Biophysical Society

2020

64th Annual Meeting of the Biophysical Society

February 15–19, 2020 ▪ San Diego, California

Program

Biophysical Society

Biophysical Society Industry Partner

The Biophysical Society is grateful to its Industry Partners

GOLD

HAMAMATSU
PHOTON IS OUR BUSINESS

MCL®
MAD CITY LABS INC.

SILVER

ALLEN INSTITUTE for CELL SCIENCE

CHROMA®

Nikon®

Learn more about becoming a Biophysical Society Industry Partner at www.biophysics.org.

BiophysicsWeek

March 23–27, 2020

Join the global celebration of biophysics!

Biophysics Week is an opportunity to promote, educate, celebrate, and engage others in biophysics research.

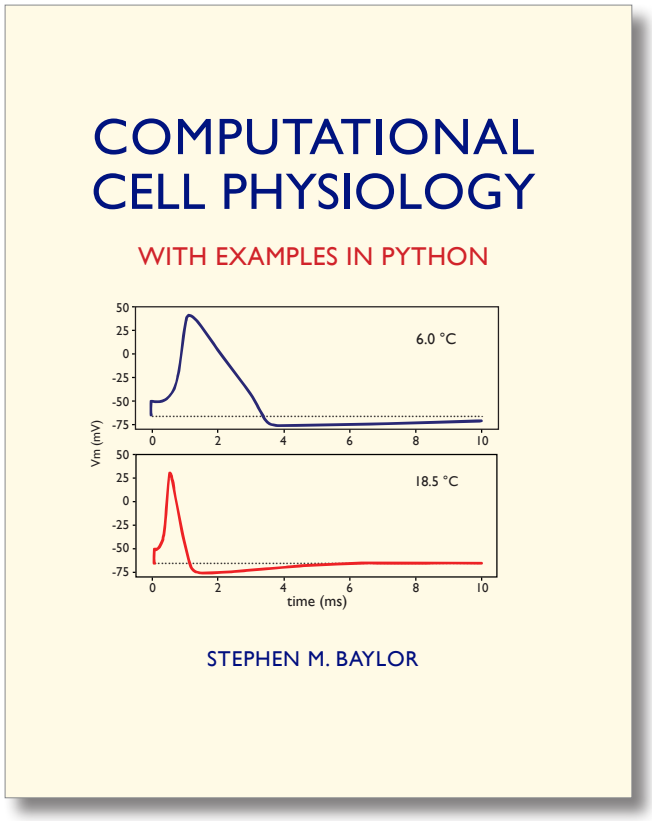
GET INVOLVED! Plan to participate in a Biophysical Society (BPS) sponsored event or an Affiliate Event near you, or host your own Affiliate Event. Register your event to receive advertising support from BPS. For more information, visit www.biophysics.org/biophysicsweek.

GEAR UP! This year's Biophysical Weeks t-shirt is now available. Get your shirt early because they sell out quickly! Visit the Biophysics Week website to order your shirt.

SUPPORT BIOPHYSICS WEEK! Help promote Biophysics Week to your peers, colleagues, and friends. Use the resources available on the Biophysics Week website to share resources and information and get the word out about Biophysics Week.

Get ready to celebrate biophysics and the important work that biophysicists do!

NEW TEXTBOOK IN PHYSIOLOGY AND BIOPHYSICS



Available on Amazon, this book explores the mechanisms that govern the function of nerve, muscle, and secretory cells. The laws of diffusion, electricity, and mass action are explained and applied to elucidate how cells establish a resting membrane potential, achieve osmotic balance, generate action potentials, initiate secretion, and control muscle contraction. The main text is complemented by computer programs in Python, an easy-to-learn, modern programming language. These programs, the explanatory text, and the exercises at the end of each chapter provide a unique framework for the exploration of the underlying mechanisms at a quantitative level. The material is suitable for a 1- or 2-semester course for advanced undergraduates or early graduate students.

The author is Professor Emeritus of Physiology at the University of Pennsylvania.

The **Biophysicist**

The Biophysicist is a peer-reviewed journal dedicated to highlighting and nurturing biophysics education, and its scholarship and development. This new, open access journal is accepting original manuscripts from the international science community and invites submissions from scientists and educators in biophysics and related disciplines. The articles focus on fundamental concepts and techniques used in biophysics education, as well as evidence-based pedagogical practice, accessible to individuals at all levels.

This journal serves undergraduate, graduate and post-graduate students and trainees, active researchers, and scholars of biophysics teaching and learning. Public outreach and K-12 education are also within the purview of this publication.

Research Articles are invited in the following categories:

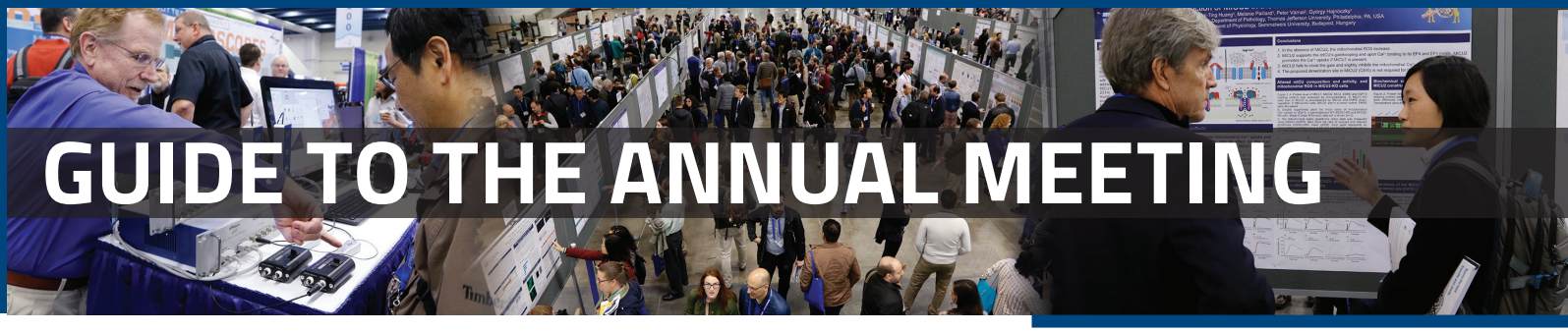
- Novel Learning and Teaching Approaches
- Laboratory and Computational Teaching Tools
- Research-based Studies of Student Learning
- Biophysics Learning Perspectives
- Adapted Research Articles

Reports are invited in the following areas:

- Biophysics and Related Disciplines
- Biophysics in Society
- Student Forum
- Book Reviews

For additional information about these article types, Instructions to Authors, and to submit, visit www.thebiophysicist.org

Biophysical Society



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, February 16	Monday, February 17	Tuesday, February 18	Wednesday, February 19
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 5:30 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®

OVER 45 YEARS OF QUALITY PERFORMANCE AND INNOVATION

AMPLIFIER SYSTEMS
MICROMANIPULATION
MICROPIPETTE FABRICATION
MICROSCOPES
LIGHT SOURCES
OPTICAL INSTRUMENTS
MICROINJECTION
AIR TABLES
TRANSLATORS AND STAGES
FARADAY CAGES
PERFUSION SYSTEMS
CUSTOM PRODUCTS

VISIT US AT BOOTH 400

ONE DIGITAL DRIVE, NOVATO, CA. 94949 | PHONE: +1.415.883.0128
FAX: +1.415.883.0572 | EMAIL: INFO@SUTTER.COM | WWW.SUTTER.COM

Biophysical Society 2020

64th Annual Meeting of the Biophysical Society

February 15–19, 2020 ▪ San Diego, California

Table of Contents

2020 Biophysical Society Lecturer

Sunney Xie
Peking University, Beijing, China

From Single-Molecule Biophysics to Single-Cell Genomics: When Stochasticity Meets Precision

About the Image

The 2020 image featured on the cover is based on combinatorial transcription factor groups: Genome-wide binding sites of three individual transcription factors (EGR1, SP1 and YY1) and their pairwise combinations on a cross section of the 3D genome of human B cell.

List of Advertisers in the 2020 Annual Meeting Program

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

ACS Omega
Applied Photophysics
Beckman Coulter Life Sciences
Bruker Corporation
Burroughs Wellcome Fund
Carl Zeiss Microscopy LLC
Chroma Technology
Dynamic Biosensors GmbH
ELEMENTS SRL
HORIBA Scientific
Leica Microsystems
LUMICKS
Mad City Labs
Mizar Imaging
Molecular Devices
Nanion Technologies
NanoSurface Biomedical
Olympus America Inc
Photonics Media
Physics Today
Sophion Bioscience A/S
Sutter Instrument
The Company of Biologists
The Journal of Physical Chemistry B
The Journal of Physical Chemistry Letters
Wyatt Technology

As of January 10, 2020

Biophysical Society Code of Conduct, Anti-Harassment Policy

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 an environment that is free of inappropriate behavior and harassment by or toward all attendees and participants of Society events, including speakers, organizers, students, guests, media, exhibitors, staff, vendors, and other suppliers. BPS expects anyone associated with an official BPS-sponsored event to respect the rules and policies of the Society, the venue, the hotels, and the city.

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.

Attendees or participants who are asked to stop engaging in harassing behavior are expected to comply immediately. 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 the complainant does not feel comfortable with such an approach, they can report the behavior as detailed below.

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.

Reporting a Violation
Violations of this Conduct Policy should be reported immediately. If you feel physically unsafe or believe a crime has been committed, you should report it to the police immediately.

To report a violation to BPS:

- You may do so in person at the Annual Meeting at the BPS Business Office in the convention center.
- You may do so in person to BPS senior staff at Thematic Meetings, BPS Conferences, or other BPS events.
- At any time (during or after an event), you can make a report through http://biophysics.ethicspoint.com or via a dedicated hotline (phone numbers listed on the website) which will collect and relay information in a secure and sensitive manner.

Reported or suspected occurrences of harassment will be promptly and thoroughly investigated per the procedure detailed below. 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.

Investigative Procedure
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.

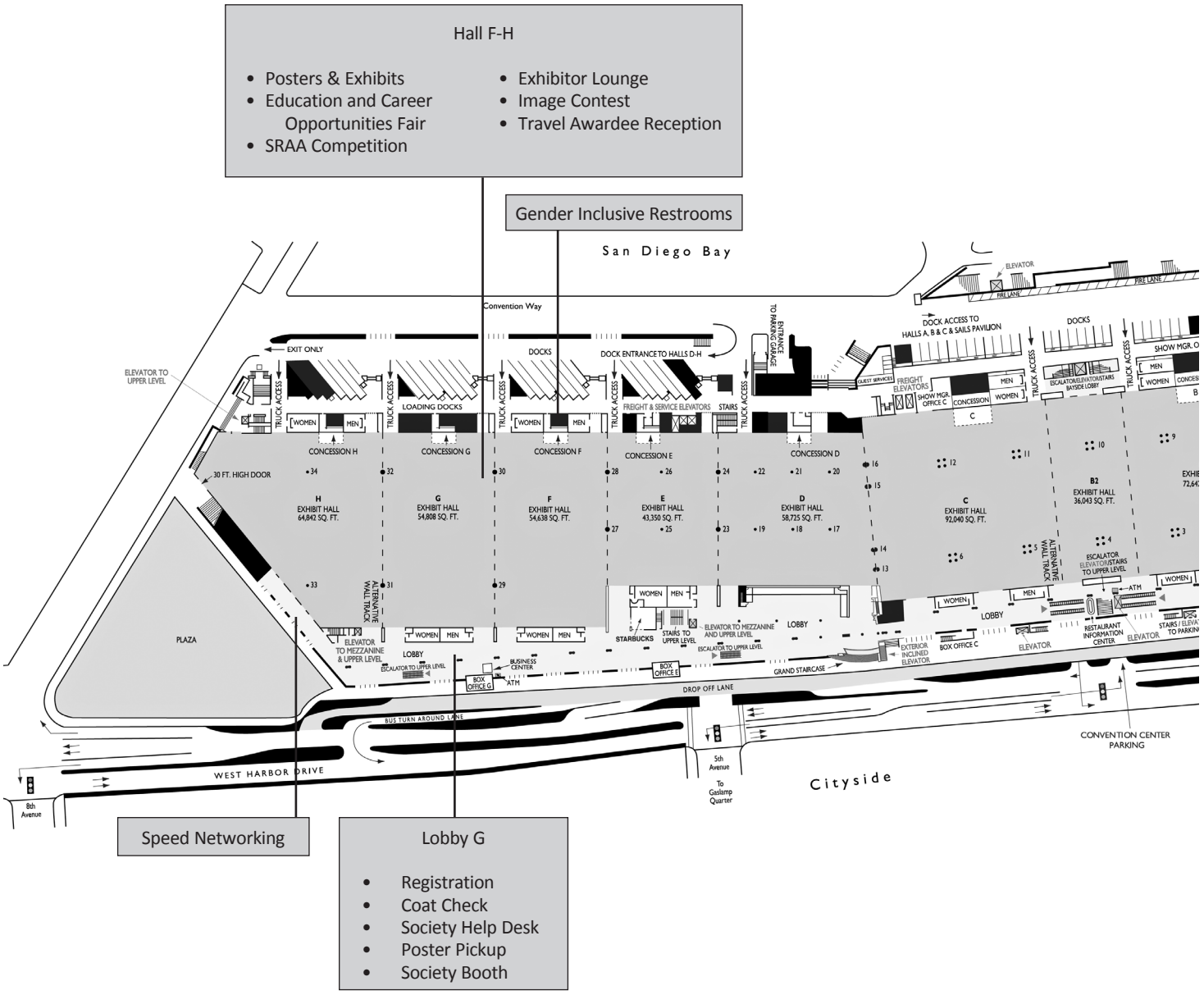
Once a complaint of harassment or sexual harassment is received, BPS will begin a prompt and thorough investigation. Please note, if a complaint is filed anonymously, BPS may be severely limited in our ability to follow-up on the allegation.

- An impartial investigative committee, consisting of the current President, President-Elect, and Executive Officer will be established. If any of these individuals were to be named in an allegation, they would be excluded from the committee.
- 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.
- If the severity of the allegation is high, is a possible repeat offense, or is determined to be beyond BPS's capacity to assess claims and views on either side, BPS may refer the case to the alleged offender's home institution (Office of Research Integrity of similar), employer, licensing board, or law enforcement for their investigation and decision.

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 written warning to ejection from the meeting or activity in question without refund of registration fees, being banned from participating in future Society meetings or Society-sponsored activities, being expelled from membership in the Society, and reporting the behavior to their employer or calling the authorities. In the event that the individual is dissatisfied with the results of the investigation, they 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.

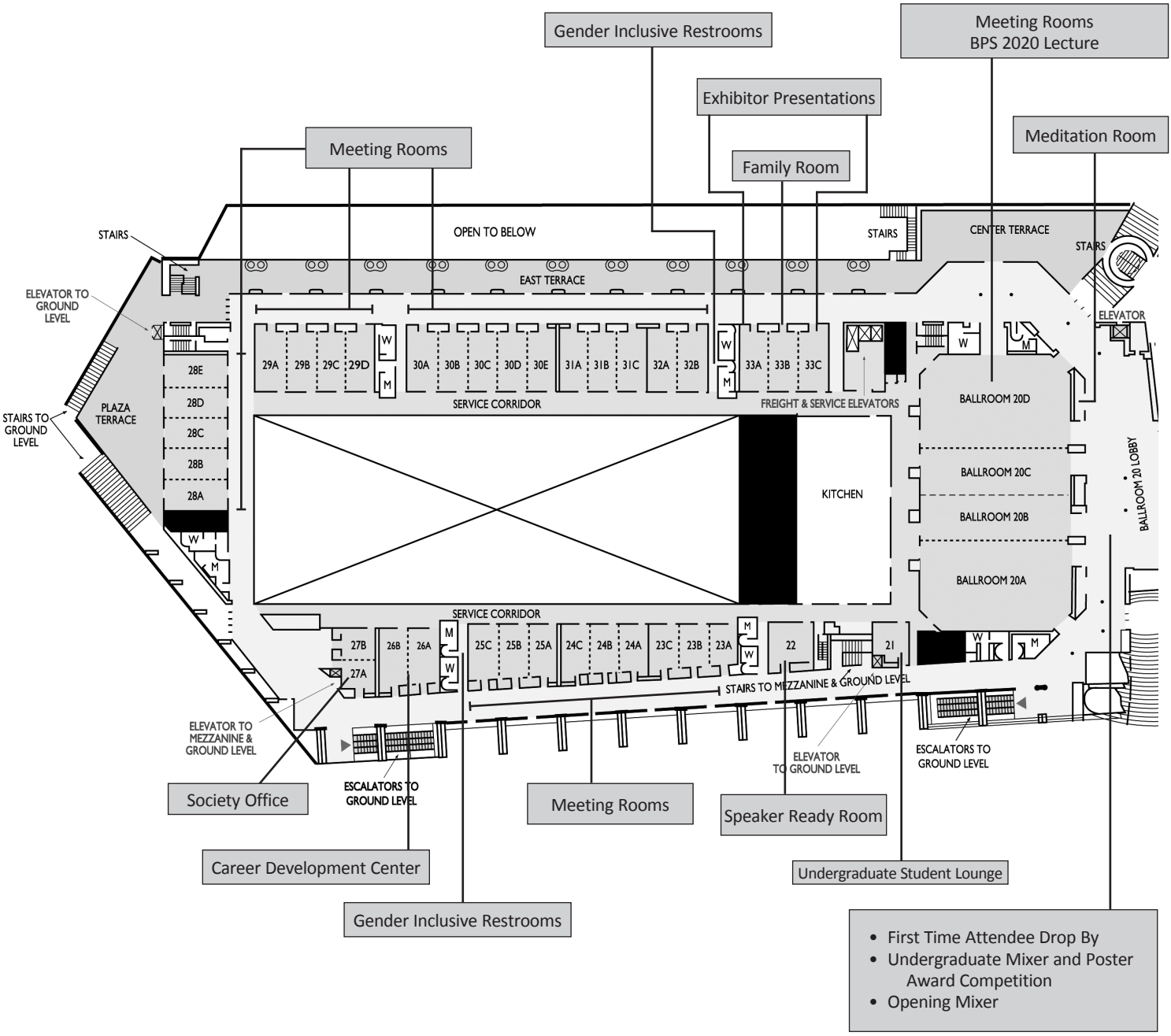
San Diego Convention Center

Ground Level Exhibit Halls



San Diego Convention Center

Upper Level Meeting Rooms



Plan the Perfect Day!

Meeting Mobile App:

- Stay organized and keep up with the latest event information
- Search by keywords, sessions, presentations, or authors
- Bookmark sessions, abstracts, presentations, exhibitors
- Create your itinerary
- Sync itinerary you may have created using the Desktop Planner into the mobile app
- View abstracts
- Make and keep notes about sessions
- Browse exhibitors
- Find attendees and connect with colleagues through "Friends"
- Follow social media postings
- And much, much more!

Partially Supported by:

BRUKER

Downloading the App is Easy!

SEARCH
The iTunes™ App Store or Google Play™ for
"Biophysical Society Events"

SCAN

For All Other Device Types (including Windows, and all other web browser-enabled devices):
While on your smartphone, point your mobile browser to **www.core-apps.com/dl/bpsevents**.

Should you have any questions, please contact society@biophysics.org,
or locate your nearest Biophysical Society Meeting Support Staff.

Biophysical Society

2020 Program Committee

Patricia Clark, University of Notre Dame, Co-Chair
William Kobertz, University of Massachusetts Medical School, Co-Chair
Teresa Giraldez, Universidad de La Laguna
Ruben Gonzalez, Columbia University
Joanna Swain, Cogen Therapeutics
Patricia Bassereau, Institut Curie
Bertrand Garcia Moreno, Johns Hopkins University
Susan Marqusee, University of California, Berkeley, Past Co-Chair
Andrej Sali, University of California, San Francisco, Past Co-Chair

BPS Officers

David W. Piston, President
Catherine A. Royer, President-Elect
Angela M. Gronenborn, Past President
Kalina Hristova, Treasurer
Erin Sheets, Secretary

BPS Council

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

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

Term Ending 2022
Michelle A. Digman
Marta Filizola
Joseph A. Mindell
Anna Moroni

Biophysical Journal

Jane Dyson, Editor-in-Chief
Vasanthi Jayaraman, Associate Editor
Jason Kahn, Associate Editor
Anne Kenworthy, Associate Editor
Elizabeth Rhoades, Associate Editor
Tamar Schlick, Associate Editor
Stanislav Shvartsman, Associate Editor
Claudia Steinem, Associate Editor

The Biophysicist

Samuel Safran, Editor-in-Chief
Gundula Bosch, Editor
Andrew Feig, Editor
Wolfgang Losert, Editor
Phil Nelson, Editor
Les Satin, Editor
Patricia Soto, Editor

Society Office Staff

Jennifer L. Pesanelli, Executive Officer
Dorothy Chaconas, Director of Meetings & Exhibits
Catie Curry, Publications Coordinator
Leann Fox, Director of Advocacy and Public Affairs
Jennifer Fraser, Meetings Coordinator
Joonyoung Kwak, Programs Coordinator
Ally Levine, Sales & Exhibits Manager
Laura Phelan, Communications & Content Manager
Harris Povich, Director of Finance & Operations
Saran Ramu, Director of Information Technology
Jesse Seese, Publications & Administrative Assistant
Caitlin Simpson, Membership Coordinator
Beth Staehle, Director of Publications
Elizabeth Vuong, Director of Marketing, Communications & Outreach
Stacey Wendelbo, Programs Coordinator
Ray Wolfe, Creative Designer & IT Systems Engineer
Umi Zhou, Meetings Manager

Sorting and Programming of 2020 Abstracts

Sorting and programming of the 2020 Annual Meeting abstracts into poster and platform sessions was completed by: Patricia Bassereau, Zev Bryant, Patricia Clark, Linda Columbus, Michelle Digman, Marta Filizola, Karen Fleming, Teresa Giraldez, Ruben Gonzalez, Angela Gronenborn, Kalina Hristova, William Kobertz, Francesca Marassi, Joseph Mindell, Carolyn Moores, Anna Moroni, Jeanne Nerbonne, David Piston, Jennifer Ross, Catherine Royer, Andrej Sali, Erin Sheets, David Stokes, Joanna Swain, Pernilla Wittung-Stafshede.

General Information

All functions will be held in the *San Diego 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 Lobby G. 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

Bank transactions can be done during regular bank business hours at Bank of America, 455 Island Ave, San Diego, CA 92101. Please bring two forms of identification with you.

Monday–Thursday	9:00 AM–5:00 PM
Friday	9:00 AM–6:00 PM
Saturday	10:00 AM–2:00 PM
Sunday	Closed

ATMs are also available in the San Diego Convention Center.

Foreign Currency Exchange

Foreign Currency Exchange and travelers' insurance services are available daily at two locations in Terminal 2 of San Diego International Airport: in the Baggage Claim area (8:00 AM–8:00 PM) and in the gate areas (5:00 AM–1:00 PM, 4:30 PM–7:30 PM).

Business Center, Lobby Level

The San Diego 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 FedEx. The business center is located in inside the San Diego Convention Center across from Hall D. To contact the business center, call 619-525-5450 or email usa1324@fedex.com.

Sunday–Saturday	8:00 AM–5:00 PM

Career Development Center, Room 26AB

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 San Diego 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 Lobby G or in the Society Meeting Office, in Room 27AB.

Child Care

Child care will be provided by KiddieCorp. On-site registration is available on a limited basis. Visit the BPS Meeting Office, Room 27AB, for additional information.

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 III) that all meeting participants must follow.

Coat Check/Luggage Storage, Lobby G

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 San Diego? Meet at the Society Booth each evening, Sunday through Tuesday, where a BPS member will coordinate dinner at a local restaurant. On Sunday, meet at 7:30 PM. Monday and Tuesday meet at 6:00 PM.

Restaurant/Concierge, Lobby E

The Convention Center staff will make restaurant recommendations and reservations as well as provide information about shopping and local sightseeing at the concierge service table.

Exhibits, Exhibit Hall F-H

The Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of January 10, 2020 can be found beginning on page 169. Please see Addendum for those registered after January 10, 2020.

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

Exhibitor Lounge, Exhibit Hall F

Exhibitors may visit the Exhibitor Lounge at the following times for assistance while at the meeting.

Friday	8:00 AM–5:00 PM
Saturday	8:00 AM–3:00 PM
Sunday	8:00 AM–5:00 PM
Monday	8:00 AM–5:00 PM
Tuesday	8:00 AM–4:00 PM
Wednesday	Closed

Exhibitor Passport Competition

Pick up a Passport Competition booklet inside the entrance of the Exhibit Hall. Visit participating exhibitors, get your passport stamped, and drop your passport at the Society Booth located in Lobby G before 2:30 PM Tuesday. The 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!

Family Room, Room 33B

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, Box Office G

In case of medical emergency, dial 5911 from any house phone or 619-525-5911 from a cell phone. For a non-emergency, you may dial 5490. The First Aid room is located in Lobby G. 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 Room 27AB. 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 in available free-of-charge in the lobby and common spaces of the San Diego Convention Center, excluding the Exhibit Hall and meeting rooms. Paid access is available in the areas below:

Attendee paid access to Internet in the Upper Level Lobby areas and meeting rooms is $13 per day, per device. Exhibitor paid access to Internet in the Exhibit Hall is $80 per day.

Meditation Room, outside entrance of Ballroom 20D

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

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 "Biophysical Society Events" to download the App. We do not support native apps for Windows Mobile, however, those users may access our mobile-friendly Desktop Planner at www.biophysics.org/2020meeting. Using the Mobile App you can view & create schedules, view abstracts/authors/exhibitors, receive event alerts from BPS, Join the conversation in social media, find & interact virtually with other attendees, and sync itineraries that were created with the Desktop Planner.

Parking

On-site private vehicle parking is available at the 1,950-vehicle underground garage located below the San Diego Convention Center. Rates may range from $15 to $35 on days when there are special events at Petco Park or other downtown events.

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 San Diego 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 F-H

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 4, 2019, 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.

Raffles

Exhibitor Raffle: Want to win a Bose Portable Bluetooth Speaker?

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 Lobby G before 2:30 PM on Tuesday, February 18. The 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, Lobby G

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, Lobby G, and four banks on the meeting room level. Gender inclusive restrooms are located in Exhibit Hall F and on the upper level next to Room 26A and Room 33A.

Social Media

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 #bps20
Facebook:	www.facebook.com/biophysicalsociety
Instagram:	@biophysicalsociety
Blog:	www.biophysics.org/blog

Society Meeting Office, Room 27AB

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 22

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 San Diego 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 Transportation Plazas of the San Diego Convention Center.

Yellow Radio Service	619-444-4444
American Radio Service	619-234-1111
Orange Radio Service	619-223-5555
San Diego Dispatch	619-226-8294
USA Radio Dispatch	619-231-1144

Undergraduate Student Lounge, Room 21

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

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

68th Annual Meeting
February 10–14, 2024
Philadelphia, Pennsylvania

Governance and Committee Meetings

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

Friday, February 14

3:30 PM–4:30 PM
New Council Orientation
Hilton, Cobalt 501C

5:00 PM–9:00 PM
Joint Council Reception, Dinner, and Meeting
Hilton, Cobalt 500AB

Saturday, February 15

8:30 AM–11:30 AM
Joint Council Meeting (continued)
Hilton, Cobalt 500AB

Sunday, February 16

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

12:00 PM–1:30 PM
Public Affairs Committee Meeting
Room 30D

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

Monday, February 17

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

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

7:30 PM–10:30 PM
Biophysical Journal Editorial Board Dinner
The Ultimate Skybox at Diamond View Tower

Tuesday, February 18

8:00 AM–9:00 AM
Biophysical Society Business Meeting
Room 29AB

9:00 AM–10:30 AM
Subgroup Chairs Meeting
Room 32A

3:00 PM–5:00 PM
Education Committee Meeting
Room 30D

6:00 PM–10:00 PM
Publications Committee Meeting
Hilton, Cobalt 500AB

Wednesday, February 19

8:00 AM–11:00 AM
New Council Meeting
Room 32A

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, February 16, to Wednesday, February 19, in Room 21.

Sessions in italics will be held in Career Development Center, Room 26AB.

Saturday, February 15, 2020

2:00 PM–4:00 PM	Communicating Your Science Workshop
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–2:40 PM | 4:30 PM–5:30 PM

Sunday, February 16, 2020

7:30 AM–8:30 AM	Postdoctoral Breakfast: Tales From Two Sides of Recruitment
9:00 AM–10:00 AM	*Networking for Nerds Night: How to Create Your Unicorn 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: Following Your IDP Roadmap to the Career You Want
1:00 PM–3:00 PM	Education & Career Opportunities Fair
2:00 PM–4:00 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	Science and Research in the Global Political L andscape: The US and China
4:00 PM–5:00 PM	*Nailing the Job Talk, or Erudition Ain't Enough*
4:00 PM–6:00 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, February 17, 2020

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*
11:00 AM-1:00 PM	Annual Meeting of the Student Chapters
11:30 AM–12:30 PM	*Networking for Nerds: How to Create Your Unicorn Career*
12:30 PM–2:00 PM	The Nuts and Bolts of Preparing Your NSF Grant
1:00 PM–2:30 PM	Careers in Industry: A Q&A Panel
1:00 PM–2:30 PM	How Does Congress Set the Federal Budget for Biomedical Research?
1:30 PM–3:00 PM	Biophysics 101: An Introduction to Molecular Dynamics Simulation and its Application to Biological Systems
2:15 PM–3:45 PM	How to Get Your Scientific Paper Published
2:30 PM–3:30 PM	*Translating Your Credentials: Writing Effective Resumes + Cover Letters and Your LinkedIn Profile*
2:30 PM–4:00 PM	Beyond Reporting: How to be an Ally to Those Experiencing Harassment
4:00 PM–5:00 PM	*Marketing Your Value: Crafting Your Elevator Pitch/30 Second Value Statement/Brand Statement*
4:30 PM–6:00 PM	Speed Networking

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, February 18, 2020

9:30 AM–10:30 AM	*Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn & More*
11:30 AM–12:30 PM	*Negotiation for Nerds: Negotiation Strategies and Tactics and Evaluating a Job Offer*
12:00 PM–1:30 PM	Funding Opportunities for Faculty at Primarily Undergraduate Institutions
12:00 PM–1:30 PM	Postdoc to Faculty Q&A: Transitions Forum and Luncheon
1:15 PM–2:45 PM	Climate Change We *Want* to See: Mitigating Unconscious Bias in the Biophysical Professions
1:30 PM–3:00 PM	The Nuts and Bolts of Preparing Your NIH Grant
2:30 PM–3:30 PM	*Going Live: Preparing for Interviews in Industry and Academia*

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, February 15, in the Career Development Center, Room 26AB. 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

Room 26AB

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 book, Networking for Nerds (Wiley, 2015), beat out Einstein (really!) for the honor of being named one of the Top 5 Books of 2015 by Physics Today. 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, EU, Mexico, Canada, Africa, and Asia, and has written over 400 articles in publications such as Nature, Science, Scientific American, National Geographic News Watch, and Smithsonian. She has served as a career columnist for Physics Today and is a regular contributor to the American Physical Society's APS News and ScienceCareers. She also writes "Your Unicorn Career", a careers column for ScienceCareers about finding your professional bliss. Levine authored two online courses for Oxford University Press on career development and entrepreneurship, is a consultant, speaker, and writer for the Lindau Nobel Laureate Meetings, and served as the event manager for an international conference on phononics. She holds bachelor's degrees in mathematics and anthropology with a certificate in Middle Eastern Studies from the University of Arizona, and studied at the American University in Cairo as a US Department of Defense Boren Fellow.

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.

Find a Job. Post a Job.

Visit the BPS Job Board today.
https://biophysics-jobs.careerwebsite.com

Sunday, February 16

Diana M. Acosta, Weill Cornell Medicine
289-Pos, B120
BIOPHYSICAL CHARACTERIZATION OF COVALENTLY MODIFIED PROTEIN TAU: OLIGOMERS, AGGREGATION, AND TUBULIN INTERACTIONS

Alaa Al-Shaer, Simon Fraser University, Canada
173-Pos, B4
ATOMIC FORCE MICROSCOPY IMAGING REVEALS STRUCTURAL HETEROGENEITIES IN COLLAGEN TYPE IV MOLECULES

Chiara Autilio, Complutense University of Madrid, Spain
429-Pos, B260
MILD HYPOTHERMIA ENHANCES LUNG SURFACTANT ACTIVITY: DELVING INTO THE MOLECULAR MECHANISMS

Estefania Barreto-Ojeda, University of Calgary, Canada
122-Plat
INTERPLAY BETWEEN MEMBRANE CURVATURE AND CONFORMATIONAL STATES IN ABC TRANSPORTERS

Julie Beenken, University of Minnesota Duluth
216-Pos, B47
COMPARATIVE PHOTOPHYSICAL STUDIES OF OF MCERULEAN3 AND MTURQUOISE2.1 AS FRET DONORS

Alida Besch, New York University
260-Pos, B91
ELUCIDATING THE ACTIVATING MECHANISM OF GATEKEEPER MUTATIONS ON RECEPTOR TYROSINE KINASES

Mikayla Carlson, Arizona State University
619-Pos, B450
PREDATION STRATEGIES OF *BDELLOVIBRIO BACTERIOVORUS*

Charlotte Cialek, Colorado State University
142-Plat
VISUALIZING DYNAMIC TETHERING OF ARGONAUTE TO SINGLE MRNA IN LIVE HUMAN CELLS REVEALS THE MECHANISM OF MIRNA-MEDIATED TRANSLATIONAL SILENCING

Katherine Coburn, University of Maryland, Baltimore
243-Pos, B74
INVESTIGATION OF THE IMPACT OF POST-TRANSLATIONAL MODIFICATIONS OF HNRNP A18 ON SMALL MOLECULE INHIBITORS

Dan Deviri, Weizmann Institute of Science, Israel
288-Pos, B119
MULTIVALENCY OF PROTEINS AND THEIR INTERACTIONS PREDICT THEIR PHASE SEPARATION

Lisa Dietel, University of Freiburg, Germany
442-Pos, B273
LIPID SCRAMBLING OF ASYMMETRIC LIPOSOMES INDUCED BY MEMBRANE ACTIVE SUBSTANCES

Daniele Di Marino, Marche Polytechnic University, Italy
225-Pos, B56
LIGAND BINDING, UNBINDING AND ALLOSTERIC EFFECTS: DECIPHERING SMALL MOLECULE MODULATION OF HSP90

Lawrence J. Dooling, University of Pennsylvania
755-Pos, B586
MOUSE MELANOMA B16 TUMORS ARE SOFT AND ENGULFABLE WHEN TARGETED IN COMBINATION WITH MACROPHAGE CHECKPOINT BLOCKADE

Anna R. Eitel, University of Arizona
398-Pos, B229
WATER AND MEMBRANE LIPIDS GOVERN G-PROTEIN ACTIVATION

Rui Gao, University of Utah
774-Pos, B605
DIRECT OBSERVATION OF SINGLE BIOMOLECULE HIDDEN BEHAVIORS BY AN ELECTRO-OPTICAL NANOPORE

Antarip Halder, Indian Institute of Science
341-Pos, B172
ROLE OF METAL IONS IN RNA TETRALOOP HAIRPIN MOTIF FORMATION

Joel C. Heisler, University of California, Merced
253-Pos, B84
CLOCK OUTPUT SERVES DUAL PURPOSE OF GENE REGULATION AND TIME KEEPING

Maria Hoernke, Albert-Ludwigs-University, BIOSS, Germany
404-Pos, B235
QUANTIFIED EFFICIENCY OF MEMBRANE LEAKAGE EVENTS RELATES TO ANTIMICROBIAL SELECTIVITY

Yihe Huang, Van Andel Research Institute
104-Plat
LIGAND RECOGNITION AND GATING MECHANISM OF THE TRPM2 CHANNEL

Elton D. Jhamba, University of New Mexico
704-Pos, B535
MULTIPLEXED DNA-PAINT USING A HIGH-SPEED LINE-SCANNING HYPERSPECTRAL MICROSCOPE

Griffin Jones, Lehigh University
196-Pos, B27
THE FUNCTION OF LYNX1 AND LYNX2 PROTEIN IN BINDING AFFINITY TO NICOTINIC RECEPTORS AND GENE RESTORATION

Avihay Kadosh, Technion, Israel
456-Pos, B287
THE TILTED HELIX MODEL OF DYNAMIN OLIGOMERS

Rhye-Samuel Kanassatega, University of Arizona
34-Plat
A FRET-BASED BIOSENSOR FOR DETECTING PHOSPHORYLATION-DEPENDENT STRUCTURAL DYNAMICS IN HUMAN MYOSIN BINDING PROTEIN-C

Ahmad Khalifa, McGill University, Canada
149-Plat
THE INNER JUNCTION COMPLEX OF THE CILIA IS AN INTERACTION HUB THAT INVOLVES TUBULIN POST-TRANSLATIONAL MODIFICATIONS

Dong-Hwee Kim, KU-KIST, South Korea
63-Plat
NUCLEAR MECHANOSENSATION REGULATES IMMUNOLOGICAL SENSITIVITY OF MACROPHAGE ACTIVATION

Tae-Hyung Kim, University of California, Los Angeles
478-Pos, B309
BETA-ADRENERGIC SIGNALING MODULATES CANCER CELL MECHANOTYPE THROUGH A RHOA-ROCK-MYOSIN II AXIS

Lydia Kisley, Case Western Reserve University
94-Plat
ADVANCEMENTS IN SUPERRESOLUTION CORRELATION ANALYSIS TO IMAGE ANOMALOUS DIFFUSION IN CROWDED ENVIRONMENTS

Elif S. Koksal, Norwegian Center for Molecular Medicine
409-Pos, B240
MILD TEMPERATURE GRADIENTS MAY HAVE ENHANCED THE GROWTH AND FUSION OF PROTOCELLS ON THE EARLY EARTH

Joon Lee, Weill Cornell Medicine
477-Pos, B308
PROBING THE HOMO- AND HETERO-DIMERIZATION PROPENSITIES OF METABOTROPIC GLUTAMATE RECEPTORS

Xingcheng Lin, Massachusetts Institute of Technology
379-Pos, B210
COARSE-GRAINED MODELING OF PRC2-MEDIATED INTER-NUCLEOSOMAL INTERACTIONS

Ines Lüchtefeld, ETH Zurich, Switzerland
61-Plat
INVESTIGATING THE INFLUENCE OF MEMBRANE PRETENSION ON SINGLE CELL MECHANOSENSITIVITY WITH FORCE-CONTROLLED MICROPIPETTES

Sai Raghavendra Maddhuri Venkata Subramaniya, Purdue University
210-Pos, B41
PROTEIN SECONDARY STRUCTURE DETECTION IN INTERMEDIATE-RESOLUTION CRYO-EM MAPS USING DEEP LEARNING

Juliana Mira Hernandez, University of California, Davis
500-Pos, B331
DIMINISHED β-ADRENERGIC RESPONSE IN PROTEIN KINASE D KNOCK-OUT CARDIOMYOCYTES

Ananya Mondal, University of Houston
329-Pos, B160
INHOMOGENEOUS FORCES IN SEMIFLEXIBLE BIOPOLYMERS

Saeed Nazemidashtarjandi, Ohio University
745-Pos, B576
OUTER LEAFLET LIPID COMPOSITION AFFECT THE INTERNALIZATION OF NANOPARTICLE IN LIVE CELLS

Kelsey C. North, University of Tennessee Health Science Center
555-Pos, B386
PREGNENOLONE CONSTRICTS CEREBRAL ARTERIES BY TARGETING THE CHANNEL-FORMING SUBUNIT OF THE SMOOTH MUSCLE BK COMPLEX

Arianne Papa, Columbia University
43-Plat
BETA-ADRENERGIC STIMULATION OF CAV1.2 CHANNELS IS TRANSDUCED VIA THE IS6-AID LINKER

Natasha H. Rhys, King's College London, United Kingdom
176-Pos, B7
ON THE ROLE OF THE SOLVENT ENVIRONMENT IN THE FOLDING AND UNFOLDING OF AMPHIPATHIC HELICES

Ampon Sae Her, New York University
124-Plat
INDUCING CONFORMATIONAL PREFERENCE OF A MULTIDRUG EFFLUX PUMP EMRE WITH A SINGLE MUTATION

Ignacio A. Segura, Centro Interdisciplinario de Neurociencia, Chile
539-Pos, B370
A FOCUSED ELECTRIC FIELD IN THE BK CHANNEL VOLTAGE SENSOR

Suzanne E. Stasiak, Northeastern University
1237-Pos, B305
COLLECTIVE MECHANOSENSING REGULATES THE AGONIST-INDUCED CALCIUM RESPONSE IN SMOOTH MUSCLE CELLS

Tiffany Suwatthee, University of Chicago Chemistry
444-Pos, B275
ELECTROSTATIC AND LIPID PACKING EFFECTS ON THE BINDING OF MILK FAT GLOBULE EGF FACTOR 8 TO PHOSPHOLIPID MEMBRANES

David V. Svintradze, University of Georgia, Tbilisi
413-Pos, B244
GENERALIZATION OF THE KELVIN EQUATION AND MACROMOLECULAR SURFACES

Marie Sweet, New York University
85-Plat
ACTION AND INACTIVATION OF THE BACTERIAL POTASSIUM PUMP KDPFABC

Jordana K. Thibado, Weill Cornell Medicine
466-Pos, B297
TUNING OF METABOTROPIC GLUTAMATE RECEPTOR ASSEMBLY AND ACTIVATION BY INTERACTIONS BETWEEN TRANSMEMBRANE DOMAINS

Yundi Wang, University of British Columbia, Canada
534-Pos, B365
MEFENAMIC ACID BINDING AND EFFECT ON I_{KS} CHANNEL GATING

Sara J. Weaver, California Institute of Technology
52-Plat
CRYOEM STRUCTURE OF THE VIBRIO CHOLERAE TYPE IV PILUS SECRETIN PILQ

Dominic G. Whittaker, University of Nottingham, United Kingdom
547-Pos, B378
RAPID CHARACTERISATION OF R56Q MUTANT HERG CHANNEL KINETICS USING SINUSOIDAL VOLTAGE PROTOCOLS

Shiyu Xia, Harvard Medical School
193-Pos, B24
PORE FORMATION MECHANISM OF HUMAN GASDERMIN D

Lili Zhang, McMaster University, Canada
246-Pos, B77
USING FLUORESCENCE CORRELATION SPECTROSCOPY TO ACCURATELY MEASURE PROTEIN CONCENTRATION GRADIENTS IN THE PRESENCE OF NOISE AND PHOTOBLEACHING

Monday, February 17

Jorge Alegre-Cebollada, CNIC, Spain
795-Plat
INDEPENDENT TUNING OF VISCOUS AND ELASTIC PROPERTIES OF PROTEIN BIOMATERIALS

Eduardo U. Anaya, University of New Mexico
1200-Pos, B268
INNATE ANTIFUNGAL IMMUNE RECEPTOR, DECTIN-1, UNDERGOES LIGAND-INDUCED OLIGOMERIZATION WITH HIGHLY STRUCTURED β-GLUCANS AND AT FUNGAL CELL CONTACT SITES

Baris O. Aydintug, University of Colorado Denver
1467-Pos, B535
PROTON TRANSPORT THROUGH E. COLI CLC CHLORIDE/PROTON ANTIPORTER IN THE PRESENCE OF BOUND FLUORIDE

Yousef Bagheri, University of Massachusetts Amherst
1147-Pos, B215
QUANTITATIVE ASSESSMENT OF THE DYNAMIC MODIFICATION OF LIPID-DNA PROBES ON LIVE CELL MEMBRANES

Matthieu P. Benoit, Albert Einstein College
856-Plat
CHEMO-MECHANICAL CYCLE DIVERSITY IN THE KINESIN SUPERFAMILY REVEALED BY CRYO-EM

Abrar A. Bhat, National Centre for Biological Sciences, India
801-Plat
DIFFERENTIAL ACTIN BINDING AFFINITY LEADS TO PROTEIN SORTING IN A RECONSTITUTED ACTIVE COMPOSITE LAYER

Madolyn Britt, University of Maryland, College Park
65-Plat, B305
MSCS IS A CRITICAL COMPONENT FOR OSMOTIC SURVIVAL OF VIBRIO CHOLERAE

Joshua Brockman, Emory University
1390-Pos, B458
SUPER-RESOLVED MEASUREMENT OF PICONEWTON RECEPTOR FORCES VIA TENSION-PAINT

Yunfeng Chen, The Scripps Research Institute
786-Plat
DISTINCTIVE MECHANO-SENSITIVITY OF FOCAL ADHESION INTEGRINS α5β1 AND αVβ3 IN CONFORMATIONAL CHANGES

Sara J. Codding, University of Maryland, Baltimore
1291-Pos, B359
MEASURING INTRINSIC LIGAND DYNAMICS OF HERG POTASSIUM CHANNELS USING THE UNNATURAL AMINO ACID L-ANAP AND TM-FRET

Kirsten Cottrill, Emory University
1174-Pos, B242
DETERMINING THE LIPID ENVIRONMENT AND INTERACTIONS OF CFTR

Elizabeth Erler, Swarthmore College
1023-Pos, B91
PROBING THE M1-M2 INTERACTION IN INFLUENZA A VIRUS USING SITE-DIRECTED SPIN LABELING EPR IN LIPID BILAYER NANODISCS

Joy Franco, Stanford University
1409-Pos, B477
AN *IN VITRO* SYSTEM FOR STUDYING NEMATODE MECHANOSENSORY NEURONS

Sarah Innes-Gold, University of California, Santa Barbara
976-Pos, B44
SINGLE-MOLECULE MECHANICAL MEASUREMENTS OF THE HYALURONAN-AGGRECAN BOTTLEBRUSH

Meghna Gupta, University of California, San Francisco
1026-Pos, B94
STRUCTURAL ANALYSIS OF A PHOSPHATE 'TRANSCEPTOR'

Shanna Hamilton, Ohio State University Medical Center
1257-Pos, B325
HYPERACTIVITY OF RYR2 IN CARDIAC DISEASE IS EXACERBATED BY CALCIUM LEAK-INDUCED MITOCHONDRIAL ROS

Per Niklas Hedde, University of California, Irvine
1211-Pos, B279
PAIR CORRELATION ANALYSIS REVEALS BARRIERS TO NATURAL KILLER CELL RECEPTOR MOTION AT THE SYNAPSE

Maxx Holmes, University of Leeds, United Kingdom
838-Plat
SUB-CELLULAR HETEROGENEITY IN SERCA DETERMINES SPATIAL CALCIUM DYNAMICS IN CARDIOMYOCYTES

Farzana Hossain, Shizuoka University, Japan
1167-Pos, B235
MEMBRANE POTENTIAL IS VITAL FOR RAPID PERMEABILIZATION OF PLASMA MEMBRANES AND LIPID BILAYERS BY THE ANTIMICROBIAL PEPTIDE LACTOFERRICIN B

Brett A. Israels, University of Oregon
915-Plat
SUB-MICROSECOND SINGLE-MOLECULE FRET STUDIES OF SINGLE-STRANDED DNA CONFORMATION FLUCTUATIONS MEDIATED BY SINGLE-STRANDED DNA BINDING PROTEINS

Joseph Mathew Kalappurakkal, National Centre for Biological Sciences, India
924-Plat
PLASMA MEMBRANE NANODOMAINS AS AN INTEGRATOR OF SUBSTRATE ENCODED MECHANO-CHEMICAL SIGNALS

James Keener, University of Arizona
1181-Pos, B249
MEASURING MEMBRANE PROTEIN-LIPID INTERACTIONS IN NANODISCS WITH NATIVE MASS SPECTROMETRY

Newsha Koushki, McGill University, Canada
1243-Pos, B311
YAP ACTIVITY DIRECTLY SCALES WITH NUCLEAR DEFORMATION AND LAMIN A DISTRIBUTION

Son C. Le, Duke University
1322-Pos, B390
AN ALLOSTERIC GATING MECHANISM OF TMEM16A CALCIUM-ACTIVATED CHLORIDE CHANNEL

Alison Leonard, University of Delaware
1189-Pos, B257
LIPID CHAIN ENTROPY AND EXCHANGE IN THE VICINITY OF G-PROTEIN COUPLED RECEPTORS

Yi-Chih Lin, Weill Cornell Medicine
1192-Pos, B260
ANNEXIN-A5 STABILIZES MEMBRANE DEFECTS VIA MODULATING LIPID ORDER

Bei Liu, Univ North Carolina, Chapel Hill
813-Plat
RAPID AND EXTREME LOW-LIGHT SUPERRESOLUTION IMAGING VIA ARTIFICIAL INTELLIGENCE

Jeffrey Lotthammer, The Ohio State University
1350-Pos, B418
IN-SILICO ELECTROPHYSIOLOGY OF INNER-EAR MECHANOTRANSDUCTION CHANNEL MODELS

Rong Ma, Emory University
1213-Pos, B281
DNA PROBES THAT STORE MECHANICAL INFORMATION REVEAL TRANSIENT PICONEWTON FORCES APPLIED BY T CELLS

Ning Ma, Stanford University
1501-Pos, B569
DEVELOPMENT OF A SINGLE-CELL LABEL-FREE DRUG TESTING PLATFORM USING FLUORESCENCE LIFETIME IMAGING MICROSCOPY (FLIM) FOR PATIENTS WITH METASTATIC CANCER

Jaime E. Martinez, Johns Hopkins University
946-Pos, B14
ELECTROSTATICS AND THE CONTROL OF ENDOGENOUS HEME LIGATION BY PH IN A HEMOGLOBIN

Meranda Masse, University of Wisconsin-Madison
958-Pos, B26
EFFECT OF NASCENT PROTEINS ON THE STABILITY OF THE RIBOSOME

Kaylee Mathews, Brown University
999-Pos, B67
STRUCTURAL AND BIOPHYSICAL CHARACTERIZATION OF SPLICING-ASSOCIATED ASSEMBLIES OF THE SMN PROTEIN

Laetitia Mony, INSERM, France
892-Plat
DIMER INTERACTION IN THE HV1 PROTON CHANNEL

Fahmida Nasrin, Shizuoka University, Japan
1545-Pos, B613
FLUOROMETRIC SENSING PLATFORM BASED ON LOCALIZED SURFACE PLASMON RESONANCE USING QUANTUM DOTS-GOLD NANOCOMPOSITES OPTIMIZING THE LINKER LENGTH VARIATION

Collin Nisler, Ohio State University
828-Plat
THE EVOLUTIONARY BIOPHYSICS OF A FORCE-CONVEYING PROTEIN COMPLEX REQUIRED FOR VERTEBRATE HEARING

Desmond Owusu Kwarteng, Kent State University
1118-Pos, B186
IONIZATION PROPERTIES OF PHOSPHATIDIC ACID AND DIACYLGLYCEROLPYROPHOSPHATE IN PC AND PC/PE MODEL MEMBRANES

Michael Pablo, University of North Carolina, Chapel Hill
810-Plat
BINDER/TAG: A VERSATILE APPROACH TO PROBE AND CONTROL THE CONFORMATIONAL CHANGES OF INDIVIDUAL MOLECULES IN LIVING CELLS

Samarthaben J. Patel, University of Wisconsin-Madison
1187-Pos, B255
CHARACTERIZING THE TRANSLOCATION OF CHARGED PEPTIDE LOOPS ACROSS LIPID BILAYERS WITH MOLECULAR DYNAMICS SIMULATIONS

Sanjoy Paul, TIFR, India
1498-Pos, B566
DYNAMICAL METRICS TO FINGERPRINT PROTEINS AND PROTEIN-PROTEIN INTERACTIONS

Lien Phung, University of Minnesota
1355-Pos, B423
DETECTION OF SUPER-RELAXED MYOSIN IN SPECIFIC HUMAN SKELETAL MUSCLE FIBER TYPES

Andrew Pyo, University of Alberta, Canada
1072-Pos, B140
MEMORY EFFECTS IN SINGLE-MOLECULE FORCE SPECTROSCOPY MEASUREMENTS OF BIOMOLECULAR FOLDING

Raju Regmi, Massachusetts Institute of Technology
913-Plat
SINGLE-MOLECULE INVESTIGATION OF CONFORMATIONAL CHANGES IN EPIDERMAL GROWTH FACTOR RECEPTOR

Julia R. Rogers, University of California, Berkeley
800-Plat
TRANSITION STATES OF PASSIVE LIPID TRANSPORT ARE CHARACTERIZED BY HYDROPHOBIC CONTACTS

Lucas Rudden, Durham University, United Kingdom
1496-Pos, B564
COMPUTER VISION FOR PROTEIN-PROTEIN DOCKING

Angelica Sandoval-Perez, University of Los Andes, Colombia
1035-Pos, B103
CHOLESTEROL CONTROLS DYNAMICS OF THE METABOTROPIC GLUTAMATE RECEPTOR 2 VIA AN IONIC-LOCK

Magdalena Schneider, Vienna University of Technology, Austria
811-Plat
2-COLOR LOCALIZATION MICROSCOPY AND SIGNIFICANCE TESTING APPROACH (2-CLASTA)

Simon Sehayek, McGill University, Canada
1517-Pos, B585
A HIGH-THROUGHPUT IMAGE CORRELATION METHOD FOR RAPID ANALYSIS OF FLUOROPHORE PHOTOBLINKING AND PHOTOBLEACHING RATES

Enrico F. Semeraro, University of Graz, Austria
1151-Pos, B219
ANTIMICROBIAL PEPTIDES IMPAIR BACTERIA CELL STRUCTURES WITHIN SECONDS

Rohit R. Singh, Cornell University
804-Plat
THE COMBINED HYDRODYNAMIC AND THERMODYNAMIC EFFECTS OF IMMOBILIZED PROTEINS ON THE DIFFUSION OF MOBILE TRANSMEMBRANE PROTEINS

Claire J. Stewart, University of North Carolina, Chapel Hill
956-Pos, B24
POLYETHYLENE GLYCOL SIZE AND PROTEIN STABILITY

Joseph C. Sudar, Ohio State University
1235-Pos, B303
EXPLORING THE STRUCTURAL ELEMENTS RESPONSIBLE FOR *CIS*-HOMODIMERIZATION OF INNER EAR CADHERIN-23

Carl-Mikael Suomivuori, Stanford University
787-Plat
MOLECULAR MECHANISM OF BIASED SIGNALING IN A PROTOTYPICAL G-PROTEIN-COUPLED RECEPTOR

Li Tian, Institute of Biological Interfaces, Germany
1025-Pos, B93
SELF-ASSEMBLY OF E5/PDGFβR IN MEMBRANES STUDIED BY SOLID-STATE NMR DISTANCE MEASUREMENTS

Chen-Wei Tsai, University of Colorado
843-Plat
MECHANISMS OF MICU1 REGULATION OF THE MITOCHONDRIAL CALCIUM UNIPORTER COMPLEX

Chiamaka Ukachukwu, University of Michigan
1278-Pos, B346
RELATIVE HERG SUBUNIT ABUNDANCE MODIFIES I_{KR} KINETICS AND MAGNITUDE DURING CARDIAC MATURATION

Zichen Wang, University of Illinois at Urbana-Champaign
1212-Pos, B280
COACTION OF ELECTROSTATIC AND HYDROPHOBIC INTERACTIONS IN SIGNALING: DYNAMIC CONSTRAINTS ON DISORDERED TRKA JUXTAMEMBRANE DOMAIN

Sarah Young, University of Arizona
1038-Pos, B106
RESOLVING CD47 STRUCTURE AND FUNCTION TO UNDERSTAND SIGNAL TRANSDUCTION MECHANISM

Klaus Yserentant, Heidelberg University, Germany
1522-Pos, B590
MOLECULAR COUNTING WITH CALIBRATED LABELING AND QUANTITATIVE FLUORESCENCE MICROSCOPY

William J. Zamora, University of Costa Rica
1162-Pos, B230
INSIGHTS INTO THE EFFECT OF THE MEMBRANE ENVIRONMENT ON THE THREE-DIMENSIONAL STRUCTURE-FUNCTION RELATIONSHIP OF ANTIMICROBIAL PEPTIDES

Zhi Wei Zeng, University of Toronto, Canada
1336-Pos, B404
CONFORMATIONAL DYNAMICS OF CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR (CFTR) REVEALED BY MOLECULAR SIMULATIONS

Tuesday, February 18

Ibraheem Alshareedah, University at Buffalo
1821-Pos, B91
SEQUENCE-ENCODED INTERACTIONS MODULATE REENTRANT LIQUID CONDENSATION OF RIBONUCLEOPROTEIN-RNA MIXTURES

Chase Amos, University of Virginia
1970-Pos, B240
PLASMA MEMBRANE ORDER REGULATES INSULIN GRANULE EXOCYTOSIS

Marcelo Ayllon, Boise State University
1875-Pos, B145
LIPOSOMES IMPEDE EXOTOXINS CYTOLYTIC EFFECTS

Linda Balabanian, McGill University, Canada
1711-Plat
TAU DIFFERENTIALLY REGULATES THE DYNAMIC LOCALIZATION OF EARLY ENDOSOMES AND LYSOSOMES

Daniel Benjamin, University of Wisconsin-Madison
1755-Pos, B25
PLASMA INDUCED MODIFICATION OF BIOMOLECULES (PLIMB) FOR EPITOPE MAPPING

Debanjan Bhowmik, Stanford University
2133-Pos, B403
STUDY OF HCM CAUSING β-CARDIAC MYOSIN MUTATIONS LOCATED AT DIFFERENT STRUCTURALLY SIGNIFICANT REGIONS OF THE MYOSIN-HEAD

Loryn J. Bohne, University of Calgary, Canada
1689-Plat
ELECTRICAL REMODELLING CONTRIBUTES TO ATRIAL FIBRILLATION IN TYPE 2 DIABETES MELLITUS

Ingrid M. Bonilla, Ohio State University
1992-Pos, B262
SOCE CONTRIBUTES TO NORMAL CALCIUM HOMEOSTASIS AND RYTHMIC ACTIVITY OF ATRIAL MYOCARDIUM

Giovana Cavenaghi Guimarães, IBILCE/UNESP, Brazil
1757-Pos, B27
CHARACTERIZATION OF THE THERMAL AND CHEMICAL DENATURATION OF THE MATRIX PROTEIN FROM HRSV

Ana C. Chang-Gonzalez, Texas A&M University
2258-Pos, B528
IMAGE-BASED STRUCTURAL MODELING OF THE EARLY-STAGE ZEBRAFISH EMBRYO BRAIN

Mateusz Czub, University of Virginia
1585-Plat
STRUCTURAL BASIS OF NON-STEROIDAL ANTI-INFLAMMATORY DRUG (NSAID) TRANSPORT BY SERUM ALBUMIN

Liuhan Dai, University of Michigan
2279-Pos, B549
CPG METHYLATION DETECTION WITH SINGLE-MOLECULE RECOGNITION THROUGH EQUILIBRIUM POISSON SAMPLING

Ria Dinsdale, University of Oxford, United Kingdom
1591-Plat
MOLECULAR MECHANISM OF MODULATION OF THE TMEM16A CHANNEL BY ANTHRACENE-9-CARBOXYLIC ACID: IMPLICATIONS FOR CHANNEL GATING

Ruslan Dmitriev, University College Cork, Ireland
1614-Plat
MULTI-PARAMETER FLUORESCENCE LIFETIME IMAGING MICROSCOPY (FLIM) FOR IMAGING METABOLISM IN THE INTESTINAL ORGANOIDS MODEL

Stephanie C. Ems-McClung, Indiana University
2108-Pos, B378
THE TAIL OF XCTK2 CONTAINS TWO DISTINCT MICROTUBULE BINDING DOMAINS

Thais A. Enoki, Cornell University
1894-Pos, B164
EXPERIMENTAL EVIDENCE THAT BILAYER ASYMMETRY DECREASES LO/LD LINE TENSION

Ricardo D. Fernandez, Virginia Commonwealth University
1825-Pos, B95
TETRAMERIC α-SYNUCLEIN STABILITY IN A MIXED METAL ENVIRONMENT

Guoming Gao, University of Michigan
2288-Pos, B558
RNA TRAFFICKING BETWEEN MEMBRANELESS ORGANELLES AT SINGLE-MOLECULE RESOLUTION IN LIVE CELLS

Akhil Gargey, University of North Carolina at Charlotte
2123-Pos, B393
ELECTROSTATIC INTERACTIONS WITHIN HUMAN CARDIAC MYOSIN HEAD MODULATE ITS KINETICS

Francesco Gianoli, Imperial College London, United Kingdom
2220-Pos, B490
THE DEVELOPMENT OF COOPERATIVE CHANNELS EXPLAINS THE MATURATION OF HAIR CELL'S MECHANOTRANSDUCTION

Nitika Gupta, University of Liverpool, United Kingdom
1988-Pos, B258
LQTS-ASSOCIATED MUTANTS OF CALMODULIN SHOW DISRUPTED INTERACTION WITH L-TYPE CALCIUM CHANNELS

Jingjie Hu, Smith College
2120-Pos, B390
INVESTIGATING THE ROLE OF CARGO SHAPE AND MOTOR ATTACHMENT GEOMETRY IN THE ENSEMBLE MOTILITY OF TEAMS OF CYTOSKELETAL MOTORS DYNEIN AND KINESIN

Hailey J. Jansen, University of Calgary, Canada
1685-Plat
REGIONAL AND TEMPORAL CHANGES IN ATRIAL ELECTROPHYSIOLOGY CONTRIBUTE TO ATRIAL FIBRILLATION IN ANGIOTENSIN II INDUCED HYPERTENSION

Orville Kirkland, Jr., Williams College
2083-Pos, B353
IMPACT OF REGULATORY LIGHT CHAIN MUTATION (K104E) ON THE ATPASE AND MOTOR PROPERTIES OF HUMAN CARDIAC MYOSIN

Matthew M. Klass, University of Arizona
1602-Plat
STOPPED-FLOW CALCIUM KINETICS OF HYPERTROPHIC CARDIOMYOPATHY-ASSOCIATED TROPONIN T MUTATIONS

Juliana M. Larson, Hamilton College
2060-Pos, B330
A CLOSER LOOK AT ORAI3: AN INVESTIGATION INTO CONSTITUTIVELY ACTIVE MUTANTS OF THE LESSER KNOWN CALCIUM ION CHANNEL

Tung T. Le, Cornell University
1830-Pos, B100
SYNERGISTIC COORDINATION OF CHROMATIN TORSIONAL MECHANICS AND TOPOISOMERASE ACTIVITY

Lindsey Lee, University of Colorado Boulder
2125-Pos, B395
FUNCTIONAL DIFFERENCES IN MYH7B THAT CONTRIBUTE TO DISTINCT BIOLOGICAL ROLES ACROSS SPECIES AND IN HEALTH AND DISEASE

Rachel Leicher, The Rockefeller University
1862-Pos, B132
SINGLE-MOLECULE INVESTIGATION OF PRC2 NON-ADJACENT NUCLEOSOME BRIDGING

Goksin Liu, Sabanci University, Turkey
1639-Plat
STRUCTURE-FUNCTION INVESTIGATION OF HAEMOPHILUS INFLUENZAE FERRIC BINDING PROTEIN UNDER CHANGING ENVIRONMENTAL CONDITIONS

Rachel Lopez, University of Michigan
2218-Pos, B488
IMPAIRED MYOCARDIAL ENERGETICS CONTRIBUTES TO MECHANICAL DYSFUNCTION IN DECOMPENSATED FAILING HEARTS

Radhakrishnan Mahalakshmi, IISER Biological Science, India
2198-Pos, B468
OXIDATIVE THIOL MODIFICATIONS AS MOLECULAR REDOX SENSORS IN HUMAN MITOCHONDRIA

Sagardip Majumder, University of Michigan
1924-Pos, B194
CELL-FREE EXPRESSION SYSTEMS: PROBING NUCLEAR MECHANOTRANSDUCTION USING NOVEL ENGINEERING PLATFORMS

Marcos Matamoros, Washington University in St Louis
1779-Pos, B49
MOLECULAR MECHANISMS OF ION SELECTIVITY IN POTASSIUM CHANNELS

Karen Montoya, University of Michigan
1704-Plat
DIRECT IDENTIFICATION AND COUNTING OF MIRNAS IN SINGLE CELLS BY TRANSIENT HYBRIDIZATION AND KINETIC FINGERPRINTING

Emma A. Morrison, Medical College of Wisconsin
1850-Pos, B120
NUCLEOSOME ASSEMBLY STATE GOVERNS HISTONE H3 TAIL CONFORMATION AND DYNAMICS

Neha Nandwani, Stanford University Biochemistry
2132-Pos, B402
UNCOVERING THE MOLECULAR AND STRUCTURAL BASIS OF HYPERTROPHIC CARDIOMYOPATHY-CAUSING MUTATIONS IN MYOSIN AND MYOSIN BINDING PROTEIN-C

Tomasz J. Nawara, University of Alabama at Birmingham
1978-Pos, B248
LINKING THE DYNAMICS OF CLATHRIN-MEDIATED ENDOCYTOSIS WITH MEMBRANE SHAPE CHANGES IN LIVING CELLS WITH NANOMETER AXIAL RESOLUTION

Maria A. Neginskaya, New York University
2185-Pos, B455
DETERMINATION OF THE NUMBER OF PERMEABILITY TRANSITION PORES IN SINGLE MITOCHONDRION

Daniel Nino, University of Toronto
2243-Pos, B513
THREE-DIMENSIONAL FAST OPTIMIZED CLUSTERING ALGORITHM (FOCAL3D) FOR SINGLE-MOLECULE LOCALIZATION MICROSCOPY

Rodrigo Ochoa, University of Antioquia Chemistry
1760-Pos, B30
COMPUTATIONAL DESIGN OF PEPTIDES BOUND TO THE MAJOR HISTOCOMPATIBILITY COMPLEX CLASS II

Seungeun Oh, Harvard Medical School
2290-Pos, B560
IN SITU MEASUREMENT OF PROTEIN AND LIPID MASS BY NORMALIZED RAMAN IMAGING

Kendahl Ott, James Madison University
1742-Pos, B12
INHIBITING CALPAIN DEPENDENT DEGRADATION OF DESMOPLAKIN

Maria Papadaki, Loyola University Chicago
1601-Plat
MOLECULAR MECHANISMS AND THERAPEUTIC APPROACHES OF MYOFILAMENT GLYCATION AS A RESULT OF DIABETES

Alexandra Paul, Chalmers University of Technology, Sweden
2291-Pos, B561
MOLECULAR MICROSCOPY OF OIL BODY AND LIPID DROPLET CHEMISTRY IN SITU WITH PHYSIOLOGICALLY-RELEVANT READOUTS

Emilia Pecora de Barros, University of California, San Diego
1567-Plat
UNCOVERING THE DYNAMICAL LANDSCAPE OF P53 DNA BINDING DOMAIN WITH MARKOV STATE MODELS

Daniela Ponce Balbuena, University of Michigan
2064-Pos, B334
CELLULAR STRESS P38MAPK ACTIVATION DECREASE NAV1.5 CURRENT DENSITY AND CONTRIBUTES TO THE DEVELOP OF ARRHYTHMIA IN ELDERLY

Aerial M. Pratt, Arizona State University
2016-Pos, B286
CONTRIBUTIONS OF THE TRANSMEMBRANE DOMAIN TO HEAT ACTIVATION OF HUMAN TRPV1

Anita Rágyanszki, York University
1659-Plat
UNDERSTANDING THE ORIGINS OF LIFE - THE CONSTITUENTS OF INTERSTELLAR MEDIUM AS THE SOURCE OF LIFE'S BUILDING BLOCKS

Jitendra S. Rane, Indian Institute of Technology, Bombay
2225-Pos, B495
ACETYL MIMICKING K274Q MUTATION ENHANCES TAU AGGREGATION, INCREASES THE AFFINITY OF TAU FOR METAL IONS AND REDUCES ITS ABILITY TO PROTECT DNA

Michaela Roskopf, Johns Hopkins University
1793-Pos, B63
ENERGETICS OF DIMERIC FKPA BINDING TO A NATIVE UNFOLDED MEMBRANE PROTEIN CLIENT

Rahul Roy, Indian Institute of Science
1785-Pos, B55
PORE ASSEMBLY OF BACTERIAL ALPHA PORE-FORMING TOXIN (αPFT), CYTOLYSIN A ON LIPID MEMBRANES

Marc-Antoine Sani, University of Melbourne and Bio21 Institute, Australia
1679-Plat
SOLID-STATE NMR STUDY OF LIVE BACTERIA IN THE PRESENCE OF ANTIMICROBIAL AGENTS

Yoel H. Sitbon, University of Miami
1604-Plat
DELETION OF THE N-TERMINUS OF MYOSIN ESSENTIAL LIGHT CHAIN (N-ELC) IN THE BACKGROUND OF HCM-A57G MUTATION IN DOUBLE MUTANT MICE RESCUES HYPERCONTRACTILE MYOSIN PHENOTYPE

Hanquan Su, Emory University
1706-Plat
POLYMER FORCE CLAMPS FOR THE MECHANICAL UNFOLDING OF TARGET MOLECULES

Amid Vahedi, Ohio University
1916-Pos, B186
CHARACTERIZATION OF PHOSPHOLIPID COMPOSITION IN THE OUTER LEAFLET OF RED BLOOD CELLS

Eleanor Vane, University of Washington
1870-Pos, B140
MEMBRANE DISRUPTION AND PEPTIDE/LIPID CO-ASSEMBLY BY THE AMYLOID-FORMING PEPTIDE, $PAP_{248-286}$

Vinh H. Vu, University of Illinois at Urbana-Champaign
1775-Pos, B45
STRUCTURE-FUNCTION ANALYSIS OF E-CADHERIN DIMERIZATION AT THE PLASMA MEMBRANE

Kevin J. Walsh, Ohio State University
2263-Pos, B533
A COMPARISON OF HISTO-CHEMICAL AND HISTO-MAGNETIC DETECTION OF IRON

Savannah J. West, University of Texas Health Graduate School of Biomedical Sciences
1984-Pos, B254
REGULATION OF ORAI1/STIM1 FUNCTION BY S-ACYLATION

Wednesday, February 19

Yuriana Aguilar-Sanchez, Rush University Medical Center
2774-Pos, B320
LUMINAL CALCIUM CONTROL OF TYPE-1 INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR

Cody P. Aplin, University of Minnesota Duluth
2485-Pos, B31
INVESTIGATING NOVEL HETERO-FRET BIOSENSORS FOR ENVIRONMENTAL IONIC STRENGTH USING EXPERIMENTAL AND THEORETICAL APPROACHES

Olivia Byun, McMaster University, Canada
2557-Pos, B103
MECHANISM OF ALLOSTERIC INHIBITION OF *PLASMODIUM FALCIPARUM* CGMP-DEPENDENT PROTEIN KINASE

Po-Chia Chen, EMBL Heidelberg, Germany
2547-Pos, B93
AB-INITIO PREDICTION OF NMR SPIN-RELAXATION PARAMETERS FROM MD SIMULATIONS

Zhijie Chen, University of California, Berkeley
2655-Pos, B201
SINGLE-MOLECULE NAVIGATION OF THE NUCLEOSOMAL TRANSCRIPTION LANDSCAPE

Yuan-I Chen, University of Texas at Austin
3012-Pos, B558
COMPARISON OF *IN-VITRO* AND *IN-VIVO* DNA HYBRIDIZATION KINETICS USING 3D SINGLE-MOLECULE TRACKING METHOD

Sami Chu, University of Minnesota
2909-Pos, B455
OBSERVING THE MYOSIN SUPER-RELAXED STATE (SRX) IN CARDIAC THICK FILAMENTS

Han Chow Chua, University of Copenhagen, Denmark
2443-Plat
THE SODIUM LEAK CHANNEL COMPLEX IS MODULATED BY VOLTAGE AND EXTRACELLULAR CALCIUM

Peter J. Chung, University of Chicago
2641-Pos, B187
ALPHA-SYNUCLEIN DETECTS AND PREFERENTIALLY BINDS TO OSMOTICALLY TENSE SYNAPTIC VESICLE-LIKE MEMBRANES

Claudia Crocini, University of Colorado Boulder
2797-Pos, B343
POST-PRANDIAL INOTROPIC RESPONSE IN PYTHON CARDIOMYOCYTES IS SUPPORTED BY DISTINCT METABOLIC ADAPTATION

Tapojyoti Das, Weill Cornell Medicine
2646-Pos, B192
THE STRUCTURAL BASIS OF OPPOSING FUNCTIONS OF ALPHA-SYNUCLEIN IN VESICLE EXOCYTOSIS

Brendan R. Deal, Emory University
3045-Pos, B591
FINE-TUNING SPHERICAL NUCLEIC ACID BINDING THROUGH HETEROMULTIVALENCY AND SPATIAL PATTERNING

Karissa Dieseldorff Jones, Florida State University
2904-Pos, B450
SEX DIFFERENCES IN REGULATING THE CARDIAC TRANSCRIPTOME WITHIN A MURINE MODEL FOR HYPERTROPHIC CARDIOMYOPATHY

Eric Figueroa, Vanderbilt University
2873-Pos, B419
CYSLT1 RECEPTOR ANTAGONISTS PRANLUKAST AND ZAFIRLUKAST INHIBIT LRRC8-MEDIATED VOLUME REGULATED ANION CHANNELS INDEPENDENTLY OF THE RECEPTOR

Ewan D. Fowler, University of Bristol, United Kingdom
2784-Pos, B330
LATE CA^{2+} SPARK ARRHYTHMOGENESIS IN FAILING CARDIAC MYOCYTES

Gabriel Jose Fuente Gomez, University of Tennessee
2602-Pos, B148
LIGAND BINDING STUDIES OF A TRIMETHOPRIM-RESISTANT DIHYDROFOLATE REDUCTASE BY FLUORINE NMR

Karola Gerecht, King's College London, United Kingdom
2379-Plat,
P53 DEAMIDATION AS A MOLECULAR TIMER FOR CELL DEATH

Bassam G. Haddad, Portland State University
2435-Plat,
VISUALIZATION OF PROTEIN-LIPID INTERACTIONS IN CONNEXIN-46/50 INTERCELLULAR CHANNELS BY CRYO-EM AND MD-SIMULATION

Joshua A. Johnson, Ohio State University
3047-Pos, B593
RECIPROCAL CONTROL OF HIERARCHICAL DNA ORIGAMI-NANOPARTICLE ASSEMBLIES

Taylor Jones, Stanford University
2981-Pos, B527
LIGHT-INDUCIBLE GENERATION OF MEMBRANE CURVATURE IN LIVE CELLS WITH ENGINEERED BAR DOMAIN PROTEINS

Taryn M. Kay, University of Minnesota Duluth
3008-Pos, B554
SINGLE-MOLECULE STUDIES OF HETERO-FRET BIOSENSORS TO ENVIRONMENTAL IONIC STRENGTH USING DIFFERENT MODALITIES OF FLUORESCENCE CORRELATION SPECTROSCOPY

Shamir A. Khan, Wichita State University
2502-Pos, B48
IMPROVING PERSONALIZED MEDICINE THROUGH SYSTEMATIC PROTEIN ENGINEERING OF LDH

Alena Khmelinskaia, University of Washington
2531-Pos, B77
BREAKING THE SYMMETRY OF PROTEIN ASSEMBLIES: STRUCTURAL FLEXIBILITY AS A <I>DE NOVO</I> DESIGN PRINCIPLE

Yin-wei Kuo, Yale University
2919-Pos, B465
EFFECTS OF SEVERING ENZYMES ON THE LENGTH DISTRIBUTION AND TOTAL MASS OF MICROTUBULES

Chon Lok Lei, University of Oxford, United Kingdom
2788-Pos, B334
AUTOMATED HIGH-THROUGHPUT PATCH CLAMP AND MODELLING TO CAPTURE HERG KINETICS AND TEMPERATURE DEPENDENCE USING OPTIMISED VOLTAGE PROTOCOLS

Zhenhui Liu, Johns Hopkins University
2950-Pos, B496
UNVEILING THE TREND OF CHANGES IN MECHANICAL PHENOTYPES BETWEEN SUBPOPULATIONS OF ISOGENIC CANCER CELLS AT DISTINCT METASTATIC STAGES

Manman Lu, University of Pittsburgh
2463-Pos, B9
^{19}F NMR STUDIES OF CYCLOPHILIN A AND ITS INTERACTION WITH HIV-1 CAPSID

Beibei Meng, Karlsruhe Institute of Technology, Germany
2998-Pos, B544
CORRELATIVE *IN VIVO* FLUORESCENCE IMAGING AND ^{19}F-MRI OF ZEBRAFISH EMBRYOS

Zeinab Mohamed, Cornell University
3034-Pos, B580
UNCOVERING BIOPHYSICAL PROPERTIES AND INTERACTIONS OF BACTERIA MEMBRANE USING AN OUTER MEMBRANE SUPPORTED BILAYER

Kristopher S. Murray, University of Notre Dame
2925-Pos, B471
CAN THRESHOLD CHOICES INFLUENCE OBSERVED MICROTUBULE AGING?

Nathaniel C. Napierski, University of Arizona
2891-Pos, B437
SELECTIVE PHOSPHORYLATION OF CMYBP-C INCREASES CROSS-BRIDGE CYCLING RATES IN PERMEABILIZED CARDIOMYOCYTES FROM SPY-C MICE

Caila A. Pilo, University of California, San Diego
2623-Pos, B169
IMPAIRED AUTOINHIBITION OF PROTEIN KINASE Cγ IN SPINOCEREBELLAR ATAXIA TYPE 14

Matthew Pittman, Johns Hopkins University
2939-Pos, B485
ELEVATED EXTRACELLULAR FLUID VISCOSITY STIMULATES MIGRATION OF METASTATIC CANCER CELLS

Yifeng Qi, Massachusetts Institute of Technology
2696-Pos, B242
POLYMER MODELING OF WHOLE-NUCLEUS DIPLOID GENOME ORGANIZATION

Christopher D. Reinkemeier, European Molecular Biology Laboratory, Germany
2987-Pos, B533
DESIGNER MEMBRANELESS ORGANELLES ENABLE HIGHLY SPECIFIC PROTEIN ENGINEERING IN EUKARYOTES

Matthew L. Rook, University of Rochester
2850-Pos, B396
STOICHIOMETRY OF ACID-SENSING ION CHANNEL (ASIC) PHARMACOLOGY

Rajneet Kaur Saini, Sri Guru Granth Sahib World University, India
2475-Pos, B21
HOW L17A/F19A DOUBLE MUTATION DIMINISH Aβ_{40} AGGREGATION IN ALZHEIMER'S DISEASE: KEY INSIGHTS FROM MOLECULAR DYNAMICS SIMULATIONS

Marilina de Sautu, University of Buenos Aires, Argentina
2598-Pos, B144
ALUMINIUM INTERACTS DIFFERENTLY WITH LIPID BILAYERS AND MODULATES THE PLASMA MEMBRANE CALCIUM ATPASE (PMCA) ACTIVITY

Yuanzi Sun, University College London, United Kingdom
2373-Plat
DIRECT OBSERVATION OF PRION PROTEIN FIBRIL ELONGATION KINETICS

Maiwase Tembo, University of Pittsburgh
2716-Pos, B262
PHOSPHATE POSITION ON PHOSPHOINOSITIDES IS KEY IN MEDIATING TMEM16A CURRENTS IN *XENOPUS LAEVIS* OOCYTES

Liang Xue, European Molecular Biology Laboratory, Germany
2381-Plat
INDIRECT BACTERIAL TRANSCRIPTION-TRANSLATION COUPLING MECHANISM REVEALED BY *IN SITU* INTEGRATIVE STRUCTURAL BIOLOGY

Dandan Yang, Ohio State University
2399-Plat
THE UNCONVENTIONAL BIOPHYSICAL FUNCTION OF MICRORNA-1 IN MODULATING CARDIAC ELECTROPHYSIOLOGY

Shuting Zhang, Drexel University
2455-Pos, B1
CONFORMATIONAL DYNAMICS OF ALANINE IN WATER AND WATER/ETHANOL MIXTURES: EXPERIMENTALLY DRIVEN EVALUATION OF MOLECULAR DYNAMICS FORCE FIELDS

Ancillary Meetings

Friday, February 14, 5:00PM–9:00 PM
Society of General Physiologists Meeting
Room 30D

Sunday, February 16, 6:00 PM–6:30 PM
Korean Biophysicists Meeting
Room 29AB

Sunday, February 16, 6:00 PM–8:00 PM
Biophysics Austria Mixer
Room 28CDE

Sunday, February 16, 7:00 PM–9:00 PM
Biophysical Society of Canada Mixer
Jolt'n Joe's Gaslamp
379 Fourth Ave, San Diego, CA 92101, USA

Tuesday, February 18, 8:00 PM–10:00 PM
SOBLA (The Society for Latinoamerican Biophysicists) Meeting
Room 29C

Notes

Friday, February 14, 2020

Daily Program Summary

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

8:00 AM–5:00 PM	Exhibitor Registration	Lobby G
8:00 AM–5:00 PM	Drug Discovery for Ion Channels XX Satellite Meeting	Room 29AB
3:00 PM–5:00 PM	Registration	Lobby G
3:30 PM–4:30 PM	New Council Orientation	Hilton, Cobalt 501C
5:00 PM–9:00 PM	Joint Council Reception, Dinner, and Meeting	Hilton, Cobalt 500AB
5:00 PM–9:00 PM	Society of General Physiologists Meeting	Room 30D

Friday, February 14

Exhibitor Registration

8:00 AM - 5:00 PM, LOBBY G

Drug Discovery for Ion Channels XX Satellite Meeting

8:00 AM - 5:00 PM, ROOM 29AB

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

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 changed 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.

8:00 AM **REGISTRATION, COFFEE, AND LIGHT BREAKFAST**

8:45 AM **WELCOME AND OPENING REMARKS**
Thais Johansen

SESSION I
Chair: Mads Korsgaard

9:00 AM
NONPSYCHOACTIVE ALTERNATIVES TO CANNABIS FOR TREATING PAIN: DISCOVERING NOVEL GLYCINE RECEPTOR MODULATORS BY AUTOMATED ELECTROPHYSIOLOGY. **Yan Xu**

9:30 AM
SODIUM CHANNEL BLOCKERS INHIBITING HUMAN SENSORY NEURONS IN DIVERSE PATHOLOGICAL STATES. **Andre Ghetti**

10:00 AM
UPDATE ON IHMRI'S HIGH THROUGHPUT E-PHYS CORE.
Rocio Finol-Urdaneta

10:30 AM **COFFEE BREAK**

SESSION II
Chair: Marc Rogers

11:00 AM
IDENTIFICATION OF NOVEL KV7.2/KV7.3 PAMS USING ADVANCED HIGH-THROUGHPUT SCREENING TOOLS. **Jean-Francois Roland**

11:30 AM
ELECTROPHYSIOLOGICAL EVALUATION OF NOVEL SMALL-MOLECULE NAV1.7-SELECTIVE STATE-INDEPENDENT PORE BLOCKERS. **Anton Delwig**

12:00 PM
EXAMINATION OF HIPSC-CARDIOMYOCYTE MONOLAYERS IN 2.5D – A NEW APPROACH TO UNITE PHYSIOLOGICAL RELEVANCE AND THROUGHPUT. **Matthias Gossmann**

12:30 PM **LUNCH (PROVIDED)**

SESSION III
Chair: Jeff Roland

1:30 PM
THE USE OF HIGH THROUGHPUT MULTI ION CHANNEL PROFILING AND IN SILICO MODELLING IN ASSESSING ARRHYTHMIA RISK - ONE PHARMA'S EXPERIENCE AND PERSPECTIVE. **Stephen Jenkinson**

2:00 PM
HIGH THROUGHPUT SCREENING OF NMDA RECEPTORS. **David Dalrymple**

2:30 PM
STUDY LIGAND GATED ION CHANNELS WITH MICROFLUIDIC BASED HIGH-THROUGHPUT, AUTOMATED ELECTROPHYSIOLOGY PLATFORM. **David Wei**

3:00 PM **COFFEE BREAK**

SESSION IV
Chair: Niels Fertig

3:30 PM
SCREENING TOXINS AS ION CHANNEL THERAPEUTICS ON AUTOMATED PATCH CLAMP SYSTEMS: KV1.3 CASE STUDY. **Marc Rogers**

4:00 PM
CHALLENGES FOR THE STRUCTURAL BIOLOGY OF VOLTAGE-GATED ION CHANNELS. **Nieng Yan**

4:45 PM **CLOSING REMARKS**
Thomas Binzer

Registration

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

New Council Orientation

3:30 PM - 4:30 PM, HILTON, COBALT 501C

Joint Council Reception, Dinner, and Meeting

5:00 PM - 9:00 PM, HILTON, COBALT 500AB

Society of General Physiologists Meeting

5:00 PM - 9:00 PM, ROOM 30D

Saturday, February 15, 2020

Daily Program Summary

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

8:00 AM–6:30 PM	Registration/Exhibitor Registration	Lobby G
8:25 AM–12:30 PM	Bioenergetics, Mitochondria and Metabolism	Room 24ABC
8:30 AM–11:30 AM	Joint Council Meeting	Hilton, Cobalt 500AB
8:30 AM–12:30 PM	Biopolymers in Vivo	Room 23ABC
8:30 AM–12:30 PM	Membrane Fusion, Fission, and Traffic	Room 25ABC
8:30 AM–12:30 PM	Mechanobiology	Room 30ABC
8:30 AM–12:30 PM	Channels, Receptors, and Transporters	Ballroom 20D
8:30 AM–12:30 PM	Nanoscale Approaches	Ballroom 20BC
9:00 AM–12:15 PM	Physical Cell Biology	Ballroom 20A
1:25 PM–5:30 PM	Membrane Transport	Ballroom 20D
1:30 PM–5:30 PM	Biological Fluorescence	Room 25ABC
1:30 PM–5:30 PM	Bioengineering	Room 23ABC
1:30 PM–5:30 PM	Intrinsically Disordered Proteins	Ballroom 20BC
1:30 PM–5:30 PM	Macromolecular Machines and Assemblies	Ballroom 20A
1:30 PM–5:30 PM	Membrane Structure and Function	Room 30ABC
1:30 PM–5:30 PM	Motility and Cytoskeleton	Room 24ABC
2:00 PM–4:00 PM	Communicating Your Science Workshop	Room 28CDE
3:00 PM–4:00 PM	Career Development Center Workshop: Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More	Room 26A
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	Cryo-EM	Room 31ABC
6:00 PM–10:00 PM	Poster Viewing	Exhibit Hall
8:00 PM–9:30 PM	Motility and Cytoskeleton Evening Session	Room 24ABC

Subgroup Dinners

Bioenergetics, Mitochondria & Metabolism: ..... 7:00 PM at Marina Kitchen at Marriott Marquis – 333 W. Harbor Drive
Bioengineering: ..... 6:30 PM at Seasons52 Seaport – 789 W. Harbor Drive #134
Channels, Receptors & Transporters (Cole Award Dinner): ..... 6:00 PM at San Diego Water Grill - 615 J Street
Membrane Fusion, Fission & Traffic: ..... Joe's Crab Shack – 525 E. Harbor Drive
Membrane Transport (Cole Award Dinner): ..... 6:00 PM at San Diego Water Grill - 615 J Street
Motility & Cytoskeleton: ..... 5:40 PM The Smoking Gun San Diego – 555 Market Street
Nanoscale Approaches: ..... 6:00 PM at Patron's Corner – 332 J Street #102
Physical Cell Biology: ..... Marina Kitchen at Marriott Marquis – 333 W. Harbor Drive

Saturday, February 15

Registration/Exhibitor Registration

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

Bioenergetics, Mitochondria and Metabolism

8:25 AM - 12:30 PM, ROOM 24ABC

Subgroup Co-Chairs
Karin Busch, University of Münster, Germany
Tatiana K. Rostovtseva, NIH, NICHHD

8:25 AM **OPENING REMARKS**

1-SUBG **8:30 AM**
IDENTIFICATION OF AN ATP-SENSITIVE POTASSIUM CHANNEL IN THE INNER MITOCHONDRIAL MEMBRANE. **Diego De Stefani**

NO ABSTRACT **9:00 AM**
MITOCHONDRIAL CHLORIDE INTRACELLULAR CHANNELS IN CARDIOPROTECTION. **Harpreet. Singh**

2-SUBG **9:30 AM**
DISTINCTIVE CHARACTERISTICS AND FUNCTIONS OF MULTIPLE MITOCHONDRIAL CA^{2+} INFLUX MECHANISMS. **Shey-Shing Sheu**

10:00 AM **COFFEE BREAK**

NO ABSTRACT **10:15 AM**
K^{+-} AND H^{+}FLUXES DRIVE ATP SYNTHESIS IN MAMMALIAN ATP SYNTHASE. **Steven J. Sollott**

3-SUBG **10:45 AM**
STRUCTURAL AND PHARMACOLOGICAL CHARACTERIZATION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE: A MEGACHANNEL FORMED BY F_1F_O ATP SYNTHASE. **Nelli Mnatsakanyan**, Marc C. Llaguno, Youshan Yang, Yangyang Yan, Joachim Weber, Fred J. Sigworth, Elizabeth A. Jonas

NO ABSTRACT **11:15 AM**
GENETIC INHIBITION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE. **Jason Karch**

11:45 AM **YOUNG BIOENERGETICIST AWARD**

12:00 PM **SUBGROUP BUSINESS MEETING**

Joint Council Meeting

8:30 AM - 11:30 AM, HILTON, COBALT 500AB

Biopolymers in Vivo

8:30 AM - 12:30 PM, ROOM 23ABC

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

8:30 AM **SUBGROUP BUSINESS MEETING**

9:00 AM **OPENING REMARKS**

9:05 AM **BIV YOUNG INVESTIGATOR AWARD**

NO ABSTRACT **9:30 AM**
STRUCTURAL BIOLOGY 'IN SITU': THE PROMISE AND CHALLENGES OF CRYO-ELECTRON TOMOGRAPHY. **Wolfgang Baumeister**

NO ABSTRACT **10:10 AM**
ROLE OF THE RIBOSOME IN PROTEIN FOLDING AND AGGREGATION. **Silvia Cavagnero**

NO ABSTRACT **10:40 AM**
DETAILED MATHEMATICAL MODELS OF STOCHASTIC GENE EXPRESSION IN EUKARYOTIC CELLS. **Ramon Grima**

NO ABSTRACT **11:20 AM**
EMERGENT MATERIAL PROPERTIES OF BIOPOLYMER CONDENSATES. **Shana Elbaum-Garfinkle**

NO ABSTRACT **11:50 AM**
HEAVY MICE AND LIGHTER THINGS: USING SOLID-STATE NMR TO STUDY THE EXTRACELLULAR MATRIX. **Melinda Duer**

Membrane Fusion, Fission, and Traffic

8:30 AM - 12:30 PM, ROOM 25ABC

Chair
Ling-Gang Wu, NIH, NINDS

8:30 AM **OPENING REMARKS**

NO ABSTRACT **8:35 AM**
DYNAMICS OF MEMBRANE TENSION AND SYNAPTIC VESICLE RECYCLING. **Erdem Karatekin**

NO ABSTRACT **9:00 AM**
VISUALIZING HOW SNARE PROTEINS REGULATE EXOSOME SECRETION . **Michelle Knowles**

4-SUBG **9:25 AM**
HIGH-THROUGHPUT SUPERRESOLUTION MICROSCOPY OF ENDOCYTOSIS - LINKING MOLECULAR ARCHITECTURE AND MECHANICS OF A PROTEIN MACHINERY. Markus Mund, Aline Tschanz, Yu-Le Wu, **Jonas Ries**

9:50 AM **BREAK**

NO ABSTRACT **10:05 AM**
DYNAMIC NANOSCALE ORGANIZATION OF THE PRESYNAPTIC NEUROTRANSMITTER RELEASE MACHINERY. **Frederic Meunier**

NO ABSTRACT **10:30 AM**
SYNAPTOTAGMIN-7 PLACES VESICLES AT THE PLASMA MEMBRANE TO PROMOTE MUNC13-2 DEPENDENT PRIMING. **Jakob Balslev Sorenson**

NO ABSTRACT **10:55 AM**
TWO FORMS OF OPA1 COORDINATE TO INDUCE MITOCHONDRIAL INNER MEMBRANE FUSION. **Yifan Ge**

11:20 AM **SUBGROUP BUSINESS MEETING**

NO ABSTRACT **11:35 AM**
SIR BERNARD KATZ AWARD LECTURE - REALLOCATION OF SYNAPTIC WEIGHTS BY RESOURCE SHARING. **Richard W. Tsien**

Mechanobiology

8:30 AM - 12:30 PM, ROOM 30ABC

Chair
Xavier Trepat, Institute for Bioengineering of Catalonia, Barcelona, Spain

8:30 AM **OPENING REMARKS**

5-SUBG **8:35 AM**
UNDERSTANDING AND EXPLOITING CANCER MECHANOBIOLOGY. **Adam J. Engler**

NO ABSTRACT **9:05 AM**
SIGNALS, FORCES, AND CELLS: DECODING TISSUE MORPHOGENESIS. **Jennifer Zallen**

NO ABSTRACT **9:35 AM**
PICONEWTON-SENSITIVE BIOSENSORS TO INVESTIGATE ADHESION MECHANICS IN CELLS. **Carsten Grashoff**

10:05 AM **SELECTED SHORT TALK 1**

10:20 AM **SELECTED SHORT TALK 2**

10:35 AM **COFFEE BREAK**

11:00 AM **MECHANOBIOLOGY EARLY CAREER AWARD**

11:30 AM **SHORT TALK 3**

11:45 AM **ELEVATOR TALKS**

12:10 PM **SUBGROUP BUSINESS MEETING**

Channels, Receptors, and Transporters

8:30 AM - 12:30 PM, BALLROOM 20D

Chair
Crina Nimigean, Weill Cornell Medicine

8:30 AM **OPENING REMARKS**

NO ABSTRACT **8:35 AM**
MECHANISMS OF ELECTROMECHANICAL COUPLING IN NON-DOMAIN-SWAPPED VOLTAGE DEPENDENT CHANNELS. **Eduardo Perozo**

NO ABSTRACT **9:05 AM**
MOLECULAR MECHANISMS OF TRPV CHANNELS GATING REVEALED BY CRYO-EM. **Vera Moiseenkova-Bell**

NO ABSTRACT **9:35 AM**
CRYO-EM OF GPCRS: FROM MOLECULAR MECHANISM TO DRUG DISCOVERY. **Georgios Skiniotis**

NO ABSTRACT **10:05 AM**
STRUCTURAL INSIGHTS INTO IP3R GATING AND REGULATION. **Irina Serysheva**

10:35 AM **BREAK**

10:45 AM **SUBGROUP BUSINESS MEETING**

NO ABSTRACT **11:00 AM**
THE STRUCTURAL PHARMACOLOGY OF HUMAN $GABA_A$ RECEPTORS. **Radu Aricescu**

NO ABSTRACT **11:30 AM**
GATING MECHANISMS IN PENTAMERIC LIGAND-GATED ION CHANNELS. **Sudha Chakrapani**

NO ABSTRACT **12:00 PM**
STRUCTURES OF THE NON-CANONICAL LYSOSOMAL K^+ CHANNEL TMEM175. **Richard Hite**

12:30 PM **ADJOURNMENT**

Nanoscale Approaches

8:30 AM - 12:30 PM, BALLROOM 20BC

Chair
Ozgur Sahin, Columbia University

8:30 AM **OPENING REMARKS**

NO ABSTRACT **8:35 AM**
LONG-TERM, SINGLE-CARGO TRACKING IN LIVE NEURONS WITH SINGLE-MOLECULAR STEP RESOLUTION. **Chunte Peng**

NO ABSTRACT **9:05 AM**
MOLECULAR MECHANISMS OF EXTREME MECHANOSTABILITY IN PROTEIN COMPLEXES. **Hermann Gaub**

NO ABSTRACT **9:35 AM**
NEW INSIGHTS INTO DNA REPLICATION ENABLED BY CORRELATIVE SINGLE-MOLECULE FLUORESCENCE AND FORCE MICROSCOPY. **Shixin Liu**

NO ABSTRACT **10:05 AM**
ON THE BORDER OF ORDER: CHROMOSOMAL ORGANIZATION IN SPACE AND TIME. **Olga Dudko**

10:35 AM **BREAK**

NO ABSTRACT **10:50 AM**
HIGH-SPEED AFM REVEALING DYNAMIC BIOMOLECULAR PROCESSES. **Toshio Ando**

11:20 AM **STUDENT/POSTDOC TALK**

11:35 AM **STUDENT/POSTDOC TALK**

NO ABSTRACT **11:50 AM**
DOCKING, SQUEEZING, AND UNFOLDING INDIVIDUAL NATIVE PROTEINS IN A SOLID STATE NANOPORE. **Meni Wanunu**

12:20 PM **SUBGROUP BUSINESS MEETING**

Physical Cell Biology

9:00 AM - 12:15 PM, BALLROOM 20A

Chair
Julie S. Biteen, University of Michigan

NO ABSTRACT **9:00 AM**
FORCE SENSING AND REGULATION IN TISSUES - FROM AGGREGATES TO ORGANISMS. **Megan T. Valentine**

9:30 AM **CONTRIBUTED TALK 1**

6-SUBG **9:45 AM**
SCHRODINGER'S "WHAT IS LIFE" AT 75: THE PHYSICAL ASPECTS OF THE LIVING CELL REVISITED. **Robert B. Phillips**

10:15 AM **BREAK**

NO ABSTRACT **10:30 AM**
BIOPHYSICAL PROPERTIES OF THE BACTERIAL CYTOPLASM. **Christine Jacobs-Wagner**

11:00 AM **CONTRIBUTED TALK 2**

11:15 AM **CONTRIBUTED TALK 3**

NO ABSTRACT **11:30 AM**
TACKLING ANTIMICROBIAL RESISTANCE, ONE MOLECULE AT A TIME. **Antoine M. van Oijen**

12:00 PM **SUBGROUP BUSINESS MEETING**

Membrane Transport

1:25 PM - 5:30 PM, BALLROOM 20D

Chair
Susan Rempe, Sandia National Laboratories

1:25 PM **OPENING REMARKS**

NO ABSTRACT **1:30 PM**
STRUCTURAL BASIS FOR TRANSPORT CYCLE OF P4 FLIPPASE. **Osamu Nureki**

NO ABSTRACT **2:00 PM**
EVOLUTION OF DRUG EXPORT BY THE SMALL MULTIDRUG RESISTANCE FAMILY OF TRANSPORTERS. **Randy Stockbridge**

2:30 PM **STUDENT TALK 1**

No Abstract **2:50 PM**
LIGAND BINDING IN MEMBRANES: A CLEAN APPROACH WHEN LIPIDS ARE THE LIGAND, SOLVENT, AND CONCENTRATION SCALE.
Grace Brannigan

3:20 PM **BREAK**

7-Subg **3:30 PM**
CONTROLLING THE RATE AND EFFICIENCY OF PROTON-COUPLED TRANSPORT BY EMRE. Nathan Thomas, Chao Wu, Peyton Spreacker, Grant Hussey, Samantha Wynne, Eva-Maria Uhlemann, Christopher Tate, Gregory T. DeKoster, **Katherine Henzler-Wildman**

4:00 PM **STUDENT TALK 2**

No Abstract **4:20 PM**
MEMBRANE MORPHOLOGY, ENERGETICS & DYNAMICS AT THE INTERFACE WITH TRANSPORT PROTEINS. **Jose Faraldo-Gomez**

4:50 PM **CLOSING REMARKS**

5:00 PM **SUBGROUP BUSINESS MEETING**

Biological Fluorescence

1:30 PM - 5:30 PM, Room 25ABC

Chair
Diane S. Lidke, University of New Mexico

1:30 PM **OPENING REMARKS**

No Abstract **1:35 PM**
EXPLORING THE SKIN OF A CELL USING FLUORESCENCE MICROSCOPY REVEALS AN ACTIVE MEMBRANE COMPOSITE. **Satyajit Mayor**

No Abstract **2:05 PM**
METABOLIC FLIM AND OXYGEN PLIM: BASICS AND BIOMEDICAL APPLICATIONS. **Angelica Rueck**

8-Subg **2:35 AM**
PHOTOSWITCHING FRET STUDIES OF DOXORUBICIN-CHROMATIN INTERACTIONS. **George H. Patterson**, Kristin H. Rainey

3:05 PM **BREAK**

3:20 PM **SUBGROUP BUSINESS MEETING**

No Abstract **3:30 PM**
SPATIOTEMPORAL DYNAMICS OF MEMBRANE RECEPTORS AT THE NANOSCALE. **Diego Krapf**

9-Subg **4:00 PM**
PLAYING WITH FLUORESCENCE EMISSION FOR ENHANCED SUPERRESOLUTION MICROSCOPY. Pierre Jouchet, clement cabriel, Adrien Mau, Abigail Illand, Guillaume Dupuis, Christian Poüs, Emmanuel Fort, **Sandrine Leveque-Fort**

4:25 PM **RAPID FIRE TALKS FROM POSTER ABSTRACTS**

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

5:05 PM **GREGORIO WEBER AWARD & LECTURE**

5:25 PM **CLOSING REMARKS & ADJOURNMENT**

Bioengineering

1:30 PM - 5:30 PM, Room 23ABC

Chair
Raphael C. Lee, University of Chicago

1:30 PM **OPENING REMARKS**

No Abstract **1:35 PM**
MULTI-OMICS AND AUTOMATED MICROFLUIDIC PUMPS AND VALVES FOR CONTROLLING AND REVERSE ENGINEERING OF BIOLOGICAL SYSTEMS. **John P. Wikswo**

No Abstract **2:05 PM**
MODULATING CELL PROTEIN ABUNDANCE TO BOTH UNDERSTAND AND MANIPULATE BIOLOGICAL NETWORKS . **H. Steve Wiley**

No Abstract **2:35 PM**
AN IN VITRO 3D NEURO MUSCULAR PLATFORM REVEALS CROSSTALK BETWEEN NEURAL NETWORKS AND MUSCLES. **Taher Saif**

3:05 PM **SUBGROUP BUSINESS MEETING**

3:30 PM **POSTDOC RECOGNITION**

No Abstract **3:50 PM**
A STOCHASTIC MULTISCALE MODEL OF CARDIAC MUSCLE BIOPHYSICS USING BROWNIAN-LANGEVIN DYNAMICS. **Yasser Aboelkassem**

10-Subg **4:20 PM**
NANOPORES AND CHANNELS FOR BIOMIMETICS AND BIOMEDICAL ENGINEERING. **Zuzanna S. Siwy**, Elif Turker Acar, Steven Buchsbaum, Francesco Fornasiero, Cody Combs

No Abstract **4:50 PM**
MULTI-SCALE MODELING OF THERAPEUTIC MECHANISMS FOR HEART FAILURE. **Andrew McCulloch**

5:20 PM **CLOSING REMARKS & ADJOURNMENT**

Intrinsically Disordered Proteins

1:30 PM - 5:30 PM, Ballroom 20BC

Chair
M. Madan Babu, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

1:30 PM **SUBGROUP BUSINESS MEETING**

1:50 PM **OPENING REMARKS**

No Abstract **2:00 PM**
PROBING PROTEINS IN SMALL VOLUMES. **Tuomas Knowles**

No Abstract **2:25 PM**
LIQUID-LIQUID PHASE SEPARATION OF INTRINSICALLY DISORDERED PROTEINS. **Markus Zweckstetter**

2:50 PM **ANNOUNCEMENT OF POSTDOC AWARDS**

2:55 PM **POSTDOC AWARD TALK**

3:10 PM **POSTDOC AWARD TALK**

3:25 PM **BREAK**

No Abstract **3:40 PM**
EMERGENT STRUCTURE AND DYNAMICS OF LOW-COMPLEXITY NUCLEOPROTEIN CONDENSATES. **Priya R Banerjee**

No Abstract **4:05 PM**
DISORDERED PROTEINS AS CATALYSTS OF MEMBRANE TRAFFIC.
Jeanne Stachowiak

No Abstract **4:30 PM**
KINETIC REGULATION OF IDR-PROTEIN INTERACTIONS IN TRANSCRIPTION REGULATION. **Jacqueline Matthews**

No Abstract **4:55 PM**
KARYOPHERIN AS CHAPERONE. **Yuh Min Chook**

5:20 PM **CLOSING REMARKS & ADJOURNMENT**

Macromolecular Machines and Assemblies

1:30 PM - 5:30 PM, Ballroom 20A

Chair
Ilya Finkelstein, University of Texas, Austin

1:30 PM **OPENING REMARKS**

No Abstract **1:45 PM**
IN CELL STRUCTURAL BIOLOGY OF PROTEIN COMPLEXES USING SENSITIVITY ENHANCED SOLID-STATE NMR. **Kendra Frederick**

No Abstract **2:15 PM**
STRUCTURES OF MANY MACROMOLECULAR MACHINES FROM A SINGLE CRYO-EM EXPERIMENT. **David Taylor**

2:45 PM **SELECTED ABSTRACT**

3:00 PM **SELECTED ABSTRACT**

3:15 PM **SUBGROUP BUSINESS MEETING**

No Abstract **3:45 PM**
SINGLE-MOLECULE PROTEIN SEQUENCING. **Edward Marcotte**

No Abstract **4:15 PM**
UNDERSTAND AND MODULATE THE STABILITY OF FORCE-TRANSMISSION CYTOSKELETAL SUPRAMOLECULAR LINKAGES. **Jie Yan**

4:45 PM **SELECTED ABSTRACT**

5:00 PM **SELECTED ABSTRACT**

5:15 PM **CLOSING REMARKS**

Membrane Structure and Function

1:30 PM - 5:30 PM, Room 30ABC

Chair
Peter Tieleman, University of Calgary, Canada

No Abstract **1:30 PM**
MEMBRANE PERMEABILIZATION IN REGULATED CELL DEATH. **Ana Garcia-Saez**

No Abstract **2:00 PM**
THE REVOLUTION WILL NOT BE SYMMETRIZED: LESSONS FROM ASYMMETRIC MODEL MEMBRANES. **Fred Heberle**

No Abstract **2:30 PM**
PHOSPHOLIPID SCRAMBLASES AND TRANSBILAYER LIPID ASYMMETRY. **Anant Menon**

No Abstract **3:00 PM**
SIMULATING PLASMA MEMBRANES: EFFECTS OF LEAFLET ASYMMETRY AND COMPOSITIONAL COMPLEXITY. **Helgi Ingolfsson**

3:30 PM **COFFEE BREAK**

No Abstract **3:45 PM**
TUNING CLC DIMERIZATION IN MEMBRANES BY OPTIMIZING THE LIPID SOLVENT. **Janice Robertson**

No Abstract **4:15 PM**
MODELING MEMBRANE HETEROGENEITIES AT SMALL AND LARGE LENGTH SCALES. **Lutz Maibaum**

No Abstract **4:45 PM**
THOMAS E. THOMPSON AWARD LECTURE. **Emad Tajkhorshid**

5:15 PM **SUBGROUP BUSINESS MEETING**

Motility and Cytoskeleton

1:30 PM - 5:30 PM, Room 24ABC

Co-Chairs
Michael J. Previs, University of Vermont
Ahmet Yildiz, University of California, Berkeley

1:30 PM **OPENING REMARKS**

No Abstract **1:35 PM**
DYNEIN REGULATION. **Andrew Carter**

No Abstract **1:55 PM**
CARDIAC MYOSIN BINDING PROTEIN-C REGULATES CARDIAC CONTRACTILITY. **Sakthivel Sadayappan**

2:15 PM **SELECTED TALK 1**

2:25 PM **SELECTED TALK 2**

No Abstract **2:35 PM**
3D STRUCTURE AND REGULATION OF INTRAFLAGELLAR TRANSPORT BY CLEM AND CRYO-EM. **Gaia Pigino**

No Abstract **2:55 PM**
HIGH-RESOLUTION CRYO-EM STRUCTURE OF THE DECORATED CILIARY DOUBLET MICROTUBULE. **Rui Zhang**

3:15 PM **SUBGROUP BUSINESS MEETING AND COFFEE BREAK**

No Abstract **3:40 PM**
ROLES OF VERTICAL AND HORIZONTAL FORCES ON THE PROCESSIVITY OF MOTORS. **Jonathon Howard**

4:00 PM **SELECTED TALK 3**

4:10 PM **SELECTED TALK 4**

No Abstract **4:20 PM**
THE MICROTUBULE NETWORK IN CARDIAC HYPERTROPHY AND HEART FAILURE. **Ben Prosser**

No Abstract **4:40 PM**
A MOLECULAR MECHANISM FOR SYMMETRY BREAKING AT CELL-CELL ADHESION COMPLEXES. **Alexander Dunn**

5:00 PM **SELECTED TALK 5**

5:10 PM **SELECTED TALK 6**

Communicating Your Science Workshop

2:00 PM - 4:00 PM, ROOM 28CDE

Communication plays a pivotal role in society; it's the difference between accord and argument, the key to a new research breakthrough and the pathway to sharing the value and impact that scientific discovery has on the public at large. When trying to explain the role and value that research in biophysics has on health, energy, technology and science, you must keep in mind your target audience. Be it a neighbor, a reporter or a politician, your language needs to reflect a frame of reference that they can understand and see the value as it applies to them personally. Session speaker, Amy Showalter, will help you have the ability to make biophysics and scientific research relatable to the non-scientific community.

Speaker
Amy Showalter, The Showalter Group

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

3:00 PM - 4:00 PM, ROOM 26A

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 you 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. Selected students will receive a $100 award and will be recognized by the BPS meeting attendees prior to the 2020 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.

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 2020 San Diego 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
Yadilette Rivera-Coln, Bay Path University

Cryo-EM

6:00 PM - 10:00 PM, ROOM 31ABC

Chair
Elizabeth Villa, University of California, San Diego

6:00 PM **OPENING REMARKS**

NO ABSTRACT **6:05 PM**
WHERE IN THE CELL IS MY PROTEIN? **David DeRosier**

NO ABSTRACT **6:27 PM**
THE CONFORMATIONAL DYNAMICS OF AN ABC TRANSPORTER UNDER TURNOVER CONDITIONS. **Arne Moeller**

6:49 PM **SUBGROUP BUSINESS MEETING**

NO ABSTRACT **7:04 PM**
CRYO-ELECTRON TOMOGRAPHY CONTRIBUTES TO OUR UNDERSTANDING OF BACTERIAL INTERACTIONS WITH THEIR ENVIRONMENT. **Ariane Briegel**

NO ABSTRACT **7:26 PM**
STRUCTURAL CHARACTERIZATION OF LARGE MACROMOLECULAR COMPLEXES REGULATING CHROMOSOME ARCHITECTURE AND GENE EXPRESSION. **Vignesh Kasinath**

NO ABSTRACT **7:44 PM**
REGULATION OF CELL DIVISION DURING SPORULATION IN BACILLUS SUBTILIS. **Kanika Khanna**

NO ABSTRACT **8:02 PM**
TOWARDS A BIOPSY AT THE NANOSCALE: ADVANCES IN CRYO-ELECTRON TOMOGRAPHY FOR IN SITU STRUCTURAL BIOLOGY OF CELLS AND TISSUES. **Juergen Plitzko**

8:24 PM **COFFEE BREAK**

NO ABSTRACT **8:39 PM**
CRYOEM AUTOMATION: BETTER, FASTER, CHEAPER. **Bridget Carragher**

11-SUBG **9:01 PM**
STRUCTURES OF NATIVELY-GLYCOSYLATED HIV-1 ENVELOPE TRIMERS DEFINE ANTIBODY-MEDIATED NEUTRALIZATION OF HIV-1. | **Christopher O. Barnes**

9:19 PM **SELECTED ABSTRACT SPEAKER**

12-SUBG **9:37 PM**
LOCATION AND IDENTIFICATION OF MACROMOLECULAR COMPLEXES WITHIN CELLULAR ENVIRONMENTS BY HIGH-RESOLUTION TEMPLATE MATCHING. **Nikolaus Grigorieff**, Liang Xue, Timothy Grant, John P. Rickgauer, Wim Hagen, Julia Mahamid

10:00 PM **ADJOURNMENT**

Poster Viewing

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

Motility and Cytoskeleton Evening Session

8:00 PM - 9:30 PM, ROOM 24ABC

Co-Chairs
Michael J. Previs, University of Vermont
Ahmet Yildiz, University of California, Berkeley

NO ABSTRACT **8:00 PM**
MICROTUBULE DYNAMICS: NOT ONLY AT THE TIPS.
Antonina. Roll-Mecak

8:20 PM **MOTILITY AND CYTOSKELETON JUNIOR FACULTY AWARD**

NO ABSTRACT **8:45 PM**
SPECTROSCOPIC PROBES OF MUSCLE PROTEINS: MECHANISTIC INSIGHTS AND THERAPEUTIC DISCOVERY. **David Thomas**

Sunday, February 16, 2020

Daily Program Summary

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

7:00 AM–9:00 AM	***Biophysical Journal* Editorial Board Boot Camp**	**Room 32A**
7:30 AM–8:30 AM	**Postdoctoral Breakfast: Tales From Two Sides of Recruitment**	**Room 29AB**
7:30 AM–5:00 PM	**Registration/Exhibitor Registration**	**Lobby G**
8:00 AM–10:00 PM	**Poster Viewing**	**Exhibit Hall**
8:15 AM–10:15 AM	**Symposium: Asymmetric Membranes** **Chair:** *Georg Pabst, University of Graz, Austria* VPS13 PROTEINS ARE CHANNELS THAT TRANSPORT LIPIDS BETWEEN MEMBRANES. *Karin Reinisch* STRUCTURAL BASIS OF LIPID AND ION TRANSPORT BY TMEM16 SCRAMBLASES. *Alessio Accardi* DYNAMIC IMAGING OF MEMBRANE HYDRATION. *Sylvie Roke* ASYMMETRIC LIPID BILAYERS: INSIGHTS FROM LEAFLET-SPECIFIC STRUCTURAL STUDIES. *Georg Pabst*	**Ballroom 20A**
8:15 AM–10:15 AM	**Symposium: Single-Molecule Visualization of Transcription, Translation and Splicing** **Chair:** *Magnus Johansson, Uppsala University, Sweden* DYNAMIC IMAGING OF NASCENT RNA REVEALS GENERAL PRINCIPLES OF TRANSCRIPTION AND SPLICING. *Daniel R. Larson* IMAGING NON-CANONICAL TRANSLATION DYNAMICS OF SINGLE RNA IN LIVING CELLS. *Timothy J. Stasevich* GENE REGULATION BY BACTERIAL SMALL RNA AND RNA CHAPERON HFQ. *Jingyi Fei* LIVE-CELL SINGLE-MOLECULE TRACKING FOR PROTEIN SYNTHESIS KINETICS MEASUREMENTS. *Magnus Johansson*	**Ballroom 20D**
8:15 AM–10:15 AM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates I**	**Ballroom 20BC**
8:15 AM–10:15 AM	**Platform: Cardiac Muscle Mechanics and Structure**	**Room 23ABC**
8:15 AM–10:15 AM	**Platform: Member Organized Session: Multiscale Genome Organization**	**Room 24ABC**
8:15 AM–10:15 AM	**Platform: Ion Channel Regulatory Mechanisms**	**Room 25ABC**
8:15 AM–10:15 AM	**Platform: Membrane Protein Structures**	**Room 30ABC**
8:15 AM–10:15 AM	**Platform: Mechanosensation**	**Room 31ABC**
8:30 AM–10:30 AM	**CID Committee Meeting**	**Room 30D**
9:00 AM–10:00 AM	**Career Development Center Workshop:** **Networking for Nerds: How to Create Your Unicorn Career**	**Room 26A**
9:30 AM–11:00 AM	**Exhibitor Presentation: Mizar Imaging** **Tilt – A New Angle on Light Sheet Imaging**	**Room 33A**
10:00 AM–5:00 PM	**Exhibits**	**Exhibit Hall**
10:15 AM–11:00 AM	**Coffee Break**	**Exhibit Hall**
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**	**Room 26A**
10:30 AM–12:00 PM	**Exhibitor Presentation: Wyatt Technology** **Recent Advances in Light Scattering and Related Techniques**	**Room 33C**
10:45 AM–12:45 PM	**Symposium: Mapping the Immune System** **Chair:** *Brian Baker, University of Notre Dame* A SYSTEMS APPROACH TO ENGINEERED IMMUNITY - FROM MOLECULES AND CELLS TO PATIENTS. *Krishnendu Roy* HOW TO HIT HIV WHERE IT HURTS. *Arup Chakraborty* MULTI-SCALE COMPUTATIONAL MODEL OF IMMUNE CELL ACTIVATION IN CANCER. *Stacey D. Finley* DEMYSTIFYING CROSS-REACTIVITY IN CELLULAR IMMUNITY. *Brian M. Baker*	**Ballroom 20A**

10:45 AM–12:45 PM	**Symposium: Cytoskeleton and Motility** **Chair:** *Joseph Falke, University of Colorado Boulder* HOW DOES THE ACTIN CYTOSKELETON REGULATE DISTRIBUTION AND DIFFUSION OF MEMBRANE COMPONENTS? *Barbara Baird* REGULATION OF ACTIN AND MEMBRANE DYNAMICS BY CLASS I MYOSINS. *Mira Krendel* MECHANOCHEMICAL CIRCUITS IN THE CYTOPLASM. *Margaret Gardel* REGULATORY MECHANISMS OF CA^{2+}, RECEPTOR, RAS, AND LIPID SIGNALS THAT CONTROL ACTIN POLYMERIZATION DURING CELL MIGRATION. *Joseph J. Falke*	**Ballroom 20D**
10:45 AM–12:45 PM	**Symposium: Mitochondrial Calcium Fluxes** **Chair:** *Gyorgy Csordas, Thomas Jefferson University* MITOCHONDRIAL (ATP SYNTHASE) PERMEABILITY TRANSITION PORE. *Elizabeth Jonas* THE DUAL LIFE OF MITOCHONDRIAL F-ATP SYNTHASE. *Paolo Bernardi* MITOCHONDRIAL CALCIUM AND CELL DEATH. *Elizabeth Murphy* NON-UNIFORM DISTRIBUTION OF INNER MITOCHONDRIAL MEMBRANE CALCIUM TRANSPORT MECHANISMS IN THE CARDIAC MUSCLE. *Gyorgy Csordas*	**Ballroom 20BC**
10:45 AM–12:45 PM	**Platform: Protein-Lipid Interactions I**	**Room 23ABC**
10:45 AM–12:45 PM	**Platform: Membrane Pumps, Transporters, and Exchangers**	**Room 24ABC**
10:45 AM–12:45 PM	**Platform: Optical Microscopy and Superresolution Imaging I**	**Room 25ABC**
10:45 AM–12:45 PM	**Platform: TRP Channels**	**Room 30ABC**
10:45 AM–12:45 PM	**Platform: Protein Structure and Conformation I**	**Room 31ABC**
11:15 AM–3:00 PM	**Exploring Careers in Biophysics Day**	**Room 28CDE**
11:30 AM–1:00 PM	**Undergraduate Student Pizza "Breakfast"**	**Room 28CDE**
11:30 AM–1:00 PM	**Exhibitor Presentation: NanoSurface Biomedical** **Recreating the Extracellular Matrix in a Dish**	**Room 33A**
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**	**Room 26A**
12:00 PM–1:30 PM	**Public Affairs Committee Meeting**	**Room 30D**
12:00 PM–4:00 PM	**BPS/IOP Advisory Board Meeting**	**Room 32B**
12:30 PM–2:00 PM	**Exhibitor Presentation: Sutter Instrument** **Scientists Empowering Scientists**	**Room 33C**
1:00 PM–2:30 PM	**Town Hall for Community Input on the National Academies Decadal Survey of Biological Physics**	**Room 31ABC**
1:00 PM–2:30 PM	**The World Outside the Lab: Following Your IDP Roadmap to the Career You Want**	**Room 28AB**
1:00 PM–3:00 PM	**Education & Career Opportunities Fair**	**Exhibit Hall**
1:30 PM–3:00 PM	**Exhibitor Presentation: Carl Zeiss Microscopy LLC** **Multiplex Mode for the LSM 9 Series with Airyscan 2: Fast and Gentle Confocal Superresolution in Large Volumes**	**Room 33A**
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–4:00 PM	**Teaching Science Like We Do Science**	**Room 28CDE**
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**	**Room 26A**
2:30 PM–4:00 PM	**Exhibitor Presentation: Dynamic Biosensors GmbH** **switchSENSE® Biophysical Analysis with Electro-Switchable Biosurfaces**	**Room 33C**
2:30 PM–4:00 PM	**Science and Research in the Global Political Landscape: The US and China**	**Room 29C**
3:30 PM–5:00 PM	**Early Careers Committee Meeting**	**Room 30D**
3:30 PM–5:00 PM	**Exhibitor Presentation: Bruker Corporation** **Multiplexed Imaging and Superresolution Microscopy Using the Vutara 352 Microscope with Integrated Fluidics System**	**Room 33A**

4:00 PM–5:00 PM	**Career Development Center Workshop: Nailing the Job Talk, or Erudition Ain't Enough**	**Room 26A**
4:00 PM–6:00 PM	***Biophysical Journal* Associate Editors Meeting**	**Room 30E**
4:00 PM–6:00 PM	**Symposium: Anion Channels** **Chair:** *Criss Hartzell, Emory University* MECHANISMS OF CLC CL^-/H^+ TRANSPORTERS. *Merritt Maduke* INTRACELLULAR CLC TRANSPORTERS - FROM KIDNEY STONES TO INTELLECTUAL DISABILITY. *Michael Pusch* GATING DYNAMICS, REGULATION AND PHARMACOLOGY OF THE CFTR ANION CHANNEL. *László Csanády* AMAZING ANOCTAMINS (TMEM16) ALL AROUND. *Criss Hartzell*	**Ballroom 20A**
4:00 PM–6:00 PM	**Symposium: "Fuzzy" Interactions and Crowding** **Chair:** *Catherine Musselman, The University of Iowa* THE SHAPE OF (INTRACELLULAR) WATER. *Francesco Cardarelli* PROTEINS IN A CROWD UNDER HEAT AND PRESSURE. *Margaret S. Cheung* ENCODING MULTIPHASE CYTOPLASMIC STRUCTURE. *Clifford Brangwynne* A TALE OF FUZZY TAILS AND THEIR ROLE IN CHROMATIN STRUCTURE REGULATION. *Catherine Musselman*	**Ballroom 20D**
4:00 PM–6:00 PM	**Platform: Membrane Protein Dynamics and Folding I**	**Ballroom 20BC**
4:00 PM–6:00 PM	**Platform: Neuroscience**	**Room 23ABC**
4:00 PM–6:00 PM	**Platform: Nucleic Acid Replication, Transcription, Translation, and Repair**	**Room 24ABC**
4:00 PM–6:00 PM	**Platform: Microtubules, Actin, Dynamics, and Associated Proteins**	**Room 25ABC**
4:00 PM–6:00 PM	**Platform: Optical and Force Microscopy**	**Room 30ABC**
4:00 PM–6:00 PM	**Platform: Excitation-Contraction Coupling**	**Room 31ABC**
4:00 PM–6:00 PM	**PI to PI: A Wine & Cheese Mixer**	**Room 28AB**
5:30 PM–7:00 PM	**Exhibitor Presentation: ELEMENTS SRL** **Low-Noise, Handheld Amplifiers for Electrophysiology and Nanopore Applications**	**Room 33A**
6:00 PM–6:30 PM	**Korean Biophysicists Meeting**	**Room 29AB**
6:00 PM–8:00 PM	**Biophysics Austria Mixer**	**Room 28CDE**
6:00 PM–9:00 PM	**Student Research Achievement Award (SRAA) Poster Competition**	**Exhibit Hall**
6:15 PM–7:15 PM	**Scientific Societies and Grassroots Movements:** **What We All Can Do to Combat Sexual Harassment** **Chair:** Sharona Gordon, University of Washington **Panel:** Sharona Gordon, University of Washington David W. Piston, Washington University School of Medicine in St. Louis Billy M. Williams, American Geophysical Union Gabriela K. Popescu, SUNY Buffalo	**Ballroom 20D**
7:00 PM–9:00 PM	**Biophysical Society of Canada (BSC) Mixer**	**Jolt'n Joe's Gaslamp**
7:30 PM–8:00 PM	**Dinner Meet-Ups**	**Society Booth/Lobby G**
7:30 PM–10:30 PM	***Biophysical Journal* Editorial Board Dinner**	**The Ultimate Skybox at Diamond View Tower**

Sunday, February 16

Biophysical Journal Editorial Board Boot Camp

7:00 AM - 9:00 AM, ROOM 32A

Postdoctoral Breakfast
Tales From Two Sides of Recruitment

7:30 AM - 8:30 AM, ROOM 29AB

Support contributed by the Burroughs Wellcome Fund.

This breakfast presents an opportunity for postdoctoral Annual Meeting attendees to meet and discuss the issues they face in their current career stage. Limited to the first 100 attendees.

Moderators
Anthony Cammarato, Johns Hopkins University
Harpreet Singh, The Ohio State University

Speakers
Greg Harris, San Diego State University
Stephanie Grainger, San Diego State University
Peter Yingxiao Wang, San Diego State University
Lingyan Shi, San Diego State University

Registration/Exhibitor Registration

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

Poster Viewing

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

Symposium
Asymmetric Membranes

8:15 AM - 10:15 AM, BALLROOM 20A

Chair
Georg Pabst, University of Graz, Austria

NO ABSTRACT **8:15 AM**
VPS13 PROTEINS ARE CHANNELS THAT TRANSPORT LIPIDS BETWEEN MEMBRANES. **Karin Reinisch**

13-SYMP **8:45 AM**
STRUCTURAL BASIS OF LIPID AND ION TRANSPORT BY TMEM16 SCRAMBLASES. **Alessio Accardi**

14-SYMP **9:15 AM**
DYNAMIC IMAGING OF MEMBRANE HYDRATION. **Sylvie Roke**

15-SYMP **9:45 AM**
ASYMMETRIC LIPID BILAYERS: INSIGHTS FROM LEAFLET-SPECIFIC STRUCTURAL STUDIES. **Georg Pabst**

Symposium
Single-Molecule Visualization of Transcription, Translation and Splicing

8:15 AM - 10:15 AM, BALLROOM 20D

Chair
Magnus Johansson, Uppsala University, Sweden

16-SYMP **8:15 AM**
DYNAMIC IMAGING OF NASCENT RNA REVEALS GENERAL PRINCIPLES OF TRANSCRIPTION AND SPLICING. **Daniel R. Larson**

17-SYMP **8:45 AM**
IMAGING NON-CANONICAL TRANSLATION DYNAMICS OF SINGLE RNA IN LIVING CELLS. **Timothy J. Stasevich**

18-SYMP **9:15 AM**
GENE REGULATION BY BACTERIAL SMALL RNA AND RNA CHAPERON HFQ. **Jingyi Fei**

19-SYMP **9:45 AM**
LIVE-CELL SINGLE-MOLECULE TRACKING FOR PROTEIN SYNTHESIS KINETICS MEASUREMENTS. **Magnus Johansson**

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates I

8:15 AM - 10:15 AM, BALLROOM 20BC

Co-Chairs
Loren Hough, University of Colorado Boulder
Sumaiya Iqbal, Broad Institute

20-PLAT **8:15 AM**
BURDEN OF FUNCTIONAL FEATURES AND GENETIC VARIATIONS IN HUMAN INTRINSICALLY DISORDERED PROTEINS. Shehab Ahmed, Zaara Rifat, Arthur J. Campbell, A. Keith Dunker, Sohel Rahman, **Sumaiya Iqbal**

21-PLAT **8:30 AM**
DISSECTING THE MOLECULAR MECHANISM OF THE YEAST CELLULAR STARVATION RESPONSE VIA IN-CELL NMR. **Jeffre Allen**, Kathryn P. Wall, Lindsey Hamblin, Jenna Trost, Loren E. Hough

22-PLAT **8:45 AM**
PROGRAMMABLE PHASE BEHAVIOR IN BIOPOLYMER SOLUTIONS. **William M. Jacobs**

23-PLAT **9:00 AM**
ALPHA-HELICAL STRUCTURE IN TDP-43 TUNES LIQUID-LIQUID PHASE SEPARATION AND CELLULAR FUNCTION. Alexander E. Conicella, Gregory Dignon, Gül H. Zerze, Broder Schmidt, Alexandra M. D'Ordine, Youngchan Kim, Rajat Rohatgi, Yuna M. Ayala, Jeetain Mittal, **Nicolas L. Fawzi**

9:15 AM **FLASH TALKS**

24-PLAT **9:30 AM**
THE DYNAMIC SEARCH MODE OF A DISORDERED TRANSCRIPTION FACTOR. Conor Kelly, Mikhail Kuravsky, Christina Redfield, **Sarah L. Shammas**

25-PLAT **9:45 AM**
MODELING AMYLOID AGGREGATES USING MACHINE LEARNING AND STRUCTURAL PREDICTIONS. **Malgorzata Kotulska**, Jakub Wojciechowski, Michal Burdukiewicz

26-PLAT **10:00 AM**
EVOLUTIONARILY CONSERVED AMINO ACID ORGANIZATION IN PROTEIN LOW COMPLEXITY REGIONS ENCODES CONFORMATION, DYNAMICS AND ASSEMBLY. **Erik W. Martin**, Alex S. Holehouse, Ivan Peran, Jeremias Incicco, Andrea Soranno, Rohit V. Pappu, Tanja Mittag

Platform
Cardiac Muscle Mechanics and Structure

8:15 AM - 10:15 AM, ROOM 23ABC

Co-Chairs
Mathias Gautel, King's College London, United Kingdom
Rhye-Samuel Kanassatega, University of Arizona

27-PLAT **8:15 AM**
HIGH-THROUGHPUT PRODUCTION AND BIOPHYSICAL CHARACTERIZATION OF WILD TYPE AND VARIANT TITIN DOMAINS. Martin Rees, Alexander Alexandrovich, Roksana Nikoopour, Sarah Grover, Anna Laddach, Franca Fraternali, Heinz Jungbluth, **Mathias Gautel**

28-PLAT **8:30 AM**
THE SPECIFIC CLEAVAGE OF TITIN SPRINGS TO QUANTIFY THE CONTRIBUTION OF TITIN TO MYOCARDIAL PASSIVE STIFFNESS. Johanna K. Freundt, Christine Loescher, Andreas Unger, Ivan Liashkovich, Yong Li, Julio M. Fernandez, **Wolfgang A. Linke**

29-PLAT **8:45 AM**
BAG3 LOCALIZES TO THE MATURE SARCOMERE AND MAINTAINS MYOFILAMENT FUNCTION. **Thomas Martin**

30-PLAT **9:00 AM**
IMPACT OF MAVACAMTEN ON FORCE GENERATION IN SINGLE MYOFIBRILS FROM RABBIT PSOAS AND HUMAN CARDIAC MUSCLE. Beatrice Scellini, Nicoletta Piroddi, Marica Dente, Cecilia Ferrantini, Raffaele Coppini, **Corrado Poggesi**, Chiara Tesi

31-PLAT **9:15 AM**
FRET MEASUREMENTS OF THE POWER STROKE IN HUMAN CARDIAC MYOSIN. **Wanjian Tang**, Jinghua Ge, Rohini Dessety, Christopher M. Yengo

32-PLAT **9:30 AM**
STRUCTURE OF THE ACTIN-TROPOMYOSIN-TNT COMPLEX. **Matthew Doran**, Anita Ghosh, William Lehman, Esther Bullitt

33-PLAT **9:45 AM**
MECHANICAL SIGNATURES DRIVING HCM AND DCM REVEALED IN HUMAN ENGINEERED HEART TISSUES EXPRESSING CARDIOMYOPATHY-ASSOCIATED VARIANTS IN TPM1. **Lorenzo R. Sewanan**, Stuart G. Campbell

34-PLAT **10:00 AM**
TRAVEL AWARDEE
A FRET-BASED BIOSENSOR FOR DETECTING PHOSPHORYLATION-DEPENDENT STRUCTURAL DYNAMICS IN HUMAN MYOSIN BINDING PROTEIN-C. **Rhye-Samuel Kanassatega**, Thomas A. Bunch, Christopher Wang, Victoria C. Lepak, Brett A. Colson

Platform
Member Organized Session: Multiscale Genome Organization

8:15 AM - 10:15 AM, ROOM 24ABC

Co-Chairs
Yamini Dalal, National Cancer Institute
Tamar Schlick, New York University, HHMI

35-PLAT **8:15 AM**
A BALANCE BETWEEN ELASTIC AND RIGIDIFIED CENP-A NUCLEOSOMES GOVERN CENTROMERIC CHROMATIN FIDELITY. **Daniël P. Melters**, Mary Pitman, Tatini Rakshit, Emilios K. Dimitriadis, Minh Bui, Garegin A. Papoian, Yamini Dalal

36-PLAT **8:30 AM**
NUCLEOSOME CLUTCHES IN CHROMATIN ARE TIGHTLY REGULATED BY NUCLEOSOME POSITIONS AND LINKER HISTONE DENSITY. **Stephanie Portillo**, Lucille H. Tsao, Tamar Schlick

37-PLAT **8:45 AM**
UNRAVELING THE NUCLEOSOME THROUGH MICROSCOPIC SIMULATIONS. **David N. Winogradoff**, Aleksei Aksimentiev

38-PLAT **9:00 AM**
COMPUTATIONAL MODELING OF NUCLEOSOMAL MECHANICS AND EPIGENETIC MODIFICATIONS. **Mary Pitman**, Yamini Dalal, Garegin A. Papoian, Daniël P. Melters, Tatini Rakshit, Emilios K. Dimitriadis, Minh Bui

39-PLAT **9:15 AM**
A LIBRARY FOR COMPARATIVE ALL ATOM STUDIES OF NUCLEOSOMES. **Ran Sun**, Thomas C. Bishop

40-PLAT **9:30 AM**
ELUCIDATING ARCHAEAL CHROMATIN "SLINKY" DYNAMICS THROUGH SIMULATION AND EXPERIMENT. **Samuel Bowerman**, Daren Kraft, Jeff Wereszczynski, Karolin Luger

41-PLAT **9:45 AM**
ANALYZING NUCLEOSOME PLASTICITY VIA ATOMISTIC MD SIMULATIONS. Anastasiia Kniazeva, Grigorii Armeev, Iunona Pospelova, **Alexey K. Shaytan**

42-PLAT **10:00 AM**
CONNECTING NUCLEOSOMAL DNA FOLDING TO CHROMATIN ARCHITECTURE AND PROPERTIES. **Stefjord Todolli**, Wilma K. Olson

Platform
Ion Channel Regulatory Mechanisms

8:15 AM - 10:15 AM, ROOM 25ABC

Co-Chairs
Rose Dixon, University of California, Davis
Izhar Karbat, Weizmann Institute of Science, Israel

43-PLAT **8:15 AM** **TRAVEL AWARDEE**
BETA-ADRENERGIC STIMULATION OF CAV1.2 CHANNELS IS TRANSDUCED VIA THE IS6-AID LINKER. **Arianne Papa**, Jared Kushner, Jessica Hennessey, Alexander N. Katchman, Sergey I. Zakharov, Bi-xing Chen, Lin Yang, Ree Lu, Stephen Leong, Johanna Diaz, Henry M. Colecraft, Geoffrey S. Pitt, Manu Ben-Johny, Steven O. Marx

44-PLAT **8:30 AM**
B-ADRENERGIC RECEPTOR-MEDIATED SIGNALING PROMOTES ENHANCED SARCOLEMMAL INSERTION OF $CA_V1.2$ FROM RAB4-POSITIVE ENDOSOMES. **Silvia Garcia del Villar**, Eamonn J. Dickson, Rose E. Dixon

45-PLAT **8:45 AM**
HETROMERIZATION OF KIR CHANNELS: PRINCIPLES OF ASSEMBLY AND PHYSIOLOGICAL SIGNIFICANCE. **Alice Mett**, Shachar Fine, Astrid Kollewe, Izhar Karbat, Bernd Fakler, Eitan Reuveny

46-PLAT **9:00 AM**
ISOFORM-SPECIFIC REGULATION OF HCN4 CHANNELS BY A FAMILY OF NOVEL INTERACTING PROTEINS. **Colin H. Peters**, John Bankston, Cathy Proenza

47-PLAT **9:15 AM**
NATIVE-STATE PROLYL ISOMERIZATION IS INVOLVED IN THE ACTIVATION OF A CNG CHANNEL. **Philipp A. Schmidpeter**, Crina M. Nimigean

48-PLAT **9:30 AM**
STEPWISE DISSOCIATION OF AN INNER GATE CONTROLS PORE OPENING IN THE CALCIUM-ACTIVATED CHLORIDE CHANNEL TMEM16A. **Andy Lam**, Raimund Dutzler

49-PLAT **9:45 AM**
CONFORMATIONAL PLASTICITY OF THE KCSA CHANNEL FROM ADVANCED TIME-RESOLVED HOMO-FRET METHODOLOGIES. Clara Díaz-García, Maria Lourdes Renart, A. Marcela Giudici, José António Poveda, José Manuel González-Ros, Mário Nuno Berberan-Santos, Ana Coutinho, **Manuel Prieto**

50-PLAT **10:00 AM**
THE LANDSCAPE FOR ION CHANNEL TRANSPORT AND SELECTIVITY. **Subin Sahu**, Justin Elenewski, Michael Zwolak

Platform
Membrane Protein Structures

8:15 AM - 10:15 AM, ROOM 30ABC

Co-Chairs
Lise Arleth, University of Copenhagen, Denmark
James Gumbart, Georgia Institute of Technology

51-PLAT **8:15 AM**
CANCER-ASSOCIATED MUTATIONS CO-LOCATE WITH TRPA1 HINGE FORMATION IN THE ANKYRIN REPEAT REGION. **Cassandra Kosmidou**, David Shorthouse, Rebecca C. Fitzgerald, Benjamin A. Hall

52-PLAT **8:30 AM** **TRAVEL AWARDEE**
CRYOEM STRUCTURE OF THE VIBRIO CHOLERAE TYPE IV PILUS SECRETIN PILQ. **Sara J. Weaver**, Matthew Sazinsky, Triana Dalia, Ankur Dalia, Grant J. Jensen

53-PLAT **8:45 AM**
SMALL-ANGLE NEUTRON SCATTERING SHOWS THAT THE SOLUTION STRUCTURES OF THE BACTERIAL MG^{2+}-CHANNEL CORA ARE OVERALL SIMILAR WITH AND WITHOUT MG^{2+}BOUND. **Lise Arleth**, Nicolai T. Johansen, Tone Bengtsen, Andreas Haahr Larsen, Frederik Tidemand, Thomas Pomorski, Kresten Lindorff-Larsen

54-PLAT **9:00 AM**
STRUCTURAL ORGANIZATION OF CAVEOLIN-1 8S OLIGOMERS DETERMINED BY CRYO-ELECTRON MICROSCOPY. **Bing Han**, Jason Porta, Elad Binshtein, Erkan Karakas, Melanie D. Ohi, Anne K. Kenworthy

55-PLAT **9:15 AM**
HIGHLY DYNAMIC C99 OLIGOMERIC STRUCTURE IN CHOLESTEROL AND SPHINGOMYELIN RICH BICELLES. **James Hutchison**, Kuo-chih Shih, George Pantelopulos, Haley Harrington, Kathleen Mittendorf, Holger Scheidt, Shuo Qian, Scott Collier, Melissa Chambers, Daniel Huster, John Katsaras, Robert L. McFeeters, John E. Straub, Mu-Ping Nieh, Charles Sanders

56-PLAT **9:30 AM**
MODELING THE PLACEMENT OF THE ACRAB-TOLC MULTIDRUG EFFLUX PUMP IN THE BACTERIAL CELL ENVELOPE. **James C. Gumbart**, Josie Ferreira, Sunny hwang, Anthony Hazel, Jerry M. Parks, Jeremy C. Smith, Morgan Beeby, Helen Zgurskaya

57-PLAT **9:45 AM**
HUMAN ADENOSINE $A_{2A}R$ DIMERIZATION IS DRIVEN BY A C-TERMINAL MOTIF. **Khanh D.Q. Nguyen**, Susanna Seppala, Michael Vigers, Nicole S. Schonenbach, Jennifer Hoover, Michelle A. O'Malley, Songi Han

58-PLAT **10:00 AM**
SINGLE-PARTICLE CRYO-EM OF MEMBRANE PROTEINS - SUCCESS STORIES AND CURRENT CHALLENGES. **Doreen Matthies**, Biao Qiu, Chanhyung Bae, Eduardo Perozo, Kenton Swartz, Sriram Subramaniam, Olga Boudker, Zhiheng Yu

Platform
Mechanosensation

8:15 AM - 10:15 AM, ROOM 31ABC

Co-Chairs
Angela Ballesteros Morcillo, NIH
Zheng Shi, Rutgers University

59-PLAT **8:15 AM**
MECHANOSENSITIVE CHANNELS IN PARABURKHOLDERIA GRAMINIS. Brittni L. Miller, **Hannah R. Malcolm**

60-PLAT **8:30 AM**
STRUCTURING INNER-EAR MECHANOTRANSDUCTION. Deepanshu Choudhary, Yoshie Narui, Brandon Neel, Sanket Walujkar, Jeffrey M. Lotthammer, Joseph C. Sudar, Collin Nisler, Lahiru N. Wimalasena, Carissa F. Klanseck, Pedro De-la-Torre, Conghui Chen, Raul R. Araya-Secchi, Elakkiya Tamilselvan, **Marcos Sotomayor**

61-PLAT **8:45 AM** **TRAVEL AWARDEE**
INVESTIGATING THE INFLUENCE OF MEMBRANE PRETENSION ON SINGLE CELL MECHANOSENSITIVITY WITH FORCE-CONTROLLED MICROPIPETTES. **Ines Lüchtefeld**, Christoph Gäbelein, Janos Voros, Boris Martinac, Tomaso Zambelli, Massimo Vassalli

62-PLAT **9:00 AM**
MAPPING THE DISTRIBUTION OF MECHANICAL STRESSES IN THE LINC COMPLEX. Kamyar Behrouzi, Zeinab Jahed, **Mohammad R. Mofrad**

63-PLAT **9:15 AM** **TRAVEL AWARDEE**
NUCLEAR MECHANOSENSATION REGULATES IMMUNOLOGICAL SENSITIVITY OF MACROPHAGE ACTIVATION. **Dong-Hwee Kim**

64-PLAT **9:30 AM**
BACTERIAL-LIKE MECHANOSENSITIVE CHANNELS CONTROL INFECTIVITY AND ORGANELLE DYNAMICS IN PROTOZOAN PARASITES. Joshua Fonbuena, Ingrid Augusto, Tiffine Pham, Melvin Williams, Kildare Miranda, **Veronica Jimenez**

65-PLAT **9:45 AM** **TRAVEL AWARDEE**
COLLECTIVE MECHANOSENSING REGULATES THE AGONIST-INDUCED CALCIUM RESPONSE IN SMOOTH MUSCLE CELLS. **Suzanne E. Stasiak**, Ryan R. Jamieson, Harikrishnan Parameswaran

66-PLAT **10:00 AM**
PROPAGATION OF MEMBRANE TENSION IN NEURONAL AXONS. **Zheng Shi**, Adam E. Cohen

CID Committee Meeting

8:30 AM - 10:30 AM, ROOM 30D

Career Development Center Workshop
Networking for Nerds: How to Create Your Unicorn Career

9:00 AM - 10:00 AM, ROOM 26A

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 33A

Tilt – A New Angle on Light Sheet Imaging
Mizar Imaging is proud to introduce the Tilt, the first light sheet imaging system that is a simple add-on to most inverted microscopes. The key benefit of light sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample and the Tilt excels at this. 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.

When installed on your microscope, the Tilt does not interfere with any existing modalities so you can easily add the Tilt to an existing 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*, zebra fish and other similar model organisms as well 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. This makes the Tilt the only light sheet imaging system that can use high NA/high magnification objectives such as high resolution 60x and 100x objectives. There is no limit to what you can do with the Tilt.

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
Paul Maddox, Founder & President, Mizar Imaging

Exhibits

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

Coffee Break

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

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, ROOM 26A

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 2020.

Exhibitor Presentation
Wyatt Technology

10:30 AM - 12:00 PM, ROOM 33C

Recent Advances in Light Scattering and Related Techniques
Historically light scattering detection has been seen as a tool to assess molecular weight and aggregation. Throughout its existence the utility of this method to assess additional properties of proteins has expanded significantly. Today it's uniquely positioned to give information about how aggregates form, properties of conjugates such as determination of the mass of pegylation or many other conjugates relative to the mass of the protein, protein conformation and many others. One of the properties of light scattering that differentiate it from other techniques that give similar data is the ability for the experiments to be done in solution. With no labeling, fixing of detection agents to solid surfaces or drying of the material to be analyzed you get a real picture of the properties in a given solution.

In this presentation we will discuss the recent advances in HPLC, field flow fractionation (FFF) and composition gradient (CG) coupled with multi-angle light scattering (MALS). The use of HPLC has expanded beyond size exclusion chromatography to include ion-exchange, reversed phase and hydrophobic interaction chromatography that enables the assessment of other properties and various types of molecules such as antibody drug conjugates. FFF-MALS is a gentle separation technique that allows for the separation of a wide range of particle sizes in a single channel with low shear. It is done entirely in a liquid stream and is well suited to utilizing the same separation buffer in which the molecules have been formulated, eliminating the worry that the elution buffer may be affecting the molecule in some way. With CG-MALS the user is able to study protein interaction with other molecules of interest again all in solution and label free.

We invite you to join us in this discussion of the newest uses to discover how they might apply to the next breakthrough in your research.

Speaker
Kevin McCowen, Regional Manager, Wyatt Technology

Symposium
Mapping the Immune System

10:45 AM - 12:45 PM, BALLROOM 20A

Chair
Brian Baker, University of Notre Dame

NO ABSTRACT **10:45 AM**
A SYSTEMS APPROACH TO ENGINEERED IMMUNITY - FROM MOLECULES AND CELLS TO PATIENTS. **Krishnendu Roy**

67-SYMP **11:15 AM**
HOW TO HIT HIV WHERE IT HURTS. **Arup Chakraborty**

68-SYMP **11:45 AM**
MULTI-SCALE COMPUTATIONAL MODEL OF IMMUNE CELL ACTIVATION IN CANCER. **Stacey D. Finley**

NO ABSTRACT **12:15 PM**
DEMYSTIFYING CROSS-REACTIVITY IN CELLULAR IMMUNITY.
Brian M. Baker

Symposium
Cytoskeleton and Motility

10:45 AM - 12:45 PM, BALLROOM 20D

Chair
Joseph Falke, University of Colorado Boulder

69-SYMP **10:45 AM**
HOW DOES THE ACTIN CYTOSKELETON REGULATE DISTRIBUTION AND DIFFUSION OF MEMBRANE COMPONENTS? **Barbara Baird**, David Holowka

70-SYMP **11:15 AM**
REGULATION OF ACTIN AND MEMBRANE DYNAMICS BY CLASS I MYOSINS. **Mira Krendel**

71-SYMP **11:45 AM**
MECHANOCHEMICAL CIRCUITS IN THE CYTOPLASM. **Margaret Gardel**

72-Symp **12:15 pm**
REGULATORY MECHANISMS OF CA^{2+}, RECEPTOR, RAS, AND LIPID SIGNALS THAT CONTROL ACTIN POLYMERIZATION DURING CELL MIGRATION. **Joseph J. Falke**, Brian P. Ziemba, Thomas C. Buckles, Roger L. Williams, Glenn Masson

Symposium
Mitochondrial Calcium Fluxes

10:45 am - 12:45 pm, Ballroom 20BC

Chair
Gyorgy Csordas, Thomas Jefferson University

73-Symp **10:45 am**
MITOCHONDRIAL (ATP SYNTHASE) PERMEABILITY TRANSITION PORE. **Elizabeth Jonas**, Nelli Mnatsakanyan, Kambiz N. Alavian, Rongmin Chen

74-Symp **11:15 am**
THE DUAL LIFE OF MITOCHONDRIAL F-ATP SYNTHASE. **Paolo Bernardi**, Ildikò Szabò, Giovanna Lippe, Christoph Gerle, Michael A. Forte

75-Symp **11:45 am**
MITOCHONDRIAL CALCIUM AND CELL DEATH. **Elizabeth Murphy**

76-Symp **12:15 pm**
NON-UNIFORM DISTRIBUTION OF INNER MITOCHONDRIAL MEMBRANE CALCIUM TRANSPORT MECHANISMS IN THE CARDIAC MUSCLE. **Gyorgy Csordas**

Platform
Protein-Lipid Interactions I

10:45 am - 12:45 pm, Room 23ABC

Co-Chairs
Brennica Marlow, Vanderbilt University
Phillip Stansfeld, University of Oxford, United Kingdom

77-Plat **10:45 am**
STRUCTURAL DETERMINANTS OF CHOLESTEROL RECOGNITION IN HELICAL MEMBRANE PROTEINS. **Brennica Marlow**

78-Plat **11:00 am**
HIGH QUALITY METHYL-TROSY NMR STUDIES OF THE INTERACTIONS BETWEEN THE SMALL GTPASE ARF1 AND ITS ARFGAP ASAP1 AT THE MEMBRANE SURFACE. **Yue Zhang**, Olivier Soubias, Andrew Byrd

79-Plat **11:15 am**
MOLECULAR MECHANISM OF SELECTIVE CHOLESTEROL UPTAKE IN CLASS B SCAVENGER RECEPTOR LIMP-2. **Anna Liang**, Christopher Ing, Richard L. Banh, Régis Pomès

80-Plat **11:30 am**
SUPPORTED LIPID BILAYERS WITH ASYMMETRIC MEMBRANE PROTEINS: CONTROLLING THE PROTEIN ORIENTATION BY USING PEPTIDE-DISCS. **Alessandra Luchini**, Frederik G. Tidemand, Raul R. Araya-Secchi, Lise Arleth

81-Plat **11:45 am**
MODELLING THE DYNAMIC ORGANISATION OF THE B_2-ADRENERGIC RECEPTOR IN CROWDED MEMBRANES: FROM THE NANO TO THE MESOSCALE. **Anna L. Duncan**, Maximillian A.R. Bandurka, Wanling Song, Mark S.P. Sansom

82-Plat **12:00 pm**
ON-CELL MOTION OF SINGLE T4 BACTERIOPHAGES, A HIGHLY DYNAMIC TARGET-FINDING PROCESS. **Lisa Dreesens**

83-Plat **12:15 pm**
INVESTIGATING THE INFLUENCES OF LIPID BINDING ON RHODOPSIN ACTIVATION USING NATIVE MASS SPECTROMETRY. **Carolanne E. Norris**, James E. Keener, Nipuna Weerasinghe, Michael F. Brown, Michael T. Marty

84-Plat **12:30 pm**
INSIGHTS INTO MEMBRANE PROTEIN-LIPID INTERACTIONS FROM FREE ENERGY CALCULATIONS. Robin A. Corey, Owen N. Vickery, Tanadet Pipatpolkai, Frances M. Ashcroft, Mark S. Sansom, **Phillip J. Stansfeld**

Platform
Membrane Pumps, Transporters, and Exchangers

10:45 am - 12:45 pm, Room 24ABC

Co-Chairs
Oliver Beckstein, Arizona State University
Ina Urbatsch, Texas Tech University Health Sciences Center

85-Plat **10:45 am** **Travel Awardee**
ACTION AND INACTIVATION OF THE BACTERIAL POTASSIUM PUMP KDPFABC. **Marie Sweet**, Hediye Erdjument-Bromage, Thomas A. Neubert, David L. Stokes

86-Plat **11:00 am**
ATP1A3-DISEASE MUTATIONS AT THE ION BINDING SITES UNRAVEL SEQUENTIAL RELEASE OF NA^+ IN THE HNA^+/K^+ ATPASE ALPHA 3. **Cristina Moreno Vadillo**, Miguel Holmgren

87-Plat **11:15 am**
MOLECULAR MECHANISM OF MITOCHONDRIAL CALCIUM UNIPORTER REGULATION. **Vivek Garg**, Ishan Paranjpae, Tiffany Unsulangi, Junji Suzuki, Lorin S. Milescu, Yuriy V. Kirichok

88-Plat **11:30 am**
INTERPRETATION OF SPECTROSCOPIC DATA USING MOLECULAR SIMULATIONS FOR THE SECONDARY ACTIVE TRANSPORTER BETP. **Vanessa Leone**, Izabela Waclawska, Katharina Kossman, Caroline Koshy, Monika Sharma, Thomas F. Prisner, Christine M. Ziegler, Burkhard Endeward, Lucy R. Forrest

89-Plat **11:45 am**
INTRACELLULAR CA^{2+} REGULATION OF H^+/CA^{2+} ANTIPORTER YFKE MEDIATED BY A CA^{2+} MINI-SENSOR. **Lei Zheng**, Shuo Lu, Alemayehu A. Gorfe, Zhenlong Li

90-Plat **12:00 pm**
WAG-THE-DOG MECHANISM OF GATING IN GLUTAMATE TRANSPORTERS. **Xiaoyu Wang**, Olga Boudker

91-Plat **12:15 pm**
DRUG-BINDING TO DISTINCT SITES OF THE MULTIDRUG EXPORTER P-GLYCOPROTEIN. **Ina L. Urbatsch**, Douglas J. Swartz, Anukriti Singh, Courtney Katz, Benjamin T. Jackson, Joachim Weber

92-Plat **12:30 pm**
MOLECULAR MECHANISM OF ALTERNATING-ACCESS TRANSPORT IN A SODIUM/PROTON ANTIPORTER. **Oliver Beckstein**, Ian M. Kenney, Chenou Zhang, Fiona Naughton, Rick Sexton, Shujie Fan, David L. Dotson

Platform
Optical Microscopy and Superresolution Imaging I

10:45 am - 12:45 pm, Room 25ABC

Co-Chairs
Lydia Kisley, Case Western Reserve University
Luca Lanzano, Istituto Italiano di Tecnologia, Italy

93-PLAT 10:45 AM
NANOSCALE DISTRIBUTION OF NUCLEAR SITES ANALYZED BY SUPERRESOLUTION STED IMAGE CROSS-CORRELATION SPECTROSCOPY. Michele Oneto, Lorenzo Scipioni, Maria Sarmento, Isotta Cainero, Elena Cerutti, Simone Pelicci, Laura Furia, Pier Giuseppe Pelicci, Gaetano Ivan Dellino, Paolo Bianchini, Mario Faretta, Enrico Gratton, Alberto Diaspro, **Luca Lanzano**

94-PLAT 11:00 AM TRAVEL AWARDEE
ADVANCEMENTS IN SUPERRESOLUTION CORRELATION ANALYSIS TO IMAGE ANOMALOUS DIFFUSION IN CROWDED ENVIRONMENTS. **Lydia Kisley**

95-PLAT 11:15 AM
GAG LATTICE DYNAMICS DETECTED BY TIME-LAPSE AND CORRELATIVE IPALM. **Ipsita Saha**, Saveez Saffarian

96-PLAT 11:30 AM
A NANOCAMERA SYSTEM FOR FAST SPECTRAL FLIM IN LIVING CELLS. **Lorenzo Scipioni**, Alexander Vallmitjana, Francesco Palomba, Alessandro Rossetta, Enrico Gratton

11:45 AM FLASH TALKS

97-PLAT 12:00 PM
CRYOGENIC SUPERRESOLUTION FLUORESCENCE CORRELATED WITH CRYOGENIC ELECTRON TOMOGRAPHY: COMBINING SPECIFIC LABELING AND HIGH RESOLUTION. **Peter D. Dahlberg**, Saumya Saurabh, Jiarui Wang, Annina M. Sartor, Wah Chiu, Lucy Shapiro, William E. Moerner

98-PLAT 12:15 PM
SUPERRESOLUTION 3D ORIENTATION IMAGING REVEALS NANOSCALE COMPOSITIONAL HETEROGENEITY IN LIPID MEMBRANES. **Jin Lu**, Hesam Mazidi, Tianben Ding, Oumeng Zhang, Matthew D. Lew

99-PLAT 12:30 PM
LIVE-CELL INTRACELLULAR STORM IN THE PRESENCE OF OXYGEN WITH MEMBRANE-IMPERMEABLE ORGANIC FLUOROPHORES. **Yongjae Lee**, Duncan L. Nall, Pinghua Ge, Paul R. Selvin

Platform
TRP Channels

10:45 AM - 12:45 PM, ROOM 30ABC

Co-Chairs
Katharina Held, KU Leuven, Belgium
Alexander Sobolevsky, Columbia University

100-PLAT 10:45 AM
THE MOLECULAR MECHANISMS OF TRMP3 CHANNEL REGULATION BY GBΓ AND PHOSPHOINOSITIDES. **Siyuan Zhao**, Eleonora Gianti, Vincenzo Carnevale, Tibor Rohacs

101-PLAT 11:00 AM
TRPM3 INHIBITS SYNAPTIC TRANSMISSION AND PLASTICITY IN THE HIPPOCAMPUS. **Katharina Held**, Marie Mulier, Nele Van Ranst, Yang Ge, Thomas Voets, Yu Tian Wang, Joris Vriens

102-PLAT 11:15 AM
DOMAIN ZIPPING AND UNZIPPING MODULATES TRPM4'S PROPERTIES IN HUMAN CARDIAC CONDUCTION DISEASE. **Wenying Xian**, Hongmei Wang, Alessandra Moretti, Karl-Ludwig Laugwitz, Veit Flockerzi, Peter Lipp

103-PLAT 11:30 AM
MAMMALIAN TRP ION CHANNELS ARE INSENSITIVE TO MEMBRANE STRETCH. Yury Nikolaev, Charles D. Cox, Pietro Ridone, Paul R. Rohde, Julio F. Cordero-Morales, Valeria Vasquez, Derek R. Laver, **Boris Martinac**

104-PLAT 11:45 AM TRAVEL AWARDEE
LIGAND RECOGNITION AND GATING MECHANISM OF THE TRPM2 CHANNEL. **Yihe Huang**, Becca Roth, Wei Lu, Juan Du

105-PLAT 12:00 PM
SINGLE-MOLECULE TWISTING MOTIONS DURING GATING OF THE HUMAN TRPV1 CHANNEL RECORDED WITH SUB-MILLISECOND TIME RESOLUTION. **Hirofumi Shimizu**, Takuya Kobayashi, Masayuki Iwamoto, Kentaro Kajiwara, Nagomi Kurebayashi, Haruo Ogawa, Takashi Murayama

106-PLAT 12:15 PM
STRUCTURAL BASIS OF TEMPERATURE SENSATION BY THE TRP CHANNEL TRPV3. Appu K. Singh, Luke L. McGoldrick, Lusine Demirkhanyan, Merfilius Leslie, Eleonora Zakharian, **Alexander I. Sobolevsky**

107-PLAT 12:30 PM
MAKING SENSE OF TRP CHANNEL STRUCTURES. **Katherine E. Huffer**, Antoniya A. Aleksandrova, Andres Jara-Oseguera, Lucy R. Forrest, Kenton Swartz

Platform
Protein Structure and Conformation I

10:45 AM - 12:45 PM, ROOM 31ABC

Co-Chairs
Acacia Dishman, Medical College of Wisconsin
Carrie Partch, University of California, Santa Cruz

108-PLAT 10:45 AM
THE ROLE OF STRUCTURAL PLEIOTROPY AND REGULATORY EVOLUTION IN THE RETENTION OF HETEROMERS OF PARALOGS. Axelle Marchant, **Angel F. Cisneros Caballero**, Alexandre K. Dubé, Isabelle Gagnon-Arsenault, Diana Ascencio, Honey A. Jain, Simon Aubé, Chris Eberlein, Daniel Evans-Yamamoto, Nozomu Yachie, Christian Landry

109-PLAT 11:00 AM
FOLD-SWITCHING SETS THE STAGE FOR COOPERATIVITY AND COMPETITION IN THE CYANOBACTERIAL CIRCADIAN CLOCK. **Carrie L. Partch**, Jeffrey A. Swan, Joel C. Heisler, Andy LiWang

110-PLAT 11:15 AM
NMR STRUCTURES OF CLOSELY RELATED PROTEIN CONFORMATIONS. **Andrei T. Alexandrescu**, Anne Kaplan, Therese Tripler, Carolyn M. Teschke

111-PLAT 11:30 AM
UNDERSTANDING THE NATIVE FLUCTUATION OF PROTEIN CORES. **Zhe Mei**, John Treado, Lynne J. Regan, Zachary Levine, Corey O'Hern

11:45 AM FLASH TALKS

112-PLAT 12:00 PM
COMPUTATIONAL PREDICTION OF METAMORPHIC BEHAVIOR IN PROTEIN SEQUENCES. **Lee-Ping Wang**, Andy LiWang, Nanhao Chen, Madhurima Das, Xuejun Yao

113-PLAT 12:15 PM
PROBING THE CONFORMATIONAL FLEXIBILITY OF THE MUNC18-1/SYNTAXIN-1A COMPLEX. **Ioanna Stefani**, Dirk Fasshauer

114-PLAT 12:30 PM
EVOLUTION AND FUNCTIONAL ADVANTAGES OF PROTEIN METAMORPHOSIS. **Acacia F. Dishman**, Robert Tyler, Jamie Fox, Michelle Lee, Jaime de Anda, Ernest Lee, Gerard C. Wong, Brian Volkman

Exploring Careers in Biophysics Day

11:15 AM - 3:00 PM, ROOM 28CDE

This free day for San Diego area high school and college students at the BPS 64th Annual Meeting kicks off with an Undergraduate Student Pizza "Breakfast" where participants will have an opportunity to network with their peers and members of the Biophysical Society's Education Committee in a fun and relaxed environment. The Breakfast will include a panel discussion on academic and career paths in biophysics, with times 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. Attendees will be permitted to 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.

Undergraduate Student Pizza "Breakfast"

11:30 AM - 1:00 PM, ROOM 28CDE

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.

Career Panel
Angel Payan, University of California, San Diego
Maria Colorado, Stanford Heath Care
Annette Medina, Gilead Sciences

Career Talk
Carmilia Jimenez, Ajinomoto Bio-Pharma Services

Exhibitor Presentation NanoSurface Biomedical

11:30 AM - 1:00 PM, ROOM 33A

Recreating the Extracellular Matrix in a Dish
Cells in the body use a variety of cues (e.g. structural, mechanical, electrical, and chemical) from the extracellular matrix (ECM) to develop and mature physiologically. These influential cues help regulate a broad spectrum of processes such as cell signaling, division, and differentiation. Many in vitro platforms seek to incorporate these cues into the cell's microenvironment, but often fail, suffering from lack of reproducibility and incompatibility with other well-established end-point assays. Here, we demonstrate biomimetic in vitro platforms capable of reliably reproducing these essential ECM cues. These platforms markedly improve the structural and functional development of a variety of cell types, including stem cells, cardiomyocytes, muscle cells, and many more. Specifically, we show how NanoSurface Plates and Cytostretcher Cell-stretching Instruments can be utilized individually or collectively to study various model systems. The effects of cell-nanotopography interactions on adhesion, signaling, polarity, and migration across many applications such as human epithelia, cardiovascular function, and cancer biology are highlighted. Further, we describe how the differentiation of stem cells can be enhanced by providing a more biomimetic culture environment, with a particular focus on iPSC-derived cardiomyocytes and skeletal muscle cells.

