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

Biophysics Week

March 20–24, 2023



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

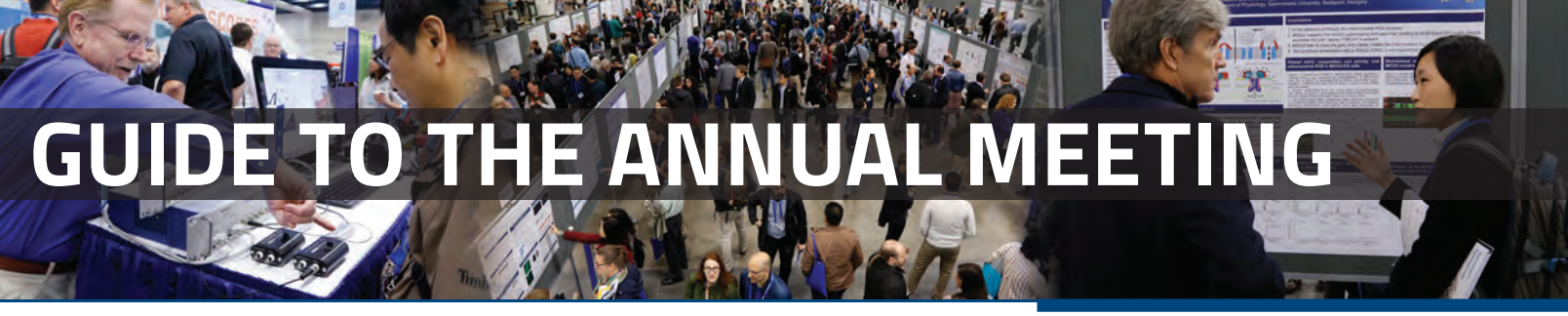
GET INVOLVED! Plan to participate in BPS sponsored events as well as virtual or local Affiliate Events. You can also host your own Biophysics Week Affiliate Event. Register your event to receive advertising support from BPS.

GEAR UP! This year's Biophysics Week t-shirt is now available. Purchase at the Society Booth or pre-order online before they sell out!

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

Get ready to celebrate biophysics!

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



GUIDE TO THE ANNUAL MEETING

About the BPS Annual Meeting

The Biophysical Society (BPS) Annual Meeting is the largest gathering of biophysicists in the world. With over 200 sessions and more than 3,000 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 and student researchers
- Approximately six held concurrently during each symposium session

Workshops
- Technique-oriented sessions
- Four-to-five speakers per two-hour session
- Four-to-five 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 networking, public speaking, teaching and science education, careers in industry and academia, and optimizing graduate and postdoc experiences

Exhibits
Over 120 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 19	Monday, February 20	Tuesday, February 21	Wednesday, February 22
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 Sunday - Tuesday at 6 PM at the Society Booth to help you explore local restaurants and neighborhoods

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

Biophysical Society

Plan the Perfect Day!

Meeting Mobile App:

- Stay organized and keep up with the latest event information
- Search by keyboards, sessions, presentations, or authors
- Bookmark session, 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
- Follow social media postings
- And much, much more!



Download the App

Search Apple App Store or Google Play for "Biophysical Society Events"

Download on the App Store

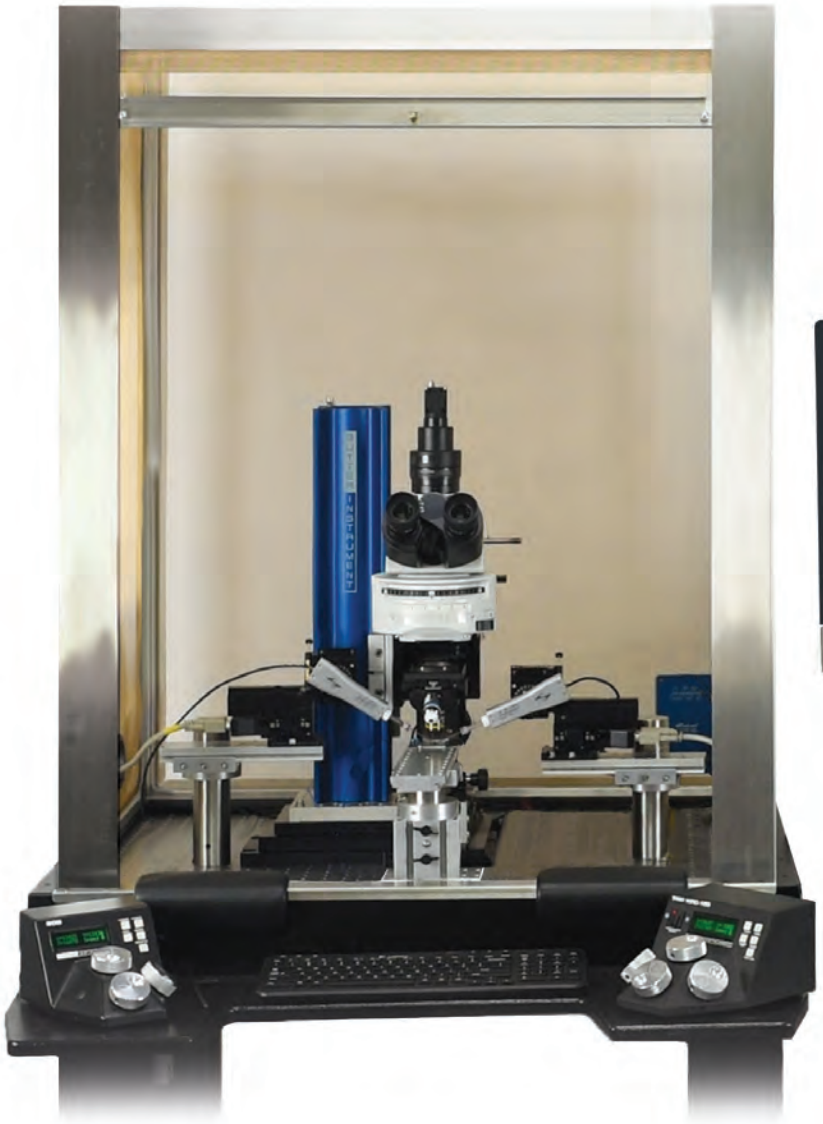
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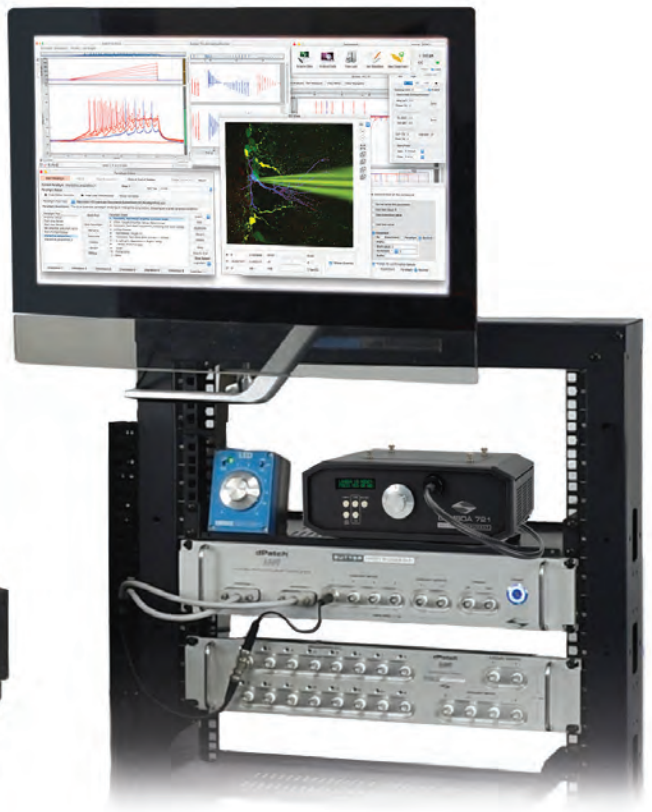
or Scan

For all other device types and all other web browser enabled devices, point your mobile browser to https://plan.core-apps.com/bpsam2023.

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

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BPS2023

67th Biophysical Society Annual Meeting
February 18–22, 2023

SAN DIEGO CALIFORNIA, USA

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2023 Biophysical Society Lecturer

Ardem Patapoutian

Scripps Research/HHMI

How do you feel? The Molecules that Sense Touch

About the Image

The 2023 image featured is Structure of mouse mechanosensitive ion channel PIEZO1 using cryo-EM. The channel is a trimer with 114 transmembrane domains.

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Sophion Bioscience A/S
Sutter Instrument

As of January 3, 2023

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 Hall

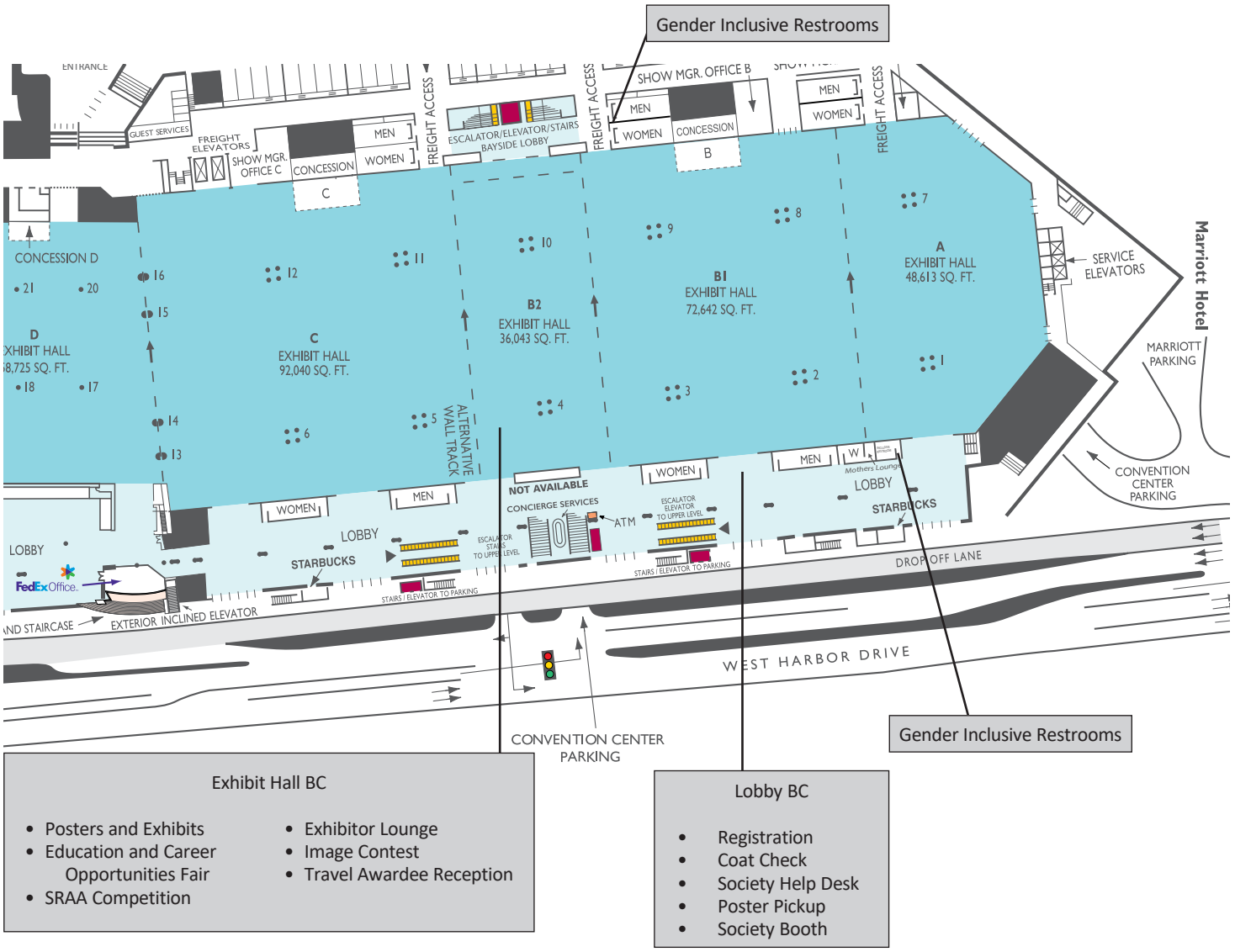


Exhibit Hall BC

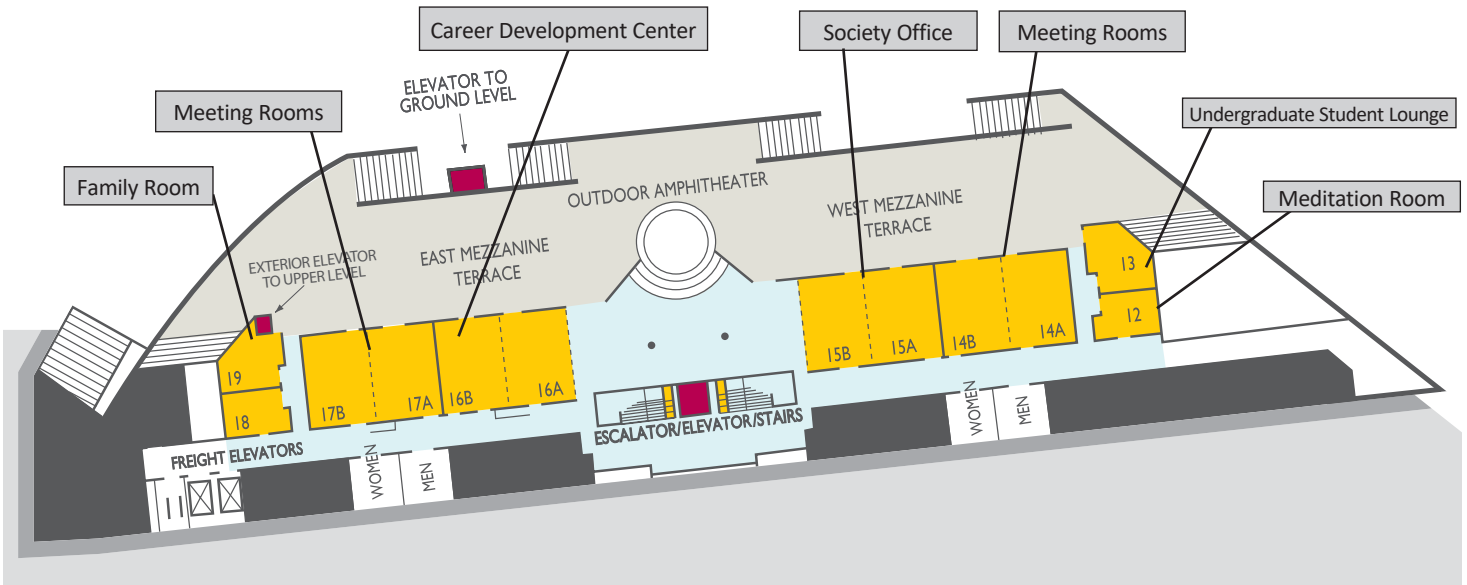
- Posters and Exhibits
- Education and Career Opportunities Fair
- SRAA Competition
- Exhibitor Lounge
- Image Contest
- Travel Awardee Reception

Lobby BC

- Registration
- Coat Check
- Society Help Desk
- Poster Pickup
- Society Booth

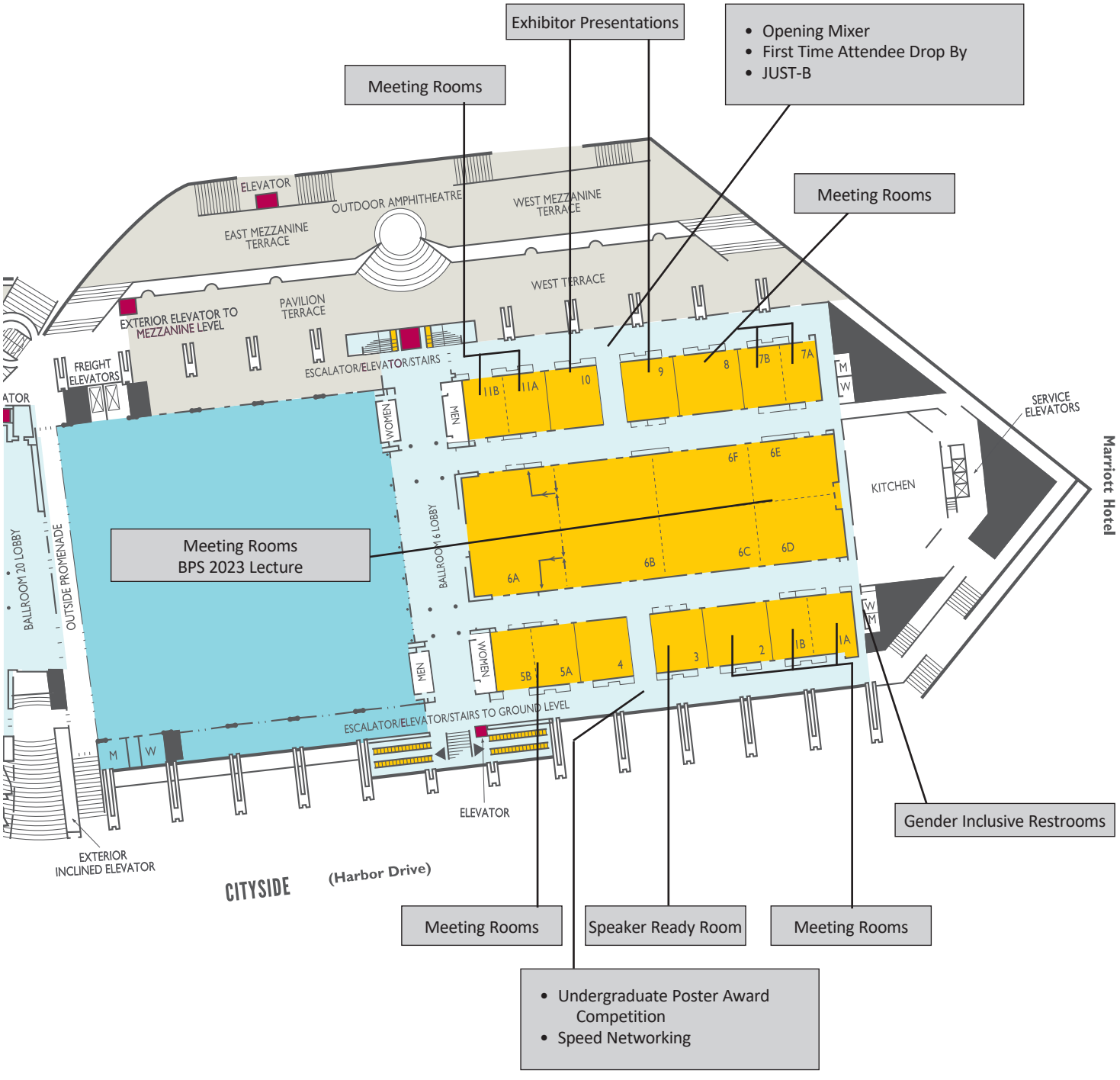
San Diego Convention Center

Mezzanine Level Meeting Rooms



San Diego Convention Center

Upper Level Meetings Rooms



Biophysical Society

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Sorting and Programming of 2023 Abstracts

Sorting and programming of the 2023 Annual Meeting abstracts into poster and platform sessions was completed by Patricia Bassereau, Baron Chanda, Margaret Cheung, Henry Colecraft, Erin Dueber, Taekjip Ha, Gilad Haran, Samantha Harris, Kumiko Hayashi, Syma Khalid, William Kobertz, Elizabeth Komives, Francesca Marassi, Emmanuel Margeat, Susan Marqusee, Jim Sellers, David Stokes, Carolyn Moores, Anna Moroni, Arthur Palmer, David Piston, Janice Robertson, Gail Robertson, Jennifer Ross, Frances Separovic, Erin Sheets, Kandice Tanner, Valeria Vasquez, Angela Gronenborn, and Jing Xu.

Biophysical Society

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Mark Your Calendars! Future BPS Annual Meetings

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

69th Annual Meeting
February 15–19, 2025
Los Angeles, California

70th Annual Meeting
February 21–25, 2026
San Francisco, California

71st Annual Meeting
February 20–24, 2027
Philadelphia, Pennsylvania

Badges
Badges are required for admission to all scientific sessions, including Saturday Subgroup symposia, poster areas, exhibits, and social functions. 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 Financial Center, 655 W Broadway STE 101, San Diego, CA 92101, United States. Please bring two forms of identification with you. Please note that banks will be closed on Presidents Day, Monday, February 20, 2023.

Monday–Thursday	9:00 AM–5:00 PM
Friday	9:00 AM–4:00 PM
Saturday - Sunday	Closed

ATMs are also available in the San Diego Convention Center.

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 workstations, and printing services. Shipping is provided through FedEx. The business center is located 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 16A
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–5:00 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 BC or in the Society Meeting Office, in Room 15AB.

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 BC
The cost is $3.00 per checked coat or small handbag and $5.00 per checked luggage. 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, at 6:00 PM, where a BPS member will coordinate dinner at a local restaurant.

Exhibits, Exhibit Hall BC
The Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of January 3, 2023, can be found beginning on page 165. Please see Addendum for those registered after January 3, 2023.

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 BC
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 BC 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 19
The Family Room is equipped with diapers, wipes, labels for breast milk, plastic bags for disposing of diapers, electrical outlets for pumps, 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

Mother's lounges are also located in the women's restrooms of Lobbies A and E. The rooms are equipped with comfortable furniture and separate private areas for nursing mothers.

First Aid, Lobby A - Box Office A

In case of medical emergency, dial 5911 from any house phone. For a non-emergency, you may dial 5490. The First Aid room is located in Lobby A - Box Office A. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.

Friday	7:00 AM–9:00 PM
Saturday	7:00 AM–10:00 PM
Sunday	7:00 AM–10:00 PM
Monday	7:00 AM–10:00 PM
Tuesday	7:00 AM–6:00 PM
Wednesday	7:00 AM–4:00 PM

Individuals Requiring Assistance

Attendees requiring special assistance during the meeting should visit the Society Meeting Office in Room 15AB. Society staff will do their best to accommodate requests, however, we cannot ensure that special needs will be met without prior notice.

Internet Access

Wireless Internet access is available free-of-charge in the lobby and common spaces of the San Diego Convention Center, excluding the Exhibit Hall and meeting rooms. Exhibitor paid access to Internet in the Exhibit Hall is $80 per day.

Meditation Room, Room 12

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 the App Store and the 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/2023meeting. Using the Mobile App you can view and create schedules, view abstracts/authors/exhibitors, receive event alerts from BPS, join the conversation on social media, find and 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 $25 to $35 per day on days when there are special events at Petco Park or other downtown events.

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 BC

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 4:00 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 at 1:45 PM–2:45 PM (10:30 AM–11:30 AM on Wednesday); even-numbered posters should present at 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 1, 2022, 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 to accommodate exhibit teardown, 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 Samsung Galaxy Tablet?

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 questions, get your passport stamped, and drop off your passport at the Society Booth located in Lobby BC before 2:30 PM on Tuesday, February 21. 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 BC

Friday	3:00 PM–5:00 PM
Saturday	7:30 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 BC, and six banks on the meeting room levels. Gender-inclusive restrooms are located in Exhibit Hall B and on the upper level next to Room 1A.

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 #bps2023
Facebook:	www.facebook.com/biophysicalsociety
Instagram:	@biophysicalsociety
Blog:	www.biophysics.org/blog

Social Media/Photography Policy

The Biophysical Society welcomes the use of social media to share information from the 67th Biophysical Society Annual Meeting and to engage with the biophysics community. Please use the Annual Meeting hashtag #bps2023 when posting to help others follow along.

We encourage you to share highlights from the meeting, suggest sessions to attend, discuss stand-out presentations and posters, and connect with your fellow biophysicists, as well as our sponsors and exhibitors.

When sharing information about what you see and hear in meeting sessions, please refrain from photographing or sharing full details of the material presented, to respect the intellectual property of the presenters. Some presenters may request, verbally or in writing, that attendees not share information about their presentations and content; please honor those requests so that we can maintain a professional, respectful environment.

Presenters: If you do not wish to have your research shared via social media, please make an announcement before and during your presentation. BPS strongly encourages compliance with speaker requests regarding social media sharing but cannot guarantee it.

Due to the sensitive nature of data and the preliminary, unpublished research findings, all filming and recording of any kind (camera, cell phones, personal devices) in the scientific session rooms, Exhibit Hall, and poster area are strictly prohibited unless the individual doing the filming or recording is accompanied by a member of the Society staff. Any individual seen taking photographs in any session room, the Exhibit Hall, or poster area will be escorted out by security.

Society Meeting Office, Room 15AB

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 3

We highly encourage all presenters in Symposia, Workshops, and Platform sessions to visit the Speaker Ready Room one day before 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 before 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 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 13

This special space is reserved for undergraduate meeting attendees looking for a place to relax or catch up on coursework they may miss while at the Annual Meeting.

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

Governance and Committee Meetings

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

Friday, February 17

3:30 PM–4:30 PM
New Council Orientation
Hilton, Aqua Boardroom

5:00 PM–9:00 PM
Joint Council Reception, Dinner, and Meeting
Hilton, Aqua 310

Saturday, February 18

8:30 AM–11:30 AM
Joint Council Meeting (continued)
Hilton, Aqua 310

Sunday, February 20

8:30 AM–10:30 AM
Committee for Inclusion and Diversity Meeting
Room 14A

12:00 PM–1:30 PM
Public Affairs Committee Meeting
Room 14A

3:30 PM–5:00 PM
Early Careers Committee Meeting
Room 14A

4:00 PM–6:00 PM
Biophysical Journal Associate Editors Meeting
Room 14B

7:00 PM–10:30 PM
BPS Editors Dinner
San Diego Wine and Culinary

Monday, February 21

8:30 AM–10:30 AM
CPOW Committee Meeting
Room 14A

3:30 PM–5:30 PM
Membership Committee Meeting
Room 14A

Tuesday, February 22

8:00 AM–9:00 AM
Biophysical Society Business Meeting
Room 2

9:00 AM–10:30 AM
Subgroup Chairs Meeting
Room 17B

1:00 PM–3:00 PM
The Biophysicist Editorial Board Meeting
Room 14A

3:00 PM–5:00 PM
Education Committee Meeting
Room 14B

3:30 PM–5:30 PM
Biophysical Reports Editorial Board Meeting
Room 14A

6:00 PM–10:00 PM
Publications Committee Meeting
Hilton, Indigo 202

Wednesday, February 23

8:00 AM–11:00 AM
New Council Meeting
Room 17B

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

Ancillary Meetings

Friday, February 18, 6:00 PM–9:00 PM
Society of General Physiologists Meeting
South, Level Three, Room 312

Sunday, February 20, 6:00 PM–6:30 PM
Korean Biophysicists Meeting
Esplanade, Room 153

Tuesday, February 22, 8:00 PM–10:00 PM
SOBLA (The Society for Latinoamerican Biophysicists) Meeting
Esplanade, Room 154

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 Saturday, February 18, to Wednesday, February 22, in Room 16A.

Sessions in italics will be held in Career Development Center, Room 16A.

Saturday, February 18, 2023

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 Poster Award Competition

One-on-One Resume and Career Counseling*
2:00 PM–2:40 PM | 4:30 PM–4:50 PM

Sunday, February 19, 2023

7:30 AM–8:30 AM	Postdoctoral Breakfast
9:00 AM–10:00 AM	*Networking for Biophysicists: How to Create Your Dream Career*
11:30 AM–1:00 PM	Undergraduate Student Pizza "Breakfast"
12:00 PM–1:00 PM	*Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn & More*
1:00 PM–3:00 PM	Education and Career Opportunities Fair
2:00 PM–4:00 PM	Teaching Science Like We Do Science
2:30 PM–3:30 PM	*I Need a Job Right Now – What Do I do?*
2:30 PM–4:00 PM	All About ARPA-H: Exploring Opportunities at the New Agency
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 and Cheese Mixer

One-on-One Resume and Career Counseling*
9:20 AM–1:00 PM | 2:30 PM–4:50 PM | 5:20 PM–5:40 PM

Monday, February 20, 2023

7:30 AM–8:30 AM	Graduate Student Breakfast
9:00 AM–10:00 AM	*Demystifying the Academic Job Search I: Understanding the Search*
10:30 AM–11:30 AM	*Marketing Your Value: Crafting your Elevator Pitch/30 Second Value Statement/Brand Statement*
11:00 AM–1:00 PM	Annual Meeting of the Student Chapters
12:00 PM–1:00 PM	*Translating Your Credentials: Writing Effective Resumes + Cover Letters for Industry, Government, and Nonprofit Jobs*
1:00 PM–2:30 PM	Envisioning the Future of Biophysical Postdoctoral Training
1:30 PM–3:00 PM	Biophysics 101: Incorporating Bayesian and Artificial Intelligence Approaches into Biophysics
2:15 PM–3:45 PM	Authorship Best Practices in Biophysics
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	Achieving Work-Life Balance Across Different Job Sectors
4:00 PM–5:00 PM	*Negotiation for Biophysicists: Negotiation Strategies and Tactics and Evaluating a Job Offer*
4:30 PM–6:00 PM	Speed Networking

One-on-One Resume and Career Counseling*
9:00 AM–1:10 PM | 2:30 PM–4:30 PM | 5:20 PM–6:00 PM

Tuesday, February 21, 2023

9:30 AM–10:30 AM	*Demystifying the Academic Job Search II: Preparing your Written Application Materials*
11:30 AM–12:30 PM	*How and When to Say Yes (or No!) to Opportunities*
12:00 PM–1:30 PM	Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions
1:00 PM–2:30 PM	Careers in Industry: A Q&A Panel
2:30 PM–3:30 PM	*The Strategic Postdoc: How to Find and Leverage your Postdoc Experience*

One-on-One Resume and Career Counseling*
9:00 AM–12:00 PM | 2:00 PM–3:30 PM | 3:50 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 18, in the Career Development Center, Room 16A. Please come prepared with resumes, CVs, and other appropriate materials.

Career Development Center Information

Esplanade, Room 151

Andrew Green earned his PhD at UC Berkeley and has over 20 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, professional speaker, TEDx speaker, science journalist 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, LLC, she is a prolific speaker and writer on career development and professional advancement for engineers and scientists.

She has delivered over 850 webinars and speeches for clients in the US, EU, Mexico, Canada, Africa, Asia, and South America (including over 100 gigs in 2020), and has written over 450 articles in publications such as *Science*, *Nature*, *Scientific American*, *National Geographic News Watch*, *World Economic Forum*, and *Smithsonian*. 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. As a career coach and consultant, she has helped hundreds of clients in diverse fields, professions, industries, and regions create and land their own Unicorn Career. 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

Travel Grant Awardees

Sunday

Mena Abdelsayed, Stanford University
171-Plat
ACTION POTENTIAL HETEROGENEITY IN THE MYOSIN BINDING PROTEIN C3 MUTANT, R943X.

Anna Katarina Antonovic, Queen Mary University of London
570-Pos, Board B391
A RATIONAL APPROACH TO SELECTIVE TARGETING OF SKELETAL MYOSIN.

Christopher A. Azaldegui, University of Michigan
44-Plat
SINGLE-MOLECULE IMAGING OF THE MCDA ATPASE REVEALS MECHANISTIC DETAILS OF CARBOXYSOME TRAFFICKING.

Chelsea Brown, Warwick University
661-Pos, Board B482
SUPRAMOLECULAR ORGANISATION AND DYNAMICS OF MANNOSYLATED PHOSPHATIDYLINOSITOL LIPIDS IN THE MYCOBACTERIAL PLASMA MEMBRANE.

Tianxin Cao, University of Illinois at Chicago
586-Pos, Board B407
THE C-TERMINAL END SEGMENT OF TROPONIN T IS A NOVEL TROPOMYOSIN-BINDING SITE DIRECTLY REGULATED BY CA^{2+} TO DETERMINE THE KINETICS OF CARDIAC MUSCLE.

Karen Castillo, Centro Interdisciplinario de Neurociencia de Valparaíso
531-Pos, Board B352
THE BISPHOSPHONATE ZOLEDRONIC ACID IS A TRPV1 CHANNEL INHIBITOR.

Elizabeth Crumley, University of Tennessee
385-Pos, Board B206
THE USE OF IODINATED CHOLESTEROL TO ENHANCE CONTRAST IN CRYO-EM IMAGES OF LIPID MEMBRANES.

Caroline Davis, University of Virginia
187-Pos, Board B8
REFINING HIV ENVELOPE PROTEIN CONFORMATIONAL DATA FROM DIFFERENT EXPERIMENTAL SOURCES USING BIAS-RESAMPLING METHODS AND INFORMATION THEORY.

Guy W. Dayhoff, II, University South Florida
300-Pos, Board B121
RAPID PREDICTION AND ANALYSIS OF PROTEIN INTRINSIC DISORDER.

Daisy Duan, Yale University
603-Pos, Board B424
ABL2 MEDIATES MICROTUBULE NUCLEATION AND REPAIR VIA TUBULIN CO-CONDENSATION.

Axel J. Fenwick, Johns Hopkins University
594-Pos, Board B415
HF_PEF ANIMAL MODELS DISPLAY DIFFERENCES IN MYOFIBRIL MECHANICS.
Yekaterina Fyodorova, University of Michigan
81-Plat
IDENTIFYING THE ROLE OF THE FACT HISTONE CHAPERONE IN EPIGENETICS THROUGH SINGLE-MOLECULE FLUORESCENCE IMAGING.

Clinton A. Gabel, Purdue University
605-Pos, Board B426
BREAKING DOWN THE HAUS: MOLECULAR INSIGHTS INTO BRANCHING MICROTUBULE NUCLEATION.

Kirin Gada, Northeastern University
510-Pos, Board B331
CRITICAL REGULATION OF THE VOLTAGE-GATED SODIUM CHANNEL, $NA_V1.4$, BY PIP_2.

Cristina García Mouton, Complutense University of Madrid
420-Pos, Board B241
CONTRIBUTION OF SURFACE-ASSOCIATED MEMBRANES TO PULMONARY SURFACTANT-MEDIATED DRUG DELIVERY.

Stefanie M. Geisler, University of Innsbruck
515-Pos, Board B33
GENETIC DELETION OF STAC2 ADAPTOR PROTEIN ALTERS ELECTRICAL ACTIVITY OF MOUSE CHROMAFFIN CELLS.
Shefin Sam George, Stanford University
457-Pos, Board B278
CHOLESTEROL AS A TOOL TO PROBE THE ROLE OF MEMBRANE IN COCHLEAR HAIR CELL MECHANOTRANSDUCTION.

Laura I. Gil Pineda, Virginia Tech
666-Pos, Board B487
USING TETRAPEPTIDE GSSS AND β-CATENIN$^{17-48}$ TO STUDY THE EFFECTS OF PHOSPHOSERINE ON POLYPEPTIDE CONFORMATIONAL ENSEMBLES.

Margaret B. Jameson, University of Wisconsin - Madison
60-Plat
PAIRWISE BIOSYNTHESIS ESTABLISHES ION CHANNEL BALANCE AND MITIGATES ARRHYTHMIA.

John Janetzko, Stanford University
240-Pos, Board B61
ARRESTIN C-TAIL DYNAMICS REGULATE ACTIVATION AND GPCR ENGAGEMENT.

Veronica Jimenez, California State University, Fullerton
444-Pos, Board B265
MITOCHONDRIAL FUNCTION IS REGULATED BY MECHANOSENSITIVE CHANNELS IN *TRYPANOSOMA BRUCEI*.

Isik Kantarcioglu, Sabanci Universty
291-Pos, Board B112
EFFLUX OF ANTIBIOTICS BY THE HOMOTRIMERIC TOLC TRANSMEMBRANE PROTEIN.

Kristen Kennison, University of Tennessee, Knoxville
400-Pos, Board B221
UTILIZING ASYMMETRIC GIANT UNILAMELLAR VESICLES TO DETERMINE HOW LOW-MELTING PHOSPHOLIPIDS AFFECT INTERLEAFLET COUPLING STRENGTH.

Eugene Klyshko, University of Toronto
Plat-153
LAWS: LOCAL ALIGNMENT OF WATER SITES - DESCRIBING ALLOSTERIC WATER NETWORKS IN ENZYMES.

Efthymios Kyriakis, University of British Columbia
104-Plat
STRUCTURAL INSIGHTS FOR THE MODULATION OF KCNQ1 CHANNEL BY ML277.

Kerry V. Lane, University of California, Santa Barbara
116-Plat
DUAL-PROTEIN PATTERNING TO INVESTIGATE EFFECTS OF CELL-CELL ADHESIONS ON HIPSC-CM MATURITY.

Hannah McArthur, King's College London
68-Plat
UNDERSTANDING HOW ANTIGEN MOBILITY AND ADHESION MOLECULES INFLUENCE B CELL ACTIVATION.

Sarah Mersch, University of Minnesota Duluth
193-Pos, Board B14
TIME-RESOLVED TWO-PHOTON FLUORESCENCE DYNAMICS OF A NOVEL MEGFP-LINKER-MSCARLET-I CROWDING BIOSENSOR.

Desmond Owusu Kwarteng, Kent State University
144-Plat
THE ELECTROSTATIC BASIS OF DIACYLGLYCEROL PYROPHOSPHATE-PROTEIN INTERACTION.

Marion Pierre, CERVO
492-Pos, Board B313
CHARACTERIZATION OF ATRIAL FIBRILLATION LINKED MUTATIONS USING THE $NA_V1.5$ KNOCK-OUT OF ATRIAL CARDIOMYOCYTES DERIVED FROM IPSCS.

Tanadet Pipatpolkai, Science for Life Laboratory
141-Plat
PIP2 BINDING AT THE VOLTAGE SENSOR DOMAIN FACILITATES KCNQ1 VSD ACTIVATION AND GATING.

Nishadh Rathod, University of Alberta
164-Plat
COMPLEMENTARY *IN VITRO* FUNCTIONAL STUDIES AND *IN SILICO* ALCHEMICAL FREE ENERGY SIMULATIONS OF THE SARCO-ENDOPLASMIC RETICULUM CALCIUM PUMP (SERCA) AND PHOSPHOLAMBAN (PLN) COMPLEX.

Tyler R. Reagle, University of Pennsylvania
393-Pos, Board B214
INVESTIGATING THE MECHANOCHEMISTRY OF MEMBRANE AREA ASYMMETRY GENERATION: A COMBINED MASS-ACTION AND MICROMECHANICAL STUDY USING METHYL-BETA-CYCLODEXTRIN.

Aoon Rizvi, University of California, Irvine
333-Pos, Board B154
REVEALING NANOSCALE STRUCTURE AND INTERFACES OF POLYMER AND PROTEIN CONDENSATES VIA CRYO-ELECTRON MICROSCOPY.

Kristy Rochon, Case Western Reserve University
204-Pos, Board B25
CONFORMATIONAL CHANGES IN SOLUTION MULTIMERS OF DYNAMIN-RELATED PROTEIN 1 (DRP1) FACILITATES FUNCTIONAL ASSEMBLY.

Spencer J. Rothfuss, Vanderbilt University
287-Pos, Board B108
THE ROLE OF K288A IN CONFORMATIONAL SELECTION IN LEUT.

Ignacio Sanchez Burgos, University of Cambridge
319-Pos, Board B140
CONDENSATE'S AGEING MODELLED THROUGH MOLECULAR DYNAMICS: PROTEIN STRUCTURAL TRANSITIONS CRITICALLY TRANSFORM THE NETWORK CONNECTIVITY AND VISCOELASTICITY OF RNA-BINDING PROTEIN CONDENSATES.

Adriana N. Santiago Ruiz, University of Pennsylvania
77-Plat
IN-SITU CHARACTERIZATION OF ALZHEIMER'S DISEASE TAU AGGREGATES VIA SUPER-RESOLUTION IMAGING.

Sajad A. Shiekh, Kent State University
365-Pos, Board B186
IMPACT OF SHELTERIN COMPLEX ON TELOMERE ACCESSIBILITY.

Marton A. Simon, Semmelweis University
550-Pos, Board B371
UNDERSTANDING IMPACT OF ΔF508 AND G551D CFTR MUTATIONS ON CFTR/PKA-C INTERACTION.

Rohit K. Singh, University of Colorado
59-Plat
DEFINING THE INTERACTIONS BETWEEN HCN4 AND THE REGULATORY PROTEINS IRAG AND LRMP.

Jenaro Soto, University of California, Irvine
201-Pos, Board B22
DYNAMICS OF THE BYPASS POLYMERASE, DINB HOMOLOG.

Joseph C. Sudar, New York University Medical Center
202-Pos, Board B23
UNDERSTANDING THE MOLECULAR COMPOSITION OF THE MICROSPORIDIAN POLAR TUBE.

Antonio Suma, SISSA
142-Plat
CHANNEL-LIPID INTERACTIONS DRIVE THE EMERGENCE OF ION CHANNEL CLUSTERING, CHANNEL-CHANNEL COOPERATIVITY, AND ACTIVATION HYSTERESIS.

Qian Tian, University of Massachusetts Amherst
451-Pos, Board B272
VISUALIZATION OF MECHANICAL FORCES IN 3D CELL MODELS WITH MOLECULAR DNA TENSION PROBE.

Renata Torres da Costa, Rutgers University
473-Pos, Board B294
DEPLETION OF MITOCHONDRIAL POLYP LEVELS INCREASE THE PHOSPHORYLATION OF AMPK PROTEIN AND COMPROMISES OXYGEN CONSUMPTION IN SH-SY5Y CELLS.

Chen-Wei Tsai, University of Colorado
168-Plat
MOLECULAR AND CELLULAR MECHANISMS UNDERLYING TISSUE-SPECIFIC MICU-DIMER ASSEMBLY IN THE MITOCHONDRIAL CALCIUM UNIPORTER COMPLEX.