Speaker
Hamed Ghazizadeh, Product Manager, NanoSurface Biomedical

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, ROOM 26A

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 committees.

Public Affairs Committee Meeting

12:00 PM - 1:30 PM, ROOM 30D

BPS/IOP Advisory Board Meeting

12:00 PM - 4:00 PM, ROOM 32B

Exhibitor Presentation Sutter Instrument

12:30 PM - 2:00 PM, ROOM 33C

Scientists Empowering Scientists
For over 45 years, Sutter Instrument has been collaborating with researchers. During this period, there have been many technological evolutions in patch clamp electrophysiology, and Sutter has introduced many new product families, including pipette pullers, manipulators, light sources, wavelength switchers, specialized microscopes and, most recently, fully integrated patch clamp amplifier systems. At this presentation, we will teach techniques, tips and tricks, and showcase new features, such as dynamic clamp capability.

The IPA®, Double IPA® and new dPatch® Ultra-fast, Low-noise Integrated Patch Clamp Amplifiers and SutterPatch® Software are being used for a variety of common experiments, including characterization of ionic current and recording synaptic events in tissue slices. We will demonstrate how the SutterPatch Software's online measurements and sophisticated control of experimental workflow can be used to aid real-time decision-making and eventually simplify analysis.

Town Hall for Community Input on the National Academies Decadal Survey of Biological Physics

1:00 PM - 2:30 PM, ROOM 31ABC

The National Academies of Sciences, Engineering, and Medicine is undertaking a decadal survey of biophysics to look at how the approaches and tools of physics can help to answer important questions about living systems. A committee of experts will evaluate the current state of the field, identify important future research directions, and assess workforce and education needs. This study is funded by the National Science Foundation, and will serve as a guide for federal agencies and academic leadership as they make decisions regarding the future of biophysics. Community input for this study is critical—particularly given the interdisciplinary nature of the field—and this town hall will serve as an opportunity for members of the BPS community to express their thoughts directly to the committee members who are conducting the study. This town hall is open to all members of the BPS community, and we encourage your participation.

Speakers
William Bialek, Priceton University
Christopher Jones, National Academies of Sciences, Engineering, and Medicine
Steven Moss, National Academies of Sciences, Engineering, and Medicine

The World Outside the Lab Following Your IDP Roadmap to the Career You Want

1:00 PM - 2:30 PM, ROOM 28AB

Finding a job is easy, finding the job you want requires a plan! In this interactive workshop, you will be guided through the creation of your Individual Development Plan (IDP) and will develop strategies for utilizing your IDP to find, land, and succeed in a career that fits you best. Learn how to identify what you desire and require a job, evaluate how well potential career fields match your needs, and develop goals to prepare for and land a position you will find satisfying and rewarding. Don't settle for just any job, join us and plot your course to a fulfilling career! Speaker Heather Dillon has over a decade of experience in recruitment and advising, and has assisted hundreds of graduate students and postdoctoral fellows and their job searches and application materials and is devoted to helping trainees succeed in their chosen professions by providing career guidance and advice through seminars, workshops, and individual meetings.

Speaker
Heather Dillon, University of California, San Diego

Education & Career Opportunities Fair

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

Learn about the different leading biophysics programs and opportunities. This fair will give you the opportunity to speak to representatives from different institutions, agencies, and companies about their biophysics programs and opportunities. All those attending the Annual Meeting are encouraged to attend.

Exhibitor Presentation Carl Zeiss Microscopy LLC

1:30 PM - 3:00 PM, ROOM 33A

Multiplex Mode for the LSM 9 Series with Airyscan 2: Fast and Gentle Confocal Superresolution in Large Volumes
The LSM 9 family with Airyscan 2 from ZEISS provides more options to enable the perfect balance of speed and resolution for today's confocal-imaging needs. The new Multiplex mode extends sensitive Airyscan imaging to larger model systems with low expression levels by increasing acquisition speeds even further. It extracts more spatial information; hence, multiple lines can be imaged in a single line scan. This allows for larger acquisition steps to improve image acquisition speeds and reduce the illumination dosage to the sample. This novel concept allows rapid volumetric imaging with unprecedented resolution beyond what is available in traditional confocal systems today.

Airyscan 2 provides new data handling concepts, providing 6.6 times smaller data sizes and 5 times faster image reconstruction times. Further, optimized real time acquisition strategies employed with the LSM 9 family enable faster scan speeds for Airyscan 2, allowing higher data throughput.

Join this workshop and learn how the newest members of the ZEISS imaging portfolio, ZEISS LSM 9 series with Airyscan 2 can help you capture dynamic processes in volumes and improve your imaging experiments in completely new ways.

Speaker
Renée Dalrymple, Product Marketing Manager-Laser Scanning Microscopy, 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 - 4:00 PM, ROOM 28CDE

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 changes to their educational methods might be appropriate.

In the first hour of the workshop, we will review a set of assessment techniques commonly used in science education. Guided by provided workshop resources, participants will have opportunities to share first-hand experiences in round table discussions and collaborate, regardless of the extent of previous knowledge, to compose a personal assessment toolbox that aligns with their course objectives.

In the second hour, we will discuss how results from course assessment can be used to inform curricular decisions regarding program effectiveness. This bigger picture approach is not only relevant to program directors or department chairs, but will also result in a better awareness of every instructor of the holistic nature of a student's education.

Speakers
Gundula Bosch, Johns Hopkins University
Pedro Muiño, 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, ROOM 26A

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.

Exhibitor Presentation
Dynamic Biosensors GmbH

2:30 PM - 4:00 PM, ROOM 33C

switchSENSE® Biophysical Analysis with Electro-Switchable Biosurfaces
The presentation will highlight the broad range of applications of the switchSENSE® technology that is supported by the recently launched heliX® biosensor:

- Size and Conformational Change – Screening and ranking of small molecule induced conformational changes by de novo real-time conformation referencing
- Bispecific Antibodies – Bifunctional sensor functionalization, advanced ligand density control and two-color fluorescence detection for the in-depth analysis of bispecific binders
- Resolving the fastest kinetics with confidence using advanced microfluidics and 10 ms data collection
- DNA/RNA Binding Proteins – Flexible exchange of DNA/RNA targets for binding and enzymatic activity studies in real-time
- From Small Molecules to Cells – Chip functionalization solutions for the biophysical characterization of very small or very large structures

Speakers
Ulrich Rant, CEO, Dynamic Biosensors GmbH
Aishwarya Mahadevan, Application Specialist, Dynamic Biosensors Inc

Science and Research in the Global Political Landscape The US and China

2:30 PM - 4:00 PM, ROOM 29C

Science has always thrived on collaborations, with many significant advances resulting from the coordinated efforts of multiple research teams, frequently based in different countries. China's recent increased investment in science and technology has been accompanied by increasing numbers of international scientific collaborations involving scientists at Chinese institutions, with collaborations involving US scientists comprising the largest share.

The high level of US-China scientific collaboration has coincided with trade disputes and concerns about intellectual property theft. The United States Congress has begun to actively pursue legislation to protect the products of US research efforts from foreign governments. At the same time, the US agencies overseeing federal research grants have initiated investigations into grantees with undisclosed collaborative agreements with foreign governments amidst allegations of 'double dipping.'

As US-China tensions continue to rise, what are the long-term repercussions for scientific research – an endeavor that has always thrived on collaborative efforts and global perspectives? What is the impact of university and federal agency investigations on the participation of Chinese nationals in the US scientific enterprise?

Moderator
Dorothy Beckett, University of Maryland

Panelists
Michael Lauer, NIH
Frank H. Wu, University of California, Hastings College of the Law
Tai-Ming Cheung, University of California, San Diego
Sandra Brown, University of California, San Diego

Early Careers Committee Meeting

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

Exhibitor Presentation
Bruker Corporation

3:30 PM - 5:00 PM, ROOM 33A

Multiplexed Imaging and Superresolution Microscopy Using the Vutara 352 Microscope with Integrated Fluidics System
The Vutara 352 super resolution microscope has been designed for single molecule localization microscopy in multiple types of biological samples. However, most current methods for super resolution microscopy are limited to three- to four-targets due to the limited number of dyes compatible with quality super resolution techniques. This talk presents a method for multiplexing single molecule localization microscopy imaging within a biological sample through the use of an integrated automated microfluidics system. Probe multiplexing allows for the imaging of greater than four different targets within a cell. Using the Vutara 352 and integrated fluidics unit we will show the three-dimensional oligoSTORM imaging of a multiplexed oligoPAINT labeled chromosome in individual human fibroblast cells along with 3D multi probe DNA-PAINT based single molecule localization data for antibody labeled targets in cell culture and tissue slices. The Vutara 352 with integrated fluidics and SRX software provides a powerful suite of tools for simultaneous imaging, localization, visualization and statistical analysis of multiplexed single molecule super resolution data.

Speaker
Robert Hobson, Applications Scientist, Bruker Corporation

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

4:00 PM - 5:00 PM, ROOM 26A

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.

Biophysical Journal Associate Editors Meeting

4:00 PM - 6:00 PM, ROOM 30E

Symposium
Anion Channels

4:00 PM - 6:00 PM, BALLROOM 20A

Chair
Criss Hartzell, Emory University

115-SYMP 4:00 PM
MECHANISMS OF CLC CL^-/H^+ TRANSPORTERS. **Merritt Maduke**

116-SYMP 4:30 PM
INTRACELLULAR CLC TRANSPORTERS - FROM KIDNEY STONES TO INTELLECTUAL DISABILITY. **Michael Pusch**, Alessandra Picollo, Sara Bertelli, Giovanni Zifarelli, Elizabeth E. Palmer, Vera Kalscheuer

117-SYMP 5:00 PM
GATING DYNAMICS, REGULATION AND PHARMACOLOGY OF THE CFTR ANION CHANNEL. **László Csanády**, Csaba Mihályi, Beáta Töröcsik

118-SYMP 5:30 PM
AMAZING ANOCTAMINS (TMEM16) ALL AROUND. **Criss Hartzell**, Kuai Yu, Steven Foltz, Hyojung Choo, Jarred M. Whitlock

Symposium
"Fuzzy" Interactions and Crowding

4:00 PM - 6:00 PM, BALLROOM 20D

Chair
Catherine Musselman, The University of Iowa

119-SYMP **4:00 PM**
THE SHAPE OF (INTRACELLULAR) WATER. **Francesco Cardarelli**

120-SYMP **4:30 PM**
PROTEINS IN A CROWD UNDER HEAT AND PRESSURE.
Margaret S. Cheung

121-SYMP **5:00 PM**
ENCODING MULTIPHASE CYTOPLASMIC STRUCTURE.
Clifford Brangwynne

NO ABSTRACT **5:30 PM**
A TALE OF FUZZY TAILS AND THEIR ROLE IN CHROMATIN STRUCTURE REGULATION. **Catherine Musselman**

Platform
Membrane Protein Dynamics and Folding I

4:00 PM - 6:00 PM, BALLROOM 20BC

Co-Chairs
Estefania Barreto-Ojeda, University of Calgary, Canada
Heedeok Hong, Michigan State University

122-PLAT **4:00 PM** **TRAVEL AWARDEE**
INTERPLAY BETWEEN MEMBRANE CURVATURE AND CONFORMATIONAL STATES IN ABC TRANSPORTERS. **Estefania Barreto-Ojeda**, Patricia M. Bassereau, Daniel Levy, Peter D. Tieleman

123-PLAT **4:15 PM**
C-TERMINAL REGION PLAYS A DIRECT ROLE IN HOMO- AND HETERODIMERIZATION OF A2A ADENOSINE RECEPTORS. **Eric Sefah**, Blake Mertz

124-PLAT **4:30 PM** **TRAVEL AWARDEE**
INDUCING CONFORMATIONAL PREFERENCE OF A MULTIDRUG EFFLUX PUMP EMRE WITH A SINGLE MUTATION. **Ampon Sae Her**, Maureen Leninger, Nate Traaseth

125-PLAT **4:45 PM**
INVESTIGATING THE CONFORMATIONAL DYNAMICS OF THE OUTER MEMBRANE LPS TRANSLOCON LPTDE. **Francesco Fiorentino**, Xing Yu Qiu, Joshua B. Sauer, Jani Reddy Bolla, Shahid Mehmood, Phillip J. Stansfeld, Carol V. Robinson

126-PLAT **5:00 PM**
TRACKING CA^{2+}ATPASE INTERMEDIATES IN REAL-TIME BY X-RAY SOLUTION SCATTERING. **Harsha Ravishankar**, Martin Nors Pedersen, Alya Sitsel, Chenge Li, Annette Duelli, Matteo Levantino, Michael Wulff, Andreas Barth, Claus Olesen, Poul Nissen, Magnus Andersson

127-PLAT **5:15 PM**
TOWARDS UNDERSTANDING HOW WATER MODULATES MEMBRANE PROTEIN STABILITY. **Dagan C. Marx**, Karen G. Fleming

128-PLAT **5:30 PM**
CHARACTERIZATION OF PROTEIN FOLDING DYNAMICS IN MEMBRANE-MIMETIC ENVIRONMENTS USING SINGLE-MOLECULE FLUORESCENCE SPECTROSCOPY. **Andreas Hartmann**, Simon Ollmann, Vadim Bogatyr, Georg Krainer, Michael Schlierf

129-PLAT **5:45 PM**
MEMBRANE INDUCES CONTRACTION BUT NOT COLLAPSE OF THE DENATURED STATE OF A HELICAL MEMBRANE PROTEIN. Ruiqiong Guo, Kristen A. Gaffney, Michael D. Bridges, Miyeon Kim, Wayne L. Hubbell, Tobin R. Sosnick, **Heedeok Hong**

Platform
Neuroscience

4:00 PM - 6:00 PM, ROOM 23ABC

Co-Chairs
Isabella Farhy-Tselnicker, Salk Institute for Biological Studies
Paul Selvin, University of Illinois at Urbana-Champaign

130-PLAT **4:00 PM**
ANTAGONISTS PHARMACOLOGICALLY CHAPERONE OPIOID RECEPTORS. **Stephen Grant**, Anand K. Muthusamy, Andres Collazo, Henry A. Lester

131-PLAT **4:15 PM**
CHANGES IN NUMBER AND STRUCTURE OF NERVE RECEPTORS (AMPARS) ASSOCIATED WITH MEMORY IN DISSOCIATED HIPPOCAMPAL NEURONS. **Paul R. Selvin**, Chaoyi Jin, Sung Soo Jang, Pinghua Ge, Hee Jung Chung

132-PLAT **4:30 PM**
ASTROCYTE EXPRESSION OF SYNAPSE PROMOTING GENES IS DEVELOPMENTALLY REGULATED BY NEURONAL AND ASTROCYTE ACTIVITY. **Isabella Farhy-Tselnicker**, Cari Dowling, Nicola J. Allen

133-PLAT **4:45 PM**
COMPUTATIONAL MODELING OF SPATIAL PROPAGATION OF MEMBRANE VOLTAGE IN COMPLEX DENDRITIC GEOMETRIES. **Miriam Bell**, Christopher T. Lee, Padmini Rangamani

134-PLAT **5:00 PM**
DEVELOPING NANOELECTRODES INTO ROBUST ELECTROPHYSIOLOGICAL TOOLS FOR ACCURATE AND PARALLEL RECORDING OF ACTION POTENTIALS FROM SINGLE CELLS. **Zeinab Jahed**, Yang Yang, huaxiao Yang, Allister McGuire, Aofei Liu, Xiao Li, Bianxiao Cui

135-PLAT **5:15 PM**
BIOPHYSICAL MODEL OF THE VESTIBULAR HAIR CELL CALYX SYNAPSE. **Aravind Chenrayan Govindaraju**, Imran Quraishi, Anna Lysakowski, Ruth Anne Eatock, Robert M. Raphael

136-PLAT **5:30 PM**
SCALING LAWS GOVERNING DENDRITIC MORPHOLOGY DEVELOPMENT OF *DROSOPHILAMELANOGASTER* CLASS IV NEURONS. **Maijia Liao**, Jonathon Howard

137-PLAT **5:45 PM**
M-CURRENT INHIBITION IN HIPPOCAMPAL NEURONS TRIGGERS INTRINSIC AND SYNAPTIC HOMEOSTATIC RESPONSES AT DIFFERENT TEMPORAL SCALES. **Bernard Attali**, Jonathan Lezmy, Maxim Katsenelson, Boaz Styr, Hanna Gelman, Eliav Tikochinsky, Maya Lipinsky, Asher Peretz, Shira Burg, Inna Slutsky

Platform
Nucleic Acid Replication, Transcription, Translation, and Repair

4:00 PM - 6:00 PM, ROOM 24ABC

Co-Chairs
Achilles Kapanidis, University of Oxford, United Kingdom
Yang Liu, Johns Hopkins University

138-PLAT **4:00 PM**
VERY FAST CRISPR ON DEMAND. **Yang Liu**, Roger Zou, Yuta Nihongaki, Shuaixin He, Shiva Razavi, Bin Wu, Taekjip Ha

139-Plat 4:15 pm
VISUALIZING ENDOGENOUS RNA POLYMERASE II PHOSPHORYLATION DYNAMICS AT A SINGLE GENE. **Linda S. Forero Quintero**, William Raymond, Tetsuya Handa, Matthew Saxton, Tatsuya Morisaki, Edouard Bertrand, Hiroshi Kimura, Brian Munsky, Timothy J. Stasevich

140-Plat 4:30 pm
SINGLE-MOLECULE ANALYSIS REVEALS THE MECHANISM FOR DNA OPENING IN TRANSCRIPTION INITIATION. Abhishek Mazumder, Richard H. Ebright, **Achillefs N. Kapanidis**

141-Plat 4:45 pm
TRACKING SINGLE RNAP ENZYME STEPS AND STATE TRANSITIONS DURING ELONGATION AND PAUSING WITH NANOPORE TWEEZERS. **Ian C. Nova**, Abhishek Mazumder, Jonathan M. Craig, Andrew H. Laszlo, Matthew T. Noakes, Henry D. Brinkerhoff, Shuya Yang, Jonathan W. Mount, Jesse Huang, Richard H. Ebright, Jens H. Gundlach

142-Plat 5:00 pm Travel Awardee
VISUALIZING DYNAMIC TETHERING OF ARGONAUTE TO SINGLE MRNA IN LIVE HUMAN CELLS REVEALS THE MECHANISM OF MIRNA-MEDIATED TRANSLATIONAL SILENCING. **Charlotte A. Cialek**, Taiowa A. Montgomery, Timothy J. Stasevich

143-Plat 5:15 pm
STUDYING THE DYNAMICS OF PARTIALLY FOLDED NASCENT PEPTIDES ON THE RIBOSOME USING PET-FCS APPROACH. **Manisankar Maiti**, Marija Liutkute, Ekaterina Samatova, Joerg Enderlein, Marina V. Rodnina

144-Plat 5:30 pm
DAMAGE SEARCH MECHANISM OF HUMAN NER PROTEIN XPC-RAD23B AT THE SINGLE-MOLECULE LEVEL. **Na Young Cheon**, Ja Yil Lee

145-Plat 5:45 pm
DNA BRIDGING BY THE HOMOLOGOUS RECOMBINATION COMPONENT CTIP INVESTIGATED ON THE SINGLE DNA MOLECULE LEVEL. Robin Öz, Sean Michael Howard, Hanna Törnkvist, Sriram KK, Petr Cejka, **Fredrik Westerlund**

Platform
Microtubules, Actin, Dynamics, and Associated Proteins

4:00 pm - 6:00 pm, Room 25ABC

Co-Chairs
Richard McKenney, University of California, Davis
Kristen Skruber, University of Florida

146-Plat 4:00 pm
MOLECULAR MECHANISM FOR DIFFERENTIAL FORCE-REGULATED ACTIN BINDING BY VINCULIN AND ALPHA-CATENIN. **Lin Mei**, Santiago Espinosa de los Reyes, Matthew J. Reynolds, Shixin Liu, Gregory M. Alushin

147-Plat 4:15 pm
MICROTUBULES GATE TAU CONDENSATION TO SPATIALLY REGULATE MICROTUBULE FUNCTIONS. Ruensern Tan, Aileen Lam, Tracy Tan, Jisoo Han, Dan W. Nowakowski, Sergi Simo, Michael Vershinin, Kassandra M. Ori-McKenney, **Richard J. McKenney**

148-Plat 4:30 pm
THE C-TERMINAL DOMAIN OF TALIN FORMS A FORCE-RESPONSIVE, DIRECTIONAL CATCH BOND TO F-ACTIN. **Leanna M. Owen**, Nicolas A. Bax, William I. Weis, Alexander R. Dunn

149-Plat 4:45 pm Travel Awardee
THE INNER JUNCTION COMPLEX OF THE CILIA IS AN INTERACTION HUB THAT INVOLVES TUBULIN POST-TRANSLATIONAL MODIFICATIONS. **Ahmad Khalifa**, Muneyoshi Ichikawa, Daniel Dai, Corbin Black, Katya Peri, Thomas McAlear, Shintaroh Kubo, Simon Veyron, Shun Kai Yang, Kaustuv Basu, Javier Vargas, Jean-Francois Trempe, Susanne Bechstedt, Khanh Huy Bui

150-Plat 5:00 pm
PROFILIN-1 CONTROLS ACTIN NETWORK ORGANIZATION AND HOMEOSTASIS THROUGH COORDINATION WITH OTHER ASSEMBLY FACTORS. **Kristen Skruber**, Peyton Warp, Jessica Henty-Ridilla, Eric Vitriol

151-Plat 5:15 pm
COLLECTIVE MECHANOCHEMICAL EFFECTS IN MICROTUBULE DYNAMICS: THEORY AND SIMULATIONS. **Kristian Blom**, Maxim Igaev, Aljaz Godec, Helmut Grubmueller

152-Plat 5:30 pm
PATHWAYS FOR ACTIN POLYMERIZATION MEDIATED BY FORMINS. **Naomi Courtemanche**

153-Plat 5:45 pm
MICROTUBULE TREADMILLING RECONSTITUTED WITH A MINIMAL-COMPONENT *IN VITRO* SYSTEM. Goker Arpag, Elizabeth Lawrence, **Marija Zanic**

Platform
Optical and Force Microscopy

4:00 pm - 6:00 pm, Room 30ABC

Co-Chairs
Alvaro Alonso-Caballero, Columbia University
Megan Kern, University of North Carolina Chapel Hill

154-Plat 4:00 pm
ANISOTROPY RESOLVED MULTIDIMENSIONAL EMISSION SPECTROSCOPY (ARMES) AND CHEMOMETRIC MODELLING TO STUDY FÖRSTER RESONANCE ENERGY TRANSFER (FRET) PROCESSES. **Fiona Gordon**

155-Plat 4:15 pm
RAMAN SPECTROSCOPY AND ARTIFICIAL INTELLIGENCE TO PREDICT THE BAYESIAN PROBABILITY OF BREAST CANCER. **Ragini Kothari**, Veronica Jones, Dominique Mena, Viviana Bermudez, Youkang Shon, Jennifer Smith, Daniel Schmolze, Philip Cha, Yuman Fong, Michael Storrie-Lombardi

156-Plat 4:30 pm
NONSPECIFIC PROBE BINDING AND AUTOMATIC GATING IN FLOW CYTOMETRY AND FLUORESCENCE ACTIVATED CELL SORTING (FACS). **Bhaven A. Mistry**, Tom Chou

157-Plat 4:45 pm
GOLD NANOISLAND SUBSTRATES AS UNIFORM SERS SUBSTRATES FOR SENSITIVE DETECTION OF BONE MARROW-DERIVED MESENCHYMAL STROMAL CELLS FINGERPRINTS. **Adrianna Milewska**, Vesna Zivanovic, Virginia Merk, Ólafur E. Sigurjónsson, Janina S. Kneipp, Kristjan Leosson

158-Plat 5:00 pm
A THERMODYNAMIC FRAMEWORK FOR DYNAMIC FORCE SPECTROSCOPY. **Alan Y. Liu**, Todd A. Sulchek

159-Plat 5:15 pm
COMBINED AFM AND VERTICAL LIGHT SHEET MICROSCOPY TO CORRELATE ACTIN ACCUMULATION TO ENGULFMENT FORCES DURING PHAGOCYTOSIS. **Megan E. Kern**, Evan F. Nelsen, Chad M. Hobson, Joe Hsiao, E. Timothy E. O'Brien, Michael R. Falvo, Richard Superfine

160-Plat 5:30 pm
BIOMOLECULAR DATA ASSIMILATION TO INTEGRATE HIGH-SPEED ATOMIC FORCE MICROSCOPY MEASUREMENT AND MOLECULAR SIMULATION. **Sotaro Fuchigami**, Toru Niina, Shoji Takada

161-Plat 5:45 pm
HIGH FORCE MAGNETIC TWEEZERS REVEAL THAT BACTERIAL ADHESION PILI ACT AS MEGADALTON-SCALE SCHOCK ABSORBERS. **Alvaro Alonso-Caballero**, Rafael Tapia-Rojo, Carmen L. Badilla, Julio M. Fernandez

Platform
Excitation-Contraction Coupling

4:00 PM - 6:00 PM, ROOM 31ABC

Co-Chairs
Donald Bers, University of California, Davis
Montserrat Samso, Virginia Commonwealth University School of Medicine

162-PLAT 4:00 PM
ELUCIDATION OF MECHANISM OF CA^{2+}INDUCED CA^{2+}RELEASE OF RYR2 REVEALED BY CRYO-EM. Takuya Kobayashi, Akihisa Tsutsumi, Nagomi Kurebayashi, Kei Saito, Takashi Sakurai, Masahide Kikkawa, Takashi Murayama, **Haruo Ogawa**

163-PLAT 4:15 PM
STRUCTURAL INSIGHT ON THE REGULATION OF RYR1 BY CALCIUM AND MAGNESIUM. Ashok R. Nayak, Alex H. Will, Joshua Lobo, Pablo Castro-Hartmann, **Montserrat Samso**

164-PLAT 4:30 PM
ALTERNATIVE SPLICING OF $CA_V1.2$ IN ARVC PATIENTS. Theresa Bourjau, Valentina Di Biase, Marta Campiglio, Maria Giglberger, Barbara Schober, Teresa Stauber, Gabriela Pietrzyk, Andrea Baessler, Marcus Fischer, Stefan Wagner, Lars S. Maier, **Karin P. Hammer**

165-PLAT 4:45 PM
TRPV4 CONTRIBUTES TO PRO-ARRHYTHMIC CALCIUM SIGNALING IN CARDIOMYOCYTES OF AGED MICE. **Deborah Peana**, Timothy L. Domeier

166-PLAT 5:00 PM
CARDIAC CAMKIIΔ MEMORY: HOW POST-TRANSLATIONAL-MODIFICATIONS ALTER CALMODULIN AFFINITY. **Mitchell Simon**, Christopher Y. Ko, Sonya Baidar, Razvan L. Cornea, Julie Bossuyt, Donald M. Bers

167-PLAT 5:15 PM
EFFECT OF BAPTA AND DYSFERLIN'S C2A DOMAIN ON RECOVERY OF CA^{2+} TRANSIENTS AFTER OSMOTIC SHOCK IN DYSFERLIN-NULL MYOFIBERS. **Valeriy I. Lukyanenko**, Joaquin M. Muriel, Robert J. Bloch

168-PLAT 5:30 PM
HUMAN BIN1 ISOFORMS MAINTAIN, REGENERATE AND ELICIT FUNCTIONAL EC-COUPLING AND COUPLONS IN ADULT RAT AND HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. **Peter Lipp**, Jia Guo, Qinghai Tian, Monika Barth, Wenying XIan, Sandra Ruppenthal, Hans-Joachim Schaefers, Zhifen Chen, Alessandra Moretti, Karl-Ludwig Laugwitz

169-PLAT 5:45 PM
THE E258K-*MYPBC3* MODELLED IN HCM PATIENT-DERIVED CARDIOMYOCYTES TO IDENTIFY THE PRIMARY IMPACT OF THE MUTATION VERSUS THE SECONDARY CHANGES DUE TO CARDIAC REMODELING. **J. M. Pioner**, Sonette Steczina, Giulia Vitale, Saffie Mohran, Chiara Palandri, Lorenzo Santini, Silvia Querceto, Marianna Langione, Elisabetta Cerbai, Chiara Tesi, Raffaele Coppini, Cecilia Ferrantini, Corrado Poggesi, Michael Regnier

PI to PI
A Wine & Cheese Mixer

4:00 PM - 6:00 PM, ROOM 28AB

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

Exhibitor Presentation
ELEMENTS SRL

5:30 PM - 7:00 PM, ROOM 33A

Low-Noise, Handheld 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 miniaturized products, based on our custom CMOS microchips.

In this presentation, we will be featuring our latest products through the hands-on experience of current customers from the US, Europe, and Japan. You will hear first-hand accounts about their research and the results they got using:

- The world's smallest integrated patch clamp amplifier, ePatch
- A handheld nanopore kit for nanoparticle detection using disposable glass nanopore chips, eNPR

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's smallest and cheapest patch clamp amplifier is radically changing patch-clamp measurements
- Different user experience ranging from patch-clamp on live cells, to exosome detection using solid state nanopores, as well as lipid bilayer experiments

Complimentary Italian hors d'oeuvres and drinks will be served. Seating is limited.

Speakers
Federico Thei, Chief Executive Officer, ELEMENTS SRL
Alessandro Porro, Application Scientist, ELEMENTS SRL
Guilherme Henrique Bomfim, Researcher, New York University
Nelly Mnatsakanyan, Assistant Professor, Yale University
David Niedzwiecki, Scientist, Goeppert LLC
Mark Platt, Senior Lecturer, University of Loughborough
Masato Nishio, Tokyo University

Korean Biophysicists Meeting

6:00 PM - 6:30 PM, ROOM 29AB

Biophysics Austria Mixer

6:00 PM - 8:00 PM, ROOM 28CDE

Student Research Achievement Award (SRAA) Poster Competition

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

This session features students who are presenting posters at the Annual Meeting and have indicated at the time of abstract submission that they wish to participate in the competition. During the competition, students will deliver a five-to-seven minute oral presentation of their poster to one or more judges. Winners will be recognized on Monday evening prior to the Biophysical Society Lecture.

Scientific Societies and Grassroots Movements: What We All Can Do to Combat Sexual Harassment

6:15 PM - 7:15 PM, BALLROOM 20D

Join us for this critically important look at the NASEM report on sexual harassment and how scientific societies, including BPS, are taking responsibility and working to ensure safe, welcoming, inclusive environments for members and attendees.

Moderator
Sharona Gordon, University of Washington

Speakers
Sharona Gordon, University of Washington
David W. Piston, Washington University School of Medicine in St. Louis
Billy M. Williams, American Geophysical Union
Gabriela K. Popescu, SUNY Buffalo

Biophysical Society of Canada (BSC) Mixer

7:00 PM - 9:00 PM, JOLT'N JOE'S GASLAMP

Dinner Meet-Ups

7:30 PM - 8:00 PM, SOCIETY BOOTH/LOBBY G

Interested in making new acquaintances and experiencing the cuisine of San Diego? Meet at the Society Booth each evening Sunday (7:30 PM), Monday and Tuesday (6:00 PM), where a BPS member will coordinate dinner at a local restaurant.

Biophysical Journal Editorial Board Dinner

7:30 PM - 10:30 PM, THE ULTIMATE SKYBOX AT DIAMOND VIEW TOWER

SUNDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL

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 Abstract 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 I
B36–B53	Protein Structure, Prediction, and Design I
B54–B74	Protein-Small Molecule Interactions I
B75–B96	Protein Dynamics and Allostery I
B97–B116	Membrane Protein Dynamics I
B117–B140	Intrinsically Disordered Proteins (IDP) and Aggregates I
B141–B160	DNA Structure and Dynamics I
B161–B179	RNA Structure and Dynamics
B180–B212	Protein-Nucleic Acid Interactions I
B213–B237	Membrane Physical Chemistry I
B238–B262	Membrane Dynamics I
B263–B287	Membrane Structure I
B288–B313	Membrane Receptors and Signal Transduction I
B314–B331	Excitation-Contraction Coupling I
B332–B344	Cardiac, Smooth, and Skeletal Muscle Electrophysiology I
B345–B356	Voltage-gated Ca Channels
B357–B385	Voltage-gated K Channels I
B386–B410	Ion Channels, Pharmacology, and Disease I
B411–B426	Skeletal and Smooth Muscle Mechanics, Structure, and Regulation
B427–B442	Actin Structure, Dynamics, and Associated Proteins
B443–B455	Bacterial Mechanics, Cytoskeleton, and Motility
B456–B471	Membrane Pumps, Transporters, and Exchangers I
B472–B476	Light Energy Harvesting, Trapping, and Transfer
B477–B488	Cellular Signaling and Metabolic Networks
B489–B500	Diffraction and Scattering Techniques
B501–B531	Molecular Dynamics I
B532–B566	Optical Microscopy and Superresolution Imaging I
B567–B586	Bioengineering
B587–B606	Micro- and Nanotechnology 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 - B35)

170-Pos Board B1
UNDERSTANDING FUNCTION OF MITOCHONDRIAL HSP70 WITH *IN ORGANELLO* SINGLE-MOLECULE FRET. **Vanessa Trauschke**, Rupa Banerjee, Dejana Mokranjac, Don C. Lamb

171-Pos Board B2
SQUEEZING PROTEINS AT THE UNFOLDING LIMIT. **Prabhat Tripathi**, Abdelkrim Bennabbas, Paul M. Champion, Meni Wanunu

172-Pos Board B3
LIQUID-OBSERVED VAPOR EXCHANGE (LOVE) NMR REVEALS RESIDUE-LEVEL EFFECTS OF PROTECTANTS ON A DRIED PROTEIN. **Candice J. Crilly**, Julia A. Noonan Brom, David A. Rockcliffe, Gary J. Pielak

173-Pos Board B4 Travel Awardee
ATOMIC FORCE MICROSCOPY IMAGING REVEALS STRUCTURAL HETEROGENEITIES IN COLLAGEN TYPE IV MOLECULES. **Alaa Al-Shaer**

174-Pos Board B5
THERMODYNAMICS OF PROTEIN-SURFACE BINDING - THE MODEL MAKES ALL THE DIFFERENCE. **Nicholas C. Fitzkee**, Kayla D. McConnell, Olivia C. Williams, Emily R. Chappell, Rebecca G. Manns

175-Pos Board B6
FROZEN IN TIME - HOW PHOSPHORYLATION INDUCES CONFORMATIONAL REARRANGEMENT IN THE CIRCADIAN AAA^+ ATPASE KAIC. **Colby R. Sandate**, Jeffrey A. Swan, Carrie L. Partch, Gabriel C. Lander

176-Pos Board B7 Travel Awardee
ON THE ROLE OF THE SOLVENT ENVIRONMENT IN THE FOLDING AND UNFOLDING OF AMPHIPATHIC HELICES. **Natasha H. Rhys**, Nicola Steinke, Samvid Kurlekar, Christian D. Lorenz, Sylvia E. McLain

177-Pos Board B8
PRESSURE PERTURBATION OF PROTEIN SECONDARY STRUCTURE COUPLED WITH MICROFLUIDIC MODULATION SPECTROSCOPY - A POWERFUL PLATFORM FOR BIOPHARMACEUTICAL FORMULATIONS DEVELOPMENT. **Alexander Lazarev**, Vera Gross, Libo Wang, Matthew McGann, Gary B. Smejkal, Nicole Cutri, Jeffrey A. Zonderman

178-Pos Board B9
MECHANICS OF ADHESION MOLECULES PROBED BY MOLECULAR DYNAMICS AND HIGH-SPEED FORCE SPECTROSCOPY. Fidan Sumbul, **Felix Rico**

179-Pos Board B10
A SYSTEMATIC REVIEW OF CHROMOGRANIN A (CGA) AND ITS BIOMEDICAL APPLICATIONS, UNVEILING ITS STRUCTURE-RELATED FUNCTIONS. **Manhyuk Han**, Kyuhyung Choi, Seung Joong Kim

180-Pos Board B11
SPR AND HDXMS ANALYSIS OF INTERACTIONS BETWEEN COMPLEMENT COMPONENT 3 AND THROMBOMODULIN. **Julia R. Koeppe**, Jose Giler

181-Pos Board B12
AMYLOID BETA OLIGOMERIZATION PROBED BY SINGLE-MOLECULE FRET. **Fanjie Meng**, Janghyun Yoo, Jae-Yeol Kim, Hoi Sung Chung

182-Pos Board B13
THE STRUCTURE AND MECHANISM OF A UNIQUE RIESKE-TYPE MONOOXYGENASE ENZYME FROM THE HUMAN GUT MICROBIOTA IMPLICATED IN CARDIOVASCULAR DISEASE. **Mussa Quareshy**, Muralidharan Shanmugam, Alexander D. Cameron, Timothy D. Bugg, Yin Chen

183-Pos Board B14
STRUCTURAL INSIGHTS INTO AN ATP-DEPENDENT RIBOKINASE FROM *ARABIDOPSIS THALIANA*. Pyeoung-Ann Kang, Juntaek Oh, Haehee Lee, Claus-Peter Witte, **Sangkee Rhee**

184-Pos Board B15
MDMX ACIDIC DOMAIN REQUIRES THE WF MOTIF FOR THE INITIATION OF THE SECONDARY INTERACTION WITH THE P53DBD. **Malissa J. Fenton**, Wade M. Borcherds, Gary W. Daughdrill, Lihong Chen, Jiandong Chen

185-Pos Board B16
STRUCTURE OF SMYBP-C M DOMAIN. Lindsey M. Hensley, **Nathan T. Wright**

186-Pos Board B17
PROBING LOCAL ENVIRONMENTS OF ADENYLATE KINASE WITH UNNATURAL AMINO ACIDS. **Angelica Camilo**, Scott H. Brewer, Christine M. Phillips-Piro

187-Pos Board B18
THE ELUCIDATION OF THE FORMATION PROCESS OF ZEBRAFISH TAIL FIN BY 3D MODEL USING ADVANCED TRANS-SCALE EM AND BY CLEM. Junpei Kuroda, Takeshi Itabashi, Takako Ichinose, Shigeru Kondo, **Atsuko H. Iwane**

188-Pos Board B19
CRYSTAL STRUCTURE OF AN ANTI-CRISPR PROTEIN, ACRIF2, AND ITS INTERACTION WITH TYPE I-F CAS PROTEINS. Donghyun Ka, Nayoung Suh, **Euiyoung Bae**

189-Pos Board B20
UNRAVELING COMPLEX PROTEIN ENVIRONMENTS IN GREEN FLUORESCENT PROTEIN USING THE UNNATURAL AMINO ACID 4-CYANO-L-PHENYLALANINE. **Brianna M. Papoutsis**, ByungUk Lee, Nathan Wong, Paul Nerenberg, Scott H. Brewer, Christine M. Phillips-Piro

190-Pos Board B21
ELUCIDATING THE STRUCTURE OF AGGREGATION-PRONE INTERMEDIATE CONFORMATIONS IN DIVERSE POINT MUTANTS OF HUMAN ГD-CRYSTALLIN. **Jimmy Thai**, Eugene Serebryany, Eugene Shakhnovich

191-Pos Board B22
STRUCTURAL AND FUNCTIONAL STUDIES ON A SMALL HEAT SHOCK PROTEIN FROM *E. HISTOLYTICA*. **Devanshu Kurre**

192-Pos Board B23
INTEGRATED STRUCTURAL DYNAMICS OF CALMODULIN. **Narendar Kolimi**

193-Pos Board B24 Travel Awardee
PORE FORMATION MECHANISM OF HUMAN GASDERMIN D. **Shiyu Xia**, Jianbin Ruan, Juan Lorenzo Pablo, Zhibin Zhang, Longfei Wang, Tian-Min Fu, Anna Greka, Judy Lieberman, Hao Wu

194-Pos Board B25
USING ALPHA SHAPES TO CHARACTERIZE PROTEIN PACKING AND CAPTURE THE MULTISCALE ASPECTS OF ALLOSTERY. **Pranav M. Khade**, Ambuj Kumar, Robert L. Jernigan

195-Pos Board B26
STRUCTURAL AND NANOMECHANICAL PROPERTIES OF GLYCATED COLLAGEN FROM MOLECULES TO TISSUE. **Dora Haluszka**, Jolán Hársfalvi, Miklós S. Kellermayer

196-Pos Board B27 Travel Awardee
THE FUNCTION OF LYNX1 AND LYNX2 PROTEIN IN BINDING AFFINITY TO NICOTINIC RECEPTORS AND GENE RESTORATION. **Griffin M. Jones**

197-Pos **Board B28**
ROLE OF PROLYL ISOMERIZATION IN METAMORPHOSIS OF THE CLOCK PROTEIN, KAIB. **Madhurima Das**

198-Pos **Board B29**
THE STRUCTURE OF LRRK2 AND THE CONFORMATIONAL CHANGES THAT ARE ASSOCIATED WITH LRRK2 ACTIVATION AND PARKINSON'S DISEASE PATHOGENESIS. **Jui-Hung Weng**

199-Pos **Board B30**
SINGLE PARTICLE CRYO-EM STRUCTURE OF ALPHA-SYNUCLEIN FIBRILS INTERACTING WITH TAU. **Alimohammad Hojjatian**, Anvesh K.R. Dasari, Dianne Taylor, Nadia Daneshparvar, Fatemeh A. Abbasi Yeganeh, Kwang Hun Lim, Kenneth A. Taylor

200-Pos **Board B31**
STRUCTURES AND MECHANISM OF HUMAN TRPM2 DESENSITIZATION AND INHIBITION. **Longfei Wang**, Tianmin Fu, Shiyu Xia

201-Pos **Board B32**
ELUCIDATING THE STRUCTURAL BASIS OF PROTEIN DOMAIN COUPLING IN SPECTRIN REPEAT DOMAINS. **Althea Amaris**, Madison Nohner, Michael Fealey, Katie M. Dunleavy, Gail E. Fanucci, Jessica Sieber, Anne Hinderliter

202-Pos **Board B33**
STRUCTURAL CHARACTERIZATION AND SURFACE ADSORPTION OF *S. EPIDERMIDIS* AUTOLYSIN E - AMIDASE, A PROTEIN IMPLICATED IN BIOFILM FORMATION. **Rahul Yadav**, Nicholas C. Fitzkee

203-Pos **Board B34**
NEW STRUCTURAL INSIGHTS INTO THE FUNCTION OF THE ACTIVE FULL LENGTH HUMAN TASPASE1: A NOVEL ANTICANCER THERAPEUTIC TARGET. **Rebecca J. Jernigan**, Nirupa Nagaratnam, Darren Thifault, Silvia Delker, Michele Zacks, Thomas Edwards, Lidia Sambucetti, Liang Tong, Raimund Fromme, Joel Schneider, James Hsieh, Barbra Mroczkowski, Andrew Flint, Petra Fromme, Jose M. Garcia

204-Pos **Board B35**
NOVEL INSIGHTS INTO THE STRUCTURAL PERTURBATION INDUCED BY THE ONCOGENIC MUTATIONS, Q61L AND Q61H, IN RAS STATE 1. **Shigeyuki Matsumoto**, Haruka Taniguchi-Tamura, Mitsugu Araki, Takashi Kawamura, Ryo Miyamoto, Chiemi Tsuda, Yasushi Okuno, Fumi Shima, Takashi Kumasaka, Tohru Kataoka

Protein Structure, Prediction, and Design I (Boards B36 - B53)

205-Pos **Board B36**
MOLECULAR DESIGN FOR RESEARCH AND THERAPEUTICS. **Nikolay V. Dokholyan**

206-Pos **Board B37**
STATISTICAL PROPERTIES OF FOLDED PROTEINS' SEQUENCES: PREDICTING FOLDABILITY AND EFFECT OF MUTATIONS. **Mihaly Mezei**

207-Pos **Board B38**
DESIGN OF GLOBIN-LIKE COMPLICATED FOLDS. **Koya Sakuma**, Kano Suzuki, Takahiro Kosugi, Takeshi Murata, Toshihiko Sugiki, Naohiro Kobayashi, Naoya Kobayashi, Rie Koga, Nobuyasu Koga

208-Pos **Board B39**
EXPLORATION OF NOVEL ALPHA-BETA PROTEIN FOLDS BY *DE NOVO* DESIGN. **Shintaro Minami**, Rie Koga, George Chikenji, Toshihiko Sugiki, Naohiro Kobayashi, Nobuyasu Koga

209-Pos **Board B40**
THE MATHEMATICS OF SECONDARY STRUCTURES IN PROTEINS. **Magdalena D. Toda**, Bhagya Athukorallage

210-Pos **Board B41** **Travel Awardee**
PROTEIN SECONDARY STRUCTURE DETECTION IN INTERMEDIATE-RESOLUTION CRYO-EM MAPS USING DEEP LEARNING. **Sai Raghavendra Maddhuri Venkata Subramaniya**, Genki Terashi, Daisuke Kihara

211-Pos **Board B42**
PROTEIN LOOP MODELING USING DEEP NEURAL NETWORKS ENHANCED BY REINFORCEMENT LEARNING. **Feng Pan**, Yuan Zhang, Chun-Chao Lo, Xiuwen Liu, Jinfeng Zhang

212-Pos **Board B43**
PRODCONN - PROTEIN DESIGN USING A CONVOLUTIONAL NEURAL NETWORK. **Yuan Zhang**, Yang Chen, Chenran Wang, Chun-Chao Lo, Xiuwen Liu, Wu Wei, Jinfeng Zhang

213-Pos **Board B44**
EDES: A PROTOCOL TO GENERATE HOLO-LIKE AND DRUGGABLE PROTEIN CONFORMATIONS STARTING FROM THE APO STRUCTURE. Andrea Basciu, Giuliano Malloci, Panos Koukos, Fabio Pietrucci, Alexandre M.J.J. Bonvin, **Attilio V. Vargiu**

214-Pos **Board B45**
USING SEQUENCE AND STRUCTURE INFORMATION TO ANNOTATE GENE AND PROTEIN FUNCTION. **Benjamin R. Litterer**, Kejue Jia, Sayane Shome, Robert L. Jernigan

215-Pos **Board B46**
IDENTIFICATION OF SWITCH-LIKE FEATURES IN PROTEINS USING SEQUENCE-BASED DESCRIPTORS MODELLED FROM REGIONS IDENTIFIED IN X-RAY CRYSTAL STRUCTURES. **Jonathan Oribello**, Benjy Strauss, Charles Qui, Angelina Huynh, Edgardo Millan, Khai Cao, Ningkun Wang, Brooke Lustig

216-Pos **Board B47**
Travel Awardee
COMPARATIVE PHOTOPHYSICAL STUDIES OF OF MCERULEAN3 AND MTURQUOISE2.1 AS FRET DONORS. **Julie A. Beenken**, Emmanuel Tetteh-Jada, Cody P. Aplin, Taryn M. Kay, Arnold J. Boersma, Ahmed A. Heikal, Erin D. Sheets

217-Pos **Board B48**
LONG-RANGE REGULATION OF CYTOCHROME *C* BINDING TO *BC1* COMPLEX. **Natalie L. Simmons**, Spencer B. Grewe, Oleksandr Kokhan

218-Pos **Board B49**
DEVELOPING A CARBON-CONSERVING PHOTORESPIRATION BYPASS PATHWAY BYPASS PATHWAY THROUGH ANCESTRAL GENOME MINING AND ENGINEERING. **Brian L. Ross**, Devin Trudeau, Arren Bar-Even, Dan Tawfik

219-Pos **Board B50**
COMBINING *IN SILICO* PHYLOGENETIC AND THREADING APPROACHES TO ASSIST THE *IN VITRO* PROTEIN ENGINEERING OF BVMO ENZYMES. **Joseph S. Rebehmed**, Alexandre G. de Brevern

220-Pos **Board B51**
COMPUTATIONAL DESIGN OF A STABLE DIII PENTAMER OF DENGUE VIRUS ENVELOPE PROTEIN AS AN IMMUNOGEN WITH ROSETTA. **Colleen Maillie**, Thanh Thanh Phanh, Brian Kuhlman

221-Pos **Board B52**
MOLECULAR DESIGN OF SOLUBLE ZEIN PROTEIN SEQUENCES. **Mohammad Madani**, Anna Tarakanova

222-Pos **Board B53**
CHARACTERIZATION OF MECHANICS AND TUNABILITY OF RESILIN PROTEIN BY MOLECULAR DYNAMICS SIMULATION. **Mohammad Madani**, Anna Tarakanova

Protein-Small Molecule Interactions I (Boards B54 - B74)

223-Pos Board B54
ILLUMINATING THE STRUCTURAL DETERMINANTS FOR TETRAMERIC ASSEMBLY OF ONCOGENIC CTBP TO GUIDE INHIBITOR DESIGN. **William E. Royer**, Jeffry C. Nichols, Celia A. Schiffer

224-Pos Board B55
CORRELATIONS BETWEEN THERMODYNAMICS AND STRUCTURE OF CARBONIC ANHYDRASE-INHIBITOR BINDING. **Vaida Paketuryte**, Alexey Smirnov, Alberta Jankunaite, Audrius Zaksauskas, Edita Capkauskaite, Daumantas Matulis

225-Pos Board B56 Travel Awardee
LIGAND BINDING, UNBINDING AND ALLOSTERIC EFFECTS: DECIPHERING SMALL MOLECULE MODULATION OF HSP90. **Daniele Di Marino**, Ilda D'Annessa, Stefano Raniolo, Vittorio Limongelli, Giorgio Colombo

226-Pos Board B57
INTERPLAY OF CONFORMATIONAL PLASTICITY AND SUBSTRATE POLYMORPHISM IN MALARIAL TYROSYL-TRNA SYNTHETASE. **Manish Datt**

227-Pos Board B58
ER STRESS DIRECTLY ACTIVATES INFLAMMATORY RESPONSES THROUGH DAMP PRODUCTION. **Ying Fan**, Darren F. Boehning, Askar M. Akimzhanov, Abdikarim Abdullahi, Marc Jeschke

228-Pos Board B59
AN INTEGRATED COMPUTATIONAL APPROACH FOR THE DISCOVERY OF UBIQUITIN SPECIFIC PROTEASE 7 (USP7) INHIBITORS AS POTENTIAL CANCER THERAPIES. **Serdar Durdagi**

229-Pos Board B60
TWO STEP MECHANISM OF AN ACTIVITY-BASED FLUORESCENT PROBE FOR CYCLOOXYGENASE-2. **Andres S. Arango**, Anuj Yadav, Christopher J. Reinhardt, Hannah C. Huff, Liang Dong, Aditi Das, Michael G. Malkowski, Jefferson Chan, Emad Tajkhorshid

230-Pos Board B61
THE EFFECT OF (-)-EPIGALLOCATECHIN-3-GALLATE ON THE AB SECONDARY STRUCTURE. **Atanu Acharya**, Julia Stockmann, Leon Beyer, Andreas Nabers, Klaus Gerwert, James C. Gumbart, Victor S. Batista

231-Pos Board B62
MECHANISM OF PKR ACTIVATION BY SMALL MOLECULES. Stephen J. Hesler, Vicky Godoy, **James L. Cole**

232-Pos Board B63
CRYO-EM AS A TOOL FOR DRUG DEVELOPMENT INVOLVING AN INHIBITOR OF A 29 KDA PROTEIN. **Wei Huang**, Hongyun Li, Joseph M. Ready, Sanford D. Markowitz, Derek J. Taylor

233-Pos Board B64
THE ENTHALPY OF PROTEIN-LIGAND INTERACTION. Asta Zubrien, **Daumantas Matulis**

234-Pos Board B65
DILUTE *VS* NON-DILUTE FLOODING MOLECULAR DYNAMICS SIMULATIONS - WHERE DO WE DRAW THE LINE. **Leticia Stock**, Leonardo Cirqueira, Werner Treptow

235-Pos Board B66
IDENTIFYING LIGAND BINDING SITES OF PROTEINS USING CRYSTALLOGRAPHIC BFACTORS AND RELATIVE POCKET SIZES. Navya Shilpa Josyula, **Constance Jeffery**

236-Pos Board B67
POLYETHYLENE GLYCOL SIZE AND PROTEIN-COMPLEX STABILITY. **Francis J. Lauzier**, Claire J. Stewart, Daniel Harries, Gary J. Pielak, Shannon L. Speer

237-Pos Board B68
THE CONSTRUCTION OF FUNCTIONALIZED BIO-INORGANIC NANOPORES AND ITS APPLICATION. **Sha Wang**, Shuo Huang

238-Pos Board B69
CALCULATION OF BACKBONE AND SIDE CHAIN CONFORMATIONAL ENTROPY CHANGES UPON BINDING OF PROLINE-RICH MOTIFS TO SH3 DOMAIN. **Jie Shi**, Jae-Hyun Cho, Wonmuk Hwang

239-Pos Board B70
STRUCTURAL BASIS OF P97 INHIBITION BY THE ANTI-CANCER COMPOUND CB-5083. **Di Xia**, Wai-Kwan Tang

240-Pos Board B71
FROM BRANCHES TO FIBERS - INVESTIGATING F-ACTIN NETWORKS WITH BIOCHEMISTRY AND MATHEMATICAL MODELING. **Melissa A. Riddle**, Olga Askinazi, Callie Miller, Dorothy Schafer

241-Pos Board B72
ABSOLUTE BINDING FREE ENERGY CALCULATIONS OF DRUGS TO THE HERG CHANNEL FOR THE PREDICTION OF CARDIOTOXICITY. **Tatsuki Negami**, Tohru Terada

242-Pos Board B73
MOLECULAR MECHANISM OF MELATONIN AND SEROTONIN AFFECTING THE AGGREGATION OF AMYLOID-B. **Yehong Gong**, Yu Zou, Qingwen Zhang

243-Pos Board B74 Travel Awardee
INVESTIGATION OF THE IMPACT OF POST-TRANSLATIONAL MODIFICATIONS OF HNRNP A18 ON SMALL MOLECULE INHIBITORS. **Katherine Coburn**, Eduardo Solano-Gonzalez, Braden Roth, Paul T. Wilder, Kristen Varney, France Carrier, David J. Weber

Protein Dynamics and Allostery I (Boards B75 - B96)

244-Pos Board B75
SEARCHING FOR A MECHANISTIC DESCRIPTION OF PAIRWISE EPISTASIS IN PROTEIN SYSTEMS. **Jonathan Barnes**, Kyle Martin, Craig Miller, F. Marty Ytreberg

245-Pos Board B76
MAPPING THE ADENYLATE KINASE REACTION BY TIME-RESOLVED X-RAY SOLUTION SCATTERING. Harsha Ravishankar, Jack Goodman, Martin Nors Pedersen, Michael Wulff, Matteo Levantino, Magnus Wolf-Watz, **Magnus Andersson**

246-Pos Board B77 Travel Awardee
USING FLUORESCENCE CORRELATION SPECTROSCOPY TO ACCURATELY MEASURE PROTEIN CONCENTRATION GRADIENTS IN THE PRESENCE OF NOISE AND PHOTOBLEACHING. **Lili Zhang**, Cécile Fradin

247-Pos Board B78
S195A IS A CATALYTICALLY INACTIVE MUTANT OF THE PROTEASE DOMAIN OF THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR (UPA). **Francis X. Alipranti**, Mahima Masih, Constanza Torres-Paris, Elizabeth A. Komives

248-Pos Board B79
BACKBONE DYNAMICS AND CHEMICAL EXCHANGE OF PEROXIREDOXIN Q FROM *XANTHAMONAS CAMPESTRIS*. **Aidan Estelle**, Patrick N. Reardon, Seth Pinckney, Andrew Karplus, Elisar J. Barbar

249-Pos Board B80
CONFORMATIONAL CONSEQUENCES OF PHOSPHOINOSITIDE BINDING TO DYSFERLIN C2A. **Shauna C. Otto**, Patrick N. Reardon, Tanushri Kumar, Colin P. Johnson

250-Pos **Board B81**
RAS SIGNALING IN THE PI3K/AKT/MTOR PATHWAY. **Ruth Nussinov**, Mingzhen Zhang, Hyunbum Jang

251-Pos **Board B82**
INTERLEUKIN-2 DRUGGABILITY IS MODULATED BY GLOBAL CONFORMATIONAL TRANSITIONS THAT ARE CONTROLLED BY A HELICAL CAPPING SWITCH. **Viviane De Paula**, Kevin M. Jude, Santrupti Nerli, Caleb R. Glassman, K. Christopher Garcia, Nikolaos Sgourakis

252-Pos **Board B83**
HYDROGEN EXCHANGE AND NMR DYNAMICS REVEAL POSITIONS STABILIZED BY P53 RESCUE MUTANTS N239Y AND N235K. **Jenaro Soto**, Colleen L. Moody, Ali Alhoshani, Melanie J. Cocco

253-Pos **Board B84** **Travel Awardee**
CLOCK OUTPUT SERVES DUAL PURPOSE OF GENE REGULATION AND TIME KEEPING. **Joel C. Heisler**, Jeffrey A. Swan, Archana G. Chavan, Carrie L. Partch, Andy LiWang

254-Pos **Board B85**
FROM INDUCING ALLOSTERIC SIGNALING TO EXPLORING THE ALLOSTERIC EFFECT OF SNPS AND ALLOSTERIC POLYMORPHISM. **Wei-Ven Tee**, Enrico Guarnera, Zhen Wah Tan, Igor N. Berezovsky

255-Pos **Board B86**
INVESTIGATING THE RESIDUE-LEVEL DYNAMICS OF THE THROMBIN-THROMBOMODULIN INTERACTION. **Riley B. Peacock**, Taylor McGrann, Elizabeth A. Komives

256-Pos **Board B87**
ASYMMETRY IN DYNAMIC ALLOSTERIC RESIDUE COUPLING (DARC) INTERACTIONS CAPTURES EVOLUTIONARY LANDSCAPE. **Paul Campitelli**, S. Banu Ozkan, Liskin Swint-Kruse

257-Pos **Board B88**
ARE CRYPTIC POCKETS IN B-LACTAMASES FUNCTIONAL?
Catherine R. Knoverek, Shreya Raavicharla, Justin R. Porter, Upasana L. Mallimadugula, Emily Wood, Gregory R. Bowman

258-Pos **Board B89**
REBINDING DYNAMICS OF CO WITH CYTOGLOBIN IN AQUEOUS SOLUTION. Joohyang Shin, Seongchul Park, **Manho Lim**

259-Pos **Board B90**
ROLE OF TRANSIENT HELICITY AND HEAT CAPACITY IN COUPLED FOLDING AND BINDING OF P53TAD TO MDM2 AND MDMX. **Pirada S. Higbee**, Gary W. Daughdrill, Peng Sang, Jianfeng Cai

260-Pos **Board B91** **Travel Awardee**
ELUCIDATING THE ACTIVATING MECHANISM OF GATEKEEPER MUTATIONS ON RECEPTOR TYROSINE KINASES. **Alida Besch**, William Marsiglia, Moosa Mohammadi, Yingkai Zhang, Nate Traaseth

261-Pos **Board B92**
EFFECTS OF HUMANLIKE MUTATIONS ON YEAST ISO-1-CYTOCHROME *C*. **Ariel Frederick**

262-Pos **Board B93**
THE N-TERMINAL FRAGMENT (ATF) REGULATES THE DYNAMICS AND THE ACTIVITY OF THE PROTEASE DOMAIN OF THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR (UPA). **Constanza Torres-Paris**, Lufan Xiao, Yueyi Chen, Francis X. Alipranti, Mahima Masih, Elizabeth A. Komives

263-Pos **Board B94**
REVISITING A CLASSICAL ALLOSTERIC MODEL - EXAMINATION OF AN OBLITERATED INTERFACE. **Antonio Tsuneshige**, Satoru Unzai

264-Pos **Board B95**
DYNAMIC ALLOSTERIC RESIDUE COUPLING REVEALS DISEASE MECHANISM FOR GAUCHER DISEASE AND NSNVS ACROSS THE PROTEOME. **Nicholas Ose**, Brandon M. Butler, Avishek Kumar, S. Banu Ozkan, Sudhir Kumar

265-Pos **Board B96**
DYNAMIC CONSEQUENCES OF INACTIVATING THE CATALYTIC SERINE 195 TO METHIONINE IN THE HUMAN UROKINASE-TYPE PLASMINOGEN ACTIVATOR (UPA). **Mahima Masih**, Francis X. Alipranti, Constanza Torres-Paris, Elizabeth A. Komives

Membrane Protein Dynamics I (Boards B97 - B116)

266-Pos **Board B97**
INVESTIGATING THE DYNAMICS IN VIBRIO CHOLERAE PATHOGENICITY BY SINGLE-MOLECULE PALM AND BAYESIAN STATISTICS. **Eric D. Donarski**, Josh D. Karslake, Lucas Demey, Victor J. DiRita, Julie Biteen

267-Pos **Board B98**
DEVELOPMENT AND IMPLEMENTATION OF A SINGLE-MOLECULE PLATFORM TO STUDY THE MECHANISM OF THE BETA-BARREL ASSEMBLY MACHINE COMPLEX. **Megan E. Mitchell**, Marcelo C. Sousa

268-Pos **Board B99**
INVESTIGATION OF THE SPATIO-TEMPORAL DYNAMICS OF GLUT4 IN CARDIOMYOCYTES. **Anna Magdalena Koester**

269-Pos **Board B100**
CADHERIN EXTRACELLULAR DOMAIN CLUSTERING IN THE ABSENCE OF TRANS-INTERACTIONS. **Connor Thompson**, Vinh H. Vu, Deborah E. Leckband, Daniel K. Schwartz

270-Pos **Board B101**
DETERMINING MEMBRANE PROTEIN INTERACTION KINETICS THROUGH SINGLE-MOLECULE IMAGING AND STOCHASTIC MODELING. Luciana R. de Oliveira, **Khuloud Jaqaman**

271-Pos **Board B102**
HOW DIFFERENT ANIONIC LIPIDS SORT DYNAMICS OF KRAS4B ON MODEL MEMBRANES, POPS VERSUS PIP2 IN MILLISECOND ALL ATOM MOLECULAR DYNAMICS SIMULATIONS. **Van A. Ngo**, Sumantra Sarka, Chris Neale, Angel E. Garcia

272-Pos **Board B103**
THE INFLUENCE OF LIPIDS ON THE ASSEMBLY OF AQUAPORIN Z. **Batiste Thienpont**, James N. Sturgis

273-Pos **Board B104**
DOMAINS OF ACTIVATED GPCRS MEDIATED BY MEMBRANE CURVATURE. Line Lauritsen, Christopher G. Shuttle, **Eleftheria Kazepidou**, Dimitrios Stamou

274-Pos **Board B105**
HIGH SPEED AFM IMAGING OF STRUCTURE AND DYNAMICS OF BACTERIAL ABC TRANSPORTER MSBA DURING LIPID TRANSPORT. **XuanKien Ngo**

275-Pos **Board B106**
EGF SIGNALING IN EPITHELIAL CARCINOMA CELLS UTILIZES HIGHER ORDER ARCHITECTURES OF EGFR AND HER2. **Adam J. Wollman**, Charlotte Fournier, Isabel Llorente-Garcia, Oliver Harriman, Sviatlana Shashkova, Alex Hargreaves, Peng Zhou, Djamila Ouaret, Jenny Wilding, Akihiro Kusumi, Walter Bodmer, Mark C. Leake

276-Pos **Board B107**
BRIDGING BIOCHEMICAL ACTIVITIES WITH CONFORMATIONAL DYNAMICS OBSERVED IN ATOMIC FORCE MICROSCOPY. **Kanokporn Chattrakun**, David P. Hoogerheide, Chunfeng Mao, Linda L. Randall, Gavin King

277-Pos Board B108
DYNAMIC INTERNAL MOTION OF GPCR ON LIVE CELLS. **Masaki Ishihara**, Shoko Fujimura, Kohei Ichiyanagi, Shunsuke Nozawa, Shinichi Adachi, Ryo Fukaya, Masahiro Kuramochi, Hiroshi Sekiguchi, Kazuhiro Mio, Yuji C. Sasaki

278-Pos Board B109
CORRELATION OF HIGH-SPEED AFM AND ELECTROPHYSIOLOGY MEASUREMENTS TO STUDY ION CHANNEL STRUCTURE-FUNCTION RELATIONSHIPS. **Raghavendar Reddy Sanganna Gari**, George R. Heath, Crina M. Nimigean, Simon Scheuring

279-Pos Board B110
CARDIOLIPIN'S DOUBLE LIFE AS A SUBSTRATE AND DYNAMIC REGULATOR IN PRO-APOPTOTIC LIPID PEROXIDATION. Mingyue Li, Abhishek Mandal, Vladimir A. Tyurin, Maria DeLucia, Jinwoo Ahn, Valerian Kagan, **Patrick C.A. van der Wel**

280-Pos Board B111
EXPLORING THE PROTEIN-MEMBRANE INTERACTIONS ON THE INTRACELLULAR SIDE OF PRLR. **Raul Araya-Secchi**, Katrine Bugge, Birthe B. Kragelund, Lise Arleth

281-Pos Board B112
RAS FAMILY MEMBER RIT1 INTERACTS WITH THE MEMBRANE VIA C TERMINAL PEPTIDE TAIL WITHOUT LIPID ANCHOR. **Amy Migliori**

282-Pos Board B113
SINGLE MOLECULE IMAGING OF HIV-1 ENVELOPE DYNAMICS AND GAG LATTICE ASSOCIATION EXPOSES DETERMINANTS RESPONSIBLE FOR VIRUS INCORPORATION. **Nairi Pezeshkian**, Nicholas S. Groves, Schuyler B. van Engelenburg

283-Pos Board B114
AN INVESTIGATION OF THE INFLUENZA HEMAGGLUTININ MEMBRANE FUSION PROCESS USING MICROSECOND-LEVEL MD SIMULATIONS. **Vivek Govind Kumar**, Dylan S. Ogden, Adithya Polasa, Mahmoud Moradi

284-Pos Board B115
PROBING THE FUNCTIONAL RELEVANCE OF THE TIP-TO-TIP ACRAB-TOLC STRUCTURAL MODEL. **Isoiza Ojo**, Yinan Wei

285-Pos Board B116
STRUCTURAL DYNAMICS OF SINGLE METABOTROPIC GLUTAMATE RECEPTOR DIMERS. Robert Quast, Anne-Marinette Cao, Fataneh Fatemi, Linnea Olofsson, Philippe Rondard, Jean Philippe Pin, **Emmanuel Margeat**

Intrinsically Disordered Proteins (IDP) and Aggregates I (Boards B117 - B140)

286-Pos Board B117
INVESTIGATING THE CONFORMATIONAL ENSEMBLES OF INTRINSICALLY-DISORDERED PROTEINS WITH A SIMPLE PHYSICS-BASED MODEL. Yani Zhao, Robin Cortes-Huerto, Kurt Kremer, **Joseph F. Rudzinski**

287-Pos Board B118
COOPERATIVE INHIBITION OF SNARE-MEDIATED VESICLE FUSION BY ALPHA-SYNUCLEIN MONOMER AND OLIGOMER. **Gyeongji Yoo**, Yoonjung Cho, Soojin Park, Nam Ki Lee

288-Pos Board B119 Travel Awardee
MULTIVALENCY OF PROTEINS AND THEIR INTERACTIONS PREDICT THEIR PHASE SEPARATION. **Dan Deviri**, Amy R. Strom, Gary Karpen, Samuel Safran

289-Pos Board B120 Travel Awardee
BIOPHYSICAL CHARACTERIZATION OF COVALENTLY MODIFIED PROTEIN TAU: OLIGOMERS, AGGREGATION, AND TUBULIN INTERACTIONS. **Diana M. Acosta**, David Eliezer

290-Pos Board B121
EXPLORING SERUM PROTEINS TO STABILIZE THE CONFORMATION OF THE PRECURSOR PROTEIN OF ANP. **Yuji Hidaka**, Hayato Ueda, Shigeru Shimamoto

291-Pos Board B122
UNRAVELING THE MECHANISM OF FUNCTIONAL AND PATHOLOGICAL AMYLOID FORMATION FROM INTRINSICALLY DISORDERED PROTEINS. **Mily Bhattacharya**, Anjali Giri, Jaspreet Kaur, Priyanka Dogra, Samrat Mukhopadhyay

292-Pos Board B123
EFFECT OF FAMILIAL ALZHEIMER'S DISEASE MUTATIONS OF THE FOLDING FREE ENERGY OF AMYLOID BETA-PEPTIDE. **Darcy S. Davidson**, Joshua A. Kraus, Julia M. Montgomery, Justin A. Lemkul

293-Pos Board B124
DOMAIN SWAPPING IN CRYSTALLIN PROTEINS CAN DRIVE EARLY STAGES OF CATARACT FORMATION. **Govardhan Reddy Patluri**, Balaka Mondal

294-Pos Board B125
HUNTINGTIN AGGREGATION AND LIPID BINDING ARE INFLUENCED BY PHYSICOCHEMICAL PROPERTIES OF MEMBRANES. **Maryssa Beasley**, Sharon E. Groover, Nicolas C. Frazee, Blake Mertz, Stephen J. Valentine, Justin A. Legleiter

295-Pos Board B126
THE DYNAMISM OF INTRINSICALLY DISORDERED PROTEINS IN LIQUID-LIQUID PHASE SEPARATION. **Samrat Mukhopadhyay**, Anupa Majumdar, Priyanka Dogra, Shiny Maity, Ashish Joshi

296-Pos Board B127
STRUCTURE AND FUNCTION IMPLICATIONS OF CONFORMATIONAL ENSEMBLES CONSISTENT WITH NMR, SAXS, AND SMFRET DATA. THE DISORDERED PROTEIN SIC1 BEFORE AND AFTER MULTISITE PHOSPHORYLATION. **Gregory W. Gomes**, Mickael Krzeminski, Erik W. Martin, Tanja Mittag, Julie D. Forman-Kay, Claudiu C. Gradinaru

297-Pos Board B128
INTRINSICALLY DISORDERED HAX-1 REGULATES PHOSPHOLAMBAN IN MEMBRANES. **Erik K. Larsen**, Daniel Weber, Songlin Wang, Seth L. Robia, Gianluigi Veglia

298-Pos Board B129
THE EFFICACY OF DESIGNED ANTI-MEASLES VIRUS PEPTIDES DEPENDS ON THE STABILITY OF SELF-ASSEMBLED CLUSTERS. **Diogo A. Mendonça**

299-Pos Board B130
SOLUTION SPACE FINGERPRINTS OF INTRINSICALLY DISORDERED REGIONS. **David Moses**, Nora Shamoon, Shahar Sukenik

300-Pos Board B131
METHIONINE OXIDATION ALTERS THE MECHANISM OF AB INTERACTION WITH DMPC BILAYERS. **Christopher Lockhart**, Amy K. Smith, Dmitri K. Klimov

301-Pos Board B132
STRUCTURAL AND PHYSICAL BASIS FOR THE HIGHER AFFINITY TO ONCOPROTEIN MDM2 OF A PEPTIDE SELECTED WITH MRNA DISPLAY OVER TUMOR SUPPRESSOR P53. **Takashi Nagata**, Tatsuya Yamada, Tomohiko Hayashi, Simon Hikiri, Naohiro Kobayashi, Mitsunori Ikeguchi, Masato Katahira, Masahiro Kinoshita, Hiroshi Yanagawa

302-Pos Board B133
SOLUTION NMR INVESTIGATION OF PROLINE-RICH DOMAINS REVEALS MECHANISM OF MODULATION OF SIGNAL TRANSDUCTION. **Ruben D. Elias**, Bhargavi Ramaraju, Lalit Deshmukh

303-Pos Board B134
DISSECTING THE NUCLEAR PORE-LIKE PERMEABILITY BARRIER FUNCTION OF PHASE SEPARATED LIQUID FG NUCLEOPORIN CONDENSATES. **Panagiotis A. Patsis**, Giorgia Celetti, Giulia Paci, Joana Caria, Miao Yu, Tom Scheidt, Virginia VanDelinder, George Bachand, Edward A. Lemke

304-Pos Board B135
STRUCTURAL BASIS OF ALPHA SYNUCLEIN ASSEMBLY TOXICITY INHIBITION BY HUMAN SERUM ALBUMIN. **Rashik Ahmed**, Jinfeng Huang, Adree Khondker, Maikel C. Rheinstadter, Madoka Akimoto, Vincent Huynh, Ryan G. Wylie, Jose C. Bozelli Jr., Richard M. Epand, Giuseppe Melacini

305-Pos Board B136
INVESTIGATING THE BINDING MECHANISMS OF INTRINSICALLY DISORDERED TRANSACTIVATION DOMAINS TO THE TAZ1 DOMAIN OF CBP VIA MOLECULAR DYNAMICS SIMULATION. Meng Gao, Jing Yang, Sen Liu, Zhengding Su, **Yongqi Huang**

306-Pos Board B137
SOLUTION STRUCTURE DETERMINATION OF ARABIDOPSIS THALIANA RALF8 ILLUSTRATES THE USE OF CUTTING-EDGE SOFTWARE DEVELOPED AT THE NATIONAL MAGNETIC RESONANCE FACILITY AT MADISON. **Woonghee Lee**, Marco Tonelli, Ronnie O. Frederick, Miyoshi Haruta, Gabriel Cornilescu, Claudia C. Cornilescu, Michael R. Sussman, John L. Markley

307-Pos Board B138
REGULATING THE ACTIVATION OF ASH1/ASH1L HISTONE METHYLTRANSFERASE BY INTRINSICALLY DISORDERED REGIONS. **Jing Yang**, Meng Gao, Yongqi Huang

308-Pos Board B139
NEAREST NEIGHBOR EFFECTS IN HOMOPEPTIDE SEGMENTS OF SHORT PEPTIDES EXPLORED BY CIRCULAR DICHROISM AND NMR SPECTROSCOPY. **Bridget Milorey**, Harald Schwalbe, Reinhard Schweitzer-Stenner

309-Pos Board B140
ENTROPIC LIMITS OF SIMULTANEOUS BINDING TO T CELL RECEPTOR DISORDERED DOMAINS. **Lara Clemens**, Omer Dushek, Jun F. Allard

DNA Structure and Dynamics I (Boards B141 - B160)

310-Pos Board B141
HIGH-RESOLUTION SINGLE-CELL MODELS OF ENSEMBLE CHROMATIN STRUCTURES DURING DROSOPHILA EMBRYOGENESIS FROM POPULATION HI-C. **Qiu Sun**

311-Pos Board B142
RESTRICTED MOBILITY OF DNA PACKAGED IN PHAGE PHI29 VIRAL PROHEADS ASSESSED BY SINGLE-MOLECULE OPTICAL TWEEZERS MEASUREMENTS OF DNA EXIT. **Mounir Fizari**, Douglas E. Smith

312-Pos Board B143
BACTERIAL NUCLEIC ACID QUADRUPLEX FORMATION. **Lucille H. Tsao**, Amelia Cecere, Hikari Murayama, Sally Shepardson-Fungairino, Megan E. Nunez

313-Pos Board B144
LOOP EXTRUSION IN CHROMATIN: A QUESTION OF TIME! **Ajoy Maji**, Ranjith Padinhateeri, Mithun K. Mitra

314-Pos Board B145
INVESTIGATION OF THE SPIROIMINODIHYDANTOIN LESION'S STRUCTURAL AND DYNAMIC EFFECTS ON AN 11-MER DEOXYRIBONUCLEOTIDE DUPLEX. **Laurie C. Brutus**, Elizabeth Jamieson, Cristina Suarez, Megan E. Nunez

315-Pos Board B146
NON-ERGODIC TRANSPORT AND CONFORMATIONAL DYNAMICS OF DNA IN BIOMIMETIC CYTOSKELETON NETWORKS. **Jonathan Garamella**, Gina Aguirre, Ryan McGorty, Rae Anderson

316-Pos Board B147
DYNAMIC INTERCONVERSIONS BETWEEN G-QUADRUPLEX CONFIGURATIONS IN THE HUMAN BCL-2 PROXIMAL PROMOTER REVEALED BY SINGLE-MOLECULE SPECTROSCOPY. **I-Ren Lee**, Hao-Yi Hsu, Chiao-Ying Chen

317-Pos Board B148
TBA MARKEDLY ALTERS A-TRACT OLIGOS. **Earle Stellwagen**

318-Pos Board B149
INTEGRATIVE MODELING OF NUCLEOSOMES AND SUPRANUCLEOSOMAL STRUCTURES. **Grigoriy Armeev**, Anna Panchenko, Alexey Feofanov, Alexey K. Shaytan

319-Pos Board B150
TWO-METAL ION MECHANISM OF DNA CLEAVAGE IN CRISPR-CAS9. **Giulia Palermo**, Lorenzo Casalino, Martin Jinek

320-Pos Board B151
SINGLE-MOLECULE STUDIES OF SUPRAMOLECULAR DNA STRUCTURE AT 1-NM RESOLUTION. **Phil Haynes**

321-Pos Board B152
MAPPING LATERAL LOOP CONFORMATIONAL SWITCHING OF THE TELOMERIC DNA G-QUADRUPLEX ON NMM PROPHYRIN BINDING USING FLUORESCENT GUANINE ANALOGS. **Jessica Desamero**, Lesley Davenport

322-Pos Board B153
CONFORMATIONAL PREFERENCES OF DNA STRANDS FROM C-MYC PROMOTER REGION. **Lutan Liu**, Congshan Ma, James W. Wells, Tigran V. Chalikian

323-Pos Board B154
AN IMAGE-BASED APPROACH TO THE EVALUATION OF ONCOGENE ACTIVATION EFFECTS ON CELL'S GENOMIC STABILITY. **Elena Cerutti**, Isotta Cainero, Gaetano Ivan Dellino, Mario Faretta, Pier Giuseppe Pelicci, Alberto Diaspro, Luca Lanzano

324-Pos Board B155
DYNAMICS OF THE 1:2:1 AND 1:6:1 C-MYC G-QUADRUPLEXES WITH THE DRUDE POLARIZABLE FORCE FIELD. **Tanner Dean**, Alexa M. Salsbury, Justin A. Lemkul

325-Pos Board B156
THE INCLUSION OF A GCAA TETRALOOP AFFECTS THE UNFOLDING THERMODYNAMICS OF INTRAMOLECULAR DNA STRUCTURES. Irine Khutsishvili, Carolyn E. Carr, **Luis A. Marky**

326-Pos Board B157
USE OF MICROCT SCANNER TO CHARACTERIZE THE HISTOTECHNOLOGICAL PROCESSING OF BONE USING DIFFERENT TISSUE FIXATIVES: RELATIONSHIP TO DNA PRESERVATION (IMMUNOHISTOCHEMISTRY). **Francis G. DeOcampo**, Claude E. Gagna, Anthony N. Yodice, Shaheryar M. Gill, Zabi Khwaja, Megha Gupta, Ilaha Jalilova, Mina Ahsan, Alisha Malhotra, Peter Lambert, Clark Lambert

327-Pos Board B158
SINGLE-MOLECULE MEASUREMENT OF SHORT DSDNA AND A_6-TRACT STIFFNESS AND BENDING USING DNA NUNCHUCKS. **Xinyue Cai**, Deborah K. Fygenson

328-Pos Board B159
A SIMPLE THERMODYNAMIC MODEL FOR DNA-STRAND DISPLACEMENT REACTIONS IN PRESENCE OF BASE-PAIR MISMATCHES. **Patrick Irmisch**, Marius Rutkauskas, Ralf Seidel

329-Pos Board B160 Travel Awardee
INHOMOGENEOUS FORCES IN SEMIFLEXIBLE BIOPOLYMERS. **Ananya Mondal**, Gregory Morrison

RNA Structure and Dynamics (Boards B161 - B179)

330-Pos Board B161
INFLUENCE OF SEQUENCE VARIATION ON RNA 3WJ HELICAL ORIENTATION STUDIED BY HIGH-PRECISION FRET. **Olga Doroshenko**, Hayk Vardanyan, Aiswaria Prakash, Sascha Froebel, Stanislav Kalinin, Simon Sindbert, Oleg Opanasyuk, Christian A. Hanke, Sabine Mueller, Holger Gohlke, Claus A. Seidel

331-Pos Board B162
SINGLE-MOLECULE THREE-COLOR FRET REVEALS MULTI-STATE CONFORMATIONAL DYNAMICS OF RNA FOUR-WAY JUNCTIONS. **Anders Barth**, Christian A. Hanke, Oleg Opanasyuk, Hayk Vardanyan, Simon Sindbert, Stanislav Kalinin, Claus A. Seidel

332-Pos Board B163
RNA STRUCTURAL ENSEMBLES ACT AS A GATE KEEPER OF 3' ALTERNATIVE SPLICING. **Robb S. Welty**, Nils G. Walter

333-Pos Board B164
STRUCTURAL DETERMINANTS OF MRNA TRANSPORT SPECIFICITY IN OLIGODENDROCYTES. **Ved V. Topkar**

334-Pos Board B165
BIOPHYSICAL CHARACTERIZATION OF G-QUADRUPLEX STRUCTURE IN LONG NONCODING RNA NEAT1. **Emily M. Benner**, Mihaela-Rita Mihailescu

335-Pos Board B166
ELUCIDATING THE ROLE OF THE G-QUADRUPLEX STRUCTURE IN THE MATURATION OF A PRE-MICRORNA VARIANT IN ALZHEIMER'S DISEASE. **Joshua A. Imperatore**, McKenna L. Then, Keefe B. McDougal, Mihaela-Rita Mihailescu

336-Pos Board B167
COMPETITION BETWEEN LIGAND BINDING AND TRANSCRIPTION RATE MODULATES RIBOSWITCH-MEDIATED REGULATION OF TRANSCRIPTION. Adrien Chauvier, **Pujan Ajmera**, Nils G. Walter

337-Pos Board B168
SOLVATION EFFECTS IN RNA SYSTEMS. **Clark Templeton**

338-Pos Board B169
CAPTURING THE INFLUENCE OF SOLVENT AND NEIGHBORING RESIDUES IN A FIXED-CHARGE FORCE FIELD FOR RNA. **Chapin E. Cavender**, Louis G. Smith, Alan Grossfield, David H. Mathews

339-Pos Board B170
QUANTITATIVE ANALYSIS OF SALT-INDUCED RNA DUPLEX VARIATIONS BY WIDE-ANGLE X-RAY SCATTERING (WAXS). **Yen-Lin Chen**, Lois Pollack

340-Pos Board B171
EXPLORING THE ION-MEDIATED RNA INTERACTIONS OF A HELIX-JUNCTION-HELIX RNA MODEL THROUGH WELL-TEMPERED METADYNAMICS SIMULATIONS. **Diego E. Kleiman**, Nawavi Naleem, Serdal Kirmizialtin

341-Pos Board B172 Travel Awardee
ROLE OF METAL IONS IN RNA TETRALOOP HAIRPIN MOTIF FORMATION. **Antarip Halder**, Sunil Kumar, Govardhan Reddy Patluri

342-Pos Board B173
PROBING MG^{+2}-MEDIATED RNA-RNA INTERACTIONS IN THE PRESENCE OF METABOLITES. **Derrick R. Lin**, Suzette A. Pabit, Lois Pollack

343-Pos Board B174
EFFECT OF MG^{2+} IONS ON TPP RIBOSWITCH APTAMER FOLDING. **Sunil Kumar**, Govardhan Reddy

344-Pos Board B175
EFFECT OF PRESSURE ON RNA G-QUADRUPLEX STRUCTURES. **Balasubramanian Harish**, Roland Winter, Catherine A. Royer

345-Pos Board B176
UNDERSTANDING THE SHAPE REAGENT BINDING FROM RNA DYNAMICS. **Fengfei Wang**, Xiaojun Xu

346-Pos Board B177
QUANTIFYING STRUCTURAL DIVERSITY OF CNG TRINUCLEOTIDE REPEATS USING DIAGRAMMATIC ALGORITHMS. **Ethan Phan**, Chi H. Mak

347-Pos Board B178
DISCOVERING DESIGN PRINCIPLES TO RE-ENGINEER FUNCTIONAL RNA ELEMENTS. **Alex Plumridge**, Lois Pollack

348-Pos Board B179
FUNCTIONAL AND TEMPLATING ABILITY OF FLUORESCENT RNA APTAMERS IN POSSIBLE PREBIOTIC CONDITIONS. **Ranajay Saha**, Samuel Verbanic, Irene A. Chen

Protein-Nucleic Acid Interactions I (Boards B180 - B212)

349-Pos Board B180
EXPLORATION OF CONFIGURATIONAL AND TOPOLOGICAL PROPERTIES OF MINICHROMOSOMES USING ELASTIC ENERGY OPTIMIZATIONS AT THE DNA BASE-PAIR LEVEL. **Robert T. Young**, Wilma K. Olson

350-Pos Board B181
E. COLI SINGLE STRANDED BINDING PROTEIN (SSB) SELF-REGULATES WRAPPING OF SSDNA THROUGH COMPETITIVE BINDING. M. Nabuan Naufer, Michael Morse, **Gudfridur B. Moller**, James McIsaac, Ioulia Rouzina, Penny J. Beuning, Mark C. Williams

351-Pos Board B182
REGULATION OF NEAREST-NEIGHBOR COOPERATIVE BINDING OF *E.COLI* SSB PROTEIN TO SSDNA BY ITS INTRINSICALLY DISORDERED REGIONS. **Alexander G. Kozlov**, Min Kyung Shinn, Timothy M. Lohman

352-Pos Board B183
SINGLE MOLECULE BINDING DYNAMICS OF LINE-1 ORF1P TO SSDNA. **Benjamin A. Cashen**, M. Nabuan Naufer, Charlie E. Jones, Anthony V. Furano, Mark C. Williams

353-Pos Board B184
SLIDING, FAST AND SLOW: DISTINCT DIFFUSION MECHANISMS OF EUKARYOTIC AND PROKARYOTIC DNA CLAMPS. **Jejoong Yoo**, Sang Hak Lee

354-Pos Board B185
SINGLE-MOLECULE IMAGING OF PAF15-PCNA USING DNA SKYBRIDGE. **Daehyung Kim**, Alfredo D. biasio, Amaia Gonzalez-Magaña, Gayun Bu, Fahad Rashid, Samir Hamdan, Francisco Blanco, Jong-Bong Lee Lee

355-Pos **Board B186**
UNCOVERING THE MOLECULAR BASIS FOR SEQUENCE-DEPENDENT TRANSLOCATION IN A SUPERFAMILY 2 HELICASE USING HIGH-RESOLUTION NANOPORE TWEEZERS. **Jonathan M. Craig**, Sinduja K. Marx, Andrew H. Laszlo, Ian C. Nova, Hwanhee C. Kim, Jesse R. Huang, Sarah J. Abell, Jens H. Gundlach

356-Pos **Board B187**
DIRECT MEASUREMENT OF STEPPING DYNAMICS OF E. COLI UVRD HELICASE. **Sean P. Carney**, Kevin D. Whitley, Wen Ma, Haifeng Jia, Timothy M. Lohman, Zaida Luthey-Schulten, Yann R. Chemla

357-Pos **Board B188**
MOLECULAR MECHANISM OF CONFORMATIONAL SWITCHING THAT REGULATES HELICASE FUNCTION. **Wen Ma**, Sean Carney, Yann R. Chemla, Zaida Luthey-Schulten, J. Andrew McCammon

358-Pos **Board B189**
THE NUCLEASE DOMAIN OF RECBCD INFLUENCES DNA BINDING AND HELICASE ACTIVITY. **Nicole T. Fazio**, Linxuan Hao, Timothy M. Lohman

359-Pos **Board B190**
SV40 LARGE T ANTIGEN HELICASE UNWINDS DOUBLE-STRANDED DNA IN SINGLE-NUCLEOTIDE STEPS AS REVEALED BY NANOPORE TWEEZERS. **Christopher A. Thomas**, Jonathan M. Craig, Andrew H. Laszlo, Ian C. Nova, Sherry Xie, Jesse R. Huang, Hwanhee C. Kim, Sarah J. Abell, Hasan Yardimci, Jens H. Gundlach

360-Pos **Board B191**
ROLE OF ATP IN ALLOSTERIC REGULATION OF THE DNA CLEAVAGE PROCESS IN YEAST TOPOISOMERASE IIA. **Stefania Evoli**, Jeffery M. Wereszczynski

361-Pos **Board B192**
DOMAIN RIGIDITY MODULATES THE CATALYTIC ACTIVITY OF *E. COLI* TYPE IA DNA TOPOISOMERASES. **Yeonee Seol**, Yuk-Ching Tse Dinh, Keir C. Neuman

362-Pos **Board B193**
DISCOVERY OF NOVEL DNA GYRASE INHIBITORS AGAINST SALMONELLA TYPHI USING STRUCTURE BASED DRUG DELIVERY APPROACH. **Arti Kapil**, Priyanka Sharma, Punit Kaur, Manoj Kumar, Sushila Dahiya, Seema Sood, Bimal Das

363-Pos **Board B194**
INVESTIGATING THE ROLE OF MSH4-MSH5 ATPASE ACTIVITY DURING HOMOLOGOUS RECOMBINATION. **Zane Lombardo**, Sudipta Lahiri, Bharat Lakhani, Manju M. Hingorani, David L. Beveridge, Ishita Mukerji

364-Pos **Board B195**
SINGLE-MOLECULE MAGNETIC TWEEZERS CHARACTERIZATION OF MTERF1 AS A DIRECTIONAL ROADBLOCK. **Eugeniu Ostrofet**, Flavia Stal Papini, Britney Johnson, Jamie J. Arnold, Craig E. Cameron, David Dulin

365-Pos **Board B196**
HIV RESTRICTION FACTOR APOBEC3G BINDS SINGLE STRANDED DNA IN MULTIPLE CONFORMATIONS WHILE SEARCHING FOR TARGET DEAMINATION SITES. **Michael Morse**, M. Nabuan Naufer, Yuqing Feng, Linda Chelico, Ioulia Rouzina, Mark C. Williams

366-Pos **Board B197**
SINGLE-MOLECULE STUDIES OF HIV-1 GAG ASSEMBLY. **Raymond F. Pauszek**, Arishma Singh, Jonathan Kitzrow, Shuohui Liu, Karin Musier-Forsyth, David P. Millar

367-Pos **Board B198**
PROBING THE BINDING MECHANISM OF DNA POLYMERASE KAPPA TO DNA USING OPTICAL TWEEZERS. **Joshua Watts**, Samer Lone, Thayaparan Paramanathan

368-Pos **Board B199**
INTRINSIC DISORDER DIRECTS TWO DISTINCT DIMERS OF THE MASTER TRANSCRIPTION FACTOR PU.1. Suela Xhani, Sangchoon Lee, Markus W. Germann, **Gregory M. Poon**

369-Pos **Board B200**
POSITIVE SUPERCOILING AHEAD OF RNA POLYMERASE AIDS EXIT FROM PROTEIN-MEDIATED LOOPS. **Wenxuan Xu**, Yan Yan, David Dunlap, Laura Finzi

370-Pos **Board B201**
TRANSCRIPTIONAL OBSTACLES MODIFY REPETITIVE ELONGATION. **Yan Yan**, Wenxuan Xu, Jin Qian, Irina Artsimovitch, David Dunlap, Laura Finzi

371-Pos **Board B202**
STRUCTURAL BASIS OF 7SK RNA 5'-GAMMA-PHOSPHATE METHYLATION AND RETENTION BY MEPCE. **Yuan Yang**, Catherine D. Eichhorn, Yaqiang Wang, Duilio Cascio, Juli Feigon

372-Pos **Board B203**
A HIGH-THROUGHPUT PLATFORM CHARACTERIZES FUNCTIONAL EFFECTS OF TRANSCRIPTION FACTOR MUTATIONS. **Arjun K. Aditham**, Nicole V. DelRosso, Polly Fordyce

373-Pos **Board B204**
CHARACTERIZATION OF THE NOVEL DNA BINDING ACTIVITY OF THE BRG1 AT-HOOK-BROMODOMAIN. **Julio C. Sanchez**, Liyang Zhang, Miles Pufall, Catherine A. Musselman

374-Pos **Board B205**
INVESTIGATING THE NOVEL NUCLEIC ACID BINDING ACTIVITY OF POLYBROMO-1 BROMODOMAINS. **Saumya M. De Silva**, Nicholas J. Schnicker, Catherine A. Musselman

375-Pos **Board B206**
REGULATION OF VIRAL PACKAGING MOTORS GRIP ON DNA AND DISCOVERY OF A DNA "END-CLAMP" MECHANISM. Mariam Ordyan, Mounir Fizari, Jo-fan Chien, Brandon Rawson, **Douglas E. Smith**

376-Pos **Board B207**
CHARACTERISTIC INTERACTIONS BETWEEN BRCA2 AND G-QUADRUPLEX STRUCTURES FOR TELOMERE MAINTENANCE. **Keewon Sung**, Junyeop Lee, So Young Joo, Hyunsook Lee, Seong Keun Kim

377-Pos **Board B208**
IN SILICO STUDIES ON FUNCTIONAL SIGNIFICANCE OF MULTIPLE BINDING CONFIGURATIONS OF BACTERIAL NUCLEOID ASSOCIATED PROTEIN-DNA ASSEMBLIES. **Min-Yeh Tsai**, Weihua Zheng, Mingchen Chen, Peter G. Wolynes

378-Pos **Board B209**
CHROMATIN FOLDING UNDER DIFFERENT NUCLEAR CONFINEMENT. **Samira Mali**, Alan Perez-Rathke, Qiu Sun, Gamze Gürsoy, Jie Liang

379-Pos **Board B210** **Travel Awardee**
COARSE-GRAINED MODELING OF PRC2-MEDIATED INTER-NUCLEOSOMAL INTERACTIONS. **Xingcheng Lin**, Rachel Leicher, Eva Ge, Matthew J. Reynolds, Thomas Walz, Tom Muir, Shixin Liu, Bin Zhang

380-Pos **Board B211**
UNDERSTANDING PROTEIN-DNA RECOGNITION IN THE CONTEXT OF MULTI-SCALE GENOME ORGANIZATION. **Remo Rohs**

381-Pos **Board B212**
FLUORESCENT PROTEIN AS A DNA STAINING DYE. **Kyubong Jo**

Membrane Physical Chemistry I (Boards B213 - B237)

382-Pos Board B213
*SULFOLOBUS ACIDOCALDARIUS*MICROVESICLES EXHIBIT UNUSUAL PHYSICAL PROPERTIES. **Alexander P. Bonanno**, Parkson L-G. Chong

383-Pos Board B214
THERMODYNAMIC AND MORPHOLOGICAL PROPERTIES OF TRASTUZUMAB REGULATED BY THE LIPID COMPOSITION OF CELL MEMBRANE MODELS AT THE AIR-WATER INTERFACE. **Luciano Caseli**, Andrei Sakai, Ana Paula de Sousa Mesquita, Helena B. Nader, Carla C. Lopes, Waka Nakanishi, Katsuhiko Ariga

384-Pos Board B215
FAR FROM INERT - DRUG LIPIDATION IN MEMBRANES. Hannah M. Britt, Jackie A. Mosely, **John M. Sanderson**

385-Pos Board B216
HIGH CONTENT IMAGING TO IDENTIFY MODULATORS OF MEMBRANE PHASE BEHAVIOR. **Nico Fricke**, Ajit Tiwari, Krishnan Raghunathan, Hui Huang, Ricardo F. Capone, Charles R. Sanders, Anne K. Kenworthy

386-Pos Board B217
HOMEOVISCOUS ADAPTATION IN MAMMALIAN CELL MEMBRANES IN RESPONSE TO DIETARY LIPID PERTURBATIONS IS NECESSARY FOR CELL SURVIVAL. **Kandice R. Levental**, Jessica L. Symons, Yang-Yi Fan, Robert Chapkin, Robert Ernst, Ilya Levental

387-Pos Board B218
PARTIALLY AUTOMATED IDENTIFICATION OF CURVATURE-SENSITIVE COLLECTIVE LIPID STRUCTURE. Andrew H. Beaven, Kayla Sapp, **Alexander J. Sodt**

388-Pos Board B219
EFFECT OF DIPOLE MOMENT ON AMPHIPHILE SOLUBILITY AND PARTITION INTO LIQUID ORDERED AND LIQUID DISORDERED PHASES IN LIPID BILAYERS. Renato M.S. Cardoso, Patricia A.T. Martins, Ricardo J.B. Leote, Kalbe Razi Naqvi, Winchil L.C. Vaz, **Maria Joao Moreno**

389-Pos Board B220
ADSORPTION AND PERMEATION OF PORPHYRINS THROUGH LIPID MEMBRANE. **Irene Jiménez Munguía**, Arsenii Fedorov, Ivan Meshkov, Yuri Ermakov, Yulia Gorbunova, Valerij Sokolov

390-Pos Board B221
FUNCTIONALIZED POLYSTYRENE NANOPARTICLES ALTER THE STRUCTURE AND STABILITY OF MODEL CELL MEMBRANES. Paige Ashey, David Van Doren, **Shelli L. Frey**

391-Pos Board B222
SPHINGOMYELIN NANODOMAINS MAINLY CONSTITUTE LIQUID-ORDERED PHASE OF TERNARY MODEL MEMBRANE. **Michio Murata**, Shinya Hanashima, Yo Yano, Tomokazu Yasuda, Hiroshi Tsuchikawa, Nobuaki Matsumori, Masanao Kinoshita, J.P Slotte

392-Pos Board B223
CO-EXISTING GEL AND FLUID PHASES IN BILAYERS CONTAINING CERAMIDE AND CHOLESTEROL. **Alicia Alonso**, Emilio González-Ramírez, Aritz B. Garcia- Arribas, Felix M. Goni

393-Pos Board B224
COMPUTATIONAL INSIGHTS INTO THE MECHANISM AND REGULATION OF MEMBRANE DOMAIN REGISTRATION/ANTI-REGISTRATION. **Xubo Lin**, Siya Zhang

394-Pos Board B225
BODIPY-BASED PHOTOSENSITIZER FOR PHOTODYNAMIC THERAPY - PHOTOPHYSICS AND MEMBRANE LOCALISATION VIA CLASSICAL MOLECULAR DYNAMICS AND SURFACE HOPPING. **Lukasz Cwiklik**, Marek Pederzoli, Mirza Wasif Baig, Mojmír Kývala, Jiří Jiří Pittner

395-Pos Board B226
DROPLET INTERFACE BILAYERS AS A PHYSICO-CHEMICAL TOOL TO ASSESS AND INVESTIGATE THE CELLULAR MEMBRANE CROSSING OF SMALL MOLECULES. **Vincent Faugeras**, Olivier Duclos, Didier Bazile, Abdou Rachid Thiam

396-Pos Board B227
ATOMIC FORCE MICROSCOPY REVEALS STRUCTURES OF DRIED FATTY ACIDS AND CONNECTIONS TO AMINO ACID POLYMERIZATION. **Brenda L. Kessenich**, Zachary R. Cohen, James J. De Yoreo, Sarah L. Keller, Roy A. Black

397-Pos Board B228
HOW UREA COUNTERACTS TRIMETHYLAMINE N-OXIDE INDUCED ATTRACTION BETWEEN LIPID MEMBRANES. **Yuri Shakhman**, Christoph Allolio, Shahar Sukenik, Daniel Harries

398-Pos Board B229 Travel Awardee
WATER AND MEMBRANE LIPIDS GOVERN G-PROTEIN ACTIVATION. **Anna R. Eitel**, Nipuna Weerasinghe, Steven D. Fried, Suchithranga M. Perera, Emily L. Cosgriff, Gabrielle I. Fitzwater, Helen F. Mann, Andrey V. Struts, Michael F. Brown

399-Pos Board B230
BALANCING ADVECTION AND DIFFUSION IN FLOW TRANSPORT OF MEMBRANE PROTEINS. **Aurelia R. Honerkamp-Smith**, Amanda Ratajczak, Xaymara Rivera Gonzalez, Autumn Anthony

400-Pos Board B231
CRYOPROTECTANTS DISRUPT HYDROGEN-BOND NETWORKS AT THE LIPID-WATER INTERFACE. Ravi K. Venkatraman, **Carlos R. Baiz**

401-Pos Board B232
INORGANIC NANOPARTICLES CHALLENGING LAMELLAR AND NON-LAMELLAR MODEL MEMBRANES. Lucrezia Caselli, Costanza Montis, Andrea Ridolfi, Emil Gustafsson, Nina-Juliane Steinke, Debora Berti, **Tommy Nylander**

402-Pos Board B233
FINE TUNING OF BILAYER-SUBSTRATE SEPARATION. **David P. Hoogerheide**, Dennis J. Michalak, Mathias Loesche

403-Pos Board B234
ELECTROSTATICS AT PEPTIDE-LIPID INTERFACE IN NANO-BIO HYBRID SYSTEMS BY SPIN-LABELING EPR. **Tatyana I. Smirnova**, Erkang Ou, Maxim A. Voinov, Alex Irving, Alex Smirnov

404-Pos Board B235 Travel Awardee
QUANTIFIED EFFICIENCY OF MEMBRANE LEAKAGE EVENTS RELATES TO ANTIMICROBIAL SELECTIVITY. Anja Stulz, Stefan Braun, Shuai Shi, Ndjali Quarta, **Maria Hoernke**

405-Pos Board B236
NANOSECOND LIFE CYCLE OF BIOMEMBRANE ELECTROPORATION: EXPERIMENTAL VALIDATION OF MOLECULAR MODEL. **Esin B. Sozer**, Sourav Haldar, Federica Castellani, P. Thomas Vernier, Joshua Zimmerberg

406-Pos Board B237
THE ROLE OF DISORDERED PROTEINS IN MEMBRANE CURVATURE SENSING DURING ENDOCYTOSIS. **Wade F. Zeno**, Wilton T. Snead, Liping Wang, Ajay S. Thatte, Jacob B. Hochfelder, Eileen M. Lafer, Jeanne C. Stachowiak

Membrane Dynamics I (Boards B238 - B262)

407-Pos **Board B238**
SPONTANEOUS COMPARTMENTALIZATION IN ADHERENT ARTIFICIAL CELLS. **Karolina Spustova**, Elif S. Koksal, Alar Ainla, Irep Gozen

408-Pos **Board B239**
SURFACE-ASSISTED SELF-ASSEMBLY OF FATTY ACIDS TO CELL-LIKE COMPARTMENTS. **Inga Põldsalu**, Elif S. Koksal, Irep Gozen

409-Pos **Board B240** **Travel Awardee**
MILD TEMPERATURE GRADIENTS MAY HAVE ENHANCED THE GROWTH AND FUSION OF PROTOCELLS ON THE EARLY EARTH. **Elif S. Koksal**, Lauri Viitala, Irep Gozen

410-Pos **Board B241**
VESICLE BUDDING INDUCED BY THE ASYMMETRIC MEMBRANE INSERTION OF A SURFACTANT IS LIMITED BY AN OSMOTIC BARRIER. **Michael Kaiser**, Ndjali Quarta, Annette Meister, Heiko Heerklotz

411-Pos **Board B242**
ASYMMETRIC MEMBRANES AND THE STUDY OF LIPID MOVEMENT ACROSS SINGLE LIPID BILAYERS. **Ursula A. Perez-Salas**, Yangmingyue Liu, Lionel Porcar

412-Pos **Board B243**
EXTENSIVE TEST OF HYDROGEN MASS REPARTITIONING ON MD SIMULATIONS OF LIPID MEMBRANES. **Chun Hon Lau**, Yi Wang

413-Pos **Board B244** **Travel Awardee**
GENERALIZATION OF THE KELVIN EQUATION AND MACROMOLECULAR SURFACES. **David V. Svintradze**

414-Pos **Board B245**
ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS OF GANGLIOSIDE GM1 AND ITS DEGRADATION PRODUCTS. **Andrew H. Beaven**, Alexander J. Sodt

415-Pos **Board B246**
CHARACTERIZATION OF SPECIFIC ION EFFECTS ON PI(4,5)P2 CLUSTERING USING MOLECULAR DYNAMICS SIMULATIONS AND GRAPH-THEORETIC ANALYSIS. **Kyungreem Han**, Arne Gericke, Richard W. Pastor

416-Pos **Board B247**
A MICROSCOPIC PICTURE OF CALCIUM-ASSISTED LIPID DEMIXING AND MEMBRANE REMODELING USING MULTI-SCALE SIMULATIONS. **Abhilash Sahoo**, Silvina Matysiak

417-Pos **Board B248**
CONTINUUM-MODELING SOFTWARE FOR MODELING THE DYNAMICS OF ARBITRARY TOPOLOGY MEMBRANES. **Kayla Sapp**, Alexander J. Sodt

418-Pos **Board B249**
TRANSMEMBRANE PEPTIDE INSERTION AFFECTS MEMBRANE INTERFACIAL DYNAMICS. **Jennifer C. Flanagan**, Carlos R. Baiz

419-Pos **Board B250**
MEMBRANE VISCOSITY AND LIPID DIFFUSION IN A MODEL BILAYER MEASURED AT MOLECULAR SCALES. **Michihiro Nagao**, Elizabeth G. Kelley, Takeshi Yamada, Antonio Faraone, Kaoru Shibata, Paul D. Butler

420-Pos **Board B251**
HIERARCHICAL MEMBRANE DYNAMICS IN PHASE-SEPARATED MODEL MEMBRANES. **Saptarshi Chakraborty**, Jan Michael Y. Carrillo, Elizabeth G. Kelley, Frederick A. Heberle, John Katsaras, Bobby G. Sumpter, Michihiro Nagao, Rana Ashkar

421-Pos **Board B252**
BREAKDOWN OF THE COUPLING BETWEEN THE LIPID MEMBRANE DYNAMICS OF DIFFERING HIERARCHICAL LEVELS. Cheng-Zhi Xie, Shih-Ming Chang, Eugene Mamontov, Laura R. Stingaciu, **Yi-Fan Chen**

422-Pos **Board B253**
FAST DYNAMICS OF LIPID MIXTURES INVESTIGATED WITH VIBRATIONAL SPECTROSCOPY. **Mason L. Valentine**, Alfredo E. Cardenas, Ron Elber, Carlos R. Baiz

423-Pos **Board B254**
ELASTIC MODULI AND COLLECTIVE DYNAMICS OF PHOSPHOLIPIDS ARE REVEALED BY SOLID-STATE ^{2}H NMR SPECTROSCOPY. **Trivikram R. Molugu**, K. J. Mallikarjunaiah, Horia I. Petrache, Saptarshi Chakraborty, Rana Ashkar, Michael F. Brown

424-Pos **Board B255**
SCALING RELATIONSHIPS FOR THE MECHANICAL PROPERTIES OF MIXED LIPID MEMBRANES. **Elizabeth G. Kelley**, Paul D. Butler, Michihiro Nagao

425-Pos **Board B256**
THE RELATIONSHIP BETWEEN THE COMPRESSIBILITY MODULI OF THE BILAYER AND ITS LEAFLETS - NOT SIMPLE BUT IMPORTANT. **Milka Doktorova**, Faezeh Darbaniyan

426-Pos **Board B257**
STIFFENING OF PHOSPHOCHOLINE MEMBRANES BY CHOLESTEROL. Saptarshi Chakraborty, Trivikram R. Molugu, Milka Doktorova, Frederick A. Heberle, Haden L. Scott, Elizabeth G. Kelley, Michihiro Nagao, Boris G. Dzikovski[10], Robert F. Standaert[11], Francisco N. Barrera, John Katsaras[12], George Khelashvili[13], Michael F. Brown, **Rana Ashkar**

427-Pos **Board B258**
LPS-INDUCED BILAYER DEFORMATION IS MODULATED WITH INCREASING LIPID MEMBRANE COMPLEXITY. **Loreen R. Stromberg**, James H. Werner, Gabriel A. Montano, Harshini Mukundan

428-Pos **Board B259**
MECHANISTIC INSIGHTS IN THE INTERACTION OF CHEMICALS WITH SURFACTANT MEMBRANE MODELS *IN VITRO*. **Emilie Da Silva**, Chiara Autilio, Karin S. Hougaard, Anders Baun, Antonio Cruz, Jesus Perez-Gil, Jorid Birkelund Sørli

429-Pos **Board B260** **Travel Awardee**
MILD HYPOTHERMIA ENHANCES LUNG SURFACTANT ACTIVITY: DELVING INTO THE MOLECULAR MECHANISMS. **Chiara Autilio**, Mercedes Echaide, Cristina Garcia-Mouton, Alberto Hidalgo, Antonio Cruz, Daniele De Luca, Jesus Perez-Gil

430-Pos **Board B261**
USING A MODEL LYSOSOME MEMBRANE TO STUDY NANOMATERIAL-MEMBRANE INTERACTIONS. **Donald S. Anderson**, Matthew J. Sydor, Harmen B. Steele, Becky Kendall, Sandy Ross, Andrij Holian

431-Pos **Board B262**
DYNAMIC NANOSCALE REORGANIZATION OF LIPID MOLECULES AND NANOPARTICLES REVEALED BY PLASMONIC GAP RESONANCE SPECTROSCOPY. **Matthew R. Cheetham**, Bart de Nijs, Jack P. Griffiths, Stephen D. Evans, Jeremy J. Baumberg, Rohit Chikkaraddy

Membrane Structure I (Boards B263 - B287)

432-Pos **Board B263**
THE STRUCTURAL BASIS FOR STABILIZATION OF PULMONARY SURFACTANT FILMS BY SUBPHASE MATERIAL. Konstantin Andreev, Michael W. Martynowycz, Ivan Kuzmenko, Stephen B. Hall, **David Gidalevitz**

433-Pos Board B264
MODIFYING THE CHARMM36 LIPID FORCE FIELD FOR LJ-PME SIMULATIONS. **Yalun Yu**, Andreas Krämer, Jeffery B. Klauda, Richard W. Pastor

434-Pos Board B265
UPDATE OF THE CHARMM36 UNITED ATOM CHAIN MODEL FOR LIPIDS. Yalun Yu, **Jeffery B. Klauda**

435-Pos Board B266
EMBRACING BIOLOGICAL COMPLEXITY IN ATOMISTIC SIMULATIONS OF CELLULAR MEMBRANES. **Noah Trebesch**, Emad Tajkhorshid

436-Pos Board B267
PARTITIONING OF LIPIDS BETWEEN DOMAINS IN MODEL MEMBRANES STUDIED BY COARSE-GRAINED MD SIMULATIONS. **Alexander Q. Phillips**, Samuel W. Canner, Stephen R. Wassall

437-Pos Board B268
MEMBRANE CONSTRICTION AND THINNING BY SEQUENTIAL ESCRT-III POLYMERIZATION. **Henry C. Nguyen**, Nathaniel Talledge, John McCullough, Abhimanyu Sharma, Frank R. Moss, Janet Iwasa, Michael Vershinin, Wesley I. Sundquist, Adam Frost

438-Pos Board B269
EXPLORING STRUCTURES AT AIR-WATER INTERFACES AT BEAMLINE P08, PETRA III. **Chen Shen**, Florian Bertram, Rene Kirchhof

439-Pos Board B270
MODEL ASYMMETRIC PLASMA MEMBRANE EXHIBITS A MICROEMULSION IN BOTH LEAVES PROVIDING A FOUNDATION FOR "RAFTS". **Michael Schick**, David Allender, Ha Giang

440-Pos Board B271
CHARACTERIZATION OF ASYMMETRIC PHOSPHOINOSITIDE/LIPID VESICLES. **Olivia K. Hunker**, Arne Gericke, Alonzo H. Ross

441-Pos Board B272
SELF-ASSEMBLY OF LIPID PEROXIDATION IN WATER. **Minchakarn Janlad**, Phansiri Boonnoy, Jirasak Wong-Ekkabut

442-Pos Board B273 Travel Awardee
LIPID SCRAMBLING OF ASYMMETRIC LIPOSOMES INDUCED BY MEMBRANE ACTIVE SUBSTANCES. **Lisa Dietel**, Louma Kalie, Heiko H. Heerklotz

443-Pos Board B274
FORMALLY CORRECT SOLUTIONS TO LOCAL STRESS EQUATION CAN BE NON-PHYSICAL. **Otto Schullian**, Reinhard Lipowsky, Markus S. Miettinen

444-Pos Board B275 Travel Awardee
ELECTROSTATIC AND LIPID PACKING EFFECTS ON THE BINDING OF MILK FAT GLOBULE EGF FACTOR 8 TO PHOSPHOLIPID MEMBRANES. **Tiffany Suwatthee**, Daniel H. Kerr, Ka Yee C. Lee

445-Pos Board B276
LIPID NANOTUBES AND DOUBLE-MEMBRANE SHEETS INDUCED BY OSMOTIC DEFLATION OF GIANT UNILAMELLAR VESICLES ENCAPSULATING AQUEOUS TWO-PHASE SOLUTIONS. **Ziliang Zhao**, Debjit Roy, Jan Steinkühler, Roland L. Knorr, Tom Robinson, Reinhard Lipowsky, Rumiana Dimova

446-Pos Board B277
THE THERMOTROPIC BEHAVIOR OF SATURATED PHOSPHOCHOLINES IN THE PRESENCE OF STEROID SAPONINS. **Svetlana S. Efimova**, Olga S. Ostroumova

447-Pos Board B278
COUPLING OF LEAFLET STRUCTURE IN ASYMMETRIC LIPID VESICLES. **Moritz P. Frewein**, Haden L. Scott, Milka Doktorova, Frederick A. Heberle, Yuri Gerelli, Lionel Porcar, Georg Pabst

448-Pos Board B279
PLASMA MEMBRANE PACKING ASYMMETRY DRIVES TRANSMEMBRANE PROTEIN LOCALIZATION. **Joseph H. Lorent**, Lakshmi Ganesan, Edward R. Lyman, Kandice R. Levental, Ilya Levental

449-Pos Board B280
LIPID BILAYERS INFLUENCED BY TAURIN AND BETAIN. **Sergio D. Funari**, Alexander Schoekel, Sigrid Bernstorff

450-Pos Board B281
VITAMIN E'S AFFINITY FOR POLYUNSATURATED PHOSPHOLIPIDS STUDIED BY ALL-ATOM MD SIMULATIONS. **Samuel W. Canner**, Alexander Q. Phillips, Scott I. Feller, Stephen R. Wassall

451-Pos Board B282
SPONTANEOUS CURVATURE, DIFFERENTIAL STRESS, AND BENDING MODULUS OF ASYMMETRIC LIPID MEMBRANES. **Amirali Hossein**, Markus Deserno

452-Pos Board B283
CELL-DERIVED PLASMA MEMBRANE VESICLES ARE PERMEABLE TO HYDROPHILIC MACROMOLECULES. **Blanca B. Diaz-Rohrer**, Allison Skinkle, Kandice R. Levental, Ilya Levental

453-Pos Board B284
PROBING THE PHASE BEHAVIOR OF HYBRID LIPID/BLOCK COPOLYMER BIOMEMBRANES. **Naomi Hamada**, Sukriti Gakhar, Marjorie L. Longo

454-Pos Board B285
X-RAY AND NEUTRON REFLECTIVITY STUDIES OF STYRENE-MALEIC ACID POLYMER INTERACTIONS WITH GALACTOLIPID-CONTAINING MONOLAYERS. **Minh D. Phan**, Olena I. Korotych, Nathan Brady, Madeline M. Davis, Sushil K. Satija, John F. Ankner, Barry D. Bruce

455-Pos Board B286
UNRAVELING THE MYSTERY OF MEMBRANE PERMEABILITY OF ANTICANCER DRUGS. **Neetu S. Yadav**

456-Pos Board B287 Travel Awardee
THE TILTED HELIX MODEL OF DYNAMIN OLIGOMERS. **Avihay Kadosh**

Membrane Receptors and Signal Transduction I (Boards B288 - B313)

457-Pos Board B288
ATOMIC-LEVEL CHARACTERIZATION OF THE DISTINCT METHADONE-INDUCED CONFORMATIONAL SAMPLING AND ACTIVATION KINETICS OF THE μ-OPIOID RECEPTOR BY MOLECULAR SIMULATIONS.
Abhijeet Kapoor, Davide Provasi, Marta Filizola

458-Pos Board B289
MECHANISMS OF B-ARRESTIN-DEPENDENT PI(4,5)P_2 SYNTHESIS FOR GPCR ENDOCYTOSIS. **Seung-Ryoung Jung**, Yifei Jiang, Bertil Hille, Duk-Su Koh

459-Pos Board B290
RHODOPSIN'S ULTRA-FAST ACTIVATION DYNAMICS IN BILAYER AND MICELLE ENVIRONMENTS. **Leslie A. Salas-Estrada**, Thomas D. Grant, Suchithranga M. Perera, Andrey V. Struts, Udeep Chawla, Xiaolin Xu, Steven D. Fried, Nipuna Weerasinghe, D. Mendez, R. Alvarez, K. Karpos, S. Lisova, S. Zaare, R. Nazari, N.A. Zatsepsin, Abhishek Singharoy, S. Boutet, S. Carbajo, M.S. Hunter, M. Liang, M.D. Seaberg, Raimund Fromme, Petra Fromme, Richard A. Kirian, Michael F. Brown, Alan Grossfield

460-Pos Board B291
EFFICIENT PREDICTION OF THE EFFECT OF MUTATIONS ON THE ACTIVATION KINETICS OF G PROTEIN-COUPLED RECEPTORS USING A MAXIMUM CALIBER APPROACH. **Steven Ramsey**, Davide Provasi, Jan Moeller, Martin Lohse, Marta Filizola

461-Pos **Board B292**
FUNCTIONAL RELEVANCE OF ORTHOSTERIC BINDING SITE OF 5-HYDROXYTRYPTAMINE 2A RECEPTOR AND THE MECHANISM OF RECEPTOR ACTIVATION. **Yu Xu**, Guoqing Xiang, Takeharu Kawano, Diomedes E. Logothetis

462-Pos **Board B293**
INVESTIGATING THE MECHANISM OF STRA6-MEDIATED CELLULAR RETINOL UPTAKE. **Brianna K. Costabile**, Yun-Ting Chen, Jonathan Kim, Youn-Kyung Kim, Oliver B. Clarke, Paul T. Wilder, David J. Weber, Loredana Quadro, Hui Sun, Filippo Mancia

463-Pos **Board B294**
NEUROTRANSMITTER RECEPTORS AS KEY PHYSIOLOGICAL REGULATORS OF EPITHELIAL MORPHOGENESIS. **Fnu Nilay Kumar**, Francisco Huizar, Maria Unger, Dharsan Soundarrajan, Vijay Velagala, John Koren, Jeremiah J. Zartman

464-Pos **Board B295**
SINGLE MOLECULE FORCE SPECTROSCOPY OF CHONDROCYTE A5B1 AND A1B1 INTEGRINS. **Divya Kota**, Ishara S. Ratnayake, Lin Kang, Phil Ahrenkiel, Congzhou Wang, Scott Wood, Steve Smith

465-Pos **Board B296**
SIGNALING THROUGH IONS IS ESSENTIAL FOR CHEMOTROPISM AND REPRODUCTION. **Jose A. Feijo**

466-Pos **Board B297** **Travel Awardee**
TUNING OF METABOTROPIC GLUTAMATE RECEPTOR ASSEMBLY AND ACTIVATION BY INTERACTIONS BETWEEN TRANSMEMBRANE DOMAINS. **Jordana K. Thibado**, Vanessa Gutzeit, Josh T. Levitz

467-Pos **Board B298**
ELUCIDATING THE ADHESIVE MECHANISM OF THE ATYPICAL CADHERIN CELSR1 INVOLVED IN PLANAR CELL POLARITY. **Elakkiya Tamilselvan**, Marcos M. Sotomayor

468-Pos **Board B299**
A FLUORESCENCE-BASED BIOSENSOR FOR MONITORING CONFORMATIONAL DYNAMICS IN GPCRS. **Anthony D. Shumate**, Christopher T. Schafer, David L. Farrens

469-Pos **Board B300**
REVEALING THE MECHANISTIC DETAILS OF GROWTH HORMONE RECEPTOR AND PROLACTIN RECEPTOR INTERACTIONS ON THE CELL MEMBRANE. **Chen Chen**, Jing Jiang, Tejeshwar C. Rao, Stuart J. Frank, André Leier

470-Pos **Board B301**
EFFECTS OF LUTEINIZING HORMONE RECEPTOR EXPRESSION LEVEL ON RECEPTOR AGGREGATION AND FUNCTION. Duaa Althumairy, Deborah A. Roess, **B. George Barisas**

471-Pos **Board B302**
PHARMACOLOGICAL IMPLICATIONS OF ADENOSINE 2A AND DOPAMINE TYPE 2 RECEPTOR HETEROMERIZATION. **Yuchen Yang**, Candice N. Hatcher-Solis, Maria P. Papakonstantinou, Albert A. Steiner, Takeharu Kawano, Leigh D. Plant, Diomedes E. Logothetis

472-Pos **Board B303**
GPCR STIMULATION MODULATES CAMKII TRANSLOCATION AND TARGETING IN CARDIOMYOCYTES. **Chidera C. Alim**, Maura Ferrero, Sonya Baidar, Donald M. Bers, Julie Bossuyt

473-Pos **Board B304**
UNNATURAL AMINO ACID RECEPTOR INCORPORATION AS A NOVEL PHOTOAFFINITY TOOL FOR GPCR HETEROMER SIGNALING STUDIES. **Brenda T. Winn**, Chungsik Kim, Meng Cui, Roman Manetsch, Diomedes E. Logothetis

474-Pos **Board B305**
DECIPHERING THE NATURE OF M1R TRANSIENT CURRENTS. **Verena Burtscher**, Peter S. Hasenhuetl, Matej Hotka, Michael Freissmuth, Walter Sandtner

475-Pos **Board B306**
SEEKING THE INTERFACES OF EPH RECEPTOR INTERACTIONS. **Taylor P. Light**, Kelly Karl, Jeffrey J. Gray, Kalina Hristova

476-Pos **Board B307**
INTEGRIN-DEPENDENT DIFFERENCE IN CELL ADHESION AND FORCE EXERTION. **Myung Hyun Jo**, Jing Li, Timothy A. Springer, Taekjip Ha

477-Pos **Board B308** **Travel Awardee**
PROBING THE HOMO- AND HETERO-DIMERIZATION PROPENSITIES OF METABOTROPIC GLUTAMATE RECEPTORS. **Joon Lee**, Vanessa Gutzeit, Josh T. Levitz

478-Pos **Board B309** **Travel Awardee**
BETA-ADRENERGIC SIGNALING MODULATES CANCER CELL MECHANOTYPE THROUGH A RHOA-ROCK-MYOSIN II AXIS. **Tae-Hyung Kim**, Esteban Vazquez-Hidalgo, Alexander Abdou, Xing Haw Marvin Tan, Alexei Christodoulides, Carly Farris, Pei-Yu Chiou, Erica Sloan, Parag Katira, Amy Rowat

479-Pos **Board B310**
DIFFERENT FGFS STIMULATE FGFR1 IN DIFFERENT WAYS. **Kelly A. Karl**, Kalina Hristova

480-Pos **Board B311**
FUNCTIONAL OLIGOMERIZATION OF THE EPHA2 RECEPTOR TYROSINE KINASE. **Xiaojun Shi**, Ryan Lingrak, Carmelle Cuizon, Paul Toth, Ji Zheng, Adam Smith, Bingcheng Wang

481-Pos **Board B312**
STUDYING THE INTERACTION OF RECEPTOR TYROSINE KINASES AND ADAPTOR PROTEINS AT THE SINGLE-MOLECULE LEVEL WITH SINGLE-PARTICLE TRACKING. **Tim Niklas Baldering**, Johanna Rahm, Sebastian Malkusch, Marina S. Dietz, Mike Heilemann

482-Pos **Board B313**
SINGLE-MOLECULE IMAGING REVEALS CHEMOKINE RECEPTOR CONTRIBUTIONS TO THE T CELL IMMUNOLOGICAL SYNAPSE. **James H. Felce**, Michael L. Dustin

Excitation-Contraction Coupling I (Boards B314 - B331)

483-Pos **Board B314**
INVESTIGATING DUAL CA^{2+} MODULATION OF THE RYANODINE RECEPTOR 1 BY MOLECULAR DYNAMICS SIMULATION. **Wenjun Zheng**, Han Wen

484-Pos **Board B315**
MOLECULAR DYNAMICS AND CA^{2+} IMAGING OF MUTANT TYPE 1 RYANODINE RECEPTOR. **Toshiko Yamazawa**, Haruo Ogawa, Takashi Murayama, Maki Yamaguchi, Hideto Oyamada, Junji Suzuki, Nagomi Kurebayashi, Kanemaru Kazunori, Takashi Sakurai, Masamitsu Iino

485-Pos **Board B316**
CHARACTERIZATION OF NOVEL RYR1-SELECTIVE INHIBITORS IDENTIFIED BY HIGH-THROUGHPUT SCREENING USING ER CA^{2+} MEASUREMENT. Hiroyuki Kagechika, Takashi Sakurai

486-Pos **Board B317**
THERAPEUTIC EFFECTS OF A NOVEL RYR1 INHIBITOR ON MALIGNANT HYPERTHERMIA-SUSCEPTIBLE MODEL MICE. **Takashi Murayama**, Toshiko Yamazawa, Takuya Kobayashi, Nagomi Kurebayashi, Satoru Noguchi, Ichizo Nishino, Shuichi Mori, Hiroyuki Kagechika, Jose R. Lopez, Paul D. Allen

487-Pos **Board B318**
DIRECT VISUALIZATION OF TYPE 2 RYANODINE RECEPTORS USING DSTORM. **David R. Scriven**, Anne Berit Johnsen, Parisa Asghari, Keng Chang Chou, Edwin D. Moore

488-Pos **Board B319**
TOTAL CALCIUM CONTENT OF SARCOPLASMIC RETICULUM AND MITOCHONDRIA IN RYANODINE RECEPTOR VARIANT MUSCLE. Cedric R. Lamboley, Luke Pearce, **Bradley S. Launikonis**

489-Pos **Board B320**
STIM1 AFFECTS INTRACELLULAR CA^{2+} MOVEMENT AS WELL AS EXTRACELLULAR CA^{2+} ENTRY IN SKELETAL MUSCLE. **Jun Hee Choi**, Mei Huang, Changdo Hyun, Mi Ri Oh, Keon Jin Lee, Chung-Hyun Cho, Eun Hui Lee

490-Pos **Board B321**
MULTIPLE SEQUENCE VARIANTS IN STAC3 AFFECT INTERACTIONS WITH CAV1.1 AND EXCITATION-CONTRACTION COUPLING. **Britany Rufenach**

491-Pos **Board B322**
TOPOLOGICAL ALLOSTERIC REGULATION OF THE SARCOPLASMIC RETICULUM CALCIUM PUMP PHOSPHOLAMBAN. **Daniel K. Weber**, Maximo Sanz-Hernandez, Venkateswara Reddy Uddigiri, Erik K. Larsen, Songlin Wang, Tata Gopinath, Alfonso De Simone, Gianluigi Veglia

492-Pos **Board B323**
NEURONAL JUNCTOPHILIN 3 CAN REPLACE MUSCLE JUNCTOPHILIN 2 IN VOLTAGE-INDUCED CALCIUM RELEASE. **Stefano Perni**, Kurt G. Beam

493-Pos **Board B324**
WITHDRAWN

494-Pos **Board B325**
DIFFERENTIAL IMPACT OF SELECTIVE DE-ADHESION WITHIN NAV1.5-RICH INTERCALATED DISK NANODOMAINS ON ATRIAL ARRHYTHMIA RISK. **Heather L. Struckman**, Louisa Mezache, Anna Phillips, Celine Dagher, Amara Greer-Short, Przemyslaw Radwanski, Thomas J. Hund, Rengasayee Veeraraghavan

495-Pos **Board B326**
CARDIOPROTECTION CONFERRED BY A CRISPR/CAS9 SINGLE AMINO ACID SUBSTITUTION OF NCX1 (H165A): THE PH INSENSITIVE NCX MOUSE. **Rui Zhang**, Sabine Lotteau, Adina T. Hazan, Stephan Aynaszyan, Devina Gonzalez, Liang Li, Kenneth D. Philipson, Michela Ottolia, Joshua I. Goldhaber

496-Pos **Board B327**
GENETIC ABLATION OF NCX1.1 NA^+-DEPENDENT INACTIVATION IMPACTS CARDIAC ACTION POTENTIAL AND CA^{2+} TRANSIENT. **Federica Steccanella**, Kyle Scranton, Namuna Panday, Marina Angelini, Rui Zhang, Sabine Lotteau, Scott A. John, Riccardo Olcese, Joshua I. Goldhaber, Michela Ottolia

497-Pos **Board B328**
THE NA^+-DEPENDENT INACTIVATION OF NCX1.1 IS PHYSIOLOGICALLY RELEVANT TO CARDIAC FUNCTION. **Kyle Scranton**, Soban Umar, Guillaume Calmettes, Mansoureh Eghbali, Joshua I. Goldhaber, Scott A. John, Riccardo Olcese, Ariel L. Escobar, Michela Ottolia

498-Pos **Board B329**
SHAPING ACTION POTENTIAL REPOLARIZATION PHASE I BY STOICHIOMETRIC EXPRESSION OF KV4.3/KCHIP2.1. **Nan Wang**, Eef Dries, Ewan D. Fowler, Jules C. Hancox, Mark B. Cannell

499-Pos **Board B330**
AUTOSOMAL-DOMINANT CASQ2-K180R CAUSES CPVT BY A DIFFERENT MECHANISM THAN AUTOSOMAL-RECESSIVE CASQ2 MUTATIONS. **Matthew Wleklinski**, Shan Parikh, Bjorn C. Knollmann

500-Pos **Board B331** **Travel Awardee**
DIMINISHED B-ADRENERGIC RESPONSE IN PROTEIN KINASE D KNOCKOUT CARDIOMYOCYTES. **Juliana Mira Hernandez**, Christopher Y. Ko, Bruno Jacobsen, Erin Y. Shen, Benjamin W. Van, Avery Mandel, Zhong Jian, Sabine J. van Dijk, Donald M. Bers, Ye Chen-Izu, Julie Bossuyt

Cardiac, Smooth, and Skeletal Muscle Electrophysiology I (Boards B332 - B344)

501-Pos **Board B332**
SERCA2A IS CRITICAL FOR ARRHYTHMIC RISK IN NONISCHEMIC CARDIOMYOPATHY. **An Xie**, Zhen Song, Gyeoung-Jin Kang, Feng Feng, Zhilin Qu, Samuel C. Dudley

502-Pos **Board B333**
MUTATIONS IN KCNE1 PROMOTE CARDIAC ALTERNANS IN LONG QT SYNDROME TYPE 5 RABBITS. **Tae Yun Kim**, Anatoli Kabakov, Radmila Terentyeva, Dmitry A. Terentyev, YiChun Lu, Katja E. Odening, Andras Varro, Zsuzsanna Bősze, Gideon Koren, Bum-Rak Choi

503-Pos **Board B334**
MOLECULAR MECHANISMS UNDERLYING CARDIAC L-TYPE CHANNEL REGULATION BY LRRC10. **Pedro del Rivero Morfin**, Manu B. Johny

504-Pos **Board B335**
IMPAIRED PARASYMPATHETIC NERVOUS SYSTEM REGULATION OF HEART RATE AND SINOATRIAL NODE FUNCTION IN TYPE 2 DIABETES MELLITUS. **Yingjie Liu**, Hailey J. Jansen, Robert A. Rose

505-Pos **Board B336**
INTRINSIC SINOATRIAL NODE DYSFUNCTION IMPAIRS AUTONOMIC REGULATION OF HEART RATE VARIABILITY IN HYPERTENSIVE HEART DISEASE. **Tristan W. Dorey**, Motahareh Moghtadaei, Adam Kirkby, Robert A. Rose

506-Pos **Board B337**
HYPOKALEMIA PROMOTES ARRHYTHMIA BY DISTINCT MECHANISMS IN ATRIAL AND VENTRICULAR MYOCYTES. Kiarash Tazmini, Michael Frisk, **Martin Laasmaa**, Alexandre Lewalle, Stefano Morotti, David B. Lipsett, Ornella Manfra, Jonas Skogested, Jan Magnus Aronsen, Ivar Sjaastad, Andrew G. Edwards, Eleonora Grandi, Steven A. Niederer, Erik Øie, William E. Louch

507-Pos **Board B338**
DISRUPTING THE CIRCADIAN CLOCK MECHANISM IN CARDIOMYOCYTES EXACERBATES THE LQT3-RELATED PHENOTYPE IN $SCN5A^{\Delta KPQ/+}$MICE. **Jennifer Wayland**, Fiaz Shah, Kaitlyn Samuels, Tanya Seward, Elizabeth Schroder, Brian P. Delisle

508-Pos **Board B339**
CARDIAC OVEREXPRESSION OF ADENYLYL CYCLASE TYPE VIII AUGMENTS FUNCTION OF THE COUPLED OSCILLATORY SYSTEM AND ACTION POTENTIAL FIRING RATE OF SINOATRIAL NODAL CELLS. **Syevda Tagirova**, Khalid Chakir, Dongmei Yang, Bruce D. Ziman, Yelena Tarasova, Kirill Tarasov, Edward G. Lakatta

509-Pos **Board B340**
O-GLYCOSYLATION OF CAMKII AT SERINE 280 PROMOTES CARDIAC ARRHYTHMIAS IN DIABETIC HYPERGLYCEMIA. **Bence Hegyi**, Anna Fasoli, Christopher Y. Ko, Marisa M. Ciccozzi, Srinivas Tapa, Benjamin W. Van, Erin Y. Shen, Sonya Baidar, Julie Bossuyt, Crystal M. Ripplinger, Donald M. Bers

510-Pos **Board B341**
IMAGING AND ELECTROPHYSIOLOGICAL BIOMARKERS IN A NOVEL PRECLINICAL PIG MODEL OF ANTHRACYCLINE-INDUCED CARDIOTOXICITY. Peter Lin, Terenz Escartin, Melissa Larsen, Jennifer Barry, Xiuling Qi, Matthew Ng, Susan Camilleri, Idan Roifman, **Mihaela Pop**

511-Pos Board B342
UBIQUITIN LIGASE RIFIFYLIN (RFFL) HAS YIN-YANG EFFECTS ON RABBIT CARDIAC TRANSIENT OUTWARD (I_{TO}) POTASSIUM CHANNELS. **Anatoli Y. Kabakov**, Karim Roder, Karni S. Moshal, YiChun Lu, Mingwang Zhong, Saroj Dhakal, Alain Karma, Gideon Koren

512-Pos Board B343
POTENT SUPPRESSION OF VENTRICULAR ARRHYTHMIAS BY SELECTIVELY TARGETING LATE L-TYPE CALCIUM CURRENT. **Marina Angelini**, Arash Pezhouman, Nicoletta Savalli, Marvin Chang, Guillaume Calmettes, Federica Steccanella, Antonios Pantazis, Hrayr S. Karagueuzian, James N. Weiss, Riccardo Olcese

513-Pos Board B344
ELECLAZINE INHIBITION OF VOLTAGE-GATED SODIUM CURRENTS IN RAT ATRIAL AND VENTRICULAR MYOCYTES. Rachel E. Caves, Ben Clennell, Alexander Carpenter, Stephanie C. Choisy, Hongwei Cheng, Cameron McNiff, Brendan Mann, James T. Milnes, Jules C. Hancox, **Andrew F. James**

Voltage-gated Ca Channels (Boards B345 - B356)

514-Pos Board B345
PROBING THE EFFECTS OF CALMODULINOPATHY MUTATIONS ON $CA_V2.1$ CHANNELS. **John W. Hussey**, Helene H. Jensen, Mette Nyegaard, Michael T. Overgaard, Ivy E. Dick

515-Pos Board B346
MYOCARDIAL RAD DELETION INCREASES EARLY L-TYPE CALCIUM CURRENT WITHOUT AFFECTING LATE CALCIUM CURRENT THROUGH MULTIPLE MECHANISMS. **Brooke Ahern**, Andrea Sebastian, Douglas A. Andres, Jonathan Satin

516-Pos Board B347
NON-CANONICAL ROLE OF CA_VA2D1 IN CARDIAC HYPERTROPHY. **Aya Al Katat**, Angelino Calderone, Lucie Parent

517-Pos Board B348
THE CONTRIBUTION OF THE INDIVIDUAL VOLTAGE SENSORS TO THE ACTIVATION OF SKELETAL $CA_V1.1$ CHANNELS. **Nicoletta Savalli**, Marina Angelini, Federica Steccanella, Fenfen Wu, Marbella Quinonez, Alan Neely, Steve C. Cannon, Riccardo Olcese

518-Pos Board B349
NEURONAL NITRIC OXIDE SYNTHASE REGULATION OF CALCIUM CYCLING IN VENTRICULAR CARDIOMYOCYTES IS INDEPENDENT OF $CA_V1.2$ CHANNEL MODULATION. **Janine Michaela Ebner**, Michal Cagalinec, Helmut Kubista, Hannes Todt, Petra L. Szabo, Attila Kiss, Bruno K. Podesser, Henrietta Cserne Szappano, Livia C. Hool, Karlheinz Hilber, Xaver Koenig

519-Pos Board B350
A POTENT VOLTAGE-GATED CALCIUM CHANNEL INHIBITOR ENGINEERED FROM A NANOBODY TARGETED TO AUXILIARY CAVB SUBUNITS. **Travis J. Morgenstern**

520-Pos Board B351
PHENYLAKYLAMINES IN CALCIUM CHANNELS. EXPERIMENTAL STRUCTURES AND COMPUTATIONAL MODELS. Denis B. Tikhonov, Lianyun Lin, Daniel S. Yang, Zhiguang Yuchi, **Boris S. Zhorov**

521-Pos Board B352
TWO CAV3.3 (CACNA1I) GAIN-OF-FUNCTION MUTATIONS LINKED TO EPILEPSY AND INTELLECTUAL DISABILITY AFFECT GATING PROPERTIES AND THE WINDOW CURRENT. **Yousra El Ghaleb**, Pauline E. Schneeberger, Abeltje M. Polstra, Johanna M. van Hagen, Marta Campiglio, Jonas Denecke, Monica Fernandez-Quintero, Klaus R. Liedl, Kerstin Kutsche, Bernhard E. Flucher

522-Pos Board B353
ARRHYTHMOGENIC CALMODULIN MUTATIONS CAN DISRUPT THE GLOBULAR STRUCTURE AND UNCOUPLE CA^{2+} BINDING COOPERATIVITY. **Kaiqian Wang**, Malene Brohus, Christian Holt, Michael T. Overgaard, Reinhard Wimmer, Filip Van Petegem

523-Pos Board B354
STRUCTURAL DETERMINANTS OF VOLTAGE-GATED CALCIUM CHANNEL GATING PROPERTIES. **Monica L. Fernández-Quintero**

524-Pos Board B355
UNICELLULAR CAVB SUBUNIT MODULATES CALCIUM CHANNELS. **Emilie Segura**, Amrit Mehta, Mireille Marsolais, Xuan R. Quan, Juan Zhao, Rémy Sauvé, John D. Spafford, Lucie Parent

525-Pos Board B356
EXPLORING THE ROLE OF THE FIRST EXTRACELLULAR LOOP OF $CA_V2.3$ IN MEDIATING THE INTERACTION WITH AUXILIARY SUBUNITS. Juan Zhao, Mireille Marsolais, Emilie Segura, **Lucie Parent**

Voltage-gated K Channels I (Boards B357 - B385)

526-Pos Board B357
IDENTIFICATION OF RESIDUES CONTRIBUTING TO THE VSD-PD COUPLING IN IKS CHANNELS. **Xiaoan Wu**, Marta E. Perez, Peter H. Larsson

527-Pos Board B358
TEMPERATURE SENSITIVITY IN A POTASSIUM CHANNEL FROM LAND PLANTS. **Bernardo I. Pinto**, Francisco Bezanilla

528-Pos Board B359
A KINETIC MAP OF THE HOMOMERIC VOLTAGE-GATED POTASSIUM CHANNEL (KV) FAMILY. **Rajnish Ranjan**, Emmanuelle Logette, Michela Marani, Mirjia Herzog, Valerie Tache, Enrico Scantamburlo, Valérie Buchillier, Henry Markram

529-Pos Board B360
STABILIZATION OF THE KCNQ1 POTASSIUM CHANNEL CAUSES DISEASE. **Hui Huang**, Laura Chamness, Jonathan Schlebach, Arina Hadziselimovic, Georg Kuenze, Jens Meiler, Alfred L. George, Charles R. Sanders

530-Pos Board B361
CONDUCTION AND SELECTIVITY IN KIR3.2 CHANNELS - A MOLECULAR DYNAMICS STUDY. **Anna Stary-Weinzinger**, Harald Bernsteiner

531-Pos Board B362
A CALCULATED PROTON PATH IN $K_V1.2$ FROM THE VOLTAGE SENSING DOMAIN S4 SEGMENT TOWARD THE GATE, WITH A HYPOTHESIS AS TO THE REMAINDER OF THE PATH. **Alisher M. Kariev**, Michael E. Green

532-Pos Board B363
MOLECULAR MECHANISM OF BK CHANNEL ACTIVATION BY THE SMOOTH MUSCLE RELAXANT NS11021. **Michael E. Rockman**, Alexandre G. Vouga, Brad S. Rothberg

533-Pos Board B364
INHIBITION OF HERG POTASSIUM CHANNELS BY THE POLYCYLIC AROMATIC HYDROCARBON PHENANTHRENE. **Ehab Al-Moubarak**, Holly Shiels, Yihong Zhang, Chunyun Du, Christopher Dempsey, Jules Hancox

534-Pos Board B365 Travel Awardee
MEFENAMIC ACID BINDING AND EFFECT ON I_{KS} CHANNEL GATING. **Yundi Wang**, Jodene R. Eldstrom, David Fedida

535-Pos **Board B366**
HYPOXIA INHIBITS KV1.5 CURRENTS THROUGH REACTIVE OXYGEN SPECIES-MEDIATED DISULFIDE BOND FORMATION. **Nancy You**, Wentao Li, Jun Guo, Tonghua Yang, Shetuan Zhang

536-Pos **Board B367**
PROBING THE MOLECULAR BASIS OF OPPOSING PUFA EFFECTS ON KV7 CHANNELS. **Damon J.A. Frampton**, Louise C. Abrahamsson, Johan E. Larsson, Sara I. Liin

537-Pos **Board B368**
CHOLESTEROL-INDUCED TRAFFICKING OF BETA1 SUBUNITS SWITCHES MODULATION OF BK FUNCTION BY THIS STEROID FROM INHIBITION TO ACTIVATION. **Anna N. Bukiya**, M. Dennis Leo, Jonathan H. Jaggar, Alex M. Dopico

538-Pos **Board B369**
FUNCTIONAL CONSEQUENCES OF INCIDENTALLY DISCOVERED KCNQ1 VARIANTS DETERMINED BY AUTOMATED ELECTROPHYSIOLOGY. **Carlos G. Vanoye**, Reshma R. Desai, Sneha Adusumilli, Jens Meiler, Charles R. Sanders, Tooraj Mirshahi, Megan J. Puckelwartz, Elizabeth M. McNally, Alfred L. George

539-Pos **Board B370** **Travel Awardee**
A FOCUSED ELECTRIC FIELD IN THE BK CHANNEL VOLTAGE SENSOR. **Ignacio A. Segura**, Willy R. Carrasquel-Ursulaez, Ramon Latorre

540-Pos **Board B371**
CORRECTION OF HERG FUNCTIONAL EXPRESSION AND DEFECTIVE PERIPHERAL PROCESSING IN INHERITED AND ACQUIRED LQT2 SYNDROMES. Brian Foo, William C. Valinsky, Josua Solomon, Jeeventh Kaur, Elya Quesnel, Camille Barbier, Gergely L. Lukacs, **Alvin Shrier**

541-Pos **Board B372**
TETHERED PEPTIDE NEUROTOXINS FACILITATE BIOPHYSICAL STUDY AND REVEAL TWO VOLTAGE-DEPENDENT BLOCKING MECHANISMS FOR SAK1 TOXINS IN THE K^+ CHANNEL PORE. **Ruiming Zhao**, Hui Dai, Netanel Mendelman, Jordan H. Chill, Steve A. Goldstein

542-Pos **Board B373**
EXTRACELLULAR HEME MODULATES VOLTAGE-GATING IN CNBD SUPERFAMILY CATION CHANNELS. **Timothy J. Jegla**, Yunqing Zhou, Aditya Pisupati, Benjamin T. Simonson, Kathryn King, Damian B. van Rossum, Andriy Anishkin

543-Pos **Board B374**
RATIONALLY DESIGNED PROTON CHANNEL INHIBITORS REVEAL A DRUGGABLE POCKET IN A VOLTAGE-SENSING DOMAIN. **Chang Zhao**, Liang Hong, Saleh Riahi, Jason D. Galpin, Christopher A. Ahern, Douglas J. Tobias, Francesco Tombola

544-Pos **Board B375**
MOLECULAR DETERMINANTS OF C-TYPE INACTIVATION FOR THE HERG CHANNEL AND ITS DISEASE-ASSOCIATED MUTANTS. **Jing Li**, Rong Shen, Young Hoon Koh, Eduardo Perozo, Benoit Roux

545-Pos **Board B376**
CADMIUM AND PROTONS ACTIVATE THE PLANT HYPERPOLARIZATION-GATED K^+ CHANNEL KAT1 THROUGH A CONSERVED BINDING SITE IN THE VOLTAGE SENSOR DOMAIN. **Yunqing Zhou**, Sarah M. Assmann, Timothy J. Jegla

546-Pos **Board B377**
PROBING ION CHANNEL THERMODYNAMICS WITH TEMPERATURE JUMPS IN OOCYTES. **Bernardo Pinto**, Carlos Alberto Z. Bassetto Jr, Francisco Bezanilla, Ramon Latorre

547-Pos **Board B378** **Travel Awardee**
RAPID CHARACTERISATION OF R56Q MUTANT HERG CHANNEL KINETICS USING SINUSOIDAL VOLTAGE PROTOCOLS. **Dominic G. Whittaker**, Jake M. Kemp, Gary R. Mirams, Tom W. Claydon

548-Pos **Board B379**
ELECTROSTATIC INTERACTIONS OF NEGATIVELY CHARGED DHAA DERIVATIVES WITH THE VOLTAGE-GATED POTASSIUM CHANNEL $K_V7.2/7.3$. **Argel Estrada-Mondragon**, Nina E. Ottosson, Xiongyu Wu, Peter Konradsson, Fredrik Elinder

549-Pos **Board B380**
MOVING GATING CHARGE WITH TEMPERATURE JUMPS. **Carlos Alberto Z. Bassetto Jr**, Bernardo Pinto, Ramon Latorre, Francisco Bezanilla

550-Pos **Board B381**
DOES PHYSICS EXPLAIN THE ACTIVATION OF VOLTAGE-GATED ION CHANNELS? **H. Richard Leuchtag**

551-Pos **Board B382**
VOLTAGE SENSOR MOVEMENT OF NEURONAL K_V7 CHANNELS. **Michaela Edmond**, Rene Barro-Soria

552-Pos **Board B383**
A NEW APPROACH TO STUDY NON-CONDUCTING KV2 CHANNELS. **Emily E. Maverick**, Michael M. Tamkun

553-Pos **Board B384**
TWO-STAGE "HAND-AND-ELBOW" GATING MECHANISM OF A K_V CHANNEL. **Panpan Hou**, Po wei Kang, Audrey Deyawe Kongmeneck, Nien-Du Yang, Yongfeng Liu, Jingyi Shi, Xianjin Xu, Kelli McFarland White, Mark A. Zaydman, Marina A. Kasimova, Guiscard Seebohm, Ling Zhong, Xiaoqin Zou, Mounir Tarek, Jianmin Cui

554-Pos **Board B385**
INHIBITION OF THE ONCOGENIC $K_V10.1$ POTASSIUM CHANNEL BY AMIODARONE AND DRONEDARONE. EFFECTS ON THE COLE-MOORE SHIFT OF THE CHANNELS. Froylan Gomez-Lagunas, **Teresa Meléndez**, Carolina Barriga-Montoya

Ion Channels, Pharmacology, and Disease I (Boards B386 - B410)

555-Pos **Board B386** **Travel Awardee**
PREGNENOLONE CONSTRICTS CEREBRAL ARTERIES BY TARGETING THE CHANNEL-FORMING SUBUNIT OF THE SMOOTH MUSCLE BK COMPLEX. **Kelsey C. North**, Luiz Moreira, Man Zhang, Alexandria Slayden, Anna Bukiya, Alejandro M. Dopico

556-Pos **Board B387**
CHARACTERIZATION OF NEW HUMAN *KCNMA1* LOSS-OF-FUNCTION MUTATIONS. Hans J. Moldenhauer, Su Mi Park, **Andrea L. Meredith**

557-Pos **Board B388**
FUNCTIONAL AND PHARMACOLOGICAL CHARACTERIZATION OF C. ELEGANS DEG/ENAC/ASIC CHANNELS. **Sylvia Fechner**, Isabel D'Alessandro, Lingxin Wang, Calvin Tower, Li Tao, Miriam B. Goodman

558-Pos **Board B389**
ZEBRAFISH HEART AS A MODEL FOR EARLY-SCREENING OF HUMAN ANTI-ARRHYTHMIC DRUGS. **Alicia de la Cruz**, Marta E Perez-Rodriguez, Quinn C. Rainer, Sara I. Liin, Peter H. Larsson

559-Pos **Board B390**
ALTERED CYTOSOLIC CA^{2+} SIGNALING AND MITOCHONDRIAL POTENTIAL IN LYMPHOCYTES FROM MICE CARRYING THE GAIN-OF-FUNCTION MUTATION IN RYANODINE RECEPTOR TYPE 1. Lukun Yang, Elena N. Dedkova, Paul D. Allen, **Alla F. Fomina**

560-Pos **Board B391**
RELATIVE AFFINITIES OF GENERAL ANESTHETICS FOR EXPERIMENTALLY-IDENTIFIED BINDING SITES IN RYANODINE RECEPTORS (RYR1). **Sruthi Murlidaran**, Weiming Bu, Roderic G. Eckenhoff, Grace H. Brannigan, Thomas T. Joseph

561-Pos Board B392
MODULATION OF NATIVE AND RECOMBINANT GIRK1/2 CHANNELS BY ANALGESIC A-CONOTOXINS. Anuja R. Bony, Jeffrey R. McArthur, Rocio K. Finol-Urdaneta, **David J. Adams**

562-Pos Board B393
CYSTEINE-MODIFICATION OF K_V7 CHANNELS AS ANALGESIC MECHANISM OF ACTION OF ACETAMINOPHEN. **Isabella Salzer**, Sutirtha Ray, Stefan Boehm

563-Pos Board B394
ELUCIDATING THE MOLECULAR DETERMINANTS OF PRO-ARRHYTHMIC PROCLIVITIES OF BETA-BLOCKING DRUGS. **John R. Dawson**, Kevin DeMarco, Pei-Chi Yang, Slava Bekker, Vladimir Yarov-Yarovoy, Colleen E. Clancy, Igor V. Vorobyov

564-Pos Board B395
EARLY AFTERDEPOLARIZATION IN DRUG-INDUCED ARRHYTHMISAS CAN BE PREDICTED BY VOLTAGE-DEPENDENCE IN I_{CAL} BLOCK. **Akira Kimura**, Shingo Murakami

565-Pos Board B396
DISCRIMINATING MECHANISMS OF DRUG ACTION FROM OPTICAL RECORDINGS OF VOLTAGE AND CALCIUM IN HIPSC CARDIOMYOCYTES. **Andrew G. Edwards**, Stefano Morotti, Eleonora Grandi

566-Pos Board B397
DIASTOLIC SODIUM CURRENT IN CARDIOMYOCYTES ASSESSED WITH LITHIUM. **Kenneth S. Ginsburg**, Yanyan Jiang, Daniel C. Bartos, Sanda I. Despa, Donald M. Bers

567-Pos Board B398
RELIABLE IDENTIFICATION OF HERG LIABILITY IN DRUG DISCOVERY BY AUTOMATED PATCH CLAMP. Michael George, **Rodolfo Haedo**, Nina Brinkwirth, Nadine Becker, Claudia S. Haarmann, Alison Obergrussberger, Ronald Knox, Martin Hampl, Niels Fertig

568-Pos Board B399
PREDICTING ARRHYTHMOGENICITY: STRUCTURAL MODELING OF SAFE AND UNSAFE HERG BLOCKERS. **Aiyana M. Emigh**, Kevin DeMarco, Kazuharu Furutani, Colleen E. Clancy, Igor V. Vorobyov, Vladimir Yarov-Yarovoy

569-Pos Board B400
CELLULAR AND FUNCTIONAL DEFECTS IN ALDOSTERONISM-LINKED CYTOSOLIC DOMAIN MUTATIONS IN GIRK4 (KCNJ5). **Reem Handklo Jamal**, Boris Shalomov, Haritha P. Reddy, Neta Theodor, Mariam Ashkar, Amal K. Bera, Nathan Dascal

570-Pos Board B401
INHIBITORY MECHANISMS OF G-PROTEIN-GATED INWARDLY RECTIFYING K^+ CHANNEL BY ANTIHISTAMINES. **I-Shan Chen**, Chang Liu, Michihiro Tateyama, Izhar Karbat, Motonari Uesugi, Eitan Reuveny, Yoshihiro Kubo

571-Pos Board B402
PIEZO MECHANOSENSORY CHANNELS CONTROL CENTRIOLE ENGAGEMENT VIA CALCIUM SIGNALING AT THE CENTROSOME. **Liron David**

572-Pos Board B403
PROTON DEPENDENT INHIBITION AND THE SLOW GATING MECHANISM OF CLC-0 CHLORIDE CHANNEL. **Hwoi Chan Kwon**

573-Pos Board B404
IMPAIRMENT OF HUMAN $K_V4.3$ PROTEIN BIOSYNTHESIS AND CHANNEL GATING BY NOVEL SCA19/22-ASSOCIATED MUTATIONS. Ssu-Ju Fu, Cheng-Tsung Hsiao, Bing-Wen Soong, **Chih-Yung Tang**, Chung-Jiuan Jeng

574-Pos Board B405
THE KCA 3.1 POTASSIUM CHANNEL MEDIATES THE TAMOXIFEN-DEPENDENT ANTICANCER EFFECTS IN BREAST CANCER. Vitaly Senyuk, Rudy Calderon, Daniel R. Sauter, **Saverio Gentile**

575-Pos Board B406
DIFFERENTIAL ROLES OF SK CHANNEL SUBTYPES IN VASCULAR ENDOTHELIAL CELLS. Young-Woo Nam, Taibah Aldakhil, Dong Wang, Adam Viegas, **Miao Zhang**

576-Pos Board B407
KINETIC AND PHARMACOLOGICAL PROPERTIES OF $P2X_3$ AND $P2X_{2/3}$ RECEPTORS. James L. Costantin, **Timothy Strassmaier**, Giustina M. Rotordam, Tom Goetze, Nadine Becker, Alison Obergrussberger, Andrea Bruggemann, Michael George, Niels Fertig

577-Pos Board B408
VOLTAGE DEPENDENT ANION CHANNELS REGULATE PROLIFERATION OF CANCER STEM CELLS. **Amandine M. Rovini**, Elizabeth Hunt, Kareem A. Heslop, Shenghui Qin, Monika Gooz, Gavin Wang, Eduardo N. Maldonado

578-Pos Board B409
HUMAN A4B2 AND A7 NICOTINIC ACETYLCHOLINE RECEPTOR PROFILES OF NS3861 REVEAL ITS BROAD ACTIVITY IN FUNCTIONAL ELECTROPHYSIOLOGY ASSAYS. **Damian Mc Hugh**, Omar Alijevic, Julia Hoeng

579-Pos Board B410
PHARMACOLOGICAL CHARACTERIZATION OF NATURAL TOBACCO ALKALOIDS IN THE PRESENCE OF POSITIVE ALLOSTERIC MODULATORS AGAINST HUMAN A4B2 AND A7 NICOTINIC ACETYLCHOLINE RECEPTORS. **Omar Alijevic**, Damian Mc Hugh, Anatoly Mazurov, Julia Hoeng, Manuel Peitsch

Skeletal and Smooth Muscle Mechanics, Structure, and Regulation (Boards B411 - B426)

580-Pos Board B411
A CATCH BOND SUPPRESSES FLUCTUATIONS IN THE COORDINATED ACTIONS OF MYOSIN II MOTORS. **Jason A. Wagoner**

581-Pos Board B412
CHARACTERIZATION OF THE FUNCTIONAL DIVERSITY OF THE SYNTHETIC NANOMACHINE POWERED BY DIFFERENT MUSCLE MYOSIN ISOFORMS. Irene Pertici, Giulio Bianchi, Lorenzo Bongini, Vincenzo Lombardi, **Pasquale Bianco**

582-Pos Board B413
RECONSTRUCTION OF REAL-SPACE 3-D STRUCTURE FROM X-RAY FIBER DIFFRACTION PATTERN: APPLICATION TO MUSCLE PROTEIN FILAMENTS. **Hiroyuki Iwamoto**

583-Pos Board B414
A NOVEL MECHANISM TO REDUCE FORCE LOSS DURING PROLONGED USE OF SLOW-TWITCH MUSCLE FIBERS. Chad R. Straight, Kaylyn M. Bell, Jared N. Slosberg, Mark S. Miller, **Douglas M. Swank**

584-Pos Board B415
FACTORS THAT MODULATE THE STABILITY OF THE SUPER RELAXED STATE OF MYOSIN IN SKELETAL MUSCLE FIBERS. Nariman Naber, Clyde F. Wilson, **Roger Cooke**

585-Pos Board B416
IN SITU CHARACTERIZATION OF THE WORKING STROKE OF THE SLOW AND FAST ISOFORMS OF MUSCLE MYOSIN. Marco Caremani, Irene Pertici, Valentina Percario, Vincenzo Lombardi, **Marco Linari**

586-Pos Board B417
SUB-MAXIMALLY ACTIVATED RAT SOLEUS FIBERS EXHIBIT STRETCH ACTIVATION. Faruk H. Moonschi, **Kenneth S. Campbell**

587-Pos Board B418
GEOMETRICAL CONSTRAINTS ASSOCIATED TO MECHANO-SENSING INDUCED DUAL-FILAMENT REGULATION IMPROVE IN-SILICO EXPLANATION OF POWER OUTPUT IN MUSCLE MODELLING. **Lorenzo Marcucci**, Hiroki Fukunaga, Mitsuhiro Iwaki, Toshio Yanagida

588-Pos Board B419
UNDERSTANDING OBSCURIN'S MOLECULAR MECHANISMS. **Charles J. White**

589-Pos Board B420
INCREASED MICROTUBULE DENSITY AND ALTERED DIRECTIONALITY OCCUR COMMENSURATE WITH MYOFIBRILLAR MALFORMATION IN DYSTROPHIC AND AGED SKELETAL MUSCLE. **Anicca Harriot**, Andrew Coleman, Guoli Shi, Humberto Cavalcante Joca, Christopher W. Ward

590-Pos Board B421
ISOLATED EXTENSOR DIGITORUM LONGUS MUSCLES FROM OLD MDX DYSTROPHIC MICE SHOW LITTLE FORCE RECOVERY 120 MINUTES AFTER ECCENTRIC DAMAGE. **Leonit Kiriaev**, Sindy Kueh, John W. Morley, Kathryn N. North, Peter J. Houweling, Stewart I. Head

591-Pos Board B422
TOWARD THE GENERAL MECHANISM FOR THICK AND THIN FILAMENT REGULATION OF THE SIMPLE HARMONIC MOTION OF TROPOMYOSIN IN THE ACTIVATION AND RELAXATION OF CONTRACTION IN CARDIAC, SKELETAL AND SMOOTH MUSCLES. **James J. Earley**

592-Pos Board B423
TIMING AND LOAD-DEPENDENCE OF THE POWERSTROKE AND P_i-RELEASE IN SKELETAL MUSCLE MYOSIN. **Claudia Arbore**, Francesco S. Pavone, Marco Capitanio, Edward P. Debold

593-Pos Board B424
THE ROLE OF THIN FILAMENT CALCIUM SENSITIVITY IN MODULATING RELAXATION TIME OF SOLEUS AND EDL SKELETAL MUSCLE. **Connor Tyree**, Kyra Peczkowski, Paul M. Janssen, Jill Rafael-Fortney, Jonathan P. Davis

594-Pos Board B425
INCREASING STIFFNESS OF COLLAGEN FIBERS CAN LEAD TO EXCESSIVE CONSTRICTION OF AIRWAYS. **Ryan R. Jamieson**, Suzanne E. Stasiak, Samuel R. Polio, Harikrishnan Parameswaran

595-Pos Board B426
DEPHOSPHORYLATION OF TONIC AND PHASIC SMOOTH MUSCLE MYOSIN IN THE IN VITRO MOTILITY ASSAY EXHIBITS DIFFERENT KINETICS. **Megan Hammell**, Gijs Ijpma, Linda Kachmar, Anne-Marie Lauzon

Actin Structure, Dynamics, and Associated Proteins (Boards B427 - B442)

596-Pos Board B427
CPI-MOTIF REGULATION OF BIOCHEMICAL FUNCTIONS OF ACTIN CAPPING PROTEIN. Patrick McConnell, Marlene Mekel, Alexander G. Kozlov, Olivia L. Mooren, Timothy M. Lohman, **John A. Cooper**

597-Pos Board B428
QUANTIFICATION OF SURFACE RECEPTOR - ACTIN CORTEX INTERPLAY VIA MULTIPLEXED TWO - COLOR IMAGING. **Aparajita Dasgupta**, Huong-Tra Ngo, Deryl Tschoerner, Nicolas Touret, Bruno Da Rocha-Azevedo, Khuloud Jaqaman

598-Pos Board B429
ACTOMYOSIN CONTRACTILITY DRIVES INWARD BLEBBING BY CORRALLING MEMBRANE PROTEINS. **John Xiaohe Li**, Bill Brieher

599-Pos Board B430
MYOSIN REGULATION OF ACTIN TURNOVER DYNAMICS. **Danielle Scheff**, Margaret L. Gardel

600-Pos Board B431
DESIGN AND OPTIMIZATION OF TROPOMYOSIN FRAGMENTS FOR TROPOMODULIN INTERACTION STUDIES. **Balaganesh Kuruba**, Dmitri Tolkatchev, Alla S. Kostyukova, Kyle Swain, Natalia Moroz, Trenton Williams, Kaitlin A. Smith

601-Pos Board B432
MONITORING PALLADIN'S EFFECT ON ACTIN DYNAMICS AND ORGANIZATION WITH TIRF MICROSCOPY. **Abby Jurgensmeier**, Moriah R. Beck

602-Pos Board B433
VISUALIZING DYNAMIC ACTIN CROSSLINKING PROCESSES DRIVEN BY THE ACTIN BINDING PROTEIN ANILLIN. **Kyohei Matsuda**, Mitsuhiro Sugawa, Masahiko Yamagishi, Noriyuki Kodera, Junichiro Yajima

603-Pos Board B434
ALTERATION OF MESENCHYMAL STEM CELLS POLARITY BY LAMINAR SHEAR STIMULATION PROMOTING B-CATENIN NUCLEAR LOCALIZATION. **Jennifer Ho**, Oscar K. Lee

604-Pos Board B435
DEEP LEARNING REVEALS THE LINK BETWEEN FILAMENT ARCHITECTURE AND SUBUNIT CONFORMATION IN BENT ACTIN. **Matthew J. Reynolds**, Rui Gong, Santiago Espinosa de los Reyes, Gregory M. Alushin

605-Pos Board B436
MICRORHEOLOGY OF ACTIVE ACTIN-MICROTUBULE NETWORKS. **Gloria Lee**, Michael J. Rust, Moumita Das, Jennifer L. Ross, Rae Anderson

606-Pos Board B437
THE FORMIN INHIBITOR, SMIFH2, INHIBITS MEMBERS OF THE MYOSIN SUPERFAMILY. **James R. Sellers**, Shidong Shi, Yukako Nishimura, Fang Zhang, Rong Liu, Yasuharu Takagi, Virgile Viasnoff, Alexander D. Bershadsky

607-Pos Board B438
TALIN ROD MECHANICAL UNFOLDING: *IN SILICO* STUDY USING BOTH BOXED AND STEERED MOLECULAR DYNAMICS. **Vasyl V. Mykuliak**, Jonathan J. Booth, Dmitrii V. Shalashilin, Vesa P. Hytönen

608-Pos Board B439
ACTIN CONTROLS THE DYNAMICS AND MICROTUBULE CROSSLINKERS TUNE CO-LOCALIZATION IN CROSSLINKED COMPOSITE ACTIN-MICROTUBULE NETWORKS. Jennifer L. Ross, Shea N. Ricketts, **Leila Farhadi**, Moumita Das, Michael Rust, Rae Anderson

609-Pos Board B440
CONSERVED TRYPTOPHAN MUTATION LEADS TO DISCOVERY OF OBSCURE TYROSINATE FLUORESCENCE IN IMMUNOGLOBULIN DOMAIN. Ravi Vattepu, Allan Ayella, **Rachel Klausmeyer**, Rahul Yadav, Joseph Dille, Moriah R. Beck

610-Pos Board B441
CYTOSKELETAL REGULATION OF THREE-DIMENSIONAL EPITHELIAL CELL SHAPE. **Theresa A. Chmiel**, Margaret L. Gardel

611-Pos Board B442
ACTIN DEPOLYMERIZATION AND COFILIN BINDING INDUCED BY DIELECTRIC ALLOSTERY. **Jun Ohnuki**, Mitsunori Takano

Bacterial Mechanics, Cytoskeleton, and Motility (Boards B443 - B455)

612-Pos Board B443
THE BACTERIAL TUBULIN HOMOLOG FTSZ FORMS 2D-SHEETS THAT SUSTAIN ELECTRICAL OSCILLATIONS. **Julieta Bonacina**, Monica P. Carabajal, María del Rocío Cantero, Horacio F. Cantiello

613-Pos **Board B444**
SILVER IONS AFFECT THE MOTILITY OF *E. COLI* BY DISRUPTING THE MARKOVIAN RUN-AND-TUMBLE PROCESS. **Benjamin P. Russell**, Yong Wang

614-Pos **Board B445**
ROTATIONAL AND TRANSLATIONAL DRAG COEFFICIENTS OF A HELICAL BACTERIAL CELL. **Liu Yu**, Lucas Le Nagard, Cécile Fradin

615-Pos **Board B446**
COMPARISON OF THE DYNAMIC PROPERTIES OF THE BACTERIAL TUBULIN HOMOLOG FTSZ, FROM BACTERIA TO CHLOROPLAST. **Yaodong Chen**, Xueqin Ma, Na Wang, Mujeeb U. Rahman

616-Pos **Board B447**
INVESTIGATION OF ADHESION OF EXTRACELLULAR POLYMERIC SUBSTANCES VIA MAGNETIC TWEEZERS. **Yu-Ying Hsieh**, Yujia Cui, Yu-Tung Weng, Lihan Chung, Shin-Yi Lin, Chi-Shuo Chen

617-Pos **Board B448**
STRUCTURAL AND FUNCTIONAL INVESTIGATION OF THE MYCOBACTERIAL TYPE VII SECRETION ATPASE ECCA. **Tom Crosskey**, Kate Beckham, Annabel Parret, Matthias Wilmanns

618-Pos **Board B449**
ANISOTROPIC SWIMMING MODES IN*HELICOBACTER PYLORI*. **Jyot D. Antani**, Pushkar P. Lele

619-Pos **Board B450** **Travel Awardee**
PREDATION STRATEGIES OF *BDELLOVIBRIO BACTERIOVORUS*. **Mikayla Carlson**, Sean L. Seyler, Steve Pressé

620-Pos **Board B451**
SYNTHETIC CELL-CELL ADHESION MEDIATES AGGREGATION AND BOUNDARY FORMATION IN SWARMING *E. COLI*. **Jung Kim**, Ingmar H. Riedel-Kruse

621-Pos **Board B452**
MECHANICAL STRESS PROMOTES DISASSEMBLY OF THE ANTIBIOTIC EFFLUX COMPLEX MACAB-TOLC. **Christine E. Harper**, Wenyao Zhang, Peng Chen, Christopher J. Hernandez

622-Pos **Board B453**
COMPETITIVE SUBSTRATE BINDING COORDINATES THE TWO ANTAGONISTIC MOTORS OF THE BACTERIAL TYPE IV PILUS. **Matthias D. Koch**, Chenyi Fei, Ned S. Wingreen, Zemer Gitai, Joshua W. Shaevitz

623-Pos **Board B454**
GEOMETRIC ENRICHMENT OF ENHANCED CELL WALL SYNTHESIS AND CYTOSKELETAL PROTEINS IN STRAIGHT, CURVED, AND HELICAL RODS. **Benjamin P. Bratton**, Jennifer A. Taylor, Nicholas R. Martin, Edith S. Blackman, Nina R. Salama, Zemer Gitai, Joshua W. Shaevitz

624-Pos **Board B455**
MECHANISTIC ORIGIN OF CELL-SIZE CONTROL AND HOMEOSTASIS IN BACTERIA. **Fangwei Si**, Guillaume Le Treut, John T. Sauls, Stephen Vadia, Petra Anne Levin, Suckjoon Jun

Membrane Pumps, Transporters, and Exchangers I (Boards B456 - B471)

625-Pos **Board B456**
THE ION-TRANSPORTER NKCC1 AS A TARGET FOR BRAIN DISEASES. **Corinne Portioli**, Annalisa Savardi, Zhenning Ren, Marco De Vivo, Ming Zhou, Laura Cancedda

626-Pos **Board B457**
K^+-DRIVEN ATP SYNTHESIS IN ISOLATED HEART MITOCHONDRIA. **Miguel A. Aon**, Sonia Cortassa, Magdalena Juhaszova, Evgeny Kobrinsky, Dmitry B. Zorov, Steven J. Sollott

627-Pos **Board B458**
INSIGHT INTO SODIUM PUMP REGULATION IN THE FAILING HUMAN HEART. **Jaroslava Seflova**, Marsha Pribadi, Jonathan Kirk, Alain Heroux, Aleksey V. Zima, Seth L. Robia

628-Pos **Board B459**
ELECTROPHYSIOLOGICAL MEASUREMENT OF MITOCHONDRIAL NA^+-CA^{2+} EXCHANGE IN MOUSE HEART. **Mohammed M. Islam**, Ayako Takeuchi, Satoshi Matsuoka

629-Pos **Board B460**
A NOVEL APPROACH TO DETECT ELECTROGENIC TRANSPORTER ACTIVITY IN INTACT CELLS APPLIED TO INVESTIGATE IPSC DERIVED CARDIOMYOCYTES AND NEURONS. **Maria Barthmes**, Riccardo Rizzetto, Anna Mondini, Andre Bazzone, Jean-Francois Rolland, Niels Fertig, Michael George, Andrea Bruggemann

630-Pos **Board B461**
RETHINKING THE BOUNDS OF ION-COUPLED TRANSPORT. **Nathan E. Thomas**, Grant Hussey, Katherine A. Henzler-Wildman

631-Pos **Board B462**
UNRAVELING THE MOLECULAR DETERMINANTS FOR GABA TRANSPORTER SUBTYPE SELECTIVITY. **Stefanie Kickinger**, Anas Al-Khawaja, Anne S. Haugaard, Maria E.K. Lie, Francesco Bavo, Rebekka Löffler, Maria Damgaard, Bente Frølund, Gerhard Franz Ecker, Petrine Wellendorph

632-Pos **Board B463**
OVERLAPPING SUBSTRATE SPECIFICITIES IN THE SMALL MULTIDRUG RESISTANCE (SMR) FAMILY OF TRANSPORTERS. **Christian B. Macdonald**, Ali A. Kermani, Randy B. Stockbridge

633-Pos **Board B464**
SUBSTRATE RECOGNITION OF GUANIDINIUM EXPORTERS (GDX) FROM THE SMALL MULTIDRUG RESISTANCE (SMR) FAMILY. **Olive E. Burata**, Christian B. Macdonald, Ali A. Kermani, Randy Stockbridge

634-Pos **Board B465**
BACTERIAL ION HOMEOSTASIS THROUGH BIOCHEMICAL ASSAYS OF ION TRANSPORTERS. **Rachael M. Lucero**, Randy Stockbridge

635-Pos **Board B466**
FUNCTIONAL SIGNIFICANCE OF SLC26A6 IN CARDIAC PH REGULATION REVEALED BY *EX VIVO* CONFOCAL IMAGING. Phung Thai, Lu Ren, Yankun Lyu, James Overton, Wilson Xu, Nipavan Chiamvimonvat, **Xiao-Dong Zhang**

636-Pos **Board B467**
DEVELOPMENT OF A HIGH-THROUGHPUT ASSAY USING R-CEPIA1ER FLUORESCENCE TO ASSESS SMALL-MOLECULE MODULATORS OF SERCA ACTIVITY IN LIVING CELLS. Roman Nikolaienko, Elisa Bovo, Samantha Yuen, Joseph M. Autry, Seth L. Robia, Razvan L. Cornea, David D. Thomas, **Aleksey V. Zima**

637-Pos **Board B468**
WHEN TWO'S COMPANY: NEW EVIDENCES ON DUAL F_E/C_O SELECTIVITY OF TRANSPORT IN THE C_O^{2+}-EXPORTING CATION DIFFUSION FACILITATORS (C_O-$_E$CDF) FAMILY. **Daniel C. Raimunda**, Isidro Abreu, Paula Mihelj, Manuel González-Guerrero

638-Pos **Board B469**
RECONSTITUTION OF RESPIRATORY ENZYMES IN PDMS-*G*-PEO POLYMER AND POLYMER/LIPID HYBRID VESICLES. **Nika Marušič**, Lado Otrin, Ziliang Zhao, Rafael B. Lira, Tanja Vidaković-Koch, Ivan Ivanov, Rumiana Dimova, Kai Sundmacher

639-Pos **Board B470**
CONSTITUTIVE ACTIVITY OF THE DUAL-CHROMOPHORE PHOTORECEPTOR ARCHAERHODOPSIN 4. Xiaoyan Ding, Sijin Chen, Haolin Cui, Chao Sun, Dongxue Liu, Qixi Mi, Xiao He, Anthony Watts, **Xin Zhao**

640-Pos Board B471
EXTRACTING THE HYDROLYSIS RATE CONSTANT FROM A SINGLE-MOLECULE CONTROLLED ROTATION EXPERIMENTAL DATA ON A F1ATPASE. **Oganes Khatchikian**, Sandor Volkan-Kacso

Light Energy Harvesting, Trapping, and Transfer (Boards B472 - B476)

641-Pos Board B472
INTERACTION OF FNR WITH THE CYTOCHROME B_6F COMPLEX: THERMODYNAMIC PARAMETERS. **Stanislav Zakharov**, Yuko Misumi, Genji Kurisu, William A. Cramer

642-Pos Board B473
SPECTROSCOPIC AND COMPUTATIONAL ANALYSIS OF MN_4CA CLUSTER TRANSFORMATIONS IN THE OXYGEN EVOLVING COMPLEX OF PHOTOSYSTEM II. **Yulia Pushkar**, Scott C. Jensen, Alireza K. Ravari

643-Pos Board B474
FINITE TEMPERATURE ANALYSIS OF INTER-CHROMOPHORE ELECTRONIC COUPLINGS IN DIFFERENT FORMS OF THE PERIDININ-CHLOROPHYLL A PROTEIN. **Dalia M. Hassan**, Matthew Guberman-Pfeffer, José A. Gascón

644-Pos Board B475
COMPARISON OF THE ENERGY TRANSFER DYNAMICS IN STRUCTURAL AND SPECTRAL VARIANTS OF THE LIGHT-HARVESTING COMPLEX 2 OF PURPLE BACTERIA. **Olivia C. Fiebig**, Ashley L. Tong, Marcel Giansily, James N. Sturgis, Gabriela S. Schlau-Cohen

645-Pos Board B476
SPONTANEOUS CELL LUMINESCENCE AND OXIDATIVE METABOLISM. **Ibtissame Khaoua**, François Amblard

Cellular Signaling and Metabolic Networks (Boards B477 - B488)

646-Pos Board B477
BCL-2 OVEREXPRESSION STIMULATES CELL PROLIFERATION AND LACTIC FERMENTATION WITHOUT AFFECTING WHOLE CELL RESPIRATION. **Laurent M. Dejean**, Bushra Mahmood, Nawras Saaman, Lucineh Kasnakjian, Krish Krishnan, Fabian V. Filipp

647-Pos Board B478
THERMODYNAMIC BOUNDS ON THE RANGE AND SENSITIVITY OF COVALENT SWITCHING. Jeremy A. Owen, Pranay Talla, **John W. Biddle**, Jeremy Gunawardena

648-Pos Board B479
DEDUCED ROLES OF THE CARDIAC 14-3-3 PROTEIN INTERACTOME IN HEART METABOLISM, PROTEIN SYNTHESIS AND PROTEOSTASIS. **Jia-Hua Qu**, Kirill V. Tarasov, Khalid Chakir, Yelena S. Tarasova, Edward G. Lakatta

649-Pos Board B480
ISLET COMPLEXINS ARE COMPLEX. **Michael R. DiGruccio**, Xue Wen Ng, David W. Piston, Rebecca Rooks

650-Pos Board B481
TUNABLE FLUORESCENT IONIC NANOMATERIALS WITH SELECTIVE TOXICITY TOWARD CANCER CELLS. **Shalise A. Burch**, Luis Arrioja, Areli Jannes Javier, David Bwambok, Carlos Luna Lopez

651-Pos Board B482
VISCOADAPTATION CONTROLS DIFFUSION AND INTRACELLULAR REACTION RATES IN RESPONSE TO HEAT AND ENERGY AVAILABILITY. **Laura Persson**, Vardhaan Ambati, Onn Brandman

652-Pos Board B483
UNDERSTANDING TISSUE BEHAVIOUR INCORPORATING DIFFERENT KINDS OF CELLULAR INTERACTIONS. **Debangana Mukhopadhyay**

653-Pos Board B484
LEARNING REGULATION AND OPTIMAL CONTROL OF ENZYME ACTIVITIES. **William R. Cannon**, Samuel R. Britton, Mark Alber

654-Pos Board B485
A NOVEL STOCHASTIC SIMULATION APPROACH ENABLES EXPLORATION OF MECHANISMS TO REGULATE POLARIZATION DYNAMICS. **Samuel A. Ramirez**, Michael Pablo, Sean Burk, Daniel J. Lew, Timothy C. Elston

655-Pos Board B486
A PREDICTIVE MODEL OF MULTICELLULAR MECHANICS AND INTRACELLULAR SIGNALING DURING EPITHELIAL-MESENCHYMAL TRANSITION. **Shreyas U. Hirway**, Lewis E. Scott, Christopher A. Lemmon, Seth H. Weinberg

656-Pos Board B487
A CONTROLLABLE PROTEIN TRANSLATION STRATEGY FOR EXPLORING CELLULAR SIGNAL TRANSDUCTION BASED ON READING THROUGH PREMATURE TERMINATION CODONS. **Cheryl X. Y. Cheng**, Jingjing Zhou, Yongqi Huang, Zhengding Su

657-Pos Board B488
THE APPLICATION OF NMR METABOLOMICS IN THE STUDY OF THE WOUND HEALING PROCESS. Juliana F. Floriano, Icaro P. Caruso, Angelica M. Barbosa, Carlos F. Graeff, **Fatima Pereira de Souza**, Marilza V. Rudge

Diffraction and Scattering Techniques (Boards B489 - B500)

658-Pos Board B489
LABEL FREE QUANTITATITVE PHASE IMAGING OF CELLULAR STRUCTURES. **Nicholas Anthony**, Alberta Trianni, Paolo Bianchini, Alberto Diaspro

659-Pos Board B490
MODELING OF CHROMATIN DNA BY POLARIZED LIGHT SCATTERING. **Muhammad Waseem Ashraf**, Aymeric Le Gratiet, Riccardo Marongiu, Alberto Diaspro

660-Pos Board B491
POLARIZATION-RESOLVED LIGHT SCATTERING SPECTROSCOPY (PLSS) TO STUDY CHROMATIN-DNA ORGANIZATION. **Riccardo Marongiu**, Aymeric Le Gratiet, Muhammad W. Ashraf, Alberto Diaspro

661-Pos Board B492
PROTEIN CONFORMATIONAL DYNAMICS PROBED CORRELATION SPECTROSCOPY OF MULTIPLY SCATTERED LIGHT. Guillaume Graciani, Loic Le Goff, **François Amblard**

662-Pos Board B493
QUANTIFICATION OF WATER FLUX IN LARGE UNILAMELLAR VESICLES. Christof Hannesschläger, Anna Eckerstorfer, Armin Speletz, Thomas Barta, Johann Wachlmayr, **Andreas Horner**

663-Pos Board B494
STUDYING WEAK MACROMOLECULAR INTERACTIONS BY SEDIMENTATION VELOCITY OF HIGHLY CONCENTRATED SOLUTIONS. Peter Schuck, **Sumit K. Chaturvedi**, Huaying Zhao

664-Pos Board B495
DEVELOPING A PH-JUMP CHEMICAL TRIGGERING METHOD FOR TIME-RESOLVED DIFFRACTION IN BACTERIAL HMG-COA REDUCTASE. **Vatsal Purohit**, Tony Rosales, Chandra Critchelow, Calvin Steussy, Tim Schmidt, Olaf Wiest, Paul Helquist, Cynthia V. Stauffacher

665-Pos Board B496
SINGLE MOLECULAR OBSERVATION OF AFP AND ICE-CRYSTAL DYNAMICS IN *CAENORHABDITIS ELEGANS* BY TIME-RESOLVED X-RAY DIFFRACTION MEASUREMENTS. **Yige Dong**, Masahiro Kuramochi, Chiaki Takanashi, Kazuhiro Mio, Motomichi Doi, Kouki Aoyama, Hiroshi Sekiguchi, Sakae Tsuda, Yuji C. Sasaki

666-Pos Board B497
DNA-ORIGAMI-ASSISTED FLOW-ALIGNED SINGLE-PARTICLE DIFFRACTIVE IMAGING USING XFEL PULSES. **P Lourdu Xavier**, Oleksandr Yefanov, Kartik Ayyer, Ruojie Sha, Juraj Knoška, Carolin Seuring, Sébastien Boutet, Mengning Liang, David A. Bushnell, Roger Kornberg, Anton Barty, Saša Bajt, Rick P. Millane, Nadrian C. Seeman, Henry N. Chapman

667-Pos Board B498
USER CAPABILITIES AT THE GM/CA@APS STRUCTURAL BIOLOGY FACILITY AT THE ADVANCED PHOTON SOURCE. **Nagarajan Venugopalan**, Michael Becker, Stephen Corcoran, Dale Ferguson, Mark Hilgart, David J. Kissick, Oleg Makarov, Craig M. Ogata, Ruslan Sanishvili, Sergey Stepanov, Qingping Xu, Shenglan Xu, Robert F. Fischetti, Janet L. Smith

668-Pos Board B499
HIGH THROUGHPUT SCATTERING BEAMLINE FOR LIFE SCIENCES AT NSLS-II. **Shirish N. Chodankar**, Lin Yang, James Byrnes

669-Pos Board B500
RECENT DEVELOPMENTS AT THE BEAMLINE FOR BIOLOGICAL SMALL ANGLE X-RAY SCATTERING BL4-2 AT SSRL. **Ivan Rajkovic**, Tsutomu Matsui, Ping Liu, Thomas M. Weiss

Molecular Dynamics I (Boards B501 - B531)

670-Pos Board B501
A VERSATILE LAMBDA-DYNAMICS MODULE FOR GROMACS. **R. Thomas Ullmann**, Helmut Grubmueller

671-Pos Board B502
THE ROLE OF RAPID PROTEIN DYNAMICS IN ARTIFICIAL ENZYME DESIGN. **Joseph Schafer**, Ioanna Zoi, Dimitri Antoniou, Steven D. Schwartz

672-Pos Board B503
LOOS: A SUITE OF TOOLS TO ANALYZE MOLECULAR DYNAMICS SIMULATIONS. **Alan Grossfield**, Tod D. Romo

673-Pos Board B504
IMPROVED ESTIMATES OF FOLDING STABILITIES AND KINETICS FROM MULTIENSEMBLE MARKOV MODELS. **Si Zhang**, Vincent Voelz

674-Pos Board B505
A SCALING RELATION BETWEEN ACCESSIBLE PHASE SPACE VOLUME AND ESCAPE RATES FOR RANDOM WALKS IN HIGH-DIMENSIONAL HIERARCHICAL ENERGY LANDSCAPES - IMPLICATIONS FOR PROTEIN DYNAMICS. **Andreas Volkhardt**, Helmut Grubmueller

675-Pos Board B506
TEMPERATURE DRIVEN SHAPE TRANSFORMATION OF NANODISCS BY COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Warin Rangubpit**, Ras Pandey, Pornthep Sompornpisut

676-Pos Board B507
ENHANCED SAMPLING OF PEPTIDE BINDING TO PROTEINS THROUGH GAUSSIAN ACCELERATED MOLECULAR DYNAMICS SIMULATIONS. **Jinan Wang**, Andrey Alekseenko, Dima Kozakov, Yinglong Miao

677-Pos Board B508
BICEPS 2.0: NEW TOOLS FOR BAYESIAN INFERENCE OF CONFORMATIONAL POPULATIONS FROM THEORY AND EXPERIMENT. **Yunhui Ge**, Robert M. Raddi, Vincent A. Voelz

678-Pos Board B509
PROBING THE ACCURACY OF EXPLICIT SOLVENT CONSTANT PH MOLECULAR DYNAMICS SIMULATIONS FOR PEPTIDES. **Plamen N. Dobrev**, Sahithya Vemulapalli, Nilamoni Nath, Christian Griesinger, Helmut Grubmueller

679-Pos Board B510
EFFICIENT ESTIMATION OF BINDING KINETICS USING SCALED NON-BONDED INTERACTIONS AND HARMONIC RESTRAINTS. **Yunhui Ge**, Vincent A. Voelz

680-Pos Board B511
HYBRID KINETIC MONTE CARLO / MOLECULAR DYNAMICS SIMULATIONS OF BOND SCISSIONS IN PROTEINS. **Benedikt Rennekamp**, Fabian Kutzki, Agnieszka Obarska-Kosinska, Christopher Zapp, Frauke Gräter

681-Pos Board B512
NANOPORE CONFINED SPACE TOWARD PRECISION ASYMMETRIC SYNTHESIS OF SINGLE MOLECULES. Bo Yuan, Yuanjie Li, Hongyan Niu, Xueyuan Wu, Yilun Ying, **Yi-Tao Long**

682-Pos Board B513
COMPUTING SPATIALLY RESOLVED ROTATIONAL HYDRATION-SHELL ENTROPIES FROM MD SIMULATIONS USING AN ORIENTATIONAL K-NEAREST-NEIGHBOR DENSITY ESTIMATOR. **Leonard P. Heinz**, Helmut Grubmueller

683-Pos Board B514
NANOWAVEGUIDE-ILLUMINATED FLUORESCENCE CORRELATION SPECTROSCOPY FOR STUDYING MOLECULAR DYNAMICS ON CELL MEMBRANES. **Joseph M. Chandler**, Patrick DeLear, Brian Le, Chelsea Howard, Arstanbek Tulekeyev, Oskar Garcia, Huizhong Xu

684-Pos Board B515
DETERMINING PROTEIN STRUCTURES USING ACCELERATED MD SIMULATIONS AND NOISY DATA. **Roy Nassar**, Alberto Perez, James C. Robertson, Cong Liu, Emiliano Brini, Ken A. Dill

685-Pos Board B516
IMPROVED FLOODING MOLECULAR DYNAMICS ANALYSIS. **Leonardo Cirqueira**, Leticia Stock, Werner Treptow

686-Pos Board B517
DATA-DRIVEN DEVELOPMENT OF LIPID FORCE FIELDS FOR MOLECULAR DYNAMICS SIMULATIONS. **Hanne S. Antila**, Markus S. Miettinen

687-Pos Board B518
TESTING AND IMPROVING ALCHEMICAL METHODS FOR PROTEIN-PROTEIN BINDING AFFINITY CALCULATION. **Dharmeshkumar J Patel**, Jagdish Suresh Patel, F. Marty Ytreberg

688-Pos Board B519
PROBING THE CONFORMATIONAL CHANGE OF CONTRACTILE TAILS USING COARSE-GRAINED NORMAL MODE ANALYSIS. **Moises E. Romero**, Ioan Andricioaei

689-Pos Board B520
EXPLICIT IONS FOR COARSE-GRAINED SIMULATIONS OF INTRINSICALLY DISORDERED PROTEINS VIA HYDROPHOBICITY/HYDROPHILICITY SCALES. **Thomas P. Dannenhoffer-Lafage**, Robert B. Best

690-Pos Board B521
ACCURATE DETERMINATION OF MEMBRANE PENETRATION OF PROTEINS USING FLUORESCENCE QUENCHING AND MOLECULAR DYNAMICS SIMULATIONS. **Oleksandr V. Kyrychenko**, Alexey S. Ladokhin

691-Pos Board B522
NOVEL SIMULATION METHODS FOR ELECTRIC FIELD-INDUCED DYNAMICS OF PROTEIN CRYSTALS. **Justin S. Kim**, Lauren McGough, Eugene Klyshko, Rama Ranganathan, Sarah Rauscher

692-Pos Board B523
USING DIHEDRAL STABILITIES TO CHARACTERIZE PROTEIN FOLDING TRANSITIONS. **David Wang**, Piotr E. Marszalek

693-Pos Board B524
AUTOMATIC PARTITION OF PROTEIN MOLECULAR DYNAMICS USING COUPLED HIDDEN MARKOV-ISING MODELS. **Ka Chun Ho**, Donald Hamelberg

694-Pos Board B525
FORCE FIELD ERROR DIAGNOSIS AND STRUCTURE-DRIVEN CORRECTION FOR THE ATP-MAGNESIUM COMPLEX. **Floris Buelens**, Bert L. de Groot, Helmut Grubmueller

695-Pos Board B526
AN INTEGRATIVE APPROACH TO SINGLE-MOLECULE FRET SPECTROSCOPY AND MOLECULAR DYNAMICS SIMULATIONS FOR THE STUDY OF INTRINSICALLY DISORDERED PROTEINS. **Mahmoud Moradi**

696-Pos Board B527
USING MOLECULAR DYNAMICS SIMULATIONS TO UNDERSTAND IR SPECTROSCOPY RESULTS IN GREEN FLUORESCENT PROTEIN. Nia Huggins, Tracey Ng, Nicole Cruz, Scott H. Brewer, Christine M. Phillips-Piro, **Paul S. Nerenberg**

697-Pos Board B528
EQUILIBRATION OF BURIED WATER MOLECULES TO ENHANCE PROTEIN-LIGAND BINDING FREE ENERGY CALCULATIONS. **Ido Y. Ben-Shalom**, Charles Lin, Tom Kurtzman, Ross Walker, Michael K. Gilson

698-Pos Board B529
A COMPUTATIONAL STUDY OF FREE-ENERGY CHANGES UPON PROTEIN MUTATIONS. **Shun Sakuraba**

699-Pos Board B530
IDENTIFICATION OF BINDING MODES IN MOLECULAR RECOGNITION PROCESSES VIA NON-HEURISTIC CLUSTERING OF COMPUTATIONAL DATA. **Danna De Boer**

700-Pos Board B531
NAMD AS A TOOL FOR *IN SILICO* FORCE SPECTROSCOPY. **Rafael C. Bernardi**, Lukas F. Milles, Hermann E. Gaub

Optical Microscopy and Superresolution Imaging I (Boards B532 - B566)

701-Pos Board B532
DEVELOPING INVERSELY RESPONDING GENETICALLY ENCODED SUPERRESOLUTION REPORTERS. **Kriti Srivastava**, Gary Mo

702-Pos Board B533
3D SUPERRESOLUTION FLUORESCENCE MICROSCOPY ON T-CELLS. **Lukas Velas**, Philipp Zelger, Alexander Jesacher, Mario O. Brameshuber, Gerhard J. Schütz

703-Pos Board B534
SUPERRESOLUTION ORIENTATION IMAGING: A MICROSCOPY TECHNIQUE FOR MEASURING DYNAMICS IN BIOLOGICAL SYSTEMS. **Duncan P. Ryan**, Somak Majumder, Jennifer A. Hollingsworth, Peter M. Goodwin, James H. Werner

704-Pos Board B535 Travel Awardee
MULTIPLEXED DNA-PAINT USING A HIGH-SPEED LINE-SCANNING HYPERSPECTRAL MICROSCOPE. **Elton D. Jhamba**, Hanieh Mazloom-Farsibaf, Diane S. Lidke, Keith A. Lidke

705-Pos Board B536
SUPERRESOLUTION IMAGING OF LIVE CELLS WITH GENETICALLY ENCODED SILICON RHODAMINE-BINDING RNA APTAMERS. Peng Gao, Regina Wirth, Jens Lackner, Murat Sunbul, Andres Jaeschke, **G. Ulrich Nienhaus**

706-Pos Board B537
SUPERRESOLUTION 3D MICROSCOPY OF THE NUCLEAR PORE. **Rajdeep Chowdhury**, Abhishek Sau, Siegfried M. Musser

707-Pos Board B538
SIMULTANEOUSLY CAPTURING THE STRUCTURE AND MECHANICAL PROPERTIES OF CHROMOSOME USING STED NANOSCOPY AND OPTICAL TWEEZERS. **Tianlong Man**, Anna E.C. Meijering, Iddo Heller, Kata Sarlós, Ian D. Hickson, Gijs J. Wuite, Erwin J.G. Peterman

708-Pos Board B539
CHARACTERIZATION OF DCAS9 INTERACTION KINETICS AND LOCAL CHROMATIN STRUCTURE IN LIVE HUMAN CELLS USING PALM SUPERRESOLUTION MICROSCOPY. **Dushyant Mehra**, Chiranjib Banerjee, Santosh Adhikari, Karl J. Clark, Stephen C. Ekker, Elias M. Puchner

709-Pos Board B540
SINGLE-MOLECULE IMAGING AND LABELLING WITH DNA-BASED SUPERRESOLUTION MICROSCOPY. **Mingjie Dai**, Ninning Liu, Sinem K. Saka, Peng Yin

710-Pos Board B541
QUANTIFYING THE OLIGOMERIC STATES OF MEMBRANE PROTEINS IN CELLS THROUGH SUPERRESOLUTION LOCALIZATIONS. **Xihong Xie**, Yu-Shan Cheng, Meng-Hsuan Wen, Aparna Calindi, Tai-Yen Chen

711-Pos Board B542
HIGH-THROUGHPUT AUTOMATED SEQUENTIAL SUPERRESOLUTION IMAGING OF MEMBRANE PROTEINS. **David J. Schodt**, Farzin Farzam, Keith A. Lidke

712-Pos Board B543
TRACKING RETROVIRUS PARTICLES AT DIFFERENT STAGES OF THE VIRAL LIFE CYCLE USING 3-DIMENSIONAL SUPERRESOLUTION MICROSCOPY. **Rayna M. Addabbo**, John Kohler, Isaac Angert, Louis M. Mansky, Joachim D. Mueller

713-Pos Board B544
OPEN-SOURCE TOOLS FOR AUTOMATED LOCALIZATION MICROSCOPY. **Joran Deschamps**, Markus Mund, Daniel Schroeder, Jonas Ries

714-Pos Board B545
A MODULAR PLATFORM TO ENABLE COMBINATORIAL MICROSCOPY. **Aaron Au**, Ziyang Yu, Christopher M. Yip

715-Pos Board B546
A ROBUST, FIDUCIAL FREE DRIFT CORRECTION FOR SUPERRESOLUTION IMAGING. **Michael J. Wester**, Sandeep Pallikkuth, Hanieh Mazloom-Farsibaf, Mohamadreza Fazel, David Schodt, Keith A. Lidke

716-Pos Board B547
TOWARD SINGLE-MOLECULE LOCALIZATION MICROSCOPY (SMLM) ACQUISITIONS ASSISTED BY REAL-TIME QUALITY CONTROL. Sébastien Mailfert, Nicolas Bertaux, **Didier A. Marguet**

717-Pos Board B548
STED SUPERRESOLUTION IMAGING OF DUOX1 AND CEN2 REVEALS SUBSTRUCTURE OF MEMBRANE MACROMOLECULAR COMPLEXES IN HUMAN BRONCHIAL EPITHELIAL CELLS. **Kamila R. Mustafina**, Yukiko Sato, John W. Hanrahan, Paul W. Wiseman

718-Pos Board B549
LIVE-CELL SUPERRESOLUTION MICROSCOPY OF FAA4 RE-DISTRIBUTION ON LIPID DROPLETS DURING METABOLIC TRANSITIONS IN YEAST. **Santosh Adhikari**, Joe Moscatelli, Elias M. Puchner

719-Pos Board B550
QUANTITATIVE SUPERRESOLUTION MICROSCOPY REVEALS THE CRITICAL ROLE OF ULK1 OLIGOMERIC STATES AND SUB-CELLULAR LOCALIZATION IN PHAGOPHORE MATURATION. Chiranjib Banerjee, Daihyun Song, Do-Hyung Kim, **Elias M. Puchner**

720-Pos Board B551
STRUCTURAL CHANGES TO DESMOSOME ARCHITECTURE DURING ASSEMBLY AND MATURATION. **Reena R. Beggs**, Tejeshwar C. Rao, William F. Dean, Rose M. Albert, Alexa L. Mattheyses

721-Pos Board B552
USING CORRELATIVE SUPERRESOLUTION FLUORESCENCE AND ELECTRON MICROSCOPY TO UNRAVEL DIATOM MORPHOGENESIS. **Adeeba Fathima Valiya Thodiyil**, André Ohara, Nicole Poulsen, Nils Kröger, Michael Schlierf

722-Pos **Board B553**
IN DEPTH 3D SINGLE MOLECULE LOCALIZATION MICROSCOPY WITH TIME MODULATED EXCITATION. **Pierre Jouchet**, Clement Cabriel, Nicolas Bourg, Marion Bardou, Christian Poüs, Emmanuel Fort, Sandrine Lévêque-Fort

723-Pos **Board B554**
DEVELOPING SINGLE-MOLECULE AND SUPERRESOLUTION TECHNIQUES TO CHARACTERISE ALPHA-SYNUCLEIN AGGREGATION. **Alexandre Chappard**, Mathew Horrocks

724-Pos **Board B555**
VISUALISING A-SYNUCLEIN OLIGOMERS USING SUPERRESOLUTION MICROSCOPY. **Craig Leighton**, Mathew Horrocks, Tilo Kunath

725-Pos **Board B556**
ENHANCED TRANSIENT AMYLOID BINDING MICROSCOPY USING SINGLE-MOLECULE ORIENTATION MEASUREMENTS. **Tianben Ding**, Tingting Wu, Hesam Mazidi, Oumeng Zhang, Matthew D. Lew

726-Pos **Board B557**
QUANTITATIVE IMAGING OF BACTERIAL EFFLUX PUMPS THROUGH SINGLE-MOLECULE LOCALIZATION MICROSCOPY. **Tiziano Vignolini**, Lucia Gardini, Francesco S. Pavone, Marco Capitanio

727-Pos **Board B558**
VERSATILE UNIFORM ILLUMINATION FOR QUANTITATIVE WIDE-FIELD FLUORESCENCE AND SINGLE-MOLECULE LOCALIZATION MICROSCOPIES. **Adrien Mau**, Nicolas Bourg, Sandrine Lévêque-Fort

728-Pos **Board B559**
APPLICATIONS OF LABEL-RETENTION EXPANSION MICROSCOPY ON BIOLOGICAL SYSTEMS AT VARIOUS SCALES. **Xiaoyu Shi**, Ian Seiple, Bo Huang

729-Pos **Board B560**
APPLICATION OF SUPERRESOLUTION RADIAL FLUCTUATION (SRRF) IMAGING TO MEASUREMENT OF SINGLE-MOLECULE DNA HYBRIDIZATION KINETICS. **Justin T. Cooper**, Adam Wise

730-Pos **Board B561**
NUCLEAR PORES AS VERSATILE REFERENCE STANDARDS FOR QUANTITATIVE SUPERRESOLUTION MICROSCOPY. Jervis V. Thevathasan, Maurice Kahnwald, Robin Diekmann, Jan Ellenberg, **Jonas Ries**

731-Pos **Board B562**
THE EFFECT OF CRYO TEMPERATURE ON COMMONLY USED FLUOROPHORES. **Lauren Ann Metskas**, Samuel Ho, Sara J. Weaver, Grant J. Jensen, David A. Tirrell

732-Pos **Board B563**
SYNERGIC COMBINATION OF STIMULATED EMISSION DEPLETION MICROSCOPY WITH STIMULATED RAMAN SCATTERING. Wenlong Yang, Nate Jowett, **Iván Coto Hernández**

733-Pos **Board B564**
3D SUPERRESOLUTION STUDIES OF THE EFFECT OF SERINC5 ON ENV GLYCOPROTEIN DISTRIBUTION ON HIV-1 PARTICLES. **Yen-Cheng Chen**, Chetan Sood, Mariana Marin, Jesse Aaron, Teng-Leong Chew, Khalid Salaita, Gregory B. Melikyan

734-Pos **Board B565**
INTERFEROMETRIC SCATTERING MICROSCOPY TO CHARACTERIZE NANOMETRIC OBJECTS AND SUBCELLULAR STRUCTURES: TOWARDS FAST 3D IMAGING AT NANOSCALE. Il-Buem Lee, Jin-Sung Park, Hyeon-Min Moon, Katerina Zambochova, Kyoung-Hoon Kim, Jong-Hyeon Joo, Jin-Sun Ryu, Sun-Young Kong, **Seok-Cheol Hong**, Minhaeng Cho

735-Pos **Board B566**
SCANNING FCS AND SUPERRESOLUTION MICROSCOPY ON 2D LIPID MEMBRANES. **Marcelle Koenig**, Mariano Gonzalez Pisfil, Rhys Dowler, Benedikt Krämer, Sumeet Rohilla, Christian Oelsner, Felix Koberling, Rainer Erdmann

Bioengineering (Boards B567 - B586)

736-Pos **Board B567**
TOWARD TAILORED BIOSTABILITY OF DNA NANOSTRUCTURES. **Javier Vilcapoma**

737-Pos **Board B568**
DNA NANOSWITCHES AS VERSATILE RNA BIOSENSORS. **Arun Richard Chandrasekaran**

738-Pos **Board B569**
ISOTHERMAL DNAZYME-MEDIATED BICYCLIC ROLLING CIRCLE AMPLIFICATION ENABLES SIMPLE COLORIMETRIC DETECTION OF A TARGET SEQUENCE. Alessandra C. Zimmermann, **Jason D. Kahn**, Ian M. White

739-Pos **Board B570**
PREPARATION OF PEPTIDES WITH HIGH AFFINITY TO CANCER TARGETS IN MRNA DISPLAY VIA CONTINUOUS-FLOW MICROFLUIDICS. **Wan-Zhen Lin**, William E. Evenson, Kenmond Pang, Richard Roberts, Noah Malmstadt

740-Pos **Board B571**
SENSING MIXED LINEAGE LEUKEMIA WIN MOTIF PEPTIDE-WD REPEAT PROTEIN-5 ASSOCIATION WITH AN ENGINEERED BIOSENSOR. **Lauren A. Mayse**, Ashley Canning, Ali Imran, Michael Cosgrove, Liviu Movileanu

741-Pos **Board B572**
PHOTO-CONTROL OF RAS NUCLEOTIDE EXCHANGE REACTION USING PEPTIDE INHIBITOR MODIFIED WITH SPIROPYRAN DERIVATIVE. **Kenichi Taii**, Nobuyuki Nishibe, Kei Sadakane, Shinsaku Maruta

742-Pos **Board B573**
THE EFFECT OF DIFFERENT FLUOROPHORES ON FLUORESCENCE-BASED TECHNIQUES. **Marco Cavaco**, Diana Gaspar, Vera Neves, Miguel A. Castanho

743-Pos **Board B574**
ENGINEERING A MAGNETIC PROTEIN CRYSTAL. **Thomas Li**, Zegao Wang, He You, Qunxiang Ong, Vamsi Varanasi, Mingdong Dong, Bai Lu, Sergiu Pasca, Bianxiao Cui

744-Pos **Board B575**
PAPER-SUPPORTED LIPID BILAYERS THAT CAN BE STORED BEFORE USE. **Gabriella R. Kimmerly**, Khadijah T. Thibodeaux, Jazmyn Juarez, Lauren Trihy, Babak Sanii

745-Pos **Board B576** **Travel Awardee**
OUTER LEAFLET LIPID COMPOSITION AFFECT THE INTERNALIZATION OF NANOPARTICLE IN LIVE CELLS. **Saeed Nazemidashtarjandi**, Amir Farnoud

746-Pos **Board B577**
A PIPELINE FOR HIGH-THROUGHPUT ASSESSMENT OF ELECTROPHYSIOLOGY AND PROTEIN QUANTIFICATION IN SMALL SAMPLES OF IPS-CM. **Weizhen Li**, Emilia Entcheva

747-Pos **Board B578**
FABRICATION OF A MICROFLUIDIC DEVICE TO STUDY THE INTERACTIONS BETWEEN HUMAN CHORDOMA UCH-1 AND HUMAN ADIPOSE-DERIVED STEM CELLS. **Holly Day**, Rosaline Kumar, Carlos Luna

748-Pos Board B579
ENGINEERING THE MICROENVIRONMENT FOR HEART MUSCLE CELL MECHANOBIOLOGY. **Erica A. Castillo**, Kerry Lane, Orlando Chirikian, Samuel Feinstein, Cheavar Blair, Alison Schroer, Gaspard Pardon, Tanya Grancharova, Ru Gunawardane, Sarah Heilshorn, Beth L. Pruitt

749-Pos Board B580
PHENOTYPING OF PHAGOCYTOSING NEUTROPHIL POPULATIONS USING DEFORMABILITY CYTOMETRY. **Cody Combs**, Matthew J. Bovyn, Rocelle Radzyminski, Daniel Spalinski, Jun F. Allard, Steven Gross, Xiaohui Xie, Zuzanna S. Siwy

750-Pos Board B581
HAIR REGENERATION INDUCED BY MECHANICAL STRETCH THROUGH THE ALTERNATIVE ACTIVATION OF MACROPHAGES. **Oscar K. Lee**

751-Pos Board B582
PERIODIC BIOMECHANICAL STRESSES AND STRAINS AT NEURAL INTERFACES MODULATE MITOCHONDRIAL AND METABOLIC FUNCTIONALITY. **Arati Sridharan**, Vladislav Voziyanov, Jit Muthuswamy

752-Pos Board B583
SIMULATED MICROGRAVITY AFFECTS NUMB LOCALIZATION IN HUMAN ADIPOSE-DERIVED STEM CELLS. **Areli Jannes Javier**, Daniel Roufaeil, Shalise Burch, Rosaline Kumar, Holly Day, Carlos Luna

753-Pos Board B584
A MULTI-SCALE MODELING APPROACH TO DETERMINE 3D HEART VALVE INTERSTITIAL CELL BIOPHYSICAL BEHAVIOR IN A HYDROGEL ENVIRONMENT. **Michael S. Sacks**, Emma Lejeune, Alex Khang

754-Pos Board B585
PHYSICAL CONFINEMENT INDUCES MALIGNANT TRANSFORMATION IN MAMMARY EPITHELIAL CELLS. **Yen-Chun Lu**

755-Pos Board B586 Travel Awardee
MOUSE MELANOMA B16 TUMORS ARE SOFT AND ENGULFABLE WHEN TARGETED IN COMBINATION WITH MACROPHAGE CHECKPOINT BLOCKADE. **Lawrence J. Dooling**, Brandon H. Hayes, Jason C. Andrechak, Siddhant Kadu, Dennis E. Discher

Micro- and Nanotechnology I (Boards B587 - B606)

756-Pos Board B587
STRUCTURAL AND FUNCTIONAL PROPERTIES OF SYNTHETIC TRANSMEMBRANE PEPTIDE PORES. **Puthumadathil Neethu Narayanan Anitha**, Smrithi Krishnan R., Kozhinjampara R. Mahendran

757-Pos Board B588
IMMOBILIZATION OF BIOENGINEERED PORTAL PROTEIN WITHIN A SOLID-STATE NANOPORE FOR MOLECULAR SENSING.
Mehrnaz Mojtabavi, Sandra Greive, Alfred Antson, Meni Wanunu

758-Pos Board B589
SIMULATING RESISITIVE PULSES FROM THE TRANSLOCATION OF ARBITRARILY SHAPED SINGLE PROTEINS THROUGH NANOPORES USING SPHERICAL CLUSTERS OF BEADS. **Shuran Xu**, Cuifeng Ying, Marco Lattuada, Michael Mayer

759-Pos Board B590
SINGLE PROTEIN TRAPPING ON ULTRATHIN ASYMMETRIC SOLID-STATE NANOPORES. **Hirohito Yamazaki**, Fanjun Li, Abdelkrim Benabbas, Benjamin Cressiot, Paul M. Champion, Min Chen, Meni Wanunu

760-Pos Board B591
PROTEIN TRAPPING IN A NANOPORE WELL. **Jiali Li**, Cuifeng Ying, Saurabh Awasthi, Trevor Kalkus, Mitu C. Acharjee, Michael Mayer

761-Pos Board B592
TWO PROTEIN DYNAMICS THROUGH A NANOPORE IN AN ELECTRICALLY BIASED SOLID-STATE MEMBRANE. **Craig C. Wells**, Dmitriy V. Melnikov, Maria E. Gracheva

762-Pos Board B593
ORIENTATION-DEPENDENT ELECTRIC POTENTIAL AND IONIC CURRENT MODEL OF A NUCLEOTIDE IN A SILICON DIOXIDE NANOPORE.
Arjun Verma, Maria E. Gracheva

763-Pos Board B594
ELECTRONIC DETECTION OF NUCLEOTIDES IN MULTI-LAYERED MOS_2-HBN NANOPORE FET DEVICES. **Nagendra Athreya**, Jean-Pierre Leburton

764-Pos Board B595
INVESTIGATING C-KIT1 G-QUADRUPLEX STABILITY USING NANOPORE. Trang Vu, Joel Martinez-Goyco, Sun Min Kim, Tae-Joon Jeon, **Jiwook Shim**

765-Pos Board B596
REPEATED SENSING OF SINGLE DNA MOLECULES IN A DUAL NANOPORE DEVICE. Philip Zimny, Yuning Zhang, Ankit Rana, Roland Nagel, Walter Reisner, William B. Dunbar, **Xu Liu**

766-Pos Board B597
RECENT PROGRESS IN SOLID-STATE NANOPORE DNA SEQUENCING. **Paul Masih Das**

767-Pos Board B598
INHIBITING SECONDARY STRUCTURE IN HIGH-MOLECULAR-WEIGHT SSDNA DURING TRANSLOCATION THROUGH GRAPHENE NANOPORES. **Dayana E. Tobar**, Ravipa Losakul, Robin Schipper, Akira Pimenov, Aracely Gutierrez, Wolf A. Jehle, Henk W.C. Postma

768-Pos Board B599
OPTICAL OBSERVATION OF DNA TRANSLOCATION DYNAMICS IN SIN NANOPORES. **Katsuyuki Enomoto**, Yuki Ishikawa, Keiko Esashika, Toshiharu Saiki

769-Pos Board B600
UNBALANCED ION FLUSHING EFFECT IN MOS_2 NANOPORE BIOSENSORS. **Mingye Xiong**, Michael Graf, Nagendra Athreya, Aleksandra Radenovic, Jean-Pierre Leburton

770-Pos Board B601
GATING OF HYDROPHOBIC NANOPORES WITH LARGE ANIONS.
Jake Polster, Elif T. Acar, Tuan Anh Pham, Zuzanna S. Siwy

771-Pos Board B602
IONIC AMPLIFYING CIRCUITS INSPIRED BY ELECTRONICS AND BIOLOGY. **Rachel A. Lucas**, Chih-Yuan Lin, Lane A. Baker, Zuzanna S. Siwy

772-Pos Board B603
BIOMIMETIC SIGNAL PROPAGATION IN A TWO-PORE SOLID-STATE SYSTEM. Cody Combs, Rachel A. Lucas, Jenny Zhou, Nick Teslich, Elif Turker Acar, Francesco Fornasiero, Zuzanna S. Siwy, **Steven F. Buchsbaum**

773-Pos Board B604
ELECTRODE-FREE NANOPORE SENSING BY DIFFUSIOPTOPHYSIOLOGY (DOP). **Yuqin Wang**

774-Pos Board B605 Travel Awardee
DIRECT OBSERVATION OF SINGLE BIOMOLECULE HIDDEN BEHAVIORS BY AN ELECTRO-OPTICAL NANOPORE. **Rui Gao**, Yilun Ying, Yi-Tao Long

775-Pos Board B606
DYNAMICS OF LASER-ASSISTED SILICON NITRIDE DIELECTRIC BREAKDOWN FOR DETERMINISTIC FABRICATION OF SOLID-STATE NANOPORE. **Zifan Tang**, Xiaodong He, Weihua Guan

Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, February 16, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S133, 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 (Boards S1 – S4)

Board S1
DYNAMIC PLASTICITY OF MITOCHONDRIAL VDAC2 REVEALED BY SINGLE-MOLECULE ELECTROPHYSIOLOGY William M. Rosencrans (1337-Pos / B405)

Board S2
STUDY OF WATER AND PROTON CHANNELS NEAR TO THE OXYGEN EVOLVING COMPLEX OF PHOTOSYSTEM II Divya Kaur Matta (2977-Pos / B523)

Board S3
MAMMALIAN STEAROYL-COA DESATURASE FORMS A STABLE TERNARY COMPLEX WITH CYTOCHROME B_5 AND CYTOCHROME B_5 REDUCTASE
Jiemin Shen (2568-Pos / B114)

Board S4
LIVE-CELL SUPERRESOLUTION MICROSCOPY OF FAA4 RE-DISTRIBUTION ON LIPID DROPLETS DURING METABOLIC TRANSITIONS IN YEAST
Santosh Adhikari (718-Pos / B549)

Bioengineering (Boards S5 – S12)

Board S5
CHROMATIN FOLDING UNDER DIFFERENT NUCLEAR CONFINEMENT.
Samira Mali (378-Pos / B209)

Board S6
PREPARATION OF PEPTIDES WITH HIGH AFFINITY TO CANCER TARGETS IN MRNA DISPLAY VIA CONTINUOUS-FLOW MICROFLUIDICS.
Wan-Zhen Lin (739-Pos / B570)

Board S7
DUAL EFFECTS OF SUBCELLULAR CALCIUM HETEROGENEITY AND HEART RATE VARIABILITY ON CARDIAC ELECTROMECHANICAL DYNAMICS.
Vrishti Phadumdeo (1994-Pos / B264)

Board S8
RATIONALIZING THE EFFECT OF MUTATIONS ON THE EDITING EFFICIENCY OF ADENINE BASE EDITORS.
Kartik Lakshmi Rallapalli (1455-Pos / B523)

Board S9
CONSTRUCTION OF PROGRAMMABLE NANOPORE USING *DE NOVO* DESIGNED B-SHEET PEPTIDE.
Keisuke Shimizu (2323-Pos / B593)

Board S10
ANALYZING SINGLE-MOLECULE BEHAVIOR OF A SMALL PROTEIN IN CONFINED NANOSPACE OF A BIOLOGICAL NANOPORE.
Misa Yamaji (2322-Pos / B592)

Board S11
ALLOSTERIC REGULATION OF GLUTAMATE DEHYDROGENASE DEAMINATION ACTIVITY.
Soumen Bera (2538-Pos / B84)

Board S12
MULTIMODAL NONLINEAR OPTICAL IMAGING OF PLASMA MEMBRANE BY DYE-BASED SUM-FREQUENCY GENERATION USING A COHERENT ANTI-STOKES RAMAN SCATTERING MICROSCOPE.
Takaha Mizuguchi (2293-Pos / B563)

Biological Fluorescence (Boards S13 – S24)

Board S13
AO-DIVER ADVANCES THE DEPTH LIMITS OF MULTIPHOTON MICROSCOPY IN SCATTERING MEDIA.
Simon W. Leemans (1504-Pos / B572)

Board S14
BLUE-CONVERSION OF ORGANIC DYES PRODUCES THE ARTIFACTS OF MULTI-COLOR FLUORESCENT IMAGING.
Yeonho Chang (1527-Pos / B595)

Board S15
DEFINING THE FLEXIBLE CARDIAC TROPONIN T LINKER REGION IN RELATIONSHIP TO ACTIN AND DETERMINING EFFECTS OF PATHOGENIC POINT MUTATIONS.
Andrea E. Deranek (2077-Pos / B347)

Board S16
INVESTIGATING NOVEL HETERO-FRET BIOSENSORS FOR ENVIRONMENTAL IONIC STRENGTH USING EXPERIMENTAL AND THEORETICAL APPROACHES.
Cody P. Aplin (2485-Pos / B31)

Board S17
A NOVEL TARGETING APPROACH FOR CANCER TREATMENT BASED ON PHOTODYNAMIC THERAPY.
Eleonora Uriati (1533-Pos / B601)

Board S18
COTRANSCRIPTIONAL MOONLIGHTING OF RSMC AS AN RNA CHAPERONE PROTEIN.
Keshav G C (1102-Pos / B170)

Board S19
STRUCTURAL CHANGES TO DESMOSOME ARCHITECTURE DURING ASSEMBLY AND MATURATION.
Reena R. Beggs (720-Pos / B551)

Board S20
SINGLE-MOLECULE STUDIES OF HETERO-FRET BIOSENSORS TO ENVIRONMENTAL IONIC STRENGTH USING DIFFERENT MODALITIES OF FLUORESCENCE CORRELATION SPECTROSCOPY.
Taryn M. Kay (3008-Pos / B554)

Board S21
HIGH-THROUGHPUT AUTOMATED SEQUENTIAL SUPERRESOLUTION IMAGING OF MEMBRANE PROTEINS.
David Schodt (711-Pos / B542)

Board S22
DIRECTED MANIPULATION OF MEMBRANE PROTEINS BY FLUORESCENT MAGNETIC NANOPARTICLES.
Jia Hui Li (1532-Pos / B600)
Biological Fluorescence (Continued) – Boards S13 – S24

Board S23
REAL-TIME OBSERVATION OF DNA CLEAVAGE BY CRISPR-CAS9 ENDONUCLEASE USING PYRENE MOLECULE AS A SENSITIVE PROBE FOR DETECTING SUB-NM STRUCTURAL CHANGE.
Jinho Park (1098-Pos / B166)

Board S24
COUNTING SINGLE MOLECULES USING INFINITE FACTORIAL HIDDEN MARKOV MODELS.
Shep Bryan IV (3001-Pos / B547)

Biopolymers in vivo (Boards S25 – S32)

Board S25
THE ROLE OF RAPID PROTEIN DYNAMICS IN ARTIFICIAL ENZYME DESIGN.
Joseph Schafer (671-Pos / B502)

Board S26
MULTIDIMENSIONAL PHASE DIAGRAMS FOR MULTICOMPONENT SYSTEMS COMPRISING MULTIVALENT PROTEINS.
Furqan Dar (1041-Pos / B109)

Board S27
INHOMOGENEOUS FORCES IN SEMIFLEXIBLE BIOPOLYMERS.
Ananya Mondal (329-Pos / B160)

Board S28
COMPUTATIONAL EVALUATION OF POINT MUTATION PERTURBATIONS TO THE RECOVERY STROKE OF *DICTYOSTELIUM* MYOSIN II WITH METADYNAMICS.
Anthony Baldo (2138-Pos / B408)

Board S29
INFERRING RADIAL ORGANIZATION OF CHROMOSOMAL TERRITORIES FROM HI-C DATA.
Priyojit Das (2689-Pos / B235)

Board S30
DYNAMICAL METRICS TO FINGERPRINT PROTEINS AND PROTEIN-PROTEIN INTERACTIONS.
Sanjoy Paul (1498-Pos / B566)

Board S31
IN CELL KINETIC FRET ASSAY TO JUDGE SUITABILITY OF BIOORTHOGONAL DYE LABELLING REACTION.
Christine Koehler (1535-Pos / B603)

Board S32
EFFECT OF NASCENT PROTEINS ON THE STABILITY OF THE RIBOSOME.
Meranda Masse (958-Pos / B26)

Channels, Receptors & Transporters (Boards S33 – S43)

Board S33
FUNCTIONAL UNCOUPLING OF PAIN-LINKED NAV1.7/A1632E DIMERS PARTLY RESCUES ITS PAIN-CAUSING PHENOTYPE.
Annika Ruehlmann (2829-Pos / B375)

Board S34
RELATIVE HERG SUBUNIT ABUNDANCE MODIFIES I_{KR} KINETICS AND MAGNITUDE DURING CARDIAC MATURATION.
Chiamaka Ukachukwu (1278-Pos / B346)

Board S35
K_{ATP} CHANNELS IN ZEBRAFISH CARDIOVASCULAR SYSTEM: A MODEL TO STUDY CANTÚ SYNDROME.
Soma S. Singareddy (1271-Pos / B339)

Board S36
EFFECT OF BILAYER THICKNESS ON MECHANICAL ACTIVATION OF THE ANGIOTENSIN II TYPE 1 RECEPTOR.
Bharat Poudel (935-Pos / B3)

Board S37
MOLECULAR DYNAMICS SIMULATIONS STUDIES OF THE PROTON CHANNEL OTOPETRIN AND OTHER MECHANICALLY-ACTIVATED ION CHANNELS.
Che Chun (Alex) Tsui (1345-Pos / B413)

Board S38
LIPID-DEPENDENT MODULATION OF CARDIAC ION CHANNEL ACTIVITY AS AN ANTI-ARRHYTHMIC THERAPY IN LONG-QT SYNDROME.
Haydee Mesa Galloso (2719-Pos / B265)

Board S39
COUPLING MECHANISMS OF VSD MUTANTS OF CI-VSP.
Natsuki Mizutani (1349-Pos / B417)

Board S40
MOLECULAR MECHANISMS OF HUMAN ERG1 CHANNEL BLOCKADE BY CERAMIDES.
Williams E. Miranda (2725-Pos / B271)

Board S41
SEEKING THE INTERFACES OF EPH RECEPTOR INTERACTIONS.
Taylor P. Light (475-Pos / B306)

Board S42
MODULATION OF 5-HT1A G PROTEIN COUPLED RECEPTOR MOVEMENT AND INTERNALIZATION.
Austin Baggetta (2579-Pos / B125)

Board S43
INNATE ANTIFUNGAL IMMUNE RECEPTOR, DECTIN-1, UNDERGOES LIGAND-INDUCED OLIGOMERIZATION WITH HIGHLY STRUCTURED B-GLUCANS AND AT FUNGAL CELL CONTACT SITES.
Eduardo U. Anaya (1200-Pos / B268)

Cryo-EM (Boards S44 – S46)

Board S44
ACTIN FILAMENTS IN FLIGHT MUSCLE Z-DISKS OF*LETHOCERUS INDICUS* SHOW SCREW SYMMETRY, NOT ROTATIONAL SYMMETRY.
Fatemeh A. Abbasi Yeganeh (1436-Pos / B504)

Board S45
INSIGHTS INTO VARIOUS TYPES OF MYOPATHY USING THE ATOMIC MODEL OF*LETHOCERUS* MYOSIN FILAMENTS.
Hamidreza Rahmani (1364-Pos / B432)

Board S46
PORE FORMATION MECHANISM OF HUMAN GASDERMIN D.
Shiyu Xia (193-Pos / B24)

Intrinsically Disordered Proteins (Boards S47 – S56)

Board S47
DISSECTING THE NUCLEAR PORE-LIKE PERMEABILITY BARRIER FUNCTION OF PHASE SEPARATED LIQUID FG NUCLEOPORIN CONDENSATES.
Panagiotis A. Patsis (303-Pos / B134)

Board S48
A-SYNUCLEIN DIMERS AS POTENT INHIBITORS OF FIBRILLIZATION.
Yevhenii Kyriukha (1811-Pos / B81)

Board S49
A DOUBLE MUTANT CYCLE INVOLVING THE CHARGED RESIDUES OF AMYLOID BETA.
Anirban Das (1812-Pos / B82)

Board S50
DESIGNER MEMBRANELESS ORGANELLES ENABLE HIGHLY SPECIFIC PROTEIN ENGINEERING IN EUKARYOTES.
Christopher D. Reinkemeier (2987-Pos / B533)

Board S51
LIPID COMPOSITION, PROTONATION, AND DIVALENT CATIONS AS MODULATORS OF PROTEIN-MEMBRANE INTERACTIONS.
Victor Vasquez Montes (1153-Pos / B221)

Board S52
ENERGETICS OF Π-Π INTERACTIONS IMPLICATED IN LIQUID-LIQUID PHASE SEPARATION.
Andrea Guljas (2642-Pos / B188)

Board S53
SEQUENCE-ENCODED INTERACTIONS MODULATE REENTRANT LIQUID CONDENSATION OF RIBONUCLEOPROTEIN-RNA MIXTURES.
Ibraheem Alshareedah (1821-Pos / B91)

Board S55
BASIN MAPPING METHOD FOR EXTRACTING COMPARATIVE ASSESSMENTS OF PROTEIN PHASE BEHAVIOR FROM *IN VIVO* MEASUREMENTS.
Jared M. Lalmansingh (2636-Pos / B182)

Board S56
RATIONAL DESIGN OF CONFORMATION-SPECIFIC ANTIBODIES FOR TAU OLIGOMERS.
Klara Kulenkampff (1814-Pos / B84)

Macromolecular Machines & Assemblies (Boards S57 – S69)

Board S57
BICEPS 2.0: NEW TOOLS FOR BAYESIAN INFERENCE OF CONFORMATIONAL POPULATIONS FROM THEORY AND EXPERIMENT.
Yunhui Ge (677-Pos / B508)

Board S58
CLOCK OUTPUT SERVES DUAL PURPOSE OF GENE REGULATION AND TIME KEEPING.
Joel C. Heisler (253-Pos / B84)

Board S59
IS DODINE A PROTEIN STABILIZER OR DESTABILIZER? IT'S COMPLICATED!
Shriyaa Mittal (969-Pos / B37)

Board S60
ENERGY LANDSCAPE OF UBIQUITIN FAMILY PROTEINS - ELUCIDATING THE ROLE OF PROTEIN SEQUENCE AND SPECIFIC INTERACTIONS SUCH AS SALT-BRIDGES IN DICTATING FOLDING PATHWAYS.
Tathagata Nandi (968-Pos / B36)

Board S61
ASSEMBLY AND BINDING OF *E COLI* RECOR PROTEINS TO SSB C-TERMINAL TAILS.
Min Kyung Shinn (1829-Pos / B99)

Board S62
MOLECULAR DYNAMICS SIMULATION REVEALS NEW POCKET FOR THE DESIGN OF NOVEL AMINO ACID COUPLED SIRT1 SELECTIVE INHIBITOR.
Mrityunjay Singh (1010-Pos / B78)

Board S63
MOLECULAR DYNAMICS INVESTIGATION OF THE PHYSICAL BINDING OF THE NNK DIAZONIUM ION TO TP53 EXON 5.
David Wahl (1460-Pos / B528)

Board S64
USING DIHEDRAL STABILITIES TO CHARACTERIZE PROTEIN FOLDING TRANSITIONS.
David Wang (692-Pos / B523)

Board S65
HOOGSTEEN BASE PAIRING IN DNA VS RNA: THERMODYNAMICS AND KINETICS FROM ENHANCED SAMPLING SIMULATION AND MARKOV STATE MODELING.
Dhiman Ray (1465-Pos / B533)

Board S66
THE ROLE OF BACKBONE AND SIDECHAIN DYNAMICS ON FIMH ALLOSTERY.
Jenny Liu (2546-Pos / B92)

Board S67
CHARACTERISTIC INTERACTIONS BETWEEN BRCA2 AND G-QUADRUPLEX STRUCTURES FOR TELOMERE MAINTENANCE.
Keewon Sung (376-Pos / B207)

Board S68
THE NUCLEASE DOMAIN OF RECBCD INFLUENCES DNA BINDING AND HELICASE ACTIVITY.
Nicole T. Fazio (358-Pos / B189)

Board S69
SINGLE-MOLECULE MECHANICAL MEASUREMENTS OF THE HYALURONAN-AGGRECAN BOTTLEBRUSH.
Sarah Innes-Gold (976-Pos / B44)

Mechanobiology (Boards S70 – S76)

Board S70
ANALYSIS OF THE LIFETIME OF THE FIMH CATCH BOND UNDER FORCE.
Laura Carlucci (2518-Pos / B64)

Board S71
A PREDICTIVE MODEL OF MULTICELLULAR MECHANICS AND INTRACELLULAR SIGNALING DURING EPITHELIAL-MESENCHYMAL TRANSITION.
Shreyas Hirway (655-Pos / B486)

Board S72
IN-SILICO ELECTROPHYSIOLOGY OF INNER-EAR MECHANOTRANSDUCTION CHANNEL MODELS.
Jeffrey Lotthammer (1350-Pos / B418)

Board S73
SINGLE MOLECULE FORCE SPECTROSCOPY OF CHONDROCYTE A5B1 AND A1B1 INTEGRINS.
Divya Kota (1153-Pos / B255)

Board S74
FINITE TEMPERATURE ANALYSIS OF INTER-CHROMOPHORE ELECTRONIC COUPLINGS IN DIFFERENT FORMS OF THE PERIDININ-CHLOROPHYLL A PROTEIN.
Dalia M. Hassan (643-Pos / B474)

Board S75
DISCRIMINATOR EFFECTS ON OPEN COMPLEX FORMATION, STABILIZATION, AND TRANSCRIPTION INITIATION.
Hao-Che Wang (2652-Pos / B198)

Board S76
EXPLORING THE STRUCTURAL ELEMENTS RESPONSIBLE FOR *CIS*-HOMODIMERIZATION OF INNER EAR CADHERIN-23.
Joseph C. Sudar (1235-Pos / B303)

Membrane Fusion, Fission & Traffic (Boards S77 – S84)

Board S77
LIPID MEMBRANE DEFORMATION INDUCED BY TRANSMEMBRANE PEPTIDES.
Kayano Izumi (1136-Pos / B204)

Board S78
SPATIOTEMPORAL ORGANIZATION OF MMP9 AND ITS EXOCYTOTIC ORGANIZING ELEMENTS IN MCF7 BREAST CANCER CELLS.
Dominique C. Stephens (1972-Pos / B242)

Board S79
PLASMA MEMBRANE ORDER REGULATES INSULIN GRANULE EXOCYTOSIS.
Chase Amos (1970-Pos / B240)

Board S80
MILD TEMPERATURE GRADIENTS MAY HAVE ENHANCED THE GROWTH AND FUSION OF PROTOCELLS ON THE EARLY EARTH.
Elif S. Koksal (409-Pos / B240)

Board S81
EFFECT OF SIMPLE ANESTHETICS ON SNARE FUSION PROTEINS AND ON FUSING MEMBRANES.
Robert E. Coffman (1959-Pos / B229)

Board S82
COMPUTATIONAL MODELLING FRAMEWORK TO STUDY CA^{2+} ACTIVATION OF SYNAPTIC VESICLE FUSION BY DIFFERENT SYNAPTOTAGMIN ISOFORMS.
Christopher A. Norman (1402-Pos / B470)

Board S83
INDUCED MEMBRANE PERMEABILIZATION AND VESICLE FUSION: SYNTHETIC ANTIMICROBIALS ACTING ON MODEL MEMBRANES.
Shuai Shi (1880-Pos / B150)

Board S84
A POTENT VOLTAGE-GATED CALCIUM CHANNEL INHIBITOR ENGINEERED FROM A NANOBODY TARGETED TO AUXILIARY CAVB SUBUNITS.
Travis J. Morgenstern (519-Pos / B350)

Membrane Structure & Function (Boards S85 – S95)

Board S85
MEMBRANE BINDING OF ALPHA-SYNUCLEIN CONFERS STERIC STABILIZATION OF NANOPARTICLE-SUPPORTED LIPID BILAYERS.
Hyeondo (Luke) Hwang (2739-Pos / B285)

Board S86
A MICROSCOPIC PICTURE OF CALCIUM-ASSISTED LIPID DEMIXING AND MEMBRANE REMODELING USING MULTI-SCALE SIMULATIONS.
Abhilash Sahoo (416-Pos / B247)

Board S87
MECHANISM OF THE INHIBITORY INTERFERENCE IN HUMAN ANTIMICROBIAL PEPTIDES.
Ewa Drab (1198-Pos / B266)

Board S88
A MOLECULAR SIMULATION METHOD TO PREDICT THE SOLVATION, FOLD, SELF-ASSEMBLY, AND PORATION OF PEPTIDES AND PROTEINS IN MEMBRANES.
Jingjing Huang (1922-Pos / B192)

Board S89
MILD HYPOTHERMIA ENHANCES LUNG SURFACTANT ACTIVITY: DELVING INTO THE MOLECULAR MECHANISMS.
Chiara Autilio (429-Pos / B260)

Board S90
MOLECULAR BASIS OF CHOLESTEROL-DEPENDENT BINDING AND SELECTIVITY OF A CHOLESTEROL SENSOR.
Defne Gorgun (1191-Pos / B259)

Board S91
DIMERIZATION OF B2-ADRENERGIC RECEPTOR IS RESPONSIBLE FOR THE BASAL ACTIVITY SUBJECTED TO INVERSE AGONISM.
Min Gyu Jeong (1519-Pos / B587)

Board S93
MODULATION OF EGFR ACTIVATION BY DIRECT INTERACTION WITH CHOLESTEROL IN THE PLASMA MEMBRANE.
Triet Ming Hong (1524-Pos / B592)

Board S94
DIRECT DETECTION AND CHARACTERIZATION OF A PHOSPHOINOSITIDE DEPENDENT KINASE-1 (PDK1) HOMODIMER ON A TARGET MEMBRANE SURFACE VIA SINGLE MOLECULE FLUORESCENCE.
Moshe T. Gordon (2733-Pos / B279)

Board S95
BEYOND THE MONOLAYER: PULMONARY SURFACTANT FILMS ANALYSED BY A FLUID-INTERFACES-GRAZING-ANGLES-NEUTRON-REFLECTOMETER (FIGARO).
José C. Castillo-Sanchez (1889-Pos / B159)

Membrane Transport (Boards S96 – S103)

Board S96
COMPUTATIONAL STUDY OF THE MOLECULAR DETAILS OF EBOLA VIRUS MATRIX PROTEIN VP40 AND HUMAN SEC24C PROTEIN INTERACTION.
Nisha Bhattarai (2474-Pos / B20)

Board S97
SMALL MOLECULE INTERACTIONS WITH BACTERIAL CELL MEMBRANES: ASSESSING INSERTION BARRIERS FOR ALL THE MEMBRANES USING FREE ENERGY COMPUTATIONS.
Pradyumn Sharma (1451-Pos / B519)

Board S98
CLATHRIN-COATED PITS FORM FROM ELASTICALLY LOADED CLATHRIN LATTICES.
Grigory Tagiltsev (1977-Pos / B247)

Board S99
EXPLORING THE KINETICS OF THE HCN2 CHANNEL USING A CYCLIC ALLOSTERIC FOUR-STATE MODEL.
Delbert Yip (1329-Pos / B397)

Board S100
PHOSPHATE POSITION ON PHOSPHOINOSITIDES IS KEY IN MEDIATING TMEM16A CURRENTS IN *XENOPUS LAEVIS* OOCYTES.
Maiwase Tembo (2716-Pos / B262)

Board S101
ANNOTATING ION CHANNEL PORES: STRUCTURES, HYDROPHOBICITY AND THE THRESHOLD FOR PERMEATION.
Shanlin Rao (1333-Pos / B401)

Board S102
IDENTIFICATION OF RESIDUES CONTRIBUTING TO THE VSD-PD COUPLING IN IKS CHANNELS.
Xiaoan Wu (526-Pos / B357)

Board S103
MOLECULAR DYNAMICS SIMULATION OF LIGAND BINDING AND ION PERMEATION IN A GANGLIONIC NICOTINIC RECEPTOR.
Yuxuan Zhuang (2852-Pos / B398)

Motility & Cytoskeleton (Boards S104 – S111)

Board S104
MONITORING PALLADIN'S EFFECT ON ACTIN DYNAMICS AND ORGANIZATION WITH TIRF MICROSCOPY.
Abby Jurgensmeier (601-Pos / B432)

Board S105
DETECTION OF SUPER-RELAXED MYOSIN IN SPECIFIC HUMAN SKELETAL MUSCLE FIBER TYPES.
Lien A. Phung (1355-Pos / B423)

Board S106
MECHANISMS UNDERLYING NWASP ACTIVATION BY SYNERGISTIC PAIRS OF SIGNALING MOLECULES.
Aniruddha Chattaraj (2146-Pos / B416)

Board S107
ANISOTROPIC SWIMMING MODES IN*HELICOBACTER PYLORI*.
Jyot Antani (618-Pos / B449)

Board S108
PREDATION STRATEGIES OF *BDELLOVIBRIO BACTERIOVORUS*.
Mikayla Carlson (619-Pos / B450)

Board S109
MEASUREMENTS OF ACTIN LAYER LINES IN PERMEABILIZED HEART TISSUE REVEAL NEW STRUCTURAL PROPERTIES OF THE CARDIAC THIN FILAMENT.
Maicon Landim Vieira (2089-Pos / B359)

Board S110
A NOVEL FUNCTION OF THE POLY-GLUTAMIC ACID SEGMENT OF INSECT TROPONIN T TESTED IN MOUSE HEART FOR IMPROVING CARDIAC EFFICIENCY.
Tianxin Cao (2896-Pos / B442)

Board S111
UNVEILING THE TREND OF CHANGES IN MECHANICAL PHENOTYPES BETWEEN SUBPOPULATIONS OF ISOGENIC CANCER CELLS AT DISTINCT METASTATIC STAGES.
Zhenhui Liu (2950-Pos / B496)

Nanoscale Approaches (Boards S112 - 123)

Board S112
IMMOBILIZATION OF BIOENGINEERED PORTAL PROTEIN WITHIN A SOLID-STATE NANOPORE FOR MOLECULAR SENSING.
Mehrnaz Mojtabavi (757-Pos / B588)

Board S113
NANOIMPACT BASED SINGLE-ENTITY DETECTION OF PROTEINS USING A NANOPORE-NANOELECTRODE NANOPIPETTE.
Popular Pandey (2313-Pos / B583)

Board S114
COMPARISON OF *IN-VITRO* AND *IN-VIVO* DNA HYBRIDIZATION KINETICS USING 3D SINGLE-MOLECULE TRACKING METHOD.
Yuan-I Chen (3012-Pos / B558)

Board S115
MITIGATING PHOTOTOXICITY IN SINGLE-MOLECULE LOCALIZATION MICROSCOPY USING PRECISELY CALIBRATED AND SPATIALLY INFORMED PHOTOACTIVATION.
Angel Mancebo, Jr. (1530-Pos / B598)

Board S116
STED SUPERRESOLUTION IMAGING OF DUOX1 AND CEN2 REVEALS SUBSTRUCTURE OF MEMBRANE MACROMOLECULAR COMPLEXES IN HUMAN BRONCHIAL EPITHELIAL CELLS.
Kamila R. Mustafina (717-Pos / B548)

Board S117
POLARIZATION-RESOLVED LIGHT SCATTERING SPECTROSCOPY (PLSS) TO STUDY CHROMATIN-DNA ORGANIZATION.
Riccardo Marongiu (660-Pos / B491)

Board S118
STRUCTURAL AND FUNCTIONAL PROPERTIES OF SYNTHETIC TRANS-MEMBRANE PEPTIDE PORES.
Puthumadathil Neethu Narayanan Anitha (756-Pos / B587)

Board S119
PHYSICAL CHARACTERIZATION OF SILVER NANOPARTICLES FOR NANO-DETECTION.
Joanna P. Patalas (3050-Pos / B596)

Board S120
SILVER NANORODS STABILISED BY GEMINI SURFACTANT AS COMPO-NENTS FOR NANOSENSING APPLICATIONS.
Karolina Rucinska (3051-Pos / B597)

Board S121
SINGLE-MOLECULE INVESTIGATION OF PRC2 NON-ADJACENT NUCLEO-SOME BRIDGING.
Rachel Leicher (1862-Pos / B132)

Board S122
DIRECT MEASUREMENT OF STEPPING DYNAMICS OF E. COLI UVRD HELICASE.
Sean Carney (356-Pos / B187)

Board S123
TEMPERATURE DRIVEN SHAPE TRANSFORMATION OF NANODISCS BY COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS.
Warin Rangubpit (675-Pos / B506)

Physical Cell Biology (Boards S124 – S133)

Board S124
DETERMINANTS OF INFLUENZA A DIFFUSION THROUGH THE MUCUS BARRIER TO INFECTION.
Logan Kaler (2210-Pos / B480)

Board S125
RNA TRAFFICKING BETWEEN MEMBRANELESS ORGANELLES AT SINGLE-MOLECULE RESOLUTION IN LIVE CELLS.
Guoming Gao (2288-Pos / B558)

Board S126
ELUCIDATING THE ROLE OF PHOSPHORYLATED REGULATORY LIGHT CHAIN PROTEINS (RLC) DURING HEART FAILURE PROGRESSION.
Kasturi Markandran (1266-Pos / B334)

Board S127
STUDY OF SELF-ASSOCIATION OF HUMAN CSTF-64 RNA RECOGNITION MOTIF.
Elahe Masoumzadeh (2549-Pos / B95)

Board S128
SINGLE MOLECULE IMAGING OF HIV-1 ENVELOPE DYNAMICS AND GAG LATTICE ASSOCIATION EXPOSES DETERMINANTS RESPONSIBLE FOR VIRUS INCORPORATION.
Nairi Pezeshkian (282-Pos / B113)

Board S129
MATHEMATICAL MODELING OF CELL VOLUME CONTROL.
Maria Jesus Munoz Lopez (2259-Pos / B529)

Board S130
SIM-ENHANCED PTYCHOGRAPHY IMAGING OF HELA CELLS.
Alberta Trianni (1529-Pos / B597)

Board S131
CHARACTERIZATION OF DCAS9 INTERACTION KINETICS AND LOCAL CHROMATIN STRUCTURE IN LIVE HUMAN CELLS USING PALM SUPER-RESOLUTION MICROSCOPY.
Dushyant Mehra (708-Pos / B539)

Board S132
SINGLE MOLECULES DYNAMICS LEARNED FROM SINGLE PHOTONS- FLIM AND FCS WITH BAYESIAN NONPARAMETRICS.
Meysam Tavakoli (1534-Pos / B602)

Board S133
STRUCTURE-FUNCTION ANALYSIS OF E-CADHERIN DIMERIZATION AT THE PLASMA MEMBRANE.
Vinh H. Vu (1775-Pos / B45)

Monday, February 17, 2020

Daily Program Summary

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

7:30 AM–8:30 AM	**Graduate Student Breakfast**	**Room 28CDE**
7:30 AM–5:00 PM	**Registration/Exhibitor Registration**	**Lobby G**
8:00 AM–10:00 PM	**Poster Viewing**	**Exhibit Hall**
8:15 AM–10:15 AM	**Symposium: Molecular Motors** **Chair:** *Bik-Kwoon Tye, Hong Kong University of Science and Technology* RAD52 DNA REPAIR PROTEIN IS A GATEKEEPER THAT PROTECTS DNA REPLICATION FORKS FROM REGRESSION BY FORK REVERSAL MOTORS. *Maria Spies* RNA HELICASES AND SWITCHES: MOLECULAR MOTORS IN RNA BIOLOGY. *Anna Marie Pyle* PROCESSIVE CHITINASE, A BURNT-BRIDGE BROWNIAN MOTOR HYDROLYZING CRYSTALLINE POLYSACCHARIDE. *Ryota Iino* EVOLUTION OF THE EUKARYOTIC ORIGIN RECOGNITION COMPLEX. *Bik-Kwoon Tye*	**Ballroom 20A**
8:15 AM–10:15 AM	**Symposium: Pharmaceutical Biophysics** **Chair:** *Jeanne Hardy, University of Massachusetts Amherst* IDENTIFYING AND EXPLOITING CRYPTIC POCKETS. *Greg R. Bowman* BITOPIC AND PERIPHERAL MEMBRANE PROTEINS AS DRUG TARGETS: BROADER BIOPHYSICAL INSIGHT FROM BIOMEMBRANE SIMULATIONS THAT TRANSCENDS THE "LOCK AND KEY" PARADIGM. *Alex Bunker* THE CHOREOGRAPHY OF A PROTEIN'S DANCE AT THE HEART OF DRUG DESIGN. *Dorothee Kern* TARGETING RARE CONFORMATIONAL STATES TO ACHIEVE SELECTIVE CASPASE PROTEASE INHIBITION. *Jeanne Hardy*	**Ballroom 20D**
8:15 AM–10:15 AM	**Platform: Membrane Receptors and Signal Transduction**	**Ballroom 20BC**
8:15 AM–10:15 AM	**Platform: Bioengineering, Biosurfaces, and Biomaterials**	**Room 23ABC**
8:15 AM–10:15 AM	**Platform: Membrane Dynamics**	**Room 24ABC**
8:15 AM–10:15 AM	**Platform: Optical Microscopy and Superresolution Imaging II**	**Room 25ABC**
8:15 AM–10:15 AM	**Platform: Voltage-gated K Channels**	**Room 30ABC**
8:15 AM–10:15 AM	**Platform: Protein Dynamics and Allostery I**	**Room 31ABC**
8:30 AM–10:00 AM	**Exhibitor Presentation: Beckman Coulter Life Sciences** **Get the High-Resolution Separation That You Have Been Searching for with Preparative and Analytical Ultracentrifugation**	**Room 33C**
8:30 AM–10:30 AM	**CPOW Committee Meeting**	**Room 30D**
9:30 AM–11:00 AM	**Exhibitor Presentation: Bruker Corporation** **From Single Molecules to Tissues – A New AFM Toolkit for Nanoscopic Investigation of Mechanics, Structures, and Dynamic Processes in Life Science**	**Room 33A**
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**	**Room 26A**
10:00 AM–5:00 PM	**Exhibits**	**Exhibit Hall**
10:15 AM–11:00 AM	**Coffee Break**	**Exhibit Hall**
10:15 AM–11:00 AM	**Meet the Editors, *The Biophysicist***	**Society Booth/Lobby G**
10:15 AM–11:15 AM	**New Member Welcome Coffee**	**Room 28CDE**
10:30 AM–12:00 PM	**Exhibitor Presentation: Bruker Corporation** **Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in Biophysics**	**Room 33C**

10:45 AM–12:45 PM	**Symposium: Sensational Membrane Proteins** **Chair:** *Emily Liman, University of Southern California* FROM STRETCH TO DEFLECTION: FINE TUNING MECHANICAL ACTIVATION OF ION CHANNELS. *Kate Poole* STRUCTURE AND MECHANOGATING OF THE MECHANOSENSITIVE PIEZO CHANNEL. *Bailong Xiao* SENSING SCENTS: STRUCTURAL INSIGHTS INTO INSECT OLFACTORY RECEPTORS. *Vanessa Ruta* SENSING SOUR: THE OTOP1 PROTON CHANNEL FROM FUNCTION TO STRUCTURE. *Emily Liman*	**Ballroom 20A**
10:45 AM–12:45 PM	**Symposium: Biophysical Underpinnings of the Origin of Life** **Chair:** *Ken A. Dill, Stony Brook University* LESSONS FROM EXPERIMENTAL PROTEIN FITNESS LANDSCAPES. *Daniel Bolon* RESURRECTED ENZYMES AS PROXIES FOR ANCIENT BIOMOLECULAR PROCESSES. *Betul Kacar* LESSONS FROM RIBOZYME EVOLUTION. *Irene Chen* A CENTRAL ROLE FOR PEPTIDES AND PROTEINS IN THE CHEMISTRY TO BIOLOGY TRANSITION OF THE ORIGINS OF LIFE. *Ken A. Dill*	**Ballroom 20D**
10:45 AM–12:45 PM	**Symposium: Future of Biophysics** **Co-Chairs:** *Patricia Clark, University of Notre Dame, William Kobertz, University of Massachusetts Medical School* X-RAY SCATTERING FROM CORRELATED MOTIONS IN PROTEINS. *Nozomi Ando* EXPLOITING 3D TO 2D LOCALIZATION TO CONTROL PROTEIN SELF-ASSEMBLY. *Margaret Johnson* CONFORMATIONAL DYNAMICS OF SINGLE VIRAL MEMBRANE FUSION MACHINES. *James B. Munro* SIGNALING WITH UBIQUITIN - COMMUNICATION BETWEEN METABOLISM AND IMMUNE RESPONSES. *Elton Zeqiraj*	**Ballroom 20BC**
10:45 AM–12:45 PM	**Platform: Intracellular Calcium Channels and Calcium Sparks and Waves**	**Room 23ABC**
10:45 AM–12:45 PM	**Platform: Biosensors**	**Room 24ABC**
10:45 AM–12:45 PM	**Platform: Cytoskeletal Motors**	**Room 25ABC**
10:45 AM–12:45 PM	**Platform: Membrane Protein Dynamics and Folding II**	**Room 30ABC**
10:45 AM–12:45 PM	**Platform: Molecular Dynamics**	**Room 31ABC**
11:00 AM–1:00 PM	**Annual Meeting of the Student Chapters**	**Room 28AB**
11:30 AM–12:30 PM	**Career Development Center Workshop:** **Networking for Nerds: How to Create Your Unicorn Career**	**Room 26A**
11:30 AM–1:00 PM	**Exhibitor Presentation: Leica Microsystems** **Leica SP8 FALCON: Applications of FLIM for Functional Imaging and STED Nanoscopy**	**Room 33A**
12:30 PM–2:00 PM	**The Nuts and Bolts of Preparing Your NSF Grant**	**Room 28CDE**
12:30 PM–2:00 PM	**Exhibitor Presentation: Nanion Technologies** **Beyond Ion Channels and Transporters: Snapshots of the State-of the-Art Solutions**	**Room 33C**
1:00 PM–2:30 PM	**How Does Congress Set the Federal Budget for Biomedical Research?**	**Room 23ABC**
1:00 PM–2:30 PM	**Careers in Industry: A Q&A Panel**	**Room 29AB**
1:30 PM–3:00 PM	**Biophysics 101:** **An Introduction to Molecular Dynamics Simulation and its Application to Biological Systems**	**Room 24ABC**
1:30 PM–3:00 PM	**Exhibitor Presentation: Olympus America Inc** **Advancements in Lens Manufacturing Technology Develop New X Line Objective Lenses**	**Room 33A**
1:45 PM–3:00 PM	**Snack Break**	**Exhibit Hall**
1:45 PM–3:00 PM	**Meet the Editors, *Biophysical Journal***	**Society Booth/Lobby G**
1:45 PM–3:45 PM	**Poster Presentations and Late Posters**	**Exhibit Hall**
2:15 PM–3:45 PM	**How to Get Your Scientific Paper Published**	**Room 29C**
2:30 PM–3:30 PM	**Career Development Center Workshop:** **Translating Your Credentials: Writing Effective Resumes + Cover Letters and Your LinkedIn Profile**	**Room 26A**
2:30 PM–4:00 PM	**Beyond Reporting: How to be an Ally to Those Experiencing Harassment**	**Room 28CDE**
2:30 PM–4:00 PM	**Exhibitor Presentation: HORIBA Scientific** **A New Modular Research Fluorometer Pushes Detection, Stray-Light, and Wavelength Limits of Fluorescence Spectroscopy**	**Room 33C**

3:30 PM–5:00 PM	**Exhibitor Presentation: Applied Photophysics** **Discover When Change is Significant: Latest Developments in Circular Dichroism and Stopped-Flow Kinetics**	**Room 33A**
3:30 PM–5:30 PM	**Membership Committee Meeting**	**Room 30D**
4:00 PM–5:00 PM	**Career Development Center Workshop:** **Marketing Your Value: Crafting Your Elevator Pitch/30 Second Value Statement/Brand Statement**	**Room 26A**
4:00 PM–6:00 PM	**Symposium: Kinetic Stability: Controlling Longevity at the Molecular Level** **Chair:** *Jonathan King, MIT* DESIGNING PROTEIN STABILITY AND STRAIN FOR FOLDING AND FUNCTION. *Elizabeth M. Meiering* COMPETING INTERACTIONS BETWEEN VIRAL RHIM AMYLOID-FORMING PROTEINS AND HOST FUNCTIONAL AMYLOID STRUCTURES MODULATE THE CELLULAR RESPONSE TO INFECTION. *Margaret Sunde* PROTEOMICS ANALYSES OF KINETIC STABILITY: FROM MOLECULAR TO ORGANISM LONGEVITY. *Wilfredo Colon* BURIED TRYPTOPHANS CONTRIBUTING TO THE HIGH KINETIC STABILITY OF THE LONG-LIVED GAMMA CRYSTALLINS AND THEIR OXIDATIVE DAMAGE OPENING THE PATHWAY TO THE AGGREGATED STATE ASSOCIATED WITH CATARACTS. *Jonathan King*	**Ballroom 20A**
4:00 PM–6:00 PM	**Symposium: Translational Control** **Chair:** *Christine Dunham, Emory University* NASCENT POLYPEPTIDE CHAIN-MEDIATED TRANSLATION ELONGATION ARREST IN BACTERIA. *Shinobu Chiba* PRECISELY QUANTIFYING THE ENERGETICS OF THE RIBOSOME. *Paul C. Whitford* CAT TAILS DRIVE DEGRADATION OF STALLED POLYPEPTIDES ON AND OFF THE RIBOSOME. *Onn Brandman* ROLE OF RNA MODIFICATIONS IN TRNA STRUCTURAL STABILITY AND ACCURATE PROTEIN SYNTHESIS. *Christine Dunham*	**Ballroom 20D**
4:00 PM–6:00 PM	**Platforms: Protein Structure and Conformation II**	**Ballroom 20BC**
4:00 PM–6:00 PM	**Platform: Mitochondria and Energy**	**Room 23ABC**
4:00 PM–6:00 PM	**Platform: Membrane Structure**	**Room 24ABC**
4:00 PM–6:00 PM	**Platform: Single-Molecule Spectroscopy**	**Room 25ABC**
4:00 PM–6:00 PM	**Platform: Cell Mechanics, Mechanosensing, and Motility**	**Room 30ABC**
4:00 PM–6:00 PM	**Platform: Ligand-gated Channels**	**Room 31ABC**
4:30 PM–6:00 PM	**Speed Networking**	**Lobby H**
4:30 PM–6:00 PM	**Exhibitor Presentation: Molecular Devices** **Empower Your Electrophysiology Studies Using New Axon pCLAMP 11 Software and HumSilencer Adaptive Noise Cancellation Technology**	**Room 33C**
5:30 PM–7:00 PM	**Exhibitor Presentation: LUMICKS** **Breaking the Barriers: Providing the Full Workflow for Dynamic Single-Molecule Research from Sample to Publication**	**Room 33A**
6:00 PM–6:30 PM	**Dinner Meet-Ups**	**Society Booth/Lobby G**
8:00 PM–9:00 PM	**Awards and 2020 Biophysical Society Lecture**	**Ballroom 20ABCD**
9:30 PM–12:00 AM	**Reception and Dance**	**Hilton, Sapphire**
9:30 PM–12:00 AM	**Reception and Quiet Room**	**Hilton, Indigo AE**

Monday, February 17

Graduate Student Breakfast

7:30 AM - 8:30 AM, ROOM 28CDE

Support contributed by the Burroughs Wellcome Fund.

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.

Speaker
Martin Guthold, Wake Forest University
Jeanne Small, NSF

Registration/Exhibitor Registration

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

Poster Viewing

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

Symposium
Molecular Motors

8:15 AM - 10:15 AM, BALLROOM 20A

Chair
Bik-Kwoon Tye, Hong Kong University of Science and Technology

776-SYMP **8:15 AM**
RAD52 DNA REPAIR PROTEIN IS A GATEKEEPER THAT PROTECTS DNA REPLICATION FORKS FROM REGRESSION BY FORK REVERSAL MOTORS. Masayoshi Honda, Emeleeta A. Paintsil, **Maria Spies**

No Abstract **8:45 AM**
RNA HELICASES AND SWITCHES: MOLECULAR MOTORS IN RNA BIOLOGY. **Anna Marie Pyle**

777-SYMP **9:15 AM**
PROCESSIVE CHITINASE, A BURNT-BRIDGE BROWNIAN MOTOR HYDROLYZING CRYSTALLINE POLYSACCHARIDE. **Ryota Iino**

778-SYMP **9:45 AM**
EVOLUTION OF THE EUKARYOTIC ORIGIN RECOGNITION COMPLEX. **Bik-Kwoon Tye**, Shuk Kwan C. Lee, Wai Hei H. Lam, Yuanliang Zhai

Symposium
Pharmaceutical Biophysics

8:15 AM - 10:15 AM, BALLROOM 20D

Chair
Jeanne Hardy, University of Massachusetts Amherst

779-SYMP **8:15 AM**
IDENTIFYING AND EXPLOITING CRYPTIC POCKETS. **Greg R. Bowman**

780-SYMP **8:45 AM**
BITOPIC AND PERIPHERAL MEMBRANE PROTEINS AS DRUG TARGETS: BROADER BIOPHYSICAL INSIGHT FROM BIOMEMBRANE SIMULATIONS THAT TRANSCENDS THE "LOCK AND KEY" PARADIGM. **Alex Bunker**

No Abstract **9:15 AM**
THE CHOREOGRAPHY OF A PROTEIN'S DANCE AT THE HEART OF DRUG DESIGN. **Dorothee Kern**

781-SYMP **9:45 AM**
TARGETING RARE CONFORMATIONAL STATES TO ACHIEVE SELECTIVE CASPASE PROTEASE INHIBITION. **Jeanne Hardy**

Platform
Membrane Receptors and Signal Transduction

8:15 AM - 10:15 AM, BALLROOM 20BC

Co-Chairs
Deborah Leckband, University of Illinois at Urbana-Champaign
Carl-Mikael Suomivuori, Stanford University

782-PLAT **8:15 AM**
RATIONALIZING THE TRANSPORT OF TROJAN HORSE COMPOUNDS FOR CROSSING THE OUTER MEMBRANE OF GRAM- BACTERIA. Stefan Milenkovic, Igor V. Bodrenko, Mariano Andrea Scorciapino, **Matteo Ceccarelli**

783-PLAT **8:30 AM**
ATOMISTIC MODELING OF NEURO-CARDIOVASCULAR COUPLING MODULATION. Kevin R. DeMarco, John R.D. Dawson, Slava Bekker, Vladimir Yarov-Yarovoy, Colleen E. Clancy, **Igor Vorobyov**

784-PLAT **8:45 AM**
LARGE CONDUCTANCE CA^{2+}-ACTIVATED K^+ CHANNELS REGULATE LPS-INDUCED CYTOKINE SECRETION FROM ALVEOLAR EPITHELIAL AND ENDOTHELIAL CELLS. **Tatiana Zyrianova**, Benjamin Lopez, Andy Liao, Charles Gu, Leanne Wong, Michela Ottolia, Riccardo Olcese, Andreas Schwingshackl

785-PLAT **9:00 AM**
AFFINITY AND STOICHIOMETRY OF E-CADHERIN/EGFR COMPLEXES-RELEVANCE TO PROLIFERATION AND FORCE TRANSDUCTION. **Deborah E. Leckband**, Taylor P. Light, Vinh H. Vu, Brendan G. Sullivan, Kalina Hristova

786-PLAT **9:15 AM** **TRAVEL AWARDEE**
DISTINCTIVE MECHANO-SENSITIVITY OF FOCAL ADHESION INTEGRINS A5B1 AND AVB3 IN CONFORMATIONAL CHANGES. **Yunfeng Chen**, Fang Kong, Zhenhai Li, Lining Ju, Steve Park, Andres J. Garcia, Paul Mould, Martin J. Humphries, Cheng Zhu

787-PLAT **9:30 AM** **TRAVEL AWARDEE**
MOLECULAR MECHANISM OF BIASED SIGNALING IN A PROTOTYPICAL G-PROTEIN-COUPLED RECEPTOR. **Carl-Mikael Suomivuori**, Naomi R. Latorraca, Laura M. Wingler, Stephan Eismann, Matthew C. King, Alissa L.W. Kleinhenz, Meredith A. Skiba, Dean P. Staus, Andrew C. Kruse, Robert J. Lefkowitz, Ron O. Dror

788-PLAT **9:45 AM**
CHARACTERIZATION OF $A_{2A}R$ AND G PROTEIN COUPLING BY SURFACE PLASMON RESONANCE. **Kirsten S. Koretz**, Claire McGraw, Anne S. Robinson

789-PLAT **10:00 AM**
INVESTIGATING THE HOMOTYPIC AND HETEROTYPIC INTERACTIONS OF ERBB RECEPTOR TYROSINE KINASES. **Soyeon Kim**, Adam W. Smith

Platform
Bioengineering, Biosurfaces, and Biomaterials

8:15 AM - 10:15 AM, ROOM 23ABC

Co-Chairs
Henry Brinkerhoff, Delft University of Technology, The Netherlands
Elizabeth Yates, United States Naval Academy

790-PLAT **8:15 AM**
SUPRACELLULAR ACTIN CABLES AND ACTOMYOSIN-BASED CONTRACTION IN CARDIAC MORPHOGENESIS. **Christopher McFaul**, Negar Balaghi, Christopher M. Yip, Rodrigo Fernandez-Gonzalez

791-PLAT 8:30 AM
SINGLE-MOLECULE PROTEIN SEQUENCING USING BIOLOGICAL NANOPORES. **Henry Brinkerhoff**, Cees Dekker

792-PLAT 8:45 AM
CONTROLLING THE RATE AND THE LEVEL OF INTERLEAFLET LIPID TRANSPORT WITH SWITCHABLE DNA NANOSTRUCTURE. **Diana K. Sobota**, Himanshu Joshi, Alexander Ohmann, Aleksei Aksimentiev, Ulrich F. Keyser

793-PLAT 9:00 AM
DESIGNING SYNTHETIC BACTERIAL BIOFILMS TO PROBE THE MECHANICS OF CELL ASSEMBLY. **Alex Hamby**

794-PLAT 9:15 AM
MEASURING THE PHYSICAL PROPERTIES OF SYNTHETIC CEMENT DERIVED BARNACLE ADHESIVE NANOMATERIALS FROM THE BARNACLE *AMPHIBALANUS AMPHITRITE*. **Elizabeth A. Yates**, Luis A. Estrella, Heonjune Ryou, Kathryn J. Wahl, Christopher R. So

795-PLAT 9:30 AM TRAVEL AWARDEE
INDEPENDENT TUNING OF VISCOUS AND ELASTIC PROPERTIES OF PROTEIN BIOMATERIALS. Carla Huerta-Lopez, Diana Velázquez-Carreras, Luis Gutierrez-Rus, Francisco M. Martin-Zamora, Elías Herrero Galán, Alvaro Martinez-del-Pozo, David de Sancho, Gustavo R. Plaza, **Jorge Alegre-Cebollada**

796-PLAT 9:45 AM
NOVEL POLY(ASPARTAMIDE) BASED HYDROGELS FOR CELL CULTIVATION AND TISSUE REGENERATION. **David Juriga**, Krisztina Tóth, Krisztina S. Nagy, Angéla Jedlovszky-Hajdú, Gábor Varga, Miklós Zrínyi

797-PLAT 10:00 AM
ACOUSTOFLUIDIC INTERFEROMETRIC TECHNIQUES FOR SINGLE CELL OPTICAL PHENOTYPING. **Julián Mejía Morales**, Gian Luca Lippi, Peter Glynne-Jones, Massimo Vassalli

Platform
Membrane Dynamics

8:15 AM - 10:15 AM, ROOM 24ABC

Co-Chairs
Robert Ernst, University of Saarland, Germany
Kranthi Mandadapu, University of California, Berkeley

798-PLAT 8:15 AM
A BIOPHYSICAL BASIS FOR CHRONIC DISEASES ASSOCIATED WITH ER STRESS - IRE1 IS ACTIVATED BY LIPID BILAYER STRESS AND PERPETUATES THE UNFOLDED PROTEIN RESPONSE. **Robert Ernst**, Roberto Covino, Gerhard Hummer, John Reinhard, Carsten Mattes, Kristina Väth, Julia Hach

799-PLAT 8:30 AM
REMODELING OF HOST CELL PLASMA MEMBRANE AND NANOMECHANICAL PROPERTIES BY MYCOBACTERIUM LIPIDS GOVERNS AUTOPHAGY SIGNALLING. **Manjari Mishra**

800-PLAT 8:45 AM TRAVEL AWARDEE
TRANSITION STATES OF PASSIVE LIPID TRANSPORT ARE CHARACTERIZED BY HYDROPHOBIC CONTACTS. **Julia R. Rogers**, Phillip L. Geissler

801-PLAT 9:00 AM TRAVEL AWARDEE
DIFFERENTIAL ACTIN BINDING AFFINITY LEADS TO PROTEIN SORTING IN A RECONSTITUTED ACTIVE COMPOSITE LAYER. **Abrar A. Bhat**, Amit Das, Kabir Husain, Madan Rao, Darius V. Koester, Satyajit Mayor

802-PLAT 9:15 AM
NON-EQUILIBRIUM THERMODYNAMICS AND HYDRODYNAMICS OF LIPID MEMBRANES. **Amaresh Sahu**, Joel Tchoufag, Yannick Azhri Din Omar, Yulong Pan, Kranthi K. Mandadapu

803-PLAT 9:30 AM
MOLECULAR TRANSPORT AND SPATIAL SORTING OF MEMBRANE-BOUND DNA NANOSTRUCTURES BY A BIOLOGICAL REACTION-DIFFUSION SYSTEM. **Beatrice Ramm**, Alena Khmelinskaia, Philipp Blumhardt, Hiromune Eto, Kristina A. Ganzinger, Petra Schwille

804-PLAT 9:45 AM TRAVEL AWARDEE
THE COMBINED HYDRODYNAMIC AND THERMODYNAMIC EFFECTS OF IMMOBILIZED PROTEINS ON THE DIFFUSION OF MOBILE TRANSMEMBRANE PROTEINS. **Rohit R. Singh**, Ashok Sangani, Susan Daniel, Donald Koch

805-PLAT 10:00 AM
PHOSPHOLIPID STRUCTURAL FEATURES INFLUENCE LATERAL DIFFUSION. **Klaus Gawrisch**, Holly C. Gaede, Olivier Soubias, Walter E. Teague

Platform
Optical Microscopy and Superresolution Imaging II

8:15 AM - 10:15 AM, ROOM 25ABC

Co-Chairs
Leonel Malacrida, Hospital de Clínicas, Chile
Kaitlin Szederkenyi, University of Toronto, Canada

806-PLAT 8:15 AM
INVESTIGATING POLARISATION EFFECTS IN A CONFOCAL TOTAL INTERNAL REFLECTION-SUPERCRITICAL ANGLE FLUORESCENCE (TIR-SAF) GEOMETRY WITH SAMPLE SCANNING. **Kaitlin Szederkenyi**, Bruno Lagarde, Maia Brunstein, Marc Guillon, Christopher M. Yip, Martin Oheim

807-PLAT 8:30 AM
INTERFEROMETRIC SCATTERING MICROSCOPY REVEALS MICROSECOND NANOSCOPIC PROTEIN MOTION ON A LIVE CELL MEMBRANE. **Richard W. Taylor**

808-PLAT 8:45 AM
SOLVATOCHROMIC PROPERTIES OF ACDAN AND SPECTRAL PHASOR ANALYSIS REVEAL THE ROLE OF AQUAPORIN 0A IN REGULATING MACROMOLECULAR CROWDING IN THE ZEBRAFISH LENS *IN VIVO*. **Leonel S. Malacrida**, Alexander Vallmitjana, Belén Torrado, Thomas F. Schilling, James E. Hall, Enrico Gratton, Irene Vorontsova

809-PLAT 9:00 AM
STRUCTURED ILLUMINATION MICROSCOPY AS A TOOL TO INVESTIGATE ONCOGENE-INDUCED ALTERATIONS IN CHROMATIN ORGANIZATION. **Isotta Cainero**, Elena Cerutti, Simone Pelicci, Mario Faretta, Gaetano Ivan Dellino, Pier Giuseppe Pelicci, Alberto Diaspro, Luca Lanzano

810-PLAT 9:15 AM TRAVEL AWARDEE
BINDER/TAG: A VERSATILE APPROACH TO PROBE AND CONTROL THE CONFORMATIONAL CHANGES OF INDIVIDUAL MOLECULES IN LIVING CELLS. **Michael Pablo**, Bei Liu, Orrin Stone, Onur Dagliyan, Timothy C. Elston, Klaus M. Hahn

811-PLAT 9:30 AM TRAVEL AWARDEE
2-COLOR LOCALIZATION MICROSCOPY AND SIGNIFICANCE TESTING APPROACH (2-CLASTA). **Magdalena C. Schneider**, Andreas M. Arnold, Florian Baumgart, Robert Sablatnig, Christoph Hüsson, Mario O. Brameshuber, Gerhard J. Schütz

812-PLAT 9:45 AM
AQUAPORIN 0A IS REQUIRED FOR WATER HOMEOSTASIS IN THE ZEBRAFISH LENS *IN VIVO*. **Irene Vorontsova**, Alexander Vallmitjana, Yosuke Nakazawa, Belén Torrado, Thomas Schilling, James E. Hall, Enrico Gratton, Leonel S. Malacrida

813-PLAT 10:00 AM TRAVEL AWARDEE
RAPID AND EXTREME LOW-LIGHT SUPERRESOLUTION IMAGING VIA ARTIFICIAL INTELLIGENCE. **Bei Liu**, Luhong Jin, Bowei Dong, Ruiyan Song, Fenqiang Zhao, Stephen Hahn, Timothy C. Elston, Yingke Xu, Klaus M. Hahn

Platform
Voltage-gated K Channels
8:15 AM - 10:15 AM, ROOM 30ABC

Co-Chairs
Rikard Blunck, Université de Montréal, Canada
Kanchan Gupta, NIH, NINDS

814-PLAT 8:15 AM
SIMULATING STREAMING POTENTIALS IN POTASSIUM CHANNELS. **Csaba Daday**, Wojciech Kopec, Bert L. de Groot

815-PLAT 8:30 AM
ASYMMETRIC MUTATIONS IN SELECTIVITY FILTER OF K^+ CHANNEL PORE GENERATE C-TYPE INACTIVATION. Marietheres Kleuter, Gerhard Thiel, **Oliver Rauh**

816-PLAT 8:45 AM
REFINEMENT OF HIGH-RESOLUTION CRYO-EM STRUCTURE OF HERG: WHAT CAN WE EXPECT? **Hanif Muhammad Khan**, Peter D. Tieleman, Sergei Y. Noskov

817-PLAT 9:00 AM
IDENTIFICATION OF PUFA INTERACTION SITES ON A CARDIAC POTASSIUM CHANNEL. Samira Yazdi, **Johan E. Larsson**, Williams E. Miranda, Valentina Corradi, Peter D. Tieleman, Sergei Y. Noskov, Peter H. Larsson, Sara I. Liin

818-PLAT 9:15 AM
DYNAMICS OF THE PAS AND CNBHD DOMAIN INTERACTION PROBED WITH A FLUORESCENT NONCANONICAL AMINO ACID (L-ANAP) IN HERG POTASSIUM CHANNELS. **Ashley A. Johnson**, Matt C. Trudeau

819-PLAT 9:30 AM
STATE-DEPENDENT PHOTOCROSSLINKING AT THE BK CHANNEL INTERSUBUNIT INTERFACE. **Alberto Jesus Gonzalez Hernandez**, Belinda Rivero-Perez, David Bartolome-Martin, Diego Alvarez de la Rosa, Andrew J.R. Plested, Teresa Giráldez

820-PLAT 9:45 AM
POSITION OF INACTIVATION PARTICLE OF SHAKER KV CHANNELS IN RESTING STATE. **Roshan Pandey**, Tanja U. Kalstrup, Rikard Blunck

821-PLAT 10:00 AM
EXPLORING STRUCTURAL DYNAMICS OF A MEMBRANE PROTEIN BY COMBINING BIOORTHOGONAL CHEMISTRY AND CYSTEINE MUTAGENESIS. **Kanchan Gupta**, Gilman E.S. Toombes, Kenton J. Swartz

Platform
Protein Dynamics and Allostery I
8:15 AM - 10:15 AM, ROOM 31ABC

Co-Chairs
Rodrigo Maillard, Georgetown University
Anubhuti Singh, Technical University of Munich, Germany

822-PLAT 8:15 AM
UNDERSTANDING ALLOSTERIC INFORMATION TRANSFER ACROSS TIME- AND LENGTH SCALES. **Steffen Wolf**, Benedikt Sohmen, Bjorn Hellenkamp, Johann Thurn, Thorsten Hugel, Gerhard Stock

823-PLAT 8:30 AM
SINGLE MOLECULE DYNAMICS OF AN HSP70 CHAPERONE. **Anubhuti Singh**, Soumit S. Mandal, Gabriel Žoldák, Matthias Rief

824-PLAT 8:45 AM
VISUALIZING DOMAIN MOTIONS IN NF-KB TRANSCRIPTIONAL REGULATION. **Wei Chen**, Elizabeth A. Komives

825-PLAT 9:00 AM
CATCHING FAST PROTEIN FOLDING IN THE ACT: RESOLVING (UN) FOLDING TRANSITION PATHS USING ADVANCED SINGLE-MOLECULE SPECTROSCOPY. **Nivin Mothi**, Mourad Sadqi, Victor Munoz

826-PLAT 9:15 AM
DIRECT DETECTION OF INTRAMOLECULAR DYNAMICS OF MEMBRANE PROTEINS USING TIME-RESOLVED X-RAY SINGLE-MOLECULE TRACKING. **Kazuhiro Mio**, Shoko Fujimura, Masaki Ishihara, Muneyo Mio, Masahiro Kuramochi, Hiroshi Sekiguchi, Tai Kubo, Yuji C. Sasaki

827-PLAT 9:30 AM
A TUG-OF-WAR MECHANISM DRIVES THE ALLOSTERIC ACTIVATION OF PROTEIN KINASE A. Lihui Bai, Jeneffer P. England, **Rodrigo A. Maillard**

828-PLAT 9:45 AM TRAVEL AWARDEE
THE EVOLUTIONARY BIOPHYSICS OF A FORCE-CONVEYING PROTEIN COMPLEX REQUIRED FOR VERTEBRATE HEARING. **Collin Nisler**, Yoshie Narui, Vincent Lynch, Marcos M. Sotomayor

829-PLAT 10:00 AM
CONFORMATIONAL DYNAMICS OF THE T-CELL RECEPTOR CHASSIS COORDINATES CDR3 LOOP POSITIONING DURING MECHANOSENSING OF PMHC LIGANDS. **Wonmuk Hwang**, Robert J. Mallis, Matthew J. Lang, Ellis L. Reinherz

Exhibitor Presentation
Beckman Coulter Life Sciences
8:30 AM - 10:00 AM, ROOM 33C

Get the High-Resolution Separation That You Have Been Searching for with Preparative and Analytical Ultracentrifugation
Introduction: Purification of biological products, including biotherapeutics, involves the separation of cells from the culture media, followed by extensive processing to isolate the target of interest. Relatively simple separations are often achieved via differential centrifugation (pelleting), though high-resolution separations often utilize density gradient ultracentrifugation to yield high purity. In this presentation, we will discuss the full gamut of preparative (ultra)centrifugation, which permits the isolation and purification of biological components ranging from small peptides and nanoparticles to large nucleic acids, viruses, and organelles. We will then discuss the analytical/characterization aspects of ultracentrifugation, which allow quantitation of size, mass, shape, and density of the biological components that have been purified, along with exploration of their thermodynamic properties and binding interactions. Modern examples will be discussed for both preparative and analytical ultracentrifugation.

Purification: Modern centrifuges reach incredibly high speeds (with centrifugal acceleration sometimes exceeding 1,000,000 x *g*) to aid the high-resolution separation of particles, typically in the micro- or nanometer range, by size and/or density. Today's gene therapy products, such as viral vectors, require high-quality purification to ensure

the consistent production of safe, efficacious therapeutics of the highest quality to further advance this rapidly growing field and deliver solutions to patients in need. Density gradient ultracentrifugation (DGUC) is a centrifuge-based technique for providing superior purification of viral vectors (e.g., isolating full AAV particles from partial and empty capsids), along with other materials (such as plasmid DNA) in gene therapy production workflows. Though a well-established and mature method, DGUC is sometimes viewed as dated, challenging to design and conduct, or only suited for small-scale research applications. In this workshop, we'll address these perceptions and discuss the premise of DGUC as a modern, high-resolution purification technique for AAVs and plasmid DNA. We'll also provide guidance on how to get started with DGUC and optimize this technique for gene therapy workflows.

Characterization: Analytical ultracentrifugation (AUC) is one of the most versatile biophysical tools used today for the characterization of biological samples ranging from small drug molecules to intact viruses, vesicles and microparticles. AUC works with biological samples in the native state and does not depend on a reporter species or custom-coated substrates. AUC separates biomolecules based upon both molecular mass and anisotropy and can also be used to quantify interactions between different species. In this talk, we will start with the principles of AUC and take a tour through the technology behind modern AUC, including detection methods. We then look at advancements of the latest gen Optima AUC. Next, we go through experiment design – including the use of simulation tools. Following, we will address the different types of AUC experiments (equilibrium and velocity), compare and contrast their merits with sample data, and touch upon the principles of data processing. Finally, we will explore a variety of applications with a focus on the unique advantages that AUC brings to the study of various biotherapeutics, polymers, nanoparticles, and others – and how AUC compares to and complements other analytical techniques.

Speakers
Ross VerHeul, Senior Applications Scientist, Beckman Coulter Life Sciences
Akash Bhattacharya, Senior Applications Engineer, Beckman Coulter Life Sciences

CPOW Committee Meeting

8:30 AM - 10:30 AM, Room 30D

Exhibitor Presentation
Bruker Corporation

9:30 AM - 11:00 AM, Room 33A

From Single Molecules to Tissues – A New AFM Toolkit for Nanoscopic Investigation of Mechanics, Structures, and Dynamic Processes in Life Science
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. JPK BioAFM has developed a new NanoWizard® 4 XP AFM which not only enables the high-speed study of the 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. This seminar will focus on how the advances in Bruker's latest BioAFM can be applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues in real-time, in-situ experiments. We will present examples of how we are able to resolve the nanoscale structure of individual biomolecules at high-speed scan rates (150 Hz), follow the dynamic reorganization of the membrane-associated cytoskeleton of living cells at high-temporal and high-spatial resolution, and automatically map the topography of cell cultures across the entire area of the microscope stage. We will also discuss the full suite of BioAFM modes and accessories for studying the nanomechanical properties of cells and tissues, including direct correlation of multiparametric, quantitative AFM and super-resolution (STED) datasets.

Speaker
Andrea Slade, BioAFM Product Manager, 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, Room 26A

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 "glance-able" 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

Meet the Editors, The Biophysicist

10:15 AM - 11:00 AM, Society Booth/Lobby G

New Member Welcome Coffee

10:15 AM - 11:15 AM, Room 28CDE

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 33C

Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in Biophysics
Magnet 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 has long been a valuable tool for the determination of structures, the study of dynamic processes and the investigation of interactions in biological molecules. To conduct these studies on larger molecules higher magnetic fields are required. Bruker BioSpin has successfully installed a 1.1 GHz NMR system in a customer laboratory and the delivery of the first 1.2 GHz system is imminent. To complement the higher magnetic fields Bruker Biospin has also introduced several new probes for liquid and solid state NMR.

NMR has recently been used successfully for the characterization of large proteins such as monoclonal antibodies. The statistical analysis of NMR spectra allows the detection of changes in the high order structure of these molecules.

Another growing area is the use of 19F in bio-molecular NMR. Both the introduction of new accessories and method permit more widespread use of this nucleus in NMR studies.

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, and 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, and distance measurements (2-8 nm) via DEER (Double Electron-Electron Resonance) to complement other structural methods such as X-ray, NMR, CryoEM and FRET.

Speakers
Clemens Anklin, Vice President, NMR Applications & Training, Bruker Corporation
Ralph Weber, EPR Applications Manager, Bruker Corporation

Symposium
Sensational Membrane Proteins

10:45 AM - 12:45 PM, BALLROOM 20A

Chair
Emily Liman, University of Southern California

830-SYMP 10:45 AM
FROM STRETCH TO DEFLECTION: FINE TUNING MECHANICAL ACTIVATION OF ION CHANNELS. Jessica Richardson, Setareh Sianati, Navid Bavi, Lioba Schroeter, Amrutha Patkunarajah, **Kate Poole**

831-SYMP 11:15 AM
STRUCTURE AND MECHANOGATING OF THE MECHANOSENSITIVE PIEZO CHANNEL. **Bailong Xiao**

832-SYMP 11:45 AM
SENSING SCENTS: STRUCTURAL INSIGHTS INTO INSECT OLFACTORY RECEPTORS. **Vanessa Ruta**

833-SYMP 12:15 PM
SENSING SOUR: THE OTOP1 PROTON CHANNEL FROM FUNCTION TO STRUCTURE. **Emily Liman**

Symposium
Biophysical Underpinnings of the Origin of Life

10:45 AM - 12:45 PM, BALLROOM 20D

Chair
Ken A. Dill, Stony Brook University

834-SYMP 10:45 AM
LESSONS FROM EXPERIMENTAL PROTEIN FITNESS LANDSCAPES. **Daniel Bolon**

No Abstract 11:15 AM
RESURRECTED ENZYMES AS PROXIES FOR ANCIENT BIOMOLECULAR PROCESSES. **Betul Kacar**

835-SYMP 11:45 AM
LESSONS FROM RIBOZYME EVOLUTION. **Irene Chen**

836-SYMP 12:15 PM
A CENTRAL ROLE FOR PEPTIDES AND PROTEINS IN THE CHEMISTRY TO BIOLOGY TRANSITION OF THE ORIGINS OF LIFE. **Ken Dill**

Symposium
Future of Biophysics

10:45 AM - 12:45 PM, BALLROOM 20BC

Support contributed by the Burroughs Wellcome Fund.

Co-Chairs
Patricia Clark, University of Notre Dame
William Kobertz, University of Massachusetts Medical School

No Abstract 10:45 AM
X-RAY SCATTERING FROM CORRELATED MOTIONS IN PROTEINS. **Nozomi Ando**

No Abstract 11:15 AM
EXPLOITING 3D TO 2D LOCALIZATION TO CONTROL PROTEIN SELF-ASSEMBLY. **Margaret Johnson**

No Abstract 11:45 AM
CONFORMATIONAL DYNAMICS OF SINGLE VIRAL MEMBRANE FUSION MACHINES. **James B. Munro**

No Abstract 12:15 PM
SIGNALING WITH UBIQUITIN - COMMUNICATION BETWEEN METABOLISM AND IMMUNE RESPONSES. **Elton Zeqiraj**

Platform
Intracellular Calcium Channels and Calcium Sparks and Waves

10:45 AM - 12:45 PM, ROOM 23ABC

Co-Chairs
Raul Benitez, Polytechnic University of Catalonia, Spain
Maura Greiser, University of Maryland

837-PLAT 10:45 AM
OPTICAL SUPERRESOLUTION ANALYSIS OF INTRACELLULAR CALCIUM HANDLING PROTEINS AND CORRELATING CALCIUM SIGNAL MORPHOLOGY. **Miriam E. Hurley**, Thomas M. Sheard, Ruth Norman, Hannah M. Kirton, Shihab S. Shah, Eleftheria Pervolaraki, Zhaokang Yang, Derek S. Steele, Nikita Gamper, Ed White, Izzy Jayasinghe

838-PLAT 11:00 AM TRAVEL AWARDEE
SUB-CELLULAR HETEROGENEITY IN SERCA DETERMINES SPATIAL CALCIUM DYNAMICS IN CARDIOMYOCYTES. **Maxx Holmes**, Miriam E. Hurley, Tom M.D. Sheard, Harley J. Stevenson-Cocks, Al Benson, Izzy Jayasinghe, Michael A. Colman

839-PLAT 11:15 AM
'CALCIUM CLOCK' AT THE NANOSCALE IN THE RAT SA NODE: 3D RYANODINE RECEPTOR CLUSTER ORGANIZATION AND INTRACELLULAR CA^{2+} SIGNALING. **Saif Yasin**, Aaron D. Kaplan, Humberto C. Joca, W. Jonathan Lederer, Maura Greiser

840-PLAT 11:30 AM
COMPARISON BETWEEN HIPS-CM FROM RYR2-R420Q CPVT PATIENTS AND KI MICE BEARING THE SAME MUTATION. Li Heng Yin, Alexandra Zahradnikova jr., Riccardo Rizzetto, Pascale Gerbaud, Valerie Nicolas, Esther Zorio, Jean-Pierre Benitah, **Ana M. Gomez**

841-PLAT 11:45 AM
DETECTION OF CALCIUM RELEASE FROM INDIVIDUAL RYR2 CLUSTERS IN CARDIOMYOCITES. **Carme Nolla Colomer**, Alexander Vallmitjana, Adela Herraiz Martínez, Hildegard Colino Lage, S.R. Wayne Chen, Leif Hove-Madsen, Raul Benitez

842-PLAT **12:00 PM**
FRET-BASED HIGH-THROUGHPUT SCREENING BIOSENSOR USING THE CARDIAC RYANODINE RECEPTOR (RYR2) N-TERMINAL "ABC" DOMAIN. **Jingyan Zhang**, Robyn T. Rebbeck, David D. Thomas, Filip V. Petegem, Razvan L. Cornea

843-PLAT **12:15 PM** **TRAVEL AWARDEE**
MECHANISMS OF MICU1 REGULATION OF THE MITOCHONDRIAL CALCIUM UNIPORTER COMPLEX. **Chen-Wei Tsai**, Ming-Feng Tsai

844-PLAT **12:30 PM**
MECHANISMS OF EMRE ACTIVATION OF THE MITOCHONDRIAL CALCIUM UNIPORTER. **Anna M. Van Keuren**, Chen-Wei Tsai, Ming-Feng Tsai

Platform
Biosensors

10:45 AM - 12:45 PM, ROOM 24ABC

Co-Chairs
leyla Esfandiari, University of Cincinnati
Yoo Jin Oh, Johannes Kepler University Linz, Austria

845-PLAT **10:45 AM**
FORCE-CONTROLLED NANOPORES FOR SINGLE CELL MEASUREMENTS USING MICRO-CHANNELLED AFM CANTILEVERS. **Til Schlotter**, Sean Weaver, Tomaso Zambelli, Janos Voros, Morteza Aramesh

846-PLAT **11:00 AM**
DETECTION OF SINGLE PROTEINS IN A COMPLEX BIOFLUID USING A SELECTIVE NANOPORE: FINDING THE NEEDLE IN A HAYSTACK. Avinash Thakur, **Liviu Movileanu**

847-PLAT **11:15 AM**
ASSEMBLING A SINGLE-MOLECULE NANOPORE-NANOMACHINE TO UNRAVEL THE INTERACTION BETWEEN ANTI-CANCER DRUGS WITH TARGETING DNAS. **Kai Tian**, Chengrui Hou, Emily Ma, Binquan Luan, Li-Qun Gu

848-PLAT **11:30 AM**
LABEL-FREE PROBING OF BINDING AFFINITY USING TOPOGRAPHY AND RECOGNITION IMAGING. **Yoo Jin Oh**, Melanie Köhler, Yoonhee Lee, Sourav Mishra, Joon Won Park, Peter Hinterdorfer

849-PLAT **11:45 AM**
PHOTOACOUSTIC SELECTIVE PLANE ILLUMINATION MICROSCOPY. **Francesco Garzella**, Cristiano Viappiani, Ranieri Bizzarri, Barbara Storti, Stefania Abbruzzetti, Paolo Bianchini, Alberto Diaspro

850-PLAT **12:00 PM**
BIOPHYSICAL CHARACTERIZATION OF EXOSOMES BASED ON THEIR UNIQUE DIELECTRIC PROPERTIES. Yuqian Zhang, Leilei Shi, **Leyla Esfandiari**

851-PLAT **12:15 PM**
IMPROVED SPLIT FLUORESCENT PROTEINS FOR THE VISUALIZATION OF ENDOGENOUS PROTEINS AND SYNAPSES. Siyu Feng, **Shuqin Zhou**, Aruna Varshney, Doris C. Villa, Cyrus Modavi, John Kohler, Fatima Farah, Nebat Ali, Joachim D. Mueller, Miri VanHoven, Bo Huang

852-PLAT **12:30 PM**
SPATIALLY COMPARTMENTALIZED PHASE REGULATION IN THE CA^{2+}-CAMP-PKA-OSCILLATORY CIRCUIT. **Brian Tenner**, Michael Getz, Brian L. Ross, Donya Ohadi, Sohum Mehta, Padmini Rangamani, Jin Zhang

Platform
Cytoskeletal Motors

10:45 AM - 12:45 PM, ROOM 25ABC

Co-Chairs
Kumiko Hayashi, Tohoku University, Japan
Jing Xu, University of California, Merced

853-PLAT **10:45 AM**
DYNACTIN P150 PROMOTES PROCESSIVE MOTILITY OF DDB COMPLEXES BY MINIMIZING DIFFUSIONAL BEHAVIOR OF DYNEIN. Qingzhou Feng, Allison Gicking, **William O. Hancock**

854-PLAT **11:00 AM**
EFFECT OF THE DYNEIN INHIBITOR CILIOBREVIN ON THE NUMBER OF FORCE PRODUCING UNITS TRANSPORTING SYNAPTIC VESICLE PRECURSORS. **Kumiko Hayashi**, Miki G. Miyamoto, Shinsuke Niwa

855-PLAT **11:15 AM**
STRUCTURE OF THE DYNEIN-2 COMPLEX AND ITS ASSEMBLY WITH INTRAFLAGELLAR TRANSPORT TRAINS. **Katerina Toropova**

856-PLAT **11:30 AM** **TRAVEL AWARDEE**
CHEMO-MECHANICAL CYCLE DIVERSITY IN THE KINESIN SUPERFAMILY REVEALED BY CRYO-EM. **Matthieu P. Benoit**, Ana B. Asenjo, Mohammadjavad Paydar, Byron Hunter, John S. Allingham, Benjamin H. Kwok, Hernando Sosa

857-PLAT **11:45 AM**
CHOLESTEROL IN THE CARGO MEMBRANE IMPACTS KINESIN-BASED TRANSPORT IN THE PRESENCE OF TAU. Qiaochu Li, John O. Wilson, Kuofu Tseng, Weihong Qiu, Michael Vershinin, Stephen J. King, **Jing Xu**

858-PLAT **12:00 PM**
BRIDGING KINESIN PROPERTIES WITH SYSTEM-SCALE CHARACTERISTICS OF MICROTUBULE-MOTOR ASSEMBLIES. **Rachel Banks**, Heun Jin Lee, Tyler Ross, Matt Thomson, Rob Phillips

859-PLAT **12:15 PM**
BETA-CARDIAC MYOSIN WITH AN HCM MUTATION (R712L) HAS AN INHIBITED WORKING STROKE THAT IS RESCUED BY THE DRUG OMECAMTIV MECARBIL. **Aaron Snoberger**, Bipasha Barua, Jennifer L. Atherton, Eva Forgacs, Yale E. Goldman, Donald A. Winkelmann, E. Michael Ostap

860-PLAT **12:30 PM**
FRET AND OPTICAL TRAPPING MEASUREMENTS REVEAL RELATIONSHIP BETWEEN PHOSPHATE RELEASE AND THE POWER STROKE IN MYOSIN V. Edward P. Debold, Laura K. Gunther, Matthew Unger, Brent Scott, Wanjian Tang, **Christopher M. Yengo**

Platform
Membrane Protein Dynamics and Folding II

10:45 AM - 12:45 PM, ROOM 30ABC

Co-Chairs
Konstantina Karathanou, Freie Universität Berlin, Germany
Katherine Schaefer, University of Missouri

861-PLAT **10:45 AM**
DIRECT OBSERVATION OF LIGAND-INDUCED CONFORMATIONAL CHANGES OF P-GLYCOPROTEIN IN AFM AND CORRELATION WITH SURFACE-ABSORBED ACTIVITY MEASUREMENTS. **Katherine G. Schaefer**, Gershon Mensah, Phuong H. Nguyen, Arthur G. Roberts, Gavin M. King

862-PLAT **11:00 AM**
REVEALING A MULTISTEP BINDING MECHANISM OF INSERTASES FOR MEMBRANE PROTEIN INSERTION AND FOLDING. **Pawel R. Laskowski**, Kristyna Pluhackova, Brian M. Lang, Andreas Kuhn, Daniel J. Mueller

863-PLAT 11:15 AM
STRUCTURES OF UNFOLDED OUTER MEMBRANE PROTEINS IN COMPLEX WITH CHAPERONES. **Neharika Chamachi**, Andreas Hartmann, Georg Krainer, Michael Schlierf

864-PLAT 11:30 AM
CONFORMATIONAL DYNAMICS OF THE MEMBRANE ENZYME LSPA USING EPR AND MD. Tracy A. Caldwell, Owen N. Vickery, Phillip J. Stansfeld, **Linda Columbus**

865-PLAT 11:45 AM
DYNAMIC FINGERPRINTING OF THE A_{2A} ADENOSINE RECEPTOR IN DIFFERENT LIGAND-BIASED STATES. **Dennis D. Fernandes**, Chris Neale, Gregory W. Gomes, Yuchong Li, Aditya Pandey, Libin Ye, R. Scott Prosser, Claudiu C. Gradinaru

866-PLAT 12:00 PM
INSIGHTS INTO THE DYNAMICS AND ASSEMBLY PROPERTIES OF THE ENIGMATIC TSPO PROTEIN. Rajas Rao, Ibaa Dhaybi, Julien Diharce, **Catherine Etchebest**

867-PLAT 12:15 PM
INVESTIGATION OF DRUG TRANSPORT BY MTRD FROM *NEISSERIA GONORRHOEAE*. **Lauren Ammerman**, Sarah B. Mertz, John G. Wise

868-PLAT 12:30 PM
PROTON BINDING AT PROTEIN AND MEMBRANE INTERFACES. **Konstantina Karathanou**, Lukas Kemmler, Michalis Lazaratos, Malte Siemers, Ana-Nicoleta Bondar

Platform
Molecular Dynamics

10:45 AM - 12:45 PM, ROOM 31ABC

Co-Chairs
Gregory Babbitt, Rochester Institute of Technology
Anna Pavlova, Georgia Institute of Technology

869-PLAT 10:45 AM
DETERMINING FREE ENERGY DIFFERENCES THROUGH VARIATIONAL MORPHING. **Martin Reinhardt**, Helmut Grubmueller

870-PLAT 11:00 AM
MACHINE LEARNING-BASED DETECTION OF FUNCTIONALLY CONSERVED BINDING INTERACTIONS IN MOLECULAR DYNAMIC SIMULATIONS. **Gregory A. Babbitt**

871-PLAT 11:15 AM
MECHANISM OF ACTION OF HBV CAPSID ASSEMBLY MODULATORS CAN BE PREDICTED FROM A COMBINATION OF MOLECULAR DYNAMICS AND DOCKING. **Anna Pavlova**, James C. Gumbart

872-PLAT 11:30 AM
BUILDING A MACRO-MIXING DUAL-BASIN GO MODEL USING THE MULTISTATE BENNETT ACCEPTANCE RATIO. **Ai Shinobu**, Chigusa Kobayashi, Yasuhiro Matsunaga, Yuji Sugita

873-PLAT 11:45 AM
UNVEILING LIGAND BINDING MECHANISMS THROUGH MOLECULAR SIMULATION: LESSONS AND PROGRESS FROM MARKOV STATE MODEL APPROACHES. **Vincent A. Voelz**

874-PLAT 12:00 PM
A NEW CONSTANT PH METHOD TO SIMULTANEOUSLY PREDICT PH-INDUCED CONFORMATIONAL CHANGES AND INDIVIDUAL PKA VALUES IN LARGE BIOMOLECULES. **Ekaterina D. Kots**, Derek M. Shore, Harel Weinstein

875-PLAT 12:15 PM
ACCELERATED ESTIMATION OF LONG-TIMESCALE KINETICS BY COMBINING WEIGHTED ENSEMBLE SIMULATION WITH MARKOV MODEL "MICROSTATES" USING NON-MARKOVIAN THEORY. **Jeremy T. Copperman**, Daniel M. Zuckerman

876-PLAT 12:30 PM
DETERMINATION OF PROTEIN COARSE-GRAINED POTENTIALS BY MACHINE LEARNING APPROACHES. Eric Vazquez, **Rachel Thomas**, Rafael Zamora-Resendiz, Yu-Hang Tang, Masakatsu Watanabe, Silvia Crivelli

Annual Meeting of the Student Chapters

11:00 AM - 1:00 PM, ROOM 28AB

Join BPS Student Chapters from all over the world for a poster session and workshop. Attendees will meet Student Chapter officers and representatives and learn about each chapter. There will also be an interactive workshop that aims to establish chapter interactions, communications, and planning for future Student Chapter Annual Meeting sessions.

Moderators
Seth Weinberg, Ohio State University
Ashley Carter, Amherst College

Career Development Center Workshop
Networking for Nerds: How to Create Your Unicorn Career

11:30 AM - 12:30 PM, ROOM 26A

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
Leica Microsystems

11:30 AM - 1:00 PM, ROOM 33A

Leica SP8 FALCON: Applications of FLIM for Functional Imaging and STED Nanoscopy
The rapidly growing field of functional imaging helps us understand the complex interactions of molecules, revealing the true nature of 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 highly sensitive to the molecular environment, providing a robust measure of a biological system's health. However, previous FLIM solutions were slow and difficult to implement, particularly for complex imaging workflows. To address this weakness, we present the Leica SP8 FALCON (Fast Lifetime Contrast), a fast, intuitive and totally integrated, all-Leica FLIM solution. The SP8 FALCON delivers video-rate FLIM with pixel-by-pixel quantification, due to a unique combination of fast electronics, sensitive spectral hybrid detectors (Leica HyDs), and a novel concept for measuring time. The system has ultra-short dead time and powerful built-in algorithms to manage data acquisition and analysis, while maintaining accuracy and excellent data quality.

This talk explains the technical implementations enabling this new level of performance and provides some interesting application examples, including functional imaging (e.g. metabolic imaging or FRET imaging) and the use of lifetime information to achieve improved live-cell Nanoscopic Imaging (τ-STED). τ-STED is a revolutionary modality for STED imaging, making use of the FALCON FLIM phasor approach, delivering cutting-edge resolu-

tion and image quality at low light dose, especially beneficial for live-cell nanoscopy applications. τ-STED takes the fluorescence lifetime information from all detected photons combined with phasor analysis in a novel way to increase the resolution and eliminate uncorrelated background in an automated manner. The τ-STED implementation on Leica SP8 STED 3x systems works for 2D and 3D STED in live and in fixed specimens, and for multicolor applications.

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 auto-fluorescence component separation.

Speaker
Haridas Pudavar, Product Performance Manager-Confocal Systems, Leica Microsystems

The Nuts and Bolts of Preparing Your NSF Grant

12:30 PM - 2:00 PM, ROOM 28CDE

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
Marcia Newcomer, NSF

Exhibitor Presentation Nanion Technologies

12:30 PM - 2:00 PM, ROOM 33C

Beyond Ion Channels and Transporters: Snapshots of the State-of-the-Art Solutions
For almost two decades Nanion Technologies provides diverse solutions for electrophysiologists worldwide. We aim to successfully implement innovative technologies in the fields of ion channel automated electrophysiology, monitoring of cell viability and contraction, as well as electrogenic transporters, with our chip- and plate-based devices. Covering the needs for low, medium and high throughput assays our portfolio is well suited to advance research and screening projects. During this year's symposium, five snapshots of successful wide-ranging applications, assays and emerging technologies from our product portfolio will be presented. Our symposium will start with an introduction by Dr. Niels Fertig (CEO, Nanion) as a guide through the overall capabilities of Nanion´s technology portfolio. In continuation, we will welcome our speakers.

Our first snapshot, presented by Prof. Dr. Jamie Vandenberg (Victor Chang Cardiac Research Institute) will be focusing on the high throughput automated patch clamp (APC) screening of missense variants in KCNH2 mutations, a well-established cause of sudden cardiac death, using the SyncroPatch 384PE. Prof. Vandenberg will present a high throughput functional assay his group developed in order to differentiate between benign and pathogenic variants in KCNH2 gene. Dr. Marc Rogers (Metrion Biosciences) will continue with a snapshot focusing on validation of a CardioExcyte 96 impedance-based phenotypic assay, that is able to reproduce the chronic effects of a range of clinical drugs that affect human iPSC cardiomyocyte contractility and viability by multiple and diverse mechanisms, including ion channel and ionic pump inhibition, DNA intercalation, proteasome and tyrosine kinase inhibition, and myosin disruption. One of the newest Nanion´s releases, the FLEXcyte 96, will be highlighted in the snapshot presented by Dr. Matthias Gossmann (inno-Vitro). Dr Gossmann will introduce the important impact this technology has on cardiac research, as it offers the potential to scale-up mechanical testing of cardiac contractile behavior, maturation and drug screening towards medium-throughput analysed under true physiological conditions.

Moving from cardiac physiology, Nathan Thomas (University of Wisconsin-Madison) will introduce a new application of SSM-based electrophysiology, in the field of ion coupled transporters. With a novel approach the transporter stoichiometry is investigated via reversal potential determination. During his snapshot, SURFE2R N1 data obtained on transporters from the small multidrug resistance (SMR) family, with the goal of providing a better understanding of underlying transport mechanisms, will be presented.

Finally, Dr. Stephen Hess (Evotec) will introduce the use of APC platforms to support ion channel drug discovery, focusing on the Nav1.1 channels, which positive modulators could be useful in treating cognitive disorders, epilepsy, and neurodegenerative diseases. To find novel positive modulators of NaV1.1 channels. Dr. Hess screened over 150K small molecules using the SyncroPatch 384PE and found confirmed hits which could serve as excellent starting points for further MedChem optimization towards potential therapeutics.

The Nanion team is delighted to welcome you to our lunch symposium!

Speakers
Jamie Vandenberg, Co-Deputy Director, Head of Cardiac Electrophysiology, The Victor Chang Cardiac Research Institute
Marc Rogers, Director, CSO, Metrion Biosciences
Matthias Gossmann, Innovitro (FLX), Co-Founder & CEO, Innovitro
Nathan Thomas, University of Wisconsin-Madison
Stephen Hess, Research Leader-Ion Channels, Evotec

How Does Congress Set the Federal Budget for Biomedical Research?

1:00 PM - 2:30 PM, ROOM 23ABC

The Congressional appropriations process for setting the federal budget is often fought out over many months, and rarely straightforward. The funding of agencies such as the National Institute of Health (NIH) and National Science Foundation (NSF) are a small part of the $1.4 trillion discretionary budget set annually by the House and Senate.

This workshop will review the overall process, including distinctions between authorization and appropriations, discretionary and non-discretionary spending, and the Presidential and Congressional budgets. Understanding where grant giving agencies fit into the broader federal budget will aid you in advocating for basic and biomedical research budgets that truly address national needs. Learn how you can lend your voice to the Biophysical Society's advocacy for sustained, predictable funding for scientific research.

Moderator
Jonathan King, MIT

Speakers
Angela Diaz, University of California, San Diego
Leah Cairns, BPS Congressional Science Fellow
Eric Sundberg, Emory University School of Medicine

Careers in Industry
A Q&A Panel

1:00 PM - 2:30 PM, ROOM 29AB

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.

Moderator
Ariel Lewis-Ballester, Gilead Sciences

Speakers
Angela Ballosteros, NIH
Jeanne Small, NSF
Akash Bhattacharya, Beckman Coulter Life Sciences
Karl Maluf, KBI Biopharma
Shanti Amagasu, Amgen

Biophysics 101
An Introduction to Molecular Dynamics Simulation and its Application to Biological Systems

1:30 PM - 3:00 PM, ROOM 24ABC

Molecular dynamics (MD) is a computer simulation technique for studying structural dynamics and thermodynamics properties of molecular systems. The atoms and molecules are allowed to interact for a fixed period of time, giving a view of the dynamic "evolution" of the system. Given its high temporal and spatial resolutions, the methodology can be considered as a "computational microscope" to allow for visualization of molecular systems and processes and quantify microscopic properties of interest, including macromolecular interactions, energetics associated with processes, and molecular properties underlying macroscopic behavior observed experimentally. MD is now an indispensable biophysical tool that closely complements many experimental techniques. The technique has benefitted tremendously from substantial boost in our computational power and from algorithmic advances, and it can currently describe rather complex biological phenomena. The speakers will introduce the basic theory and system building steps for a MD simulation and present some of the recent successful biophysical applications of the technique including examples of combining the methodology with experimental data.

Speakers
Esmael Haddadian, The University of Chicago
Emad Tajkhorshid, University of Illinois at Urbana-Champaign

Exhibitor Presentation
Olympus America Inc

1:30 PM - 3:00 PM, ROOM 33A

Advancements in Lens Manufacturing Technology Develop New X Line Objective Lenses
Researchers use microscopes as essential tools for advancing their science, and objective lenses are crucial components of the system. Many applications benefit from high-quality images with a large field of view, but there is usually a trade-off where improvements in one area of imaging, such as flatness of field, lead to a decrease in another area such as chromatic correction. Conventional objective lens manufacturing technology forced a trade-off between numerical aperture, image flatness, and chromatic correction, making it difficult to improve all three in one objective. Olympus, with 100 years of innovative optical solutions for life sciences, has developed a new lens polishing technology that creates lenses with shapes that are difficult to fabricate using other methods. These improvements enable manufacturing of convex lenses with ultra-thin edges as well as ultra-thin concave lenses, which lead to more lenses being packaged in each objective housing, increasing the NA, image flatness, and chromatic correction range. In this presentation, you will learn how these improvements advance optical performance and a range of applications.

Speaker
James Lopez, Manager-Life Science Applications Group, Olympus America Inc

Snack Break

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

Meet the Editors, Biophysical Journal

1:45 PM - 3:00 PM, SOCIETY BOOTH/LOBBY G

Poster Presentations and Late Posters

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

How to Get Your Scientific Paper Published

2:15 PM - 3:45 PM, ROOM 29C

This panel discussion, sponsored by the Publications Committee, will focus on the practical issues involved in publishing a scientific paper. Panelists include Biophysical Journal editors and Publication Committee members who have extensive experience in writing, reviewing, and editing papers. They will provide general information on the dos and don'ts of submitting research manuscripts to journals for publication. For authors, topics encompass writing for your audience (and identifying the appropriate journal), writing the cover letter, managing reviews, and suggestions for responding to critiques and even rejection of a paper. For reviewers, topics include how to write a useful critique. Attendees are encouraged to pose questions and raise topics for discussion.

Moderator
Kathleen Hall, Washington University in Saint Louis

Panelists
Jason Kahn, University of Maryland, *Selecting the Right Journal for Your Paper*
Vasanthi Jayaraman, University of Texas Health Science Center, *The Path of a Manuscript*
Will Hancock, Pennsylvania State University, *How to Craft a Narrative*
Carlos Baiz, University of Texas at Austin, *Design of Effective Figures*

Career Development Center Workshop
Translating Your Credentials: Writing Effective Resumes + Cover Letters and Your LinkedIn Profile

2:30 PM - 3:30 PM, ROOM 26A

Beyond Reporting: How to be an Ally to Those Experiencing Harassment

2:30 PM - 4:00 PM, ROOM 28CDE

It can be difficult to know how best to support individuals experiencing harassment, or to know what to do or say if you observe problematic conduct. In this workshop participants will learn what it means to be an ally to those experiencing harassment, ways to be an effective ally, and will discuss common concerns of would-be allies. Participants will also learn practical, experience-based actions, strategies, and conversations colleagues can utilize in order to support targets of harassment.

Speaker
Kristina K. Larsen, Kristina Larsen Law

Exhibitor Presentation
HORIBA Scientific

2:30 PM - 4:00 PM, ROOM 33C

A New Modular Research Fluorometer Pushes Detection, Stray-Light, and Wavelength Limits of Fluorescence Spectroscopy
HORIBA Instruments Inc is proud to introduce the new FluorologQM modular research spectrofluorometer. This is the fourth generation of the world famous, all reflective, Fluorolog modular research spectrofluorometer and it pushes the sensitivity, performance and flexibility of fluorescence spectroscopy to new heights. Featuring the world's highest guaranteed sensitivity specification, the longest focal length monochromators in the industry, and a wavelength coverage range from 180 to 5,500 nm, the FluorologQM pushes the detection, stray light, and wavelength limits of fluorescence to new levels. With new software, a new design and complete automation, this advanced research fluorometer, is also equally well suited for the simplest of tasks. The biophysical applications of the FluorologQM will be presented.

Speaker
Cary Davies, Global Product Manager-Fluorescence Division, HORIBA Scientific

Exhibitor Presentation
Applied Photophysics

3:30 PM - 5:00 PM, ROOM 33A

Discover When Change is Significant: Latest Developments in Circular Dichroism and Stopped-Flow Kinetics
Applied Photophysics has remained at the forefront of the technologies of circular dichroism and stopped-flow kinetics since its creation in 1971 by the Royal Institution of Great Britain under the leadership of Nobel Prize-winning Lord Port.

In the first part of the presentation, the latest developments regarding the Chirascan CD spectrometers will be introduced. Case studies will be discussed to illustrate that CD spectroscopy with Chirascan is far more powerful than the traditional use of revealing the protein secondary structures such as α-helix and β-sheet. With Chirascan CD spectrometers, information regarding secondary structures, as well as tertiary structures, thermal and chemical stability can be clearly demonstrated. Moreover, the introduction of automatic CD spectrometers provides unparalleled sensitivity, reproducibility and productivity. It provides a novel approach for objective, quantifiable higher order structure (HOS) comparisons. The introduction of the Circularly Polarized Luminescence (CPL) accessory makes the Chirascan more economical and versatile.

In the second part of the presentation, the latest developments in the SX Stopped-Flow systems will be discussed. Stopped-Flow systems from Applied Photophysics are known for its high performance, ease-of-use and durability and we have made them better. We introduce LED light sources and various accessories, such as dual fluorescence detection, fluorescence polarization/anisotropy, and photodiode array detector. Applications in enzymology and protein structures will be discussed.

Speakers
Marc Neglia, Sales Director, Applied Photophysics Americas
Frank Yuan, Applications Scientist, Applied Photophysics
Darek Silwa, Sales Manager, Applied Photophysics

Membership Committee Meeting

3:30 PM - 5:30 PM, ROOM 30D

Career Development Center Workshop
Marketing Your Value: Crafting Your Elevator Pitch/30 Second Value Statement/Brand Statement

4:00 PM - 5:00 PM, ROOM 26A

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
Kinetic Stability: Controlling Longevity at the Molecular Level

4:00 PM - 6:00 PM, BALLROOM 20A

Chair
Jonathan King, MIT

877-SYMP 4:00 PM
DESIGNING PROTEIN STABILITY AND STRAIN FOR FOLDING AND FUNCTION. **Elizabeth M. Meiering**

878-SYMP 4:30 PM
COMPETING INTERACTIONS BETWEEN VIRAL RHIM AMYLOID-FORMING PROTEINS AND HOST FUNCTIONAL AMYLOID STRUCTURES MODULATE THE CELLULAR RESPONSE TO INFECTION. **Margaret Sunde**, Chi L.L. Pham, Nirukshan Shanmugam, Max O.D.G. Baker, Megan Steain, Ailis O' Carroll, James W. Brown, Emma Sierecki, Yann Gambin

879-SYMP 5:00 PM
PROTEOMICS ANALYSES OF KINETIC STABILITY: FROM MOLECULAR TO ORGANISM LONGEVITY. **Wilfredo Colon**, Evelyn G. Rugaber, Ke Xia

880-SYMP 5:30 PM
BURIED TRYPTOPHANS CONTRIBUTING TO THE HIGH KINETIC STABILITY OF THE LONG-LIVED GAMMA CRYSTALLINS AND THEIR OXIDATIVE DAMAGE OPENING THE PATHWAY TO THE AGGREGATED STATE ASSOCIATED WITH CATARACTS. **Jonathan King**, Ishara Mills Henry, Melissa Kosinski-Collins, Shannon Thol, Eugene Serebryany

Symposium
Translational Control

4:00 PM - 6:00 PM, BALLROOM 20D

Chair
Christine Dunham, Emory University

881-SYMP 4:00 PM
NASCENT POLYPEPTIDE CHAIN-MEDIATED TRANSLATION ELONGATION ARREST IN BACTERIA. **Shinobu Chiba**

882-SYMP 4:30 PM
PRECISELY QUANTIFYING THE ENERGETICS OF THE RIBOSOME. Mariana Levi, Jeffrey Noel, Huan Yang, Trung Kien Nguyen, Asem H. Hassan, Kelsey N. Walak, Jonathan Perrier, Liah Dukaye, Ransom Horne, **Paul C. Whitford**

883-SYMP 5:00 PM
CAT TAILS DRIVE DEGRADATION OF STALLED POLYPEPTIDES ON AND OFF THE RIBOSOME. **Onn Brandman**

884-SYMP 5:30 PM
ROLE OF RNA MODIFICATIONS IN TRNA STRUCTURAL STABILITY AND ACCURATE PROTEIN SYNTHESIS. **Christine Dunham**, Eric D. Hoffer, Ha An Nguyen, Sunita Subramanian, Samuel Hong, Tatsuya Maehigashi

Platforms
Protein Structure and Conformation II

4:00 PM - 6:00 PM, BALLROOM 20BC

Co-Chairs
Joanna Long, University of Florida
Joseph Primeau, University of Alberta, Canada

885-PLAT 4:00 PM
ELUCIDATION OF PROTEIN-PROTEIN INTERACTIONS THROUGHOUT *E. COLI* FATTY ACID BIOSYNTHESIS. **Thomas G. Bartholow**, Terra Sztain-Pedone, Ashay Patel, Ruben Abagyan, Michael D. Burkart

886-PLAT 4:15 PM
CHARACTERIZATION OF INTERMOLECULAR QUATERNARY INTERACTIONS BETWEEN DISCRETE SEGMENTS OF THE *STREPTOCOCCUS MUTANS* ADHESIN P1 AND THEIR BINDING TO SMALL MOLECULE AMYLOID INHIBITORS VIA NMR SPECTROSCOPY. Gwladys Riviere, Emily Peng, Albert Brotgandel, Jeanine Brady, **Joanna R. Long**

887-PLAT 4:30 PM
HEAT EFFECTS ON COIL HYDRODYNAMIC SIZE REVEAL THE ENERGETICS OF DENATURED STATE CONFORMATIONAL BIAS. **Steven T. Whitten**, Lance R. English, Elisia A. Paiz

888-PLAT 4:45 PM
WW DOMAINS FROM WWP2 E3 UBIQUITIN LIGASE RECOGNISE OCT4 AND SMAD7 PEPTIDES. Lloyd C. Wahl, Jessica E. Watt, Danielle De Bourcier, Andrew Chantry, **Tharin M.A. Blumenschein**

889-PLAT 5:00 PM
THE COMPLETE CHARACTERIZATION OF A TRAPPED ACYL CARRIER PROTEIN-KETOSYNTHASE COMPLEX. **Jeffrey T. Mindrebo**, Laetitia E. Misson, Ashay Patel, Katia Charov, Joseph P. Noel, Michael D. Burkart

890-PLAT 5:15 PM
STRUCTURE-FUNCTION RELATIONSHIPS IN BIOFILMS CHARACTERIZING THE STAPHYLOCOCCAL AUTOLYSIN R2 REPEAT DOMAIN. **Yasiru R. Perera**, Taylor M. South, Kayla D. McConnell, Rahul Yadav, Nicholas C. Fitzkee

891-PLAT 5:30 PM
INTERACTION OF A SARCOLIPIN PENTAMER AND MONOMER WITH THE SARCOPLASMIC RETICULUM CALCIUM PUMP, SERCA. John Paul Glaves, **Joseph O. Primeau**, Przemek Gorski, L. Michel Espinoza-Fonseca, M. Joanne Lemieux, Howard S. Young

892-PLAT 5:45 PM TRAVEL AWARDEE
DIMER INTERACTION IN THE HV1 PROTON CHANNEL. **Laetitia Mony**, David Stroebel, Ehud Y. Isacoff

Platform
Mitochondria and Energy

4:00 PM - 6:00 PM, ROOM 23ABC

Co-Chairs
Ambre Bertholet, University of California, San Francisco
Verónica Eisner, Pontificia Universidad Católica de Chile, Chile

893-PLAT 4:00 PM
FAST STATES REVEALED BY THEORY OF JUMPS IN F_1-ATPASE ROTATION EXPERIMENTS. **Sandor Volkan-Kacso**, Luan Q. Le, Haibin Su, Rudolph Marcus

894-PLAT 4:15 PM
REVISITING SUBUNIT ROTATION IN F_OF_1-ATP SYNTHASE BY SINGLE-MOLECULE FRET IN AN ABELTRAP. **Michael Boersch**

895-PLAT 4:30 PM
ANIONIC LIPIDS CONFINE CYTOCHROME C_2 TO THE VICINITY OF BIOENERGETIC MEMBRANES WITHOUT COMPROMISING ITS INTERACTION WITH MEMBRANE-EMBEDDED REDOX PARTNERS. **Chun Kit Chan**, Abhishek Singharoy, Emad Tajkhorshid

896-PLAT 4:45 PM
VOLTAGE-ENERGIZED CALCIUM-SENSITIVE ATP PRODUCTION BY MITOCHONDRIA. Andrew P. Wescott, Joseph P. Kao, W. Jonathan Lederer, **Liron Boyman**

897-PLAT 5:00 PM
A PHOSPHOMIMETIC MUTATION S215E IN VDAC1 INTERFERES WITH HEKOKINASE BINDING. **Qunli Cheng**, Gayathri K. Natarajan, Meiying Yang, Po-Chao Wen, Nandan Haloi, Emad Tajkhorshid, Amadou K. Camara, Wai-Meng Kwok

898-PLAT 5:15 PM
OPA1 GTPASE AND GE DOMAIN-SPECIFIC MUTATIONS DIFFERENTIALLY ALTER MITOCHONDRIAL FUSION DYNAMICS AND CALCIUM HOMEOSTASIS. Benjamin Cartes-Saavedra, Duxan Arancibia, Florence Burté, Marcela Sjoberg, Maria Estela Andres, Patrick Yu-Wai-Man, Gyorgy Hajnoczky, **Verónica Eisner**

899-PLAT 5:30 PM
REDOX CONTROL OF SLEEP. **Anissa Kempf**, Seoho M. Song, Clifford B. Talbot, Gero Miesenböck

900-PLAT 5:45 PM
MOLECULAR IDENTITY AND REGULATORY MECHANISMS OF THE MITOCHONDRIAL UNCOUPLING PROTEIN OF NON-ADIPOSE TISSUES. **Ambre M. Bertholet**, Edward T. Chouchani, Lawrence Kazak, Alessia Angelin, Andriy Fedorenko, Jonathan Z. Long, Sara Vidoni, Ryan Garrity, Joonseok Cho, Naohiro Terada, Douglas Wallace, Bruce M. Spiegelman, Yuriy V. Kirichok

Platform
Membrane Structure

4:00 PM - 6:00 PM, ROOM 24ABC

Co-Chairs
Milka Doktorova, University of Texas Health Science Center at Houston
Félix Goñi, University of the Basque Country, Spain

901-PLAT 4:00 PM
FISB MEDIATED MEMBRANE FISSION DURING SPORULATION IN *BACILLUS SUBTILIS*. **Ane Landajuela**, Martha Braun, Christopher Daniel Rodrigues, Thierry Doan, David Rudner, Erdem Karatekin

902-PLAT 4:15 PM
PHOSPHOLIPID TRANSLOCATION AS DRIVER OF CHOLESTEROL (RE) DISTRIBUTION. **Milka Doktorova**, Jessica L. Symons, Kandice R. Levental, Ilya Levental

903-PLAT 4:30 PM
A SEMI-SUPERVISED LEARNING APPROACH FOR CALCULATION OF MEMBRANE CURVATURE PROPERTIES, WITH APPLICATION TO MITOCHONDRIAL MODEL MEMBRANES. **Moeen Meigooni**, Emad Tajkhorshid

904-PLAT 4:45 PM
IMPACT OF DYSLIPIDEMIC LEVELS OF OXIDIZED CHOLESTEROL ON ENDOTHELIAL MEMBRANES. **Manuela A. Ayee**, Katie Lam, Irena Levitan

905-PLAT 5:00 PM
PATCHES AND BLEBS, A COMPARATIVE STUDY OF TWO PLASMA MEMBRANE PREPARATIONS FROM CHO CELLS. **Félix M. Goñi**, Bingen G. Monasterio, Noemi Jimenez-Rojo, Aritz Garcia-Arribas, Howard Riezman, Alicia Alonso

906-PLAT **5:15 PM**
MONTE CARLO AND MOLECULAR DYNAMICS SIMULATIONS TO EXPLAIN BIOMEMBRANE MESO-PATTERNING BY A COMPOSITION-CURVATURE COUPLING MECHANISM. **Julie Cornet**, Matthieu Chavent, Manoel Manghi, Nicolas Destainville

907-PLAT **5:30 PM**
MECHANICAL PROPERTIES OF COMPOSITIONALLY ASYMMETRIC MEMBRANES. **Aparna Sreekumari**, Reinhard Lipowsky

908-PLAT **5:45 PM**
SUPERRESOLVING THE MEMBRANE TOPOGRAPHY OF LIVE CELLS. **Gabriele Kockelkoren**, Line Lauritsen, Christopher Shuttle, Dimitrios Stamou

Platform
Single-Molecule Spectroscopy
4:00 PM - 6:00 PM, ROOM 25ABC

Co-Chairs
Brett Israels, University of Oregon
Irina Gophich, NIH

909-PLAT **4:00 PM**
QUANTIFYING BINDING AFFINITIES, KINETICS AND STOICHIOMETRY OF BIOMOLECULAR COMPLEXES WITH MASS PHOTOMETRY. **Fabian Soltermann**, Veronica Pagnoni, Eric Foley, Martin Galpin, Justin L. Benesch, Weston B. Struwe, Philipp Kukura

910-PLAT **4:15 PM**
A MODULAR DNA SCAFFOLD TO STUDY PROTEIN-PROTEIN INTERACTIONS AT SINGLE-MOLECULE RESOLUTION. **Dorota N. Kostrz**, Hannah K. Wayment-Steele, Jinglong WANG, Maryne Follenfant, Vijay S. Pande, Antoine Triller, Christian G. Specht, Terence R. Strick, Charlie Gosse

911-PLAT **4:30 PM**
INVESTIGATION OF LENTIVIRUSES AND THEIR INITIAL CONTACTS WITH CELLS USING REAL-TIME 3D TRACKING. **Jack C. Exell**, Shangguo Hou, Courtney C. Johnson, Kevin D. Welsher

912-PLAT **4:45 PM**
FAST THREE-COLOR SINGLE-MOLECULE FRET USING CONTINUOUS-WAVE EXCITATION OF DONOR. **Janghyun Yoo**, Jae-Yeol Kim, John M. Louis, Irina V. Gopich, Hoi Sung Chung

913-PLAT **5:00 PM** **TRAVEL AWARDEE**
SINGLE-MOLECULE INVESTIGATION OF CONFORMATIONAL CHANGES IN EPIDERMAL GROWTH FACTOR RECEPTOR. **Raju Regmi**, Shwetha Srinivasan, Xingcheng Lin, Steven Quinn, Wei He, Kermit L. Carraway III, Matthew A. Coleman, Bin Zhang, Gabriela Schlau-Cohen

914-PLAT **5:15 PM**
SINGLE-MOLECULE DYNAMICS OF THE HUMAN RNA POLYMERASE II PRE-INITIATION COMPLEX. Rory Cunnison, Oksana Gonchar, Jonathan Grimm, Luke Lavis, Zhengjian Zhang, **Andrey G. Revyakin**

915-PLAT **5:30 PM** **TRAVEL AWARDEE**
SUB-MICROSECOND SINGLE-MOLECULE FRET STUDIES OF SINGLE-STRANDED DNA CONFORMATION FLUCTUATIONS MEDIATED BY SINGLE-STRANDED DNA BINDING PROTEINS. **Brett A. Israels**, Anson Dang, Peter H. von Hippel, Andrew H. Marcus

916-PLAT **5:45 PM**
HIGH GC CONTENT DNA DOES NOT AFFECT PHAGE T4 DNA PACKAGING -- TEST OF A SCRUNCHWORM MODEL FOR PACKAGING MOTOR FUNCTION. **Youbin Mo**, Nicholas A. Keller, Douglas E. Smith

Platform
Cell Mechanics, Mechanosensing, and Motility
4:00 PM - 6:00 PM, ROOM 30ABC

Co-Chairs
Effie Bastounis, University of Washington
Stephanie Hoehn, University of Cambridge, United Kingdom

917-PLAT **4:00 PM**
QUANTIFYING MOLECULAR FORCES WITH SERIALLY CONNECTED FORCE SENSORS. Yousif Murad, Adam Yasunaga, **Isaac T. Li**

918-PLAT **4:15 PM**
MORPHOGENESIS IS STRESSFUL - ELASTIC PROPERTIES OF FOLDING CELL SHEETS. **Stephanie S. Hoehn**, Pierre A. Haas, Raymond E. Goldstein

919-PLAT **4:30 PM**
EMERGENCE OF CELL ORGANIZATION AND PATTERN SENSING FROM ENTROPIC SHAPE FLUCTUATIONS. **Nicholas A. Kurniawan**

920-PLAT **4:45 PM**
STICK-SLIP DYNAMICS OF MIGRATING CELLS. **Rumi De**, Partho Sakha De

921-PLAT **5:00 PM**
MECHANICALLY-DRIVEN CELLULAR COMPETITION PROMOTES THE COLLECTIVE EXTRUSION OF BACTERIA-INFECTED EPITHELIAL CELLS. **Effie E. Bastounis**, Prathima Radhakrishnan, Patrik Engström, Francisco Alcalde, Maria Gómez Benito, José M. García Aznar, Matthew Welch, Julie Theriot

922-PLAT **5:15 PM**
CORRELATING MECHANICAL AND GENE EXPRESSION DATA ON THE SINGLE CELL LEVEL TO INVESTIGATE METASTASIS. **Katherine M. Young**, Congmin Xu, Kelly Ahkee, Roman Mezencev, Peng Qiu, Todd Sulchek

923-PLAT **5:30 PM**
DIVERSE MODES OF MOTION OF DICTYOSTELIUM DISCOIDEUM CELLS: CORRELATING CYTOSKELETON ORGANIZATION AND GENERATION OF TRACTION FORCES. **Elisabeth Ghabache**, Yuchuan Miao, Peter N. Devreotes, Wouter-Jan Rappel

924-PLAT **5:45 PM** **TRAVEL AWARDEE**
PLASMA MEMBRANE NANODOMAINS AS AN INTEGRATOR OF SUBSTRATE ENCODED MECHANO-CHEMICAL SIGNALS. **Joseph Mathew Kalappurakkal**, Anupama Ambika Anilkumar, Chandrima Patra, Thomas S. van Zanten, Michael P. Sheetz, Satyajit Mayor

Platform
Ligand-gated Channels
4:00 PM - 6:00 PM, ROOM 31ABC

Co-Chairs
Sun Joo Lee, Washington University in St. Louis
Erik Lindahl, Stockholm University, Sweden

925-PLAT **4:00 PM**
LIGAND BINDING AND VOLTAGE MODULATION OPEN A CYCLIC-NUCLEOTIDE GATED ION CHANNEL. **Xiaolong Gao**, Chen Fan, Crina M. Nimigean

926-PLAT **4:15 PM**
PATCH-CLAMP FLUOROMETRY DEFINES A ROLE FOR SUR1 IN NUCLEOTIDE INHIBITION OF K_{ATP} CHANNELS. Samuel Usher, Frances M. Ashcroft, **Michael C. Puljung**

927-PLAT **4:30 PM**
ELUCIDATE THE BINDING MECHANISM OF VARIOUS SETRONS TO 5-HT3AR. **Sandip Basak**, Yvonne W. Gicheru, Arvind Kumar, Sudha Chakrapani

928-PLAT 4:45 PM
A LIPID RECOGNITION SITE AT A TRANSMEMBRANE HELIX KINK SHAPES THE AGONIST RESPONSE OF A PENTAMERIC LIGAND-GATED ION CHANNEL. **John E. Baenziger**, Camille M. Henault, Cedric Govaerts, Argel Estrada, Joseph Lynch, Daniel Bertrand, Els Pardon, Genevieve Evans, Kristen N. Woods, Benjamin W. Elberson, Luis G. Cuello, Grace H. Brannigan, Hugues Nury, Jan Steyaert, Chris Ulens

929-PLAT 5:00 PM
THE MOLECULAR MECHANISMS OF CHOLESTEROL REGULATION OF KIR CHANNELS REVEALED BY DIRECT AND QUANTITATIVE APPROACHES. **Sun Joo Lee**, Zi-Wei Chen, Melissa Budelier, Kathiresan Krishnan, Douglas F. Covey, Alex S. Evers, Colin G. Nichols

930-PLAT 5:15 PM
MECHANISM OF MODULATION OF AMPA RECEPTORS BY TARP-Γ8. **Elisa Carrillo**, Sana A. Shaikh, Vladmir Berka, Linda M. Nowak, Vasanthi Jayaraman

931-PLAT 5:30 PM
MECHANISMS OF ACTIVATION AND DESENSITIZATION OF FULL-LENGTH GLYCINE RECEPTOR IN MEMBRANES. **Arvind Kumar**, Sandip Basak, Shanlin Rao, Yvonne W. Gicheru, Megan Mayer, Mark S. Sansom, Sudha Chakrapani

932-PLAT 5:45 PM
MAPPING PH-DEPENDENT STATE TRANSITIONS OF A PENTAMERIC LIGAND-GATED ION CHANNEL THROUGH MARKOV STATE MODELING. **Cathrine Bergh**, Laura Orellana, Stephanie A. Heusser, Rebecca J. Howard, Erik Lindahl

Speed Networking

4:30 PM - 6:00 PM, LOBBY H

Career development and networking is important in science, but can be a big time commitment. Here we offer refreshments and the chance to speed network, an exciting way to connect with a large number of biophysicists (including Biophysical Society committee members) in a short amount of time. Mid-career and more experienced scientists can learn how to get more involved in the Society or network for open positions in their labs. Early career scientists can 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 can 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!