Wietske E. Tuinte, Medical University of Innsbruck
514-Pos, Board B335
STAC PROTEINS INHIBIT THE VOLTAGE DEPENDENT INACTIVATION OF L-TYPE CALCIUM CHANNELS.

Sandra Vergara, University of Pittsburgh
56-PLAT
A MOLECULAR MOVIE OF NUCLEOTIDE ADDITION BY HIV-1 REVERSE TRANSCRIPTASE.

Qi Wang, New Mexico Institute of Mining & Technology
412-POS, BOARD B233
MEMBRANE OXYGEN PERMEABILITY IS GOVERNED BY AREA-PER-LIPID, COMBINED WITH HEADGROUP SIZE AND CHOLESTEROL CONTENT.

Kaiqian Wang, Linköping University
513-POS, BOARD B334
$CA_V2.1$ CHANNELS DIVIDE INTO TWO POPULATIONS AT RESTING MEMBRANE POTENTIALS.

Monday

Mohammad Ahsan, University of California Riverside
832-PLAT
PRINCIPLES OF DNA CLEAVAGE IN CRISPR-CAS9.

Carmen Al Masri, University of California, Irvine
833-PLAT
NON-SPECIFIC VS SPECIFIC DNA BINDING FREE ENERGETICS OF A TRANSCRIPTION FACTOR DOMAIN PROTEIN BETWEEN SEARCH AND RECOGNITION.

Joekeem D. Arizala, City University of New York, CSI
1233-POS, BOARD B362
FROM SIMULATION TO APPLICATION: ELUCIDATING PROTOXIN-2 BINDING MECHANISM IN PAIN CHANNEL $NA_V1.7$ THROUGH DYNAMICS SIMULATION AND BIOPHYSICS.

Michael Bergman, Northeastern University
935-POS, BOARD B64
MANIPULATING POLYDISPERSITY OF LLENS β-CRYSTALLINS USING DIVALENT CATIONS DEMONSTRATES EVIDENCE OF CALCIUM REGULATION.

Karishma Bhasne, University of Massachusetts Amherst
741-PLAT
ELUCIDATING THE ROLE OF THE HSC70 CHAPERONE IN SNARE COMPLEX ASSEMBLY.

Siyu Chen, University of California, San Diego
735-PLAT
CRYO-EM VISUALIZATION OF STATE TRANSITION DURING NON-HOMOLOGOUS END-JOINING (NHEJ).

Lynne Cherchia, University of Southern California
1328-POS, BOARD B457
PREDICTIVE MODELING OF SIGNAL TRANSDUCTION ANCHORED BY QUANTITATIVE IMAGING.

Jasmine Cubuk, Washington University in St. Louis
976-POS, BOARD B105
SINGLE-MOLECULE SPECTROSCOPY OF THE SARS-COV-2 NUCLEOCAPSID PROTEIN.

Vikram Dalal, Washington University School of Medicine
1215-POS, BOARD B344
NANODISC SCAFFOLD ALTERS THE STRUCTURE OF A PENTAMERIC LIGAND-GATED ION CHANNEL REVEALING NEW CONFORMATIONS.

Johnathon Emlaw, University of Ottawa
1197-POS, BOARD B326
RECONSTRUCTING IDENTICAL AGONIST SITES IN THE MUSCLE-TYPE NICOTINIC ACETYLCHOLINE RECEPTOR.

Argel Estrada Mondragon, Linköping Universitet
1186-POS, BOARD B315
POINT MUTATIONS IN THE VOLTAGE-GATED POTASSIUM CHANNEL KV7.2/7.3, AND THEIR POSSIBLE INVOLVEMENT IN EPILEPSY AND CHANNEL GATING.

Mina Farag, Washington University in St Louis
778-PLAT
COMPLEX COACERVATION CONTRIBUTES TO THE JOINT PHASE BEHAVIORS OF MIXTURES OF CHARGE-DEFICIENT PRION-LIKE LOW-COMPLEXITY DOMAINS

Liyanage Devthilini P. Fernando, Michigan State University
1388-POS, BOARD B517
STRUCTURE OF FUNGAL CELL WALLS AND REMODELING BY ANTIFUNGAL DRUGS ELUCIDATED USING SOLID-STATE NMR.

Anika J. Friedman, University of Colorado Boulder
865-PLAT
ALLOSTERIC INHIBITION VIA NONPOLAR TERPENOID INHIBITORS.

Gabriella Gerlach, University of Pittsburgh
991-POS, BOARD B120
SENSITIVITY OR SPECIFICITY IN PROTEIN INTERACTIONS ARE INDEPENDENTLY REGULATED UPON RECOGNITION: AN SH2 CASE STUDY.

Eric Gibbs, Case Western Reserve University
1213-POS, BOARD B342
STRUCTURAL CHARACTERIZATION OF A FULL-LENGTH HETEROMERIC GLYCINE RECEPTOR IN MULTIPLE FUNCTIONAL STATES.

Marriah Green, Columbia University
944-POS, BOARD B73
STRUCTURE OF THE ARABIDOPSIS THALIANA GLUTAMATE RECEPTOR-LIKE CHANNEL GLR3.4.

Liam Haas-Neill, University of Toronto
846-PLAT
MUTANT CANCER PROTEIN STAT5B HAS TWO DISTINCT CONFORMATIONAL STATES.

Miaomiao He, Stony Brook University
1220-POS, BOARD B349
TWO GATES MEDIATE NMDAR ACTIVITY AND ARE UNDER SUBUNIT-SPECIFIC REGULATION.

Erik K. Henze, Cornell University
800-PLAT
A CELLULAR METABOLITE DIRECTLY AND REVERSIBLY OPENS THE ATP RELEASE PANNEXIN CHANNELS.

Jan Huertas Martin, Cambridge University
831-PLAT
OCT4 INTERPRETS AND ENHANCES NUCLEOSOME DYNAMICS.

Jingjing Ji, Syracuse University
882-POS, BOARD B11
CHARACTERIZING THE HYDROPHOBICITY OF PROTEINS TO PREDICT PROTEIN ASSEMBLY.

Shikai Jin, Rice University
908-Pos, Board B37
EXPLORING THE MECHANISM OF THE BACTERIOPHAGE T7 SINGLE-STRANDED DNA BINDING PROTEIN GP2.5.

Marcus Kelly, University of Minnesota
1283-Pos, Board B412
EXAMINING CROSSTALK BETWEEN CD44 AND INTEGRINS AND ITS EFFECTS ON CELL MIGRATION AND TRACTION FORCE IN GLIOBLASTOMA.

Sein Lee, Yale University
1422-Pos, Board B551
NOVEL, HIGH-THROUGHPUT COLLAGEN-BASED BIOPRINTING FOR TISSUE ENGINEERING.

Shuxiang Li, Queen's University
1063-Pos, Board B192
HISTONE VARIANT H2A.Z MODULATES NUCLEOSOME DYNAMICS TO PROMOTE DNA ACCESSIBILITY.

Jenna L. Lin, Washington University in St. Louis
1190-Pos, Board B319
FUNCTIONAL CHARACTERIZATION OF GATING POLARITY IN CNBD CHANNELS ACROSS PHYLOGENETICALLY DIVERSE SPECIES.

Xingchen Liu, University of Massachusetts Medical School
840-Plat
MECHANISM OF SLIDING CLAMP LOADING DURING DNA REPLICATION AND REPAIR IN ATOMIC DETAIL.

Pedro Martín, IIFP CONICET-UNLP
1250-Pos, Board B379

Martial Millet, Universite Laval
1297-Pos, Board B426
SUBSTRATE STIFFNESS REGULATES FOCAL ADHESION KINASE ALTERNATIVE SPLICING IN BREAST CANCER.

Nicolae Moise, The Ohio State University
810-Plat
EMERGENT PACEMAKING AND TISSUE HETEROGENEITY IN A CALCIUM FEEDBACK REGULATORY MODEL OF THE SINOATRIAL NODE.

Clayton Molter, McGill University
1279-Pos, Board B408
THE ANDROGEN RECEPTOR AS A POTENTIAL REGULATOR OF PROSTATE CANCER CONTRACTILITY.

Marc Mora Hortal, King's College London
737-Plat
OXIDATIVE STRESS REGULATES TALIN MECHANOSENSING.

Khoa Ngo, University of California, Davis
873-Plat
SIMULATIONS REVEAL MOLECULAR MECHANISMS OF HIGH AFFINITY AND SELECTIVE BINDING OF THE TARANTULA VENOM PROTOXIN-2 TO THE HUMAN $NA_V1.7$ CHANNEL.

Neel A. Patel, Wayne State University
897-Pos, Board B26
IDENTIFICATION OF NOVEL INHIBITORS TARGETING KRAS-SOS1 INTERACTIONS BY STRUCTURE-BASED DRUG DESIGN.

Maria Queralt-Martin, Universitat Jaume I
1091-Pos, Board B220
BIPHASIC CONCENTRATION PATTERNS IN IONIC TRANSPORT UNDER NANOCONFINEMENT REVEALED IN STEADY STATE AND TIME-DEPENDENT PROPERTIES.

Dominique Ramirez, University of Colorado Boulder
1018-Pos, Board B147
COILED-COIL DOMAINS CAN DRIVE LIQUID-LIQUID PHASE SEPARATION.

Jennifer Ramirez, University of Pennsylvania
978-Pos, Board B107
THE MOLECULAR BASIS FOR THE SYNERGISTIC AGGREGATION OF TAU BY ALPHA-SYNUCLEIN.

Shamayeeta Ray, Harvard University
938-Pos, Board B67
STRUCTURAL BASIS OF METAL IMPORT BY NRAMP FAMILY TRANSPORTERS.

Raju Regmi, Institut Curie, Paris
793-Plat
CONFORMATION-DEPENDENT DIFFUSION PROPERTIES OF A TRANSMEMBRANE PROTEIN.

Haitham A. Shaban, LBME and CBI-CNRS University of Toulouse
1036-Pos, Board B165
INDIVIDUAL ACTIVATOR AND REPRESSOR TRANSCRIPTION FACTORS ACT AS MODULATORS OF GLOBAL CHROMATIN MOBILITY.

Joseph Shuttleworth, University of Nottingham
1179-Pos, Board B308
USING MANY DIFFERENT VOLTAGE PROTOCOLS TO CHARACTERISE DISCREPANCY IN MATHEMATICAL ION CHANNEL MODELS.

Jana Sipkova, University of Cambridge
1304-Pos, Board B433
THE MECHANICAL REGULATION OF EPH/EPHRIN SIGNALING IN THE DEVELOPING BRAIN.

Eunho Song, Seoul National University
733-Plat
THREE KINETICALLY DISTINCT BUT COMPATIBLE ROUTES OF RHO-DEPENDENT TERMINATION UNCOVERED BY SINGLE-MOLECULE TRANSCRIPTION IMAGING.

Iker F. Soto Santarriaga, University of Notre Dame
740-Plat
RECAPITULATING PROTEIN VECTORIAL APPEARANCE ENHANCES FOLDING TO THE NATIVE STRUCTURE IN VITRO.

Shwetha Srinivasan, Massachusetts Institute of Technology
981-Pos, Board B110
LIPID DEPENDENCE OF THE CONFORMATIONAL COUPLING ACROSS THE MEMBRANE BILAYER OF FULL-LENGTH EPIDERMAL GROWTH FACTOR RECEPTOR.

Christian Tessier, University of Ottawa
1204-Pos, Board B333
ANCESTRAL ACETYLCHOLINE RECEPTOR BETA-SUBUNIT FORMS HOMOPENTAMERS THAT PRIME BEFORE OPENING SPONTANEOUSLY.

Shannon Yan, University of California, Berkeley
1305-Pos, Board B434
DO CELL MEMBRANES SUPPORT OR RESIST TENSION PROPAGATION?

Wayne Yang, EPFL
1348-Pos, Board B477
DEFECT ENGINEERING OF 2D MATERIAL FOR BIOSENSING APPLICATIONS.

Xiangyu Yao, Virginia Tech
1318-Pos, Board B447
ANALYSIS OF ROBUSTNESS OF OSCILLATIONS IN MODELS OF THE MAMMALIAN CIRCADIAN CLOCK.

Tuesday

Ameneh Ahrari, University of Montreal
1872-Pos, Board B277
ENDOCANNABINOID REGULATION OF INWARD RECTIFIER (KIR2.1) CHANNELS.

Jewel Ashbrook, Middlebury College
1727-Pos, Board B132
SINGLE-MOLECULE DYNAMICS OF RIBONUCLEASE H ENZYMES IN *BACILLUS SUBTILIS*.

Roksana Azad, Advanced Science Research Center-CUNY
1628-Pos, Board B33
STRUCTURAL BASIS OF SIGNAL TRANSDUCTION WITHIN PAS REGULATED SER/THR KINASE.

Lipika Baidya, Indian Institute of Science
1524-Plat
CHAIN LENGTH AND AMINO ACID COMPOSITION DEPENDENCE OF COIL-GLOBULE TRANSITION IN INTRINSICALLY DISORDERED PROTEINS.

Ana-Nicoleta Bondar, University of Bucharest
1666-Pos, Board B71
MECHANISMS BY WHICH WATER-MEDIATED HYDROGEN-BOND NETWORKS GOVERN PH-DEPENDENT REACTIONS AT MEMBRANE INTERFACES.

Eduardo Campos Chavez, Northwestern University
1755-Pos, Board B160
STRUCTURAL AND BIOPHYSICAL STUDIES OF THE T-BOX RIBOSWITCH.

Ankita Chadda, Washington University in Saint Louis
1729-Pos, Board B134
MTB UVRD1 MONOMER UNWINDS A KU NUCLEOPROTEIN FILAMENT.

Chun Kit Chan, University of Illinois at Urbana-Champaign
1466-Plat
DISORDERED REGIONS OF RESPIRATORY SUPERCOMPLEXES OFFER NEW PATHWAYS FOR SUBSTRATE CHANNELING IN CROWDED MEMBRANES.

Pin Yu Chew, University of Cambridge
1436-Plat
PHYSICAL DETERMINANTS OF MULTIPHASE ORGANISATION IN MULTI-COMPONENT PROTEIN/RNA CONDENSATES.

Sara J. Codding, University of Maryland, Baltimore
1892-Pos, Board B297
USING THE PHOTO-CROSSLINKABLE NON-CANONICAL AMINO ACID BZF TO CAPTURE U.V.-DRIVEN, STATE-DEPENDENT DISRUPTION OF KINETICS AND VOLTAGE DEPENDENCE OF ACTIVATION IN HERG POTASSIUM CHANNELS.

Taylor R. Crawford, University of Maryland, Baltimore
1891-Pos, Board B296
DETERMINING THE ROLE OF THE UNIQUE N-TERMINAL 1B DOMAIN IN THE GATING OF HETEROTETRAMERIC HERG1A/HERG1B POTASSIUM CHANNELS.

Zhicheng Cui, University of California, Berkeley
1499-Plat
STRUCTURAL BASIS FOR MTORC1-DEPENDENT REGULATION OF THE LYSOSOMAL AND AUTOPHAGIC TRANSCRIPTION FACTOR EB.

Megan Cullinan, University of Colorado Anschutz Medical
1911-Pos, Board B316
REVEALING THE ARRANGEMENT OF THE INTRACELLULAR TERMINI OF ASIC1A USING TRANSITION METAL ION FRET.

Liza Dahal, University of California, Berkeley
2084-Pos, Board B489
LIVE CELL SINGLE MOLECULE IMAGING REVEALS CONCENTRATION DEPENDENT CHANGES TO DYNAMIC BEHAVIOR OF NUCLEAR RECEPTORS RAR AND RXR.

Fathima T. Doole, University of Arizona
1795-Pos, Board B200
UNTANGLING THE RIVALRY BETWEEN CHOLESTEROL AND ANTIMICROBIAL PEPTIDES.

Cristian A. Escobar, University of Wisconsin–Madison
1746-Pos, Board B151
SOLUTION STRUCTURE OF POLY(UG) RNA REVEALS A NEW FOLD THAT DRIVES GENE SILENCING.

Sayantika Ghosh, University of Warwick
1580-Plat
STUDY OF CELL-CELL ADHESION FORMATION AND DYNAMICS IN CANCER CELLS USING A HYBRID CELL - LIPID BILAYER SYSTEM.

Sabrina I. Giacometti, New York University School of Medicine
162-Plat, Board B350
ELUCIDATING THE ROLE OF A TRANS-ENVELOPE MCE TRANSPORT SYSTEM IN PSEUDOMONAS AERUGINOSA.

Angela Greenman, University of Arizona
1958-Pos, Board B363
THE C5C7 DOMAINS OF CMYBP-C DO NOT ALTER MYOFILAMENT CALCIUM SENSITIVITY OF TENSION.

Yanxiao Han, University of California, Davis
1603-Pos, Board B8
ELUCIDATION OF A DYNAMIC INTERPLAY BETWEEN GUANINE NUCLEOTIDE AND THE TERNARY COMPLEX OF A BETA-ADRENERGIC RECEPTOR, ITS AGONIST AND STIMULATORY G PROTEIN.

Emi Hibino, Nagoya University
1713-Pos, Board B118
ANALYSIS AND COMPARISON OF AMORPHOUS & AMYLOID AGGREGATES OF THE TUMOR SUPPRESSOR P53.

Jesse J. Howe, Oregon State University
1694-Pos, Board B99
MULTIVALENCY IN 53BP1-LC8 INTERACTIONS SUGGEST NEW BINDING MODE IN LC8 INTERACTIONS.

Jessica I. Kelz, University of California, Irvine
1448-Plat
IMPLEMENTATION OF SPECIFICATIONS GRADING IN AN UPPER-DIVISION CHEMICAL BIOLOGY COURSE.

David King, The Ohio State University
1506-Plat
NANOSCALE REMODELING OF SODIUM CHANNELS IN THE CARDIAC TRANSVERSE TUBULES CONTRIBUTES TO ABERRANT CALCIUM RELEASE IN A *SCN1A* HAPLOINSUFFICIENT MOUSE.

Robert C. Klipp, University of Colorado Anschutz Medical
1919-Pos, Board B324
MECHANISTIC INSIGHTS INTO LIPID REGULATION OF THE ACID-SENSING ION CHANNELS.

Maicon Landim-Vieira, Florida State University
1950-Pos, Board B355
DISSECTING THE MECHANISMS BY WHICH A PATHOGENIC VARIANT IN CARDIAC TNT TAIL DOMAIN LEADS TO DISTURBED MYOFILAMENT PERFORMANCE.

Isabella Leite Coscarella, Florida State University
1969-Pos, Board B374
HCM AND DCM ASSOCIATED *TNNT2* SARCOMERIC VARIANTS INDUCE NUCLEUS REMODELING IN HUMAN IPSC-CMS.

Jiahui Lu, University of California Los Angeles
1522-Plat
CRYO-EM STRUCTURES OF THE D290V VARIANT OF THE HNRNPA2 LOW COMPLEXITY DOMAIN REVEAL THE MECHANISM OF ITS PATHOGENICITY.

Alberto Marin-Gonzalez, Johns Hopkins University
1490-Plat
MULTIPLEXING CAS9 ACTIVITY WITH MULTI-TARGET CRISPR.

Jordan McIvor, The University of Auckland
1680-Pos, Board B85
Publishing Title:
PHOSPHORYLATION REFINES THE CONTROL OF COMPLEX FORMATION IN IDPS.

Louisa Mezache, The Ohio State University
2111-Pos, Board B516
SARS-COV-2 SPIKE PROTEIN-INDUCED INFLAMMATION UNDERLIES PROARRHYTHMIA IN COVID-19.

Alina Milici, KU Leuven
1906-Pos, Board B311
SILICA NANOPARTICLES INHIBIT RESPONSES TO ATP IN HUMAN AIRWAY EPITHELIAL 16HBE CELLS.

Hossein Moghimianavval, University of Michigan
2022-Pos, Board B427
A SYNTHETIC BIOLOGY TOOL FOR CONTACT-DEPENDENT SYNTHETIC CELL COMMUNICATION.

Éva Moussong, Eötvös Loránd University
1618-Pos, Board B23
EFFECT OF NANOPARTICLES ON THE AGGREGATION AND AMYLOID FORMATION OF AMYLOID-BETA PEPTIDE.

Florence D. Mumbi, Florida State University
1964-Pos, Board B369
INVESTIGATING THE SARCOLEMMA-SARCOMERE CONNECTION AND FORCE TRANSMISSION IN THE HEART.

Haibo Ni, University of California, Davis
1857-Pos, Board B262
3D SPATIAL MODELING OF SINOATRIAL NODE CELLS REVEALS A CRITICAL ROLE OF SUBCELLULAR RYANODINE RECEPTOR DISTRIBUTION IN PACEMAKER AUTOMATICITY.

Crystal F. Ottoway, Arizona State University
1519-Plat
PHOTO-INDUCED ELECTRON TRANSFER BETWEEN TRYPTOPHAN AND CYSTEINE: PH DEPENDENCE.

Simone Pelizzari, Medical University of Innsbruck
1835-Pos, Board B240
IDENTIFYING THE $CA_V1.1$ VOLTAGE-SENSING DOMAINS INVOLVED IN CHANNEL GATING AND EXCITATION CONTRACTION COUPLING.

Aida Rahimi Kahmini, Florida State University
1855-Pos, Board B260
COMPENSATORY CALCIUM HANDLING MAY UNDERLIE INCREASED ARRHYTHMIA SUSCEPTIBILITY OF SARCOSPAN-DEFICIENT MICE AFTER ISCHEMIA-REPERFUSION INJURY.

Faye Raymond, University at Buffalo
1925-Pos, Board B330
KINETIC MECHANISM OF NMDA RECEPTOR INHIBITION BY THE KETAMINE METABOLITE 2R,6R-HYDROXYNORKETAMINE.

Bakai Sheyitov, Emory University
2123-Pos, Board B528
INVESTIGATING OPTIMAL KINETIC PARAMETERS OF EXONUCLEASE III TO CREATE A NEXT-GENERATION, ROBUST, SELF-AVOIDING ROLLING MOTOR BIOSENSOR.

Charlotte Smith, University of California, Davis
1851-Pos, Board B256
SEX DIFFERENCES IN ELECTROPHYSIOLOGY OF THE INTACT ATRIA.

Justyna B. Startek, KU Leuven
1562-Plat
A TR(I)P THROUGH TRPA1 MECHANOSENSITIVITY.

Daniel G P Turner, University of Wisconsin - Madison
2009-Pos, Board B414
ENGINEERED CARDIAC TISSUE AS A NOVEL *IN VITRO* HUMAN MYOCARDIUM MODEL FOR STUDYING CARDIAC STRETCH.

Daiana C.O. Vieira, University of Maryland
1507-Plat
INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES ENABLE THE DEVELOPMENT OF NEW THERAPEUTIC STRATEGIES FOR THE TREATMENT OF LQT8.

Citlayi Villaseñor, Northwestern University
1670-Pos, Board B75
THE ROLE OF LIPID BILAYER COMPOSITION IN CELL-FREE EXPRESSED ABC TRANSPORTER FOLDING.

Akasit Visootsat, Oregon State University
2002-Pos, Board B407
TINA ENABLES PLUS-END-DIRECTED KINESIN-14/KLPA TO ACHIEVE ENHANCED MINUS-END-DIRECTED PROCESSIVITY ON SINGLE MICROTUBULES.

Ivy D. Vo, University of Hawaii at Manoa
1622-Pos, Board B27
SEQUENCE ADAPTATION IN VARIOUS ENVIRONMENTS ACROSS ORGANISMS; SIMILAR YET DIFFERENT SUPEROXIDE DISMUTASE.

Brittany E. Watson, University of South Carolina
1710-Pos, Board B115
DETECTING PHYSIOLOGICAL CONCENTRATIONS OF ALZHEIMER'S ASSOCIATED AMYLOID-B OLIGOMERS WITH A CELL-BASED RESPONSE.

Mihyun Waugh, University of South Carolina
1720-Pos, Board B125
PEPTOIDS AS POTENTIAL THERAPEUTICS TO REDUCE S100B-INDUCED RAGE-ASSOCIATED NEUROINFLAMMATION IN ALZHEIMER'S DISEASE.

Yiheng Wu, University of Chicago
1740-Pos, Board B145
COARSE-GRAINED RNA SIMULATIONS WITH CONCERTED C2'/C3'-ENDO SUGAR PUCKER TRANSITIONS.

Tingting Wu, Washington University in St. Louis
1437-Plat
MAPPING INHOMOGENEOUS NETWORK STRUCTURES WITHIN BIOMOLECULAR CONDENSATE USING SINGLE-MOLECULE IMAGING AND TRACKING OF FLUOROGENIC PROBES.

Amber M. Yanas, University of Pennsylvania
1554-Plat
USING SINGLE-MOLECULE FLUORESCENCE TECHNIQUES TO UNDERSTAND THE ENZYMATIC CYCLE OF SEX-BIASED RNA HELICASES DDX3X AND DDX3Y.

Peiyi Zhang, Purdue University
2092-Pos, Board B497
DEEP LEARNING DRIVEN ADAPTIVE OPTICS FOR SINGLE MOLECULE LOCALIZATION MICROSCOPY.

Wednesday

Canan Atilgan, Sabanci University
2163-Plat
INCREASED IONIC STRENGTH TRIGGERS MULTIPLE CONFORMATIONS IN BOTH APO AND HOLO FORMS OF BACTERIAL FERRIC BINDING PROTEIN.

Parijat Banerjee, Johns Hopkins University
2596-Pos, Board B346
UNDERSTANDING MECHANISMS OF TOPOGRAPHY SENSING IN MIGRATING CELLS THROUGH SIMULATIONS OF A COUPLED EXCITABLE NETWORK MODEL.

Vrishank Bikkumalla, University of Colorado Denver
2460-Pos, Board B210
EFFECTS OF CHOLESTEROL ON MEMBRANE BINDING BY SYNAPTOTAGMIN-7 C2 DOMAINS.

Rupasree Brahma, Saha Institute of Nuclear Physics
2310-Pos, Board B60
MONITORING THE STRUCTURAL STABILITY OF THE ISOLATED '$MG2^{+}$-SENSOR' OF MGTE BY SPECTROSCOPIC AND COMPUTATIONAL APPROACHES.

Isotta Cainero, Istituto Italiano Tecnologia
2194-Plat
NEW INSIGHTS IN PROGERIN-INDUCED MODIFICATIONS OF CHROMATIN LANDSCAPES.

Bianca C. Caminada, Purdue University
2663-Pos, Board B413
UNFOLDING/REFOLDING OF SINGLE POLYPROTEINS HELD UNDER CONSTANT TENSION: EFFECT OF MONOVALENT SALTS ON FOLDING/ UNFOLDING RATES.

Emily T. Chan, The Ohio State University
2590-Pos, Board B340
DETERMINING THE ROLES OF MEMBRANE TENSION IN BREAST CANCER CELL MIGRATION.

Mohamad T. Dandan, University of California, San Francisco
2380-Pos, Board B130
CONTEXT-SPECIFIC INHIBITION OF TRANSLATION IN MYCOBACTERIUM.

Thembalami Dube, Swarthmore College
2365-Pos, Board B115
IN VIVO DISRUPTION OF NUCLEAR HSATII RNA BIOMOLECULAR CONDENSATES.

Jingru Fang, Scripps Research
2149-Plat
EBOLA VIRAL FACTORIES ARE BIOMOLECULAR CONDENSATES WITH SPECIALIZED ASSEMBLY DYNAMICS FOR VIRAL RNA SYNTHESIS.

Hammad Farooq, University of Illinois at Chicago
2415-Pos, Board B165
COMPUTATIONAL PREDICTIONS OF 3D CHROMATIN MANY-BODY INTERACTIONS REVEAL ROLES OF CHROMATIN HUBS IN GENE EXPRESSION.

Marissa Gionet-Gonzales, University of California, Santa Barbara
2206-Plat
ENGINEERING VISCOELASTIC ALGINATE HYDROGELS FOR HIPSC CARDIOMYOCYTE CULTURE..

Cuauhtemoc U. Gonzalez, University of Texas Health Science Center at Houston
2232-Plat
ELUCIDATING THE STRUCTURE-FUNCTION OF THE IONOTROPIC DELTA RECEPTOR IN THE PRESENCE OF TRANS-SYNAPTIC PARTNERS.

Alexandra M. Houser, Oregon Health and Science University
2553-Pos, Board B303
THE FOURTH WHEEL: STRUCTURAL STUDIES OF HETEROTRIMERIC DELTA BETA GAMMA ENAC.

Ilaria Incaviglia, ETH Zürich
2684-Pos, Board B434
OPTIMIZING THE SENSITIVITY OF MICROCANTILEVERS TO MONITOR THE MASS OF SINGLE ADHERENT LIVING CELLS.

Sharique Khan, University of Kentucky
2262-Pos, Board B12
^{19}F NMR REVEALS DYNAMICS NOT EVIDENT IN CRYSTAL STRUCTURE OF LONG-CHAIN FLAVODOXIN.

Kristina B. Kooiker, University of Washington
2203-Plat
ELUCIDATING THE MECHANISM OF DANICAMTIV ON FORCE, KINETICS, AND MYOSIN STRUCTURE AND FUNCTION.

Mirna Elizabeta Kramar, Institut Curie
2580-Pos, Board B330
CELLULAR COMMUNICATION IN CANCER: INTERPLAY OF SIGNALLING AND ELECTRICITY.

Danielle R. Latham, Clemson University
2695-Pos, Board B445
BIOPHYSICS CONCEPT INVENTORY SURVEY: AN ASSESSMENT IN BIOPHYSICAL UNDERGRADUATE EDUCATION.

Grace Liu, University of Chicago
2534-Pos, Board B284
MOLECULAR ORIGIN OF THE PROTON SELECTIVITY IN THE HUMAN VOLTAGE-GATED PROTON CHANNEL.

Hridya Valia Madapally, University of Southern Denmark
2573-Pos, Board B323
MECHANISM OF K+ TRANSPORT ALONG THE INTERSUBUNIT TUNNEL OF KDPFABC.

Kevin Mak, University of Alberta
2312-Pos, Board B62
SOLUTION NMR STUDIES REVEAL NOVEL CLIC4 CHAPERONE ACTIVITY WITH RESPECT TO PROFILIN-1.

Carolyn Maslanka, St Jude Children's Research Hospital
2311-Pos, Board B61
ELUCIDATING THE ROLE OF NUCLEOPHOSMIN IN PROTEIN QUALITY CONTROL MECHANISMS INSIDE THE NUCLEOLUS.

Arup Mondal, University of Florida
2291-Pos, Board B41
LOW INFORMATION NMR DATA GUIDED PROTEIN-PEPTIDE COMPLEX STRUCTURE DETERMINATION WITH MELDXMD.

Kit Neikirk, University of Hawaii at Hilo
2638-Pos, Board B388
3D RECONSTRUCTION SHOWS MOUSE SKELETAL MUSCLE MAY DECLINE IN FUNCTION ACROSS AGING DUE TO THE MICOS COMPLEX.

Michelle D. Nemetchek, The University of Montana
2267-Pos, Board B17
A STRUCTURAL MECHANISM OF NUCLEAR RECEPTOR BIASED AGONISM.

Phuong Ngoc Pham, Institute of Biotechnology of the Czech Academy of Sciences
2290-Pos, Board B40
PHOTOREGULATION OF IL-24/IL-20R2 COMPLEX FORMATION USING A LIGHT-RESPONSIVE NON-CANONICAL AMINO ACID.

Justin Nguyen, Wesleyan University
2278-Pos, Board B28
OPTIMIZING THE FUNCTION AND DYNAMICS OF DE NOVO DESIGNED FLUORESCENT β-BARREL PROTEINS.

Aniruddha Panda, Yale University
2452-Pos, Board B202
DIRECT DETERMINATION OF MEMBRANE PROTEIN-LIPID ORGANIZATION FROM CUSTOMIZABLE BILAYER AND ITS APPLICATION IN SYNAPTIC VESICLE FUSION.

Antonio Peña-Pichicoi, Universidad de Valparaíso - CINV
2548-Pos, Board B298
FUNCTION MODULATION OF MDSC MHV1 CHANNEL BY N TERMINAL LENGTH.

Marcelo D. Polêto, Virginia Tech
2169-Plat
ACTIVE-SITE ELECTRONIC PROPERTIES AND CONFORMATIONAL DYNAMICS OF PET-DEGRADING ENZYMES.

Shreya Pramanik, Max Planck Institute
2183-Plat
BINDING OF HIS-TAGGED MOLECULES TO GIANT VESICLES VIA ANCHOR LIPIDS.

Lahari Saha, University of Maryland, Baltimore County
2211-Plat
FLUOROPHORE-INDUCED PLASMONIC CURRENT FOR SOLAR ENERGY COLLECTION.

Jared Smothers, University of Texas Southwestern
2445-Pos, Board B195
HOW OSTREOLYSIN A DETECTS SM/CHOLESTEROL IN MEMBRANES.

Collin Sroge, University of California Irvine
2257-Pos, Board B7
POSTTRANSLATIONAL MODIFICATIONS DECERASE SOLUBILITY OF CRYSTALLIN PROTEINS, WHILE ENHANCING CRYSTALLIZABILITY.

Crystal Stackhouse, Rowan University
2261-Pos, Board B11
CHARACTERIZATION OF THE 10MAG/LDAO REVERSE MICELLE SURFACTANT SYSTEM, A USEFUL TOOL FOR STUDYING PROTEIN BIOPHYSICS.

Jacob H. Steele, University of Houston
2385-Pos, Board B135
MUTAGENESIS OF *ESCHERICHIA COLI* FOR SM-FRET & FIRMS STUDY OF DOMAIN IV EF-G STUDIES.

Lottie R. Steward, University of Colorado - Boulder
2222-Plat
ARCHITECTURE AND ASSEMBLY MECHANISM OF HUMAN LACTB.

Yuanfei Sun, Texas A&M University
2301-Pos, Board B51
VARIANT EFFECT PREDICTION USING STRUCTURE-INFORMED PROTEIN LANGUAGE MODELS.

Gemma R. Takahashi, University of California, Irvine
2300-Pos, Board B50
COMPARATIVE DYNAMICS AND STRUCTURAL ANALYSIS OF EXTREMOPHILIC SERINE PROTEASES FROM DIVERSE ENVIRONMENTS.

Chantal Usai, Istituto Italiano Tecnologia
2389-Pos, Board B139
DECRYPTING THE SPATIAL RELATIONSHIP BETWEEN PERIPHERAL CHROMATIN AND NUCLEAR LAMINA IN HUTCHINSON-GILFORD PROGERIA SYNDROME USING SUPER-RESOLUTION MICROSCOPY TECHNIQUES.

Sofia Vargas-Hernandez, Rice University
2191-Plat
INVESTIGATING MOLECULAR MECHANISMS OF KEY PROTEINS UNDERLYING SYNAPTIC PLASTICITY USING SINGLE-MOLECULE TRACKING AND SUPER-RESOLUTION IMAGING.

Wenjun Xie, University of Southern California
2244-Plat
HARNESSING NATURAL EVOLUTION AND COMPUTATION TOWARDS SYSTEMS ENZYMOLOGY.

Priya Yadav, International Centre for Genetic Engineering and Biotechnology, New Delhi
2265-Pos, Board B15
STRUCTURAL INSIGHTS INTO SUBSTRATE ACCOMMODATION BY *ESCHERICHIA COLI* ADENINE PHOSPHORIBOSYLTRANSFERASE (APRT) REVEAL A UNIQUE MECHANISM IN ENTEROBACTERALES.

Abdel-Ghafar Yerima, University of California, Berkeley
2442-Pos, Board B192
MEMBRANE CURVATURE SENSED AND INDUCED BY FORMIN BINDING PROTEIN 17.

Brenda Yu, Stanford University
2623-Pos, Board B373
OSCILLATORY EFFECTS OF KETAMINE USING FOCUSED ULTRASOUND SENSITIVE LIPOSOMES.

Friday, February 17, 2023

Daily Program Summary

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

8:00 AM–4:35 PM	Drug Discovery for Ion Channels XXIII Satellite Meeting	Room 8
8:00 AM–5:00 PM	Exhibitor Registration	Lobby BC
3:00 PM–5:00 PM	Registration	Lobby BC
3:30 PM–4:30 PM	New Council Orientation	Hilton, Aqua Boardroom
5:00 PM–9:00 PM	Joint Council Reception, Dinner, and Meeting	Hilton, Aqua 310
6:00 PM–9:00 PM	Society of General Physiologists Meeting	Room 14A

Friday, February 17

Drug Discovery for Ion Channels XXIII Satellite Meeting

8:00 AM - 4:35 PM, ROOM 8

Sponsored by Sophion Bioscience; Nanion Technologies; SB Drug Discovery; Metrion Biosciences; 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. This year's meeting will highlight presentations from users of automated electrophysiology instrumentation as well as other speakers in the field of ion channel drug discovery, including several academic speakers.

8:00 AM **REGISTRATION AND COFFEE**

8:30 AM **WELCOME AND OPENING REMARKS**
Daniel Sauter

SESSION I
Chair: Neils Fertig

8:45 AM **Keynote Speaker**
MOLECULAR BASIS AND FUNCTION OF BK-CALCIUM SUBCELLULAR DOMAINS AS MODULATORS OF PLASTIITY IN THE BRAIN**. Teresa Giraldez**

9:30 AM
PHARMACOLOGICAL CHAPERONES RESTORE THE TRAFFICKING AND FUNCTION OF PATHOGENIC GABAA RECEPTORS. **Megan Yajuan**

10:00 AM
CHARACTERIZATION OF SMALL MOLECULE MODULATORS OF KNA CHANNELS USING AUTOMATING PATCH CLAMP. **Brittany Spitznagel**

10:30 AM **COFFEE BREAK**

SESSION II
Chair: Ali Yehia

11:00 AM
MOLECULARLY SELECTIVE NAV1.1 POTENTIATORS INCREASE PV+ FAST-SPIKING INTERNEURON EXCITABILITY AND RESTORE MOTOR PERFORMANCE IN A MOUSE MODEL OF DRAVET SYNDROME. **Sam Goodchild**

11:30 AM
ANTAGONIZING NACHRS TO TREAT PAIN AND ADDICTION. **Andrew Riley**

12:00 PM
STRUCTURAL AND FUNCTIONAL INVESTIGATION OF MECHANICAL COUPLING BETWEEN L-TYPE CALCIUM CHANNELS AND RYANODINE RECEPTORS . **Philip Van Petegem**

12:30 PM LUNCH (PROVIDED)

SESSION III
Chair: Daniel Sauter

1:30 PM
ADVANCED PATCH CLAMP PROTOCOL DESIGNS TO REVEAL HIDDEN DETAILS OF ION CHANNEL-DRUG INTERACTIONS. **Péter Lukács**

2:00 PM
PERIPHERALLY-RESTRICTED GABA-A MODULATORS FOR THE TREATMENT OF IBS AND VISCERAL PAIN. **Mike Poslusney**

2:30 PM
IN VIVO CONLN VIVO CONTROL OF SKELETAL MUSCLE CONTRACTION AND HEART RHYTHM USING PHOTOSENSITIVE CAGED NATURAL PEPTIDES. **Michael DeWaard**

3:00 PM **COFFEE BREAK**

SESSION IV
Chair: Robert Kirby

3:30 PM
DEVELOPMENT OF NEW KV7.2/7.3 CHANNEL ACTIVATORS. **Nina Ottoson**

4:00 PM
GAIN-OF-FUNCTION MUTATIONS IN NAV1.6 AND EPILEPTIC SEIZURES. **Manoj Patel**

4:30 PM **CLOSING REMARKS**
Neils Fertig

Exhibitor Registration

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

Registration

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

New Council Orientation

3:30 PM - 4:30 PM, HILTON, AQUA BOARDROOM

Joint Council Reception, Dinner, and Meeting

5:00 PM - 9:00 PM, HILTON, AQUA 310

Society of General Physiologists Meeting

6:00 PM - 9:00 PM, ROOM 14A

Saturday, February 18, 2023

Daily Program Summary

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

7:30 AM-6:30 PM	Registration/Exhibitor Registration	Lobby BC
8:30 AM-11:30 AM	Joint Council Meeting	Hilton, Aqua 310
8:30 AM-12:30 PM	Bioenergetics, Mitochondria, and Metabolism Symposium	Room 7AB
8:30 AM-12:30 PM	Biological Fluorescence Symposium	Room 11AB
8:30 AM-12:30 PM	Biopolymers in vivo Symposium	Room 6E
8:30 AM-12:30 PM	Channels, Receptors, and Transporters Symposium	Room 6B
8:30 AM-12:30 PM	Cryo-EM Symposium	Room 6F
8:30 AM-12:30 PM	Membrane Fusion, Fission, and Traffic Symposium	Room 6D
8:30 AM-12:30 PM	Nanoscale Approaches to Biology Symposium	Room 5AB
8:30 AM-12:30 PM	Physical Cell Biology Symposium	Room 6C
8:30 AM-12:30 PM	Theory and Computation Symposium	Room 6A
1:30 PM-5:30 PM	Bioengineering Symposium	Room 6D
1:30 PM-5:30 PM	Intrinsically Disordered Proteins Symposium	Room 6C
1:30 PM-5:30 PM	Macromolecular Machines and Assemblies Symposium	Room 5AB
1:30 PM-5:30 PM	Mechanobiology Symposium	Room 6E
1:30 PM-5:30 PM	Membrane Structure and Function Symposium	Room 6B
1:30 PM-5:30 PM	Membrane Transport Symposium	Room 6F
1:30 PM-5:30 PM	Motility and Cytoskeleton Symposium	Room 6A
1:30 PM-5:30 PM	Multiscale Genome Organization Symposium	Room 7AB
1:30 PM-5:30 PM	Single-Molecule Forces, Manipulation, and Visualization Symposium	Room 11AB
3:00 PM-4:00 PM	Career Development Center Workshop: Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More	Room 16B
3:00 PM-5:00 PM	Undergraduate Poster Award Competition	Ballroom Lobby Cityside Corridor
5:00 PM-6:00 PM	First-Time Attendee Drop By	Ballroom Lobby Bayside Corridor
5:00 PM-7:00 PM	Opening Mixer	Ballroom Lobby Bayside Corridor
6:00 PM-7:30 PM	Travel Awardee Reception	Exhibit Hall BC
6:00 PM-10:00 PM	Poster Viewing	Exhibit Hall BC

Subgroup Dinners

Please note that invitation and/or advance purchase tickets apply

Bioenergetics, Mitochondria, and Metabolism ..... Gaslamp Meze Greek Fusion, 6:30 PM-9:30 PM, 345 Sixth Ave.
Biopolymers in vivo ..... Garage Kitchen & Bar, 6:30 PM-8:30 PM, 655 Fourth Ave.
Channels, Receptors, and Transporters (Cole Dinner)..... Fogo de Chao, 6:00 PM-10:00 PM, 668 Sixth Ave.
Cryo-EM Happy Hour..... Half Door Brewing Co., 6:00 PM-10:00 PM, 903 Island Ave.
Intrinsically Disordered Proteins ..... Union Kitchen & Tap Gaslamp, 6:30 PM-9:30 PM, 333 Fifth Ave.
Membrane Transport (Cole Dinner)..... Fogo de Chao, 6:00 PM-10:00 PM, 668 Sixth Ave.