Exhibitor Presentation
Molecular Devices

4:30 PM - 6:00 PM, ROOM 33C

Empower Your Electrophysiology Studies Using New Axon pCLAMP 11 Software and HumSilencer Adaptive Noise Cancellation Technology
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 how to design protocols easier, analyze data faster, and achieve better data quality.

Speaker
Jeffrey Tang, Senior Global Axon Electrophysiological Application Scientist, Molecular Devices

Exhibitor Presentation
LUMICKS

5:30 PM - 7:00 PM, ROOM 33A

Breaking the Barriers: Providing the Full Workflow for Dynamic Single-Molecule Research from Sample to Publication
Here, we present our newest developments to further support discoveries in the fields of biology and biophysics. Our aim is to enable faster, easier, and more reliable than ever single-molecule research – from sample to publication – by extending the full experimental workflow with new services and open-access initiatives.

To decipher complex molecular interactions, you need to be able to observe the same biological process from multiple points of view. Using LUMICKS' groundbreaking C-Trap™ Optical Tweezers –Fluorescence & Label-free Microscopy, you can simultaneously visualize individual molecules in real time and measure biological processes in greater detail. The combination of live-imaging and measurements has proven to be a research game changer.

With the ever-increasing pressure to perform breakthrough discoveries in the least amount of time, LUMICKS brings you an instrument with unprecedented high precision, accuracy, reliability, and the shortest time to result. The C-Trap gives you access to three key features: stable and precise sample manipulation and measurements, a wide variety of visualization capabilities, and a high throughput experimental workflow.

With the technology in hand, the major barriers that still remain in dynamic single-molecule experimentation are caused by tedious sample preparation and non-standardized data analysis methods.

With ready-to-use kits, tailored sample preparation support, and easy-to-use data analysis, scientists can now focus more on their biological questions and generate the next wave of scientific discoveries in the least amount of time.

Join our presentation to learn about our new single-molecule biochemistry services and our open-access user community for experiment automation and data analysis in single-molecule research.

Speakers
Olivier Heyning, Chief Executive Officer & Founder, LUMICKS
Emmanuel Lissek, Application Scientist, LUMICKS
Ali Raja, Director Americas, LUMICKS

Dinner Meet-Ups

6:00 PM - 6:30 PM, SOCIETY BOOTH/LOBBY G

Interested in making new acquaintances and experiencing the cuisine of San Diego? Meet at the Society Booth Monday and Tuesday at 6:00 PM, where a BPS member will coordinate dinner at a local restaurant.

Awards and 2020 Biophysical Society Lecture

8:00 PM - 9:00 PM, BALLROOM 20ABCD

PRESENTATION OF AWARDS 8:00 PM

932.01-BPSL 8:15 PM
FROM SINGLE MOLECULE BIOPHYSICS TO SINGLE CELL GENOMICS: WHEN STOCHASTICITY MEETS PRECISION **Xiaoliang Sunney Xie**

Reception and Dance

9:30 PM - 12:00 AM, HILTON, SAPPHIRE

Reception and Quiet Room

9:30 PM - 12:00 AM, HILTON, INDIGO AE

MONDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL

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 – B21	Protein Structure and Conformation II
B22 – B40	Protein Stability, Folding, and Chaperones I
B41 – B67	Protein Assemblies I
B68 – B87	Protein Dynamics and Allostery II
B88 – B107	Membrane Protein Structures I
B108 – B131	Intrinsically Disordered Proteins (IDP) and Aggregates II
B132 – B152	DNA Structure and Dynamics II
B153 – B177	Protein-Nucleic Acid Interactions II
B178 – B201	Membrane Physical Chemistry II
B202 – B215	Membrane Dynamics II
B216 – B240	Membrane Active Peptides and Toxins I
B241 – B267	General Protein-Lipid Interactions I
B268 – B293	Membrane Receptors and Signal Transduction II
B294 – B312	Mechanosensation I
B313 – B329	Intracellular Calcium Channels and Calcium Sparks and Waves I
B330 – B344	Muscle Regulation
B345 – B374	Voltage-gated K Channels II
B375 – B394	Ion Channel Regulatory Mechanisms I
B395 – B420	Other Channels
B421 – B437	Skeletal Muscle Mechanics, Structure, and Regulation
B438 – B460	Cell Mechanics, Mechanosensing, and Motility I
B461 – B467	Genetic Regulatory Systems
B468 – B475	Computational Neuroscience
B476 – B488	Neuroscience: Experimental Approaches and Tools
B489 – B512	Electron Microscopy
B513 – B538	Molecular Dynamics II
B539 – B568	Computational Methods and Bioinformatics I
B569 – B603	Optical Microscopy and Superresolution Imaging II
B604 – B618	Biosensors I
B619 – B626	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 II (Boards B1 - B21)

933-Pos Board B1
EXPERIMENTAL TEST OF ENSEMBLE-INDUCED EPISTASIS IN MACROMOLECULES. **Anneliese J. Morrison**, Michael J. Harms

934-Pos Board B2
PP2A PHOSPHATASE ACTIVATOR (PTPA): KEY TO THE MASTER REGULATOR IS CRUCIAL FOR SURVIVAL OF *ENTAMOEBA HISTOLYTICA*; STRUCTURAL AND FUNCTIONAL ELUCIDATION. **Priya Tomar**, Gourinath Samudrala

935-Pos Board B3
EFFECT OF BILAYER THICKNESS ON MECHANICAL ACTIVATION OF THE ANGIOTENSIN II TYPE 1 RECEPTOR. **Bharat Poudel**, Rajitha R. Tatikonda, Juan M. Vanegas

936-Pos Board B4
SINGLE-MOLECULE FLUORESCENCE SPECTROSCOPY OF NON-LIPIDATED FORMS OF APOLIPOPROTEIN E. **Melissa D. Stuchell-Brereton**, Logan Calderone, Berevan Baban, Jasmine Cubuk, Greg DeKoster, Carl Frieden, Andrea Soranno

937-Pos Board B5
ACTIVATION OF A PHOTOENZYME RESULTS IN MODIFIED STRUCTURE AND DYNAMICS. **Andreas M. Stadler**, Judith Schneidewind, Michaela Zamponi, Esther Knieps-Grünhagen, Samira Gholami, Ulrich Schwaneberg, Ivan Rivalta, Marco Garavelli, Mehdi Davari, Karl-Erich Jaeger, Frank Krause, Marco Bocola, Ulrich Krauss

938-Pos Board B6
IN-CELL STRUCTURE DETERMINATION OF AN ANTIMICROBIAL PEPTIDE BY DNP SOLID-STATE NMR. **Shiying Zhu**, Frances Separovic, Marc Antoine Sani

939-Pos Board B7
PRINCIPLES OF ATP AND GTP SELECTIVITY IN NMP KINASES. Per Rogne, Elisabet Sauer-Eriksson, Uwe Sauer, Christian Hedberg, **Magnus Wolf-Watz**

940-Pos Board B8
FLANKING DISORDER AFFECTS THE CONFORMATIONAL ENSEMBLE AND DYNAMICS OF A SMALL FOLDED HUB DOMAIN. **Lasse Staby**, Micha Kunze, Katherine R. Kemplen, Karen Skriver, Birthe B. Kragelund

941-Pos Board B9
THE VARIABLE DOMAIN FROM THE MITOCHONDRIAL FISSION MECHANOENZYME DRP1 PROMOTES LIQUID-LIQUID PHASE SEPARATION. **Blake Hill**, Ammon E. Posey, Mehran Bagheri, Megan C. Harwig, Nolan W. Kennedy, Vincent J. Hilser, James L. Harden

942-Pos Board B10
STRUCTURE AND FUNCTION OF A SOLUBLE PRECURSOR OF HUMAN PULMONARY SURFACTANT PROTEIN SP-B. **Alejandro Alonso**, Barbara Olmeda, Olga Cañadas, Jesus Perez-Gil

943-Pos Board B11
DISSECTING CONTRIBUTIONS TO EFFICIENT CATALYSIS IN THE TRNA MODIFYING ENZYME TILS. **Ferdiemar C. Guinto**, Rebecca W. Alexander, Freddie R. Salsbury

944-Pos Board B12
INVESTIGATION OF DRUG RESISTANCE MECHANISMS FOR ANTIANDROGEN PROSTATE CANCER DRUG ENZALUTAMIDE USING MOLECULAR DYNAMICS SIMULATIONS. Behzad Aslani Avilaq, **Sefer Baday**

945-Pos Board B13
CHARACTERIZATION OF AIF5A PROTEIN: A MULTIFUNCTIONAL TRANSLATION FACTOR IN THE HYPERTHERMOPHILIC ARCHAEON *S. SOLFATARICUS*. **Alice Romagnoli**, Flavia Bassani, Paolo Moretti, Francesco Spinozzi, Udo Bläsi, Daniele Di Marino, Anna La Teana

946-Pos Board B14 Travel Awardee
ELECTROSTATICS AND THE CONTROL OF ENDOGENOUS HEME LIGATION BY PH IN A HEMOGLOBIN. **Jaime E. Martinez**, Laia Julió Plana, Jamie L. Schlessman, Darío A. Estrin, Luciana Capece, Juliette T. Lecomte

947-Pos Board B15
HIGH-THROUGHPUT MUTATIONAL SCREEN IDENTIFIES PHENOTYPICALLY RELEVANT CATEGORIES OF MUTATIONS IN FUMARATE HYDRATASE. **David Shorthouse**, Michael W.J. Hall, Benjamin A. Hall

948-Pos Board B16
THE DETERMINANTS FOR LIGAND BINDING OF THE DOMESTICATED RETROVIRAL PROTEIN ARC. **Christian Parsbæk Pedersen**, Lau Dalby Nielsen, Simon Erlendsson, Kaare Teilum

949-Pos Board B17
ALTERATION OF TBID-INDUCED APOPTOTIC BAX PORATION IN MITOCHONDRIAL MEMBRANES BY MUTATIONS AND SMALL MOLECULES. **Fei Qi**

950-Pos Board B18
MECHANISMS OF CARDIAC ARRHYTHMIAS AND SUDDEN CARDIAC DEATH IN HUMAN CALMODULINOPATHY. **Ryan L. Woltz**, Hannah A. Ledford, Padmini Sirish, Duncan Muir, Wen Smith, Xiao-Dong Zhang, Vladimir Yarov-Yarovoy, Nipavan Chiamvimonvat

951-Pos Board B19
MOLECULAR BASIS FOR HEME EXTRACTION OF THE ANTIMICROBIAL TARGET ISDH FROM STAPHYLOCOCCUS AUREUS FROM HUMAN HEMOGLOBIN. **Sandra Valenciano Bellido**, Vu T. Nhuan, Makoto Nakakido, Jose M. M. Caaveiro, Kouhei Tsumoto

952-Pos Board B20
DARWINIAN SHIFT: A GENERAL APPROACH FOR ESTABLISHING EVIDENCE AND MECHANISM OF NATURAL SELECTION. Michael W. Hall, David Shorthouse, Philip H. Jones, **Benjamin A. Hall**

953-Pos Board B21
ROSSMANN-LIKE PROTEINS FUNCTION AND EVOLUTION ANALYSIS OF A FIFTH OF THE PROTEIN WORLD. **Kirill E. Medvedev**, Lisa N. Kinch, Nick V. Grishin

Protein Stability, Folding, and Chaperones I (Boards B22 - B40)

954-Pos Board B22
ENERGETIC DEPENDENCIES AMONG DOMAINS DICTATE FOLDING MECHANISM IN A COMPLEX PROTEIN. Kaixian Liu, Xiuqi Chen, **Christian M. Kaiser**

955-Pos Board B23
ZEBRAFISH OOCYTES AS A TOOL FOR EUKARYOTIC IN-CELL NMR. **Joseph F. Thole**, Samantha S. Stadmiller, Gary J. Pielak

956-Pos Board B24 Travel Awardee
POLYETHYLENE GLYCOL SIZE AND PROTEIN STABILITY. **Claire J. Stewart**, Shannon L. Speer, Francis J. Lauzier, Daniel Harries, Gary J. Pielak

957-Pos Board B25
UNDERSTANDING THE UNDERLYING PRINCIPLES BEHIND CONFORMATIONAL SWITCH OF CHEMOKINES. **Prabir Khatua**, Alan Ray, Ulrich Hansmann

958-Pos **Board B26** **Travel Awardee**
EFFECT OF NASCENT PROTEINS ON THE STABILITY OF THE RIBOSOME. **Meranda M. Masse**, Angela E. Varela, Aniruddha Srivastava, Silvia Cavagnero

959-Pos **Board B27**
ENHANCED SENSITIVITY TO LOCAL DYNAMICS IN PEPTIDES BY USE OF TEMPERATURE-JUMP IR-SPECTROSCOPY AND ISOTOPE LABELING. David Scheerer, Heng Chi, Dan McElheny, **Tim A. Keiderling**, Karin Hauser

960-Pos **Board B28**
DISORDER-TO-ORDER TRANSITIONS AND POST-TRANSLATIONAL ACYLATION CONTROL THE FOLDING AND ACTIVITY OF THE BORDETELLA PERTUSSIS CYAA TOXIN. Darragh P. O'Brien, Alexis Voegele, Dorothée Raoux-Barbot, Marilyne Davi, Sara Cannella, Thibaut Douché, Mariette Matondo, Dominique Durand, Patrice Vachette, Sébastien Brier, Daniel Ladant, **Alexandre Chenal**

961-Pos **Board B29**
COMPUTATIONAL ANALYSIS OF MISSENSE MUTATIONS IN CREATINE TRANSPORTER PROTEIN ASSOCIATED WITH CREATINE DEFICIENCY SYNDROME. **Mahesh Koirala**, Emil Alexov

962-Pos **Board B30**
ROLE OF ZERO-ORDER LOOP IN PROTEIN UNFOLDING CASE STUDY WITH APOAZURIN. **Dirar M. Homouz**, Fabio Zegarra, Pernilla E. Wittung-Stafshede, Margaret S. Cheung

963-Pos **Board B31**
CATALYSIS OF AGGREGATION BY INTERFACE OPENING AND DISULFIDE EXCHANGE IN CATARACT-ASSOCIATED VARIANTS OF HUMAN GAMMA-D CRYSTALLIN. **Eugene Serebryany**, William M. Jacobs, Rostam Razban, Eugene Shakhnovich

964-Pos **Board B32**
SINGLE-MOLECULE FORCE SPECTROSCOPY REVEALS THE MECHANICAL DESIGN GOVERNING THE EFFICIENT TRANSLOCATION OF BACTERIAL TOXIN PROTEIN RTX. **Han Wang**, Xiaoqing Gao, Hongbin Li

965-Pos **Board B33**
DETAILS OF THE CONFORMATIONAL CYCLE OF HSP90 PROBED USING OPTICAL TWEEZERS. **Katarzyna Tych**, Markus Jahn, Hannah Girstmair, Thorsten Hugel, Johannes Buchner, Matthias Rief

966-Pos **Board B34**
BREAKTHROUGH EMPIRICAL APPROACH TO DETERMINING DEAMIDATION SITES AND ASSESSING PROTEIN STABILITY FOR AN ARRAY OF THERAPEUTIC PROTEINS IN SOLUTION. **Belinda Pastrana-Rios**

967-Pos **Board B35**
THERMOSTABILITY OF THE ENGRAILED HOMEODOMAIN AND AN ENGINEERED VARIANT. **Natali A. Gonzalez**, Emily Hamlin, Parwana Khazi, Michelle E. McCully

968-Pos **Board B36**
ENERGY LANDSCAPE OF UBIQUITIN FAMILY PROTEINS - ELUCIDATING THE ROLE OF PROTEIN SEQUENCE AND SPECIFIC INTERACTIONS SUCH AS SALT-BRIDGES IN DICTATING FOLDING PATHWAYS. **Tathagata Nandi**, Sri Rama Koti Ainavarapu

969-Pos **Board B37**
IS DODINE A PROTEIN STABILIZER OR DESTABILIZER? IT'S COMPLICATED! **Shriyaa Mittal**, Drishti Guin, Brian Bozymski, Diwakar Shukla, Martin Gruebele

970-Pos **Board B38**
TRADEOFF BETWEEN THERMOSTABILITY AND DNA-BINDING FUNCTION IN ENGINEERED VARIANTS OF ENHD. Lauren Verheyden, **Lily A. Schumacher**, Andrew T. Bigler, Michelle E. McCully

971-Pos **Board B39**
AMPHIPHILIC COPOLYMER INHIBITION OF PNIPAM-PS AGGREGATION IS HLB DEPENDENT. **Michelle X. Ling**, Jeff M. Ting, Amanda B. Marciel, Matthew V. Tirrell, Raphael C. Lee

972-Pos **Board B40**
DESMIN FORMS TOXIC, SEEDING COMPETENT AMYLOID AGGREGATES THAT PERSIST IN MUSCLE FIBERS. Niraja Kedia, Khalid Arhzaouy, Sara Pittman, Yuanzi Sun, Mark Batchelor, Conrad C. Weihl, **Jan Bieschke**

Protein Assemblies I (Boards B41 - B67)

973-Pos **Board B41**
ENGINEERING TEMPERATURE SENSITIVE ALLELES INSACCHAROMYCES CEREVISIAETO STUDY THE GENETIC INTERACTIONS BETWEEN RAN POINT MUTANTS AND ITS ACCESSORY PROTEINS. **Tenzin Tsepal**

974-Pos **Board B42**
ATOMIC FORCE MICROSCOPY IN THE STUDY OF PROTEIN SELF-ASSEMBLY. **Natalia V. Kuzmina**, Evgeniy V. Dubrovin, Olga N. Koroleva, Valeriy L. Drutsa, Joshua Zimmerberg, Oleg V. Batishchev

975-Pos **Board B43**
UNCOVERING THE SELF-ASSEMBLY MECHANISM OF HEPATITIS B VIRUS AT THE SINGLE-MOLECULE LEVEL. **Pedro Buzón**, Sourav Maity, Panagiotis Christodoulis, Monique J. Wiertsema, Steven Dunkelbarger, Christine Kim, Gijs J. Wuite, Adam Zlotnick, Wouter H. Roos

976-Pos **Board B44** **Travel Awardee**
SINGLE-MOLECULE MECHANICAL MEASUREMENTS OF THE HYALURONAN-AGGRECAN BOTTLEBRUSH. **Sarah N. Innes-Gold**, John P. Berezney, Omar A. Saleh

977-Pos **Board B45**
QUANTITATIVE MASS SPECTROMETRIC ASSAY OF AMYLOID BETA PEPTIDE VARIANTS WITH N- AND C-TERMINAL TRUNCATIONS AND MODIFICATIONS IN HUMAN BRAIN. Ran Furman, Sharon C.W. Ng, **Hiroaki Komatsu**, Paul H. Axelsen

978-Pos **Board B46**
INTEGRATIVE STRUCTURAL BIOLOGY OF BACTERIAL NANO-MACHINES. **Nadia Izadi Pruneyre**

979-Pos **Board B47**
MAPPING THE EMERIN INTERACTOME BY APEX PROXIMITY LABELING. **Markville B. Bautista**, Fabien Pinaud

980-Pos **Board B48**
UTILIZING 3D PRINTING FOR ENHANCED SAMPLE HANDLING IN ANALYTICAL ULTRACENTRIFUGATION. **Samuel C. To**, Chad Brautigam, Sumit K. Chaturvedi, Mary T. Bollard, Jonathan Krynitsky, John Kakareka, Tom Pohida, Huaying Zhao, Peter Schuck

981-Pos **Board B49**
PLASTICITY IN PROTEIN SEQUENCE-FUNCTION RELATIONSHIPS. **Chenlu He**, Dorothy Beckett

982-Pos **Board B50**
CELLULAR GAG-CONTAINING COMPLEXES AND HIV ASSEMBLY. **Yisong Deng**, John A. Hammond, Raymond F. Pauszek, Ilean Chai, Stosh T. Ozog, David P. Millar, Bruce E. Torbett, James R. Williamson

983-Pos **Board B51**
PHYSIOLOGICALLY-RELEVANT CROWDING EFFECTS ON THE SH3-SON OF SEVENLESS INTERACTION. **Samantha S. Stadmiller**, Jhoan Sebastian Aguilar, Gary J. Pielak

984-Pos Board B52
CONTINUOUS, TOPOLOGICALLY GUIDED PROTEIN CRYSTALLIZATION DRIVES SELF-ASSEMBLY OF A BACTERIAL SURFACE LAYER.
Colin J. Comerci, Jonathan Herrmann, Joshua Yoon, Fatemeh Jabbarpour, Xiaofeng Zhou, John F. Nomellini, John Smit, Lucy Shapiro, Soichi Wakatsuki, William E. Moerner

985-Pos Board B53
AFFINITY BETWEEN MACROMOLECULAR REGULATORS LEADS TO PRECISE CONTROL OF LIQUID-LIQUID PHASE SEPARATION.
Konstantinos P. Mazarakos, Archishman Ghosh, Xiaojia Zhang, Valery Nguemaha, Huan-Xiang Zhou

986-Pos Board B54
STRUCTURAL AND CONFORMATIONAL CHANGES IN AMYLOID BETA PEPTIDES INDUCED BY THE PRESENCE OF SURFACTANTS.
Michalina M. Wilkowska, Aneta Szymanska, Barbara Peplińska, Marek Kempka, Monika Makrocka-Rydzyk, Maciej L. Kozak

987-Pos Board B55
MOLECULAR MECHANISMS OF RNA SENSING IN NLRP6 INFLAMMASOME SIGNALING. **Chen Shen**, Runzhi Li, Roberto Negro, Richard Flavell, Shu Zhu, Hao Wu

988-Pos Board B56
QUANTIFYING PROTEIN-PROTEIN BINDING INTERACTION *IN VITRO* AND IN CELLS. **Yuhan Wang**, Mahima Unnikrishnan, Brooke Ramsey, Martin Gruebele

989-Pos Board B57
INFLUENCE OF IONIC AQUEOUS SOLUTION ON THE AB_{16-22} SELF-ASSEMBLY: A REPLICA-EXCHANGE MOLECULAR DYNAMICS STUDY. **Zhenyu Qian**, Lili Zhu, Zhiwei Liu

990-Pos Board B58
TWO CALCIUM SENSORS, ONE TARGET: PRP40 INTERACTS WITH CALMODULIN AND CENTRIN. **Adalberto Diaz-Casas**, Walter J. Chazin

991-Pos Board B59
ATP REGULATED TIME WINDOW TRIGGERED BY CA^{2+}/CAM FOR GATING CAMKII HOLOENZYME INTERACTIONS WITH NR2B. **Tuan A. Nguyen**, Henry L. Puhl, Daniel Liput, Grace H. Taumoefolau, Steven S. Vogel, Youngchan Kim

992-Pos Board B60
MOLECULAR MECHANISMS FOR THE STOCHASTIC CONDENSATION OF LAT ASSEMBLIES IN T CELLS. **Mark K. ODair**, Darren B. McAffee, Jay T. Groves

993-Pos Board B61
ROBUST MODULATION OF A BACTERIAL KINASE BY PROTEIN PHASE SEPARATION. **Saumya Saurabh**, Trisha Chong, Camille Bayas, Peter D. Dahlberg, William E. Moerner, Lucy Shapiro

994-Pos Board B62
SEGMENTAL AGGREGATION AND STRUCTURAL PROPENSITIES OF AMYLOID BETA PEPTIDE. **Faisal Abedin**, Nabin Kandel, Suren A. Tatulian

995-Pos Board B63
STRUCTURE AND AGGREGATION OF $ABETA_{1-40}$ AND PYROGLUTAMYLATED $ABETA_{3-40}$ SEPARATELY AND COMBINED. **Faisal Abedin**, Suren A. Tatulian

996-Pos Board B64
ASSEMBLY OF I-BAR CONTAINING PROTEIN IRSP53 ENHANCES MEMBRANE BENDING. **Kristin D. Graham**, Wilton T. Snead, Liping Wang, Eileen M. Lafer, Jeanne C. Stachowiak

997-Pos Board B65
STRUCTURAL BASIS OF CURVATURE GENERATION BY DYNAMIN-RELATED PROTEIN 1. **Paul V. Thomas**

998-Pos Board B66
NUCLEIC ACID-INDUCED DIMERIZATION OF HIV-1 GAG PROTEIN.
Huaying Zhao, Siddhartha A. Datta, Sung Kim, Samuel To, Sumit K. Chaturvedi, Alan Rein, Peter Schuck

999-Pos Board B67 Travel Awardee
STRUCTURAL AND BIOPHYSICAL CHARACTERIZATION OF SPLICING-ASSOCIATED ASSEMBLIES OF THE SMN PROTEIN. **Kaylee L. Mathews**, Jacob Marglous, Nicolas L. Fawzi

Protein Dynamics and Allostery II (Boards B68 - B87)

1000-Pos Board B68
WHAT ARE THE DESIGN PRINCIPLES FOR EVOLUTION FROM PROMISCUOUS TO SUBSTRATE SPECIFICITY? **Tushar Modi**, Valeria A. Risso, Sergio Martinez-Rodriguez, Jose A. Gavira, S. Banu Ozkan

1001-Pos Board B69
LARGE SCALE DISEASE SUSCEPTIBILITY PREDICTION OF NSNVS BY DYNAMICS INFORMATION BASED NEURAL NETWORKS. **Ismail C. Kazan**, S. Banu Ozkan

1002-Pos Board B70
MARKOV STATE MODEL APPROACH TO ESTIMATING RATES AND MECHANISMS OF VSL12 PEPTIDE TO SRC-FAMILY KINASE SH3 DOMAINS.
Robert Raddi, Vincent Voelz

1003-Pos Board B71
MOLECULAR DYNAMICS OF VILLIN HEADPIECE-36 UNDER DIFFERENT HYDRATION LEVELS. **Jillian Oviedo**

1004-Pos Board B72
EXPLAINABLE MACHINE LEARNING FRAMEWORK TO PREDICT FUNCTIONAL EFFECTS OF PROTEIN MUTATIONS FROM ALTERATIONS IN STRUCTURAL DYNAMICS. **Sunaina Banerjee**, Sumanta Mukherjee, Rahul Roy

1005-Pos Board B73
FAST CONFORMATIONAL SEARCHES TO CHARACTERIZE THE EFFECTS OF MUTATIONS ON COMPLEX LANDSCAPES. **Maxwell I. Zimmerman**, Gregory Bowman

1006-Pos Board B74
ASYMMETRIC ATP HYDROLYSIS KINETICS OF ABCE1 EXPLAINED WITH A MARKOV STATE MODEL. **Malte Schäffner**, Nicholas Leioatts, Colin A. Smith, Hadas Leonov, Bert L. de Groot, Helmut Grubmueller

1007-Pos Board B75
INVESTIGATION OF ALLOSTERIC INHIBITION MECHANISMS BY THE PEPTIDE P5 ON THE ALZHEIMER'S DISEASE (AD) PATHOLOGICAL COMPLEX CDK5-P25 THROUGH MOLECULAR DYNAMICS SIMULATIONS.
Tejaswi Tammareddy, Antonio Cardone, Sergio Hassan, Harish Pant, Mary Brady, Ram Sriram, Jeffery B. Klauda

1008-Pos Board B76
DYNAMIC ORGANIZATION IN THE SUPERTERTIARY STRUCTURE OF PDZ3-SH3-GUK CORE SUPRAMODULE OF PSD-95 SCAFFOLD PROTEIN.
Nabanita Saikia, George L. Hamilton, Hugo Sanabria, Mark E. Bowen, Feng Ding

1009-Pos Board B77
COMPUTATIONAL MODELING AND ENGINEERING OF ALLOSTERIC REGULATORY MECHANISMS IN SIGNALING PROTEINS: INTEGRATION OF MULTISCALE SIMULATIONS, NETWORK BIOLOGY AND MACHINE LEARNING. **Gennady Verkhivker**

1010-Pos Board B78
MOLECULAR DYNAMICS SIMULATION REVEALS NEW POCKET FOR THE DESIGN OF NOVEL AMINO ACID COUPLED SIRT1 SELECTIVE INHIBITOR. **Mrityunjay Singh**, Mitul Srivastava, Nikil Purushotham, Bugga Paramesha, Sharad R. Wakode, Boja Poojary, Sanjay K. Banerjee, Shailendra Asthana

1011-Pos **Board B79**
LONG RANGE CORRELATED MOTIONS OF TIM AND THEIR POSSIBLE INFLUENCE ON ENZYME FUNCTION. Jeffrey A. McKinney, Yanting Deng, Deepu K. George, John Richard, **Andrea G. Markelz**

1012-Pos **Board B80**
RESOLVING FREE-ENERGY CONTRIBUTIONS OF SUBSTRATE DELIVERY TO DESATURASE BY ATOMISTIC SIMULATIONS. **Marcel D. Baer**, Simone Raugei

1013-Pos **Board B81**
USING MOLECULAR SIMULATIONS TO INFORM DRUG DEVELOPMENT EFFORTS FOR THE GPCR CCR2. **Bryn C. Taylor**, Christopher T. Lee, Rommie E. Amaro

1014-Pos **Board B82**
FREE ENERGY LANDSCAPE OF CASEIN KINASE DELTA AND ITS IMPLICATIONS FOR CIRCADIAN RHYTHM. **Clarisse Gravina Ricci**, Jonathan M. Philpott, Rajesh Narasimamurthy, Alfred M. Freeberg, Sabrina R. Hunt, Lauren E. Yee, Rebecca S. Pelofsky, Sarvind Tripathi, David M. Virshup, Carrie L. Partch

1015-Pos **Board B83**
MODELLING AND PREDICTING ALLOSTERY WITH PROPAGATION OF RIGIDITY ACROSS PROTEIN STRUCTURES. **Adnan Sljoka**

1016-Pos **Board B84**
EVIDENCE OF INTRAMOLECULAR STRUCTURAL STABILIZATION IN LIGHT ACTIVATED STATE OF ORANGE CAROTENOID PROTEIN.
Jeffrey A. McKinney, Akansha Sharma, Kimberly Crossen, Yanting Deng, Deepu K. George, Sigal Lechno-Yossef, Cheryl Kerfeld, Andrea G. Markelz

1017-Pos **Board B85**
COMBINING LE4PD NORMAL MODES AND MARKOV STATE MODELING TO ELUCIDATE THE FLUCTUATION DYNAMICS OF UBIQUITIN.
Eric R. Beyerle, Marina G. Guenza

1018-Pos **Board B86**
INVESTIGATING FULL-LENGTH P53 TETRAMER DYNAMICS WITH MULTI-MICROSECOND MOLECULAR DYNAMICS SIMULATIONS. **Ozlem Demir**, Rommie E. Amaro

1019-Pos **Board B87**
ALLOSTERY EXPLAINED THROUGH SYNCHRONIZED OSCILLATORS AND FRACTAL NETWORKS. **Alexandr P. Kornev**

Membrane Protein Structures I (Boards B88 - B107)

1020-Pos **Board B88**
STRUCTURE AND TOPOLOGY OF THE SERCA REGULATOR DWORF IN LIPID BILAYERS BY ORIENTED SAMPLE SOLID-STATE NMR. **Venkateswara Reddy Uddigiri**, Daniel Weber, Songlin Wang, Erik K. Larsen, Seth L. Robia, Gianluigi Veglia

1021-Pos **Board B89**
EXPRESSION OF FUNCTIONAL HUMAN NA^+- COUPLED CITRATE TRANSPORTER (SLC13A5) IN THE YEAST *PICHIA PASTORIS*.
Valeria Jaramillo-Martinez, Ina L. Urbatsch, Vadivel Ganapathy

1022-Pos **Board B90**
STUDY THE STRUCTURAL TOPOLOGY, DYNAMIC PROPERTIES AND FUNCTIONAL MODEL OF PHAGE 21 HOLIN PROTEIN USING EPR SPECTROSCOPY. **Tanbir Ahammad**, Daniel L. Drew, Indra Sahu, Rasal Khan, Tianyan Li, Emily Faul, Robert M. McCarrick, Gary A. Lorigan

1023-Pos **Board B91** **Travel Awardee**
PROBING THE M1-M2 INTERACTION IN INFLUENZA A VIRUS USING SITE-DIRECTED SPIN LABELING EPR IN LIPID BILAYER NANODISCS.
Elizabeth Erler, Reham Mahgoub, Kathleen P. Howard

1024-Pos **Board B92**
EPR DISTANCE MEASUREMENTS ON THE *E. COLI* COBALAMIN TRANSPORTER BTUB INDICATE CONFORMATION AND ORGANIZATION ARE DEPENDENT ON THE NATIVE, CELLULAR ENVIRONMENT. **David Nyenhuis**, Thushani D. Nilaweera, David S. Cafiso

1025-Pos **Board B93** **Travel Awardee**
SELF-ASSEMBLY OF E5/PDGFBR IN MEMBRANES STUDIED BY SOLID-STATE NMR DISTANCE MEASUREMENTS. **Li Tian**, Stephan L. Grage, Parvesh Wadhwani, Anne S. Ulrich

1026-Pos **Board B94** **Travel Awardee**
STRUCTURAL ANALYSIS OF A PHOSPHATE 'TRANSCEPTOR'.
Meghna Gupta, Robert M. Stroud

1027-Pos **Board B95**
INVESTIGATION OF STRUCTURAL TOPOLOGY AND DYNAMICS OF CANONICAL HOLIN IN LIPOSOMES USING EPR SPECTROSCOPY. **Indra D. Sahu**, Rehani S. Perera, Ryan Kaplevatsky, Jack Bennett, Gary A. Lorigan

1028-Pos **Board B96**
INFLUENCES OF A NEAR-NATIVE MEMBRANE ENVIRONMENT ON THE STRUCTURE AND FUNCTION OF THE *YERSINIA PESTIS* OUTER MEMBRANE PROTEIN AIL. **James E. Kent**, L. Miya Fujimoto, Yong Yao, Kyungsoo Shin, Chandan Singh, Francesca M. Marassi

1029-Pos **Board B97**
FROM THE GRAM-NEGATIVE BACTERIAL EXTRACELLULAR SPACE TO PERIPLASMIC SPACE WITH EPR: EXPLORING THE *ESCHERICHIA COLI* VITAMIN B_{12} TRANSPORTER, BTUB, IN WHOLE CELLS. **Thushani D. Nilaweera**, David A. Nyenhuis, Robert K. Nakamoto, David S. Cafiso

1030-Pos **Board B98**
THE ROLE OF PROTEIN-LIPID INTERACTIONS IN THE FUNCTIONING OF BITOPIC MEMBRANE PROTEINS. **Eduard V. Bocharov**, Dmitry M. Lesovoy, Olga V. Bocharova, Anatoly S. Urban, Yaroslav V. Bershacky, Pavel E. Volynsky, Roman G. Efremov, Alexander S. Arseniev

1031-Pos **Board B99**
MEMBRANE-MEDIATED CONFORMATIONAL CHANGES OF CYTOPROTECTIVE BCL-XL REGULATE ITS ACTIVITY. **Pavel Ryzhov**, Yong Yao, Betsaida Bibo Verdugo, Guy Salvesen, Francesca M. Marassi

1032-Pos **Board B100**
CONFORMATIONAL SAMPLING OF PH-LOW INSERTION PEPTIDES IN MULTICOMPONENT BILYAYERS: EFFECTS OF CHARGED LIPIDS AND PROTONATION STATES. **Brandon M. Bogart**, Afra Panahi

1033-Pos **Board B101**
CRYO-EM STRUCTURE OF RICE OSCA1.2 ELUCIDATES THE MECHANICAL BASIS OF MEMBRANE HYPEROSMOLALITY GATING IN PLANTS. **Koustav Maity**, John M. Heumann, Aaron P. McGrath, Noah J. Kopcho, Po-Kai Hsu, Srinivasan Krishnan, Arturo Medrano-Soto, Milton H. Saier, Miguel A. Piñeros, Elizabeth A. Komives, Julian I. Schroeder, Geoffrey Chang, Michael H.B. Stowell

1034-Pos **Board B102**
STRUCTURE-FUNCTION STUDIES OF THE A4B2 NICOTINIC ACETYLCHOLINE RECEPTOR IN A LIPIDIC ENVIRONMENT. **Guipeun Kang**

1035-Pos **Board B103** **Travel Awardee**
CHOLESTEROL CONTROLS DYNAMICS OF THE METABOTROPIC GLUTAMATE RECEPTOR 2 VIA AN IONIC-LOCK. **Angelica Sandoval-Perez**

1036-Pos **Board B104**
STRUCTURAL MODELING OF THE HERG CHANNEL IN AN INACTIVATED STATE AND ASSOCIATED DRUG INTERACTIONS. **Jan Maly**, Aiyana M. Emigh, Kevin DeMarco, Jon T. Sack, Igor V. Vorobyov, Colleen E. Clancy, Vladimir Yarov-Yarovoy

1037-Pos Board B105
MOLECULAR MECHANISMS OF AUTOINHIBITION AND ACTIVATION OF THE EUKARYOTIC LIPID FLIPPASE DRS2P-CDC50P. Lin Bai, **Huilin Li**

1038-Pos Board B106 Travel Awardee
RESOLVING CD47 STRUCTURE AND FUNCTION TO UNDERSTAND SIGNAL TRANSDUCTION MECHANISM. **Sarah M. Young**, Tarjani M. Thaker, Thomas M. Tomasiak, William R. Montfort

1039-Pos Board B107
MAPPING THE ATP HYDROLYSIS CYCLE OF A CLOSTRIDIUM PERFRINGENS ABC TRANSPORTER. **Sergei Pourmal**

Intrinsically Disordered Proteins (IDP) and Aggregates II (Boards B108 - B131)

1040-Pos Board B108
LIQUID-LIQUID PHASE SEPARATION OF INTRINSICALLY DISORDERED PROTEINS FOR DEVELOPMENT OF MEMBRANELESS ORGANELLES IN SYNTHETIC CELLS. **Michele Costantino**, Prerna Sharma, Sara M. Vaiana, Giovanna Ghirlanda

1041-Pos Board B109
MULTIDIMENSIONAL PHASE DIAGRAMS FOR MULTICOMPONENT SYSTEMS COMPRISING MULTIVALENT PROTEINS. **Furqan Dar**, Rohit V. Pappu

1042-Pos Board B110
CONFORMATIONAL FLEXIBILITY OF P53 TRANSACTIVATION DOMAIN CONTROLS DNA BINDING SPECIFICITY AND PROMOTER SELECTIVITY. **Emily Gregory-Lott**, Wade M. Borcherds, Fan He, Mi Zhou, Gary W. Daughdrill

1043-Pos Board B111
SECONDARY STRUCTURE PREDICTION FOR INTRINSICALLY DISORDERED PROTEINS. **Youngchan Kim**, Nina Jovic, Jeetain Mittal

1044-Pos Board B112
IMPACT OF HYDROPHOBIC PATTERNING ON CONFORMATIONAL ENSEMBLE OF DISORDERED PROTEINS. **Wenwei Zheng**, Gregory Dignon, Matthew Brown, Jeetain Mittal

1045-Pos Board B113
NANO-DROPLET OLIGOMERS (NANDOS) OF AMYLOID-BETA 40. **Jay M. Pittman**, Atul K. Srivastava, Christopher T. Boughter, Bharat Somireddy Venkata, Jonathan Zerweck, Patrick C. Moore, Joseph R. Sachleben, Stephen C. Meredith

1046-Pos Board B114
COMPACT DISORDER OF ESTROGEN RECEPTOR. **Sichun Yang**

1047-Pos Board B115
NANOPORES TO INTERROGATE THE CONFORMATIONAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS ON A SINGLE-MOLECULE LEVEL. **Saurabh Awasthi**, Jared Houghtaling, Cuifeng Ying, Aziz Fennouri, Ivan Shorubalko, Michel Calame, Mitu C. Acharjee, Jiali Li, Michael Mayer

1048-Pos Board B116
TUNING THE ACTIVITY OF DISORDERED PROTEINS BY CHANGING SOLUTION CONDITIONS. David Moses, Feng Yu, Alex S. Holehouse, **Shahar Sukenik**

1049-Pos Board B117
MOLECULAR MECHANISMS OF LOW COMPLEXITY SEQUENCE PROTEIN ASSEMBLY. Yuuki Wittmer, Blake Fonda, Rachelle Stowell, Natalie Boulos, Rebecca Rafique, Rong Hu, Truc Le, **Dylan T. Murray**

1050-Pos Board B118
PROTEIN DISORDER REGULATES THE DNA BINDING SPECIFICITY OF P53. **Robin Levy**, Wade M. Borcherds, Fan He, Gary W. Daughdrill, Jiandong Chen

1051-Pos Board B119
DISEASE ASSOCIATED MUTATIONS IN INTRINSICALLY DISORDERED PROTEINS SHOW EVIDENCE OF ENRICHMENT IN HYDROPHOBIC BLOBS. **Ruchi Lohia**, Kaitlin Bassi, Matthew Hansen, Grace Brannigan

1052-Pos Board B120
THERMODYNAMICS OF THE INTERACTION BETWEEN BIOLOGICAL POLYELECTROLYTE-LIKE DISORDERED PROTEINS: FROM BINARY COMPLEXES TO OLIGOMERS. **Aritra Chowdhury**, Andrea Sottini, Alessandro Borgia, Madeleine B. Borgia, Daniel Nettels, Benjamin Schuler

1053-Pos Board B121
MOLTEN GLOBULE DRIVEN LIQUID-LIQUID PHASE SEPARATION AT THE CENTER OF VIRAL FACTORY ASSEMBLY. Mariano Salgueiro, Gabriela Camporeale, Julieta Conci, Belen Sousa, Araceli Visentin, Agustin Corbat, Hernan Grecco, Guilherme A. de Oliveira, **Gonzalo de Prat-Gay**

1054-Pos Board B122
THE IMPROVED ABILITY OF APOA-I AMYLOIDOGENIC VARIANTS AT MEDIATING CHOLESTEROL EFFLUX RELIES ON THEIR INCREASED STRUCTURAL FLEXIBILITY. **Jens O. Lagerstedt**, Oktawia Nilsson, Mikaela Lindvall, Laura Obici, Simon Ekström, Rita Del Giudice

1055-Pos Board B123
WATER DYNAMICS AND INTERACTIONS INSIDE AMYLOID-BETA FIBRILS. Sachin Natesh, **Alex R. Hummels**, Joseph R. Sachleben, Tobin R. Sosnick, Karl F. Freed, Stephen C. Meredith, Esmael J. Haddadian

1056-Pos Board B124
STRUCTURAL CHARACTERIZATION OF HUNTINGTIN: MECHANISM OF AGGREGATION AND DISAGGREGATION. **Silvia A. Cervantes Cortes**, J. Mario Isas, Janine Kirstein, Ralf Langen, Ansgar B. Siemer

1057-Pos Board B125
CARDIOLIPIN MODULATES HUNTINGTIN AGGREGATION AND BINDING TO MITOCHONDRIAL MEMBRANES. **Adewale Adegbuyiro**, Faezeh Sedighi, Justin Legleiter

1058-Pos Board B126
TRANSIENT STRUCTURE FORMATION KINETICS OF MONOMERIC ALPHA-SYNUCLEIN DERIVED FROM MD SIMULATIONS. **Reinhard Klement**, Timo Graen, Asaf Grupi, Elisha Haas, Helmut Grubmueller

1059-Pos Board B127
ALL-ATOM MOLECULAR DYNAMICS SIMULATION OF THE ALTERED PROTEIN-PROTEIN INTERACTION WITH METABOLITES AND IONS IN THE CYTOPLASM. **Isseki Yu**, Michael Feig, Yuji Sugita

1060-Pos Board B128
TRACKING OLIGOMERIZATION OF ALPHA-SYNUCLEIN DEMONSTRATES PIVOTAL ROLE OF MITOCHONDRIA IN SEEDING. **Minee L. Choi**, Mathew H. Horrocks, Margarida Rodrigues, Suman De, Laura Tosatto, Weilia Zhang, Gurvir Virdi, David Klenerman, Andrey Y. Abramov, Sonia Gandhi

1061-Pos Board B129
INTEGRATIVE SEQUENCE-BASED CLASSIFICATION OF INTRINSICALLY DISORDERED REGIONS. **Garrett M. Ginell**, Jared Lalmansingh, Megan C. Cohan, Alex S. Holehouse

1062-Pos Board B130
IDENTIFICATION OF STRUCTURAL DEFECTS IN AMYLOID BETA FIBRIL AS POTENTIAL SITES FOR INHIBITION OF PROTEIN AGGREGATION. **Giuseppe Licari**, Soumyo Sen, Xing Jiang, Jeffrey S. Moore, Emad Tajkhorshid

1063-Pos Board B131
CHARACTERIZATION OF SMALL OBJECTS IN HOMOGENATES OF THE SQUID OPTIC LOBE. **Catherine Chang**, Amelia Ralowicz, Yuto Kegawa, Jennifer Petersen, Gulcin Pekkurnaz, Paul S. Blank, Joshua Zimmerberg

DNA Structure and Dynamics II (Boards B132 - B152)

1064-Pos **Board B132**
MOLECULAR CROWDING EFFECTS ON STABILITY AND KINETICS OF TRINUCLEOTIDE REPEAT HAIRPINS. Deema Martini, **Brian L. Cannon**

1065-Pos **Board B133**
ACCURATE ASSESSMENT OF BIOMOLECULAR PARTIAL SPECIFIC VOLUMES FROM POLARIZABLE MD SIMULATIONS AND ANALYTICAL ULTRACENTRIFUGATION EXPERIMENTS. **Alexey Savelyev**, Borries Demeler

1066-Pos **Board B134**
CALCULATING THE BINDING FREE ENERGY DIFFERENCE BETWEEN CONFORMATIONAL CHANGES OF AT-RICH DNA SEQUENCES. **Md Lokman Hossen**, Prem P. Chapagain, Bernard Gerstman

1067-Pos **Board B135**
REAL-TIME CONDENSATION OF NANOCONFINED DNA BY AN INTRINSICALLY DISORDERED POLYCATIONIC PROTEIN. **Rajhans Sharma**, Sriram KK, Erik D. Holmstrom, Fredrik Westerlund

1068-Pos **Board B136**
LABEL-FREE SINGLE-MOLECULE QUANTIFICATION OF DNA BY MASS PHOTOMETRY. **Yiwen Li**, Weston B. Struwe, Katharina Häußermann, Philipp Kukura

1069-Pos **Board B137**
STUDYING THE INTRAMOLECULAR FORCES OF BASE-MODIFIED NUCLEIC ACIDS USING OPTICAL TWEEZERS. **Vinoth Edal Joseph Sundar Rajan**, Xavier Viader, Yii-Lih Lin, Felix Ritort, Fredrik Westerlund, Marcus Wilhelmsson

1070-Pos **Board B138**
ATOMIC FORCE MICROSCOPY STUDY OF INTERCALATED DNA MOLECULES. **Joseph Tibbs**, S. M. Ali Tabei, Timothy E. Kidd, Justin P. Peters

1071-Pos **Board B139**
DIRECT MEASUREMENT OF FLUID SHEAR STRESS IN 3-D MATRICES USING DNA-BASED FORCE SPECTROSCOPY. **Peter E. Beshay**, Kelly L. Kolotka, Jonathan W. Song, Carlos E. Castro

1072-Pos **Board B140** **Travel Awardee**
MEMORY EFFECTS IN SINGLE-MOLECULE FORCE SPECTROSCOPY MEASUREMENTS OF BIOMOLECULAR FOLDING. **Andrew G. Pyo**, Michael T. Woodside

1073-Pos **Board B141**
NANOPORE-BASED ANALYSIS OF CONFORMATIONAL HETEROGENEITY OF NUCLEIC ACIDS USING A GAMMA-HEMOLYSIN PROTEIN CHANNEL. **Cherie S. Tan**

1074-Pos **Board B142**
A DEEP DIVE INTO DNA BASE PAIRING INTERACTIONS UNDER WATER. **Rongpeng Li**, Chi H. Mak

1075-Pos **Board B143**
COUNTERION CONDENSATION ON A POLYELECTROLYTE UNDER EXTERNAL ELECTRIC FIELDS. **Pyeong Jun Park**

1076-Pos **Board B144**
INFLUENCE OF MONOVALENT CATIONS ON THE DYNAMICS OF THE C-KIT1 PROMOTER G-QUADRUPLEX USING POLARIZABLE MOLECULAR DYNAMICS SIMULATIONS. **Alexa M. Salsbury**, Justin A. Lemkul

1077-Pos **Board B145**
FOLDING/UNFOLDING PATTERN AND STABILITY OF INTRAMOLECULAR G-QUADRUPLEX STRUCTURE BY MYOINOSITOL. **Danish Idrees**

1078-Pos **Board B146**
POLARIZABLE MOLECULAR DYNAMICS SIMULATIONS OF DNA G-QUADRUPLEXES REVEAL DIFFERENT PROPERTIES OF NUCLEOBASE ELECTRONIC STRUCTURE AND CATION BINDING. **Justin A. Lemkul**

1079-Pos **Board B147**
IRREVERSIBILITY OF CONFORMATIONAL CHANGES AND ZN^{2+}BINDING TO DNA. **Kurt Andresen**, Olivia Peduzzi, Claire Woodward, Katie Madore, Shelli L. Frey, Katherine M. Buettner

1080-Pos **Board B148**
DNA ELECTROPHORETIC MOBILITIES IN HIGH IONIC STRENGTH SOLUTIONS. **Nancy C. Stellwagen**, Earle Stellwagen

1081-Pos **Board B149**
BIOMIMETIC TRANSMEMBRANE SIGNAL TRANSDUCING DNA NANOSENSOR FOR MEMBRANE ENCLOSED NUCLEIC ACID BIOMARKER DETECTION. **Swarup Dey**, Alonzo Beatty V, Hao Yan

1082-Pos **Board B150**
DNA DIELECTRIC AND ELECTROMAGNETIC PROPERTIES- THEORETICAL BACKGROUND, EXPERIMENTAL FINDINGS AND DISCUSSION. **Masroor H.S. Bukhari**, Asifa Bukhari, Salma Batool, Yasir Raza, Tashmeem Razzaki

1083-Pos **Board B151**
COARSE-GRAINED MODELING OF DNA PLECTONEME FORMATION IN THE PRESENCE OF BASE-PAIR MISMATCHES. **Parth Rakesh Desai**, Siddhartha Das, Keir C. Neuman

1084-Pos **Board B152**
TESTING THE RETROELEMENT INVASION HYPOTHESIS FOR THE EMERGENCE OF THE ANCESTORAL EUKARYOTIC CELL. **Davneet Kaur**, Gloria Lee, Nicholar Sherer, Neil H. Kim, Elliot Urriola, Michael Martini, Chi Xue, Nigel Goldenfeld, Thomas E. Kuhlman

Protein-Nucleic Acid Interactions II (Boards B153 - B177)

1085-Pos **Board B153**
USING PROGRAMMABLE ROADBLOCKS TO PROBE DNA TARGET SEARCH. **Allen C. Price**

1086-Pos **Board B154**
SINGLE-MOLECULE STUDIES OF DOXORUBICIN-DNA INTERACTIONS USING OPTICAL TWEEZERS. **Zachary Ells**, Brian Dolle, Mark C. Williams, Thayaparan Paramanathan

1087-Pos **Board B155**
COOPERATIVITY AND COMPETITION IN THE BINDING OF HETEROCYCLIC DIAMIDINES AND RNA POLYMERASES TO PHIX174 DNA. **Stephen A. Winkle**, Rosalina Fernandez-Paradas, Selma Hernandez, Erney Lorquet, Stephanie Singer, Nidia Rodriguez

1088-Pos **Board B156**
BIOPHYSICAL STUDIES OF NON-CODING RNAS. Tyler Mrozowich, Darren L. Gemmill, Corey R. Nelson, Michael H. D'souza, Maulik Badmalia, Vanessa Meier-Stephen, **Trushar R. Patel**

1089-Pos **Board B157**
EVIDENCE THAT PRIMARY MICRORNA BENDS IN THE PRESENCE OF DGCR8 SEEN USING BOTH SAXS AND FRET MEASUREMENTS. **Suzette A. Pabit**, Yen-Lin Chen, Grace A. Usher, Erik C. Cook, Lois Pollack, Scott A. Showalter

1090-Pos **Board B158**
VIRAL RNA FOLDING STUDIED THROUGH CONTRAST VARIATION SMALL ANGLE- X RAY SCATTERING. **Josue San Emeterio**, Lois Pollack

1091-Pos Board B159
MACROMOLECULAR CONDENSATION FACILITATES LARGELY 3D MRNA TARGET SEARCH BY MICRORNAS. Hui Li, **Ameya P. Jalihal**, Sethu Pitchiaya, Nils G. Walter

1092-Pos Board B160
RNA-PROTEIN PHASE SEPARATION IN CANCER: INVESTIGATING HUMAN SATELLITE II RNA STRUCTURE AND FUNCTION. **Jack D. Rubien**, Bede Portz, Liliya Yatsunyk, Dawn Carone

1093-Pos Board B161
PRP22 REMODELING OF PRE-MRNA DURING THE P-TO-ILS SPLICEOSOME TRANSITION. **Elizabeth C. Duran**, Nils G. Walter

1094-Pos Board B162
CRISPR-CAS12A NUCLEASES BIND FLEXIBLE DNA DUPLEXES WITHOUT RNA-DNA COMPLEMENTARITY. Wei Jiang, Jaideep Singh, Aleique Allen, Yue Li, Venkatesan Kathiresan, Omair Qureshi, Narin Tangprasertchai, Xiaojun Zhang, Hari Priya Parameshwaran, Rakhi Rajan, **Peter Z. Qin**

1095-Pos Board B163
DIRECT OBSERVATION OF CRISPR-CAS12 CONFORMATIONAL SAMPLING BY SM FRET AND CRYO EM REVEALS HOW CONFORMATIONAL ACTIVATION PROMOTES CATALYSIS AND RESETTING OF THE ENDONUCLEASE ACTIVITY. Stefano Stella, Pablo Mesa, Johannes Thomsen, Bijoya Paul, Pablo Alcon, Simon B. Jensen, Matias E. Moses, Guillermo Montoya, **Nikos S. Hatzakis**

1096-Pos Board B164
A CATALYTICALLY ENHANCED TYPE II-C CAS9 THROUGH DIRECTED PROTIEN EVOLUTION. Travis H. Hand, **Mitchell O. Roth**, Chardasia L. Smith, Emily Shiel, Hong Li

1097-Pos Board B165
MAPPING THE BOUNDARY OF DNA UNWINDING IN CRISPR-CAS9 TARGET RECOGNITION. **Yukang Liu**, Yue Li, Narin Tangprasertchai, Peter Z. Qin

1098-Pos Board B166
REAL-TIME OBSERVATION OF DNA CLEAVAGE BY CRISPR-CAS9 ENDONUCLEASE USING PYRENE MOLECULE AS A SENSITIVE PROBE FOR DETECTING SUB-NM STRUCTURAL CHANGE. **Jinho Park**

1099-Pos Board B167
CHARACTERIZING THE PROTEIN/RNA INTERACTIONS IN THE INITIAL EVENTS OF HIV-1 ASSEMBLY. **Emily Cannistraci**, Ugonna Mbaekwe, Alexis Waller, Sapna Bassapa, Nansen Kuo, Aaron Kidane, Mitali Sarkar, Ridhi Chaudhary, Hana Flores, Pengfei Ding, Michael F. Summers

1100-Pos Board B168
POLARIZATION MOLECULAR DYNAMICS OF AN RNA DUPLEX:G-QUADRUPLEX JUNCTION IN COMPLEX WITH THE FRAGILE X MENTAL RETARDATION PROTEIN. **Brian D. Ratnasinghe**, Alexa M. Salsbury, Justin A. Lemkul

1101-Pos Board B169
ENERGY LANDSCAPE OF THE COMPLEX BETWEEN THE RGG BOX DOMAIN OF FRAGILE-X MENTAL RETARDATION PROTEIN AND AN RNA G-QUADRUPLEX. **Kendy A. Pellegrene**, Mihaela-Rita Mihailescu, Jeffrey D. Evanseck

1102-Pos Board B170
COTRANSCRIPTIONAL MOONLIGHTING OF RSMC AS AN RNA CHAPERONE PROTEIN. **Keshav G C**, Prabesh Gyawali, Hamza Balci, Sanjaya Abeysirigunawardena

1103-Pos Board B171
HISTONE TAILS DYNAMICS IN CANONICAL AND SUBNUCLEOSOMAL PARTICLES INVESTIGATED WITH MOLECULAR DYNAMICS SIMULATIONS. **Lokesh Baweja**, Emma A. Morrison, Catherine A. Musselman, Jeffery M. Wereszczynski

1104-Pos Board B172
UNRAVELING THE HISTONE REPLACEMENT PATHWAY IN SPERM. **Ruth O. Mosunmade**, Yuxing Ma, Ashley Carter

1105-Pos Board B173
RESOLVING THE DYNAMICS OF THE DOUBLE STRANDED RNA BINDING PROTEIN TRBP. **Oliver Stach**, Sebastian L. König, Andrea Holla, Flurin Sturzenegger, Sebastian Doden, Daniel Nettels, Benjamin Schuler

1106-Pos Board B174
INVESTIGATING NUCLEOSOME STABILITY VIA FRET. **Loiselle Gonzalez Baez**, Caitlin Aguirre, Elizabeth Jamieson, Megan E. Nunez

1107-Pos Board B175
COARSE-GRAINED MODELS FOR COMPLEX COACERVATION IN CHROMATIN. **Kathryn M. Lebold**

1108-Pos Board B176
REPACKAGING DNA: FROM NUCLEOSOME CORE PARTICLES TO PROTAMINE LOOPS. **Yuxing Ma**, Obinna Ukogu, Ashley Carter

1109-Pos Board B177
PROTAMINE FOLDS DNA INTO A FLOWER SHAPE BEFORE FORMING TOROIDS. **Ryan B. McMillan**, Hilary A. Bediako, Luka Matej Devenica, Yuxing E. Ma, Ashley R. Carter

Membrane Physical Chemistry II (Boards B178 - B201)

1110-Pos Board B178
MEMBRANES WITH DECREASED DEFORMABILITY TO STUDY THE KINETICS OF FUSION INTERMEDIATES. **Ana Villamil**, Peter Kasson

1111-Pos Board B179
ALPHA-HELICAL MEMBRANE PROTEIN FOLDING IN “MIXED” AND “IDEAL” BICELLES. **Nicole Swope**, Soenke Seifert, Linda M. Columbus

1112-Pos Board B180
ORDER PARAMETER ANALYSIS OF LIPIDS ORGANIZATION IN THE PRESENCE OF ATP. **Azam Shafieenezhad**, Andres T. Cavazos, Abhinav Ramkumar, Stephen R. Wassall, Horia I. Petrache

1113-Pos Board B181
NANODOMAINS PERSIST TO MUCH HIGHER TEMPERATURES THAN LARGE SCALE PHASE SEPARATION IN GIANT PLASMA MEMBRANE VESICLES AND CAN RESPOND DIFFERENTLY TO ALTERATIONS OF PLASMA MEMBRANE LIPID COMPOSITION. Guangtao Li, Shinako Kakuda, **Bingchen Li**, Qing Wang, Erwin London

1114-Pos Board B182
A COMPARISON OF THREE FLUOROPHORES IN LANGMUIR MONOLAYERS. **Benjamin L. Stottrup**, Dametre Thunberg, Joan C. Kunz

1115-Pos Board B183
CONNECTIONS BETWEEN MACROSCOPIC WETTABILITY AND LIPID STRUCTURES ON CLAY MONTMORILLONITE. **Joshua K. Kibue**, Brenda L. Kessenich, Elias Nakouzi, James J. De Yoreo

1116-Pos Board B184
PLASMA MEMBRANE PERMEABILITY IS ALTERED IN LIVING MAMMALIAN CELLS BY PERTURBATIONS OF LIPID MEMBRANE COMPOSITION. **Jessica L. Symons**, Kandice R. Levental, Ilya Levental

1117-Pos Board B185
EUTECTIC EXPLAINS FUNCTION OF THERMORESPONSIVE LIPOSOMES - RESOLVING THE LYSOLIPID PARADOX. Daniel Eckhardt, Johannes Schnur, Jessica Steigenberger, Louma Kalie, Ulrich Massing, Georg Pabst, **Heiko H. Heerklotz**

1118-Pos **Board B186** **Travel Awardee**
IONIZATION PROPERTIES OF PHOSPHATIDIC ACID AND DIACYLGLYCEROLPYROPHOSPHATE IN PC AND PC/PE MODEL MEMBRANES. **Desmond Owusu Kwarteng**, Edgar Kooijman

1119-Pos **Board B187**
FATTY ACID MEMBRANES BOOST PEPTIDE YIELD AND IMPLICATIONS FOR THE ORIGIN OF CELLULAR LIFE. **Zachary R. Cohen**, Julia Nguyen, Avijit Hazra, Gojko Lalic, Roy A. Black, Sarah L. Keller

1120-Pos **Board B188**
ESR SPECTROSCOPY DETERMINES THE AFFINITY OF CHOLESTEROL FOR LIPIDS WITH VARYING DEGREES OF UNSATURATION. **Andres T. Cavazos**, Stephen R. Wassall

1121-Pos **Board B189**
THE ROLE OF GROWTH TEMPERATURE AND LIPID COMPOSITION IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES. **Chantelle L. Leveille**, Caitlin E. Cornell, Alexey J. Merz, Sarah L. Keller

1122-Pos **Board B190**
DIRECT IMAGING OF LIPID DOMAINS IN NANOSCALE VESICLES BY CRYOEM. **Caitlin E. Cornell**, Alexander Mileant, Kelly K. Lee, Sarah L. Keller

1123-Pos **Board B191**
SCALING BEHAVIOR IN SOFT MATERIALS REVEALED BY LIPID ACYL CHAIN ORDER. **Abhinav Ramkumar**, Xiaoling Leng, Michael F. Brown, Horia I. Petrache

1124-Pos **Board B192**
EFFECT OF POLAR SOLVENTS ON SURFACTANT MEMBRANES. Daniel Berrellez, Judith Tánori, Alan G. Acedo-Mendoza, **Amir Maldonado**

1125-Pos **Board B193**
PROBING THE RELATIONSHIP BETWEEN CHOLESTEROL CONCENTRATION AND CHEMICAL POTENTIAL IN MODEL MEMBRANES. **Anna D. Gaffney**, Fiona C. Gaffney, Kathleen Wisser, Sarah L. Veatch

1126-Pos **Board B194**
RAPID PRODUCTION OF LIPOSOMES USING ELECTRODIALYSIS. **Gamid Abatchev**, Andy Bogard, Jason D. Ward, Rikki Fix

1127-Pos **Board B195**
ANTIPSYCHOTICS ALTER LIPID BILAYER PROPERTIES. **R Lea Sanford**, Olaf S. Andersen

1128-Pos **Board B196**
MICROFLUIDIC MEASUREMENT OF CARBON DIOXIDE PERMEABILITY ACROSS LIPID BILAYERS. **Matthew C. Blosser**, Majed S. Madani, Justin So, Noah Malmstadt

1129-Pos **Board B197**
DEUTERATED POLYUNSATURATED FATTY ACID RESIDUES PROTECT BILAYER LIPID MEMBRANES FROM PEROXIDATIVE DAMAGE. **Alexander M. Firsov**, Elena A. Kotova, Maksim A. Fomich, Andrei V. Bekish, Olga L. Sharko, Vadim V. Shmanai, Yuri N. Antonenko, Mikhail S. Shchepinov

1130-Pos **Board B198**
PERMEABILITY OF HUMAN RED BLOOD CELL MEMBRANES TO HYDROGEN PEROXIDE. **Matias N. Moller**, Florencia Orrico, Ana C. Lopez, Ana Denicola, Leonor Thomson

1131-Pos **Board B199**
COUNTERINTUITIVE ELECTROSTATIC FORCES IN LIPOSOME COLLOIDAL CRYSTALS. **Joel Cohen**

1132-Pos **Board B200**
EFFECT OF STYRENE MALEIC ACID COPOLYMER LENGTH ON BIOLOGICAL MEMBRANE SOLUBILISATION AND PROPERTIES OF NATIVE NANODISCS. **Barend O.W. Elenbaas**, Adrian H. Kopf, Martijn C. Koorengevel, Helene Jahn, J. Antoinette Killian

1133-Pos **Board B201**
DEMIXING IN MEMBRANES AND THEIR ENCAPSULATED SOLUTIONS. **Heidi M. Spears**, Sarah L. Keller

Membrane Dynamics II (Boards B202 - B215)

1134-Pos **Board B202**
OBSERVATIONS OF COMPOUND PENETRATION IN *ESCHERICHIA COLI* USING ETHIDIUM BROMIDE AS A MODEL COMPOUND. **Michelle Ramsahoye**, Ankit Pandeya, Yuguang Cai, Yinan Wei

1135-Pos **Board B203**
RECONCILING MEMBRANE PROTEIN SIMULATIONS WITH EXPERIMENTAL SPECTROSCOPIC DATA. **Shriyaa Mittal**, Diwakar Shukla

1136-Pos **Board B204**
LIPID MEMBRANE DEFORMATION INDUCED BY TRANSMEMBRANE PEPTIDES. **Kayano Izumi**, Keisuke Shimizu, Ryuji Kawano

1137-Pos **Board B205**
MECHANISMS OF NEGATIVE MEMBRANE CURVATURE SENSING AND GENERATION. **Binod Nepal**, Aliasghar Sepehri, Themis Lazaridis

1138-Pos **Board B206**
RED BLOOD CELL CURVATURE IS CONTROLLED BY THE NON-UNIFORM DISTRIBUTION OF MYOSIN-MEDIATED FORCES AND MEMBRANE TENSION. **Haleh Alimohamadi**, Alyson Smith, Velia Fowler, Padmini Rangamani

1139-Pos **Board B207**
VISUALIZING OPA1-MEDIATED CHANGES TO INNER MITOCHONDRIAL MEMBRANE MORPHOLOGY. **Julie L. McDonald**, Yifan Ge, Paula P. Navarro, Luke H. Chao

1140-Pos **Board B208**
FACILE MEMBRANE FLOW AND TENSION EQUILIBRATION AT A PRESYNAPTIC NERVE TERMINAL. **Carolina Gomis Perez**, Natasha Dudzinski, Mason Rouches, Benjamin Matcha, David Zenisek, Erdem Karatekin

1141-Pos **Board B209**
MELATONIN CHANGES DOMAIN STRUCTURE AND PROTECTS MODEL NEURONAL MEMBRANES AGAINST DAMAGE CAUSED BY AMYLOID-BETA. **Carina T. Filice**, Julia Lumini, Brenda Y. Lee, Zoya Leonenko

1142-Pos **Board B210**
THE ORGANIZATION AND CLUSTERING OF GIARDIAL LIPID RAFT DOMAINS AFTER TREATMENT WITH OSELTAMIVIR BY DIRECT STOCHASTIC OPTICAL RESOLUTION MICROSCOPY. **Carmen Martinez**, E. Aslan Gallegos, Aaron Neumann

1143-Pos **Board B211**
SUBCELLULAR ACCUMULATION OF FLUOROQUINOLONES IN *E. COLI*. **Ankit Pandeya**, Olaniyi Alegun, Yinan Wei

1144-Pos **Board B212**
SUPPORTED MODEL MEMBRANES FOR BIOSENSING APPLICATIONS - OPTICAL OXYTOCIN BINDING ASSAY. **Aysu Kucukturhan Kubowicz**, Kiryl Kustanovich, Agata Gitlin-Domagalska, Ventsislav Yantchev, Mattan Hurevich, Shlomo Yitzchaik, Aldo Jesorka, Irep Gozen

1145-Pos **Board B213**
SINGLE PROTEIN DYNAMICS IN POLYMER-CUSHIONED LIPID BILAYERS DERIVED FROM CELL PLASMA MEMBRANES. Wai Cheng Wong, Jz-Yuan Juo, Chih-Hsiang Lin, Yi-Hung Liao, Ching-Ya Cheng, **Chia-Lung Hsieh**

1146-Pos **Board B214**
MONOVALENT LABELING OF GOLD NANOPROBES FOR ULTRAFAST TRACKING OF SINGLE-MEMBRANE MOLECULES IN LIVE CELLS. **Yi-Hung Liao**, Chih-Hsiang Lin, Ching-Ya Cheng, Wai Cheng (Christine) Wong, Jz-Yuan Juo, Chia-Lung Hsieh

1147-Pos **Board B215** **Travel Awardee**
QUANTITATIVE ASSESSMENT OF THE DYNAMIC MODIFICATION OF LIPID-DNA PROBES ON LIVE CELL MEMBRANES. **Yousef Bagheri**, Mingxu You

Membrane Active Peptides and Toxins I (Boards B216 - B240)

1148-Pos **Board B216**
CROWDING ALTERS THE KINETICS OF POLYPEPTIDE-PROTEIN NANOPORE INTERACTION. **Motahareh Ghahari Larimi**, Lauren A. Mayse, Liviu Movileanu

1149-Pos **Board B217**
CHARACTERIZATION OF MEMBRANE PORES FORMED BY CATIONIC AMPHIPATHIC A-HELICAL ANTIMICROBIAL PEPTIDES. **Erik Strandberg**, David Bentz, Parvesh Wadhwani, Jochen Bürck, Anne S. Ulrich

1150-Pos **Board B218**
MEMBRANE PORE FORMATION BY MELITTIN DERIVATIVES. **Aliasghar Sepehri**, Leo PeBenito, Almudena Pino-Angeles, Themis Lazaridis

1151-Pos **Board B219** **Travel Awardee**
ANTIMICROBIAL PEPTIDES IMPAIR BACTERIA CELL STRUCTURES WITHIN SECONDS. **Enrico F. Semeraro**, Johannes Mandl, Lisa Marx, Theyencheri Narayanan, Sylvain Prévost, Helmut Bergler, Karl Lohner, Georg Pabst

1152-Pos **Board B220**
EFFECTS OF MEMBRANE POTENTIAL ON THE ENTRY OF CELL-PENETRATING PEPTIDES TRANSPORTAN 10 INTO SINGLE VESICLES.
Md. Mizanur R. Moghal, Md. Zahidul Islam, Farzana Hossain, Samiron Kumar Saha, Masahito Yamazaki

1153-Pos **Board B221**
LIPID COMPOSITION, PROTONATION, AND DIVALENT CATIONS AS MODULATORS OF PROTEIN-MEMBRANE INTERACTIONS. **Victor Vasquez Montes**, Alexey Ladokhin

1154-Pos **Board B222**
EFFECTS OF COLD ATMOSPHERIC PLASMAS ON MEMBRANES.
Joseph H. Lorent, Min Xie, Fabrice Gilissen, J. Antoinette Killian

1155-Pos **Board B223**
THE ANTIMICROBIAL PEPTIDE POLYMYXIN B1 ENCOUNTERS MANY MOLECULAR OBSTACLES IN THE PERIPLASM*EN ROUTE*TO THE INNER MEMBRANE OF *E. COLI*. **Syma Khalid**, Conrado Pedebos

1156-Pos **Board B224**
DEPROTONATION OF C-TERMINAL ACIDIC RESIDUES HOLDS THE KEY TO THE EXIT PATHWAY OF PHLIP. **Violeta Burns**, Blake Mertz

1157-Pos **Board B225**
DISCOVERING NOVEL HEMOCOMPATIBLE ANTIMICROBIAL PEPTIDES USING HIGH-THROUGHPUT SCREENING AND RATIONAL VARIATION.
Jenisha Ghimire, Charles G. Starr, William C. Wimley, Shantanu Guha, Joseph P. Hoffmann, Yihui Wang, Lisa A. Morici

1158-Pos **Board B226**
CHARACTERIZATION OF CHARGE-ZIPPER TETRAMERIC ASSEMBLY OF THE STRESS RESPONSE PEPTIDE TISB FROM *E. COLI* IN MODEL MEMBRANES. **Parvesh Wadhwani**, Benjamin Zimpfer, Violetta Schneider, Jochen Burck, Johannes Reichert, Erik Strandberg, Stephan L. Grage, Markus Elstner, Tomás Kubar, Anne S. Ulrich

1159-Pos **Board B227**
RHOMBOHEDRAL TRAP FOR STUDYING MOLECULAR OLIGOMERIZATION IN MEMBRANES: APPLICATION TO DAPTOMYCIN. **Ming-Tao Lee**, Wei-Chin Hung, Huey W. Huang

1160-Pos **Board B228**
INDUCED-FIT PATHWAY ACCELERATED BINDING OF AGITOXIN-2 TO A K^+ CHANNEL IMAGED BY HS-AFM. **Ayumi Sumino**, Takashi Sumikama, Takayuki Uchihashi, Shigetoshi Oiki

1161-Pos **Board B229**
NMR STRUCTURAL STUDIES AND ANTIBACTERIAL KILLING MECHANISMS OF ANTIMICROBIAL PEPTIDES WITH HIGHER ACTIVITY. **Yongae Kim**

1162-Pos **Board B230** **Travel Awardee**
INSIGHTS INTO THE EFFECT OF THE MEMBRANE ENVIRONMENT ON THE THREE-DIMENSIONAL STRUCTURE-FUNCTION RELATIONSHIP OF ANTIMICROBIAL PEPTIDES. **William J. Zamora**, Silvana De Souza, Frances Separovic, Fco. Javier Luque

1163-Pos **Board B231**
DIVALENT CATIONS AND LIPID COMPOSITION MODULATE MEMBRANE INSERTION AND CANCER-TARGETING ACTION OF PHLIP. **Victor Vasquez Montes**, Janessa S. Gerhart, Damien Thevenin, Alexey Ladokhin

1164-Pos **Board B232**
SELECTIVE CARGO RELEASE FROM LIPID VESICLES BY A SYNTHETICALLY EVOLVED, NON-TOXIC, VESICLE-PERMEABILIZING PEPTIDE. **Leisheng Sun**, Kalina Hristova, William Wimley

1165-Pos **Board B233**
MEMBRANE PERFORATION BY THE PORE-FORMING TOXIN PNEUMOLYSIN. **Martin Vögele**, Ramachandra M. Bhaskara, Estefania Mulvihill, Katharina van Pee, Özkan Yildiz, Werner Kühlbrandt, Daniel J. Müller, Gerhard Hummer

1166-Pos **Board B234**
CATIONIC ANTIMICROBIAL PEPTIDES HAVE REDUCED BINDING TO MPRF-MODIFIED MEMBRANES. **Patrick W. Simcock**, Mark S. Sansom, Phillip J. Stansfeld, Maike Bublitz, Jason Crain, Maxim G. Ryadnov, Flaviu Cipcigan

1167-Pos **Board B235** **Travel Awardee**
MEMBRANE POTENTIAL IS VITAL FOR RAPID PERMEABILIZATION OF PLASMA MEMBRANES AND LIPID BILAYERS BY THE ANTIMICROBIAL PEPTIDE LACTOFERRICIN B. **Farzana Hossain**, Md. Mizanur Moghal, Md. Zahidul Islam, Md. Moniruzzaman, Masahito Yamazaki

1168-Pos **Board B236**
EFFECTS OF POLYUNSATURATED FATTY ACIDS AND METALLATION ON THE ANTIMICROBIAL ACTIVITY AND MEMBRANE-DISRUPTIVE PROPERTIES OF HOST-DEFENSE METALLOPEPTIDE PISCIDIN 1. **Myriam Cotten**, Steven Paredes, Sarah Kim, Alexander Greenwood, Yawei Xiong, Kalina Hristova, David Giles

1169-Pos **Board B237**
AMPHOTERICINB INTERACTION WITH DMPC/ERGO MIXED LIPID BILAYERS. **Wei-Chin Hung**, Chi-Jiun Hung

1170-Pos **Board B238**
PISCIDINS AT MEMBRANE INTERFACES: PHOSPHOLIPIDS VERSUS LPS. **Hannah Cetuk**, Joseph Maramba, Madolyn Britt, Robert K. Ernst, Ella Mihailescu, Myriam Cotten, Sergei I. Sukharev

1171-Pos **Board B239**
INCREASED POTENCY OF ANTIMICROBIAL PISCIDINS IN THE PRESENCE OF COPPER (II) CORRELATES DIRECTLY WITH INSERTION DEPTH AND ORIENTATION IN MEMBRANES. **Fatih Comert**, Frank Heinrich, Alexander Greenwood, Vitalii I. Silin, Myriam Cotten, Ella Mihailescu

1172-Pos **Board B240**
PEPTIDE-DRUG CONJUGATES ACROSS THE BLOOD-BRAIN BARRIER: USING VIRAL PROTEIN DOMAINS TO SHUTTLE SMALL DRUGS TO THE CENTRAL NERVOUS SYSTEM. **Miguel A.R.B. Castanho**

General Protein-Lipid Interactions I (Boards B241 - B267)

1173-Pos **Board B241**
UNDERSTANDING KEY INTERACTIONS BETWEEN LIPID MEMBRANES AND PERIPHERAL MEMBRANE PROTEINS INVOLVED IN CELLULAR SIGNALLING. **Andreas H. Larsen**, Laura John, Lilya Tata, Mark S. Sansom

1174-Pos **Board B242** **Travel Awardee**
DETERMINING THE LIPID ENVIRONMENT AND INTERACTIONS OF CFTR. **Kirsten Cottrill**, Kerry M. Strickland, Nael A. McCarty

1175-Pos **Board B243**
BINDING OF ALPHA-CRYSTALLIN TO PHOSPHOLIPID MEMBRANE: EPR SPIN-LABELING APPROACH. **Laxman Mainali**

1176-Pos **Board B244**
SOFT MATTER CONTROL OF GPCR FUNCTION BY MEMBRANE LIPIDS AND WATER. Nipuna Weerasinghe, **Helen Mann**, Anna R. Eitel, Steven D. Fried, Emily Cosgriff, Andrey V. Struts, Suchithranga M. Perera, Michael F. Brown

1177-Pos **Board B245**
FUNCTIONAL AND STRUCTURAL STUDIES OF OPA PROTEINS FROM NEISSERIA. **Meagan L. Belcher Dufrisne**, Linda M. Columbus

1178-Pos **Board B246**
CHOLESTEROL CONTROL OF INFLUENZA FUSION PEPTIDE BEHAVIOR WITHIN LIPID MEMBRANES. **Piotr M. Setny**

1179-Pos **Board B247**
TRANSMEMBRANE AND JUXTAMEMBRANE INTERACTIONS OF EPHA2 WITH LIPID MEMBRANES IN THE ACTIVE AND INACTIVE STATES. **Katherine M. Stefanski**, Justin M. Westerfield, Francisco N. Barrera

1180-Pos **Board B248**
AN IMPLICIT LIPID MODEL FOR EFFICIENT REACTION DIFFUSION SIMULATIONS OF PROTEINS BINDING TO ARBITRARY SURFACES. **Yiben Fu**, Alexander J. Sodt, Margaret E. Johnson

1181-Pos **Board B249** **Travel Awardee**
MEASURING MEMBRANE PROTEIN-LIPID INTERACTIONS IN NANODISCS WITH NATIVE MASS SPECTROMETRY. **James E. Keener**, Julia Townsend, Megan Mowad, Michael T. Marty

1182-Pos **Board B250**
STRENGTHENING INTERACTIONS WITH THE MEMBRANE INTERFACE THROUGH GRAFTED AROMATIC COMPOUNDS PRODUCES EXTREMELY POTENT HIV-1 NEUTRALIZING ANTIBODIES. **Jose L. Nieva**, Edurne Rujas, Sara Insausti, Daniel P. Leaman, Pablo Carravilla, Ruben Sanchez-Eugenia, Lei Zhang, Miguel Garcia-Porras, Christian Eggeling, Jean-Philippe Julien, Akio Ojida, Michael B. Zwick, Jose M. Caaveiro

1183-Pos **Board B251**
WATER FOR STEROL: AN UNUSUAL MECHANISM OF STEROL EGRESS FROM A STARKIN DOMAIN. **George Khelashvili**, Neha Chauhan, Kalpana Pandey, David Eliezer, Anant K. Menon

1184-Pos **Board B252**
SIGMA 1 RECEPTOR REMODELS ENDOPLASMIC RETICULUM MEMBRANE. **Vladimir Zhemkov**, Ilya Bezprozvanny

1185-Pos **Board B253**
MODULATION OF INSULIN RECEPTOR KINASE ACTIVITY BY LIPID ENVIRONMENT. **Pavana Suresh**, Erwin London, W. Todd Miller

1186-Pos **Board B254**
IMPROVED SOLUBILITY OF MEMBRANE PROTEINS WITH ZSMA POLYMERS. **Mariana C. Fiori**, Yunjiang Jiang, Wan Zheng, Guillermo A. Altenberg, Hongjun Liang

1187-Pos **Board B255** **Travel Awardee**
CHARACTERIZING THE TRANSLOCATION OF CHARGED PEPTIDE LOOPS ACROSS LIPID BILAYERS WITH MOLECULAR DYNAMICS SIMULATIONS. **Samarthaben J. Patel**, Reid C. Van Lehn

1188-Pos **Board B256**
MEMBRANE CURVATURE EFFECTS ON RHODOPSIN ACTIVATION INVESTIGATED BY TIME-RESOLVED ELECTRONIC SPECTROSCOPY. **Steven D. Fried**, James W. Lewis, Istvan Szundi, Karina Martínez-Mayorga, Mohana Mahalingam, Reiner Vogel, David S. Kliger, Michael F. Brown

1189-Pos **Board B257** **Travel Awardee**
LIPID CHAIN ENTROPY AND EXCHANGE IN THE VICINITY OF G-PROTEIN COUPLED RECEPTORS. **Alison Leonard**, Alexander J. Sodt, Edward R. Lyman

1190-Pos **Board B258**
DISSECTING THE FUNCTIONAL ROLE OF PALMITOYLATION ON RPE65 PROTEIN. **Sheetal Uppal**, Tingting Liu, Eugenia Poliakov, Susan Gentleman, Thomas M. Redmond

1191-Pos **Board B259**
MOLECULAR BASIS OF CHOLESTEROL-DEPENDENT BINDING AND SELECTIVITY OF A CHOLESTEROL SENSOR. **Defne Gorgun**, Muyun Lihan, Emad Tajkhorshid

1192-Pos **Board B260** **Travel Awardee**
ANNEXIN-A5 STABILIZES MEMBRANE DEFECTS VIA MODULATING LIPID ORDER. **Yi-Chih Lin**, Christophe Chipot, Simon Scheuring

1193-Pos **Board B261**
MECHANISTIC DISSECTION OF SPHINGOLIPID BINDING TO THE ER STRESS TRANSDUCER ATF6 - INSIGHTS INTO THE COORDINATION OF SPHINGOLIPID AND PROTEIN PRODUCTION. **Toni Radanovic**, Michael Gecht, Roberto Covino, Gerhard Hummer, Maho Niwa, Robert Ernst

1194-Pos **Board B262**
THE INTERACTION WITH DIFFERENT MEMBRANES OF THE C2 DOMAIN OF PKC-EPSILON. **Juan C. Gomez-Fernandez**, Senena Corbalán-García, Alessio Ausili

1195-Pos **Board B263**
THE THERMODYNAMIC LANDSCAPE OF NANODISC SELF-ASSEMBLY. **Tyler Camp**, Stephen G. Sligar

1196-Pos **Board B264**
AN AXON-MYELIN INTERFACE MODEL TO EXAMINE MULTIVALENT INTERACTIONS BETWEEN GANGLIOSIDES AND MYELIN-ASSOCIATED GLYCOPROTEIN. **Jennie Cawley**, Nathan J. Wittenberg

1197-Pos **Board B265**
INTERACTION OF CARDIOLIPIN WITH LC3/GABARAP FAMILY MEMBERS IN CARGO RECOGNITION DURING MITOPHAGY. **Asier Etxaniz**, Marina N. Iriondo, Yaiza Varela, Javier Hervás, Ruth Montes, Felix Goñi, Alicia Alonso

1198-Pos **Board B266**
MECHANISM OF THE INHIBITORY INTERFERENCE IN HUMAN ANTIMICROBIAL PEPTIDES. **Ewa Drab**, Kaori Sugihara

1199-Pos **Board B267**
THERMODYNAMIC CHARACTERIZATION OF THE MITOCHONDRIAL CALCIUM UNIPORTER. **Francisco J. Sierra Valdez**

Membrane Receptors and Signal Transduction II (Boards B268 - B293)

1200-Pos Board B268 Travel Awardee
INNATE ANTIFUNGAL IMMUNE RECEPTOR, DECTIN-1, UNDERGOES LIGAND-INDUCED OLIGOMERIZATION WITH HIGHLY STRUCTURED B-GLUCANS AND AT FUNGAL CELL CONTACT SITES. **Eduardo U. Anaya**, Aaron Neumann

1201-Pos Board B269
AN UNUSUAL HYDROGEN-BOND IN THE KDEL RECEPTOR. **Zhiyi Wu**, Simon Newstead, Philip C. Biggin

1202-Pos Board B270
ACCELERATED MOLECULAR SIMULATIONS OF SUBSTRATE RECOGNITION BY G-SECRETASE. **Apurba Bhattarai**, Sujan Devkota, Yilong Miao, Michael S. Wolfe, Sanjay Bhattarai

1203-Pos Board B271
MODELING THE BINDING MECHANISM OF A T CELL RECEPTOR AND MAJOR HISTOCOMPATIBILITY COMPLEX. **Erin Groth**, Cory M. Ayres, Brian M. Baker, Steven A. Corcelli

1204-Pos Board B272
HOW THE T CELL SIGNALING NETWORK PROCESSES INFORMATION TO DISCRIMINATE BETWEEN SELF AND COGNATE LIGANDS. **Raman S. Ganti**, Wan-Lin Lo, Darren McAffee, Jay T. Groves, Arthur Weiss, Arup K. Chakraborty

1205-Pos Board B273
SPATIAL REQUIREMENTS FOR T-CELL RECEPTOR TRIGGERING PROBED VIA FUNCTIONALIZED DNA ORIGAMI PLATFORMS. **Joschka P. Hellmeier**, Rene Platzer, Andreas Karner, Victoria Motsch, Victor Bamieh, Johannes Preiner, Mario O. Brameshuber, Hannes Stockinger, Gerhard J. Schütz, Johannes B. Huppa, Eva Sevcsik

1206-Pos Board B274
MAGNESIUM DEFICIENCY CAUSES REVERSIBLE DIASTOLIC AND SYSTOLIC CARDIOMYOPATHY. **Man Liu**, Hong Liu, An Xie, Gyeoung-Jin Kang, Feng Feng, Xiaoxu Zhou, Yang Zhao, Samuel C. Dudley

1207-Pos Board B275
COMPARATIVE ANALYSIS OF THE RESIDUE CO-EVOLUTION OF THE DNA-BINDING RESPONSE REGULATOR SUBFAMILIES. **Mayu Shibata**, Xingcheng Lin, Ryan R. Cheng, Kei Yura, José N. Onuchic

1208-Pos Board B276
SOLUBLE ADENYLYL CYCLASE AT THE NANOSCALE: IMAGING AND FUNCTION IN HEART. **Liron Boyman**, Konstantinos Lefkimmiatis, Tullio Pozzan, W. Jonathan Lederer, Maura Greiser

1209-Pos Board B277
IQGAP1 SCAFFOLDING CONNECTS EGFR AND PHOSPHOINOSITIDE SIGNALING TO CYTOSKELETAL REORGANIZATION. **V Siddartha Yerramilli**, Alonzo H. Ross, Jessica Reisinger, Karin Plante, Suzanne F. Scarlata, Arne Gericke

1210-Pos Board B278
EXPANDING NUMBER AND BRIGHTNESS TO DETERMINE THE OLIGOMER SIZE OF MEMBRANE PROTEINS IN LIVE CELLS AS A FUNCTION OF CONCENTRATION. **Michael D. Paul**, Yi Zuo, Randall Rainwater, Luo Gu, Kalina Hristova

1211-Pos Board B279 Travel Awardee
PAIR CORRELATION ANALYSIS REVEALS BARRIERS TO NATURAL KILLER CELL RECEPTOR MOTION AT THE SYNAPSE. **Per Niklas Hedde**, Elina Staaf, Sunitha Bagawath Singh, Sofia Johansson, Enrico Gratton

1212-Pos Board B280 Travel Awardee
COACTION OF ELECTROSTATIC AND HYDROPHOBIC INTERACTIONS IN SIGNALING: DYNAMIC CONSTRAINTS ON DISORDERED TRKA JUXTAMEMBRANE DOMAIN. **Zichen Wang**, Huaxun Fan, Xiao Hu, John Khamo, Jiajie Diao, Kai Zhang, Taras V. Pogorelov

1213-Pos Board B281 Travel Awardee
DNA PROBES THAT STORE MECHANICAL INFORMATION REVEAL TRANSIENT PICONEWTON FORCES APPLIED BY T CELLS. **Rong Ma**, Anna V. Kellner, Victor Pui-Yan Ma, Hanquan Su, Brendan R. Deal, Joshua Brockman, Khalid Salaita

1214-Pos Board B282
EXPANSION MICROSCOPY REVEALS THAT CD45 IS EXCLUDED FROM THE TIPS OF MICROVILLI IN T AND B LYMPHOCYTES. **Yunmin Jung**, Lai Wen, Sara McArdle, Klaus Ley

1215-Pos Board B283
PLASMA MEMBRANE ORGANIZATION IS POISED TO MEDIATE STIMULATED TRANSMEMBRANE SIGNALING. **Nirmalya Bag**, David A. Holowka, Barbara A. Baird

1216-Pos Board B284
MECHANICAL STRESS MAY IMPACT THE FORMATION OF STRESS GRANULES. **Androniqi Qifti**, Suzanne F. Scarlata

1217-Pos Board B285
DISCRETE-STATE STOCHASTIC MODELING OF T-CELL ACTIVATION. **Hamid Teimouri**, Anatoly B. Kolomeisky

1218-Pos Board B286
THE FORMATION OF LAT PROTEIN CONDENSATES IN RESPONSE TO SINGLE PMHC-TCR BINDING EVENTS. **Darren McAffee**, Shalini Low-Nam, Jenny J. Lin, Scott D. Hansen, Steven Alvarez, Jay T. Groves

1219-Pos Board B287
HOW GROWTH FACTOR RECEPTOR CLUSTERING PROMOTES DOWNSTREAM SIGNALING. **Kelvin J. Peterson**, Leslie M. Loew

1220-Pos Board B288
PI 4-KINASE AND PIP 5-KINASE COOPERATE TO REPLENISH PTDINS(4,5) P_2 AFTER RECEPTOR-MEDIATED DEPLETION. **Jill B. Jensen**, Lizbeth de la Cruz, Alexis Traynor-Kaplan, Bertil Hille

1221-Pos Board B289
GENETIC BIOSENSORS FOR REAL TIME MONITORING OF THE ACTIVATION OF SIGNAL TRANSDUCERS AND ACTIVATORS OF TRANSCRIPTION (STAT). **Aisha M. Attar**

1222-Pos Board B290
RHOA MEDIATED JUXTACRINE REGULATION OF GLUCAGON SECRETION. **Yong Hee Chung**, David W. Piston

1223-Pos Board B291
LATTICE LIGHT-SHEET MICROSCOPY MULTI-DIMENSIONAL ANALYSES (LAMDA) OF T-CELL RECEPTOR DYNAMICS PREDICT T-CELL SIGNALING STATES. **Jun Huang**

1224-Pos Board B292
REGULATION OF DHHC5 ENZYMATIC ACTIVITY IN CARDIOMYOCYTES. **Jie Chen**, Autumn N. Marsden, C. Anthony Scott, Askar M. Akimzhanov, Darren F. Boehning

1225-Pos Board B293
LIPID REMODELLING IN CD36 NANOCLUSTERS PROMOTES FYN ACTIVATION IN RESPONSE TO THROMBOSPONDIN-1. **Nicolas Touret**, Swai Mon Khaing

Mechanosensation I (Boards B294 - B312)

1226-Pos **Board B294**
CHARACTERIZING THE EXPRESSION AND FUNCTION OF THE MECHANOSENSITIVE PIEZO1 CHANNEL IN THE HEART. **Fan Jiang**

1227-Pos **Board B295**
DIFFERENT MECHANICAL RESPONSES TO SUBSTRATE STIFFNESS BETWEEN CANCER CELLS AND NORMAL CELLS. **Fang Tian**, Tsung-Cheng Lin, Liang Wang, Sidong Chen, Caishan Yan, Pak Man Yiu, Ophelia K.C. Tsui, Jun Chu, Ching-Hwa Kiang, Hyokeun Park

1228-Pos **Board B296**
CORYNEBACTERIAL "FORCE-FROM-LIPIDS" MECHANOSENSATION FOR MSG PRODUCTION. **Yoshitaka Nakayama**, Ken-ichi Hashimoto, Hisashi Kawasaki, Boris Martinac

1229-Pos **Board B297**
QUANTITATIVE NANO-PLATFORMS FOR INTERROGATION OF CURVATURE SENSITIVE PROTEINS. **Ching-Ting Tsai**

1230-Pos **Board B298**
STRUCTURE AND MECHANOGATING OF THE MAMMALIAN TACTILE CHANNEL PIEZO2. **Wenhao Liu**

1231-Pos **Board B299**
CADHERIN COMPLEXES ARE COMBINATORIAL MECHANO-SWITCHES THAT DIFFERENTIALLY REGULATE CELL MECHANICS. Vinh H. Vu, Zainab Rahil, **Brendan G. Sullivan**, Deborah E. Leckband

1232-Pos **Board B300**
SURVIVIN IS A MECHANOSENSITIVE REGULATOR OF VASCULAR SMOOTH MUSCLE CELL PROLIFERATION. **John C. Biber**, Yongho Bae

1233-Pos **Board B301**
QUANTIFYING THE EFFECT OF FATTY ACIDS ON THE ELASTICITY OF MODEL MEMBRANES. **Miranda L. Jacobs**, Neha P. Kamat

1234-Pos **Board B302**
THE INFLUENCE OF SUBSTRATE ELASTICITY ON CELL ADHESION MECHANISMS. **Zbigniew Baster**, Zenon Rajfur

1235-Pos **Board B303** **Travel Awardee**
EXPLORING THE STRUCTURAL ELEMENTS RESPONSIBLE FOR *CIS*-HOMODIMERIZATION OF INNER EAR CADHERIN-23. **Joseph C. Sudar**, Jasanvir Sandhu, Pedro De-la-Torre, Deepanshu Choudhary, Marissa Boyer, Florencia Velez-Cortes, Jeshua K. Avila-Estrada, Collin Nisler, Michael L. Leake, Marcos M. Sotomayor

1236-Pos **Board B304**
CONTRACTILITY AUTOREGULATION IN CARDIOMYOCYTES EMERGES FROM MECHANOSENSOR GEOMETRY AND MECHANO-CHEMO-TRANSDUCTION. **Leighton T. Izu**, Rafael Shimkunas, Zhong Jian, Tamas Banyasz, Ye Chen-Izu

1237-Pos **Board B305** **Travel Awardee**
MSCS IS A CRITICAL COMPONENT FOR OSMOTIC SURVIVAL OF VIBRIO CHOLERAE. **Madolyn Britt**, Kristen Ramsey, Joseph Maramba, Blake Ushijima, Elissa Moller, Andriy Anishkin, Claudia Hase, Sergei I. Sukharev

1238-Pos **Board B306**
EXPLORING THE FUNCTIONAL IMPLICATIONS OF THE STRUCTURAL RELATIONSHIP BETWEEN TMC1 AND TMEM16 PROTEINS. **Angela Ballesteros**, Kenton Swartz

1239-Pos **Board B307**
MECHANICAL FORCES ALTER ENDOTHELIN-1 SIGNALING: COMPARATIVE OVINE MODELS OF CONGENITAL HEART DISEASE. **Antoni Garcia-Herreros**, Rebecca J. Kameny, Terry Zhu, Jason Boehme, Gary Raff, Juan C. Lasheras, Stephen M. Black, Emin Maltepe, Sanjeev A. Datar, Jeffrey R. Fineman

1240-Pos **Board B308**
ACTIVE FORCES ON CELL-CELL CONTACTS ENABLE EFFICIENT IMMUNE DISCRIMINATION. **Shenshen Wang**

1241-Pos **Board B309**
A FRET-BASED SENSOR FOR PROBING FORCES EXERTED BY SINGLE T CELL RECEPTORS ON THEIR LIGANDS. **Lukas Schrangl**, Janett Goehring, Florian Kellner, Johannes B. Huppa, Gerhard J. Schütz

1242-Pos **Board B310**
CELL GEOMETRY MODULATES THE ACTIVATION OF FIBROBLASTS IN 3D TUMOR MICROENVIRONMENTS. **Saradha Venkatachalapathy**, D.S. Jokhun, G.V. Shivashankar

1243-Pos **Board B311** **Travel Awardee**
YAP ACTIVITY DIRECTLY SCALES WITH NUCLEAR DEFORMATION AND LAMIN A DISTRIBUTION. **Newsha Koushki**, Allen J Ehrlicher

1244-Pos **Board B312**
MECHANICAL CHARACTERIZATION OF EXTRACELLULAR VESICLES DERIVED FROM IMMORTALIZED ADIPOSE STROMAL CELLS.
Melissa C. Piontek, Sourav Maity, Linda A. Brouwer, Martin C. Harmsen, Wouter H. Roos

Intracellular Calcium Channels and Calcium Sparks and Waves I (Boards B313 - B329)

1245-Pos **Board B313**
CHARACTERIZATION OF RYR2 MUTATIONS LOCATED AT THE CAFFEINE AND FKBP BINDING SITES IN HIPSC-CMS. **Jose Carlos Fernandez Morales**, Xiaohua Zhang, Yanli Xia, Naohiro Yamaguchi, Martin Morad

1246-Pos **Board B314**
INCREASED SR CALCIUM LEAK IS PROMOTED BY O-GLCNACYLATION OF CAMKII IN DIABETES AND HYPERGLYCEMIA. **Anna Fasoli**, Christopher Y. Ko, Bence Hegyi, Wenjun Pan, Benjamin W. Van, Erin Y. Shen, Sonya Baidar, Julie Bossuyt, Donald M. Bers

1247-Pos **Board B315**
ROLE OF SK CURRENT RECTIFICATION IN SHAPING ACTION POTENTIAL OF VENTRICULAR CARDIOMYOCYTES. **Peter Bronk**, Tae Yun Kim, Iuliia Polina, Shanna Hamilton, Radmila Terentieva, Karim Roder, Gideon Koren, Dmitry A. Terentyev, Bum-Rak Choi

1248-Pos **Board B316**
SORAFENIB SUPPRESSES BASAL SPONTANEOUS BEATING OF RABBIT SINOATRIAL NODE CELLS (SANC) THROUGH INHIBITION OF VASCULAR ENDOTHELIAL GROWTH FACTOR RECEPTOR 1 (VEGFR1).
Tatiana M. Vinogradova, Kirill Tarasov, Yelena Tarasova, Edward G. Lakatta

1249-Pos **Board B317**
A NOVEL *IN VITRO* MODEL USING ORGANOTYPIC CARDIAC SLICES REVEALS TRANSMURAL HETEROGENEITY IN ARRHYTHMOGENIC CA^{2+} EVENTS AFTER CARDIAC INJURY. **Eef Dries**, Ifigeneia Bardi, Fotios Pitoulis, Raquel Nunez-Toldra, Warrapong Kit-Anan, Cesare M. Terracciano

1250-Pos Board B318
SERCA STIMULATION TRIGGERS ARRHYTHMOGENIC CA^{2+} EVENTS IN MOUSE CARDIOMYOCYTES HARBORING THE $RYR2^{R420Q+/-}$ MUTATION. **Ruben Jose Lopez Dicuru**, Miguel Fernandez-Tenorio, Radoslav Janicek, Ana M. Gomez, Ernst Niggli

1251-Pos Board B319
IMPROVEMENTS OF ER-CA^{2+} BASED HIGH-THROUGHPUT SCREENING METHOD FOR SEARCHING NOVEL RYR2 INHIBITORS. **Masatoshi Ito**, Nagomi Kurebayashi, Takashi Murayama, Mai Tamura, Junji Suzuki, kazunori Kanemaru, Masamitsu Iino, Takashi Sakurai

1252-Pos Board B320
EFFECTS OF RYR2 INHIBITORS ON CA^{2+} SIGNALS IN HEALTHY AND DISEASED CARDIAC CELLS. **Nagomi Kurebayashi**, Takashi Murayama, Masato Konishi, Shuichi Mori, Mari Ishigami-Yuasa, Hiroyuki Kagechika, Haruo Ogawa, Sachio Morimoto, Takashi Sakurai

1253-Pos Board B321
DWORF DIRECTLY REGULATES CARDIAC SERCA FUNCTION. **Elisa Bovo**, Christopher S. Hoover, M'Lynn Fisher, Jonathan Jeske, Roman Nikolaienko, Daniel Kahn, Seth L. Robia, Howard S. Young, Aleksey V. Zima

1254-Pos Board B322
PROBING THE RYR2 CA^{2+} AND CAFFEINE BINDING SITES BY MUTAGENESIS IN HUMAN STEM-CELL DERIVED CARDIOMYOCYTES BY CRISPR/CAS9 GENE EDITING. **Yanli Xia**, Xiaohua Zhang, Naohiro Yamaguchi, Martin Morad

1255-Pos Board B323
ANALYSIS OF LOCAL CALCIUM FLUCTUATIONS IN CARDIAC MYOCYTES. **Cherrie H. Kong**, Mark B. Cannell

1256-Pos Board B324
CPVT-ASSOCIATED MUTATION P.G357S-RYR2 PROMOTES A GAIN OF FUNCTION IN PATIENT-SPECIFIC INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES (IPS-CM). **David Carreras**, Rebecca Martinez-Moreno, Elisabet Selga, Ramon Brugada, Fabiana S. Scornik, Guillermo J. Perez

1257-Pos Board B325 Travel Awardee
HYPERACTIVITY OF RYR2 IN CARDIAC DISEASE IS EXACERBATED BY CALCIUM LEAK-INDUCED MITOCHONDRIAL ROS. **Shanna Hamilton**, Radmila Terentyeva, Jiaoni Li, Andrei Stepanov, Ingrid M. Bonilla, Bjorn C. Knollmann, Przemyslaw Radwanski, Sandor Gyorke, Andriy E. Belevych, Dmitry Terentyev

1258-Pos Board B326
EFFECTS OF ULTRASTRUCTURAL REMODELING ON CALCIUM SIGNALING AND ELECTROPHYSIOLOGY IN A THREE-DIMENSIONAL MODEL OF THE HUMAN ATRIAL MYOCYTE. **Xianwei Zhang**, Haibo Ni, Stefano Morotti, William E. Louch, Andrew G. Edwards, Daisuke Sato, Eleonora Grandi

1259-Pos Board B327
ELEMENTARY INTRACELLULAR CALCIUM SIGNALS ARE INITIATED BY A PHASE TRANSITION OF CALCIUM RELEASE CHANNELS IN A METASTABLE STATE. **Guillermo Veron**, Anna Maltsev, Michael D. Stern, Victor A. Maltsev

1260-Pos Board B328
NOVEL MITOCHONDRIAL CA^{2+} UPTAKE ENHANCERS FOR THE TREATMENT OF CARDIAC ARRHYTHMIA. **Paulina Sander**, Daniela M. Arduino, Maria K. Schweitzer, Fabiola Wilting, Thomas Gudermann, Fabiana Perocchi, Johann Schredelseker

1261-Pos Board B329
PHARMACOLOGICAL MODULATION OF MITOCHONDRIA CA^{2+} EXERTS DIVERGENT EFFECTS ON ARRHYTHMOGENIC CALCIUM WAVES IN CA^{2+}-DEPENDENT AND METABOLIC CARDIAC DISEASE. Brian Tow, Anna-Beth Loper, Dongyu Wang, Bjorn C. Knollmann, Sandor Gyorke, **Bin Liu**

Muscle Regulation (Boards B330 - B344)

1262-Pos Board B330
RIBONUCLEOTIDE REDUCTASE IS ESSENTIAL IN ADULT CARDIOMYOCYTES. **Kristina B. Kooiker**, Djelli Berisha, Amy Martinson, Joelle Tudor, Jeremy Freeman, Claire Branley, Farid Moussavi-Harami

1263-Pos Board B331
CARDIAC PALMITOME SHEDS NEW LIGHT ON THE STRUCTURAL AND FUNCTIONAL ROLES OF S-PALMITOYLATION IN CARDIAC MYOCYTES. **Madeleine Miles**, Nicholas Rodriguez, Min Jiang, Jane E. Tomaszewski, Isabelle Deschenes, Gea-Ny Tseng

1264-Pos Board B332
HYPERTROPHIC CARDIOMYOPATHY: PROLONGED TWITCH, CALCIUM TRANSIENTS AND ACTION POTENTIALS IN HUMAN STEM CELL-DERIVED CARDIOMYOCYTES WITH B-MYOSIN MUTATION R723G. **Natalie Weber**, Tim Holler, Joachim Meißner, Judith Montag, Martin Fischer, Jeanne de la Roche, Stefan Thiemann, Neele Peschel, Anne Kathrin Mayer, Kristin Schwanke, Birgit Piep, Ulrich Martin, Robert Zweigerdt, Theresia Kraft

1265-Pos Board B333
THE MECHANICAL PROPERTIES OF A UTROPHIN CONSTRUCT ENCODING THE TANDEM CH ACTIN BINDING DOMAIN THROUGH SPECTRIN REPEAT 3 IS ALTERED BY THE CELL EXPRESSION SYSTEM THROUGH POST-TRANSLATIONAL MODIFICATIONS. **Maria Paz Ramirez Lopez**, Sivaraman Rajaganapathy, Wendy R. Gordon, Murti V. Salapaka, James M. Ervasti

1266-Pos Board B334
ELUCIDATING THE ROLE OF PHOSPHORYLATED REGULATORY LIGHT CHAIN PROTEINS (RLC) DURING HEART FAILURE PROGRESSION. **Kasturi Markandran**

1267-Pos Board B335
CALCIUM REGULATES AVERAGE TIME AND NOT VELOCITY A THIN FILAMENT MOVES. **Henry G. Zot**, Javier E. Hasbun, Prescott B. Chase, J. Renato D. Pinto

1268-Pos Board B336
ESSENTIAL ROLE OF SEPTIN 7 IN SKELETAL MUSCLE STRUCTURE AND FUNCTION. **Laszlo Csernoch**, Mónika Gönczi, Zsolt Ráduly, László Szabó, Nóra Dobrosi, Péter Szentesi, Beatrix Dienes

1269-Pos Board B337
STUDY BIOPHYSICS OF ESOPHAGEAL TRANSPORT BY COMBINING SIMULATION, MODELING AND BIO-MECHANICAL ANALYSIS BASED ON IN-VIVO DATA. **Wenjun Kou**, Shashank Acharya, Sourav Halder, Neelesh Patankar, John Pandolfino

1270-Pos Board B338
THE GLU-RICH C-TERMINAL EXTENSION OF INSECT TROPONIN T IS AN ESSENTIAL STRUCTURE CRITICAL TO EMBRYONIC DEVELOPMENT. **Alyson Sujkowski**, Tianxin Cao, J.-P. Jin

1271-Pos Board B339
K_{ATP} CHANNELS IN ZEBRAFISH CARDIOVASCULAR SYSTEM: A MODEL TO STUDY CANTÚ SYNDROME. **Soma S. Singareddy**, Helen I. Roessler, Conor McClenaghan, Rob C. Tryon, Gijs van Haaften, Colin G. Nichols

1272-Pos Board B340
UNIVERSAL INVERSE SQUARE RELATIONSHIP BETWEEN HEART RATE VARIABILITY AND HEART RATE. **Anna Maltsev**, Oliver J. Monfredi, Victor A. Maltsev

1273-Pos Board B341
TISSUE MECHANISMS OF ADULT ZEBRAFISH VENTRICULAR ECG PATTERNS UNDER BASELINE AND OXIDATIVE STRESS CONDITION. Yali Zhao, Nicholas James, Ashraf Beshay, Eileen Chang, **Thao P. Nguyen**

1274-Pos **Board B342**
MODELING VAS DEFERENS SMOOTH MUSCLE ELECTROPHYSIOLOGY: ROLE OF ION CHANNELS IN GENERATING ELECTRICAL ACTIVITY. **Chitaranjan Mahapatra**, Rohit Manchanda

1275-Pos **Board B343**
FUNCTIONAL ROLES OF CL^-/HCO_3^- EXCHANGER IN THE SINOATRIAL NODE. Phung N. Thai, Lu Ren, Yankun Lyu, Valeriy Timofeyev, Hannah A. Ledford, Padmini Sirish, James Overton, Wilson Xu, Nipavan Chiamvimonvat, **Xiao-Dong Zhang**

1276-Pos **Board B344**
EXPLORING THE EFFECTS OF 2.DEOXY-ATP ON SERCA 2A USING MULTISCALE MODELING. **Kimberly J. McCabe**, Sophia P. Hirakis, Abigail E. Teitgen, Alexandre B. Duclos, Michael Regnier, Rommie E. Amaro, Andrew D. McCulloch

Voltage-gated K Channels II (Boards B345 - B374)

1277-Pos **Board B345**
HALTING KCSA'S C-TYPE INACTIVATION GATING BY CONTROLLING WATER DIFFUSION BEHIND THE CHANNEL'S SELECTIVITY FILTER. D. Marien Cortes, **Luis G. Cuello**

1278-Pos **Board B346** **Travel Awardee**
RELATIVE HERG SUBUNIT ABUNDANCE MODIFIES I_{KR} KINETICS AND MAGNITUDE DURING CARDIAC MATURATION. **Chiamaka U. Ukachukwu**

1279-Pos **Board B347**
A MOLECULAR MECHANISM FOR GATING POLARITY IN NON-DOMAIN-SWAPPED K_V CHANNELS. **Gustavo F. Contreras**, Michael D. Clark, Rong Shen, Eduardo Perozo

1280-Pos **Board B348**
THE CARDIAC $K_V7.1$-KCNE1 CHANNEL ASSEMBLES AT ER-PM JUNCTIONS BEFORE TRANSLOCATED TO THE PLASMA MEMBRANE. Clara Serrano Novillo, Anna Oliveras, Núria Comes, Christian Soeller, **Antonio Felipe**

1281-Pos **Board B349**
TOLUENE-INDUCED INHIBITION OF SMOOTH MUSCLE BK CHANNELS AND MIDDLE CEREBRAL ARTERY CONSTRICTION. Kelsey C. North, Luiz Moreira, Alexandria Slayden, Anna N. Bukiya, **Alex M. Dopico**

1282-Pos **Board B350**
HCN DOMAIN IS NECESSARY FOR SURFACE EXPRESSION OF HCN CHANNELS. **Zejun Wang**, Ismary Blanco, Tinatin I. Brelidze

1283-Pos **Board B351**
BK CHANNEL GAMMA3 SUBUNIT (LRRC55) KNOCK-OUT MICE SHOW ATAXIA-LIKE PHENOTYPE. Xin Guan, **Jiusheng Yan**

1284-Pos **Board B352**
BLOCK OF THE CARDIAC POTASSIUM CHANNEL HERG BY CATIONS. Jeremy Adrian, Jacky Ng, Huzaifa Khawaja, Zahra Asadollahi, **Alan Miller**

1285-Pos **Board B353**
DYNAMIC CHARACTERIZATION OF KCNQ1 AND ITS REGULATORY SUBUNITS REVEALED BY FLUORESCENCE FLUCTUATION TECHNIQUES. **Giulia Tedeschi**, Lorenzo Scipioni, Geoffrey Abbott, Michelle A. Digman

1286-Pos **Board B354**
CHOOSING THE CORRECT STOICHIOMETRY FROM SINGLE SUBUNIT COUNTING DATA. Lena Moeller, Alain J. Labro, Dirk J. Snyders, **Rikard Blunck**

1287-Pos **Board B355**
INHIBITION OF THE VOLTAGE-GATED POTASSIUM CHANNEL KV2.1 BY RY785, A KV2-SELECTIVE SMALL MOLECULE. **Matthew J. Marquis**, Michelle Nguyen, Jon T. Sack

1288-Pos **Board B356**
OBSERVATION OF MULTIPLE POTASSIUM CHANNEL CLOSED STATE STRUCTURES BY VOLTAGE CLAMP SPECTROSCOPY. Parashar Thapa, Sebastian Fletcher-Taylor, Rebecka J. Sepela, Vladimir Yarov-Yarovoy, **Jon T. Sack**, Bruce E. Cohen

1289-Pos **Board B357**
$K_V1.3$ INTERACTS WITH A CALMODULIN-BINDING TETRALEUCINE MOTIF OF KCNE4. **Daniel Sastre**, Laura Sole Codina, Sara R. Roig, Gregorio Fernandez-Ballester, Michael M. Tamkun, Antonio Felipe

1290-Pos **Board B358**
KCNQ1 DDG CALCULATIONS AND CORRELATION TO EXPERIMENTAL DATA. **Kathryn R. Brewer**, Hui Huang, Georg Kuenze, Jens Meiler, Charles R. Sanders

1291-Pos **Board B359** **Travel Awardee**
MEASURING INTRINSIC LIGAND DYNAMICS OF HERG POTASSIUM CHANNELS USING THE UNNATURAL AMINO ACID L-ANAP AND TM-FRET. **Sara J. Codding**, Matt C. Trudeau

1292-Pos **Board B360**
CHARACTERIZATION OF A NOVEL HIGH-SELECTIVITY KV1.3 INHIBITOR PEPTIDE. Agota Csoti, Lourival D. Possani, **Gyorgy Panyi**

1293-Pos **Board B361**
BENEFICIAL EFFECT OF CITRUS FLAVONOID - NARINGENIN ON ENDOTHELIAL CELLS BY ACTIVATION OF MITOCHONDRIAL POTASSIUM CHANNELS. **Rafal P. Kampa**, Aleksandra Sęk, Anna Kicińska, Jan Daniluk, Wieslawa Jarmuszkiewicz, Adam Szewczyk, Piotr Bednarczyk

1294-Pos **Board B362**
CHARACTERIZATION OF DIRECT CYCLODEXTRIN EFFECTS ON VOLTAGE-GATED POTASSIUM CHANNELS. Florina Zakany, Tamas Kovacs, Tamas Sohajda, Lajos Szente, Peter Nagy, Gyorgy Panyi, **Zoltan Varga**

1295-Pos **Board B363**
GATING MECHANISMS OF CARDIAC AND NEURONAL KCNQ POTASSIUM CHANNELS. **Nien-Du Yang**, Alex Dou, Po Wei Kang, Panpan Hou, Kelli McFarland White, Jingyi Shi, Jianmin Cui

1296-Pos **Board B364**
PROTEIN-PROTEIN INTERACTIONS OF KCNQ1 AND KCNE1 OBSERVED VIA SDSL-EPR LINE SHAPE ANALYSIS. **Rebecca Stowe**, Gunjan Dixit, Indra D. Sahu, Gary A. Lorigan

1297-Pos **Board B365**
COMPARING ENSEMBLE VERSUS SINGLE CELL RECORDINGS OF VOLTAGE-GATED CHANNELS WITH A MICROFLUIDICS BASED AUTOMATED PATCH CLAMP. **Ali Yehia**, Alexandra Stevens

1298-Pos **Board B366**
REVERSIBLE BLOCK OF BK CHANNELS BY PIPERINE. Aravind S. Kshatri, **Teresa Giraldez**

1299-Pos **Board B367**
RESIN-ACID DERIVATIVES OPEN THE $HK_V7.2/7.3$ CHANNEL AND HAVE ANTIEPILEPTIC EFFECTS IN A ZEBRAFISH LARVAE MODEL. **Nina E. Ottosson**, Malin Silverå Ejneby, Michelle Nilsson, Urban Karlsson, Melanie Schupp, Xiongyu Wu, Peter Konradsson, Fredrik Elinder

1300-Pos **Board B368**
ION BEHAVIOUR IN THE HCN1 CHANNEL SELECTIVITY FILTER. Sajjad Ahrari, **Nazzareno D'Avanzo**

1301-Pos **Board B369**
JOURNEY FROM THE PORE CAVITY TO THE SELECTIVITY FILTER IN $K_V1.2$: HOW K^+ DOES IT, AND NA^+ CAN'T QUITE. Alisher M. Kariev, **Michael E. Green**

1302-Pos Board B370
USING ONSET-OF-BLOCK KINETIC ANALYSIS OF HERG1 CURRENT WITH A MARKOV MODEL TO IMPROVE *IN SILICO* PROARRHYTHMOGENIC RISK PREDICTION. **Bogdan P. Amuzescu**, Thomas Knott, Stefan A. Mann, Juliane Knuepling, Razvan Airini, Florin Bogdan Epureanu, Beatrice Mihaela Radu

1303-Pos Board B371
KV1.3 REGULATES THE DRIVING FORCE FOR CALCIUM ENTRY THROUGH P2X4 IN MICROGLIA. **Hai M. Nguyen**, Yi-Je Chen, Jacopo Di Lucente, Lee-Way Jin, Izumi Maezawa, Heike Wulff

1304-Pos Board B372
IDENTIFICATION OF SODIUM SENSITIVE SITE AND CHLORIDE SENSITIVE SITE ON THE C-TERMINUS OF RAT KCNT1 CHANNEL. Jie Xu, Xiao-Yun Zhao, Yan-Tian Lv, Yun Xu, Jing-Jing Wang, Qiong-Yao Tang, **Zhe Zhang**

1305-Pos Board B373
SLC7A5 ALTERS THE FUNCTIONAL INTERACTION BETWEEN KV1.2 AND KVB. **Shawn M. Lamothe**, Harley T. Kurata

1306-Pos Board B374
IDENTIFICATION OF EXTRACELLULAR PH-SENSING RESIDUES IN THE VOLTAGE-GATED PROTON CHANNEL HV1. Ashley L. Bennett, Guiliano Melki, **I. Scott Ramsey**

Ion Channel Regulatory Mechanisms I (Boards B375 - B394)

1307-Pos Board B375
RELATIONSHIP BETWEEN AMINO ACID SEQUENCE MUTATIONS AND HUMAN DISEASES REVEALED BY PIEZO 1 ION CHANNEL STURCTURAL ANALYSIS. **Zikai Zhou**

1308-Pos Board B376
ACID-SENSING ION CHANNEL CURRENTS OF THE HYPOTHALAMUS ARE INCREASED BY HYDROGEN SULFIDE. **Zhong Peng**, Stephan Kellenberger

1309-Pos Board B377
MECHANISMS OF DOMINANCE OF MLC2B MUTATIONS IN GLIALCAM, A REGULATORY SUBUNIT OF THE CLC-2 CHLORIDE CHANNEL. **Raul Estevez**

1310-Pos Board B378
THE ROAD NOT TAKEN - LIPID/ION CONDUCTION PATHWAYS IN TMEM16 PROTEIN FAMILY. **ZhiGuang Jia**, Pengfei Liang, Trieu Le, Huanghe Yang, Jianhan Chen

1311-Pos Board B379
COMPUTATIONAL INSIGHTS INTO VOLTAGE DEPENDENCE OF POLYAMINE BLOCK IN INWARDLY RECTIFYING K^+ CHANNELS. **Michael Bründl**, Xingyu Chen, Anna Stary-Weinzinger

1312-Pos Board B380
ATRIAL MYOCYTES MAINTAIN LOW $[NA^+]I$ THROUGH SPECIALIZED NA^+/K^+ ATPASE MICRODOMAIN. Humberto C. Joca, Libet Garber, Andrew Coleman, Liron Boyman, Mariusz Karbowski, Christopher W. Ward, W. Jonathan Lederer, **Maura Greiser**

1313-Pos Board B381
ENERGETICS OF CALMODULIN RECOGNITION OF A SKELETAL MUSCLE RYANODINE RECEPTOR SITE. **Adina M. Kilpatrick**, Ryan W. Mahling, Madeline A. Shea

1314-Pos Board B382
HOW DO KCNQ1 AND KCNE1 ASSEMBLE TO FORM THE SLOW- DELAYED-RECTIFIER (I_{KS}) CHANNELS IN ADULT VENTRICULAR MOCYTES (AVMS)? Sukhleen Kaur, Tytus Bernas, **Zachary Wilson**, Taylor Schultz, Min Jiang, Gea-Ny Tseng

1315-Pos Board B383
ARRHYTHMOGENIC VULNERABILITY IS ASSOCIATED WITH ALTERATIONS IN ION CHANNEL EXPRESSION, LOCALIZATION AND FUNCTION IN HYPERTROPHIC CARDIOMYOPATHY. Henrietta Cserne-Szappanos, Danica W. Ito, Rose E. Dixon, **Livia C. Hool**

1316-Pos Board B384
EAG CHANNEL PAS DOMAIN BINDER INHIBITS CURRENTS FROM EAG CHANNELS AND DECREASES TUMOR GROWTH IN ZEBRAFISH XENOGRAFT MODEL. Ze-Jun Wang, Pareesa Kamgar-Dayhoff, Purushottam B. Tiwari, Eric Glasgow, **Tinatin I. Brelidze**

1317-Pos Board B385
CONTROL OF SLC7A5 SENSITIVITY BY THE VOLTAGE-SENSING DOMAIN OF KV1 CHANNELS. Shawn M. Lamothe, Nazlee Sharmin, Victoria A. Baronas, Grace Silver, Yubin Hao, **Harley T. Kurata**

1318-Pos Board B386
THE ENERGY LANDSCAPE OF VOLTAGE SENSING IN CI-VSP. **Rong Shen**, Benoit Roux, Eduardo Perozo

1319-Pos Board B387
BOTH LOBES OF CALMODULIN BOUND TO KCA2.2 RESPOND TO CA^{2+}. **David Brent Halling**, Ashley Philpo, Richard W. Aldrich

1320-Pos Board B388
CHARACTERISATION OF THE VERSATILE GATING BEHAVIOUR IN TALK-2 K_{2P} CHANNELS. **Elena B. Riel**, Björn Jürs, Jan Langer, Marianne Musinszki, Sönke Cordeiro, Susanne Rinné, Niels Decher, Marcus Schewe, Thomas Baukrowitz

1321-Pos Board B389
SOLVING THE GATING MECHANISM OF THE MITOCHONDRIAL B-BARREL METABOLITE CHANNEL VDAC. **Maria Queralt-Martin**, Van A. Ngo, Lucie A. Bergdoll, Jeff Abramson, David P. Hoogerheide, Tatiana K. Rostovtseva, Sergey M. Bezrukov, Sergei Y. Noskov

1322-Pos Board B390 Travel Awardee
AN ALLOSTERIC GATING MECHANISM OF TMEM16A CALCIUM-ACTIVATED CHLORIDE CHANNEL. **Son C. Le**, Huanghe Yang

1323-Pos Board B391
NOVEL BIOPHYSICAL PROPERTIES OF MOLECULAR PERMEATION IN CALHM1 AND CONNEXIN CHANNELS. **Pablo S. Gaete**, Mauricio A. Lillo, William I. Lopez, Yu Liu, Andrew L. Harris, Jorge E. Contreras

1324-Pos Board B392
ANKYRIN-G MEDIATES TARGETING OF BOTH NA^+ AND KATP CHANNELS TO THE CARDIAC INTERCALATED DISC. **Hua-Qian Yang**, Marta Pérez-Hernández, Jose L. Sanchez-Alonso, Andriy Shevchuk, Julia Gorelik, Eli Rothenberg, Mario Delmar, William A. Coetzee

1325-Pos Board B393
GBΓ ACTIVATES GIRK2 WITH LOW-MICROMOLAR AFFINITY WITH DISTINCT ACTIVATION PATTERN COMPARED TO GIRK1/2. Daniel Yakubovich, Uri Kahanovitch, Galit Tabak, Tal Keren Raifman, Vladimir Tsemakhovich, Debi Ranjan Tripathy, Carmen W. Dessauer, Joel A. Hirsch, **Nathan Dascal**

1326-Pos Board B394
LOV-NANO AS A NEW TOOL FOR THE REGULATION OF HCN CHANNELS BY BLUE LIGHT. Michal Laskowski, Andrea Saponaro, Alessandro Porro, Matias Zurbriggen, Gerhard Thiel, **Anna Moroni**

Other Channels (Boards B395 - B420)

1327-Pos Board B395
STRUCTURAL AND FUNCTIONAL COMPARISON OF CLAUDIN-2 AND CLAUDIN-15. **Priyanka Samanta**, Pan Li, Ye Li, Simona Curkoska, Shadi Fuladi, Le Shen, Christopher Weber, Fatemeh Khalili-Araghi

1328-Pos Board B396
A KINETIC STUDY OF INTRABURST ACTIVITY OF THE HUMAN ERYTHROCYTE MECHANO-ACTIVATED K+ CHANNEL A (HEMKCA): EFFECT OF CALCIUM AND TRAM-34. **Jesus G. Romero**, Alejandro Mata

1329-Pos Board B397
EXPLORING THE KINETICS OF THE HCN2 CHANNEL USING A CYCLIC ALLOSTERIC FOUR-STATE MODEL. **Delbert Yip**, Wai Wong, Leo Kim, Yue-Xian Li, Eric Accili

1330-Pos Board B398
MEASUREMENT OF SELECTIVITY FILTER DYNAMICS IN SELECTIVE AND NON-SELECTIVE NAK CHANNEL VARIANTS. **Adam Lewis**, Katherine Henzler-Wildman

1331-Pos Board B399
LABELING AND PURIFICATION OF BK CHANNEL FOR SINGLE MOLECULE EXPERIMENTS. **Shubhra Srivastava**, Pablo Miranda, Teresa Giráldez, Miguel Holmgren

1332-Pos Board B400
NANODOMAIN CALCIUM SIGNALS COUPLE ACTIVATION OF TRPV1 AND ANO1 SENSORY ION CHANNELS. **Shihab S. Shah**, Chase M. Carver, Mark S. Shapiro, Nikita Gamper

1333-Pos Board B401
ANNOTATING ION CHANNEL PORES: STRUCTURES, HYDROPHOBICITY AND THE THRESHOLD FOR PERMEATION. **Shanlin Rao**, Gianni Klesse, Stephen J. Tucker, Mark S.P. Sansom

1334-Pos Board B402
IDENTIFYING RYANODINE RECEPTOR MODULATORS: FROM HIGH-THROUGHPUT SCREENING TO SINGLE CHANNEL RECORDING. Manuel Paina, Jim Goodchild, Lucy Firth, Katharina Montag, Maria Grazia Garibaldi, Loredana Redaelli, Lia Scarabottolo, Judith Blythe, **Jean-Francois Rolland**

1335-Pos Board B403
THE ATOMISTIC DETAILS OF THE CA^{2+} PERMEATION THROUGH THE OPEN-STATE RYANODINE RECEPTOR 1. Aihua Zhang, Hua Yu, Chunhong Liu, **Chen Song**

1336-Pos Board B404 Travel Awardee
CONFORMATIONAL DYNAMICS OF CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR (CFTR) REVEALED BY MOLECULAR SIMULATIONS. **Zhi Wei Zeng**

1337-Pos Board B405
DYNAMIC PLASTICITY OF MITOCHONDRIAL VDAC2 REVEALED BY SINGLE-MOLECULE ELECTROPHYSIOLOGY. **William M. Rosencrans**, Maria Queralt-Martin, David P. Hoogerheide, Philip A. Gurnev, Tsyr-Yan Yu, Radhakrishnan Mahalakshmi, Sergey M. Bezrukov, Tatiana K. Rostovtseva

1338-Pos Board B406
VISUALIZING CONFORMATIONAL CHANGES OF THE MAGNESIUM CHANNEL CORA USING SYNTHETIC ANTIBODIES. **Satchal K. Erramilli**, Tian Li, Kamil Nosol, Piotr Tokarz, Przemyslaw Dutka, Pawel K. Dominik, Eduardo Perozo, Anthony A. Kossiakoff

1339-Pos Board B407
A HIGHLY SELECTIVE GREEN FLUORESCENT MAGNESIUM INDICATOR FOR INTRACELLULAR MAGNESIUM ION ANALYSIS. **Deven Patel**, Qin Zhao, Haitao Guo, Ruogu Peng, Jixiang Liu, Jinfang Liao, Zhenjun Diwu

1340-Pos Board B408
HYDROPHOBIC GASKET MUTATION PRODUCES PROTON SELECTIVE GATING PORE CURRENTS IN CLOSED HUMAN VOLTAGE-GATED PROTON CHANNELS. **Richard L. Banh**, Vladimir V. Cherny, Deri Morgan, Boris Musset, Sarah Thomas, Kethika Kulleperuma, Susan M. Smith, Thomas E. DeCoursey, Régis Pomès

1341-Pos Board B409
FUNCTIONAL CHARACTERIZATION OF V_j-GATING AND SINGLE CHANNEL CONDUCTANCE OF SHEEP CX46 AND CX50 GAP JUNCTIONS. Benny Yue, Bassam G. Haddad, Umair Khan, Mena Atalla, Steve L. Reichow, **Donglin Bai**

1342-Pos Board B410
OBSERVATION OF WATER PERMEABILITY IN XENOPUS OOCYTES EXPRESSING GAP JUNCTION PROTEINS. **Jaafar Hamdan**, Adam DePriest, Ingrid M. Skerrett

1343-Pos Board B411
EFFECTS OF OSMOTIC CHALLENGES ON GAP JUNCTION COMMUNICATION. **Stephen R. Thompson**, Derek L. Beahm

1344-Pos Board B412
DEVELOPING A MICROFABRICATED LAB-ON-A-CHIP DEVICE FOR PATCH-CLAMP APPLICATIONS WITH INTERNAL SOLUTION EXCHANGE. **Hugo McGuire**, Mark Aurousseau, Elise Faure, Yoann Lussier, Maxime Lupien, Gabriel Roberge

1345-Pos Board B413
MOLECULAR DYNAMICS SIMULATIONS STUDIES OF THE PROTON CHANNEL OTOPETRIN AND OTHER MECHANICALLY-ACTIVATED ION CHANNELS. **Che Chun (Alex) Tsui**, Kei Saotome, Bochuan Teng, Wen-Hsin Lee, Yu-Hsiang Tu, Sebastian Jojoa-Cruz, Emily R. Liman, Andrew B. Ward, Mark S.P. Sansom

1346-Pos Board B414
DETECTING AND MODELLING CONFORMATIONAL STATES OF THE PROTON CHANNEL WITH VOLTAGE-CLAMP FLUOROMETRY. **Ferenc Papp**, Zoltan Denes Petho, Adrienn Bagosi, Gilman E.S. Toombes, Gyorgy Panyi, Zoltan Varga

1347-Pos Board B415
MOLECULAR BASIS OF VOLTAGE-GATED PROTON CHANNEL'S INTRACELLULAR TRAFFICKING. **Luisa Ribeiro-Silva**, Manoel Arcisio-Miranda

1348-Pos Board B416
VOLTAGE-GATED PROTON CHANNELS EXIST IN THE PLASMA MEMBRANE OF HUMAN OOCYTES. **Thomas E. DeCoursey**

1349-Pos Board B417
COUPLING MECHANISMS OF VSD MUTANTS OF CI-VSP. **Natsuki Mizutani**, Yasushi Okamura

1350-Pos Board B418 Travel Awardee
IN-SILICO ELECTROPHYSIOLOGY OF INNER-EAR MECHANOTRANSDUCTION CHANNEL MODELS. **Jeffrey Lotthammer**, Sanket Walujkar, Lahiru N. Wimalasena, Marcos M. Sotomayor

1351-Pos Board B419
A MODEL-DRIVEN ANALYSIS OF THERMOSENSATION MECHANISMS IN THE FAMILY OF IONOTROPIC GUSTATORY RECEPTORS FROM *DROSOPHILA* GENUS. Marzie Amirshenava, Andriy Anishkin, Aditi Mishra, Sergei I. Sukharev, Mirela Milescu, **Lorin S. Milescu**

1352-Pos Board B420
UNDERSTANDING TRANSPORT OF ANTIBIOTIC MOLECULES ACROSS OUTER MEMBRANE CHANNELS IN THEIR NATIVE ENVIRONMENT USING OUTER MEMBRANE VESICLE FUSION AS A METHOD. **Jayesh A. Bafna**, Jiajun Wang, Remi Terrasse, Lorraine Benier, mathias Winterhalter

Skeletal Muscle Mechanics, Structure, and Regulation (Boards B421 - B437)

1353-Pos Board B421
ACTIVE AND PASSIVE CONTRIBUTION TO FORCE IN SKELETAL MUSCLE FIBRES: EFFECT OF AN ACTIVE STRETCH. **Venus Joumaa**, Faruk Ortes, Walter Herzog

1354-Pos Board B422
BINDING SITE ANALYSIS OF AN ANTI-TROPOMYOSIN DESTABILIZING PEPTIDE USING FLUORESCENCE MICROSCOPY AND SPECTROSCOPY. **Blessing I. Oloyede**, Douglas D. Root

1355-Pos Board B423 Travel Awardee
DETECTION OF SUPER-RELAXED MYOSIN IN SPECIFIC HUMAN SKELETAL MUSCLE FIBER TYPES. **Lien A. Phung**, Aurora D. Foster, Mark S. Miller, Dawn A. Lowe, David D. Thomas

1356-Pos Board B424
RELGULATORY LIGHT CHAIN ORIENTAITON ON MYOSIN S1 USING A BIFUNCTIONAL SPIN LABEL. **Yahor Savich**, Megan R. McCarthy, David D. Thomas

1357-Pos Board B425
MITOCHONDRIAL ORGANIZATION IS SEVERLY MODIFIED IN SKELETAL MUSCLES OF SEPTIN7 KNOCKDOWN ANIMALS. **Mónika Gönczi**, László Szabó, Zsolt Ráduly, Nóra Dobrosi, Gréta Kis, Karolina Cseri, Beatrix Dienes, László Csernoch

1358-Pos Board B426
DEVELOPMENT OF MECHANICAL AND STRUCTURAL DYSFUNCTION IN SKELETAL MUSCLE FROM A DUCHENE MUSCULAR DYSTROPHY RAT MODEL. **Saffie Mohran**, Chen-Ching Yuan, Shawn M. Luttrell, Weikang Ma, Thomas C. Irving, David L. Mack, Michael Regnier

1359-Pos Board B427
CROSS-BRIDGE CYCLING KINETICS SLOW AT LONGER MUSCLE LENGTH IN TETANIC CONTRACTING MOUSE SOLEUS MUSCLE. **Axel J. Fenwick**, David C. Lin, Bertrand C. Tanner

1360-Pos Board B428
REAL-TIME INVESTIGATION OF SARCOMERE STRUCTURE-FUNCTION IN LIVE SKELETAL MUSCLE THROUGH FRET. **Ashley A. Martin**, Brian R. Thompson, Joseph M. Metzger

1361-Pos Board B429
SKELETAL MYOSIN-BINDING PROTEIN C ISOFORMS DIFFERENTIALLY REGULATE FAST- AND SLOW-TWITCH SKELETAL MUSCLE FUNCTION. **Shane R. Nelson**, Amy Li, Sheema Rahmanseresht, Filip Braet, Anabelle S. Cornachione, Samantha Beck Previs, Thomas O'Leary, James W. McNamara, Dilson E. Rassier, Sakthivel Sadayappan, Michael J. Previs, David M. Warshaw

1362-Pos Board B430
USE OF CELLS FROM REMOTELY COLLECTED URINE TO GENERATE HUMAN INDUCED PLURIPOTENT STEM CELLS AND MYOFIBERS THAT RECAPITULATE UNCONVENTIONAL MYOPATHIES. **Shawn M. Luttrell**, Saffie Mohran, Kati Buckingham, Michael J. Bamshad, Michael Regnier, David L. Mack

1363-Pos Board B431
STEP STRETCHES AND SHORTENINGS ELICIT SIMILAR TRANSIENT FORCE OVERSHOOTS. **Joel C. Robinett**, Laurin M. Hanft, Kerry S. McDonald

1364-Pos Board B432
INSIGHTS INTO VARIOUS TYPES OF MYOPATHY USING THE ATOMIC MODEL OF*LETHOCERUS* MYOSIN FILAMENTS. **Hamidreza Rahmani**, Nadia Daneshparvar, Dianne Taylor, Kenneth A. Taylor

1365-Pos Board B433
MUTATIONS IN THE LARGE PROTEIN NEBULIN TRIGGER TYPICAL NEMALINE MYOPATHY WITH A UNIQUE MOLECULAR MECHANISM. **Johan Lindqvist**, Weikang Ma, Yaeren Hernandez, Frank W. Li, Justin Kolb, Paola Tonino, Balazs Kiss, Robbert van der Pijl, Esmat Karimi, Zaynab Hourani, John E. Smith, Coen A. Ottenheijm, Thomas C. Irving, Henk L. Granzier

1366-Pos Board B434
MOLECULAR DYNAMICS SIMULATIONS OF ALPHA-BETA-TROPOMYOSIN SHOW CONFORMATIONAL PROPERTIES OF HETERODIMERIC TROPOMYOSIN. **Michael J. Rynkiewicz**, William Lehman

1367-Pos Board B435
STRESS-DEPENDENT ACTIVATION OF MYOSIN MOTORS CONTROLS THE COOPERATIVITY AND DYNAMICS OF FORCE GENERATION IN SKELETAL MUSCLE. **Luca Fusi**, Elisabetta Brunello, Lorenzo Marcucci, Ziqian Yan, Yin-Biao Sun, Malcolm Irving

1368-Pos Board B436
MEASUREMENT OF SKELETAL MUSCLE FIBER CONTRACTILITY WITH HIGH-SPEED TRACTION MICROSCOPY. **David Böhringer**, Martin Rausch, Martin Steinmann, Stefan Schruefer, Dirk W. Schubert, Annamaria Härtl, Christoph Mark, Ben Fabry

1369-Pos Board B437
USING POSITIONAL ISOMERS OF A SYNTHETIC NON-NUCLEOSIDE TRIPHOSPHATE TO CONTROL MYOSIN FUNCTION. **Mike Woodward**, Eric Ostrander, Xiaorong Liu, Seung Pyo Jeong, Jianhan Chen, Dhandapani Venkataraman, Edward P. Debold

Cell Mechanics, Mechanosensing, and Motility I (Boards B438 - B460)

1370-Pos Board B438
REDUCED VIMENTIN LEVEL IN FIBROBLASTS REGULATES CELL TRACTION FORCE BUT NOT MECHANOSENSING. **Minh-Tri Ho Thanh**

1371-Pos Board B439
DYNAMIC CROSSLINKING OF THE ACTIN CYTOSKELETON GOVERNS CELL MECHANICS. Loic Chaubet, Hossein Khadivi Heris, Allen J. Ehrlicher, **Adam G. Hendricks**

1372-Pos Board B440
MECHANOBIOLOGY OF EXTRAVASATING CD4(+) T-CELL CYTOSKELETON. Alexander S. Zhovmer, **Emilios K. Dimitriadis**, Xuefei Ma, Paolo P. Provenzano, Erdem D. Tabdanov

1373-Pos Board B441
EFFECTS OF INTER-DOUBLET COUPLING ON FLAGELLAR BEATING. **Louis Woodhams**, Yenan Shen, Philip Bayly

1374-Pos Board B442
AN ARTIFICIAL PROTEIN-BASED BURNT-BRIDGES MOLECULAR MOTOR DESIGN. **Chapin S. Korosec**, Nancy R. Forde

1375-Pos Board B443
REAL-TIME NANOMETER-ACCURACY TRACKING OF SINGLE LIPID DROPLETS IN LIVING CELLS. **Hoi Man Lau**, Hyokeun Park

1376-Pos Board B444
ROLE OF BRAF IN CANCER CELL EXTRAVASATION, MECHANOTRANSDUCTION IN ENDOTHELIAL MONOLAYERS. **Anna Hollosi**, Katalin Paszty, Balint Bunta, Miklós S.Z. Kellermayer, Andrea Varga

1377-Pos **Board B445**
BIOMECHANICS OF JAM-C-MEDIATED NEUTROPHIL REVERSE TRANSENDOTHELIAL MIGRATION. **Yi-Ting Yeh**, Ricardo Serrano, Ernesto Criado-Hidalgo, Juan Carlos del Álamo, Juan Carlos Lasheras

1378-Pos **Board B446**
BINDING OF RAS TO PI3K: MEASURING BINDING AFFINITY, AND THE EFFECTS OF DISEASE-LINKED H-RAS MUTATIONS ON AFFINITY. **G Hayden Swisher**, Nicholas J. Cordaro, Justin G. Martyr, Annette H. Erbse, Johnathon H. Hannan, Emily M. Kibby, Joseph J. Falke

1379-Pos **Board B447**
EFFECT OF EXTRACELLULAR MATRIX STIFFNESS GRADIENT ON DUROTAXIS MOTION AND CELL MIGRATION OF CELLS USING DYNAMIC CELLULAR FINITE ELEMENT MODEL (DYCELFEM). **Pourya Delafrouz**, Jieling Zhao, Wei Tian, Jie Liang

1380-Pos **Board B448**
PTEN-PI(4,5)P_2 POSITIVE FEEDBACK MECHANISM FOR STABILIZING ASYMMETRIC PI(3,4,5)P_3 LOCALIZATION IN MIGRATING CELL. **Daisuke Yoshioka**, Seiya Fukushima, Hiroyasu Koteishi, Daichi Okuno, Toru Ide, Satomi Matsuoka, Masahiro Ueda

1381-Pos **Board B449**
DIRECT FORCE MEASUREMENT OF THE PANC-1'S TRACTION FORCE. **Takeshi Sakamoto**, Yuwen Mei, Justin Raupp

1382-Pos **Board B450**
CELL MECHANICS AND INVASION ARE INFLUENCED BY ST6GAL-I MEDIATED SIALYLATION OF EGFR. **Tejeshwar C. Rao**, Reena R. Beggs, Katie L. Dietz, Victor Pui-Yan Ma, Khalid Salaita, Susan L. Bellis, Alexa L. Mattheyses

1383-Pos **Board B451**
BEYOND A CRITICAL STRAIN, LAMIN-A DILATES AND NUCLEI RUPTURE AT SITES OF HIGH CURVATURE. **Charlotte R. Pfeifer**, Michael P. Tobin, Lizeth Lopez, Emma G. Ricci-De Lucca, Keiann T. Simon, Dennis E. Discher

1384-Pos **Board B452**
UNDERSTANDING MECHANICAL EFFECTS ON THE DYNAMICS OF NASCENT ADHESIONS. **Laurent MacKay**, Etienne Lehman, Anmar Khadra

1385-Pos **Board B453**
LIPID DROPLETS DEFORM NUCLEUS AND CAUSE MISLOCALIZATION OF DNA REPAIR FACTORS. **Irena L. Ivanovska**, Michael P. Tobin, Charlotte R. Pfeifer, Dennis E. Discher

1386-Pos **Board B454**
ROS INDUCED CELL MECHANICAL ALTERATIONS IN SUSPENSION AND ADHERENT CELLS. **Yesaswini Komaragiri**

1387-Pos **Board B455**
THE DYNAMICS OF PROTEIN TRANSLATION IN THE PROCESS OF CELLULAR ADHESION. **Alexia Caillier**, Jonathan Bergeman, Marc-Étienne Huot

1388-Pos **Board B456**
UTILIZING MOLECULAR DYNAMICS SIMULATIONS TO PROBE THE RELEASE OF SIGNAL FACTORS FROM THE ADHERENS JUNCTION. **Brandon L. Neel**, Marcos M. Sotomayor

1389-Pos **Board B457**
GENETICALLY ENGINEERED MYOBLASTS FOR MEASURING NUCLEAR LAMINA STRESS. **Thomas M. Suchyna**, Frederick Sachs, Fanjie Meng, Wilma A. Hofmann

1390-Pos **Board B458** **Travel Awardee**
SUPER-RESOLVED MEASUREMENT OF PICONEWTON RECEPTOR FORCES VIA TENSION-PAINT. **Joshua M. Brockman**, Hanquan Su, Alexa L. Mattheyses, Yonggang Ke, Khalid Salaita

1391-Pos **Board B459**
PHYSICAL DETERMINANTS OF PARTICLE UPTAKE AND TRANSPORT DURING PHAGOCYTOSIS. Steve Keller, Simon Wieland, Wolfgang Gross, Konrad Berghoff, David Gitschier, Manuel Eisentraut, **Holger Kress**

1392-Pos **Board B460**
A SIDE-VIEW ON NUCLEAR MECHANICS: COMBINED ATOMIC FORCE MICROSCOPY AND LIGHT SHEET MICROSCOPY INFORM CHROMATIN'S ROLE IN REGULATING NUCLEAR MORPHOLOGY. **Chad Hobson**, Evan F. Nelsen, Joe Hsiao, Megan E. Kern, Andrew Stephens, E. Timothy O'Brien, Michael R. Falvo, Richard Superfine

Genetic Regulatory Systems (Boards B461 - B467)

1393-Pos **Board B461**
AGE-DEPENDENT PROTEIN DEGRADATION MODULATES NOISE OF AUTOREGULATED GENE EXPRESSION. **Ji-Hyun Kim**, Jaeyoung Sung

1394-Pos **Board B462**
PROBABILITY LANDSCAPE OF COUPLED EPIGENETIC AND GENETIC NETWORK WITH EDDY-LIKE PROBABILITY CURRENTS. **Bhaswati Bhattacharyya**, Masaki Sasai

1395-Pos **Board B463**
REPLICATION INITIATION CONTROL IN E. COLI. **Dongyang Li**, Suckjoon Jun

1396-Pos **Board B464**
IN SITU SINGLE-MOLECULE DYNAMICS OF THE SOS-REPRESSOR LEXA DURING ANTIBIOTIC STRESS. Leonard Schärfen, Milos Tisma, Andreas Hartmann, **Michael Schlierf**

1397-Pos **Board B465**
CHEMICAL DYNAMICS IN LIVING CELLS. **Jaeyoung Sung**

1398-Pos **Board B466**
DYSREGULATED CILIARY, AUTOPHAGY AND CELL CYCLING PATHWAYS MANIFEST IN HEPATOBLASTOMA TUMORS REQUIRING LIVER TRANSPLANTATION - A SYSTEMS BIOLOGY ANALYSIS. **Tejaswini Narayanan**, Mylarappa Ningappa, Rakesh Sindhi, B. W Higgs, Shankar Subramaniam

1399-Pos **Board B467**
THE EFFECT OF TIME-DEPENDENT DRIVE AND DELAYED FEEDBACK LOOP IN TWO-DIMENSIONAL GENE REGULATORY NETWORK. **Bivash Kaity**, Ratan Sarkar, Buddhapriya Chakrabarti, Mithun K. Mitra

Computational Neuroscience (Boards B468 - B475)

1400-Pos **Board B468**
CORRELATING DENDRITIC SPINE GEOMETRY AND CALCIUM TRANSIENTS TO LEARNING AND INFORMATION PROCESSING. **Christopher T. Lee**, Justin G. Laughlin, Miriam Bell, Michael Holst, Padmini Rangamani

1401-Pos **Board B469**
PHOSPHAGENS AS ENERGETIC MODERATORS AT CHEMICAL SYNAPSES: A COMPUTATIONAL APPROACH. **Sergio Sempertegui**, Yaouen Fily, Gregory T. Macleod

1402-Pos **Board B470**
COMPUTATIONAL MODELLING FRAMEWORK TO STUDY CA^{2+} ACTIVATION OF SYNAPTIC VESICLE FUSION BY DIFFERENT SYNAPTOTAGMIN ISOFORMS. **Christopher A. Norman**, Kirill E. Volynski, Shyam S. Krishnakumar, Yulia Timofeeva

1403-Pos **Board B471**
A COMPUTATIONAL MODEL OF PH DYNAMICS WITHIN THE CLEFT OF CONVENTIONAL NEURONAL SYNAPSES. **Touhid Feghhi**, Gregory T. Macleod, Roberto X. Hernandez, AWC Lau, Michal Stawarski, Jolanta A. Borycz, Zhiyuan Lu, Andrea Aragwal, Ian A. Meinertzhagen, Robert Renden

1404-Pos Board B472
COMPUTATIONAL MODEL OF PARKINSON'S DISEASE PATHOLOGY IN OLFACTORY BULB PREDICTS LOCALIZATION OF NEURAL ACTIVITY AND DISRUPTION TO OSCILLATORY BEHAVIOR. **Kendall Berry**, Daniel L. Cox

1405-Pos Board B473
PREDICTING THE MORPHOLOGY OF CLASS IV NEURONS FROM THE DYNAMICS OF DENDRITIC GROWTH IN *DROSOPHILA*. **Olivier Trottier**, Sabyasachi Sutradhar, Sonal Shree, Jonathon Howard

1406-Pos Board B474
A KINETIC MODEL TO ACCOUNT FOR SELECTIVE TRAPPING OF WEAK BASES INSIDE ACIDIC INTRA-CELLULAR VESICLES. **Philip Jordache**, William Green, Esmael Haddadian

1407-Pos Board B475
KETONE DIETS CAN REVERSE SOME BRAIN ACTIVITIES THAT ARE LOST IN AGING. **Corey Weistuch**, Lilianne Mujica-Parodi, Anar Amgalan, Syed Fahad Sultan, Ken A. Dill

Neuroscience: Experimental Approaches and Tools (Boards B476 - B488)

1408-Pos Board B476
OPTICAL MODULATION OF RECEPTOR TYROSINE KINASE SIGNALING DURING CELL DIFFERENTIATION AND EMBRYONIC DEVELOPMENT. Savanna R. Sharum, Payel Mondal, Vishnu Krishnamurthy, Kritika Mehta, Huaxun Fan, Jing Yang, **Kai Zhang**

1409-Pos Board B477 Travel Awardee
AN *IN VITRO* SYSTEM FOR STUDYING NEMATODE MECHANOSENSORY NEURONS. **Joy A. Franco**, Alakananda Das, Beth Pruitt, Miriam B. Goodman

1410-Pos Board B478
REPRODUCIBILITY IN MAGNETOGENETICS: SHARING THE LOAD. **Guillaume Duret**, Jacob T. Robinson

1411-Pos Board B479
A MATHEMATICAL MODEL OF CEREBRAL CORTICAL FOLDING DEVELOPMENT. **Ahmet Kilinc**, Monica K. Hurdal

1412-Pos Board B480
TRANSMEMBRANE HEMOPROTEIN OPTICAL REPORTERS (THORS) FOR MEMBRANE POTENTIAL SENSING. **Martin J. Iwanicki**, Brian Y. Chow, Christopher C. Moser, Bohdana M. Discher

1413-Pos Board B481
A RATIOMETRIC CALCIUM SENSORS USING BRIGHT GREEN AND RED FLUORESCENT PROTEINS FOR NEURAL CALCIUM IMAGING. **Diming Zhang**, Kimberly K. Lennox, Zhijing Zhu, Emily Redington, Yiyang Gong

1414-Pos Board B482
INFLUENCE OF MID-INFRARED LASER IRRADIATION ON MEMBRANE POTENTIALS IN NEURON-LIKE CELLS. **Yoshiyuki Shimizu**, Gen Takebe, Toyohiko Yamauchi, Tatsuo Dougakiuchi

1415-Pos Board B483
DENSE NEURONAL RECONSTRUCTION THROUGH X-RAY HOLOGRAPHIC NANO-TOMOGRAPHY. **Aaron T. Kuan**

1416-Pos Board B484
MODULATION OF HUMAN STEM CELL DERIVED NEURON ACTIVITY THROUGH ADDITION OF AN EXTERNAL CONDUCTANCE USING DYNAMIC CLAMP. Brian K. Panama, Leigh Korbel, Brandon Franks, Christine Hickey, Glenna Bett, Randall L. Rasmusson, **Mark W. Nowak**

1417-Pos Board B485
BIOMECHANICAL STRESSES DUE TO TISSUE MICROMOTION AT THE NEURAL INTERFACE MODULATE INTRACELLULAR MEMBRANE POTENTIALS. **Jonathan L. Duncan**, Swathy Sampath Kumar, Diane Iradukunda, Arati Sridharan, Jitendran Muthuswamy

1418-Pos Board B486
LIVE CELL STORM STUDIES ON THE PERINEURONAL NET IN CULTURED NEURONS. **Duncan L. Nall**, Paul R. Selvin

1419-Pos Board B487
EXTERNAL CHARGES INFLUENCE FLUORESCENT PROTEIN PROTON WIRES. **Bok Eum Kang**, Leticia Leong, Bradley J. Baker

1420-Pos Board B488
EFFECTIVENESS OF THE QUBE IN STUDYING THE RAPIDLY-DESENSITIZING ALPHA7 NICOTINIC ACETYLCHOLINE RECEPTOR. **Sung H. Park**

Electron Microscopy (Boards B489 - B512)

1421-Pos Board B489
WHAT TO EXPECT FROM CRYO-EM AT THE NCCAT NATIONAL SERVICE CENTER. **Edward T. Eng**, Elina Kopylov, Clinton S. Potter, Bridget Carragher

1422-Pos Board B490
NIH TRANSFORMATIVE HIGH RESOLUTION CRYO-EM AND CRYO-ELECTRON TOMOGRAPHY INITIATIVES. Malgorzata Klosek, **Mary Ann Wu**, Paula F. Flicker, Houmam Araj

1423-Pos Board B491
BOTTOM-UP STRUCTURAL PROTEOMICS: CRYO-EM OF PROTEIN COMPLEXES ENRICHED FROM THE CELLULAR MILIEU. Chi-Min Ho, Xiaorun Li, Mason Lai, Thomas Terwilliger, Josh Beck, James A. Wohlschlegel, Daniel E. Goldberg, Anthony W.P. Fitzpatrick, **Hong Zhou**

1424-Pos Board B492
AUTOMATED CRYO-EM STRUCTURE REFINEMENT USING CORRELATION-DRIVEN MOLECULAR DYNAMICS. **Andrea C. Vaiana**, Maxim Igaev, Lars V. Bock, Carsten Kutzner, Helmut Grubmueller

1425-Pos Board B493
DE NOVO COMPUTATIONAL PROTEIN TERTIARY STRUCTURE MODELING PIPELINE FOR CRYO-EM MAPS OF INTERMEDIATE RESOLUTION. **Daisuke Kihara**, Genki Terashi, Sai Raghavendra Maddhuri Venkata Subramaniya

1426-Pos Board B494
DAMPED DYNAMICS AS A VALIDATION PLATFORM FOR THE FLEXIBLE REFINEMENT OF ATOMIC MODELS AGAINST CRYO-EM MAPS. **Willy R. Wriggers**, Vitold E. Galkin, Wade A. Hunter, Julio A. Kovacs

1427-Pos Board B495
Z-CONTRAST ENHANCEMENT FOR SMALL PROTEIN CRYO-EM STRUCTURE DETERMINATION. Adam Oken, Jaeick Lee, Sholto David, Qing Xie, Christopher Dennison, **James Z. Chen**

1428-Pos Board B496
AUTOMATED SEGMENTATION AND CORRECTION OF MISSING-WEDGE ARTIFACTS IN CRYO-ELECTRON TOMOGRAPHY MAPS BY SHAPE-CONSTRAINED DECONVOLUTION. **Wade A. Hunter**, Julio A. Kovacs, Willy R. Wriggers

1429-Pos Board B497
SEMI-AUTOMATED 3D SEGMENTATION OF HUMAN SKELETAL MUSCLE USING FOCUSED ION BEAM-SCANNING ELECTRON MICROSCOPIC IMAGES REVEALS NETWORK OF MITOCHONDRIA. **Alexander V. Maltsev**, Brian Caffrey, Marta Gonzalez-Freire, Lisa Hartnell, Sriram Subramaniam, Luigi Ferrucci

1430-Pos **Board B498**
AUTOMATED FIBER DIAMETER AND POROSITY MEASUREMENT OF FIBRIN CLOTS IN SEM IMAGES. **Ali Daraei**, Marlien Pieters, Zelda de Lange, Martin Guthold

1431-Pos **Board B499**
NEURAL MODELING OF EUKARYOTIC CELL ULTRASTRUCTURE OBTAINED FROM 3D ELECTRON MICROSCOPY. **Matthew D. Guay**, Ruida Cheng, Zeyad A. Emam, Richard D. Leapman

1432-Pos **Board B500**
ENERGY DISPERSIVE X-RAY SPECTROMETRY IN COMBINATION WITH 3D SEM FACILITATES THE IDENTIFICATION AND SEGMENTATION OF CELLS AND ORGANELLES. **Louise Hughes**, Stuart Searle, Cheng Cheng, Iain Anderson

1433-Pos **Board B501**
QUANTITATIVE IMAGING WITH ELECTRON PROBES OF CULTURED ERYTHROBLASTS UNDERGOING ERYTHROPOIESIS. **Maria A. Aronova**, Seung-Jae Noh, Colleen Byrnes, Guofeng Zhang, Youngchan Kim, Emily R. Meier, Richard D. Leapman

1434-Pos **Board B502**
DECONSTRUCTING MECHANOTRANSDUCTION CUES FOR A QUANTITATIVE*IN SITU*CELLULAR TOMOGRAPHY WORKFLOW. **Guido M. Gaietta**, Kai Fuiboon, Valerie M. Weaver, Dorit Hanein

1435-Pos **Board B503**
CRYO-EM REVEALS ACTIN FILAMENT NUCLEATION BY ACTIVATED ARP2/3 COMPLEX. **Saikat Chowdhury**, Mohammed H. Shaaban, Brad Nolen

1436-Pos **Board B504**
ACTIN FILAMENTS IN FLIGHT MUSCLE Z-DISKS OF*LETHOCERUS INDICUS* SHOW SCREW SYMMETRY, NOT ROTATIONAL SYMMETRY. **Fatemeh A. Abbasi Yeganeh**, Corinne Summerill, Zhongjun Hu, Hamidreza Rahmani, Dianne Taylor, Kenneth A. Taylor

1437-Pos **Board B505**
WHY THE INTERACTING HEADS MOTIF IS NOT OBSERVED IN ISOLATED, RELAXED THICK FILAMENTS OF DROSOPHILA MELANOGASTER. **Nadia Daneshparvar**, Michael Previs, Thomas O'Leary, Dianne Taylor, Hamidreza Rahmani, Fatemeh Abbasiyeganeh, Kenneth A. Taylor

1438-Pos **Board B506**
CRYO-EM STRUCTURES OF CHROMATOSOMES CONTAINING HUMAN LINKER HISTONE VARIANTS. **Bing-Rui Zhou**, Hanqiao Feng, Natalia D. Val, Yawen Bai

1439-Pos **Board B507**
STRUCTURE OF THE *HELICOBACTER PYLORI* CAG TYPE IV SECRETION SYSTEM. **Jeong Min Chung**, Michael J. Sheedlo, Anne M. Campbell, Neha Sawhney, Arwen E. Frick-Cheng, D. Borden Lacy, Timothy L. Cover, Melanie D. Ohi

1440-Pos **Board B508**
STRUCTURE OF THE CYANOBACTERIAL NAD(P)H DEHYDROGENASE-LIKE COMPLEX OF OXYGENIC PHOTOSYNTHESIS. **Thomas G. Laughlin**, Andrew Bayne, Jean-Francois Trempe, David Savage, Karen Davies

1441-Pos **Board B509**
TOWARDS AN EFFICIENT RNA DELIVERY SYSTEM - STRUCTURAL INSIGHTS INTO THE INFECTION CYCLE OF SSRNA PHAGES. **Junjie Zhang**

1442-Pos **Board B510**
BILE SALTS ALTER THE MOUSE NOROVIRUS CAPSID CONFORMATION - POSSIBLE IMPLICATIONS FOR CELL ATTACHMENT AND IMMUNE EVASION. **Alexis Williams**, Hong Q. Smith, Michael Sherman, Thomas J. Smith

1443-Pos **Board B511**
A NOVEL PACKING FOR A-FORM DNA IN AN ICOSAHEDRAL VIRUS. **Fengbin Wang**, Ying Liu, Zhangli Su, James Conway, Stefan Schouten, Mart Krupovic, David Prangishvili, Edward H. Egelman

1444-Pos **Board B512**
AUTOMATED IDENTIFICATION OF FLEXIBLE MULTIVALENT IDP-BOUND ASSEMBLIES IN ELECTRON MICROGRAPHS. **Barmak Mostofian**, Russell McFarland, Elisar J. Barbar, Steve L. Reichow, Daniel M. Zuckerman

Molecular Dynamics II (Boards B513 - B538)

1445-Pos **Board B513**
CAN SIMULATIONS BE RECYCLED TO BENCHMARK RNA FORCE FIELDS. **Louis G. Smith**, Scott D. Kennedy, Douglas H. Turner, Alan Grossfield, David H. Mathews

1446-Pos **Board B514**
COARSE-GRAINED SIMULATION OF DNA-POLYETHYLENIMINE AGGREGATION AT ENDOSOMAL PH: IMPLICATIONS TO NANOPARTICLE DISSOCIATION. **Subhamoy Mahajan**, Tian Tang

1447-Pos **Board B515**
A LARGE SCALE SIMULATION OF MUCUS. **Arlette R. Baljon**, Jon Parsons

1448-Pos **Board B516**
PHOSPHORYLATION OF INTRINSICALLY DISORDERED REGIONS WITHIN THE GENOME. **Akshay Sridhar**, Guillem Portella, Modesto Orozco, Rosana Collepardo-Guevara

1449-Pos **Board B517**
RECONSTRUCTION OF ARNT PAS-B UNFOLDING PATHS BY STEERED MD AND ARTIFICIAL NEURAL NETWORK REVEALS NEW PUTATIVE BINDING CONFORMATIONS. **Stefano Motta**, Alessandro Pandini, Arianna Fornili, Laura Bonati

1450-Pos **Board B518**
STRUCTURE AND HYDRATION PROPERTY OF LOW MOLECULAR WEIGHT HYALURONIC ACID BY MOLECULAR DYNAMICS SIMULATIONS. Panyakorn Taweechat, Ras Pandey, **Pornthep Sompornpisut**

1451-Pos **Board B519**
SMALL MOLECULE INTERACTIONS WITH BACTERIAL CELL MEMBRANES: ASSESSING INSERTION BARRIERS FOR ALL THE MEMBRANES USING FREE ENERGY COMPUTATIONS. **Pradyumn Sharma**

1452-Pos **Board B520**
UNDERSTANDING MOLECULAR MECHANISMS OF THE CRISPR-CAS12A SYSTEM USING MOLECULAR DYNAMICS SIMULATIONS. **Chun Chan**, Xiaolin Cheng

1453-Pos **Board B521**
SECONDARY-STRUCTURE CHANGES IMPACT LARP1/MRNA BINDING: SIMULATIONS AND EXPERIMENTS SUGGEST NEW AVENUES FOR ANTICANCER DRUG DISCOVERY. Kevin C. Cassidy, Jesse C. Kaminsky, Andrea J. Berman, **Jacob D. Durrant**

1454-Pos **Board B522**
CHARACTERIZING WRITHED GEOMETRIES IN OPEN AND CLOSED SUPERCOILED DNA STRUCTURES. **Zachary Sierzega**, Christopher Prior, Jeffery M. Wereszczynski

1455-Pos **Board B523**
RATIONALIZING THE EFFECT OF MUTATIONS ON THE EDITING EFFICIENCY OF ADENINE BASE EDITORS. **Kartik Lakshmi Rallapalli**, Francesco Paesani, Alexis Komor

1456-Pos **Board B524**
MOLECULAR DETERMINANTS OF GAP JUNCTION CHANNELS CONDUCTANCE. **Claudia Pareja-Barrueto**, Maximiliano Rojas, Juan Carlos Sáez, Danilo Gonzalez-Nilo

1457-Pos Board B525
OBTAINING 3D ATOMISTIC STRUCTURE OF SACCHARIDES FROM RAMAN/ROA/NMR SPECTROSCOPIC TECHNIQUES. **Vladimir Palivec**, Petr Bour, Pavel Jungwirth, Jakub Kaminsky, Hector Martinez-Seara

1458-Pos Board B526
MECHANISTIC STUDIES OF THE CATALYTIC PROCESS OF MORPHINONE REDUCTASE. **Xi Chen**

1459-Pos Board B527
BINDING OF MDM2 INHIBITORS VIA BIASED SAMPLING AND MULTI-ENSEMBLE MARKOV MODELS. **Matthew F. Hurley**, Vincent Voelz

1460-Pos Board B528
MOLECULAR DYNAMICS INVESTIGATION OF THE PHYSICAL BINDING OF THE NNK DIAZONIUM ION TO TP53 EXON 5. **David Wahl**, Christos Deligkaris, Evan Millam

1461-Pos Board B529
TRANSLOCATION OF ANTHRAX LETHAL FACTOR: PERSPECTIVES FROM ATOMIC MOLECULAR DYNAMICS SIMULATIONS. **Piao Ma**, Alfredo E. Cardenas, Mangesh Chaudhari, Ron Elber, Susan L. Rempe

1462-Pos Board B530
SOLVATION THERMODYNAMIC PROPERTIES OF ANIONIC AND NATURAL SULFATE-FREE SURFACTANT MOLECULES. **Manori Jayasinghe**, Harshini Fernando

1463-Pos Board B531
COMPUTATIONAL STUDIES OF THE ORANGE CAROTENOID PROTEIN (OCP) FAMILIES, COMBINING COMPARATIVE MODELING AND MOLECULAR DYNAMICS SIMULATION. **Youngmoon Cho**, Manhyuk Han, Yvette V. Villafani, Seung Joong Kim, Jiyong Park, Younil Park

1464-Pos Board B532
UNVEILING THE STRUCTURAL PROPERTIES OF HIV-1 VESICLE FROM COARSE-GRAIN MOLECULAR DYNAMICS SIMULATIONS.
Fabio A. Gonzalez-Arias, Tyler J. Reddy, Juan R. Perilla

1465-Pos Board B533
HOOGSTEEN BASE PAIRING IN DNA VS RNA: THERMODYNAMICS AND KINETICS FROM ENHANCED SAMPLING SIMULATION AND MARKOV STATE MODELING. **Dhiman Ray**, Ioan Andricioaei

1466-Pos Board B534
EVALUATING BINDING AFFINITIES OF DIMERIZATION OF BAR PROTEINS IN SOLUTION AND ON MEMBRANE SURFACE. **Adip Jhaveri**

1467-Pos Board B535 Travel Awardee
PROTON TRANSPORT THROUGH E. COLI CLC CHLORIDE/PROTON ANTIPORTER IN THE PRESENCE OF BOUND FLUORIDE. **Baris O. Aydintug**

1468-Pos Board B536
LIPID PORE INSTABILITY IN BIPOLAR ELECTRICALLY STRESSED MEMBRANES. **Federica Castellani**, Esin B. Sozer, P. Thomas Vernier

1469-Pos Board B537
MULTI-RESOLUTION MODEL OF THE EUKARYOTIC CYTOPLASM.
Han-Yi Chou, David N. Winogradoff, Christopher M. Maffeo, Aleksei Aksimentiev

1470-Pos Board B538
MULTI-RESOLUTION SIMULATIONS OF HIV GLYCAN SHIELD REVEAL MECHANISTIC ASPECTS OF IMMUNE EVASION. **Srirupa Chakraborty**, Cesar A. Lopez, Sandrasegaram Gnanakaran

Computational Methods and Bioinformatics I (Boards B539 - B568)

1471-Pos Board B539
INVESTIGATING THE CHANGES IN AMINO ACID PROPERTIES IN THE EVOLUTIONARY AND MULTI-SCALE CONTEXT. **Daniel Kool**

1472-Pos Board B540
GENOME DASHBOARDS: A FRAMEWORK FOR UNIFYING INFORMATICS AND STRUCTURE. **Zilong Li**, Thomas C. Bishop

1473-Pos Board B541
SENSITIVITY OF DNA DAMAGE TO VARIANCE OF SIMULATION PARAMETERS IN MICROSCOPIC MONTE CARLO SIMULATION. **Yujie Chi**, Youfang Lai, Congchong Yan, Min-yu Tsai, Xun Jia

1474-Pos Board B542
CONVOLUTIONAL NEURAL NETWORKS BRIDGE MOLECULAR MODELS AND SOLUTION X-RAY SCATTERING EXPERIMENTS. **Yen-Lin Chen**, Lois Pollack

1475-Pos Board B543
STRUCTURAL INTERPRETATION OF HYDROGEN-DEUTERIUM EXCHANGE WITH MAXIMUM-ENTROPY SIMULATION REWEIGHTING.
Fabrizio Marinelli, Richard Bradshaw, José D. Faraldo-Gómez, Lucy R. Forrest

1476-Pos Board B544
FRET-BASED INTEGRATIVE STRUCTURAL MODELS AND THEIR DATABASE DEPOSITION. **Christian A. Hanke**, Hayk Vardanyan, Claus A. Seidel

1477-Pos Board B545
MULTI-SCALE IMPLEMENTATION OF 3D-RISM TO THE ELECTRONIC STRUCTURE THEORY BEING APPLICABLE FOR SOLVATED BIOMOLECULES. **Norio Yoshida**

1478-Pos Board B546
A DIFFUSION BASED EMBEDDING OF THE STOCHASTIC SIMULATION ALGORITHM IN CONTINUOUS SPACE. **Marcus Thomas**, Russell S. Schwartz

1479-Pos Board B547
THEORETICAL INVESTIGATIONS OF SELECTED MUTATIONS AND EXPLORING THE CATALYTIC SPACE OF ADENYLOSUCCINATE LYASE - A POTENTIAL TARGET FOR *L DONOVANI*. **Nikita Bora**

1480-Pos Board B548
TARGETING COVALENT COMPLEX OF HUMAN TOPOISOMERASE I WITH DNA. **Purushottam Tiwari**, Yuk-Ching Tse-Dinh, Aykut Üren

1481-Pos Board B549
IDENTIFYING TIME-RESOLVED ALLOSTERIC SIGNALING PATHWAYS IN PROTEINS USING SUPERVISED MACHINE LEARNING. **Nalvi D. Duro**, Sameer Varma

1482-Pos Board B550
PROTEIN TRANSITION PATHWAY GENERATION GUIDED BY INTERNAL COORDINATE NORMAL MODES. **Byung Ho Lee**, Soon Woo Park, Hyunki Kim, Moon Ki Kim

1483-Pos Board B551
LEARNING DYNAMICAL INFORMATION FROM STATIC PROTEIN AND SEQUENCING DATA. **Philip Pearce**, Francis G. Woodhouse, Aden Forrow, Halim Kusumaatmaja, Jorn Dunkel

1484-Pos Board B552
DETECTING FUNCTIONAL DYNAMICS IN PROTEINS WITH COMPARATIVE PERTURBED-ENSEMBLES ANALYSIS. **Xin-Qiu Yao**, Donald Hamelberg

1485-Pos Board B553
STATISTICAL ANALYSIS OF PROTEIN DYNAMICS USING THE KOSMOS DATABASE. **Hyunki Kim**, Soon Woo Park, Byung Ho Lee, Moon Ki Kim

1486-Pos **Board B554**
SAMPLING SOLVATION FREE ENERGY OF ELECTROLYTIC SOLVENTS WITH 3D2PT. **Edgar Manriquez-Sandoval**

1487-Pos **Board B555**
HYBRID QUANTUM MECHANICS/ROSETTA MODELING MECHANISTIC STUDY OF A TERPENE SYNTHASE. **Sophie R. Shoemaker**, Yue Zhang, Terrence O'Brien, Dean Tantillo, Justin B. Siegel

1488-Pos **Board B556**
REPLICA-PERMUTATION METHODS IN ISOTHERMAL-ISOBARIC ENSEMBLE AND THEIR APPLICATIONS TO INVESTIGATE PROTEIN STABILITY UNDER HIGH-PRESSURE CONDITIONS. **Masataka Yamauchi**, Hisashi Okumura

1489-Pos **Board B557**
COMBINED THEORETICAL AND COMPUTATIONAL APPROACH FOR CALCULATING SEQUENCE-SPECIFIC PHASE DIAGRAMS OF THERMORESPONSIVE INTRINSICALLY DISORDERED HOMOPOLYPEPTIDES. **Xiangze Zeng**, Rohit V. Pappu

1490-Pos **Board B558**
MATHEMATICALLY MODELING MECHANISMS OF MOLECULAR IDENTITY IN BIOMOLECULAR CONDENSATES. **Kelsey Gasior**, M. Greg Forest, Amy S. Gladfelter, Jay Newby

1491-Pos **Board B559**
ELECTROPHORETIC TRAPPING OF A SINGLE PROTEIN INSIDE A NANOPORE. **Kherim Willems**, Dino Ruić, Annemie Biesemans, Nicole Galenkamp, Pol Van Dorpe, Giovanni Maglia

1492-Pos **Board B560**
INTERACTION ANALYSIS BETWEEN HIV GP120 AND THE ANTIBODIES BY FRAGMENT MOLECULAR ORBITAL METHOD. **Norihito Kawashita**

1493-Pos **Board B561**
RANKING OF LIGAND BINDING KINETICS USING A WEIGHTED ENSEMBLE APPROACH AND COMPARISON WITH MILESTONING. **Surl-Hee Ahn**, Benjamin Jagger, Rommie E. Amaro

1494-Pos **Board B562**
STOCHASTIC SIMULATION OF CLOSE-CONTACT DYNAMICS IN IMMUNE RECOGNITION. **Jonathan M. Morgan**, Alan Lindsay, Omer Dushek, Johannes Pettmann

1495-Pos **Board B563**
LASSA VIRUS EPITOPE-ALLELE COMPLEXES IDENTIFIED THROUGH COMPUTATIONAL MODELING. **Prabin Baral**, Elumalai Pavadai, Bernard Gerstman, Prem P. Chapagain

1496-Pos **Board B564** **Travel Awardee**
COMPUTER VISION FOR PROTEIN-PROTEIN DOCKING. **Lucas S.P. Rudden**, Matteo T. Degiacomi, Chris G. Willcocks

1497-Pos **Board B565**
DOCKING DECOYS FOR MODELED PROTEINS. **Ian P. Kotthoff**, Petras J. Kundrotas, Ilya A. Vakser

1498-Pos **Board B566** **Travel Awardee**
DYNAMICAL METRICS TO FINGERPRINT PROTEINS AND PROTEIN-PROTEIN INTERACTIONS. **Sanjoy Paul**, Ravindra Venkatramani

1499-Pos **Board B567**
ALGORITHMS FOR PARAMETERIZING NETWORK HAMILTONIANS FOR SIMULATIONS OF AMYLOID FIBRIL SELF-ASSEMBLY. **Gianmarc Grazioli**, Yue Yu, Megha H. Unhelkar, Rachel W. Martin, Carter T. Butts

1500-Pos **Board B568**
PHYSICO-CHEMICAL PROPERTIES OF THE STRONG TOBACCO SMOKE CARCINOGEN NNK DIAZONIUM ION. **Christos Deligkaris**, Evan Millam, David Wahl

Optical Microscopy and Superresolution Imaging II (Boards B569 - B603)

1501-Pos **Board B569** **Travel Awardee**
DEVELOPMENT OF A SINGLE-CELL LABEL-FREE DRUG TESTING PLATFORM USING FLUORESCENCE LIFETIME IMAGING MICROSCOPY (FLIM) FOR PATIENTS WITH METASTATIC CANCER. **Ning Ma**

1502-Pos **Board B570**
PHASOR-FLIM QUANTIFICATION OF CHANGES IN KERATINOCYTE METABOLISM AND TISSUE ARCHITECTURE IN A LONGITUDINAL STUDY OF UV-INDUCED SKIN CANCER. **Michael G. Nichols**, Molly Myers, Dominick Myers, Kelsey A. Jackson, Ben G. Huerter, Duyen Nguyen, Connor J. Kalhorn, George Varghese, Katie D. Sotelo, Marifel Frances Gabriel, Dan L. Che, Emiliano Altuzar, Anya Long, Jackson W. Morris, Laura A. Hansen

1503-Pos **Board B571**
MAPPING THE SPATIOTEMPORAL HETEROGENEITY OF BIOMOLECULES CONCENTRATION, MOBILITY AND LOCAL ENVIRONMENT IN LIVE CELLS USING QUANTITATIVE TIME-RESOLVED CONFOCAL FLUORESCENCE MICROSCOPY IMAGING WITHOUT SCANNING AND FLUORESCENCE LIFETIME IMAGING MICROSCOPY. **Sho Oasa**, Aleksandar Krmpot, Stanko Nikolic, Lars Terenius, Rudolf Rigler, Vladana Vukojevic

1504-Pos **Board B572**
AO-DIVER ADVANCES THE DEPTH LIMITS OF MULTIPHOTON MICROSCOPY IN SCATTERING MEDIA. **Simon W. Leemans**, Alexander Dvornikov, Tara Gallagher, Enrico Gratton

1505-Pos **Board B573**
NON-DESTRUCTIVELY ANALYZING THE METABOLIC DYSREGULATION OF INVASIVE CANCER CELLS ON AN INTRACELLULAR SCALE. **Austin E.Y.T. Lefebvre**, Freddie A. Adame, Mingjuan Liu, Michelle A. Digman

1506-Pos **Board B574**
TCSPC CAMERA FOR REAL TIME VIDEO RATE FLIM ACQUISITION BASED ON CMOS TECHNOLOGY. **Graham Hungerford**, David McLoskey, Richard Hirsch, Philip Yip, David J. Birch, Nick Johnston, Robert K. Henderson

1507-Pos **Board B575**
SINGLE-OBJECTIVE MULTIPHOTON LIGHT-SHEET MICROSCOPY FOR LUNG CANCER ORGANOID SCREENING. **Trung D. Nguyen**, Yen-Liang Liu, Dat Nguyen, Yuan-I Chen, Yu-An Kuo, SoonWoo Hong, Andrew K. Dunn, Tim Yeh

1508-Pos **Board B576**
MEASURING THE SPATIAL DISTRIBUTION OF DIPOLAR RELAXATION IN LIVE ZEBRAFISH EYE LENSES DURING DEVELOPMENT.
Alexander Vallmitjana, Irene Vorontsova, Belén Torrado, Thomas F. Schilling, James E. Hall, Enrico Gratton, Leonel S. Malacrida

1509-Pos **Board B577**
WATER DYNAMICS OF A MODEL PROTEIN PHASE SEPARATION VIA FLUORESCENCE LIFETIME AND SPECTRAL ANALYSIS OF ACDAN.
Francesco Palomba, Lorenzo Scipioni, Enrico Gratton, Michelle A. Digman

1510-Pos **Board B578**
CADHERIN ORGANIZATION IN DESMOSOMES PROBED USING FLUORESCENCE POLARIZATION MICROSCOPY. **William F. Dean**, Emily I. Bartle, Alexa L. Mattheyses

1511-Pos **Board B579**
ACCURATE FLUORESCENCE FLUCTUATION ANALYSIS OF DIFFUSING PROTEINS IN LIVING CELLS WITH TIME-SHIFTED SEGMENTED Q ANALYSIS. **John Kohler**, Kwang Ho Hur, Jared Hennen, Joachim D. Mueller

1512-Pos **Board B580**
OBSERVATION OF TORSINA POLYMERIZATION AT THE NUCLEAR ENVELOPE BY QUANTITATIVE PHOTOBLEACHING AND FLUORESCENCE FLUCTUATION ANALYSIS. **Kwang Ho Hur**, Jared Hennen, Amy Schoenhofen, GW Gant Luxton, Joachim D. Mueller

1513-Pos Board B581
DIFFERENTIATING MEMBRANE-ASSOCIATED AND SOLUBLE PROTEIN POPULATIONS WITHIN THE NUCLEAR ENVELOPE VIA FLUORESCENCE FLUCTUATION SPECTROSCOPY. Jared Hennen, Kwang Ho Hur, John Kohler, GW Gant Luxton, **Joachim D. Mueller**

1514-Pos Board B582
IMAGE CORRELATION MICROSCOPY APPROACH TO STUDY COLLAGEN ACCUMULATION FOR DISTINGUISHING RECURRENCE IN LIVER CANCER PATIENTS. Christine Hsu, Enrico Gratton, Robert Anders, Avi Rosenberg, Moshe Levi, **Suman Ranjit**

1515-Pos Board B583
COUNTING PROTEINS AND NUCLEIC ACIDS WITH SINGLE-MOLECULE MICROSCOPY. Daniel Nino, Daniel Djarkarsana, **Joshua N. Milstein**

1516-Pos Board B584
TIRF MICROSCOPY STUDIES OF AXIAL PROTEIN ORGANIZATION USING PHOTOSWITCHABLE FLUORESCENT PROTEINS. **Gaetan G. Herbomel**, George H. Patterson

1517-Pos Board B585 Travel Awardee
A HIGH-THROUGHPUT IMAGE CORRELATION METHOD FOR RAPID ANALYSIS OF FLUOROPHORE PHOTOBLINKING AND PHOTOBLEACHING RATES. **Simon Sehayek**, Yasser Gidi, Viktorija Glembockyte, Hugo B. Brandao, Paul Francois, Gonzalo Cosa, Paul W. Wiseman

1518-Pos Board B586
STOKES-VECTOR RESOLVED MULTIPHOTON/FLUORESCENCE CONFOCAL SCANNING MICROSCOPY. **Aymeric Le Gratiet**, Riccardo Marongiu, Muhammad W. Ashraf, Paolo Bianchini, Alberto Diaspro

1519-Pos Board B587
DIMERIZATION OF B2-ADRENERGIC RECEPTOR IS RESPONSIBLE FOR THE BASAL ACTIVITY SUBJECTED TO INVERSE AGONISM. **Min Gyu Jeong**

1520-Pos Board B588
ADVANTAGES OF NON-DEGENERATE TWO-PHOTON MICROSCOPY FOR DEEP TISSUE IMAGING. **Sanaz Sadegh**, Mu-Han Yang, Christopher Ferri, Martin Thunemann, Anna Devor, Yeshaiahu Fainman

1521-Pos Board B589
LIGAND DEPENDENCE OF HORMONE ACTION IN GLUCOCORTICOID RECEPTOR STUDIED BY 3D ORBITAL TRACKING FLUORESCENCE CROSS CORRELATION SPECTROSCOPY. Julianna Goelzer, **Abigail Figueroa**, Diana A. Stavreva, Gordon Hager, Matthew L. Ferguson

1522-Pos Board B590 Travel Awardee
MOLECULAR COUNTING WITH CALIBRATED LABELING AND QUANTITATIVE FLUORESCENCE MICROSCOPY. **Klaus Yserentant**, Johan Hummert, Dirk-Peter Herten

1523-Pos Board B591
DIRECTIONALITY OF LIGHT ABSORPTION IN FLUORESCENT PROTEINS. **Josef Lazar**, Olga Rybakova, Jitka Myskova, Jiri Brynda, Petro Khoroshyy, Hector Martinez-Seara

1524-Pos Board B592
MODULATION OF EGFR ACTIVATION BY DIRECT INTERACTION WITH CHOLESTEROL IN THE PLASMA MEMBRANE. **Triet M. Hong**

1525-Pos Board B593
POLARIZED OFF-AXIS DIGITAL HOLOGRAPHIC MICROSCOPE WITH PARTIAL COHERENCE ILLUMINATION. **Jin Lei**, Christopher M. Yip

1526-Pos Board B594
MOTILITY-BASED SINGLE-CELL CAPTURE AND EXPANSION FROM A HETEROGENEOUS CELL CULTURE. **Nicolas Desjardins-Lecavalier**, Loïc Binan, Joannie Roy, Santiago Costantino

1527-Pos Board B595
BLUE-CONVERSION OF ORGANIC DYES PRODUCES THE ARTIFACTS OF MULTI-COLOR FLUORESCENT IMAGING. **Yeonho Chang**

1528-Pos Board B596
A NOVEL PHOTOCONVERTIBLE PROTEIN FOR ACCURATE SINGLE MOLECULE COUNTING. **Purba Kashyap**, Saskia Kutz, Helge Ewers

1529-Pos Board B597
SIM-ENHANCED PTYCHOGRAPHY IMAGING OF HELA CELLS. **Alberta Trianni**, Nicholas Anthony, Isotta Cainero, Alberto Diaspro

1530-Pos Board B598
MITIGATING PHOTOTOXICITY IN SINGLE-MOLECULE LOCALIZATION MICROSCOPY USING PRECISELY CALIBRATED AND SPATIALLY INFORMED PHOTOACTIVATION. **Angel Mancebo**, Elias M. Puchner

1531-Pos Board B599
BAYESIAN GROUPING OF LOCALIZATIONS, SUB-NANOMETER PRECISION, COUNTING AND RESOLUTION DOUBLING. **Mohamadreza Fazel**, Sebastian Restrepo Cruz, Jennifer Gillette, Bernd Rieger, Ralf Jungmann, Keith A. Lidke

1532-Pos Board B600
DIRECTED MANIPULATION OF MEMBRANE PROTEINS BY FLUORESCENT MAGNETIC NANOPARTICLES. **Jia Hui Li**, Braedyn Au, Jakob Rentsch, Stephan Block, Helge Ewers

1533-Pos Board B601
A NOVEL TARGETING APPROACH FOR CANCER TREATMENT BASED ON PHOTODYNAMIC THERAPY. **Eleonora Uriati**, Cristiano Viappiani, Paolo Bianchini, Alberto Diaspro, Stefania Abbruzzetti

1534-Pos Board B602
SINGLE MOLECULES DYNAMICS LEARNED FROM SINGLE PHOTONS- FLIM AND FCS WITH BAYESIAN NONPARAMETRICS. **Meysam Tavakoli**, Sina Jazani, Ioannis Sgouralis, Steve Presse

1535-Pos Board B603
IN CELL KINETIC FRET ASSAY TO JUDGE SUITABILITY OF BIOORTHOGONAL DYE LABELLING REACTION. **Christine Koehler**, Christopher D. Reinkemeier, Paul Sauter, Nataliia Shymanska, Edward A. Lemke

Biosensors I
(Boards B604 - B618)

1536-Pos Board B604
DRAWING SILICONE FIBER OPTICS FOR FLEXIBLE BIOSENSORS. **Katherine Snell**, Isabelle Lopez, Brandon Louie, Abby DeShazo, Babak Sanii

1537-Pos Board B605
MAPPING THE OXYGENATION WITHIN INTRACELLULAR COMPARTMENTS USING MYO-MCHERRY FLUORESCENCE LIFETIME IMAGING.
Rozhin Penjweini, Alessandra Pasut, Branden Roarke, Greg Alspaugh, Jay R. Knutson

1538-Pos Board B606
DIVERSE APPLICATIONS OF INTERMOLECULAR FRET IN VOLTAGE IMAGING. **Lee Min Leong**, Bok Eum Kang, Bradley J. Baker

1539-Pos Board B607
SINGLE-POLYPEPTIDE SERCA-PHOSPHOLAMBAN FUSED FRET BIOSENSOR FOR HIGH-THROUGHPUT CARDIAC-SPECIFIC DRUG DISCOVERY. **Evan Kleinboehl**, Tory Schaaf, Samantha Yuen, Lauren N. Roelike, Bengt Svensson, Andrew R. Thompson, Razvan L. Cornea, David D. Thomas

1540-Pos Board B608
A FRET-BASED PROBE FOR HIGH THROUGHPUT DNA INTERCALATOR DRUG DISCOVERY AND *IN VIVO* IMAGING. **Chandrashekhar U. Murade**, Samata Chadhuri, Ibtissem Nabita, Hala Fahs, Fathima Refai, Kris Gunsalus, George Shubeita

1541-Pos **Board B609**
NANOPIN - A MEMS BASED SENSOR FOR THE ANALYSIS OF SINGLE-CELL MECHANICAL PROPERTES. **Stanislav Karsten**, Lili Kudo, Zhongcai Ma, Momoko Kumemura

1542-Pos **Board B610**
DEVELOPMENT OF A SMELL BIOSENSOR SYSTEM FOR EARLY DETECTION OF PLANT DISEASES. Tímea Dóra Miskolczi, Katalin Zboray, Anikó Keszőce, Zainab Quddoos, Zsuzsanna Ambrózy, Kamirán Áron Hamow, Adam Toth, László Sági, Magdolna Olívia Szelényi, Dalma Radványi, Mátyás Csaba Földi, Béla Péter Molnár, Krisztina Pesti, Arpad Mike, **Péter Lukács**

1543-Pos **Board B611**
CHARACTERIZATION AND ANALYSIS OF LEUKOTOXIN-CONTAINING OUTER MEMBRANE VESICLES. **Megan E. Blauch**, Justin B. Nice, Angela C. Brown, Nathan J. Wittenberg

1544-Pos **Board B612**
DETECTION OF SPHINGOMYELINASE ENZYME BY METHYLENE BLUE ENCAPSULATED LIPOSOME APPLYING ELECTROCHEMICAL AMPLIFIED PROCESS. **Ankan Dutta Chowdhury**, Enoch Y. Park

1545-Pos **Board B613** **Travel Awardee**
FLUOROMETRIC SENSING PLATFORM BASED ON LOCALIZED SURFACE PLASMON RESONANCE USING QUANTUM DOTS-GOLD NANOCOMPOSITES OPTIMIZING THE LINKER LENGTH VARIATION. **Fahmida Nasrin**, Ankan Dutta Chowdhury, Kenshin Takemura, Enoch Y Park

1546-Pos **Board B614**
WIDE DYNAMIC RANGE DETECTION OF TARGET DNA BY SINGLE PARTICLE MICROSCOPY OF DNA-GOLD NANOPARTICLE MULTIMERS. **Keiko Esashika**, Takaha Mizuguchi, Toshiharu Saiki

1547-Pos **Board B615**
THE OPENPICOAMP-100K, AN OPEN-SOURCE HIGH PERFORMANCE AMPLIFIER FOR SINGLE CHANNEL RECORDING IN PLANAR LIPID BILAYERS. **Vadim Shlyonsky**, David Gall

1548-Pos **Board B616**
RESISTIVE PULSE SENSORS FOR BIOSENSORS. Marcus Pollard, Federico Thei, **Mark Platt**

1549-Pos **Board B617**
1024-CH ELECTROCHEMICAL RECORDINGS OF SINGLE-CELL NEUROTRANSMITTER SECRETION FROM HUMAN NEUROBLASTOMA CELLS USING MONOLITHIC CMOS BIOELECTRONICS. Kevin A. White, Geoffrey Mulberry, **Brian N. Kim**

1550-Pos **Board B618**
USING ELECTRIC CELL-SUBSTRATE IMPEDANCE SENSING TO CHARACTERIZE EFFECTS OF CURCUMIN ON NRK CELLS. **Erin M. Troy**, Derek L. Beahm

Biophysics Education (Boards B619 - B626)

1551-Pos **Board B619**
SCIENTIFIC SOCIETIES JOIN FORCES TO AMPLIFY EFFECTIVENESS OF STEM WORKFORCE DIVERSIFICATION PROGRAMMING.
Marina Ramirez-Alvarado, Veronica Segarra

1552-Pos **Board B620**
TEACHING BIOPHYSICS TO BLIND OR LOW VISION (BLV) STUDENTS AT MIDDLE SCHOOL. **Yuly E. Sánchez**, Angie V. Rodriguez, Edgar A. Reyes

1553-Pos **Board B621**
HELPING UNDERGRADUATE STUDENTS TO UNDERSTAND THE CONNECTION BETWEEN PHYSICS AND BIOLOGY. **Christopher Bassey**

1554-Pos **Board B622**
INTEGRATING COMPUTATION AND WET LAB METHODS IN A BIOCHEMISTRY LAB COURSE-BASED UNDERGRADUATE RESEARCH EXPERIENCE (CURE). **Julia R. Koeppe**, Ashley Ringer McDonald, Rebecca Roberts, Paul A. Craig

1555-Pos **Board B623**
MULTIMEDIA JUPYTER NOTEBOOKS FOR LEARNING STRUCTURE PREDICTION AND DESIGN. **Kathy H. Le**, Sergey Lyskov, Jeffrey J. Gray

1556-Pos **Board B624**
INVESTIGATION OF SEA URCHIN SPERM MOTILITY: AN UNDERGRADUATE PROJECT. **Jesús González**, Ana G. Villalba-Villalba, Amir Maldonado

1557-Pos **Board B625**
RESEARCH PROJECT FOR UNDERGRADUATE LEVEL STUDENTS: TOXIC METALS BIOSORPTION POTENTIAL OF ASPERGILLUS SPP.
Brenda Leyva-Amaya

1558-Pos **Board B626**
INCREASING BIOCHEMISTRY SELF-EFFICACY IN FRESHMEN STUDENTS THROUGH HANDS-ON EXPERIENCE. **Clarisse L. van der Feltz**, Mario Pennella, Lynne Prost

Tuesday, February 18, 2020

Daily Program Summary

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

7:30 AM–5:00 PM	**Registration/Information**	**Lobby G**
8:00 AM–9:00 AM	**Biophysical Society Business Meeting**	**Room 28AB**
8:00 AM–4:00 PM	**Poster Viewing**	**Exhibit Hall**
8:15 AM–10:15 AM	**Symposium: ATP-driven Maintenance of Protein Homeostasis** **Chair:** *Aaron Lucius, University of Alabama at Birmingham* REVISITING THE ATP-DRIVEN CHAPERONIN GROEL-GROES REACTION CYCLE. *Hideki Taguchi* COTRANSLATIONAL FOLDING OF PROTEIN DOMAINS ON THE RIBOSOME. *Marina Rodnina* PROTEOSTASIS AND VIRAL EVOLUTION. *Matthew D. Shoulders* MOLECULAR MECHANISMS OF ENZYME CATALYZED PROTEIN UNFOLDING AND TRANSLOCATION BY CLASS 1 AAA^{+} MOTOR. *Aaron L. Lucius*	**Ballroom 20A**
8:15 AM–10:15 AM	**Symposium: Synthetic Biology** **Chair:** *Yvonne Chen, University of California, Los Angeles* ENGINEERING DNA NANODEVICES TO ADVANCE BIOMOLECULAR ANALYSIS. *Peng Yin* MULTIPLEXABLE MOLECULAR CIRCUIT REPORTERS DESIGNED FOR NANOPORE SENSOR READOUT. *Jeff Nivala* PROTEIN FOLDING ON THE RIBOSOME - INSIGHTS FROM GENE EDITING AND STRUCTURAL BIOLOGY. *John Christodoulou* ENGINEERING NEXT-GENERATION T CELLS FOR CANCER IMMUNOTHERAPY. *Yvonne Y. Chen*	**Ballroom 20D**
8:15 AM–10:15 AM	**Platform: Protein Dynamics and Allostery II**	**Ballroom 20BC**
8:15 AM–10:15 AM	**Platform: Membrane Physical Chemistry**	**Room 23ABC**
8:15 AM–10:15 AM	**Platform: Protein-Small Molecule Interactions**	**Room 24ABC**
8:15 AM–10:15 AM	**Platform: Ion Channels, Pharmacology, and Disease**	**Room 25ABC**
8:15 AM–10:15 AM	**Platform: Cardiac Muscle Regulation**	**Room 30ABC**
8:15 AM–10:15 AM	**Platform: Calcium Signaling**	**Room 31ABC**
9:00 AM–10:30 AM	**Subgroup Chairs Meeting**	**Room 32A**
9:30 AM–10:30 AM	**Career Development Center Workshop:** **Looking Beyond Academia: Identifying your Career options using MyIDP, LinkedIn & More**	**Room 26A**
9:30 AM–11:00 AM	**Exhibitor Presentation: Sophion Bioscience A/S** **Characterization of the Rapidly Desensitizing α7 Nicotinic Acetylcholine Receptor on the Qube, NaV1.1 Assays on Automated Electrophysiology Platforms and Developing NMDA Assays on the Qube System**	**Room 33A**
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:** *David Piston, Washington University in St. Louis and BPS President* PAPER OF THE YEAR. *Carlos R. Baiz* IGNACIO TINOCO AWARD. *Elliot L. Elson* FOUNDERS AWARD. *Dan M. Herschlag* MARGARET OAKLEY DAYHOFF AWARD. *Valeria Vásquez* MICHAEL AND KATE BÁRÁNY AWARD. *Clifford P. Brangwynne* AVANTI AWARD IN LIPIDS. *Akihiro Kusumi* BIOPHYSICS IN HEALTH AND DISEASE. *Alexandra C. Newton* KAZUHIKO KINOSITA AWARD IN SINGLE MOLECULE BIOPHYSICS. *Yale E. Goldman* INNOVATION AWARD. *G. Marius Clore* ANATRACE MEMBRANE PROTEIN AWARD. *Gunnar von Heijne*	**Ballroom 20A**

10:45 AM–12:45 PM	**Platform: Optical Microscopy and Superresolution Imaging III**	**Ballroom 20BC**
10:45 AM–12:45 PM	**Platform: Voltage Sensor to Pore Coupling**	**Room 23ABC**
10:45 AM–12:45 PM	**Platform: DNA/RNA Structure and Dynamics**	**Room 24ABC**
10:45 AM–12:45 PM	**Platform: Protein Structure and Conformation III**	**Room 25ABC**
10:45 AM–12:45 PM	**Platform: Protein Stability, Folding, and Chaperones**	**Room 30ABC**
10:45 AM–12:45 PM	**Platform: Computational Methods and Bioinformatics**	**Room 31ABC**
11:30 AM–12:30 PM	**Career Development Center Workshop: Negotiation for Nerds: Negotiation Strategies and Tactics and Evaluating a Job Offer**	**Room 26A**
12:00 PM–1:30 PM	**Funding Opportunities for Faculty at Primarily Undergraduate Institutions**	**Room 29AB**
12:00 PM–1:30 PM	**Postdoc to Faculty Q&A: Transitions Forum and Luncheon**	**Room 32AB**
1:00 PM–3:00 PM	***The Biophysicist* Editorial Board Meeting**	**Room 30D**
1:15 PM–2:45 PM	**Climate Change We *Want* to See: Mitigating Unconscious Bias in the Biophysical Professions**	**Room 28AB**
1:30 PM–3:00 PM	**The Nuts and Bolts of Preparing Your NIH Grant**	**Room 28CDE**
1:30 PM–3:00 PM	**Exhibitor Presentation: HORIBA Scientific** **A New Imaging Camera Technology Featuring TDC In-Pixel Architecture for Simple Dynamic FLIM Imaging at Video Rates**	**Room 33A**
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: Going Live: Preparing for Interviews in Industry and Academia**	**Room 26A**
3:00 PM–5:00 PM	**Education Committee Meeting**	**Room 30D**
4:00 PM–6:00 PM	**Symposium: Neuron–glia Interactions** **Ballroom 20A** **Chair:** *Kira Poskanzer, University of California, San Francisco* CONSEQUENCES OF ASTROGLIAL MODULATION OF EXTRACELLULAR CALCIUM CONCENTRATION ON NEURONAL FIRING INVOLVING SODIUM CHANNELS. *Arlette Kolta* DISSECTING THE METABOLIC RESPONSE TO NEURONAL STIMULATION. *Gary Yellen* NEURON-GLIA INTERACTION IN THE LIGHT OF TWO-PHOTON IMAGING. *Bruno Weber* OPTICALLY DECODING ASTROCYTIC NETWORKS. *Kira Poskanzer*	
4:00 PM–6:00 PM	**Symposium: Exocytosis & Autophagy** **Ballroom 20D** **Chair:** *Arun Anantharam, University of Michigan* ARCHITECTURE OF MAMMALIAN RETROMER BY SINGLE PARTICLE CRYO-EM. *Lauren P. Jackson* EXOCYST TETHERING COMPLEX REGULATION OF SNARE PROTEINS AND MEMBRANE FUSION. *Mary Munson* CA^{2+}- AND PHOSPHOLIPID-DEPENDENT MECHANISMS FOR THE COUPLING OF SYNAPTIC VESICLE CONSUMPTION AND RE-SUPPLY RATES. *Noa Lipstein-Thoms* PRE- AND POST-SYNAPTIC ROLES OF SYNAPTOTAGMIN-7 IN EXOCYTOSIS. *Arun Anantharam*	
4:00 PM–6:00 PM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II**	**Ballroom 20BC**
4:00 PM–6:00 PM	**Platform: Membrane Active Peptides and Toxins**	**Room 23ABC**
4:00 PM–6:00 PM	**Platform: Cardiac, Smooth, and Skeletal Muscle Electrophysiology and Regulation I**	**Room 24ABC**
4:00 PM–6:00 PM	**Platform: Genetic, Cellular, Synthetic, and Systems Biology**	**Room 25ABC**
4:00 PM–6:00 PM	**Platform: Micro- and Nanotechnology**	**Room 30ABC**
4:00 PM–6:00 PM	**Platform: Cytoskeletal Assemblies, Dynamics, Transport, and Motility**	**Room 31ABC**
6:00 PM–6:30 PM	**Dinner Meet-Ups**	**Society Booth/Lobby G**
6:00 PM–10:00 PM	**Publications Committee Meeting**	**Hilton, Cobalt 500AB**

7:30 PM–9:30 PM	**Workshop: Design and Constructing Quantitative Biosensors** **Chair:** *Edward Lemke, IMB Mainz, Germany* FOLDING-BASED ELECTROCHEMICAL BIOSENSORS: A GENERALIZABLE APPROACH TO REAL-TIME, *IN-VIVO* MOLECULAR MEASUREMENTS. *Kevin W. Plaxco* TMP-TAG: A CHEMICAL SURROGATE TO THE FLUORESCENT PROTEINS FOR LIVE CELL IMAGING. *Virginia W. Cornish* NEW FLUORESCENT AND BIOLUMINESCENT PROBES AND SENSORS. *Kai Johnsson* HIGH PERFORMANCE GENETICALLY ENCODED BIOSENSORS OF CELL METABOLISM. *Robert E. Campbell* VERSATILE SENSOR DESIGN IN CELLULO BY COMBINING MEMBRANELESS ORGANELLES WITH CLICK CHEMISTRY. *Edward A. Lemke*	**Room 24ABC**
7:30 PM–9:30 PM	**Workshop: Chemical Biology Tools for Biophysics** **Chair:** *Henry Colecraft, Columbia University* ADJUSTING MAIN-CHAIN CHEMISTRY IN ION CHANNEL VOLTAGE-SENSORS. *Christopher A. Ahern* INSERTION OF SYNTHETIC PEPTIDES INTO PROTEINS BY TANDEM PROTEIN TRANS-SPLICING. *Stephan A. Pless* GENETICALLY-ENCODED TAGS FOR CORRELATIVE FLUORESCENCE AND ELECTRON MICROSCOPY. *Kimberly Beatty* CONTROLLING THE FATE AND FUNCTION OF PROTEINS WITH PHOTOPHARMACOLOGY. *Dirk Trauner* TARGETED (DE)UBIQUITINATION OF ION CHANNELS: FROM MECHANISTIC INSIGHTS TO TRANSLATION. *Henry Colecraft*	**Room 25ABC**
7:30 PM–9:30 PM	**Workshop: Simulation Strategies for Large Scales** **Chair:** *Tobin Sosnick, University of Chicago* WEIGHTED ENSEMBLE SIMULATION: TACKLING THE CHALLENGES OF LONG-TIMESCALE KINETICS. *Lillian Chong* ON THE ALGORITHMIC IDENTIFICATION OF OPTIMAL COARSE-GRAINED REPRESENTATIONS OF BIOMOLECULES. *Raffaello Potestio* GOING BIG: MILLION ATOM SIMULATIONS OF RIBOSOMES AND BILLION ATOM SIMULATIONS OF CHROMATIN. *Karissa Y. Sanbonmatsu* CHALLENGES TO THE CREATION OF DYNAMIC STRUCTURAL MODELS OF INTRACELLULAR SYSTEMS. *Adrian H. Elcock* UPSIDE: PROTEIN FOLDING IN CPU-HOURS WITH APPLICATIONS TO FORCE-UNFOLDING OF MEMBRANE PROTEINS. *Tobin R. Sosnick*	**Room 30ABC**
7:30 PM–9:30 PM	**Workshop: Fluorescence Correlation Spectroscopy** **Chair:** *Elizabeth Hinde, University of Melbourne, Australia* MEASURING BARRIERS TO DIFFUSION IN LIVE CELLS. *Enrico Gratton* MINING MOLECULAR NOISE VIA IMAGE CORRELATION SPECTROSCOPY TO MAP MOLECULAR TRANSPORT AND INTERACTIONS IN LIVING CELLS. *Paul W. Wiseman* APPLICATION OF SPOT VARIATION FCS (SVFCS) ANALYSIS TO T CELL MEMBRANE DYNAMICS. *Didier Marguet* PITCHING SINGLE FOCUS CONFOCAL ANALYSIS ONE PHOTON AT A TIME WITH BAYESIAN NONPARAMETRICS. *Steve Presse* MAPPING THE DIFFUSIVE ROUTE OF OLIGOMERIC TRANSCRIPTION FACTORS DURING DNA TARGET SEARCH. *Elizabeth Hinde*	**Room 31ABC**
8:00 PM–10:00 PM	**SOBLA (The Society for Latinoamerican Biophysicists) Meeting**	**Room 29C**

Tuesday, February 18

Registration/Information

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

Biophysical Society Business Meeting

8:00 AM - 9:00 AM, ROOM 28AB

Poster Viewing

8:00 AM - 4:00 PM, EXHIBIT HALL

Symposium
ATP-driven Maintenance of Protein Homeostasis

8:15 AM - 10:15 AM, BALLROOM 20A

Chair
Aaron Lucius, University of Alabama at Birmingham

NO ABSTRACT **8:15 AM**
REVISITING THE ATP-DRIVEN CHAPERONIN GROEL-GROES REACTION CYCLE. **Hideki Taguchi**

1559-SYMP **8:45 AM**
COTRANSLATIONAL FOLDING OF PROTEIN DOMAINS ON THE RIBOSOME. **Marina Rodnina**, Marija Liutkute, Meline Macher, Evan Mercier, Manisankar Maiti, Ekaterina Samatova, Wolfgang Wintermeyer

1560-SYMP **9:15 AM**
PROTEOSTASIS AND VIRAL EVOLUTION. **Matthew D. Shoulders**

1561-SYMP **9:45 AM**
MOLECULAR MECHANISMS OF ENZYME CATALYZED PROTEIN UNFOLDING AND TRANSLOCATION BY CLASS 1 AAA^+ MOTOR. **Aaron L. Lucius**

Symposium
Synthetic Biology

8:15 AM - 10:15 AM, BALLROOM 20D

Chair
Yvonne Chen, University of California, Los Angeles

1562-SYMP **8:15 AM**
ENGINEERING DNA NANODEVICES TO ADVANCE BIOMOLECULAR ANALYSIS. **Peng Yin**

1563-SYMP **8:45 AM**
MULTIPLEXABLE MOLECULAR CIRCUIT REPORTERS DESIGNED FOR NANOPORE SENSOR READOUT. **Jeff Nivala**

No Abstract **9:15 AM**
PROTEIN FOLDING ON THE RIBOSOME - INSIGHTS FROM GENE EDITING AND STRUCTURAL BIOLOGY. **John Christodoulou**

1564-SYMP **9:45 AM**
ENGINEERING NEXT-GENERATION T CELLS FOR CANCER IMMUNOTHERAPY. **Yvonne Y. Chen**

Platform
Protein Dynamics and Allostery II

8:15 AM - 10:15 AM, BALLROOM 20BC

Co-Chairs
Galia Debelouchina, University of California, San Diego
Naomi Latorraca, University of California, Berkeley

1565-PLAT **8:15 AM**
DETERMINING HOW GPCR PHOSPHORYLATION PATTERNS AFFECT ARRESTIN-MEDIATED SIGNALING. **Naomi R. Latorraca**, Ron O. Dror

1566-PLAT **8:30 AM**
SIMULATION OF SPONTANEOUS G PROTEIN ACTIVATION REVEALS A NEW INTERMEDIATE DRIVING GDP UNBINDING. **Sukrit Singh**, Xianqiang Sun, Kendall J. Blumer, Gregory Bowman

1567-PLAT **8:45 AM** **TRAVEL AWARDEE**
UNCOVERING THE DYNAMICAL LANDSCAPE OF P53 DNA BINDING DOMAIN WITH MARKOV STATE MODELS. **Emilia Pecora de Barros**, Ozlem Demir, Rommie E. Amaro

1568-PLAT **9:00 AM**
A MOLECULAR VIEW OF THE LIQUID TO GEL PHASE TRANSITION OF HETEROCHROMATIN PROTEIN HP1. Bryce Ackermann, **Galia T. Debelouchina**

1569-PLAT **9:15 AM**
DEEP DOMAIN INSERTION PROFILING IS A WINDOW INTO INWARD RECTIFIER K^+ CHANNEL DYNAMICS AND GATING. Willow Coyote-Maestas, Antonio Suma, David Nedrud, Vincenzo Carnevale, **Daniel Schmidt**

1570-PLAT **9:30 AM**
THE INTERNAL ALLOSTERIC ARCHITECTURE OF DIHYDROFOLATE REDUCTASE. **James W. McCormick**, Samuel Thompson, Kimberly A. Reynolds

1571-PLAT **9:45 AM**
A METHOD FOR THE INCORPORATION OF PROTEIN DYNAMICS INTO COMPUTATIONAL ENZYME DESIGN USING THE ROSETTA SOFTWARE SUITE. **Bethany K. Kartchner**, Ismail C. Kazan, S. Banu Ozkan, Jeremy H. Mills

1572-PLAT **10:00 AM**
COMBINING BIOPHYSICAL EXPERIMENTS AND BIOMOLECULAR SIMULATIONS. **Kresten Lindorff-Larsen**

Platform
Membrane Physical Chemistry

8:15 AM - 10:15 AM, ROOM 23ABC

Co-Chairs
Arne Gericke, Worcester Polytechnic Institute
Chad Leidy, Universidad de los Andes, Colombian

1573-PLAT **8:15 AM**
OIL-IN-WATER EMULSION DROPLETS AND MICROFLUIDIC TOOLS TO STUDY B CELLS POLARIZATION AND MECHANICS OF IMMUNOLOGICAL SYNAPSE. **Léa Pinon**, Judith Pineau, Lorraine Montel, Olivier Mesdjian, Paolo Pierobon, Jacques Fattaccioli

1574-PLAT **8:30 AM**
CAROTENOID CONTENT AND COMPOSITION IN EXPONENTIAL, STATIONARY AND BIOFILM STATES OF STAPHYLOCOCCUS AUREUS AND THEIR INFLUENCE ON MEMBRANE BIOPHYSICAL PROPERTIES. **Chad Leidy**, Maria I. Perez, Rudy M. Méndez Reina, Steven Trier, Cornelia Herrfurth, Gerson-Dirceu Lopez, Chiara Carazzone, Ivo Feussner, Adriana Bernal, Manu Forero-Shelton, Elizabeth Suesca

1575-PLAT 8:45 AM
MEMBRANE SOLUBILIZATION BY DIISOBUTYLENE-MALEIC ACID (DIBMA) COPOLYMERS AND CHARACTERIZATION OF THE RESULTING NATIVE NANODISCS. **Adrian H. Kopf**, Barend O.W. Elenbaas, Martijn C. Koorengevel, Cornelis A. van Walree, J. Antoinette Killian

1576-PLAT 9:00 AM
TRANSIENT ELECTRODEFORMATION OF GIANT UNILAMELLAR VESICLES (GUVS) TO PROBE MEMBRANE VISCOSITY. **Hammad A. Faizi**, Rumiana Dimova, Petia M. Vlahovska

1577-PLAT 9:15 AM
CURVED LIPID INTERFACES STUDIED WITH GRAZING INCIDENT SANS. **Karolina Mothander**, Tommy Nylander, Adrian Rennie

1578-PLAT 9:30 AM
THE STRUCTURAL ORIGIN OF CHOLESTEROL INDUCED PHOSPHOINOSITIDE CLUSTERING. Kyungreem Han, Anne-Marie Bryant, Richard W. Pastor, **Arne Gericke**

1579-PLAT 9:45 AM
COUPLING BETWEEN CYTOPLASMIC PROTEIN PHASE SEPARATION AND CHOLESTEROL-RICH DOMAINS IN THE PLASMA MEMBRANE FACILITATES T CELL ACTIVATION. **Hongyin Wang**, Barbara Diaz-Rohrer, Kandice R. Levental, Jonathon A. Ditlev, Michael K. Rosen, Ilya Levental

1580-PLAT 10:00 AM
USING AFM-NANO IR SPECTROSCOPY AND SUM-FREQUENCY GENERATION (SFG) VIBRATIONAL SPECTROSCOPY TO INVESTIGATE SICKLE CELL DISEASE. **Alexander P. Fellows**, Mike T.L. Casford, John N. Brewin, David C. Rees, Paul B. Davies, John S. Gibson

Platform
Protein-Small Molecule Interactions
8:15 AM - 10:15 AM, ROOM 24ABC

Co-Chairs
Karan Kapoor, University of Illinois at Urbana-Champaign
Matthias Preller, Medizinische Hochschule Hannover, Germany

1581-PLAT 8:15 AM
MULTISTAGE INHIBITION OF THE MYOSIN XIV-BASED INVASION MOTOR IN THE MALARIA PARASITE AND RELATED PATHOGENS. **Matthias Preller**, Janna Ehlert

1582-PLAT 8:30 AM
COMPUTING POSES OF LIGANDS BOUND TO PROTEINS USING MELD ACCELERATED MOLECULAR DYNAMICS. **Cong Liu**, Emiliano Brini, Alberto Perez, Ken A. Dill

1583-PLAT 8:45 AM
CHARACTERIZING EVOLUTION OF BINDING SITES IN P-GLYCOPROTEIN THROUGH EXTENDED-ENSEMBLE DOCKING. **Karan Kapoor**, Sundarapandian Thangapandian, Emad Tajkhorshid

1584-PLAT 9:00 AM
EXPLORING THE BINDING POTENCY AND SPECIFICITY OF SMALL MOLECULES AGAINST THE TRANSMEMBRANE AMYLOID PRECURSOR PROTEIN FRAGMENT, C99. **Manuel Castro**

1585-PLAT 9:15 AM TRAVEL AWARDEE
STRUCTURAL BASIS OF NON-STEROIDAL ANTI-INFLAMMATORY DRUG (NSAID) TRANSPORT BY SERUM ALBUMIN. **Mateusz P. Czub**, Katarzyna B. Handing, Barat S. Venkataramany, Ivan G. Shabalin, Wladek Minor

1586-PLAT 9:30 AM
USING REVERSE MICELLES TO EXTEND THE DETECTION LIMIT OF WEAK LIGAND-PROTEIN INTERACTIONS. Brian Fuglestad, **Nicole E. Kerstetter**, Sabrina Bedard, A. Joshua Wand

1587-PLAT 9:45 AM
FLUORESCENCE-BASED BIOSENSOR TO QUANTIFY SMALL MOLECULE BINDING KINETICS WITH TARGET SPATIAL RESOLUTION. Joanna Deek, Thomas Weber, **Ulrich Rant**

1588-PLAT 10:00 AM
STRUCTURALLY-DIVERSE NON-COVALENT ALLOSTERIC KRAS INHIBITORS **Cynthia Pagba**, Amit K. Gupta, Michael McCarthy, Yong Zhou, Alemayehu A. Gorfe

Platform
Ion Channels, Pharmacology, and Disease
8:15 AM - 10:15 AM, ROOM 25ABC

Co-Chairs
Mercedes Alfonso-Prieto, University of Barcelona, Spain
Paul DeCaen, Northwestern University

1589-PLAT 8:15 AM
MOLECULAR REGULATION OF POLYCYSTIN TRP CHANNELS. Thuy Vien, Jinliang Wang, Leo C. Ng, Erhu Cao, **Paul G. DeCaen**

1590-PLAT 8:30 AM
MODULATION OF GIRK CHANNELS BY PROTEIN KINASE C AND ITS ROLE IN ATRIAL FIBRILLATION. **Kirin Gada**, Aishwarya Chandrashekar, Yu Xu, Takeharu Kawano, Leigh D. Plant, Diomedes E. Logothetis

1591-PLAT 8:45 AM TRAVEL AWARDEE
MOLECULAR MECHANISM OF MODULATION OF THE TMEM16A CHANNEL BY ANTHRACENE-9-CARBOXYLIC ACID: IMPLICATIONS FOR CHANNEL GATING. **Ria Dinsdale**, Angela Russell, Phillip J. Stansfeld, Paolo Tammaro

1592-PLAT 9:00 AM
AN ALL-OPTICAL ELECTROPHYSIOLOGY SCREENING PLATFORM TO IDENTIFY NAV CHANNEL MODULATORS AS PAIN THERAPEUTICS. **Hongkang Zhang**, Kit Werley, Pin Liu, Gabriel Borja, Steven Nagle, Graham Dempsey, Owen McManus

1593-PLAT 9:15 AM
DEMONSTRATION OF A PREDICTIVE MULTISCALE MODEL FOR DRUG-INDUCED ARRHYTHMOGENIC RISK. **Kevin R. DeMarco**, Pei-Chi Yang, Parya Aghasafari, John R.D. Dawson, Slava Bekker, Sergei Y. Noskov, Vladimir Yarov-Yarovoy, Igor Vorobyov, Colleen E. Clancy

1594-PLAT 9:30 AM
PHOTOMODULATION OF INHIBITORY NEUROTRANSMISSION. INSIGHTS FROM MOLECULAR MODELING. Alba Nin-Hill, Galyna Maleeva, Alexandre Gomila-Juaneda, Daniel Wutz, Karin Rustler, Antoni Bautista-Barrufet, Xavier Rovira, Miquel Bosch, Petra Scholze, Franck Peiretti, Carme Rovira, Burkhard König, Pau Gorostiza, Piotr Bregestovski, **Mercedes Alfonso Prieto**[9,10]

1595-PLAT 9:45 AM
FLUORESCENCE MICROSCOPY TOOLS TO STUDY THE HETEROMERIC ASSEMBLY OF AN ION CHANNEL. **Gerardo Abbandonato**, Alessandro Porro, Lorenzo Brocca, Anna Moroni

1596-PLAT 10:00 AM
TARGETED DEUBIQUITINATION AS A GENERAL STRATEGY TO RESCUE TRAFFICKING-DEFICIENT ION CHANNELOPATHIES. **Scott A. Kanner**, Zunaira Shuja, Papiya Choudhury, Ananya Jain, Henry M. Colecraft

Platform
Cardiac Muscle Regulation

8:15 AM - 10:15 AM, ROOM 30ABC

Co-Chairs
Osha Roopnarine, University of Minnesota Medical School
Danuta Szczesna-Cordary, University of Miami

1597-PLAT 8:15 AM
ACTIN-BINDING COMPOUNDS THAT AFFECT THE ATP-INDUCED DISSOCIATION OF THE ACTIN-MYOSIN COMPLEX. **Osha Roopnarine**, David D. Thomas

1598-PLAT 8:30 AM
A MOLECULAR DYNAMICS STUDY OF SMALL MOLECULES BOUND TO A FULL ATOMISTIC MODEL OF CARDIAC THIN FILAMENT AS A METHOD TO IDENTIFY POSSIBLE TREATMENTS FOR GENETIC CARDIOMYOPATHIES. **Elango Munusamy**, Steven D. Schwartz, Jil C. Tardiff

1599-PLAT 8:45 AM
FLEXIBLE SUBSTRATE IS KEY TO APPROPRIATE CONTRACTILE BEHAVIOUR OF HIPSC DERIVED CARDIOMYOCYTES. **Eline Huethorst**, Francis L. Burton, Nikolaj Gadegaard, Godfrey L. Smith

1600-PLAT 9:00 AM
TWO SMALL MOLECULE INHIBITORS OF MYOSIN DECREASE FORCE AND INCREASE RATES OF RELAXATION IN DEMEMBRANATED RAT LEFT VENTRICULAR TISSUE. **Kristina B. Kooiker**, Qing-Fen Gan, Ming Yu, Yuanhua Cheng, Na Sa, Min Zhong, Tim McMillen, Farid Moussavi-Harami, Michael Regnier

1601-PLAT 9:15 AM TRAVEL AWARDEE
MOLECULAR MECHANISMS AND THERAPEUTIC APPROACHES OF MYOFILAMENT GLYCATION AS A RESULT OF DIABETES. **Maria Papadaki**, Theerachat Kampaengsri, Raiza Bonomo, Chelsea White, Virginie Aubert, Greg Aubert, Stuart Campbell, Jonathan A. Kirk

1602-PLAT 9:30 AM TRAVEL AWARDEE
STOPPED-FLOW CALCIUM KINETICS OF HYPERTROPHIC CARDIOMYOPATHY-ASSOCIATED TROPONIN T MUTATIONS. **Matthew M. Klass**, Grace Heffernon, Garrett Hauck, Sarah Lehman, Jonathan P. Davis, Jil C. Tardiff

1603-PLAT 9:45 AM
DISTINCT MUTATION-SPECIFIC EFFECTS ON THIN FILAMENT ACTIVATION LEAD TO DILATED CARDIOMYOPATHY PHENOTYPE IN CELLS. **Samantha K. Barrick**, Lina Greenberg, Michael J. Greenberg

1604-PLAT 10:00 AM TRAVEL AWARDEE
DELETION OF THE N-TERMINUS OF MYOSIN ESSENTIAL LIGHT CHAIN (N-ELC) IN THE BACKGROUND OF HCM-A57G MUTATION IN DOUBLE MUTANT MICE RESCUES HYPERCONTRACTILE MYOSIN PHENOTYPE. **Yoel H. Sitbon**, Katarzyna Kazmierczak, Melanie Veerasammy, Jingsheng Liang, Danuta Szczesna-Cordary

Platform
Calcium Signaling

8:15 AM - 10:15 AM, ROOM 31ABC

Co-Chairs
Christopher Weber, University of Chicago
Lisha Yang, University of Nevada, Reno

1605-PLAT 8:15 AM
TARGETING CA^{2+} FLUXES IN ATRIAL FIBRILLATION. Wenli Dai, Stefano Morotti, Ivan Moskowitz, Eleonora Grandi, **Christopher Weber**

1606-PLAT 8:30 AM
PKA-DEPENDENT PHOSPHORYLATION OF MITOCHONDRIAL SK2 CHANNELS REGULATES MITOCHONDRIAL CALCIUM UPTAKE IN VENTRICULAR CARDIOMYOCYTES. **Shanna Hamilton**, Radmila Terentyeva, Benjamin Martin, Karim Roder, Gideon Koren, Richard T. Clements, Dmitry Terentyev

1607-PLAT 8:45 AM
BETA-ADRENERGIC SIGNALING IN ISOLATED CARDIOMYOCYTES PROPAGATES SPATIALLY OVER TIME. **Thomas R. Shannon**, Dan J. Bare, Shayan Raofi, Kenneth S. Ginsburg, Donald M. Bers

1608-PLAT 9:00 AM
MITOCHONDRIAL NCX INHIBITION REDUCES OXIDATIVE STRESS AND SR CALCIUM LEAK IN DIABETIC MYOCYTES. **Sathya Velmurugan**, Amanda Hoskins, Sarah Fleischer, Florin Despa, Sanda I. Despa

1609-PLAT 9:15 AM
SODIUM-CALCIUM EXCHANGER (NCX1) IS ESSENTIAL FOR ATRIOVENTRICULAR NODE AUTOMATICITY AND CONDUCTION, AS REVEALED THROUGH ATRIAL-SPECIFIC KNOCKOUT OF NCX1. **Adina Hazan**, Rui Zhang, Sabine Lotteau, Yen-Nien Lin, Devina Gonzalez, Kenneth D. Philipson, Michela Ottolia, Joshua I. Goldhaber

1610-PLAT 9:30 AM
STIM1 MAINTAINS STABLE PERIPHERAL COUPLING IN FULLY DIFFERENTIATED CONTRACTILE VASCULAR SMOOTH MUSCLE CELLS INDEPENDENTLY OF CA^{2+} STORE DEPLETION. **Vivek Krishnan**, Sher Ali, Pratish Thakore, Martin Johnson, Evan Yamasaki, Mohamed Trebak, Scott Earley

1611-PLAT 9:45 AM
MEMBRANE DEPOLARIZATION IS ESSENTIAL FOR TRIGGERING CA^{2+} INFLUX INTO ADRENAL CHROMAFFIN CELLS EXPOSED TO NANOSECOND ELECTRIC PULSES. **Lisha Yang**, Sophia Pierce, Gale L. Craviso, Normand Leblanc

1612-PLAT 10:00 AM
INTRINSICALLY DISORDERED HS ASSOCIATED PROTEIN X-1 (HAX-1) ALTERS THE STRUCTURE OF THE SERCA2A - PHOSPHOLAMBAN REGULATORY COMPLEX. **Michael P. Dalton**, Erik K. Larsen, Elisa Bovo, Aleksey V. Zima, Gianluigi Veglia, Seth L. Robia

Subgroup Chairs Meeting

9:00 AM - 10:30 AM, ROOM 32A

Career Development Center Workshop
Looking Beyond Academia: Identifying Your Career Options Using MyIDP, LinkedIn & More

9:30 AM - 10:30 AM, ROOM 26A

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 33A

Characterization of the Rapidly Desensitizing α7 Nicotinic Acetylcholine Receptor on the Qube, NaV1.1 Assays on Automated Electrophysiology Platforms and Developing NMDA Assays on the Qube System
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 simultane-

ous 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 use of these systems in the drug discovery process. Dr Sung Hoon Park will present Qube data to show the characterization of rapidly desensitizing α7 nicotinic acetylcholine receptor on the Qube. Next, Dr Shanti Amagasu from Amgen will present data from Amgen's Nav1.1. work on automated electrophysiological platforms. Finally, Dr Abigail Marklew will present on the development of NMDA Assays on the Qube system.

Speakers
Sung Hoon Park, Field Application Scientist, Sophion Bioscience A/S
Shanti Amagasu, Senior Scientist, Amgen
Abigail Marklew, Scientist, Charles River Laboratories

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 20A

Chair
David Piston, Washington University in St. Louis and BPS President

No Abstract **10:45 AM**
PAPER OF THE YEAR. **Carlos R. Baiz**

No Abstract **10:57 AM**
IGNACIO TINOCO AWARD. **Elliot L. Elson**

No Abstract **11:09 AM**
FOUNDERS AWARD. **Dan M. Herschlag**

No Abstract **11:21 AM**
MARGARET OAKLEY DAYHOFF AWARD. **Valeria Vásquez**

No Abstract **11:33 AM**
MICHAEL AND KATE BÁRÁNY AWARD. **Clifford P. Brangwynne**

No Abstract **11:45 AM**
AVANTI AWARD IN LIPIDS. **Akihiro Kusumi**

No Abstract **11:57 AM**
BIOPHYSICS IN HEALTH AND DISEASE. **Alexandra C. Newton**

No Abstract **12:09 PM**
KAZUHIKO KINOSITA AWARD IN SINGLE MOLECULE BIOPHYSICS. **Yale E. Goldman**

No Abstract **12:21 PM**
INNOVATION AWARD. **G. Marius Clore**

No Abstract **12:33 PM**
ANATRACE MEMBRANE PROTEIN AWARD. **Gunnar von Heijne**

Platform
Optical Microscopy and Superresolution Imaging III

10:45 AM - 12:45 PM, BALLROOM 20BC

Co-Chairs
Anthony Fernandez, University of Southern California
Madoka Suzuki, Osaka University, Japan

1613-PLAT **10:45 AM**
DUAL-FUNCTIONALIZED FLUORESCENT NANODIAMOND AS NANO-HEATER AND NANOTHERMOMETER IN CELLS. **Chongxia Zhong**, Shingo Sotoma, Taras Plakhotnik, James Chen Yong Kah, Yoshie Harada, Madoka Suzuki

1614-PLAT **11:00 AM** **TRAVEL AWARDEE**
MULTI-PARAMETER FLUORESCENCE LIFETIME IMAGING MICROSCOPY (FLIM) FOR IMAGING METABOLISM IN THE INTESTINAL ORGANOIDS MODEL. **Ruslan Dmitriev**, Irina Okkelman

1615-PLAT **11:15 AM**
NANOSCALE NUCLEAR ENVELOPE DYNAMICS AND SPATIAL ORGANIZATION OF THE MUSCULAR DYSTROPHY PROTEIN EMERIN. **Anthony M. Fernandez**, Markville B. Bautista, Fabien Pinaud

1616-PLAT **11:30 AM**
SUPERRESOLUTION MAPPING OF INTRINSICALLY DISORDERED REGIONS OF NUCLEOPORINS IN SITU. **Miao Yu**, Nike Andrea Heinss, Sofya Mikhaleva, Jun Hee Kang, Edward A. Lemke

1617-PLAT **11:45 AM**
SUPERRESOLUTION TRACTION FORCE MAPPING WITH STRUCTURED ILLUMINATION MOLECULAR FORCE MICROSCOPY. **Aaron Blanchard**, Dale Combs, Joshua Brockman, Alexa L. Mattheyses, Khalid Salaita

1618-PLAT **12:00 PM**
ACTIVE FEEDBACK 3D SINGLE-MOLECULE TRACKING. **Shangguo Hou**, Jack C. Exell, Kevin D. Welsher

1619-PLAT **12:15 PM**
MAPPING PROTEIN COUNTS IN LIVE CELLS. Derek Thirstrup, **Winfried Wiegraebe**, Allen Institute for Cell Science Team

1620-PLAT **12:30 PM**
N-COLOR SPATIAL CUMULANT ANALYSIS TO DETECT G-PROTEIN DYNAMICS WITH TWO-PHOTON MICROSCOPY. **Daniel J. Foust**, David W. Piston

Platform
Voltage Sensor to Pore Coupling

10:45 AM - 12:45 PM, ROOM 23ABC

Co-Chairs
Lucie Delemotte, KTH Royal Institute of Technology, Sweden
David Fedida, The University of British Columbia, Canada

1621-PLAT **10:45 AM**
STRUCTURAL DETERMINANTS OF THE HYPERPOLARIZATION-DEPENDENT GATING OF HCN CHANNELS. **Gucan Dai**, William N. Zagotta

1622-PLAT **11:00 AM**
GATING MECHANISM OF HYPERPOLARIZATION-ACTIVATED HCN PACEMAKER CHANNELS. **Rosamary Ramentol**, Marta E. Perez, Peter H. Larsson

1623-PLAT **11:15 AM**
CONSERVED VOLTAGE-DEPENDENT GATING ELEMENTS BETWEEN SHAKER AND HERG KV CHANNELS. **Ana I. Fernández-Mariño**, Kenton Swartz

1624-PLAT **11:30 AM**
IKS ION-CHANNEL PORE CONDUCTANCE CAN RESULT FROM INDIVIDUAL VOLTAGE SENSOR MOVEMENTS. **David Fedida**, Maartje F. Westhoff, Jodene R. Eldstrom, Christopher I. Murray, Emely Thompson

1625-Plat 11:45 am
CALMODULIN FUNCTIONALLY COUPLES THE KCNQ1 CHANNEL VOLTAGE-SENSING AND PORE DOMAINS. **Po Wei Kang**, Annie M. Westerlund, Jingyi Shi, Kelli McFarland White, Alex K. Dou, Jonathan R. Silva, Lucie Delemotte, Jianmin Cui

1626-Plat 12:00 pm
STRUCTURE AND PHYSIOLOGICAL FUNCTION OF THE KCNQ1 CHANNEL VOLTAGE SENSOR INTERMEDIATE STATE. **Charles R. Sanders**, Keenan C. Taylor, Po Wei Kang, Panpan Hou, Nien-Du Yang, Georg Kuenze, Alfred L. George, Jens Meiler, Robert L. McFeeters, Jianmin Cui[10]

1627-Plat 12:15 pm
ANIONIC LIPIDS MODULATE STRUCTURE AND FUNCTION OF EPILEPSY-CAUSING VOLTAGE-GATED POTASSIUM CHANNEL. **Shashank Pant**, Jiaren Zhang, Eung Chang Kim, KIn Lam, Hee Jung Chung, Emad Tajkhorshid

1628-Plat 12:30 pm
RESIDUES CONNECTING VOLTAGE SENSOR DOMAIN TO PORE DOMAIN IN SHAKER K^+ CHANNEL BY NONCANONICAL COUPLING MECHANISM. **Carlos Alberto Z. Bassetto Jr**, Joao L. Carvalho-de-Souza, Francisco Bezanilla

Platform
DNA/RNA Structure and Dynamics

10:45 am - 12:45 pm, Room 24ABC

Co-Chairs
Victoria Birkedal, Aarhus University, Denmark
Yue Li, Northwestern University

1629-Plat 10:45 am
NETWORK ANALYSIS OF SPLICEOSOMAL STRUCTURES IDENTIFIES STEP-SPECIFIC CHANGES IN CONNECTIVITY. **Clarisse van der Feltz**, Harpreet Kaur, Aaron A. Hoskins

1630-Plat 11:00 am
STRAND THREADING IN SUBGENOMIC FLAVIVIRUS RNAS GENERATES EXORIBONUCLEASE-RESISTANCE MECHANICALLY. **Meng Zhao**, Dustin B. Ritchie, Michael T. Woodside

1631-Plat 11:15 am
TRANSIENT PROTEIN-RNA INTERACTIONS GUIDE NASCENT RIBOSOMAL RNA FOLDING. **Olivier Duss**, Galina A. Stepanyuk, Joseph D. Puglisi, James R. Williamson

1632-Plat 11:30 am
CRYO-EM STRUCTURE OF RNASE MRP, A 12-COMPONENT CATALYTIC RIBONUCLEOPROTEIN COMPLEX. **Andrey S. Krasilnikov**, Hyunwook Lee, Carol Bator, Di Li, Igor Berezin, Susan Hafenstein, Anna Perederina

1633-Plat 11:45 am
CONFORMATIONAL ENSEMBLES AND DYNAMICS OF SINGLE-STRANDED NUCLEIC ACIDS USING HIGH-RESOLUTION SINGLE-MOLECULE FLUORESCENCE SPECTROSCOPY. **Mark F. Nueesch**, Erik D. Holmstrom, Daniel Nettels, Benjamin Schuler

1634-Plat 12:00 pm
QUANTIFYING THREE-DIMENSIONAL CHROMATIN PACKING THROUGH ELECTRON TOMOGRAPHY. **Yue Li**, Adam Eshein, Eric Roth, Reiner Bleher, Vadim Backman

1635-Plat 12:15 pm
COHESIN IS A MOTOR THAT BENDS AND COMPACTS DNA. **Maxim Molodtsov**, Benedikt Bauer, Iain Davidson, Alipasha Vaziri, Jan-Michael Peters

1636-Plat 12:30 pm
FOLDING KINETICS OF MULTIPLE G-QUADRUPLEX TELOMERIC DNA STRUCTURES. Emil L. Kristoffersen, Andrea Coletta, Line Lund, Birgit Schiøtt, **Victoria Birkedal**

Platform
Protein Structure and Conformation III

10:45 am - 12:45 pm, Room 25ABC

Co-Chairs
George Hamilton, Clemson University
Rachel Martin, University of California, Irvine

1637-Plat 10:45 am
RIC8A-GA, A COMPLEX STRUCTURE OF A GUANINE NUCLEOTIDE EXCHANGE FACTOR. **Levi J. McClelland**, Kaiming Zhang, Tung-Chung Mou, Jake Johnston, Cindee Yates-Hansen, Jan Steyaert, Wah Chiu, Stephen Sprang

1638-Plat 11:00 am
ANALYZING THE SIGNATURE OF GPCR CONFORMATIONAL CHANGES. **Rafeed Khleif**, Erik Serrano, Ravinder Abrol

1639-Plat 11:15 am Travel Awardee
STRUCTURE-FUNCTION INVESTIGATION OF HAEMOPHILUS INFLUENZAE FERRIC BINDING PROTEIN UNDER CHANGING ENVIRONMENTAL CONDITIONS. **Goksin Liu**, Canan Atilgan, Zehra Sayers

1640-Plat 11:30 am
PROBING THE ROLE OF METAL COORDINATION AND PH IN ASSEMBLY AND FUNCTION OF CYTOCHROME NANOWIRES. **Vishok Srikanth**, Yangqi Gu, J. Patrick O'Brien, Ruchi Jain, Sibel Ebru Yalcin, Sophia M. Yi, Fadel A. Samatey, Nikhil S. Malvankar

1641-Plat 11:45 am
CONFORMATIONS OF P90 RIBOSOMAL S6 KINASE ACTIVATION. **Evan Kobori**, Anita Alexa, Attila Remenyi, Susan S. Taylor

1642-Plat 12:00 pm
INTERDOMAIN DYNAMICS UNDERLIE FUNCTION AND REGULATION OF POSTSYNAPTIC DENSITY PROTEIN 95. **George L. Hamilton**, Nabanita Saikia, Justin Park, Jakub Kubiak, Claus A. Seidel, Mark E. Bowen, Feng Ding, Hugo Sanabria

1643-Plat 12:15 pm
DEAMIDATION OF YD-CRYSTALLIN - EFFECTS ON STRUCTURE AND INTERACTION PROPERTIES. **Alex J. Guseman**, Matthew J. Whitley, Jeremy Gonzalez, Angela M. Gronenborn

1644-Plat 12:30 pm
AGGREGATION OF GAMMA S-CRYSTALLIN MEDIATED BY UV LIGHT AND DIVALENT METAL CATIONS. Kyle Roskamp, Brenna Norton-Baker, Natalia Kozlyuk, Jan Bierma, Suvrajit Sengupta, **Rachel W. Martin**

Platform
Protein Stability, Folding, and Chaperones

10:45 am - 12:45 pm, Room 30ABC

Co-Chairs
Stephen Fried, Johns Hopkins University
Meredith Jackrel, Washington University

1645-Plat 10:45 am
UBIQUITINATION MODULATES A PROTEIN ENERGY LANDSCAPE SITE-SPECIFICALLY WITH CONSEQUENCES FOR PROTEASOMAL DEGRADATION. **Emma Carroll**, Eric R. Greene, Andreas Martin, Susan Marqusee

1646-Plat 11:00 am
INVESTIGATION OF NATURAL AND SYNTHETIC AGGREGATION INHIBITORS USING MICROFLUIDIC APPLICATIONS. **Tom Scheidt**, Jacqueline Carozza, Justin L. Benesch, Paolo Arosio, Sara Linse, Tuomas P.J. Knowles

1647-Plat 11:15 am
OPEN AND CLOSED STATES OF THE AAA^+ PROTEASE LON PROVIDE THE STRUCTURAL BASIS FOR DISTINCT OPERATIONAL MODES. **Mia Shin**, Cristina Puchades Garcia, Ananya Asmita, Eric Adjei, R. L. Wiseman, A. W. Karzai, Gabriel C. Lander

1648-Plat 11:30 AM
MECHANISTIC INSIGHTS INTO POTENTIATION OF THE AAA+ DISAGGREGASE HSP104. Jeremy Ryan, Aaron Bao, Braxton Bell, **Meredith Jackrel**

1649-Plat 11:45 AM
GLASSY DYNAMICS IN AN INTRINSICALLY DISORDERED PROTEIN. **Ian L. Morgan**, Ram Avinery, Roy Beck, Omar A. Saleh

1650-Plat 12:00 PM
S100A9S EVOLVED POTENT PROINFLAMMATORY ACTIVITY AND LOST PROTEOLYTIC RESISTANCE FROM A PROTEOLYTICALLY RESISTANT, WEAKLY PROINFLAMMATORY ANCESTOR. **Joseph Harman**, Andrea Loes, Jeremy A. Anderson, Gus Warren, Maureen Heaphy, Kirsten Lampi, Michael J. Harms

1651-Plat 12:15 PM
PROBING THE REFOLDABILITY OF THE PROTEOME WITH MASS SPECTROMETRY. **Stephen D. Fried**

1652-Plat 12:30 PM
MOLTEN GLOBULES AND METALLOCOFACTOR DISASSOCIATION STEER HUMAN HEMOGLOBIN DISASSEMBLY. **Premila P. Samuel Mohan Dass**, George N. Phillips, John S. Olson, David A. Case

Platform
Computational Methods and Bioinformatics

10:45 AM - 12:45 PM, Room 31ABC

Co-Chairs
Mitsugu Araki, Kyoto University, Japan
Anita Rágyanszki, York University, Canada

1653-Plat 10:45 AM
PROTEIN-DRUG BINDING MODE PREDICTION FROM THE APO-PROTEIN STRUCTURE USING A MOLECULAR DYNAMICS-BASED POCKET GENERATION APPROACH. **Mitsugu Araki**, Yasushi Okuno

1654-Plat 11:00 AM
IMPROVED DESCRIPTION OF LIGAND POLARIZATION ENHANCES TRANSFERABILITY OF IONIC INTERACTIONS. **Vered Wineman-Fisher**, Yasmine Al-Hamdani, Alexandre Tkatchenko, Sameer Varma

1655-Plat 11:15 AM
COMBINING STRUCTURAL MODELING WITH SEQUENCE-BASED APPROACH TO INCREASE SPECIFICITY IN PEPTIDE-MHC BINDING PREDICTIONS. **Michelle Aranha**, Jeremy C. Smith

1656-Plat 11:30 AM
CAN MACHINE LEARNING GUIDE DIRECTED EVOLUTION OF FUNCTIONAL PROTEINS. Yutaka Saito, Misaki Oikawa, Hikaru Nakazawa, Takumi Sato, Tomoshi Kameda, Koji Tsuda, **Mitsuo Umetsu**

1657-Plat 11:45 AM
INFRASTRUCTURE FOR VISUALIZING BIOLOGICAL SIMULATIONS IN THE CONTEXT OF WHOLE CELLS. **Blair Lyons**

1658-Plat 12:00 PM
CELL FATE FORECASTING: A DATA ASSIMILATION APPROACH TO PREDICT EPITHELIAL-MESENCHYMAL TRANSITION. **Mario J. Mendez**, Matthew J. Hoffman, Elizabeth M. Cherry, Christopher A. Lemmon, Seth H. Weinberg

1659-Plat 12:15 PM Travel Awardee
UNDERSTANDING THE ORIGINS OF LIFE - THE CONSTITUENTS OF INTERSTELLAR MEDIUM AS THE SOURCE OF LIFE'S BUILDING BLOCKS. **Anita Rágyanszki**, Hongchen Ji, René Fournier

1660-Plat 12:30 PM
A MACHINE LEARNING APPROACH FOR INVESTIGATING SEX DIFFERENCES IN TORSADE DE POINTES SUSCEPTIBILITY. **Alex Fogli Iseppe**, Haibo Ni, Xianwei Zhang, Uma Srivatsa, Andrew G. Edwards, Stefano Morotti, Eleonora Grandi

Career Development Center Workshop
Negotiation for Nerds: Negotiation Strategies and Tactics and Evaluating a Job Offer

11:30 AM - 12:30 PM, Room 26A

Funding Opportunities for Faculty at Primarily Undergraduate Institutions

12:00 PM - 1:30 PM, Room 29AB

Information regarding how PUI faculty can generate funds to support their undergraduate research laboratory will be covered in this session.

Moderators
Elizabeth Yates, United States Naval Academy
Kambiz Hamadani, California State University, San Marcos

Presenters
Wilson Francisco, NSF
Silvia Ronco, Research Corporation for Science Advancement
Joe Gindhart, NIH

Postdoc to Faculty Q&A
Transitions Forum and Luncheon

12:00 PM - 1:30 PM, Room 32AB

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.

Chairs
David Warshaw, University of Vermont
Stephen Cannon, University of California, Los Angeles

Panelists
Howard Young, University of Alberta, Canada
David Jones, University of Michigan
Sarah Hiessler, Ohio State University
Krishna Chinthalapudi, Ohio State University

The Biophysicist Editorial Board Meeting

1:00 PM - 3:00 PM, Room 30D

Climate Change We *Want* to See
Mitigating Unconscious Bias in the Biophysical Professions

1:15 PM - 2:45 PM, Room 28AB

Why does the same uncontrollable, subconscious feeling that tells us to flock to a flower and flee from an insect rear its head in our professional lives? Whether it's instantaneous like a microaggression or spans decades like salary disparities, it matters. We are talking about bias. We all have it and we can never escape it fully, so let's learn how to deal with it.

Heather Metcalf and Aspen Russell of the Association for Women in Science (AWIS) will be presenting an hour-long workshop on unconscious bias. In this workshop, participants will learn the history of bias, how it manifests in STEM, and lastly, how to work together to enact

solutions to actively combat against it so we don't have to wait until after the year 2100 for women in biophysical professions to finally reach parity.

Speakers
Heather Metcalf, Association for Women in Science
Aspen Russell, Association for Women in Science

The Nuts and Bolts of Preparing Your NIH Grant

1:30 PM - 3:00 PM, ROOM 28CDE

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 currently stands, with a particular emphasis on grant writing and submission for new and early career investigators.

Moderator
Eric Sundberg, Emory University School of Medicine

Speaker
Michele McGuirl, NIH
Peter Preusch, NIH
Ruth Grossman, NIH
Eleazar Cohen, NIH
Manana Sukhareva, NIH

Exhibitor Presentation HORIBA Scientific

1:30 PM - 3:00 PM, ROOM 33A

A New Imaging Camera Technology Featuring TDC In-Pixel Architecture for Simple Dynamic FLIM Imaging at Video Rates
A new wide-field video rate TCSPC imaging camera from HORIBA Instruments will be introduced. This camera is a CMOS manufactured array of single photon avalanche diode (SPAD) detectors, with each detection "pixel" having its own time-to-digital converter (TDC). Thus each pixel is capable of measuring precise fluorescence decays in time-domain, and the entire camera is providing a complete fluorescence lifetime image map (FLIM) with each frame of the camera. This new technology is much faster than traditional scanning FLIM modalities thus making it ideal for live cell FLIM dynamics.

Speaker
Cary Davies, Global Product Manager-Fluorescence Division, HORIBA Scientific

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 Going Live: Preparing for Interviews in Industry and Academia

2:30 PM - 3:30 PM, ROOM 26A

Education Committee Meeting

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

Symposium Neuron–glia Interactions

4:00 PM - 6:00 PM, BALLROOM 20A

Chair
Kira Poskanzer, University of California, San Francisco

1661-SYMP 4:00 PM
CONSEQUENCES OF ASTROGLIAL MODULATION OF EXTRACELLULAR CALCIUM CONCENTRATION ON NEURONAL FIRING INVOLVING SODIUM CHANNELS. **Arlette Kolta**

No Abstract 4:30 PM
DISSECTING THE METABOLIC RESPONSE TO NEURONAL STIMULATION. **Gary Yellen**

No Abstract 5:00 PM
NEURON-GLIA INTERACTION IN THE LIGHT OF TWO-PHOTON IMAGING. **Bruno Weber**

1662-SYMP 5:30 PM
OPTICALLY DECODING ASTROCYTIC NETWORKS. **Kira Poskanzer**

Symposium Exocytosis & Autophagy

4:00 PM - 6:00 PM, BALLROOM 20D

Chair
Arun Anantharam, University of Michigan

1663-SYMP 4:00 PM
ARCHITECTURE OF MAMMALIAN RETROMER BY SINGLE PARTICLE CRYO-EM. Amy K. Kendall, Boyang Xie, Peng Xu, Elad Binshtein, Hui Wei, Todd Graham, Terunaga Nakagawa, **Lauren P. Jackson**

1664-SYMP 4:30 PM
EXOCYST TETHERING COMPLEX REGULATION OF SNARE PROTEINS AND MEMBRANE FUSION. **Mary Munson**, Dante Lepore, Michael Feyder, Guendalina Rossi, Alexander B. Czuchra, Lillian Kenner, Leonora Martinez-Nunez, Jacqueline M. Forson, Adam Frost, Patrick Brennwald

1665-SYMP 5:00 PM
CA^{2+}- AND PHOSPHOLIPID-DEPENDENT MECHANISMS FOR THE COUPLING OF SYNAPTIC VESICLE CONSUMPTION AND RE-SUPPLY RATES. **Noa Lipstein-Thoms**, Shuwen Chang, KunHan Lin, Holger Taschenberger, Nils Brose

1666-SYMP 5:30 PM
PRE- AND POST-SYNAPTIC ROLES OF SYNAPTOTAGMIN-7 IN EXOCYTOSIS. **Arun Anantharam**

Platform Intrinsically Disordered Proteins (IDP) and Aggregates II

4:00 PM - 6:00 PM, BALLROOM 20BC

Co-Chairs
Elisar Barbar, Oregon State University
Tanja Mittag, St. Jude Children's Research Hospital

1667-PLAT 4:00 PM
GLOBAL DIMENSIONS REPORT ON PHASE SEPARATION OF LCDS WITH A WIDE RANGE OF SEQUENCE FEATURES. Anne Bremer, Erik W. Martin, Matthew J. Cuneo, **Tanja Mittag**

1668-PLAT 4:15 PM
EMERGING FEATURES OF LINEAR MOTIF-BINDING HUB PROTEINS. **Elisar J. Barbar**, Nathan Jespersen

1669-Plat 4:30 pm
A DESIGNER FG-NUP THAT RECONSTITUTES THE SELECTIVE TRANSPORT BARRIER OF THE NUCLEAR PORE COMPLEX. **Alessio Fragasso**, Henry de Vries, Eli van der Sluis, Erik Van der Giessen, Patrick R. Onck, Cees Dekker

1670-Plat 4:45 pm
INSIGHTS INTO SPOP-SUBSTRATE BEHAVIOR THROUGH STUDIES OF PDX1-SPOP INTERACTIONS. **Grace A. Usher**, Roman Rohac, Nafiseh Sabri, Tanja Mittag, Amie K. Boal, Scott A. Showalter

1671-Plat 5:00 pm
DECIPHERING THE CONFORMATIONAL STATE OF FG-NUCLEOPORINS *IN SITU*. **Sofya Mikhaleva**, Piau Siong Tan, Miao Yu, Edward A. Lemke

1672-Plat 5:15 pm
MOLECULAR DETERMINANTS OF LARGE CARGO TRANSPORT INTO THE NUCLEUS. **Joana Caria**, Giulia Paci, Tiantian Zheng, Anton Zilman, Edward A. Lemke

1673-Plat 5:30 pm
SPECIFIC SEQUENCE FEATURES REGULATE THE TRANSIENT BINDING BETWEEN FG NUCLEOPORINS AND CARGO COMPLEXES. **Mohaddeseh Peyro**, Mohammad Mofrad

1674-Plat 5:45 pm
COARSE-GRAINED MODELING OF NUCLEAR PORE COMPLEX MIMICS COMPRISING DESIGNER FG-NUCLEOPORINS. **Henry de Vries**, Alessio Fragasso, Eli O. van der Sluis, Cees Dekker, Erik Van der Giessen, Patrick R. Onck

Platform
Membrane Active Peptides and Toxins
4:00 pm - 6:00 pm, Room 23ABC

Co-Chairs
Sonia Troeira Henriques, Queensland University of Technology, Australia
Marc-Antoine Sani, University of Melbourne, Australia

1675-Plat 4:00 pm
CHALLENGING THE CHIRALITY PARADIGM IN PEPTIDE-LIPID INTERACTIONS. **Sónia Troeira Henriques**, Hayden Peacock, Aurélie H. Benfield, Conan K. Wang, David Craik

1676-Plat 4:15 pm
MODELING NATURAL BILAYERS WITH MIXED LIPID NANODISCS FOR NATIVE MS. **Marius Kostelic**, Ciara Zak, David Jurkowitz, Michael T. Marty

1677-Plat 4:30 pm
SYNERGISM BETWEEN MAGAININ 2 AND PGLA IN BACTERIAL MEMBRANE MIMICS LEADS TO MEMBRANE FUSION AND SPONGE PHASE FORMATION. Ivo Kabelka, Michael Pachler, Sylvain Prévost, Ilse Letofsky-Papst, Karl Lohner, Georg Pabst, **Robert Vacha**

1678-Plat 4:45 pm
PEPTIDE KINETICS IN SYMMETRIC AND ASYMMETRIC MEMBRANE MIMICS OF GRAM-NEGATIVE BACTERIA. **Lisa Marx**, Enrico F. Semeraro, Georg Pabst, Karl Lohner

1679-Plat 5:00 pm Travel Awardee
SOLID-STATE NMR STUDY OF LIVE BACTERIA IN THE PRESENCE OF ANTIMICROBIAL AGENTS. Shiying Zhu, Sarah A. Overall, Vinzenz Hofferek, Frances Separovic, **Marc-Antoine Sani**

1680-Plat 5:15 pm
SOLID-STATE NMR OF INTACT BACTERIA REVEALS THE EFFECT OF STRESS AND ANTIMICROBIAL AGENTS. Zeineb Bouhlel, Dror E. Warschawski, Alexandre A. Arnold, Karine Lemarchand, Réjean Tremblay, **Isabelle Marcotte**

1681-Plat 5:30 pm
THE EBOLA VIRUS Δ-PEPTIDES ARE ENTEROTOXIC VIROPORINS *IN VIVO* AND POTENTIALLY DRUGGABLE TARGETS. **Shantanu Guha**, Lilia Melnik, Jenisha Ghimire, Allison Smither, Eric Wu, Leisheng Sun, Nathan Ungerleider, Erik Flemington, Robert F. Garry, William C. Wimley

1682-Plat 5:45 pm
MUNC13 CLUSTERS CAPTURE VESICLES TO LIPID BILAYER MEMBRANE. **Feng Li**, R. Venkat Kalyana Sundaram, Jeff Coleman, Shyam S. Krishnakumar, Frederic Pincet, James Rothman

Platform
Cardiac, Smooth, and Skeletal Muscle Electrophysiology and Regulation I
4:00 pm - 6:00 pm, Room 24ABC

Co-Chairs
Eleonora Grandi, University of California, Davis
Hailey Jansen, University of Calgary, Canada

1683-Plat 4:00 pm
QUANTITATIVE CROSS-SPECIES PREDICTION OF B-ADRENERGIC RESPONSE IN VENTRICULAR MYOCYTES. **Stefano Morotti**, Haibo Ni, Lianguo Wang, Alex Fogli Iseppe, Donald M. Bers, Andrew G. Edwards, Crystal M. Ripplinger, Eleonora Grandi

1684-Plat 4:15 pm
HEXOSAMINE PATHWAY INDUCES CARDIAC ARRHYTHMIA VIA MODULATION OF SUSTAINED POTASSIUM CURRENTMODULATION OF SUSTAINED POTASSIUM CURRENT. Matthieu Douard, Fanny Vaillant, Emma Abell, Pierre Dos Santos, **Fabien Brette**

1685-Plat 4:30 pm Travel Awardee
REGIONAL AND TEMPORAL CHANGES IN ATRIAL ELECTROPHYSIOLOGY CONTRIBUTE TO ATRIAL FIBRILLATION IN ANGIOTENSIN II INDUCED HYPERTENSION. **Hailey J. Jansen**, Robert A. Rose

1686-Plat 4:45 pm
HIERARCHICAL PACEMAKER CLUSTERING WITHIN THE RABBIT SINOATRIAL NODE IS DRIVEN BY DYNAMIC INTERACTION BETWEEN THE COMPONENTS OF THE COUPLED-CLOCK SYSTEM. Xiaoyu Yuan, Lucas N. Ratajczyk, Francisco Alvarado, Hector H. Valdivia, Alexey V. Glukhov, **Di Lang**

1687-Plat 5:00 pm
DYNAMIC REGULATION OF K AND CA CURRENTS IN LIPOTOXIC SUPRAVENTRICULAR ARRHYTHMIAS. Laura Martinez -Mateu Martinez-Mateu, Charles Leduc, Xusheng Zhang, Lisa Cole Burnett, Xiaoyun Sun, Yufeng Shen, Rudolph Leibel, Javier Saiz, **Ademuyiwa S. Aromolaran**

1688-Plat 5:15 pm
FUNCTIONAL MICRODOMAIN OF ADENYLYL CYCLASE ISOFORM 1 CONTRIBUTES TO SINOATRIAL NODE AUTOMATICITY VIA B-ADRENERGIC RECEPTOR PATHWAY. **Lu Ren**, Phung N. Thai, Raghavender R. Gopireddy, Valeriy Timofeyev, Hannah A. Ledford, Ryan L. Woltz, Seojin Park, Claudia M. Moreno, Luis F. Santana, Alana C. Conti, Yang K. Xiang, Vladimir Yarov-Yarovoy, Ebenezer N. Yamoah, Manuel F. Navedo, Nipavan Chiamvimonvat

1689-Plat 5:30 pm Travel Awardee
ELECTRICAL REMODELLING CONTRIBUTES TO ATRIAL FIBRILLATION IN TYPE 2 DIABETES MELLITUS. **Loryn J. Bohne**, Hailey J. Jansen, Motahareh Moghtadaei, Robert A. Rose

1690-Plat 5:45 pm
STABILIZER CELLS: A LESS-IS-MORE GENE THERAPY STRATEGY TO PREVENT CARDIAC ARRHYTHMIAS. **Michael B. Liu**, Silvia Priori, Zhilin Qu, James N. Weiss

Platform
Genetic, Cellular, Synthetic, and Systems Biology

4:00 PM - 6:00 PM, ROOM 25ABC

Co-Chairs
Dennis Discher, University of Pennsylvania
Christina Pospisil, University of Massachusetts Boston

1691-PLAT 4:00 PM
MODELING THE LIPID METABOLISM OF A GENETICALLY MINIMAL CELL. **David M. Bianchi**, Marian Breuer, Vinson Lam, Anustup Poddar, Kim S. Wise, Clyde A. Hutchison III, Hamilton O. Smith, Elizabeth Villa, Taekjip Ha, John I. Glass, Zaida Luthey-Schulten

1692-PLAT 4:15 PM
APPLICATION OF IRREVERSIBLE THERMODYNAMICS TO DETERMINE THE INFLUENCE OF CELL MIMICKING CONDITIONS ON THE KINETICS OF EQUILIBRIUM REACTIONS OF THE GLYCOLYSIS. **Kristina Vogel**, Thorsten Greinert, Christoph Held, Hauke Harms, Thomas Maskow

1693-PLAT 4:30 PM
SCALING ANALYSES OF TUMOR TRANSCRIPTOMES LINK LAMIN-B TO PROLIFERATION AND POOR SURVIVAL AND SEPARATELY LINK FIBROSIS WITH PROLONGED SURVIVAL. **Dennis E. Discher**, Manasvita Vashisth

1694-PLAT 4:45 PM
TOWARD PREDICTING GENE EXPRESSION AND METABOLIC FUNCTIONS FROM LABEL-FREE RAMAN IMAGING OF LIVING CELLS. **Arno Germond**, Vipin Kumar, Taro Ichimura, Takaaki Horinouchi, Tomonobu Watanabe, Chikara Furusawa

1695-PLAT 5:00 PM
CELLULAR GROWTH AND STIFFNESS DETERMINES MORPHOMETRICS IN PLANT STEM CELL MUTANTS. Aritra Chatterjee, Lea Rambaud, **Namrata Gundiah**, Pradeep Das

1696-PLAT 5:15 PM
MODELING MICROBIAL INTERACTIONS ACROSS NUTRITIONAL ENVIRONMENTS USING MAXIMUM ENTROPY. **Gabe Salmon**, Rob Phillips

1697-PLAT 5:30 PM
MATHEMATICAL MODELS FOR LIVING FORMS IN MEDICAL PHYSICS I , ENAMEL, DENTIN AND TOOTH NERVE. **Christina Pospisil**

1698-PLAT 5:45 PM
MULTISCALE TISSUE MODELING REVEALS IMPACT OF CANCER TREATMENT TO TUMOR HETEROGENEITY. **Jakob Rosenbauer**, Marco Berghoff, Alexander H. Schug

Platform
Micro- and Nanotechnology

4:00 PM - 6:00 PM, ROOM 30ABC

Co-Chairs
Quentin Lubart, Chalmers University of Technology, Sweden
Jonathan Rocheleau, University of Toronto, Canada

1699-PLAT 4:00 PM
AMINO ACID TEMPLATED PLASMONIC NANOSENSOR FOR RADIATION GEL DOSIMETRY. **Subhadeep Dutta**, Karthik Pushpavanam, Tomasz Bista, Eric Boshoven, Stephen Sapareto, Kaushal Rege

1700-PLAT 4:15 PM
MICROFLUIDIC APPROACH FOR BIOPRINTING OF *IN VITRO* TISSUE MODELS. **Tatsiana Lobovkina**, Avadhesh Kumar Singh, Vladimir Kirejev, Shijjun Xu, Christoffer Gyllensten, Gavin Jeffries

1701-PLAT 4:30 PM
ISLET-ON-A-CHIP PROVIDES AN OPTICAL WINDOW INTO CELLULAR METABOLISM AND INSULIN SECRETION. Romario Regeenes, Huntley Chang, Hima Gohil, Michael B. Wheeler, **Jonathan V. Rocheleau**

1702-PLAT 4:45 PM
A NANOFLUIDIC DEVICE FOR MULTIPLEXED ANALYSIS OF SINGLE EXOSOMES. **Quentin Lubart**, Sune Levin, Stephan Block, Silver Jõemetsa, Sriram Kesarimangalam, Fredrik Hook, Marta Bally, Fredrik Westerlund, Elin Esbjörner

1703-PLAT 5:00 PM
DEVELOPMENT OF SIMPLE AND RAPID FABRICATIONS FOR SOLID-STATE NANOPORES. **Natsumi Takai**, Masaki Matsushita, Kan Shoji, Tei Maki, Ryuji Kawano

1704-PLAT 5:15 PM TRAVEL AWARDEE
DIRECT IDENTIFICATION AND COUNTING OF MIRNAS IN SINGLE CELLS BY TRANSIENT HYBRIDIZATION AND KINETIC FINGERPRINTING. **Karen Montoya**, Lidan Li, Greg Shelley, Evan Keller, Nils G. Walter

1705-PLAT 5:30 PM
INVSERSE HEXAGONAL LIPID PHASE ENCAPSULATING SIRNA IN LIPID NANOPARTICLES. **Roy Pattipeiluhu**

1706-PLAT 5:45 PM TRAVEL AWARDEE
POLYMER FORCE CLAMPS FOR THE MECHANICAL UNFOLDING OF TARGET MOLECULES. **Hanquan Su**, Joshua Brockman, Aaron Blanchard, Travis Meyer, Yuxin Duan, Zheng Liu, Jing Zhao, Yang Liu, Victor Pui-Yan Ma, Kornelia Galior, Richard B. Dyer, Yonggang Ke, Khalid Salaita

Platform
Cytoskeletal Assemblies, Dynamics, Transport, and Motility

4:00 PM - 6:00 PM, ROOM 31ABC

Co-Chairs
Rae Anderson, University of San Diego
Wolfgang Losert, University of Maryland

1707-PLAT 4:00 PM
EXTRACTION OF ACTIVE RHOGTPASES BY RHOGDI REGULATES SPATIOTEMPORAL PATTERNING OF RHOGTPASES. **Adriana Golding**, Ilaria Visco, Peter Bieling, William Bement

1708-PLAT 4:15 PM
SHAPING THE CYTOSKELETON WITH ELECTRIC FIELDS. **Wolfgang Losert**

1709-PLAT 4:30 PM
BRIDGING MICROTUBULES PROMOTE CENTERING OF THE KINETOCHORES BY LENGTH-DEPENDENT PULLING FORCES. **Agneza Bosilj**, Mihaela Jagric, Jelena Martincic, Patrik Risteski, Iva Tolic, Nenad Pavin

1710-PLAT 4:45 PM
MACROMOLECULAR CROWDING MODULATES THE ORGANIZATION AND STRUCTURE OF ACTIN BUNDLES CROSSLINKED BY FASCIN AND ALPHA-ACTININ. Jinho Park, Myeongsang Lee, Briana Lee, Nicholas Castaneda, Laurene Tetard, **Ellen H. Kang**

1711-PLAT 5:00 PM TRAVEL AWARDEE
TAU DIFFERENTIALLY REGULATES THE DYNAMIC LOCALIZATION OF EARLY ENDOSOMES AND LYSOSOMES. **Linda Balabanian**, Christopher L. Berger, Adam G. Hendricks

1712-PLAT 5:15 PM
DYNAMICS AND OPTIMAL BEHAVIORAL STRATEGIES OF MOTILE NETWORKS. **Ingmar H. Riedel-Kruse**, Nate Cira

1713-Plat 5:30 PM
TRIGGERING SALT-INDUCED CONTRACTION OF CYTOSKELETAL NETWORKS WITH MICROFLUIDICS. **Shea N. Ricketts**, Pawan Khanal, Michael J. Rust, Moumita Das, Jennifer L. Ross, Rae M. Robertson-Anderson

1714-Plat 5:45 PM
EFFECT OF CYTOPLASM CONCENTRATION ON CYTOSKELETON DYNAMICS. **Arthur T. Molines**, Joel Lemiere, Gohta Goshima, Fred Chang

Dinner Meet-Ups

6:00 PM - 6:30 PM, Society Booth/Lobby G

Interested in making new acquaintances and experiencing the cuisine of San Diego? Meet at the Society Booth today 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, Cobalt 500AB

Workshop
Design and Constructing Quantitative Biosensors

7:30 PM - 9:30 PM, Room 24ABC

Chair
Edward Lemke, IMB Mainz, Germany

1715-Wkshp 7:30 PM
FOLDING-BASED ELECTROCHEMICAL BIOSENSORS: A GENERALIZABLE APPROACH TO REAL-TIME, *IN-VIVO* MOLECULAR MEASUREMENTS. **Kevin W. Plaxco**

1716-Wkshp 7:54 PM
TMP-TAG: A CHEMICAL SURROGATE TO THE FLUORESCENT PROTEINS FOR LIVE CELL IMAGING. **Virginia W. Cornish**

No Abstract 8:18 PM
NEW FLUORESCENT AND BIOLUMINESCENT PROBES AND SENSORS. **Kai Johnsson**

1717-Wkshp 8:42 PM
HIGH PERFORMANCE GENETICALLY ENCODED BIOSENSORS OF CELL METABOLISM. **Robert E. Campbell**

1718-Wkshp 9:06 PM
VERSATILE SENSOR DESIGN IN CELLULO BY COMBINING MEMBRANELESS ORGANELLES WITH CLICK CHEMISTRY. **Edward A. Lemke**

Workshop
Chemical Biology Tools for Biophysics

7:30 PM - 9:30 PM, Room 25ABC

Chair
Henry Colecraft, Columbia University

1719-Wkshp 7:30 PM
ADJUSTING MAIN-CHAIN CHEMISTRY IN ION CHANNEL VOLTAGE-SENSORS. **Christopher A. Ahern**

1720-Wkshp 7:54 PM
INSERTION OF SYNTHETIC PEPTIDES INTO PROTEINS BY TANDEM PROTEIN TRANS-SPLICING. **Stephan A. Pless**

1721-Wkshp 8:18 PM
GENETICALLY-ENCODED TAGS FOR CORRELATIVE FLUORESCENCE AND ELECTRON MICROSCOPY. **Kimberly Beatty**

No Abstract 8:42 PM
CONTROLLING THE FATE AND FUNCTION OF PROTEINS WITH PHOTOPHARMACOLOGY. **Dirk Trauner**

No Abstract 9:06 PM
TARGETED (DE)UBIQUITINATION OF ION CHANNELS: FROM MECHANISTIC INSIGHTS TO TRANSLATION. **Henry Colecraft**

Workshop
Simulation Strategies for Large Scales

7:30 PM - 9:30 PM, Room 30ABC

Chair
Tobin Sosnick, University of Chicago

1722-Wkshp 7:30 PM
WEIGHTED ENSEMBLE SIMULATION: TACKLING THE CHALLENGES OF LONG-TIMESCALE KINETICS. **Lillian Chong**

1723-Wkshp 7:54 PM
ON THE ALGORITHMIC IDENTIFICATION OF OPTIMAL COARSE-GRAINED REPRESENTATIONS OF BIOMOLECULES. **Raffaello Potestio**

1724-Wkshp 8:18 PM
GOING BIG: MILLION ATOM SIMULATIONS OF RIBOSOMES AND BILLION ATOM SIMULATIONS OF CHROMATIN. **Karissa Y. Sanbonmatsu**

1725-Wkshp 8:42 PM
CHALLENGES TO THE CREATION OF DYNAMIC STRUCTURAL MODELS OF INTRACELLULAR SYSTEMS. **Adrian H. Elcock**

1726-Wkshp 9:06 PM
UPSIDE: PROTEIN FOLDING IN CPU-HOURS WITH APPLICATIONS TO FORCE-UNFOLDING OF MEMBRANE PROTEINS. **Tobin R. Sosnick**, John M. Jumper, Zongan Wang, Xiangda Peng, Nabil F. Faruk, Karl F. Freed

Workshop
Fluorescence Correlation Spectroscopy

7:30 PM - 9:30 PM, Room 31ABC

Chair
Elizabeth Hinde, University of Melbourne, Australia

No Abstract 7:30 PM
MEASURING BARRIERS TO DIFFUSION IN LIVE CELLS. **Enrico Gratton**

1727-Wkshp 7:54 PM
MINING MOLECULAR NOISE VIA IMAGE CORRELATION SPECTROSCOPY TO MAP MOLECULAR TRANSPORT AND INTERACTIONS IN LIVING CELLS. **Paul W. Wiseman**

1728-Wkshp 8:18 PM
APPLICATION OF SPOT VARIATION FCS (SVFCS) ANALYSIS TO T CELL MEMBRANE DYNAMICS. Yannick Hamon, Anne-Marie Sartre, Anthony Formisano, Sébastien Mailfert, **Didier Marguet**, Hai-Tao He

1729-Wkshp 8:42 PM
PITCHING SINGLE FOCUS CONFOCAL ANALYSIS ONE PHOTON AT A TIME WITH BAYESIAN NONPARAMETRICS. **Steve Presse**

1730-Wkshp 9:06 PM
MAPPING THE DIFFUSIVE ROUTE OF OLIGOMERIC TRANSCRIPTION FACTORS DURING DNA TARGET SEARCH. **Elizabeth Hinde**

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

8:00 PM - 10:00 PM, Room 29C

TUESDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL

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 removed by 4:00 PM on Tuesday 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 Abstract Issue. Board numbers indicate where boards are located in the Exhibit Hall.

On Tuesday, the Exhibit Hall will close completely at 4:00 PM to accommodate the tear down of exhibit. ALL POSTERS MUST BE REMOVED BY 4:00 PM. Posters remaining on the 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 – B28	Protein Structure and Conformation III
B29 – B41	Protein Structure, Prediction, and Design II
B42 – B62	Membrane Protein Dynamics II
B63 – B74	Membrane Protein Folding
B75 – B97	Intrinsically Disordered Proteins (IDP) and Aggregates III
B98 – B114	DNA Replication, Recombination, and Repair
B115 – B134	Chromatin and the Nucleoid I
B135 – B155	Membrane Active Peptides and Toxins II
B156 – B186	Membrane Structure II
B187 – B208	Protein-Lipid Interactions: Structures
B209 – B226	Mechanosensation II
B227 – B251	Exocytosis and Endocytosis
B252 – B267	Calcium Signaling I
B268 – B282	Excitation-Contraction Coupling II
B283 – B309	TRP Channels
B310 – B334	Ion Channel Regulatory Mechanisms II
B335 – B365	Cardiac Muscle Mechanics and Structure
B366 – B392	Kinesins and Dyneins
B393 – B412	Myosins
B413 – B429	Cytoskeletal Assemblies and Dynamics
B430 – B448	Membrane Pumps, Transporters, and Exchangers II
B449 – B475	Mitochondria in Cell Life and Death
B476 – B488	Systems Biology and Disease
B489 – B504	Molecular and Cellular Neuroscience
B505 – B510	Sensory Neuroscience
B511 – B532	Computational Methods and Bioinformatics II
B533 – B542	Optical Microscopy and Superresolution Imaging III
B543 – B559	Single-Molecule Spectroscopy I
B560 – B582	Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence
B583 – B601	Biosensors II
B602 – B618	Biomaterials

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 - B28)

1731-Pos **Board B1**
TWO PKA RIA HOLOENZYME STRUCTURAL STATES DEFINE ATP AS AN ISOFORM SPECIFIC ORTHOSTERIC INHIBITOR THAT COMPETES WITH ALLOSTERIC ACTIVATOR, ATP. **Tsan-Wen Lu**, Susan S. Taylor

1732-Pos **Board B2**
THE EFFECT OF SALT AND TEMPERATURE ON THE CONFORMATIONAL CHANGES OF P1LEA-22, A REPEAT UNIT OF PLANTLATE EMBRYOGENESIS ABUNDANT PROTEINS. David Leon, Michael Vermeuel, Priya Gupta, **Ryan Aschoff**, Michelle R. Bunagan

1733-Pos **Board B3**
STRUCTURAL AND DYNAMIC EFFECTS OF PHOSPHORYLATION OF PROTEIN KINASE A CATALYTIC SUBUNIT. **Lily Vu**, Susan S. Taylor, Phillip C. Aoto, Jui-Hung Weng

1734-Pos **Board B4**
RESIDUAL STRUCTURE OF INTRINSICALLY DISORDERED TRANSACTIVATION DOMAINS REGULATES THEIR BINDING MECHANISMS TO THE TAZ1 DOMAIN OF CBP. **Yifan Zeng**, Meng Gao, Yongqi Huang

1735-Pos **Board B5**
HIGHER-ORDER CLUSTERING OF THE TRANSMEMBRANE ANCHOR OF DR5 DRIVES SIGNALING. **Tianmin Fu**, Hao Wu, James Chou

1736-Pos **Board B6**
EXPLORING THE STATE OF THE F_1-ATPASE AFTER ATP BINDING AND BEFORE ADP RELEASE: EFFECTS OF CONFORMATIONAL CHANGES ON PHOSPHATE DISPLACEMENT. **Ricardo A. Matute**, Sandor Volkan-Kacso, Rudolph A. Marcus

1737-Pos **Board B7**
STUDYING PROLYL OLIGOPEPTIDASE CONFORMATIONAL CHANGES WITH FLUORESCENT PYRENE PROBES. Gabriel S. Santos, William Y. Oyadomari, Elizangela A. Carvalho, Marcelo F. Marcondes, **Vitor Oliveira**

1738-Pos **Board B8**
PROBING RELATIVE DOMAIN MOBILITY OF CLASS-I MAJOR HISTOCOMPABILITY COMPLEX MOLECULES THROUGH RESIDUAL DIPOLAR COUPLINGS. **Hau V. Truong**, Nikolaos Sgourakis

1739-Pos **Board B9**
ROLE OF WATER MOLECULES IN THE WAVELENGTH REGULATION OF PHOTO SWITCHABLE RHODOPSIN MIMIC (HCRBPII). **Nona Ehyaei**, Zahra Nossoni, Hadi Nayebi Gavgani, Meisam Nosrati, Wenjing Wang, Joelle Eaves, Mustapha Akhdar, Chrysoula Vasileilou, Babak Borhan, James H. Geiger

1740-Pos **Board B10**
FLUORESCENT ANALOGUE OF HEXA-COORDINATE GLOBINS TO MONITOR ACCESSIBILITY OF THE HEME POCKET. **Maria J. Santiago Estevez**, Ruipeng Lei, Valerie Derrien, Sophie Bernad, Jaroslava Miksovska

1741-Pos **Board B11**
DESIGN OF INHIBITORY PEPTIDES TARGETING A CRYPTIC POCKET IN TEM-1 BETA-LACTAMASE. **Neha Vithani**, Gregory R. Bowman

1742-Pos **Board B12** **Travel Awardee**
INHIBITING CALPAIN DEPENDENT DEGRADATION OF DESMOPLAKIN. **Kendahl Ott**, Taylor Albertelli, Meagen Ackermann, Heather Manring, Nathan T. Wright

1743-Pos **Board B13**
THE MOLECULAR MECHANISM OF CA^{2+} TRIGGERED DREAM DIMERIZATION. **Maria D Santiago**, Jaroslava Miksovska

1744-Pos **Board B14**
DIRECTLY DETECTION OF A SINGLE AMINO ACID MOLECULE WITH AN AEROLYSIN NANOPORE. Bo Yuan, Xueyuan Wu, Shuang Li, **Yilun Ying**, Yi-Tao Long

1745-Pos **Board B15**
STRUCTURAL AND BIOPHYSICAL CHARACTERIZATION OF EPPA. **Chelsie L. Greene**

1746-Pos **Board B16**
INTERMEDIATE CONFORMATIONS BETWEEN THE NON-FUSOGENIC AND FUSOGENIC CONFORMATIONS OF THE LOOP 36 OF HEMAGGLUTININ. **Cristina E. Ramirez**, Klever D. Cajamarca, Marco V. Bayas

1747-Pos **Board B17**
VALIDATION OF HYDROGEN EXCHANGE MASS SPECTROSCOPY (HXMS) NATIVE-STATE PROTEIN STABILITY METHOD. **Jasper Flint**, Isabella Han

1748-Pos **Board B18**
CIRCULAR DICHROISM STUDY OF LATE EMBRYOGENESIS ABUNDANT PEPTIDES IN REVERSE MICELLES. **Michelle R. Bunagan**, Kyle Barrie, Melvin Paulose, Stephen Schmidt, Christopher Ratanski

1749-Pos **Board B19**
A UNIFIED WORKFLOW TO IDENTIFY QUATERNARY STRUCTURES AND CHANGES IN PROTEIN-PROTEIN INTERACTIONS FROM CROSSLINKING-BASED MASS SPECTROMETRY. **Catherine Barnier**, Lolita Piersimoni, Janet Price, Manolo Plasencia, Matthew R. Chapman, Phillip C. Andrews, Peter L. Freddolino

1750-Pos **Board B20**
UNFOLDING NATURE'S ORIGAMI ACETONITRILE'S ROLE AS A PROTEIN DENATURANT. **Amritha Anup**, Jesmyda Viyano

1751-Pos **Board B21**
UNDERLYING MECHANISM FOR STIMULATED GMP FORMATION IN A UNIQUE LARGE GTPASE HGBP1. **Sowmiya Gupta**, Nikunj H. Raninga, Apurba K. Sau

1752-Pos **Board B22**
INFRARED STUDIES OF AB PEPTIDES WITH COPPER AND ZINC: LINKING INTERACTIONS WITH STRUCTURAL CHANGES. **Tewaldemedhine Gebrejesus**, Keyon Carter, Gina M. MacDonald

1753-Pos **Board B23**
A HOST-GUEST SYSTEM FOR UNDERSTANDING PROTEIN-NANOPARTICLE INTERACTIONS. **Md Siddik Alom**, Sharkeisha Jackson, Yasiru R. Perera, Rahul Yadav, Nicholas C. Fitzkee

1754-Pos **Board B24**
IONIC LIQUIDS INDUCE STRUCTURAL CHANGES OF BSA AND HSA IN AQUEOUS MEDIA. **Juliana Raw**, Leandro R. Barbosa

1755-Pos **Board B25** **Travel Awardee**
PLASMA INDUCED MODIFICATION OF BIOMOLECULES (PLIMB) FOR EPITOPE MAPPING. **Daniel Benjamin**, Faraz A. Choudhury, Benjamin Minkoff, Claire Bramwell, St John Skilton, J. Leon Shohet, Michael R. Sussman

1756-Pos **Board B26**
PROGRAMMABLE DISASSEMBLY OF PROTEIN CAGES BY SELECTIVE PROTEOLYSIS. **Justin E. Miller**, Yashes Srinivasan, Todd O. Yeates

1757-Pos **Board B27** **Travel Awardee**
CHARACTERIZATION OF THE THERMAL AND CHEMICAL DENATURATION OF THE MATRIX PROTEIN FROM HRSV. **Giovana Cavenaghi Guimarães**, Vitor Brassolatti Machado, Jéssica Maróstica de Sá, Marcelo Andres Fossey, Ícaro Putinhon Caruso, Fatima Pereira de Souza

1758-Pos **Board B28**
FLUORESCENT STUDY ON TETANUS NEUROTOXIN. **Pierce ONeil**, Alexey Ladokhin, Liskin Swint-Kruse, Michael Baldwin

Protein Structure, Prediction, and Design II (Boards B29 - B41)

1759-Pos **Board B29**
A DUAL-LIGAND-MODULABLE FUNCTIONAL PROTEIN BASED ON LIGAND-INDUCIBLE GREEN FLUORESCENT PROTEIN AND CALMODULIN. **Yoh Shitashima**, Atsushi Miyawaki

1760-Pos **Board B30**
Travel Awardee
COMPUTATIONAL DESIGN OF PEPTIDES BOUND TO THE MAJOR HISTOCOMPATIBILITY COMPLEX CLASS II. **Rodrigo Ochoa**, Alessandro Laio, Pilar Cossio

1761-Pos **Board B31**
COMPUTATIONAL DESIGN OF TRANSMEMBRANE PEPTIDES THAT BIND AND INHIBIT THE ERYTHROPOIETIN RECEPTOR. **Marco Mravic**, William DeGrado

1762-Pos **Board B32**
ANALYSIS OF SOFTWARE METHODS FOR ESTIMATION OF PROTEIN-PROTEIN RELATIVE BINDING AFFINITY. **Kyle Martin**, Jagdish Patel, Tawny Gonzalez

1763-Pos **Board B33**
RANKING DOCKING MODELS BY COEVOLUTION ANALYSIS. **José Fiorote**

1764-Pos **Board B34**
APPLICATION OF DOCKING TO PROTEIN MODELS. **Amar Singh**, Taras Dauzhenka, Petras Kundrotas, Michael J.E. Sternberg, Ilya Vakser

1765-Pos **Board B35**
INSIGHTS INTO POLYREACTIVITY VIA HIGH-THROUGHPUT BIOPHYSICAL CHARACTERIZATION OF ANTIBODY SEQUENCES. **Christopher T. Boughter**, Marta T. Borowska, Benoit Roux, Erin J. Adams

1766-Pos **Board B36**
SEMI-EXPLICIT SOLVATION IMPROVES LIGAND BINDING SITE DESIGN IN AN ALLOSTERIC PROTEIN. **Zion R. Perry**, Anum A. Glasgow, Tanja Kortemme

1767-Pos **Board B37**
FLEXIBLE DOCKING BETWEEN ENZYME AND ITS INHIBITOR USING MULTICANONICAL MD SIMULATIONS AND BINDING FREE ENERGY CALCULATIONS. **Narutoshi Kamiya**, Gert-Jan Bekker

1768-Pos **Board B38**
IMPROVING THE SPEED AND GENERALITY OF MACHINE LEARNING APPROACHES TO LIGAND-BINDING PROTEIN DESIGN. **Andrew Tao**, Emilia Pecora de Barros, Rommie E. Amaro

1769-Pos **Board B39**
INSIGHTS IN THE BINDING MECHANISM OF GC7 IN *SULFOLOBUS SOLFATARICUS*: TOWARD THE DESIGN OF NEW INHIBITORS OF THE DEOXYHYPUSINE SYNTHASE. **Mattia D'Agostino**, Alice Romagnoli, Daniele Di Marino, Anna La Teana

1770-Pos **Board B40**
BIG DATA FROM SPARSE DATA: DIVERSE SCIENTIFIC BENCHMARKS REVEAL OPTIMIZATION IMPERATIVES FOR IMPLICIT MEMBRANE ENERGY FUNCTIONS. **Rebecca F. Alford**, Jeffrey J. Gray

1771-Pos **Board B41**
INACCURACIES IN CIRCULAR DICHROISM SPECTROSCOPY BASED SECONDARY STRUCTURE ESTIMATES. **Gabor Nagy**, Helmut Grubmueller

Membrane Protein Dynamics II (Boards B42 - B62)

1772-Pos **Board B42**
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, Gary A. Lorigan, Indra D. Sahu, Dominik Konkolewicz, Carole Dabney-Smith, Richard Edelmann

1773-Pos **Board B43**
STUDYING STRUCTURAL AND DYNAMIC PROPERTIES OF KCNE3 IN VARIOUS MEMBRANE ENVIRONMENTS USING MOLECULAR DYNAMICS SIMULATION AND EPR SPECTROSCOPY. **Alberto Perez Galende**, Fathima Dhilhani Mohammed Faleel, Steven Alston, Gary A. Lorigan, Indra D. Sahu

1774-Pos **Board B44**
EFFECTS OF STYRENE-MALEIC ACID (SMA) COPOLYMER ON THE PHOTOACTIVATION MECHANISM OF RHODOPSIN. **Stephanie G. Pitch**, Istvan Szundi, Weekie Yao, Eefei Chen, David L. Farrens, David S. Kliger

1775-Pos **Board B45**
Travel Awardee
STRUCTURE-FUNCTION ANALYSIS OF E-CADHERIN DIMERIZATION AT THE PLASMA MEMBRANE. **Vinh H. Vu**, Taylor P. Light, Kalina Hristova, Deborah E. Leckband

1776-Pos **Board B46**
INVESTIGATING THE BAMA MECHANISM WITH THIOL-REACTIVE PROBE LABELING. **Stephen Upton**

1777-Pos **Board B47**
ACTIVE RHODOPSIN CHROMOPHORE CONFORMATION REVEALED BY SOLID-STATE ^{2}H NMR AND QM/MM SIMULATIONS. Andrey V. Struts, Xiaolin Xu, Trivikram R. Molugu, Suchithranga M. Perera, Samira Faylough, Charitha Guruge, Carolina L. Nascimento, Mikhail N. Ryazantsev, **Michael F. Brown**

1778-Pos **Board B48**
CONFORMATIONAL DYNAMICS OF FULL LENGTH RAS ON THE MILLISECOND TIMESCALE. **Chris Neale**, Angel E. Garcia

1779-Pos **Board B49** **Travel Awardee**
MOLECULAR MECHANISMS OF ION SELECTIVITY IN POTASSIUM CHANNELS. **Marcos Matamoros**, Sun Joo Lee, Shizhen Wang, Colin G. Nichols

1780-Pos **Board B50**
CHOLESTEROL AND PATCHED1: MD SIMULATION STUDIES.
T. Bertie Ansell, Christian Siebold, Mark S. Sansom

1781-Pos **Board B51**
LATERAL GATE OPENING OF BAM COMPLEX STUDIED BY FREE ENERGY CALCULATIONS AND THE STRING METHOD. **Yui Tik Pang**, David Ryoo, Zijian Zhang, Karl Lundquist, James C. Gumbart

1782-Pos **Board B52**
HOW GLYCOSYLATION AFFECTS CONFORMATIONAL DYNAMICS AND SMALL MOLECULE BINDING ON INFLUENZA NEURAMINIDASE. **Christian Seitz**

1783-Pos **Board B53**
PHYSICAL PROPERTIES OF CLAUDIN-15 STRANDS IN TIGHT JUNCTIONS. **Shadi Fuladi**, Christopher Weber, Fatemeh Khalili-Araghi

1784-Pos **Board B54**
THE MULTIVALENT DYNAMICS OF RAF RBD-CRD ON MEMBRANES - ENHANCED AFFINITY DUE TO RECRUITMENT OF ANIONIC LIPIDS. Timothy S. Travers, Cesar A. Lopez, Constance Agamasu, Jeevapani J. Hettige, Angel E. Garcia, Andrew G. Stephen, **Sandrasegaram Gnanakaran**

1785-Pos **Board B55** **Travel Awardee**
PORE ASSEMBLY OF BACTERIAL ALPHA PORE-FORMING TOXIN (APFT), CYTOLYSIN A ON LIPID MEMBRANES. Satyaghosh Maurya, Sandhya Vishweshwaraiah, Ganapathy Ayappa, **Rahul Roy**

1786-Pos **Board B56**
QUANTITATIVE COMPARISONS OF COMPETING MODELS OF AUTOTRANSPORTER PASSENGER-DOMAIN SECRETION. **David Ryoo**, Marcella O. Rydmark, Yui Tik Pang, Karl Lundquist, Dirk Linke, James C. Gumbart

1787-Pos **Board B57**
AN INVESTIGATION OF THE YIDC-MEDIATED MEMBRANE INSERTION OF A PF3 COAT PROTEIN USING MD SIMULATIONS. **Adithya Polasa**, Jeevapani J. Hettige, Kalyan Immadisetty, Mahmoud Moradi

1788-Pos **Board B58**
THE ROLE OF SALT BRIDGE SWITCH IN G PROTEIN-COUPLED RECEPTOR SIGNALING. **Libin Ye**

1789-Pos **Board B59**
MEMBRANE PROTEIN DYNAMICS REVEALED BY X-RAY SCATTERING WITH A FEMTOSECOND FREE-ELECTRON LASER. Thomas D. Grant, Suchithranga M. Perera, Leslie A. Salas-Estrada, Andrey V. Struts, Udeep Chawla, Xiaolin Xu, Steven D. Fried, Nipuna Weerasinghe, D. Mendez, R. Alvarez, K. Karpos, S. Lisova, S. Zaare, R. Nazari, N.A. Zatsepsin, Abhishek Singharoy, S. Boutet, S. Carbajo, M.S. Hunter, M. Liang, M.D. Seaberg, Raimund Fromme, Petra Fromme, Alan Grossfield, Richard A. Kirian, **Michael F. Brown**

1790-Pos **Board B60**
DYNAMIC LATERAL GATE OF BAMA AND TAMA REGULATED BY POTRA DOMAINS. **Jinchan Liu**, James C. Gumbart

1791-Pos **Board B61**
MECHANISTIC PICTURE FOR STRUCTURAL TRANSITION OF P-GLYCOPROTEIN DURING THE TRANSPORT CYCLE. **Sepehr Dehghanighahnaviyeh**, Karan Kapoor, Emad Tajkhorshid

1792-Pos **Board B62**
TRANSMEMBRANE DOMAINS OF ION CHANNELS AS "ANOMALOUS ZONES" OF CELLS: CONFINED DYNAMICS OF WATER IN TRPV1 PORE. Yuri A. Trofimov, Nikolay A. Krylov, **Roman G. Efremov**

Membrane Protein Folding (Boards B63 - B74)

1793-Pos **Board B63** **Travel Awardee**
ENERGETICS OF DIMERIC FKPA BINDING TO A NATIVE UNFOLDED MEMBRANE PROTEIN CLIENT. **Michaela A. Roskopf**, Dagan C. Marx, Karen G. Fleming

1794-Pos **Board B64**
INTERROGATING THE HYBRID-BARREL MODEL OF BACTERIAL OUTER MEMBRANE PROTEIN BIOGENESIS BY THE BAM COMPLEX. **Katie M. Kuo**, Karl Lundquist, James C. Gumbart

1795-Pos **Board B65**
BETA-BARREL MEMBRANE PROTEIN FOLDING INTO NANODISCS. **DeeAnn Asamoto**

1796-Pos **Board B66**
LINKING FOLDING LANDSCAPE WITH FUNCTION IN THE HUMAN MITOCHONDRIAL VDAC2. **Shashank R. Srivastava**, Radhakrishnan Mahalakshmi

1797-Pos **Board B67**
EQUILIBRIUM SAMPLING BETWEEN MEMBRANE INTERIOR AND THE AQUEOUS SECYEG CHANNEL DEPARTS FROM THE BIOLOGICAL HYDROPHOBICITY SCALE. **Denis G. Knyazev**, Roland Kuttner, Mirjam Zimmermann, Peter Pohl

1798-Pos **Board B68**
SODIUM IONS HINDER THE MEMBRANE INSERTION OF THE PH-LOW INSERTION PEPTIDE. Justin M. Westerfield, Chitrak Gupta, Haden L. Scott, Yujie Ye, Alayna Cameron, Blake Mertz, **Francisco N. Barrera**

1799-Pos **Board B69**
MECHANICAL UNFOLDING OF TRANSPORTERS. **Samuel A. Gulaidi Breen**, Justin E. Molloy, Sergi Garcia-Manyes, Paula J. Booth

1800-Pos **Board B70**
INTERPLAY BETWEEN AMINO ACID SEQUENCES AND LIPID COMPOSITIONS IN THE GXXXG-MEDIATED PARALLEL SELF-ASSOCIATION OF TRANSMEMBRANE HELICES AS REVEALED BY SINGLE-PAIR FRET. Takayuki Morise, Yoshiaki Yano, **Katsumi Matsuzaki**

1801-Pos **Board B71**
DETERMINATION OF A BIOLOGICAL HYDROPHOBICITY SCALE FOR SECA-GUIDED INSERTION OF SINGLE-SPAN MEMBRANE PROTEINS. **Stephen H. White**, Eric Lindner

1802-Pos **Board B72**
TMPFOLD, A COMPUTATIONAL METHOD FOR ASSESSMENT OF STABILITY OF TRANSMEMBRANE A-HELICAL ASSEMBLIES. **Andrei L. Lomize**, Irina D. Pogozheva

1803-Pos **Board B73**
THE PERIPHERAL OUTER MEMBRANE PROTEIN BAMB FROM *E. COLI* BINDS IN A RANDOM SURFACE ORIENTATION TO LIPID MEMBRANES. A SITE-DIRECTED FLUORESCENCE STUDY. Lisa Gerlach, **Joerg H. Kleinschmidt**

1804-Pos **Board B74**
RHODOPSIN OLIGOMERIZATION IN SYNTHETIC LIPID BILAYERS AND NATIVE CELLULAR MEMBRANES AS STUDIED BY DEER OF A SPIN-LABELED RETINAL ANALOG. Maxim A. Voinov, Sergey Milikisiyants, Vladislav Perelygin, Melanie M. Chestnut, Rachel Munro, Leonid S. Brown, Vladimir Ladizhansky, **Alex I. Smirnov**

Intrinsically Disordered Proteins (IDP) and Aggregates III (Boards B75 - B97)

1805-Pos **Board B75**
TUNING THE AGGREGATION OF GHG BY CHANGING SAMPLE CONCENTRATION AND PH. **Morgan Hesser**, Lavenia Thursch, David DiGuiseppi, Todd Lewis, Nicolas Alvarez, Reinhard Schweitzer-Stenner

1806-Pos **Board B76**
THE ROLE OF POLYAMPHOLYTE REGIONS OF INTRINSICALLY DISORDERED PROTEINS IN THE FORMATION OF MEMBRANELESS ORGANELLES. **Alexander V. Fonin**, Iuliia A. Antifeeva, Olesya G. Shpironok, Vladimir N. Uversky, Irina M. Kuznetsova, Konstantin K. Turoverov

1807-Pos **Board B77**
THE STUDY OF SELECTED COMPLEXES OF HUMAN SERUM ALBUMIN WITH AMYLOID BETA PEPTIDES AND HUMAN CYSTATIN C. Adriana Żyła, Michał Taube, Augustyn Molinski, Igor Zhukov, Alexander Kuklin, Aneta Szymanska, **Maciej Kozak**

1808-Pos **Board B78**
QUANTITATIVE PROTEOMICS INDICATE A STRONG CORRELATION BETWEEN MITOTIC PHOSPHORYLATION/DEPHOSPHORYLATION AND STRUCTURAL PROPERTIES OF SUBSTRATE DOMAINS. **Hiroya Yamazaki**, Hidetaka Kosako, Shige H. Yoshimura

1809-Pos **Board B79**
GLUTAMINE SIDE-CHAIN TO MAIN CHAIN HYDROGEN BONDS CAN BE USED TO DESIGN SINGLE ALPHA-HELICES THAT ARE STABLE AT ROOM TEMPERATURE. **Albert Escobedo**, Busra Topal, Micha Kunze, Juan Aranda, Giulio Chiesa, Bahareh Eftekharzadeh, Roberta Pierattelli, Isabella C. Felli,

Tammo Diercks, Oscar Millet, Jesús García, Modesto Orozco, Ramon Crehuet, Kresten Lindorff-Larsen, Xavier Salvatella

1810-Pos Board B80
SELECTIVITY AND SPECIFICITY IN WW DOMAIN-PPXY INTERACTIONS. **Afua Nyarko**, Kasie Baker, Amber Vogel, Diego Rodriguez

1811-Pos Board B81
A-SYNUCLEIN DIMERS AS POTENT INHIBITORS OF FIBRILLIZATION. **Yevhenii Kyriukha**, Kseniia Afitska, Andrii Kurochka, Shubhra Sachan, Dmytro Yushchenko, Volodymyr Shvadchak

1812-Pos Board B82
A DOUBLE MUTANT CYCLE INVOLVING THE CHARGED RESIDUES OF AMYLOID BETA. **Anirban Das**, Sudipta Maiti

1813-Pos Board B83
CONVERTING STOCHASTIC ASSEMBLY INTO AN ASSEMBLY LINE: NON-EQUILIBRIUM DROPLET DYNAMICS ASSIST RIBOSOME FORMATION. **Tyler S. Harmon**, Diana M. Mitrea, Richard Kriwacki, Frank Julicher

1814-Pos Board B84
RATIONAL DESIGN OF CONFORMATION-SPECIFIC ANTIBODIES FOR TAU OLIGOMERS. **Klara Kulenkampff**, Francesco A. Aprile, Pietro Sormanni, Rohan T. Ranasinghe, David Klenerman, Michele Vendruscolo

1815-Pos Board B85
THE DYNAMIC ASSOCIATION OF AN IDP WITH A FOLDED PROTEIN WITHOUT LOCALIZED BINDING SITES OR PERSISTENT CONTACTS. **Katrine Bugge**, Jacob H. Martinsen, Catarina B. Fernandes, Robert B. Best, Benjamin Schuler, Birthe B. Kragelund

1816-Pos Board B86
ENTROPY, FLUCTUATIONS, AND DISORDERED PROTEINS. LINKING BETWEEN SEQUENCE, STRUCTURE, AND DISORDER INFORMATION. Eshel Faraggi, A. Keith Dunker, Robert L. Jernigan, **Andrzej Kloczkowski**

1817-Pos Board B87
EXPANSION UPON BINDING GUIDES P27 BINDING TO CDK2/CYCLINA. Maksym Tsytlonok, Katherina Hemmen, George L. Hamilton, Narendar Kolimi, Suren Felekyan, Claus A. Seidel, Peter Tompa, **Hugo Sanabria**

1818-Pos Board B88
PRINCIPLES OF LIGAND MODULATION OF PHASE BEHAVIOR IN MULTICOMPONENT SYSTEMS. **Kiersten M. Ruff**, Furqan Dar, Ammon E. Posey, Rohit V. Pappu

1819-Pos Board B89
UNCOVERING ORDER WITHIN THE DISORDER: REDEFINING IA_3'S INTRINSICALLY DISORDERED PROPERTIES. **Katie M. Dunleavy**, Collin H. Oi, Althea Amaris, Brooke E. Barnes, Daniel A. Savin, Anne Hinderliter, Gail E. Fanucci

1820-Pos Board B90
POLYGLUTAMINE AGGREGATION IN A LIVING ANIMAL IS GOVERNED BY BIOPHYSICAL PARAMETERS. **Tessa Sinnige**, Thomas Michaels, Michele Vendruscolo, Richard I. Morimoto

1821-Pos Board B91 Travel Awardee
SEQUENCE-ENCODED INTERACTIONS MODULATE REENTRANT LIQUID CONDENSATION OF RIBONUCLEOPROTEIN-RNA MIXTURES. **Ibraheem Alshareedah**, Priya R. Banerjee

1822-Pos Board B92
EFFECTS OF MUTATIONS ON HUMAN PRION PROTEIN UNFOLDING. Aliciarose John, Ryan R. Myers, Pedro Fernandez-Funez, **Alessandro Cembran**

1823-Pos Board B93
TARGETING INTRINSICALLY DISORDERED PROTEINS VIA NONSPECIFIC BINDING. **Jianhan Chen**

1824-Pos Board B94
INTERACTION OF BENZOTHIAZOLE DYE THIOFLAVIN T WITH ACIDIC PROTEIN PROTHYMOSIN ALPHA. **Iuliia A. Antifeeva**, Alexander V. Fonin, Anna I. Sulatskaya, Maksim M. Karasev, Irina M. Kuznetsova, Konstantin K. Turoverov

1825-Pos Board B95 Travel Awardee
TETRAMERIC A-SYNUCLEIN STABILITY IN A MIXED METAL ENVIRONMENT. **Ricardo D. Fernandez**, Heather R. Lucas

1826-Pos Board B96
MOLECULAR FORCES IN THE LIQUID-LIQUID PHASE SEPARATION OF BIOMOLECULES. **Timothy J. Welsh**, Georg Krainer, Tuomas P. Knowles

1827-Pos Board B97
KINETICS OF AGGREGATION USING SINGLE-MOLECULE FLUORESCENCE TECHNIQUES TO DETERMINE NUCLEATION AND ELONGATION RATE CONSTANTS OF AMYLOID GROWTH. **Kanchan Garai**, Subhas C. Bera, Shamasree Ghosh, Timir B. Sil

DNA Replication, Recombination, and Repair (Boards B98 - B114)

1828-Pos Board B98
PROBING AND VISUALIZATION OF THE RECQ HELICASE-INDUCED DNA BINDING MODE CHANGE OF THE BACTERIAL SINGLE-STRANDED DNA BINDING (SSB) PROTEIN. Zoltan J. Kovacs, Ágnes Hubert, Veronika Baráth, Lili Farkas, Yeonee Seol, Keir C. Neuman, Gabor Harami, **Mihaly Kovacs**

1829-Pos Board B99
ASSEMBLY AND BINDING OF *E COLI* RECOR PROTEINS TO SSB C-TERMINAL TAILS. **Min Kyung Shinn**, Alexander G. Kozlov, Timothy M. Lohman

1830-Pos Board B100 Travel Awardee
SYNERGISTIC COORDINATION OF CHROMATIN TORSIONAL MECHANICS AND TOPOISOMERASE ACTIVITY. **Tung T. Le**, Xiang Gao, Seong ha Park, Jaeyoon Lee, James T. Inman, Joyce H. Lee, Jessica L. Killian, Ryan P. Badman, James M. Berger, Michelle D. Wang

1831-Pos Board B101
SINGLE-MOLECULE SUPER-LOCALIZATION OPTICAL MICROSCOPY REVEALS HOW BARRIERS TO DNA REPLICATION ARE RESOLVED IN LIVING CELLS. **Mark C. Leake**

1832-Pos Board B102
IDENTIFYING EVOLUTIONARILY CONSERVED FEATURES OF NHEJ FROM PROKARYOTES TO EUKARYOTES USING SINGLE-MOLECULE APPROACHES. **Robin Öz**, Jinglong Wang, Raphael Guerois, Sriram KK, Rajhans Sharma, Firat Koca, Mauro Modesti, Terence R. Strick, Fredrik Westerlund

1833-Pos Board B103
ALLOSTERIC EFFECTS OF RECB NUCLEASE DOMAIN ON RECBCD-DNA INTERACTIONS. **Linxuan Hao**, Timothy M. Lohman

1834-Pos Board B104
2D FLUORESCENCE SPECTROSCOPY IS USED TO PROBE LOCAL CONFORMATIONS AND CONFORMATIONAL DISORDER OF THE SUGAR-PHOSPHATE BACKBONES OF DNA AT AND NEAR DNA REPLICATION FORK JUNCTIONS. **Dylan Heussman**, Justin Kittell, Maya Pande, Amr Tamimi, Tom Steinberg, Peter H. von Hippel, Andrew H. Marcus

1835-Pos Board B105
REPLICATION FORK ACTIVATION IS ENABLED BY A SINGLE-STRANDED DNA GATE IN CMG HELICASE. **Michael R. Wasserman**, Grant D. Schauer, Michael E. O'Donnell, Shixin Liu

1836-Pos **Board B106**
SEQUENCE-DEPENDENT PAUSING OF A DNA REPAIR HELICASE. **Alice Troitskaia**, Barbara Stekas, Maria Spies, Yann R. Chemla

1837-Pos **Board B107**
RING-SHAPED REPLICATIVE HELICASE ENCIRCLES DOUBLE-STRANDED DNA DURING UNWINDING. **Mina Lee**, Sihwa Joo, Tai Hwan Ha

1838-Pos **Board B108**
BIUXX. **Lee Ryanggeun**, Jiaquan Liu, Brooke M Britton, Keunsang Yang, Jong-Bong Lee, Richard Fishel

1839-Pos **Board B109**
ACTIVATION OF REP HELICASE BY PRIC. **Binh Nguyen**, Elizabeth Weiland, Timothy M. Lohman

1840-Pos **Board B110**
THE FREE ENERGY LANDSCAPE OF RETROVIRAL INTEGRATION AND MOLECULAR MECHANISMS OF DNA COMPACTION. Willem Vanderlinden, Pauline J. Kolbeck, Tine Brouns, Zeger Debyser, **Jan Lipfert**

1841-Pos **Board B111**
A COMPREHENSIVE CHARACTERISATION OF THE MOLECULAR BINDING MECHANISM OF SHELTERIN PROTEIN TPP1 TO HUMAN TELOMERASE INVESTIGATED BY COMPUTATIONAL METHODS. **Simone Aureli**, Vittorio Limongelli

1842-Pos **Board B112**
ELECTRICALLY ACTUATABLE ZERO-MODE WAVEGUIDES FOR HIGH-THROUGHPUT SEQUENCING. **Fatemeh Farhangdoust**, Mohammad A. Alibakhshi, Meni Wanunu

1843-Pos **Board B113**
TRACKING DNA REPLICATION RESTART *IN VIVO* AT THE SINGLE-MOLECULE LEVEL. **Alex L. Hargreaves**, Aisha Syeda, Mark C. Leake

1844-Pos **Board B114**
LIVE CELL MONITORING OF CHROMOSOME LOSS REPORTER. **Kuangzheng Zhu**, Yuntao Xia, Jerome Irianto, Jason C. Andrechak, Lawrence J. Dooling, Charlotte R. Pfeifer, Dennis E. Discher

Chromatin and the Nucleoid I (Boards B115 - B134)

1845-Pos **Board B115**
THE CURIOUS CASE OF STRONGLY BENT DNA. **Alexey V. Onufriev**

1846-Pos **Board B116**
SEQUENCE-MODULATED ELECTROSTATICS OF POLY-PEPTIDES-DNA INTERACTIONS. Raju Timsina, **Xiangyun Qiu**

1847-Pos **Board B117**
IN VITRO, IN VIVO CHARACTERIZATION OF STRUCTURE-BASED NUCLEOSOME BINDING PEPTIDES. **Kaian A. Teles**, Vinicius Fernandes, Isabel Torres, Manuela Leite, Vincenzo Lobbia, Cesar Grisolia, Hugo van Ingen, Werner Treptow, Guilherme Santos

1848-Pos **Board B118**
STRUCTURAL AND SINGLE-MOLECULE STUDIES ON THE ASSEMBLY MECHANISM OF HISTONE H3-H4 BY FISSION YEAST AAA$^+$ATPASE ABO1. **Yujin Kang**, Ja Yil Lee

1849-Pos **Board B119**
HISTONE-DNA INTERACTIONS IN THE ARCHAEON *METHANOCALDOCOCCUS JANNASCHII*. **Alice E. Carty**, Finn Werner, Justin E. Molloy

1850-Pos **Board B120** **Travel Awardee**
NUCLEOSOME ASSEMBLY STATE GOVERNS HISTONE H3 TAIL CONFORMATION AND DYNAMICS. **Emma A. Morrison**, Lokesh Baweja, Jeffery M. Wereszczynski, Catherine A. Musselman

1851-Pos **Board B121**
THE EFFECT OF H2A.B HISTONE VARIANT SUBSTITUTION ON NUCLEOSOME DYNAMICS AND INTERACTIONS. **Havva Kohestani**, Jeffery Wereszczynski

1852-Pos **Board B122**
THE CHARACTERIZATION OF HUMAN TESTIS-SPECIFIC HISTONE VARIANT H2BFW ON NUCLEOSOME STABILITY AND ITS FUNCTIONAL ROLE IN SPERMATOGENESIS. **Yu Hin Pang**, Dongbo Ding, Xulun Sun, Toyotaka Ishibashi

1853-Pos **Board B123**
THE EFFECTS OF THE LINKER HISTONE BINDING STATES ON CHROMATOSOME DYNAMICS. **Dustin C. Woods**, Jeffery Wereszczynski

1854-Pos **Board B124**
PIECES OF THE PUZZLE: INDIVIDUAL HFACT SUBDOMAINS COORDINATE TO REMODEL NUCLEOSOMES. **Micah J. McCauley**, Ran Huo, Emily Navarrete, Nicole A. Becker, Qi Hu, Uma Muthurajan, Ioulia Rouzina, Karolin Luger, Georges Mer, L. James Maher, Nathan Israeloff, Mark C. Williams

1855-Pos **Board B125**
THE EFFECT OF HISTONE H4 K20 METHYLATION ON CHROMATIN COMPACTION. **Nesreen Elathram**, Galia T. Debelouchina

1856-Pos **Board B126**
COMPUTATIONAL STUDY OF STRUCTURE-BASED NUCLEOSOME BINDING PEPTIDES. Kaian Teles, **Vinicius Fernandes**, Isabel Torres, Werner Treptow, Guilherme Santos

1857-Pos **Board B127**
SPECIFICITY AND AFFINITY OF BPTF PHD FINGER AND BROMODOMAIN IN THE CONTEXT OF THE NUCLEOSOME. **Harrison A. Fuchs**, Matthew R. Marunde, Irina K. Popova, Nathan Hall, Jonathan M. Burg, Matt J. Meiners, Zachary Gillespie, Marcus A. Cheek, Sarah A. Howard, Zu-Wen Sun, Emma A. Morrison, Michael-Christopher Keogh, Catherine A. Musselman

1858-Pos **Board B128**
EXPLORING INTERACTIONS OF NUCLEOSOME VIA INTERACTOME ANALYSIS AND INTEGRATIVE MODELING. **Yunhui Peng**, Yaroslav Markov, David Landsman, Anna R. Panchenko

1859-Pos **Board B129**
POSITIVE TORSIONAL STRESS ON DNA ENHANCES UNWRAPPING OF NUCLEOSOMAL DNA. **Hisashi Ishida**, Hidetoshi Kono

1860-Pos **Board B130**
BUNGEE JUMPING INTO ELASTICITY OF FRAGILE SITES. **Yamini Dalal**

1861-Pos **Board B131**
DETECTION OF NUCLEOSOME-RCC1 COMPLEXES USING NANOPORES. **Sumanth K. Maheshwaram**, Jyoti Sharma, Gautam V. Soni

1862-Pos **Board B132** **Travel Awardee**
SINGLE-MOLECULE INVESTIGATION OF PRC2 NON-ADJACENT NUCLEOSOME BRIDGING. **Rachel Leicher**, Eva Ge, Xingcheng Lin, Matthew J. Reynolds, Thomas Walz, Bin Zhang, Tom Muir, Shixin Liu

1863-Pos **Board B133**
DNA-LOOP EXTRUDING CONDENSIN COMPLEXES CAN TRAVERSE ONE ANOTHER. **Eugene Kim**, Jacob Kerssemakers, Indra Shaltiel, Christian Haering, Cees Dekker

1864-Pos **Board B134**
CHARACTERIZING THE STABILITY OF AN ENGINEERED REGULATORY DNA LOOP IN LIVING *E. COLI* CELLS. **Nicole A. Becker**, William J. Phillips, Jordan P. Wallace, Tanya L. Schwab, Karl J. Clark, L. James Maher

Membrane Active Peptides and Toxins II (Boards B135 - B155)

1865-Pos Board B135
ANTIMICROBIAL PEPTIDE FUNCTIONALIZED BIOMATERIALS INVESTIGATED BY MOLECULAR DYNAMICS SIMULATIONS. **Fathima T. Doole**, Chun Kit Chan, Minkyu Kim, Abhishek Singharoy, Michael F. Brown

1866-Pos Board B136
SMALL ION TRANSPORT PROPERTIES OF THE ANTHRAX TOXIN CHANNELS. **Goli Yamini**, Albatul Alshehri, Ekaterina M. Nestorovich

1867-Pos Board B137
BETA-BLOCKERS ALTER LIPID BILAYER PROPERTIES. **Radda Rusinova**, Kendra Zhang, Olaf S. Andersen

1868-Pos Board B138
UNRAVELLING THE MECHANISM OF ACTION OF PEPR, A VIRAL-DERIVED MEMBRANE-ACTIVE PEPTIDE, AGAINST STAPHYLOCOCCUS AUREUS BIOFILMS. **Ana Salomé Veiga**, Sandra N. Pinto, Susana A. Dias, Ana F. Cruz, Dalila Mil-Homens, Fábio Fernandes, Javier Valle, David Andreu, Manuel Prieto, Miguel A. Castanho, Ana Coutinho

1869-Pos Board B139
CONSTANT PH SIMULATIONS REVEAL EFFECTS OF SALT AND POINT MUTATIONS ON BEHAVIOR OF THE PH-LOW INSERTION PEPTIDE IN SOLUTION. **Nicolas C. Frazee**, Blake Mertz

1870-Pos Board B140 Travel Awardee
MEMBRANE DISRUPTION AND PEPTIDE/LIPID CO-ASSEMBLY BY THE AMYLOID-FORMING PEPTIDE, $PAP_{248-286}$. **Eleanor W. Vane**, Abhinav Nath

1871-Pos Board B141
DYNAMICS OF MELTTIN PORES IN LIPOSOMES PROBED BY ALL-ATOM SIMULATIONS. **Jung-Hsin Lin**

1872-Pos Board B142
A LAYER OF DEAD CELLS AT THE PERIPHERY PROTECTS BIOFILMS FROM ANTIMICROBIAL PEPTIDES. **Sattar Taheri-Araghi**, Ohannes Guerbidjian

1873-Pos Board B143
INHIBITION OF TOLAASIN HEMOLYTIC ACTIVITY BY INCREASE IN GD^{3+}-INDUCED MEMBRANE RIGIDITY. **Young-Kee Kim**, Yeong-Bae Yun

1874-Pos Board B144
SECRETION OF PORE-FORMING PEPTIDE TOXIN, TOLAASIN, BY PTA TYPE STRAINS OF *PSEUDOMONAS TOLAASII*, BUT NOT BY PTB TYPE STRAINS. **Yeong-Bae Yun**, Young-Kee Kim

1875-Pos Board B145 Travel Awardee
LIPOSOMES IMPEDE EXOTOXINS CYTOLYTIC EFFECTS. **Marcelo Ayllon**, Zoe Hutchinson, Ana Velasquez, Catherine Alex, Daniel Fologea

1876-Pos Board B146
TRANSLOCATION OF THE CELL PENETRATING PEPTIDE PENETRATIN THROUGH ASYMMETRIC MODEL MEMBRANES FORMED BY A MICROFLUIDIC DEVICE: ROLE OF THE LIPIDS AND TRANSMEMBRANE POTENTIAL. **Pauline Gehan**, Vincent Vivier, Kieu Ngo, Sandrine Sagan, Astrid Walrant, Sophie Cribier, Nicolas Rodriguez

1877-Pos Board B147
DIFFERENTIAL GENE EXPRESSION ANALYSIS OF RNA-SEQ DATA FOR DETECTING INTERNAL TARGETS OF ANTIMICROBIAL PEPTIDES. **Salimeh Mohammadi**, Federico Prokopczuk, Xintian Li, Sattar Taheri-Araghi

1878-Pos Board B148
HETERO-MULTIVALENT BINDING OF LECTIN TO GLYCANS ON CELL MEMBRANES. **Hung-Jen Wu**, Akshi Singla, Joseph S. Kwon, Hyun-Kyu Choi, Dongheon Lee

1879-Pos Board B149
STEROL INTERACTIONS WITH AMPHOTERICIN SPONGE: DYNAMICS DRIVE AFFINITY. **Kevin J. Cheng**, Ashley M. De Lio, Agnieszka Lewandowska, Lisa Della Ripa, Martin D. Burke, Chad M. Rienstra, Taras V. Pogorelov

1880-Pos Board B150
INDUCED MEMBRANE PERMEABILIZATION AND VESICLE FUSION: SYNTHETIC ANTIMICROBIALS ACTING ON MODEL MEMBRANES. **Shuai Shi**, Ndjali Quarta, Runhui Liu, Maria Hoernke

1881-Pos Board B151
CYTOSOLIC DELIVERY OF ANTIBODIES AND OTHER MACROMOLECULES. **Eric Wu**, Sarah Y. Kim, Kalina Hristova, William C. Wimley

1882-Pos Board B152
DESIGN OF NOVEL ANTIMICROBIAL PEPTIDES IN A MULTI-STAGE *IN SILICO* APPROACH. Alexandra Farcas, Luiza Buimaga-Iarinca, Calin Floare, **Lorant Janosi**

1883-Pos Board B153
UNDERSTANDING THE MECHANISM OF ANTIMICROBIAL PEPTIDES USING SMALL-ANGLE X-RAY AND NEUTRON SCATTERING TECHNIQUES. Josefine Eilso Nielsen, **Reidar Lund**

1884-Pos Board B154
THE LOCATION OF THE HYDROPHOBIC PROTEINS SP-B AND SP-C IN FLUID-PHASE BILAYERS. Ryan W. Loney, Sergio Panzuela, Jespar Chen, Zimo Yang, Jonathan R. Fritz, Valentina Corradi, Kamlesh Kumar, D. Peter Tieleman, **Stephen B. Hall**, Stephanie A. Tristram-Nagle

1885-Pos Board B155
A FLUORESCENT-BASED APPROACH TO UNRAVEL PROTEIN-PROTEIN INTERACTIONS IN ACTINOPORINS. **Juan Palacios-Ortega**, Esperanza Rivera, Sara García-Linares, Jose G. Gavilanes, Álvaro Martínez-del-Pozo, J Peter Slotte

Membrane Structure II (Boards B156 - B186)

1886-Pos Board B156
EFFECT OF MELATONIN ON LIPID MEMBRANE STRUCTURE AND MEMBRANE INTERACTIONS WITH AMYLOID. AN NMR AND LSPR STUDY. **Nanqin Mei**, Morgan Robinson, James H. Davis, Zoya Leonenko

1887-Pos Board B157
STRUCTURE OF LUNG SURFACTANT FROM DIFFERENT SOURCES: A SMALL-ANGLE-X-RAY SCATTERING (SAXS) STUDY. **José C. Castillo-Sanchez**, Jenny M. Andersson, Barbara Eicher, Emma Batllori-Badia, Alberto Galindo, Georg Pabst, Antonio Cruz, Kevin Roger, Jesus Perez-Gil

1888-Pos Board B158
A GENERIC PROTOCOL FOR CONSTRUCTING MOLECULAR MODELS OF NANODISCS IN SILICO. **Lisbeth Ravnkilde Kjølbye**, Birgit Schiøtt

1889-Pos Board B159
BEYOND THE MONOLAYER: PULMONARY SURFACTANT FILMS ANALYSED BY A FLUID-INTERFACES-GRAZING-ANGLES-NEUTRON-REFLECTOMETER (FIGARO). **José C. Castillo-Sanchez**, Ainhoa Collada, Antonio Cruz, Armando Maestro, Jesus Perez-Gil

1890-Pos Board B160
TRANSMEMBRANE PROTEIN EFFECTS ON LIPID BILAYER OXYGEN PERMEABILITY. Rachel J. Dotson, **Sally C. Pias**

1891-Pos Board B161
IDENTIFYING SYSTEMATIC ERRORS IN THE ANALYSIS OF SIMULATED MEMBRANE FLUCTUATION SPECTRA. **Muhammed F. Erguder**, Markus Deserno

1892-Pos **Board B162**
DIRECT IMAGING OF NANOSCALE LIPID ORGANIZATION IN PROBE-FREE BIOMIMETIC MEMBRANES. Frederick A. Heberle, Milka Doktorova, Haden L. Scott, Allison Skinkle, Edward R. Lyman, Neal Waxham, **Ilya Levental**

1893-Pos **Board B163**
SPONTANEOUS CURVATURE GENERATION IN ASYMMETRIC LIPID BILAYERS WITH TENSIONLESS LEAFLETS. **Markus S. Miettinen**, Reinhard Lipowsky

1894-Pos **Board B164** **Travel Awardee**
EXPERIMENTAL EVIDENCE THAT BILAYER ASYMMETRY DECREASES LO/LD LINE TENSION. **Thais A. Enoki**, Frederick A. Heberle, Gerald W. Feigenson

1895-Pos **Board B165**
CHOLESTEROL SPATIAL DISTRIBUTION IN ASYMMETRIC LIPID BILAYERS. **Mohammadreza (Reza) Aghaaminiha (Amini)**, Sumit Sharma

1896-Pos **Board B166**
THE EFFECTS OF PHOTOSENSITIZED LIPID OXIDATION ON SUPPORTED LIPID BILAYER FORMATION AND MEMBRANE DEFORMATION. **Ashley M. Baxter**, Nathan J. Wittenberg

1897-Pos **Board B167**
A MEMBRANE TUBULE BILAYER ASSAY FOR CURVATURE SORTING OF PHOSPHATIDIC ACID. **Broderick L. Bills**, Michelle K. Knowles

1898-Pos **Board B168**
MEASUREMENTS OF LIPID COMPOSITION FLUCTUATIONS AROUND A PLASMA MEMBRANE ION CHANNEL: IMPLICATIONS FOR FUNCTION. **Thomas R. Shaw**, Sarah L. Veatch

1899-Pos **Board B169**
THE ROLE OF LIPID STRUCTURE INDISRUPTION OF LIPID MEMBRANES BY SILICA NANOPARTICLES. **Saeed Nazemidashtarjandi**, Amir Farnoud

1900-Pos **Board B170**
COLLOIDAL GUEST PARTICLES IN CUBIC MO-PHASES: TRANSITORY STATES AND PHASE DISTORTION. Christian K. Christensen, Chen Shen, Tanaka Shinpei, **Beate M. Klösgen**

1901-Pos **Board B171**
INTERLEAFLET INTERACTION IN PHASE SEPARATED ASYMMETRIC LIPID BILAYERS. Ali Saitov, Krystina Pluhackova, Timur R. Galimzyanov, Rainer Böckmann, Sergey A. Akimov, **Peter Pohl**

1902-Pos **Board B172**
FUNCTIONAL AND STRUCTURAL CHARACTERIZATION OF A LYOPHILIZED PULMONARY SURFACTANT DIRECTLY APPLIED ONTO THE AIR-LIQUID INTERFACE. **Mercedes Echaide**, Sonia Vazquez-Sanchez, Antonio Cruz, Jesus Perez-Gil

1903-Pos **Board B173**
EXTENDING SDP MODELING TO THE INVERTED HEXAGONAL PHASE. Jason R. Pruim, Conrad J. Kuz, **Paul E. Harper**