Saturday, February 18

Registration/Exhibitor Registration

7:30 AM - 6:30 PM, LOBBY BC

Joint Council Meeting

8:30 AM - 11:30 AM, HILTON, AQUA 310

Bioenergetics, Mitochondria, and Metabolism Symposium

8:30 AM - 12:30 PM, ROOM 7AB

Subgroup Co-Chairs
Sonia Cortassa, NIH, USA
Elena Dedkova, University of California, Davis, USA

Program Chair
Ambre Bertholet, University of California, Los Angeles, USA

8:30 AM **OPENING REMARKS**

NO ABSTRACT **8:35 AM**
NEUROENDOCRINE AND PSYCHOBIOLOGICAL REGULATORS OF THE MITOCHONDRIAL RESPIRATORY CHAIN. **Martin Picard**

NO ABSTRACT **9:05 AM**
INHIBITION OF ATP-SYNTHASE REVERSE-ACTIVITY RESTORES ENERGY HOMEOSTASIS IN MITOCHONDRIAL PATHOLOGIES. **Rebeca Acin-Perez**

9:35 AM **STUDENT/POSTDOC TALK**

9:45 AM **STUDENT/POSTDOC TALK**

9:55 AM **BREAK**

NO ABSTRACT **10:10 AM**
THE MITOCHONDRIAL CALCIUM UNIPORTER PRESERVES ENERGETIC HOMEOSTASIS DURING COMPLEX I DYSFUNCTION. **Dipayan Chaudhuri**

NO ABSTRACT **10:40 AM**
SODIUM REGULATION OF INNER MEMBRANE FLUIDITY AS AN UNEXPECTED REGULATOR OF THE MITOCHONDRIAL RESPIRATORY CHAIN. **Antonio Martinez Ruiz**

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

NO ABSTRACT **11:20 AM**
TURNING THE OXYGEN AND VITAMIN DIALS. **Isha Jain**

11:50 AM **CLOSING REMARKS**

12:00 PM **SUBGROUP BUSINESS MEETING**

Biological Fluorescence Symposium

8:30 AM - 12:30 PM, ROOM 11AB

Subgroup Chair
Sua Myong, Johns Hopkins University, USA

8:30 AM **OPENING REMARKS**

1-SUBG **8:35 AM**
OBSERVING TRANSMEMBRANE CONFORMATIONAL SIGNALING WITH SMFRET. **Gabriela Schlau-Cohen**, Mikaila Hoffman, Shwetha Srinivasan

NO ABSTRACT **9:00 AM**
SINGLE-MOLECULE PERSPECTIVES ON MRNA DECODING FIDELITY IN BACTERIA AND HUMAN. **Scott Blanchard**

2-SUBG **9:25 AM**
DYNAMIC MAPPING OF INDIVIDUAL MOLECULES AND THEIR COMPARTMENTS BY HIGH-DENSITY SINGLE PARTICLE TRACKING.
Maria F. Garcia-Parajo

3-SUBG **9:50 AM**
DIFFUSION OF A DISORDERED PROTEIN ON ITS FOLDED LIGAND. **Hagen Hofmann**, Felix Wiggers, Gabriel Rosenblum, Artem Dubovetskyi, Samuel Wohl, Wenwei Zheng

10:15 AM **SUBGROUP BUSINESS MEETING & BREAK**

4-SUBG **10:40 AM**
NANOMETER-RESOLUTION LONG-TERM TRACKING OF SINGLE CARGOS REVEALS DYNEIN MOTOR MECHANISMS. **Chunte Sam Peng**

11:05 AM **SELECTED RAPID FIRE TALKS**

11:25 AM **YOUNG FLUORESCENCE INVESTIGATOR AWARD & TALK**

11:55 AM **GREGORIO WEBER AWARD & LECTURE**

12:25 PM **CLOSING REMARKS**

Biopolymers in vivo Symposium

8:30 AM - 12:30 PM, ROOM 6E

Subgroup Chair
Huan Xiang-Zhou, University of Illinois Chicago, USA

Program Co-Chairs
Kimberly Reynolds, University of Texas Southwestern, USA
Paul Whitford, Northeastern University, USA

8:30 AM **OPENING REMARKS**

NO ABSTRACT **8:35 AM**
MASSIVELY PARALLEL MAPPING OF THE ENERGETIC AND ALLOSTERIC LANDSCAPES OF PROTEINS. **Ben Lehner**

NO ABSTRACT **9:15 AM**
EMERGENT PROTEIN ASSEMBLIES IN A CELL. **Margaret Cheung**

NO ABSTRACT **9:35 AM**
PEERING INTO THE CRYSTALLIN BALL OF THE EYE LENS. **Alex Guseman**

NO ABSTRACT **9:55 AM**
PREDICTING THE TRANSITION STATES OF PROTEIN AGGREGATION.
Milo Lin

10:15 AM **BREAK**

NO ABSTRACT **10:30 AM**
STRUCTURAL DETERMINANTS OF MICRO-RNA BIOGENESIS. **Sarah Keane**

NO ABSTRACT **10:50 AM**
LOOKING IN THE GARBAGE TO GET CLUES ON AGING AND PROTEIN FOLDING. **Thibault Mayor**

NO ABSTRACT **11:10 AM**
REFLECTIN PROTEINS AS BIOPOLYMERS IN VIVO. **Alison Sweeney**

11:30 AM **YOUNG FACULTY AWARD**

11:50 AM **CLOSING REMARKS**

12:00 PM **SUBGROUP BUSINESS MEETING**

Channels, Receptors, and Transporters Symposium

8:30 AM - 12:30 PM, ROOM 6B

Subgroup Chair
Jorge E. Contreras, University of California Davis, USA

8:30 AM **OPENING REMARKS**

5-SUBG **8:35 AM**
HETEROMERIC LRRC8 CHANNEL ASSEMBLIES AND THEIR IMPACT ON CHANNEL ACTIVITY. **Elena F. Lehmann**, Sonja Rutz, Dawid Deneka, Antje Dittmann, Marta Sawicka, Raimund Dutzler

NO ABSTRACT **9:05 AM**
A TALE OF TWO PORES. **Johanna Syrjanen**

NO ABSTRACT **9:35 AM**
PHARMACOLOGY AND ACTIVATION MECHANISMS FOR LARGE-PORE PANNEXIN 1 CHANNELS: FROM A SINGLE-CHANNEL PERSPECTIVE. **Yu-Hsin Chiu**

NO ABSTRACT **10:05 AM**
HYDROPHOBIC AND HYDROPHILIC RESIDUES IN AMINO TERMINAL DOMAIN OF CX46 AND CX50 ARE CRITICAL FOR THEIR GAP JUNCTION CHANNEL GATING AND THE RATE OF ION PERMEATION. **Donglin Bai**

10:35 AM **SUBGROUP BUSINESS MEETING**

6-SUBG **11:00 AM**
COMPUTATIONAL STUDIES OF MOLECULAR PERMEATION THROUGH LARGE-PORE CHANNELS. **Yun Lyna Luo**

NO ABSTRACT **11:30 AM**
NOVEL BIOPHYSICAL PROPERTIES IN LARGE-PORE CHANNELS. **Pablo Gaete**

NO ABSTRACT **12:00 PM**
MOLECULAR PHYSIOLOGY OF CALHM ION CHANNELS. **J. Kevin Foskett**

Cryo-EM Symposium

8:30 AM - 12:30 PM, ROOM 6F

Subgroup Chair
Ariane Briegel, Leiden University, Netherlands

Program Co-Chairs
Henriette Autzen, University of Copenhagen, Denmark
Gabriel Lander, Scripps Research Institute, USA
Cristina Santarossa, NYU Langone Health, USA
Rosemary Cater, Columbia University, USA
Meghna Gupta, University of California, San Francisco, USA

8:30 AM **OPENING REMARKS**

NO ABSTRACT **8:35 AM**
ARCHITECTURE OF ERYTHROCYTE ANKYRIN-1 COMPLEXES. **Oliver Clarke**

NO ABSTRACT **9:00 AM**
MACHINE LEARNING FOR CRYO-EM RECONSTRUCTION. **Ellen Zhong**

NO ABSTRACT **9:25 AM**
HOW "NATIVE" IS YOUR PROTEIN? IMPACTS OF CRYO-EM SAMPLE PREPARATION ON PROTEIN STRUCTURE. **Rebecca Thompson**

NO ABSTRACT **9:50 AM**
UNTANGLING INTEGRIN DYNAMICS USING CRYO-EM. **Melody Campbell**

NO ABSTRACT **10:00 AM**
UNDERSTANDING ARCHITECTURE, ASSEMBLY, AND REGULATION OF BACTERIAL TOXIN DELIVERY SYSTEMS BY ELECTRON CRYOTOMOGRAPHY. **Debnath Ghosal**

10:10 AM **BREAK**

10:30 AM **PANEL DISCUSSION ON MAP QUALITY: SINGLE PARTICLE CRYO-EM VALIDATION - WHAT TO SUBMIT WITH YOUR MANUSCRIPT**

10:40 AM **RESEARCH TALK FROM ABHAY KOTECHA, THERMO FISHER SCIENTIFIC: TOWARDS HIGH-RESOLUTION AND HIGH-THROUGHPUT STRUCTURAL BIOLOGY WITH CRYO-EM**

NO ABSTRACT **10:55 AM**
MOLECULAR ARCHITECTURE OF THE JUMBO BACTERIOPHAGE NUCLEAR SHELL. **Elizabeth Villa**

7-SUBG **11:20 AM**
RHOPTRY SECRETION SYSTEM STRUCTURES AND REGULATORY MECHANISMS IN APICOMPLEXAN PARASITES REVEALED USING CRYO-ET. Shrawan Kumar Mageswaran, Matthew Martinez, Amandine Guérin, William Chen, Liam Theveny, Marta Cova, Petra Molnár, Audrey John, Boris Striepen, Maryse Lebrun, **Yi-Wei Chang**

11:45 AM **FLASH TALKS FROM SELECTED ABSTRACTS**

12:10 PM **CLOSING REMARKS**

12:15 PM **SUBGROUP BUSINESS MEETING**

Membrane Fusion, Fission, and Traffic Symposium

8:30 AM - 12:30 PM, ROOM 6D

Subgroup Chair
Phyllis Hanson, University of Michigan, USA

NO ABSTRACT **8:30 AM**
THE BIOPHYSICS OF BULKY CARGO EXPORT FROM THE ENDOPLASMIC RETICULUM. Morgan Chabanon, Ishier Raote, Nikhil Walani, Vivek Malhotra, Maria F. Garcia-Parajo, Marino Arroyo, **Felix Campelo**

8-SUBG **9:00 AM**
USING QUANTITATIVE MICROSCOPY APPROACHES TO STUDY THE FORMATION OF CLATHRIN-COATED VESICLES. **Emanuele Cocucci**, Comert Kural

NO ABSTRACT **9:30 AM**
EMERGING ROLES FOR SECRETORY AUTOPHAGY IN EV BIOGENESIS AND CARGO SPECIFICATION. **Jayanta Debnath**

10:00 AM **BREAK**

NO ABSTRACT **10:30 AM**
A NON-CANONICAL ROLE FOR A COPII SUBUNIT IN THE SELECTIVE DEGRADATION OF THE ER. **Susan Ferro-Novick**

NO ABSTRACT **11:00 AM**
INTERACTIONS BETWEEN INTRINSICALLY DISORDERED PROTEIN REGIONS AND CURVED MEMBRANE SURFACES. **Wade F. Zeno**

11:30 AM **SIR BERNARD KATZ AWARD: JOSE RIZO-REY, UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER "*MOLECULAR MECHANISMS UNDERLYING CALCIUM-TRIGGERED NEUROTRANSMITTER RELEASE*"**

12:15 PM **ANNOUNCEMENTS**

Nanoscale Approaches to Biology Symposium

8:30 AM - 12:30 PM, ROOM 5AB

Subgroup Chair
Chan Cao, Ecole Polytechnique Federale de Lausanne, Switzerland

8:30 AM **OPENING REMARKS**

No Abstract **8:35 AM**
NANOPORE SEQUENCING OF NUCLEIC ACIDS FROM CELLS UNDER STRESS. **Cynthia Burrows**

9-Subg **9:00 AM**
RAPID SINGLE PROTEIN ANALYSIS BY NANOAPERTURE OPTICAL TWEEZERS. **Reuven Gordon**

10-Subg **9:25 AM**
HIGH-SPEED ATOMIC FORCE MICROSCOPY FOR DYNAMIC SINGLE MOLECULE STRUCTURAL BIOLOGY. **Simon Scheuring**, Yining Jiang, Zhaokun Wang, Atsushi Miyagi

9:50 AM **STUDENT/POSTDOC TALK**

10:05 AM **STUDENT/POSTDOC TALK**

10:20 AM **BREAK**

11-Subg **10:30 AM**
ENHANCING SINGLE-MOLECULE SENSING AND SUPERRESOLUTION WITH DNA NANOTECH. **Philip Tinnefeld**, Cindy Close, Martina Pfeiffer, Fiona Cole, Lennart Grabenhorst, Jonas Zähringer, Renukka Yaadav, Alain M. Szalai, Izabela Kaminska, Viktorija Glembockyte

No Abstract **10:55 AM**
TALK TITLE TO BE CONVEYED. **Mike Heilemann**

12-Subg **11:20 AM**
PROBING AND PIERCING LIPID BILAYERS WITH DNA NANOSTRUCTURES. **Stefan Howorka**

11:45 AM **STUDENT/POSTDOC TALK**

12:00 PM **STUDENT/POSTDOC TALK**

12:15 PM **CLOSING REMARKS**

12:20 PM **SUBGROUP BUSINESS MEETING**

Physical Cell Biology Symposium

8:30 AM - 12:30 PM, Room 6C

Subgroup Chair
Ulrike Endesfelder, Bonn University, Germany

Program Chair
Pallav Kosuri, Salk Institute for Biological Studies, USA

8:30 AM **OPENING REMARKS**

No Abstract **9:10 AM**
SPATIAL TRANSCRIPTIONS: INDUCING NEUROGENESIS IN THE ADULT BRAIN. **Bogdan Bintu**

9:40 AM **SUBGROUP AWARD TALK**

9:55 AM **SUBGROUP AWARD TALK**

10:10 AM **BREAK**

No Abstract **10:30 AM**
CAUGHT RED-HANDED: DNA PROBES TO MEASURE CELLULAR TRACTION FORCES. **Khalid Salaita**

11:00 AM **STUDENT/POSTDOC TALK**

11:15 AM **STUDENT/POSTDOC TALK**

No Abstract **11:30 AM**
MAKING THE INVISIBLE VISIBLE: IMAGING SUBCELLULAR DYNAMICS IN MULTICELLULAR SYSTEMS. **Srigokul Upadhyayula**

12:00 PM **CLOSING REMARKS**

12:05 PM **SUBGROUP BUSINESS MEETING**

Theory and Computation Symposium

8:30 AM - 12:30 PM, Room 6A

Subgroup Chair
Gregory A. Voth, University of Chicago, USA

8:30 AM **OPENING REMARKS**

13-Subg **8:35 AM**
BENDING MEMBRANES ALONG DISTINCT PATHWAYS OF PROTEIN ASSEMBLY. **Margaret E. Johnson**

No Abstract **9:05 AM**
ACCURATE PREDICTION OF PROTEIN-LIGAND INTERACTIONS BY COMBINING PHYSICAL ENERGY FUNCTIONS AND GRAPH-NEURAL NETWORKS. **Juyong Lee**

No Abstract **9:35 AM**
INCORPORATING CHEMISTRY INTO CLASSICAL MOLECULAR DYNAMICS SIMULATIONS OF PROTEINS BY MACHINE LEARNING. **Frauke Graeter**

10:05 AM **BREAK**

14-Subg **10:20 AM**
THEORY & COMPUTATION EARLY CAREER AWARD TALK: UNRAVELING THE CRISPR-CAS REVOLUTION THROUGH THE LENS OF COMPUTATIONAL BIOPHYSICS. **Giulia Palermo**

No Abstract **10:50 AM**
THEORY & COMPUTATION MID-CAREER AWARD TALK: GENERALIZED MASTER EQUATION MODELS TO STUDY FUNCTIONAL DYNAMICS OF PROTEINS. **Xuhui Huang**

15-Subg **11:20 AM**
BUILDING A MOLECULAR MODEL FOR ION CHANNEL AND TRANSPORTER STABILITY IN MEMBRANES THROUGH A PARTNERSHIP OF EXPERIMENTS AND COMPUTATION. **Janice L. Robertson**, Jose D. Faraldo-Gomez

11:50 AM **CLOSING REMARKS**

12:00 PM **SUBGROUP BUSINESS MEETING**

Bioengineering Symposium

1:30 PM - 5:30 PM, Room 6D

Subgroup Chair
Ravi Radhakrishnan, University of Pennsylvania, USA

1:30 PM **OPENING REMARKS**

16-Subg **1:35 PM**
ENGINEERING ELECTROACTIVE MICROBES FOR ENVIRONMENTAL SENSING. **Ariel Furst**

No Abstract **2:05 PM**
UNDERSTANDING CELL AND PARTICLE DEFORMABILITY IN BLOOD FOR TUNING VASCULAR-TARGETED DRUG CARRIER INTERACTIONS AND CELLULAR TARGETING. **Lola Eniola-Adefeso**

17-Subg **2:35 PM**
PREDICTING REACTION PATHWAYS AND ACCELERATING PROTEIN CONFORMATION SAMPLING WITH MACHINE LEARNING. **Ryan Odstrcil**, Prashanta Dutta, Jin Liu

3:00 PM **BREAK**

No Abstract **3:15 PM**
A CLICK CHEMISTRY AMPLIFIED NANOPORE (CAN) ASSAY FOR ULTRASENSITIVE QUANTIFICATION OF HIV P24 ANTIGEN IN CLINICAL SAMPLES. **Chang Liu**

No Abstract **3:45 PM**
MULTI-PARAMETER EPIGENETIC PROFILING OF SINGLE CELLS AND SINGLE MOLECULES. **Aaron Streets**

No Abstract **4:15 PM**
MODELING APPROACHES TO SYNAPTIC PLASTICITY. **Padmini Rangamani**

4:45 PM **CLOSING REMARKS**

5:00 PM **SUBGROUP BUSINESS MEETING**

Intrinsically Disordered Proteins Symposium

1:30 PM - 5:30 PM, Room 6C

Subgroup Chair
Jeanne Stachowiak, University of Texas at Austin, USA

Program Co-Chairs
Samrat Mukhopadhyay, Indian Institute of Science Education and Research, India
Sapun Parekh, University of Texas at Austin, USA and Max Planck Institute for Polymer Research, Germany

1:30 PM **OPENING REMARKS**

No Abstract **1:35 PM**
KEYNOTE SPEAKER: FUNCTIONAL DISORDER IN P53. **Jane Dyson**

No Abstract **2:10 PM**
THE MANY FUNCTIONS OF INTRINSIC DISORDER IN NF-K B SIGNALING. **Elizabeth Komives**

2:35 PM **STUDENT/POSTDOC TALK**

No Abstract **2:50 PM**
SHEDDING LIGHT ON THE PHASE SEPARATION LANDSCAPE OF INTRINSICALLY DISORDERED PROTEINS. **Priya Banerjee**

3:15 PM **BREAK**

No Abstract **3:20 PM**
CONFORMATIONAL BUFFERING AS A MECHANISM UNDERLYING DIMENSIONAL COMPENSATION AND FUNCTIONAL EVOLUTION IN INTRINSICALLY DISORDERED PROTEINS. **Lucia Chemes**

3:45 PM **STUDENT/POSTDOC TALK**

No Abstract **4:00 PM**
ACCELERATION AND INHIBITION OF AMYLOID FORMATION BY BIOMOLECULAR CONDENSATES. **Paolo Arosio**

4:25 PM **STUDENT/POSTDOC TALK**

No Abstract **4:40 PM**
THE FUNDAMENTAL NATURE OF THE DROPLET STATE OF PROTEINS. **Monika Fuxretier**

5:05 PM **CLOSING REMARKS**

5:10 PM **SUBGROUP BUSINESS MEETING**

Macromolecular Machines and Assemblies Symposium

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

Subgroup Chair
Arne Gennerich, Albert Einstein College of Medicine, USA

1:30 PM **OPENING REMARKS**

No Abstract **1:35 PM**
MACHINES ON GENES: A SINGLE-MOLECULE PERSPECTIVE. **Shixin Liu**

No Abstract **2:00 PM**
SUPERRESOLUTION IMAGING OF TRANSCRIPTION IN LIVE MAMMALIAN CELLS. **Ibrahim Cisse**

No Abstract **2:25 PM**
STRUCTURAL BASIS OF HUMAN TELOMERASE RECRUITMENT AND ACTIVATION BY SHELTERIN PROTEINS TPP1:POT1. **George Ghanim**

No Abstract **2:45 PM**
SUBSTRATE-MEDIATED ACTIVATION MECHANISM OF HUMAN LONP1. **Jeff Mindrebo**

3:05 PM **BREAK**

No Abstract **3:20 PM**
THE REGULATORY FUNCTION OF THE AAA4 ATPASE DOMAIN OF CYTOPLASMIC DYNEIN. **Xinglei Liu**

18-SUBG **3:40 PM**
THICK FILAMENT DYNAMICS: A MECHANISM FOR PROTEIN REPLACEMENT WITHIN THE SARCOMERE. **Colleen M. Kelly**, Michael J. Previs

No Abstract **4:00 PM**
SINGLE-MOLECULE CHARACTERIZATION OF AN OSMOREGULATORY TRANSPORTER. **Katarzyna Tych**

19-SUBG **4:25 PM**
SUPRAMOLECULAR COMPLEXES INVOLVED IN THE COORDINATION OF TRANSCRIPTION AND TRANSLATION. Michael W. Webster, Adrien Chauvier, Andrea Graziadei, Kristine Charles, Maria Takacs, Juri Rappsilber, Nils G. Walter, **Albert Weixlbaumer**

4:50 PM **STUDENT/POSTDOC TALK**

5:00 PM **STUDENT/POSTDOC TALK**

5:10 PM **CLOSING REMARKS**

5:20 PM **SUBGROUP BUSINESS MEETING**

Mechanobiology Symposium

1:30 PM - 5:30 PM, Room 6E

Subgroup Chair
Virgile Viasnoff, Mechanobiology Institute, National University of Singapore, and CNRS, France

1:30 PM **OPENING REMARKS**

No Abstract **1:35 PM**
CELLULAR SELF-ASSEMBLY AND MECHANOSENSING IN ORGANOIDS AND TUMOR MODELS ENCAPSULATED IN HYDROGEL SHELLS. **Pierre Nassoy**

No Abstract **2:00 PM**
EMERGENT FEATURES OF COLLECTIVE CELL DYNAMICS: A MECHANOBIOLOGICAL PERSPECTIVE. **Tamal Das**

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

No Abstract **2:35 PM**
DYNAMICS OF A SELF-PULLED EPITHELIAL ZIPPER. **Edwin Munro**

No Abstract **3:00 PM**
COUPLED OSCILLATORS IN A CONTRACTILITY-GENERATING SIGNAL TRANSDUCTION NETWORK. **Min Wu**

3:25 PM **SUBGROUP BUSINESS MEETING**

3:40 PM **AWARD TALK**

No Abstract **4:05 PM**
ACTIN POLYMERIZATION AND CROSSLINKING DRIVE LEFT-RIGHT ASYMMETRY IN SINGLE CELL AND CELL COLLECTIVES. **Yee Han Tee**

No Abstract **4:15 PM**
CARDIAC PIEZO CHANNELS IN HEALTH AND DISEASE. **Charles Cox**

20-Subg **4:40 PM**
GUT TOUCH: MOLECULES, CELLS, CIRCUITS, AND PURPOSE. **Arthur Beyder**

No Abstract **5:05 PM**
DIETARY FATTY ACIDS FINE-TUNE NEURONAL AND NON-NEURONAL CELLS' MECHANICAL RESPONSE. **Valeria Vasquez**

5:30 PM **CLOSING REMARKS**

Membrane Structure and Function Symposium

1:30 PM - 5:30 PM, Room 6B

Subgroup Chair
Ingela Parmryd, University of Gothenburg, Sweden

1:30 PM **OPENING REMARKS**

No Abstract **1:35 PM**
INSIGHTS INTO LIPID-PROTEIN INTERACTIONS FROM COMPUTER SIMULATIONS. **Peter Tieleman**

No Abstract **2:00 PM**
MECHANISMS OF CURVED MEMBRANE PROTEIN IRSP53 MEDIATED INITIATION AND STABILIZATION OF CELLULAR PROTRUSIONS. **Feng-Ching Tsai**

No Abstract **2:25 PM**
LOCATING ANTIMICROBIAL PEPTIDES IN MODEL MEMBRANES AND BACTERIA USING SOLID-STATE NMR. **Frances Separovic**

21-Subg **2:50 PM**
ADIPOR2 PROMOTES FATTY ACID DESATURATION, ELONGATION AND INCORPORATION INTO PHOSPHOLIPIDS IN RESPONSE TO MEMBRANE RIGIDIFICATION. **Marc Pilon**

3:15 PM **BREAK**

22-Subg **3:30 PM**
MODELLING NATURAL CELL MEMBRANES AND HOW LIPID ASYMMETRY INFLUENCES STRUCTURE. **Jeffrey Klauda**

23-Subg **3:55 PM**
INSIGHTS ON PLASMA MEMBRANE ASYMMETRY FROM STUDIES OF ASYMMETRIC MODEL MEMBRANES. **Thais A. Enoki**

No Abstract **4:20 PM**
IMAGING CHOLESTEROL DEPLETION AT THE PLASMA MEMBRANE BY METHYL-BETA-CYCLODEXTRIN SUGGESTS PREFERENTIAL CHOLESTEROL REMOVAL FROM THE INNER LEAFLET. **Toshihide Kobayashi**

4:45 PM **THOMAS THOMPSON AWARD**

5:15 PM **CLOSING REMARKS**

5:20 PM **SUBGROUP BUSINESS MEETING**

Membrane Transport Symposium

1:30 PM - 5:30 PM, Room 6F

Subgroup Chair
Indra Schroeder, University of Jena, Germany

1:30 PM **OPENING REMARKS**

No Abstract **1:35 PM**
CONFORMATIONAL DYNAMICS: CHANNELS AND BEYOND. **William Zagotta**

24-Subg **2:05 PM**
THE MOLECULAR BASIS OF ELECTROPORATION OF EXCITABLE CELLS. **Lea Rems**, Tina Batista Napotnik, Anja Blazic, Bor Kos

2:35 PM **STUDENT/POSTDOC TALK**

2:55 PM **BREAK**

No Abstract **3:10 PM**
MECHANISM OF THE SODIUM-PROTON ANTIPORTERS NHAA AND NAPA. **Jana Shen**

3:40 PM **STUDENT/POSTDOC TALK**

4:00 PM **STUDENT/POSTDOC TALK**

No Abstract **4:20 PM**
AN ABC COMPLEX IN THE METAL SITE ASSEMBLY OF NITROUS OXIDE REDUCTASE. **Oliver Einsle**

No Abstract **4:50 PM**
THE MOLECULAR MECHANISMS UNDERLYING CELLULAR UPTAKE OF VITAMIN A. **Filippo Mancia**

5:20 PM **SUBGROUP BUSINESS MEETING**

Motility and Cytoskeleton Symposium

1:30 PM - 5:30 PM, Room 6A

Subgroup Co-Chairs
Ken'ya Furuta, National Institute of Information and Communication Technology, Japan
Marija Zanic, Vanderbilt University, USA

1:30 PM **WELCOME & SUBGROUP BUSINESS MEETING**

25-Subg **1:40 PM**
A SINGLE-MOLECULE VIEW ON INTRAFLAGELLAR TRANSPORT IN *C. ELEGANS* CHEMOSENSORY CILIA. **Erwin Peterman**

26-Subg **2:00 PM**
ACTIN SELF-ORGANIZATION IN GLIDING PARASITIC CELLS. **Christina L. Hueschen**, Li-av Segev Zarko, Jian-Hua Chen, Mark LeGros, Carolyn A. Larabell, John C. Boothroyd, Rob Phillips, Alexander R. Dunn

No Abstract **2:20 PM**
POSITION-DEPENDENT BEHAVIOR OF AN UNBOUND KINESIN HEAD NEAR THE MICROTUBULE SURFACE. **Wonmuk Hwang**

No Abstract **2:40 PM**
BALANCING ACT: PROFILIN'S COMPETING ROLES IN FORMIN-MEDIATED ACTIN POLYMERIZATION. **Naomi Courtemanche**

27-Subg **3:00 PM**
DYNAMIC COORDINATION OF THE LEVER-ARM SWING OF MYOSIN II IN DNA ORIGAMI-BASED THICK FILAMENT. **Mitsuhiro Iwaki**

3:20 PM **BREAK**

3:30 PM **POSTER FLASH TALKS**

No Abstract **3:50 PM**
SYNTHETIC RECONSTITUTION OF CORTICAL POLARITY TO STUDY CYTOSKELETON SYMMETRY BREAKING. **Emmanuel Derivery**

No Abstract **4:10 PM**
REGULATION OF CYTOPLASMIC DYNEIN-1 DURING CELL MIGRATION. **Morgan DeSantis**, Juliana Zang, Ann-Marie Zheng, Daytan Gibson

No Abstract **4:30 pm**
ORIGIN OF PULSED ACTOMYOSIN CONTRACTIONS AND THEIR ROLE IN CELL SHAPE CONTROL. **Shiladitya Banerjee**

No Abstract **4:50 pm**
ULTRA-RAPID MICROTUBULE DEPOLYMERISATION BY THE COMMON ANCESTOR OF THE KINESIN-13 FAMILY. **Claire Friel**

28-Subg **5:10 pm**
DECIPHERING THE MECHANICS OF MICROTUBULE BUNDLES IN MITOSIS. **Scott Forth**

Multiscale Genome Organization Symposium

1:30 pm - 5:30 pm, Room 7AB

Subgroup Co-Chairs
Yamini Dalal, NIH, USA
Anna Panchenko, Queen's University, Canada

Program Co-Chairs
Alexei Onufriev, Virginia Tech, USA
Bin Zhang, Massachusetts Institute of Technology, USA

1:30 pm **Opening Remarks**

No Abstract **1:35 pm**
FOLDING CHROMOSOMES WITHOUT KNOTTING THEM. **Job Dekker**

No Abstract **2:05 pm**
CHARACTERIZING THE VARIABILITY AND ORGANIZING PRINCIPLES OF WHOLE GENOME STRUCTURES BY MULTI-MODAL DATA INTEGRATION. **Frank Alber**

29-Subg **2:30 pm**
MECHANICAL FRUSTRATION OF PHASE SEPARATION IN THE CELL NUCLEUS BY CHROMATIN. **Yaojun Zhang**, Daniel S. Lee, Yigal Meir, Clifford P. Brangwynne, Ned S. Wingreen

2:55 pm **Student/Postdoc Talk**

3:10 pm **Best Poster Award Ceremony**

No Abstract **3:30 pm**
THE 3D GENOME ARCHITECTURE IN HUMAN MALARIA VECTORS. **Igor Sharakhov**

No Abstract **3:55 pm**
PHASE TRANSITIONS IN THE NUCLEUS OF CELLS SHAPE CHROMATIN FOLDING. **Mario Nicodemi**

No Abstract **4:20 pm**
TRANSCRIPTIONAL CONTROL BY LOW-COMPLEXITY DOMAIN INTERACTIONS: A SINGLE-MOLECULE PERSPECTIVE. **Shasha Chong**

No Abstract **4:45 pm**
CHANGING STRUCTURES OF CHROMOSOMES DURING A CELL CYCLE: ROLE OF MULTIPLE MOTORS. **Dave Thirumalai**

5:15 pm **Closing Remarks**

5:20 pm **Subgroup Business Meeting**

Single-Molecule Forces, Manipulation, and Visualization Symposium

1:30 pm - 5:30 pm, Room 11AB

Subgroup Co-Chairs
Zev Bryant, Stanford University, USA
Wesley Wong, Harvard University, USA

No Abstract **1:30 pm**
REALTIME OBSERVATION OF SUBSTRATE TRANSLOCATION DYNAMICS IN AN ABC TRANSPORTER. **Ruben Gonzalez**

No Abstract **1:52 pm**
TETHER-FREE, SINGLE-MOLECULE MICROSCOPY OF DNA INTERACTIONS IN OUT-OF-EQUILIBRIUM CONDITIONS. **Sabrina Leslie**

No Abstract **2:14 pm**
THE MECHANICAL ACTIVATION OF TALIN- AND VINCULIN-MEDIATED RIGIDITY SENSING OF EXTRACELLULAR MATRIX. **Jie Yan**

No Abstract **2:36 pm**
HOW SOME SINGLE RECEPTOR-LIGAND BONDS LOCK INSTANTLY INTO A LONG-LIVED FORCE-RESISTANT STATE. **Wendy Thomas**

No Abstract **2:58 pm**
ORIGAMI MOVEMENT MICROSCOPY. **Pallav Kosuri**

3:20 pm **Break**

No Abstract **3:30 pm**
TRAPPED FOR LIFE: MY CAREER, ONE MOLECULE AT A TIME. **Steven Block**

No Abstract **4:14 pm**
UNIVERSALITY VS. SPECIFICITY IN SYNAPTIC TRANSMISSION. **Olga Dudko**

No Abstract **4:36 pm**
RNA COLD MISFOLDING. **Felix Ritort**

No Abstract **4:58 pm**
DNA LOOP EXTRUSION IS A CONSERVED MECHANISM AMONG ALL EUKARYOTIC SMC COMPLEXES. **Eugene Kim**

5:20 pm **Closing Remarks and Subgroup Business Meeting**

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

3:00 pm - 4:00 pm, Room 16B

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 Poster Award Competition

3:00 PM - 5:00 PM, Ballroom Lobby Cityside Corridor

Come meet undergraduates and learn about their research projects. Undergraduates presenting as first or second author on a poster are welcome to participate to improve presentation skills in an encouraging environment, receive feedback, and be recognized for their hard work.

The six students with the best overall presentations will be awarded $100 and will be recognized during the 2023 Biophysical Society Lecture and Awards Ceremony. These students 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.

Students competing in the competition had to have been registered and confirmed prior to arrival at the meeting.

First-Time Attendee Drop By

5:00 PM - 6:00 PM, Ballroom Lobby Bayside Corridor

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 2023 San Diego Annual Meeting.