1904-Pos **Board B174**
SPHERICAL NANOVESICLES TRANSFORM INTO A MULTITUDE OF NON-SPHERICAL SHAPE. **Rikhia Ghosh**, Vahid Satarifard, Andrea Grafmüller, Reinhard Lipowsky

1905-Pos **Board B175**
ON THE MECHANISM OF BILAYER SEPARATION BY EXTRUSION; OR, WHY YOUR LARGE UNILAMELLAR VESICLES ARE NOT REALLY UNILAMELLAR. **Haden L. Scott**, Allison Skinkle, Elizabeth G. Kelley, Neal Waxham, Ilya Levental, Frederick A. Heberle

1906-Pos **Board B176**
POTENTIALS OF MEAN FORCE OF BILAYER DEFORMATION. **Giacomo Fiorin**, Fabrizio Marinelli, José D. Faraldo-Gómez

1907-Pos **Board B177**
DIFFERENTIATING BETWEEN MEMBRANE TOPOGRAPHY AND MOLECULAR CLUSTERING. **Ingela Parmryd**, Sven-Göran Eriksson, Kristoffer Bernhem, Jeremy Adler

1908-Pos **Board B178**
SIMULATIONS OF AN ASYMMETRIC MAMMALIAN LIPIDOME. Milka Doktorova, Kandice R. Levental, Erdinc Sezgin, Ilya Levental, **Edward R. Lyman**

1909-Pos **Board B179**
CANNABIDIOL AFFECTS CHAIN PACKING IN LIPID MEMBRANES. **Abeline R. Watkins**, Tejas Phaterpekar, Peter C. Ruben, Jenifer L. Thewalt

1910-Pos **Board B180**
ALTERATION OF LIPID BILAYER STRUCTURE BY FREE FATTY ACID: A COMPARATIVE STUDY OF FREE FATTY ACID AND CHOLESTEROL. **Mohammad Alwarawrah**, Jacquelyne Rea

1911-Pos **Board B181**
THE EFFECT OF SEROTONIN ON THE LATERAL SEGREGATION OF A RAFT MEMBRANE MIXTURE. **Oskar Engberg**, Simli Dey, Holger A. Scheidt, Sudipta Maiti, Daniel Huster

1912-Pos **Board B182**
ORIGIN OF LIPID TILT IN FLAT LIPID MONOLAYERS AND BILAYERS. Boris B. Kheyfets, Timur R. Galimzyanov, **Sergei I. Mukhin**

1913-Pos **Board B183**
EFFECT OF LIPID STRUCTURE AND MATERIAL PROPERTIES ON THE MEMBRANE STABILITY TO PORE FORMATION. **Timur R. Galimzyanov**, Andrew H. Beaven, Maxim A. Kalutskiy, Alexander J. Sodt, Paul S. Blank, Joshua Zimmerberg, Sergey A. Akimov, Oleg V. Batishchev

1914-Pos **Board B184**
PROPERTIES OF ASYMMETRIC MEMBRANES FROM COARSE GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Samuel Foley**, Markus Deserno

1915-Pos **Board B185**
STUDY ON ERGOSTEROL AND CHOLESTEROL CONFORMATIONAL FREEDOM AND THEIR DIFFERENT INTERACTION WITH A POPC/SM BILAYER. AN AFM AND MD STUDY. **Arturo Galván-Hernández**, Jorge Hernández-Cobos, Armando Antillón, Ivan Ortega-Blake

1916-Pos **Board B186** **Travel Awardee**
CHARACTERIZATION OF PHOSPHOLIPID COMPOSITION IN THE OUTER LEAFLET OF RED BLOOD CELLS. **Amid Vahedi**, Amir Farnoud

Protein-Lipid Interactions: Structures (Boards B187 - B208)

1917-Pos **Board B187**
INTERACTION OF ALPHA-SYNUCLEIN WITH RAFT CONTAINING MODEL LIPID MEMBRANES: MORPHOLOGY AND STRUCTURE. **Loredana Casalis**, Pietro Parisse, Fabio Perissinotto, Valeria M. Rondelli, Denis Scaini, Giuseppe A. Legname, Chiaramaria Stani

1918-Pos **Board B188**
MOLECULAR DYNAMICS STUDY OF MULTIDRUG EFFLUX TRANSPORTER ACRA-ACRB-ACRA-TOLC COMPLEX EMBEDDED IN LIPID BILAYER. **Keiko Shinoda**

1919-Pos **Board B189**
BINDING AND INTERACTION OF HUMAN BETA DEFENSIN TYPE 3 WITH MIXED PIP2 LIPID MEMBRANES. **Liqun Zhang**

1920-Pos **Board B190**
EFFECT OF CHARGED LIPIDS ON THE IONIZATION BEHAVIOR OF GLUTAMIC ACID-CONTAINING TRANSMEMBRANE HELICES. **Brooke Nunn**, Matthew McKay, Denise V. Greathouse, Roger E. Koeppe

1921-Pos Board B191
SOLIDSTATE NMR INVESTIGATIONS OF THE MHC II TRANSMEMBRANE DOMAINS: TOPOLOGICAL EQUILIBRIA AND LIPID INTERACTIONS. **Evgeny Salnikov**, Christopher Aisenbrey, Bianca Pokrandt, Britta Bruegger, Burkhard Bechinger

1922-Pos Board B192
A MOLECULAR SIMULATION METHOD TO PREDICT THE SOLVATION, FOLD, SELF-ASSEMBLY, AND PORATION OF PEPTIDES AND PROTEINS IN MEMBRANES. **Jingjing Huang**, Régis Pomès

1923-Pos Board B193
USE OF GIANT PLASMA MEMBRANE VESICLES (GPMV) TO EXAMINE THE LO/LD PHASE PREFERENCE OF THE C99 DOMAIN OF THE AMYLOID PRECURSOR PROTEIN. **Ricardo F. Capone**, Ajit Tiwari, Nico Fricke, Arina Hadziselimovic, Anne K. Kenworthy, Charles R. Sanders

1924-Pos Board B194 Travel Awardee
CELL-FREE EXPRESSION SYSTEMS: PROBING NUCLEAR MECHANOTRANSDUCTION USING NOVEL ENGINEERING PLATFORMS. **Sagardip Majumder**

1925-Pos Board B195
A SINGLE PARTICLE TRACKING STUDY OF MORE NATIVELY FOLDED RECOMBINANT HUMAN AQUAPORIN-4 ORTHOGONAL ARRAY OF PARTICLES. **Jessica D. Carder**, Michael J. Martinez, Francesco Pisani, Antonio Frigeri, Grazi P. Nicchia, James A. Brozik

1926-Pos Board B196
LIPID-DEPENDENT TITRATION OF GLUTAMIC ACID AT A MEMBRANE INTERFACE. **Roger E. Koeppe**, Matthew J. McKay

1927-Pos Board B197
EFFECT OF PH AND LIPID COMPOSITION ON MEMBRANE-SPANNING HELICES WITH GLUTAMIC ACID EXAMINED BY SOLID-STATE NMR. **Kelsey A. Marr**, Matthew McKay, Denise V. Greathouse, Roger E. Koeppe

1928-Pos Board B198
THE INFLUENCE OF LIPID TAIL COMPOSITION ON BID-MEDIATED BAX PORE FORMATION. **Ahmad Mahmood**, Helen M. Zhu, Cécile Fradin

1929-Pos Board B199
DISPOSITION OF *ESCHERICHIA COLI* SECA ATPASE MOTOR PROTEIN BOUND TO LIPID VESICLES. **Guillaume Roussel**, Stephen H. White

1930-Pos Board B200
STRUCTURAL TRANSITIONS IN MEMBRANE PROTEINS REVEALED BY INFRARED REFLECTION ABSORPTION SPECTROSCOPY. **Christian Schwieger**

1931-Pos Board B201
PROBING THE INTERACTIONS BETWEEN THE SMALL GTPASE ARF1 AND ITS ARFGAP ASAP1 AT THE MEMBRANE INTERFACE. **Olivier Soubias**, Frank Heinrich, Shashank Pant, Yue Zhang, Paul Randazzo, Mathias Losche, Emad Tajkhorshid, Robert A. Byrd

1932-Pos Board B202
RECONSTITUTION REVEALS HOW MYOSIN-VI SELF-ORGANISES TO GENERATE A DYNAMIC MECHANISM OF MEMBRANE SCULPTING. **Dario Saczko-Brack**, Benoit Rogez, Laeschkir Würthner, Anastasia B. Petrova, Felix Zierhut, Maria-Ana Huergo, Christopher Batters, Erwin Frey, Claudia Veigel

1933-Pos Board B203
SIGNIFICANCE OF SECONDARY STRUCTURE DETERMINATION WHEN EVALUATING RATIONALLY DESIGNED ANTIMICROBIAL PEPTIDES. Aria Salyapongse, Anja Penk, Daniel Huster, Robert K. Ernst, Berthony Deslouches, Y.P. Peter Di, **Stephanie A. Tristram-Nagle**

1934-Pos Board B204
MITOCHONDRIAL MEMBRANES INVOLVED IN APOPTOSIS - THE BCL-2 PROTEINS. Jörgen Åden, Ameeq Ul Mushtaq, Tobias Sparrman, Artur P. Dingeldein, Hanna P. Wacklin, Hanna Wacklin, Luke A. Clifton, **Gerhard Grobner**

1935-Pos Board B205
NATIVE LUMINESCENCE AND LUMINESCENCE LIFETIME OF CYTOCHROME P450 3A4 WITHIN ENDOPLASMIC RETICULUM BIOMIMETIC NANODISCS. **Michael J. Martinez**, Bryan C. Borders, Stephen Mather, Carlo Barnaba, Bixia Zhang, ChulHee Kang, James A. Brozik

1936-Pos Board B206
USING HIGH-THROUGHPUT STRUCTURE PREDICTION AND EVOLUTIONARY ALIGNMENT TO MAP ELECTROSTATIC PROTEIN-MEMBRANE INTERACTIONS. **Nara L. Chon**, Sherleen Tran, Christopher S. Miller, Hai Lin, Jefferson D. Knight

1937-Pos Board B207
ATTEMPTED "RESCUE" OF GLUTAMIC ACID BY ARGININE IN A TRANSMEMBRANE HELIX. **Jake R. Price**, Fahmida Afrose, Roger E. Koeppe

1938-Pos Board B208
INVESTIGATING THE STRUCTURE AND TOPOLOGY OF THE PINHOLIN MEMBRANE PROTEIN USING PULSED DEER AND CW-EPR SPECTROSCOPIC TECHNIQUES. **Gary A. Lorigan**, Tanbir Ahammad, Rasal Khan

Mechanosensation II (Boards B209 - B226)

1939-Pos Board B209
GLYCOLYSIS INHIBITION ALTERS JUNCTION MECHANICS BY PERTURBING ACTIN AND FOCAL ADHESIONS IN ENDOTHELIAL CELLS. **Gregory J. Schwarz**, Priyanka Gajwani, Jalees Rehman, Deborah E. Leckband

1940-Pos Board B210
MATRIX STIFFNESS MEDIATES RADIO-RESISTANCE OF HEPATOCELLULAR CARCINOMA THROUGH REGULATION OF REACTIVE OXYGEN SPECIES. **Lihan Chung**, Megha Jhunjhunwala, Yu-Ying Hsieh, Yu-Tung Weng, Chi-Shuo Chen

1941-Pos Board B211
QUANTIFICATION OF THE FORCES INVOLVED IN ROLLING ADHESION WITH DNA FORCE SENSORS AND FLUORESCENCE IMAGING. **Adam B. Yasunaga**

1942-Pos Board B212
EFFECTS OF MECHANICAL STRESS ON CALCIUM TRANSPORT IN CELLS OF THE IMMUNE SYSTEM. **Rosey Whiting**, Daniel Fologea

1943-Pos Board B213
LARGE GLYCOCALYX PROTEINS ARE EXCLUDED FROM THE INTERFACE BETWEEN CELL MEMBRANE AND VERTICAL NANOSTRUCTURES. **Chih-Hao Lu**, Taylor Jones, Kayvon Pedram, Carolyn Bertozzi, Matthew Paszek, Bianxiao Cui

1944-Pos Board B214
TALIN IMPACTS FORCE-INDUCED VINCULIN ACTIVATION THROUGH 'LOOSENING' THE VINCULIN INACTIVE STATE. **Florian S. Franz**, Csaba Daday, Frauke Gräter

1945-Pos Board B215
AN OSMOSENSITIVE CATION CHANNEL REQUIRED FOR HEARING. **Yun S. Shi**

1946-Pos Board B216
PIEZO2 INTEGRATES MECHANICAL AND THERMAL CUES IN VERTEBRATE MECHANORECEPTORS. **Yury A. Nikolaev**, Wang Zheng, Elena O. Gracheva, Sviatoslav N. Bagriantsev

1947-Pos Board B217
DOMAIN-DEPENDENT FORCE SELECTIVITY IN THE MECHANOSENSITIVE ION CHANNEL PIEZO1. **Alper D. Ozkan**, Jerome J. Lacroix

1948-Pos Board B218
SINGLE-MOLECULE MECHANICS OF THE TALIN-INTEGRIN BOND. **Mihai-Adrian Bodescu**, Marco Grison, Jonas Aretz, Matthias Rief, Reinhard Fassler

1949-Pos Board B219
CALCIUM INFLUX THROUGH PIEZO1 CHANNELS TRANSIENTLY CLUSTERS PI(4,5)P2 AND RECRUITS ACTIN POLYMERIZATION. Michael Zucker, **Arnd Pralle**

1950-Pos Board B220
VISCOELASTIC MECHANICAL MODELS OF THE LINC COMPLEX. **Kamyar Behrouzi**, Zeinab Jahed, Mohammad Mofrad

1951-Pos Board B221
STRESS FIBER CONTRACTILITY IS ESSENTIAL IN MOTOR-CLUTCH DYNAMICS AND CELL REMODELING UNDER CYCLIC STRETCH. **Namrata Gundiah**, Siddhartha Jaddivada

1952-Pos Board B222
MARGARIC ACID DECREASES SENSORY NEURONS MECHANICAL EXCITABILITY BY INHIBITING PIEZO2 CHANNELS. **Luis O. Romero**, Julio F. Cordero-Morales, Valeria Vasquez

1953-Pos Board B223
HETEROGENEOUSLY STRAINED TISSUE COLLAGEN RESISTS COLLAGENASE DEGRADATION WHERE STRAINS ARE HIGH. **Karanvir Saini**, Manu Tewari, Sangkyun Cho, Abdelaziz Jalil, Jerome Irianto, Manasvita Vashisth, Charlotte Pfeifer, Lawrence J. Dooling, Cory Alvey, Alex Kasznel, David Chenoweth, Kazuhiro Yamamoto, Dennis E. Discher

1954-Pos Board B224
A NOVEL ROLE FOR PIEZO1 IN DIABETES-ASSOCIATED THROMBOSIS. **Wandi Zhu**, Cissy Nsubuga, Shane Wright, Manu Beerens, Tuomas Kiviniemi, Vanessa Raskin, Rahul C. Deo, Calum A. MacRae

1955-Pos Board B225
CHARACTERIZATION OF KINDLIN-2 VARIANTS' MOLECULAR BEHAVIOR UNDER APPLIED TENSION. **Fayyaz R. Ahamed**, Brian Jeffers, Zeinab Jahed, Mohammad Mofrad

1956-Pos Board B226
MEASURING THE EFFECT OF SUBSTRATE STIFFNESS ON CELL MEMBRANE TENSION USING OPTICAL TWEEZERS. **Jeffrey Mc Hugh**, Eva Kreysing, Sarah K. Foster, Kurt Andresen, Kristian Franze, Ulrich F. Keyser

Exocytosis and Endocytosis (Boards B227 - B251)

1957-Pos Board B227
CATIONIC CELL-PENETRATING PEPTIDES TRAVERSE MEMBRANES THROUGH LYSIS OR DIRECT TRANSLOCATION PATHWAYS. Jason M. Warner, **Dong An**, Benjamin S. Stratton, Ben O'Shaughnessy

1958-Pos Board B228
VESICLE SHRINKING AND ENLARGEMENT: THE YIN AND YANG OF EXOCYTOTIC CONTENT RELEASE. **Wonchul Shin**, Gianvito Arpino, Sathish Thiyagarajan, Rui Su, Zachary A. McDargh, Lihao Ge, Xiaoli Guo, Lisi Wei, Oleg Shupliakov, Albert J. Jin, Ben O'Shaughnessy, Ling-Gang Wu

1959-Pos Board B229
EFFECT OF SIMPLE ANESTHETICS ON SNARE FUSION PROTEINS AND ON FUSING MEMBRANES. **Robert E. Coffman**, Samuel W. Shumway, Andrew T. Barton, Mark T. Parsons, Austin L. Zimmerman, Ryan D. Sorensen, Dixon J. Woodbury

1960-Pos Board B230
SYNAPTIC VESICLE RELEASE PROBABILITY, KINETICS, AND CA-SENSITIVITY ARE REGULATED BY SNARE-PROTEINS. **Zachary A. McDargh**, Ben O'Shaughnessy

1961-Pos Board B231
INHIBITION OF AIRWAY EPITHELIAL SNARE/SYNAPTOTAGMIN MEDIATED MEMBRANE FUSION BY HYDROCARBON-STAPLED PEPTIDES. **Ying Lai**, Giorgio Fois, Manfred Frick, Burton Dickey, Axel T. Brunger

1962-Pos Board B232
A POLYBASIC PATCH ON SYNAPTOTAGMIN-1 C2A DOMAIN IS ESSENTIAL FOR EVOKED RELEASE AND DILATION OF FUSION PORES. Zhenyong Wu, Lu Ma, Jie Zhu, Nicholas Courtney, Yongli Zhang, Edwin R. Chapman, **Erdem Karatekin**

1963-Pos Board B233
THE SYNAPTOTAGMIN-1 ARGININE APEX BINDS TO MEMBRANES AND THE SNARE-COMPLEX, BUT ONLY TO MEMBRANES IN THE PRESENCE OF ATP/MG^{2+}. **Sarah B. Nyenhuis**, Nakul Karandikar, Anusa Thapa, Binyong Liang, Lukas K. Tamm, David S. Cafiso

1964-Pos Board B234
IN VITRO CONFIGURATION OF MUNC13-1 BRIDGING OF PHOSPHOLIPID BILAYERS AT RESTING CONDITIONS. **Kirill S. Grushin**, R. Venkat Kalyana Sundaram, Kimberley Gibson, Shyam S. Krishnakumar, Charles V. Sindelar, James Rothman

1965-Pos Board B235
MUNC13-1 AND MUNC18-1 COOPERATIVELY CHAPERONE SNARE ASSEMBLY THROUGH A TETRAMERIC COMPLEX. **Yongli Zhang**, Tong Shu, James Rothman

1966-Pos Board B236
MUNC13 RECRUITS SNAP25 TO FACILITATE SNARE COMPLEX ASSEMBLY. **R Venkat Kalyana Sundaram**, Feng Li, Jeff Coleman, Frederic Pincet, James Rothman, Shyam S. Krishnakumar

1967-Pos Board B237
THE C2C-MCT DOMAIN OF MUNC13 IS ESSENTIAL FOR PRIMING SYNAPTIC VESICLES. **Murugesh Narayanappa**, Haowen Liu, Lei Li, Francesco Michelassi, Zhitao Hu, Jeremy Dittman

1968-Pos Board B238
BINDING OF COMPLEXIN TO T-SNARE COMPLEX IS MEDIATED BY SNAP25. **Binyong Liang**, Julian Stashower, Alex J. Kreutzberger, Volker Kiessling, Lukas K. Tamm

1969-Pos Board B239
VISUALIZING THE EFFECTS OF 3D CULTURE MATRICES ON INSULIN GRANULE RELEASE IN BETA CELL PSEUDOISLETS USING LIGHT SHEET MICROSCOPY. Elizabeth D. White, **Nick Bayhi**, Adam G. Fine, Ahmed Selim, Noah Gamble, Daozheng Gong, Tegan Marianchuk, Andrew V. Molina, Elisabeth Rennert, Adam T. Hammond

1970-Pos Board B240 Travel Awardee
PLASMA MEMBRANE ORDER REGULATES INSULIN GRANULE EXOCYTOSIS. **Chase Amos**, Noah Schenk, Volker Kiessling, Alex J. Kreutzberger, Weronika Tomaka, Mounir Bendahmane, Hitomi Seki, Yosuke Niko, Andrey S. Klymchenko, Lukas K. Tamm, Arun Anantharam

1971-Pos Board B241
TWO DISTINCT POPULATIONS OF INSULIN GRANULES THAT HAVE UNIQUE PROPERTIES. **Alex J. Kreutzberger**, Noah Schenk, Amanda E. Ward, Catherine A. Doyle, Megan T. Harris, Binyong Liang, Arun Anantharam, Volker Kiessling, Lukas K. Tamm, J. David Castle

1972-Pos Board B242
SPATIOTEMPORAL ORGANIZATION OF MMP9 AND ITS EXOCYTOTIC ORGANIZING ELEMENTS IN MCF7 BREAST CANCER CELLS. **Dominique C. Stephens**

1973-Pos Board B243
USING FLUORESCENT PROTEINS TO MONITOR GLUCAGON GRANULES IN LIVE CELLS. **Alessandro Ustione**, Priya Mathur, David W. Piston

1974-Pos Board B244
CAVICAPTURE LIMITS CATECHOLAMINE RELEASE FROM VESICLES. **Meyer B. Jackson**, Yu-Tien Hsiao, Che-Wei Chang

1975-Pos Board B245
CA^{2+}-INDEPENDENT BUT VOLTAGE-DEPENDENT QUANTAL CATECHOLAMINE SECRETION (CIVDS) IN SYMPATHETIC NERVOUS SYSTEM. **Zhuan Zhou**, Rong Huang, Yuan Wang, Jie Li, Xiaohan Jiang, Yinglin Li, Xi Wu, Yongxin Xu, Xingyu Du, Yuqi Hang, Feipeng Zhu

1976-Pos Board B246
RECEPTORS UTILIZE COATED VESICLE HETEROGENEITY TO EVADE COMPETITION DURING ENDOCYTOSIS. Andre DeGroot, **Sadhana Gollapudi**, Chi Zhao, Carl C. Hayden, Jeanne C. Stachowiak

1977-Pos Board B247
CLATHRIN-COATED PITS FORM FROM ELASTICALLY LOADED CLATHRIN LATTICES. **Grigory Tagiltsev**, Simon Scheuring

1978-Pos Board B248 Travel Awardee
LINKING THE DYNAMICS OF CLATHRIN-MEDIATED ENDOCYTOSIS WITH MEMBRANE SHAPE CHANGES IN LIVING CELLS WITH NANOMETER AXIAL RESOLUTION. **Tomasz J. Nawara**, Tejeshwar C. Rao, Gracemarie Cepero-Lopez, Alexa L. Mattheyses

1979-Pos Board B249
MULTISCALE MOLECULAR MODELING OF DYNAMIN PROTEIN-PROTEIN INTERACTIONS. **Frank X. Vázquez**, Dalia M. Hassan, Joseph A. Marte, Patsy J. Griffin, Teagan F. Sweet

1980-Pos Board B250
DYNAMINCS OF DYNAMIN BY CRYO-EM. **Nidhi Kundu**, John Jimah, Abigail Stanton, Lieza M. Chan, Venkata P. Dandey, Clinton S. Potter, Bridget Carragher, Jenny E. Hinshaw

1981-Pos Board B251
PREFUSED LYSOSOMES CLUSTER ON AUTOPHAGOSOME REGULATED BY VAMP8. **Jiajie Diao**

Calcium Signaling I (Boards B252 - B267)

1982-Pos Board B252
THE EFFECT OF OESTROGEN WITHDRAWAL ON CA^{2+} REGULATION AND THE INFLUENCE OF GPER1. **Alice J. Francis**, Jahn M. Firth, Najah Islam, Julia Gorelik, Kenneth T. Macleod

1983-Pos Board B253
LONG-QT SYNDROME-ASSOCIATED CALMODULIN MUTATIONS AND THEIR INTERACTIONS AT THE KV7.1 POTASSIUM CHANNEL. **Liam F. McCormick**, Nitika Gupta, Lee P. Haynes, Svetlana Antonyuk, Caroline Dart, Nordine Helassa

1984-Pos Board B254 Travel Awardee
REGULATION OF ORAI1/STIM1 FUNCTION BY S-ACYLATION. **Savannah J. West**, Qiaochu Wang, Michael X. Zhu, Askar M. Akimzhanov, Darren Boehning

1985-Pos Board B255
DIFFERENT WAYS OF CALCIUM SIGNALING DISRUPTION IN HUNTINGTON'S DISEASE AND SPINOCEREBELLAR ATAXIA TYPE 1. **Dmitry Grekhnyov**, Vladimir Vigont, Elena Kaznacheyeva

1986-Pos Board B256
DESIGN AND APPLICATION OF ULTRAFAST FLUORESCENT CALCIUM INDICATORS FOR MONITORING SUBCELLULAR CALCIUM DYNAMICS. **Xiaonan Deng**, Cassandra L. Miller, Bin Dong, Florence N. Reddish, You Zhuo, Cheyenne McBean, Daniel Ouedraogo, Giovanni Gadda, Ning Fang, Jenny J. Yang

1987-Pos Board B257
RYANODINE RECEPTOR-1 MEDIATED ENDOPLASMIC RETICULUM - MITOCHONDRIAL CALCIUM TRANSFER IN HIGH-GRADE SEROUS OVARIAN CANCER CELLS (HGSOC). **Kay-Pong D. Yip**, Byeong-Jik Cha, Omkar Paudel, Samuel C. Mok, James S. Sham

1988-Pos Board B258 Travel Awardee
LQTS-ASSOCIATED MUTANTS OF CALMODULIN SHOW DISRUPTED INTERACTION WITH L-TYPE CALCIUM CHANNELS. **Nitika Gupta**, Liam F. McCormick, Lee P. Haynes, Caroline Dart, Nordine Helassa

1989-Pos Board B259
TRANSPORT OF VITAMIN A VIA STRA6 IS CALCIUM-DEPENDENT. **Brianna Young**

1990-Pos Board B260
PYRIDOSTIGMINE REDUCES ARRHYTHMOGENIC STORE OPERATED CALCIUM ENTRY IN A TRANSVERSE AORTIC CONSTRICTION HF MODEL IN MICE. **Stephen H. Baine**, Ingrid M. Bonilla, Andriy E. Belevych, Sandor Gyorke

1991-Pos Board B261
PLASMA MEMBRANE PERMEABILIZATION TO CA^{2+} IN ADRENAL CHROMAFFIN CELLS DEPENDS ON THE DURATION OF APPLIED NANOSECOND ELECTRIC PULSES. **Sophia Pierce**, Lisha Yang, Normand Leblanc, Gale L. Craviso

1992-Pos Board B262 Travel Awardee
SOCE CONTRIBUTES TO NORMAL CALCIUM HOMEOSTASIS AND RYTHMIC ACTIVITY OF ATRIAL MYOCARDIUM. **Ingrid M. Bonilla**, Stephen Baine, Andrei Stepanov, Jiaoni Li, Andriy E. Belevych, Przemyslaw Radwanski, Pomeo Volpe, Silvia Priori, Dmitry A. Terentyev, Sandor Gyorke

1993-Pos Board B263
THE ANTIARRHYTHMIC COMPOUND EFSEVIN BINDS TO THE VOLTAGE-DEPENDENT ANION CHANNEL 2 AND MODULATES CHANNEL GATING. Fabiola Wilting, Robin Kopp, Philip A. Gurnev, Anna Schedel, Nathan J. Dupper, Ohyun Kwon, Annette C. Nicke, Thomas Gudermann, **Johann Schredelseker**

1994-Pos Board B264
DUAL EFFECTS OF SUBCELLULAR CALCIUM HETEROGENEITY AND HEART RATE VARIABILITY ON CARDIAC ELECTROMECHANICAL DYNAMICS. **Vrishti M. Phadumdeo**, Seth H. Weinberg

1995-Pos Board B265
A DUAL ROLE FOR SARAF IN REGULATION OF CALCIUM-RELEASE ACTIVATED CALCIUM (CRAC) CHANNEL ACTIVITY. Elia Zumot, Hadas Achildiev, **Raz Palty**

1996-Pos Board B266
ACUTE GENETIC ABLATION OF CARDIAC SODIUM-CALCIUM EXCHANGE SUPPRESSES ARRHYTHMOGENIC DELAYED AFTER DEPOLARIZATIONS. **Sabine Lotteau**, Rui Zhang, Adina Hazan, Devina Gonzalez, Nils Bögeholz, Kenneth D. Philipson, Michela Ottolia, Joshua I. Goldhaber

1997-Pos Board B267
REVERSE-MODE MITOCHONDRIAL NA^{+}/CA^{2+} EXCHANGE, NOT THE MCU, IS THE PRIMARY MODE OF CA^{2+} IMPORT INTO THE MITOCHONDRIA DURING ISCHEMIA/REPERFUSION IN NEONATAL CARDIAC MYOCYTES. **Deepthi Ashok**, Kyriakos Papanicolaou, Ting Liu, Brian O'Rourke

Excitation-Contraction Coupling II (Boards B268 - B282)

1998-Pos Board B268
FORMATION OF DYADS DURING POSTNATAL CARDIAC DEVELOPMENT IN RATS. **Alexandra Zahradnikova Jr.**, Simona Kazmerova, Marta Novotova, Ivan Zahradnik, Alexandra Zahradnikova

1999-Pos Board B269
CONFOCAL SIMULTANEOUS ASSESSMENT OF CALCIUM AND CONTRACTILITY DYNAMICS IN SINGLE VENTRICULAR MYOCYTES OF A RAT MODEL OF ISOPROTERENOL-INDUCED CARDIOMYOPATHY. **Julio Altamirano**, Perla Pérez-Treviño, José Sepúlveda-Leal

2000-Pos Board B270
ENERGY METABOLISM IN RAT FETAL HEARTS JUST AFTER THE INITIATION OF HEARTBEAT IS ALTERED VIA INCREASED GLYCOLYTIC FLUX AND ACTIVATED MITOCHONDRIAL FUNCTION. **Tatsuya Sato**, Nobutoshi Ichise, Hiroya Yamazaki, Yoshinori Terashima, Noritsugu Tohse

2001-Pos Board B271
EFFECTS OF DIET INDUCED OBESITY ON RAT SKELETAL MUSCLE CA^{2+} HANDLING AND CELLULAR ADAPTATIONS. **Daniel P. Singh**, Matthew J. Watt, Bradley S. Launikonis

2002-Pos Board B272
CHRONIC TAURINE ADMINISTRATION INDUCES MUSCLE WEAKNESS IN AGED AND CASTRATED C57BL/6J MICE. **Adan Dagnino-Acosta**, Noelia G. Barragán-Ceballos, Daniel Perea-Ruiz, Ana M. Guzman, Juan C. Iglesias Santos, Raul Huerta-Mejorada

2003-Pos Board B273
ACUTE EFFECT OF CAPSAICIN ON THE EXCITATION-CONTRACTION PROCESS OF SKELETAL MUSCLE. **Ana M. Guzman**, Adan Dagnino-Acosta, Edgar Lara, Miguel Huerta, Xóchitl Trujillo

2004-Pos Board B274
ASTAXANTHIN IMPROVES TETANIC FORCE WITHOUT ALTERING SKELETAL MUSCLE EXCITATION-CONTRACTION COUPLING IN MICE.
Mónika T. Sztretye, Zoltán Singlár, László Szabó, Péter Szentesi, Beatrix Dienes, Mónika Gönczi, László Csernoch

2005-Pos Board B275
IN VIVO FORCE EXPERIMENTS SUGGEST CALCIUM HANDLING DEFECTS DURING REPETITIVE ACTIVITY IN HUNTINGTION'S DISEASE SKELETAL MUSCLE. **Steve R.A. Burke**, Andrew A. Voss

2006-Pos Board B276
MECHANICAL LOAD ON CARDIOMYOCYTE ACTIVATES MECHANO-CHEMO-TRANSDUCTION TO AUTOREGULATE CA^{2+} SIGNALING AND CONTRACTILITY. Rafael Shimkunas, Zhong Jian, Zana A. Coulibaly, John A. Shaw, Bence Hegyi, Mark Jaradeh, Nicholas Balardi, Tamas Banyasz, Nipavan Chiamvimonvat, Kit S. Lam, Leighton T. Izu, **Ye Chen-Izu**

2007-Pos Board B277
MITOCHONDRIAL CALCIUM OVERLOAD IN THE GENESIS OF EARLY AFTERDEPOLARIZATIONS IN CARDIAC MYOCYTES. **Vikas Pandey**, Zhen Song, An Xie, Samuel C. Dudley, Zhilin Qu

2008-Pos Board B278
SIMPLIFIED MODELS PREDICT CELLULAR ARRHYTHMIA PROBABILITIES AND REVEAL THE IMPACT OF EXPERIMENTAL PARAMETER UNCERTAINTY ON THE PREDICTED DISTRIBUTION OF ARRHYTHMIC EVENTS.
Qingchu Jin, Joseph L. Greenstein, Raimond L. Winslow

2009-Pos Board B279
CAN PHASE-2 EARLY AFTERDEPOLARIZATIONS PROPAGATE IN CARDIAC TISSUE? INSIGHTS FROM MULTIPLE ACTION POTENTIAL MODELS.
Zhaoyang Zhang, Michael B. Liu, Zhen Song, Zhilin Qu

2010-Pos Board B280
FULL AUTOMATIC HIGH THROUGHPUT CARDIOMYOCYTE CALCIUM AND CONTRACTILITY MEASUREMENTS. **Michiel Helmes**, Lu Cao, Emmy Manders

2011-Pos Board B281
VASCULARIZED MYOCARDIUM-ON-A-CHIP: EXCITATION-CONTRACTION COUPLING IN PERFUSED CARDIAC CO-CULTURES. **Oisín King**, Daniela Cruz-Moreira, Sam Worrapong Kit-Anan, Alaa Sayed, Brian Wang, Jerome Fourre, Anna M. Randi, Marco Rasponi, Cesare M. Terracciano

2012-Pos Board B282
HUMAN ORGANOTYPIC CARDIAC SLICES: A PLATFORM TO STUDY MAJOR POTASSIUM CHANNELS CONTRIBUTION AND MODULATION OF HUMAN CARDIAC REPOLARIZATION. **Anastasia Carr**, Anna Gams, Rose Yin, Jaclyn Brennan, N. Rokhaya Faye, Igor Efimov

TRP Channels (Boards B283 - B309)

2013-Pos Board B283
INHIBITION OF INOSITOL MONOPHOSPHATASE ENHANCES TRPV1 FUNCTION IN VIVO. Valeria Vasquez, Rebeca Caires Mugarra, Briar Bell, Jungsoo Lee, **Julio F. Cordero-Morales**

2014-Pos Board B284
ROTATIONAL MOTION OF SINGLE TRPV1 CHANNEL UPON GATING. **Shoko Fujimura**, Kazuhiro Mio, Masahiro Kuramochi, Hiroshi Sekiguchi, Muneyo Mio, Tai Kubo, Yuji C. Sasaki

2015-Pos Board B285
DUAL REGULATION OF TRPV1 BY PHOSPHATIDYLINOSITOL VIA FUNCTIONALLY DISTINCT BINDING SITES. **Aysenur T. Yazici**, Eleonora Gianti, Vincenzo Carnevale, Tibor Rohacs

2016-Pos Board B286 Travel Awardee
CONTRIBUTIONS OF THE TRANSMEMBRANE DOMAIN TO HEAT ACTIVATION OF HUMAN TRPV1. **Aerial M. Pratt**, Dustin Luu, Minjoo Kim, Wade D. Van Horn

2017-Pos Board B287
A SET OF NOVEL CAPSAICIN ANALOGS AS MOLECULAR RULER FOR CONFORMATIONAL CHANGE OF THE TRPV1 LIGAND-BINDING POCKET. **Simon Vu**, Vikrant Singh, Fan Yang, Heike Wulff, Jie Zheng

2018-Pos Board B288
THE SELECTIVITY FILTER OF THE TRPV1 CHANNEL DOES NOT FUNCTION AS AN ACTIVATION GATE. **Andres Jara-Oseguera**, Katherine E. Huffer, Kenton J. Swartz

2019-Pos Board B289
PHOSPHOLIPID AND TEMPERATURE DEPENDENCE OF TRPV1 DYNAMICS. **Diane L. Lynch**, Chante Muller, Dow P. Hurst, Patricia H. Reggio

2020-Pos Board B290
MECHANISM OF TRPV1 ACTIVATION BY OXYTOCIN. **Antonio Suma**, Eleonora Gianti, Yelena Nersesyan, Eleonora Zakharian, Vincenzo Carnevale

2021-Pos Board B291
STRUCTURE-FUNCTION RELATIONSHIP OF THE THERMO-SENSITIVE TRP CHANNEL TRP1 FROM THE ALGA *CHLAMYDOMONAS REINHARDTII*. Luke L. McGoldrick, Appu K. Singh, Lusine Demirkhanyan, David X. Gao, Ting-Yu Lin, **Eleonora Zakharian**, Alexander I. Sobolevsky

2022-Pos Board B292
A STRUCTURAL TRIAD THAT MODULATES FAST INACTIVATION IN CALCIUM-SELECTIVE TRP CHANNELS. **Lisandra Flores Aldama**, Daniel Bustos, Wendy Gonzalez, Sebastian E. Brauchi

2023-Pos Board B293
STRUCTURAL INSIGHTS ON TRPV2 GATING BY EXOGENOUS MODULATORS. **Pamela N. Gallo**, Anna D. Protopopova, Ruth Pumroy, Vera Moiseenkova-Bell

2024-Pos Board B294
STRUCTURAL BASIS OF TRPV3 ACTIVATION AND INACTIVATION. **Zengqin Deng**, Grigory Maksaev, Michael Rau, Zili Xie, Hongzhen Hu, James A.J. Fitzpatrick, Peng Yuan

2025-Pos Board B295
AUTOINHIBITION OF TRPV6 CHANNEL BY INTRAMOLECULAR INTERACTIONS. **Ruiqi Cai**, Xiong Liu, Laura Hofmann, Wang Zheng, Qiaolin Hu, Veit Flockerzi, Xing-Zhen Chen

2026-Pos Board B296
HUNTING FOR THE ACTIVATING ADPR BINDING SITE OF THE NVTRPM2 CHANNEL. **Balazs Toth**, Iordan Iordanov, Laszlo Csanady

2027-Pos Board B297
ISOLATION OF FUNCTIONAL TEMPERATURE ACTIVATED TRANSMEMBRANE DOMAIN OF HUMAN TRPM8. **Dustin Luu**, Po-Lin Chiu, Wade D. Van Horn

2028-Pos Board B298
CHARACTERIZATION OF HTRPM8 CONFORMATIONAL DYNAMIC UTILIZING SOLUTION NMR. **Mubark Mebrat**, Jacob K. Hilton, Danielle Morelan, Wade D. Van Horn

2029-Pos Board B299
MOLECULAR MECHANISMS UNDERLYING MENTHOL BINDING AND ACTIVATION OF TRPM8 ION CHANNEL. Lizhen Xu, Yalan Han, Xiaoying Chen, Aerziguli Aierken, Hongkun Wang, Xiancui Lu, Zhenye Zhao, Ping Liang, Wei Yang, Han Wen, Wenjun Zheng, Shilong Yang, **Fan Yang**

2030-Pos Board B300
MECHANISTIC AND STRUCTURAL STUDIES OF PIRT REGULATION OF TRPM8. **Wade D. Van Horn**, Dustin D. Luu, Minjoo Kim, Jacob K. Hilton, Camila Montano

2031-Pos Board B301
ROLE OF EPIDERMAL TRP CHANNELS IN THE DEVELOPMENT OF PRURITOGENIC SIGNALS. **Anita Vladár**, Erika Lisztes, Balázs Kelemen, Martin Hanyicska, Tamás Bíró, Balázs István Tóth

2032-Pos Board B302
PATHOPHYSIOLOGICAL CONTRIBUTION OF TRPM7 CHANNEL TO PULMONARY ARTERIAL HYPERTENSION. **Keizo Hiraishi**, Lin-Hai Kurahara, Yuanyuan Cui, Ryuji Inoue

2033-Pos Board B303
TRPM3 MEDIATES PAIN BUT NOT ITCH. **Balazs Kelemen**, Silvia Pinto, Erika Lisztes, Martin Hanyicska, Anita Vladár, Thomas Voets, Tamás Bíró, Balázs István Tóth

2034-Pos Board B304
THE ION CHANNEL FUNCTION OF PKD1 REVEALED BY A GAIN-OF-FUNCTION PKD1/TRPP2 COMPLEX. Zhifei Wang, Courtney Ng, Xiong Liu, Yan Wang, R. Todd Alexander, Feng Qian, Xing-Zhen Chen, **Yong Yu**

2035-Pos Board B305
EFFECTS OF TRPM7 KINASE INACTIVATION IN MACROPHAGES. Jananie Rockwood, Pavani Beesetty, Masayuki Matsushita, **J. Ashot Kozak**

2036-Pos Board B306
ALL-OPTICAL ANALYSIS OF TRPC3/6 SIGNALLING IN MAST CELLS. Bernadett Bacsa, **Oleksandra Tiapko**, Annarita Graziani, Sanja Curcic, Klaus Groschner

2037-Pos Board B307
ROLE OF TRPC6 ON SINGLE CELL MECHANICS IN MOUSE CARDIOMYOCYTES. **Yohei Yamaguchi**, Gentaro Iribe, Keiji Naruse, Akira Takai

2038-Pos Board B308
THE ROLE OF TRPC-ORAI CHANNELS MEDIATED CALCIUM ENTRY IN HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED CARDIOMYOCYTES. **Zi Yang**, Gary Aistrup

2039-Pos Board B309
SPATIAL ARRANGEMENT OF TRPC1, 3 AND 6 CHANNELS IN RABBIT VENTRICULAR CARDIOMYOCYTES. **Molly E. Streiff**, Azmi A. Ahmad, Chris Hunter, Frank B. Sachse

Ion Channel Regulatory Mechanisms II (Boards B310 - B334)

2040-Pos Board B310
DYNAMIC REGULATION OF BICARBONATE PERMEABILITY THROUGH CFTR CHANNEL BY WNK1. **Yonjung Kim**, Ikhyun Jun, Dong Hoon Shin, Jihoon G. Yoon, Jinsei Jung, Hyun Woo Park, Mary H. Cheng, Ivet Bahar, David C. Whitcomb, Min Goo Lee

2041-Pos Board B311
HETERODIMERIZATION OF TALK SUBUNITS. **Lamyaa Khoubza**, Franck Chatelain, Sylvain Feliciangeli, Delphine Bichet, Florian Lesage

2042-Pos Board B312
THE ROLE OF HCN CHANNEL HELICES D AND E IN THE MODULATION OF CAMP AFFINITY. **Alessandro Porro**, Federica Gasparri, Filippo Cona, Gerhard Thiel, Federico Thei, Bina Santoro, Andrea Saponaro, Anna Moroni

2043-Pos Board B313
GATING OF BACTERIAL BETA-BARREL CHANNELS IS REGULATED BY SALT CONCENTRATION AND LIPID COMPOSITION. **Deborah Aurora Perini**, Antonio Alcaraz, Maria Queralt-Martin

2044-Pos Board B314
CYTOSKELETON DEPENDENT ACTIVATION OF TENTONIN3/TMEM150C, A NOVEL MECHANOSENSITIVE CHANNEL. **Gyu-Sang Hong**, Uhtaek Oh

2045-Pos Board B315
DUAL CA^{2+}-DEPENDENT GATES IN HUMAN BESTROPHIN1 UNDERLIE DISEASE-CAUSING MECHANISMS OF GAIN-OF-FUNCTION MUTATIONS. Changyi Ji, Alec Kittredge, Austin Hopiavuori, Nancy Ward, Shoudeng Chen, Yohta Fukuda, Yu Zhang, **Tingting Yang**

2046-Pos Board B316
UNDERSTANDING THE PHENOMENA OF CHARGE INVERSION AND VOLTAGE GATING IN MODEL SINGLE DIGIT NANOPORES (SDNS) USING TRIVALENT IONS. **Wilfred S. Russell**

2047-Pos Board B317
AN EPILEPSY-ASSOCIATED LARGE CONDUCTANCE BK MUTATION MODULATION BY LEUCINE-RICH REPEAT-CONTAINING PROTEIN LRRC55. Jing-Jing Wang, Xiao-Mao Dong, Zhe Zhang, **Qiong-Yao Tang**

2048-Pos Board B318
ALLOSTERIC NETWORK ANALYSIS IN THE NMDA RECEPTOR. **Nils A. Berglund**, Jose C. Flores-Canales, Birgit Schiøtt

2049-Pos Board B319
BK CHANNEL MODULATION BY THE GAMMA SUBUNIT C-TERMINAL PEPTIDES. **Guanxing Chen**, Qin Li, Jiusheng Yan

2050-Pos Board B320
$PI(3,4)P_2$-DEPENDENT MODULATION OF VOLTAGE DEPENDENCE IN TWO-PORE CHANNEL 3. **Takushi Shimomura**, Yoshihiro Kubo

2051-Pos Board B321
FUNCTIONAL AND PORE PROPERTIES OF THE LRRC8A HOMOMERIC CHANNEL ARE DISTINCT FROM THOSE OF LRRC8 CHIMERAS AND HETEROMRES. **Toshiki Yamada**, Jerod S. Denton, Kevin Strange

2052-Pos Board B322
MODULATION OF A GIRK1 ACTIVE MUTANT SUBUNIT BY PROTEIN KINASE C ISOFORMS. **Aishwarya Chandrashekar**, Kirin Gada, Yu Xu, Takeharu Kawano, Leigh D. Plant, Diomedes E. Logothetis

2053-Pos **Board B323**
ARRHYTHMOGENIC MECHANISMS IN HIPSC-CMS DERIVED FROM PATIENTS WITH DUCHENE MUSCULAR DYSTROPHY.
Eric N. Jiménez-Vázquez

2054-Pos **Board B324**
PERMEATION PROPERTIES OF PURIFIED PANNEXIN 1 CHANNELS IN PROTEOLIPOSOMES. **Adishesh K. Narahari**, Alex J. Kreutzberger, Susan Leonhardt, Xueyao Jin, Pablo Pauchard, Christopher B. Medina, Volker Kiessling, Kodi Ravichandran, Jorge E. Contreras, Lukas K. Tamm, Mark Yeager, Douglas A. Bayliss

2055-Pos **Board B325**
EFFECTS OF CATION BINDING TO THE INTRACELLULAR VESTIBULE OF TMEM16 ION TRANSPORT PATHWAYS. **Dung M. Nguyen**, Tsung-Yu Chen

2056-Pos **Board B326**
EFFECTS OF PIP2 BINDING TO ITS DIFFERENT BINDING SITES ON ANO1 FUNCTION. **Kuai Yu**, Tao Jiang, Yuanyuan Cui, Emad Tajkhorshid, H. Criss Hartzell

2057-Pos **Board B327**
CAMP-INDUCED CONFORMATIONAL CHANGES IN THE C-LINKER OF HCN4. **Bianca Introini**, Andrea Saponaro, Alessio Bonucci, Oliver Rauh, Francesca Cantini, Lucia Banci, Gerhard Thiel, Anna Moroni

2058-Pos **Board B328**
ACTIVATION MECHANISM OF THE MECHANOSENSITIVE OSCA CHANNEL: A MOLECULAR DYNAMICS STUDY. **Dali Wang**, Chen Song

2059-Pos **Board B329**
ROS-DEPENDENT REGULATION OF SOCS IN ADULT RAT CARDIOMYOCYTES PRECONDITIONED WITH DIAZOXIDE. **Joice T. Gavali**, Elba D Carrillo, Ascención Hernández, Maria C. Garcia, Jorge A. Sanchez

2060-Pos **Board B330** **Travel Awardee**
A CLOSER LOOK AT ORAI3: AN INVESTIGATION INTO CONSTITUTIVELY ACTIVE MUTANTS OF THE LESSER KNOWN CALCIUM ION CHANNEL.
Juliana M. Larson, Robert M. Nwokonko, James H. Baraniak, Yandong Zhou, Donald L. Gill

2061-Pos **Board B331**
THE MECHANISMS OF UP-REGULATION OF K^+ CHANNELS IN $CD4^+$ T CELLS OF INFLAMMATORY BOWEL DISEASE. **Susumu Ohya**, Kyoko Endo, Hiroaki Kito, Junko Kajikuri, Takayoshi Suzuki

2062-Pos **Board B332**
INVESTIGATION OF PHARMACEUTICAL AGENTS INTERACTION WITH K2P POTASSIUM CHANNELS. **Natália M. Oliveira**, Werner Treptow, Leonardo Cirqueira, Leticia Stock

2063-Pos **Board B333**
SIGNALING MECHANISMS UNDERLYING NICOTINE-INDUCED UPREGULATION OF A7 NICOTINIC ACETYLCHOLINE RECEPTOR (NACHR). **Jayharsh Panchal**, Mohammad Islam, Kristi DeBoeuf, Joseph Farley

2064-Pos **Board B334** **Travel Awardee**
CELLULAR STRESS P38MAPK ACTIVATION DECREASE NAV1.5 CURRENT DENSITY AND CONTRIBUTES TO THE DEVELOP OF ARRHYTHMIA IN ELDERLY. **Daniela Ponce Balbuena**

Cardiac Muscle Mechanics and Structure (Boards B335 - B365)

2065-Pos **Board B335**
THE ROLE OF ELECTROSTATICS IN THE DESENSITIZATION OF CARDIAC MUSCLE CONTRACTION. **Fangze Cai**, Ian M. Robertson, Thomas Kampourakis, Britney A. Klein, Brian D. Sykes

2066-Pos **Board B336**
QUANTIFYING CONTRIBUTIONS OF CELLULAR MECHANICAL MYOCARDIAL PROPERTIES ON LEFT VENTRICULAR CONTRACTILE FUNCTION IN AORTIC BANDED RATS. **Stefano Longobardi**, Alexandre Lewalle, Cynthia J. Musante, Anna Sher, Steven A. Niederer

2067-Pos **Board B337**
DOCKING TROPONIN-T ONTO THE TROPOMYOSIN OVERLAPPING DOMAIN OF THIN-FILAMENTS. **Elumalai Pavadai**, Michael J. Rynkiewicz, Anita Ghosh, William Lehman

2068-Pos **Board B338**
SEPARATING THE PRIMARY AND SECONDARY EFFECTS OF SARCOMERIC DYSFUNCTION IN THE EARLY DISEASE PATHOGENESIS OF FAMILIAL HYPERTROPHIC CARDIOMYOPATHY. **Sarah R. Clippinger**

2069-Pos **Board B339**
TARGETING THE MYOSIN OFF-ON EQUILIBRIUM TO MODULATE LENGTH-DEPENDENT CONTRACTION IN HUMAN MYOCARDIAL STRIPS. Peter O. Awinda, Krista M. Brutman, Yemeserach Bishaw, Marissa Watanabe, Maya Guglin, Kenneth S. Campbell, **Bertrand C. Tanner**

2070-Pos **Board B340**
EFFECTS OF MAVACAMTEN AND BLEBBISTATIN ON THE SMALL-ANGLE X-RAY SCATTERING STRUCTURE OF HUMAN B-CARDIAC MYOSIN. **Weikang Ma**, Suman Nag, Srinivas Chakravarthy, Sampath Gollapudi, Na Sa, Ivan Tomasic, Thomas C. Irving

2071-Pos **Board B341**
MULTI-DIMENSIONAL MAPPING OF CELL STATES DURING CARDIOMYOCYTE DIFFERENTIATION USING LIVE IMAGING AND RNA FISH. **Melissa Hendershott**, Susanne M. Rafelski

2072-Pos **Board B342**
CROSS-SPECIES DYNAMICS OF MYOSIN IN PRE-POWERSTROKE STATES. **Matthew C. Childers**, Valerie Daggett, Michael Regnier

2073-Pos **Board B343**
EFFECT OF MYOSIN ISOFORM ON MECHANICS IN INTACT CARDIAC TRABECULAE FROM MICE, RATS AND HUMANS. **Srboljub M. Mijailovich**, Momcilo Prodanovic, Corrado Poggesi, Michael Regnier, Michael A. Geeves

2074-Pos **Board B344**
DECOUPLING THE INTERACTING HEAD MOTIF AND THE SUPER RELAXED STATE OF MYOSIN IN RECONSTITUTED CARDIAC BIPOLAR THICK FILAMENTS. **Sampath K. Gollapudi**, Na Sa, Suman Nag

2075-Pos **Board B345**
A HIGH-THROUGHPUT FLUORESCENCE LIFETIME-BASED ASSAY FOR DETECTING BINDING OF MYOSIN BINDING PROTEIN-C TO F-ACTIN-TROPOMYOSIN. Thomas A. Bunch, Victoria C. Lepak, **Brett A. Colson**

2076-Pos **Board B346**
MUTATIONS IN THE TNT1 TROPOMYOSIN-BINDING ELEMENT OF TROPONIN-T ALTER ITS INHIBITORY PROPERTIES AND STIMULATE MYOCARDIAL DYSFUNCTION. Aditi Madan, Meera C. Viswanathan, Kathleen C. Woulfe, William M. Schmidt, Georg Vogler, Cortney Wilson, Sineej Madathil, Brandon J. Biesiadecki, Bosco Trinh, Agnieszka Sidor, Ting Liu, Brian O'Rourke, Larry S. Tobacman, **Anthony Cammarato**

2077-Pos **Board B347**
DEFINING THE FLEXIBLE CARDIAC TROPONIN T LINKER REGION IN RELATIONSHIP TO ACTIN AND DETERMINING EFFECTS OF PATHOGENIC POINT MUTATIONS. **Andrea E. Deranek**, Anthony Baldo, Catherine Vasquez, Steven D. Schwartz, Jil C. Tardiff

2078-Pos Board B348
3D IMAGING AND MORPHOMETRY OF THE CORONARY MICROCIRCULATION IN SPONTANEOUSLY HYPERTENSIVE RATS AND NORMOTENSIVE CONTROLS. Camilla Olianti, Francesco Giardini, Erica Lazzeri, Irene Costantini, Claudia Crocini, Leonardo Bocchi, Francesco S. Pavone, Paolo Camici, **Leonardo Sacconi**

2079-Pos Board B349
UNEQUAL ALLELIC EXPRESSION OF MUTATED CARDIAC TROPONIN I FROM CELL-TO-CELL MAY INDUCE CONTRACTILE IMBALANCE IN HYPERTROPHIC CARDIOMYOPATHY. **Valentin Burkart**, Julia Beck, Kathrin Kowalski, Jolanda van der Velden, Cris G. dos Remedios, Judith Montag, Theresia Kraft

2080-Pos Board B350
MICROTUBULE ACETYLATION REGULATES STRIATED MUSCLE MECHANOTRANSDUCTION. **Andrew K. Coleman**, Humberto Cavalcante Joca, Guoli Shi, W. Jonathan Lederer, Christopher W. Ward

2081-Pos Board B351
MICROLED ILLUMINATION TOWARDS LIQUID CRYSTALLINE ELASTOMERS BASED CARDIAC CONTRACTION ASSISTANCE. **Silvia Querceto**, Cecilia Ferrantini, Bruno Grandinetti, Daniele Martella, José Manuel Pioner, Diederik Sybolt Wiersma, Elisabetta Cerbai, Francesco Saverio Pavone, Chiara Tesi, Corrado Poggesi, Leonardo Sacconi, Camilla Parmeggiani

2082-Pos Board B352
ALTERED THICK AND THIN FILAMENT STRUCTURAL DYNAMICS IN MOUSE MYOCARDIUM DUE TO ABLATION AND PHOSPHORYLATION OF MYOSIN BINDING PROTEIN-C. **Alexey Dvornikov**, Thomas A. Bunch, Victoria C. Lepak, Brett A. Colson

2083-Pos Board B353 Travel Awardee
IMPACT OF REGULATORY LIGHT CHAIN MUTATION (K104E) ON THE ATPASE AND MOTOR PROPERTIES OF HUMAN CARDIAC MYOSIN. David Rasicci, **Orville Kirkland**, Wanjian Tang, Rohini Desetty, Christopher M. Yengo

2084-Pos Board B354
EXPLORING MECHANICAL LOAD-INDUCED CARDIAC REMODELLING USING A NOVEL ORGANOTYPIC MYOCARDIAL SLICE MODEL. **Fotios G. Pitoulis**, Raquel Nunez-Toldra, Worrapong Sam Kit-Anan, Eef Dries, Ifigeneia Bardi, Filippo Perbellini, Sian E. Harding, Pieter P. de Tombe, Cesare M. Terracciano

2085-Pos Board B355
NUCLEOTIDE-DEPENDENT ALLOSTERIC COMMUNICATION IN MYOSIN. **Matthew C. Childers**, Valerie Daggett, Michael Regnier

2086-Pos Board B356
THE ROLE OF MYOPALLADIN IN CARDIAC MUSCLE FUNCTION AND DISEASE. **Vinay Kumar Kadarla**

2087-Pos Board B357
ROLE OF A FUNCTIONAL SNP OF THE GENE CODING BRAIN SEROTONIN SYNTHESIS RATE-LIMITING ENZYME TPH2 IN DILATED CARDIOMYOPATHY. **Sachio Morimoto**, Kengo Hayamizu, Miki Nonaka, Lei Li, Yuanyuan Wang

2088-Pos Board B358
ENGINEERING SYNTHETIC DNA NANOTUBE THICK FILAMENTS TO DISSECT BETA-CARDIAC MYOSIN AND CARDIAC MYOSIN-BINDING PROTEIN C INTERACTIONS. **Anja M. Touma**, Ashim Rai, Christopher M. Yengo, Samantha B. Previs, David M. Warshaw, Sivaraj Sivaramakrishnan

2089-Pos Board B359
MEASUREMENTS OF ACTIN LAYER LINES IN PERMEABILIZED HEART TISSUE REVEAL NEW STRUCTURAL PROPERTIES OF THE CARDIAC THIN FILAMENT. **Maicon Landim Vieira**, Weikang Ma, Jamie Johnston, Prescott B. Chase, Thomas C. Irving, J. Renato D. Pinto

2090-Pos Board B360
CLASSIFICATION OF GENETIC CARDIAC MUTATIONS USING COMPUTATIONAL CHEMISTRY. **Allison B. Smith**, Anthony P. Baldo, Jil C. Tardiff, Steven D. Schwartz

2091-Pos Board B361
HIPSCS DERIVED CARDIOMYOCYTES OVEREXPRESSING DEOXY ATP TO RESTORE CARDIAC FUNCTION. **Ketaki N. Mhatre**, Julie Mathieu, Charles E. Murry, Michael Regnier

2092-Pos Board B362
INTRINSIC MODIFIER EFFECT OF CTNT ISOFORM SWITCHING IN SARCOMERIC CARDIOMYOPATHIES. **Melissa L. Lynn**, Lauren Grinspan, Catherine Vasquez, Teryn A. Holeman, Jian-Ping Jin, Jil C. Tardiff

2093-Pos Board B363
IMPACT OF ANTI-S2 PEPTIDES ON MYOSIN S2 ISOFORMS AND HCM MUTANTS. **Negar Aboonasrshiraz**, Douglas D. Root

2094-Pos Board B364
TIME-RESOLVED FRET CONFIRMS HUMAN CARDIAC MYOSIN HEAD-TAIL INTERACTION. **Alexandra N. Hurst**, Shiril Bhardwaj, Akhil Gargey, Yuri Nesmelov

2095-Pos Board B365
RAPID TRANSITIONS BETWEEN THE OFF AND ON STATES OF MYOSIN CONTRIBUTE TO CONTRACTION-RELAXATION COUPLING IN CARDIAC MUSCLE. **Faruk H. Moonschi**, Kenneth S. Campbell

Kinesins and Dyneins (Boards B366 - B392)

2096-Pos Board B366
MOLECULAR INSIGHTS INTO DYNEIN AUTOINHIBITION. **Matthew G. Marzo**

2097-Pos Board B367
SINGLE-MOLECULE IMAGING OF CYTOPLASMIC DYNEIN *IN VIVO* REVEALS THE MECHANISM OF MOTOR ACTIVATION AND CARGO CAPTURE. **Nireekshit Addanki Tirumala**

2098-Pos Board B368
HIGH RESOLUTION CRYO-EM STRUCTURES OF DYNACTIN'S SHOULDER AND POINTED END. **Clinton K. Lau**, Andrew Carter

2099-Pos Board B369
COILED-COIL REGISTRY SHIFTS IN THE F684I MUTANT OF BICAUDAL RESULT IN CARGO-INDEPENDENT ACTIVATION OF DYNEIN MOTILITY. Heying Cui, Kathleen M. Trybus, M. Yusuf Ali, Puja Goyal, Xavier D. Aura, Jia-Ying Loh, Crystal R. Noell, **Sozanne R. Solmaz**

2100-Pos Board B370
LIS1 PROMOTES THE FORMATION OF ACTIVATED CYTOPLASMIC DYNEIN-1 COMPLEXES. **John P. Gillies**, Zaw Min Htet, Richard W. Baker, Andres Leschziner, Morgan E. DeSantis, Samara L. Reck-Peterson

2101-Pos Board B371
THE REGULATORY ROLE OF LIS1 ON THE MECHANICS OF DYNEIN MOTILITY. **Emre Kusakci**

2102-Pos Board B372
CARGO ADAPTORS REGULATE THE STEPPING AND FORCE GENERATION OF MAMMALIAN DYNEIN-DYNACTIN. **John Canty**

2103-Pos Board B373
OSCILLATORY MOVEMENT OF A DYNEIN-MICROTUBULE COMPLEX CROSS-LINKED WITH DNA-ORIGAMI. Shimaa A. Abdellatef, Hisashi Tadakuma, Yuichi Kondo, Kangmin Yan, Rofia Boudria, Kodai Fukumoto, Takashi Fujiwara, Hideo Higuchi, **Keiko Hirose**

2104-Pos **Board B374**
KINETICS & THERMODYNAMICS OF KINESIN BACKSTEPS. **Huong T. Vu**, Algirdas Toleikis, Nicholas Carter, Robert A. Cross

2105-Pos **Board B375**
PROPOSED MECHANISM OF KINESIN BACKSTEPPING. **Algirdas Toleikis**, Nicholas Carter, Robert A. Cross

2106-Pos **Board B376**
SYNCHRONIZED UNIDIRECTIONAL-ROTATION AND HELICAL-MOTION OF KINESIN-BOUND GOLD NANORODS INDICATES COUPLING OF TORQUE AND LATERAL-FORCE GENERATIONS OF KINESIN HEADS. **Mitsuhiro Sugawa**, Yohei Maruyama, Masahiko Yamagishi, Robert A. Cross, Junichiro Yajima

2107-Pos **Board B377**
STRAIN-DEPENDENT PROPERTIES OF KIF3A AND KIF3C TUNE THE MECHANOCHEMISTRY OF THE KIF3AC HETERODIMER. **Brandon M. Bensel**, Michael S. Woody, Serapion Pyrpassopoulos, Yale E. Goldman, Susan P. Gilbert, E. Michael Ostap

2108-Pos **Board B378** **Travel Awardee**
THE TAIL OF XCTK2 CONTAINS TWO DISTINCT MICROTUBULE BINDING DOMAINS. **Stephanie C. Ems-McClung**, Stephanie Zhang, Mackenzie Emch, Claire E. Walczak

2109-Pos **Board B379**
INHIBITORY MECHANISM OF PHOTOCHROMIC INHIBITOR FOR MITOTIC KINESIN EG5. **Kei Sadakane**, Islam Md Alrazi, Kenichi Taii, Tomisin H. Ogunwa, Takayuki Miyanishi, Shinsaku Maruta

2110-Pos **Board B380**
CARGO DIFFUSION SHORTENS SINGLE-KINESIN RUNS AT LOW VISCOUS DRAG. **John O. Wilson**, David A. Quint, Ajay Gopinathan, Jing Xu

2111-Pos **Board B381**
IN VITRO RECONSTITUTION OF KINESIN-DRIVEN VESICLE TRANSPORT. **Rui Jiang**, Qingzhou Feng, You Jung Kang, William O. Hancock

2112-Pos **Board B382**
BIOCHEMICAL CHARACTERIZATION OF THE KIF1A CHEMOMECHANICAL CYCLE. **Taylor M. Zaniewski**, William O. Hancock

2113-Pos **Board B383**
MOTILITY CHARACTERISTICS OF HUMAN KIF1A MUTANTS IN HIPPOCAMPAL NEURONS IN RELATION TO HEREDITARY SPASTIC PARAPLEGIA. **Shiori Matsumoto**, Kyoko Chiba, Shinsuke Niwa, Kumiko Hayashi

2114-Pos **Board B384**
TRACKING DOWN THE FAST AND SUPERPROCESSIVE KIF1A WITH GOLD SCATTERING MICROSCOPY. **Allison M. Gicking**

2115-Pos **Board B385**
REGULATION OF KIF1A BEHAVIOR AND MOTILITY VIA TAU'S STRUCTURAL DYNAMICS. **Dominique V. Lessard**, Christopher L. Berger

2116-Pos **Board B386**
THREE-DIMENSIONAL MODEL TO UNDERSTAND THE COOPERATIVE TRANSPORT OF PAIRS OF KINESIN-2 MOTORS. **Wiphu Youyen**, Punam Sonar, Pattipong Wisanpitayakorn, Qingzhou Feng, Keith J. Mickolajczyk, William O. Hancock, Zeynep Okten, Erkan Tüzel

2117-Pos **Board B387**
THE ROLE OF GLYCOGEN SYNTHASE KINASE 3 (GSK3) IN REGULATING INTRACELLULAR TRANSPORT. **Ibtissem Nabti**, George T Shubeita

2118-Pos **Board B388**
SMALL MOLECULE UNCOUPLING OF MICROTUBULE DEPOLYMERASE ACTIVITY FROM MOTILITY IN HUMAN KINESIN-5 DURING MITOTIC SPINDLE ASSEMBLY. **Edward Wojcik**

2119-Pos **Board B389**
DEVELOPMENT OF NOVEL PHOTOCHROMIC INHIBITORS FOR KINESIN EG5 WHICH FORM MULTIPLE ISOMERIZATION STATES UTILIZING AZOBENZENE AND SPIROPYRAN. **Islam Md Alrazi**, Kei Sadakane, Shinsaku Maruta

2120-Pos **Board B390** **Travel Awardee**
INVESTIGATING THE ROLE OF CARGO SHAPE AND MOTOR ATTACHMENT GEOMETRY IN THE ENSEMBLE MOTILITY OF TEAMS OF CYTOSKELETAL MOTORS DYNEIN AND KINESIN. **Jingjie Hu**, Yang Yang, Chenxiang Lin, Nathan D. Derr

2121-Pos **Board B391**
MOLECULAR MECHANISM OF RAB22A MEDIATED REGULATION OF KIF13A MOTILITY AND CARGO RECYCLING. **Nishaben Patel**, Prerna Sharma, Ruchi Kumari, Aravintha Siva, Subba Rao Setty, Virupakshi Soppina

2122-Pos **Board B392**
MOLECULAR NANO-PATTERNING REVEALS DIFFERENT COORDINATION OF KINESIN-1 AND KINESIN-14 MOTORS. **Taikopaul Kaneko**, Kenya Furuta, Kazuhiro Oiwa, Hirofumi Shintaku, Hidetoshi Kotera, Ryuji Yokokawa

Myosins
(Boards B393 - B412)

2123-Pos **Board B393** **Travel Awardee**
ELECTROSTATIC INTERACTIONS WITHIN HUMAN CARDIAC MYOSIN HEAD MODULATE ITS KINETICS. **Akhil Gargey**, Shiril Bharadwaj, Yaroslav V. Tkachev, Yuri E. Nesmelov

2124-Pos **Board B394**
FUNCTIONAL COMPARISON OF HOMOLOGOUS MUTATIONS IN HUMAN BETA, PERINATAL, AND EMBRYONIC MUSCLE MYOSIN ISOFORMS. **Anastasia Karabina**, Chao Liu, James A. Spudich, Leslie A. Leinwand

2125-Pos **Board B395** **Travel Awardee**
FUNCTIONAL DIFFERENCES IN MYH7B THAT CONTRIBUTE TO DISTINCT BIOLOGICAL ROLES ACROSS SPECIES AND IN HEALTH AND DISEASE. **Lindsey A. Lee**, Anastasia Karabina, Leslie A. Leinwand

2126-Pos **Board B396**
MOLECULAR MECHANISM OF MYOSIN-7A TRANSLOCATION AND ACTIN BUNDLE ASSEMBLY INSIGHTS FROM A NEW BINDING PROTEIN. **Rong Liu**, Neil Billington, Yi Yang, Charles Bond, Amy Saw-Tin Hong, Yasuharu Takagi, Verl B. Siththanandan, James R. Sellers

2127-Pos **Board B397**
MYO3A MOTOR ACTIVITY AND TAIL DOMAIN INTERACTIONS IMPACT ACTIN PROTRUSION ELONGATION. **Laura Gunther**, Shane R. Nelson, Joseph A. Cirilo, David M. Warshaw, Christopher M. Yengo

2128-Pos **Board B398**
MYOSIN MOTORS' KINETIC DIVERSITY IS ENCODED BY THE CONFORMATIONAL DYNAMICS OF THE MOTOR DOMAIN. **Justin R. Porter**, Artur Meller, Maxwell I. Zimmerman, Michael J. Greenberg, Gregory Bowman

2129-Pos **Board B399**
FLEXIBILITY OF MYOSIN II IN SOLUTION. **Prince Tiwari**, Kyounghwan Lee, Osamu Sato, Mitsuo Ikebe, Roger Craig

2130-Pos **Board B400**
THE NEW-GENERATION MUSCLE RELAXANT MPH-220 DISSOLVES SPASTICITY IN MUSCLES AFTER CNS INJURY - A PROMISING DRUG TO ADDRESS POST-STROKE SPASTICITY. Mate Gyimesi, **Adam I. Horvath**, Demeter Túrós, Gyorgy Hegyi, Sharad K. Suthar, Mihaly Kovacs, Andras Malnasi-Csizmadia

2131-Pos **Board B401**
TARGETED MYOSIN-2 INHIBITION IMPROVES BRAIN REGENERATION AFTER STROKE BY RELAXING HYPOXIA-INDUCED VASOCONSTRICTION IN CAPILLARIES. Mate Penzes, Demeter Turos, Mate Winternitz, Ivan Ivic, Peter Toth, Anna Á. Rauscher, **Mate Gyimesi**, Andras Malnasi-Csizmadia

2132-Pos Board B402 Travel Awardee
UNCOVERING THE MOLECULAR AND STRUCTURAL BASIS OF HYPERTROPHIC CARDIOMYOPATHY-CAUSING MUTATIONS IN MYOSIN AND MYOSIN BINDING PROTEIN-C. **Neha Nandwani**, Darshan V. Trivedi, Saswata S. Sarkar, Makenna Morck, Kathleen Ruppel, James A. Spudich

2133-Pos Board B403 Travel Awardee
STUDY OF HCM CAUSING B-CARDIAC MYOSIN MUTATIONS LOCATED AT DIFFERENT STRUCTURALLY SIGNIFICANT REGIONS OF THE MYOSIN-HEAD. **Debanjan Bhowmik**, Neha Nandwani, Kathleen Ruppel, Chao Liu, James A. Spudich

2134-Pos Board B404
AUTO-INHIBITION OF ACTIN-MYOSIN ATPASE THROUGH COLLECTIVE FORCE GENERATION. **Vidya Murthy**, Travis J. Stewart, Christine R. Cremo, Josh E. Baker

2135-Pos Board B405
THE DIRECT MEASUREMENT OF THE STEPPING FORCE OF A PURIFIED VESICLE USING A SINGLE BEAM OPTICAL TRAP. **Justin J. Raupp**, Takeshi Sakamoto

2136-Pos Board B406
COMPUTATIONAL STUDY OF THE EFFECT OF POINT MUTATIONS PERTURBING THE RECOVERY STROKE OF HUMAN CARDIAC BETA-MYOSIN USING METADYNAMICS. **Ananya Chakraborti**, Jil C. Tardiff, Steven D. Schwartz

2137-Pos Board B407
BUFFER EXCHANGE WHILE PROBING A SINGLE ACTOMYOSIN INTERACTION IN THE OPTICAL TRAP. **Aaron Snoberger**, Donald A. Winkelmann, E. Michael Ostap, Yale E. Goldman

2138-Pos Board B408
COMPUTATIONAL EVALUATION OF POINT MUTATION PERTURBATIONS TO THE RECOVERY STROKE OF *DICTYOSTELIUM* MYOSIN II WITH METADYNAMICS. **Anthony P. Baldo**, Jil C. Tardiff, Steven D. Schwartz

2139-Pos Board B409
REDUCED BETA MYOSIN HEAVY CHAIN K213 ACETYLATION AND T215 PHOSPHORYLATION IN HUMAN HEART FAILURE. Amanda Wacker, **Michelle C. Rodriguez Garcia**, Maicon Landim Vieira, Rakesh K. Singh, Elizabeth A. Brundage, Bryan A. Whitson, Paul M. Janssen, Prescott B. Chase, Brandon J. Biesiadecki, Michelle S. Parvatiyar, J. Renato D. Pinto

2140-Pos Board B410
ACTIN NETWORK ORGANIZATION BY THE MONOMERIC MYOSIN IXA. **Markus Kröss**, Dario Saczko-Brack, Christopher Batters, Claudia Veigel

2141-Pos Board B411
A LANDSCAPE-BASED VIEW ON THE STEPPING MOVEMENT OF MYOSIN VI. **Tomoki P. Terada**, Qing-Miao Nie, Masaki Sasai

2142-Pos Board B412
UTILIZATION OF TRANSITION PATH SAMPLING TO PERFORM DYNAMICALLY UNBIASED SIMULATIONS OF ATP HYDROLYSIS IN TWO ISOFORMS OF MYOSIN II. **Ananya Chakraborti**, Anthony Baldo, Jil C. Tardiff, Steven D. Schwartz

Cytoskeletal Assemblies and Dynamics (Boards B413 - B429)

2143-Pos Board B413
MODELING ACTIN NETWORKS IN REALISTIC GEOMETRIES OF DENDRITIC SPINES. **Andrew Nguyen**, Justin L. Oshiro, Christopher T. Lee, Michael Holst, Padmini Rangamani

2144-Pos Board B414
PRIMARY CILIUM SUBMICRON ORGANIZATION AND DYNAMICS. **Belén Torrado**, Lorenzo Scipioni, Enrico Gratton, José L. Badano, Leonel S. Malacrida, Florencia Irigoín

2145-Pos Board B415
THE EFFECTS OF X-RAY CONTRAST MEDIA ON ACTIN. Gábor Hild, Elek Telek, **Zoltan Ujfalusi**

2146-Pos Board B416
MECHANISMS UNDERLYING NWASP ACTIVATION BY SYNERGISTIC PAIRS OF SIGNALING MOLECULES. **Aniruddha Chattaraj**, Leslie M. Loew

2147-Pos Board B417
INTERCELLULAR FORCE TRANSMISSION IN WOUND CLOSURE. Ai Kia Yip, **Keng-Hwee Chiam**

2148-Pos Board B418
MECHANICAL FORCE-DRIVEN REGISTRY OF NON-MUSCLE MYOSIN IN FIBROBLASTS. **Kinjal Dasbiswas**, Shiqiong Hu, Alexander D. Bershadsky, Samuel Safran

2149-Pos Board B419
SLIDING FILAMENT AND FIXED FILAMENT MECHANISMS CONTRIBUTE TO TENSION OF THE FISSION YEAST CYTOKINETIC RING. **Roberto Alonso-Matilla**, Sathish Thiyagarajan, Ben O'Shaughnessy

2150-Pos Board B420
REAL TIME AFM IMAGING OF DEPOLYMERIZING MICROTUBULE ARRAYS AT SINGLE PROTOFILAMENT RESOLUTION. **Radhika Subramanian**, Sithara Wijeratne

2151-Pos Board B421
BENDING OF ACTIN FILAMENTS INTO RINGS BY IQGAP FAMILY OF PROTEINS. Saravanan Palani, Tzer Chyn Lim, Mohan K. Balasubramanian, **Darius V. Koester**

2152-Pos Board B422
DYNAMICS OF FORCE-REGULATED BRANCHED ACTIN NETWORK DENSITY. **Tai-De Li**, Peter Bieling, Dyche Mullins, Daniel A. Fletcher

2153-Pos Board B423
CHANGE IN THE HELICAL SYMMETRY OF *CHLAMYDOMONAS* AND *CIONA* FLAGELLAR AXONEMES COUPLED WITH THE CHANGE IN CA^{2+} CONCENTRATIONS REVEALED BY X-RAY FIBER DIFFRACTION. **Kazuhiro Oiwa**, Hiroyuki Iwamoto, Kogiku Shiba, Kazuo Inaba, Hitoshi Sakakibara

2154-Pos Board B424
CORRELATION BETWEEN PHOTOSENSITIZER-MEDIATED OXIDATIVE STRESS AND AGING STRESS FOR RED BLOOD CELL MEMBRANE MECHANICAL PROPERTY. **Koji Kinoshita**, Gustavo Scanavachi, Tayana M. Tsubone, Vita Solovyeva, Jonathan Brewer, Rosangela Itri

2155-Pos Board B425
MEASUREMENT AND MODELING OF MICROTUBULE TIP DYNAMICS. **Joseph M. Cleary**

2156-Pos Board B426
TARGETING TUMOR CELLS BY ACTIN-REGULATED NUCLEAR ENVELOPE RUPTURE. **Marc-Antoine Rodrigue**, Claire Dziengelewski, Kévin Jacquet, Alexia Caillier, Jonathan Bergeman, François Bordeleau, Marc-Étienne Huot, Josée N. Lavoie

2157-Pos Board B427
CONTRACTILE RING CONSTRICTION AND CELL WALL GROWTH ARE REGULATED BY MECHANICAL FEEDBACK AND DESTABILIZED BY MUTATIONS IN FISSION YEAST. **Sathish Thiyagarajan**, Zachary A. McDargh, Shuyuan Wang, Ben O'Shaughnessy

2158-Pos Board B428
REPLACEMENT OF MYOSIN MOLECULES WITHIN CARDIAC THICK FILAMENTS IN INTACT MOUSE HEARTS. **Michael J. Previs**, Jody L. Martin, Jeffrey L. Spees, Thomas S. O'Leary

2159-Pos Board B429
MICRORHEOLOGY OF ACTIN-VIMENTIN-MICROTUBULE COMPOSITE CYTOSKELETAL NETWORKS. **Yinan Shen**

Membrane Pumps, Transporters, and Exchangers II (Boards B430 - B448)

2160-Pos Board B430
ZINC-INDUCED CONFORMATIONAL CHANGES IN THE CATION DIFFUSION FACILITATOR YIIP. **Maria L. Lopez**, Akiko Koide, Lorena Novoa, Jose M Arguello, Shohei Koide, David L. Stokes

2161-Pos Board B431
MECHANISM OF ION PERMEATION IN THE EUKARYOTIC COPPER TRANSPORTER CTR. **Kehan Chen**, Yaping Pan, Ming Zhou

2162-Pos Board B432
MICROSCOPIC VIEW OF STRUCTURAL TRANSITIONS OF GLUCOSE TRANSPORTERS. **Tianle Chen**, Mrinal Shekhar, Emad Tajkhorshid

2163-Pos Board B433
COOPERATIVE SUBSTRATE BINDING CONVERGES TO THE CLOSED CONFORMATIONS IN THE SODIUM-COUPLED MELIBIOSE SYMPORTER MELB. **Hariharan Parameswaran**, Lan Guan

2164-Pos Board B434
MITOCHONDRIAL ATP SYNTHASE UTILIZES BOTH K^+ AND H^+ CONDUCTANCES TO DRIVE ATP SYNTHESIS. **Evgeny Kobrinsky**, Dmitry B. Zorov, Magdalena Juhaszova, Miguel A. Aon, Sonia Cortassa, Steven J. Sollott

2165-Pos Board B435
ALTERNATING BINDING OF PHOSPHOLAMBAN AND DWORF TO SERCA DURING TRANSIENT ELEVATIONS OF CYTOSOLIC CALCIUM. **Sean R. Cleary**, Ellen E. Cho, Marsha P. Pribadi, Elisa Bovo, Jordan R. Beach, Howard S. Young, Aleksey V. Zima, Gianluigi Veglia, Seth L. Robia

2166-Pos Board B436
DEFINING SUBSTRATE BINDING SITE IN SODIUM-DEPENDENT BILE ACID TRANSPORTERS. **Azaan Wilbon**, Corinne Portiolli, Lie Wang, Ming Zhou

2167-Pos Board B437
BILE ACID TRANSPORT BY THE SYMPORTER $ASBT_{NM}$: SUBSTRATE BINDING AND CONFORMATIONAL CHANGE. **Fiona Naughton**, Patrick Becker, Deborah Brotherton, Alexander D. Cameron, Oliver Beckstein

2168-Pos Board B438
ELUCIDATION OF STRUCTURAL DOMAINS UNDERLYING SUBSTRATE RECOGNITION IN PLANT MATE TRANSPORTERS. **Srinivasan Krishnan**, Janin Riedelsberger, Julia Miller, Miguel Pineros

2169-Pos Board B439
SIMULATION AND FRET ANALYSES OF SERCA, PHOSPOHLAMBAN, AND SARCOLIPIN COMPLEXES. **Bengt Svensson**, Joseph M. Autry, Tory M. Schaaf, Razvan L. Cornea, David D. Thomas

2170-Pos Board B440
DETECTING MILLISECOND TIME RESOLUTION OF GLTPH DYNAMICS BY HS-AFM LINE SCANNING. **Tina R. Matin**, George R. Heath, Gerard Huysmans, Olga Boudker, Simon Scheuring

2171-Pos Board B441
A KINETIC DESCRIPTION OF CYTOSOLIC K^+ BINDING TO THE HUMAN SERTOTONIN TRANSPORTER UNDER TURNOVER CONDITIONS. **Zhiyu Zhao**, Emad Tajkhorshid

2172-Pos Board B442
A NOVEL STRUCTURAL MODEL OF THE CREATINE TRANSPORTER RATIONALIZES ITS STRUCTURAL DETERMINANTS OF BINDING. Giulia Banci, Riccardo Martini, **Claire Colas**, Gerhard Franz Ecker

2173-Pos Board B443
INVESTIGATING CONFORMATIONAL CHANGES TO UNDERSTAND THE TRANSPORT MECHANISM OF CLC CHLORIDE/PROTON ANTIPORTERS. **Tanmay Chavan**, Ricky Cheng, Tao Jiang, Irimpan I. Mathews, Richard A. Stein, Antoine Koehl, Ayush Krishnamoorti, Ryan J. Durham, Vladimir Berka, Hassane Mchaourab, Emad Tajkhorshid, Vasanthi Jayaraman, Merritt Maduke

2174-Pos Board B444
MOLECULAR DETERMINANTS OF PROTON TRANSFER IN ATP SYNTHASE F_OCOMPLEX. **Antoni Marciniak**, Pawel Chodnicki, Joanna Slabonska, Jacek Czub

2175-Pos Board B445
IDENTIFICATION OF A SUBSTRATE BINDING SITE ON THE MITOCHONDRIAL TRANSPORTER ABCB10. **Alexandra D. Saxberg**, Melissa Martinez, Maria E. Zoghbi

2176-Pos Board B446
ALLOSTERIC COUPLING IN AN ASYMMETRIC ABC TRANSPORTER. **Cinthia R. Millan**, Martina Francis, Valery Thompson, Tarjani M. Thaker, Thomas Tomasiak

2177-Pos Board B447
CONFORMATIONAL CHANGES DURING THE ATP HYDROLYSIS CYCLE OF THE MULTIDRUG TRANSPORTER P-GLYCOPROTEININ RESPONSE TO SUBSTRATE BINDING. **Courtney Katz**, Mariana C. Fiori, Benjamin T. Jackson, Ina Urbatsch, Guillermo A. Altenberg

2178-Pos Board B448
ATOMISTIC MOVIE OF SUBSTRATE TRANSPORT IN AN ABC EXPORTER. Hendrik Göddeke, **Lars V. Schäfer**

Mitochondria in Cell Life and Death (Boards B449 - B475)

2179-Pos Board B449
C SUBUNIT OF THE ATP SYNTHASE IS AN AMYLOIDOGENIC CHANNEL-FORMING PEPTIDE: POSSIBLE IMPLICATIONS IN MITOCHONDRIAL PATHOGENESIS. **Giuseppe F. Amodeo**, Brenda Y. Lee, Natalya Krilyuk, Carina T. Filice, Denis Valyuk, Daniel E. Otzen, Sergei Y. Noskov, Zoya Leonenko, Evgeny V. Pavlov

2180-Pos Board B450
MECHANISM OF ALPHA-SYNUCLEIN TRANSLOCATION INTO MITOCHONDRIA. **Megha Rajendran**, Marie-Paule Strub, Maria Queralt-Martin, William M. Rosencrans, Sergey M. Bezrukov, Tatiana K. Rostovtseva

2181-Pos Board B451
DELIVERY OF SINGLET OXYGEN INTO NEURONS STIMULATES MITOCHONDRIAL ENERGY METABOLISM. **Plamena R. Angelova**, Sergey G. Sokolovski, Edik U. Rafailov, Andrey Y. Abramov

2182-Pos Board B452
DELAYED PATHOPHYSIOLOGY OF MILD TRAUMATIC BRAIN INJURY: THE DIMINISHED ROLE OF CA^{2+} BUFFERING CAPACITY OF CEREBRAL MITOCHONDRIA. **Armaan Zare**, Keguo Li, Kareem M. Malas, James S. Heisner, Jyotsna Mishra, David F. Stowe, Wai-Meng Kwok, Amadou K. Camara

2183-Pos Board B453
BUTYRATE MODULATES MITOCHONDRIAL BIOENERGETICS OF CULTURED MOTOR NEURON CELLS WITH OVEREXPRESSION OF AN ALS MUTATION $SOD1^{G93A}$. **Xuejun Li**, Jianxun Yi, Ang Li, Marco A. Brotto, Jingsong Zhou

2184-Pos Board B454
MITOCHONDRIAL TRANSLOCATOR PROTEIN (TSPO) PREVENTS HEART FAILURE BY INCREASING CARDIAC UTILIZATION OF FATTY ACIDS. Phung Thai, Anthony W. Herren, Lu Ren, Donald M. Bers, Saul Schaefer, **Elena N. Dedkova**

TUESDAY

2185-Pos Board B455 Travel Awardee
DETERMINATION OF THE NUMBER OF PERMEABILITY TRANSITION PORES IN SINGLE MITOCHONDRION. **Maria A. Neginskaya**, Jasiel O. Strubbe, Giuseppe F. Amodeo, Jason N. Bazil, Evgeny V. Pavlov

2186-Pos Board B456
ACETYLATION OF CYCLOPHILIN D INCREASES CALCIUM SENSITIVITY OF THE PERMEABILITY TRANSITION PORE. Gisela Beutner, **George A. Porter**

2187-Pos Board B457
IDENTIFICATION OF ROLE OF MITOCHONDRIAL CHLORIDE INTRACELLULAR CHANNEL (CLIC) PROTEIN, CLIC4 AND CLIC5 IN CARDIOPROTECTION FROM IR INJURY VIA PROBABLY MODULATING THE OPENING OF MPTP PORE. **Devasena Ponnalagu**, Piotr Bednarczyk, Jessica Weist, Erhe Gao, Walter Koch, Mahmood Khan, Adam M. Szewczyk, Harpreet Singh

2188-Pos Board B458
STRUCTURAL AND FUNCTIONAL ALTERATIONS IN SINOATRIAL NODE MITOCHONDRIA DURING HEART FAILURE. Lu Ren, Xiao-Dong Zhang, Elena N. Dedkova, **Phung N. Thai**, Nipavan Chiamvimonvat

2189-Pos Board B459
SPATIOTEMPORAL SUBCELLULAR CHARACTERIZATION OF ABSOLUTE NADH CONCENTRATION OVER THE DYNAMIC COURSE OF METAPHASE, ANAPHASE, TELOPHASE AND CYTOKINESIS USING THE PHASOR APPROACH TO FLIM. **Rachel Cinco**, Ny'Kerria Leonard, Michelle A. Digman, Enrico Gratton

2190-Pos Board B460
THERAPEUTIC CONCENTRATIONS OF STATINS HYPERPOLARIZE MITOCHONDRIA AND INHIBIT CELL PROLIFERATION WITHOUT PROMOTING CELL DEATH IN HEPATOCARCINOMA CELLS. **Elizabeth G. Hunt**, Diana Fang, Amandine Rovini, Charleston F. Christie, Kareem A. Heslop, Eduardo N. Maldonado

2191-Pos Board B461
MONITORING CAMKII IN MITOCHONDRIA. **Kevin R. Murphy**, Qinchuan Wang, Jonathan Granger, Vedika Karandikar, Gianna Bortoli, Xi Zhang, Elizabeth Luczak, Rong Li, Mark E. Anderson

2192-Pos Board B462
AGED DIABETIC MICE EXHIBIT DIASTOLIC DYSFUNTION ASSOCIATED WITH ALTERATIONS IN MYOCARDIAL MITOCHONDRIAL OXIDATIVE PHOSPHORYLATION PROTEIN EXPRESSION AND COMPLEX ASSEMBLIES. Wenzhou MA, Scarlett Huck, Thomas Mancini, Alex Vang, Shanna Hamilton, Radmila Terentyeva, Dmitry A. Terentyev, Gaurav Choudhary, **Richard T. Clements**

2193-Pos Board B463
MEMBRANE INTERACTION OF MITOCHONDRIAL INTERMEMBRANE SPACE KINASES. **Uwe Schlattner**

2194-Pos Board B464
TRIC-A CHANNEL MODULATES CA^{2+} HOMEOSTASIS IN MITOCHONDRIA. **Ang Li**, Xuejun Li, Jianxun Yi, Xinyu Zhou, Ki Ho Park, Miyuki Nishi, Hiroshi Takashima, Jianjie Ma, Jingsong Zhou

2195-Pos Board B465
ROLE OF MITOCHONDRIAL EXPRESSION OF THE CALCIUM-ACTIVATED CHLORIDE CHANNEL ANOCTAMIN-1 IN PULMONARY ARTERY ENDOTHELIAL CELLS. **Jin O-Uchi**, Alexander Vang, Michael W. Cypress, Ana Fernandez-Nicolas, Thomas Mancini, Bong Sook Jhun, Richard T. Clements, Gaurav Choudhary

2196-Pos Board B466
REDUCED AFFINITY OF MITOCHONDRIAL VDAC3 FOR CYTOSOLIC PROTEINS REVEALS A MECHANISM FOR VDAC ISOFORM-SPECIFIC PHYSIOLOGY. **Maria Queralt-Martín**, Lucie A. Bergdoll, Jeff Abramson, Sergey M. Bezrukov, Tatiana K. Rostovtseva

2197-Pos Board B467
PERIPHERAL BINDING OF HEXOKINASE-2 TO THE RIM OF VDAC1 MEDIATED BY THE MITOCHONDRIAL OUTER MEMBRANE. **Nandan Haloi**, Po-Chao Wen, Qunli Cheng, Meiying Yang, Amadou K. Camara, Wai-Meng Kwok, Emad Tajkhorshid

2198-Pos Board B468 Travel Awardee
OXIDATIVE THIOL MODIFICATIONS AS MOLECULAR REDOX SENSORS IN HUMAN MITOCHONDRIA. **Radhakrishnan Mahalakshmi**

2199-Pos Board B469
MULTI-MODAL ACTIONS OF BAX AND BTSA1 ON MITOCHONDRIAL BIOENERGECTICS AND MEMBRANE INTEGRITY. **Jonathan Feng**, Qunli Cheng, Gayathri K. Natarajan, Amadou K. Camara, Wai-Meng Kwok

2200-Pos Board B470
PROTON TRANSPORT IN MITOCHONDRIAL UCP2 IS REGULATED BY A MATRIX-ORIENTED SALT-BRIDGE NETWORK. Afshan Ardalan, Shahin Sowlati-Hashjin, Mikko Karttunen, Matthew D. Smith, **Masoud Jelokhani-Niaraki**

2201-Pos Board B471
PROTONIC CAPACITOR BIOENERGETICS: WHY MITOCHONDRIA DEVELOP CRISTAE? **James W. Lee**

2202-Pos Board B472
MITOCHONDRIAL REDOX SIGNALING AND CRISTAE MORPHOLOGY CHANGES UPON 2-KETO-ISOCAPROATE AND FATTY ACID-STIMULATED INSULIN SECRETION. **Petr Jezek**, Blanka Holendova, Martin Jaburek, Jan Tauber, Lydie Plecitá-Hlavatá, Andrea Dlaskova

2203-Pos Board B473
MITOCHONDRION REIMAGINED - FUELING SYNTHETIC LIFE. **Lado Otrin**, Christoph Diehl, Tobias Erb, Kai Sundmacher, Tanja Vidaković-Koch

2204-Pos Board B474
ENHANCED O2-DEPENDENT MITOCHONDRIAL ACTIVATION IN MYOFIBERS FROM CMP *N*-GLYCOLYLNEURAMINIC ACID HYDROXYLASE (CMAH) GENE INACTIVATED MICE. **Leonardo Nogueira**, Ellen C. Breen

2205-Pos Board B475
STUDY OF THE MECHANISMS ASSOCIATED WITH $PM_{2.5}$ INDUCED REACTIVE OXYGEN SPECIES PRODUCTION IN ALVEOLAR MACROPHAGES. **David Flores**, Micah B. Olivas, Mandeep Kaur, Kosha Raval, Joel Castillo, Anthony Waterston, Alam Hasson, Laurent M. Dejean

Systems Biology and Disease (Boards B476 - B488)

2206-Pos Board B476
NON- EQUILIBRIUM ENTROPY OF CANCER BASED ON GOMPERTZIAN GROWTH. **Preet Sharma**, Randal Hallford, Salvatore Capotosto, Bailey Smoot

2207-Pos Board B477
A BIOPHYSICAL BASIS FOR A TARGETED THERAPY EXCEPTIONAL RESPONDER KRAS MUTATION. **Edward C. Stites**, Thomas McFall

2208-Pos Board B478
BIOPHYSICAL MODEL OF ION TRANSPORT AND ENERGY DEPLETION IN THE INNER EAR. Julia Lasater, **Robert M. Raphael**

2209-Pos Board B479
ZEBRAFISH AIRINEME TARGET SEARCH AND OPTIMAL CURVATURE. **Sohyeon Park**, Hyunjoong Kim, Dae Seok Eom, Jun F. Allard

2210-Pos Board B480
DETERMINANTS OF INFLUENZA A DIFFUSION THROUGH THE MUCUS BARRIER TO INFECTION. **Logan Kaler**, Shahed Bader, Gregg Duncan

2211-Pos **Board B481**
STRAIN ACCUMULATION VISCO-ELASTIC VENTRICULOMEGALY HYPOTHESIS FOR THE ONSET OF IDIOPATHIC NORMAL PRESSURE HYDROCEPHALUS (INPH). **Stephanie Sincomb**, Victor Haughton, Antonio Sanchez, Ernesto Criado-Hidalgo, Juan C. Lasheras

2212-Pos **Board B482**
ATOM CONTACT PROFILE BY ALPHA-SHAPE IMPROVES PREDICTION OF EFFECTS OF MISSENSE VARIANT. **Boshen Wang**, Xue Lei, Wei Tian, Alan Perez-Rathke, Yan Yuan Tseng, Jie Liang

2213-Pos **Board B483**
RESOLVING THE CONNECTION BETWEEN MAJOR HISTOCOMPATIBILTY COMPLEXES AND IMMUNE OUTCOMES USING UNSUPERVISED CLUSTERING OF MOLECULAR DYNAMICS SIMULATIONS. **Eric A. Wilson**, Karen Anderson, Abhishek Singharoy

2214-Pos **Board B484**
CELLULAR NOISE AND RESPONSE TO ANTIBIOTICS. **Shahla Nemati**, Daniel M. Weinreich, Andreas E. Vasdekis

2215-Pos **Board B485**
SINGLE-CELL ANALYSIS ON BACTERIAL COMPETITION BETWEEN MICROCOLONIES. **Tianyi Ma**, Joshua Milstein

2216-Pos **Board B486**
DELAYED ONSET MUSCLE SORENESS (DOMS): COMPARATIVE ION HOMEOSTASIS MODELING SHOWS HOW DONNAN EFFECTS PROTECT DAMAGED MUSCLE FIBERS. Catherine E. Morris, Joshua J. Wheeler, **Bela Joos**

2217-Pos **Board B487**
AMELIORATIVE EFFECTS OF TRANSCRIPTION FACTOR DFOXO OVER-EXPRESSION IN A *DROSOPHILA* CARDIOVASCULAR DISEASE MODEL. **Marissa Sumathipala**, Meera C. Viswanathan, Anna C. Blice-Baum

2218-Pos **Board B488** **Travel Awardee**
IMPAIRED MYOCARDIAL ENERGETICS CONTRIBUTES TO MECHANICAL DYSFUNCTION IN DECOMPENSATED FAILING HEARTS. **Rachel Lopez**, Xin Gao, Bahador Marzban, Ellen Lauinger, Françoise Van den Bergh, Daniel A. Beard

Molecular and Cellular Neuroscience (Boards B489 - B504)

2219-Pos **Board B489**
DIFFERENCES IN POTASSIUM CHANNEL COMPOSITION UNDERLIE DISTINCT ACTION POTENTIAL KINETICS IN TRANSCRIPTOMICALLY IDENTIFIED NEOCORTICAL MOUSE CELL TYPES. **Jim Berg**, Brian Lee, Rusty Mann, Lindsay Ng, Agata Budzillo, Brian Kalmbach, Katherine Baker, Hongkui Zeng, Gabe Murphy

2220-Pos **Board B490** **Travel Awardee**
THE DEVELOPMENT OF COOPERATIVE CHANNELS EXPLAINS THE MATURATION OF HAIR CELL'S MECHANOTRANSDUCTION. **Francesco Gianoli**, Thomas Risler, Andrei S. Kozlov

2221-Pos **Board B491**
NANOSCALE DYNAMICS OF VOLTAGE-GATED CALCIUM CHANNELS AT PRESYNAPTIC ACTIVE ZONES IN LIVE *C. ELEGANS*. **Yunke Zhao**

2222-Pos **Board B492**
COUNTING THE NUMBER OF GLUTAMATE MOLECULES IN SINGLE SYNAPTIC VESICLES. **Ann-Sofie U. Cans**, Yuanmo Wang, Hoda Mashadi Fathali, Devesh Mishra, Thomas Olsson, Jacqueline Keighron, Karolina Skibicka

2223-Pos **Board B493**
RAPID CELL TYPE-DEPENDENT UPTAKE OF 0N4R TAU MONOMER IS NOT SOLELY HEPARIN SULFATE PROTEOGLYCAN DEPENDEN. **Anne S. Robinson**, Daniel Oseid, Evan Wells, Liqing Song

2224-Pos **Board B494**
PLASMA MEMBRANE DYNAMICS AND PROTEOLYTIC PROCESSING OF APP FROM A SINGLE MOLECULE/SINGLE CELL PERSPECTIVE. Claudia Capitini, Cristina Cecchi, Francesco S. Pavone, **Martino Calamai**

2225-Pos **Board B495** **Travel Awardee**
ACETYL MIMICKING K274Q MUTATION ENHANCES TAU AGGREGATION, INCREASES THE AFFINITY OF TAU FOR METAL IONS AND REDUCES ITS ABILITY TO PROTECT DNA. **Jitendra S. Rane**, Anuradha Kumari, Dulal Panda

2226-Pos **Board B496**
CONFORMATIONAL STATES OF NITRIC OXIDE SYNTHASE CHARACTERIZED BY TIME-RESOLVED FLUORESCENCE. **Carey K. Johnson**, Alexa A. Snyder, Alexandria K. Gambill, David C. Arnett, Brian C. Smith

2227-Pos **Board B497**
SUPERRESOLUTION MICROSCOPY TO STUDY THE ENDOGENOUS ROLE OF ALPHA-SYNUCLEIN IN SYNAPTOSOMES. **Pedro P. Vallejo Ramirez**

2228-Pos **Board B498**
A SNAKE UNCOILED: ACTIVATION OF PARKIN, A UBIQUITIN LIGASE INVOLVED IN PARKINSON'S DISEASE. **Kalle Gehring**, Véronique Sauvé

2229-Pos **Board B499**
EFFECTS OF AU-FE NANOCLUSTER ON NEURON DIFFERENTIATION WITH ELECTRIC STIMULATION. **Yu-Tung Weng**, Yu-Jhe Chiu, Li-Han Chung, Yu-Ying Hsieh, Tsan-Yao Chen, Chi-Shuo Chen

2230-Pos **Board B500**
REAL-TIME IMAGING FOR THE INVESTIGATION OF CORRELATION BETWEEN FACTOR AGGREGATION AND TRANSPORT MECHANISM VARIATION OF MOTOR PROTEIN IN NEURONAL CELLS. **Yo Han Song**, Kyujin Shin, Kang Taek Lee

2231-Pos **Board B501**
SIGNAL INTEGRATION MECHANISM OF CA^{2+}/CALMODULIN-DEPENDENT PROTEIN KINASE II REVEALED BY HIGH-SPEED AFM. **Mikihiro Shibata**, Hideji Murakoshi

2232-Pos **Board B502**
NEURODEGENERATIVE DISEASE AND CAMP SIGNALING DYNAMICS. Elsa Roush, Kevin Harlen, Mike Hendrickson, **Thomas E. Hughes**

2233-Pos **Board B503**
ACTIVITY-DEPENDENT PLASTICITY AT ASSOCIATIVE MEMORY CELLS IN THE PREFRONTAL CORTEX. **Jin-Hui Wang**, Jing Feng, Wei Lu

2234-Pos **Board B504**
THE REGULATORY MEMBRANE PROTEIN FXYD6: LOCALIZATION IN THE CNS AND INTERACTION WITH THE NA^+,K^+-ATPASE. **Ryan Sweazey**, Craig Gatto, Pablo Artigas

Sensory Neuroscience (Boards B505 - B510)

2235-Pos **Board B505**
THE GROWTH DYNAMICS OF *DROSOPHILA* CLASS IV DENDRITES ACCORDS WITH A THREE-STATE MARKOV MODEL. **Sabyasachi Sutradhar**, Sonal Shree, Olivier Trottier, Jonathon Howard

2236-Pos **Board B506**
ACTION POTENTIAL ACTIVITY AND MEMBRANE STRUCTURE IN NEURONS OF THE GOLDFISH RETINA UNDERGO SEASONAL CHANGES. **Michael G. Jonz**, Michael W. Country, Katrin Blank, Jeffrey C. Smith

2237-Pos **Board B507**
NONLINEAR DYNAMICS OF HEARING. **Dolores Bozovic**

2238-Pos Board B508
STIM1 THERMOSENSITIVITY DEFINES THE OPTIMAL PREFERENCE TEMPERATURE FOR WARM SENSATION IN MICE. Xiaoling Liu, **Haiping Wang**, Yan Jiang, Qin Zheng, Matt Petrus, Mingmin Zhang, Sisi Zheng, Christian Schmedt, Xinzhong Dong, Bailong Xiao

2239-Pos Board B509
EVALUATION OF THE COGNITIVE EVOKED POTENTIAL P300 IN MEDICAL STUDENTS UNDER DIFFERENT LEVELS OF ACADEMIC STRESS. **Ana Luisa Alvarez**, Marco Antonio Delaye Martínez, Raúl Sampieri

2240-Pos Board B510
THE OSMOSENSITIVE CATION CHANNEL TMEM63B IS REQUIRED FOR AUDITORYSYSTEM. **Chang Ye**

Computational Methods and Bioinformatics II (Boards B511 - B532)

2241-Pos Board B511
SINGLE-PARTICLE TRACKING OF DNA-BINDING BIOMOLECULES IN THE NUCLEUS: WHY A POWER-LAW DISTRIBUTION OF DWELL TIMES? **Michael J. Saxton**

2242-Pos Board B512
REALISTIC, VECTORIAL MODELING OF THE DETECTION POINT SPREAD FUNCTION FOR SINGLE MOLECULE AND BRIGHTFIELD MICROSCOPY. Michael J. Nasse, **Jorg C. Woehl**

2243-Pos Board B513 Travel Awardee
THREE-DIMENSIONAL FAST OPTIMIZED CLUSTERING ALGORITHM (FOCAL3D) FOR SINGLE-MOLECULE LOCALIZATION MICROSCOPY. **Daniel F. Nino**, Joshua N. Milstein

2244-Pos Board B514
DECODING THE VARIANCE IN INTRACELLULAR ORGANIZATION OF THE UNDIFFERENTIATED HIPS CELL. **Matheus Palhares Viana**, Susanne M. Rafelski

2245-Pos Board B515
OPERATOR ALGEBRAS FOR DYNAMIC TOPOLOGY MODELS OF CYTOSKELETON. **Eric Mjolsness**

2246-Pos Board B516
BAYESIAN CELL FORCE ESTIMATION INTRODUCING CELL SHAPE PRIOR. **Ryosuke Fujikawa**, Satoshi Kozawa, Kentarou Baba, Naoyuki Inagaki, Kazushi Ikeda, Yuichi Sakumura

2247-Pos Board B517
MODELLING IN VITRO AGGREGATION OF CANCER CELLS. **Léo L. Adenis**, Olivier Seksek, Marjorie Juchaux, Christophe Deroulers, Mathilde Badoual

2248-Pos Board B518
LIPIDOME PROFILES OF GLIOBLASTOMA AND DUCTAL CARCINOMA CELL LINES. **Edmundo Medina-Gurrola**, Steve Berruecos, Michael C. Canton, Alexis S. Torres, Barry Dungan, F. Omar Holguin, Elba E. Serrano

2249-Pos Board B519
SUPPRESSING ALTERNANS BY FEEDBACK CONTROL DEPENDS ON UNDERLYING INSTABILITY FACTORS. **Arvind Krishnan**, Daisuke Sato

2250-Pos Board B520
ANALYSIS OF DIFFERENTIAL GENE EXPRESSION IN RESPONSE TO ANISOTROPIC STRETCH USING A SYSTEMS MODEL OF CARDIAC MYOCYTE MECHANOTRANSDUCTION. **Shulin Cao**, Kyle Buchholz, Philip M. Tan, Yasser Aboelkassem, Jennifer C. Stowe, Jeffrey J. Saucerman, Jeffrey Omens, Andrew D. McCulloch

2251-Pos Board B521
WHOLE-ATRIA OPTICAL ANALYSIS OF TRANSVERSE-AXIAL TUBULE SYSTEM FOR IDENTIFICATION OF VULNERABLE "HOT SPOTS" FOR ARRHYTHMIA DEVELOPMENT. **Lucas N. Ratajczyk**, Ashley K. Irwin, Di Lang, Alexey V. Glukhov

2252-Pos Board B522
BREAKDOWN IN THE CONTINUUM: EXPLORING THE LIMITATIONS OF CONTINUUM MODELS OF CALCIUM ION SIGNALING IN DENDRITIC SPINES. **Meagan P. Rowan**, Mason V. Holst, Miriam Bell, Christopher T. Lee, Michael J. Holst, Padmini Rangamani

2253-Pos Board B523
BIOLOGICAL APPLICATIONS FOR ONLINE METHODS OF RESOURCE ALLOCATION. **Andrea Boskovic**, Ashley Carter, Jeeyon Jeong

2254-Pos Board B524
MODELLING THE NUCLEOTIDE METABOLIC NETWORK OF A GENETICALLY MINIMAL CELL. **Troy A. Brier**, David Bianchi, Zane R. Thornburg, Marcelo Cardoso dos Reis Melo, Marian Breuer, Kim S. Wise, Hamilton O. Smith, Clyde A. Hutchison III, John I. Glass, Zaida Luthey-Schulten

2255-Pos Board B525
MODELLING THE GENETIC INFORMATION PROCESSES OF A GENETICALLY MINIMAL CELL. **Zane R. Thornburg**, Marcelo Cardoso dos Reis Melo, David Bianchi, Troy A. Brier, Marian Breuer, Hamilton O. Smith, Clyde A. Hutchison III, John I. Glass, Zaida Luthey-Schulten

2256-Pos Board B526
FUNCTIONAL ANNOTATION OF CODING AND NON-CODING RNA IN NON-MODEL ORGANISMS. **Sayane Shome**, Robert L. Jernigan

2257-Pos Board B527
3D MOVEMENT ANALYSIS USING DEEP LEARNING ALGORITHMS REVEALS ALTERATIONS IN MOTOR FUNCTIONS AFTER NEUROLOGICAL INJURIES IN RAT SPASTICITY MODEL. **Demeter Túrós**, Adam I. Horvath, Mate Gyimesi, Andras Malnasi-Csizmadia

2258-Pos Board B528 Travel Awardee
IMAGE-BASED STRUCTURAL MODELING OF THE EARLY-STAGE ZEBRAFISH EMBRYO BRAIN. **Ana C. Chang-Gonzalez**, Holly C. Gibbs, Arne C. Lekven, Alvin T. Yeh, Wonmuk Hwang

2259-Pos Board B529
MATHEMATICAL MODELING OF CELL VOLUME CONTROL. **Maria Jesus Munoz Lopez**, Yoichiro Mori

2260-Pos Board B530
3D CONVOLUTIONAL NEURAL NETWORK FOR PREDICTING FREE ENERGIES OF PARTITIONING. **Stewart He**, Helgi Ingolfsson, Delin Sun, W.F. Drew Bennett, Jonathan Allen, Felice C. Lightstone, Camille Bilodeau

2261-Pos Board B531
AN OPEN SOURCE PLATFORM FOR CONTINUUM SIMULATIONS OF BIOLOGICAL MEMBRANES. Yulong Pan, **Yannick Azhri Din Omar**, Amaresh Sahu

2262-Pos Board B532
INNER-SPECIES TRUNCATION OF STATE SPACE OF BIOCHEMICAL REACTION NETWORK FOR ACCURATE SOLUTION OF DISCRETE CHEMICAL MASTER EQUATION. **Farid Manuchehrfar**, Anna Terebus, Jie Liang

Optical Microscopy and Superresolution Imaging III (Boards B533 - B542)

2263-Pos **Board B533** **Travel Awardee**
A COMPARISON OF HISTO-CHEMICAL AND HISTO-MAGNETIC DETECTION OF IRON. **Kevin J. Walsh**, Stavan Shah, Ping Wei, Samuel Oberdick, Dana McTigue, Gunjan Agarwal

2264-Pos **Board B534**
INTERPLAY OF RADIATIVE AND NON RADIATIVE RATE CONSTANTS IN THE PHOTOPHYSICS OF FLUORESCENT PROTEINS. **Srijit Mukherjee**

2265-Pos **Board B535**
THE VASCULAR BARRIER REGULATES CARDIAC NANODOMAINS: IMPLICATIONS FOR THE GENESIS OF ATRIAL FIBRILLATION. **Louisa Mezache**, Heather Struckman, Anna Phillips, Stephen Baine, Amara Greer-Short, Sandor Gyorke, Przemyslaw Radwanski, Thomas J. Hund, Rengasayee Veeraraghavan

2266-Pos **Board B536**
PUMPLESS MICROFLUIDIC SYSTEM FOR BONE MARROW NICHE-ON-A-CHIP *IN VITRO* MODELLING AND MULTIPHOTON IMAGING IN LEUKEMIA. **Giulia Borile**, Giulia Borella, Camille Charoy, Andrea Filippi, Filippo Romanato, Martina Pigazzi, Kurt Anderson

2267-Pos **Board B537**
EXCLUSION OF RNA-ASSOCIATED PROTEINS FROM THE CELL CORTEX OBSERVED BY DUAL COLOR Z-SCAN FLUORESCENCE MICROSCOPY. **Siddarth Reddy Karuka**, Isaac Angert, John Kohler, Louis M. Mansky, Joachim D. Mueller

2268-Pos **Board B538**
AN ULTRA-SENSITIVE IMMUNOHISTOCHEMICAL (IHC) IMAGING METHOD FOR LOW-ABUNDANT TARGETS DETECTION. Haiyan Wu, Shu Kan, Deven Patel, **Qin Zhao**, Pengfei Dong, Liu Jixiang, Jinfang Liao, Zhenjun Diwu

2269-Pos **Board B539**
REAL-TIME POINT SPREAD FUNCTION ENGINEERING FOR ISCAT. **Vivien Walter**, Mark I. Wallace

2270-Pos **Board B540**
LARGE-SCALE SPECIES-SPECIFIC MICROBIAL IDENTIFICATION BY FLUORESCENCE *IN SITU* HYBRIDIZATION. **Sungho Kim**, Jae-Kyeong Im, Seungmin Yun, Hwasooo Koh, Donghoon Kang, Taejoon Kwon, Hajin Kim

2271-Pos **Board B541**
SIMULTANEOUS IMAGING OF INSULIN VESICLE DYNAMICS AND CALCIUM ACTIVITY IN LIVE INTACT MOUSE ISLETS BY DISPIM. **Xue Wen Ng**, Michael R. DiGruccio, Tomasz S. Tkaczyk, David W. Piston

2272-Pos **Board B542**
POINT SPREAD FUNCTION ENGINEERING TO MAP 3D PARTICLE MOTION. **Keith Bonin**, Sudhakar Prasad, Paul Kefer, George M. Holzwarth, Pierre-Alexandre Vidi

Single-Molecule Spectroscopy I (Boards B543 - B559)

2273-Pos **Board B543**
SINGLE-MOLECULE DYNAMICS OF THE HUMAN MITOCHONDRIAL RNA POLYMERASE PREINITIATION COMPLEX. **Rory F. Cunnison**, Emily Teece, Jonathan Grimm, Luke D. Lavis, Dmitry Temiakov, Yaroslav Morozov, Andrey G. Revyakin

2274-Pos **Board B544**
THE ROTARY MOTOR OF LIFE: SINGLE-MOLECULE IMAGING AND MOLECULAR DYNAMICS SIMULATION OF F1-ATPASE. **Nathan Suiter**, Jason Portillo, Matthew A. Anderson

2275-Pos **Board B545**
EGFR MEMBRANE DYNAMICS AND ORGANIZATION INVESTIGATED BY CAMERA-BASED MULTI-PARAMETER FLUORESCENCE IMAGING WITH HIGH SPATIOTEMPORAL RESOLUTION. **Thorsten Wohland**, Jagadish Sankaran, Harikrushnan Balasubramanian

2276-Pos **Board B546**
INSIDE-OUT REGULATION OF CADHERIN ADHESION. **Ramesh Koirala**, Andrew V. Priest, Soichiro Yamada, Martijn Gloerich, Sanjeevi Sivasankar

2277-Pos **Board B547**
RAISING THE BAR ON SINGLE-MOLECULE BIOPHYSICS: DNA/RNA SECONDARY/TERTIARY FOLDING USING EXTREME PRESSURE AS A CONTROL VARIABLE. **Hsuan-Lei Sung**, David J. Nesbitt

2278-Pos **Board B548**
SINGLE-MOLECULE G-QUADRUPLEX NANOPORE ASSAY. **Filip N. Boskovic**, Jinbo Zhu, Kaikai Chen, Ulrich F. Keyser

2279-Pos **Board B549** **Travel Awardee**
CPG METHYLATION DETECTION WITH SINGLE-MOLECULE RECOGNITION THROUGH EQUILIBRIUM POISSON SAMPLING. **Liuhan Dai**, Alexander Johnson-Buck, Muneesh Tewari, Nils G. Walter

2280-Pos **Board B550**
SPCAS9 DISPLAYS BIASED ONE-DIMENSIONAL DIFFUSION ON DSDNA TO SEARCH FOR A TARGET. **Chunlai Chen**, Mengyi Yang

2281-Pos **Board B551**
SPECTRAL ANALYSIS OF A FAST BIOMOLECULAR TRANSITION IN MAGNETIC TWEEZERS MEASUREMENTS. **Sebastian Belau**, Ralf Seidel

2282-Pos **Board B552**
ANTIBODY BINDING BACTERIA SAMPLE THEIR ENVIRONMENT THROUGH A SECOND BINDING SITE, WHICH CAN ACT AS A FORCE-SENSOR UNDER MECHANICAL SHEER. Narayan Dahal, Joel Nowitzke, Annie Eis, **Ionel Popa**

2283-Pos **Board B553**
COMBINED SINGLE-MOLECULE FRET AND SINGLE-CHANNEL RECORDING TO LINK ION CHANNEL CONFORMATION AND FUNCTION. **Steven Vanuytsel**, Christopher L. Parperis, Mark I. Wallace

2284-Pos **Board B554**
RESOLUTION OF ANGSTROM-SCALE PROTEIN-CONFORMATIONAL CHANGES IN THE REGULATORY DOMAIN OF A K^+ CHANNEL BY ANALYZING FLUORESCENCE ANISOTROPY. **John H. Lewis**, Zhe Lu

2285-Pos **Board B555**
MULTIVALENT EFFECTS ON INTERACTIONS BETWEEN THE LIGAND AND CELL-SURFACE RECEPTORS PROBED BY A BINDING FORCE SPECTROSCOPY. **Lina A. Alhalhooly**, Matthew Confeld, Yongki Choi, Sanku Mallik

2286-Pos **Board B556**
USING SINGLE-MOLECULE SPECTROSCOPY TO DISSECT THE HEPATITIS C VIRUS NUCLEOCAPSID ASSEMBLY PATHWAY. Saptaswa Sen, Shamal Ungawel Durayalage, **Erik D. Holmstrom**

2287-Pos **Board B557**
A STUDY OF TRANSCRIPTIONAL ACTIVATION BY THE TRANSCRIPTION FACTOR GAL4 IN SACCHAROMYCES CEREVISIAE BY 3D ORBITAL TRACKING AND IN VIVO RNA LABELLING. Abigail Figueroa, **Iris L. Torres**, Julianna Goelzer, Michael Pool, Tineke Lenstra, Matthew L. Ferguson

2288-Pos **Board B558** **Travel Awardee**
RNA TRAFFICKING BETWEEN MEMBRANELESS ORGANELLES AT SINGLE-MOLECULE RESOLUTION IN LIVE CELLS. **Guoming Gao**, Ameya P. Jalihal, Andreas Schmidt, Nils G. Walter

2289-Pos **Board B559**
SINGLE-MOLECULE MEASUREMENTS TO CAPTURE THE DISTRIBUTION OF CONFORMATIONAL AND DIMERIC STATES OF THE CYTOSOLIC PROTEIN CRAF IN LIVE CELLS. **Kenji Okamoto**, Kayo Hibino, Yasushi Sako

Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence (Boards B560 - B582)

2290-Pos Board B560 Travel Awardee
IN SITU MEASUREMENT OF PROTEIN AND LIPID MASS BY NORMALIZED RAMAN IMAGING. **Seungeun Oh**, ChangHee Lee, Dan Fu, Wenlong Yang, Ang Li, Chongzhao Ran, Wei Yin, Clifford J. Tabin, X. Sunney Xie, Marc W. Kirschner

2291-Pos Board B561 Travel Awardee
MOLECULAR MICROSCOPY OF OIL BODY AND LIPID DROPLET CHEMISTRY *IN SITU* WITH PHYSIOLOGICALLY-RELEVANT READOUTS. **Alexandra Paul**, Sapun H. Parekh

2292-Pos Board B562
WEAK INTRINSIC LUMINESCENCE IN MONOMERIC PROTEINS ARISING FROM CHARGE RECOMBINATION. Amrendra Kumar, Dileep Ahari, Anurag Priyadarshi, Mohd. Z. Ansari, **Rajaram Swaminathan**

2293-Pos Board B563
MULTIMODAL NONLINEAR OPTICAL IMAGING OF PLASMA MEMBRANE BY DYE-BASED SUM-FREQUENCY GENERATION USING A COHERENT ANTI-STOKES RAMAN SCATTERING MICROSCOPE. **Takaha Mizuguchi**, Atsuya Momotake, Mafumi Hishida, Masato Yasui, Yasuhiko Yamamoto, Mutsuo Nuriya

2294-Pos Board B564
HIGH-THROUGHPUT FRET SCREENING IN LIVING CELLS BASED ON LIFETIME DETECTION TO IDENTIFY SMALL-MOLECULE EFFECTORS OF SERCA. **Tory Schaaf**, Samantha Yuen, Andrew R. Thompson, Benjamin D. Grant, Ang Li, Evan Kleinboehl, Lauren Roelike, Ji Li, Razvan L. Cornea, David D. Thomas

2295-Pos Board B565
A SELF ALIGNING MACROSCOPIC SELECTIVE PLANE ILLUMINATION MICROSCOPE WITH NEAR UNIFORM AXIAL RESOLUTION. Arianna Gentile Polese, Gregory Seedorf, Dominik Stich, **Douglas P. Shepherd**

2296-Pos Board B566
UNRAVELING THE ORIGIN OF MULTI-EXPONENTIAL FLUORESCENCE INTENSITY DECAY OF TRYPTOPHAN IN PROTEINS. Amrendra Kumar, Shah E. Alom, **Anurag Priyadarshi**, Dileep Ahari, Mohd. Z. Ansari, Rajaram Swaminathan

2297-Pos Board B567
INTERFEROMETRIC FLUORESCENCE CROSS CORRELATION SPECTROSCOPY. **Ipsita Saha**, Saveez Saffarian

2298-Pos Board B568
STEPS TOWARD FULL WAVELENGTH RANGE CALIBRATION FOR CIRCULAR DICHROISM SPECTROSCOPY. **Curtis W. Meuse**

2299-Pos Board B569
EFFICIENT LABELING OF ESTROGEN RECEPTOR A INSIDE CELLS USING AFFIMER, AN ANTIBODY MIMETIC. **Pin Ren**, Sean W. Fanning, Christian Tiede, Thomas L. Adams, Valerie Speirs, Geoffrey L. Greene, Erik R. Nelson, Darren C. Tomlinson, Paul R. Selvin

2300-Pos Board B570
TOPOLOGY, LANDSCAPES, AND BIOMOLECULAR ENERGY TRANSPORT. **Michael Zwolak**, Justin Elenewski

2301-Pos Board B571
ACRIDINIUM AND ACRIDONE CONSTRUCTS WITH RED-SHIFTED EMISSION. Kerry M. Swift, Richard Haack, **Anastasiia A. Tikhomirova**, Stefan Hershberger, Sergey Y. Tetin

2302-Pos Board B572
TOOLS AND RESOURCES FOR CIRCULAR DICHROISM SPECTROSCOPY. **Bonnie A. Wallace**, Robert W. Janes, Andrew Miles, Elliot D. Drew, Lee Whitmore, Sergio Gomes Ramalli

2303-Pos Board B573
MODULATING AND DETECTING THE DYNAMIC CHANGES OF INTERMOLECULAR HYDROGEN BONDING IN PLASMONIC MOLECULAR JUNCTION. **Jing Guo**, Tao Ma, Eugene Li, Jin He

2304-Pos Board B574
LOCALIZED SURFACE PLASMON RESONANCE SPECTROSCOPY FOR THE DETECTION OF MICROTUBULE NUCLEATION. Runyao Yin, Dreycen Foiles, Otabek Nazarov, Evan Porter, **Keisuke Hasegawa**

2305-Pos Board B575
SYNCHROTRON-BASED INFRARED MICROSCOPY STUDIES OF THE RADIOSENSITIZATION EFFECTS OF NANOPARTICLES USED IN RADIOTHERAPY. Immaculada Martinez-Rovira, **Olivier Seksek**, Ibraheem Yousef

2306-Pos Board B576
USE OF RAMAN SPECTRUM FROM CELLS TO EVALUATE GENETIC CARDIOMYOPATHY. **Hideaki Fujita**, Arno Germond, Kazuhiro Sudo, Kuniya Abe, Tomonobu Watanabe

2307-Pos Board B577
UTILIZING TYROSINE ANALOGS TO ALTER PHOTOPHYSICAL PROPERTIES OF GREEN FLUORESCENT PROTEIN. **Darcy R. Harris**, Scott H. Brewer, Christine M. Phillips-Piro

2308-Pos Board B578
QUALITATIVE ANALYSIS AND PHENOTYPING WITH RAMAN SPECTROSCOPY. **Mark A. Krimmer**, Charles Farber, Dzmitry Kurouski

2309-Pos Board B579
FOLLOWING SPATIAL DISTRIBUTION OF PHOTOSYNTHETIC PIGMENTS ACROSS THE DEVELOPMENT OF A LEAF USING HYPERSPECTRAL FLUORESCENCE MICROSCOPY. **Sandeep Pallikkuth**, Roxana Khoshravesh, David T. Hanson, Jerilyn A. Timlin, Keith A. Lidke

2310-Pos Board B580
QUANTITATIVE FLUORESCENCE QUENCHING BY AROMATIC AMINO ACIDS. **Danielle R. Latham**, Arturo R. Diaz, Jake Ribich, Nabanita Saikia, Emma Mulry, Leah Casabianca, Feng Ding, Hugo Sanabria

2311-Pos Board B581
21-PLEX MICROFLUIDIC FLOW CYTOMETER AND ITS POTENTIAL APPLICATIONS TO PEDIATRIC MALARIAL IMMUNE RESPONSE ANALYSIS. **Gillian McMahon**, Judith R. Mourant, Kristen WIlding, Douglas J. Perkins

2312-Pos Board B582
INVESTIGATIONS OF PROTEIN AND BIOMOLECULES USING A 280 NM OR 295 NM PICOSECOND LASER FOR HIGH SPEED MEASUREMENTS AND HIGH TIME RESOLUTION. **Christian Oelsner**, Eugeny Ermilov, Thomas Schönau, Dietmar Klemme, Guillaume Delpont, Kristian Lauritsen, Rainer Erdmann

Biosensors II (Boards B583 - B601)

2313-Pos Board B583
NANOIMPACT BASED SINGLE-ENTITY DETECTION OF PROTEINS USING A NANOPORE-NANOELECTRODE NANOPIPETTE. **Popular Pandey**, Jin He

2314-Pos Board B584
MICROSCOPIC IMAGING OF ENGINEERED BIOLOGICAL NANOPORES AIMING FOR HIGH THROUGHPUT NANOPORE SENSING AND SEQUENCING. **Shuo Huang**

2315-Pos Board B585
STABLE HYBRID POLYMER-LIPID MEMBRANE FOR HIGH VOLTAGE BIOLOGICAL NANOPORE EXPERIMENTS. **Luning Yu**, Xinqi Kang, Mohammad Amin Alibakhshi, Meni Wanunu

2316-Pos Board B586
MULTIPLEXED MOLECULAR COUNTERS USING A HIGH-VOLTAGE TRANSMEMBRANE PORE PLATFORM. **Xinqi Kang**, Mohammad Amin Alibakhshi, Meni Wanunu

2317-Pos Board B587
EXOSOME CHARACTERIZATION UTILIZING THE IMMUNE SYSTEM BASED ON THE INTERRUPTING CURRENTS BY SOLID STATE NANOPORE. **Masato Nishio**, Federico Thei

2318-Pos Board B588
EFFECT OF ELECTROOSMOSIS ON ANTIBIOTIC TRANSLOCATION THROUGH OUTER MEMBRANE PORIN OMPF. Jayesh A. Bafna, Sushil Pangeni, Eshita Paul, Mathias Winterhalter, **Alphan M. Aksoyoglu**

2319-Pos Board B589
INTERACTION OF CUCURBITURIL MOLECULAR CONTAINERS WITH THE AEROLYSIN NANOPORE FOR MOLECULAR RECOGNITION. **Hadjer Ouldali**, Abdelghani Oukhaled

2320-Pos Board B590
DETECTION OF TUBULIN AND TAU PROTEINS AGGREGATIONS USING SOLID-STATE NANOPORE AND ATOMIC FORCE MICROSCOPY (AFM). **Mitu C. Acharjee**, Haopeng Li, Bo Ma, Steve Tung, Jiali Li

2321-Pos Board B591
REVEALING THE HETEROGENOUS PHOSPHORYLATION STATES FOR A SINGLE OLIGONUCLEOTIDE AND PEPTIDE BY NANOPORE SENSOR. **Meng-Yin Li**, Yi-Lun Ying, Yi-Tao Long

2322-Pos Board B592
ANALYZING SINGLE-MOLECULE BEHAVIOR OF A SMALL PROTEIN IN CONFINED NANOSPACE OF A BIOLOGICAL NANOPORE. **Misa Yamaji**, Natsumi Takai, Mauro Chinappi, Ryuji Kawano

2323-Pos Board B593
CONSTRUCTION OF PROGRAMMABLE NANOPORE USING *DE NOVO* DESIGNED B-SHEET PEPTIDE. **Keisuke Shimizu**, Shungo Sakashita, Yoshio Hamada, Kenji Usui, Batsaikhan Mijiddorj, Izuru Kawamura, Ryuji Kawano

2324-Pos Board B594
MASS-INDEPENDENT, HIGH-FIDELITY SINGLE-MOLECULE DIFFERENTIATION USING THE AEROLYSIN PROTEIN PORE. Tobias Ensslen, Hadjer Ouldali, Abdelghani Oukhaled, **Jan C. Behrends**

2325-Pos Board B595
PROTEIN FINGERPRINTING USING THE AEROLYSIN NANOPORE. **Mazdak Afshar Bakshloo**, Monasadat Talarimoghari, Hadjer Ouldali, Jan C. Behrends, Abdelghani Oukhaled

2326-Pos Board B596
KINETIC ANALYSIS OF THE EFFECT OF CHARGE NEUTRALIZATION ON SINGLE-MOLECULE ELECTRO-DIFFUSION BETWEEN TWO ENERGY MINIMA IN A PROTEIN PORE. **Tobias Ensslen**, Jan C. Behrends

2327-Pos Board B597
CAPTURE AND TRANSLOCATION CHARACTERISTICS OF DNA NANOSTRUCTURES THROUGH SOLID-STATE NANOPORES. **Liqun He**, Martin Charron, Daniel Tessier, Kyle Briggs, Vincent Tabard-Cossa

2328-Pos Board B598
OPTIMIZING THE SENSITIVITY OF DNA CONCENTRATION MEASUREMENTS USING NANOPORES. **Martin Charron**, Lucas Philipp, Kyle Briggs, Vincent Tabard-Cossa

2329-Pos Board B599
NANOPORE DETERMINATION OF NUCLEIC ACIDS IN WHOLE BLOOD BASED ON A DISPLACEMENT REACTION STRATEGY. **Liang Wang**, Xiaohan Chen, Yunjiao Wang, Shuo Zhou, Deqiang Wang, Xiyun Guan

2330-Pos Board B600
DIRECT MICRORNA SEQUENCING USING NANOPORE INDUCED PHASE-SHIFT SEQUENCING (NIPSS). **Jinyue Zhang**

2331-Pos Board B601
NANOPORE RESISTIVE PULSE SENSING WITH MULTIPLE ALPHA-HEMOLYSIN PORES IMPROVES THE DETECTION LIMIT OF MICRORNA. **Ruoyu Hu**, Maurits R.R. de Planque

Biomaterials (Boards B602 - B618)

2332-Pos Board B602
DNA LOOPING BY MULTIVALENT CATIONS. **Donna M. Roscoe**, Ashwin Balaji, Luka Matej Devenica, Ashley Carter

2333-Pos Board B603
IONS EXCLUSION BY THE BIO-INSPIRED WS_2 LAMELLAR MEMBRANE UNDER DIFFERENT DRIVING FORCES. **Laxmi K. Pandey**, Bedanga Sapkota, Meni Wanunu

2334-Pos Board B604
UNUSUAL PROPERTIES OF WATER AT HETEROGENEOUS BIOLOGICAL INTERFACES. **Jae Kyoo Lee**, Hong Gil Nam, Richard Zare

2335-Pos Board B605
THE DYNAMICS OF LIGNIN IN MELT. **Marcella Berg**

2336-Pos Board B606
A MOLECULAR PROBE TO TRACK MITOCHONDRIA-LYSOSOME INTERACTIONS IN LIVE CELLS. **Qixin Chen**, Hongbao Fang, Weijiang He, Jiajie Diao

2337-Pos Board B607
A FLUORESCENT NANOPROBE TO DETECT LOCAL TEMPERATURE CHANGES DURING ANTITUMORAL HYPERTHERMIA THERAPY. **Cynthia El Hedjaj**, Imène Chebbi, Olivier Seksek, Edouard Alphandery

2338-Pos Board B608
PH RESPONSIVE UPCONVERSION MESOPOROUS SILICA NANOPARTICLES FOR TARGETED PHOTODYNAMIC AND PHOTOTHERMAL CANCER THERAPY. **Palanikumar Loganathan**, Mazin M. Magzoub

2339-Pos Board B609
PHOTOSENSITIZATION OF HUMAN SERUM ALBUMIN PROMPTS DIFFERENTIAL UPTAKE OF PACLITAXEL IN CANCER CELLS. **Omar J. Castillo**, Sandra Cardona, Lorenzo Brancaleon

2340-Pos Board B610
CHARACTERIZATION OF BIOPHARMACEUTICAL CELL GROWTH MEDIA BY ABSORBANCE-TRANSMITTANCE EXCITATION-EMISSION (A-TEEM) SPECTROSCOPY AND EXTREME GRADIENT BOOSTING ANALYSES. **Adam M. Gilmore**, Karoly Csatorday

2341-Pos Board B611
CONJUGATED POLYMERS OPTICALLY REGULATE THE FATE OF ENDOTHELIAL COLONY FORMING CELLS. **Francesco Lodola**, Vittorio Rosti, Gabriele Tullii, Andrea Desii, Laura Tapella, Paolo Catarsi, Dmitry Lim, Francesco Moccia, Maria Rosa Antognazza

2342-Pos Board B612
DE NOVO-DESIGNED NEAR-INFRARED NANO-AGGREGATES FOR THE SUPERRESOLUTION MONITORING OF LYSOSOMES IN CELLS, IN WHOLE ORGANOIDS, AND *IN VIVO*. **Hongbao Fang**, Jiajie Diao

2343-Pos Board B613
MICROPATTERNED ADHESION SITES FOR SPHEROID CULTIVATION UNDER FLOW. **Miriam Balles**, Shokoufeh Teymouri, Roman Zantl, Jan Schwarz

2344-Pos Board B614
DESIGNING A MECHANO-CHEMICAL HYBRID HYDROGEL BASED ON A BISTABLE KINASE-PHOSPHATASE SWITCH INTEGRATED IN COLLAGEN MESHWORK. **Andrey Y. Mikheev**, Aleksandr S. Maiorov, Fazly I. Ataullakhanov, Ekaterina L. Grishchuk

2345-Pos Board B615
FLOW-INDUCED SELF-ASSEMBLY OF SPIDER SILK FROM MULTI-SCALE SIMULATIONS. **Ana M. Herrera**, Anil Kumar Dasanna, Ulrich S. Schwarz, Frauke Gräter

2346-Pos Board B616
TRANSFORMATION OF TUBULIN ARCHITECTURES BY USING CATIONIC POLYMER AS A MOLECULAR SWITCH. **Juncheol Lee**, Chaeyeon Song, Jimin Lee, Herbert P. Miller, Hasaeam Cho, Bopil Gim, Youli Li, Stuart C. Feinstein, Leslie Wilson, Cyrus R. Safinya, Myung Chul Choi

2347-Pos Board B617
SIMULATED MECHANICAL AND ELECTRICAL PROPERTIES OF THREE-DIMENSIONAL PROTEIN LATTICES. **Rachel Baarda**, Simon Kit Sang Chu, Tegan Marianchuk, Daniel L. Cox

2348-Pos Board B618
HIGHLY PROCESSIVE DNA ORIGAMI NANOSCALE MOTORS. **Alisina Bazrafshan**, Travis Meyer, Hanquan Su, Joshua Brockman, Selma Piranej, Aaron Blanchard, Khalid Salaita, Yonggang Ke

Wednesday, February 19, 2020

Daily Program Summary

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

8:00 AM–11:00 AM	**New Council Meeting**	**Room 32A**
8:00 AM–3:00 PM	**Poster Viewing**	**Exhibit Hall**
8:15 AM–10:15 AM	**Symposium: Membrane Proteins in Infectious Disease** **Chair:** *Francesca Marassi, Sanford Burnham Prebys Medical Discovery Institute* ASSEMBLY AND BUDDING OF FILOVIRUSES FROM THE HOST CELL PLASMA MEMBRANE. *Robert V. Stahelin* SMALL MOLECULE INHIBITION OF MEMBRANE FUSION MEDIATED BY THE FLAVIVIRUS ENVELOPE PROTEIN. *Priscilla L. Yang* CONFORMATIONAL STATES OF THE HIV-1 ENVELOPE GLYCOPROTEIN OBSERVED BY SMFRET. *Walther Mothes* MOLECULAR BASIS FOR PATHOGEN-HOST INTERACTIONS. *Francesca M. Marassi*	**Ballroom 20A**
8:15 AM–10:15 AM	**Symposium: Shapeshifting: Proteins with More Than One Structure** **Chair:** *Sarah Bondos, Texas A&M University* IDENTIFICATION AND PREDICTION OF FOLD-SWITCHING PROTEINS. *Lauren Porter* EVOLUTION OF A METAMORPHIC PROTEIN. *Brian F. Volkman* PROTEIN FOLDING AND CONFORMATIONAL FRUSTRATION. *Shachi Gosavi* SHAPE-SHIFTING TO REGULATE AND DIVERSIFY TRANSCRIPTION FACTOR FUNCTION. *Sarah Bondos*	**Ballroom 20D**
8:15 AM–10:15 AM	**Platform: Protein Structure, Prediction, and Design**	**Ballroom 20BC**
8:15 AM–10:15 AM	**Platform: Other Channels**	**Room 23ABC**
8:15 AM–10:15 AM	**Platform: Protein Assemblies**	**Room 24ABC**
8:15 AM–10:15 PM	**Platform: NMR, Diffraction, and EM**	**Room 25ABC**
8:15 AM–10:15 AM	**Platform: Exocytosis and Endocytosis**	**Room 30ABC**
8:15 AM–10:15 AM	**Platform: Protein-Nucleic Acid Interactions**	**Room 31ABC**
10:30 AM–12:30 PM	**Poster Presentations and Late Posters**	**Exhibit Hall**
1:00 PM–3:00 PM	**Symposium: New and Notable** **Co-Chairs:** *Patricia Clark, University of Notre Dame, William Kobertz, University of Massachusetts Medical School* SINGLE-MOLECULE TRAINSPOTTING: STUDIES OF EUKARYOTIC GENOME MAINTENANCE. *Gheorghe Chistol* COUPLING MOLECULAR ACTIVATION AND ITS FUNCTIONAL OUTPUT THROUGH MULTISCALE IMAGING. *Dorit Hanein* HOW INFLUENZA HEMAGGLUTININ ACTS WITHIN MEMBRANES TO DRIVE MEMBRANE FUSION. *Peter Kasson* LIPIDS AND CATIONS AS COUPLED REGULATORS OF MEMBRANE PROTEIN INSERTION AND FOLDING. *Alexey S. Ladokhin*	**Ballroom 20A**
1:00 PM–3:00 PM	**Symposium: Personalized Medicine:** **Protein Sequence Variation on Human Health** **Chair:** *Christian Landry, Laval University, Canada* MAKING AND MEASURING THE EFFECT OF MUTATIONS ON A MASSIVE SCALE. *Douglas M. Fowler* DECODING MOLECULAR MECHANISMS OF DISEASE WITH MEDICAL BIOPHYSICS. *Anna Panchenko* EVOLUTION-GUIDED DISSECTION AND ENHANCEMENT OF RESTRICTION OF VIRUSES BY HOST ANTIVIRAL PROTEINS. *Harmit Malik* PARALOG DEPENDENCY INDIRECTLY AFFECTS THE ROBUSTNESS OF HUMAN CELLS. *Christian Landry*	**Ballroom 20D**
1:00 PM–3:00 PM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates III**	**Ballroom 20BC**
1:00 PM–3:00 PM	**Platform: Cardiac, Smooth, and Skeletal Muscle Electrophysiology and Regulation I**	**Room 23ABC**
1:00 PM–3:00 PM	**Platform: Skeletal and Smooth Muscle Mechanics, Structure, and Regulation**	**Room 24ABC**

1:00 PM–3:00 PM	Platform: Protein-Lipid Interactions II	Room 25ABC
1:00 PM–3:00 PM	Platform: Voltage-gated Na and Ca Channels	Room 30ABC
1:00 PM–3:00 PM	Platform: Protein Structure and Conformation IV	Room 31ABC

Wednesday, February 19

New Council Meeting

8:00 AM - 11:00 AM, ROOM 32A

Poster Viewing

8:00 AM - 3:00 PM, EXHIBIT HALL

Symposium
Membrane Proteins in Infectious Disease

8:15 AM - 10:15 AM, BALLROOM 20A

Chair
Francesca Marassi, Sanford Burnham Prebys Medical Discovery Institute

2349-SYMP 8:15 AM
ASSEMBLY AND BUDDING OF FILOVIRUSES FROM THE HOST CELL PLASMA MEMBRANE. **Robert V. Stahelin**

2350-SYMP 8:45 AM
SMALL MOLECULE INHIBITION OF MEMBRANE FUSION MEDIATED BY THE FLAVIVIRUS ENVELOPE PROTEIN. **Priscilla L. Yang**

NO ABSTRACT 9:15 AM
CONFORMATIONAL STATES OF THE HIV-1 ENVELOPE GLYCOPROTEIN OBSERVED BY SMFRET. **Walther Mothes**

2351-SYMP 9:45 AM
MOLECULAR BASIS FOR PATHOGEN-HOST INTERACTIONS. **Francesca M. Marassi**

Symposium
Shapeshifting: Proteins with More Than One Structure

8:15 AM - 10:15 AM, BALLROOM 20D

Chair
Sarah Bondos, Texas A&M University

2352-SYMP 8:15 AM
IDENTIFICATION AND PREDICTION OF FOLD-SWITCHING PROTEINS. Loren Looger, Ananya K. Majumdar, **Lauren Porter**

2353-SYMP 8:45 AM
EVOLUTION OF A METAMORPHIC PROTEIN. **Brian F. Volkman**

2354-SYMP 9:15 AM
PROTEIN FOLDING AND CONFORMATIONAL FRUSTRATION. **Shachi Gosavi**

2355-SYMP 9:45 AM
SHAPE-SHIFTING TO REGULATE AND DIVERSIFY TRANSCRIPTION FACTOR FUNCTION. **Sarah Bondos**, Kelly Churion, Rebecca Booth, Sydney Tippelt

Platform
Protein Structure, Prediction, and Design

8:15 AM - 10:15 AM, BALLROOM 20BC

Co-Chairs
Caitlin Davis, Yale University
Christopher Prior, Durham University, United Kingdom

2356-PLAT 8:15 AM
CHARACTERIZATION OF A PH-DEPENDENT CARGO-DELIVERY PROTEIN CHIMERA. **Suzanne I. Sandin**, Christopher Randolph, Eva de Alba

2357-PLAT 8:30 AM
DESIGN AND CONSTRUCTION OF AN AEROLYSIN SINGLE-MOLECULE INTERFACE FOR SINGLE-MOLECULE SENSING. **Xue-yuan Wu**, Meng-Yin Li, Yi-Lun Ying, Yi-Tao Long

2358-PLAT 8:45 AM
AB INITIO TERTIARY STRUCTURE PREDICTION FROM SMALL ANGLE SCATTERING DATA. **Christopher Prior**, Ehmke Pohl, Owen Davies

2359-PLAT 9:00 AM
DE NOVO PROTEIN STRUCTURE MODELING TOOL MAINMAST ENHANCED FOR MULTIPLE CHAIN COMPLEXES AND BOUND LIGANDS. **Genki Terashi**, Daisuke Kihara

2360-PLAT 9:15 AM
FRET-ASSISTED PROTEIN STRUCTURE POSTDICTION OF CASP13 TARGETS. **Mykola Dimura**, Holger Gohlke, Claus A. Seidel

2361-PLAT 9:30 AM
COMBINING PHYSICS-BASED AND EVOLUTION-BASED METHODS TO DESIGN ANTIBODIES AGAINST AN EVOLVING VIRUS. Eric Jakobsson, **Amir Barati Farimani**, Emad Tajkhorshid, Narayana Aluru

2362-PLAT 9:45 AM
TOWARDS THE DE NOVO DESIGN OF FUNCTIONAL METALLOPROTEINS. **Ketaki Belsare**, Nicholas Polizzi, Lior Shtayer, William DeGrado

2363-PLAT 10:00 AM
QUINARY STRUCTURE MODULATES CONSENSUS PROTEIN SEQUENCE STABILITY IN CELLS. **Caitlin Davis**, Martin Gruebele

Platform
Other Channels

8:15 AM - 10:15 AM, ROOM 23ABC

Co-Chairs
Michael Pusch, Istituto di Biofisica, CNR, Italy
Ingrid Skerrett, SUNY Buffalo State College

2364-PLAT 8:15 AM
FUNCTIONAL ANALYSIS OF THE ISOLATED VOLTAGE SENSOR DOMAIN PRESENT IN THE MAMMALIAN SPERM-SPECIFIC NA^+/H^+ EXCHANGER BY PATCH-CLAMP CURRENT RECORDING. **César Arcos Hernández**, Esteban Suarez, Leon Islas, Takuya Nishigaki

2365-PLAT 8:30 AM
A MODULAR TOOLBOX FOR OPTOGENETIC MANIPULATION OF K^+CONDUCTANCE. **Gerhard Thiel**, Anja J. Engel, Kerri Kukovetz, Kerri Kukovetz, Matea Cortolano, Sebastian Höler, Monica Beltrame, Anna Moroni

2366-PLAT 8:45 AM
MOLECULAR MECHANISMS UNDERLYING OXIDATION SENSITIVITY OF VRAC. **Sara Bertelli**, Michael Pusch

2367-PLAT 9:00 AM
CONNEXIN 31 MUTATIONS ASSOCIATED WITH SKIN DISEASE AND DEAFNESS DISPLAY A VARIETY OF PHENOTYPES WHEN EXPRESSED IN XENOPUS OOCYTES. **Samuel Sunners**, Anhthi Tanguyen, Adedoyin Akingbade, Ingrid M. Skerrett

2368-PLAT 9:15 AM
REPURPOSING INTRACELLULAR FLUORESCENT BIOSENSORS TO VISUALIZE EXTRACELLULAR FLUXES. **Daniel A. Gutierrez**

2369-PLAT 9:30 AM
ROLES OF HYDROGEN-BONDING NETWORKS IN PROTON CHANNEL FUNCTION AS REVEALED THROUGH DE NOVO DESIGNED PROTON CHANNELS. **Huong T. Kratochvil**, John M. Nicoludis, William F. DeGrado

2370-Plat 9:45 am
DE NOVO DESIGN OF ION CONDUCTING TRANSMEMBRANE PROTEIN NANOPORES. **Sinduja K. Marx**, Anastassia Vorobieva, Cameron Chow, Jonathan M. Craig, Hwanhee C. Kim, Sarah J. Abell, Jesse Huang, Stacey Gerben, David Baker, Jens H. Gundlach

2371-Plat 10:00 am
EXPRESSION AND CHARACTERIZATION OF CONNEXIN30.3. Jesse Asiedu, **Ingrid M. Skerrett**

Platform
Protein Assemblies

8:15 am - 10:15 am, Room 24ABC

Co-Chairs
Marcia Levitus, Arizona State University
Allen Minton, NIH, NIDDK

2372-Plat 8:15 am
E. COLI SINGLE-STRANDED DNA BINDING (SSB) PROTEIN UNDERGOES DYNAMIC LIQUID-LIQUID PHASE SEPARATION CONTROLLED VIA PROTEIN-PROTEIN AND PROTEIN-DNA INTERACTIONS. **Gabor Harami**, Zoltan J. Kovacs, János Pálinkás, Rita Pancsa, Veronika Baráth, Krisztián Tárnok, Hajnalka Harami-Papp, Andras Malnasi-Csizmadia, Mihaly Kovacs

2373-Plat 8:30 am
DIRECT OBSERVATION OF PRION PROTEIN FIBRIL ELONGATION KINETICS. **Yuanzi Sun**, Mark Batchelor, John Collinge, Jan Bieschke

2374-Plat 8:45 am
MODULATION OF THE OLIGOMERIZATION STATE OF PROTEINS BY IONS AND SMALL MOLECULES. AN FCS STUDY. Anirban Purohit, Linda B. Bloom, **Marcia Levitus**

2375-Plat 9:00 am
SIMPLE CALCULATION OF PHASE DIAGRAMS FOR LIQUID-LIQUID PHASE TRANSITIONS IN SOLUTIONS OF TWO MACROMOLECULAR SOLUTE SPECIES. **Allen P. Minton**

2376-Plat 9:15 am
COMPUTER SIMULATIONS OF KEY PEPTIDES INVOLVED IN PREECLAMPSIA AND ALZHEIMER'S DISEASE. **Maksim Kouza**, Andrzej Kolinski, Irina Buhimschi, Andrzej Kloczkowski

2377-Plat 9:30 am
DETERMINING THE OLIGOMERIC STATES OF A GPI-ANCHORED MODEL PROTEIN VIA COLOCALIZATION-BASED SINGLE-MOLECULE MICROSCOPY. **Clara Bodner**, Mario Brameshuber, Gerhard J. Schütz

2378-Plat 9:45 am
LIQUID-LIQUID PHASE SEPARATION OF WHEAT GLIADINS - TOWARDS PHYSIOLOGICAL CONDITIONS. **Line Sahli**, Denis Renard, Véronique Solé-Jamault, Adeline Boire

2379-Plat 10:00 am Travel Awardee
P53 DEAMIDATION AS A MOLECULAR TIMER FOR CELL DEATH. **Karola Gerecht**, Sofia Margiola, Manuel M. Müller

Platform
NMR, Diffraction, and EM

8:15 am - 10:15 pm, Room 25ABC

Co-Chairs
John Franck, Syracuse University
Jessica Rabuck-Gibbons, The Scripps Research Institute

2380-Plat 8:15 am
QUANTITATIVE ANALYSIS OF LATE-STAGE RIBOSOME ASSEMBLY WITH CRYO-EM. **Jessica N. Rabuck-Gibbons**, Dmitry Lyumkis, James R. Williamson

2381-Plat 8:30 am Travel Awardee
INDIRECT BACTERIAL TRANSCRIPTION-TRANSLATION COUPLING MECHANISM REVEALED BY *IN SITU* INTEGRATIVE STRUCTURAL BIOLOGY. **Liang Xue**, Francis O'Reilly, Ludwig Sinn, Juri Rappsilber, Julia Mahamid

2382-Plat 8:45 am
THE *IN SITU* STRUCTURE OF PARKINSON'S DISEASE-LINKED LRRK2. **Reika Watanabe**, Robert Buschauer, Jan Böhning, Martina Audagnotto, Keren Lasker, Tsan Wen Lu, Daniela Boassa, Susan S. Taylor, Elizabeth Villa

2383-Plat 9:00 am
IN SITU ARRANGEMENT OF INFLUENZA A VIRUS MATRIX PROTEIN M1 RESOLVED BY CRYO ELECTRON TOMOGRAPHY SUGGESTS A MODEL FOR VIRUS ASSEMBLY. **Julia Peukes**, Serge Dmitrieff, John A.G. Briggs

2384-Plat 9:15 am
NMR "CRYSTALLOGRAPHY" OF MEMBRANE PROTEINS ALIGNED IN NATIVE-LIKE BILAYERS. Joel Lapin, Emmanuel Awosanya, **Alexander Nevzorov**

2385-Plat 9:30 am
AB INITIO ELECTRON DENSITY DETERMINATION DIRECTLY FROM SOLUTION SCATTERING DATA. **Thomas D. Grant**

2386-Plat 9:45 am
PROTEIN CRYSTAL MOTIONS FROM TIME-RESOLVED DIFFRACTED X-RAY BLINKING. **Yuji C. Sasaki**, Masahiro Kuramochi, Kazuhiro Mio, Hiroshi Sekiguchi, Ayana Sato-Tomita, Naoya Shibayama

2387-Plat 10:00 am
OVERHAUSER DYNAMIC NUCLEAR POLARIZATION: A TOOL FOR BUILDING MAPS OF HYDRATION WATER. **John M. Franck**

Platform
Exocytosis and Endocytosis

8:15 am - 10:15 am, Room 30ABC

Co-Chairs
Bianxiao Cui, Stanford University
Sathish Thiyagarajan, Columbia University

2388-Plat 8:15 am
CRYO-EM OF INTACT CLATHRIN-COATED VESICLES REVEALS ADAPTOR DISTRIBUTION AND NOVEL INTERACTIONS BETWEEN SUBUNITS. **Mohammadreza Paraan**, Scott M. Stagg

2389-Plat 8:30 am
NANOSCALE CURVATURES MODULATE PROTEIN SIGNALING AT THE CELL MEMBRANE. **Bianxiao Cui**, Xiao Li, Wei Zhang, Lasse Klausen, Hsin-Ya Lou, Wenting Zhao

2390-Plat 8:45 am
CRYO-EM STRUCTURES OF FULL-LENGTH DYNAMIN ASSEMBLED ON MEMBRANES *IN VITRO* AND WITHIN CELLS. **John Jimah**, Abigail Stanton, Kem A. Sochacki, Lieza M. Chan, Haifeng He, Huaibin Wang, Justin W. Taraska, Jenny E. Hinshaw

2391-Plat 9:00 am
DEMYSTIFYING DYNAMICS OF DYNAMIN DURING CLATHRIN MEDIATED ENDOCYTOSIS. **Ning Fang**, Xiaodong Cheng, Kuangcai Chen, Bin Dong

2392-Plat 9:15 am
DYNAMIN FUNCTION IN EXOCYTOSIS AND ENDOCYTOSIS COUPLING OF DENSE-CORE VESICLES IN PANCREATIC BETA CELLS. Fan Fan, Jenifer Wendlick, Natalia Tamarina, Yumei Wu, Shawn Ferguson, Louis H. Philipson, Pietro De Camilli, **Xuelin Lou**

2393-Plat 9:30 am
ESCRT-III ASSEMBLES SIMULTANEOUSLY AND WITHOUT PREFERENCE ON SUPPORTED LIPID BILAYERS OF VARYING CURVATURES. **Nebojsa Jukic**, Alma P. Perrino, Simon Scheuring

2394-PLAT 9:45 AM
DISSECTING THE SYNERGISTIC ROLES OF SYNAPTOTAGMIN AND COMPLEXIN IN CA^{2+}-REGULATED EXOCYTOSIS. Sathish Ramakrishnan, Manindra Bera, Jeff Coleman, Frederic Pincet, James Rothman, **Shyam S. Krishnakumar**

2395-PLAT 10:00 AM
FUSION PORES ARE COOPERATIVELY DILATED BY THE NEURONAL CALCIUM SENSOR SYT1 AND SNARE PROTEINS IN A MECHANICAL LEVER ACTION. Nadiv Dharan, **Sathish Thiyagarajan**, Zhenyong Wu, Erdem Karatekin, Ben O'Shaughnessy

Platform
Protein-Nucleic Acid Interactions

8:15 AM - 10:15 AM, ROOM 31ABC

Co-Chairs
Kumar Sarthak, University of Illinois Urbana-Champaign
Judong Fu, The Ohio State University

2396-PLAT 8:15 AM
TRANSIENT BINDING AND NON-ROTATIONAL COUPLED MOTION OF P53 REVEALED BY SUB-MILLISECOND RESOLVED SINGLE-MOLECULE FLUORESCENCE TRACKING. **Dwiky R.G. Subekti**, Satoshi Takahashi, Kiyoto Kamagata

2397-PLAT 8:30 AM
CRYO-EM STRUCTURE OF SUBSTRATE-ENGAGED NUCLEAR EXOSOME TARGETING (NEXT) COMPLEX. **Marc Rhyan Puno**, Christopher D. Lima

2398-PLAT 8:45 AM
DNA SEQUENCE AND HISTONE CORE COMPOSITION DETERMINE THE UNWRAPPING PATHWAYS IN NUCLEOSOMES. **Alex Mauney**, Lois Pollack

2399-PLAT 9:00 AM TRAVEL AWARDEE
THE UNCONVENTIONAL BIOPHYSICAL FUNCTION OF MICRORNA-1 IN MODULATING CARDIAC ELECTROPHYSIOLOGY. **Dandan Yang**

2400-PLAT 9:15 AM
MICROSCOPIC DESCRIPTION OF PROTEIN-RNA INTERACTIONS IN NUCLEOPROTEIN CONDENSATES. **Kumar Sarthak**, Swan Htun, Aleksei Aksimentiev

2401-PLAT 9:30 AM
A DNA ORIGAMI PLATFORM FOR SINGLE-PAIR FÖRSTER RESONANCE ENERGY TRANSFER INVESTIGATION OF DNA-DNA AND DNA-PROTEIN INTERACTIONS. **Kira Bartnik**, Anders Barth, Mauricio Pilo-Pais, Alvaro H. Crevenna, Tim Liedl, Don C. Lamb

2402-PLAT 9:45 AM
OBSERVING SINGLE-MOLECULE PROTEIN-DNA INTERACTIONS AND DNA TRANSCRIPTION IN VITRO USING TRANSCRIPTOMIC TETHERED PARTICLE MOTION. **Emilius Visser**, Jovana Miladinovic, Joshua Milstein

2403-PLAT 10:00 AM
IMAGING AND MECHANICS OF INFECTIOUS DNA EJECTION BY THE T7 BACTERIOPHAGE. **Balint Kiss**, Hedvig Tordai, Levente Herenyi, Miklós S.Z. Kellermayer

Poster Presentations and Late Posters

10:30 AM - 12:30 PM, EXHIBIT HALL

Symposium
New and Notable

1:00 PM - 3:00 PM, BALLROOM 20A

Co-Chairs
Patricia Clark, University of Notre Dame
William Kobertz, University of Massachusetts Medical School

NO ABSTRACT 1:00 PM
SINGLE-MOLECULE TRAINSPOTTING: STUDIES OF EUKARYOTIC GENOME MAINTENANCE. **Gheorghe Chistol**

NO ABSTRACT 1:30 PM
COUPLING MOLECULAR ACTIVATION AND ITS FUNCTIONAL OUTPUT THROUGH MULTISCALE IMAGING. **Dorit Hanein**

NO ABSTRACT 2:00 PM
HOW INFLUENZA HEMAGGLUTININ ACTS WITHIN MEMBRANES TO DRIVE MEMBRANE FUSION. **Peter Kasson**

NO ABSTRACT 2:30 PM
LIPIDS AND CATIONS AS COUPLED REGULATORS OF MEMBRANE PROTEIN INSERTION AND FOLDING. **Alexey S. Ladokhin**

Symposium
Personalized Medicine: Protein Sequence Variation on Human Health

1:00 PM - 3:00 PM, BALLROOM 20D

Chair
Christian Landry, Laval University, Canada

2404-SYMP 1:00 PM
MAKING AND MEASURING THE EFFECT OF MUTATIONS ON A MASSIVE SCALE. **Douglas M. Fowler**

2405-SYMP 1:30 PM
DECODING MOLECULAR MECHANISMS OF DISEASE WITH MEDICAL BIOPHYSICS. **Anna Panchenko**

NO ABSTRACT 2:00 PM
EVOLUTION-GUIDED DISSECTION AND ENHANCEMENT OF RESTRICTION OF VIRUSES BY HOST ANTIVIRAL PROTEINS. **Harmit Malik**

2406-SYMP 2:30 PM
PARALOG DEPENDENCY INDIRECTLY AFFECTS THE ROBUSTNESS OF HUMAN CELLS. **Christian Landry**, Rohan Dandage

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates III

1:00 PM - 3:00 PM, BALLROOM 20BC

Co-Chairs
Rajeswari Appadurai, Indian Institute of Science (IISc), India
Birthe Kragelund, University of Copenhagen, Denmark

2407-PLAT 1:00 PM
CONTEXT MATTERS IN DISORDER BASED PROTEIN COMMUNICATION. **Birthe B. Kragelund**, Andreas Prestel, Nanna Wickmann, Joao Martins, Wouter Boomsma, Lasse Staby, Ruth Hendus-Altenburger, Karen Skriver

2408-PLAT 1:15 PM
AN ADVANCED REPLICA EXCHANGE METHOD FOR EXPLORING UNCHARTED COMPLEX PROTEIN LANDSCAPES. **Rajeswari Appadurai**, Anand Srivastava

2409-PLAT 1:30 PM
DIVERSE TRANSITION PATHS OF COUPLED BINDING AND FOLDING OF INTRINSICALLY DISORDERED PROTEIN PROVED BY THREE-COLOR SINGLE-MOLECULE FRET. **Jae-Yeol Kim**, Hoi Sung Chung

2410-Plat 1:45 PM
THE STICKERS AND SPACERS FRAMEWORK FOR DESCRIBING PHASE BEHAVIOR OF MULTIVALENT INTRINSICALLY DISORDERED PROTEINS. **Jeong-Mo Choi**, Rohit V. Pappu

2411-Plat 2:00 PM
SIZE-DEPENDENT CHARACTERIZATION OF ALPHA-SYNUCLEIN AGGREGATES UNVEILS THEIR TOXICITY. **Derya Emin**, Margarida Rodrigues, Zengjie Xia, Antonina Kouli, Helen Henson, Caroline Williams-Gray, David Klenerman

2412-Plat 2:15 PM
QUANTIFYING THE THERMODYNAMIC STABILITY OF AMYLOID FIBRILS. **Kimberley L. Callaghan**, Quentin Peter, Janet R. Kumita, Tuomas P. Knowles, Christopher M. Dobson

2413-Plat 2:30 PM
BACKBONE DYNAMICS OF THE TAZ1 DOMAIN OF THE CREB-BINDING PROTEIN MODULATE COMPETITION BETWEEN DISORDERED LIGANDS. **Rebecca B. Berlow**, Jane Dyson, Peter E. Wright

2414-Plat 2:45 PM
RATIONAL DESIGN OF PEPTIDE TARGETING INTRINSICALLY DISORDERED PROTEIN P53 -REGULATION OF FUNCTION AND PHASE SEPARATION. **Kiyoto Kamagata**, Ryo Kitahara, Tomoshi Kameda

Platform
Cardiac, Smooth, and Skeletal Muscle Electrophysiology and Regulation II

1:00 PM - 3:00 PM, Room 23ABC

Co-Chairs
Balazs Horvath, University of Debrecen, Hungary
Joyce Lin, California Polytechnic State University

2415-Plat 1:00 PM
TARGETED REMUSCULARIZATION CAN REDUCE VENTRICULAR TACHYCARDIA (VT) BURDEN IN A COMPUTATIONAL HUMAN HEART MODEL OF POST-MYOCARDIAL INFARCTION (MI). **Jialiu A. Liang**, Joseph K. Yu, Natalia A. Trayanova

2416-Plat 1:15 PM
STRUCTURAL MAPPING OF ACTION POTENTIAL PROPAGATION PATHWAYS THROUGH HEALTHY AND DISEASED HEART. Erica Lazzeri, Francesco Giardini, Irene Costantini, Ludovico Silvestri, Raffaele Coppini, Cecilia Ferrantini, Giacomo Mazzamuto, Caroline Muellenbroich, Leslie M. Loew, Leonardo Bocchi, Elisabetta Cerbai, Corrado Poggesi, Martin J. Bishop, Francesco S. Pavone, **Leonardo Sacconi**