Opening Mixer

5:00 PM - 7:00 PM, Ballroom Lobby Bayside Corridor

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 BC

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

Poster Viewing

6:00 PM - 10:00 PM, Exhibit Hall BC

Sunday, February 19, 2023

Daily Program Summary

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

7:30 AM-8:30 AM	**Postdoctoral Breakfast**	**Room 2**
7:30 AM-5:00 PM	**Registration/Exhibitor Registration**	**Lobby BC**
8:00 AM-10:00 PM	**Poster Viewing**	**Exhibit Hall BC**
8:15 AM-10:15 AM	**Symposium: The Molecular Sarcomere** **Chair** *Samantha Harris, University of Arizona, USA* SARCOMERE MODEL: FLUCTUATIONS DRIVE ENERGY CONSUMPTION IN STRIATED MUSCLE UNDER CONSTANT LOAD. *Anna Grosberg* THE ROLE OF ALPHA ACTININ PARALOGS IN CARDIAC HYPERTROPHY AND CONTRACTILE FORCE PRODUCTION. *Dylan T. Burnette* CRYO-ET REVEALS SARCOMERE STRUCTURES AT MOLECULAR RESOLUTION. *Stefan Raunser* MYOSIN BINDING PROTEIN-C: EVERYTHING, EVERYWHERE, ALL AT ONCE. *Samantha P. Harris*	**Room 6A**
8:15 AM-10:15 AM	**Symposium: 50 Years After the Fluid Mosaic Membrane** **Chair** *Sarah Keller, University of Washington, USA* MITOCHONDRIAL PERMEABILIZATION IN APOPTOSIS: ADVANCED MICROSCOPY APPROACHES. *Ana J. Garcia-Saez* HOW THE LIPID BILAYER AFFECTS PROTEIN STABILITY. *Karen G. Fleming* NONEQUILIBRIUM CONTROL OF CELL MEMBRANE ORGANISATION - ACTIVE EMULSIONS. *Madan Rao* REVERSIBLE, LARGE-SCALE, LIQUID-LIQUID PHASE SEPARATION IN LIVING YEAST MEMBRANES. *Sarah Keller*	**Room 6B**
8:15 AM-10:15 AM	**Platform: Intrinsically Disordered Proteins I**	**Room 6C**
8:15 AM-10:15 AM	**Platform: Protein-Nucleic Acid Interactions I**	**Room 6D**
8:15 AM-10:15 AM	**Platform: Protein Structure and Conformation I**	**Room 6E**
8:15 AM-10:15 AM	**Platform: Voltage-Gated K Channels**	**Room 6F**
8:15 AM-10:15 AM	**Platform: Membrane Receptors and Signal Transduction**	**Room 5AB**
8:15 AM-10:15 AM	**Platform: Optical Microscopy and Superresolution Imaging I**	**Room 11AB**
8:30 AM-10:30 AM	**CID Committee Meeting**	**Room 14A**
9:00 AM-10:00 AM	**Career Development Center Workshop:** **Networking for Biophysicists: How to Create Your Dream Career**	**Room 16B**
9:30 AM-11:00 AM	**Exhibitor Presentation: Oroboros Instruments GmbH** **Mitochondrial Bioenergetics – A Quantitative Analytical and Diagnostic Approach**	**Room 9**
10:00 AM-5:00 PM	**Exhibits**	**Exhibit Hall BC**
10:15 AM-11:00 AM	**Meet the Editors, *Biophysical Journal***	**Lobby BC/Publications Booth**
10:15 AM-11:00 AM	**Coffee Break**	**Exhibit Hall BC**
10:30 AM-12:00 PM	**Exhibitor Presentation: Carl Zeiss Microscopy LLC** **Discover How Accessible Lattice Light Sheet Technology and Image Analysis Really are with ZEISS Lattice Lightsheet 7**	**Room 10**

10:45 AM-12:45 PM	**Symposium: Predicting Protein Fold** **Chair** *John Moult, University of Maryland, USA* MEMBRANE PROTEIN STRUCTURAL SYMMETRY AND ASSEMBLY PATTERNS. *Lucy R. Forrest* APPLYING AI METHODS TO PROTEIN BIOLOGY. *Kathryn Tunyasuvunakool* MEGA-SCALE ANALYSIS OF PROTEIN FOLDING STABILITY IN BIOLOGY AND PROTEIN DESIGN. *Gabriel J. Rocklin* COMPUTATIONAL STRUCTURAL BIOLOGY IN THE ERA OF DEEP LEARNING. *John Moult*	**Room 6A**
10:45 AM-12:45 PM	**Symposium: Optogenetics and Beyond** **Chair** *Mikhail Shapiro, California Institute of Technology, USA* DIVERSITY AND MOLECULAR MECHANISMS OF CHANNELRHODOPSINS. *Elena G. Govorunova* LEVERAGING OPTOGENETICS FOR CRISPRI SCREENS IN HUMAN IPSC-CARDIOMYOCYTES. *Emilia Entcheva* LIGHT-GUIDED EMBRYOGENESIS: USING OPTOGENETICS TO PROBE AND REPLACE DEVELOPMENTAL SIGNALING PATTERNS. *Jared E. Toettcher* BIOMOLECULAR ULTRASOUND FOR NONINVASIVE IMAGING AND CONTROL OF CELLULAR FUNCTION. *Mikhail G. Shapiro*	**Room 6B**
10:45 AM-12:45 PM	**Symposium: Black in Biophysics: The Next Generation** **Co-chairs** *Bil Clemons, California Institute of Technology, USA* *Theanne Griffith, University of California, Davis, USA* MICROENVIRONMENT REGULATION OF METASTASIS. *Kandice Tanner* COMPUTATIONAL APPROACHES FOR UNDERSTANDING AND ENGINEERING BIOMOLECULAR CONDENSATES. *Jerelle A. Joseph* IN-CELL PROTEIN FOOTRPRINTING COUPLED TO MASS SPECTROMETRY TO STUDY PROTEIN INTERACTIONS IN COMPLEX MODEL SYSTEMS. *Lisa M. Jones* MULTIMODAL PRECISION MEASUREMENT OF SINGLE CELLS. *Aaron Streets*	**Room 6C**
10:45 AM-12:45 PM	**Platform: DNA Structure and Dynamics**	**Room 6D**
10:45 AM-12:45 PM	**Platform: Protein-Small Molecule Interactions**	**Room 6E**
10:45 AM-12:45 PM	**Platform: Membrane Dynamics**	**Room 6F**
10:45 AM-12:45 PM	**Platform: Bioengineering**	**Room 5AB**
10:45 AM-12:45 PM	**Platform: Motor Proteins and Cytoskeletal Assemblies I**	**Room 11AB**
11:30 AM-1:00 PM	**Undergraduate Student Pizza "Breakfast"**	**Room 1AB**
11:30 AM-1:00 PM	**Exhibitor Presentation: Journal of General Physiology (JGP)**	**Room 9**
12:00 PM-1:00 PM	**Career Development Center Workshop: Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn and More**	**Room 16B**
12:00 PM-1:30 PM	**Public Affairs Committee Meeting**	**Room 14A**
12:00 PM-4:00 PM	**BPS/IOP Advisory Board Meeting**	**Room 17B**
12:30 PM-2:00 PM	**Exhibitor Presentation: PicoQuant Photonics North America Inc** **Quantitative, Reproducible Fluorescence Microscopy Made Easy**	**Room 10**
1:00 PM-2:30 PM	**Workshop: Writing Award Nomination and Support Letters**	**Room 6D**
1:00 PM-3:00 PM	**Education and Career Opportunities Fair**	**Exhibit Hall BC**
1:30 PM-3:00 PM	**Exhibitor Presentation: Mad City Labs Inc** **Open and Flexible Microscopy Systems for Combined Single-Molecule Methods**	**Room 9**
1:45 PM-3:00 PM	**Snack Break**	**Exhibit Hall BC**
1:45 PM-3:45 PM	**Poster Presentations and Late Posters**	**Exhibit Hall BC**
2:00 PM-4:00 PM	**Teaching Science Like We Do Science**	**Room 1AB**

2:30 PM-3:30 PM	Career Development Center Workshop: I Need a Job Right Now – What Do I Do?	Room 16B
2:30 PM-4:00 PM	All About ARPA-H: Exploring Opportunities at the New Agency	Room 8
2:30 PM-4:00 PM	Exhibitor Presentation: Oxford Instruments Multi-Modal Microscopy: Challenges and Workflows for Correlative Microscopy Acquisition and Analysis	Room 10
3:30 PM-5:00 PM	Early Careers Committee Meeting	Room 14A
3:30 PM-5:00 PM	Exhibitor Presentation: Fluxion Biosciences From Immunology to Ion Channels: Microfluidic Approaches to Automated Patch Clamp and Cellular Analysis. A Look at IonFlux Mercury and BioFlux Systems from Fluxion Biosciences.	Room 9
4:00 PM-5:00 PM	Career Development Center Workshop: Nailing the Job Talk, or Erudition Ain't Enough	Room 16B
4:00 PM-6:00 PM	*Biophysical Journal* Associate Editors Meeting	Room 14B
4:00 PM-6:00 PM	**Symposium: The RNA World** **Chair** *Jeffrey Chao, Friedrich Miescher Institute for Biomedical Research, Switzerland* RNA MODIFYING ENZYMES IN HEALTH AND DISEASE. *Wendy Gilbert* MODELING OF RNA-ONLY STRUCTURES. *Rhiju Das* RNA EXCITED STATES BY NMR AND THEIR IMPACT ON FUNCTION. *Katja Petzold* IMAGING THE LIFE AND DEATH OF MRNAS IN SINGLE CELLS. *Jeffrey Chao*	Room 6A
4:00 PM-6:00 PM	**Symposium: New and Notable** **Co-chairs** *Baron Chanda, Washington University in St. Louis, USA* *Janice Robertson, Washington University in St. Louis, USA* MEMBRANE VESICLES AS SHEPHERDS OF THE RNA WORLD. *Irene Chen* ACTIVATION MECHANISM OF THE COLD-SENSING TRPM8 CHANNEL BY COOLING AGENTS AND PIP2. *Seok-Yong Lee* MEMBRANE SHAPING AND REMODELING BY TETRASPANIN PROTEINS. *Raya Sorkin* HOW CAN BACTERIA BREATHE WITHOUT OXYGEN OR SOLUBLE ELECTRON ACCEPTORS? PROTEIN NANOWIRES: STRUCTURES, FUNCTIONS, AND ELECTRON TRANSFER MECHANISMS. *Nikhil Malvankar*	Room 6B
4:00 PM-6:00 PM	Platform: Skeletal Muscle Mechanics, Structure, and Regulation	Room 6C
4:00 PM-6:00 PM	Platform: General Protein-Lipid Interactions	Room 6D
4:00 PM-6:00 PM	Platform: Protein Dynamics and Allostery I	Room 6E
4:00 PM-6:00 PM	Platform: Membrane Pumps, Transporters, and Exchangers	Room 6F
4:00 PM-6:00 PM	Platform: Calcium Handling and Electrophysiology I	Room 5AB
4:00 PM-6:00 PM	Platform: Molecular Dynamics I	Room 11AB
4:00 PM-6:00 PM	PI to PI: A Wine and Cheese Mixer	Room 2
4:30 PM-6:00 PM	Exhibitor Presentation: Fluidic Analytics Introducing Microfluidic Diffusional Sizing (MDS) Technology; Quantify and Characterize any Protein Interaction – Even in Complex Backgrounds, Even with Challenging Targets	Room 10
5:00 PM-5:30 PM	Korean Biophysicists Meeting	Room 7AB
5:30 PM-7:00 PM	Exhibitor Presentation: LUMICKS From Dynamic Single-Molecule Data to Direct Quantitative Insights Into Biological Mechanisms	Room 9
6:00 PM-6:30 PM	Dinner Meet-Ups	Lobby BC/Society Booth
6:00 PM-9:00 PM	Student Research Achievement Award (SRAA) Poster Competition	Exhibit Hall BC
7:00 PM-10:00 PM	BPS Editors Dinner	San Diego Wine and Culinary Center

Sunday, February 19

Postdoctoral Breakfast

7:30 AM - 8:30 AM, ROOM 2

Registration/Exhibitor Registration

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

Poster Viewing

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

Symposium
The Molecular Sarcomere

8:15 AM - 10:15 AM, ROOM 6A

Chair
Samantha Harris, University of Arizona, USA

30-SYMP **8:15 AM**
SARCOMERE MODEL: FLUCTUATIONS DRIVE ENERGY CONSUMPTION IN STRIATED MUSCLE UNDER CONSTANT LOAD. Andrew Schmidt, Alexander Y. Grosberg, **Anna Grosberg**

31-SYMP **8:45 AM**
THE ROLE OF ALPHA ACTININ PARALOGS IN CARDIAC HYPERTROPHY AND CONTRACTILE FORCE PRODUCTION. **Dylan T. Burnette**, James B. Hayes

32-SYMP **9:15 AM**
CRYO-ET REVEALS SARCOMERE STRUCTURES AT MOLECULAR RESOLUTION. **Stefan Raunser**

33-SYMP **9:45 AM**
MYOSIN BINDING PROTEIN-C: EVERYTHING, EVERYWHERE, ALL AT ONCE. **Samantha P. Harris**

Symposium
50 Years After the Fluid Mosaic Membrane

8:15 AM - 10:15 AM, ROOM 6B

Chair
Sarah Keller, University of Washington, USA

34-SYMP **8:15 AM**
MITOCHONDRIAL PERMEABILIZATION IN APOPTOSIS: ADVANCED MICROSCOPY APPROACHES. **Ana J. Garcia-Saez**

No Abstract **8:45 AM**
HOW THE LIPID BILAYER AFFECTS PROTEIN STABILITY. **Karen G. Fleming**

35-SYMP **9:15 AM**
NONEQUILIBRIUM CONTROL OF CELL MEMBRANE ORGANISATION - ACTIVE EMULSIONS. **Madan Rao - IUPAB Sponsored Speaker**

36-SYMP **9:45 AM**
REVERSIBLE, LARGE-SCALE, LIQUID-LIQUID PHASE SEPARATION IN LIVING YEAST MEMBRANES. **Sarah Keller**, Chantelle Leveille, John Reinhard, Caitlin E. Cornell, Glennis E. Rayermann, Scott P. Rayermann, Christian Klose, Robert Ernst, Alexey J. Merz

Platform
Intrinsically Disordered Proteins I

8:15 AM - 10:15 AM, ROOM 6C

Co-Chairs
Jagannath Mondal, Tata Institute of Fundamental Research, India
Sara Sohail, NIH, USA

37-PLAT **8:15 AM**
AN ENTROPIC EXPANSION MECHANISM MODULATES SMALL-MOLECULE RECOGNITION BY ALPHA-SYNUCLEIN. **Jagannath Mondal**, Sneha Menon

38-PLAT **8:30 AM**
MULTIMODAL INTERACTIONS BETWEEN A DISORDERED PROTEIN AND ITS FOLDED TARGET AT SINGLE-MOLECULE LEVEL. **Spencer Smyth**, Claudiu C. Gradinaru, Julie D. Forman-Kay

39-PLAT **8:45 AM**
INVESTIGATING THE MECHANISM OF DNA BINDING ENHANCEMENT BY THE RELA TRANSCRIPTION ACTIVATION DOMAIN. **Hannah E. R. Baughman**, David Han, Tristan R. Gunther, Elizabeth A. Komives

40-PLAT **9:00 AM**
STRUCTURAL PREFERENCES MODULATE THE ENTROPIC FORCE EXERTED BY DISORDERED PROTEINS. **Feng Yu**, Shahar Sukenik

9:15 AM **Flash Talks**

41-PLAT **9:30 AM**
THE "STRUCTURAL" JOURNEY OF A RIBONUCLEOPROTEIN COMPLEX: FROM MOLECULES TO DROPLETS. **Rishav Mitra**, James C. Bardwell

42-PLAT **9:45 AM**
SINGLE MOLECULE FRET IMAGING AND DEEP LEARNING REVEAL CONCENTRATION DEPENDENCE OF AGGREGATION PATHWAYS DURING AB AGGREGATION. **Sara Sohail**, Janghyun Yoo, Hoi Sung Chung

43-PLAT **10:00 AM**
SOLUBILITY OF THE AMYLOIDOGENIC CORE OF TAU IN CSF. **Emil Axell**, Emma Sparr, Sara Linse

Platform
Protein-Nucleic Acid Interactions I

8:15 AM - 10:15 AM, ROOM 6D

Co-Chairs
Kathryn Lebold, NIH, USA
Matthew Newton, Francis Crick Institute, United Kingdom

44-PLAT **8:15 AM** **TRAVEL AWARD WINNER**
SINGLE-MOLECULE IMAGING OF THE MCDA ATPASE REVEALS MECHANISTIC DETAILS OF CARBOXYSOME TRAFFICKING. **Christopher A. Azaldegui**, Lisa T. Pulianmackal, Cade T. Harkner, Luis A. Ortiz-Rodríguez, Jose Miguel I. Limcaoco, Anthony G. Vecchiarelli, Julie S. Biteen

45-PLAT **8:30 AM**
DIRECT OBSERVATION OF SHELTERIN DYNAMICS AND T-LOOP FORMATION AT TELOMERES. **Matthew D. Newton**, Jacob S. Lewis, Roopesh Anand, Elizabeth P. Holmes, Alice L.B. Pyne, Simon J. Boulton

46-PLAT **8:45 AM**
STEP-BY-STEP BINDING AND UNWINDING OF RNA BY A DED1P TRIMER REVEALED BY COMBINED HIGH-RESOLUTION TWEEZERS AND FLUORESCENCE MEASUREMENTS. **Kasun B. Senanayake**, Rajeev Yadav, Kyle D. Cotter, Eric M. Patrick, Andrea A. Putnam, Eckhard Jankowski, Matthew J. Comstock

47-PLAT **9:00 AM**
ASYMMETRIC VIRAL GENOMIC RNA EGRESS FROM A SPRING-LOADED VIRUS THROUGH RUBONUCLEOPROTEIN REARRANGEMENTS. **Sean Braet**, Varun Venkatakrishnan, Ranita Ramesh, Palur Raghuvamsi, Ganesh S. Anand

48-PLAT **9:15 AM**
STRUCTURAL STUDIES OF RB69 POLYMERASE-DNA COMPLEX. **Weijia Kang**, Xiaoli Zeng, Medine Ayhan, Jane E. Lodwick, Minglei Zhao, Zhong Ren, Xiaojing Yang

49-PLAT **9:30 AM**

THE BIOPHYSICAL MODULATION AND RNA INTERFERENCE ARE TWO INDEPENDENT ACTIONS OF MICRORNA. **Dandan Yang**, Xiaoping Wan, Feng Tang, Saanvi Ganesh, Tithi Shah, Isabelle Deschenes, Jidong Fu

50-PLAT **9:45 AM**
CONTROL OF BACTERIAL IMMUNE SIGNALING BY A WYL DOMAIN TRANSCRIPTION FACTOR. **Chelsea Blankenchip**, Justin Nguyen, Rebecca Lau, Qiaozhen Ye, Yajie Gu, Kevin D. Corbett

51-PLAT **10:00 AM**
TOP-DOWN COARSE-GRAINED MODEL FOR SINGLE STRANDED NUCLEIC ACIDS. **Kathryn Lebold**, Robert B. Best

Platform
Protein Structure and Conformation I

8:15 AM - 10:15 AM, ROOM 6E

Co-Chairs
Krisztina Varga, University of New Hampshire, Durham, USA
Jie Yang, Scripps Research, USA

52-PLAT **8:15 AM**
BIOPHYSICAL CHARACTERIZATION AND APPLICATIONS OF AN INSECT ANTIFREEZE PROTEIN. **Krisztina Varga**, Korth W. Elliott, Christopher Nordyke, Jonathan A. Sreter, Katarina Jovic, Logan M. Brown

53-PLAT **8:30 AM**
LIGAND INDUCED DIMERIZATION AND TOPOLOGY OF A KNOTTED SPOUT METHYLTRANSFERASE. **Tiange Tao**

54-PLAT **8:45 AM**
DOMESTICATED CONJUGATION MACHINERY PROMOTES DNA EXCHANGE IN HYPERTHERMOPHILIC ARCHAEA. **Leticia Beltran**, Virginija Cvirkaite-Krupovic, Jessalyn Roberts, Fengbin Wang, Mark A. Kreutzberger, Tiago Costa, Ilya Levental, Vincent Conticello, Edward H. Egelman, Mart Krupovic

55-PLAT **9:00 AM**
DELE1 OLIGOMERS REVEALED BY CRYO-EM STRUCTURE PROMOTE THE INTEGRATED STRESS RESPONSE ACTIVATION. **Jie Yang**

9:15 AM **Flash Talks**

56-PLAT **9:30 AM** **TRAVEL AWARD WINNER**
A MOLECULAR MOVIE OF NUCLEOTIDE ADDITION BY HIV-1 REVERSE TRANSCRIPTASE. **Sandra Vergara**, Zhou Xiahong, Nicolas Sluis-Cremer, Guillermo Calero

57-PLAT **9:45 AM**
REGULATION OF DIIRON ACTIVE SITE OF SMMO THROUGH REGULATORY AND REDUCTASE COMPONENTS FROM *METHYLOSINUS SPORIUM* 5. **Yunha Hwang**, Seung Jae Lee

58-PLAT **10:00 AM**
MUTATIONS IN A HUMAN KINASE CAUSE DRUG RESISTANCE BY SHIFTING CONFORMATIONAL STATE DISTRIBUTIONS. **Gabriel M. da Silva**, Brenda M. Rubenstein

Platform
Voltage-Gated K Channels

8:15 AM - 10:15 AM, ROOM 6F

Co-Chairs
Magalí Colomer-Molera, University of Barcelona, Spain
Izhar Karbat, Weizmann Institute of Science, Israel

59-PLAT **8:15 AM** **TRAVEL AWARD WINNER**
DEFINING THE INTERACTIONS BETWEEN HCN4 AND THE REGULATORY PROTEINS IRAG AND LRMP. **Rohit K. Singh**, Avery A. Langley, Colin H. Peters, John Bankston, Cathy Proenza

60-PLAT **8:30 AM** **TRAVEL AWARD WINNER**
PAIRWISE BIOSYNTHESIS ESTABLISHES ION CHANNEL BALANCE AND MITIGATES ARRHYTHMIA. **Margaret B. Jameson**, Erick B. Rios Perez, Fang Liu, Avtar S. Roopra, Catherine A. Eichel, Gail A. Robertson

61-PLAT **8:45 AM**
DEVELOPMENT OF IKS ACTIVATING COMPOUNDS FOR TREATMENT OF LONG QT SYNDROME. **Jessica Jowais**, Laura Maria Castro Gonzalez, Sara I. Liin, Peter D. Tieleman, Peter H. Larsson

62-PLAT **9:00 AM**
ROLE OF LIPIDS IN HYDROPHOBIC GATING AND BLOCKER AFFINITY IN BK CHANNELS. **Lucia Coronel**, Alexandre G. Vouga, Brad S. Rothberg, Vincenzo Carnevale

63-PLAT **9:15 AM**
TRIMMING THE DISORDERED C-TERMINAL EXTENSION OF THE PROTEASE INHIBITOR HG1 PRODUCES A POTENT K_V1.3 BLOCKER. Chandamita Saikia, Hagit Altman-Gueta, Shachar Fine, Orly Dym, Felix Frolow, Eitan Reuveny, **Izhar Karbat**

64-PLAT **9:30 AM**
INACTIVATION MECHANISM OF AN IMMUNOGLOBULIN MODULATOR OF THE T-CELL POTASSIUM CHANNEL KV1.3. **Purushotham Selvakumar**, Ana I. Fernández-Mariño, Bing Wang, William J. Rice, Joel R. Meyerson, Kenton J. Swartz

65-PLAT **9:45 AM**
K_V1.3-DEPENDENT IMMUNE SYSTEM ACTIVATION IS REGULATED BY KCNE4. **Magalí Colomer-Molera**, Daniel Sastre, Laura Sole Codina, Albert Vallejo-Gracia, Maria Navarro Perez, Jesusa Capera-Aragones, Irene Estadella, Silvia Cassinelli, Gyorgy Panyi, Peter B. Hajdu, Michael M. Tamkun, Antonio Felipe

66-PLAT **10:00 AM**
A POINT MUTATION TURNS AN INACTIVATED POTASSIUM CHANNEL INTO A HYPERPOLARIZATION ACTIVATED CATION CHANNEL. **Bernardo I. Pinto**, Carlos Alberto Z. Bassetto Jr, Francisco Bezanilla

Platform
Membrane Receptors and Signal Transduction

8:15 AM - 10:15 AM, ROOM 5AB

Co-Chairs
Anne Robinson, Carnegie Mellon University, USA
Yan Yu, Indiana University, Bloomington, USA

67-PLAT **8:15 AM**
IT TAKES TWO TO TANGO: CROSSTALK BETWEEN INNATE IMMUNE RECEPTORS. **Yan Yu**

68-PLAT **8:30 AM** **TRAVEL AWARD WINNER**
UNDERSTANDING HOW ANTIGEN MOBILITY AND ADHESION MOLECULES INFLUENCE B CELL ACTIVATION. Hannah C.W. McArthur, Anna T. Bajur, **Maro Iliopoulou**, Katelyn M. Spillane

69-PLAT 8:45 AM
CD20-DEPENDENT ACTIN REMODELLING REGULATES INITIAL STEPS OF B CELL ACTIVATION. **Anna T. Bajur**, Hannah C.W. McArthur, Maro Iliopoulou, Katelyn M. Spillane

70-PLAT 9:00 AM
OPTICALLY ACTIVATED PROXIMITY LABELING FOR SPATIALLY AND TEMPORALLY RESOLVED PROTEOMICS. Omer M. Shafraz, Carolyn Davis, **Sanjeevi Sivasankar**

71-PLAT 9:15 AM
UNNATURAL AMINO ACID RECEPTOR INCORPORATION AS A PHOTOAFFINITY TOOL FOR GPCR HETEROMER SIGNALING STUDIES. **Brenda T. Winn**, Roman Manetsch, Diomedes E. Logothetis

72-PLAT 9:30 AM
TWO-STEP STRUCTURAL CHANGES IN M3 MUSCARINIC RECEPTOR ACTIVATION RELY ON THE COUPLED G PROTEIN CYCLE. Yong-Seok Kim, Jun-Hee Yeon, **Byung C. Suh**

73-PLAT 9:45 AM
PROTEIN ENGINEERING APPROACHES TO DETERMINE ADENOSINE RECEPTOR-G PROTEIN INTERACTIONS. **Anne S. Robinson**, Kirsten S. Koretz, Abhinav R. Jain

74-PLAT 10:00 AM
MITOCHONDRIAL BOUND PKA CONTRIBUTES TO CYCLIC-AMP COMPARTMENTATION IN HUMAN AIRWAY SMOOTH MUSCLE CELLS. **Rinzhin Tshering Sherpa**, Karni S. Moshal, Shailesh R. Agarwal, Rennolds S. Ostrom, Robert D. Harvey

Platform
Optical Microscopy and Superresolution Imaging I

8:15 AM - 10:15 AM, ROOM 11AB

Co-Chairs
Steen Bender, University of Copenhagen, Denmark
Eleonora Perego, Istituto Italiano di Tecnologia, Italy

75-PLAT 8:15 AM
EVENT-DRIVEN ACQUISITION FOR CONTENT-ENRICHED MICROSCOPY. Dora Mahecic, **Willi L. Stepp**, Chen Zhang, Juliette Griffie, Martin Weigert, Suliana Manley

76-PLAT 8:30 AM
MULTI-COLOR SUPERRESOLUTION IMAGING TO STUDY HUMAN CORONAVIRUS RNA DURING CELLULAR INFECTION. **Anish R. Roy**, Jiarui Wang, Mengting Han, Haifeng Wang, Leonhard Möckl, Leiping Zeng, William E. Moerner, Lei S. Qi

77-PLAT 8:45 AM TRAVEL AWARD WINNER
IN-SITU CHARACTERIZATION OF ALZHEIMER'S DISEASE TAU AGGREGATES VIA SUPERRESOLUTION IMAGING. **Adriana N. Santiago Ruiz**, Arian Arab, Siewert Hugelier, Charles Bond, Melike Lakadamyali

78-PLAT 9:00 AM
DIRECT OBSERVATION AND CLASSIFICATION OF HETEROGENEOUS PROTEIN AGGREGATION IN REAL-TIME THROUGH SUPERRESOLUTION AND AGGREGATIONAL FINGERPRINTING. **Steen Bender**, Jacob Kæstel-hansen, Min Zhang, Nikos S. Hatzakis

9:15 AM Flash Talks

79-PLAT 9:30 AM
COMPREHENSIVE FLUORESCENCE LIFETIME FLUCTUATION SPECTROSCOPY TO INVESTIGATE PROTEIN MOBILITY DURING AGGREGATION PROCESSES IN LIVING CELLS. **Eleonora Perego**, Sabrina Zappone, Eli Slenders, Francesco Castagnetti, Erika Vitiello, Davide Mariani, Lorenzo S. Mecarelli, Irene Bozzoni, Giuseppe Vicidomini

80-PLAT 9:45 AM
SINGLE-MOLECULE LOCALIZATION MICROSCOPY OF EXPANDED MAMMALIAN CENTRIOLES UNRAVELS THE ULTRASTRUCTURAL CONSTITUTION OF DISTAL APPENDAGES. **Ting-Jui B. Chang**, Jimmy C-C. Hsu, Tony Yang

81-PLAT 10:00 AM TRAVEL AWARD WINNER
IDENTIFYING THE ROLE OF THE FACT HISTONE CHAPERONE IN EPIGENETICS THROUGH SINGLE-MOLECULE FLUORESCENCE IMAGING. **Yekaterina Fyodorova**, Saikat Biswas, Kaushik Ragunathan, Julie S. Biteen

CID Committee Meeting

8:30 AM - 10:30 AM, ROOM 14A

Career Development Center Workshop
Networking for Biophysicists: How to Create Your Dream Career

9:00 AM - 10:00 AM, ROOM 16B

In this session, we will discuss how to leverage networking to create a unique, customized career, which we call Your Dream Career. We will address how to understand your unique value, skills, and interests and how to align that with employers who will hire you. We will discuss various methods for finding and building win-win collaborations with people in different professions and pathways to create opportunities for your dream career to come to fruition.

Exhibitor Presentation
Oroboros Instruments GmbH

9:30 AM - 11:00 AM, ROOM 9

Mitochondrial Bioenergetics – A Quantitative Analytical and Diagnostic Approach
Mitochondrial fitness is essential for brain and muscle function, for resistance against preventable and age-related degenerative diseases and therefore for quality of life. The capacity of oxidative phosphorylation (OXPHOS) is a fundamental part of mitochondrial fitness and a key element in bioenergetics. Comprehensive and real-time OXPHOS analysis is based on biophysical and biochemical concepts related to mitochondrial core energy metabolism. It extends bioenergetics to the level of mitochondrial physiology for functional diagnosis in health and disease.

The Oroboros O2k is the state-of-the art respirometer for quantitative high-resolution respirometry (HRR) and comprehensive OXPHOS analysis. It has the high signal stability and unrestricted flexibility of titrations suited for application of complex substrate-uncoupler-inhibitor titration (SUIT) protocols which are the basis for investigating mitochondrial pathways and respiratory control in health and disease. High resolution and precise control of oxygen concentration enable studies of mitochondrial functions under normoxia, hypoxia, and hyperoxia.

With the O2k-FluoRespirometer, fluorometric assays for ROS production, mitochondrial membrane potential, ATP production, and calcium uptake can be measured in real-time and simultaneously in direct conjunction with HRR. Modules for monitoring Q- and NAD-redox states and PhotoBiology are implemented in the NextGen-O2k, further extending the analytical resolution and opening new windows to study biophysical principles of bioenergetics.

We will present applications of the NextGen-O2k and O2k-FluoRespirometer to explore mitochondrial physiology and pathology in various types of samples and find solutions to mitochondria-associated diseases.

Speaker
Erich Gnaiger, Founder & CEO, Oroboros Instruments GmbH

Exhibits

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

Meet the Editors, *Biophysical Journal*

10:15 AM - 11:00 AM, LOBBY BC/PUBLICATIONS BOOTH

Take this opportunity to meet editors of *Biophysical Journal*. Editors will be available to talk about the journal and answer questions about where you should submit your work, what will help to get your work published, and what you can expect when you submit. Editor-in-Chief Vasanthi Jayaraman and other editors will be present at the Biophysical Society publications booth.

Coffee Break

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

Exhibitor Presentation
Carl Zeiss Microscopy LLC

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

Discover How Accessible Lattice Light Sheet Technology and Image Analysis Really are with ZEISS Lattice Lightsheet 7
In order to best understand the world around us it is necessary to observe microscopic specimens in as natural a state as possible. This requires a transition from imaging fixed to live specimens and expanding from 2D to 3D model organisms. The drive towards live-cell imaging over long timeframes and at high volume speeds brings new challenges. There is evidence that traditional imaging techniques can influence the behavior of specimens due to phototoxicity, thus affecting the integrity of the results, and with the push to perform long-term volumetric imaging comes a need to analyze increasingly larger data sets.

This talk will describe how ZEISS Lattice Lightsheet 7 makes long-term volumetric imaging of living cells with subcellular resolution possible without having to change your standard sample preparation protocols to accommodate the instrument. With automatic alignment and easy acquisition workflows, lattice light-sheet imaging is now as accessible as using a standard inverted microscope. ZEISS ZEN microscopy software and arivis Vision4D provide analysis pipelines which can easily be utilized to go from large image datasets to results.

Join us for this presentation to learn how accessible lattice light sheet technology and image analysis really are with ZEISS Lattice Lightsheet 7, ZEN microscopy software and arivis Vision 4D.

Speaker
Renée Dalrymple, Life Science Business Sector Marketing Manager, Carl Zeiss Microscopy LLC

Symposium
Predicting Protein Fold

10:45 AM - 12:45 PM, ROOM 6A

Chair
John Moult, University of Maryland, USA

82-SYMP **10:45 AM**
MEMBRANE PROTEIN STRUCTURAL SYMMETRY AND ASSEMBLY PATTERNS. **Lucy R. Forrest**

83-SYMP **11:15 AM**
APPLYING AI METHODS TO PROTEIN BIOLOGY. **Kathryn Tunyasuvunakool**

84-SYMP **11:45 AM**
MEGA-SCALE ANALYSIS OF PROTEIN FOLDING STABILITY IN BIOLOGY AND PROTEIN DESIGN. **Gabriel J. Rocklin**, Kotaro Tsuboyama

85-SYMP **12:15 PM**
COMPUTATIONAL STRUCTURAL BIOLOGY IN THE ERA OF DEEP LEARNING. **John Moult**

Symposium
Optogenetics and Beyond

10:45 AM - 12:45 PM, ROOM 6B

Chair
Mikhail Shapiro, California Institute of Technology, USA

86-SYMP **10:45 AM**
DIVERSITY AND MOLECULAR MECHANISMS OF CHANNELRHODOPSINS. **Elena G. Govorunova**, Oleg A. Sineshchekov, Hai Li, John L. Spudich

87-SYMP **11:15 AM**
LEVERAGING OPTOGENETICS FOR CRISPRI SCREENS IN HUMAN IPSC-CARDIOMYOCYTES. **Emilia Entcheva**, Julie Han

88-SYMP **11:45 AM**
LIGHT-GUIDED EMBRYOGENESIS: USING OPTOGENETICS TO PROBE AND REPLACE DEVELOPMENTAL SIGNALING PATTERNS. **Jared E. Toettcher**

89-SYMP **12:15 PM**
BIOMOLECULAR ULTRASOUND FOR NONINVASIVE IMAGING AND CONTROL OF CELLULAR FUNCTION. **Mikhail G. Shapiro**

Symposium
Black in Biophysics: The Next Generation

10:45 AM - 12:45 PM, ROOM 6C

The Biophysical Society (BPS) has been a change agent for members of groups historically underrepresented in the physical and life sciences, women, and international scientists. We serve all members and our efforts to mentor and promote the careers of rising scientists underscores our belief that diversity will be enhanced if we invest in the next generation.

In this President's Symposium at the BPS Annual Meeting, we are taking the opportunity to highlight Black scientists and honor Black History Month in the U.S. and elsewhere. At our annual meeting, BPS aims to foster inclusion and the momentum inspired by the Black Lives Matter movement.

Featured are four stars from different fields, selected to attract a broad, interdisciplinary audience from across our Society. We invite all attendees to learn about exciting new developments in biophysics and celebrate diversity at this special symposium.

Co-chairs
Bil Clemons, California Institute of Technology, USA
Theanne Griffith, University of California, Davis, USA

No Abstract **10:45 AM**
MICROENVIRONMENT REGULATION OF METASTASIS. **Kandice Tanner**

No Abstract **11:15 AM**
COMPUTATIONAL APPROACHES FOR UNDERSTANDING AND ENGINEERING BIOMOLECULAR CONDENSATES. **Jerelle A. Joseph**

No Abstract **11:45 AM**
IN-CELL PROTEIN FOOTRPRINTING COUPLED TO MASS SPECTROMETRY TO STUDY PROTEIN INTERACTIONS IN COMPLEX MODEL SYSTEMS. **Lisa M. Jones**

No Abstract **12:15 PM**
MULTIMODAL PRECISION MEASUREMENT OF SINGLE CELLS. **Aaron Streets**

Platform
DNA Structure and Dynamics

10:45 AM - 12:45 PM, Room 6D

Co-Chairs
Lu Bai, Penn State University, USA
Xinyu A. Feng, Johns Hopkins University, USA

90-PLAT **10:45 AM**
LONG RANGE CHROMOSOMAL INTERACTIONS AND FIRST PASSAGE PROCESS IN BUDDING YEAST. **Lu Bai**

91-PLAT **11:00 AM**
TRANSCRIPTION-INDUCED ACTIVE FORCES SUPPRESS CHROMATIN MOTION BY INDUCING A TRANSIENT DISORDER-TO-ORDER TRANSITION. **Sucheol Shin**, Hyun Woo Cho, Guang Shi, Dave Thirumalai

92-PLAT **11:15 AM**
ROLE OF DNA SLIDING FRICTION AND NON-EQUILIBRIUM DYNAMICS IN VIRAL DNA EJECTION AND PACKAGING. **Mounir Fizari**, Paul Jardine, Douglas E. Smith

93-PLAT **11:30 AM**
DYNAMIC CONCATENATION LEADS TO ANOMALOUS TRANSPORT OF RING DNA IN CONCENTRATED SOLUTIONS. **Juexin Marfai**, Philip Neill, Ryan McGorty, Rae Robertson-Anderson

94-PLAT **11:45 AM**
DYNAMIC SELF-ORGANIZATION OF THE HUMAN GENOME DURING THE CELL CYCLE. **Suho Lee**, Alexandra Zidovska

95-PLAT **12:00 PM**
DNA BINDING DYNAMICS AND TARGET LOCATION MECHANISM OF PIONEER FACTOR GAF. **Xinyu A. Feng**, Kaitlin M. Ness, Celina Liu, Carl Wu, Taekjip Ha

96-PLAT **12:15 PM**
FROM SINGLE-MOLECULE TO SYNCHROTRON: NEW TOOLS FOR INVESTIGATING THE MOLECULAR MECHANISMS OF ABERRANT DNA DISEASES. **Alice V. Rhind-Tutt**, Sophie E. Fountain, Mahmoud A. Abdelhamid, Timothy D. Craggs

97-PLAT **12:30 PM**
INTERPHASE CHROMOSOMES OF THE *AEDES AEGYPTI* MOSQUITO ARE LIQUID CRYSTALLINE AND CAN SENSE MECHANICAL CUES. **Vinicius G. Contessoto**, Olga Dudchenko, Erez Aiden, Peter G. Wolynes, Jose N. Onuchic, Michele Di Pierro

Platform
Protein-Small Molecule Interactions

10:45 AM - 12:45 PM, Room 6E

Co-Chairs
Efthymios Kyriakis, University of British Columbia, Canada
Anna Pavlova, Georgia Institute of Technology, USA

98-PLAT **10:45 AM**
PREDICTING THE MECHANISM OF ACTIONS OF CAPSID ASSEMBLY MODULATORS FROM A COMBINATION OF MOLECULAR DYNAMICS AND MACHINE LEARNING. **Anna Pavlova**, Zixing Fan, Diane L. Lynch, James C. Gumbart

99-PLAT **11:00 AM**
HOW DOES A LIGAND EXIT FROM A BURIED RECEPTOR CAVITY? ATOMISTIC SIMULATIONS OF UNBINDING PATHWAYS WITH RIGOROUS KINETICS. **Marion L. Silvestrini**, Riccardo Solazzo, Matteo Masetti, Kevin H. Gardner, Lillian T. Chong

100-PLAT **11:15 AM**
THE EFFECT OF PFAS ON PPAR-GAMMA/RXR-ALPHA HETERODIMER. **Semiha Kevser Bali**, Nuno M. Almeida, Deepak James, Arohi Nair, Angela K. Wilson

101-PLAT **11:30 AM**
MOLECULAR FINGERPRINT IN HYALURONAN-PEPTIDE INTERACTIONS: COOPERATION OF ELECTROSTATICS AND SIDE-CHAIN SPECIFICITY IN ENHANCED ARGININE EFFECT. **Miguel Riopedre Fernández**, Denys Biriukov, Martin Dračínský, Hector Martinez-Seara

102-PLAT **11:45 AM**
MOLECULAR EVOLUTION OF EXTENDED SPECTRUM BETA-LACTAM RESISTANCE. **Ilona K. Gaszek**, Isik Kantarcioglu, M. Sadik Yildiz, Levent Sari, Ayesha Ahmed, Alan Katz, Milo M. Lin, Erdal Toprak

103-PLAT **12:00 PM**
VARIED MECHANISMS FOR THE NEUTRALIZATION OF BIOLOGICAL TOXINS USING NATURAL PRODUCTS. **Ryan Limbocker**, Justus Gabriel, Thomas Tan, Dillon J. Rinauro, Michele Vendruscolo

104-PLAT **12:15 PM** **Travel Award Winner**
STRUCTURAL INSIGHTS FOR THE MODULATION OF KCNQ1 CHANNEL BY ML277. **Efthymios Kyriakis**, Jodene Eldstrom, Katrien Willegems, Fariba Ataei, Harutyun Sahakyan, Ying Dou, Sophia Russo, Filip Van Petegem, David Fedida

105-PLAT **12:30 PM**
UNRAVELING THE MOLECULAR MECHANISM OF TYPE II TOPOISOMERASE POISONS WITH MAGNETIC TWEEZERS. **Ian L. Morgan**, Keir C. Neuman

Platform
Membrane Dynamics

10:45 AM - 12:45 PM, Room 6F

Co-Chairs
Rana Ashkar, Virginia Tech, USA
Georg Pabst, University of Graz, Austria

106-PLAT **10:45 AM**
THE ELECTROMECHANICS OF LIPID MEMBRANES: A DIMENSIONALLY-REDUCED THEORY. **Yannick Azhri Din Omar**, Zachary G. Lipel, Kranthi K. Mandadapu

107-PLAT **11:00 AM**
TOPOLOGICAL LEARNING APPROACH TO CHARACTERIZE LIPIDS. **Andres S. Arango**, Hyun Park, Emad Tajkhorshid

108-PLAT **11:15 AM**
INVESTIGATING THE ORGANISATION OF THE ASYMMETRIC PLASMA MEMBRANE USING A NOVEL SOLVATOCHROMIC REPORTER. **Chandrima Patra**, Maninder Singh, Thomas V. Zanten, Parvinder Pal Singh, Satyajit Mayor

109-PLAT **11:30 AM**
NANOSCALE MEMBRANE DYNAMICS IN CHAIN ASYMMETRIC LIPID BILAYERS. **Elizabeth G. Kelley**, Moritz P.K. Frewein, Georg Pabst, Michihiro Nagao

110-PLAT **11:45 AM**
LIPID SCRAMBLING FACILITATES MEMBRANE VESICULATION THROUGH DECREASING MEMBRANE STIFFNESS. **Hongyin Wang**, Kandice R. Levental, Joseph H. Lorent, Adhvikaa A. Revathi, Ilya Levental

111-PLAT 12:00 PM
ATOMISTIC INSIGHTS INTO THE ROLE OF SAR1 GTPASE IN COPII MEDIATED PROTEIN SECRETARY PATHWAY. **Sanjoy Paul**, Qiang Cui

112-PLAT 12:15 PM
CARGO CONTROL OF BULKY CARRIER FORMATION DURING COLLAGEN EXPORT. **Morgan Chabanon**, Nikhil Walani, Marino Arroyo, Felix Campelo

113-PLAT 12:30 PM
ACTIN RINGS FORM PLASMA MEMBRANE DIFFUSION BARRIERS. **Jakob Rentsch**, Batuhan Sezen, Selle Bandstra, Alena Bresch, Jia Hui Li, Francesca Bottanelli, Helge Ewers

Platform
Bioengineering

10:45 AM - 12:45 PM, ROOM 5AB

Co-Chairs
Reyhaneh Nazarian, University of California, Los Angeles, USA
Ingmar Riedel-Kruse, University of Arizona, USA

114-PLAT 10:45 AM
DYNAMICS AND THERMODYNAMICS OF BIMOLECULAR REACTIONS AT HETEROGENEOUS BIOLOGICAL INTERFACES. **Jae Kyoo Lee**

115-PLAT 11:00 AM
SYNTHETIC ADHESION LOGIC, SELF-ASSEMBLY OF BACTERIAL SWARMS, AND MULTICELLULAR TILING PATTERNS. **Ingmar H. Riedel-Kruse**, Honesty Kim, Dominc Skinner, David S. Glass, Alexander Hamby, Bradey Stuart, Jorn Dunkel

116-PLAT 11:15 AM TRAVEL AWARD WINNER
DUAL-PROTEIN PATTERNING TO INVESTIGATE EFFECTS OF CELL-CELL ADHESIONS ON HIPSC-CM MATURITY. **Kerry V. Lane**, Liam P. Dow, Shaylee R. Larson, Cheavar A. Blair, Beth L. Pruitt

117-PLAT 11:30 AM
DESIGN AND CHARACTERIZATION OF PROTEIN-BASED, PH-RESPONSIVE HYDROGELS WITH POTENTIAL BIOMEDICAL APPLICATIONS. **Eduardo A. Gaspar-Morales**, Anthony W. Waterston, Pedro Diaz-Parga, Ariell M. Smith, Roberto C. Andresen Eguiluz, Arvind Gopinath, Eva de Alba

118-PLAT 11:45 AM
INVESTIGATION THE ROLE OF BACTERIA IN CALCIUM OXALATE KIDNEY STONE FORMATION. **Reyhaneh Nazarian**, Kymora Scotland

119-PLAT 12:00 PM
ROLE OF CELL WALL ANISOTROPY ON GUARD CELL MECHANICS IN ARABIDOPSIS THALIANA. **Sedighe Keynia**, Leila Jaafar, Yintong Chen, Dolzodmaa Davaasuren, James Z. Wang, You Zhou, Wenlong Li, Charles T. Anderson, Joseph A. Turner

120-PLAT 12:15 PM
CONTROLLED MANIPULATION OF THE GUT MICROBIOME IMPROVES INTRACORTICAL MICROELECTRODE PERFORMANCE. **George F. Hoeferlin**, Jonathan Duncan, Jichu Zhang, Hyun Ju Lee, Christopher Hong, Grace Burkhart, Jennifer L. Cadnum, George E. Jaskiw, Curtis J. Donskey, Joseph J. Pancrazio, Horst von Recum, Jeffrey R. Capadona

121-PLAT 12:30 PM
MULTI-AXIS ELECTROMAGNETIC SAMPLE HANDLER FOR LIVE IMAGING OF ORGANOID STRUCTURES AND DYNAMICS. **Thaisa Luup Carvalho Kannen**, Laurence Pelletier, Christopher M. Yip

Platform
Motor Proteins and Cytoskeletal Assemblies I

10:45 AM - 12:45 PM, ROOM 11AB

Co-Chairs
Elizabeth Lawrence, Vanderbilt University, USA
George Shubeita, New York University Abu Dhabi, United Arab Emirates

122-PLAT 10:45 AM
KINESIN-1 UTILIZES A HIERARCHICAL FOLDING MECHANISM TO PROMOTE AUTOINHIBITION. **Zhenyu Tan**, Sarah Haynes, Yue Yang, Felipe Leprevost, Alexey Nesvizhskii, Kristen Verhey, Michael A. Cianfrocco

123-PLAT 11:00 AM
TRAK ADAPTORS REGULATE THE RECRUITMENT AND ACTIVATION OF DYNEIN AND KINESIN IN MITOCHONDRIAL TRANSPORT. **Merve Aslan**, Andrew M. Hensley, John Canty, Amanda Jack, Ahmet Yildiz

124-PLAT 11:15 AM
THE MICROTUBULE ASSOCIATED PROTEIN 4 (MAP4) SWEEPS ORGANELLES TOWARDS THE NUCLEUS BY WEAKENING THE KINESIN MOTOR. Ibtissem Nabti, Babu Reddy Janakaloti Narayanareddy, Rachid Rezgui, Wenqi Wang, Steven Gross, **George T. Shubeita**

125-PLAT 11:30 AM
CHARACTERIZING TUBULIN INTERACTIONS WITH THE PROLINE RICH REGION OF TAU. **Karen Acosta**, Elizabeth Rhoades

11:45 AM Flash Talks

126-PLAT 12:00 PM
KATANIN ACTIVITY IN TAU ENVELOPES NEGATIVELY CORRELATES WITH ATP LEVELS. **Lenka Grycova**, Tereza Humhalova, Tomas Zdobinsky, Stefan Diez, Ivan Barvik, Lenka Libusova, Marcus Braun, Zdenek Lansky

127-PLAT 12:15 PM
CLASP'S DICTATE THE TUBULIN OFF-RATE TO REGULATE MICROTUBULE DYNAMICS. **Elizabeth J. Lawrence**, Saptarshi Chatterjee, Marija Zanic

128-PLAT 12:30 PM
STEPS OF ACTIN FILAMENT BRANCH FORMATION BY ARP2/3 COMPLEX INVESTIGATED WITH COARSE-GRAINED MOLECULAR DYNAMICS. **Shuting Zhang**, Dimitrios Vavylonis

Undergraduate Student Pizza "Breakfast"

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

Connect with other undergraduates at this "breakfast" for a valuable networking and social opportunity. You will also have a chance to meet and talk to Biophysical Society Committee members, and scientists at all career levels to discuss academic goals and questions and learn how to develop a career path in biophysics. Hear from invited speaker(s) who will share their stories and answer questions. Space for this session is limited to the first 100 attendees.