2417-Plat 1:30 PM
A NEW MECHANISM OF CELLULAR AND TISSUE AUTOMATICITY. **Steven Poelzing**, James P. Keener, Kees McGahan

2418-Plat 1:45 PM
SPATIOTEMPORAL MODULATION OF ACTION POTENTIAL DURATION IN INTACT HEARTS BY SUB-THRESHOLDS OPTOGENETICS STIMULATION. **Valentina Biasci**, Marina Scardigli, Lorenzo Santini, Raffaele Coppini, Cecilia Ferrantini, Caroline Muellenbroich, Leslie M. Loew, Elisabetta Cerbai, Corrado Poggesi, Marfina Campione, Francesco S. Pavone, Leonardo Sacconi

2419-Plat 2:00 PM
CREATING ION CHANNEL MODELS WITH UNBIASED GRAPHS. **Kathryn Mangold**, Jonathan R. Silva

2420-Plat 2:15 PM
EXPLORING THE EFFECTS OF CONDUCTION RESERVE AND EPHAPTIC COUPLING IN CARDIAC CELLS. **Joyce Lin**, Steven Poelzing, Sharon A. George, Amara Greer-Short, Matthew W. Kay

2421-Plat 2:30 PM
INTERPLAY BETWEEN B-ADRENERGIC STIMULATION AND CAMKII SIGNALING FAVORS HUMAN ATRIAL ARRHYTHMOGENESIS: INSIGHTS FROM POPULATIONS OF MODELS. **Haibo Ni**, Xianwei Zhang, Stefano Morotti, Eleonora Grandi

2422-Plat 2:45 PM
LATE SODIUM CURRENT IN CANINE, GUINEA PIG AND HUMAN LEFT VENTRICULAR MYOCARDIUM. **Balazs Horvath**, Tamas Hezso, Norbert Szentandrássy, Kornel Kistamas, Tamas Arpadffy-Lovas, Roland Veress, Csaba B. Dienes, Dora Baranyai, Laszlo Virag, Norbert Nagy, Istvan Baczko, Janos Magyar, Tamas Banyasz, Andras Varro, Peter P. Nanasi

Platform
Skeletal and Smooth Muscle Mechanics, Structure, and Regulation

1:00 PM - 3:00 PM, Room 24ABC

Co-Chairs
Belinda Bullard, University of York, United Kingdom
Miklós Kellermayer, Semmelweis University, Hungary

2423-Plat 1:00 PM
STRUCTURAL INSIGHTS INTO F-ACTIN REGULATION AND SARCOMERE ASSEMBLY VIA MYOTILIN. **Kristina Djinovic-Carugo**, Julius Kostan

2424-Plat 1:15 PM
SAR ANALYSIS OF LINKER DERIVATIVES OF THE SMOOTH MUSCLE MYOSIN SPECIFIC CK-571 COMPOUND. Sharad K. Suthar, Mate Gyimesi, Csilla Kurdi, **Andras Malnasi-Csizmadia**

2425-Plat 1:30 PM
TROPOMYOSIN AS A STRETCH SENSOR IN THE TROPONIN BRIDGES OF INSECT FLIGHT MUSCLE. Konstantinos Drousiotis, Demetris Koutalianos, Christoph G. Baumann, **Belinda Bullard**

2426-Plat 1:45 PM
BASIC RESIDUES IN THE C-TERMINAL REGION OF TROPONIN T ARE CRITICAL IN SKELETAL MUSCLE REGULATION. Alfredo J. Lopez-Davila, Li Zhu, Leon Fritz, **Theresia Kraft**, Joseph M. Chalovich

2427-Plat 2:00 PM
MICROTUBULE REMODELING CONTRIBUTES TO THE LOSS OF FORCE AND POWER IN AGING SKELETAL MUSCLE. **Humberto Cavalcante Joca**, Anicca Harriot, Jenna Leser, Andrew Coleman, Guoli Shi, Joseph P. Stains, Christopher W. Ward

2428-Plat 2:15 PM
WEAKLY-BOUND, NON-LINEAR ELASTIC CROSS-BRIDGES ARE REQUIRED TO SELF-CONSISTENTLY MODEL THE FENN EFFECT, FORCE VELOCITY AND TENSION TRANSIENTS IN MUSCLE FIBERS. **Katelyn Jarvis**, Kaylyn Bell, Amy K. Loya, Douglas M. Swank, Sam Walcott

2429-Plat 2:30 PM
TOPOLOGICAL STRUCTURE OF SMOOTH-MUSCLE TITIN MOLECULES AND OLIGOMERS. Elmira I. Yakupova, Ivan M. Vikhlyantsev, Alexander G. Bobylev, Zsolt Mártonfalvi, **Miklós S. Kellermayer**

2430-Plat 2:45 PM
THICK FILAMENT ACTIVATION AND POST-TETANIC POTENTIATION MECHANISMS EVOLVED DIFFERENTLY IN INVERTEBRATE AND VERTEBRATE STRIATED MUSCLE. **Raul Padron**, Weikang Ma, Sebastian Duno Miranda, Natalia Koubassova, Kyounghwan Lee, Prince Tiwari, Antonio Pinto, Pura Bolaños, Andrey Tsaturyan, Thomas C. Irving, Roger Craig

Platform
Protein-Lipid Interactions II

1:00 PM - 3:00 PM, ROOM 25ABC

Co-Chairs
Constance Agamasu, Frederick National Laboratory for Cancer Research
Alemayehu Gorfe, University of Texas Health Science Center at Houston

2431-PLAT 1:00 PM
EMERGING INSIGHTS INTO THE MEMBRANE BINDING DOMAIN OF RAF ENGAGING WITH THE PLASMA MEMBRANE AND ITS IMPLICATION ON RAF ACTIVATION. **Constance Agamasu**, De Chen, John Columbus, Frank Heinrich, Marco Tonelli, Christopher B. Stanley, Thomas Turbyville, Frank McCormick, Dwight V. Nissley, Andrew G. Stephen

2432-PLAT 1:15 PM
DHHC20 PALMITOYL-TRANSFERASE RESHAPES THE MEMBRANE TO FOSTER CATALYSIS. **Robyn Stix**, James Song, Anirban Banerjee, José D. Faraldo-Gómez

2433-PLAT 1:30 PM
USING MACHINE LEARNING TO PREDICT MEMBRANE PROTEIN STATES BASED ON THEIR LIPID ENVIRONMENT. Adam T. Moody, Gautham Dharuman, **Timothy S. Carpenter**, Helgi I. Ingolfsson, Brian C. Van Essen, James N. Glosli, Felice C. Lightstone

2434-PLAT 1:45 PM
STATE-DEPENDENT AND MUTATION-INDUCED DIFFERENCES IN PROTEIN-LIPID INTERACTIONS IN THE NA,K ATPASE. **Dhani R. Mahato**, Magnus Andersson

2435-PLAT 2:00 PM TRAVEL AWARDEE
VISUALIZATION OF PROTEIN-LIPID INTERACTIONS IN CONNEXIN-46/50 INTERCELLULAR CHANNELS BY CRYO-EM AND MD-SIMULATION. **Bassam G. Haddad**, Jonathan A. Flores, Kimberly A. Dolan, Janette B. Myers, Craig C. Yoshioka, Daniel M. Zuckerman, Steve L. Reichow

2436-PLAT 2:15 PM
CRYO-EM STRUCTURES OF THE GIRK2 CHANNEL REVEAL MECHANISMS FOR LIPID MODULATION. **Ian W. Glaaser**, Yamuna K. Mathiharan, Yulin Zhao, Georgios Skiniotis, Paul A. Slesinger

2437-PLAT 2:30 PM
CRYSTAL STRUCTURE OF MID51 BOUND TO PHOSPHOLIPID.
Nikhil Bharambe

2438-PLAT 2:45 PM
DYNAMICS OF ONCOGENIC KRAS MUTANTS ON BILAYER SURFACES. Priyanka Prakash Srivastava, Douglas B. Litwin, Liang Hong, Suparna Sarkar-Banerjee, Drew M. Dolino, Yong Zhou, Vasanthi Jayaraman, John F. Hancock, **Alemayehu A. Gorfe**

Platform
Voltage-gated Na and Ca Channels

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

Co-Chairs
Han Chow Chua, University of Copenhagen, Denmark
Ivy Dick, University of Maryland

2439-PLAT 1:00 PM
WHICH CAV1.1 VOLTAGE SENSOR(S) ACTIVATE RYR1? **Marina Angelini**, Nicoletta Savalli, Federica Steccanella, Marino G. Di Franco, Alan Neely, Steve C. Cannon, Riccardo Olcese

2440-PLAT 1:15 PM
TOWARDS A DEEPER UNDERSTANDING OF THE DIVERSE ROLES OF THE $CA_V1.2$ S6. **Moradeke A. Bamgboye**, Josiah O. Owoyemi, Kevin G. Herold, Maria K. Traficante, Ivy E. Dick

2441-PLAT 1:30 PM
DIFFERENTIAL MODULATION OF L-TYPE $CA_V1.1$ AND $CA_V1.2$ CHANNELS BY THE $A_2\Delta$-1 SUBUNIT. **Federica Steccanella**, Nicoletta Savalli, Marina Angelini, Alan Neely, Riccardo Olcese

2442-PLAT 1:45 PM
HUMAN CARDIAC VOLTAGE-GATED CALCIUM CHANNEL PHOSPHORYLATION BY CAMP-DEPENDENT PROTEIN KINASE A. **Omid Haji-Ghassemi**, Jiaming Xu, Filip Van Petegem

2443-PLAT 2:00 PM TRAVEL AWARDEE
THE SODIUM LEAK CHANNEL COMPLEX IS MODULATED BY VOLTAGE AND EXTRACELLULAR CALCIUM. **Han Chow Chua**, Matthias Wulf, Claudia Weidling, Lise Pilgaard Rasmussen, Stephan A. Pless

2444-PLAT 2:15 PM
MECHANISM OF SODIUM CHANNEL INHIBITION BY CANNABIDIOL. **Mohammad-Reza Ghovanloo**, Tagore Sanketh Bandaru, Koushik Choudhury, Mohamed Fouda, Kaveh Rayani, Damon Poburko, Lucie Delemotte, Peter C. Ruben

2445-PLAT 2:30 PM
TARGETING OF NAV1.6 AND NAV1.2 TO INHIBIT EXCITATORY VS INHIBITORY NEURAL CIRCUITS. **Samuel J. Goodchild**, Mohammad-Reza Ghovanloo, Aaron Williams, Noah Shuart, Maegan Soriano, Janette Mezeyova, Richard Dean, Thilo Focken, Peter Ruben, James Empfield, Charles Cohen, J.p. Johnson

2446-PLAT 2:45 PM
COMPARATIVE STUDY OF THE EFFECTS OF AN SCN5A MUTATION WITHIN A FAMILY DIAGNOSED WITH BRUGADA SYNDROME USING IPS-CM. **Rebecca Martinez-Moreno**, David Carreras, Elisabet Selga, Georgia Sarquella-Brugada, Ramon Brugada, Guillermo J. Perez, Fabiana S. Scornik

Platform
Protein Structure and Conformation IV

1:00 PM - 3:00 PM, ROOM 31ABC

Co-Chairs
Wei Liu, University of Science and Technology of China, China
Marc Ruff, IGBMC, CERBM, France

2447-PLAT 1:00 PM
PATHOGENIC SIDEROPHORE ABC IMPORTER YBTPQ ADOPTS A SURPRISING FOLD OF EXPORTER. **Zhiming Wang**, Wenxin Hu, Hongjin Zheng

2448-PLAT 1:15 PM
ATOMIC STRUCTURE OF THE HUMAN HERPESVIRUS 6B CAPSID AND CAPSID-ASSOCIATED TEGUMENT COMPLEXES. **Wei Liu**, Yibo Zhang, Zihang Li, Vinay Kumar, Ana L. Alvarez-Cabrera, Emily C. Leibovitch, Yanxiang Cui, Ye Mei, Guo-Qiang Bi, Steve Jacobson, Z. Hong Zhou

2449-PLAT 1:30 PM
HIV-1 PRE-INTEGRATION COMPLEXES. STRUCTURES, FUNCTIONS AND DRUG DESIGN. Julien Batisse, Eduardo Bruch, Nicolas Levy, Sylvia Eiler, Sylvie Duclaud, Patrick Schultz, Patrice Gouet, Serge Bouaziz, Olivier Delelis, Vincent Parissi, **Marc Ruff**

2450-PLAT 1:45 PM
PROTEASOME CONFORMATIONAL REGULATION OF SUBSTRATE ENGAGEMENT AND DEGRADATION. **Eric R. Greene**, Ellen Goodall, Andres H. de la Peña, Mary Matyskiela, Gabriel Lander, Andreas Martin

2451-PLAT 2:00 PM
A STRUCTURAL AND MECHANISTIC MODEL FOR THE INTERACTION OF PARKINSON'S DISEASE-RELATED LRRK2 WITH MICROTUBULES.
Colin K. Deniston, Andres Leschziner, John Salogiannis, David Snead, Indrajit Lahiri

2452-Plat 2:15 pm
STRUCTURAL STUDIES USING CRYO-EM TO UNRAVEL MECHANISTIC DETAILS OF P47 BINDING TO P97. **Purbasha Nandi**, Po-Lin Chiu

2453-Plat 2:30 pm
FTIP - AN ACCURATE AND EFFICIENT METHOD FOR GLOBAL PROTEIN SURFACE COMPARISON. **Yuan Zhang**, Xin Sui, Scott M. Stagg, Jinfeng Zhang

2454-Plat 2:45 pm
SINGLE-PARTICLE CRYO-EM STUDIES OF ERP44-ERAP1 AND ERP44-ERAP2 REVEAL THEIR ER-RETENTION MECHANISM. **Richa Arya**, Lawrence J. Stern

WEDNESDAY POSTER SESSIONS

10:30 AM–12:30 PM, EXHIBIT HALL

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 at 7:00 AM on Wednesday and removed by 3:00 PM. Poster numbers refer to the program order of abstracts as they appear in the online Abstract 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 – B32	Protein Structure and Conformation IV
B33 – B51	Protein Stability, Folding, and Chaperones II
B52 – B71	Protein-Small Molecule Interactions II
B72 – B83	Protein Assemblies II
B84 – B106	Protein Dynamics and Allostery III
B107 – B124	Membrane Protein Structures II
B125 – B144	Membrane Protein Dynamics III
B145 – B170	Enzyme Function, Cofactors, and Post-translational Modifications
B171 – B196	Intrinsically Disordered Proteins (IDP) and Aggregates IV
B197 – B217	Transcription
B218 – B231	Ribosomes and Translation
B232 – B247	Chromatin and the Nucleoid II
B248 – B261	Membrane Fusion and Non-Bilayer Structures
B262 – B272	Protein-Lipid Interactions: Channels
B273 – B297	General Protein-Lipid Interactions II
B298 – B313	Calcium Signaling II
B314 – B330	Intracellular Calcium Channels and Calcium Sparks and Waves II
B331 – B345	Cardiac, Smooth, and Skeletal Muscle Electrophysiology II
B346 – B353	Intracellular Transport
B354 – B378	Voltage-gated Na Channels
B379 – B413	Ligand-gated Channels
B414 – B436	Ion Channels, Pharmacology, and Disease II
B437 – B458	Cardiac Muscle Regulation
B459 – B475	Microtubules, Structure, Dynamics, and Associated Proteins
B476 – B509	Cell Mechanics, Mechanosensing, and Motility II
B510 – B514	Cytoskeletal-based Intracellular Transport
B515 – B525	Electron and Proton Transfer
B526 – B535	Emerging Techniques and Synthetic Biology
B536 – B545	EPR and NMR: Spectroscopy and Imaging
B546 – B561	Single-Molecule Spectroscopy II
B562 – B579	Force Spectroscopy and Scanning Probe Microscopy
B580 – B600	Micro- and Nanotechnology II

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

Protein Structure and Conformation IV (Boards B1 - B32)

2455-Pos Board B1 Travel Awardee
CONFORMATIONAL DYNAMICS OF ALANINE IN WATER AND WATER/ETHANOL MIXTURES: EXPERIMENTALLY DRIVEN EVALUATION OF MOLECULAR DYNAMICS FORCE FIELDS. **Shuting Zhang**, Reinhard Schweitzer-Stenner, Brigita Urbanc

2456-Pos Board B2
NANOMECHANICAL DIFFERENCES BETWEEN INACTIVE AND ACTIVE STATES OF RHODOPSIN FROM MOLECULAR-SCALE SIMULATION. **Adolfo B. Poma**, Slawomir Filipek, Paul Park

2457-Pos Board B3
PROTEINS ON THE WATER/AIR INTERFACES: INSIGHTS FROM SIMULATIONS USING POLARIZABLE FORCE FIELDS. Jian Zhu, Zongyang Qiu, **Jing Huang**

2458-Pos Board B4
A COMPUTATIONAL PERSPECTIVE ON THE GATING MECHANISM OF B-KETOACYL-ACP SYNTHASES . **Ashay Patel**, Jeffrey T. MIndrebo, Woojoo E. Kim, Aochiu Chen, Thomas G. Bartholow, Tony D. Davis, James J. La Clair, J. Andrew McCammon, Joseph P. Noel, Michael D. Burkart

2459-Pos Board B5
LOCAL UNFOLDING RELATES TO PROTEOLYTIC SUSCEPTIBILITY OF THE MAJOR BIRCH POLLEN ALLERGEN BET V 1. **Anna S. Kamenik**, Florian Hofer, Klaus R. Liedl

2460-Pos Board B6
INVESTIGATING THE ROLE OF INTERFACIAL WATERS IN PROTEIN-PROTEIN RECOGNITION MECHANISM. **Dhananjay C. Joshi**, Jung-Hsin Lin

2461-Pos Board B7
SAXS SIGNATURES OF CONFORMATIONAL HETEROGENEITY AND HOMOGENEITY OF DISORDERED PROTEIN ENSEMBLES. Jianhui Song, Jichen Li, **Hue Sun Chan**

2462-Pos Board B8
INTERACTIONS OF THE GDP DISSOCIATION STIMULATOR SMGGDS WITH KRAS: X-RAY SCATTERING AND ROSETTA DOCKING STUDIES AND DIFFERENCES IN INTERACTION OF TWO ISOFORMS WITH MEMBRANE-BOUND KRAS4B. **Dennis J. Michalak**, Ellen Lorimer, Bethany Unger, Carol L. Williams, Frank Heinrich, Mathias Lösche

2463-Pos Board B9 Travel Awardee
^{19}F NMR STUDIES OF CYCLOPHILIN A AND ITS INTERACTION WITH HIV-1 CAPSID. **Manman Lu**, Tatyana E. Polenova, Angela M. Gronenborn

2464-Pos Board B10
PURIFICATION AND BIOPHYSICAL CHARACTERIZATION OF L_{YS}E MEMBRANE EXPORTER FROM *MYCOBACTERIUM TUBERCULOSIS* IN LIPODISCS MADE OF NATIVE *E. COLI* MEMBRANES AND DETERGENT.
Elka R. Georgieva, Christina Fanouraki, Peter P. Borbat

2465-Pos Board B11
EF-X IN SILICO - MODELING PROTEIN DYNAMICS IN AN ELECTRIC FIELD. **Eugene Klyshko**, Lauren McGough, Justin S. Kim, Rama Ranganathan, Sarah Rauscher

2466-Pos Board B12
CANCER ACTIVATING MUTATIONS IN STAT5B: ELUCIDATING THE IMPACT ON PROTEIN STRUCTURE AND DYNAMICS USING ATOMISTIC MOLECULAR SIMULATIONS. **Deniz Meneksedag-Erol**, Elvin D. de Araujo, Fettah Erdogan, Hyuk-Soo Seo, Sirano Dhe-Paganon, Patrick T. Gunning, Sarah Rauscher

2467-Pos Board B13
KINDLIN COOPERATES WITH TALIN FOR INTEGRIN ACTIVATION, A MOLECULAR DYNAMICS APPROACH. **Zainab Haydari**, Hengameh Shams, Zeinab Jahed, Mohammad Mofrad

2468-Pos Board B14
UNDERSTANDING THE STRUCTURAL AND DYNAMIC CHANGES THAT RELIEVE INHIBITION OF IMPDH UPON HORIZONTAL TRANSFER OF A PATHWAY FOR COUMARATE CATABOLISM IN *E. COLI*. **Madhulika Gupta**, Dan M. Close, Connor J. Cooper, Xingyou Wang, Payal Chirania, John R. Ossyra, Richard J. Giannone, Nancy L. Engle, Timothy J. Tschaplinski, Jeremy C. Smith, Lizbeth Hedstrom, Jerry M. Parks, Joshua K. Michener

2469-Pos Board B15
IDENTIFYING CONFORMATIONS OF AMYLOID PRECURSOR PROTEIN DIMER STRUCTURES. **Alexander Gonzalez**, Jacob B. Usadi, Esmael J. Haddadian

2470-Pos Board B16
EXPLORING ARTIFICIALLY CONJUGATED UBIQUITIN DIMERS BY MEANS OF NMR SPECTROSCOPY AND MD SIMULATIONS. Tobias Schneider, Andrej Berg, Christine Peter, **Michael Kovermann**

2471-Pos Board B17
STRUCTURAL AND DYNAMIC ELUCIDATION OF NATURAL POLYREACTIVITY IN ANTIBODIES. **Marta T. Borowska**, Christopher T. Boughter, Erin J. Adams

2472-Pos Board B18
IN-SILICO EXPLORATION OF ANTIVIRAL LECTIN GRIFFITHSIN. **Clarence B. Le**, Patricia LiWang, Michael E. Colvin

2473-Pos Board B19
MOLECULAR DYNAMICS SIMULATIONS OF A 2.8-Å RESOLUTION CRYO-EM STRUCTURE OF THE AIIBB3-ABCIXIMAB COMPLEX. **Aleksandar Spasic**, Davide Provasi, Dragana Nesic, Yixiao Zhang, Jihong Li, Barry S. Coller, Thomas Walz, Marta Filizola

2474-Pos Board B20
COMPUTATIONAL STUDY OF THE MOLECULAR DETAILS OF EBOLA VIRUS MATRIX PROTEIN VP40 AND HUMAN SEC24C PROTEIN INTERACTION. **Nisha Bhattarai**, Bernard S. Gerstman, Prem P. Chapagain

2475-Pos Board B21 Travel Awardee
HOW L17A/F19A DOUBLE MUTATION DIMINISH AB_{40} AGGREGATION IN ALZHEIMER'S DISEASE: KEY INSIGHTS FROM MOLECULAR DYNAMICS SIMULATIONS. **Rajneet Kaur Saini**

2476-Pos Board B22
USING MOLECULAR SIMULATION TO UNDERSTAND THE ROLE OF CONSERVED RESIDUES IN AN EXTREMOPHILIC BETA-GALACTOSIDASE. **Shahlo Solieva**, Vincent A. Voelz

2477-Pos Board B23
CONFORMATIONAL TRANSITIONS OF HISTIDINE KINASES USING MOLECULAR DYNAMICS. **Fathia Idiris**

2478-Pos Board B24
MD SIMULATION OF HIGH TEMPERATURE ENZYME ACTIVITY. **Samin Tajik**

2479-Pos Board B25
DETERMINING FACTORS THAT INFLUENCE VCCI LOOP INTERACTIONS IN VCCI-CHEMOKINE BINDING THROUGH MD SIMULATION. **Lauren E. Stark**, Patricia LiWang, Michael E. Colvin

2480-Pos Board B26
DEVELOPMENT OF THE CHARMM FORCE FIELD FOR CYCLOSPORINE A AND APPLICATION TO MOLECULAR DYNAMICS SIMULATIONS USING A MEMBRANE-WATER SYSTEM. **Tsutomu Yamane**, Ryo Takahashi, Akari Ito, Toru Ekimoto, Mitsunori Ikeguchi

2481-Pos **Board B27**
MOLECULAR DYNAMICS SIMULATIONS FOR IMPROVING CRYSTAL QUALITY AND ILLUMINATING THE FUNCTION OF TASPASE1: A THERAPEUTIC TARGET. **Jacob Layton**, Nirupa Nagaratnam, Rebecca J. Jernigan, Joel Schneider, Andrew Flint, Barbara Mroczkowski, Petra Fromme, Jose M. Garcia, Abhishek Singharoy

2482-Pos **Board B28**
STUDYING BBA PROTEIN FOLDING USING THE GRADIENT DESCENT METHOD TO MODIFY THE SIGMOID FUNCTION AS THE ORDER PARAMETER OF THE UMBRELLA SAMPLING METHOD. **Hamed Meshkin**

2483-Pos **Board B29**
DYNAMICS AND ENERGETICS OF LOSS-OF-FUNCTION VON WILLEBRAND FACTOR MUTANTS, DETERMINED THROUGH MOLECULAR DYNAMICS SIMULATIONS AND FREE ENERGY CALCULATIONS. **Valeria Mejía-Restrepo**

2484-Pos **Board B30**
AN ATOMIC LEVEL INTERACTIONS OF PHOSPHORYLATED TAU REPEAT WITH MICROTUBULE USING MOLECULAR MODELING APPROACH. **Vishwambhar V. Bhandare**, Ambarish Kunwar

2485-Pos **Board B31** **Travel Awardee**
INVESTIGATING NOVEL HETERO-FRET BIOSENSORS FOR ENVIRONMENTAL IONIC STRENGTH USING EXPERIMENTAL AND THEORETICAL APPROACHES. **Cody P. Aplin**, Robert C. Miller, Taryn M. Kay, Alessandro Cembran, Arnold J. Boersma, Ahmed A. Heikal, Erin D. Sheets

2486-Pos **Board B32**
DEVELOPMENT OF NEW METHODS FOR ENHANCED CONFORMATIONAL SAMPLING OF GPCRS. **Erik A. Serrano**, Ravinder Abrol

Protein Stability, Folding, and Chaperones II (Boards B33 - B51)

2487-Pos **Board B33**
MECHANISM OF THE DISULFIDE-COUPLED FOLDING OF A *DE NOVO* DESIGNED PROUROGUANYLIN PROTEIN. **Mayu Fukutsuji**, Aman L. Maharjan, Toi Osumi, Shigeru Shimamoto, Yuji Hidaka

2488-Pos **Board B34**
SINGLE-MOLECULE AFM IMAGING OF THERMALLY DENATURED FIREFLY LUCIFERASE. **Dimitra Apostolidou**, Piotr E. Marszalek

2489-Pos **Board B35**
INVESTIGATION OF MECHANICALLY LABILE TYPE III SECRETION PROTEIN EFFECTORS. **Katherine E. DaPron**, Morgan Fink, Marc-Andre LeBlanc, Devin T. Edwards, Thomas T. Perkins, Marcelo C. Sousa

2490-Pos **Board B36**
DENATURING EFFECT OF GUANIDINE HYDROHLORIDE ON AMYLOID FIBRILS. **Anna I. Sulatskaya**, Maksim I. Sulatsky, Olga V. Stepanenko, Olga I. Povarova, Irina M. Kuznetsova, Konstantin K. Turoverov

2491-Pos **Board B37**
STRUCTURAL DYNAMICS OF MAMMALIAN PRION PROTEIN CORRELATES WITH DEGREE OF SUSCEPTIBILITY TO PRION DISEASES. **Patricia Soto**, Alyssa L. Bursott, Hannah O. Brockman, Garrett M. Gloeb

2492-Pos **Board B38**
CHARACTERIZING THE INTERPLAY BETWEEN DYNAMICS AND REGULATION IN THE TRYPSINOGEN/TRYPSIN PROTEASE SYSTEM. **Sarah Duggan**

2493-Pos **Board B39**
EVALUATION THE PROTEIN STABILITY BY MOLECULAR DYNAMICS SIMULATION. **Tomoshi Kameda**, Kaito Kobayashi, Shin Irumagawa, Ryoichi Arai, Yutaka Saito, Takeshi Miyata, Mitsuo Umetsu

2494-Pos **Board B40**
USING CIRCULAR PERMUTATION TO PROBE THE ROLE OF CHAIN CONNECTIVITY IN THE CO-TRANSLATIONAL FOLDING PROCESS OF HALOTAG. **Natalie R. Dall**, Susan Marqusee

2495-Pos **Board B41**
INTERPRETING TRANSITION PATH TIME EXTRAPOLATION BY SINGLE MOLECULE FRET WITH MD SIMULATIONS. **Grace H. Taumoefolau**, Robert B. Best

2496-Pos **Board B42**
PH DEPENDENCE OF OLIGOMERIZATION AND FUNCTIONAL ACTIVITY OF ALPHA B CRYSTALLIN. **Kashmeera D. Baboolall**, Yusrah B. Kaudeer, Anne Gershenson, Patricia B. O'Hara

2497-Pos **Board B43**
THEORETICAL INVESTIGATIONS OF A MULTI-DOMAIN PROTEIN FOLDING UNDER CONFINEMENTS AND CROWDERS. **Xiakun Chu**, Jin Wang

2498-Pos **Board B44**
MONITORING PROTEIN FOLDING ON AND OFF THE RIBOSOME USING X-RAY FOOTPRINTING/MASS SPECTROMETRY (XF/MS). **Shawn M. Costello**

2499-Pos **Board B45**
INTRA-MOLECULAR CHAPERONE MEDIATED FOLDING OF A PEPTIDE HORMONE IN MOLECULAR EVOLUTION. **Toi Osumi**, Aman L. Maharjan, Mayu Fukutsuji, Shigeru Shimamoto, Yuji Hidaka

2500-Pos **Board B46**
IDENTIFYING THE STRUCTURAL FEATURES THAT DIFFERENTIATE CLIENT PROTEINS OF AB-CRYSTALLIN. **Marc Sprauge-Piercy**, Kyle Roskamp, Rachel W. Martin

2501-Pos **Board B47**
FOX01 TRANSCRIPTION FACTOR FOLDING LANDSCAPE ELUCIDATES THE ROLE OF DISEASE MUTATIONS. **Dylan Novack**, Lei Qian, Richard H.G. Baxter, Vincent Voelz

2502-Pos **Board B48** **Travel Awardee**
IMPROVING PERSONALIZED MEDICINE THROUGH SYSTEMATIC PROTEIN ENGINEERING OF LDH. **Shamir A. Khan**

2503-Pos **Board B49**
COMPARING STABILIZATION STRATEGIES BETWEEN ENGINEERED AND NATURALLY THERMOSTABLE PROTEINS. **Catrina Nguyen**, Lauren M. Yearwood, Michelle E. McCully

2504-Pos **Board B50**
RATIONAL MUTAGENESIS TO ENGINEER HEME STABILITY IN RECOMBINANT HUMAN HEMOGLOBIN TO DESIGN POTENTIAL HEMOGLOBIN BASED OXYGEN CARRIER. **Mohd A. Khan**, Nidhi Mittal, Kajal Yadav, Sanjeev K. Yadav, Gaurav Mittal, Amit Tyagi, Suman Kundu

2505-Pos **Board B51**
MICROFLUIDIC DIFFUSIONAL SIZING FOR STUDYING PROTEIN-PROTEIN INTERACTIONS. **Matthias M. Schneider**, Tom Scheidt, Christopher M. Dobson, Tuomas P.J. Knowles

Protein-Small Molecule Interactions II (Boards B52 - B71)

2506-Pos **Board B52**
PRINCIPLES GOVERNING ANION SELECTIVITY IN PROTEINS. **Mirna Damergi**, Hristina R. Zhekova, Carmen Hsieh, Sergei Y. Noskov

2507-Pos **Board B53**
BINDING MECHANISM OF ANTI-CANCER TARGET HSP90 AND PEPTIDE DRUG. **Lisa Matsukura**, Naoyuki Miyashita

2508-Pos Board B54
ROLE OF VITRONECTIN IN THE FORMATION OF LIPID-PROTEIN AGGREGATES IN AGE-RELATED MACULAR DEGENERATION. **Kyungsoo Shin**, Lynn M. Fujimoto, James E. Kent, Andrey A. Bobkov, Fu-Yue Zeng, Ian Pass, Francesca M. Marassi

2509-Pos Board B55
THE EFFECTS OF A SMALL-MOLECULE INHIBITOR ON CDC42, ITS MUTANT AND ITS INTERACTION WITH EFFECTOR PROTEINS. **Djamali Muhoza**

2510-Pos Board B56
A COMPARATIVE STUDY TO DETERMINE SUBSTRATE-BINDING PATTERN IN EICOSANOID-GENERATING ENZYMES BY COMPUTATIONAL MAPPING. **Inseok Song**

2511-Pos Board B57
EXPERIMENTAL MEASURE OF SOLVATION ENERGY FROM MODEL CRYPTOPHANE-RUBIDIUM BINDING REACTION. **Daryl K. Eggers**, Sherry Fu, Dominic V. Ngo, Elizabeth H. Vuomg, Thierry Brotin

2512-Pos Board B58
DEVELOPMENT OF NOVEL SMALL-MOLECULE THERAPIES FOR THE TREATMENT OF HEART FAILURE. **Eli Antonio Alonso Fernandez de Gortari**

2513-Pos Board B59
CHARACTERIZING THE INFLUENCE OF TWO SMALL MOLECULE TARGETS TOWARDS THE RAS-RELATED PROTEIN CDC42. Djamali Muhoza, Emilio Duverna, Alix Montoya-Beltrand, **Paul D. Adams**

2514-Pos Board B60
UNDERSTANDING EBOLA VIRUS PROTEIN SHAPE SHIFTING FOR DRUG DESIGN. **Matthew A. Cruz**

2515-Pos Board B61
CHARACTERIZATION AND CONTROL OVER PROTEIN MULTIMERIZATION INDUCED BY PORPHYRINS. Samuel D. Fontaine

2516-Pos Board B62
PHOTO-CONTROL OF RAS FUNCTION USING PEPTIDE INHIBITOR MODIFIED WITH AZOBENZENE DERIVATIVE. **Nobuyuki Nishibe**, Kenichi Taii, Toshio Nagashima, Toshio Yamazaki, Kazunori Kondoh, Shinsaku Maruta

2517-Pos Board B63
IMPACT OF THE INTERNAL DISULFIDE BOND ON THE LIGAND MIGRATION IN GLOBIN X. **Ruipeng Lei**, Maria J. Santiago Estevez, Manuel Picon, Isa Sabir, Valerie Derrien, Sophie Bernad, Jaroslava Miksovska

2518-Pos Board B64
ANALYSIS OF THE LIFETIME OF THE FIMH CATCH BOND UNDER FORCE. **Laura A. Carlucci**, Wendy E. Thomas

2519-Pos Board B65
PREDICTION OF FREE ENERGY BY DOCKING SIMULATION USING INTER-FRAGMENT INTERACTION ENERGIES. **Hirofumi Fuji**, Norihito Kawashita

2520-Pos Board B66
INVISIBLE STATE OF MDMX AND DESIGN OF ITS INHIBITORS. **Xiyao Cheng**, Huili Liu, Yongqi Huang, Zhengding Su

2521-Pos Board B67
MULTISITE BINDING IN TWO AND THREE DIMENSIONS. **Irina V. Gopich**

2522-Pos Board B68
A NOVEL NANOBEAD-BASED SINGLE-MOLECULE PULL-DOWN FOR CELL POPULATIONS AND SINGLE CELLS. **Qirui Zhao**, Yusheng Shen, Fang Tian, Xiaofen LI, Levent YOBAS, Hyokeun Park, Pingbo Huang

2523-Pos Board B69
DRUGGING PROTEIN-PROTEIN INTERFACES OF A SUPRAMOLECULAR ASSEMBLY AS A MEANS TO OVERCOME RESISTANCE TO ACTIVE SITE THYMIDYLATE SYNTHASE INHIBITORS. **Tigran M. Abramyan**, Alexander Tropsha, Andrew L. Lee, Paul J. Sapienza

2524-Pos Board B70
BIOPHYSICAL CHARACTERIZATION OF THE BINDING OF HRSV M2-1 PROTEIN TO RNA AND SOLASODINE. **Vitor Brassolatti Machado**, Giovana Cavenaghi Guimarães, Marcelo Andrés Fossey, Ícaro Putinhon Caruso, Fatima Pereira de Souza

2525-Pos Board B71
CONSTRUCTING GPR6 HOMOLOGY MODEL, DOCKING STUDIES AND DRUG DESIGN. **Israa Isawi**, Paula Morales, Dow P. Hurst, Diane L. Lynch, Patricia H. Reggio

Protein Assemblies II (Boards B72 - B83)

2526-Pos Board B72
DIRECTED EVOLUTION OF STRUCTURAL PROTEINS USING A HIGH THROUGHPUT APPROACH. **Melik C. Demirel**

2527-Pos Board B73
COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS OF TRIM5ALPHA SELF-ASSEMBLY AND RESTRICTION OF HIV. **Alvin Yu**, Katarzyna Skorupka, Alexander Pak, Barbie K. Ganser-Pornillos, Owen Pornillos, Gregory A. Voth

2528-Pos Board B74
PROTEIN DOCKING REFINEMENT WITH SYSTEMATIC CONFORMATIONAL SEARCH - APPLICATION TO MODELS INSIDE THE DOCKING FUNNEL. **Taras Dauzhenka**, Ivan Anishchenko, Petras Kundrotas, Ilya Vakser

2529-Pos Board B75
DYNAMIC INTERROGATION OF A VIRAL DNA PACKAGING MOTOR COMPLEX. **Joshua Pajak**, Erik Dill, Mark A. White, Paul Jardine, Marc C. Morais, Gaurav Arya

2530-Pos Board B76
INTERFACEA: OPEN-SOURCE LIBRARY FOR PROTEIN INTERFACE ANALYSIS. **João Pedro Garcia Lopes Maia Rodrigues**, Michael Levitt

2531-Pos Board B77 Travel Awardee
BREAKING THE SYMMETRY OF PROTEIN ASSEMBLIES: STRUCTURAL FLEXIBILITY AS A *DE NOVO* DESIGN PRINCIPLE. **Alena Khmelinskaia**, Andrew J. Borst, Yang Hsia, Quinton Dowling, David Veesler, Neil P. King

2532-Pos Board B78
UNDERSTANDING SEPARATION OF TIME SCALES IN BACTERIAL PROTEASOME ASSEMBLY. **Pushpa Itagi**, Anupama Kante, Anjana Suppahia, Jeroen Roelfs, Eric J. Deeds

2533-Pos Board B79
EVALUATING SELF-ASSEMBLY PROPENSITY OF TETRA-PEPTIDE USING MD AND MACHINE LEARNING. **Yoichi Kurumida**, Keisuke Ikeda, Yusuke Nakamichi, Kaito Kobayashi, Yutaka Saito, Tomoshi Kameda

2534-Pos Board B80
ON NON-MONOTONIC DEPENDENCE OF PHASE SEPARATION PROPERTIES ON MOLECULAR INTERACTION PARAMETERS. **George M. Thurston**, Douglas L. Hayden, Giuseppe Foffi, David S. Ross, John F. Hamilton

2535-Pos Board B81
MODELING SYNTHESIZED PROTEIN MEGAMOLECULES: STRUCTURE, DYNAMICS, AND FUNCTIONS. **Peng He**, Josh Zuchniarz, Shengwang Zhou, Justin Modica, Sonali Dhindwal, Ying Li, Gregory A. Voth, Milan Mrksich, Vinayak P. Dravid, Benoit Roux

2536-Pos **Board B82**
A COMPUTATIONAL MODEL FOR UNDERSTANDING THE OLIGOMERIZATION MECHANISMS OF TNF RECEPTOR SUPERFAMILY. **Zhaoqian Su**, Yinghao Wu

2537-Pos **Board B83**
MICROSCOPIC CHARACTERIZATION OF HEPATITIS B VIRUS CAPSID DISASSEMBLY. **Zhaleh Ghaemi**, Martin Gruebele, Emad Tajkhorshid

Protein Dynamics and Allostery III (Boards B84 - B106)

2538-Pos **Board B84**
ALLOSTERIC REGULATION OF GLUTAMATE DEHYDROGENASE DEAMINATION ACTIVITY. **Soumen Bera**

2539-Pos **Board B85**
A CONSERVED LOCAL STRUCTURAL MOTIF CONTROLS THE KINETICS OF PTP1B CATALYSIS. **Christine Y. Yeh**, Jesus Izaguirre, Jack Greisman, Lindsay Willmore, Paul Maragakis, David E. Shaw

2540-Pos **Board B86**
SOLUTION NMR INVESTIGATION OF HIV-1 REPLICATION CYCLE. Bhargavi Ramaraju, **Lalit Deshmukh**

2541-Pos **Board B87**
ROLE OF PROTEIN DYNAMICS IN THE FUNCTION OF P38 KINASE AND PROTEIN TYROSINE PHOSPHATASE 1B. **Senthil Kumar Ganesan**, Michael W. Clarkson, Kristiane Torgeson Pelletier, Rebecca Page, Wolfgang Peti

2542-Pos **Board B88**
PARTIAL DISSOCIATION OF ANTIGENIC PEPTIDES FROM MHC I OR HOW TO DEAL WITH CONFLICTING RESULTS FROM DIFFERENT ENHANCED SAMPLING METHODS? **Sebastian Wingbermühle**, Lars V. Schäfer

2543-Pos **Board B89**
A SIX-STATE BINDING MODEL GIVES RISE TO DYNAMIC ACTIVITY AND ENERGY LANDSCAPES IN YEAST CHORISMATE MUTASE. **Scott D. Gorman**, Dennis S. Winston, Debashish Sahu, David D. Boehr

2544-Pos **Board B90**
REGULATION OF THE ACTIVITY OF BACTERIAL TYROSINE KINASES. **Fatlum Hajredini**, Andrea Piserchio, Rinat Abzalimov, Ranajeet Ghose

2545-Pos **Board B91**
UNVEILING THE PH-DEPENDENT DYNAMICS OF THE PREPORE-TO-PORE TRANSITION OF A TC TOXIN. **Svetlana Kucher**, Daniel Roderer, Tufa E. Assafa, Stefan Raunser, Enrica Bordignon

2546-Pos **Board B92**
THE ROLE OF BACKBONE AND SIDECHAIN DYNAMICS ON FIMH ALLOSTERY. **Jenny Liu**, Kerim Dansuk, Sinan Keten, Luis Amaral

2547-Pos **Board B93** **Travel Awardee**
AB-INITIO PREDICTION OF NMR SPIN-RELAXATION PARAMETERS FROM MD SIMULATIONS. **Po-Chia Chen**, Maggy Hologne, Olivier Walker, Janosch Hennig

2548-Pos **Board B94**
SILVER IONS CAUSED FASTER DIFFUSION OF H-NS PROTEINS IN LIVE *E. COLI* BY WEAKENING THE BINDING BETWEEN H-NS PROTEINS AND DNA. **Asmaa A. Sadoon**, Prabhat Khadka, Jack freeland, Ravi Gundampati, Rayan Mason, Mazon Ruiz, Suresh K. Thallapuranam, Jing Chen, Yong Wang

2549-Pos **Board B95**
STUDY OF SELF-ASSOCIATION OF HUMAN CSTF-64 RNA RECOGNITION MOTIF. **Elahe Masoumzadeh**, Michael Latham, Clinton MacDonald, Petar Grozdanov

2550-Pos **Board B96**
EPIDERMAL GROWTH FACTOR RECEPTOR KINASE EXON 19 DELETION MUTATIONS DISPLAY VARIABILITY IN ACTIVATION AND DRUG RESPONSIVENESS. **Benjamin P. Brown**

2551-Pos **Board B97**
THE STAPHYLOCOCCUS AUREUS ISDH RECEPTOR FORMS A DYNAMIC COMPLEX WITH HUMAN HEMOGLOBIN AND TRIGGERS HEME RELEASE VIA TWO DISTINCT HOT SPOTS. **Joseph A. Clayton**, Jeffery M. Wereszczynski

2552-Pos **Board B98**
WHAT TIME IS IT? RECONSTITUTING A CYANOBACTERIA CLOCK TO TIME THE GENE EXPRESSION IN VITRO. **Archana G. Chavan**, Joel Heisler, Yonggang Chang, Andy LiWang

2553-Pos **Board B99**
IS THE PROTEIN DYNAMICAL TRANSITION USEFUL? **Akansha Sharma**, Deepu K. George, Kimberly Crossen, Jeffrey McKinney, Cheryl Kerfeld, Andrea Markelz

2554-Pos **Board B100**
PERIODIC TABLE OF F-TYPE ATPASES. **John W. Vant**, Abhishek Singharoy

2555-Pos **Board B101**
RECEPTORS' MOSAICS AND ALLOSTERY FOR PHARMACOLOGY. Zeineb Si Chaib, Alessandro Marchetto, Klevia Dishnica, Paolo Carloni, Alejandro Giorgetti, **Giulia Rossetti**

2556-Pos **Board B102**
DYNAMIC DISEASE LANDSCAPE OF A CANCER DRIVING FUSION KINASE. **Phillip C. Aoto**, Susan S. Taylor

2557-Pos **Board B103** **Travel Awardee**
MECHANISM OF ALLOSTERIC INHIBITION OF *PLASMODIUM FALCIPARUM* CGMP-DEPENDENT PROTEIN KINASE. **Olivia Byun**, Katherine Van, Philipp Henning, Friedrich W. Herberg, Giuseppe Melacini

2558-Pos **Board B104**
STRUCTURAL BASIS FOR THE ROBUST SUBSTRATE PHOSPHORYLATION BY MAPK P38A UNDER THE STRESS-ASSOCIATED ATP-DECREASED, WEAKLY ACIDIC PH CONDITION ELUCIDATED BY SOLUTION NMR. **Yuji Tokunaga**, Koh Takeuchi, Hideo Takahashi, Ichio Shimada

2559-Pos **Board B105**
ALLOSTERY AND CONFORMATIONAL DYNAMICS IN TYROSINE KINASE REGULATION. William Marsiglia, Joseph Katigbak, Sijin Zheng, Moosa Mohammadi, Yingkai Zhang, **Nate Traaseth**

2560-Pos **Board B106**
SOLVENT MAPPING APPROACH FOR UNCOVERING CRYPTIC POCKETS IN MEMBRANE-BOUND PROTEINS. **Lorena Zuzic**, Jan K. Marzinek, Jim Warwicker, Peter J. Bond

Membrane Protein Structures II (Boards B107 - B124)

2561-Pos **Board B107**
PROTEIN-LIPID INTERACTIONS IN FORMATION OF VIRAL ENVELOPES. Natalia V. Kuzmina, Anna S. Loshkareva, Liudmila A. Shilova, Eleonora V. Shtykova, Denis G. Knyazev, Joshua Zimmerberg, **Oleg V. Batishchev**

2562-Pos **Board B108**
PHASE PLATE CRYO-EM STRUCTURE OF FORMYLPEPTIDE RECEPTOR 2 BOUND TO AN INHIBITORY G PROTEIN. **Gongpu Zhao**, Xing Meng

2563-Pos **Board B109**
INFLUENCE OF THE LIPID-PROTEIN INTERFACE ON MSCS MECHANOSENSITIVE CHANNEL GATING AT HIGH RESOLUTIONS. **Bharat Reddy**, Navid Bavi, Eduardo Perozo

2564-Pos Board B110
STRUCTURE AND DRUG RESISTANCE OF THE *PLASMODIUM FALCIPARUM* TRANSPORTER PFCRT. **Jonathan Kim**, Yong Zi Tan, Kathryn J. Wicht, Satchal K. Erramilli, Satish K. Dhingra, John Okombo, Jeremie P. Vendome, Laura M. Hagenah, Sabrina I. Giacometti, Clinton S. Potter, Bridget Carragher, Anthony A. Kossiakoff, Matthias Quick, David A. Fidock, Filippo Mancia

2565-Pos Board B111
EXPRESSION AND PURIFICATION OF A MAMMALIAN TRPV4 FOR FUNCTIONAL AND STRUCTURAL ANALYSES. **Efren Garcia-Maldonado**, Francisco J. Sierra Valdez, Valeria Vasquez, Julio F. Cordero-Morales

2566-Pos Board B112
THE OPEN AND CLOSED STRUCTURE OF A BARIUM-BLOCKED POTASSIUM CHANNEL. **Ahmed Rohaim**, LiDong Gong, Jing Li, Lydia Blachowicz, Benoit Roux

2567-Pos Board B113
MOLECULAR DYNAMICS SIMULATIONS OF THE A_{2A} G-PROTEIN COUPLED RECEPTOR. **Liam I. Haas-Neill**, Sarah Rauscher

2568-Pos Board B114
MAMMALIAN STEAROYL-COA DESATURASE FORMS A STABLE TERNARY COMPLEX WITH CYTOCHROME B_5 AND CYTOCHROME B_5 REDUCTASE. **Jiemin Shen**, Gang Wu, Ah-Lim Tsai, Ming Zhou

2569-Pos Board B115
MODELLING OF ION AND WATER PERMEATION IN THE OUTWARD FACING CONFORMATION OF HUMAN ANION EXCHANGER 1. **Hristina R. Zhekova**, Jiansen Jiang, Hong Zhou, Alexander Pushkin, Sergei Y. Noskov, Ira Kurtz

2570-Pos Board B116
HIGH-RESOLUTION ARCHITECTURE OF BACTERIAL OUTER MEMBRANE PORIN LAMB. **Tae Gyun Kim**, Jaekyung Hyun, Euikyung Yu, Matthias Wolf

2571-Pos Board B117
INVESTIGATING THE STRUCTURAL TOPOLOGY OF PINHOLIN INCORPORATED INTO ALIGNED LIPID BILAYERS. **Rasal H. Khan**, Tanbir Ahammad, Robert M. McCarrick, Gary A. Lorigan

2572-Pos Board B118
EFFECT OF CHOLESTEROL ON THE STRUCTURAL DYNAMICS OF METABOTROPIC GLUTAMATE RECEPTOR ($MGLUR_1$): A MOLECULAR DYNAMICS STUDY. **Ugochi Isu**, Seyed Hamid Tabari, Vivek Govind Kumar, Mahmoud Moradi

2573-Pos Board B119
STRUCTURAL INSIGHT OF THE COMPLEX OF TREM2 AND DAP12 IN MEMBRANE BILAYER. **Younghee Park**, Charles R. Sanders, Jens Meiler

2574-Pos Board B120
BIOCHEMICAL AND STRUCTURAL CHARACTERIZATION OF ENZYMES RESPONSIBLE OF POLYMYXIN RESISTANCE IN GRAM-NEGATIVE BACTERIA. **Daniel Munoz**, Marcelo C. Sousa

2575-Pos Board B121
ENTROPY PRODUCTION IN PROTEIN AGGREGATION.
Salvatore Capotosto, Bailey Smoot, Yelena Nemchen, Randal Hallford, Preet Sharma

2576-Pos Board B122
PODOCIN REGULATES THE NEPHRIN-NEPHRIN DISTANCE IN THE GLOMERULAR PORE. **Gusztav Schay**, Violetta Antal, Máté Kétszeri, Katalin Csókay, Miklós S. Kellermayer, Dóra Karancsiné Menyhárd, Kálmán Tory

2577-Pos Board B123
STRUCTURAL INSIGHT INTO VACUOLAR ABC TRANSPORTER MLT1 OF *CANDIDA ALBICANS*. **Nitesh K. Khandelwal**, Tarjani M. Thaker, Thomas M. Tomasiak

2578-Pos Board B124
STRUCTURE AND CATALYTIC MECHANISM OF HUMAN DIACYLGLYCEROL O-ACYLTRANSFERASE 1. **Lie Wang**, Hongwu Qian, Yin Nian, Yimo Han, Zhenning Ren, Hanzhi Zhang, Liya Hu, B V Venkatar Prasad, Nieng Yan, Ming Zhou

Membrane Protein Dynamics III (Boards B125 - B144)

2579-Pos Board B125
MODULATION OF 5-HT1A G PROTEIN COUPLED RECEPTOR MOVEMENT AND INTERNALIZATION. **Austin M. Baggetta**, Xavier Michalet, Leigh D. Plant

2580-Pos Board B126
SIMULATIONS OF ACTIVE TRANSPORT ACROSS THE BLOOD-BRAIN BARRIER. **Christian Jorgensen**, Martin Ulmschneider, Peter C. Searson

2581-Pos Board B127
EVIDENCE FOR DIRECT MEMBRANE INTERACTION AND CHOLESTEROL SENSING OF A-LOOP IN ABC TRANSPORTER ABCG2. **Ali Rasouli**, Karan Kapoor, Po-Chao Wen, Emad Tajkhorshid

2582-Pos Board B128
G-PROTEIN-COUPLED RECEPTORS ARE SOLVENT-SWOLLEN IN THE FUNCTIONALLY ACTIVE STATE. **Steven D. Fried**, Anna R. Eitel, Nipuna Weerasinghe, Gabrielle I. Fitzwater, Johnathan D. Somers, Udeep Chawla, Michael C. Pitman, Blake Mertz, Andrey V. Struts, Suchithranga M. Perera, Michael F. Brown

2583-Pos Board B129
UNRAVELING THE MECHANISM OF THE MFS MULTIDRUG TRANSPORTER USING STEERED MOLECULAR DYNAMICS. **Ruhar Singh**, Atanu Banerjee, Amresh Prakash, Andrew M. Lynn

2584-Pos Board B130
ELECTROSTATIC MEMBRANE INTERACTION OF SYNAPTOTAGMIN-LIKE PROTEIN 4: SIMULATIONS OF MUTANT C2A DOMAINS. **Mikias Negussie**, Sherleen Tran, Nara L. Chon, Julianna Oviedo, Aml Alnaas, Jefferson Knight, Hai Lin

2585-Pos Board B131
USING MOLECULAR DYNAMICS SIMULATIONS TO PREDICT SPECTRAL PEAK SENSITIVITIES OF THE BACTERIORHODOPSIN PHOTOCYCLE.
Kyle Billings, Blake Mertz

2586-Pos Board B132
MOLECULAR INSIGHTS INTO THE ACTIVITY AND STRUCTURAL IMPACTS OF ENZYMES ACROSS THE DYNAMIC PH ENVIRONMENT IN SEA SPRAY AEROSOLS. **Nicholas A. Wauer**, Abigail C. Dommer, Rommie E. Amaro

2587-Pos Board B133
CONFORMATIONAL DYNAMICS OF MULTIDRUG RESISTANCE PROTEIN 1 DURING ACTIVE TRANSPORT. **Ling Wang**, Zachary L. Johnson, Michael R. Wasserman, Jesper Levring, Jue Chen, Shixin Liu

2588-Pos Board B134
DYNAMICS OF THE HUMAN Y1-RECEPTOR IN THE INACTIVE AND APO STATES INVESTIGATED BY SOLID-STATE NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY AND MOLECULAR DYNAMICS SIMULATIONS.
Alexander Vogel, Hossein Batebi, Johanna K. Tiemann, Marcel Gauglitz, Mathias Bosse, Daniel Huster, Peter W. Hildebrand

2589-Pos Board B135
PROBING THE DYNAMIC ASPECTS OF ACRB FUNCTION THROUGH DISULFIDE BOND FORMATION. **Prasangi Rajapaksha**, Yinan Wei

2590-Pos Board B136
PREDICTING THE pK_A SHIFT OF ACIDIC RESIDUES IN THE CALCIUM-BINDING SITES OF SERCA USING ALCHEMICAL FREE-ENERGY CALCULATIONS. **Rodrigo Aguayo-Ortiz**, Laura Dominguez, L. Michel Espinoza-Fonseca

2591-Pos Board B137
VISUALIZING SINGLE MOLECULE DYNAMICS OF SYNTAXIN SIMULTANEOUS WITH CLUSTERS USING DYE LABELED NANOBODIES. **Alan Weisgerber**

2592-Pos Board B138
IMMUNE CELL TRIGGERING BY SPATIAL SEGREGATION STUDIED USING STOCHASTIC RARE EVENT SIMULATION. **Robert Taylor**, Jun F. Allard, Elizabeth Read

2593-Pos Board B139
USING FLUORESCENCE MICROSCOPY TO CHARACTERIZE THE ROLE OF MECHANOSENSATION IN CELL DIVISION. **Allen Lu**, Seongjin Park, Bharat Reddy, Jingyi Fei, Eduardo Perozo

2594-Pos Board B140
3D DSTORM IMAGING REVEALS CAMKII-DEPENDENT DISPERSAL OF RYANODINE RECEPTOR CLUSTERS IN FAILING RAT CARDIOMYOCYTES. **Xin Shen**, Terje R. Kolstad, Jonas van den Brink, Michael Frisk, Yufeng Hou, Einar Norden, Andrew G. Edwards, Ivar Sjaastad, Christian Soeller, William E. Louch

2595-Pos Board B141
A COMPARISON OF IN VIVO AND IN VITRO BAMA BARREL SEAM DYNAMICS. **Matthew A. Brown**

2596-Pos Board B142
INFLUENCE OF PRESENILIN H1-H2 LINKER MUTATIONS ON THE APP PROCESSING BY GAMMA-SECRETASE. **Michal M. Olewniczak**, Lukasz Nierzwicki, Jacek Czub

2597-Pos Board B143
DYNAMIN PH DOMAIN INTERACTIONS WITH PHOSPHATIDYLINOSITOL LIPIDS IN MEMBRANE. **Joseph A. Marte**, Dalia M. Hassan, Frank X. Vázquez

2598-Pos Board B144 Travel Awardee
ALUMINIUM INTERACTS DIFFERENTLY WITH LIPID BILAYERS AND MODULATES THE PLASMA MEMBRANE CALCIUM ATPASE (PMCA) ACTIVITY. **Marilina de Sautu**, Gustavo Scanavachi, Mariela Soledad Ferreira-Gomes, Juan Pablo F. Rossi, Rosangela Itri, Irene C. Mangialavori

Enzyme Function, Cofactors, and Post-translational Modifications (Boards B145 - B170)

2599-Pos Board B145
ACTIVITY AND SUBSTRATE SPECIFICITY OF FACTOR XIII RESULTING FROM DIFFERENT ACTIVATION PATHWAYS. **Rameesa Darul Amne Syed Mohammed**, Heli Butala, Muriel Maurer

2600-Pos Board B146
SOLUTION STRUCTURE STUDIES OF ESS1 INTERACTIONS WITH THE RNAPII CTD SUGGEST A DUAL BINDING MECHANISM THAT DIFFERS FROM THAT OF HUMAN PIN1. **Tongyin Zheng**, Kevin Namitz, Ashley Canning, Nilda Alicea-Velazquez, Carlos A. Castaneda, Micheal S. Cosgrove, Steven D. Hanes

2601-Pos Board B147
BIOPHYSICAL INVESTIGATION OF THE FUNCTION OF ENZYME 3DL1. **Ali A. Khan**, Michael Kirsch, Julia R. Koeppe

2602-Pos Board B148 Travel Awardee
LIGAND BINDING STUDIES OF A TRIMETHOPRIM-RESISTANT DIHYDROFOLATE REDUCTASE BY FLUORINE NMR. **Gabriel J. Fuente Gomez**, Michael Duff, Elizabeth Howell

2603-Pos Board B149
THE DISSOCIATION MECHANISM OF THE PROCESSIVE CELLULASE *TR*CE-L7A. **Josh V. Vermaas**, Riin Kont, Gregg T. Beckham, Michael F. Crowley, Mikael Gudmundsson, Mats Sandgren, Jerry Ståhlberg, Priit Väljamäe, Brandon C. Knott

2604-Pos Board B150
EFFECT OF BINDING SITE MUTATIONS IN FIBRINOGEN AC (233-425) ON FXIII SUBSTRATE SPECIFICITY. **Francis Dean O. Ablan**, Nicholas M. McCann, Mohammed M. Hindi, Muriel C. Maurer

2605-Pos Board B151
EFFECT OF CARGO IDENTITY ON ACYL CARRIER PROTEIN STRUCTURE. **Terra Sztain-Pedone**, Michael D. Burkart, James A. McCammon

2606-Pos Board B152
ENZYME ACTIVATION MECHANISM OF COCOONASE. **Mai Takegawa**, Tsubasa Tagawa, Ayumi Ogata, Shigeru Shimamoto, Yuji Hidaka

2607-Pos Board B153
STRUCTURAL AND FUNCTIONAL STUDIES OF HUMAN TYPE II TOPOISOMERASES AND THEIR POST-TRANSLATIONAL MODIFICATIONS. **Christophe Lotz**, Claire Bedez, Claire Batisse, Arnaud Vanden Broeck, Robert Drillien, Marc Ruff, Valérie Lamour

2608-Pos Board B154
USING HIGH ORDER COEVOLUTION CORRELATIONS TO IDENTIFY SITES FOR COMPENSATING MUTATIONS TO RESCUE FUNCTION. **Kejue Jia**, Nikita Chopra, Amy H. Andreotti, Robert L. Jernigan

2609-Pos Board B155
PURIFICATION AND KINETIC CHARACTERIZATION OF PROTEIN TYROSINE PHOSPHATASE 1B (1-393). **Kyle M. Jones**, Erik Zavala, J. Patrick Loria

2610-Pos Board B156
ALLOSTERIC REGULATION OF GLUTAMATE DEHYDROGENASE. **Zoe A. Hoffpauir**, Eleena Sherman, Hong Q. Smith, Thomas J. Smith

2611-Pos Board B157
RCAN1 AND ITS ROLE IN DOWN SYNDROME VIA ITS REGULATION OF CALCINEURIN. **Yang Li**

2612-Pos Board B158
THERMODYNAMIC PROFILES OF PHOSPHOPROTEINS SUGGEST A GENERAL FUNDAMENTAL ROLE FOR SERINE/THREONINE PHOSPHORYLATION SITES WITH +1 PROLINE (S/T-P) IN EUKARYOTES. **Min Hyung Cho**, Vincent J. Hilser, James Taylor

2613-Pos Board B159
ENZYME FUNCTION PREDICTION USING DEEP LEARNING. **Safyan Aman Memon**, Kinaan Aamir Khan, Hammad Naveed

2614-Pos Board B160
EFFECT OF TYR116 IN MYCOBACTERIAL 3-KETOSTEROID-Δ^1-DEHYDROGENASE ON ITS SUBSTRATE SPECIFICITY. **Shikui Song**, Xin Li, Tian Chen, Cheryl X. Y. Cheng, Zhengkun Kuang, Yongqi Huang, Zhengding Su

2615-Pos Board B161
SIROHEME SYNTHASE ORIENTS SUBSTRATES FOR DEHYDROGENASE AND CHELATASE ACTIVITES IN A SINGLE ACTIVE SITE. **Elizabeth Stroupe**, Joseph M. Pennington

2616-Pos Board B162
A COMPUTATIONAL STUDY OF THE ROLE OF THE E3 LIGASE IN THE UBIQUITINATION REACTION. **Jay-Anne K. Johnson**

2617-Pos Board B163
A COMPUTATIONAL STUDY OF THE EFFECT OF PROTONATION STATES ON THE N79D MUTATION IN UBC13. **Robert W. Gardner**

2618-Pos Board B164
CHARACTERZING THE AUXILIARY NUCLEOTIDE BINDING SITES IN RECBCD DNA HELICASE, TOWARDS DECIPHERING THEIR FUNCTIONAL ROLE. **Sivasubramanyan Mangapuram Venkata**, Rani Zananiri, Vera Gaydar, Oded Kleifeld, Ariel Kaplan, Arnon Henn

2619-Pos Board B165
MECHANISM OF DEGRADATION OF HISTATIN 5 PEPTIDE BY SECRETED ASPARTIC PROTEASES (SAPS) OF *C. ALBICANS*. **Mahdi Ghorbani**, Jeffery B. Klauda, Bernard R. Brooks

2620-Pos Board B166
REAL-TIME MEASUREMENT OF PHOSPHATASE ACTIVITY DURING PROTEOLYTIC DIGESTION BY LYSYL ENDOPEPTIDASE USING HIGH PRESSURE OPTICAL SPECTROSCOPY. **Gary B. Smejkal**, Vera Gross, Nicole Cutri, Alexander Lazarev

2621-Pos Board B167
WATER AS AN ESSENTIAL COFACTOR FOR ALL ENZYMES. **Pedro L. Muino**, Patrik R. Callis

2622-Pos Board B168
A HIGH-THROUGHPUT ASSAY PLATFORM FOR NEXT-GENERATION MECHANISTIC ENZYMOLOGY AND APPLICATIONS. **Craig J. Markin**, Daniel A. Mokhtari, Fanny Sunden, Mason J. Appel, Dan M. Herschlag, Polly Fordyce

2623-Pos Board B169 Travel Awardee
IMPAIRED AUTOINHIBITION OF PROTEIN KINASE CΓ IN SPINOCEREBELLAR ATAXIA TYPE 14. **Caila A. Pilo**, Maya T. Kunkel, An-Angela N. Van, Evan K. Kobori, Alexandr P. Kornev, Cheryl Longman, George Gorrie, Susan S. Taylor, Alexandra C. Newton

2624-Pos Board B170
DISTAL RESIDUES AND ENZYME ACTIVITY: IMPLICATIONS FOR PERSONALIZED MEDICINE. Lisa Ngu, Jenifer N. Winters, Lee Makowski, Penny J. Beuning, **Mary Jo Ondrechen**

Intrinsically Disordered Proteins (IDP) and Aggregates IV (Boards B171 - B196)

2625-Pos Board B171
MEMBRANE ASSOCIATION OF THE INTRINSICALLY DISORDERED N-TERMINAL REGION OF CHIZ. **Alan Hicks**, Cristian A. Escobar, Timothy A. Cross, Huan-Xiang Zhou

2626-Pos Board B172
UNCOVERING THE STRUCTURAL BASIS FOR THE MECHANICAL PROPERTIES OF ELASTIN. **Lamia Hossain**, Ananya Srivastava, Quang Huynh, Régis Pomès

2627-Pos Board B173
INTRINSICALLY UNFOLDED ALPHA-C REGION OF FIBRINOGEN IS MAJOR CONTRIBUTOR TO MECHANICAL STRENGTH OF FIBRIN FIBERS. Ali Daraei, Taylor C. Dement, Nathan E. Hudson, **Martin Guthold**

2628-Pos Board B174
DYNAMICS IN NATURAL AND DESIGNED ELASTINS AND THEIR RELATION TO ELASTIC FIBER STRUCTURE AND RECOIL. Ma. Faye Charmagne Carvajal, Jonathan Preston, Nour Jamhawi, Christo Vairamon, Dernae Rowe, Joel Bresland, James Aramini, Thomas Michael Sabo, Richard Wittebort, **Ronald Koder**

2629-Pos Board B175
MAP OF GENETICALLY CONSTRAINED REGIONS IN HUMAN INTRINSICALLY DISORDERED PROTEINS. Zaara Rifat, Shehab Ahmed, Arthur J. Campbell, A. Keith Dunker, Sohel Rahman, **Sumaiya Iqbal**

2630-Pos Board B176
DESTABILIZING BETA SHEET PEPTIDES FROM THE HYDROPHOBIC CORE OF ALPHA SYNUCLEIN. **Sarah A. Petty**, Michael J. Calceterra, Matthew W. Fernandez, Christopher G. Fernandez, Sophia A. Von Fedak

2631-Pos Board B177
MICROSCOPIC MODEL OF A BIOLOGICAL CONDENSATE. **Swan Htun**, Kumar Sarthak, Han-Yi Chou

2632-Pos Board B178
STUDYING RNA MODULATED PROTEIN LIQUID-LIQUID PHASE SEPARATION USING COARSE-GRAINED MODELS. **Roshan M Regy**, Gregory L. Dignon, Youngchan Kim, Jeetain Mittal

2633-Pos Board B179
ALPHA-SYNUCLEIN MODULATES STIMULATED EXOCYTOSIS AND BINDS TO MITOCHONDRIA WITH FUNCTIONAL CONSEQUENCES. **Meraj Ramezani**, Tapojyoti Das, David A. Holowka, David Eliezer, Barbara A. Baird

2634-Pos Board B180
COMPUTATIONAL CHARACHTERIZATION OF FUS DISASSEMBLY BY KAPB2. **Genevieve Kunkel**

2635-Pos Board B181
FORCE FIELD REFINEMENT BASED ON HIGH RESOLUTION PROTEIN STRUCTURES. **Robert Best**

2636-Pos Board B182
BASIN MAPPING METHOD FOR EXTRACTING COMPARATIVE ASSESSMENTS OF PROTEIN PHASE BEHAVIOR FROM *IN VIVO* MEASUREMENTS. **Jared M. Lalmansingh**, Ammon E. Posey, Tejbir Kandola, Randal Halfmann, Rohit V. Pappu

2637-Pos Board B183
DESTABILIZATION AND RESISTING GROWTH OF ALPHA-SYNUCLEIN FIBRIL BY SYNUCLEAN-D. **Soumyo Sen**, Emad Tajkhorshid

2638-Pos Board B184
ROLE OF INTERACTION MODULARITY IN GOVERNING PHASE BEHAVIOR, STRUCTURE AND DYNAMICS OF TERNARY PROTEIN-RNA CONDENSATES. **Taranpreet Kaur**, Priya R. Banerjee

2639-Pos Board B185
STRUCTURAL STUDIES OF AMYLOIDOGENIC PEPTIDES WITH CATIONIC GEMINI IMIDAZOLIUM SURFACTANTS. **Julia Ludwiczak**, Maciej Kozak, Aneta Szymanska, Kosma Szutkowski, Michalina M. Wilkowska

2640-Pos Board B186
NPM1 EXHIBITS STRUCTURAL AND DYNAMIC HETEROGENEITY UPON PHASE SEPARATION WITH THE TUMOR SUPPRESSOR ARF. **Eric B. Gibbs**, Barbara Perrone, Aila Hassan, Rainer Kümmerle, Richard Kriwacki

2641-Pos Board B187 Travel Awardee
ALPHA-SYNUCLEIN DETECTS AND PREFERENTIALLY BINDS TO OSMOTICALLY TENSE SYNAPTIC VESICLE-LIKE MEMBRANES. **Peter J. Chung**

2642-Pos Board B188
ENERGETICS OF Π-Π INTERACTIONS IMPLICATED IN LIQUID-LIQUID PHASE SEPARATION. **Andrea Guljas**, Robert M. Vernon, Julie D. Forman-Kay, Régis Pomès

2643-Pos Board B189
HEURISTICS FOR THE EFFECTS OF SEQUENCE AND CONFORMATIONAL CONTEXTS ON PK_A VALUES OF IONIZABLE RESIDUES INFERRED FROM *Q*-CANONICAL MONTE CARLO SIMULATIONS. **Martin J. Fossat**, Ammon E. Posey, Rohit V. Pappu

2644-Pos **Board B190**
A TAIL OF NIGHT OWLS: THE MAMMALIAN CRY1 C-TERMINAL TAIL CONTROLS CIRCADIAN TIMING BY REGULATING ITS ASSOCIATION TO CLOCK:BMAL1. **Gian Carlo G. Parico**

2645-Pos **Board B191**
AGGREGATION STATE OF HUNTINGTIN REGULATES ITS INTERACTION WITH LIPID MEMBRANES. **Faezeh Sedighi**, Adewale Adegbuyiro, Justin A. Legleiter

2646-Pos **Board B192** **Travel Awardee**
THE STRUCTURAL BASIS OF OPPOSING FUNCTIONS OF ALPHA-SYNUCLEIN IN VESICLE EXOCYTOSIS. **Tapojyoti Das**, Meraj Ramezani, David A. Holowka, Barbara A. Baird, David Eliezer

2647-Pos **Board B193**
QUANTIFYING THE EFFECTS OF CHARGE REGULATION ON DISORDER-ORDER TRANSITIONS OF HIGHLY CHARGED PROTEIN SEQUENCES. **Ammon E. Posey**, Martin J. Fossat, Rohit V. Pappu

2648-Pos **Board B194**
INTERNAL DYNAMICS OF THE MEASLES VIRUS N_{TAIL} PROTEIN BY PHOTO-INDUCED ELECTRON TRANSFER EXPERIMENTS AND MOLECULAR SIMULATIONS. **John Kunkel**, Gerdenis Kodis, Priscila Sutto-Ortiz, Christophe Bignon, Nina Jovic, Jeetain Mittal, Sonia Longhi, Sara M. Vaiana

2649-Pos **Board B195**
MODELING LIQUID-LIQUID PHASE SEPARATIONS OF INTRINSICALLY DISORDERED PROTEINS ON THE MICROMETER-SCALE. Viren Pattni, Sara M. Vaiana, Giovanna Ghirlanda, **Matthias Heyden**

2650-Pos **Board B196**
PROTEOLYTIC FRAGMENTS OF TAU PRODUCE SEEDING-COMPETENT FIBRILS. **Michael Vigers**, Songi Han

Transcription (Boards B197 - B217)

2651-Pos **Board B197**
THE ROLE OF TRANSCRIPTION FACTOR - DNA RESIDENCE TIME IN TRANSCRIPTION. **Achim P. Popp**, Karen Clauss, Lena Schulze, Johannes Hettich, Matthias Reisser, Christof J. Gebhardt

2652-Pos **Board B198**
DISCRIMINATOR EFFECTS ON OPEN COMPLEX FORMATION, STABILIZATION, AND TRANSCRIPTION INITIATION. **Hao-Che Wang**

2653-Pos **Board B199**
LONG-DISTANCE COOPERATIVE AND ANTAGONISTIC RNA POLYMERASE DYNAMICS VIA DNA SUPERCOILING. **Sangjin Kim**

2654-Pos **Board B200**
EFFECT OF ENGINEERED PHAGE PROTEINS ON THE TRANSCRIPTION BY SIGMA70-ASSOCIATED HOST RNA POLYMERASE. **Vikas Jain**

2655-Pos **Board B201** **Travel Awardee**
SINGLE-MOLECULE NAVIGATION OF THE NUCLEOSOMAL TRANSCRIPTION LANDSCAPE. **Zhijie Chen**, Ronen Gabizon, Tingting Yao, Carlos Bustamante

2656-Pos **Board B202**
SINGLE-MOLECULE STUDY REVEALS THE CONFORMATIONAL DYNAMICS DURING INITIATION-ELONGATION TRANSITION IN MITOCHONDRIAL TRANSCRIPTION. **Seung-Won Lee**, Byeong-Kwon Sohn, Urmimala Basu, Hayoon Cho, Jiayu Shen, Aishwarya Deshpande, Smita S. Patel, Hajin Kim

2657-Pos **Board B203**
FORCE AND GREA MODULATE TRANSCRIPTIONAL PAUSES AT ELONGATIONAL OBSTACLES. **Jin Qian**, Wenxuan Xu, Yan Yan, Irina Artsimovitch, David Dunlap, Laura Finzi

2658-Pos **Board B204**
MONOVALENT SALT DEPENDENCE OF THE BACTERIAL RNA POLYMERASE OPEN COMPLEX DYNAMICS. Subhas C. Bera, Mona Seifert, Eugeniu Ostrofet, Monika Spermann, Flavia Stal Papini, Anssi M. Malinen, **David Dulin**

2659-Pos **Board B205**
DYNAMIC CROWDING REGULATES TRANSCRIPTION. **Anne Shim**, Rikkert J. Nap, Kai Huang, Luay M. Almassalha, Hiroyuki Matsuda, Hiroaki Matsuda, Vadim Backman, Igal Szleifer

2660-Pos **Board B206**
DECIPHERING KINETICS OF RNA POLYMERASE I MULTI-NUCLEOTIDE TRANSCRIPTION. **Zachariah Ingram**, David A. Schneider, Aaron L. Lucius

2661-Pos **Board B207**
A UNIFYING MECHANISTIC MODEL OF BACTERIAL TRANSCRIPTION WITH THREE INTERCONNECTED PAUSE STATES AND NON-DIFFUSIVE BACKTRACK RECOVERY. **Richard Janissen**, Behrouz Eslami-Mossallam, Irina Artsimovitch, Martin Depken, Nynke H. Dekker

2662-Pos **Board B208**
KINETIC REGULATION OF TRANSCRIPT FLUX RATIOS. **Eric A. Galburt**

2663-Pos **Board B209**
RNA POLYMERASE DYNAMICS AND OTHER SINGLE-MOLECULE CONTINUOUS TIME PROBLEMS. **Zeliha Kilic**, Ioannis Sgouralis, Steve Pressé

2664-Pos **Board B210**
FREQUENCY SPECTRUM OF CHEMICAL FLUCTUATION: A PROBE OF REACTION MECHANISM AND DYNAMICS. **Sanggeun Song**, Gil-Suk Yang, Seong Jun Park, Sungguan Hong, Ji-Hyun Kim, Jaeyoung Sung

2665-Pos **Board B211**
INTERACTION BETWEEN TRANSCRIPTION AND TRANSLATION MACHINERIES ON A NASCENT RNA WITH HIGHER ORDER STRUCTURE. **Surajit Chatterjee**, Adrien Chauvier, Nils G. Walter

2666-Pos **Board B212**
ENHANCER RNA TRANSCRIPTION DYNAMICS IN SINGLE CELLS. **Gable M. Wadsworth**, Joseph Rodriguez

2667-Pos **Board B213**
USING MULTI-FOCUS MICROSCOPY TO CAPTURE TRANSCRIPTIONAL DYNAMICS AT THE SECOND TIMESCALE. **Robert I. Shelansky**, Hinrich Boeger, Sara Abrahamson

2668-Pos **Board B214**
SINGLE-MOLECULE NANOSCOPY OF RNA POLYMERASE II, POL II COFACTORS, CHROMATIN REGULATORS AND GENOME ORGANIZATION IN LIVE CELLS. **Alexandros Pertsinidis**

2669-Pos **Board B215**
REAL-TIME IMAGING OF TRANSCRIPTION AND TRANSPORT OF SINGLE ARC MRNA IN LIVE NEURONS. **Hyungseok C. Moon**, Sulagna Das, Robert H. Singer, Hye Yoon Park

2670-Pos **Board B216**
THE MOLECULAR BIOPHYSICS OF ADAPTATION. **Griffin Chure**, Rob Phillips

2671-Pos **Board B217**
SINGLE-MOLECULE TRACKING OF TRANSCRIPTIONAL AND TRANSLATIONAL MACHINERY IN STATIONARY PHASE *E.COLI*. **Yanyu Zhu**, Mainak Mustafi, James C. Weisshaar

Ribosomes and Translation (Boards B218 - B231)

2672-Pos Board B218
KINETIC VARIABILITY AT THE 5' UTR OF BACTERIAL MRNA LEADS TO NARROW DYNAMIC RANGE AND HIGH SENSITIVITY IN 30S RIBOSOME BINDING. **Shiba S. Dandpat**, Sujay Ray, Surajit Chatterjee, Nils G. Walter

2673-Pos Board B219
DISSECTING STRUCTURE, FUNCTION AND DYNAMICS OF MOLECULAR MACHINES BY SINGLE-MOLECULE FRET MICROSCOPY: TRANSLATION INITIATION IS REGULATED THROUGH MODULATION OF THE CONFORMATIONAL DYNAMICS OF THE DEAD-BOX PROTEIN EIF4A. Alexandra Z. Andreou, Ulf Harms, Linda Krause, **Dagmar Klostermeier**

2674-Pos Board B220
A MAXIMUM ENTROPY MODEL FOR TRNA ABUNDANCES INITIATING PROTEIN SYNTHESIS. **Rebecca J. Rousseau**, William Bialek

2675-Pos Board B221
MODULATION AND VISUAL DETECTION OF CROSSLINKED EF-G DURING TRANSLOCATION. **Yuhong Wang**, HENG YIN, Shoujun Xu

2676-Pos Board B222
KINETICS AND THERMODYNAMICS OF -1 RIBOSOMAL FRAMESHIFTING. **Lars V. Bock**, Neva Caliskan, Bee-Zen Peng, Natalia Korniy, Riccardo Belardinelli, Frank Peske, Marina V. Rodnina, Helmut Grubmueller

2677-Pos Board B223
SINGLE-MOLECULE AND ENSEMBLE ANALYSIS OF PROTEIN-MEDIATED FRAMESHIFTING. **Neva Caliskan**

2678-Pos Board B224
SINGLE-MOLECULE APPROACHES TO STUDY FRAMESHIFTING MECHANISMS AND EFFICIENCY. **Lukas Pekarek**, Matthias Zimmer, Anuja Kibe, Neva Caliskan

2679-Pos Board B225
ERROR-SPEED CORRELATIONS IN BIOPOLYMER SYNTHESIS. **Davide Chiuchiu**, Yuhai Tu, Simone Pigolotti

2680-Pos Board B226
TRNA DISSOCIATION FROM EF-TU AFTER GTP HYDROLISIS - PRIMARY STEPS AND ANTIBIOTIC INHIBITION. Malte Warias, **Helmut Grubmueller**, Lars V. Bock

2681-Pos Board B227
MORPHOLOGICALLY DISCRETE ER SUBDOMAINS SUPPORT THE SYNTHESIS OF DIFFERENT TYPES OF PROTEIN. **Heejun Choi**, Ya-Cheng Liao, Young J. Yoon, Jonathan Grimm, Luke D. Lavis, Robert H. Singer, Jennifer Lippincott-Schwartz

2682-Pos Board B228
COMPUTATIONAL DESIGN AND INTERPRETATION OF SINGLE-RNA TRANSLATION EXPERIMENTS. **Luis U. Aguilera**, Kenneth Lyon, William Raymond, Tatsuya Morisaki, Timothy J. Stasevich, Brian Munsky

2683-Pos Board B229
USING SIMULATIONS TO IDENTIFY PRECISE SINGLE-MOLECULE PROBES FOR RIBOSOME DYNAMICS. **Asem H. Hassan**, Paul C. Whitford

2684-Pos Board B230
OPTIMIZING RECOMBINANT PROTEIN EXPRESSION WITH SYNONYMOUS CODONS. Daniel Wong, Kam-Ho Wong, Gregory Boël, John F. Hunt, **Daniel P. Aalberts**

2685-Pos Board B231
EXPANDING MASS SPECTROMETRY TOOLBOX FOR RNA MODIFICATION PROFILING. **Anna Popova**, Luigi D'Ascenzo, James R. Williamson

Chromatin and the Nucleoid II (Boards B232 - B247)

2686-Pos Board B232
INFLUENCE OF MICROPILLAR INDUCED DEFORMATION ON CHROMATIN ARCHITECTURE IN REGULATING STEM CELL DIFFERENTIATION. **Vasundhara Agrawal**, Xinlong Wang, Guillermo Ameer, Vadim Backman

2687-Pos Board B233
CHROMATIN FOLDING COORDINATE AND LANDSCAPE UNRAVELED BY DEEP LEARNING ANALYSIS OF SINGLE-CELL IMAGING DATA. **Wenjun Xie**, Yifeng Qi, Bin Zhang

2688-Pos Board B234
MESOSCALE PHASE SEPARATION OF CHROMATIN IN THE NUCLEUS. Gaurav Bajpai, Daria A. Pavlov, Dana Lorber, Talila Volk, **Samuel Safran**

2689-Pos Board B235
INFERRING RADIAL ORGANIZATION OF CHROMOSOMAL TERRITORIES FROM HI-C DATA. **Priyojit Das**, Jacob T. Sanders, Tongye Shen, Rachel P. McCord

2690-Pos Board B236
LANDSCAPE OF MULTIVALENT CHROMATIN INTERACTIONS IN TRANSCRIPTIONALLY ACTIVE LOCI. Alan Perez-Rathke, Qiu Sun, Boshen Wang, Valentina Boeva, Zhifeng Shao, **Jie Liang**

2691-Pos Board B237
CREATING AN INTEGRATED LANDSCAPE OF HUMAN IPSC NUCLEAR STATES. **Christopher L. Frick**, Susanne M. Rafelski

2692-Pos Board B238
DISORDERED CHROMATIN PACKING REGULATES ENSEMBLE GENE EXPRESSION AND PHENOTYPIC PLASTICITY. **Ranya Virk**, Wenli Wu, Luay M. Almassalha, Greta M. Bauer, Yue Li, David VanDerway, Jane Frederick, Di Zhang, Adam Eshein, Igal Szleifer, Vadim Backman

2693-Pos Board B239
IMPROVING CHEMOTHERAPY TREATMENT EFFICACY WITH CHROMATIN PROTECTION THERAPIES. **Jane Frederick**, Greta Wodarcyk, Luay M. Almassalha, Wenli Wu, David VanDerway, Ranya Virk, Vadim Backman

2694-Pos Board B240
BRIDGING CHROMATIN NANOIMAGING AND MOLECULAR MODELING: CHROMATIN PACKING AS A REGULATOR OF TRANSCRIPTIONAL HETEROGENEITY IN CARCINOGENESIS. **Vadim Backman**

2695-Pos Board B241
EXPERIMENTALLY-DRIVEN MODELS OF BACTERIAL CHROMOSOMES. **Michael Feig**

2696-Pos Board B242 Travel Awardee
POLYMER MODELING OF WHOLE-NUCLEUS DIPLOID GENOME ORGANIZATION. **Yifeng Qi**, Bin Zhang

2697-Pos Board B243
MODELING HIGH-ORDER CHROMATIN STRUCTURE IN SINGLE CELLS. **Kai Huang**, Vadim Backman, Igal Szleifer

2698-Pos Board B244
LARGE-SCALE HETEROPOLYMER MODEL OF CHROMATIN DYNAMICS AND MECHANICS. **Anne Shim**, Kai Huang, Vadim Backman, Igal Szleifer

2699-Pos Board B245
THE EFFECT OF NUCLEAR ENVELOPE ON CHROMATIN ARCHITECTURE IN *DROSOPHILA MELANOGASTER*: MODELING OF THREE-DIMENSIONAL INTERPHASE CHROMOSOME ORGANIZATION. **Igor S. Tolokh**, Nicholas A. Kinney, Igor V. Sharakhov, Alexey V. Onufriev

2700-Pos **Board B246**
PREDICTING THE ORGANIZATION OF MITOTIC CHROMOSOMES USING THE GENERALIZED ROUSE MODEL. **Atreya Dey**, Guang Shi, Dave Thirumalai

2701-Pos **Board B247**
PREDICTING STRUCTURAL ENTROPY OF TOPOLOGICALLY ASSOCIATING DOMAINS (TADS) OF CHROMATIN FROM EPIGENETIC INFORMATION. **Lin Du**, Boshen Wang, Alan Perez-Rathke, Jie Liang

Membrane Fusion and Non-Bilayer Structures (Boards B248 - B261)

2702-Pos **Board B248**
COMPLEXIN 1 AND SYNAPTOTAGMIN 1 COMPETE FOR MEMBRANE BINDING IN A PIP2 DEPENDENT MANNER. **Qian Liang**, Volker Kiessling, Binyong Liang, Lukas K. Tamm, David S. Cafiso

2703-Pos **Board B249**
A MODEL FOR MYOMERGER FUNCTION IN MYOBLAST FUSION. **Gonen Golani**, Evgenia Leikina, Douglas P. Millay, Leonid V. Chernomordik, Michael M. Kozlov

2704-Pos **Board B250**
CALCIUM IONS ENHANCE ENTRY OF EBOLA VIRUS BY DIRECTLY TARGETING THE FUSION PEPTIDE. **Liqi Lai**, Lakshmi Nathan, Jean K. Miller, Jack H. Freed, Gary R. Whittaker, Susan Daniel

2705-Pos **Board B251**
DIFFERENTIATING ANTIBODY NEUTRALISATION MECHANISMS USING A SINGLE VIRUS-ASSAY. **Anjali Sengar**, Rebecca R. Pompano, Peter Kasson

2706-Pos **Board B252**
STRUCTURAL DETERMINANTS OF LIPID MEMBRANE THICKENING AT CLOSE DISTANCES. **Leonard P. Heinz**, Agata Witkowska, Helmut Grubmueller, Reinhard Jahn

2707-Pos **Board B253**
INVERTED CUBIC (Q_{II}) PHASE STABILIZING EFFECTS OF MEMBRANE ACTIVE PEPTIDES AS AN INDEX OF ANTIMICROBIAL PEPTIDE (AMP) AND FUSION PEPTIDE ACTIVITY. **David P. Siegel**

2708-Pos **Board B254**
RESOLVING KINETIC INTERMEDIATES DURING THE REGULATED ASSEMBLY AND DISASSEMBLY OF FUSION PORES. **Huan Bao**

2709-Pos **Board B255**
DECONVOLUTION OF INFLUENZA A VIRAL BINDING AND FUSION WITH A CHEMICALLY-DEFINED GLYCOCALYX. **Elizabeth R. Webster**, Corleone S. Delaveris, Carolyn R. Bertozzi, Steven G. Boxer

2710-Pos **Board B256**
IMPACTS OF BIOCHEMICAL COMPLEXITY ON CLIMATE-RELEVANT PROPERTIES OF MODEL MARINE AEROSOLS. **Abigail C. Dommer**, Rommie E. Amaro

2711-Pos **Board B257**
KINETIC AND CELLULAR AUTOMATON MODELS OF WEST NILE VIRUS HEMIFUSION. **Abraham Park**, Robert J. Rawle

2712-Pos **Board B258**
SINGLE VIRUS INVESTIGATION OF SENDAI VIRUS BINDING AND FUSION TO SUPPORTED LIPID BILAYERS. **Amy Lam**, Nandini Seetharaman, Robert J. Rawle

2713-Pos **Board B259**
TWO FORMS OF OPA1 COOPERATE TO COMPLETE MITOCHONDRIA INNER MEMBRANE FUSION. **Yifan Ge**, Sivakumar Boopathy, Xiaojun Shi, Julie L. McDonald, Adam W. Smith, Luke Chao

2714-Pos **Board B260**
SYNAPTOTAGMIN-1/CA^{2+}OVERCOMES INEFFICIENCY OF SNARE COMPLEX IN DILATING THE FUSION PORE. **Ryan Khounlo**

2715-Pos **Board B261**
CHOLESTEROL ALTERS PHYSICAL PROPERTIES OF THE TARGET MEMBRANE TO FACILITATE INFLUENZA MEMBRANE FUSION AT THE SINGLE-PARTICLE LEVEL. **Katherine N. Liu**, Steven G. Boxer

Protein-Lipid Interactions: Channels (Boards B262 - B272)

2716-Pos **Board B262** **Travel Awardee**
PHOSPHATE POSITION ON PHOSPHOINOSITIDES IS KEY IN MEDIATING TMEM16A CURRENTS IN *XENOPUS LAEVIS* OOCYTES. **Maiwase Tembo**, Anne E. Carlson

2717-Pos **Board B263**
NICOTINIC ACETYLCHOLINE RECEPTORS LIPID PREFERENCES WITHIN COMPLEX QUASI-NATIVE MEMBRANES. **Liam M. Sharp**, Kristen N. Woods, Grace H. Brannigan

2718-Pos **Board B264**
INVESTIGATING PROTEIN-LIPID INTERACTIONS OF MTHK AND NATIVE BACTERIAL MEMBRANE LIPIDS. **Daniel Quetschlich**, Mark T. Agasid, Rachel A. Davis, Zara A. Sands, Idlir Liko, Mark S. Sansom, Phillip J. Stansfeld, Carol V. Robinson

2719-Pos **Board B265**
LIPID-DEPENDENT MODULATION OF CARDIAC ION CHANNEL ACTIVITY AS AN ANTI-ARRHYTHMIC THERAPY IN LONG-QT SYNDROME. **Haydee Mesa Galloso**, Mario E. Valdes-Tresanco, Nandhitha Subramanian, Valentina Corradi, Williams E. Miranda, Meruyert Kudaibergenova, Sara I. Liin, Peter H. Larsson, Sergei Y. Noskov, Peter D. Tieleman

2720-Pos **Board B266**
RUGGEDIZED CHIP-BASED LIPID BILAYER ARRAYS WITH PERMEABLE MULTI-MAC SUPPORT. **Daniel L. Burden**, Amanda J. Smith, Theo Larsen, Lisa M. Burden

2721-Pos **Board B267**
ELASTIC MEMBRANE DEFORMATIONS DETERMINE INTERACTION OF GRAMICIDIN A DIMERS, MONOMERS, AND PAIRS THEREBY MODULATING THE LIFETIME OF THE CONDUCTING STATE. Oleg V. Kondrashov, Timur R. Galimzyanov, Tatyana I. Rokitskaya, Elena A. Kotova, Yuri N. Antonenko, **Sergey A. Akimov**

2722-Pos **Board B268**
MOLECULAR PROCESS OF GRAMICIDIN A DIMERIZATION DETERMINED WITH MILLISECONDS ATOMISTIC SIMULATIONS AND MACHINE LEARNING. **Delin Sun**

2723-Pos **Board B269**
A NETWORK OF PIP_2 BINDING SITES REGULATE GATING OF THE CALCIUM-ACTIVATED CHLORIDE CHANNEL TMEM16A. **Tao Jiang**, Kuai Yu, Yuanyuan Cui, H. Criss Hartzell, Emad Tajkhorshid

2724-Pos **Board B270**
MOLECULAR SIMULATIONS OF KIR-CHOLESTEROL INTERACTIONS UNCOVER CHOLESTEROL-MEDIATED DE-COUPLING OF FUNCTIONAL DOMAINS IMPORTANT FOR GATING. **Nicolas Barbera**, Belinda S. Akpa, Irena Levitan

2725-Pos **Board B271**
MOLECULAR MECHANISMS OF HUMAN ERG1 CHANNEL BLOCKADE BY CERAMIDES. **Williams E. Miranda**, Jiqing Guo, Valentina Corradi, Haydee Mesa Galloso, Peter D. Tieleman, Henry J. Duff, Sergei Y. Noskov

2726-Pos Board B272
ROLE OF LIPID ENVIRONMENT IN THE PORE-FORMING ACTIVITY OF CECROPIN A. **Anastasiia A. Zakharova**, Svetlana S. Efimova, Olga S. Ostroumova

General Protein-Lipid Interactions II (Boards B273 - B297)

2727-Pos Board B273
VARYING THE PH AND LIPOSOME CONTENT OF CYTOCHROME C - LIPOSOME MIXTURES. **Raghed Kurbaj**

2728-Pos Board B274
CHARGE DRIVES INITIATION AND REGULATION OF BLOOD COAGULATION CASCADE: IONS AND PROTEINS. **Ashley M. De Lio**, Riya Jain, Divyani Paul, James H. Morrissey, Taras V. Pogorelov

2729-Pos Board B275
THE N-TERMINAL REGION OF A PH-RESPONSIVE PEPTIDE CONTROLS ITS INTERACTION WITH PHOSPHATIDYLSERINE-CONTAINING BILAYERS. **Andrew C. Dixson**, Vanessa P. Nguyen, Francisco N. Barrera

2730-Pos Board B276
LIPID COMPOSITION MODULATES MEMBRANE BINDING OF PHOSPHATIDYLSERINE-RECEPTOR TIM-3. **Sofiya Maltseva**, Daniel H. Kerr, Ka Yee C. Lee

2731-Pos Board B277
FISB-LIPID INTERACTIONS DURING SPORULATION IN *BACILLUS SUBTILIS*. **Martha Braun**, Ane Landajuela, Christopher Rodrigues, Thierry Doan, David Rudner, Erdem Karatekin

2732-Pos Board B278
EFFECT OF ACYL CHAIN SATURATION ON PERILIPIN 3 BINDING TO MODEL LIPID DROPLETS. **Ellyse N. Ridgway**, Rebecca Douglas, Amber R. Titus, Elizabeth K. Mann, Edgar E. Kooijman

2733-Pos Board B279
DIRECT DETECTION AND CHARACTERIZATION OF A PHOSPHOINOSITIDE DEPENDENT KINASE-1 (PDK1) HOMODIMER ON A TARGET MEMBRANE SURFACE VIA SINGLE MOLECULE FLUORESCENCE. **Moshe T. Gordon**, Joseph J. Falke

2734-Pos Board B280
BENEFITS OF THE ELECTRONIC CONTINUUM CORRECTION IN BIOFORCE FIELDS. Ricky Nencini, Vladimir Palivec, Carmelo Tempra, Pauline Delcroix, Samuli O. Ollila, Matti Javanainen, Pavel Jungwirth, **Hector Martinez-Seara**

2735-Pos Board B281
THE MEMBRANE ASSOCIATION OF THE TIM FAMILY OF PHOSPHATIDYLSERINE-RECEPTORS IS DIRECTLY REGULATED BY PHOSPHATIDIC ACID AND CALCIUM. **Daniel H. Kerr**, Zhiliang Gong, Tiffany Suwatthee, Sofiya Maltseva, Erin J. Adams, Ka Yee C. Lee

2736-Pos Board B282
A MONTE CARLO FRAMEWORK FOR MODELING PROTEIN ASSEMBLY ON LIPID MEMBRANES. **Carlos A. Osorio Merea**, Ashutosh Agrawal

2737-Pos Board B283
INTERACTIONS OF VARIABLE DOMAIN (VD) OF DRP1 WITH LIPIDS REVEALED BY MD SIMULATIONS. **Nidhin Thomas**, Rajesh Ramachandran, Ashutosh Agrawal

2738-Pos Board B284
PHOSPHATIDYLETHANOLAMINE: BETWEEN OXIDATIVE STRESS AND UNCOUPLING. Olga Jovanovic, Mario Vazdar, **Elena E. Pohl**

2739-Pos Board B285
MEMBRANE BINDING OF ALPHA-SYNUCLEIN CONFERS STERIC STABILIZATION OF NANOPARTICLE-SUPPORTED LIPID BILAYERS. **Hyeondo (Luke) Hwang**, Peter J. Chung, Benjamin R. Slaw, Alessandra Leong, Ka Yee C. Lee

2740-Pos Board B286
THE INTERPLAY OF MEMBRANE TENSION AND OSMOTIC PRESSURE IN MODULATING ALPHA-SYNUCLEIN BINDING. **Benjamin R. Slaw**, Peter J. Chung, Hyeondo (Luke) Hwang, Ka Yee C. Lee

2741-Pos Board B287
ROLE OF CHOLESTEROL ON BINDING OF AMYLOID FIBRILS WITH LIPID BILAYERS. **Cristiano L. Dias**, Luis R. Cruz Cruz

2742-Pos Board B288
CONFORMATIONAL DYNAMICS AND ENERGETICS OF MELITTIN AND ITS DIASTEREOMER INTERACTING WITH POPC AND POPG LIPID BILAYERS: A MOLECULAR DYNAMICS STUDY. Milica Utjesanovic, **Ioan Kosztin**

2743-Pos Board B289
OPTIMIZING A CELL-BASED ASSAY FOR FLUORESCENT PHOSPHOLIPID SCRAMBLING. **John M. Gilchrist**, Lily Y. Jan

2744-Pos Board B290
BIOPHYSICAL ORIGINS OF CALCIUM-INHIBITED MEMBRANE BINDING BY THE C2A DOMAIN OF SYNAPTOTAGMIN-LIKE PROTEIN 2. Timothy Spotts, David Flores, Abena Watson-Siriboe, David N. Jones, Markus Zweckstetter, **Jefferson Knight**

2745-Pos Board B291
TOWARDS A MOLECULAR MECHANISM OF DYNAMIN POLYMERIZATION WITH MASS PHOTOMETRY. **Manish S. Kushwah**

2746-Pos Board B292
DISSOCIATION KINETICS OF PLECKSTRIN HOMOLOGY DOMAINS FROM UNROOFED HEK293T CELLS. **Madeline R. Sponholtz**, Eric N. Senning

2747-Pos Board B293
BRUTON'S TYROSINE KINASE MEMBRANE DYNAMICS AND SIGNALING. **Laura M. Nocka**, Jean K. Chung, Aubrianna Decker, Theresa Kadlecek, Arthur Weiss, John Kuriyan, Jay T. Groves

2748-Pos Board B294
UNRAVELING THE MYSTERY OF THREE-STATE DIFFUSION MODEL OF KRAS4B ON PLASMA MEMBRANE. **Rebika Shrestha**, De Chen, Thomas Turbyville

2749-Pos Board B295
PHASE SEPARATION STUDIES OF COMPLEXES OF INTRINSICALLY DISORDERED PROTEIN TAU AND ANIONIC LIPOSOMES. **Christine Tchounwou**, Bretton Fletcher, Rebecca Best, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

2750-Pos Board B296
DETERMINING THE STRUCTURAL TOPOLOGY AND DYNAMICS OF CANONICAL HOLIN USING CONTINUOUS WAVE- EPR SPECTROSCOPY. **Rehani S. Perera**, Indra Dev Sahu, Gary A. Lorigan

2751-Pos Board B297
SURFACE ACTIVITY AND LIPID DROPLET LOCALIZATION OF FULL LENGTH AND TRUNCATED PERILIPIN 3. **Amber R. Titus**, Rebecca Douglas, Ellyse N. Ridgway, Alexandra K. Yungblut, Manasi Agrawal, Elizabeth K. Mann, Kristy Welshhans, Edgar E. Kooijman

Calcium Signaling II (Boards B298 - B313)

2752-Pos Board B298
TO FACE OR NOT TO FACE: RELATIONSHIP OF IP3 RECEPTORS AND MITOCHONDRIA IN PURKINJE FIBERS OF CEREBELLUM. **Clara Franzini-Armstrong**, V. Ramesh Iyer

2753-Pos Board B299
COMPUTATIONAL MODELING OF LPS- AND ATP-MEDIATED CYTOKINE PRODUCTION IN MACROPHAGES. **Byeongjae Chun**, Peter M. Kekenes-Huskey, Chris Richards

2754-Pos Board B300
MULTIPLE FEEDBACK MECHANISMS UNDERLYING BETA CELL SECRETORY OSCILLATIONS. **Benjamin M. Thompson**, Isabella Marinelli, Richard Bertram, Arthur Sherman, Leslie S. Satin

2755-Pos Board B301
CARDIAC CAMKIIΔ MEMORY: POST-TRANSLATIONAL MODIFICATION-MEDIATED PROLONGATION OF CAMKIIΔ IN AUTONOMOUSLY ACTIVE OPEN STATE. **Christopher Y. Ko**, Leann T. Le, Mitchell R. Simon, Razvan L. Cornea, Julie Bossuyt, Donald M. Bers

2756-Pos Board B302
MATHEMATICAL MODELING OF CALCIUM BINDING TO HUMAN, PLANT, AND ENGINEERED CALMODULIN, AS WELL AS CARDIAC AND SLOW SKELETAL TROPONIN. **Garrett T. Hauck**, Yongjun Kou, Svetlana Tikunova, Jonathan P. Davis

2757-Pos Board B303
CALCIUM STORE-OPERATED CURRENTS IN HUMAN SKIN CELLS. **Declan Manning**, Richard L. Evans, Caroline Dart

2758-Pos Board B304
MUSCARINIC RECEPTOR STIMULATION DIFFERENTIALLY REGULATES NUCLEOPLASMIC CALCIUM IN ATRIAL AND VENTRICULAR MYOCYTES. **Andriy E. Belevych**, Jiaoni Li, Andrei Stepanov, Ingrid M. Bonilla, Dmitry A. Terentyev, Sandor Gyorke

2759-Pos Board B305
ZINC PROTECTION OF FERTILIZED EGGS IS CONSERVED IN NON-MAMMALIAN SPECIES. **Rachel E. Bainbridge**, Katherine Wozniak, Wesley A. Phelps, Steven M. Sanders, Matthew L. Nicotra, Miler T. Lee, Anne E. Carlson

2760-Pos Board B306
LOW RYR2 SENSITIVITY TO FLECAINIDE COMBINED WITH SLOW SARCOLEMMAL ENTRY AND RAPID MITOCHONDRIAL ACCUMULATION MAY EXPLAIN THE ABSENCE OF RYR2 EFFECTS INTACT WILD TYPE MYOCYTES. Emma J. Steer, Zhaokang Yang, **Derek S. Steele**

2761-Pos Board B307
ANO1, $CA_V1.2$ AND IP_3R FORM A FUNCTIONAL UNIT OF EXCITATION-CONTRACTION COUPLING DURING AGONIST-MEDIATED CONTRACTION OF MOUSE PULMONARY ARTERIAL SMOOTH MUSCLE. Joydeep Aoun, Katie Mayne, Julius Baeck, Kenton M. Sanders, Sean M. Ward, Iain A. Greenwood, Simon A. Bulley, Jonathan H. Jaggar, Scott Earley, **Normand Leblanc**

2762-Pos Board B308
HETERO-OLIGOMERIZATION OF THE MICROPEPTIDE REGULINS THAT MODULATE CALCIUM TRANSPORT ACTIVITY. Garrett T. Hauck, Sean R. Cleary, **Seth L. Robia**

2763-Pos Board B309
DATA DRIVEN MODELING OF ALZHEIMER'S DISEASE ASSOCIATED BETA AMYLOID PORES HINTS TOWARDS PROGRESSIVE CA^{2+}-INDUCED CELL TOXICITY. **Syed Islamuddin Shah**, Ian Parker, Angelo Demuro, Ghanim Ullah

2764-Pos Board B310
CYTOKINESIS TRIGGERS TWO SEPARATE SPIKES OF INTRACELLULAR CALCIUM. **Qian Chen**

2765-Pos Board B311
A POWERFUL TRANSFECTION REAGENT FOR BUILDING STABLE GPCR EXPRESSING CELL LINES. **Shu Kan**, Jinfang Liao, Zhenjun Diwu

2766-Pos Board B312
CATERPILLAR ORAL SECRETION ELICITS REACTIVE OXYGEN SPECIES IN ISOLATED PLANT PROTOPLASTS. **Akanksha Gandhi**, Cruz Chapa, Rupesh Kariyat, Nirakar Sahoo

2767-Pos Board B313
CALCIUM BUFFERING BY FLUORESCENT INDICATORS - IMPLICATIONS AND EASY SOLUTIONS. **Krzysztof Hyrc**, Ziemowit Rzeszotnik, Mark P. Goldberg, Colin G. Nichols

Intracellular Calcium Channels and Calcium Sparks and Waves II (Boards B314 - B330)

2768-Pos Board B314
DEFECTIVE INTERACTION OF CAM WITH RYR2 CAM-BINDING POCKET MIGHT CONTRIBUTE TO ARRHYTHMOGENIC CARDIAC DISEASE. **Michail Nomikos**, Angelos Thanassoulas, Vyronia Vassilakopoulou, Brian L. Calver, Evangelia Livaniou, Bared Safieh-Garabedian, Egon Toft, George Nounesis, F. Anthony Lai

2769-Pos Board B315
RYR2 HYPERACTIVITY GENERATES VENTRICULAR TACHYCARDIA SUSCEPTIBILITY IN STRUCTURAL HEART DISEASE. **Kyungsoo Kim**, Bjorn C. Knollmann

2770-Pos Board B316
RECRUITING RYRS TO OPEN IN A CA^{2+} RELEASE UNIT. **Dirk Gillespie**

2771-Pos Board B317
SLOW-RAPID-SLOW PACING IN THE HEART HAVING $CASQ2^{G112+5X}$ GENE MUTATION PRODUCES EADS AS THE MECHANISM OF CPVT DURING ADRENERGIC STIMULATION. **Roshan Paudel**, Aman Ullah, Mohsin S. Jafri

2772-Pos Board B318
INHIBITION OF TYROSINE KINASE PYK2 IN HYPERTROPHIC HEARTS: CELLULAR MECHANISMS OF ANTI-ARRHYTHMIC EFFECTS. **Radmila Terentieva**, Shanna Hamilton, Tae Yun Kim, Iulia Polina, Peter Bronk, Karim Roder, Jin O-Uchi, Gideon Koren, Sandor Gyorke, Andriy E. Belevych, Bum-Rak Choi, Dmitry A. Terentyev

2773-Pos Board B319
PROTOCOL DEVELOPMENT FOR EXPRESSING FUNCTIONAL RYANODINE RECEPTORS IN HEK293-6E SUSPENSION CELLS. **Michael Wold**, Robyn T. Rebbeck, Elisa Bovo, Aleksey V. Zima, David D. Thomas, Razvan L. Cornea

2774-Pos Board B320 Travel Awardee
LUMINAL CALCIUM CONTROL OF TYPE-1 INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR. Allison M. Tambeaux, **Yuriana Aguilar-Sanchez**, Rafael Mejia-Alvarez, Michael Fill, S.R. Wayne Chen, Josefina Ramos-Franco

2775-Pos Board B321
CORRELATING CALCIUM SPARKS AND RYANODINE RECEPTOR LOCALIZATION IN LIVE CARDIOMYOCYTES. Yufeng Hou, **Martin Laasmaa**, Jia Li, Ornella Manfra, Xin Shen, Peter P. Jones, Christian Soeller, William E. Louch

2776-Pos Board B322
REGULATION OF HUMAN RYR2 BY CALMODULIN. **Roman Nikolaienko**, Elisa Bovo, Christopher Hoover, Robyn Rebbeck, David D. Thomas, Razvan L. Cornea, Aleksey V. Zima

2777-Pos **Board B323**
RYR2 INHIBITION BY FLECAINIDE DETERMINES ANTIARRHYTHMIC ACTIVITY IN CPVT. **Dmytro O. Kryshtal**, Daniel J. Blackwell, Abbigail N. Smith, Suzanne M. Batiste, Jeffrey N. Johnston, Bjorn C. Knollmann

2778-Pos **Board B324**
A CRYO-EM BASED STUDY OF AN EQUIVALENT N TERMINAL DOMAIN MUTATION IN SKELETAL AND CARDIAC RYANODINE RECEPTOR (RYR). **Kavita A. Iyer**, Yifan Hu, Ashok R. Nayak, Nagomi Kurebayashi, Takashi Murayama, Montserrat Samso

2779-Pos **Board B325**
EFFECTS OF CONFOCAL MODALITIES AND DETECTORS IN HIGH-SPEED RECORDING OF CA^{2+} SPARKS IN CARDIOMYOCYTES. **Qinghai Tian**, Peter Lipp

2780-Pos **Board B326**
THE ROLE OF NAADP-MEDIATED ENDO-LYSOSOMAL CALCIUM RELEASE IN THE CARDIAC ATRIA. Rebecca A. Capel, Razik Mu-u-Min, Daniel Aston, Margarida Ruas, Helen Christian, Antony Galione, Derek A. Terrar, **Rebecca A.B. Burton**

2781-Pos **Board B327**
THE MOLECULAR BASIS FOR SOCE REGULATION BY SARAF. **Anna Meshcheriakova**, Christopher Kimberlin, Raz Palty, Izhar Karbat, Daniel L. Minor, Eitan Reuveny

2782-Pos **Board B328**
HIGH-THROUGHPUT SCREENING YIELDS ALLOSTERIC INHIBITORS OF LEAKY RYRS FOR THERAPEUTIC DEVELOPMENT. **Robyn T. Rebbeck**, Gabrielle M. Evans, Kaja Rozman, Jacob A. Schwarz, Michael C. Wold, Marzena Baran, Courtney C. Aldrich, Donald M. Bers, David D. Thomas, Razvan L. Cornea

2783-Pos **Board B329**
MECHANISMS OF SUBCELLULAR SPATIALLY DISCORDANT CALCIUM ALTERNANS IN CARDIAC MYOCYTES. **Zhen Song**, Zhilin Qu

2784-Pos **Board B330** **Travel Awardee**
LATE CA^{2+}SPARK ARRHYTHMOGENESIS IN FAILING CARDIAC MYOCYTES. **Ewan D. Fowler**, Nan Wang, Jules C. Hancox, Mark B. Cannell

Cardiac, Smooth, and Skeletal Muscle Electrophysiology II (Boards B331 - B345)

2785-Pos **Board B331**
CRISPRI ION CHANNEL GENE MODULATION IN HUMAN IPSC-CARDIOMYOCYTES. **Julie L. Han**, Emilia Entcheva

2786-Pos **Board B332**
PROBING THE TIMELINE OF INTEGRATION BETWEEN THREE-DIMENSIONAL "SPARK-CELL" SPHEROIDS AND HUMAN CARDIAC TISSUE. **Christianne Chua**, Weizhen Li, Julie Han, Emilia Entcheva

2787-Pos **Board B333**
THE ROLE OF IL-1B ON ATRIAL FIBRILLATION PHYSIOPATHOLOGY. **Oscar Moreno-Loaiza**, Ainhoa Rodriguez de Yurre Guirao, Narendra Vera-Nuñez, Ariel L. Escobar, Emiliano Medei

2788-Pos **Board B334** **Travel Awardee**
AUTOMATED HIGH-THROUGHPUT PATCH CLAMP AND MODELLING TO CAPTURE HERG KINETICS AND TEMPERATURE DEPENDENCE USING OPTIMISED VOLTAGE PROTOCOLS. **Chon Lok Lei**, Michael Clerx, David J. Gavaghan, Johannes Stiehler, Liudmila Polonchuk, Ken Wang, Gary R. Mirams

2789-Pos **Board B335**
UPREGULATION OF THE MAGUK SAP97 ENHANCES PROTEIN EXPRESSION IN STEM CELL DERIVED MYOCYTES. Tamirat Ali, Jeffery Creech, Andre Monteiro Da Rocha, Todd J. Herron, **Justus M. Anumonwo**

2790-Pos **Board B336**
UNIDIRECTIONAL BLOCK DEMONSTRATED ON VENTRICULAR MONOLAYERS EXPRESSING CHANNELRHODOPSIN-2 USING OPTOGENETICS. **José Miguel Romero Sepúlveda**, Alvin Shrier, Gil Bub

2791-Pos **Board B337**
COMBINING PHYSIOLOGICAL RELEVANCE AND THROUGHPUT FOR IN VITRO CARDIAC CONTRACTILITY MEASUREMENT. **Ronald Knox**, Andrea Bruggemann, Matthias Gossmann, Ulrich Thomas, András Horváth, Elena Dragicevic, Sonja Stoelzle-Feix, Niels Fertig, Alexander Jung, Alexander H. Raman, Manfred Staat, Peter Linder

2792-Pos **Board B338**
AUTOMATED PATCH CLAMP SYSTEM INTRODUCING SIMULATED IK1 INTO STEM CELL-DERIVED CARDIOMYOCYTES USING DYNAMIC CLAMP. **George O. Okeyo**, András Horváth, Nadine Becker, Alan Fabbri, Christian Grad, Michael George, Teun P. de Boer, Niels Fertig

2793-Pos **Board B339**
THE BISTABLE RESTING POTENTIAL OF SKELETAL MUSCLE IN HYPOKALEMIC PERIODIC PARALYSIS. Marino G. Di Franco, **Steve C. Cannon**

2794-Pos **Board B340**
LOW-NOISE FLUORESCENT INFRARED DETECTION OF SINGLE-CELL CARDIAC ACTION POTENTIALS. **Anthony Costantino**, Brian K. Panama, Mark W. Nowak, Randall L. Rasmusson, Glenna Bett

2795-Pos **Board B341**
NATRIURETIC PEPTIDE RECEPTOR-C MITIGATES ANGIOTENSIN II INDUCED FIBROSIS IN THE ATRIA AND SINOATRIAL NODE. **Martin Mackasey**, Hailey J. Jansen, Motahareh Moghtadaei, Robert A. Rose

2796-Pos **Board B342**
CHRONIC HEMODYNAMIC OVERLOAD OF THE ATRIA IS AN IMPORTANT FACTOR FOR SHEAR SIGNALING REMODELING IN RAT HEARTS. **Qui A. Le**, Joon-Chul Kim, Berihun D. Mihiretu, Sun-Hee Woo

2797-Pos **Board B343** **Travel Awardee**
POST-PRANDIAL INOTROPIC RESPONSE IN PYTHON CARDIOMYOCYTES IS SUPPORTED BY DISTINCT METABOLIC ADAPTATION. **Claudia Crocini**, Kathleen C. Woulfe, Leslie A. Leinwand

2798-Pos **Board B344**
CARDIOPROTECTIVE EFFECTS OF ROTIGAPTIDE ARE DEPENDENT ON PERFUSATE IONIC COMPOSITION DURING ISCHEMIA/REPERFUSION. **Gregory S. Hoeker**, Steven Poelzing

2799-Pos **Board B345**
QUANTIFYING HYPOXIA IN HUMAN IPS-CARDIOMYOCYTES UNDER OPTOGENETIC PACING. **Wei Liu**, WEIZHEN LI, Julie Han, Emilia Entcheva

Intracellular Transport (Boards B346 - B353)

2800-Pos **Board B346**
SINGLE-MOLECULE TRACKING REVEALS COMPLEX MOTILITY OF TRANSMEMBRANE PROTEINS IN THE CHEMOSENSORY CILIA OF *C. ELEGANS*. Jaap van Krugten, Noemie B. Danne, **Erwin J. Peterman**

2801-Pos **Board B347**
ORGANELLE STRUCTURAL FEATURES CAN ACCELERATE DIFFUSIVE TRANSPORT AND REACTION RATES. **Aidan I. Brown**, Elena F. Koslover

2802-Pos Board B348
LYSOZYME-LIKE MODEL PROTEIN DIFFUSION AND ADSORPTION ON A CHARGED SURFACE. EFFECTS OF HYDRODYNAMIC INTERACTIONS. Paweł Czajka, **Maciej J. Dlugosz**

2803-Pos Board B349
DASHING THROUGH THE MAZE: ACTIVE MIXING IN THE ENDOPLASMIC RETICULUM. Katherine M. Xiang, Edward Avezov, **Elena F. Koslover**

2804-Pos Board B350
EXPORT/IMPORT OF EXOSOMAL CIRS-7: A SINGLE MOLECULE ANALYSIS OF CIRCULAR RNA TRAFFICKING. **Andreas Schmidt**, Ameya P. Jalihal, Guoming Gao, Nils G. Walter

2805-Pos Board B351
KINETIC PROOFREADING USING SUBSTRATE GRADIENTS AND ENZYME DIFFUSION. **Vahe Galstyan**, Kabir Husain, Fangzhou Xiao, Arvind Murugan, Rob Phillips

2806-Pos Board B352
CHARACTERIZATION OF MEMBRANE CONTACT SITES FOR THE FACILITATION OF LIPID EXCHANGE AT THE MALARIA PARASITE - RED BLOOD CELL INTERFACE. **Matthias Garten**, Josh Beck, Robyn Roth, John E. Heuser, Tatyana Tenkova-Heuser, Christopher K.E. Bleck, Daniel E. Goldberg, Joshua Zimmerberg

2807-Pos Board B353
INTRACELLULAR TRANSPORT DYNAMICS OF UPCONVERTING NANOPARTICLES IN LIVING CELLS. **Kyujin Shin**, Sanggeun Song, Yo Han Song, Seungsoo Hahn, Ji-Hyun Kim, In-Chun Jeong, Jaeyoung Sung, Kang Taek Lee

Voltage-gated Na Channels (Boards B354 - B378)

2808-Pos Board B354
THE MECHANISM OF ION CONDUCTION AND SELECTIVITY IN THE EUKARYOTIC NA_VPAS CHANNEL. Juan Nogueira, **Ben Corry**

2809-Pos Board B355
RELATIVE VOLTAGE SENSOR ACTIVATION KINETICS DETERMINES THE EFFECTS OF SENSOR NEUTRALIZATION IN VOLTAGE-GATED SODIUM CHANNELS. **Niklas Brake**, Adamo Mancino, Yuhao Yan, Takushi Shimomura, Yoshihiro Kubo, Derek Bowie, Anmar Khadra

2810-Pos Board B356
EXPLORING NONCANONICAL COUPLING IN VOLTAGE-GATED SODIUM CHANNELS. **Fraol Galan**, Carlos Alberto Bassetto Jr, Benjamin Fosque, Francisco Bezanilla

2811-Pos Board B357
MULTISCALE MOLECULAR DYNAMICS TO EXPLORE VOLTAGE-GATED SODIUM CHANNEL OLIGOMERISATION. William Glass, Anna L. Duncan, Jessica Mitchell, **Philip C. Biggin**

2812-Pos Board B358
CYSTEINE MUTAGENESIS TO PROBE SITE-SPECIFIC INTERACTIONS IN THE VOLTAGE SENSOR MODULE OF HNAV1.4. **James R. Groome**, Ryann Camp, Landon Bayless-Edwards

2813-Pos Board B359
REVISITING NA_V CHANNEL INACTIVATION: THE ROLE OF FIBROBLAST GROWTH FACTOR HOMOLOGOUS FACTOR (FHF). **Paweorn Angsutararux**, Taylor L. Voelker, Catherine Malcolm, Wandi Zhu, Jonathan R. Silva

2814-Pos Board B360
MYOTONIC MUTATIONS OF NAV1.4 LOCATED AT EF HAND-LIKE MOTIF IN C-TERMINUS IMPAIR FAST INACTIVATION. **Riho Horie**, Tomoya Kubota, Jinsoo Koh, Rieko Tanaka, Yuichiro Nakamura, Sasaki Ryogen, Hidefumi Ito, Masanori P. Takahashi

2815-Pos Board B361
CRYSTAL STRUCTURES OF CALCIUM-LOADED CALMODULIN IN COMPLEX WITH C-TERMINAL DOMAINS OF VOLTAGE-GATED SODIUM CHANNELS. **Filip Van Petegem**, Ching-Chieh Tung, Bernd Gardill, Ricardo E. Rivera-Acevedo

2816-Pos Board B362
A CALMODULIN MUTATION THAT DYSREGULATES $NA_V1.6$ BUT NOT $NA_V1.5$. **Yusuf Olgar**, Sandor Gyorke, Rengasayee Veeraraghavan, Jonathan P. Davis, Przemyslaw Radwanski

2817-Pos Board B363
RILUZOLE AS A PROTOTYPE OF A NEW CLASS OF SODIUM CHANNEL INHIBITORS. **Mátyás Csaba Földi**, Péter Lukács, Krisztina Pesti, Andras Malnasi-Csizmadia, Arpad Mike

2818-Pos Board B364
HOW FAST IS RILUZOLE. **Krisztina Pesti**, Péter Lukács, Arpad Mike

2819-Pos Board B365
WHAT MAKES A COMPOUND A SODIUM CHANNEL INHIBITOR. **Adam Toth**, Peter Lukacs, Arpad Mike

2820-Pos Board B366
ABERRANT CALMODULIN REGULATION OF NAV1.5 CHANNELS LINKED TO INHERITED CARDIAC ARRHYTHMIA. **Nourdine Chakouri**, Po wei Kang, Johanna Diaz, Gordon F. Tomaselli, Manu B. Johny

2821-Pos Board B367
IDENTIFICATION OF A NEW GAIN-OF-FUNCTION MUTATION OF NAV1.5 ASSOCIATED WITH ATRIAL FIBRILLATION IN AN AFRICAN-AMERICAN FAMILY. **Liang Hong**, Faisal A. Darbar, Meihong Zhang, Dawood Darbar

2822-Pos Board B368
REDUCED SODIUM CURRENTS AND INCREASED SENSITIVITY TO FLECAINIDE IN ATRIAL CARDIOMYOCYTES, COMPARED TO VENTRICULAR. Sian-Marie O'Brien, Andrew P. Holmes, Daniel M. Johnson, Maddalena Tessari, Giuseppe Faggian, Larissa Fabritz, Paulus Kirchhof, **Davor Pavlovic**

2823-Pos Board B369
AN *SCN5A* SPLICE VARIANT ASSOCIATED WITH HEART FAILURE LEADS TO A REDUCTION IN SODIUM CURRENT THROUGH COUPLED GATING WITH THE WT CHANNEL. **Yang Zheng**, Haiyan Liu, Xiaoping Wan, Isabelle Deschenes

2824-Pos Board B370
LATE SUSTAINED SODIUM CURRENT (INA,L) IN ADULT HUMAN PRIMARY CARDIOMYOCYTES. **Anh Tuan Ton**, Andrea Ghetti, Guy Page, Paul E. Miller, Najah Abi Gerges

2825-Pos Board B371
PROTECTIVE EFFECT OF CANNABIDIOL AGAINST OXIDATIVE STRESS AND CYTOTOXICITY EVOKED BY HIGH GLUCOSE IN CARDIAC VOLTAGE-GATED SODIUM CHANNELS. **Mohamed A. Fouda**, Mohammad-Reza Ghovanloo, Peter C. Ruben

2826-Pos Board B372
ALTERED AXONAL TRAFFICKING OF NAV1.7 IN CULTURED PERIPHERAL NEURONS IN RESPONSE TO INFLAMMATORY MEDIATORS AND PACLITAXEL. **Elizabeth J. Akin**, Grant P. Higerd, Shujun Liu, Fadia B. Dib-Hajj, Stephen G. Waxman, Sulayman D. Dib-Hajj

2827-Pos Board B373
THE SUBCELLULAR LOCALIZATION OF SODIUM CHANNELS & POTASSIUM CHANNELS IN THE NODES OF RANVIER. **Jiemin Lou**

2828-Pos Board B374
IDENTIFICATION OF A NOVEL GAIN-OF-FUNCTION SODIUM CHANNEL B2 SUBUNIT MUTATION IN SMALL FIBER NEUROPATHY. **Matthew Alsaloum**, Peng Zhao, Monique M. Gerrits, Rowida Almomani, Janneke Hoeijmakers, Maurice Sopacua, Giuseppe Lauria, Catharina G. Faber, Sulayman Dib-Hajj, Stephen G. Waxman

2829-Pos Board B375
FUNCTIONAL UNCOUPLING OF PAIN-LINKED NAV1.7/A1632E DIMERS PARTLY RESCUES ITS PAIN-CAUSING PHENOTYPE. **Annika Ruehlmann**, Jannis Körner, Nikolay Bebrivenski, Silvia Detro-Dassen, Petra Hautvast, Carène Benasolo, Jannis Meents, Jan-Philipp Machtens, Günther Schmalzing, Angelika Lampert

2830-Pos Board B376
EFFICIENT AND HIGHLY SCALABLE MECHANISTIC CHARACTERIZATION OF ION CHANNEL FUNCTION IN DRUG DISCOVERY. **Tianbo Li**, Martin Ginkel, Ada Yee, Leigh Foster, Renee Emkey, Jun Chen, Stephan Heyse, Stephan Steigele

2831-Pos Board B377
PROBING ALTERED CALMODULIN INTERACTIONS IN SODIUM CHANNELOPATHIES USING FLOW-CYTOMETRIC FRET. **Johanna Diaz**, Khadija Hanif, Viviana Laines, Nourdine Chakouri, Manu B. Johny

2832-Pos Board B378
RAPIDLY ASSAYING VOLTAGE-GATED SODIUM CHANNELS USING LIGHT-INDUCED ACTION POTENTIALS AND FLUORESCENT RECORDINGS OF THE MEMBRANE POTENTIAL IN AN INSTRUMENT WITH A NOVEL DETECTOR ARRAY. Joerg Oestreich, **Stephen S. Smith**, Jay Trautman, Andrew L. Blatz

Ligand-gated Channels (Boards B379 - B413)

2833-Pos Board B379
TRANSITION PATHWAY FOR ACTIVATION OF LIGAND-GATED ION CHANNELS AND THE ROLE OF CHOLESTEROL. **Sunny Hwang**, Christophe J. Chipot, Emad Tajkhorshid

2834-Pos Board B380
POLYUNSATURATED FATTY ACID REGULATION OF THE ACID-SENSING ION CHANNELS. **Robert C. Klipp**, John R. Bankston

2835-Pos Board B381
THE BINDING SITE OF TETS IN THE PORE OF THE A2B3Γ2L GABA-A RECEPTOR. **Brandon Pressly**, Heike Wulff, Ruth Lee

2836-Pos Board B382
SCREENING OF EPILEPSY-LINKED GABAA RECEPTOR MUTANTS FOR ASSEMBLY DEFECTS. Sarah Ziemons, **Guenther Schmalzing**

2837-Pos Board B383
A RE-EVALUATION OF GAIN-OF-FUNCTION DISEASE-ASSOCIATED MUTATIONS IN NMDA RECEPTORS. **Gary J. Iacobucci**

2838-Pos Board B384
DYNAMICAL MECHANISMS OF GLUTAMATE RECEPTOR GATING AND SUB-CONDUCTANCE. **Maria G. Kurnikova**, Serzhan Sakipov, Christopher Kottke, Chamali Narangoda, Jessica Scaranto

2839-Pos Board B385
MOLECULAR MECHANISM OF PH REGULATION ON TMEM16F LIPID SCRAMBLASE AND ION CHANNEL. **Pengfei Liang**, Trieu P. Le, Son C. Le, Huanghe Yang

2840-Pos Board B386
LIFE IN THE FAST LANE- BINDING TO GLUTAMATE RECEPTORS. Remy Yovanno, Tyler J. Wied, Alvin Yu, Hector P. Salazar, Andrew J. Plested, **Albert Y. Lau**

2841-Pos Board B387
USING A NETWORK OF SINGLE SITE SPECIFIC MUTATIONS AND CROSS-LINKING MASS SPECTROMETRY (CXMS) TO REFINE THE STRUCTURE AND DYNAMICS OF THE HUMAN ALPHA 1 GLYCINE RECEPTOR (GLYR). **Kayce A. Tomcho**, Hannah E. Gering, Amanda Pellegrino, David J. Lapinsky, Michael Cascio

2842-Pos Board B388
CRYO-EM STRUCTURE DETERMINATION AND MODEL FITTING OF THE PROTON-GATED LIGAND-GATED ION CHANNEL GLIC AT MULTIPLE PH STATES. Urska Rovsnik, Victoria Lim, Christian Blau, Rebecca J. Howard, **Erik Lindahl**

2843-Pos Board B389
FUNCTIONAL RECONSTITUTION OF THE 5-HT_3 RECEPTOR. **Uriel López Sánchez**, Eleftherios Zarkadas, Guy Schoehn, Hugues Nury

2844-Pos Board B390
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

2845-Pos Board B391
MECHANISM AND BINDING SITE OF THE ASIC1A-BIG DYNORPHIN INTERACTION. Christian B. Borg, **Nina Braun**, Stephanie A. Heusser, Yasmin Bay, Daniel Weis, Iacopo Galleano, Camilla Lund, Weihua Tian, Linda M. Haugaard-Kedström, Eric P. Bennett, Timothy Lynagh, Kristian Strømgaard, Jacob Andersen, Stephan A. Pless

2846-Pos Board B392
POINT MUTATIONS OF P2X7 RECEPTORS. Hannah Dentler, Manuela Klapperstück, Guenther Schmalzing, **Fritz Markwardt**

2847-Pos Board B393
CRYO-EM STRUCTURE OF THE A1B2Γ2 $GABA_A$ RECEPTOR IN A LIPIDIC ENVIRONMENT. **Jeong Joo Kim**, Anant Gharpure, Jinfeng Teng, Shaotong Zhu, Colleen M. Noviello, Richard M. Walsh, Ryan E. Hibbs

2848-Pos Board B394
MECHANISM OF CALCIUM GATING AND INACTIVATION IN A POTASSIUM CHANNEL. **Chen Fan**, Nattakan Sukomon, Jan Rheinberger, Crina M. Nimigean

2849-Pos Board B395
CHARACTERIZATION OF AMINO ACID SUBSTITUTIONS IN THE PUTATIVE BINDING SITE OF BUPROPION IN GLIC. **Dubem Onyejegbu**, Jessica Shepherd, Elham Pirayesh, Akash Pandhare, Zackary R. Gallardo, Michaela Jansen

2850-Pos Board B396 Travel Awardee
STOICHIOMETRY OF ACID-SENSING ION CHANNEL (ASIC) PHARMACOLOGY. **Matthew L. Rook**, David M. MacLean

2851-Pos Board B397
STRUCTURAL INSIGHTS INTO THE CALCIUM/CALMODULIN DEPENDENT INACTIVATION OF N-METHYL-D-ASPARTATE (NMDA) RECEPTORS. **Nidhi Kaur Bhatia**, Elisa Carrillo, Ryan J. Durham, Vladmir Berka, Vasanthi Jayaraman

2852-Pos Board B398
MOLECULAR DYNAMICS SIMULATION OF LIGAND BINDING AND ION PERMEATION IN A GANGLIONIC NICOTINIC RECEPTOR. **Yuxuan Zhuang**, Anant Gharpure, Ryan E. Hibbs, Rebecca J. Howard, Erik R. Lindahl

2853-Pos Board B399
PROBABILITY OF OPENING DURING RECOVERY FROM ACHR DESENSITIZATION. **Radhakrishnan Gnanasambandam**, Anthony Auerbach

2854-Pos **Board B400**
PROTEIN-PROTEIN INTERACTIONS OF HUMAN P2X7 IN MICROGLIA AND HUMAN ASIC1A IN KIDNEY CELLS. Mette H. Poulsen, Svetlana R. Maurya, Johann Sigurdsson, Alicia Lundby, **Stephan A. Pless**

2855-Pos **Board B401**
DICATIONIC, TRICATIONIC AND TETRACATIONIC SURFACTANTS AS TRANSGENE CARRIERS - COMPARISON OF THEIR ABILITY TO SIRNA BINDING. **Weronika J. Andrzejewska**, Michalina M. Wilkowska, Andrzej Skrzypczak, Anna Woźniak, Barbara Peplińska, Maciej Kozak

2856-Pos **Board B402**
ALLOSTERIC GATING DETERMINANTS IN THE TRANSMEMBRANE DOMAIN OF PENTAMERIC LIGAND-GATED ION CHANNELS. **Rebecca J. Howard**, Yuxuan Zhuang, Stephanie A. Heusser, Cathrine C. Bergh, Urska Rovsnik, Laura Orellana, Erik Lindahl

2857-Pos **Board B403**
UNDERSTANDING THE MECHANISM OF AGONIST EFFICACY IN A FULL-LENGTH GLUK2/K5 USING SINGLE MOLECULE FRET. **Nabina Paudyal**, Douglas B. Litwin, Vladmir Berka, Elisa Carrillo, Vasanthi Jayaraman

2858-Pos **Board B404**
MOLECULAR RECOGNITION OF NEONICOTINOID INSECTICIDES BY HONEYBEE NICOTINIC RECEPTORS AND ACHBP HOMOLOGUES. **Chris Ulens**, Quinty Bisseling, Marijke Brams, Aujan Mehregan, Genevieve L. Evans, Diletta Pasini, Hester Beard, Steven Verhelst, Alexander Fish, Sofie van Dorst, Kumiko Kambara, Daniel Bertrand

2859-Pos **Board B405**
LOWERING EXCITOTOXICITY AND STABILIZING SERIAL ACTIVATION OF NMDA RECEPTORS IN AUTOMATED PATCH CLAMP ASSAYS. Ali Yehia, **Alexandra Stevens**

2860-Pos **Board B406**
A MATHEMATICAL MODEL FOR LIGAND POTENCY IN THE HCN2 CHANNEL. Leo Ng, Meiying Zhuang, Filip Van Petegem, Yue-Xian Li, **Eric Accili**

2861-Pos **Board B407**
IDENTIFICATION OF THE BINDING SITE OF BUPROPION ON SEROTONIN TYPE 3A RECEPTORS. **Jessica Shepherd**, Dubem Onyejegbu, Antonia Stuebler, Zackary Gallardo, Chris Hornback, Michaela Jansen

2862-Pos **Board B408**
HEARING LOSS MUTATIONS ALTER THE FUNCTIONAL PROPERTIES OF HUMAN P2X2 RECEPTOR CHANNELS THROUGH DISTINCT MECHANISMS. Benjamin I. George, Kenton Swartz, **Mufeng Li**

2863-Pos **Board B409**
FUNCTIONAL CHARACTERIZATION OF ION CHANNELS EXPRESSED IN EUKARYOTIC CELL-FREE SYSTEMS USING LIPID BILAYER ARRAYS. **Ekaterina Zaitseva**, Srujan Dondapati, Jeffrey Schloßhauer, Anne Zemella, Priyavathi Dhandapani, Stefan Kubick, Gerhard Baaken

2864-Pos **Board B410**
AGONIST SELECTIVITY AND ION PERMEATION IN THE A3B4 GANGLIONIC NICOTINIC RECEPTOR. **Anant Gharpure**, Jinfeng Teng, Yuxuan Zhuang, Colleen M. Noviello, Richard M. Walsh, Rico Cabuco, Rebecca J. Howard, Nurulain Zaveri, Erik R. Lindahl, Ryan E. Hibbs

2865-Pos **Board B411**
ROLE OF CONFORMATIONAL DYNAMICS IN NMDA RECEPTOR NEGATIVE COOPERATIVITY. **Ryan J. Durham**, Nabina Paudyal, Elisa Carrillo, David M. MacLean, Vladmir Berka, Drew M. Dolino, Nidhi Kaur Bhatia, Alemayehu A. Gorfe, Vasanthi Jayaraman

2866-Pos **Board B412**
MOLECULAR EVOLUTION OF PLANT GLUTAMATE RECEPTORS. **Alex A. Simon**, Juan Barbosa-Caro, Jose Feijo, Erwan Michard

2867-Pos **Board B413**
MEASURING INTERACTIONS BETWEEN THE INTRACELLULAR DOMAINS OF THE ACID-SENSING ION CHANNEL. **Megan M. Cullinan**, John R. Bankston

Ion Channels, Pharmacology, and Disease II (Boards B414 - B436)

2868-Pos **Board B414**
ION SELECTIVE PENTAMERIC PORE FORMATION BY EBOLA VIRUS DELTA PEPTIDE. **Rudramani Pokhrel**, Elumalai Pavadai, Bernard Gerstman, Prem P. Chapagain

2869-Pos **Board B415**
INTRACELLULAR RECORDING USING TRANSMEMBRANE CONDUCTIVE NANOPARTICLES. **Mitsuyoshi L. Saito**

2870-Pos **Board B416**
STRUCTURAL MODELING OF ION CHANNEL - SMALL MOLECULE INTERACTIONS USING ROSETTA'S GALIGANDDOCK. **Brandon J. Harris**, Phuong T. Nguyen, Vladimir Yarov-Yarovoy

2871-Pos **Board B417**
BINDING WITHOUT BLOCK. AN ANALYSIS OF AMANTADINE AND RIMANTADINE BLOCK OF THE INFLUENZA M2 S31N CHANNEL. **Kelly L. McGuire**, David D. Busath

2872-Pos **Board B418**
SELECTIVE INHIBITION OF DIFFERENT ISOFORMS OF CONNEXIN HEMICHANNELS BY NEW AMINOGLYCOSIDES. **Abbey Kjellgren**, Mariana C. Fiori, Madher N. AlFindee, Yagya P. Subedi, Srinivasan Krishnan, Cheng-Wei T. Chang, Guillermo A. Altenberg

2873-Pos **Board B419** **Travel Awardee**
CYSLT1 RECEPTOR ANTAGONISTS PRANLUKAST AND ZAFIRLUKAST INHIBIT LRRC8-MEDIATED VOLUME REGULATED ANION CHANNELS INDEPENDENTLY OF THE RECEPTOR. **Eric E. Figueroa**, Jerod S. Denton

2874-Pos **Board B420**
ALTERATION OF MEMBRANE CHOLESTEROL CONTENT PLAYS A KEY ROLE IN REGULATION OF CFTR CHANNEL ACTIVITY. **Guiying Cui**, Kirsten A. Cottrill, Kerry M. Strickland, Barry R. Imhoff, Nael A. McCarty

2875-Pos **Board B421**
CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR GENE VARIATIONS IN CODING AND NONCODING REGIONS IN CONGENITAL BILATERAL ABSENCE OF THE VAS DEFERENS DEPENDENT INFERTILITY. **Semire Uzun Göçmen**, Klaus Wagner, Sina Gökçe

2876-Pos **Board B422**
ANTIEPILEPTIC DRUG ETHOSUXIMIDE MAY REGULATE ABSENCE SEIZURES THROUGH DIFFERENT ION CHANNELS. **Boris Shalomov**, Shoham Dabbah, Nathan Dascal

2877-Pos **Board B423**
PHARMACOLOGICAL SENSITIVITY OF KCNQ & GIRK K^+ CHANNELS AND CA_V CA^{2+} CHANNELS TO COMMONLY-USED DRUGS. Victor de la Rosa, **Mark S. Shapiro**

2878-Pos **Board B424**
POTASSIUM CHANNEL ACTIVITY UNVEILS CANCER VULNERABILITY: FROM SIGNALING CONTROLLING TUMOR GROWTH AND METASTASIS TO PRECISION MEDICINE. **Saverio Gentile**

2879-Pos **Board B425**
KV11.1 CHANNEL ACTIVITY CONTROL REACTIVE OXYGEN SPECIES (ROS) HOMEOSTASIS IN BREAST CANCER CELLS. **Vitaly Senyuk**, Alexandra Hegel, Saverio Gentile

2880-Pos Board B426
KATP ACTIVITY IN INTESTINAL SMOOTH MUSCLE REGULATES MOTILITY. **Nathaniel W. York**, Helen Parker, David Tyus, Zili Xie, Maham Akbar, Zihan Yan, Hongzhen Hu, Maria S. Remedi, Colin G. Nichols

2881-Pos Board B427
REPURPOSING THE KIR6.2/SUR2 CHANNEL ACTIVATOR MINOXIDIL TO TREAT GYNECOLOGICAL CANCERS. Vitaly Senyuk, Angela Russo, Margaret Liotta, Ronald Potkul, Craig Beeson, Joanna Burdette, **Saverio Gentile**

2882-Pos Board B428
BIOPHYSICAL AND PHARMACOLOGICAL CHARACTERIZATION OF ATP-SENSITIVE POTASSIUM CHANNELS IN MICE KIR6.1$^{WT/V65M}$ MIRRORING THE HUMAN CANTU' SYNDROME. Fatima Maqoud, Rosa Scala, Antonietta Mele, Conor McClenaghan, Maria S. Remedi, Colin C. Nichols, **Domenico Tricarico**

2883-Pos Board B429
PHARMACOLOGICAL APPROACHES FOR TARGETING CARDIOVASCULAR AND SKELETAL MUSCLE KATP CHANNELOPATHIES. **Conor McClenaghan**, Yan Huang, Zihan Yan, Jacob Roeglin, Theresa Harter, Carmen Halabi, Maria S. Remedi, Colin G. Nichols

2884-Pos Board B430
DEVELOPMENT OF SMALL-MOLECULE INHIBITORS OF PROTON-ACTIVATED CHLORIDE CHANNELS. **Eric E. Figueroa**, Jerod S. Denton

2885-Pos Board B431
INHIBITORY PROFILE OF CLOZAPINE AT CIPA CARDIAC ION CHANNELS. **Georg Andrees Bohme**

2886-Pos Board B432
OPTIMIZING FOR INFORMATION CONTENT ON IONFLUX MERCURY AUTOMATED PATCH CLAMP. **Arpad Mike**, Krisztina Pesti, Mátyás Csaba Földi, Zsolt Bagoly, Gábor Papp, Péter Lukács

2887-Pos Board B433
PREDICTING CLINICAL RISK OF TORSADE WITH QNET: COMBINING *IN SILICO* COMPUTER MODELING WITH *IN VITRO* ION CHANNEL DATA. **Leigh Korbel**, Randall Rasmusson, G Bett

2888-Pos Board B434
USING NEW *IN VITRO* CARDIAC ION CHANNEL ASSAYS AND *IN SILICO* MODELS TO PREDICT PROARRHYTHMIC RISK WITH AUTOMATED PATCH CLAMP DATA. **Edward S. Humphries**, John Ridley, Robert W. Kirby, Marc Rogers

2889-Pos Board B435
A METHOD FOR PREPARATION OF FRESHLY-ISOLATED HUMAN URINARY BLADDER SMOOTH MUSCLE CELLS: UTILITY FOR CHARACTERIZATION OF WHOLE-CELL CATION CURRENTS. John Malysz, Eric S. Rovner, Robert Wake, **Georgi V. Petkov**

2890-Pos Board B436
ELECTROPHYSIOLOGICAL EXAMINATION OF THE EFFECTS OF CLASSICAL PHARMACOLOGICAL AGENT VERAPAMIL IN PLANT BASED MODEL SYSTEM. **Vilmantas Pupkis**, Indre Lapeikaite, Vilma Kisnieriene

Cardiac Muscle Regulation (Boards B437 - B458)

2891-Pos Board B437 Travel Awardee
SELECTIVE PHOSPHORYLATION OF CMYBP-C INCREASES CROSS-BRIDGE CYCLING RATES IN PERMEABILIZED CARDIOMYOCYTES FROM SPY-C MICE. **Nathaniel C. Napierski**, Kevin Granger, Samantha P. Harris

2892-Pos Board B438
A TROPOMYOSIN CABLE MODEL ON THIN-FILAMENTS DEDUCED BY PROTEIN-PROTEIN DOCKING. **Elumalai Pavadai**, Michael J. Rynkiewicz, William Lehman

2893-Pos Board B439
A METHOD TO STUDY CONTRACTILITY OF SKINNED FROZEN SECTIONS OF MOUSE VENTRICULAR PAPILLARY MUSCLE AND THE EFFECT OF THE RESTRICTIVE TRUNCATION OF THE N-TERMINAL EXTENSION OF CARDIAC TROPONIN I. **Hanzhong Feng**, J.p. Jin

2894-Pos Board B440
THE C-TERMINAL END PEPTIDE OF TROPONIN I AS A MYOFILAMENT CA^{2+}DESENSITIZER. Sienna Wong, Han-Zhong Feng, **J.p. Jin**

2895-Pos Board B441
AN INDEPENDENT POOL OF GSK-3B MODULATES CALCIUM SENSITIVITY AT THE CARDIAC MYOFILAMENT. **Marisa J. Stachowski**, Andrei Zlobin, Maria Papadaki, Edith Perez, Jody L. Martin, Nitha Aima Muntu, Christine S. Moravec, Jonathan A. Kirk

2896-Pos Board B442
A NOVEL FUNCTION OF THE POLY-GLUTAMIC ACID SEGMENT OF INSECT TROPONIN T TESTED IN MOUSE HEART FOR IMPROVING CARDIAC EFFICIENCY. **Tianxin Cao**, Hanzhong Feng, J.p. Jin

2897-Pos Board B443
BIOPHYSICS OF THE SERCA2A/DWORF COMPLEX, IMPLICATIONS FOR TREATMENT OF HEART FAILURE. **Ang Li**, Daniel Stroik, Tory Schaaf, Samantha Yuen, Evan Kleinboehl, Razvan L. Cornea, David D. Thomas

2898-Pos Board B444
DEAMIDATION OF ASPARAGINE14 PREVENTS SERINE15 PHOSPHORYLATION OF HUMAN CARDIAC MLC2V. Paul Goldspink, **Jody L. Martin**, Chad M. Warren, Walter Thompson, Elena Levi-D'Ancona, Pieter P. de Tombe

2899-Pos Board B445
MODUMODULATION BY INOTROPIC INTERVENTIONS OF THE REGULATORY STATE OF THE CARDIAC THICK FILAMENT IN DIASTOLE. Marco Caremani, Serena Governali, Massimo Reconditi, Francesca Pinzauti, Theyencheri Narayanan, Ger J. Stienen, Marco Linari, **Vincenzo Lombardi**, Gabriella Piazzesi

2900-Pos Board B446
ACTIN-BINDING COMPOUNDS, DISCOVERED FROM FRET-BASED HIGH-THROUGHPUT SCREENING, DIFFERENTIALLY AFFECT SKELETAL AND CARDIAC MUSCLE. **Piyali Guhathakurta**, Lien Phung, Sarah Lichtenberger, Ewa Prochniewicz, David D. Thomas

2901-Pos Board B447
MAVACAMTEN DECREASES MAXIMAL FORCE AND CA^{2+}-SENSITIVITY OF CONTRACTION IN MYOCARDIAL STRIPS FROM A MOUSE MODEL FOR HYPERTROPHIC CARDIOMYOPATHY. **Peter O. Awinda**, Marissa Watanabe, Yemeserach Bishaw, Katarzyna Kazmierczak, Danuta Szczesna-Cordary, Bertrand C. Tanner

2902-Pos Board B448
IN SILICO ENGINEERING OF CALMODULIN TO BIND THE CARDIAC RYANODINE RECEPTOR WITH HIGH AFFINITY. **Vladimir Bogdanov**, Svetlana Tikunova, Yongjun Kou, Nick Fadell, Julia Evans, Anthony Tirone, Garrett Hauck, Christopher Johnson, Steffen Lindert, Sandor Gyorke, Jonathan P. Davis

2903-Pos Board B449
TWO MYOFILAMENT-BASED APPROACHES TO PREVENT GENETIC DILATED CARDIOMYOPATHY. **Claire E. Branley**, Farid Moussavi-Harami, Kristina B. Kooiker, Michael Regnier, Jil C. Tardiff, Joelle Tudor, Jeremy Freeman

2904-Pos **Board B450** **Travel Awardee**
SEX DIFFERENCES IN REGULATING THE CARDIAC TRANSCRIPTOME WITHIN A MURINE MODEL FOR HYPERTROPHIC CARDIOMYOPATHY. **Karissa M. Dieseldorff Jones**, Cynthia Vied, Isela C. Valera, Prescott B. Chase, Michelle S. Parvatiyar, J. Renato Pinto

2905-Pos **Board B451**
A HIGH ALA MUTANT OF THE C-TERMINAL REGION OF HUMAN CARDIAC TNT HAS A LARGE IMPACT ON REGULATION. Dylan Johnson, Li Zhu, **Maicon Landim Vieira**, J. Renato D. Pinto, Joseph M. Chalovich

2906-Pos **Board B452**
CONNECTING CARDIAC SARCOLEMMA PROTEIN CONTENT WITH SARCOMERIC FUNCTION. **Isabella Leite Coscarella**, Maicon Landim Vieira, Isela C. Valera, Amanda L. Wacker, Prescott B. Chase, J. Renato Pinto, Michelle S. Parvatiyar

2907-Pos **Board B453**
THE ROLE OF CMYBP-C IN REGULATING THE FRANK-STARLING RELATIONSHIP. **Laurin M. Hanft**, Daniel P. Fitzsimons, Timothy A. Hacker, Richard L. Moss, Kerry S. McDonald

2908-Pos **Board B454**
PHOSPHODIESTERASE 2 AND 3 REGULATE COMPARTMENTALIZED BETA2-ADRENERGIC RECEPTOR CAMP SIGNALING. **Michael W. Rudokas**, John P. Post, Chase M. Fiore, Shailesh R. Agarwal, Robert D. Harvey

2909-Pos **Board B455** **Travel Awardee**
OBSERVING THE MYOSIN SUPER-RELAXED STATE (SRX) IN CARDIAC THICK FILAMENTS. **Sami Chu**, Sriya Byrapuneni, David D. Thomas, Joseph M. Muretta

2910-Pos **Board B456**
OSMOTIC COMPRESSION INFLUENCES CROSS-BRIDGE DETACHMENT RATE IN TRANSGENIC HYPERTROPHIC CARDIOMYOPATHY VARIANT HCTNT-I79N AND NON-TRANSGENIC MOUSE CARDIAC MUSCLE. **Maicon Landim Vieira**, Bjorn C. Knollmann, Hyun S. Hwang, Coen A. Ottenheijm, J. Renato D. Pinto, Prescott B. Chase

2911-Pos **Board B457**
DESIGN OF AN OPTICAL TWEEZERS SYSTEM WITH FAST DIGITAL FEEDBACK FOR STUDYING THE MECHANOCHEMISTRY OF CARDIAC MYOSIN. **William Stump**, Thomas Blackwell, Sarah R. Clippinger, Michael J. Greenberg

2912-Pos **Board B458**
CHARACTERIZATION OF THE CARDIAC MYOSIN INHIBITOR CK-3773274: A POTENTIAL THERAPEUTIC APPROACH FOR HYPERTROPHIC CARDIOMYOPATHY. **James J. Hartman**, Darren T. Hwee, Jingying Wang, Yangsong Wu, Julia Schaletzky, Preeti Paliwal, Ken Lee, Khanha D. Taheri, Eddie Wehri, Todd J. Ewing, Joseph P. Michel, Chihyuan Chuang, Eva R. Chin, Bradley P. Morgan, Fady I. Malik

Microtubules, Structure, Dynamics, and Associated Proteins (Boards B459 - B475)

2913-Pos **Board B459**
TUBULIN TAILS AND THEIR MODIFICATIONS REGULATE PROTEIN DIFFUSION ON MICROTUBULES. **Koby Levy**

2914-Pos **Board B460**
GMPCPP-TUBULIN ISLANDS REGULATE THE MECHANISM AND KINETICS OF MICROTUBULE DEPOLYMERIZATION. **George D. Bachand**, Jonathan A. Bollinger, Zachary Imam, Mark J. Stevens

2915-Pos **Board B461**
STUDY OF TAU N-TERMINAL MUTATION, R5L, ON TAU INTERACTION WITH THE MICROTUBULE LATTICE. **Alisa Cario**, Morgan Dexter, Christopher L. Berger

2916-Pos **Board B462**
C-TERMINAL TAIL POLYGLYCYLATION AND POLYGLUTAMYLATION ALTER MICROTUBULE MECHANICAL PROPERTIES. Kathryn P. Wall, Harold Hart, Thomas Lee, Cynthia Page, Taviare L. Hawkins, **Loren E. Hough**

2917-Pos **Board B463**
ALL TUBULINS ARE NOT ALIKE: HETERODIMER DISSOCIATION DIFFERS AMONG DIFFERENT BIOLOGICAL SOURCES: COMPARISON WITH DIMER ASSOCIATION. Felipe A. Montecinos-Franjola, Sumit K. Chaturvedi, Peter Schuck, **Dan L. Sackett**

2918-Pos **Board B464**
SUBNANOMETER MECHANICS OF MICROTUBULE SELF-(DIS)ASSEMBLY. **Maxim Igaev**, Helmut Grubmueller

2919-Pos **Board B465** **Travel Awardee**
EFFECTS OF SEVERING ENZYMES ON THE LENGTH DISTRIBUTION AND TOTAL MASS OF MICROTUBULES. **Yin-wei Kuo**, Olivier Trottier, Mohammed Mahamdeh, Jonathon Howard

2920-Pos **Board B466**
MICROTUBULE POLARITY IN AXONS IS SORTED BY A MOLECULAR GRADIENT OF DYNACTIN. **Maximilian A. Jakobs**, Kristian Franze

2921-Pos **Board B467**
ULTRAFAST FORCE-CLAMP STUDIES OF THE DIFFUSING MICROTUBULE-BINDING PROTEINS. **Ekaterina L. Grishchuk**, Vladimir Demidov, Shaowen Wu, Ivan V. Gonchar, Fazly I. Ataullakhanov

2922-Pos **Board B468**
COMPUTATIONAL ANALYSIS OF NUCLEOTIDE-DEPENDENT MECHANICAL PROPERTIES OF MICROTUBULE PROTOFILAMENTS. **James E. Gonzales**, Wonmuk Hwang

2923-Pos **Board B469**
A REAL-SPACE METHOD TO MEASURE THE PERSISTENCE LENGTH OF DYNAMIC MICROTUBULES. **Jeffrey Spector**, Gilman E.S. Toombes, Kenton Swartz, Antonina Roll-Mecak

2924-Pos **Board B470**
MICROTUBULE IN VITRO BUNDLE STRUCTURES DEPENDS ON TAU PROJECTION DOMAIN AND IONIC STRENGTH. **Hasaeam Cho**, Hanjoon Nho, Juncheol Lee, Sang Yeop Lee, Kyeong Sik Jin, Herbert P. Miller, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya, Myung Chul Choi

2925-Pos **Board B471** **Travel Awardee**
CAN THRESHOLD CHOICES INFLUENCE OBSERVED MICROTUBULE AGING? **Kristopher S. Murray**, Ava J. Mauro, Holly V. Goodson

2926-Pos **Board B472**
MATHEMATICAL MODELING AND SIMULATIONS OF CENTRIOLE POSITIONING DURING MITOSIS OF CELLS IN CONFINED ENVIRONMENTS. **Nadia C. Beydoun**, Parag Katira, Christian Mercado, Brianna Roseberry

2927-Pos **Board B473**
BRAIN MICROTUBULE STRUCTURES BEHAVE AS MEMRISTIVE DEVICES. **María del Rocío Cantero**, Paula L. Perez, Noelia Scarinci, Brenda C. Gutierrez, Horacio F. Cantiello

2928-Pos **Board B474**
THE DEPENDENCE OF TAU-MEDIATED MICROTUBULE ASSEMBLY AND BUNDLE FORMATION ON GTP AND MG^{2+}. **Bretton Fletcher**, Chaeyeon Song, Phillip A. Kohl, Herbert P. Miller, Youli Li, Myung Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

2929-Pos **Board B475**
STRUCTURAL EVOLUTION OF ENERGY-CONSUMING TAU MEDIATED MICROTUBULE BUNDLES. **Phillip A. Kohl**, Bretton Fletcher, Chaeyeon Song, Peter J. Chung, Herbert P. Miller, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

Cell Mechanics, Mechanosensing, and Motility II (Boards B476 - B509)

2930-Pos Board B476
DYNAMICAL INITIATION OF THE SYNERGETIC MIGRATION IN EPITHELIAL WOUND. **Hyuntae Jeong**, Yeojin Wook, Seunghwa Ryu, Jennifer H. Shin

2931-Pos Board B477
MESENCHYMAL-LIKE MIGRATION STRATEGIES OF IMMUNE CELLS IN A 3D ENVIRONMENT. **Tina Czerwinski**, Christoph Mark, Susanne Rössner, Caroline Bosch-Voskens, Tapomoy Bhattacharjee, Thomas E. Angelini, Ben Fabry

2932-Pos Board B478
INFLUENCE OF CELL CONFLUENCY ON MECHANICAL PROPERTIES OF BREAST CELLS. **Hyunsu Lee**, Keith Bonin, Martin Guthold

2933-Pos Board B479
AGILITY IN MECHANOCHEMICAL CELLULAR RESPONSES: SPATIALLY-LOCALIZED COUPLING OF CELLULAR CONTROL MODULATES TRACTION STRESSES AND RETROGRADE FLOW WITHIN CELLS. **Magdalena Stolarska**, Aravind R. Rammohan

2934-Pos Board B480
A CAPILLARY CONTROLLED HYDROGEL MICROCHANNEL FOR ISOTROPIC COMPRESSIVE STRESS QUANTIFICATION. **Ernesto Criado-Hidalgo**, Antoni Garcia-Herreros, Yi-Ting Yeh, Juan C. Lasheras, Juan C. del Alamo

2935-Pos Board B481
WHAT IS GENETIC ENTROPY. AN EQUILIBRIUM OR A NON EQUILIBRIUM ENTROPY. **Bailey Smoot**, Randal L. Hallford, Salvatore Capotosto, Preet Sharma

2936-Pos Board B482
EFFECT OF VARYING MECHANICAL ENVIRONMENT IN 2D CULTURE ON SUBSEQUENT METASTASIS PROCESS OF OVARIAN CANCER. **Jiwon Kim**, Sangyoon Oh, Jennifer H. Shin

2937-Pos Board B483
TOWARDS NANOMECHANICAL PROPERTIES FROM PIPETTE ION CURRENTS. **Nicola Lacalendola**, Ankita Gangotra, Geoff R. Willmott

2938-Pos Board B484
RETARDATION CAN QUANTIFY TENSION IN SINGLE STRESS FIBERS? **Shukei Sugita**, Masatoshi Hozaki, Tsubasa S. Matusi, Yoshihiro Ujihara, Shinji Deguchi, Masanori Nakamura

2939-Pos Board B485 Travel Awardee
ELEVATED EXTRACELLULAR FLUID VISCOSITY STIMULATES MIGRATION OF METASTATIC CANCER CELLS. **Matthew Pittman**, Keva Li, Yun Chen

2940-Pos Board B486
NEUROMECHANICS OF MAMMALIAN CORTICAL NEURONS. **Krishna Chaitanya Kasuba**, Benjamin M. Gaub, Silvia Ronchi, Daniel J. Mueller, Andreas Hierlemann

2941-Pos Board B487
SELF-ORGANIZATION OF HUMAN SPERMATOZOA IN RECTANGULAR MICROCHANNELS. **Anton Bukatin**, Vasily Kantsler

2942-Pos Board B488
A BALANCE BETWEEN TURNING AND PERSISTENT MOTION IS CRITICAL FOR FAST AND EFFICIENT 3-DIMENSIONAL NEUTROPHIL MIGRATION. **Joshua Francois**, Yi-Ting Yeh, Cindy Ayala, Richard Firtel, Juan Carlos del Alamo, Shu Chien, Juan C. Lasheras

2943-Pos Board B489
ENGINEERED PERICELLULAR MATRIX DEPOSITION CONTROLS MESENCHYMAL STROMAL CELL VOLUME EXPANSION AND FATE. **Sing-Wan Wong**, Raymond Bargi, Celine Macaraniag, Zhangli Peng, Jae-Won Shin

2944-Pos Board B490
LABEL-FREE CYTOMETRY IN VIRTUAL FLUIDIC CHANNELS - HIGH-THROUGHPUT CELL RHEOLOGY AND TISSUE MECHANICS. Muzaffar H. Panhwar, Fabian Czerwinski, Bob Fregin, Venkata A. Dabbiru, Yesaswini Komaragiri, Doreen Biedenweg, Ricardo H. Pires, **Oliver Otto**

2945-Pos Board B491
PREDICTING COLLECTIVE MIGRATION OF HETEROGENEOUS CELL POPULATIONS. **Jairaj Mathur**, Amit Pathak

2946-Pos Board B492
SPATIAL CONFINEMENT MODULATES CELL VELOCITY IN COLLECTIVE CELL MIGRATION. **Sylvain Gabriele**

2947-Pos Board B493
LEADING EDGE MAINTENANCE IN MIGRATING NEUTROPHIL-LIKE HL-60 CELLS IS AN EMERGENT PROPERTY OF BRANCHED ACTIN GROWTH. **Rikki M. Garner**, Elena F. Koslover, Andrew J. Spakowitz, Julie Theriot

2948-Pos Board B494
UNDERSTANDING THE RELEVANCE OF THE 3D-MICROENVIRONMENT FOR SINGLE CELL AND SINGLE SPHEROID MECHANICS. **Venkata Aditya S. Dabbiru**, Muzaffar H. Panhwar, Doreen Biedenweg, Fabian Czerwinski, Ricardo H. Pires, Oliver Otto

2949-Pos Board B495
TRACTION FORCES CONTROL CELL-EDGE DYNAMICS AND MEDIATE DISTANCE-SENSITIVITY DURING CELL POLARIZATION. **Zeno Messi**

2950-Pos Board B496 Travel Awardee
UNVEILING THE TREND OF CHANGES IN MECHANICAL PHENOTYPES BETWEEN SUBPOPULATIONS OF ISOGENIC CANCER CELLS AT DISTINCT METASTATIC STAGES. **Zhenhui Liu**, Se Jong Lee, Seungman Park, Konstantinos Konstantopoulos, Kristine Glunde, Yun Chen, Ishan Barman

2951-Pos Board B497
CELL MORPHOLOGY AND SUBSTRATE LIGAND DENSITY DETERMINES ADHESION STRENGTH AND REMODELLING UNDER DYNAMIC SHEAR. Neha Paddillaya, Paturu Kondaiah, Pramod A. Pullarkat, Gautam I. Menon, **Namrata Gundiah**

2952-Pos Board B498
QUANTIFYING SUBSTRATE RIGIDITY EFFECTS ON CANCER CELL MECHANICS USING SINGLE CELL FORCE SPECTROSCOPY. **Tsung-Cheng Lin**, Jingqiang Li, Sithara S. Wijeratne, Xin He, Xuewen Feng, Nicolas Nikoloutsos, Raymond Fang, Kevin Jiang, Ian Y. Lian, Ching-Hwa Kiang

2953-Pos Board B499
SPHERICAL MICROWELL ARRAYS TO CULTURE CELLS IN 3D CONFINEMENT. **Keng-hui Lin**, Cheng-Kuang Huang, Giovanni Paylaga

2954-Pos Board B500
DYNAMIC REAL-TIME DEFORMABILITY CYTOMETRY - TIME-RESOLVED MECHANICAL SINGLE CELL ANALYSIS AT 100 CELLS/S. **Bob Fregin**, Fabian Czerwinski, Doreen Biedenweg, Salvatore Girardo, Stefan Groß, Konstanze Aurich, Oliver Otto

2955-Pos Board B501
EVOLUTION OF CELL/SUBSTRATE STRESSES DURING CONFINED INTERFACIAL MIGRATION. **Abhishek Mukherjee**, Ramesh Singh, Wenyi Yan, Shamik Sen

2956-Pos **Board B502**
DENSITY OF IMMOBILIZED ANTIBODIES MODULATES NEUTROPHIL BIOPHYSICAL BEHAVIOR AND CALCIUM DYNAMICS DURING PHAGOCYTIC SPREADING. **Emmet A. Francis**, Lay Heng Teng, Kay Hadrick, Volkmar Heinrich

2957-Pos **Board B503**
MOLECULAR STRUCTURE OF FIBRIN DIRECT PLATELET RESPONSE UNDER MECHANICAL STIMULI. **Sachin Kumar B**, Yujen Wang, Sapun H. Parekh

2958-Pos **Board B504**
CHONDROCYTE DYNAMICS UNDER HIGH HYDROSTATIC PRESSURE. **Masatoshi Morimatsu**, Kazuki Teramachi, Masayoshi Nishiyama, Keiji Naruse

2959-Pos **Board B505**
THE MORPHOLOGICAL SIGNATURES RELATED TO HETEROGENEOUS MOTILITY OF CANCER CELLS UNDER CONSTRAINTS. **Xingjian Zhang**, Trevor Chan, Michael Mak

2960-Pos **Board B506**
TOPOGRAPHICAL GUIDANCE OF HIGHLY MOTILE AMOEBOID CELL MIGRATION. **Joeri A. Wondergem**, Patrick Witzel, Maria Mytiliniou, David Holcman, Doris Heinrich

2961-Pos **Board B507**
HIGH HYDROSTATIC PRESSURE INDUCES VIGOROUS FLAGELLAR BEATING IN*CHLAMYDOMONAS*NON-MOTILEMUTANTS LACKING THE CENTRAL APPARATUS. Toshiki Yagi, **Masayoshi Nishiyama**

2962-Pos **Board B508**
COLLECTIVE SYNCHRONIZATION OF CONTRACTILE FORCES IN TUMOR SPHEROIDS. David Böhringer, Christoph Mark, Nadine Grummel, Pamela L. Strissel, Reiner Strick, Thomas J. Grundy, Geraldine M. O'Neill, **Ben Fabry**

2963-Pos **Board B509**
MODELING CO-EVOLUTION OF MECHANICALLY HETEROGENEOUS CELL POPULATIONS. **Gudur Ashrith Reddy**, Parag Katira

Cytoskeletal-based Intracellular Transport (Boards B510 - B514)

2964-Pos **Board B510**
STEPWISE MOVEMENT OF MYOSIN-10 WITHIN THE FILOPODIUM OF LIVE MAMMALIAN CELLS. **Gregory I. Mashanov**, Tatiana A. Nenasheva, Francine Parker, Laura Knipe, Michelle Peckham, Justin E. Molloy

2965-Pos **Board B511**
DYNAMICS AND MECHANISMS OF DC-SIGN RECRUITMENT TO THE *C. ALBICANS* FUNGAL CONTACT SITE WITH MICROMANIPULATOR SYSTEM. **Rohan Choraghe**, Aaron Neumann

2966-Pos **Board B512**
IN SILICO MODEL OF MYOSIN VA-MEDIATED LIPOSOME TRANSPORT PREDICTS ACTIN FILAMENT DENSITY AND LIPOSOME DIAMETER DICTATE TRANSPORT MODES. **Sam Walcott**, David M. Warshaw

2967-Pos **Board B513**
THE ROLE OF ARP2/3 COMPLEX IN INFLAMMATORY ACTIVATION AND TLR4 ENDOCYTOSIS. **Elsa Ronzier**, Jeremy Rotty

2968-Pos **Board B514**
MOLECULAR MOTOR ORGANIZATION AND MOBILITY ON CARGOS CAN OVERCOME A TRADEOFF BETWEEN FAST BINDING AND RUN LENGTH. **Matthew J. Bovyn**, Steven Gross, Jun F. Allard

Electron and Proton Transfer (Boards B515 - B525)

2969-Pos **Board B515**
BIOPHYSICAL ELECTRON TRANSFER FROM THE PERSPECTIVE OF DIELECTRIC CONTINUUM THEORY. **David Gnandt**, Thorsten Koslowski

2970-Pos **Board B516**
UNIFIED MODEL FOR PHOTOPHYSICAL AND ELECTRO-OPTICAL PROPERTIES OF GREEN FLUORESCENT PROTEINS. **Chi-Yun Lin**, Matthew G. Romei, Luke M. Oltrogge, Irimpan I. Mathews, Steven G. Boxer

2971-Pos **Board B517**
THE EFFECT OF MULTIPLE PHOSPHORYLATIONS ON THE INTERACTION BETWEEN CYTOCHROME C AND CYTOCHROME C OXIDASE. **Clayre Parson**, Martha Scharlau, Francis Millett

2972-Pos **Board B518**
RADICAL FORMATION IN THE PHOTOACTIVATED ADENYLATE CYCLASE OAPAC REVEALED BY ULTRAFAST SPECTROSCOPY. **Andras Lukacs**, Jinnette Tolentino, James Iuliano, Katalin Pirisi, Peter J. Tonge, Greg Greetham, Mike Towrie, Stephen R. Meech

2973-Pos **Board B519**
REGULATION OF ELECTRON TRANSFER FROM CYTOCHROME C TO CYTOCHROME C OXIDASE BY PHOSPHORYLATION OF CC THR-28. **Earl M. Neel**, Martha Scharlau, Francis Millett

2974-Pos **Board B520**
ELECTROSTATIC CONTROL OF PHOTOISOMERIZATION PATHWAYS IN PROTEINS. **Matthew G. Romei**, Chi-Yun Lin, Irimpan I. Mathews, Steven G. Boxer

2975-Pos **Board B521**
ENGINEERING A CYTOCHROME WITH A TUNABLE BANDGAP POTENTIAL. **Taylor L. Corridon**, Coleman M. Swaim, Oleksandr Kokhan, Samuel D. Fontaine

2976-Pos **Board B522**
ENABLING PROTON TRANSPORT THROUGH ION CHANNELS WITH ADAPTIVE QM/MM. **Adam W. Duster**, Hai Lin

2977-Pos **Board B523**
STUDY OF WATER AND PROTON CHANNELS NEAR TO THE OXYGEN EVOLVING COMPLEX OF PHOTOSYSTEM II. **Divya K. Matta**, Krystle M. Reiss, Gary W. Brudvig, Victor S. Batista, Marilyn Gunner

2978-Pos **Board B524**
DETERMINATION OF THE BINDING INTERACTION BETWEEN MITOCHONDRIAL ELECTRON TRANSPORT CHAIN PROTEINS CYTOCHROME C AND CYTOCHROME C OXIDASE. **Tyler Elmendorf**, Martha Scharlau, Francis Millett

2979-Pos **Board B525**
THE MECHANISM OF SUBSTRATE DELIVERY AND ACTIVATION IN THE SOLAR WATER OXIDATION REACTION OF PHOTOSYSTEM II. **K V. Lakshmi**, Vidmantas Kalendra, Gourab Banerjee, Ipsita Ghosh, Ke Yang, Victor S. Batista, Gary W. Brudvig

Emerging Techniques and Synthetic Biology (Boards B526 - B535)

2980-Pos **Board B526**
DEBUGGING SYNTHETIC CIRCUITS WITH OPTOGENETIC CONTROL. **Zachary Fox**, Remy Chait, Gregory Batt, Jakob Ruess

2981-Pos **Board B527** **Travel Awardee**
LIGHT-INDUCIBLE GENERATION OF MEMBRANE CURVATURE IN LIVE CELLS WITH ENGINEERED BAR DOMAIN PROTEINS. **Taylor Jones**, Bianxiao Cui

2982-Pos **Board B528**
ENCODING SPATIAL MEMORY WITHIN A BACTERIAL BIOFILM COMMUNITY. **Chih-Yu Yang**, Maja Bialecka-Fornal, Colleen Weatherwax, Joseph Larkin, Arthur Prindle, Jintao Liu, Jordi Garcia-Ojalvo, Gurol M. Suel

2983-Pos **Board B529**
CURRENT NOISE ANALYSIS OF A PROTEIN RECEPTOR. **Jiaxin Sun**, Avinash K. Thakur, Liviu Movileanu

2984-Pos **Board B530**
TACKLE CIRCUIT-HOST INTERACTIONS TO ENGINEER ROBUST GENE CIRCUITS. **Xiaojun Tian**

2985-Pos **Board B531**
GENETIC BARCODES ENABLE QUANTITATIVE MAPPING OF OPERATOR MUTANTS TO GENE EXPRESSION. **Nicholas S. McCarty**, Manuel Razo-Mejia, Rob Phillips

2986-Pos **Board B532**
BIOELECTRICAL SIGNALING AND PATTERN FORMATION VIA DOMAIN WALL MIGRATION. **Harold M. McNamara**, Rajath Salegame, Ziad Al Tanoury, Haitan Xu, Gloria Ortiz, Olivier Pourquie, Adam E. Cohen

2987-Pos **Board B533** **Travel Awardee**
DESIGNER MEMBRANELESS ORGANELLES ENABLE HIGHLY SPECIFIC PROTEIN ENGINEERING IN EUKARYOTES. **Christopher D. Reinkemeier**, Gemma Estrada Girona, Mikhail E. Sushkin, Edward A. Lemke

2988-Pos **Board B534**
HOW COMPLEX MOLECULES COULD POSSIBLY BE STABLE AT THE DAWN OF LIFE: OUT OF EQUILIBRIUM DISSIPATION SHAPES SELECTION. **Daniel Maria Busiello**, Shiling Liang, Paolo De Los Rios

2989-Pos **Board B535**
EFFECT OF FERMENTATION ON CHEMICAL AND NUTRITIONAL VALUE OF SOME SELECTED GRAINS. Olusola Ladokun, **Sarah O. Oni**, Olawale Akanbi

EPR and NMR: Spectroscopy and Imaging (Boards B536 - B545)

2990-Pos **Board B536**
SENSETIVITY GAIN IN NONUNIFORMLY SAMPLED NMR EXPERIMENTS. **Yulia Pustovalova**, Jeffrey C. Hoch

2991-Pos **Board B537**
WITHDRAWN.

2992-Pos **Board B538**
IMPROVED GROWTH PROTOCOL FOR THE PRODUCTION OF LOW-EXPRESSION EUKARYOTIC MEMBRANE PROTEINS FOR SOLID-STATE NMR. **Rachel A. Munro**, Jeffrey De Vlugt, Vladimir Ladizhansky, Leonid S. Brown

2993-Pos **Board B539**
NMR STRUCTURAL STUDIES OF MERCURY TRANSPORT MEMBRANE PROTEINS. **Zheng Long**, Jiaqian Wu, Sang Ho Park, Anna De Angelis, Stanley Opella

2994-Pos **Board B540**
BIOPHYSICAL CHARACTERIZATION OF THE ROLE OF GAG UBIQUITINATION IN HIV-1 BUDDING. **Bhargavi Ramaraju**

2995-Pos **Board B541**
NMR STUDY OF POLYMER DIFFUSION IN THE PRESENCE OF A BIOLOGICAL INTRACELLULAR CROWDER. **Yanitza Trosel**, Valerie Booth, Anand Yethiraj

2996-Pos **Board B542**
WHOLE CELL ^{2}H SOLID-STATE NMR OF ANTIMICROBIAL PEPTIDES INTERACTING WITH CELL ENVELOPES: ROLE OF LIPOPOLYSACCHARIDE. **Sarika Kumari**, Michael R. Morrow, Valerie Booth

2997-Pos **Board B543**
A MULTI-MODAL APPROACH FOR THE INVESTIGATION OF COMPLEX PROTEIN SYSTEMS VIA SITE-DIRECTED SPIN-LABELING. **Samantha M. Betts**, Jazmine M. Richardson, Eldon R. Hard, John M. Franck

2998-Pos **Board B544** **Travel Awardee**
CORRELATIVE *IN VIVO* FLUORESCENCE IMAGING AND ^{19}F-MRI OF ZEBRAFISH EMBRYOS. **Beibei Meng**, Stephan L. Grage, Masanari Takamiya, Volker Middel, Neil MacKinnon, Omar Nassar, Tim Schober, Illia Hutskalov, Oleg Babii, Uwe Straehle, Jan G. Korvink, Anne S. Ulrich

2999-Pos **Board B545**
HET MOUSE MODEL SUGGESTS VESTIBULAR SYSTEM MEDIATES MAGNETIC FIELD EFFECTS. **Jason Cote**

Single-Molecule Spectroscopy II (Boards B546 - B561)

3000-Pos **Board B546**
NEW MONOMERIC BRIGHT YELLOW GENETICALLY ENCODED FLUORESCENT PROTEIN. Jody A. Dantzig, **Him Shweta**, Yale E. Goldman

3001-Pos **Board B547**
COUNTING SINGLE MOLECULES USING INFINITE FACTORIAL HIDDEN MARKOV MODELS. **Shep Bryan IV**

3002-Pos **Board B548**
RAPID SINGLE MOLECULAR DYNAMICS FROM SINGLE PHOTON ARRIVALS. **Sina Jazani**, Steve Pressé

3003-Pos **Board B549**
DEMOCRATIZING SINGLE-MOLECULE FRET: AN OPEN-SOURCE MICROSCOPE FOR MEASURING PRECISE DISTANCES AND BIOMOLECULAR DYNAMICS. Benjamin Ambrose, James Baxter, John Cully, Matthew Willmott, Benji C. Bateman, Elliot Steele, Ashley J. Cadby, Jonathan Shewring, Marleen Aaldering, **Timothy D. Craggs**

3004-Pos **Board B550**
ACCURATE FRET MEASUREMENTS RESOLVING DISTANCES AND DYNAMICS IN BIOMOLECULES. **Julian Folz**, Milana Popara, Suren Felekyan, Paul Lauterjung, Noah Salama, Christian Herrmann, Claus A. Seidel

3005-Pos **Board B551**
BELOW THE FRET LIMIT: A NEW QUANTITATIVE SINGLE-MOLECULE TOOL FOR MEASURING SHORT-RANGE (0-3 NM) BIOMOLECULAR CONFORMATIONS. **Benjamin Ambrose**, Matthew Willmott, Tristan Johnston-Wood, Robert A. Shaw, J G. Hill, Timothy D. Craggs

3006-Pos **Board B552**
WHAT HAPPENS IF YOU FIRE LASERS AT DIAMOND THEN MICROWAVE IT? A NOVEL METHOD TOWARDS ION CHANNEL STUDY.
Andrew R. Mason, William D. Jamieson, Oliver Williams, Daniel Slocombe, Oliver K. Castell

3007-Pos **Board B553**
BIOPOLYELECTROLYTE SURFACE DIFFUSION WITHIN A PLANAR SLIT GEOMETRY. **Greg Morrin**

3008-Pos **Board B554** **Travel Awardee**
SINGLE-MOLECULE STUDIES OF HETERO-FRET BIOSENSORS TO ENVIRONMENTAL IONIC STRENGTH USING DIFFERENT MODALITIES OF FLUORESCENCE CORRELATION SPECTROSCOPY. **Taryn M. Kay**, Christin Libal, Cody P. Aplin, Arnold J. Boersma, Erin D. Sheets, Ahmed A. Heikal

3009-Pos **Board B555**
SENSING THE PHOSPHORYLATION STATE OF INDIVIDUAL PEPTIDES IN SOLUTION. **Quan Wang**

3010-Pos **Board B556**
METHOD OF SYNTHETIC MOTION FOR TESTING SINGLE PARTICLE TRACKING MICROSCOPES. **Nicholas A. Vickers**, Sean B. Andersson

3011-Pos **Board B557**
QUANTITATIVE COMPARISONS OF SINGLE PARTICLE TRACKING ALGORITHMS QUANTITATIVE COMPARISON OF SINGLE PARTICLE TRACKING ALGORITHMS ACROSS DIFFERENT SIGNAL AND NOISE LEVELS. Ye Lin, **Sean B. Andersson**

3012-Pos **Board B558** **Travel Awardee**
COMPARISON OF *IN-VITRO* AND *IN-VIVO* DNA HYBRIDIZATION KINETICS USING 3D SINGLE-MOLECULE TRACKING METHOD. **Yuan-I Chen**, Yin-Jui Chang, Trung D. Nguyen, Cong Liu, Stephanie Phillion, Yu-An Kuo, Huong T. Vu, Angela Liu, Yen-Liang Liu, Soonwoo Hong, Hsin-Chin Li, Pengyu Ren, Thomas E. Yankeelov, Tim Yeh

3013-Pos **Board B559**
PINHOLE OPTICAL TWEEZERS: EXTENDING THE PHOTOBLEACHING LIFETIME IN THE PRESENCE OF AN OPTICAL TRAP BY WAVEFRONT ENGINEERING. **Zheng Zhang**, Joshua Milstein

3014-Pos **Board B560**
SINGLE-MOLECULE IMAGING IN DIAGNOSTIC ASSAYS: DIRECTLY COUNTING ANTIBODY SANDWICHES ON MICROPARTICLES. Qiaoqiao Ruan, **Patrick J. Macdonald**, Kerry M. Swift, Felicia M. Bogdan, Mark R. Pope, Sergey Y. Tetin

3015-Pos **Board B561**
EFFECT OF CHIRALITY ON THE ELASTIC PROPERTIES OF THE DNA-THREADING BINUCLEAR RUTHENIUM COMPLEX. **Adam A. Jabak**, Nicholas Bryden, Fredrik Westerlund, Per Lincoln, Micah J. McCauley, Ioulia F. Rouzina, Mark C. Williams, Thayaparan Paramanathan

Force Spectroscopy and Scanning Probe Microscopy (Boards B562 - B579)

3016-Pos **Board B562**
FLUORESCENT CORRELATION SPECTROSCOPY MEASUREMENT IN MICROFLUIDIC DEVICE. **Dayo D. Adeyemo**, Praise Farayola, Oluwaseun Egunsola, Bernard M. Hang`ormbe

3017-Pos **Board B563**
ESCRT-III SPIRALS ARE LOADED SPRINGS THAT GOVERN SPONTANEOUS MEMBRANE DEFORMATION. **Alma P. Perrino**, Nebojsa Jukic, Simon Scheuring

3018-Pos **Board B564**
MULTIPLEXED DNA ORIGAMI FORCE SENSORS WITH PROGRAMMABLE SENSITIVITIES. **Ehsan Akbari**, Melika Shahhosseini, Jonathan W. Song, Carlos E. Castro

3019-Pos **Board B565**
GAP PLASMON ENHANCED HIGH SPATIAL RESOLUTION IMAGING BY PHOTOTHERMAL INDUCED RESONANCE IN VISIBLE SPECTRAL RANGE. **Jiangtao Zhou**, Anton Smirnov, Giovanni Dietler, Sergey K. Sekatskii

3020-Pos **Board B566**
DIRECT EQUILIBRIUM PROTEIN FOLDING-UNFOLDING OF MECHANICALLY LABILE ALPHA HELICAL PROTEIN BY ATOMIC FORCE MICROSCOPY. **Adam Xiao**, Hongbin Li

3021-Pos **Board B567**
THE EFFECT OF CHAIN CONNECTIVITY ON THE THERMODYNAMIC, KINETIC AND MECHANICAL PROPERTIES OF AZURIN. Priya Yadav, Mona Gupta, Debanjana Das, **Sri Rama Koti Ainavarapu**

3022-Pos **Board B568**
DIRECT CHARACTERIZATION OF STRESS-STRAIN RELATIONSHIP FOR QUANTIFYING SINGLE CELL ELASTICITY. **Xian Wang**, Changhong Cao, Jingcheng Shan, Yakun Zhao, Tobin Filleter, Yu Sun

3023-Pos **Board B569**
TWO DISTINCT LIGAND BINDING SITES IN MONOAMINE TRANSPORTERS MONITORED BY NANOPHARMACOLOGICAL FORCE SENSING. Rong Zhu, Julia Gobl, Marion Holy, Oliver Kudlacek, Walter Sandtner, Thomas Stockner, Hermann J. Gruber, Michael Freissmuth, Amy Hauck Newman, Harald H. Sitte, **Peter Hinterdorfer**

3024-Pos **Board B570**
PROBING REAL-TIME HYPHAL GROWTH OF *CANDIDA ALBICANS* USING ATOMIC FORCE MICROSCOPY: THE EFFECT OF TEMPERATURE. **Arzu Çolak**, Melanie A.C. Ikeh, Clarissa J. Nobile, Mehmet Z. Baykara

3025-Pos **Board B571**
DIRECT OBSERVATION OF A COIL-TO-HELIX CONTRACTION TRIGGERED BY VINCULIN BINDING TO TALIN. **Rafael Tapia-Rojo**, Alvaro Alonso-Caballero, Julio M. Fernandez

3026-Pos **Board B572**
THE EXTRA-DOMAIN B OF FIBRONECTIN IS MECHANICALLY LABILE. **Chengzhi He**, Yayan Xie

3027-Pos **Board B573**
COMPUTING ATOMIC FORCE MICROSCOPY IMAGES OF CHROMOSOMES USING POLYMER SIMULATION. **Takashi Sumikama**, Adam S. Foster, Takeshi Fukuma

3028-Pos **Board B574**
THE LOW-FORCE RESPONSE OF VON WILLEBRAND FACTOR REVEALED BY MAGNETIC TWEEZERS. **Sophia Gruber**, Achim Löf, Tobias Obser, Maria A. Brehm, Martin Benoit, Jan Lipfert

3029-Pos **Board B575**
INFLUENCE OF CARBONIC ACID AND PROBE CONTACT TIMES ON ROOT HAIR - SOIL ADHESION. Anne E. Murdaugh, **Audrey Smith**

3030-Pos **Board B576**
A NOVEL PHASE-SHIFT-BASED AMPLITUDE DETECTOR FOR A HIGH-SPEED ATOMIC FORCE MICROSCOPE. **Atsushi Miyagi**, Simon Scheuring

3031-Pos **Board B577**
OPTICAL TWEEZERS AND MULTIMODALITY IMAGING: A PLATFORM FOR DYNAMIC SINGLE-MOLECULE ANALYSIS. **Ernie Au**

3032-Pos **Board B578**
EMPLOYING ATOMIC FORCE MICROSCOPY TO INVESTIGATE THE BIOPHYSICAL CHEMISTRY OF BACTERIAL PREDATOR *BDELLOVIBRIO BACTERIOVORUS*. **Asriel D. Walker**, Cindy Peraza, Catherine B. Volle, Megan A. Ferguson, Eileen M. Spain, Megan E. Nunez

3033-Pos Board B579
QUANTIFICATION OF INDIVIDUAL BASE-STACKING INTERACTIONS IN DNA USING CALORIMETRY AND SINGLE-MOLECULE FORCE CLAMP EXPERIMENTS. **Thomas H. Banco**, Jibin Abraham Punnoose, Ken Halvorsen

Micro- and Nanotechnology II (Boards B580 - B600)

3034-Pos Board B580 Travel Awardee
UNCOVERING BIOPHYSICAL PROPERTIES AND INTERACTIONS OF BACTERIA MEMBRANE USING AN OUTER MEMBRANE SUPPORTED BILAYER. **Zeinab Mohamed**, Jung-Ho Shin, Tobias Dörr, Susan Daniel

3035-Pos Board B581 Travel Awardee
MECHANICS AND WATER PERMEATION DRIVE EXTRACELLULAR VESICLE TRANSPORT UNDER CONFINEMENT IN MATRIX. **Stephen B. Lenzini**, Raymond Bargi, Gina Chung, Jae-Won Shin

3036-Pos Board B582
IN VITRO CHARACTERIZATION AND NUMERICAL SIMULATIONS OF RED BLOOD CELL TRANSMIGRATION THROUGH SPLENIC INTER-ENDOTHELIAL SLITS. **Antoni Garcia-Herreros**, Huijie Lu, Zhangli Peng, Juan C. del Alamo

3037-Pos Board B583
INTRACELLULAR STRESS OF CELL-CELL JUNCTIONS. Julia Eckert, Luca Giomi, **Thomas Schmidt**

3038-Pos Board B584
A MICROPHYSIOLOGIC BODY-IN-A-CUBE SYSTEM WITH NEAR-PHYSIOLOGIC AMOUNTS OF BLOOD SURROGATE. **Longyi Chen**, Hidetaka Ueno, Takaaki Suzuki, Mandy Esch

3039-Pos Board B585
RADIO-FREQUENCY ELECTROCHEMICAL SENSOR ARRAYS FOR BIOLOGICAL IMAGING. Kangping Hu, Eamonn Kennedy, **Jacob K. Rosenstein**

3040-Pos Board B586
IMPROVED METHOD SUPPORTING MALDI-MS ANALYSIS OF SIALYLOLIGOSACCHARIDES INCLUDING THEIR STRUCTURAL ISOMERS. **Takashi Terabayashi**, Kenji Fukuda, Minoru Morita, Tadasu Urashima

3041-Pos Board B587
REVEALING AND ATTENUATING THE ELECTROSTATIC PROPERTIES OF TUBULIN AND MICROTUBULES. **Aarat P. Kalra**, Sahil Patel, Philip Winter, Pawan Kumar, Hui Wang, Kris W. Carlson, Vahid Rezania, John Lewis, Al Meldrum, Karthik Shankar, Jack A. Tuszynski

3042-Pos Board B588
DEVELOPMENT OF ^{99M}TC-LABELING PROTOCOL FOR HYDROGEL-BASED MICROSPHERES. **Nikolett Kiss-Hegedus**, Domokos Mathe, Krisztian Szigeti

3043-Pos Board B589
NANOFIBROUS POLYMER-DOPAMINE CONJUGATES. **Krisztina Tóth**, David Juriga, Miklós Zrínyi, Gábor Varga, Angéla Jedlovszky-Hajdú, Krisztina S. Nagy

3044-Pos Board B590
CYTOSOLIC DELIVERY OF BIOCONJUGATED QDS INTO T CELL LYMPHOCYTES. **Haoran Jing**

3045-Pos Board B591 Travel Awardee
FINE-TUNING SPHERICAL NUCLEIC ACID BINDING THROUGH HETERO-MULTIVALENCY AND SPATIAL PATTERNING. **Brendan R. Deal**

3046-Pos Board B592
DESIGN AND MODELING OF A TETRAHEDRON NANOSTRUCTURE FOR ENHANCED DELIVERY OF RNAI SUBSTRATES. **Wojciech K. Kasprzak**, Paul Zakrevsky, Eckart Bindewald, William F. Heinz, Weimin Wu, Htet Kahnt, Nomongo Dorjsuren, Eric A. Fields, Natalia de Val, Luc Jaeger, Bruce A. Shapiro

3047-Pos Board B593 Travel Awardee
RECIPROCAL CONTROL OF HIERARCHICAL DNA ORIGAMI-NANOPARTICLE ASSEMBLIES. **Joshua A. Johnson**, Abhilasha Dehankar, Carlos E. Castro, Jessica Winter

3048-Pos Board B594
MASSIVELY PARALLEL ACTIVATOR SELECTION OF NANOCLUSTER BEACONS. **Yu-An Kuo**, Oliver S. Zhao, Hung-Che Kuo, James R. Rybarski, Trung D. Nguyen, Yuan-I Chen, Soonwoo Hong, Yen-Liang Liu, Ilya J. Finkelstein, Tim Yeh

3049-Pos Board B595
THE INTERACTION OF THE BLOOD PLASMA PROTEINS WITH METAL OXIDE NANOPARTICLES (ACCORDING TO LIGHT SCATTERING). **Marina Kirichenko**, Leonid Chaikov, Svetlana Krivokhizha, Nikolay Bulychev

3050-Pos Board B596
PHYSICAL CHARACTERIZATION OF SILVER NANOPARTICLES FOR NANODETECTION. **Joanna P. Patalas**, Karolina Rucinska, Agata Szymbor, Żaneta Polańska, Michał Taube, Augustyn Molinski, Zuzanna Pietralik, Barbara Peplińska, Agnieszka Boś-Liedke, Maciej Kozak

3051-Pos Board B597
SILVER NANORODS STABILISED BY GEMINI SURFACTANT AS COMPONENTS FOR NANOSENSING APPLICATIONS. **Karolina Rucinska**, Joanna P. Patalas, Żaneta Polańska, Michał Taube, Augustyn Molinski, Zuzanna Pietralik, Barbara Peplińska, Kosma Szutkowski, Agnieszka Boś-Liedke, Maciej Kozak

3052-Pos Board B598
MODULATING BIOACTIVITY WITH GOLD NANOPARTICLES. **Simon Albertini**, Felix Laimer, Lukas Tiefenthaler, Sarah Flatscher, Fabio Zappa, Mariana de Araujo, Harald Schöbel, Lukas A. Huber, Paul Scheier

3053-Pos Board B599
CHEMICALLY POWERED JANUS MICROMOTORS FOR ENZYME RATE ENHANCEMENT. **Andrew Pan**

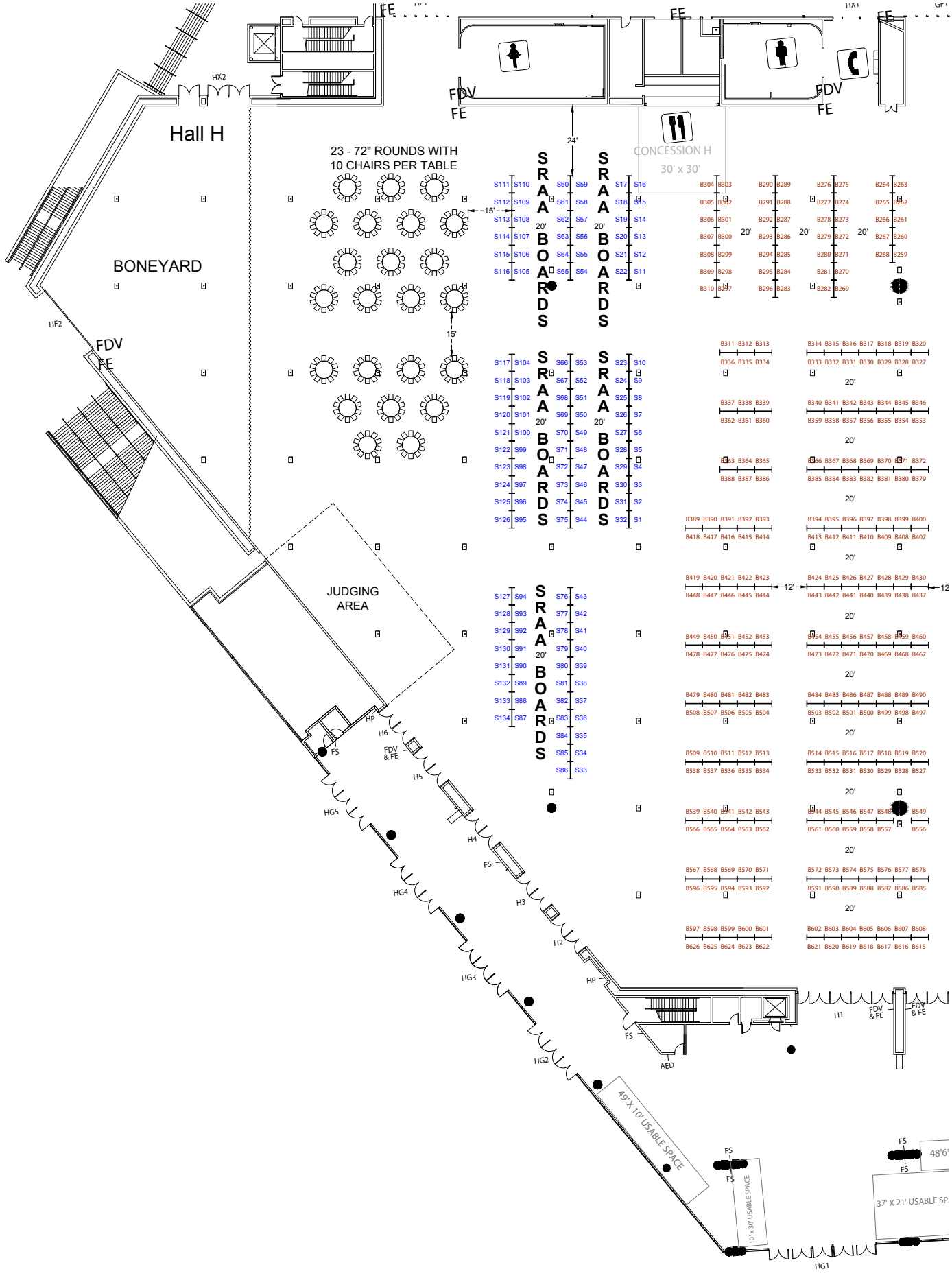
3054-Pos Board B600
PROTEIN ADSORPTION ONTO POLYSTYRENE NANOPARTICLES AND ITS EFFECT ON NANOPARTICLE AGGLOMERATION. Haixia Wang, Rui Ma, **Karin Nienhaus**, G. Ulrich Nienhaus

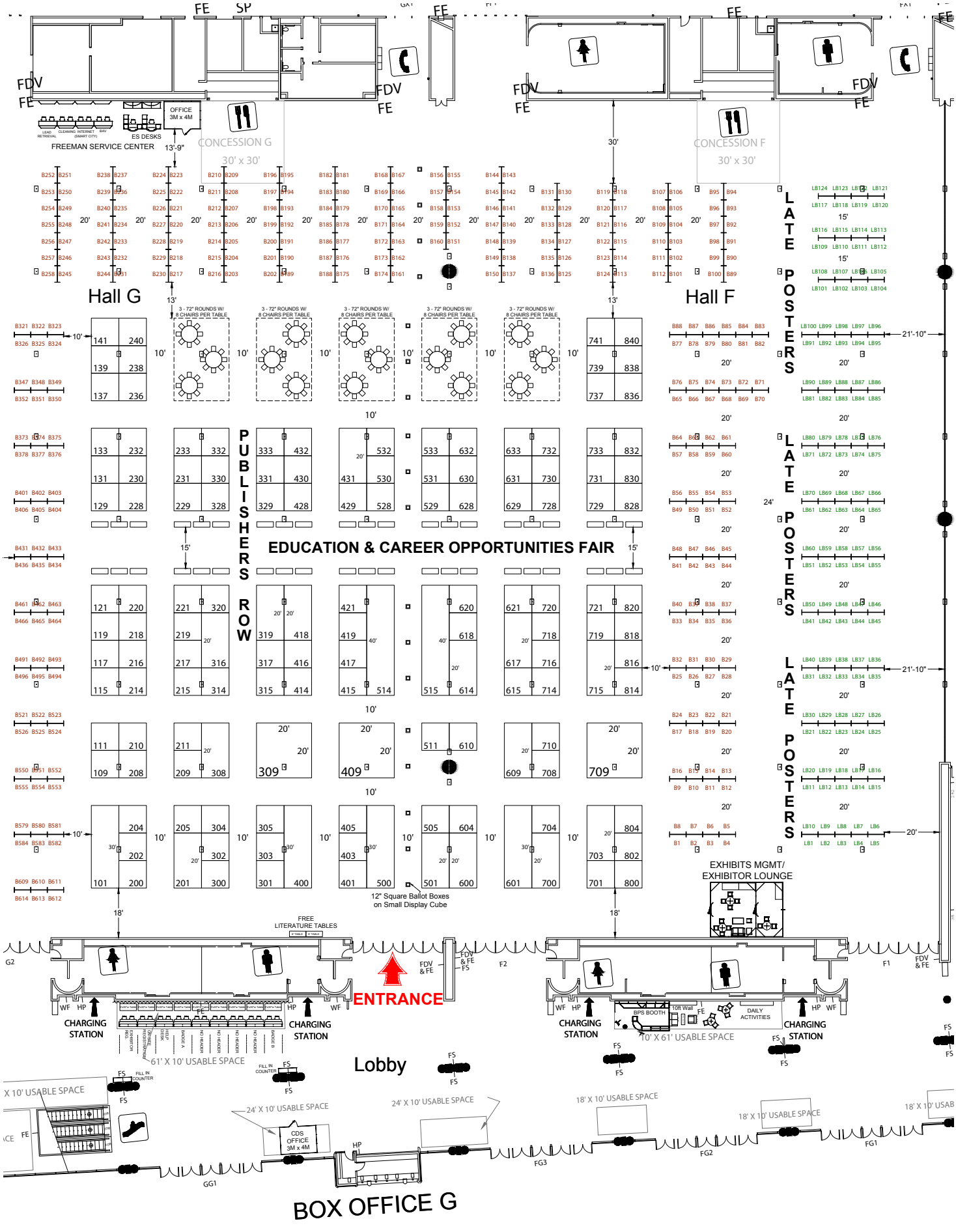
Exhibitor List and Booth Numbers

Booth Number	Exhibitor
709	89 North
429	AAT Bioquest Inc
730	Abbelight
633	Abberior Instruments America
505	Agilent
305	AIP Publishing
620	ALA Scientific Instruments Inc
802	Alembic Instruments Inc
418	Allen Institute for Cell Science
628	Alvéole
231	NEW 2020 American Physical Society
211	NEW 2020 AnaBios
421	Anatrace | Molecular Dimensions
416	Andor Technology, an Oxford Instruments Company
704	Anton Paar
714	Applied Photophysics
529	ASI/Applied Scientific Instrumentation
139	Aurora Scientific Inc
601	Avanti Polar Lipids Inc
631	Axiom Optics
208	BaySpec Inc
308	Beckman Coulter Life Sciences
415	Bio-Logic USA
430	BioCAT
216	BioTek Instruments Inc
217	NEW 2020 Bon Opus Biosciences
721	Boston Electronics
515	Bruker Corporation
303	Cambridge University Press
701	Carl Zeiss Microscopy LLC
204	Cedarlane
201	Cell Press
709	Chroma Technology
632	NEW 2020 Crayon technologies Inc
840	Cytocybernetics
119	Dynamic Biosensors GmbH
728	Ecocyte Bioscience US LLC
618	Edinburgh Instruments
319	Electron Microscopy Sciences
629	ELEMENTS SRL
209	NEW 2020 Etaluma Inc
729	Excelitas Technologies
417	Fluicell AB

Booth Number	Exhibitor
331	NEW 2020 Fluidic Analytics
320	Fluxion Biosciences
215	Gene Tools LLC
816	NEW 2020 GoldBio
700	Hamamatsu Corporation
302	HEKA
332	Hellma USA
830	Hinds Instruments Inc
409	HORIBA Scientific
828	NEW 2020 ibidi USA Inc
800	ID Quantique SA
703	IonOptix
804	Ionovation GmbH
316	IOP Publishing
715	ISS Inc
617	JASCO
317	Journal of Biological Chemistry (ASBMB)
301	Journal of General Physiology
401	KinTek Corporation
315	Laboratory for Fluorescence Dynamics
532	Larodan AB
708	Leica Microsystems
719	Linnowave
333	NEW 2020 Live Cell Instrument
101	LUMICKS
500	Mad City Labs Inc
431	Malvern Panalytical
405	Matreya LLC
221	NEW 2020 MDPI IJMS
210	NEW 2020 MEIJI TECHNO AMERICA INCORPORATED
214	METRION BIOSCIENCES
820	Mizar Imaging
501	Molecular Devices
718	NEW 2020 Molecular Vista Inc
121	Montana Molecular
300	Multi Channel Systems
514	Nanion Technologies
818	NanoAndMore USA Corp
720	NanoSurface Biomedical
533	Navitar
229	NEW 2020 NCI National CryoEM Facility

Booth Number	Exhibitor
630	NeoBiosystems Inc
115	Nicoya
614	Nikon Instruments Inc
133	NMRbox | CoMD/NMR | MagLab
202	OLIS Inc, On-Line Instrument Systems
604	Olympus America Inc
432	OriginLab Corporation
414	Oxford Instruments of America Inc
621	PCO America
615	Photometrics
610	PI (Physik Instrumente)
609	PicoQuant Photonics North America Inc
732	PIEZOCONCEPT
205	NEW 2020 Quantum Design
200	Quantum Northwest Inc
710	Rapp OptoElectronic GmbH
109	Refeyn
330	Royal Society Publishing
111	RPMC Lasers Inc
117	NEW 2020 RWD Life Science
531	SB Drug Discovery
219	NEW 2020 ScienCell Research Laboratories
141	Siskiyou Corporation
600	Sophion Bioscience A/S
218	Springer Nature
329	NEW 2020 St. Jude Children's Research Hospital
129	NEW 2020 Stanford-SLAC Cryo-EM Center
428	Strex
400	Sutter Instrument
530	T&T Scientific Corporation
314	TA Instruments
419	TCI America
814	The Company of Biologists
328	The Journal of Physiology
309	Thorlabs
228	Tissue Gnostics USA
511	TMC
528	TOKAI HIT USA INC
304	Warner Instruments
403	Wyatt Technology Corporation
238	NEW 2020 Zaber Technologies Inc

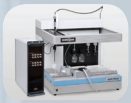

Hall H
HX2
FE
FDV
FE
CONCESSION H
30' x 30'
23 - 72" ROUNDS WITH
10 CHAIRS PER TABLE
24'
15'
BONEYARD
HF2
FDV
FE
JUDGING
AREA
SRAA BOARDS
20'
12'
HP
H6
FS
FDV & FE
H5
HG5
H4
HG4
H3
H2
HG3
H1
HG2
AED
49' X 10' USABLE SPACE
10' x 30' USABLE SPACE
37' X 21' USABLE SP
48'6"
HG1


FE
SP
FDV
FE
OFFICE
3M x 4M
LEAD RETRIEVAL
CLEANING
INTERNET (SMART CITY)
BAY
ES DESKS
FREEMAN SERVICE CENTER
13'-9"
CONCESSION G
30' x 30'
CONCESSION F
30' x 30'
30'
Hall G
Hall F
13'
3 - 72" ROUNDS W/ 8 CHAIRS PER TABLE
LATE POSTERS
PUBLISHERS ROW
EDUCATION & CAREER OPPORTUNITIES FAIR
EXHIBITS MGMT/
EXHIBITOR LOUNGE
12" Square Ballot Boxes
on Small Display Cube
FREE
LITERATURE TABLES
ENTRANCE
CHARGING STATION
WF
HP
BPS BOOTH
TOR Wall
DAILY ACTIVITIES
61' X 10' USABLE SPACE
10' X 61' USABLE SPACE
Lobby
24' X 10' USABLE SPACE
18' X 10' USABLE SPACE
CDS OFFICE
3M x 4M
FILL IN COUNTER
BOX OFFICE G
G2
F2
F1
FG1
FG2
FG3
GG1

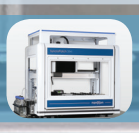
Excited about patch clamp?

nan]i[on

Port-a-Patch mini. NEW!
The world's smallest patch clamp rig.



Patchliner & Dynamite[8]. NEW!
Unlimited experimental freedom.



SyncroPatch 384i. NEW!
Ion channel HTS - easy & even more flexible.

SURFE²R N1.
In-depth transporter research.

SURFE²R 96SE.
High throughput transporter screening.

CardioExcyte 96
Contractility. Electrophysiology. Chronic tox.

FLEXcyte 96. NEW!
True contraction force analysis.

Orbit 16 & Orbit mini.
Instant bilayers - just add protein.

Vesicle Prep Pro.
Liposomes made easy.

So are we!

Visit us at booth #514

Join our Symposium

Monday Feb. 17, 12:30 – 2:00 PM, Room 33C

Jamie Vandenberg, Victor Chang Institute
High throughput screening of missense variants in KCNH2

Marc Rogers, Metrion
Validaton of impedance-based phenotypic screening assay able to detect multiple mechanisms of chronic cardiotoxicity in human stem cell-derived cardiomyocytes

Matthias Gossmann, innoVitro
Mechanobiology of in vitro assays: tackling prevailing challenges in pre-clinical drug development

Nathan Thomas, Univ. of Wisconsin-Madison
Unlocking the (reversal) potential of SSM electrophysiology: transporter stoichiometry with the SURFE²R N1

Stephen Hess, Evotec
Use of automated patch clamp platforms to support ion channel drug discovery

www.nanion.de

Exhibit Dates and Times

Sunday, February 16 ..... 10:00 AM – 5:00 PM
Monday, February 17..... 10:00 AM – 5:00 PM
Tuesday, February 18..... 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 a Bose Portable Bluetooth Speaker, pick up a 2020 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 before 2:30 PM on Tuesday, February 18. Raffle will be announced on Tuesday, February 18, at 3:00 PM in the Exhibit Hall. You must be present to win.

Exhibitor Presentations

Exhibitor Presentations will take place in Rooms 33A and 33C of the San Diego Convention Center.
See pages 170-177 for detailed descriptions.

Room 33A

Sunday, February 16

9:30 AM – 11:00 AM	Mizar Imaging
11:30 AM – 1:00 PM	NanoSurface Biomedical
1:30 PM – 3:00 PM	Carl Zeiss Microscopy LLC
3:30 PM – 5:00 PM	Bruker Corporation
5:30 PM – 7:00 PM	ELEMENTS SRL

Monday, February 17

9:30 AM – 11:00 AM	Bruker Corporation
11:30 AM – 1:00 PM	Leica Microsystems
1:30 PM – 3:00 PM	Olympus America Inc
3:30 PM – 5:00 PM	Applied Photophysics
5:30 PM – 7:00 PM	LUMICKS

Tuesday, February 18

9:30 AM – 11:00 AM	Sophion Bioscience A/S
1:30 PM – 3:00 PM	HORIBA Scientific

Room 33C

Sunday, February 16

10:30 AM – 12:00 PM	Wyatt Technology
12:30 PM – 2:00 PM	Sutter Instrument
2:30 PM – 4:00 PM	Dynamic Biosensors GmbH

Monday, February 17

8:30 AM – 10:00 AM	Beckman Coulter Life Sciences
10:30 AM – 12:00 PM	Bruker Corporation
12:30 PM – 2:00 PM	Nanion Technologies
2:30 PM – 4:00 PM	HORIBA Scientific
4:30 PM – 6:00 PM	Molecular Devices

Annual Meeting Sponsors*

ACS Omega
Applied Photophysics
Beckman Coulter Life Sciences
Bruker Corporation
Burroughs Wellcome Fund
Carl Zeiss Microscopy LLC
Chroma Technology
Dynamic Biosensors GmbH
ELEMENTS SRL
HORIBA Scientific
Leica Microsystems
LUMICKS
Mad City Labs
Mizar Imaging
Molecular Devices
Nanion Technologies
NanoSurface Biomedical
Olympus America Inc
Photonics Media
Physics Today
Sophion Bioscience A/S
Sutter Instrument
The Company of Biologists
The Journal of Physical Chemistry B
The Journal of Physical Chemistry Letters
Wyatt Technology

**As of January 10, 2020*

Room 33A: Sunday, February 16

9:30 AM – 11:00 AM

Mizar Imaging

Tilt – A New Angle on Light Sheet Imaging

Mizar Imaging is proud to introduce the Tilt, the first light sheet imaging system that is a simple add-on to most inverted microscopes. The key benefit of light sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample and the Tilt excels at this. 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.

When installed on your microscope, the Tilt does not interfere with any existing modalities so you can easily add the Tilt to an existing 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, zebra fish and other similar model organisms as well 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. This makes the Tilt the only light sheet imaging system that can use high NA/high magnification objectives such as high resolution 60x and 100x objectives. There is no limit to what you can do with the Tilt.

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
Paul Maddox, Founder & President, Mizar Imaging

11:30 AM – 1:00 PM

NanoSurface Biomedical

Recreating the Extracellular Matrix in a Dish

Cells in the body use a variety of cues (e.g. structural, mechanical, electrical, and chemical) from the extracellular matrix (ECM) to develop and mature physiologically. These influential cues help regulate a broad spectrum of processes such as cell signaling, division, and differentiation. Many in vitro platforms seek to incorporate these cues into the cell's microenvironment, but often fail, suffering from lack of reproducibility and incompatibility with other well-established end-point assays. Here, we demonstrate biomimetic in vitro platforms capable of reliably reproducing these essential ECM cues. These platforms markedly improve the structural and functional development of a variety of cell types, including stem cells, cardiomyocytes, muscle cells, and many more. Specifically, we show how NanoSurface Plates and Cytostretcher Cell-stretching Instruments can be utilized individually or collectively to study various model systems. The effects of cell-nanotopography interactions on adhesion, signaling, polarity, and migration across many applications such as human epithelia, cardiovascular function, and cancer biology are highlighted. Further, we describe how the differentiation of stem cells can be enhanced by providing a more biomimetic culture environment, with a particular focus on iPSC-derived cardiomyocytes and skeletal muscle cells.

Speaker
Hamed Ghazizadeh, Product Manager, NanoSurface Biomedical

1:30 PM – 3:00 PM

Carl Zeiss Microscopy LLC

Multiplex Mode for the LSM 9 Series with Airyscan 2: Fast and Gentle Confocal Superresolution in Large Volumes

The LSM 9 family with Airyscan 2 from ZEISS provides more options to enable the perfect balance of speed and resolution for today's confocal-imaging needs. The new Multiplex mode extends sensitive Airyscan imaging to larger model systems with low expression levels by increasing acquisition speeds even further. It extracts more spatial information; hence, multiple lines can be imaged in a single line scan. This allows for larger acquisition steps to improve image acquisition speeds and reduce the illumination dosage to the sample. This novel concept allows rapid volumetric imaging with unprecedented resolution beyond what is available in traditional confocal systems today.

Airyscan 2 provides new data handling concepts, providing 6.6 times smaller data sizes and 5 times faster image reconstruction times. Further, optimized real time acquisition strategies employed with the LSM 9 family enable faster scan speeds for Airyscan 2, allowing higher data throughput.

Join this workshop and learn how the newest members of the ZEISS imaging portfolio, ZEISS LSM 9 series with Airyscan 2 can help you capture dynamic processes in volumes and improve your imaging experiments in completely new ways.

Speaker
Renée Dalrymple, Product Marketing Manager-Laser Scanning Microscopy, Carl Zeiss Microscopy LLC

3:30 PM – 5:00 PM

Bruker Corporation

Multiplexed Imaging and Superresolution Microscopy Using the Vutara 352 Microscope with Integrated Fluidics System

The Vutara 352 super resolution microscope has been designed for single molecule localization microscopy in multiple types of biological samples. However, most current methods for super resolution microscopy are limited to three- to four-targets due to the limited number of dyes compatible with quality super resolution techniques. This talk presents a method for multiplexing single molecule localization microscopy imaging within a biological sample through the use of an integrated automated microfluidics system. Probe multiplexing allows for the imaging of greater than four different targets within a cell. Using the Vutara 352 and integrated fluidics unit we will show the three-dimensional oligoSTORM imaging of a multiplexed oligoPAINT labeled chromosome in individual human fibroblast cells along with 3D multi probe DNA-PAINT based single molecule localization data for antibody labeled targets in cell culture and tissue slices. The Vutara 352 with integrated fluidics and SRX software provides a powerful suite of tools for simultaneous imaging, localization, visualization and statistical analysis of multiplexed single molecule super resolution data.

Speaker
Robert Hobson, Applications Scientist, Bruker Corporation

5:30 PM – 7:00 PM

ELEMENTS SRL

Low-Noise, Handheld 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 miniaturized products, based on our custom CMOS microchips.

In this presentation, we will be featuring our latest products through the hands-on experience of current customers from the US, Europe, and Japan. You will hear first-hand accounts about their research and the results they got using:

- The world's smallest integrated patch clamp amplifier, ePatch
- A handheld nanopore kit for nanoparticle detection using disposable glass nanopore chips, eNPR

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's smallest and cheapest patch clamp amplifier is radically changing patch-clamp measurements
- Different user experience ranging from patch-clamp on live cells, to exosome detection using solid state nanopores, as well as lipid bilayer experiments

Complimentary Italian hors d'oeuvres and drinks will be served. Seating is limited.

Speakers
Federico Thei, Chief Executive Officer, ELEMENTS SRL
Alessandro Porro, Application Scientist, ELEMENTS SRL
Guilherme Henrique Bomfim, Researcher, New York University
Nelly Mnatsakanyan, Assistant Professor, Yale University
David Niedzwiecki, Scientist, Goeppert LLC
Mark Platt, Senior Lecturer, University of Loughborough
Masato Nishio, Tokyo University

Room 33A: Monday, February 17

9:30 AM – 11:00 AM

Bruker Corporation

From Single Molecules to Tissues – A New AFM Toolkit for Nanoscopic Investigation of Mechanics, Structures, and Dynamic Processes in Life Science

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. JPK BioAFM has developed a new NanoWizard® 4 XP AFM which not only enables the high-speed study of the 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. This seminar will focus on how the advances in Bruker's latest BioAFM can be applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues in real-time, in-situ experiments. We will present examples of how we are able to resolve the nanoscale structure of individual biomolecules at high-speed scan rates (150 Hz), follow the dynamic reorganization of the membrane-associated cytoskeleton of living cells at high-temporal and high-spatial resolution, and automatically map the topography of cell cultures across the entire area of the microscope stage. We will also discuss the full suite of BioAFM modes and accessories for studying the nanomechanical properties of cells and tissues, including direct correlation of multiparametric, quantitative AFM and super-resolution (STED) datasets.

Speaker
Andrea Slade, BioAFM Product Manager, Bruker Corporation

11:30 AM – 1:00 PM

Leica Microsystems

Leica SP8 FALCON: Applications of FLIM for Functional Imaging and STED Nanoscopy

The rapidly growing field of functional imaging helps us understand the complex interactions of molecules, revealing the true nature of 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 highly sensitive to the molecular environment, providing a robust measure of a biological system's health. However, previous FLIM solutions were slow and difficult to implement, particularly for complex imaging workflows. To address this weakness, we present the Leica SP8 FALCON (Fast Lifetime Contrast), a fast, intuitive and totally integrated, all-Leica FLIM solution. The SP8 FALCON delivers video-rate FLIM with pixel-by-pixel quantification, due to a unique combination of fast electronics, sensitive spectral hybrid detectors (Leica HyDs), and a novel concept for measuring time. The system has ultra-short dead time and powerful built-in algorithms to manage data acquisition and analysis, while maintaining accuracy and excellent data quality.

This talk explains the technical implementations enabling this new level of performance and provides some interesting application examples, including functional imaging (e.g. metabolic imaging or FRET imaging) and the use of lifetime information to achieve improved live-cell Nanoscopic Imaging (τ-STED). τ-STED is a revolutionary modality for STED imaging, making use of the FALCON FLIM phasor approach, delivering cutting-edge resolution and image quality at low light dose, especially beneficial for live-cell nanoscopy applications. τ-STED takes the fluorescence lifetime information from all detected photons combined with phasor analysis in a novel way to increase the resolution and eliminate uncorrelated background in an automated manner. The τ-STED implementation on Leica SP8 STED 3x systems works for 2D and 3D STED in live and in fixed specimens, and for multicolor applications.

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 auto-fluorescence component separation.

Speaker
Haridas Pudavar, Product Performance Manager-Confocal Systems, Leica Microsystems

1:30 PM – 3:00 PM

Olympus America Inc

Advancements in Lens Manufacturing Technology Develop New X Line Objective Lenses

Researchers use microscopes as essential tools for advancing their science, and objective lenses are crucial components of the system. Many applications benefit from high-quality images with a large field of view, but there is usually a trade-off where improvements in one area of imaging, such as flatness of field, lead to a decrease in another area such as chromatic correction. Conventional objective lens manufacturing technology forced a trade-off between numerical aperture, image flatness, and chromatic correction, making it difficult to improve all three in one objective. Olympus, with 100 years of innovative optical solutions for life sciences, has developed a new lens polishing technology that creates lenses with shapes that are difficult to fabricate using other methods. These improvements enable manufacturing of convex lenses with ultra-thin edges as well as ultra-thin concave lenses, which lead to more lenses being packaged in each objective housing, increasing the NA, image flatness, and chromatic correction range. In this presentation, you will learn how these improvements advance optical performance and a range of applications.

Speaker
James Lopez, Manager-Life Science Applications Group, Olympus America Inc

3:30 PM – 5:00 PM

Applied Photophysics

Discover When Change is Significant: Latest Developments in Circular Dichroism and Stopped-Flow Kinetics

Applied Photophysics has remained at the forefront of the technologies of circular dichroism and stopped-flow kinetics since its creation in 1971 by the Royal Institution of Great Britain under the leadership of Nobel Prize-winning Lord Port.

In the first part of the presentation, the latest developments regarding the Chirascan CD spectrometers will be introduced. Case studies will be discussed to illustrate that CD spectroscopy with Chirascan is far more powerful than the traditional use of revealing the protein secondary structures such as α-helix and β-sheet. With Chirascan CD spectrometers, information regarding secondary structures, as well as tertiary structures, thermal and chemical stability can be clearly demonstrated. Moreover, the introduction of automatic CD spectrometers provides unparalleled sensitivity, reproducibility and productivity. It provides a novel approach for objective, quantifiable higher order structure (HOS) comparisons. The introduction of the Circularly Polarized Luminescence (CPL) accessory makes the Chirascan more economical and versatile.

In the second part of the presentation, the latest developments in the SX Stopped-Flow systems will be discussed. Stopped-Flow systems from Applied Photophysics are known for its high performance, ease-of-use and durability and we have made them better. We introduce LED light sources and various accessories, such as dual fluorescence detection, fluorescence polarization/anisotropy, and photodiode array detector. Applications in enzymology and protein structures will be discussed.

Speakers
Marc Neglia, Sales Director, Applied Photophysics Americas
Frank Yuan, Applications Scientist, Applied Photophysics
Darek Silwa, Sales Manager, Applied Photophysics

5:30 PM – 7:00 PM

LUMICKS

Breaking the Barriers: Providing the Full Workflow for Dynamic Single-Molecule Research from Sample to Publication

Here, we present our newest developments to further support discoveries in the fields of biology and biophysics. Our aim is to enable faster, easier, and more reliable than ever single-molecule research – from sample to publication – by extending the full experimental workflow with new services and open-access initiatives.

To decipher complex molecular interactions, you need to be able to observe the same biological process from multiple points of view. Using LUMICKS' groundbreaking C-Trap™ Optical Tweezers –Fluorescence & Label-free Microscopy, you can simultaneously visualize individual molecules in real time and measure biological processes in greater detail. The combination of live-imaging and measurements has proven to be a research game changer.

With the ever-increasing pressure to perform breakthrough discoveries in the least amount of time, LUMICKS brings you an instrument with unprecedented high precision, accuracy, reliability, and the shortest time to result. The C-Trap gives you access to three key features: stable and precise sample manipulation and measurements, a wide variety of visualization capabilities, and a high throughput experimental workflow.

With the technology in hand, the major barriers that still remain in dynamic single-molecule experimentation are caused by tedious sample preparation and non-standardized data analysis methods.

With ready-to-use kits, tailored sample preparation support, and easy-to-use data analysis, scientists can now focus more on their biological questions and generate the next wave of scientific discoveries in the least amount of time.

Join our presentation to learn about our new single-molecule biochemistry services and our open-access user community for experiment automation and data analysis in single-molecule research.

Speakers
Olivier Heyning, Chief Executive Officer & Founder, LUMICKS
Emmanuel Lissek, Application Scientist, LUMICKS
Ali Raja, Director Americas, LUMICKS

Room 33A: Tuesday, February 18

9:30 AM – 11:00 AM

Sophion Bioscience A/S

Characterization of the Rapidly Desensitizing α7 Nicotinic Acetylcholine Receptor on the Qube, NaV1.1 Assays on Automated Electrophysiology Platforms and Developing NMDA Assays on the Qube System

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 use of these systems in the drug discovery process. Dr Sung Hoon Park will present Qube data to show the characterization of rapidly desensitizing α7 nicotinic acetylcholine receptor on the Qube. Next, Dr Shanti Amagasu from Amgen will present data from Amgen's Nav1.1. work on automated electrophysiological platforms. Finally, Dr Abigail Marklew will present on the development of NMDA Assays on the Qube system.

Speakers
Sung Hoon Park, Field Application Scientist, Sophion Bioscience A/S
Shanti Amagasu, Senior Scientist, Amgen
Abigail Marklew, Scientist, Charles River Laboratories

1:30 PM – 3:00 PM

HORIBA Scientific

A New Imaging Camera Technology Featuring TDC In-Pixel Architecture for Simple Dynamic FLIM Imaging at Video Rates

A new wide-field video rate TCSPC imaging camera from HORIBA Instruments will be introduced. This camera is a CMOS manufactured array of single photon avalanche diode (SPAD) detectors, with each detection "pixel" having its own time-to-digital converter (TDC). Thus each pixel is capable of measuring precise fluorescence decays in time-domain, and the entire camera is providing a complete fluorescence lifetime image map (FLIM) with each frame of the camera. This new technology is much faster than traditional scanning FLIM modalities thus making it ideal for live cell FLIM dynamics.

Speaker
Cary Davies, Global Product Manager-Fluorescence Division, HORIBA Scientific

Room 33C: Sunday, February 16

10:30 AM – 12:00 PM

Wyatt Technology

Recent Advances in Light Scattering and Related Techniques

Historically light scattering detection has been seen as a tool to assess molecular weight and aggregation. Throughout its existence the utility of this method to assess additional properties of proteins has expanded significantly. Today it's uniquely positioned to give information about how aggregates form, properties of conjugates such as determination of the mass of pegylation or many other conjugates relative to the mass of the protein, protein conformation and many others. One of the properties of light scattering that differentiate it from other techniques that give similar data is the ability for the experiments to be done in solution. With no labeling, fixing of detection agents to solid surfaces or drying of the material to be analyzed you get a real picture of the properties in a given solution.

In this presentation we will discuss the recent advances in HPLC, field flow fractionation (FFF) and composition gradient (CG) coupled with multi-angle light scattering (MALS). The use of HPLC has expanded beyond size exclusion chromatography to include ion-exchange, reversed phase and hydrophobic interaction chromatography that enables the assessment of other properties and various types of molecules such as antibody drug conjugates. FFF-MALS is a gentle separation technique that allows for the separation of a wide range of particle sizes in a single channel with low shear. It is done entirely in a liquid stream and is well suited to utilizing the same separation buffer in which the molecules have been formulated, eliminating the worry that the elution buffer may be affecting the molecule in some way. With CG-MALS the user is able to study protein interaction with other molecules of interest again all in solution and label free.

We invite you to join us in this discussion of the newest uses to discover how they might apply to the next breakthrough in your research.

Speaker
Kevin McCowen, Regional Manager, Wyatt Technology

12:30 PM – 2:00 PM

Sutter Instrument

Scientists Empowering Scientists

For over 45 years, Sutter Instrument has been collaborating with researchers. During this period, there have been many technological evolutions in patch clamp electrophysiology, and Sutter has introduced many new product families, including pipette pullers, manipulators, light sources, wavelength switchers, specialized microscopes and, most recently, fully integrated patch clamp amplifier systems. At this presentation, we will teach techniques, tips and tricks, and showcase new features, such as dynamic clamp capability.

The IPA®, Double IPA® and new dPatch® Ultra-fast, Low-noise Integrated Patch Clamp Amplifiers and SutterPatch® Software are being used for a variety of common experiments, including characterization of ionic current and recording synaptic events in tissue slices. We will demonstrate how the SutterPatch Software's online measurements and sophisticated control of experimental workflow can be used to aid real-time decision-making and eventually simplify analysis.

2:30 PM – 4:00 PM

Dynamic Biosensors GmbH

switchSENSE® Biophysical Analysis with Electro-Switchable Biosurfaces

The presentation will highlight the broad range of applications of the switchSENSE® technology that is supported by the recently launched heliX® biosensor:

- Size and Conformational Change – Screening and ranking of small molecule induced conformational changes by de novo real-time conformation referencing
- Bispecific Antibodies – Bifunctional sensor functionalization, advanced ligand density control and two-color fluorescence detection for the in-depth analysis of bispecific binders
- Resolving the fastest kinetics with confidence using advanced microfluidics and 10 ms data collection
- DNA/RNA Binding Proteins – Flexible exchange of DNA/RNA targets for binding and enzymatic activity studies in real-time
- From Small Molecules to Cells – Chip functionalization solutions for the biophysical characterization of very small or very large structures

Speakers
Ulrich Rant, CEO, Dynamic Biosensors GmbH
Aishwarya Mahadevan, Application Specialist, Dynamic Biosensors Inc

Room 33C: Monday, February 17

8:30 AM – 10:00 AM

Beckman Coulter Life Sciences

Get the High-Resolution Separation That You Have Been Searching for with Preparative and Analytical Ultracentrifugation

Introduction: Purification of biological products, including biotherapeutics, involves the separation of cells from the culture media, followed by extensive processing to isolate the target of interest. Relatively simple separations are often achieved via differential centrifugation (pelleting), though high-resolution separations often utilize density gradient ultracentrifugation to yield high purity. In this presentation, we will discuss the full gamut of preparative (ultra)centrifugation, which permits the isolation and purification of biological components ranging from small peptides and nanoparticles to large nucleic acids, viruses, and organelles. We will then discuss the analytical/characterization aspects of ultracentrifugation, which allow quantitation of size, mass, shape, and density of the biological components that have been purified, along with exploration of their thermodynamic properties and binding interactions. Modern examples will be discussed for both preparative and analytical ultracentrifugation.

Purification: Modern centrifuges reach incredibly high speeds (with centrifugal acceleration sometimes exceeding 1,000,000 x g) to aid the high-resolution separation of particles, typically in the micro- or nanometer range, by size and/or density. Today's gene therapy products, such as viral vectors, require high-quality purification to ensure the consistent production of safe, efficacious therapeutics of the highest quality to further advance this rapidly growing field and deliver solutions to patients in need. Density gradient ultracentrifugation (DGUC) is a centrifuge-based technique for providing superior purification of viral vectors (e.g., isolating full AAV particles from partial and empty capsids), along with other materials (such as plasmid DNA) in gene therapy production workflows. Though a well-established and mature method, DGUC is sometimes viewed as dated, challenging to design and conduct, or only suited for small-scale research applications. In this workshop, we'll address these perceptions and discuss the premise of DGUC as a modern, high-resolution purification technique for AAVs and plasmid DNA. We'll also provide guidance on how to get started with DGUC and optimize this technique for gene therapy workflows.

Characterization: Analytical ultracentrifugation (AUC) is one of the most versatile biophysical tools used today for the characterization of biological samples ranging from small drug molecules to intact viruses, vesicles and microparticles. AUC works with biological samples in the native state and does not depend on a reporter species or custom-coated substrates. AUC separates biomolecules based upon both molecular mass and anisotropy and can also be used to quantify interactions between different species. In this talk, we will start with the principles of AUC and take a tour through the technology behind modern AUC, including detection methods. We then look at advancements of the latest gen Optima AUC. Next, we go through experiment design – including the use of simulation tools. Following, we will address the different types of AUC experiments (equilibrium and velocity), compare and contrast their merits with sample data, and touch upon the principles of data processing. Finally, we will explore a variety of applications with a focus on the unique advantages that AUC brings to the study of various biotherapeutics, polymers, nanoparticles, and others – and how AUC compares to and complements other analytical techniques.

Speakers
Ross VerHeul, Senior Applications Scientist, Beckman Coulter Life Sciences
Akash Bhattacharya, Senior Applications Engineer, Beckman Coulter Life Sciences

10:30 AM – 12:00 PM

Bruker Corporation

Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in Biophysics

Magnet 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 has long been a valuable tool for the determination of structures, the study of dynamic processes and the investigation of interactions in biological molecules. To conduct these studies on larger molecules higher magnetic fields are required. Bruker BioSpin has successfully installed a 1.1 GHz NMR system in a customer laboratory and the delivery of the first 1.2 GHz system is imminent. To complement the higher magnetic fields Bruker Biospin has also introduced several new probes for liquid and solid state NMR.

NMR has recently been used successfully for the characterization of large proteins such as monoclonal antibodies. The statistical analysis of NMR spectra allows the detection of changes in the high order structure of these molecules.

Another growing area is the use of 19F in bio-molecular NMR. Both the introduction of new accessories and method permit more widespread use of this nucleus in NMR studies.

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, and 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, and distance measurements (2-8 nm) via DEER (Double Electron-Electron Resonance) to complement other structural methods such as X-ray, NMR, CryoEM and FRET.

Speakers
Clemens Anklin, Vice President, NMR Applications & Training, Bruker Corporation
Ralph Weber, EPR Applications Manager, Bruker Corporation

12:30 PM – 2:00 PM

Nanion Technologies

Beyond Ion Channels and Transporters: Snapshots of the State-of-the-Art Solutions

For almost two decades Nanion Technologies provides diverse solutions for electrophysiologists worldwide. We aim to successfully implement innovative technologies in the fields of ion channel automated electrophysiology, monitoring of cell viability and contraction, as well as electrogenic transporters, with our chip- and plate-based devices. Covering the needs for low, medium and high throughput assays our portfolio is well suited to advance research and screening projects. During this year's symposium, five snapshots of successful wide-ranging applications, assays and emerging technologies from our product portfolio will be presented. Our symposium will start with an introduction by Dr. Niels Fertig (CEO, Nanion) as a guide through the overall capabilities of Nanion´s technology portfolio. In continuation, we will welcome our speakers.

Our first snapshot, presented by Prof. Dr. Jamie Vandenberg (Victor Chang Cardiac Research Institute) will be focusing on the high throughput automated patch clamp (APC) screening of missense variants in KCNH2 mutations, a well-established cause of sudden cardiac death, using the SyncroPatch 384PE. Prof. Vandenberg will present a high throughput functional assay his group developed in order to differentiate between benign and pathogenic variants in KCNH2 gene. Dr. Marc Rogers (Metrion Biosciences) will continue with a snapshot focusing on validation of a CardioExcyte 96 impedance-based phenotypic assay, that is able to reproduce the chronic effects of a range of clinical drugs that affect human iPSC cardiomyocyte contractility and viability by multiple and diverse mechanisms, including ion channel and ionic pump inhibition, DNA intercalation, proteasome and tyrosine kinase inhibition, and myosin disruption. One of the newest Nanion´s releases, the FLEXcyte 96, will be highlighted in the snapshot presented by Dr. Matthias Gossmann (innoVitro). Dr Gossmann will introduce the important impact this technology has on cardiac research, as it offers the potential to scale-up mechanical testing of cardiac contractile behavior, maturation and drug screening towards medium-throughput analysed under true physiological conditions.

Moving from cardiac physiology, Nathan Thomas (University of Wisconsin-Madison) will introduce a new application of SSM-based electrophysiology, in the field of ion coupled transporters. With a novel approach the transporter stoichiometry is investigated via reversal potential determination. During his snapshot, SURFE2R N1 data obtained on transporters from the small multidrug resistance (SMR) family, with the goal of providing a better understanding of underlying transport mechanisms, will be presented.

Finally, Dr. Stephen Hess (Evotec) will introduce the use of APC platforms to support ion channel drug discovery, focusing on the Nav1.1 channels, which positive modulators could be useful in treating cognitive disorders, epilepsy, and neurodegenerative diseases. To find novel positive modulators of NaV1.1 channels. Dr. Hess screened over 150K small molecules using the SyncroPatch 384PE and found confirmed hits which could serve as excellent starting points for further MedChem optimization towards potential therapeutics.

The Nanion team is delighted to welcome you to our lunch symposium!

Speakers
Jamie Vandenberg, Co-Deputy Director, Head of Cardiac Electrophysiology, The Victor Chang Cardiac Research Institute
Marc Rogers, Director, CSO, Metrion Biosciences
Matthias Gossmann, Innovitro (FLX), Co-Founder & CEO, Innovitro
Nathan Thomas, University of Wisconsin-Madison
Stephen Hess, Research Leader-Ion Channels, Evotec

2:30 PM – 4:00 PM

HORIBA Scientific

A New Modular Research Fluorometer Pushes Detection, Stray-Light, and Wavelength Limits of Fluorescence Spectroscopy

HORIBA Instruments Inc is proud to introduce the new FluorologQM modular research spectrofluorometer. This is the fourth generation of the world famous, all reflective, Fluorolog modular research spectrofluorometer and it pushes the sensitivity, performance and flexibility of fluorescence spectroscopy to new heights. Featuring the world's highest guaranteed sensitivity specification, the longest focal length monochromators in the industry, and a wavelength coverage range from 180 to 5,500 nm, the FluorologQM pushes the detection, stray light, and wavelength limits of fluorescence to new levels. With new software, a new design and complete automation, this advanced research fluorometer, is also equally well suited for the simplest of tasks. The biophysical applications of the FluorologQM will be presented.

Speaker
Cary Davies, Global Product Manager-Fluorescence Division, HORIBA Scientific

4:30 PM – 6:00 PM

Molecular Devices

Empower Your Electrophysiology Studies Using New Axon pCLAMP 11 Software and HumSilencer Adaptive Noise Cancellation Technology

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 how to design protocols easier, analyze data faster, and achieve better data quality.

Speaker
Jeffrey Tang, Senior Global Axon Electrophysiological Application Scientist, Molecular Devices

Company Name Booth Number

89 North 709
1 Mill Street, Unit 285
Burlington, VT 05401
www.89north.com

89 North provides products to improve research and clinical fluorescence imaging for the life sciences. Our products surround the research microscope including light sources, image splitters, laser combiners and filter wheels. We also offer engineering and manufacturing expertise to customize existing products or to create new solutions for systems integration.

AAT Bioquest Inc 429
520 Mercury Drive
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.

Abbelight 730
6 rue Jean Calvin
Paris, 75005
France
www.abbelight.com

Single Molecule Localization Microscopy (SMLM) combines quantitative information with the highest resolution achievable in light microscopy and is therefore a game changer in many biological studies. Abbelight is the result of 10 years of academic research on cutting-edge detection methods in fluorescence microscopy. Our unique offers are designed to provide the best instruments, software, and scientific expertise to speed-up the entire imaging workflow - from sample preparation, to image acquisition and analysis - within a wide range of research applications in biology and pharmacology.

Company Name Booth Number

Abberior Instruments America 633
1 Max Planck Way
Jupiter, FL 33458
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.

Agilent 505
121 Hartwell Avenue
Lexington, MA 02421
www.agilent.com

Agilent Technologies Inc. is a global leader in life sciences, diagnostics and applied chemical markets. With more than 50 years of insight and innovation, Agilent instruments, software, services, solutions, and people provide trusted answers to its customers' most challenging questions. Agilent employs about 13,500 people worldwide.

AIP Publishing 305
1305 Walt Whitman Road, Suite 300
Melville, NY 11747
scitation.aip.org

AIP Publishing is a wholly owned not-for-profit subsidiary of the American Institute of Physics (AIP). Our portfolio offers scientists, engineers, researchers and students a foundation of interdisciplinary and emerging basic and applied research. Spanning the physical sciences, publications cover physics, plasmas, fluids, mathematical physics, instrumentation, and education. For more information visit publishing.aip.org.

Company Name Booth Number

ALA Scientific Instruments Inc 620
60 Marine Street
Farmingdale, NY 11735
www.alascience.com

As manufacturers (fluidics, chambers, 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 802
3285 Cavendish Boulevard, Suite 570
Montreal, QC H4B 2L9
Canada
www.alembicinst.com

Alembic Instruments makes patch clamps amplifiers with 100% Rs Compensation! Our patented Rs CompensatorTM can voltage clamp the largest, fastest ionic currents, under physiologic conditions - currents that are simply out of reach without it. Come see the NEW Alembic VE-3 computer controlled Patch clamp amplifier: 4 channels with Integrated data acquisition, can run 4 separate patch clamp rigs simultaneously, true current-clamp, embedded computer with dedicated FPGA for real-time AP Clamp / Dynamic Clamp experiments, and more.

ALLEN INSTITUTE for CELL SCIENCE

Industry Partner **SILVER**

Allen Institute for Cell Science 418
615 Westlake Avenue North
Seattle, WA 98109
www.allencell.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 allencell.org.

Company Name Booth Number

Alvéole 628

68, boulevard de Port-Royal
Paris, 75005
France
www.alveolelab.com

Alvéole specializes in bioengineering technologies and tools for better cell sample preparation. Its main product PRIMO is a contactless and maskless photopatterning system allowing to perform: protein micropatterning on all cell culture substrates (stiff, soft, flat, microstructured), microfabrication and hydrogel structuration. Via the custom control it provides over cell microenvironment it can be a game changer for many applications such as: studying cell mechanisms (via polarity, adhesion, migration), controlling cell position and intra-cellular organization for cryo-ET, disease modeling.

American Physical Society 231

NEW 2020

1 Physics Ellipse
College Park, MD 20740
journals.aps.org

The American Physical Society (APS) is a nonprofit membership organization that publishes the Physical Review collection, the world's most widely read physics research and review journals. Please stop by booth 231 in the Exhibit Hall to meet the editors and discuss the Physical Review family of journals.

AnaBios 211

NEW 2020

3030 Bunker Hill Street, Suite 312
San Diego, CA 92109
www.anabios.com

Located in San Diego, California, AnaBios aims to establish the safety and efficacy of novel compounds through its advanced, human-focused translational technologies. AnaBios primarily focuses on areas of high, unmet medical need, including cardiac disease, pain and itch. In addition to working with Fortune 500 biotech companies, contract research organizations and academic institutions, AnaBios drives an internal drug discovery platform via in-licensed programs from partners in the pharmaceutical industry. For more information, visit http://www.anabios.com.

Company Name Booth Number

Anatrace | Molecular Dimensions 421

434 West Dussel Drive
Maumee, OH 43537
www.anatrace.com/MD

Anatrace and Molecular Dimensions are seriously committed to helping you set higher standards this year with our detergents, lipids, crystallization screens, and tools for structural biology. Whether you're involved with soluble proteins, membrane proteins, NMR, Crystallography, or even Cryo-EM, we can help you achieve more in your research. Stop by our booth to learn about our new and innovative products we have been busy developing this past year.

Andor Technology, an Oxford Instruments Company 416

300 Baker Avenue, Suite 150
Concord, MA 01742
www.andor.com

Andor manufactures scientific imaging cameras and microscopy systems. Our EMCCDs are the ideal for low light applications; single molecule detection, ion (calcium) imaging, superresolution and TIRF.

Anton Paar 704

10215 Timber Ridge Drive
Ashland, VA 23005
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.

Company Name Booth Number

Applied Photophysics 714

100 Cumming Center, 440C
Beverly, MA 01915
www.photophysics.com

Applied Photophysics, headquartered in Leatherhead, Surrey, UK, is a leading provider of solutions for biophysical characterization of biomolecules. Chirascan™ systems use the phenomenon of circular dichroism (CD) to characterize changes in the higher order structure of proteins. These systems are used in cutting-edge research and to support the development of innovator drugs and biosimilars in the biopharmaceutical industry. The Company's SX-range of stopped-flow spectrometers is acknowledged globally as the gold standard for kinetic studies of fast biochemical reactions.

Pick up a Passport Competition booklet inside the entrance of the Exhibit Hall, visit participating companies, answer their questions, get your passport stamped, and enter for a chance to win a Bose Portable Bluetooth Speaker!

ASI/Applied Scientific Instrumentation 529

29391 West Enid Rd
Eugene, OR 97402
www.asiimaging.com

Applied Scientific Instrumentation, Inc. (ASI) is a company with decades of experience meeting researchers' technical needs for microscope automation and imaging. Precision motion control is the foundation of our products, including extremely precise D.C servo stages, piezo stages, and low vibration filter wheels. ASI's Modular Infinity Microscope (MIM) system makes it easy to build a complete microscope customized to the user's needs. We offer a range of related products including autofocus devices, LED illumination and light sheet microscope components. Our RAMM frame microscope is stable and open platform perfect for innovative techniques. Systems have been built for multi-photon and 2nd harmonic microscopy, rapid tracking of freely moving organisms ,TIRF, and wide field fluorescence . ASI has worked with a number of partners over the years to help develop and supply innovative technology to the scientific community. One example of this is our recent collaboration with Special Optics to develop an immersion objective lens specifically designed for cleared tissue imaging with light sheet microscopy. We offer light sheet microscope systems for imaging a wide variety of samples. Several light sheet geometries can all be built from our modular optical and control systems.

Aurora Scientific Inc 139

25 Industry Street
Aurora, ON L4G 1X6
Canada
www.aurorascientific.com

Aurora Scientific provides solutions for measuring the dynamic physical properties of muscle and connective tissue. Muscle mechanics systems cover the range from single myocyte to whole large-animal in-situ. Products: Muscle Lever Systems, Force Transducers, High-Current Stimulators, Test Apparatus and Software. New Products: Dynamic Muscle Analysis Software with high throughput module.

Avanti Polar Lipids Inc 601

700 Industrial Park Drive
Alabaster, AL 35007
www.avantilipids.com

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.

Axiom Optics 631

444 Somerville Avenue
Somerville, MA 02143
www.axiomoptics.com

Axiom Optics offers sales, support, and expertise in advanced light microscopy. We are known for the following applications; rescan confocal microscopy, fluorescence lifetime imaging microscopy (FLIM), single molecule localization microscopy and 3D super resolution, high-speed fluorescence imaging, microscopy quality assessment slides (Argolight).

BaySpec Inc 208

1101 McKay Drive
San Jose, CA 95131
www.bayspec.com

BaySpec Inc, founded in 1999 with 100% manufacturing in the USA, is a vertically integrated spectral sensing company. The company designs, manufactures, and markets advanced spectral instruments, including UV-VIS-NIR-SWIR spectrometers, benchtop and portable NIR/SWIR and Raman analyzers, confocal Raman micrscopes, hyperspectral imagers, mass spectrometers, and OEM spectral engines and components, for the R&D, biomedical, pharmaceuticals, chemical, food, semiconductor, health monitoring, human & animal medical devices, and the optical telecommunications industries.

Beckman Coulter Life Sciences 308

5350 Lakeview Parkway South Drive, m/s 5-11
Indianapolis, IN 46268
www.beckman.com/home

Beckman Coulter Life Sciences develops, manufactures and markets products that simplify, automate and innovate complex biomedical testing. For 80+ years, we've been making a difference in people's lives by improving the productivity of scientists by supplying critical information for improving patient health and delivering trusted solutions for research and discovery. Scientists can optimize workflows and increase efficiency with our centrifugation, particle counting, characterization, liquid handling, flow cytometry, and custom integration solutions. For more information, visit www.beckman.com.

BioCAT 430

Argonne National Laboratory,
9700 South Cass Avenue,
Building 435B
Argonne, IL 60439
bio.aps.anl.gov

Our mission is to develop and operate state-of-the-art x-ray facilities for the study of the structure and dynamics of biological systems under non-crystalline conditions similar to their functional states in living tissues. Our primary research tool is a very high brightness X-ray beam-line at the Advanced Photon Source (APS) at Argonne National Laboratory. BioCAT is a member of Illinois Institute of Technology's (IIT) Center for Synchrotron Radiation Research and Instrumentation (CSSRI) and is funded by the National Institutes of Health.

Bio-Logic USA 415

9050 Executive Park Drive, Suite 110C
Knoxville, TN 37923
www.bio-logic.net

Bio-Logic USA is the leading manufacturer of stopped flow, quench flow, and freeze quench mixers for examining reaction kinetics in biochemistry, molecular biology, and biophysics. The SFM-4000 series of mixers deliver dead times of 200microseconds or faster, with asymmetrical mixing, modular design, and unsurpassed performance. They can be connected to spectrometers, x-ray and neutron lines, and EPR systems. The MOS-500 spectropolarimeter delivers auto-optimized performance from near IR to UV in CD, LD, absorbance, fluorescence, and anisotropy modes. Sample handling options include cuvette, dry powder, magnetic CD, peltier temperature control, and more. The MOS-500 can be used standalone or with the SFM-4000 series stopped flow mixers.

BioTek Instruments Inc 216

Highland Park, Box 998
Winooski, VT 05404
www.biotek.com

BioTek, now a part of Agilent, is a worldwide leader in the design, manufacture, and distribution of innovative life science instrumentation including cell imaging systems, microplate readers, washers, dispensers, automated incubators and stackers. Our products enable life science research by providing high performance, cost-effective analysis and quantification of biomolecules, biomolecular interactions and cellular structure and function across diverse applications.

Bon Opus Biosciences 217

NEW 2020

150 Essex Street, Suite 301
Millburn, NJ 07041
www.bonopusbio.com

Bon Opus Biosciences is an NJ-based contract research organization. Our areas of expertise include gene synthesis, custom protein expression, and custom antibody production. All proteins have activity and purity data testing performed and reported. In addition to our vast recombinant protein catalog, we also carry a comprehensive catalog of over 3,000 primary antibodies. Bon Opus has built several service programs that are specifically designed to support the development of targeted therapeutics - in particular, antigen production and monoclonal antibodies.

Boston Electronics 721

91 Boylston Street
Brookline, MA 02445
www.boselec.com

About Boston Electronics - Boston Electronics are specialists in providing electro-optical solutions including photodetectors, LEDs, tunable lasers imaging arrays and photon counting detection, spanning the spectrum from ultraviolet to visible and infrared. Boston Electronics distributes advanced electro-optical products from premier manufacturers worldwide. We specialize in products related to photodetection including especially detectors, sources, and signal processing electronics.

Bruker Corporation 515

40 Manning Road
Billerica, MA 01821
www.bruker.com/

Bruker enables scientists to make breakthrough discoveries and develop new applications that improve the quality of human life. Our high-performance scientific instruments and high-value analytical and diagnostic solutions enable scientists to explore life and materials at molecular, cellular and microscopic levels. Visit our booth to learn about Bruker's comprehensive selection of biology atomic force microscopes (BioAFMs), electron paramagnetic resonance (EPR) and nuclear magnetic resonance (NMR) spectroscopy systems, and super-resolution single molecule localization (SML) microscopes.

Cambridge University Press 303

University Printing House, Shaftesbury Road
Cambridge, CB2 8BS
United Kingdom
www.cambridge.org

Cambridge University Press is a not-for-profit organization that advances learning and research via the global publication of academic books, journals, and digital content.

Carl Zeiss Microscopy LLC 701

1 Zeiss Drive
Thornwood, NY 10594
www.zeiss.com/microscopy

Throughout the world, ZEISS stands for the highest quality and reliability. Carl Zeiss Microscopy is part of the ZEISS Group, a leading organization of companies operating worldwide in the optical and optoelectronical industry. As the world's only manufacturer of light, X-ray and electron/ion microscopes, we offer tailor-made systems for 3D imaging in biomedical research, life sciences and healthcare. A dedicated and well-trained sales force, an extensive support infrastructure and a responsive service team enable customers to use their ZEISS microscope systems to their full potential.

Company Name Booth Number

Cedarlane 204

1210 Turrentine Street
Burlington, NC 27215
www.cedarlanelabs.com

Cedarlane offers a myriad of biologicals and biochemicals to researchers and clinicians, providing products from virtually all of the World's most renowned international manufacturers. Cedarlane works closely with both customers and suppliers offering a personalized and comprehensive experience to reflect the core value that customers are of the utmost importance. By providing a gateway to over six million global kits and reagents, customers have the advantage of freight consolidation and the convenience and cost savings inherent within. Cedarlane is the one-stop-shop for your research needs.

Cell Press 201

50 Hampshire Street, 5th Floor
Cambridge, MA 02139
www.cell.com

Cell Press is proud to publish *Biophysical Journal* for the Biophysical Society. Cell Press is a leading publisher of cutting-edge life, physical, and earth science research and reviews. We continue leading in the innovative presentation of exciting scientific discoveries, consistently focusing on delivering research that drives scientific discovery, spanning a wide range of scientific disciplines. Pick up the latest free journal copies of your favorite Cell Press journals, including Cell and *Biophysical Journal*.

Company Name Booth Number

Industry Partner **SILVER**

Chroma Technology 709

10 Imtec Lane
Bellows Falls, VT 05101
www.chroma.com

Chroma Technology designs and manufactures optical interference filters using advanced sputtering technologies. Our high performance filters are intended for imaging applications ranging from widefield and confocal fluorescence microscopy, TIRF and super-resolution techniques to flow cytometry, high content screening multi-photon and Raman spectroscopy. Chroma also provides comprehensive technical and applications support.

Crayon technologies Inc 632

NEW 2020

602-I, Sinnae-Technotown,
123 Bonghwasan-ro, Jungnang-gu
Seoul, 02048
South Korea
www.crayontech.com

Crayon technologies Inc develops and provides innovative technologies that allow researchers to study detailed molecular and structural information of biological samples in three dimensions. Our products achieve unprecedented ultra-rapid and complete processing and immunostaining of 3-dimensional biological samples while preserving structural integrity. Through continuous technology development, we aim to develop an integrated platform for analyzing 3D molecular signatures of deep tissues and phenotyping various organ systems for clinical diagnostic purposes.

Company Name Booth Number

Cytocybernetics Inc 840

5000 B Tonawanda Creek Road
North Tonawanda, NY 14120
www.cytocybernetics.com

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.

Dynamic Biosensors GmbH 119

Lochhamer Str. 15
Martinsried, 82152
Germany
www.dynamic-biosensors.com

Dynamic Biosensors is a provider of instruments, consumables, and services in the field of analytical systems for the characterization of biomolecules and molecular interactions. Dynamic Biosensors commercializes switchSENSE® technology, a groundbreaking platform technology for the analysis of biomolecules with applications in R&D and drug development. The switchSENSE® technology is protected worldwide and only available through Dynamic Biosensors. The company is headquartered in the south of Munich, Germany and runs offices in the United States, the United Kingdom, Japan and Singapore.

Ecocyte Bioscience US LLC 728

111 Ramble Lane, Suite 109
Austin, TX 78745
ecocyte-us.com/

Ecocyte Bioscience supports research labs in Europe and USA with freshly prepared or mRNA/cDNA preinjected Xenopus Oocytes, lab chemicals and standard or customized cell and tissue media. Our mother company Lohmann Research Equipment (LRE) develops and distributes high quality products for biomedical research. Our multiple electrophysiological platform Synchroslice/Autoslice became a standard in brain and heart slice high throughput screening. Furthermore, as a renowned CRO, LRE offers electrophysiological contract research in Xenopus Oocytes (Preinjection, TEVC) and brain/heart slices.

Edinburgh Instruments 618

2 Bain Square, Kirkton Campus
Livingston, EH547DQ
United Kingdom
www.edinst.com

Edinburgh Instruments are global providers of Molecular Spectroscopy solutions covering techniques such as Photoluminescence, Raman, UV-Vis, Transient Absorption, and pulsed lasers and LEDs. We are world leaders in cutting-edge fluorescence spectroscopic instrumentation. Over the years we have developed new and innovative products, winning many international designs, technology and export achievement awards. We excel in providing one-to-one comprehensive customer service and continue to meet the needs of our customers worldwide.

Electron Microscopy Sciences 319

1560 Industry Road
Hatfield, PA 19440
www.emsdiasum.com

Electron microscopy sciences will have on display their complete line of accessories, chemicals, supplies and equipment for all fields of microscopy, biological research and general laboratory requirements. As well as our full line of tools, tweezers and dissecting equipment.

ELEMENTS SRL 629

Viale G. Marconi 438
Cesena, IT 47521
Italy
elements-ic.com

Elements srl produces electronic instrumentation for the pico- and nano-scale measurements in the electrochemistry field, ranging from electrophysiology on live cells to bio- and solid-state nanopore sensing. Elements technology is based on custom microchip, designed by the company microelectronic engineers, that allows ultra-low noise current measurement starting from very low ranges (few hundreds of fA). Elements microchips allow to produce miniaturized devices that enable nanotechnologies to be used in the new generation of portable diagnostic instruments and nanoparticle analysis.

Etaluma Inc 209

NEW 2020

4360 Viewridge Avenue, Suite B
San Diego, CA 92123
www.etaluma.com

Etaluma provides fluorescence microscopes for live cell imaging as well as an instrument development ecosystem of OEM microscopy components with compact multi-channel solid-state optics, maximum resolution and high sensitivity, and zero pixel shift. This system allows partners to easily configure their clinical or research instruments using a unifying gRPC layer running on Linux. Multiple options for cameras/sensors, LED wavelength control, automated XY, motorized Z for autofocus, and dimensions offer flexibility and customization.

Excelitas Technologies 729

2260 Argentia Road
Mississauga, ON L5N 6H7
Canada
www.excelitas.com

Excelitas Technologies®, a photonics technology leader focused on delivering innovative, high-performance, market-driven photonic solutions to meet the lighting, optronics, detection and optical technology needs of global customers, will showcase its innovative X-Cite® fluorescence illumination and measurement solutions. Recognized as the industry standard in fluorescence microscopy, X-Cite fluorescence illuminators include a complete range of lamp and LED light sources offering maximum stability and superior illumination uniformity to optimize imaging and ensure greater data reliability.

Fluicell AB 417

Arvid Wallgrens Backe 20
Gothenburg, 41346
Sweden
www.fluicell.com

Fluicell is a public company that has commercialized single-cell discovery platforms for life science to study single cells, primarily in the field of drug development. Fluicell's existing products are the research tools Biopen® and Dynaflow® Resolve, which allow researchers to investigate the effects of drugs on individual cells at a unique level of detail. Fluicell is developing a unique high-resolution bioprinting technology in both 2D and 3D under the name Biopixlar™. With this system, complex tissue-like structures can be created where positioning of individual cells can be controlled.

Fluidic Analytics 331

NEW 2020

Unit A, The Paddocks,
Cherry Hinton Road
Cambridge, CB1 8DH
United Kingdom
www.fluidic.com

We envision a world where information about proteins and their behavior transforms our understanding of how the biological world operates, and helps all of us make better decisions about how we diagnose diseases, develop treatment, and maintain our personal well-being.

Fluxion Biosciences 320

1600 Harbor Bay Parkway, Suite 150
Alameda, CA 94502
www.fluxionbio.com

Using proprietary microfluidic approaches, Fluxion's manufactures the IonFlux Mercury automated patch clamp system. IonFlux is used all over the world in industry and academic laboratories. It is well established in ligand and voltage gated ion channel screening. Its unique in-plate perfusion, providing continuous flow, allows for the simplification and speed of otherwise complicated assays. Fluxion's other developments includes liquid biopsy workflows (IsoFlux CTC Liquid Biopsy System and Spotlight NGS Oncology Panels) as well as BioFlux systems for cell-cell interaction analysis.

Gene Tools LLC 215

1001 Summerton Way
Philomath, OR 97370
www.gene-tools.com

Gene Tools manufactures Morpholino oligos for blocking translation, modifying splicing or inhibiting miRNA activity. Morpholinos are used in cell cultures, embryos or, as Vivo-Morpholinos, in adult animals. Morpholinos are effective, specific, stable and non-toxic. Backed by Ph.D.-level customer support, Gene Tools designs and synthesizes Morpholinos and offers cytosolic delivery options.

GoldBio 816

NEW 2020

1328 Ashby Road
St. Louis, MO 63132
www.goldbio.com

GoldBio has been committed to researchers around the world by providing our customers with the best research reagents. GoldBio's line of high-quality reagents include products for DNA and protein research, cloning, cell culture, bioluminescence and so much more.

HAMAMATSU
PHOTON IS OUR BUSINESS

Industry Partner **GOLD**

Hamamatsu Corporation 700

360 Foothill Road
Bridgewater, NJ 08807
www.hamamatsu.com

Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, and ultraviolet light. We offer photomultiplier tubes and other low-light detectors, image sensors, light sources, and cameras (sCMOS, CCD, and EM-CCD) for biological applications.

HEKA 302

84 October Hill Road
Holliston, MA 01746
www.heka.com

HEKA provides complete solutions for electrophysiology and electrochemistry applications. We deliver complete set-ups with optional installation. HEKA provides hardware such as Patch-Clamp Amplifiers, Potentiostat and Galvanostat Amplifiers, entire E-chem scanning probes and much more! Our new PATCHMASTER NEXT software features a brand-new user-interface that is specifically designed for modern computer operating systems, making it easy to use for beginners and HEKA-veterans alike. Visit us to learn how HEKA can be a trusted partner in your laboratory.

Hellma USA 332

80 Skyline Drive
Plainview, NY 11803

Hellma is the world's leading manufacturer of cells and optical components for optical analysis. For 97 years, since Hellma GmbH was founded in 1922 in Müllheim, southern Germany, our commitment has been to provide the best possible quality in order to guarantee the most precise analytical results. Welcome to the fine art of precision!

Hinds Instruments Inc 830

7245 NE Evergreen Parkway
Hillsboro, OR 97124
www.hindsinstruments.com

Hinds Instruments is the manufacturer of the Photoelastic Modulator, the PEM100 and soon to be released PEM200. The PEM is used in commercial CD and VCD systems and bench-top laboratory research in CD, VCD, fluorescence, and other spectroscopic applications. Benefits for using the PEM are the wide spectral range (DUV to FIR), high sensitivity (10^-6), and large useful apertures. Stop by our booth for more information on the new, fully digital, PEM200.

HORIBA Scientific 409

20 Knightsbridge Road
Piscataway, NJ 08854
www.horiba.com/scientific

HORIBA Scientific offers the most sensitive, flexible, simple, affordable steady state & lifetime fluorometers, modular, expandable open architecture, tabletop systems & ion ratio imaging microscopy solutions, software & accessories. Duetta offers simultaneous Fluorescence/Absorbance from UV to NIR, uses CCD detection for fluorescence spectral acquisitions, & offers enhanced dynamic range & precise multivariate analysis capabilities for molecular fingerprinting. New FLIMera camera enables fluorescence lifetime imaging at real-time video rates for up to 24,576 simultaneous lifetime measurements.

ibidi USA Inc 828

NEW 2020

2920 Marketplace Drive, Suite 102
Fitchburg, WI 53719
ibidi.com

ibidi's position as a leader for functional cell-based assay technologies is based on more than 18 years of experience and a passion for quality and service. The ibidi product portfolio provides the largest and most sophisticated selection of microscopy slides worldwide. Applications range from standard microscopy techniques for high quality and super resolution imaging to more advanced cell-based assays including migration and chemotaxis, cell culture under flow conditions, and angiogenesis. Moreover, ibidi has an extended expertise in solutions for stage top incubation and perfusion.

ID Quantique SA 800

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 703

396 University Avenue
Westwood, MA 02090
www.ionoptix.com

IonOptix manufactures high-performance fluorescence and muscle function data acquisition and analysis systems. Well known for our popular Cardiomyocyte Calcium and Contractility System, we're proud to offer our new MultiCell high-throughput system for fast calcium and contractility data acquisition and analysis in isolated myocytes. Always innovating, IonOptix now offers calcium and force measurements in whole muscle as well as isolated cardiomyocytes, and our C-Stretch enables combined stretch and electrical stimulation in cultured cells – easy-to-use with the new C-Pace Navigator software.

Ionovation GmbH 804

Gewerbepark 9-11
Bissendorf, 49143
Germany
www.ionovation.com

Ionovation represents a wealth of experience in microscopy and electrophysiology. Our product line comprises Nobel Prize 2018 awarded technology: adjustment free optical tweezers with unique video based force detection. Fluorescence and Quantitative Phase Contrast microscopy combined with organ on chip technology complete the picture. Another field of Ionovation's activity is lipid bilayer electrophysiology: We offer automated workstations and advanced versions as add-ons for inverted microscopes. Our mission is to provide state-of-the-art technology and services for your research projects.

IOP Publishing 316

Temple Circus, Temple Way
Bristol, BS1 6HG
United Kingdom
www.ioppublishing.org

IOP Publishing provides a range of journals, ebooks, conference proceedings, and digital products services covering research in the physical sciences and beyond. IOP Publishing is owned by the UK Institute of Physics, a not-for-profit society. Any profit earned by IOP Publishing goes directly to the Institute to support its activities.

ISS Inc 715

1602 Newton Drive
Champaign, IL 61822
www.iss.com

For over 30 years, ISS has been a pioneer in producing scientific instrumentation. Applications include FRET, FLIM, FCS, FCCS, PCH, STED and all FFS techniques. Experts in absolute measurements of oxygen saturation in brain and muscle tissue. We host a variety of modular components that complement the instrumentation: laser diodes, LEDs, high pressure cell and fiber optic sensors among an extensive line of accessories; data acquisition cards for FCS and FLIM, laser launchers, galvo-scanning mirrors and detector units. Stop by our booth to learn more.

JASCO 617

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.

Journal of Biological Chemistry (ASBMB) 317

11200 Rockville Pike, Suite 302
Rockville, MD 20852
www.jbc.org

The Journal of Biological Chemistry (JBC) publishes papers based on original research that contributes to the understanding of molecular and cellular basis of biological processes. All accepted manuscripts are available for free to the public on the day of acceptance. Average time from submission to first decision is 17 days for regular articles. JBC is published by the American Society for Biochemistry and Molecular Biology.

Journal of General Physiology 301

950 Third Avenue, Floor 2
New York, NY 10022
www.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.

KinTek Corporation 401

7604 Sandia Loop
Austin, TX 78735
www.kintekcorp.com

KinTek is the world leader for the highest quality state-of-the-art comprehensive kinetic analysis. We offer premier research instruments supported by first-class service. We will show our new Auto-Stopped-Flow, offering the highest signal using the smallest sample volumes, and our Rapid Chemical/Freeze-Quench-Flow instruments. We also will introduce the new book by our founder, Kenneth A. Johnson, "Kinetic analysis for the New Enzymology." 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 315

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.

Company Name Booth Number

Larodan AB 532

Nobels väg 16
Solna, 17165
Sweden
www.larodan.com

Larodan makes a comprehensive range of research grade lipids for use as analytical standards and reagents with customers all over the world. Our products include all classes of neutral and polar lipids, from simple fatty acids and methyl esters to complex oxylipins, glycerides and phospholipids. We also provide specialty products to the Nordic market, in collaboration with other international research chemicals companies. Our facilities are located at the Karolinska Institute in Stockholm, Sweden with a US office in Michigan.

Leica Microsystems 708

1700 Leider
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 719

Henkestrasse 91
Erlangen, 91052
Germany
www.linnowave.com

Linnowave is a startup company from Erlangen (Germany) caring about precise and dynamic temperature control in optical high-resolution microscopy. Our newly developed micro heating system VAHEAT is designed to measure and actively control the temperature in your field of view even when working with immersion medium. Its compact and versatile design ensures compatibility with almost all commercially available upright and inverted microscopes while providing unprecedented temperature precision. Exploit the capabilities of VAHEAT to design your own temperature sensitive experiments.

.

Company Name Booth Number

Live Cell Instrument 333

NEW 2020

403B Hagye-technotown. 10,
NoWon Ro 15gil, Nowon Gu
Seoul, 01988
South Korea
www.lcibio.com

Live Cell Instrument (LCI), found in 2008, is highly experienced company specialized in developing and manufacturing scientific instruments and laboratory consumables to bio industry. Our products are dedicated to the technology of live cell microscopy including 'Bio Instruments' such as Automated All-in-one Imaging System, Microscope Incubator System, Anti-vibration Platform, IVF (In Vitro Fertilization), Gas controller, Heating Glass, Heating Plate and Adapters; 'Bio Consumables' such as Magnetic Imaging Chamber, Customized Well Plates, Dishes and so on.

LUMICKS 101

552 Massachusetts Ave, Suite 204
Cambridge, MA 02139
www.lumicks.com

LUMICKS is the leading supplier of Dynamic Single-Molecule instruments for the study of molecular motor activity, protein folding and conformational changes, DNA/RNA-protein interactions, and the properties of protein droplets. To decipher complex molecular interactions, you need to be able to observe the same biological process from multiple points of view. Our groundbreaking instrument, the C-Trap™ Optical Tweezers – Fluorescence & Label-free Microscopy, enables for the first time the analysis of complex dynamic details related to the behavior and interaction of single molecules.

Industry Partner **GOLD**

Mad City Labs Inc 500

2524 Todd Drive
Madison, WI 53713
www.madcitylabs.com

For over 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, Microscope stages, Modular motion control, Atomic Force Microscopes (AFM), Near Field Scanning Optical Microscopes (NSOM), and RM21® 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.

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.

New for 2020: Additional RM21® Microscope modules to support magnetic tweezer experiments and multi-view imaging. Microscopy specific modular motion control devices.

Malvern Panalytical 431

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 405

2178 High Tech Road
State College, PA 16803
www.matreya.com/

Matreya is a manufacturer of high purity lipids for Life Science Research. We offer gangliosides, sphingolipids, glycolipids, ceramides, phospholipids, enzyme inhibitors, fluorescent/isotope/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 us. Matreya is now a part of Cayman Chemical to better serve the lipid community.

MDPI IJMS 221

NEW 2020

St. Alban-Anlage 66
Basel, 4052
Switzerland
www.mdpi.com/journal/ijms

International Journal of Molecular Sciences is an international peer-reviewed open access journal providing an advanced forum for biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry, and is published semi-monthly online by MDPI.

MEIJI TECHNO AMERICA INCORPORATED 210

NEW 2020

5895 Rue Ferrari
San Jose, CA 95138
www.meijitechno.com

Meiji Techno Co Ltd is the third-largest manufacturer of optical microscopes in Japan. In 1964, Azuma Optics Co Ltd was founded as a contract manufacturer of microscopes and quickly established a reputation for high quality and fast delivery. In 1975, the company reformed into Meiji Techno Co Ltd and began selling microscopes directly to the public under the name Meiji Techno.

Metrion Biosciences 214

Riverside 3, Suite 1, Granta Park,
Great Abington
Cambridge, Cambridgeshire CB21 6AD
United Kingdom
www.metrionbiosciences.com

Metrion Biosciences is a preclinical CRO based in Cambridge UK specializing in in vitro ion channel screening, safety pharmacology testing, and drug discovery services. We have extensive expertise studying ion channels using electrophysiology techniques, and offer an industry-leading collection of high quality, validated CiPA-compliant cardiac safety testing assays (including hERG, core and extended CiPA panel, in silico modeling, and human iPSC-derived cardiomyocytes). We also offer translational native rodent neuron assays, especially dorsal root ganglion on manual patch and MEA platforms.

Mizar Imaging 820

7 MBL Street, Lillie 220
Woods Hole, MA 02543
www.mizarimaging.com

Mizar Imaging is proud to introduce the Tilt, the first light sheet imaging system that is a simple add-on to most inverted microscopes. The key benefit of light-sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample and the Tilt excels at this. 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.

Molecular Devices 501

3860 N 1st Street
San Jose, CA 95134
www.moleculardevices.com

Molecular Devices is one of the world's leading providers of high-performance bioanalytical measurement systems, software and consumables for life science research, pharmaceutical and biotherapeutic development. Included within a broad product portfolio are platforms for high-throughput screening, genomic and cellular analysis, colony selection and microplate detection. These leading-edge products enable scientists to improve productivity and effectiveness, ultimately accelerating research and the discovery of new therapeutics.

Molecular Vista Inc 718

NEW 2020

6840 Via Del Oro, Suite 110
San Jose, CA 95119
www.molecularvista.com

Molecular Vista provides tools that probe and understand matter at the molecular level through quantitative visualization. Its flagship product, VistaScope, is a flexible hybrid atomic force microscope (AFM) and optical spectroscopy platform for studying material & biological systems with chemical specificity and nanometer spatial resolution. VistaScope is equipped with patented photo-induced force microscopy (PiFM) which can resolve the nanometer-scale distribution of chemical species in multi-component systems, revealing an unprecedented and spectacular molecular vista to the researcher.

Don't forget to pick up a Passport Competition booklet inside the entrance of the Exhibit Hall and enter to win a Bose Portable Bluetooth Speaker!

Montana Molecular 121

366 Gallatin Park Drive, Unit A
Bozeman, MT 59715
www.montanamolecular.com

Montana Molecular develops genetically-encoded fluorescent biosensors for drug discovery and to observe and measure cell signaling with high spatiotemporal resolution. Detection is compatible with fluorescence imaging systems, microscopes, and automated plate readers. Each biosensor is packaged in a viral vector for detection in any cell type and can be used to make direct measurements of arrestin cAMP, DAG, Ca^{2+}, cGMP, PIP2, PIP3 and ER stress. Custom BacMam vector production services are available to enable efficient expression of any gene including ion channels and other large constructs.

Multi Channel Systems 300

Aspen Haustrasse 21
Reutlingen, 72770
Germany
www.multichannelsystems.com

Multi Channel Systems provides scientific equipment for in vitro and in vivo electrophysiological research including MEA-Systems for extracellular recordings using microelectrode arrays, automated patch clamp systems, and robots for TEVC in Xenopus oocytes. Our automated devices, Robocyte2 and PatchServer are ideal for time saving allowing you to focus on what really matters, research. Visit our booth to see why our over 20 years of experience and international distribution network have made us a global market leader in the field of non-clinical electrophysiology with microelectrode arrays.

Nanion Technologies 514

Ganghoferstr 70A
Munich, 80339
Germany
www.nanion.de

Nanion is a leading provider of automated patch clamp systems with throughput capabilities ranging from 50 to 20.000 high quality dp/day, in formats from 1 to 384 recording channels. Since 2002, Nanion expanded its product range to in vitro systems for membrane pump/transporter, and bilayer recordings, and confluency and contractility measurements from cells monolayers (impedance/EFP). Join us at Booth 514 to discover Nanion´s newest automated patch clamp family additions (SyncroPatch 384i, Dynamite8 and Port-a-Patch mini), and the newest add-on for measuring true contractility (FLEXcyte 96).

NanoAndMore USA Corp 818

21 Brennan Street, Suite 10
Watsonville, CA 95076
nanoandmore.com

NanoAndMore USA is your #1 Source for the major brands of SPM and AFM probes from NanoWorld™, NANOSENSORS™, nanotools™, BudgetSensors™, sQube™, OPUS™ and MikroMasch™ covering all application needs from education to research and industry. Pass by our booth or check out our website to find out more about our built-in Quantity Discounts for AFM probes, Free AFM probe samples, Calibration Standards and other products for nanotechnology.

NanoSurface Biomedical 720

4000 Mason Road, Suite 304
Seattle, WA 98195
www.nanosurfacebio.com

NanoSurface Biomedical provides in vitro platforms and services for cell and tissue engineering, disease modeling, and fundamental cell biology research.
NanoSurface technologies feature biomimetic surfaces that imitate the native ECM, promoting the alignment, maturity, and phenotypic development of cardiomyocytes, skeletal muscle, and many more cell types.
The NanoSurface Cytostretcher family of cell-stretching systems are able to provide both structural and mechanical cues to cells and tissues, with fully customizable programmable stretch routines.

Navitar 533

200 Commerce Drive
Rochester, NY 14623
www.navitar.com

Navitar Imaging Solutions, Projection Optics and Custom Optics divisions produce leading-edge optical and electro-optical technologies for the fastest growing segments of the world's economy. Navitar's optical solutions are used in a wide variety of industries including Biotechnology & Medical, Defense & Security, Industrial Imaging and Projection. Applications include machine vision, automation, assembly, imaging, testing, measuring, metrology, biometrics, telecommunications, photonics R&D, non-contact measurement, simulation, and much more.

NCI National CryoEM Facility 229

NEW 2020

8560 Progress Drive, Room B1602
Frederick, MD 21701
www.cancer.gov/research/resources/cryoem

The National Cryo-EM Facility is supported by the NCI and operates a national user facility within the Frederick National Laboratory for Cancer Research. Our mission is to provide rapid access to high-quality cryo-EM imaging to the academic and non-profit cancer research community. Our facility is equipped with two Titan Krios cryo-electron microscopes coupled to K3 direct detectors. We provide a rapid and simple application process and short wait times. There is no cost for access, and there is no prerequisite for prior NCI or NIH funding.

NeoBiosystems Inc 630

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.

Nicoya 115

29-B King Street East
Kitchener, ON N2G 2K4
Canada
www.nicoyalife.com

Nicoya is a Canadian biotechnology company whose mission is to extend human life by helping scientists succeed. Using nanotechnology and digital microfluidics, Nicoya created Alto™ - the world's first fully automated, high-throughput, benchtop SPR instrument. Nicoya supports hundreds of leading institutions and organizations to accelerate their next big discovery.

Nikon

Industry Partner **SILVER**

Nikon Instruments Inc 614

1300 Walt Whitman Road
Melville, NY 11747
www.nikoninstruments.com

Nikon Instruments Inc is a world leader in the development and manufacture of optical and digital imaging technology. Nikon provides complete optical imaging systems, offering cutting-edge microscopes with optimal performance and expandability, from basic documentation to confocal, and superresolution, powered by NIS-Elements imaging software.

NMRbox | CoMD/NMR | MagLab 133

https://nmrbox.org/pages/BPS-2020

The National Center for NMR Data Processing and Analysis (NMRbox) disseminates and supports NMR software and a cloud-based platform featuring substantial computational resources.

The Center on Macromolecular Dynamics by NMR (CoMD/NMR) provides advanced NMR spectroscopic and computational methods for characterizing protein and nucleic acid conformational dynamics.

The National Resource for Advanced NMR Technology advances the sensitivity and spectral resolution of NMR at high magnetic fields through development of state-of-the-art probes and techniques.

OLIS

OLIS Inc, On-Line Instrument Systems 202

130 Conway Drive, Suites A&B
Bogart, GA 30622
www.olisclarity.com

Reduce sample preparation & clarification when you have an OLIS CLARiTY UV/Vis for absorbance and fluorescence spectroscopy, True in situ spectroscopy -- keeping sample & environment intact -- is successful on nanoparticles to living cells. The small & affordable OLIS CPL Solo supports study of chiral molecules in their excited state . Stopped-flow kinetics, Phosphorescence Lifetime, Spectroelectrochemistry, Circular Dichroism (CD), & upcycling Cary 14 & 17, HP 8452 & 8453, and PE 983 IR specs complete a product line rich with brilliant breakthroughts, ours & those you can make with them.

Olympus America Inc 604

48 Woerd Avenue
Waltham, MA 02453
www.olympus-lifescience.com

Olympus is a global technology leader, crafting innovative optical and digital solutions in medical technologies; life sciences; industrial solutions; and cameras and audio products. Throughout our nearly 100-year history, Olympus has focused on being true to society and making people's lives healthier, safer and more fulfilling. Our life sciences business is dedicated to meeting and exceeding the evolving needs and expectations of life science professionals through a comprehensive range of clinical, educational and research microscopes and microscope systems.

OriginLab Corporation 432

1 Roundhouse Plaza, Suite 303
Northampton, MA 01060
www.originlab.com

Origin is an industry-leading graphing and data analysis software for science and engineering. Features include 100+ customizable 2D, 3D, statistical and specialized graphs, batch plotting, curve fitting, peak analysis, signal processing, advanced statistics, result recalculation on data or parameter change, batch analysis, and programming support for C, R, and Python.

Oxford Instruments America Inc 414

300 Baker Avenue, Suite 150
Concord, MA 01742
www.afm.oxinst.com

Oxford Instruments offers a range of microanalytical techniques, such as EDS and EBSD, which provide critical information to complement conventional imaging-based techniques. Our analytical systems are optimized for applications in the bio and life sciences, improving sensitivity, throughput and broadening the range of biological applications.

Company Name Booth Number

PCO America 621

6930 Metroplex Drive
Romulus, MI 48174
www.pco-tech.com

PCO is a leading specialist and pioneer in cameras and optoelectronics with more than 30 years of expert knowledge and experience of developing and manufacturing high-end imaging systems. The company's cutting edge sCMOS and high-speed cameras are used in scientific and industrial research, automotive testing, quality control, metrology and a large variety of other applications all over the world.

Photometrics 615

3440 E Britannia Drive, Suite 100
Tucson, AZ 85706
www.photometrics.com

Founded in 1978, Teledyne Photometrics is now part of the Teledyne Imaging Group. Teledyne Photometrics is the world's premier designer and manufacturer of high-performance sCMOS, EMCCD and CCD cameras for life science research. The original architect of the world's first scientific-grade microscopy EMCCD camera, Teledyne Photometrics maintains its leadership role with the release of the Prime 95B, the first sCMOS camera with 95% quantum efficiency. Teledyne Photometrics also offers comprehensive OEM support, including fully characterized, cost-efficient imaging systems and components.

PI (Physik Instrumente) 610

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.

Company Name Booth Number

PicoQuant Photonics North America Inc 609

9 Trinity Drive
West Springfield, MA 01089
www.picoquant.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), superresolution microscopy.

PIEZOCONCEPT 732

15 Rue du Bocage
Lyon, 69008
France
www.piezoconcept.com

PIEZOCONCEPT is the leading provider of nanopositioners dedicated to applications such as superresolution microscopy, optical trapping and atomic force microscopy. Our customers include many leading scientists engaged in leading edge research at world class universities and institutes. We developed a range of ultra-stable nanopositionner able to meet a wide range of microscopy applications with significant advantages over the currently available nanopositionners. As one of our biggest advantages, the sensor we use has exceptionally high signal, leading to picometric stability.

Quantum Design 205

NEW 2020

10307 Pacific Center Court
San Diego, CA 92121
www.qdusa.com

Since its inception in 1982, Quantum Design International (a privately held corporation) has developed and manufactured automated temperature and magnetic field testing platforms for materials characterization. These systems offer a variety of measurement capabilities and are in widespread use in the fields of physics, chemistry, biotechnology, materials science, nanotechnology, and quantum information research.

Quantum Northwest Inc 200

22910 E Appleway Avenue, Suite 4
Liberty Lake, WA 99019
www.qnw.com

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 710

Gehlenkamp 9a
Hamburg, 22559
Germany
www.rapp-opto.com

At Rapp OptoElectronic we have years of research experience. Together with close contact with customers and their challenges we provide a broad range of products for applications such as:
Optogenetics, uncaging, photobleaching/FRAP, photoconversion/photoswitching, ablation, mapping of neural networks, laser temperature-jump, flash photolysis, general illumination, and 2-photon microscopy. Our products include off-the-shelf and customized systems for localized illumination in microscopy, continuous and pulsed light sources (UV, VIS and IR lasers, flash lamps, high power LED systems).

Refeyn 109

1 Electric Avenue, Ferry Hinksey Road
Oxford, OX OX2 0BY
United Kingdom
www.refeyn.com

Refeyn – Weighing molecules with light The pioneer in mass photometry, Refeyn produces a disruptive new generation of analytical instruments that measure the mass of individual molecules directly in solution. Mass photometry transforms our ability to characterize the composition, structure and dynamics of biomolecules, revealing the true behavior of molecules in their native environment. Simply, Refeyn instruments can show sample purity and homogeneity, analyze biomolecular complex assembly or disassembly, quantify strength and kinetics of complex molecular interactions, and much more.

Royal Society Publishing 330

6-9 Carlton House Terrace
London, SW1Y 5AG
United Kingdom
www.royalsocietypublishing.org

The Royal Society journal Interface, edited by Prof Richard Cogdell, Univ of Glasgow, publishes research and reviews. Its sister journal Interface Focus, edited by Prof Russell Foster FRS, Univ 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, visit booth 330, where our representative Tim Holt will be happy to answer your questions.

RPMC Lasers Inc 111

8495 Veterans Memorial Parkway
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.

RWD Life Science 117

NEW 2020

6540 Lusk Boulevard, Suite C161
San Diego, CA 92121
www.rwdstco.com

Since 2002, RWD Life Science has been the world leading manufacturer for pre-clinical research laboratory instruments in animal model, we specialize in producing Inhalation Anesthesia Machines, Active Gas Scavenger, Stereotaxic Instruments, Cannula Implantation System, MCAO Sutures, Stainless Steel Mouse and Rat Brain Matrix, Optogenetic Stimulation Solutions, Animal Ventilator and Temperature Controller, and more than 1,000 kinds of surgical tools. For more information about our products, visit www.rwdstco.com.

SB Drug Discovery 531

West of Scotland Science Park
Glasgow, G20 0XA
United Kingdom
www.sbdrugdiscovery.com

SB Drug Discovery is a contract research organization specializing in cell line generation and biochemical & cell-based screening assays against targets such as ion channels, GPCRs, phosphodiesterases and nuclear receptors. SB has an extensive portfolio of ion channel and GPCR cell lines and assays available for HTS and medicinal chemistry campaigns.

ScienCell Research Laboratories 219

NEW 2020

1610 Faraday Avenue
Carlsbad, CA 92008
sciencellonline.com

ScienCell Research Laboratories is an expanding biotechnology company established in 1999. Our mission is to research and develop cell products for experimental use. ScienCell provides a variety of high quality normal human and animal cells, cell culture media and reagents, gene analysis tools, cell-derived molecular biology products, cell-based assay kits, and stem cell products for the research community. We offer specialty medium designed to selectively promote unique cell growth, including STEMium™.

Siskiyou Corporation 141

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 600

Balturpvej 154
Ballerup, 2750
Denmark
www.sophion.com

Sophion was founded almost 20 years ago by a group of passionate electrophysiologists, with the 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.

Company Name Booth Number

Springer Nature 218

233 Spring Street
New York, NY 10013
www.springernature.com

Springer Nature is one of the world's leading global research, educational and professional publishers, home to an array of respected brands providing quality content through a range of innovative products and services. Springer Nature is the world's largest academic book publisher, publisher of the world's most influential journals and a pioneer in the field of open research. The company numbers almost 13,000 staff in over 50 countries and has a turnover of approximately EUR 1.5 billion.

St. Jude Children's Research Hospital 329

NEW 2020

262 Danny Thomas Place
Memphis, TN 38105
www.stjude.org/postdoc

St. Jude Children's Research Hospital is a nonprofit biomedical research institution, where basic research is translated into groundbreaking treatments for cancer and other childhood diseases. We offer an exceptional training environment with state-of-the-art research facilities (including a 1.1 GHz NMR, cryoEM, X-ray crystallography center, and bioimaging informatics), competitive salaries, excellent benefits, and professional development funding. We consistently rank on FORTUNE magazine's "100 Best Companies to Work For" list. Visit booth 329 to discuss postdoctoral opportunities.

Company Name Booth Number

Stanford-SLAC Cryo-EM Center 129

NEW 2020

2575 Sand Hill Road, MS 69
Menlo Park, CA 94025
cryoem.slac.stanford.edu/s2cs/

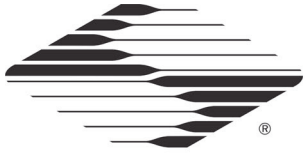
The NIH Common Fund Transformative High Resolution Cryo-Electron Microscopy program funds three National Centers. They are available free of charge through competitive peer review of user proposals to: 1) provide access to high-end cryo-EM instruments for atomic resolution data collection of single particle specimens and 2) train independent cryo-EM investigators. For more information: Stanford-SLAC Cryo-EM Center: https://cryoem.slac.stanford.edu/s2c2 Pacific Northwest Cryo-EM Center: https://pncc.labworks.org National Center for CryoEM Access and Training: https://nccat.nysbc.org.

Strex 428

10060 Carroll Canyon Road, Suite 100
San Diego, CA 92131
strexcell.com

Strex manufactures cyclic cell stretching instruments, used in mechanotransduction experimentation on cardiomyocytes and lung cells. Our most popular products are our Cell Stretching Systems for uniaxial and biaxial stretch used for various mechanostimuli and stretch experiments. These devices mimic cell strain and create an environment similar to that of in-vivo physiology. Microscope-mountable options are available for enhanced live cell-strain imaging. Strex also features a device that applies pressurizing stimulation to cardiac cells, kidney cells, etc. Contact us for more information.

Company Name Booth Number



SUTTER INSTRUMENT

Sutter Instrument 400

1 Digital Drive
Novato, CA 94949
www.sutter.com

Quality. Precision. Reliability. For over 45 years, Sutter Instrument has been a global leader in equipment for neuroscience research, setting the highest standards for product performance and innovation. Stop by and let us show you the dPatch®, our fully integrated digital patch clamp amplifier and SutterPatch data analysis software suite for single channel or whole cell recording. The BOB open platform upright microscope ideal for slice electrophysiology, 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. A stainless steel manipulator can be coupled with the controller for increased stability. The Lambda 421 and Lambda OBC Optical Beam Combiners are ideal for combining separate light sources into a single output beam.

T&T Scientific Corporation 530

201 E Moody Avenue
Knoxville, TN 37920
www.ttscientific.com

T&T Scientific offers variety of pharmaceutical leading edge patent-protected technology products for lipid nanoparticles (LNPs) and liposomes small to large scale manufacturing. T&T has developed its contract service capabilities in 15,000 square foot state of the art facility with a team of highly knowledgable scientists and engineers to support clients with liposomes and LNPs formulation and methods developments, research, analytical and manufacturing services. T&T offers these services in both pre-clinical developments and commercial products to pharmaceutical companies and research labs.

Company Name Booth Number

TA Instruments 314

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.

TCI America 419

9211 N Harborgate Street
Portland, OR 97203
www.TCIchemicals.com

TCI is a leading supplier of high quality organic reagents, offering more than 28,000 chemicals. Consistency and quality of all of TCI's products are maintained through our extensive QC process. We are committed to assisting your research by providing reliable reagents for synthetic chemistry, life science, materials science, and analytical chemistry. With 95% of our catalog stocked at our warehouses in the USA and Japan, you can count on TCI to have product ready to ship when you need it. Through custom synthesis and bulk services, we can help you scale up as needed.

The Company of Biologists 814

Bidder Building, Station Road,
Histon Cambridge, Cambridge CB24 9LF
United Kingdom
www.biologists.com

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.

Company Name Booth Number

The Journal of Physiology 328

Hodgkin Huxley House, 30 Farringdon Lane
London, EC1R 3AW
United Kingdom
www.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 2018 Two-Year Impact Factor is 4.950.

Thorlabs 309

56 Sparta Avenue
Newton, NJ 07860
www.thorlabs.com

Thorlabs has been proud to serve the photonics industry for 30 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 11 countries, are focused on providing same-day shipping of stocked components, a fast response to customer inquiries, and fast turnaround on custom needs.

Tissue Gnostics USA 228

18460 Clark Street
Tarzana, CA 91356
www.tissuegnostics.com

TissueGnostics (TG) is a globally active Austrian company focusing on integrated solutions for high content and/or high throughput scanning and analysis of biomedical, veterinary, natural sciences and technical microscopy samples. TG has been founded by scientists from the Vienna University Hospital (AKH) in 2003. It is now has subsidiaries in the EU, the USA and China and customers in 30 countries on all continents.

Company Name Booth Number

TMC 511

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 USA INC 528

Two Bala Plaza, Suite 300
Bala Cynwyd, PA 19004
www.tokaihit.com

Happiness for Cells, Success for Researchers! Leave cell culturing to Tokai Hit, with our wide variety of Stage Top Incubators and enclosures (ThermoBox). With our systems, you can maintain optimal temperature, gas, and humidity for cell culture on the microscope. We have a system for any type of microscope and stage, offering flexible customizations even for those with home-made equipment. Please visit our booth #528 and take a look at part of our latest line-up!

Company Name Booth Number

Warner Instruments 304

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. Find quality accessories and other electrophysiology tools such as capillary glass, coverglass and vibration isolation equipment to go along with a Warner system or one that is already in your lab. The Smart Ephys family of products, encompassing the collective expertise of Warner, HEKA and Multi Channel Systems 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 403

6300 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

Zaber Technologies Inc 238

NEW 2020

2-605 West Kent Avenue N
Vancouver, BC V6P 6T7
Canada
www.zaber.com

At Zaber, we design and manufacture precision positioning devices that are affordable, integrated, and easy to use. Our devices are used in many different applications and markets, such as photonics and optics, life sciences, microscopy, and industrial automation.

Product Categories

3-D Visualization
Company Name	Booth Number
Abbelight	730
Crayon technologies Inc	632
Mizar Imaging	820

Acoustic Force Spectroscopy
Company Name	Booth Number
LUMICKS	101

AFM/NSOM/Confocal Microscopes
Company Name	Booth Number
Abberior Instruments America	633
Bruker Corporation	515
Mad City Labs Inc	500
Molecular Vista Inc	718
NanoAndMore USA Corp	818

Amperometry/Voltammetry Instrumentation
Company Name	Booth Number
ELEMENTS SRL	629

Amphipols
Company Name	Booth Number
Anatrace | Molecular Dimensions	421

Amplifiers
Company Name	Booth Number
ALA Scientific Instruments Inc	620
Alembic Instruments Inc	802
ELEMENTS SRL	629
HEKA	302
Multi Channel Systems	300
Sutter Instrument	400

Analytical/Testing Services
Company Name	Booth Number
Anton Paar	704
Avanti Polar Lipids Inc	601
PicoQuant Photonics North America Inc	609
Refeyn	109
T&T Scientific Corporation	530

Antibodies
Company Name	Booth Number
Bon Opus Biosciences	217
Cedarlane	204
Dynamic Biosensors GmbH	119
Electron Microscopy Sciences	319
GoldBio	816
Matreya LLC	405
T&T Scientific Corporation	530
TCI America	419

Assay Kits
Company Name	Booth Number
Agilent	505
Cedarlane	204
LUMICKS	101
Montana Molecular	121
ScienCell Research Laboratories	219

Atomic Force Microscopes
Company Name	Booth Number
Bruker Corporation	515
Mad City Labs Inc	500
Molecular Vista Inc	718
NanoAndMore USA Corp	818

Biochemical Reagents
Company Name	Booth Number
Abbelight	730
Avanti Polar Lipids Inc	601
Ecocyte Bioscience US LLC	728
GoldBio	816
ScienCell Research Laboratories	219
TCI America	419

Biochemicals
Company Name	Booth Number
Larodan AB	532
Matreya LLC	405

Biotechnology
Company Name	Booth Number
Alvéole	628
AnaBios	211
Anton Paar	704
Crayon technologies Inc	632
Dynamic Biosensors GmbH	119
GoldBio	816
Live Cell Instrument	333
Metrion Biosciences	214
Navitar	533
Nicoya	115
ScienCell Research Laboratories	219
Sophion Bioscience A/S	600
T&T Scientific Corporation	530

Books and Journals
Company Name	Booth Number
American Physical Society	231
IOP Publishing	316
Journal of Biological Chemistry (ASBMB)	317
Journal of General Physiology	301
KinTek Corporation	401
MDPI IJMS	221
NanoSurface Biomedical	720
Royal Society Publishing	330
Springer Nature	218
The Company of Biologists	814

Cameras
Company Name	Booth Number
Axiom Optics	631
Carl Zeiss Microscopy LLC	701
Hamamatsu Corporation	700
HORIBA Scientific	409
Navitar	533
PCO America	621
Photometrics	615
Thorlabs	309

Cell Biology Products
Company Name	Booth Number
Agilent	505
Allen Institute for Cell Science	418
Alvéole	628
BioTek Instruments Inc	216
Cedarlane	204
Ecocyte Bioscience US LLC	728
Fluicell AB	417
GoldBio	816
Montana Molecular	121
NanoSurface Biomedical	720
ScienCell Research Laboratories	219
Strex	428

Cell Culture Products
Company Name	Booth Number
BioTek Instruments Inc	216
Cedarlane	204
Etaluma Inc	209
GoldBio	816
ibidi USA Inc	828
IonOptix	703
Linnowave	719
Live Cell Instrument	333
NanoSurface Biomedical	720
Olympus America Inc	604
RWD Life Science	117
ScienCell Research Laboratories	219
Strex	428
TOKAI HIT USA INC	528

Centrifuges
Company Name	Booth Number
Beckman Coulter Life Sciences	308
RWD Life Science	117

Chromatography
Company Name	Booth Number
TCI America	419

Circular Dichroism Spectroscopy
Company Name	Booth Number
Applied Photophysics	714
Hellma USA	332
Hinds Instruments Inc	830
JASCO	617
OLIS Inc, On-Line Instrument Systems	202

Computational Biology Products
Company Name	Booth Number
Allen Institute for Cell Science	418
Cytocybernetics Inc	840

Computational Software
Company Name	Booth Number
Allen Institute for Cell Science	418
Cytocybernetics Inc	840
NMRbox | CoMD/NMR | MagLab	133

Computers, Hardware, and Software
Company Name	Booth Number
Aurora Scientific Inc	139
OriginLab Corporation	432

Confocal Microscopes
Company Name	Booth Number
Axiom Optics	631
Bruker Corporation	515
ISS Inc	715
Molecular Devices	501
Nikon Instruments Inc	614
Olympus America Inc	604
PicoQuant Photonics North America Inc	609
Siskiyou Corporation	141
Thorlabs	309

Crystallization Utilities
Company Name	Booth Number
Linnowave	719

Crystallography
Company Name	Booth Number
TA Instruments	314

Company Name	Booth Number

Curvettes
NanoAndMore USA Corp 818

Data Acquisition
Alembic Instruments Inc 802
KinTek Corporation 401
NCI National CryoEM Facility 229
PicoQuant Photonics North America Inc 609
Sutter Instrument 400

Data Analysis Software
Abbelight 730
Allen Institute for Cell Science 418
Aurora Scientific Inc 139
KinTek Corporation 401
NMRbox | CoMD/NMR | MagLab 133
OriginLab Corporation 432
PicoQuant Photonics North America Inc 609

Detergents
Avanti Polar Lipids Inc 601

Digitizers
NeoBiosystems Inc 630

Drug Discovery
AAT Bioquest Inc 429
Agilent 505
BioTek Instruments Inc 216
Dynamic Biosensors GmbH 119
Etaluma Inc 209
Fluxion Biosciences 320
Metrion Biosciences 214
Molecular Devices 501
Nanion Technologies 514
NanoSurface Biomedical 720
Nicoya 115
SB Drug Discovery 531

Electromechanical Instrumentation
Strex 428

Electrophoresis Equipment
Crayon technologies Inc 632

Electrophysiological Data Acquisition
Alembic Instruments Inc 802
AnaBios 211
Cytocybernetics Inc 840
Ecocyte Bioscience US LLC 728
ELEMENTS SRL 629
HEKA 302
Metrion Biosciences 214
Multi Channel Systems 300
Nanion Technologies 514
Sutter Instrument 400

Electrophysiological Instruments
ALA Scientific Instruments Inc 620
Alembic Instruments Inc 802
Cytocybernetics Inc 840
ELEMENTS SRL 629
Fluxion Biosciences 320

Company Name	Booth Number

HEKA 302
Ionovation GmbH 804
Molecular Devices 501
Nanion Technologies 514
NeoBiosystems Inc 630
Sutter Instrument 400

Electrophysiology Equipment
ALA Scientific Instruments Inc 620
Alembic Instruments Inc 802
Aurora Scientific Inc 139
Cytocybernetics Inc 840
Ecocyte Bioscience US LLC 728
ELEMENTS SRL 629
Fluxion Biosciences 320
HEKA 302
Molecular Devices 501
Multi Channel Systems 300
Nanion Technologies 514
Olympus America Inc 604
RWD Life Science 117
Sutter Instrument 400

Electrophysiology Software
Cytocybernetics Inc 840
ELEMENTS SRL 629
HEKA 302
Multi Channel Systems 300
Nanion Technologies 514
Sutter Instrument 400

Filter Wheels
Sutter Instrument 400

Flash Lamps
Rapp OptoElectronic GmbH 710

Fluid Flow Chambers
ibidi USA Inc 828

Fluorescence Anisotropy
Edinburgh Instruments 618
ISS Inc 715
KinTek Corporation 401
OLIS Inc, On-Line Instrument Systems 202

Fluorescence Correlation Spectroscopy
Boston Electronics 721
Ionovation GmbH 804
ISS Inc 715
JASCO 617
PicoQuant Photonics North America Inc 609

Fluorescence Image Analysis Equipment
Aurora Scientific Inc 139
Etaluma Inc 209
HORIBA Scientific 409
Live Cell Instrument 333
PCO America 621

Company Name	Booth Number

Fluorescence Lifetime Imaging
Axiom Optics 631
Boston Electronics 721
HORIBA Scientific 409
ID Quantique SA 800
ISS Inc 715
Mad City Labs Inc 500
PCO America 621
Sutter Instrument 400

Fluorescent Filters
89 North 709
Chroma Technology 709

Fluorescent Probes
Cedarlane 204
Montana Molecular 121

Fluorometers
Edinburgh Instruments 618
HORIBA Scientific 409
Quantum Northwest Inc 200

Glass Capillary Tubing
Sutter Instrument 400
Warner Instruments 304

Glassware
ibidi USA Inc 828

High-Throughput Instrumentation
Anton Paar 704
Dynamic Biosensors GmbH 119
Ecocyte Bioscience US LLC 728
Fluxion Biosciences 320
Ionovation GmbH 804
JASCO 617
Mad City Labs Inc 500
Molecular Devices 501
Multi Channel Systems 300
Nanion Technologies 514
NanoSurface Biomedical 720
Nicoya 115
PIEZOCONCEPT 732
Sophion Bioscience A/S 600

Image Acquisition Systems
ASI/Applied Scientific Instrumentation 529
Aurora Scientific Inc 139
Etaluma Inc 209
HORIBA Scientific 409
Mizar Imaging 820
PCO America 621

Image Analysis
Laboratory for Fluorescence Dynamics 315
Malvern Panalytical 431
Molecular Devices 501

Company Name	Booth Number
Image Analysis Software	
Allen Institute for Cell Science	418
Aurora Scientific Inc	139
Boston Electronics	721
Nikon Instruments Inc	614
OriginLab Corporation	432
Image Analysis, High Resolution	
Abbelight	730
Etaluma Inc	209
Oxford Instruments America Inc	414
PCO America	621
Image Intensifiers	
Axiom Optics	631
PCO America	621
Image Stabilization	
Mad City Labs Inc	500
Imaging Chambers	
Live Cell Instrument	333
Strex	428
Warner Instruments	304
Imaging Systems	
ASI/Applied Scientific Instrumentation	529
Axiom Optics	631
BioTek Instruments Inc	216
HEKA	302
Live Cell Instrument	333
Mad City Labs Inc	500
Mizar Imaging	820
Nikon Instruments Inc	614
PCO America	621
Sutter Instrument	400
Thorlabs	309
Incubators	
Linnowave	719
Live Cell Instrument	333
TOKAI HIT USA INC	528
Warner Instruments	304
Infrared Spectroscopy	
JASCO	617
Molecular Vista Inc	718
Ion Channels	
AnaBios	211
Cytocybernetics Inc	840
Fluxion Biosciences	320
Metrion Biosciences	214
SB Drug Discovery	531
Warner Instruments	304
Isotope-Labeled Compounds	
Larodan AB	532
Matreya LLC	405
Label Free Sensing	
Molecular Vista Inc	718
Navitar	533
Nicoya	115

Company Name	Booth Number
Labeling Dyes	
Crayon technologies Inc	632
Cytocybernetics Inc	840
TCI America	419
Laboratory Apparatus & Equipment	
Alvéole	628
Electron Microscopy Sciences	319
RWD Life Science	117
Lasers	
Molecular Devices	501
PicoQuant Photonics North America Inc	609
Rapp OptoElectronic GmbH	710
RPMC Lasers Inc	111
Life Sciences	
Agilent	505
Alvéole	628
AnaBios	211
BioCAT	430
BioTek Instruments Inc	216
Bon Opus Biosciences	217
Cedarlane	204
Excelitas Technologies	729
ISS Inc	715
Larodan AB	532
Metrion Biosciences	214
Navitar	533
Nicoya	115
Photometrics	615
RWD Life Science	117
T&T Scientific Corporation	530
Light Sheet Microscopy	
ASI/Applied Scientific Instrumentation	529
Bruker Corporation	515
Mad City Labs Inc	500
Mizar Imaging	820
Navitar	533
Olympus America Inc	604
Photometrics	615
PIEZOCONCEPT	732
Light Sources	
89 North 709	
ASI/Applied Scientific Instrumentation	529
Chroma Technology	709
Excelitas Technologies	729
Rapp OptoElectronic GmbH	710
Sutter Instrument	400
Thorlabs	309
Lipids	
Avanti Polar Lipids Inc	601
Cedarlane	204
Larodan AB	532
Matreya LLC	405
T&T Scientific Corporation	530
TCI America	419
Liposome Preparation Equipment	
Avanti Polar Lipids Inc	601
T&T Scientific Corporation	530

Company Name	Booth Number
Liquid Chromatography Instruments	
JASCO	617
Magnetic Resonance Imaging	
Bruker Corporation	515
NMRbox | CoMD/NMR | MagLab	133
Mass Spectrometry	
Avanti Polar Lipids Inc	601
Matreya LLC	405
St. Jude Children's Research Hospital	329
Mathematical and Statistical Software	
KinTek Corporation	401
NMRbox | CoMD/NMR | MagLab	133
OriginLab Corporation	432
Micro Environmental Control	
Alvéole	628
NanoSurface Biomedical	720
Microdissecting Instruments	
Rapp OptoElectronic GmbH	710
Microelectrode Holders	
Sutter Instrument	400
Warner Instruments	304
Microfluidic Chambers	
Ecocyte Bioscience US LLC	728
Fluxion Biosciences	320
LUMICKS	101
Warner Instruments	304
Microinjectors	
ASI/Applied Scientific Instrumentation	529
Sutter Instrument	400
Warner Instruments	304
Micromanipulators	
ASI/Applied Scientific Instrumentation	529
Electron Microscopy Sciences	319
Mad City Labs Inc	500
Sutter Instrument	400
Zaber Technologies Inc	238
Micropipette Pullers	
Sutter Instrument	400
Micropositioners	
ASI/Applied Scientific Instrumentation	529
Mad City Labs Inc	500
PI (Physik Instrumente)	610

Company Name	Booth Number
Microscope Accessories	
Alvéole	628
ASI/Applied Scientific Instrumentation	529
Axiom Optics	631
Electron Microscopy Sciences	319
Etaluma Inc	209
Excelitas Technologies	729
ibidi USA Inc	828
Linnowave	719
Mad City Labs Inc	500
Mizar Imaging	820
NanoAndMore USA Corp	818
NanoSurface Biomedical	720
Photometrics	615
Rapp OptoElectronic GmbH	710
Sutter Instrument	400
Thorlabs	309
TOKAI HIT USA INC	528
Microscope Drift Correction	
ASI/Applied Scientific Instrumentation	529
Mad City Labs Inc	500
Nikon Instruments Inc	614
Microscope Stages	
ASI/Applied Scientific Instrumentation	529
Mad City Labs Inc	500
Mizar Imaging	820
PIEZOCONCEPT	732
Sutter Instrument	400
Zaber Technologies Inc	238
Microscopes	
Abbelight	730
ASI/Applied Scientific Instrumentation	529
BioTek Instruments Inc	216
Electron Microscopy Sciences	319
Etaluma Inc	209
HORIBA Scientific	409
Ionovation GmbH	804
Leica Microsystems	708
Live Cell Instrument	333
Mad City Labs Inc	500
Mizar Imaging	820
NanoAndMore USA Corp	818
Nikon Instruments Inc	614
Olympus America Inc	604
PicoQuant Photonics North America Inc	609
Rapp OptoElectronic GmbH	710
Sutter Instrument	400
Thorlabs	309
Warner Instruments	304
Zaber Technologies Inc	238
Microscopy Chambers	
ibidi USA Inc	828
Linnowave	719
Microtomes	
Electron Microscopy Sciences	319
RWD Life Science	117

Company Name	Booth Number
Molecular Biology Products	
BioTek Instruments Inc	216
Bon Opus Biosciences	217
Cedarlane	204
Gene Tools LLC	215
GoldBio	816
ScienCell Research Laboratories	219
T&T Scientific Corporation	530
Monochromators	
Rapp OptoElectronic GmbH	710
Nanopositioning Systems	
ASI/Applied Scientific Instrumentation	529
Mad City Labs Inc	500
NeoBiosystems Inc	630
PI (Physik Instrumente)	610
PIEZOCONCEPT	732
Zaber Technologies Inc	238
Near-Field Scanning Optical Microscopes (NSOM)	
Mad City Labs Inc	500
Molecular Vista Inc	718
NanoAndMore USA Corp	818
PIEZOCONCEPT	732
Nuclear Magnetic Resonance	
Bruker Corporation	515
NMRbox | CoMD/NMR | MagLab	133
Optical Tweezers	
Bruker Corporation	515
Ionovation GmbH	804
LUMICKS	101
Mad City Labs Inc	500
Thorlabs	309
Particle Sizing Products	
Anton Paar	704
Patch Clamp Instrumentation	
ALA Scientific Instruments Inc	620
Alembic Instruments Inc	802
ELEMENTS SRL	629
Fluxion Biosciences	320
HEKA	302
Metrion Biosciences	214
Multi Channel Systems	300
Nanion Technologies	514
NeoBiosystems Inc	630
Sophion Bioscience A/S	600
Sutter Instrument	400
Warner Instruments	304
Peptides	
Bon Opus Biosciences	217
TCI America	419
Perfusion Stepper System	
NeoBiosystems Inc	630
Warner Instruments	304

Company Name	Booth Number
Perfusion Systems	
ibidi USA Inc	828
NeoBiosystems Inc	630
TOKAI HIT USA INC	528
Warner Instruments	304
Phospholipids	
Avanti Polar Lipids Inc	601
Larodan AB	532
Matreya LLC	405
Montana Molecular	121
T&T Scientific Corporation	530
TCI America	419
Photometers	
OLIS Inc, On-Line Instrument Systems	202
Rapp OptoElectronic GmbH	710
Piezo Lens Positioners	
ASI/Applied Scientific Instrumentation	529
Mad City Labs Inc	500
PI (Physik Instrumente)	610
PIEZOCONCEPT	732
Piezo Scanning Stages	
ASI/Applied Scientific Instrumentation	529
Mad City Labs Inc	500
PI (Physik Instrumente)	610
PIEZOCONCEPT	732
Piezo Stages	
ASI/Applied Scientific Instrumentation	529
Mad City Labs Inc	500
PI (Physik Instrumente)	610
PIEZOCONCEPT	732
Pipettes	
Electron Microscopy Sciences	319
Probes	
NanoAndMore USA Corp	818
Protein Binding Studies	
Dynamic Biosensors GmbH	119
KinTek Corporation	401
Linnowave	719
Nicoya	115
Refeyn	109
Protein Expression	
Bon Opus Biosciences	217
GoldBio	816
Refeyn	109
SB Drug Discovery	531
Protein Purification Systems	
Bon Opus Biosciences	217
Dynamic Biosensors GmbH	119
Refeyn	109
Protein Structure Data	
NCI National CryoEM Facility	229

Company Name	Booth Number
Publications	
AIP Publishing	305
Cell Press	201
IOP Publishing	316
Pumps	
ibidi USA Inc	828
NeoBiosystems Inc	630
Reagents	
Abbelight	730
Agilent	505
Bon Opus Biosciences	217
Electron Microscopy Sciences	319
Gene Tools LLC	215
GoldBio	816
Larodan AB	532
TCI America	419
Recording Chambers	
Ecocyte Bioscience US LLC	728
Warner Instruments	304
Rheometers/Viscometers	
Anton Paar	704
Scanning Electron Microscope	
Stanford-SLAC Cryo-EM Center	129
Scanning Probe Microscopes	
HEKA	302
Mad City Labs Inc	500
Molecular Vista Inc	718
NanoAndMore USA Corp	818
Scientific CMOS Cameras	
Axiom Optics	631
PCO America	621
Photometrics	615
Thorlabs	309
Warner Instruments	304
Screening, High-Throughput	
Bon Opus Biosciences	217
Dynamic Biosensors GmbH	119
Ecocyte Bioscience US LLC	728
ibidi USA Inc	828
Metrion Biosciences	214
Multi Channel Systems	300
Nanion Technologies	514
NanoSurface Biomedical	720
Nicoya	115
Nikon Instruments Inc	614
SB Drug Discovery	531
St. Jude Children's Research Hospital	329
Sensors	
Linnowave	719
Montana Molecular	121
Shutters	
Sutter Instrument	400

Company Name	Booth Number
Software	
KinTek Corporation	401
NMRbox | CoMD/NMR | MagLab	133
OriginLab Corporation	432
Spectrofluorometers	
Edinburgh Instruments	618
ISS Inc	715
OLIS Inc, On-Line Instrument Systems	202
Spectrometers	
Anton Paar	704
Applied Photophysics	714
Edinburgh Instruments	618
Navitar	533
Spectrophotometers	
BioTek Instruments Inc	216
Edinburgh Instruments	618
HORIBA Scientific	409
JASCO	617
OLIS Inc, On-Line Instrument Systems	202
Spectroscopy Accessories	
Applied Photophysics	714
Edinburgh Instruments	618
HORIBA Scientific	409
Sphingolipids	
Avanti Polar Lipids Inc	601
Larodan AB	532
Matreya LLC	405
Stepper Technology	
Mad City Labs Inc	500
Zaber Technologies Inc	238
Sterols	
Larodan AB	532
Matreya LLC	405
Stimulators	
ALA Scientific Instruments Inc	620
Alembic Instruments Inc	802
Aurora Scientific Inc	139
Strex	428
Warner Instruments	304
Stimulus Isolators	
ALA Scientific Instruments Inc	620
Stopped-Flow Spectroscopy	
Applied Photophysics	714
JASCO	617
OLIS Inc, On-Line Instrument Systems	202
Superresolution (SR) Microscopy	
Abbelight	730
Axiom Optics	631
Bruker Corporation	515
ISS Inc	715
Mad City Labs Inc	500
Nikon Instruments Inc	614
Olympus America Inc	604

Company Name	Booth Number
Surface Plasmon Resonance Instrumentation	
Dynamic Biosensors GmbH	119
Mad City Labs Inc	500
Nicoya	115
TCSPC Components	
Boston Electronics	721
Edinburgh Instruments	618
ISS Inc	715
Mad City Labs Inc 500	
PicoQuant Photonics North America Inc	609
Temperature Controllers	
ALA Scientific Instruments Inc	620
Aurora Scientific Inc	139
Linnowave	719
Warner Instruments	304
Tomography	
NCI National CryoEM Facility	229
Stanford-SLAC Cryo-EM Center	129
UV Spectroscopy	
Edinburgh Instruments	618
Hinds Instruments Inc	830
JASCO	617
KinTek Corporation	401
OLIS Inc, On-Line Instrument Systems	202
Vibration Isolation Systems	
Sutter Instrument	400
TMC	511
Video Microscopy Systems	
Etaluma Inc	209
Mad City Labs Inc	500
Mizar Imaging	820
Navitar	533
Visible Spectroscopy	
Hinds Instruments Inc	830
OLIS Inc, On-Line Instrument Systems	202
Voltage Clamp Instrumentation	
ALA Scientific Instruments Inc	620
Alembic Instruments Inc	802
ELEMENTS SRL	629
Fluxion Biosciences	320
Multi Channel Systems	300
NeoBiosystems Inc	630
X-Ray Diffraction Equipment	
Anton Paar	704
BioCAT	430
X-Ray Imaging Equipment	
BioCAT	430
Zeta Potential	
Anton Paar	704
Wyatt Technology Corporation	403

Author Index

B

C

D

E

F

G

H

I

J

K

L

M

P

Q

R

S

T

U

V

W

X

Y

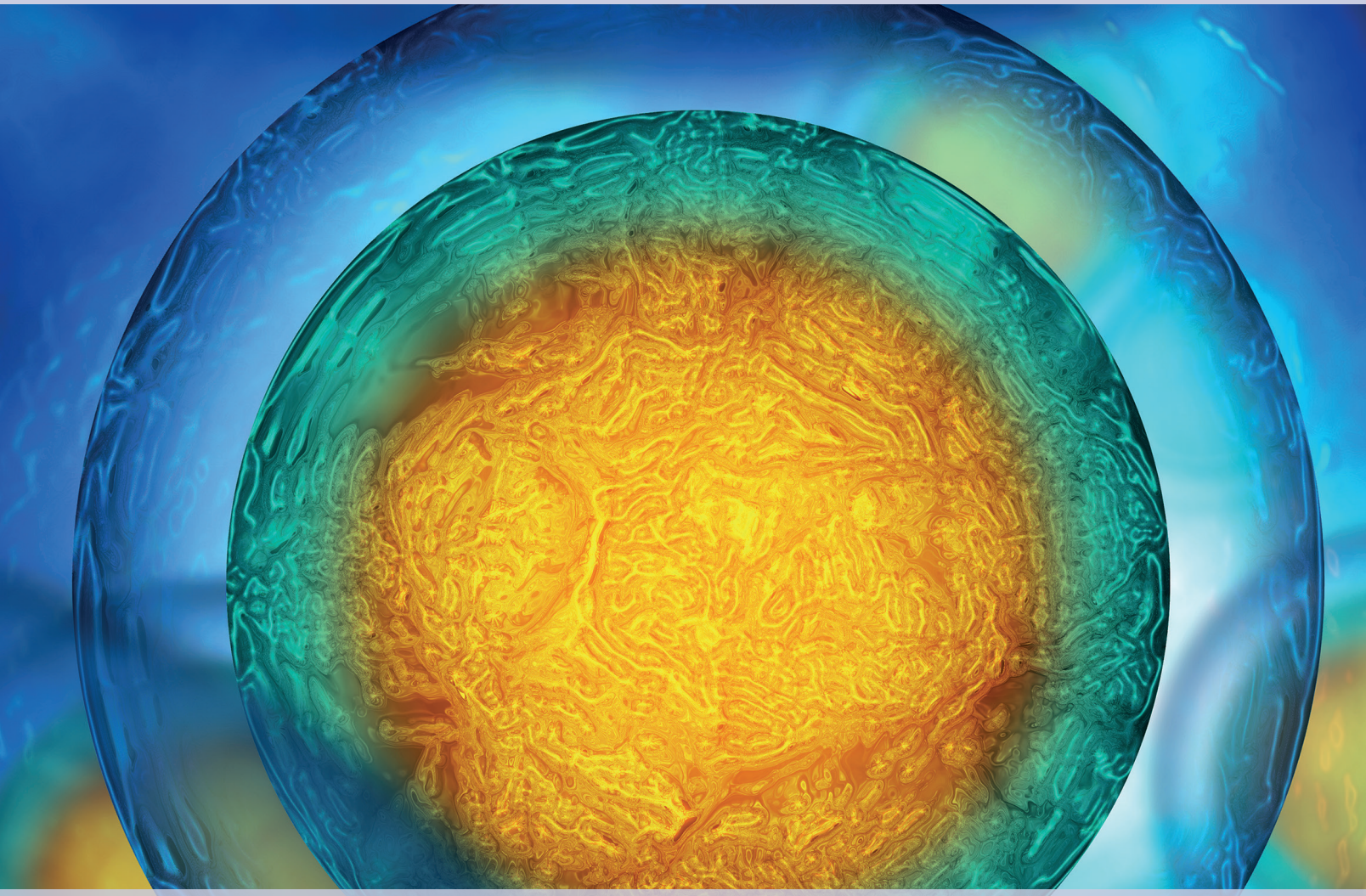
Z

Biophysical Society

IOP | ebooks™

BPS–IOP eBooks, creating the defining collection of ebooks in biophysics. Submit your book proposal today or contact us to discuss your ideas further.

iopscience.iop.org/bookListInfo/iop-series-in-biophysical-society



Four books published in 2019 ▪ Seven books coming in 2020 ▪ Three books already scheduled for 2021

To learn more about this book program or becoming an author, Visit the BPS booth in Lobby G or the IOP booth (316) in the Exhibit Hall

Are You Taking Advantage of **Your Member Benefits?**

Biophysical Society

Take advantage of membership benefits that allow you to:

- **Keep up with the latest research**
  Access to *Biophysical Journal* online – the premier journal of quantitative biology
- **Get published for less**
  Publish in the *Biophysical Journal* and pay reduced rates for pages and print color
- **Save money on meetings**
  Get significant member discounts to the BPS Annual Meeting, Thematic Meetings, and BPS Conferences
- **Increase your career development skills**
  Webinars on timely and relevant career development topics
- **Expand your network**
  Connect with your peers at Society meetings including BPS Annual Meeting, Thematic Meetings, BPS Conferences, and local networking events
- **Get financial assistance**
  Apply for travel awards and bridging funds to attend the BPS Annual Meeting, or apply for funds to help support your local meetings and events
- **Stay connected and informed**
  Gain easy access to other members through the members-only directory; stay informed with a monthly newsletter and member communications; connect with other members through BPS Subgroups and Student Chapters
- **Advance your career**
  Get access to career development resources, including the BPS Job Board, external career resources, and career expert columnist "Molly Cule"
- **Make your voice count**
  Join thousands of biophysicists across the globe speaking in one strong voice advocating for funding basic science in general and for biophysics specifically

Visit **biophysics.org** to renew your membership or join the Society.

Biophysical Society

Thematic Meetings 2020

Biophysics at the Dawn of Exascale Computers

Hamburg, Germany
May 12–15, 2020

Spatial Organization of Biological Functions

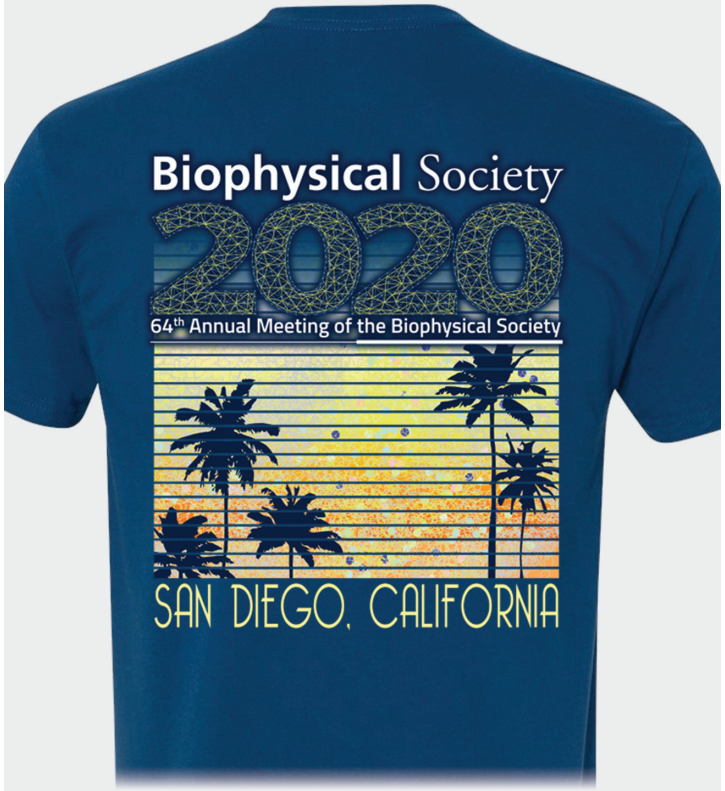
Bangalore, India
August 16–19, 2020
Early Abstract and Registration Deadline: April 17, 2020

Physical and Quantitative Approaches to Overcome Antibiotic Resistance

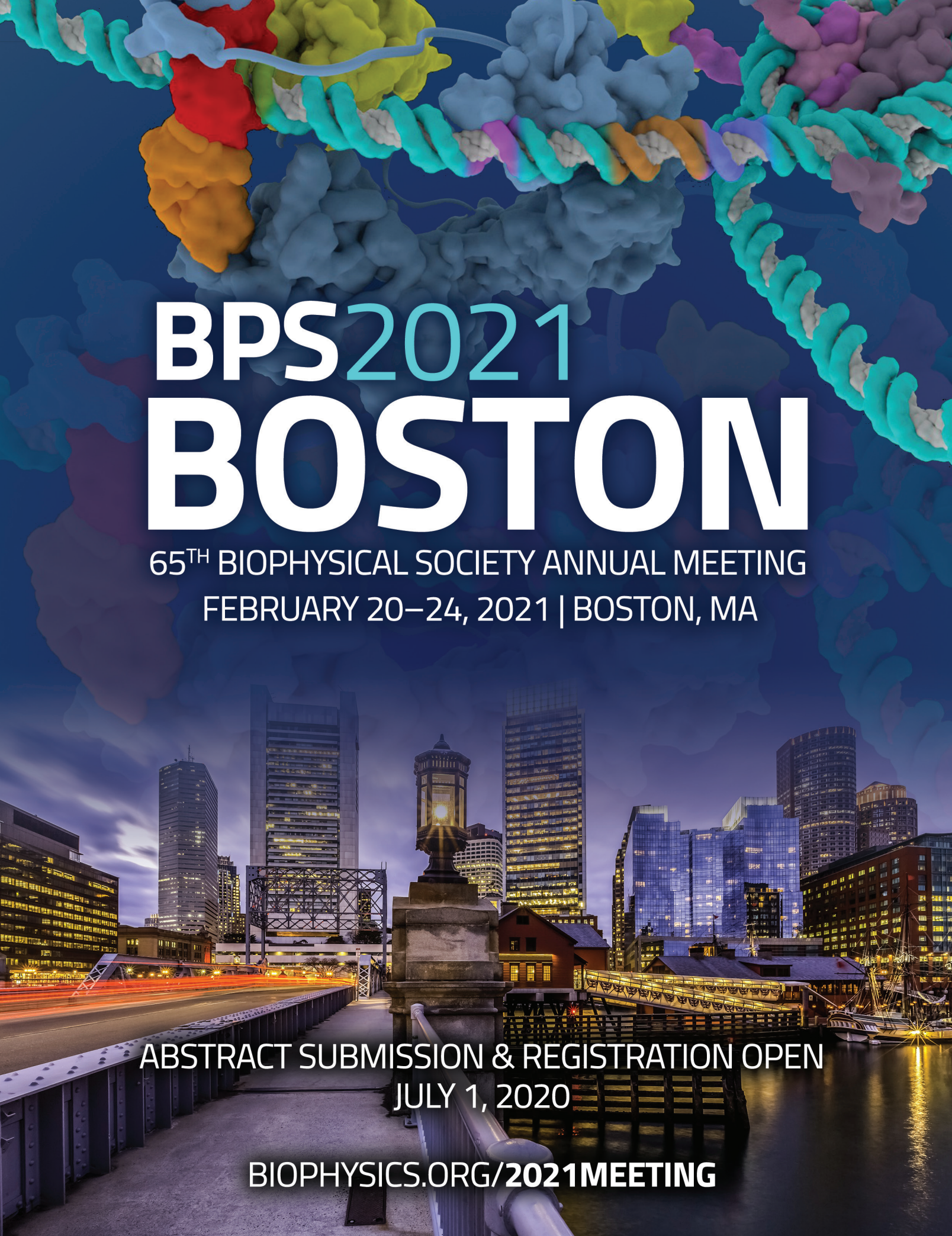
Stockholm, Sweden
August 30–September 2, 2020
Early Abstract Deadline: May 1, 2020
Early Registration Deadline: May 20, 2020

For more information visit **www.biophysics.org**

Don't Forget Your BPS20 T-Shirt!



Society Merchandise available at the BPS Booth in Lobby G


BPS2021
BOSTON
65TH BIOPHYSICAL SOCIETY ANNUAL MEETING
FEBRUARY 20–24, 2021 | BOSTON, MA
ABSTRACT SUBMISSION & REGISTRATION OPEN
JULY 1, 2020
BIOPHYSICS.ORG/2021MEETING


60
YEARS
Biophysical Journal
1960–2020
Biophysical Society