Exhibitor Presentation
Journal of General Physiology (JGP)

11:30 AM - 1:00 PM, ROOM 9

Career Development Center Workshop
Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn and More

12:00 PM - 1:00 PM, ROOM 16B

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.

Public Affairs Committee Meeting

12:00 PM - 1:30 PM, ROOM 14A

BPS/IOP Advisory Board Meeting

12:00 PM - 4:00 PM, ROOM 17B

Exhibitor Presentation
PicoQuant Photonics North America Inc

12:30 PM - 2:00 PM, ROOM 10

Quantitative, Reproducible Fluorescence Microscopy Made Easy
Quantitative single molecule and time-resolved fluorescence techniques offer new insights into many samples in life and materials sciences. So far, their adoption has been slow because expert knowledge was required for correct data acquisition and analysis. Now, PicoQuant developed a new single photon counting confocal microscope, called Luminosa. It combines state-of-the-art hardware with cutting edge software to deliver high quality data while simplifying daily operation. The system software includes context-based workflows for each technique, which improve accuracy and reproducibility of experiments.

Advanced integration of hardware and software enables new features such as sample-free auto-alignment, excitation laser power calibration, and automatic configuration of hardware parameters for time-resolved measurements. These features make experiments more efficient and reliable.

Dr. Koenig and Dr. Sisamakis will present how Luminosa brings single molecule Förster Resonance Energy Transfer (smFRET) experiments to a new level. For example, FRET efficiency (E) and stoichiometry (S) are calculated online, corrected according to the standard procedure of the community, and displayed live in an E/S histogram during the measurement.

Finally, Dr. Koenig and Dr. Sisamakis will describe how fluorescence lifetime imaging (FLIM) is streamlined with Luminosa. Its rapidFLIM hardware can record several frames per sec with very high photon count rates. The software handles these with a novel dynamic binning format. In combination with GPU-accelerated algorithms, this enables high-speed analysis of FLIM images. The automated analysis algorithm suggests the best model for multiexponential fitting, calculates a phasor plot and offers pattern matching.

A lot of expert knowledge went into the design of Luminosa. This empowers researchers to confidently explore new paths with time-resolved fluorescence techniques.

Speakers
Evangelos Sisamakis, Product Manager Microscopy, PicoQuant GmbH
Marcelle Koenig, PicoQuant GmbH

Workshop
Writing Award Nomination and Support Letters

1:00 PM - 2:30 PM, ROOM 6D

Helping your colleagues, mentors, and mentees be recognized via awards, promotions, or hires is an important skill for everyone. If you choose a career in research and/or education, you will likely be asked to write many such letters. In this workshop, Biophysical Society Fellows will discuss what makes an effective letter. For practice, we recommend you come with a candidate in mind for one of the BPS awards. Effective nominations can come from scientists at any career stage!

Chair
Susan Marqusee, University of California, Berkeley, USA

Education and Career Opportunities Fair

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

Come to this fair to meet with representatives from educational institutions as well as industry and government agencies. Students and postdoctoral candidates will be able to meet with representatives from colleges and universities with leading programs in biophysics. Attendees can connect with representatives from industry and agencies who will provide information about employment and funding opportunities at their institutions/companies.

Learn about the variety of opportunities available and to talk one-on-one with representatives from participating organizations!

Exhibitor Presentation
Mad City Labs Inc

1:30 PM - 3:00 PM, ROOM 9

Open and Flexible Microscopy Systems for Combined Single-Molecule Methods
Speaker: Eric Drier, Senior Scientist, Mad City Labs Inc
Open and flexible microscopy systems have distinct advantages for implementing novel biophysical methods. This session focuses on 3 such systems, each of which combines precision motion control with single molecule measurements.

Quantification of Lipid Diffusion Dynamics on Live Cell Membranes through Interferometric Scattering Microscopy
Speaker: Francesco Reina, Leibniz-Institut für Photonische Technologien e.V. and Institute of Applied Optics and Biophysics, Friedrich Schiller University Jena, Germany
The study of single lipid dynamics on membranes requires simultaneously high localization precision and temporal resolution, a feat that few microscopy techniques are able to achieve. We show how Single Particle Tracking through Interferometric Scattering (ISCAT) microscopy has given us new insights in the compartmentalization of plasma membrane structure, and the diffusion modes of single, gold-nanoparticle tagged lipids. The tracked lipids appear to diffuse through a “hopping” motion between compartments of nanoscopic size (100-120nm) with a probability of crossing the boundary. These results were confirmed with the use of particle diffusion simulations in a corralled, two-dimensional plane, which also serve to estimate the “hopping” probability.

A Single-Molecule View on Dynamic Chromatin Access of Epigenetic Regulatory Factors
Speaker: Beat Fierz, École Polytechnique Fédérale de Lausanne, Switzerland
The dynamic organization of the eukaryotic genome into chromatin is integral to its regulation. We develop single-molecule colocalization imaging and single-molecule FRET approaches to directly observe the dynamic architecture of chemically defined chromatin fibers. We found that local chromatin undergoes structural fluctuations on the micro- to millisecond timescale. Internal chromatin dynamics are exploited by transcription factors to invade chromatin structure. Using single-molecule imaging, we recently revealed DNA access mechanisms for pioneer TFs, genome editors and centromeric proteins. Overall, our results show that compact chromatin structure hinders factor access, but mechanisms that open nucleosome contacts, including his-

tone variants and chromatin remodeling complexes can help key factors to overcome these obstacles.

Magnetic Tweezers Investigations of the Type IA Topoisomerase of Mycobacterium Smegmatis
Speaker: Maria Mills, Department of Physics and Astronomy, University of Missouri
Type IA topoisomerases relieve torsional strain in supercoiled DNA. These enzymes work by cleaving the backbone of one strand of a DNA duplex, passing the other strand through the break, and re-ligating the DNA. We have used magnetic tweezers to characterize Mycobacterium smegmatis topoisomerase I (MsmTOP1). In addition to a conserved core domain common to all type IA topoisomerases, Mycobacteria type IA topoisomerases have unique DNA-binding C-terminal domains that are involved in passage of the second DNA strand through a protein-mediated DNA gate. In separate magnetic tweezers assays, we measured the supercoil relaxation activity and DNA-gate dynamics of the wildtype and mutants lacking portions of the C-terminus. Our results provide new information on the role of these C-terminal domains in the topoisomerase activity.

Snack Break

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

Poster Presentations and Late Posters

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

Teaching Science Like We Do Science

2:00 PM - 4:00 PM, ROOM 1AB

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.

Career Development Center Workshop
I Need a Job Right Now – What Do I Do?

2:30 PM - 3:30 PM, ROOM 16B

This session will give a step-by-step strategy to land a job right now, and is applicable to academia, industry, and any other ecosystem.

All About ARPA-H
Exploring Opportunities at the New Agency

2:30 PM - 4:00 PM, ROOM 8

The Advanced Research Projects Agency for Health (ARPA-H) will be entering its first full year of operation in 2023. Join the Public Affairs Committee as we learn more about the fledgling high-risk, high-reward research agency, how the structure will continue to form, exploring what opportunities exist and how does that fit into the larger research funding sources available to biophysicists.

Exhibitor Presentation
Oxford Instruments

2:30 PM - 4:00 PM, ROOM 10

Multi-Modal Microscopy: Challenges and Workflows for Correlative Microscopy Acquisition and Analysis
Correlative microscopy data is beautiful and incredibly complex, particularly when dealing with data acquired at significantly different magnification scales, 3D data, data acquired using analytical techniques or dynamic data that has been acquired at multiple time points with more than one type of imaging technique. Combining multiple microscopy techniques can have more than one purpose, enabling researchers to better target regions of interest and optimize microscope and researcher time, and also to enable a deeper insight into the structural and functional properties of your sample.

Where do you begin with multi-modal microscopy?
This interactive workshop will take you through some of the considerations for biological microscopists when approaching correlative microscopy, including sample preparation, how to find your regions of interest, and how to determine the sequence of microscopy techniques. We will also provide case studies using a range of techniques for correlative microscopy research on biological samples, including analytical techniques that go beyond structural imaging; Raman spectroscopy, atomic force microscopy (AFM), electron microscopy, and energy dispersive x-ray spectrometry (EDS).

How do you analyze the data?
Collecting the data is only the start, a significant proportion of research time is spent on data collation and interpretation. The final part of this workshop will discuss techniques to process correlative data and optimize your analysis, taking you beyond image overlays through to producing quantitative, analytical results.

Speaker
Louise Hughes, Business Manager, Oxford Instruments

Early Careers Committee Meeting

3:30 PM - 5:00 PM, ROOM 14A

Exhibitor Presentation
Fluxion Biosciences

3:30 PM - 5:00 PM, ROOM 9

From Immunology to Ion Channels: Microfluidic Approaches to Automated Patch Clamp and Cellular Analysis. A Look at IonFlux Mercury and BioFlux Systems from Fluxion Biosciences.
Leveraging proprietary microfluidic approaches, Fluxion Biosciences provides unique solutions that simplify and automate complex cell-based assays. This presentation will cover two Fluxion systems used extensively in biophysical characterization of cells: IonFlux and BioFlux.

IonFlux Mercury automated patch clamp (APC) systems are capable of recording from 16 to 256 separate cells simultaneously in whole cell patch clamp mode. With unique features such as industry-leading fast in-PLATe compound exchange and continuous solution flow, IonFlux systems are used globally in pharma and academic laboratories for both ligand and voltage-gated ion channel screening. Recent developments include automated IC/EC50 calculation workflows, and the introduction of a new range of GABA cells for complete sample-to-result analysis.

The BioFlux system is the world's leading PLATform for analyzing cell-cell interactions in a flow-controlled environment. Applications include characterization of cell migration, adhesion strength, transmigration, and chemotaxis. BioFlux assays for research and drug development in immunology, vascular biology, and cancer will be reviewed. Recent research in covid-induced thrombocytopenia and functional analysis of CAR-T cells will be highlighted.

Speakers
Jeff Jensen, Chief Executive Officer, Fluxion Biosciences
Ali Yehia, Chief Scientific Officer, Fluxion Biosciences

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

4:00 PM - 5:00 PM, ROOM 16B

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 14B

Symposium
The RNA World

4:00 PM - 6:00 PM, ROOM 6A

Chair
Jeffrey Chao, Friedrich Miescher Institute for Biomedical Research, Switzerland

129-SYMP 4:00 PM
RNA MODIFYING ENZYMES IN HEALTH AND DISEASE. **Wendy Gilbert**, Austin Draycott, Matthew Wang, Luisa Escobar-Hoyos

130-SYMP 4:30 PM
MODELING OF RNA-ONLY STRUCTURES. **Rhiju Das**

131-SYMP 5:00 PM
RNA EXCITED STATES BY NMR AND THEIR IMPACT ON FUNCTION. **Katja Petzold**

132-SYMP 5:30 PM
IMAGING THE LIFE AND DEATH OF MRNAS IN SINGLE CELLS. **Jeffrey Chao**

Symposium
New and Notable

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

Co-chairs
Baron Chanda, Washington University in St. Louis, USA
Janice Robertson, Washington University in St. Louis, USA

No Abstract 4:00 PM

MEMBRANE VESICLES AS SHEPHERDS OF THE RNA WORLD. **Irene Chen**

No Abstract 4:30 PM
ACTIVATION MECHANISM OF THE COLD-SENSING TRPM8 CHANNEL BY COOLING AGENTS AND PIP2. **Seok-Yong Lee**

No Abstract 5:00 PM
MEMBRANE SHAPING AND REMODELING BY TETRASPANIN PROTEINS. **Raya Sorkin**

No Abstract 5:30 PM
HOW CAN BACTERIA BREATHE WITHOUT OXYGEN OR SOLUBLE ELECTRON ACCEPTORS? PROTEIN NANOWIRES: STRUCTURES, FUNCTIONS, AND ELECTRON TRANSFER MECHANISMS. **Nikhil Malvankar**

Platform
Skeletal Muscle Mechanics, Structure, and Regulation

4:00 PM - 6:00 PM, ROOM 6C

Co-Chairs
Ashley Martin, University of Minnesota, USA
Andrew Mead, University of Vermont, USA

133-PLAT 4:00 PM
BUTYRATE ENDOWS EXTRAOCULAR MUSCLE STEM CELL-LIKE TRANSCRIPTOMIC PATTERNS THAT AMELIORATE SATELLITE CELL DEPLETION AND DENERVATION TO SLOW ALS PROGRESSION. **Ang Li**, Jianxun Yi, Xuejun Li, Li Dong, Lyle W. Ostrow, Jianjie Ma, Jingsong Zhou

134-PLAT 4:15 PM
A NEW TOOL FOR PRODUCING AND INVESTIGATING RECOMBINANT SARCOMERIC ACTIN. Aditi Madan, Jennifer Cossentino, Meera C. Viswanathan, William Schmidt, Axel Fenwick, Kripa Chitre, John Dawson, **Anthony Cammarato**

135-PLAT 4:30 PM
INTERROGATION OF SKELETAL MUSCLE ACTIVATION IN AN INTACT SYSTEM VIA A MYOFILAMENT INCORPORATED FRET BIOSENSOR. **Ashley A. Martin**, Brian R. Thompson, Joseph M. Metzger

136-PLAT 4:45 PM
MUSCLE LENGTH ALTERS ACTIVATION KINETICS IN FAST-TWITCH EDL MUSCLE AND RELAXATION KINETICS IN SLOW-TWITCH SOLEUS MUSCLE. **Saffie Mohran**, Henry M. Gong, Michael Regnier, Thomas C. Irving, Weikang Ma

137-PLAT 5:00 PM
MYOSIN BINDING PROTEIN H DOMINATES THE "C-ZONE" IN ULTRAFAST SWIMMING MUSCLES OF DEVELOPING ZEBRAFISH. **Andrew F. Mead**, Neil B. Wood, Shane R. Nelson, Guy G. Kennedy, Angela Ploysangngam, Alicia M. Ebert, Aaron N. Johnson, Christina A. Gurnett, Michael J. Previs, David M. Warshaw

138-PLAT 5:15 PM
THE ORGANISATION OF TITIN AT THE CENTRE OF THE VERTEBRATE STRIATED MUSCLE THICK FILAMENT. **Pauline Bennett**, Martin Rees, Sarah Grover, Atsushi Fukuzawa, Alexander Alexandrovich, Roberto Steiner, Mathias Gautel

139-PLAT 5:30 PM
TITIN FUNCTION IN THE ACTIVE SARCOMERE STUDIED IN FROG MUSCLE FIBERS UPON INHIBITION OF MYOSIN MOTORS BY PARA-NITRO-BLEBBISTATIN. **Caterina Squarci**, Pasquale Bianco, Massimo Reconditi, Irene Pertici, Marco Caremani, Theyencheri Narayanan, Adam I. Horvath, Andras Malnasi-Csizmadia, Marco Linari, Vincenzo Lombardi, Gabriella Piazzesi

140-PLAT 5:45 PM
FITTING A MODEL TO MULTISCALE DATA SUGGESTS THICK FILAMENT ACTIVATION CAN PRODUCE FORCE DEPRESSION IN MUSCLE FIBERS. **Sam Walcott**, Shuyue Liu, Christopher Marang, Mike Woodward, Venus Joumaa, Tim Leonard, Brent Scott, Edward P. Debold, Walter Herzog

Platform
General Protein-Lipid Interactions

4:00 PM - 6:00 PM, ROOM 6D

Co-Chairs
Andrea Gohlke, AstraZeneca, United Kingdom
Samsuzzoha Mondal, University of Pennsylvania, USA

141-PLAT 4:00 PM TRAVEL AWARD WINNER
PIP2 BINDING AT THE VOLTAGE SENSOR DOMAIN FACILITATES KCNQ1 VSD ACTIVATION AND GATING. **Tanadet Pipatpolkai**, Darko Mitrovic, Jianmin Cui, Lucie Delemotte

142-PLAT 4:15 PM TRAVEL AWARD WINNER
CHANNEL-LIPID INTERACTIONS DRIVE THE EMERGENCE OF ION CHANNEL CLUSTERING, CHANNEL-CHANNEL COOPERATIVITY, AND ACTIVATION HYSTERESIS. **Antonio Suma**, Daniel Sigg, Abhinav Srivastava, Giuseppe Gonnella, Vincenzo Carnevale

143-PLAT 4:30 PM
CHOLESTEROL ESTERS LIPID DROPLETS BIOGENESIS. **Calvin Dumesnil**

144-PLAT 4:45 PM TRAVEL AWARD WINNER
THE ELECTROSTATIC BASIS OF DIACYLGLYCEROL PYROPHOSPHATE-PROTEIN INTERACTION. **Desmond Owusu Kwarteng**, Zachary Graber, Shannon Lange, Yannis Koukanas, Hady Khalifa, Jean W. Mutambuze, Edgar E. Kooijman

145-PLAT **5:00 PM**
CALMODULIN EXTRACTS THE RAS FAMILY PROTEIN RALA FROM LIPID BILAYERS BY ENGAGEMENT WITH TWO MEMBRANE-TARGETING MOTIFS. **Andrea Gohlke**, Samuel G. Chamberlain, Arooj Shafiq, Iolo J. Squires, Darerca Owen, Helen Mott

146-PLAT **5:15 PM**
ALLOSTERIC MODULATION OF THE INTEGRAL ENZYME OMPLA BY MEMBRANE ASYMMETRY. **Enrico F. Semeraro**, Paulina Piller, Sandro Keller, Georg Pabst

147-PLAT **5:30 PM**
PHASE SEPARATION CAN REGULATE MEMBRANE CURVATURE GENERATION BY BAR-PROTEINS. **Samsuzzoha Mondal**, Karthik Narayan, Tobias Baumgart

148-PLAT **5:45 PM**
DIRECT INTERACTIONS BETWEEN PICORNAVIRUS 3CD PROTEIN AND PHOSPHOINOSITIDE LIPIDS IN VIRUS REPLICATION ORGANELLES. **David D. Boehr**, Dennis S. Winston, Jie Yu

Platform
Protein Dynamics and Allostery I

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

Co-Chairs
Lauren Alexandrescu, University of Oxford, United Kingdom
Ferran Feixas, University of Girona, Spain

149-PLAT **4:00 PM**
TIME EVOLUTION OF THE SUBSTRATE-INDUCED MILLISECOND ALLOSTERIC ACTIVATION OF IMIDAZOLE GLYCEROL PHOSPHATE SYNTHASE. **Ferran Feixas**

150-PLAT **4:15 PM**
DELINEATING THE CONFORMATIONAL LANDSCAPE OF CANNABINOID RECEPTOR 1 (CB1R) USING GAUSSIAN ACCELERATED MOLECULAR DYNAMICS AND NETWORK ANALYSIS. **Peter Obi**, Senthil Natesan

151-PLAT **4:30 PM**
DYNAMIC ALLOSTERIC NETWORKS DRIVE ADENOSINE A_1 RECEPTOR ACTIVATION AND G-PROTEIN COUPLING. **Miguel A. Maria-Solano**, Sun Choi

152-PLAT **4:45 PM**
ELECTROSTATIC NETWORKS FOR CHARACTERIZATION OF ALLOSTERIC PATHWAYS: ALLOSTERIC PATHS IN CAS9 APO, DNA- AND RNA-BOUND FORMS. **Federica Maschietto**, Gregory W. Kyro, Brandon Allen, Pablo R. Arantes, Giulia Palermo, George P. Lisi, Victor S. Batista

153-PLAT **5:00 PM** **TRAVEL AWARD WINNER**
LAWS: LOCAL ALIGNMENT OF WATER SITES - DESCRIBING ALLOSTERIC WATER NETWORKS IN ENZYMES. **Eugene Klyshko**, Justin S. Kim, Sarah Rauscher

154-PLAT **5:15 PM**
A CENTRAL HELICAL SWITCH CONTROLS INTEGRATED STRESS RESPONSE SIGNALING VIA EIF2B CONFORMATION AND ASSEMBLY. **Rosalie Lawrence**, Sophie Shoemaker, Aniliese Deal, Lan Wang, Susan Marqusee, Peter Walter

155-PLAT **5:30 PM**
INFLUENTIAL NODES DRIVE DYNAMIC ALLOSTERY IN PROTEIN TYROSINE PHOSPHATASES. **Colin L. Welsh**, Alexandr P. Kornev, Lalima K. Madan

156-PLAT **5:45 PM**
THE MOLECULAR BASIS OF PROTEOLYTIC INACTIVATION IN THE HUMAN LONP1 PROTEASE VIA LONG-TIMESCALE MOLECULAR DYNAMICS. **Lauren A. Alexandrescu**, Gabriel C. Lander, Philip C. Biggin

Platform
Membrane Pumps, Transporters, and Exchangers

4:00 PM - 6:00 PM, ROOM 6F

Co-Chairs
Oliver Beckstein, Arizona State University, USA
Hristina Zhekova, University of Calgary, Canada

157-PLAT **4:00 PM**
NECESSARY AND SUFFICIENT MOLECULAR DETERMINANTS OF QUATERNARY AMMONIUM ANTISEPTIC EXPORT BY SMALL MULTIDRUG RESISTANCE TRANSPORTERS. **Olive E. Burata**, Victoria E. O'Donnell, Jeonghoon Hyun, Randy Stockbridge

158-PLAT **4:15 PM**
ELEVATOR TRANSPORT MECHANISM IN SLC4 TRANSPORTERS: INSIGHTS FROM NEW INWARD FACING CRYO-EM STRUCTURES OF AE1. **Hristina R. Zhekova**, Jiansen Jiang, Weiguang Wang, Kirill Tsirulnikov, Gülru Kayık, Hanif Muhammad Khan, Rustam Azimov, Natalia Abuladze, Liyo Kao, Debbie Newman, Sergei Y. Noskov, D. Peter Tieleman, Hong Zhou, Alexander Pushkin, Ira Kurtz

159-PLAT **4:30 PM**
CONFORMATIONAL DYNAMICS AND PH-REGULATION IN APCT. **Kelli N. Kazmier**, Dungeng Peng, Brandy Verhalen, Jeanette Matthieu, Matthias Quick, Richard A. Stein, Hassane S. Mchaourab

160-PLAT **4:45 PM**
INSIGHTS INTO AUTOREGULATION OF A MEMBRANE PROTEIN COMPLEX BY ITS CYTOPLASMIC DOMAINS. **Vanessa Leone**, Lucy R. Forrest, Richard Bradshaw, Caroline Koshy, Paul S. Lee, Maria Cristina Fenollar-Ferrer, Veronika Heinz, Christine M. Ziegler

161-PLAT **5:00 PM**
THERMODYNAMICALLY CONSISTENT STOCHASTIC MODELS FOR ACTIVE TRANSMEMBRANE TRANSPORT PROCESSES. **Oliver Beckstein**, Ian M. Kenney, Nikolas Awtrey, Shujie Fan

1945-Pos **5:15 PM**
ELUCIDATING BACTERIAL LIPID TRANSPORT MECHANISMS BY THE ENVELOPE-SPANNING LETAB COMPLEX. **Cristina C. Santarossa**, Max Haase, Minkyung Baek, David Baker, Damian Ekiert, Gira Bhabha

163-PLAT **5:30 PM**
LIPID TRANSLOCATION IN THE OMEGA-3 FATTY-ACID TRANSPORTER MFSD2A. **Louis Tung Faat Lai**, Nguyen Chi, Hsiang-Ting Lei, Gallenito J. Marc, Xuelang Mu, Tamir Gonen, Doreen Matthies

164-PLAT **5:45 PM** **TRAVEL AWARD WINNER**
COMPLEMENTARY *IN VITRO* FUNCTIONAL STUDIES AND *IN SILICO* ALCHEMICAL FREE ENERGY SIMULATIONS OF THE SARCO-ENDOPLASMIC RETICULUM CALCIUM PUMP (SERCA) AND PHOSPHOLAMBAN (PLN) COMPLEX. **Nishadh Rathod**, Joseph O. Primeau, Christophe J. Chipot, Benoit Roux, Howard S. Young

Platform
Calcium Handling and Electrophysiology I

4:00 PM - 6:00 PM, ROOM 5AB

Co-Chairs
Chen-Wei Tsai, University of Colorado Denver, USA
Rengasayee Veeraraghavan, The Ohio State University, USA

165-PLAT 4:00 PM
RECONSTITUTION OF DEPOLARIZATION-INDUCED CA^{2+} RELEASE FOR VALIDATION OF SKELETAL MUSCLE DISEASE MUTATIONS AND DRUG DISCOVERY. **Takashi Murayama**, Nagomi Kurebayashi, Takuro Numaga-Tomita, Takuya Kobayashi, Shuichi Mori, Ryosuke Ishida, Hiroyuki Kagechika, Mitsuhiko Yamada, Takashi Sakurai

166-PLAT 4:15 PM
ELEVATED CA^{2+} AT THE TRIAD JUNCTION UNDERLIES DYSREGULATION OF CA^{2+} SIGNALING IN DYSFERLINOPATHY. **Valeriy I. Lukyanenko**, Joaquin M. Muriel, Robert J. Bloch

167-PLAT 4:30 PM
QUANTITATIVE MALE-TO-FEMALE TRANSLATION OF CARDIAC ELECTROPHYSIOLOGICAL RESPONSE TO DRUGS. **Kim T. Hellgren**, Haibo Ni, Stefano Morotti, Eleonora Grandi

168-PLAT 4:45 PM TRAVEL AWARD WINNER
MOLECULAR AND CELLULAR MECHANISMS UNDERLYING TISSUE-SPECIFIC MICU-DIMER ASSEMBLY IN THE MITOCHONDRIAL CALCIUM UNIPORTER COMPLEX. **Chen-Wei Tsai**, Madison Rodriguez, Ming-Feng Tsai

5:00 PM Flash Talks

169-PLAT 5:15 PM
EMPAGLIFLOZIN AND ROS-CAMKII-LATE SODIUM CURRENT SIGNALING IN HEART FAILURE WITH PRESERVED EJECTION FRACTION. **Bence Hegyi**, Juliana Mira Hernandez, Erin Y. Shen, Emily R. Spencer, Daria Smoliarchuk, Tory A. Edwards, Christopher Y. Ko, Julie Bossuyt, Donald M. Bers

170-PLAT 5:30 PM
A SYSTEMATIC INVESTIGATION OF THE CARDIAC INTERCALATED DISK IN HEALTH AND DISEASE. **Heather Struckman**, Nicolae Moise, Ryan King, Andrew M. Soltisz, Andrew Buxton, Izabella Dunlap, Zhenhui Chen, Przemyslaw Radwanski, Seth H. Weinberg, Rengasayee Veeraraghavan

171-PLAT 5:45 PM TRAVEL AWARD WINNER
ACTION POTENTIAL HETEROGENEITY IN THE MYOSIN BINDING PROTEIN C3 MUTANT, R943X. **Mena Abdelsayed**, Mark Mercola

Platform
Molecular Dynamics I

4:00 PM - 6:00 PM, ROOM 11AB

Co-Chairs
Rafael Bernardi, Auburn University, USA
Yuji Sugita, RIKEN, Japan

172-PLAT 4:00 PM
MOLECULAR MECHANISMS OF BIOFILM FORMATION IN *STAPHYLOCOCCI* BACTERIA: HOW ANTIBIOTIC RESISTANT BACTERIA IS EVOLVING TO BECOME MORE RESILIENT TO MECHANICAL FORCE LOADS. Priscila S. Gomes, Marcelo Cardoso dos Reis Melo, Diego E. Barreto Gomes, **Rafael C. Bernardi**

173-PLAT 4:15 PM
FAST, CONFORMATION-INDEPENDENT CHARGES WITH GRAPH CONVOLUTIONAL NETWORKS. **Lily Wang**, Simon Boothroyd, Joshua T. Horton, Matthew W. Thompson, Michael R. Shirts, Daniel J. Cole, John D. Chodera, David L. Mobley

174-PLAT 4:30 PM
FROM INTEGRATIVE ATOMIC-RESOLUTION ENSEMBLES OF DISORDERED PROTEINS TO SIMULATIONS OF PHASE-SEPARATED CONDENSATES. **Lukas S. Stelzl**, Lisa M. Pietrek, Xiaofei Ping, Andrea Holla, Mateusz Sikora, Juergen Koefinger, Dorothee Dormann, Benjamin Schuler, Markus Zweckstetter, Gerhard Hummer

175-PLAT 4:45 PM
AN INTEGRATIVE APPROACH TO MOLECULAR DYNAMICS AND SINGLE MOLECULE FRET TECHNIQUES. **Mahmoud Moradi**, Maolin Lu, Reza Vafabakhsh, Colin D. Heyes

176-PLAT 5:00 PM
IMPROVED POLARIZABLE FORCE FIELD FOR MODELING MG^{2+} BINDING TO PROTEINS AND NUCLEOTIDES. **Julian A. Melendez**, Peter R. Nagy, Sameer Varma

177-PLAT 5:15 PM
PROBING ENDOPHILIN-MEDIATED ENDOCYTOSIS VIA MOLECULAR DYNAMICS SIMULATIONS. **Jeriann Beiter**, Patricia M. Bassereau, Gregory A. Voth

178-PLAT 5:30 PM
INDUCING CONCENTRATION GRADIENTS ACROSS THE MEMBRANE IN MOLECULAR DYNAMICS SIMULATIONS TO INVESTIGATE MEMBRANE PERMEABILITY. **Eric Shinn**, Emad Tajkhorshid

179-PLAT 5:45 PM
BINDING FREE ENERGY LANDSCAPE OF C-SRC KINASE TO ITS INHIBITORS SAMPLED BY MOLECULAR DYNAMICS SIMULATIONS: EFFECT OF LIGAND SIZE AND FLEXIBILITY. Ai Shinobu, Suyong Re, **Yuji Sugita**

PI to PI
A Wine and Cheese Mixer

4:00 PM - 6:00 PM, ROOM 2

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: Fluidic Analytics

4:30 PM - 6:00 PM, ROOM 10

Introducing Microfluidic Diffusional Sizing (MDS) Technology; Quantify and Characterize Any Protein Interaction – Even in Complex Backgrounds, Even with Challenging Targets
Studying protein interactions is of fundamental importance in a wide variety of research fields, including neurobiology, oncology, immunology, structural biology, and molecular biology.

The more scientists understand about protein interactions, the more we will know about the inner workings of a cell, and crucially, the better we will understand what happens when normal cellular function is subverted in human disease. But, with a multitude of different technologies on the market, how do researchers know which technique is right for them?

Microfluidic Diffusion Sizing technology (MDS) brings a new tool to the analytical characterization toolbox: a different approach that enables the analysis of protein interactions close to in vivo conditions.

Measuring What Matters
With MDS, scientists can determine affinity of interaction (KD), concen-

tration of bound protein, and stoichiometric information, in solution, and all in a single experiment, whether using simple biological buffer systems or complex backgrounds such as serum, plasma, saliva, and cell lysates. The MDS technology enables quantification and characterization of any protein interaction – even in complex backgrounds or with challenging targets

• Characterize membrane proteins
• Track functional immune response in serum samples
• Reveal therapeutic antibody / protein interaction mechanisms
• Characterize disordered proteins, higher-order complexes, or amyloids under close to in vivo conditions
• Explore aggregation effects and distinguish between specific and non-specific binding

During our presentation we will describe a series of case studies and collaborations with pioneering researchers covering such topics:

• Purification-free affinity and concentration measurement of membrane-protein targets
• Determination of antibody affinities and concentrations directly in clinical samples
• In-solution measurement of antibody affinities and binding stoichiometries to neurotoxic amyloid species
• Binding of Fc-engineered IgG antibodies to FcRn
• In-solution affinity measurement of a drug-induced protein complex

Speaker
Molly Coseno, Sales Application Specialist, Fluidic Analytics

Korean Biophysicists Meeting

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

Exhibitor Presentation
LUMICKS

5:30 PM - 7:00 PM, ROOM 9

From Dynamic Single-Molecule Data to Direct Quantitative Insights Into Biological Mechanisms
The value of dynamic single-molecule research in providing direct insight into the molecular mechanisms of biology has been proven for many years. However, this realm of science has long been accessible only to experts that could build and operate complex instruments, had the knowledge to produce specific samples, and could develop sophisticated methods for analyzing the data.

The LUMICKS C-Trap enabled studying dynamic molecular mechanisms with a ready-to-go instrument. It uniquely correlates single-molecule force and fluorescence measurements to capture all molecular interactions in real time. With the release of biochemistry products, scripting library, and sharing platform an ecosystem was initiated with the aim to provide researchers with all the tools to do their research. We are now taking the next big step in this by launching Lakeview data analysis: a software platform that enables any scientist to instantaneously analyze their science – from raw data to quantitative insights into mechanisms with a couple of clicks.

In this talk we will present Lakeview and show how it can be used to organize, manage, and visualize all your dynamic single-molecule data on any laptop and PC. We will show how it enables automatic tracking of the location and dynamics of individual proteins on DNA and how that can be used to instantaneously visualize resulting data. From here you gain direct quantitative insights into biological mechanisms. And there is more to come!

Speaker
Trey Simpson, Application Scientist Manager, LUMICKS

Dinner Meet-Ups

6:00 PM - 6:30 PM, LOBBY BC/SOCIETY BOOTH

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

Student Research Achievement Award (SRAA) Poster Competition

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

This session features graduate, masters and PhD 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.

BPS Editors Dinner

7:00 PM - 10:00 PM, SAN DIEGO WINE AND CULINARY CENTER

SUNDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL BC

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 - B34	Protein Structure and Conformation I
B35 - B53	Protein Assemblies
B54 - B72	Protein Dynamics and Allostery I
B73 - B93	Membrane Protein Structures I
B94 - B113	Membrane Protein Dynamics I
B114 - B138	Intrinsically Disordered Proteins I
B139 - B157	Condensates: Physical Properties and Modeling I
B158 - B173	Transcription
B174 - B205	Protein-Nucleic Acid Interactions I
B206 - B231	Membrane Physical Chemistry I
B232 - B252	Membrane Structure I
B253 - B281	Mechanosensation
B282 - B307	Mitochondria in Cell Life and Death
B308 - B333	Voltage-Gated Na Channels
B334 - B348	Voltage-Gated Ca Channels
B349 - B366	TRP Channels
B367 - B377	Anion Channels
B378 - B399	Skeletal Muscle Mechanics, Structure, and Regulation
B400 - B418	Poster: Smooth Muscle and Cardia Muscle Regulation, Mechanics
B419 - B436	Microtubules, Structure, Dynamics, and Associated Proteins
B437 - B470	Optical Microscopy and Superresolution Imaging I
B471 - B497	Molecular Dynamics I: Docking and Assemblies
B498 - B532	Computational Methods and Machine Learning, Artificial Intelligence, and Bioinformatics I

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

Protein Structure and Conformation I (Boards B1 - B34)

180-POS BOARD B1
IDENTIFICATION AND CHARACTERIZATION OF E266Q MUTATION IN NSP15 ENDORIBONUCLEASE FROM SARS-COV-2 EPSILON VARIANT. **Manashi Sonowal**, Nirupa Nagaratnam, Rebecca J. Jernigan, Dhenugen Logeswaran, Raimund Fromme, Julian J-L. Chen, Petra Fromme

181-POS BOARD B2
SARS-COV-2 NSP3 OLIGOMERIZATION IS A DRIVER FOR MOLECULAR PORE FORMATION. **Yulia Pustovalova**, Alexandra Pozhidaeva, Jeffrey C. Hoch

182-POS BOARD B3
INTEGRATION OF SMFRET AND MOLECULAR DYNAMICS TO CHARACTERIZE CONFORMATIONAL DYNAMICS OF THE SPIKE PROTEIN OF WILD-TYPE SARS-COV-2 AND ITS VARIANTS. **Joseph Williamson**, Maolin Lu, Mahmoud Moradi

183-POS BOARD B4
MASS SPECTROMETRY AND MOLECULAR MODELING EVIDENCE FOR AN UNUSUAL DISULFIDE CROSSLINK BETWEEN CYSTEINES 24 AND 36 IN THE GAMMAS-CRYSTALLIN LINKED TO CATARACTS. **Kirsten J. Lampi**, Samuel Wheeler, David Anderson, Larry David

184-POS BOARD B5
DAMAGE RESISTANCE OF GAMMA CRYSTALLINS: WEATHERING HEAT, UV, AND IONIZING RADIATION. **Rachel W. Martin**, Megan A. Rocha, Brenna Norton-Baker, Mina Mozafari, Jessica I. Kelz

185-POS BOARD B6
DYNAMICS OF THE SARS-COV-2 MAIN PROTEASE BINDING SITE. **Advaith S. Harith**, Sacha Mallalieu, Amelia A. Fuller, Michelle E. McCully

186-POS BOARD B7
STUDIES ON ANTIVIRAL RESISTANT SARS-COV-2 MPRO MUTANTS. **Morgan A. Esler**, Arad Moghadasi, Reuben S. Harris, Hideki Aihara

187-POS BOARD B8 TRAVEL AWARD WINNER
REFINING HIV ENVELOPE PROTEIN CONFORMATIONAL DATA FROM DIFFERENT EXPERIMENTAL SOURCES USING BIAS-RESAMPLING METHODS AND INFORMATION THEORY. **Caroline Davis**, Peter Kasson

188-POS BOARD B9
PARTIAL ASSIGNMENTS OF TUNICATE BΓ-CRYSTALLIN STRUCTURE. **Mina Mozafari**, Natalia Kozlyuk, Megan A. Rocha, Rachel W. Martin

189-POS BOARD B10
ROLE OF PEMI IN THE STAPHYLOCOCCUS AUREUS PEMIK TOXIN-ANTITOXIN COMPLEX: PEMI CONTROLS PEMK BY ATING AS A PEK LOOP MIMIC. **Bong Jin Lee**

190-POS BOARD B11
STRUCTURE OF *ANABAENA FLOS-AQUAE* GAS VESICLES REVEALED BY CRYO-ET. **Przemyslaw Dutka**, Lauren Ann Metskas, Robert C. Hurt, Hossein Salahshoor, Ting-Yu Wang, Dina Malounda, George Lu, Tsui-Fen Chou, Mikhail G. Shapiro, Grant J. Jensen

191-POS BOARD B12
SALT-INDUCED PRECIPITATION OF FIBRINOGEN: NEW INSIGHTS FROM EXPERIMENTS AND SIMULATIONS. **Aparna Sai Malisetty**, Stephanie Stamboroski, Jana Lierath, Michael Noeske, Dorothea Brueggemann, Susan Köppen

192-POS BOARD B13
REVEALING NUCLEOTIDE-INDUCED DOMAIN MOVEMENTS OF GTP-BOUND RBG1 WITH LONG-TIMESCALE MD SIMULATIONS. **Yupeng Li**, Hong Jin, Emad Tajkhorshid

193-POS BOARD B14 TRAVEL AWARD WINNER
TIME-RESOLVED TWO-PHOTON FLUORESCENCE DYNAMICS OF A NOVEL MEGFP-LINKER-MSCARLET-I CROWDING BIOSENSOR. **Sarah Mersch**, Sarah Bergman, Arnold J. Boersma, Ahmed A. Heikal, Erin D. Sheets

195-POS BOARD B16
CONFORMATIONAL SELECTION IN THE CRE CBD DOMAIN: INSIGHTS INTO INTASOME ASSEMBLY. **Marco A. Ramírez**, Nina Pastor, Mark P. Foster

196-POS BOARD B17
DYNAMICS AND STRUCTURAL CHANGES OF CALMODULIN UPON INTERACTION WITH THE ANTAGONIST CALMIDAZOLIUM. **Corentin Leger**, Irène Pitard, Mirko Sadi, Nicolas Carvalho, Sébastien Brier, Ariel Mechaly, Sylviane Hoos, Patrice Vachette, Dominique Durand, Ahmed Haouz, Inaki Guijarro, Daniel Ladant, Alexandre Chenal

197-POS BOARD B18
STRUCTURE-FUNCTION ANALYSIS OF THE DUAL FUNCTIONING MYCOBACTERIAL VIRULENCE FACTORS ESPE AND ESPF. **Rebecca J. Prest**, Konstantin V. Korotkov, Patricia A. Champion

198-POS BOARD B19
NUCLEOTIDE DEPENDENT CONFORMATIONAL CHANGES OF MUTL. **Andi Morgan**, Ashley Drew, Andrew Atisa, Malikiya A. Hinds, Sharonda LeBlanc

199-POS BOARD B20
IMPROVED IDENTIFICATION OF CANCER DRIVER MUTATIONS USING EVOLUTIONARY PATTERNS OF LOCAL FUNCTIONAL SPATIAL REGIONS ON PROTEIN STRUCTURES. **Bowei Ye**, Boshen Wang, Jie Liang

200-POS BOARD B21
CELLULAR MODELS FOR THE INVESTIGATION OF THE STRUCTURAL DYNAMICS AND ACTIVITY OF HUMAN TAU PROTEIN AGGREGATE FORMATION. **Eranjalee Ranaweera**, Carol J. Huseby, Debra T. Hansen, Po-Lin Chiu, Paul Coleman, Petra Fromme

201-POS BOARD B22 TRAVEL AWARD WINNER
DYNAMICS OF THE BYPASS POLYMERASE, DINB HOMOLOG. **Jenaro Soto**, Melanie J. Cocco

202-POS BOARD B23 TRAVEL AWARD WINNER
UNDERSTANDING THE MOLECULAR COMPOSITION OF THE MICROSPORIDIAN POLAR TUBE. **Joseph C. Sudar**, Hediye Erdjument-Bromage, Thomas Neubert, Damian C. Ekiert, Gira Bhabha

203-POS BOARD B24
THE INTERACTION OF CC CHEMOKINE BINDING PROTEIN VCCI WITH CCL17(TARC). **Wenyan Guan**, Airam M. Rodriguez, Rafael Guerrero, Lauren E. Stark, Michael E. Colvin, Patricia LiWang

204-POS BOARD B25 TRAVEL AWARD WINNER
CONFORMATIONAL CHANGES IN SOLUTION MULTIMERS OF DYNAMIN-RELATED PROTEIN 1 (DRP1) FACILITATES FUNCTIONAL ASSEMBLY. **Kristy Rochon**, Brianna Bauer, Jason A. Mears

205-POS BOARD B26
STRUCTURAL AND MECHANISTIC INSIGHTS INTO CANCER PROMOTING ACTIVITIES OF PYRUVATE KINASE MUSCLE ISOFORM-2. **Saurabh Upadhyay**, Ashok Kumar Patel

206-POS BOARD B27
CONNECTION BETWEEN SLOW AND FAST DYNAMICS IN HUMAN PURINE NUCLEOSIDE PHOSPHORYLASE. **Clara F. Frost**, Sree Ganesh Balasubramani, Dimitris Antoniou, Steven D. Schwartz

207-POS BOARD B28
STRUCTURE AND ACTIVATION MECHANISM OF *STAPHYLOCOCCUS AUREUS* RESPONSE REGULATOR ARLR BY SOLUTION NMR. **Mohammad Rafid Feisal**, Philip B. Liu, Yurong Wen, Peter M. Hwang

208-POS **BOARD B29**
AN IMPROVEMENT TO CAPTURE AND VISUALIZE THE PROTEIN CONFORMATIONAL ENSEMBLES IN DOUBLE ELECTRON-ELECTRON RESONANCE MEASUREMENTS. **Te-Yu Kao**, Yun-Wei Chiang

209-POS **BOARD B30**
UNDERSTANDING THE EFFECTS OF HIGHER-ORDER ASSEMBLY ON THE STRUCTURE OF THE SULFITE REDUCTASE. **Nidhi Walia**, Daniel Murray, Kevin Weiss, Gergely Nagy, M. Elizabeth Stroupe

210-POS **BOARD B31**
THE ROLE OF ELECTRON TRANSFER IN THE ENZYMATIC ACTIVITY OF A PHOTOACTIVABLE ADENYLATE CYCLASE. **Elek Telek**, Katalin Raics, Katalin Pirisi, Robert Kapronczai, Emoke Bodis, Ildiko Pecsi, Marten H. Vos, Bo Zhuang, Andras Lukacs

211-POS **BOARD B32**
STRUCTURE OF THE HOPS TETHERING COMPLEX, A LYSOSOMAL MEMBRANE FUSION MACHINERY. **Arne Moeller**, Dmitry Shvarev, Jannis Schoppe

212-POS **BOARD B33**
MONITORING OLIGOMERIC FORMS OF AMYLOID BETA IN THE EARLY STAGES OF AGGREGATION USING HYBRID X-RAY FOOTPRINTING MASS SPECTROMETRY WITH INLINE FLUORESCENCE. Sayan Gupta, Line Kristensen, Jevgenij Raskatov, **Corie Ralston**

213-POS **BOARD B34**
A VIBRATIONAL SPECTROSCOPIC APPROACH TO ELUCIDATE THE MOLECULAR MECHANISM BEHIND THE CHANNEL ACTIVITY OF VIROPORINS. **Ronja R. Paschke**, Sascha Lange, Adam Lange, Jacek Kozuch

Protein Assemblies (Boards B35 - B53)

214-POS **BOARD B35**
STIMULI RESPONSIVE HIERARCHICAL ASSEMBLY OF SUPRAMOLECULAR CONDUCTIVE FIBERS FROM COILED-COIL BUILDING BLOCKS. **Adam Grosvirt-Dramen**, Zachary Urbach, Fengbin Wang, Yuanming Song, Douglas J. Tobias, Edward H. Egelman, Allon Hochbaum

215-POS **BOARD B36**
AN INTEGRATIVE AND MULTISCALE APPROACH TO STUDY DENGUE VIRUS-LIKE PARTICLE DYNAMICS. **Venkata Raghuvamsi Palur**, Gielenny Salem, Fan-Chi Chen, Shang-Rung Wu, Peter J. Bond, Day-Yu Chao, Jan K. Marzinek

216-POS **BOARD B37**
S-PALMITOYLATION DEPENDENT SELF ASSEMBLY OF HUMAN AQUAPORIN-4 ORTHOGONAL ARRAYS OF PARTICLES IN BIOMIMETIC MEMBRANES. **Jessica D. Carder**, Barbara Barile, Grazia Paola Nicchia, James A. Brozik

217-POS **BOARD B38**
BIOPHYSICAL MODELS FOR STUDYING PATTERNS OF RUBISCO SMALL SUBUNIT EVOLUTION. **Kaustubh M. Amritkar**, Bruno Cuevas-Zuviría, Betül Kaçar

218-POS **BOARD B39**
COMPARING ELECTROCHEMICAL AND SPECTROSCOPIC PROPERTIES OF THREE CYTOCHROME NANOWIRES FROM *GEOBACTER SULFURREDUCENS*. **Khawla Mustafa**, Miranda Xiao, Fengbin Wang, Allon I. Hochbaum

219-POS **BOARD B40**
EFFECT OF PHOSPHORYLATION ON THE ASSEMBLY OF HIPPO SIGNALING REGULATORY COMPLEXES. **Sanjay Ramprasad**

220-POS **BOARD B41**
KEY PLAYERS DRIVING THE INTERACTION OF (BIO)MOLECULES AND MATERIALS SURFACES - AN ATOMISTIC STUDY. **Susan Köppen**

221-POS **BOARD B42**
CAPTURING THE INFLUENCE OF A CROWDED ENVIRONMENT ON PROTEIN GB1 DIMERIZATION AT COARSE-GRAINED RESOLUTIONS. **Mithun Biswas**

222-POS **BOARD B43**
CULLIN-5 RING LIGASES UBIQUITYLATE HISTONES. **Calvin P. Lin**, Nathan H. Lee, Elizabeth A. Komives

223-POS **BOARD B44**
THERMODYNAMICS OF ASSEMBLY OF THE BIVALENT NOTCH TERNARY COMPLEX. **Cyril B.R. Cook**, Kristen M. Ramsey, Radah Al-Khateeb, Doug Barrick

224-POS **BOARD B45**
DRUG DELIVERY WITH DESIGNED PEPTIDE HYDROGELS: EXPERIMENTAL AND COMPUTATIONAL STUDIES. **Neetu S. Yadav**

225-POS **BOARD B46**
THE OSCILLATING MECHANISM OF A CIRCADIAN CLOCK. **Andy LiWang**

226-POS **BOARD B47**
PROMOTION OF PROTEIN ASSEMBLY BY NANOPARTICLES: FROM *IN VITRO* TO IN-CELL. **Mahima Unnikrishnan**, Yuhan Wang, Martin Gruebele, Catherine J. Murphy

227-POS **BOARD B48**
GRAMM: A WEBSERVER FOR FREE AND TEMPLATE-BASED PROTEIN DOCKING. **Amar Singh**, Matthew M. Copeland, Petras J. Kundrotas, Ilya A. Vakser

228-POS **BOARD B49**
KIDA, A NOVEL INTERACTOR OF THE CYANOBACTERIAL CIRCADIAN OSCILLATOR THAT TUNES ITS PERIOD. **Soo Ji Kim**, Chris Chi, Gopal Pattanayak, Aaron Dinner, Michael J. Rust

229-POS **BOARD B50**
CHARACTERIZATION OF ENZYME SCAFFOLDING INSIDE THE ALPHA-CARBOXYSOME BY CRYO-ELECTRON TOMOGRAPHY. **Lauren Ann Metskas**, Luke M. Oltrogge, Julia Borden, David Savage

230-POS **BOARD B51**
CPSF6 ASSEMBLY DYNAMICS AND BINDING AVIDITY ON HIV-1 CAPSID ARE REGULATED BY INTERACTIONS BETWEEN PRION-LIKE LOW COMPLEXITY REGIONS. **Arpa Hudait**, Mamuka Kvaratskhelia, Gregory A. Voth

231-POS **BOARD B52**
UNDERSTANDING HEPATITIS B VIRAL CAPSID DIFFUSION, DISSOCIATION AND TOXICITY IN LIVE HEPATOCYTES. **Gopika Gopan**, Yuhan Wang, Martin Gruebele

232-POS **BOARD B53**
DYNAMIC ASSOCIATION OF AN ASSEMBLY PLATFORM SUBCOMPLEX OF THE BACTERIAL TYPE TWO SECRETION SYSTEM. Regine Dazzoni, Olivera Francetic, Michael Nilges, Benjamin Bardiaux, **Nadia Izadi Pruneyre**

Protein Dynamics and Allostery I (Boards B54 - B72)

233-POS **BOARD B54**
MDIGEST: A COMPREHENSIVE TOOLKIT FOR DETECTION OF ALLOSTERIC COMMUNICATION FROM MOLECULAR DYNAMICS SIMULATIONS OF BIOCHEMICAL SYSTEMS. **Brandon C. Allen**, Federica Maschietto, Victor S. Batista

234-POS **BOARD B55**
DEFINING THE ALLOSTERIC ROLE OF RNA IN THE CRISPR-ASSOCIATED CAS13A PROTEIN ACTIVATION. **Souvik Sinha**, Adrian Moises Molina Vergas, Pablo R. Arantes, Amun C. Patel, Mitchell O'Connell, Giulia Palermo

235-POS **BOARD B56**
ALLOSTERIC REGULATORY CONTROL IN DIHYDROFOLATE REDUCTASE (DHFR) REVEALED WITH DYNAMIC ASYMMETRY IN UNLIGANDED ENSEMBLE. **I. Can (John) Kazan**, Jeremy H. Mills, S. Banu Ozkan

236-POS **BOARD B57**
RNA-INDUCED ALLOSTERIC COUPLING DRIVES VIRAL CAPSID ASSEMBLY IN THE SINGLE-STRANDED RNA VIRUS BACTERIOPHAGE MS2. **Sean Hamilton**, Tushar Modi, Petr Sulc, S. Banu Ozkan

237-POS **BOARD B58**
DETERMINING THE MECHANISMS OF THE ALLOSTERIC ARCHITECTURE OF DHFR. **James W. McCormick**, Jerry C. Dinan, Marielle A. Russo, Kimberly A. Reynolds

238-POS **BOARD B59**
EXPERIMENTAL RECONSTRUCTION OF MEMBRANE TRANSPORTER EVOLUTION. **Krishna Reddy**, Olga Boudker

239-POS **BOARD B60**
REVEALING THE ALLOSTERIC MECHANISM OF PH-DEPENDENCE IN THE PROTON-ACTIVATED CHLORIDE CHANNEL. **Ekaterina Kots**, Harel Weinstein

240-POS **BOARD B61** **TRAVEL AWARD WINNER**
ARRESTIN C-TAIL DYNAMICS REGULATE ACTIVATION AND GPCR ENGAGEMENT. **John Janetzko**, Asuka Inoue, Yuqi Shi, Jonathan C. Deutsch, Korak Kumar Ray, Matthieu Masureel, Ruben L. Gonzalez, Rosa Viner, Brian K. Kobilka, Rabindra Shivnaraine

241-POS **BOARD B62**
PROBING GPCR ALLOSTERIC ACTIVATION AND BIASED SIGNALING WITH RIGIDITY PROPAGATION AND GEOMETRIC MONTE-CARLO SIMULATIONS. **Adnan Sljoka**

242-POS **BOARD B63**
PRESSURE-BASED MAPPING OF ARF1 SWITCH TRANSITION. **Tejaswi Naidu Koduru**, Edgar Peters, Noam Hantman, Catherine A. Royer

243-POS **BOARD B64**
THE CONFORMATIONAL SPACE OF THE SARS-COV-2 MAIN PROTEASE ACTIVE SITE LOOPS IS DETERMINED BY LIGAND BINDING AND INTERPROTOMER ALLOSTERY. **Ethan Lee**, Sarah Rauscher

244-POS **BOARD B65**
UNDERSTANDING BIRA ALLOSTERY FROM A NETWORK PERSPECTIVE USING MD SIMULATIONS. **Riya Samanta**, Silvina Matysiak

245-POS **BOARD B66**
POSITIVE FEEDBACK IN RAS ACTIVATION THROUGH MODULATION OF SOS ACTIVATION PROBABILITY. **He Ren**, Albert Lee, Lap Jung Nugent Lew, Joseph B. DeGrandchamp, Jay T. Groves

246-POS **BOARD B67**
SINGLE-MOLECULE FLUORESCENCE: ELUCIDATING ATP DRIVEN PROTEIN TRANSPORT IN THE SEC COMPLEX. **Joel A. Crossley**, Tomas Fessl, Ian Collinson, Roman Tuma, Sheena E. Radford

247-POS **BOARD B68**
QUANTIFYING THE EVOLVABILITY OF ALLOSTERY AT DIFFERENT PROTEIN SURFACES. **Jerry C. Dinan**, Kimberly A. Reynolds

248-POS **BOARD B69**
IDENTIFICATION OF SUBSTRATE-SPECIFIC ALLOSTERIC FINGERPRINTS IN MATRIX METALLOPROTEASE-1 AT THE SINGLE MOLECULE LEVEL FOR PRECISION CONTROL OF FUNCTION. **Susanta K. Sarkar**

249-POS **BOARD B70**
CHARACTERIZATION OF IMMUNOGLOBULIN-E (IGE) TO BENEFIT THERAPEUTIC IGE ENGINEERING. **Chinh Su**

250-POS **BOARD B71**
SELECTIVE VIRTUAL SCREENING OF HYPOXIA INDUCIBLE FACTOR AGONISTS AND ANTAGONISTS USING ARTIFICIAL INTELLIGENCE AND LINEAR RESPONSE THEORY. **Rajat Punia**, Gaurav Goel

251-POS **BOARD B72**
FROM ELUCIDATING MECHANISMS OF ALLOSTERIC SIGNALING TO DESIGNING ALLOSTERIC DRUGS AND BIOLOGICS. **Wei-Ven Tee**, Zhen Wah Tan, Enrico Guarnera, Igor N. Berezovsky

Membrane Protein Structures I (Boards B73 - B93)

252-POS **BOARD B73**
STRUCTURE AND FUNCTION OF ABC TRANSPORTERS IN OCEANIC SPECIES. **Megan Young**

253-POS **BOARD B74**
STRUCTURAL BASIS FOR PHAGE SINGLE GENE LYSIS PROTEIN MECHANISMS. **Yancheng E. Li**, Anna K. Orta, William M. Clemons Jr

254-POS **BOARD B75**
MULTIMERIC ASSEMBLY AND DYNAMICS OF PORE-FORMING LANTIBIOTIC PEPTIDE NISIN. **Hugo A. Perez**

255-POS **BOARD B76**
STRUCTURE OF THE SHAKER KV CHANNEL IN LOW K AND MECHANISM OF SLOW C-TYPE INACTIVATION. **Xiaofeng Tan**, Kenton Swartz

256-POS **BOARD B77**
PUTATIVE PORE STRUCTURE OF AMYLOID BETA AND ALPHA SYNUCLEIN IN LIPID BILAYERS. **Ankita Dutta**

257-POS **BOARD B78**
CRYO-EM SNAPSHOTS AND PROTEIN SPIN LABELING IN STRUCTURAL STUDIES OF HIV-1 VPU. **Md Majharul Islam**, Oluwatosin Adetyui, Saman Majeed, Olamide Ishola, Isaac Forester, Steven J. Ludtke, Elka R. Georgieva

258-POS **BOARD B79**
EXPLORING THE STRUCTURE AND FUNCTION OF THE PEPTIDASE-ABC TRANSPORTER FUSION PROTEIN ZMAM. **Gerardo E. Zavala**, Jose A. Velilla, Mit Patel, Richard M. Walsh, Rachelle Gaudet

259-POS **BOARD B80**
INVESTIGATING THE MOLECULAR EVOLUTION OF SMALL MULTIDRUG RESISTANT TRANSPORTERS. **Victoria E. O'Donnell**, Olive E. Burata, Randy Stockbridge

260-POS **BOARD B81**
STRUCTURE REFINEMENT OF TRANSMEMBRANE DOMAIN OF KCNE3 IN PROTEOLIPOSOMES USING EPR SPECTROSCOPY. **Indra D. Sahu**, Matthew Scheyer, Conner Campbell, Patrick L. Williams, Isaac K. Asare, Afsana Begum, Mustakim Hussain, Charles R. Sanders, Gary A. Lorigan

261-POS **BOARD B82**
CRYO-EM STRUCTURES OF THE TOLQ MEMBRANE PROTEIN IN COMPLEX WITH INNER MEMBRANE PROTEIN PARTNER TOLR FROM THE OPPORTUNISTIC PATHOGEN *ACINETOBACTER BAUMANNII* PROVIDE INFORMATION ON STRUCTURE AND STOICHIOMETRY. **Elina Karimullina**, Yirui Guo, Bradley Quade, Rosa Di Leo, Zbyszek Otwinowski, Dominika Borek, Alexei Savchenko

262-POS **BOARD B83**
INTRINSIC FIDUCIALS FOR SMALL MEMBRANE PROTEIN STRUCTURE DETERMINATION. **Michael P. Dalton**, Jonathan Coleman

263-POS **BOARD B84**
COMPARING STRUCTURAL DYNAMIC PROPERTIES OF DISEASES CAUSING MUTATIONS OF KCNE3 WITH WILD-TYPE KCNE3 IN A LIPID BILAYER MEMBRANE USING MOLECULAR DYNAMICS SIMULATIONS. **Isaac Asare**, Anna Clara Miranda Moura, Antonio J. Aguado, Brian M. Morales, Mateo F. Cruz, Steven Alston, Andrea Kravats, Charles R. Sanders, Gary A. Lorigan, Indra D. Sahu

264-POS **BOARD B85**
OUTER MEMBRANE PROTEIN FOLDING MECHANISM: HOW DOES AN OMP REACH THE ACTIVE SITE OF THE BAM COMPLEX? **Katherine Fenn**, Jim E. Horne

265-POS **BOARD B86**
PROBING STRUCTURAL TOPOLOGY AND DYNAMICS OF HUMAN KCNE3 MEMBRANE PROTEIN IN LIPID BILAYERS USING SITE-DIRECTED SPIN LABELING AND ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY. **Patrick L. Williams**, Conner Campbell, Matthew Scheyer, Mustakim Hussain, Afsana Begum, Sebastian Fonseca, Peyton Dabney, Haley Carter, Charles R. Sanders, Gary A. Lorigan, Indra D. Sahu

266-POS **BOARD B87**
CONFORMATIONAL DYNAMICS OF GLUCAGON RECEPTOR DOMAINS REVEALED BY SINGLE-MOLECULE FLUORESCENCE MICROSCOPY. Ting Liu, **Susmita Khanal**, Gillian D. Hertslet, Sriram Tiruvadi Krishnan, Rajan Lamichhane

267-POS **BOARD B88**
OPTIMIZATION OF EXPERIMENTAL CONDITIONS FOR STRUCTURAL STUDIES OF THE MEMBRANE SURFACE COMPLEX BETWEEN THE SMALL GTPASE ARF1 AND THE ARFGAP ASAP1 BY PARAMAGNETIC RELAXATION ENHANCEMENT NMR. **Rebekah A. Jackson**, Olivier Soubias, Brianna M. Papoutsis, Jess Li, Yue Zhang, Andrew Byrd

268-POS **BOARD B89**
STRUCTURAL INSIGHT INTO MYCOBACTERIAL CELL WALL BIOSYNTHESIS BY AFTB, A POTENTIAL ANTI-TB DRUG TARGET. **Yaqi Liu**, Todd Lowary, Celia Su, Satchal Erramilli, Brian Kloss, Filippo Mancia

269-POS **BOARD B90**
STRUCTURAL BASIS FOR INHIBITION AND REGULATION OF A CHITIN SYNTHASE FROM *CANDIDA ALBICANS*. **Zhenning Ren**, Abhishek Chhetri, Kenichi Yokoyama, Seok-Yong Lee

270-POS **BOARD B91**
INWARD-FACING GLYCINE RESIDUES CREATE SHARP TURNS IN B-BARREL MEMBRANE PROTEINS. **Zijian Zhang**, David Ryoo, James C. Gumbart

271-POS **BOARD B92**
STRUCTURAL HETEROGENEITY OF NUCLEAR PORES IN YEAST. **Digvijay Singh**, Neelesh Soni, Ignacia Echeverria, Farhaz Shaikh, Sergey Suslov, Javier Fernandez-Martinez, Paula Upla, Steven Ludtke, Christopher W. Akey, Andrej Sali, Michael P. Rout, Elizabeth Villa

272-POS **BOARD B93**
HIGH-RESOLUTION STRUCTURES USING CRYO-EM GUIDE DRUG DEVELOPMENT FOR NEUROMYELITIS OPTICA (NMO). **Meghna Gupta**, Andrew Nelson, Sergei Pourmal, Jeffery Bennett, Robert M. Stroud

Membrane Protein Dynamics I (Boards B94 - B113)

273-POS **BOARD B94**
INVESTIGATING THE REGULATION AND FUNCTION OF BACTERIAL QUATERNARY AMMONIUM COMPOUND EXPORTERS. **Kemal Demirer**, Randy Stockbridge

274-POS **BOARD B95**
INVESTIGATING NRP1 AND VEGFR2 ASSOCIATION USING NUMBER AND BRIGHTNESS. **Keynon Bell**, Kalina Hristova

275-POS **BOARD B96**
CHARACTERIZING THE INTERACTIONS BETWEEN THE LPS TRANSPORT PROTEIN LPTC AND THE ABC TRANSPORTER $LPTB_2FG$. **Nicholas P. Cina**, Candice S. Klug

276-POS **BOARD B97**
A QUANTITATIVE MICROSCOPY METHOD TO PROBE RTK ACTIVATION. **Ece Ozdemir**, Daniel Wirth, Kalina Hristova

277-POS **BOARD B98**
SUPERRESOLUTION STUDIES OF EPHA2 DISTRIBUTIONS IN THE PLASMA MEMBRANE. **Mahmoud Abouelkheir**, Evgenia Azarova, Kalina Hristova

278-POS **BOARD B99**
STRUCTURAL DYNAMICS OF THE ACTIVATION LOOP IN THE KINASE DOMAIN OF E. FAECALIS IREK. **Kathryn M. Schultz**, Matthew Bluma, Christopher Kristich, Candice Klug

279-POS **BOARD B100**
NUMBER AND BRIGHTNESS STUDIES OF THE FGFR3 ACHONDROPLASIA MUTANT. **Tanaya Roy**, Kalina Hristova

280-POS **BOARD B101**
APPLICATION OF AMBER SUPPRESSION TO STUDY THE ROLE OF TYR M210 IN ELECTRON TRANSFER IN *R. SPHAEROIDES* PHOTOSYNTHETIC REACTION CENTERS. **Khoi Tran**, Kaitlyn Faries, Nikki Magdaong, Chris Kirmaier, Dewey Holten, Steven G. Boxer

281-POS **BOARD B102**
SIGNAL PROCESSING BY EXTRACELLULAR DNA-SENSOR RAGEUSING SINGLE MOLECULE TECHNIQUES. **Christopher J. Randolph**, Eva de Alba

282-POS **BOARD B103**
A SINGLE-MOLECULE STRUCTURAL BIOLOGY VIEW OF A TRANSPORTER CYCLE. **Yining Jiang**, Simon Scheuring

283-POS **BOARD B104**
INFLUENZA A VIRUS SURFACE PROTEINS DETERMINE THE SPATIAL STRUCTURE OF VIRAL SPREAD. **Zijian Guo**, Michael Vahey

284-POS **BOARD B105**
INVESTIGATING THE EFFECTS OF THE MEMBRANE LIPID COMPOSITION ON ATG9A STRUCTURE AND DYNAMICS. **Christian B. Borg**, Matteo Lambrughi, Elisabeth Corcelle-Termeau, Isha Raj, Ditte L. Fogde, Emiliano Maiani, Simone Scrima, Kenji Maeda, Nicholas M.I. Taylor, Marja Jäättelä, Elena Papaleo

285-POS **BOARD B106**
DISSECTING METABOTROPIC GLUTAMATE RECEPTOR ACTIVATION BY SINGLE-MOLECULE FRET USING MINIMALLY INVASIVE LABELING STRATEGIES. Leo Bonhomme, Robert Quast, Nathalie Lecat-Guillet, Jean-Philippe PIN, Philippe Rondard, **Emmanuel Margeat**

286-POS **BOARD B107**
RESOLVING THE HIERARCHICAL NETWORK OF RECEPTOR TYROSINE KINASE INTERACTIONS AND THE EFFECT OF ONCOGENIC MUTATIONS. **Adam W. Smith**

287-POS **BOARD B108** **TRAVEL AWARD WINNER**
THE ROLE OF K288A IN CONFORMATIONAL SELECTION IN LEUT. **Spencer J. Rothfuss**, Richard A. Stein, Kelli N. Kazmier

288-POS **BOARD B109**
TRACKING THE STRUCTURAL DYNAMICS OF SERCA REGULATION IN REAL TIME. **Fredrik Orädd**, Konstantinos Magkakis, Irfan Prabudiansyah, Matteo Levantino, Kenji Inaba, Magnus Andersson

289-POS BOARD B110
MEMBRANE CURVATURE GOVERNS THE DISTRIBUTION OF PIEZO1 IN LIVE CELLS. **Shilong Yang**, Xinwen Miao, Steven Arnold, Boxuan Li, Alan Ly, Huan Wang, Matthew Wang, Xiangfu Guo, Medha M. Pathak, Wenting Zhao, Charles D. Cox, Zheng Shi

290-POS BOARD B111
MOLECULAR MECHANISM OF CORE PLANAR CELL POLARITY COMPLEX FUNCTION ELUCIDATED WITH SINGLE-MOLECULE METHODS. **Silas Boye Nissen**, Alexis T. Weiner, Alexander R. Dunn, Jeffrey D. Axelrod

291-POS BOARD B112 TRAVEL AWARD WINNER
EFFLUX OF ANTIBIOTICS BY THE HOMOTRIMERIC TOLC TRANSMEMBRANE PROTEIN. **Isik Kantarcioglu**, Ilona K. Gaszek, Erdal Toprak, Ali Rana Atilgan, Canan Atilgan

292-POS BOARD B113
EXPLORING CONFORMATIONAL TRANSITIONS IN MEMBRANE PROTEINS WITH MEMENTO. Simon Lichtinger, Simon Newstead, **Philip C. Biggin**

Intrinsically Disordered Proteins I (Boards B114 - B138)

293-POS BOARD B114
DISORDERED PROTEINS AND BAR DOMAINS COLLABORATE TO REMODEL MEMBRANES. **Caleb Walker**, Wilton T. Snead, Wade F. Zeno, Liping Wang, Eileen M. Lafer, Jeanne C. Stachowiak

294-POS BOARD B115
COARSE-GRAINED INTRINSICALLY DISORDERED PROTEIN SIMULATIONS WITH EXPLICIT IONS PARAMETERIZED BY SALTING-OUT CONSTANTS. **Thomas P. Dannenhoffer-Lafage**, Robert B. Best

295-POS BOARD B116
A DEEP DIVE INTO BIOMOLECULAR CONDENSATES USING SINGLE-DROPLET SURFACE-ENHANCED RAMAN SPECTROSCOPY. **Samrat Mukhopadhyay**, Anamika Avni, Ashish Joshi, Anuja Walimbe, Swastik G. Pattanashetty

296-POS BOARD B117
UNCOVERING THE CONDITIONS THAT DICTATE THE LIQUID-LIQUID PHASE SEPARATION OF THE CTD OF RNAPII. **Nathan McKean**

297-POS BOARD B118
LIPID DROPLETS AS FLEXIBLE SUBSTRATES FOR PROTEIN PHASE SEPARATION. **Advika Kamatar**, Jeanne C. Stachowiak, Sapun H. Parekh

298-POS BOARD B119
COMPUTATIONAL MODULE OF NANODROPLET FORMATION *EN ROUTE* TO FIBRILLIZATION OF AMYLOID PEPTIDES WITH DESIGNED FLANKING SEQUENCES. **Zhenzhen Zhang**, Feng Ding

299-POS BOARD B120
CONNECTING SEQUENCE FEATURES WITHIN THE DISORDERED C-TERMINAL LINKER OF *B. SUBTILIS* FTSZ TO FUNCTIONS AND BACTERIAL CELL DIVISION. **Min Kyung Shinn**, Megan Cohan, Jessie L. Bullock, Kiersten Ruff, Petra Anne Levin, Rohit V. Pappu

300-POS BOARD B121 TRAVEL AWARD WINNER
RAPID PREDICTION AND ANALYSIS OF PROTEIN INTRINSIC DISORDER. **Guy W. Dayhoff**, Vladimir N. Uversky

301-POS BOARD B122
SH3 BINDING PATHWAY AND KINETICS IN THE PRESENCE. **Frida Anguiano**, Oluebube Onwuzulu, Anna Carhart, Elliott J. Stollar, K. Aurelia Ball

302-POS BOARD B123
EFFECTS OF A KEY NEGATIVELY CHARGED RESIDUE MUTATION ON THE BINDING PATHWAY OF SH3 DOMAIN COMPLEX AND ARKA PEPTIDE. **Oluebube C. Onwuzulu**

303-POS BOARD B124
INTRICATE COUPLING BETWEEN THE TRANSACTIVATION AND BASIC-LEUCINE ZIPPER DOMAINS GOVERNS PHOSPHORYLATION OF TRANSCRIPTION FACTOR ATF4 BY CASEIN KINASE 2. **Steven Siang**

304-POS BOARD B125
ELUCIDATING THE MECHANISM OF MBD PROTEIN LLPS AND ITS ROLE IN HETEROCHROMATIN FORMATION AND TRANSCRIPTIONAL REPRESSION. **Nicole Maurici**, Catherine Campbell, Jessica L. Henty-Ridilla, Alaji Bah

305-POS BOARD B126
INTRAMOLECULAR AND INTERMOLECULAR EFFECTS OF AROMATIC STICKER RESIDUE STRENGTH ON INTRINSICALLY DISORDERED PROTEIN REGIONS. **David Moses**, Garrett M. Ginell, Alex S. Holehouse, Shahar Sukenik

306-POS BOARD B127
FULL ACTIVATION OF WASP, NOT N-WASP, BY CDC42 AND PIP_2 REQUIRES CDC42 PRENYLATION. **Souvik Dey**, Huan-Xiang Zhou

307-POS BOARD B128
LINKING STRUCTURAL CHANGES WITH DESICCATION PROTECTION OF INTRINSICALLY DISORDERED PROTEINS. **Edith R. Gollub**, Shraddha KC, Feng Yu, Thomas C. Boothby, Shahar Sukenik

308-POS BOARD B129
BEYOND DISORDER: AN INTEGRATIVE INVESTIGATION OF THE INTRINSICALLY DISORDERED PROTEIN 4E-BP2. **Thomas E. Tsangaris**, Spencer Smyth, Greg W. Gomes, Julie D. Forman-Kay, Claudiu C. Gradinaru

309-POS BOARD B130
PROLINE ISOMERIZATION COMPENSATES FOR THE EFFECT OF PHOSPHORYLATION IN CONFORMATIONS OF THE DISORDERED RNA POLYMERASE II CTD. **Raymond B. East**, Lizbeth Mendoza, Scott A. Showalter, Wei Chen, K. Aurelia Ball

310-POS BOARD B131
FLEXIBILITY OF THE HIV VIF-A3F BINDING INTERACTION. **Elizabeth Miller**, Juan Alcantara, K. Aurelia Ball

311-POS BOARD B132
CYCLIC-NDGA EFFECTIVELY INHIBITS HUMAN GAMMA-SYNUCLEIN FIBRILLATION, FORMS OFF-PATHWAY SPECIES, AND DISINTEGRATES PREFORMED MATURE FIBRILS. **Sneh Lata Singh**, Rajiv Bhat

312-POS BOARD B133
CONTROLLING HTT PROTEIN AGGREGATION TO ASSESS TOXICITY IN CAENORHABDITIS ELEGANS. **Ephraim C. Ezeigbo**, Justin A. Legleiter

313-POS BOARD B134
OBTENTION OF ACCURATE ABETA-ZN(II) ENSEMBLES FROM MOLECULAR MODELLING AND BAYESIAN/MAXIMUM ENTROPY REWEIGHING. **Julen Aduriz**

314-POS BOARD B135
DYNAMICS OF TERNARY COMPLEX FORMATION OF AN IDP AND TWO BINDING PARTNERS AND THEIR ALLOSTERIC EFFECTS STUDIED BY THREE-COLOR SINGLE-MOLECULE FRET. **Jae-Yeol Kim**, Hoi Sung Chung

315-POS BOARD B136
THERMODYNAMICS OF *E.COLI* SSB PHASE SEPARATION. EFFECTS OF MONOVALENT SALT CONCENTRATION AND TYPE AND INTRINSICALLY DISORDERED LINKER MODIFICATIONS. **Alexander G. Kozlov**, Irina A. Shkel, M. Thomas Record, Timothy M. Lohman

316-POS BOARD B137
EFFECTS OF PHOSPHORYLATION TO THE CONFORMATIONAL SPACE OF C-TERMINAL DOMAIN OF RNA POLYMERASE II. **Weththasinghage Don Amith**, Bercem Dutagaci

317-POS **BOARD B138**
TRANSCRIPTION ACTIVATION DOMAIN STRUCTURE CORRELATES WITH GENE EXPRESSION LEVELS. **Eduardo Flores**, Max V. Staller, Shahar Sukenik

Condensates: Physical Properties and Modeling I (Boards B139 - B157)

318-POS **BOARD B139**
LATERAL COMPRESSION OF LIPIDS DRIVES TRANSBILAYER COUPLING OF PROTEIN CONDENSATES. **Yohan Lee**, Sujin Park, Feng Yuan, Jeanne C. Stachowiak

319-POS **BOARD B140** **TRAVEL AWARD WINNER**
CONDENSATE'S AGEING MODELLED THROUGH MOLECULAR DYNAMICS: PROTEIN STRUCTURAL TRANSITIONS CRITICALLY TRANSFORM THE NETWORK CONNECTIVITY AND VISCOELASTICITY OF RNA-BINDING PROTEIN CONDENSATES. **Ignacio Sanchez Burgos**, Andres R. Tejedor, Maria Espinosa, Jorge Ramirez, Rosana Collepardo-Guevara, Jorge R. Espinosa

320-POS **BOARD B141**
PROTEIN-RNA CONDENSATES: COMPLEMENTARY OR COMPETING INTERACTIONS IN ALS PROGRESSION? **Mark D. Driver**, Jasper Postema, Patrick R. Onck

321-POS **BOARD B142**
THE CONCENTRATION THRESHOLD FOR CONDENSATION OF MULTIVALENT MOLECULES IS SET BY THE MAXIMUM SOLUBILITY PRODUCT. Aniruddha Chattaraj, **Leslie M. Loew**

322-POS **BOARD B143**
COARSE-GRAINDED MODEL FOR SIMULATING PROTEIN COMPLEXES: FOLDED VS. DISORDERED PROTEINS. **Youngchan Kim**, Jeetain Mittal

323-POS **BOARD B144**
PHASE SEPARATION AND GELATION OF CHEMICALLY REACTIVE MACROMOLECULES. **Ruoyao Zhang**, Sheng Mao, Mikko P. Haataja

324-POS **BOARD B145**
PREDICTING MORPHOLOGIES OF BIOMOLECULAR CONDENSATES FROM PROTEIN INTERACTION NETWORKS. **Tianhao Li**, William M. Jacobs

325-POS **BOARD B146**
FIELD-THEORETIC FORMULATION FOR PHASE BEHAVIORS OF 20-AMINO-ACID-TYPE INTRINSICALLY DISORDERED PROTEIN SEQUENCES. **Jonas Wessén**, Tanmoy Pal, Suman Das, Hue Sun Chan

326-POS **BOARD B147**
MEMBRANE REMODELING AND VESICLE FORMATION BY BIOMOLECULAR CONDENSATES: A COARSE GRAINED SIMULATION STUDY. **Sayantan Mondal**, Qiang Cui

327-POS **BOARD B148**
REGULATION OF EGFR PHASE TRANSITION THROUGH GRB2-GRB2 INTERACTIONS. **Henry T. Phan**, Chun-Wei Lin, Brittany Stinger, Joseph B. DeGrandchamp, Lap Jung Nugent Lew, Jay T. Groves

328-POS **BOARD B149**
MULTI-SPECIES PHASE SEPARATION OF INTRINSICALLY DISORDERED PROTEINS IN ANALYTICAL AND FIELD-THEORETIC MODELS. **Tanmoy Pal**, Jonas Wessén, Suman Das, Yi-Hsuan Lin, Hue Sun Chan

329-POS **BOARD B150**
FLUCTUATING DIFFUSIVITY OF INTRINSICALLY DISORDERED PROTEINS. **Eiji Yamamoto**, Fuga Watanabe, Robert B. Best, Takuma Akimoto, Kresten Lindorff-Larsen, Ralf Metzler

330-POS **BOARD B151**
INVESTIGATE PARTITIONING OF DRUG MOLECULES IN PROTEIN CONDENSATES USING ATOMISTIC MOLECULAR DYNAMICS SIMULATIONS. **Cong Wang**, Bin Zhang

331-POS **BOARD B152**
BIOMOLECULAR CONDENSATES UNDER EXTREME MARTIAN SALT CONDITIONS. **Lena Ostermeier**, Roland Winter

332-POS **BOARD B153**
DESIGNER PROTEINS AS POTENTIAL THERAPEUTIC BIOMOLECULAR CONDENSATES. **Tin Long Chris Ng**, Mateo Hoare, Timothy Welsh, Sneideris Tomas, Ellis Wilde, Tuomas P.J. Knowles, Laura S. Itzhaki, Janet R. Kumita

333-POS **BOARD B154** **TRAVEL AWARD WINNER**
REVEALING NANOSCALE STRUCTURE AND INTERFACES OF POLYMER AND PROTEIN CONDENSATES VIA CRYO-ELECTRON MICROSCOPY. **Aoon Rizvi**

334-POS **BOARD B155**
INVESTIGATING THE BACTRIA MOTION IN AN ASYMMETRIC RATCHET CHANNEL. **Maryam Fathian**

335-POS **BOARD B156**
RNA STRUCTURE CONTROLS ASSEMBLY OF MULTI-LAYERED PARASPECKLES. **Wilton T. Snead**, Krishna Shrinivas, Danial Babaki, Kevin M. Weeks, Amy S. Gladfelter

336-POS **BOARD B157**
EFFECTS OF ALPHA-SYNUCLEIN AND SYNAPTIC VESICLES ON THE MATERIAL PROPERTIES OF SYNAPSIN CONDENSATES. **Huan Wang**, Christian Hoffmann, Jordan Elliott, James Roggeveen, Howard A. Stone, Jean Baum, Dragomir Milovanovic, Zheng Shi

Transcription (Boards B158 - B173)

337-POS **BOARD B158**
LARGE SCALE DISCOVERY OF REGULATORY ARCHITECTURES IN BACTERIA. **Tom Roeschinger**

338-POS **BOARD B159**
MODELING AND SIMULATING HUMAN MITOCHONDRIAL RNA POLYMERASE NUCLEOTIDE ADDITION CYCLE USING COMPUTATIONAL MICROSCOPE. **Shannon J. McElhenney**, Moises E. Romero, Jin Yu

339-POS **BOARD B160**
ANALYSIS OF RNA POLYMERASE II TRIGGER LOOP MUTATIONS USING SIMULATIONS AND MACHINE LEARNING. **Bercem Dutagaci**, Bingbing Duan, Craig D. Kaplan, Michael Feig

340-POS **BOARD B161**
HIGH THROUGHPUT MEASUREMENTS OF DIRECT ACTIVATION DOMAIN-COACTIVATOR INTERACTIONS. **Nicole DelRosso**, Peter Suzuki, Daniel Griffith, Alex S. Holehouse, Lacramioara Bintu, Polly Fordyce

341-POS **BOARD B162**
NOVEL IMPROVEMENTS TO RNA SYNTHESIS FOR BIOPHYSICAL STUDIES. Kithmie MalagodaPathiranage, Ruptanu Banerjee, Purnima Mala, Amin Abek, **Craig T. Martin**

342-POS **BOARD B163**
TOWARD MERGING IMAGE ANALYSIS AND GENE NETWORK DISCOVERY FROM FLUORESCENT IN SITU HYBRIDIZATION DATA. **Max Schweiger**, Zeliha Kilic, Camille Moyer, Sina Jazani, Rory Kruithoff, Alexis Coullomb, Lei Zhou, Douglas P. Shepherd, Steve Pressé

343-POS **BOARD B164**
SYNERGY BETWEEN PAUSING AND CLEAVAGE-FACTOR-ASSISTED-PROOFREADING RESULTS IN OPTIMAL TRANSCRIPTION SPEED AND TOLERABLE ACCURACY. **Tripti Midha**, Anatoly B. Kolomeisky, Oleg Igoshin

344-POS **BOARD B165**
LOCATION OF A TOPOLOGICALLY ASSOCIATING DOMAIN AT THE NUCLEAR PERIPHERY HAS NO SYSTEMATIC CAUSAL EFFECT ON ITS GENES TRANSCRIPTION LEVELS IN DROSOPHILA NUCLEI. **Igor S. Tolokh**, Alexander Y. Afanasyev, Yoonjin Kim, Igor V. Sharakhov, Alexey V. Onufriev

345-POS BOARD B166
A SWI4 POSITIVE FEEDBACK LOOP THAT REGULATES TIMING OF START REVEALED BY TWO PHOTON SCANNING NUMBER AND BRIGHTNESS MICROSCOPY. **Abhishek Ghimire**, Carleton H. Coffin, Pooja Goswami, Jing Cheng, Ghada Ghazal, Sylvain Tollis, Mike Tyers, Catherine A. Royer

346-POS BOARD B167
SINGLE-MOLECULE STUDIES ON CO-TRANSCRIPTIONAL R-LOOP FORMATION AT DNA DAMAGE SITE. **Gun Hyoung Lim**, Sungchul Hohng

347-POS BOARD B168
CYTOKINE-INDUCED TRANSCRIPTIONAL MEMORY IS EVIDENT IN THE KINETICS OF TRANSCRIPTIONAL BURSTS. **Clayton Seitz**, Hailan Ma, Hok Wai Chang, Jing Liu

348-POS BOARD B169
PAK4 KINASE AS A POTENTIAL THERAPEUTIC TARGET OF THE TRANSCRIPTION FACTOR P63-MEDITATED SQUAMOUS CELL CARCINOMAS OF THE PANCREAS. **Seungeun Lee**

349-POS BOARD B170
DECIPHERING THE MOLECULAR MECHANISMS OF BPTF INTERACTIONS WITH NUCLEOSOMES VIA MOLECULAR SIMULATIONS. **Ryan F. Hebert**, Jeffery M. Wereszczynski

350-POS BOARD B171
THE A12.2 SUBUNIT HAS A ROLE IN RNA POLYMERASE I PYROPHOSPHATE RELEASE. **Kaila B. Fuller**, Ruth Q. Jacobs, David A. Schneider, Aaron L. Lucius

351-POS BOARD B172
RECONSTITUTION OF MITOCHONDRIAL TRANSCRIPTIONAL PAUSING. **An H. Hsieh**

352-POS BOARD B173
INVESTIGATING THE MOLECULAR MECHANISMS BEHIND THE TRANSCRIPTIONAL RESPONSE IN PRESSURE ADAPTATION. **Carleton H. Coffin**, Brooke Evans, Luke Fisher, Abhishek Ghimire, Doug Bartlett, Catherine A. Royer

Protein-Nucleic Acid Interactions I (Boards B174 - B205)

353-POS BOARD B174
SINGLE-MOLECULE DISSECTION OF THE INTERACTION BETWEEN A METHYL-DNA BINDING PROTEIN AND CHROMATIN. **Gabriella N.L. Chua**

354-POS BOARD B175
STRUCTURE AND FUNCTION OF SARS-COV-2 NUCLEOCAPSID PROTEIN MEASURED USING OPTICAL TWEEZERS, CONFOCAL FLUORESCENCE, AND AFM. **Michael Morse**, Jana Sefcikova, Micah J. McCauley, Ioulia F. Rouzina, Penny J. Beuning, Mark C. Williams

355-POS BOARD B176
SINGLE MOLECULE EVIDEONCE FOR LINKER HISTONE H1 DNA SLIDING AND NUCLEOSOMAL BYPASSING REGULATED BY THE C-TERMINAL DISORDERED DOMAIN. **Ehsan Akbari**, Nathan Burge, Michael G. Poirier

356-POS BOARD B177
POLARITY OF THE CRISPR ROADBLOCK TO TRANSCRIPTION. **Porter M. Hall**, James Inman, Robert M. Fulbright, Tung T. Le, Joshua Brewer, Guillaume Lambert, Seth A. Darst, Michelle D. Wang

357-POS BOARD B178
MIRNA ACCESSIBILITY IN CELLULAR RISC REVEALED BY SINGLE-MOLECULE KINETIC FINGERPRINTING. **Tanmay O. Chatterjee**, Shankar Mandal, Nils G. Walter

358-POS BOARD B179
STUDYING PICH-INDUCED NUCLEOSOME REMODELING USING DUAL-TRAP OPTICAL TWEEZERS. Dian Spakman, **Tinka V.M. Clement**, Andreas S. Biebricher, Graeme A. King, Manika I. Singh, Ian D. Hickson, Erwin J.G. Peterman, Gijs J.L. wuite

359-POS BOARD B180
DNA MINI-CIRCLES REVEAL EFFECTS OF DNA TOPOLOGY ON CRISPR-CAS9 FUNCTIONS. **Yukang Liu**, Peter Z. Qin

360-POS BOARD B181
THE SMC5/6 COMPLEX EXHIBITS DYNAMIC BINDING ON DOUBLE-STRANDED DNA, BUT BINDS STABLY TO BRANCHED DNA. **Jeremy T. Chang**, Shibai Li, Emily Beckwitt, Thane Than, Cory Haluska, Joshua Chandanani, Michael O'Donnell, Xiaolan Zhao, Shixin Liu

361-POS BOARD B182
EXPLORING CLEAVAGE ACTIVITY OF NSP15 USING SINGLE-MOLECULE PIE-FRET. **Kenya Gordon**, Meredith Frazier, Isha Wilson, Robin Stanley, Sharonda LeBlanc

362-POS BOARD B183
PROBING THE BRIDGING BEHAVIOUR OF THE ROK PROTEIN FROM *BACILLUS SUBTILIS* WITH QUADRUPLE-TRAP OPTICAL TWEEZERS. **Xamanie M.R. Seymonson**, Panagiotis Christodoulis, Mandy Erkelens, Andreas S. Biebricher, Remus T. Dame, Gijs J. Wuite

363-POS BOARD B184
TARGET SEARCH DYNAMICS OF SOX TRANSCRIPTION FACTORS. **Sim Sakong**, David Suter, Beat Fierz

364-POS BOARD B185
OPTICAL TWEEZERS EXPERIMENTS REVEAL ANTICANCER DRUG BI-3802 BINDS DNA IN THE MICROMOLAR RANGE. **Jared M. McAuliffe**, Mark C. Williams, Thayaparan Paramanathan

365-POS BOARD B186 TRAVEL AWARD WINNER
IMPACT OF SHELTERIN COMPLEX ON TELOMERE ACCESSIBILITY. **Sajad A. Shiekh**, Amanda Jack, Golam Mustafa, Sineth G. Kodikara, Prabesh Gyawali, Mohammed E. Hoque, Ahmet Yildiz, Hamza Balci

366-POS BOARD B187
HIV-1 NUCLEOCAPSID PROTEIN BINDS DOUBLE-STRANDED DNA IN MULTIPLE MODES TO REGULATE COMPACTION AND CAPSID UNCOATING. **Helena Gien**, Michael Morse, Micah J. McCauley, Ioulia F. Rouzina, Jonathan Kitzrow, Karin Musier-Forsyth, Robert Gorelick, Mark C. Williams

367-POS BOARD B188
T4 GP32 FORMS DYNAMIC, COMPACTING FILAMENTS ON SSDNA THAT REORGANIZE THROUGH INTERPROTEIN INTERACTIONS. **Benjamin Cashen**, Michael Morse, Ioulia F. Rouzina, Richard L. Karpel, Mark C. Williams

368-POS BOARD B189
MEASURING SITE SPECIFIC DNA CLEAVAGE AT THE SINGLE-MOLECULE LEVEL. Allen C. Price, **Jaqueline Ferreira**, Lauren Menzel, Krysten Rafferty

369-POS BOARD B190
"HELICASE" ACTIVITY PROMOTED THROUGH DYNAMIC INTERACTIONS BETWEEN A SSDNA TRANSLOCASE AND A DIFFUSING SSB PROTEIN. **Kacey N. Mersch**, Joshua E. Sokoloski, Binh Nguyen, Roberto Galletto, Timothy M. Lohman

370-POS BOARD B191
MEASURING DNA FOLDING BY THE SARS-COV-2 NUCLEOCAPSID PROTEIN. **Jake J. Kim**, Youna N. Choi, Ashley R. Carter

371-POS BOARD B192
A KINETIC MECHANISM FOR U6 SNRNP BIOGENESIS OBTAINED BY SINGLE-MOLECULE FLUORESCENCE COLOCALIZATION MICROSCOPY. **Ye Liu**, Yuichiro Nomura, Samuel E. Butcher, Aaron A. Hoskins

372-POS BOARD B193
SINGLE-MOLECULE ASSAY FOR HIGHLY SENSITIVE SARS-COV-2 GENE DETECTION BASED ON CRISPR-CAS12A. **Sangmin Ji**, Hye Ran Koh

373-POS **BOARD B194**
ASSEMBLY OF A THREE-PROTEIN COMPLEX ON DNA PROBED BY NANOFLUIDIC STRETCHING. Ming Liu, Hai Pan, Parminder Kaur, Lucia J. Wang, Ariana C. C. Detwiler, Yizhi J. Tao, Patricia L. Opresko, Hong Wang, **Robert Riehn**

374-POS **BOARD B195**
BINDING AND WRAPPING OF *E. COLI* SINGLE STRANDED BINDING PROTEIN (SSB) C-TERMINAL TAIL VARIANTS MEASURED USING FORCE SPECTROSCOPY. **Gudfridur B. Moller**, Michael Morse, James McIsaac, Ioulia F. Rouzina, Penny Beuning, Mark C. Williams

375-POS **BOARD B196**
EXPLORING THE BINDING OF MITOXANTRONE TO DNA USING OPTICAL TWEEZERS. **Karan R. Patel**, Thayaparan Paramanathan

376-POS **BOARD B197**
RESOLVING THE KINETICS OF TRANSCRIPTION FACTOR RECOGNITION OF THE TARGET DNA SITE VIA ADVANCED SINGLE-MOLECULE FRET SPECTROSCOPY. **Catherine Ghosh**

377-POS **BOARD B198**
REMDESIVIR DISPLAYS WEAK BINDING TO DNA IN OPTICAL TWEEZERS EXPERIMENTS. **Ryan Bauer**, Thayaparan Paramanathan

378-POS **BOARD B199**
TRACKING TELOMERASE RECRUITMENT TO MODEL TELOMERE DNA ENDS USING REAL-TIME SINGLE-MOLECULE FRET. **Mareike Badstuebner**

379-POS **BOARD B200**
MEASURING THE EFFECTS OF C-TERMINAL DELETION IN MYCOBACTERIAL TYPE IA TOPOISOMERASES USING MAGNETIC TWEEZERS. **Dillon S. Balthrop**, Deepesh Sigdel, Chunfeng Mao, K. Maria Mills

380-POS **BOARD B201**
OPTICAL TWEEZERS EXPERIMENTS SHOW MELTING DNA FACILITATES THE BINDING OF MINOR GROOVE BINDER NETROPSIN. **Irbazhusain Shaikh**, Thayaparan Paramanathan

381-POS **BOARD B202**
NUCLEOSOME CHAPERONE ACTIVITY OF LEDGF AND HDGF2 CHARACTERIZED WITH SINGLE-MOLECULE FORCE SPECTROSCOPY. **Joha Joshi**, Micah J. McCauley, Nicole A. Becker, Michael Morse, Ioulia F. Rouzina, Louis J. Maher, Dmitry Lyumkis, Mark C. Williams

382-POS **BOARD B203**
GATE DYNAMICS STUDIES OF *M. SMEGMATIS* TOP1A USING MAGNETIC TWEEZERS. **Deepesh Sigdel**, Doniven Hicks, Dillon S. Balthrop, Chunfeng Mao, K. Maria Mills

383-POS **BOARD B204**
MEASURING JUMPING DURING DNA TARGET SEARCH. Allen C. Price, **Van Nguyen**, Joseph J. Loparo

384-POS **BOARD B205**
3D GENOME ARCHITECTURE REGULATES THE TRAFFIC OF TRANSCRIPTION FACTORS THROUGHOUT HUMAN CHROMOSOMES. Amit Das, Ryan Cheng, Davit Potoyan, **Michele Di Pierro**

Membrane Physical Chemistry I (Boards B206 - B231)

385-POS **BOARD B206** **TRAVEL AWARD WINNER**
THE USE OF IODINATED CHOLESTEROL TO ENHANCE CONTRAST IN CRYO-EM IMAGES OF LIPID MEMBRANES. **Elizabeth K. Crumley**, Deeksha Mehta, Jinchao Lou, Michael D. Best, Neal Waxham, Frederick A. Heberle

386-POS **BOARD B207**
ELUCIDATING THE PHASE BEHAVIOR OF TERNARY MODEL MEMBRANE MIXTURES CONTAINING HALOGENATED CHOLESTEROL ANALOGUES. **Deeksha Mehta**, Elizabeth Crumley, Jinchao Lou, Michael D. Best, Neal Waxham, Frederick A. Heberle

387-POS **BOARD B208**
ARE LIPID PROPERTIES THE SAME IN NANODISCS AND VESICLES? **Itay Schachter**, Christoph Allolio, George Khelashvili, Daniel Harries

388-POS **BOARD B209**
APPLICATION OF POLYMETHACRYLATE BASED NANODISCS FOR THE CHARACTERIZATION OF PHOSPHOINOSITIDE/PEPTIDE INTERACTIONS. **Peter G. Oni**, Arne Gericke

389-POS **BOARD B210**
PHYSICOCHEMICAL CHARACTERIZATION OF LIPID MIXTURES FOR LIPOSOMAL FORMULATIONS OF POLYENES. Joseline A. Bahena-Herrera, Rebeca Dominguez-Reyes, Gabriela Leos-Aguirre, **Arturo Galván-Hernández**, Ivan Ortega-Blake

390-POS **BOARD B211**
MEMBRANE COMPOSITION MAY REGULATE PROTON WAVE PROPAGATION. **Anna Maznichenko**, Peter Pohl

391-POS **BOARD B212**
EXPERIMENTAL INVESTIGATIONS OF COUPLED POLYMER AND MEMBRANE PHASE TRANSITIONS. **Yousef Bagheri**, Mason Rouches, Benjamin B. Machta, Sarah L. Veatch

392-POS **BOARD B213**
SMALL CHANGES IN LIPID BACKBONE LINKAGES CAN LEAD TO BIG CHANGES IN LIQUID-LIQUID PHASE SEPARATION IN MODEL MEMBRANES. **Karan D. Sharma**, Neal Waxham, Frederick A. Heberle

393-POS **BOARD B214** **TRAVEL AWARD WINNER**
INVESTIGATING THE MECHANOCHEMISTRY OF MEMBRANE AREA ASYMMETRY GENERATION: A COMBINED MASS-ACTION AND MICROMECHANICAL STUDY USING METHYL-BETA-CYCLODEXTRIN. **Tyler R. Reagle**, Yuxin Xie, Tobias Baumgart

394-POS **BOARD B215**
THE ROLE OF CHOLESTEROL IN CURVATURE AND STRIPE WIDTH EVOLUTION IN MODEL LUNG SURFACTANT MONOLAYERS. Zachary McAllister, **Benjamin L. Stottrup**, Cain Valtierrez-Gaytan, Bjorn Solberg, Aidan S. Dosch, Joseph A. Zasadzinski

395-POS **BOARD B216**
MEASUREMENTS OF CHOLESTEROL CHEMICAL POTENTIAL CONSTRAIN MODELS OF CHOLESTEROL-PHOSPHATIDYLCHOLINE INTERACTIONS. **Thomas R. Shaw**, Kathleen Wisser, Taylor A. Schaffner, Anna Gaffney, Benjamin B. Machta, Sarah L. Veatch

396-POS **BOARD B217**
DESORPTION OF CHOLESTEROL FROM MODEL MEMBRANES BY β-CYCLODEXTRINS: CHARACTERIZING PLAQUE FIGHTING COMPOUNDS VIA QUARTZ CRYSTAL MICROGRAVIMETRY WITH DISSIPATION MONITORING. **Ethan M. Fong**

397-POS **BOARD B218**
PHOSPHATIDYLINOSITOL-4-PHOSPHATE DOMAIN PROPERTIES IN ASYMMETRIC GIANT UNILAMMELAR VESICLES. **Catherine P. Reynolds**, Trevor A. Paratore, Alonzo H. Ross, Arne Gericke

398-POS **BOARD B219**
VESICLE BUDDING CAUSED BY LYSOLIPID-INDUCED ASYMMETRY STRESS. **Lisa Hua**, Michael D. Kaiser, Heiko H. Heerklotz

399-POS **BOARD B220**
EFFECTS OF INTERDIGITATION ON THE BIOPHYSICAL PROPERTIES OF LIPID BILAYERS: A MOLECULAR DYNAMICS STUDY OF CHAIN ASYMMETRIC LIPIDS. **Emily H. Chaisson**, Milka Doktorova, Frederick A. Heberle

400-POS **BOARD B221** **TRAVEL AWARD WINNER**
UTILIZING ASYMMETRIC GIANT UNILAMELLAR VESICLES TO DETERMINE HOW LOW-MELTING PHOSPHOLIPIDS AFFECT INTERLEAFLET COUPLING STRENGTH. **Kristen B. Kennison**, Haden L. Scott, Thais A. Enoki, Neal Waxham, Frederick A. Heberle

401-POS **BOARD B222**
NEUTRAL POLYMERS PARTIAL EXCLUSION IN IONIC SOLUTIONS NEAR CHARGED MEMBRANES. Marcel Aguilella-Arzo, David P. Hoogerheide, **Vicente M. Aguilella**

402-POS **BOARD B223**
MODELING THE MECHANISM OF GIANT UNILAMELLAR VESICLE (GUV) ASSEMBLY. **Vaishnavi Girish**, Anand B. Subramaniam

403-POS **BOARD B224**
VESICLES MADE BY SEVERAL METHODS CONTAIN THE RATIO OF PHOSPHOLIPIDS IN THE STOCK SOLUTION. **Kent Wilson**, Gunnar Goetz, Heidi Spears, Emily Pruitt, Libin Xu, Sarah Keller

404-POS **BOARD B225**
OPTIMIZATION OF EMULSION PHASE TRANSFER TO PRODUCE GIANT VESICLES WITH TWO NESTED BILAYERS. **Gunnar J. Goetz**, Sarah L. Keller

405-POS **BOARD B226**
MECHANISTIC INSIGHTS ALLOWS HIGH YIELD ASSEMBLY OF GIANT UNILAMELLAR VESICLES IN SOLUTIONS OF PHYSIOLOGICAL IONIC STRENGTHS AND STUDIES OF THE EFFECTS OF INTERCELLULAR VARIATION ON CIRCADIAN TIMEKEEPING. **Anand B. Subramaniam**

406-POS **BOARD B227**
EXAMINING COMPOSITIONAL VARIABILITY OF GIANT UNILAMELLAR VESICLES VIA SECONDARY ION MASS SPECTROMETRY. **Dashiel S. Grusky**, Ahanjit Bhattacharya, Steven G. Boxer

407-POS **BOARD B228**
PHOSPHATIDYLINOSITOL PHASE BEHAVIOR IN SYMMETRIC AND ASYMMETRIC MODEL MEMBRANES. **Safiya N. Ali**, Trevor A. Paratore, Alonzo H. Ross, Arne Gericke

408-POS **BOARD B229**
CHARACTERIZATION OF PHOSPHOINOSITIDE DOMAINS IN ASYMMETRIC GIANT UNILAMELLAR VESICLES. **Trevor A. Paratore**, Alonzo H. Ross, Arne Gericke

409-POS **BOARD B230**
DISSECTING THE IMPACT OF THE DEGREE OF LIPID SATURATION AND PRESENCE OF CARDIOLIPIN ON THE MITOCHONDRIAL INNER MEMBRANE MECHANICS. **Christopher T. Lee**, Kailash Venkatraman, Itay Budin, Padmini Rangamani

410-POS **BOARD B231**
CHARACTERIZATION AND MODELING OF LIPID MONOLAYER MORPHOLOGY AND MECHANICAL STABILITY. **Anna Gaffney**, Kathleen D. Cao, Angelo R. Carotenuto, Nhung Nguyen, David Owen, Massimiliano Fraldi, Luca Deseri, Ka Yee C. Lee, Luka Pocivavsek

Membrane Structure I (Boards B232 - B252)

411-POS **BOARD B232**
POLYUNSATURATED FATTY ACIDS AND THE EFFECT OF PHOSPHOLIPID HEADGROUP ON LIPID RAFTS. **Patrick Kelley**, Alexander Q. Phillips, Samuel W. Canner, Stephen R. Wassall

412-POS **BOARD B233** **TRAVEL AWARD WINNER**
MEMBRANE OXYGEN PERMEABILITY IS GOVERNED BY AREA-PER-LIPID, COMBINED WITH HEADGROUP SIZE AND CHOLESTEROL CONTENT. **Qi Wang**, Sally C. Pias

413-POS **BOARD B234**
BIOPHYSICAL ADAPTATIONS OF CELL MEMBRANES TO HYDROSTATIC PRESSURE: FROM DEEP-SEA MARINE INVERTEBRATES TO MODEL MICROORGANISMS. **Daniel Milshteyn**, Jacob R. Winnikoff, Steven H.D. Haddock, Itay Budin

414-POS **BOARD B235**
LONG-TERM SURVIVABLE LIPOSOMES IN SEAWATER. **Kayano Izumi**, Keiichiro Koiwai, Ryuji Kawano

415-POS **BOARD B236**
CHOLESTEROL PROMOTES SIMILAR CHAIN PACKING IN N-3 PUFA-CONTAINING MEMBRANES. **Andres T. Cavazos**, Samuel W. Canner, Xiaoling Leng, Horia I. Petrache, Stephen R. Wassall

416-POS **BOARD B237**
INVESTIGATING STRUCTURE-PROPERTY RELATIONS IN CHOLESTEROL-RICH LIPID MEMBRANES. **Teshani Kumarage**, Sudipta Gupta, Fathima T. Doole, Milka Doktorova, Haden L. Scott, Laura R. Stingaciu, John Katsaras, George Khelashvili, Michael F. Brown, Rana Ashkar

417-POS **BOARD B238**
CANNABIDIOL AND CANNABINOL HAVE DISTINCT EFFECTS ON MEMBRANE STRUCTURE. **Mark N. Mahadeo**, Emma Lee, Jaydon Bains, Peter C. Ruben, Jenifer L. Thewalt

418-POS **BOARD B239**
DISTRIBUTION OF CHOLESTEROL IN ASYMMETRIC MEMBRANES DRIVEN BY COMPOSITION AND DIFFERENTIAL STRESS. **Malavika Varma**, Markus Deserno

419-POS **BOARD B240**
LIPIDS AND MICROPARTICLES, PHYSICAL CHARACTERIZATION AS A LUNG-CONTAMINATION MODEL. **Sergio I. Gomez**, Francisco Javier Guevara Pantoja, Andrew R. White, Younjin Min

420-POS **BOARD B241** **TRAVEL AWARD WINNER**
CONTRIBUTION OF SURFACE-ASSOCIATED MEMBRANES TO PULMONARY SURFACTANT-MEDIATED DRUG DELIVERY. **Cristina García Mouton**, Mercedes Echaide, Luis A. Serrano, Guillermo Orellana, Antonio Cruz, Jesus Perez-Gil

421-POS **BOARD B242**
ROLE OF CHOLESTEROL IN PULMONARY SURFACTANT AT AMBIENT AND PHYSIOLOGICAL TEMPERATURES. Fazle R. Dayeen, Bret A. Brandner, Stephen B. Hall, **David Gidalevitz**

422-POS **BOARD B243**
CEREBROSIDES LIPIDS AND THEIR PHYSICAL EFFECT ON MULTIPLE SCLEROSIS MEMBRANES. **Isabelle Fischer**, Francisco Javier Guevara Pantoja, Younjin Min

423-POS **BOARD B244**
SPATIAL CORRELATION OF CHOLESTEROL AND AMPHIPATHIC HELIX OF IFITM3. **Amirali Hossein**, Andrew H. Beaven, Kazi Rahman, Alex A. Compton, Alexander J. Sodt

424-POS **BOARD B245**
LIPID COMPOSITION OF XENOPUS OOCYTES USED FOR HETEROLOGOUS MEMBRANE PROTEIN EXPRESSION. **Elba E. Serrano**

425-POS **BOARD B246**
FCERI CLUSTERS COUPLING WITH SIGNALING CONDENSATES AND MEMBRANE RAFT DOMAINS IN MAST CELL ACTIVATION. **Daryna Sputay**, Hongyin Wang, Sze Ham Chan, Kandice R. Levental, Ilya Levental

426-POS **BOARD B247**
PROBING THE MECHANISM OF ANNEXIN MEDIATED PLASMA MEMBRANE REPAIR. **Adam Cohen Simonsen**, Anna Mularski, Jesper Nylandsted, Anne Sofie Busk Heitmann

427-POS **BOARD B248**
THE MEMBRANE PHASE TRANSITION DRIVES TUNABLE ASSEMBLY AND FUNCTION OF B CELL RECEPTOR SIGNALING DOMAINS. **Sarah A. Shelby**, Ivan Castello Serrano, Ilya Levental, Sarah L. Veatch

428-POS **BOARD B249**
THE INTERDEPENDENCE OF THERMODYNAMIC, MECHANICAL, AND STRUCTURAL PROPERTIES IN SATURATED PHOSPHOLIPID MEMBRANES. **Nicholas B. Morris**, Teshani Kumarage, Rana Ashkar

429-POS **BOARD B250**
ACCURATE ESTIMATION OF FREE ENERGY LANDSCAPE OF PHASE SEPARATION IN LIPID BILAYERS. **Ashlin James Poruthoor**, Alan Grossfield

430-POS **BOARD B251**
CURVATURE INDUCED MEMBRANE STRUCTURE FROM FLUORESCENCE. **Luis M. Davila Munoz**, Radha Ranganathan

431-POS **BOARD B252**
PULMONARY SURFACTANT STRUCTURE AS SOLVED BY NEUTRON REFLECTOMETRY AND ATOMIC FORCE MICROSCOPY. **Ainhoa Collada**, Armando Maestro, Johann Mertens, Emma Batllori-Badia, Alberto Galindo, Jesus Perez-Gil, Antonio Cruz

Mechanosensation (Boards B253 - B281)

432-POS **BOARD B253**
MOUSE NODAL IMMOTILE CILIA SENSE BENDING DIRECTION FOR LEFT-RIGHT DETERMINATION: MECHANICAL REGULATION IN INITIATION OF SYMMETRY BREAKING. **Takanobu A. Katoh**, Toshihiro Omori, Katsutoshi Mizuno, Takeshi Itabashi, Atsuko H. Iwane, Takuji Ishikawa, Yasushi Okada, Takayuki Nishizaka, Hiroshi Hamada

433-POS **BOARD B254**
SYNERGISTIC NANOMAGNETIC FORCES AND ARIPIPRAZOLE POTENTIATE GUIDED NEURITE OUTGROWTH. **Madeline Conrad**, Mackenna K. Landis, Anja Kunze

434-POS **BOARD B255**
TENSION-SUPPRESSED DEGRADATION OF COLLAGEN CONTROLS TISSUE STIFFNESS SCALING WITH FIBRILLAR COLLAGEN. **Karanvir Saini**, Sangkyun Cho, Manu Tewari, Abdelaziz Jalil, Mai Wang, Manasvita Vashisth, Alex Kasznel, Kazuhiro Yamamoto, David M. Chenoweth, Dennis E. Discher

435-POS **BOARD B256**
SUBSTRATE STIFFNESS INDUCES A CHRONIC ADAPTATION IN CONTRACTILE WORK AND ELECTROPHYSIOLOGY OF CARDIOMYOCYTES. **Pouria Tirgar**, José Miguel Romero Sepúlveda, Cameron Hastie, Yuanyuan Tao, Gil Bub, Allen J. Ehrlicher

436-POS **BOARD B257**
GENETIC KNOCKOUT OF PRESTIN LIMITS CARDIAC HYPERTROPHY IN A MURINE PRESSURE OVERLOAD MODEL. **Phung N. Thai**, Lu Ren, Yankun Lyu, Daphne A. Diloretto, Valeriy Timofeyev, Ebenezer N. Yamoah, Xiao-Dong Zhang, Nipavan Chiamvimonvat

437-POS **BOARD B258**
FUNCTIONAL SPECIALIZATIONS OF *DROSOPHILA* PRIMARY MECHANOSENSORY NEURONS. **Stephen L. Holtz**, Rachel I. Wilson

438-POS **BOARD B259**
NONLINEAR DYNAMICS OF SOUND DETECTION IN THE AMPHIBIAN AUDITORY SYSTEM. **Dzmitry Vaido**, Martín A. Toderi, Dolores Bozovic

439-POS **BOARD B260**
USING LIGHT TO STUDY SOUND: STIMULATING HAIR CELLS WITH PHOTONIC PRESSURE. Sanjeewa Abeytunge, Francesco Gianoli, A. James Hudspeth, **Andriy Kozlov**

440-POS **BOARD B261**
DIFFERENTIAL NUCLEAR TRANSLOCATION OF STAT6 REGULATES THE MECHANOSENSITIVE IMMUNE CELL ACTIVATION. **Dong-Hwee Kim**

441-POS **BOARD B262**
FAT-FILLED LIPID DROPLETS WITH HIGH CURVATURE ACT AS STIFF INCLUSIONS THAT DISRUPT THE LAMINA, RUPTURE THE NUCLEUS AND INCREASE DNA DAMAGE. **Irena L. Ivanovska**, Michael P. Tobin, Lawrence J. Dooling, Dennis E. Discher

442-POS **BOARD B263**
NUCLEAR STIFFNESS REGULATES CELLULAR SENESCENCE VIA YAP DEPENDENT MECHANOTRANSDUCTION. **Luv Kishore Srivastava**, Ajinkya Ghagre, Allen J. Ehrlicher

443-POS **BOARD B264**
HYPERCONTRACTILITY BY HYPERTROPHIC CARDIOMYOPATHY MUTANT IPSC-CMS INDUCES HIPPO-YAP ACTIVATION THROUGH ENHANCED NUCLEAR DEFORMATION. **Orlando N. Chirikian**

444-POS **BOARD B265** **TRAVEL AWARD WINNER**
MITOCHONDRIAL FUNCTION IS REGULATED BY MECHANOSENSITIVE CHANNELS IN *TRYPANOSOMA BRUCEI*. Melvin Williams, Elissa Moller, Tiffine Pham, Sergei I. Sukharev, **Veronica Jimenez**

445-POS **BOARD B266**
BACTERIA BIOLUMINESCE IN RESPONSE TO FLUID SHEAR. **Sumit Kumar Birwa**, Raymond E. Goldstein, Nuno M. Oliveira

446-POS **BOARD B267**
THE ROLE OF PROTEIN-MEMBRANE ELECTROSTATIC INTERACTIONS IN THE ADAPTIVE GATING CYCLE OF MSCS. Madolyn Britt, Elissa Moller, Andriy Anishkin, **Sergei I. Sukharev**

447-POS **BOARD B268**
QUANTIFYING PRESSURE AND ULTRASOUND ACTIVATION OF THE MECHANOSENSITIVE K^+ CHANNEL TRAAK. **Trevor Docter**, Ben Sorum, Robert A. RIetmeijer, Steve Brohawn

448-POS **BOARD B269**
THE ENERGETICS OF RAPID CELLULAR MECHANOTRANSDUCTION. Michael N. Young, Michael J. Sindoni, Amanda H. Lewis, Stefan Zauscher, **Jörg M. Grandl**

449-POS **BOARD B270**
DIRECT OBSERVATION OF PIEZO1 CONFORMATIONAL STATES. **Eric M. Mulhall**, Rachel Lee, Adrienne E. Dubin, Jesse Aaron, Michael Reiche, Anant Gharpure, Kara Marshall, Kathryn Spencer, Scott C. Henderson, Teng-Leong Chew, Ardem Patapoutian

450-POS **BOARD B271**
SINGLE-PARTICLE TRACKING AND MACHINE-LEARNING CLASSIFICATION REVEALS HETEROGENEOUS PIEZO1 DIFFUSION. **Alan T. Ly**, Vivek Tyagi, Gabriella A. Bertaccini, Elizabeth Evans, J. Alfredo Freites, Douglas J. Tobias, Medha M. Pathak

451-POS **BOARD B272** **TRAVEL AWARD WINNER**
VISUALIZATION OF MECHANICAL FORCES IN 3D CELL MODELS WITH MOLECULAR DNA TENSION PROBE. **Qian Tian**, Feiyu Yang, Yubing Sun, Mingxu You

452-POS **BOARD B273**
MECHANICAL ACTIVATION OF EPIDERMAL GROWTH FACTOR RECEPTOR AT INTERCELLULAR ADHESIONS. **Deborah E. Leckband**, Vinh H. Vu, Yubo Zou, Brendan G. Sullivan

453-POS **BOARD B274**
CALCIUM-DEPENDENT STRENGTH OF THE INNER-EAR CADHERIN-23 ECTODOMAIN. **Colin Klaus**, Shuqi Wang, Bowen Jia, Avinash Jaiganesh, Marcos M. Sotomayor

454-POS **BOARD B275**
ELASTIC PROPERTIES OF THE INNER-EAR TIP LINK EXPLORED USING ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Carter T. Wheat**, Jasanvir Sandhu, Elakkiya Tamilselvan, Pedro De-la-Torre, Joseph C. Sudar, Travis Harrison-Rawn, Marissa Boyer, Qurat Ashraf, Daisy Alvarado, Marcos M. Sotomayor

455-POS **BOARD B276**
MEMBRANE CURVATURE REGULATES THE SPATIAL DISTRIBUTION OF BULKY GLYCOPROTEINS. **Chih-Hao Lu**

456-POS **BOARD B277**
TMC REGULATES MEMBRANE VISCOSITY IN MAMMALIAN COCHLEAR HAIR CELLS. **Shefin Sam George**, Amel El Bahloul-Jaziri, Anthony J. Ricci

457-POS **BOARD B278** **TRAVEL AWARD WINNER**
CHOLESTEROL AS A TOOL TO PROBE THE ROLE OF MEMBRANE IN COCHLEAR HAIR CELL MECHANOTRANSDUCTION. **Shefin Sam George**, Thomas Effertz, Anthony J. Ricci

458-POS **BOARD B279**
PREDICTING CONDUCTION PROPERTIES OF TMC PROTEINS INVOLVED IN SENSORY PERCEPTION *IN SILICO*. **Shounak Mukherjee**, Harsha Mandayam Bharathi, Wei-Hsiang Weng, Travis Harrison-Rawn, Hariharan Kannan, Quratulayn Ashraf, Marcos M. Sotomayor

459-POS **BOARD B280**
MECHANICAL VS. AGONIST INDUCED ACTIVATION IN THE ANGIOTENSIN II TYPE 1 RECEPTOR. Bharat Poudel, Rajitha R. Tatikonda, **Juan M. Vanegas**

460-POS **BOARD B281**
SINGLE PICONEWTON FORCES REGULATE DISSOCIATION OF THE LATROPHILIN-3 GAIN DOMAIN. **Brian L. Zhong**, Christina E. Lee, Vipul T. Vachharajani, Thomas C. Sudhof, Alexander R. Dunn

Mitochondria in Cell Life and Death (Boards B282 - B307)

461-POS **BOARD B282**
THE SINGLE RESIDUE K12 GOVERNS HIGHLY SENSITIVE VOLTAGE GATING OF THE VOLTAGE-DEPENDENT ANION CHANNEL. Van Ngo, Maria Queralt-Martin, Farha Khan, Lucie A. Bergdoll, Jeff Abramson, Sergey M. Bezrukov, Tatiana K. Rostovtseva, Sergei Y. Noskov, **David P. Hoogerheide**[10]

462-POS **BOARD B283**
SMALL MOLECULES TARGETING THE NADH-BINDING POCKET OF VDAC ENHANCE T CELL CYTOTOXICITY AND SELECTIVELY INHIBIT CANCER CELL PROLIFERATION. Milagros Junco, Paramita Chakraborty, Clara Ventura, Kareem A. Heslop, Monika Gooz, Shikhar Mehrotra, **Eduardo N. Maldonado**

463-POS **BOARD B284**
ROLE OF VDAC ISOFORMS IN BIOENERGETICS AND METABOLISM. **Megha Rajendran**, Sergey M. Bezrukov, Tatiana K. Rostovtseva

464-POS **BOARD B285**
DEFINING THE ROLES AND REGULATION OF THE MITOCHONDRIAL VDAC ISOFORMS ONE MOLECULE AT A TIME. **William M. Rosencrans**, Maria Queralt-Martin, Henry J. Lessen, Motahareh Ghahari Larimi, Megha Rajendran, Tsui-Fen Chou, Radhakrishnan Mahalakshmi, Alexander J. Sodt, Tsyr-Yan Yu, Sergey M. Bezrukov, Tatiana K. Rostovtseva

465-POS **BOARD B286**
COOPERATIVITY OF GATING OF ATP SYNTHASE AND ANT ION CHANNELS. **Elizabeth A. Jonas**, Feifei Shang, Lei Shen, Nelli Mnatsakanyan

466-POS **BOARD B287**
IN ORGANELLO REAL-TIME NMR METABOLOMICS OF MITOCHONDRIA: AN *S. CEREVISIAE* MODEL OF BARTH SYNDROME DISPLAYS PERTURBED METABOLISM. Antonio J. Rua, Wayne Mitchell, Nathan N. Alder, **Andrei T. Alexandrescu**

467-POS **BOARD B288**
CALCIUM AND BICARBONATE SIGNALING CONTROL MITOCHONDRIAL ATP PRODUCTION. Maura Greiser, Mariusz Karbowski, Aaron D. Kaplan, Andrew Coleman, Carmen A. Mannella, **W. Jonathan Lederer**, Liron Boyman

468-POS **BOARD B289**
BCL-2 EXPRESSION STIMULATES ETHANOL PRODUCTION IN YEAST. **Laurent M. Dejean**, Hailie Willey, Carlos Gonzalez, Sean Carpenter, Andrew Gilbert, Krish Krishnan, Stephen Manon

469-POS **BOARD B290**
PRESSURE TREATMENT HAS A DIFFERENTIAL EFFECT ON CYANIDE- AND ETHANOL-INDUCED AUTOFLUORESCENCE RESPONSE IN YEAST. Xavier J. Mleziva, **Paul K. Urayama**

470-POS **BOARD B291**
PATHOLOGICAL ROLE OF HIGH SUGAR IN MITOCHONDRIAL RESPIRATORY CHAIN DEFECT - AUGMENTED MITOCHONDRIAL STRESS. **Ebrima D. Cham**, Mei-Jie Jou

471-POS **BOARD B292**
MITOCHONDRIAL ROS AS A REGULATOR OF SYNAPTIC FUNCTION. Irina Stavrovskaya, Bethany Kristi Morin, **Pablo M. Peixoto**

472-POS **BOARD B293**
ENZYMATIC DEPLETION OF MITOCHONDRIAL INORGANIC POLYPHOSPHATE INCREASES THE GENERATION OF REACTIVE OXYGEN SPECIES AND THE ACTIVITY OF THE PENTOSE PHOSPHATE PATHWAY IN MAMMALIAN CELLS. **Vedangi D. Hambardikar**

473-POS **BOARD B294** **TRAVEL AWARD WINNER**
DEPLETION OF MITOCHONDRIAL POLYP LEVELS INCREASE THE PHOSPHORYLATION OF AMPK PROTEIN AND COMPROMISES OXYGEN CONSUMPTION IN SH-SY5Y CELLS. **Renata Torres da Costa**, Matheus Moreira Perez, Ernest Scoma, Vedangi D. Hambardikar, Lindsey M. Riggs, Maria E. Solesio Torregrosa

474-POS **BOARD B295**
PRUNE REGULATES THE MEATBOLISM OF MAMMALIAN INORGANIC POLYPHOSPHATES AND BIOENERGETICS. **Ernest Scoma**

475-POS **BOARD B296**
ROLE OF INORGANIC POLYPHOSPHATES IN THE ACTIVATION OF AMPK IN MODELS OF ALZHEIMER'S DISEASE. **Lindsey M. Riggs**, Maria E. Solesio Torregrosa

476-POS **BOARD B297**
IMBALANCES IN MITOCHONDRIAL METABOLISM AND UNCOUPLING PROTEIN 2 IN POLICYSTIC KIDNEY DISEASE CELLS. **Monika Gooz**, Yujing Dang, Yefim Manevich, Anna-Liisa Nieminen, Darwin Bell, Eduardo N. Maldonado

477-POS **BOARD B298**
CYCLOPHILIN D INHIBITION RESCUES CARDIAC FUNCTION IN NEONATAL HYPOXIA. Jonathan Burris, Gisela Beutner, Ethan D. Cohen, Min Yee, Michael A. O'Reilly, **George A. Porter**

478-POS **BOARD B299**
BIOACTIVE FUMARATE IMPROVES CARDIAC FUNCTION AND EXPANDS LIFESPAN IN FRIEDRECH'S ATAXIA. Lili Salinas, Francisco Figueroa, Claire B. Montgomery, Phung N. Thai, Nipavan Chiamvimonvat, Sundeep Dugar, Somdutta Sen, Gino Cortopassi, **Elena N. Dedkova**

479-POS **BOARD B300**
CONSEQUENTIAL MODULATION OF MITOCHONDRIAL K^+- AND H^+-DRIVEN ATP SYNTHASE ACTIVITY UNDER EXCESS CYTOPLASMIC NA^+ AND OXIDATIVE STRESS MIMICKING HEART FAILURE: MODELING STUDIES. **Sonia C. Cortassa**, Miguel A. Aon, Magdalena Juhaszova, Dmitry B. Zorov, Steven J. Sollott

480-POS **BOARD B301**
CARDIOPROTECTIVE ROLE OF INNER MEMBRANE CHLORIDE CHANNEL, CLIC5 FROM ISCHEMIA-REPERFUSION INJURY. **Devasena Ponnalagu**, Diego Antelo, Ahmed T. Hussain, Erhe Gao, Walter Koch, Harpreet Singh

481-POS **BOARD B302**
CARDIOPROTECTION WITH A BKCA CHANNEL ACTIVATOR IMPROVES POST-ISCHEMIC CARDIAC RECOVERY IN PIGS AND NORMALIZES ALTERED MITOCHONDRIAL PROTEIN EXPRESSION ASSESSED BY TMT-MS. **Wenzhuo Ma**, Neel Sodha, Martin Kolodziejczak, Zhiqi Zhang, Afshin Ehsan, Scarlett Huck, Clarissa Cavarsan, Frank Sellke, Jun Feng, Dmitry A. Terentyev, Richard T. Clements

482-POS **BOARD B303**
KNOCK-OUT OF MITOCHONDRIAL NUCLEOSIDE DIPHOSPHATE KINASE NME4 REVEALS SURPRISING TISSUE-DISTRIBUTION AND REMODELED CELL SIGNALING, SUGGESTIVE OF MULTIPLE FUNCTIONS. **Malgorzata Tokarska-Schlattner**, Baraa Rstom, Cindy Tellier, Stephane Attia, Laurence Kay, Uwe Schlattner

483-POS **BOARD B304**
OPTICAL MODULATION OF MITOCHONDRIAL MORPHOLOGY AND FUNCTIONS. Kangqiang Qiu, Weiwei Zou, Hongbao Fang, Minggang Hao, Kritika Mehta, Zhiqi Tian, Jun-Lin Guan, Taosheng Huang, Jiajie Diao, **Kai Zhang**

484-POS **BOARD B305**
DISSECTING THE LIPIDIC DETERMINANTS OF INNER MITOCHONDRIAL MEMBRANE STRUCTURE. **Kailash Venkatraman**, Christopher T. Lee, Guadalupe Garcia, Arijit Mahapatra, Keunyoung Kim, Guy Perkins, Sebastien Phan, Hilda A. Pasolli, Jennifer Lippincott-Schwartz, Mark Ellisman, Padmini Rangamani, Itay Budin

485-POS **BOARD B306**
MITOCHONDRIAL TEMPORAL NETWORK TRACKING FOR 4D LIVE-CELL FLUORESCENCE MICROSCOPY DATA. **Zichen Wang**, Parth Natekar, Challana Tea, Sharon Tamir, Hiroyuki Hakozaki, Johannes Schöneberg

486-POS **BOARD B307**
MITOCHONDRIAL RUPTURE AFTER PHOTODAMAGE INITIATES PARKIN-INDEPENDENT MITOPHAGY IN MOUSE HEPATOCYTES. **Li li**, Jiangting Hu, Zhi Zhong, Eeva-Liisa Eskelinen, John J. Lemasters

Voltage-Gated Na Channels (Boards B308 - B333)

487-POS **BOARD B308**
BIOPHYSICAL PROPERTIES OF $NA_V1.5$ CHANNEL IN VENTRICULAR-LIKE AND ATRIAL-LIKE CHAMBER CARDIOMYOCYTES DERIVED FROM HUMAN INDUCED PLURIPOTENT STEM CELLS. **Charles-Albert Chapotte-Baldacci**, Marion Pierre, Mohammed Djemaï, Mohamed Chahine

488-POS **BOARD B309**
CALMODULIN BINDS FGF12A TO REGULATE NAV1.5 CHANNEL INACTIVATION. **Lucy S. Woodbury**, Paweorn Angsutararux, Martina Marras, Carlota Abella, Jonathan R. Silva

489-POS **BOARD B310**
A DE NOVO ARRHYTHMOGENIC NAV1.5 VARIANT, E171Q, CAUSES MULTIPLE BIOPHYSICAL DEFECTS. Mohamed Fouda, Andrew M. Glazer, Tao Yang, **Dana A. Page**, Yuko Wada, Shubhayan Sanatani, Dan M. Roden, Peter C. Ruben

490-POS **BOARD B311**
ARUMENAMIDES: A NOVEL CLASS OF POTENTIAL ANTI-ARRHYTHMIC COMPOUNDS. **Mena Abdelsayed**, Dana A. Page, Peter C. Ruben

491-POS **BOARD B312**
INFLAMMATION PROVOKES GATING CHANGES IN THE NEURONAL VOLTAGE-GATED SODIUM CHANNEL, NAV1.6. Mohamed Fouda, **Peter C. Ruben**

492-POS **BOARD B313** **TRAVEL AWARD WINNER**
CHARACTERIZATION OF ATRIAL FIBRILLATION LINKED MUTATIONS USING THE $NA_V1.5$ KNOCK-OUT OF ATRIAL CARDIOMYOCYTES DERIVED FROM IPSCS. **Marion Pierre**, Charles-Albert Chapotte-Baldacci, Mohammed Djemai, Mohamed Chahine

493-POS **BOARD B314**
ENHANCEMENT OF EFL-INACTIVATION GATE INTERACTION BY TRUNCATION OF NAV1.5 CARBOXY-TERMINAL DOMAIN. **Ryan W. Mahling**, Nourdine Chakouri, Manu Ben-Johny

494-POS **BOARD B315**
EFFECTS OF MEXILETINE ON A RACE-SPECIFIC MUTATION IN NAV1.5 ASSOCIATED WITH LONG QT SYNDROME. Xin Wu, Yawei Li, **Liang Hong**

495-POS **BOARD B316**
ELUCIDATING THE DIFFERENTIAL MUTATIONAL EFFECTS OF GATING CHARGES IN VOLTAGE-GATED SODIUM CHANNELS. **Eslam Elhanafy**, Amin Akbari Ahangar, Jing Li

496-POS **BOARD B317**
EFFECTS OF ELECTRIC-FIELD RESHAPING ON VOLTAGE SENSING IN VOLTAGE-GATED SODIUM CHANNELS. **Andrei Y. Kostritskii**, Jan-Philipp Machtens

497-POS **BOARD B318**
HIGH-LEVEL EXPRESSION OF VOLTAGE-GATED SODIUM CHANNELS IN THYMIDINE-ARRESTED HUMAN EMBRYONIC KIDNEY CELLS. **Ahmed Eltokhi**, Tamer M. Gamal El-Din, William A. Catterall

498-POS **BOARD B319**
A NOVEL HIGH THROUGHPUT COMBINED VOLTAGE-CLAMP/CURRENT-CLAMP ANALYSIS OF SINGLE PRIMARY NEURONS. **Mohammad-Reza Ghovanloo**, Sidharth Tyagi, Peng Zhao, Emre Kiziltug, Mark Estacion, Sulayman Dib-Hajj, Stephen G. Waxman

499-POS **BOARD B320**
FINE-STRUCTURE CONSTANT AND HYSTERESIS REGIMES IN THE GIANT SQUID PROPAGATING ACTION POTENTIAL. **Nikola K. Jurisic**, Fred Cooper

500-POS **BOARD B321**
NO EVIDENCE OF FUNCTIONAL INTERACTIONS BETWEEN CARDIAC SODIUM CHANNELS. **Zoja Selimi**, Jean-Sébastien Rougier, Hugues Abriel, Jan P. Kucera

501-POS **BOARD B322**
USING ROSETTA AND ALPHAFOLD TO ASSESS JINGZHAOTOXIN-III BINDING TO $HNA_V1.5$ AND $HK_V2.1$. **Brandon J. Harris**, Diego Lopez Mateos, Geir Hareland, Vladimir Yarov-Yarovoy

502-POS **BOARD B323**
STRUCTURAL BASIS FOR SEVERE PAIN CAUSED BY MUTATIONS IN VOLTAGE GATED SODIUM CHANNELS $NA_V1.7$. **Tamer M. Gamal El-Din**, Goragot Wisedchaisri, William A. Catterall

503-POS **BOARD B324**
COMPOSITION OF TTX-S NA_VCURRENT IN RAT MUSCLE AFFERENT NEURONS. **Khrystyna Sukhanova**, Jeong Sook Kim-Han, Keith S. Elmslie

504-POS **BOARD B325**
COMPUTATIONAL DESIGN OF PEPTIDES STABILIZING NAV1.7 CHANNEL IN AN INACTIVATED STATE. **Diego Lopez Mateos**, Adriana Hernandez Gonzalez, Vladimir Yarov-Yarovoy

505-POS **BOARD B326**
A DIGITALLY-MODULATED CONDUCTANCE CLAMP ELIMINATES INSTABILITY OBSERVED WITH LARGER CURRENT SIGNALS IN CONVENTIONAL DYNAMIC CLAMP. Anthony Costantino, Mark W. Nowak, Leigh Korbel, Alex Kane, Glenna Bett, **Randall L. Rasmusson**

506-POS **BOARD B327**
INTERACTION OF GATING-MODIFIER TARANTULA TOXINS WITH VOLTAGE-GATED SODIUM CHANNELS. **Krishnakoli Adhikary**

507-POS **BOARD B328**
$NA_V1.9$: A UNIQUE VOLTAGE-GATED SODIUM CHANNEL WITH A ROLE IN INFLAMMATORY PAIN. **Margaux Theys**, Frank Bosmans

508-POS **BOARD B329**
OPTICAL MEASUREMENT OF GATING PORE CURRENTS IN HYPOKALEMIC PERIODIC PARALYSIS MODEL CELLS. **Tomoya Kubota**, Satoe Takahashi, Risa Yamamoto, Ruka Sato, Aya Miyanooto, Reina Yamamoto, Kosuke Yamauchi, Kazuaki Homma, Masanori P. Takahashi

509-POS **BOARD B330**
GATING DEFECTS IN K1126I, A PUTATIVE HYPOKALEMIC PERIODIC PARALYSIS MUTATION IN HNAV1.4. **James R. Groome**

510-POS **BOARD B331** **TRAVEL AWARD WINNER**
CRITICAL REGULATION OF THE VOLTAGE-GATED SODIUM CHANNEL, $NA_V1.4$, BY PIP_2. **Kirin D. Gada**, Jordie M. Kamuene, Aishwarya Chandrashekar, R. Charlie Kissell, Leigh D. Plant

511-POS **BOARD B332**
OPTOGENETIC REGULATION OF PIP_2 ALTERS THE VOLTAGE-DEPENDENCE OF ACTIVATION AND FAST INACTIVATION OF SKELETAL MUSCLE $NA_V1.4$ CHANNELS. **Jordie M. Kamuene**, Kirin Gada, Charlie Kissell, Leigh D. Plant

512-POS **BOARD B333**
ALTERED VOLTAGE-DEPENDENCE REVEALED IN AN INACTIVATION-DEFICIENT MUTANT OF NAV1.4 VIA OPTOGENETIC PI(4,5)P2 DEPHOSPHORYLATION. **Ralph C. Kissell**, Kirin D. Gada, Jordie M. Kamuene, Aishwarya Chandrashekar, Leigh D. Plant

Voltage-Gated Ca Channels (Boards B334 - B348)

513-POS **BOARD B334** **TRAVEL AWARD WINNER**
$CA_V2.1$ CHANNELS DIVIDE INTO TWO POPULATIONS AT RESTING MEMBRANE POTENTIALS. **Kaiqian Wang**, Michelle Nilsson, Fredrik Elinder, Antonios Pantazis

514-POS **BOARD B335** **TRAVEL AWARD WINNER**
STAC PROTEINS INHIBIT THE VOLTAGE DEPENDENT INACTIVATION OF L-TYPE CALCIUM CHANNELS. **Wietske E. Tuinte**, Petronel Tuluc, Marta Campiglio

515-POS **BOARD B336** **TRAVEL AWARD WINNER**
GENETIC DELETION OF STAC2 ADAPTOR PROTEIN ALTERS ELECTRICAL ACTIVITY OF MOUSE CHROMAFFIN CELLS. **Stefanie M. Geisler**, Tamara Theiner, Noelia Jacobo-Piqueras, Marta Campiglio, Petronel Tuluc

516-POS **BOARD B337**
INCREASED PANCREATIC B-CELL ELECTRICAL ACTIVITY REDUCES DIABETES SUSCEPTIBILITY IN FEMALE MICE. **Noelia Jacobo-Piqueras**, Petronel Tuluc

517-POS **BOARD B338**
PHOSPHODIESTERASE 1 INHIBITION UNDERLIES LONG QT PHENOTYPE CAUSED BY THE HUMAN N98S-CALMODULIN MUTANT. **Shuai Guo**, Zhenhui Chen, Michael Rubart

518-POS **BOARD B339**
DISEASE-ASSOCIATED CALMODULIN VARIANTS IMPAIR REGULATION OF NEURONAL VOLTAGE-GATED CALCIUM CHANNELS. **John W. Hussey**, Emily DeMarco, Deborah DiSilvestre, Helene H. Jensen, Manu Ben-Johny, Mette Nyegaard, Michael T. Overgaard, Ivy E. Dick

519-POS **BOARD B340**
ELUCIDATING THE ROLE $CA_V1.2$ DYSFUNCTION IN THE PATHOGENESIS OF TIMOTHY SYNDROME USING IPSC-DERIVED NEURONS. **Kevin G. Herold**, Moradeke A. Bamgboye, Deborah DiSilvestre, John Hussey, Josiah O. owoyemi, Ivy E. Dick

520-POS **BOARD B341**
CONVERGENT REGULATION OF $CA_V1.2$ CHANNELS BY DIRECT PHOSPHORYLATION AND BY THE SMALL GTPASE RAD IN THE CARDIAC FIGHT-OR-FLIGHT RESPONSE. **Liam Hovey**, Tamer M. Gamal El-Din, William A. Catterall

521-POS **BOARD B342**
PHENOTYPE PREDICTION OF VOLTAGE-GATED CALCIUM CHANNEL MUTATIONS. **Xuechen Tang**, Klaus R. Liedl, Monica L. Fernandez-Quintero, Joerg Striessnig

522-POS **BOARD B343**
VOLTAGE-DEPENDENT TRANSITIONS BETWEEN RESTING AND ACTIVATED STATES OF THE FOUR CAV1.1 VOLTAGE SENSORS OBSERVED IN MD SIMULATION. **Monica L. Fernández-Quintero**, Simone Pelizzari, Yousra El Ghaleb, Martin C. Heiss, Klaus R. Liedl, Bernhard E. Flucher

523-POS **BOARD B344**
IONIC INTERACTIONS BETWEEN GATING CHARGES AND COUNTER-CHARGES IN VOLTAGE-SENSING DOMAIN I INDEPENDENTLY REGULATE KINETICS AND VOLTAGE-DEPENDENCE OF $CA_V1.1$ GATING. **Martin C. Heiss**, Monica L. Fernandez-Quintero, Simone Pelizzari, Yousra El Ghaleb, Marta Campiglio, Petronel Tuluc, Klaus R. Liedl, Bernhard E. Flucher

524-POS **BOARD B345**
THE VOLTAGE-DEPENDENT STRUCTURAL TRANSITIONS GOVERNING THE OPENING OF THE HUMAN T-TYPE CAV3.1 CHANNEL: INSIGHTS FROM VOLTAGE-CLAMP FLUOROMETRY. **Marina Angelini**, Moira McVicar, Nicoletta Savalli, Scott A. John, Alan Neely, Antonios Pantazis, Michela Ottolia, Riccardo Olcese

525-POS **BOARD B346**
TOWARDS NEXT-GENERATION OPTOGENETIC ACTUATORS OF VOLTAGE-GATED CA^{2+} CHANNELS. **Audrey Lauris Kochiss**, Srinidhi Jayaraman, Pedro J. del Rivero Morfin, Nourdine Chakouri, Manu Ben-Johny

526-POS **BOARD B347**
INHIBITION OF CAV1.4 CHANNELS BY PROTONS DEPENDS ON THE IDENTITY OF THE A2Δ SUBUNIT. **Juan Antonio M. De La Rosa**, Amy Lee

527-POS **BOARD B348**
TWO NEWLY IDENTIFIED *CACNA1I* VARIANTS LINKED TO NEURODEVELOPMENTAL DISORDER AND EPILEPSY DIFFERENTIALLY AFFECT CAV3.3 GATING PROPERTIES. **Yousra El Ghaleb**, Monica L. Fernandez-Quintero, Marta Campiglio, Klaus R. Liedl, Astrid S. Plomp, Dewi P. Bakker, Mahdi M. Motazacker, Fanny Kortüm, Anne-Sophie Höing, Kerstin Kutsche, Bernhard E. Flucher

TRP Channels (Boards B349 - B366)

528-POS **BOARD B349**
STRUCTURAL ALIGNMENT OF TRP CHANNELS TO INVESTIGATE SELECTIVITY AND GATING. **Elisabeth V. Oskoui**, Katherine E. Huffer, Kenton J. Swartz

529-POS **BOARD B350**
A GATING MODEL FOR THE MECHANICAL ACTIVATION OF SENSORY TRP CHANNELS. **Inti Zumeta-Dube**, Alina Milici, Enrique (Quique) Velasco Serna, Karel Talavera

530-POS **BOARD B351**
ELUCIDATING THE MECHANISM OF PI3K WHEN INTERACTING WITH TRPV1. **Jesse R. Huang**, Teresa M. Swanson, Moshe T. Gordon, Sharona E. Gordon

531-POS **BOARD B352** **TRAVEL AWARD WINNER**
THE BISPHOSPHONATE ZOLEDRONIC ACID IS A TRPV1 CHANNEL INHIBITOR. **Karen Castillo**, Yorley Duarte, Ignacio A. Segura, Rodrigo Meza, Carlos Ancaten, Karina Carvajal-Zamorano, Rosa Scala, Domenico Tricarico, Andres Chavez, Ramon Latorre

532-POS **BOARD B353**
VANILLOID-DEPENDENT TRPV1 OPENING TRAJECTORY FROM CRYOEM ENSEMBLE ANALYSIS. **Dohoon Kwon**, Feng Zhang, Justin G. Fedor, Yang Suo, Seok-Yong Lee

533-POS **BOARD B354**
VOLTAGE-DEPENDENT INHIBITION OF THERMO-TRPV CHANNELS BY INTRACELLULAR SPERMINE. **Grigory Maksaev**, Peng Yuan, Colin G. Nichols

534-POS **BOARD B355**
HYDROPHOBIC GATING IN BUNDLE-CROSSING ION CHANNELS: A CASE STUDY OF TRPV4. **Jian Huang**, Jianhan Chen

535-POS **BOARD B356**
ELECTROPHYSIOLOGICAL PROPERTIES OF TRPC1/4 HETEROMER DETERMINED BY ITS PORE RESIDUES. **Christine Haewon Park**, Insuk So

536-POS **BOARD B357**
IDENTIFICATION OF A NOVEL TRICYCLIC ANTIDEPRESSANT BINDING SITE WITHIN OPIOID RECEPTOR USING MOLECULAR DYNAMICS AND FUNCTIONAL ASSAYS. **Byeongseok Jeong**, Insuk So, Chansik Hong

537-POS **BOARD B358**
TRP^{434} AND TRP^{435} RESIDUES ARE CRUCIAL FOR SENSING CALCIUM IONS AND PI(4,5)P2 MOLECULES IN TRPC5 CHANNEL. **Jinhyeong Kim**, Jinsung Kim, Insuk So

538-POS **BOARD B359**
TRP CHANNEL RESPONSIBLE FOR THE RESPONSES TO COLLISION, AGITATION, AND SHEAR IN *CHLAMYDOMONAS*. Kosuke Saga, Neo Itoh, Megumi Yoshida, Atsuko Isu, Ken-ishi Wakabayashi, **Kenjiro Yoshimura**

539-POS **BOARD B360**
INVESTIGATION OF FACTORS THAT INFLUENCE THE TEMPERATURE SENSITIVITY OF THE TRPM2 CATION CHANNEL. **Adam Bartok**, Laszlo Csanady

540-POS **BOARD B361**
DEVELOPMENT OF A HIGH THROUGHPUT-COMPATIBLE FLUORESCENCE-BASED ASSAY FOR TRPM3 CHANNEL ACTIVITY AND SURFACE EXPRESSION. **Helen Chen**

541-POS **BOARD B362**
EXPLORING THE GATING MECHANISMS OF THE TRPM3 CHANNEL. **Charlotte H. Godfrey**, Katherine Huffer, Kenton Swartz

542-POS **BOARD B363**
TRPM7 KINASE UPREGULATION IN HYPOMAGNESEMIA INDUCES IL-1B SECRETION FROM MACROPHAGES, CONTRIBUTING TO DIASTOLIC DYSFUNCTION. **Samuel C. Dudley**, Man Liu, Salman Ali, Hong Liu, Yugene Guo, Gyeoung-Jin Kang

543-POS **BOARD B364**
HYPEREXCITABILITY REDUCES TRPM5 IN PANCREATIC B-CELLS: INSIGHTS INTO DISRUPTION OF INSULIN SECRETION IN CHRONICALLY STIMULATED ISLETS. **Nathaniel W. York**, Zihan Yan, Abbie L. Tate, Maria S. Remedi, Colin G. Nichols

544-POS **BOARD B365**
APPLICATION OF STEM CELL THERAPY FOR OSTEOARTHRITIS PAIN MANAGEMENT. **Hope Sabella**, Ayaan M. Khan, Gabrielle Thomas, Takova Wallace-Gay, Farah Deba

545-POS **BOARD B366**
TREATMENT OF OSTEOARTHRITIS BY SALVIANOLIC ACID DERIVATIVES. **Ayaan M. Khan**, Tanvikhaa Saravanan, Farah Deba

Anion Channels (Boards B367 - B377)

546-POS **BOARD B367**
INACTIVATION OF ANOCTAMIN-1 BY CAMKII PHOSPHORYLATION IS HAMPERED BY THE PRESENCE OF ALTERNATIVELY SPLICED VARIANT *D*. **Connor Jimenez**, Matthew B. Hawn, Elizabeth Akin, Normand Leblanc

547-POS **BOARD B368**
TOWARDS STRUCTURAL DETERMINATION OF EUKARYOTIC FLUORIDE EXPORT PROTEIN (FEX). **Chia-Yu Kang**, Benjamin McIlwain, Randy Stockbridge

548-POS **BOARD B369**
INTERACTIONS OF HUMAN REDUCED FOLATE CARRIER SLC19A1 WITH FOLATES AND ANTIFOLATES. **Han Zhang**, Wonpil Im

549-POS **BOARD B370**
FUNCTIONAL CHARACTERIZATION OF CHLORIDE INTRACELLULAR CHANNEL 6 (CLIC6). **Veronica Loyo-Celis**, Devendra Patel, Shridhar Sanghvi, Devasena Ponnalagu, Kamalpreet Kaur, Sahej Bindra, Shubha Gururaja Rao, Harpreet Singh

550-POS **BOARD B371** **TRAVEL AWARD WINNER**
UNDERSTANDING IMPACT OF ΔF508 AND G551D CFTR MUTATIONS ON CFTR/PKA-C INTERACTION. **Marton A. Simon**, Laszlo Csanady

551-POS **BOARD B372**
IDENTIFICATION OF LRRC8/VRAC CHANNEL STRUCTURAL ELEMENTS REQUIRED FOR REGULATION BY CELL VOLUME INCREASE AND INTRACELLULAR IONIC STRENGTH. **Toshiki Yamada**, Hirohide Takahashi, Erkan Karakas, Jerod S. Denton, Kevin Strange

552-POS **BOARD B373**
INFLUENCE OF ELECTRONIC POLARIZATION IN A CHLORIDE-PUMPING RHODOPSIN BINDING SITE. **Linda X. Phan**, Hector Martinez-Seara, Jason Crain, Mark S.P. Sansom, Stephen J. Tucker

553-POS **BOARD B374**
OLIGOMERIC STRUCTURE OF LRRC8/VRAC CHANNELS: ARGUMENTS FOR A HEPTAMERIC CONFORMATION. **Jerod S. Denton**, Toshiki Yamada, Hirohide Takahashi, Erkan Karakas, Kevin Strange

554-POS **BOARD B375**
INFLUENCE OF THE STATE OF PHOSPHORYLATION ON THE INTERACTION OF ANTHRACENE-9-CARBOXYLIC ACID WITH ANO1-ENCODED CA^{2+}-ACTIVATED CL^- CHANNELS. **Matthew B. Hawn**, Connor Jimenez, Ramon J. Ayon, Michael Wiwchar, Normand Leblanc

555-POS **BOARD B376**
CYSTEINE MUTAGENESIS REVEALS NOVEL STRUCTURE-FUNCTION FEATURES WITHIN THE PREDICTED TRANSMEMBRANE DOMAIN OF CHLORIDE INTRACELLULAR ION CHANNEL 1 (CLIC1). **Shridhar K. Sanghvi**, Veronica Loyo-Celis, Kalina Szteyn, Devendra Patel, Harpreet Singh

556-POS **BOARD B377**
BESTROPHIN-2 AND GLUTAMINE SYNTHETASE FORM A COMPLEX FOR GLUTAMATE RELEASE. **Alec Kittredge**, Aaron P. Owji, Kuai Yu, Jiali Wang, Yu Zhang, Tingting Yang

Skeletal Muscle Mechanics, Structure, and Regulation (Boards B378 - B399)

557-POS **BOARD B378**
HIGH-INTENSITY INTERVAL TRAINING USING ELECTRICAL STIMULATION IMPROVES MITOCHONDRIAL DYSFUNCTION AND MUSCLE ENDURANCE IN RATS WITH CHRONIC KIDNEY DISEASE. **Hiroyori Fusagawa**, Takashi Yamada, Tatsuya Sato, Yuki Ashida, Asuma Naito, Nao Tokuda, Nao Yamauchi, Nobutoshi Ichise, Takuro Karaushi, Atsushi Teramoto, Toshihiko Yamashita, Noritsugu Tohse

558-POS **BOARD B379**
STRETCH ACTIVATED FORCE PRODUCTION INCREASES DURING FATIGUE IN FAST-CONTRACTING SKELETAL MUSCLE FIBERS. **Philip Woods**, Douglas M. Swank, Mark S. Miller

559-POS **BOARD B380**
SKELETAL MUSCLE FIBER FORCE DECLINES WITH CHRONIC KIDNEY DISEASE IN JUVENILE AND ADULT MICE. **Brent A. Momb**, Edwin Patino, Oleh Akchurin, Mark S. Miller

560-POS **BOARD B381**
IRON SUPPLEMENTATION IMPROVES SKELETAL MUSCLE CONTRACTILE PROPERTIES IN MICE WITH CHRONIC KIDNEY DISEASE. **Brent Momb**, Edwin Patino, Oleh Akchurin, Mark S. Miller

561-POS **BOARD B382**
PHARMACOLOGICAL INTERVENTIONS IMPROVE MYOSIN-ACTIN CROSS-BRIDGE FUNCTION IN MICE WITH ADVANCED CHRONIC KIDNEY DISEASE. **Brent Momb**, Edwin Patino, Oleh Akchurin, Mark S. Miller

562-POS **BOARD B383**
EMBRYONIC MYOSIN MUTATIONS ALTER THE MECHANICS AND MATURATION OF HIPSC DERIVED SKELETAL MUSCLE. **Christian J. Mandrycky**, Saffie Mohran, Matthew C. Childers, Shawn M. Luttrell, Kati Buckingham, Michael J. Bamshad, David L. Mack, Michael Regnier

563-POS **BOARD B384**
PASSIVE FORCE ENHANCEMENT IS NOT ABOLISHED BY SHORTENING OF SINGLE FIBRES. **Shuyue Liu**, Heron Baptista de Oliveira Medeiros, Heiliane de Brito Fontana, Walter Herzog

564-POS **BOARD B385**
IMMUNOGLOBULIN DOMAIN UNFOLDING AND REFOLDING IN PASSIVELY STRETCHED MYOFIBRILS. **Chris Tiessen**, Tim Leonard, Gudrun Schappacher-Tilp, Walter Herzog

565-POS **BOARD B386**
DIFFERENT PHOSPHORYLATION STATES OF NATIVE TITIN FILAMENTS VISUALIZED BY ATOMIC FORCE MIVROSCOPY. Andrea Balogh-Molnar, Dominik Sziklai, Miklos Kellermayer, **Zsolt Martonfalvi**

566-POS **BOARD B387**
DO ACTIN-MYOSIN CROSS-BRIDGES EXHIBIT A VISCOELASTIC BEHAVIOUR? **Venus Joumaa**, Wejdaan Faridi, Shuyue Liu, Walter Herzog

567-POS **BOARD B388**
MEASURING SARCOMERE DYNAMICS FOLLOWING IMMUNOFLUORESCENT LABELLING OF CONSTITUTIVE STRUCTURAL AND CONTRACTILE PROTEINS. **Armaan Sekhon**, Dhairya Desai, Tim Leonard, Walter Herzog

568-POS **BOARD B389**
MODELING SPATIAL INHOMOGENEITIES IN A CROSSBRIDGE ENSEMBLE REVEALS WHERE MEAN-FIELD ESTIMATES OF SARCOMERE STIFFNESS BREAK DOWN. **Dan Rivera**, Madhusudhan Venkadesan

569-POS **BOARD B390**
EFFECTS OF BLEBBISTATIN ON FORCE PRODUCTION, ACTIN MOTILITY AND THE FORCE-VELOCITY RELATION PRODUCED BY MYOSIN II FILAMENTS AND MYOFIBRILS. **Yu-Shu Cheng**, Daren Elkrief, Dilson E. Rassier

570-POS **BOARD B391** **TRAVEL AWARD WINNER**
A RATIONAL APPROACH TO SELECTIVE TARGETING OF SKELETAL MYOSIN. **Anna Katarina Antonovic**, Julien Ochala, Arianna Fornili

571-POS **BOARD B392**
KINETICS OF INTERACTION OF MYOSIN-NUCLEOTIDE COMPLEX AND ACTIN. Aarushi Naskar, **Yuri Nesmelov**

572-POS **BOARD B393**
REGULATION OF TROPONIN AND MYOSIN CONFORMATION IN THIN- AND THICK-FILAMENT DOMAINS IN THE SARCOMERE OF SKELETAL MUSCLE MYOFIBRILS. Kristina Sliogeryte, **Luca Fusi**

573-POS **BOARD B394**
INTERPRETING EQUATORIAL X-RAY DIFFRACTION PATTERNS FROM STRIATED MUSCLE WITH MULTISCALE MODELING. Momcilo Prodanovic, Yiwei Wang, Srboljub M. Mijailovich, **Thomas C. Irving**

574-POS **BOARD B395**
CRYO-EM STRUCTURE OF TARANTULA MYOSIN FILAMENT: IMPLICATIONS FOR ANALYSIS OF MYOPATHY MUTATIONS. **Debabrata Dutta**, Vu Nguyen, Raul Padron, Roger Craig

575-POS **BOARD B396**
CHEMOMECHANICAL ENERGY REGULATES TIME-DEPENDENT CHANGES IN THIN FILAMENT ACTIVATION. **Henry G. Zot**, Javier E. Hasbun

576-POS **BOARD B397**
EXAMINATION INTO PROTEIN ASSEMBLY WITHIN THE CARDIAC THIN FILAMENT: WHY THE TROPONIN COMPLEX CROSSES OVER. **Anthony P. Baldo**, Jil C. Tardiff, Steven D. Schwartz

577-POS **BOARD B398**
CONDITIONALLY DOMINANT NEGATIVE IMPACTS OF CLINICALLY RECESSIVE *TNNT1* MYOPATHY MUTATIONS. **Han-Zhong Feng**, Jian-Ping Jin

578-POS **BOARD B399**
THERMOGENIC REGULATION OF THE SIMPLE HARMONIC MOTION OF TROPOMYOSIN BY WEAK-BINDING MYOSIN CROSS-BRIDGES EXPLAINS SPONTANEOUS OSCILLATORY CONTRACTIONS. **James J. Earley**

Poster: Smooth Muscle and Cardia Muscle Regulation, Mechanics (Boards B400 - B418)

579-POS **BOARD B400**
ATRIAL CARDIOMYOCYTES FROM A CANINE MODEL OF ATRIAL FIBRILLATION DEMONSTRATE REDUCED FORCE DEVELOPMENT AND ALTERED EXPRESSION OF CONTRACTILE PROTEINS. **Hannah E. Cizauskas**, Kelly Araujo, Seby Edassery, Jonathan A. Kirk, Rishi Arora, David Barefield

580-POS **BOARD B401**
CARDIAC MYOSIN'S MECHANICS AND LOAD DEPENDENT KINETICS ARE NOT ALTERED BY THE THIN-FILAMENT PROTEINS. **Brent Scott**, Sarah R. Clippinger, Samantha K. Barrick, William Stump, Thomas Blackwell, Michael J. Greenberg

581-POS **BOARD B402**
CALDESMON ENHANCES MOTILITY INHIBITION BY MYOSIN DEPHOSPHORYLATION. **Matheus Schultz**, Linda Kachmar, Gijs Ijpma, Anne-Marie Lauzon

582-POS **BOARD B403**
STRIATED MUSCLE MLCP IS REGULATED BY MYPT2 TO LIMIT BASELINE CARDIAC MYOSIN PHOSPHORYLATION. Eunyoung Lee, Zhenan Liu, Herman I. May, Thomas G. Gillette, Joseph A. Hill, **Audrey N. Chang**

583-POS **BOARD B404**
PHOSPHO-MIMETIC CARDIAC TROPONIN I SER43/45 PRODUCES EARLY CHANGES IN MITOCHONDRIA. Paige Reynolds, Oula Salih, Joseph Ruff, Sai H. Nagidi, Emily Lavey, **Margaret V. Westfall**

584-POS **BOARD B405**
TROPOMYOSIN R160A IS CRUCIAL FOR TNI PHOSPHORYLATION-INDUCED EFFECTS ON CALCIUM SENSITIVITY. **Meaghan Barry**, Michael J. Rynkiewicz, An-yue Tu, Michael Regnier, William Lehman, Jeffrey R. Moore

585-POS **BOARD B406**
MECHANISTIC STUDY OF MECHANICAL STRETCH INDUCED INCREASE IN CA^{2+} SENSITIVITY OF TROPONIN C. **Xutu Wang**, Wenji Dong

586-POS **BOARD B407** **TRAVEL AWARD WINNER**
THE C-TERMINAL END SEGMENT OF TROPONIN T IS A NOVEL TROPOMYOSIN-BINDING SITE DIRECTLY REGULATED BY CA^{2+} TO DETERMINE THE KINETICS OF CARDIAC MUSCLE. **Tianxin Cao**, Han-Zhong Feng, Jian-Ping Jin

587-POS **BOARD B408**
THIN FILAMENT REGULATION OF STRIATED MUSCLE POWER OUTPUT: IMPLICATIONS FOR TARGETS TO IMPROVE FAILING HUMAN HEARTS. Laurin M. Hanft, Theodore J. Kalogeris, Kenneth S. Campbell, Brandon J. Biesiadecki, **Kerry S. McDonald**

588-POS **BOARD B409**
CARDIAC MYOSIN-BINDING PROTEIN C N-TERMINAL DOMAINS DIFFERENTIALLY AFFECT CALCIUM DISSOCIATION FROM THE CARDIAC THIN FILAMENT. **Garrett Hauck**, Fiona Wong, Matthew M. Klass, Rhye-Samuel Kanassatega, Brett A. Colson, Jil C. Tardiff

589-POS **BOARD B410**
PREDICTIVE GENOTYPE-PHENOTYPE CORRELATION OF FOUR TROPOMYOSIN-1 VARIANTS OF UNKNOWN SIGNIFICANCE. **Ilayda Firlar**, Michael J. Rynkiewicz, Jenette Creso, Darren Liu, Jeffrey R. Moore, William Lehman, Stuart G. Campbell

590-POS **BOARD B411**
COMPUTATIONAL MODELING OF COOPERATIVE REGULATION OF BOTH STRANDS IN THIN FILAMENTS. **Yun Shi**, Sarah A. Kosta, Jose R. Pinto, Vitold E. Galkin, Kenneth S. Campbell, Prescott B. Chase

591-POS **BOARD B412**
THE EFFECT OF SMALL MOLECULE MYOSIN MODULATORS ON ATP TURNOVER IN PIG CARDIAC HMM USING STOPPED FLOW SPECTROSCOPY. Kristina B. Kooiker, Saffie Mohran, **Max Mahoney-Schaefer**, Jeremy Freeman, Michael A. Geeves, Michael Regnier, Farid Moussavi-Harami

592-POS **BOARD B413**
PRECLINICAL CHARACTERIZATION OF CK-4021586, A NEW CLASS OF CARDIAC MYOSIN INHIBITORS FOR THE TREATMENT OF HYPERTROPHIC CARDIOMYOPATHY. **Saswata Sankar Sarkar**, James J. Hartman, Darren T. Hwee, Chihyuan Chuang, Peadar Cremin, Andre deRosier, Samantha Edell, Roshni Madhvani, Yangsong Wu, Lisette Yco, Jeanelle Zamora, Anne Murphy, Bradley P. Morgan, Fady I. Malik

593-POS **BOARD B414**
MYOSIN IN AUTOINHIBITED *OFF* STATE(S), STABILIZED BY MAVACAMTEN, CAN BE RECRUITED VIA INOTROPIC EFFECTORS. **Weikang Ma**, Lin Qi, Momcilo Prodanovic, Henry M. Gong, Christopher Zambataro, Sampath K. Gollapudi, Srboljub M. Mijailovich, Carlos L. delRio, Suman Nag, Thomas C. Irving

594-POS **BOARD B415** **TRAVEL AWARD WINNER**
HF_pEF ANIMAL MODELS DISPLAY DIFFERENCES IN MYOFIBRIL MECHANICS. **Axel J. Fenwick**, Vivek P. Jani, David A. Kass, Anthony Cammarato

595-POS **BOARD B416**
EFFECTS OF LOW-DOSE X-RAY RADIATION AT VARYING DOSE RATES ON HUMAN AORTIC SMOOTH MUSCLE *IN VITRO*. **Charles D. Winchester**, Regan Frye, Arianna Csiszer, Jackson Well, Almog Gur, Delphine Dean, Endre Takacs

596-POS **BOARD B417**
IDENTIFICATION AND CHARACTERIZATION OF A CRUCIAL GUANINE NUCLEOTIDE EXCHANGE FACTOR (GEF), P63RHOGEF IN BLOOD PRESSURE REGULATION IN ZEBRAFISH AIMING FOR A NOVEL HIGH-THROUGHPUT DRUG SCREENING. **Akane Watanabe**, Masaya Hirota, Natsuho Moriyama, Satoru Yamamoto, Ryosuke Wakabayashi, Kyoshiro Tsuge, Akira Shimamoto, Ko Momotani, Kumiko Sakai

597-POS **BOARD B418**
EFFECTS OF VOLUNTARY EXERCISE AND ADMINISTRATION OF RENIN ANGIOTENSIN INHIBITOR ON CARDIAC FUNCTION IN INHERITED DILATED CARDIOMYOPATHY MODEL. **Masami Sugihara**, Ryo Kakigi, Takashi Murayama, Takashi Miida, Takashi Sakurai, Sachio Morimoto, Nagomi Kurebayashi

Microtubules, Structure, Dynamics, and Associated Proteins (Boards B419 - B436)

598-POS **BOARD B419**
DIVALENT METAL ION MEDIATED STRUCTURAL TRANSITIONS IN MICROTUBULE BUNDLES IN DISSIPATIVE REACTION MIXTURES REVEALED BY SYNCHROTRON SAXS AND PLASTIC-EMBEDDED TEM. **Phillip A. Kohl**, Chaeyeon Song, Bretton Fletcher, Rebecca Best, Christine Tchounwou, Ximena Garcia Arceo, Peter J. Chung, Herbert P. Miller, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

599-POS **BOARD B420**
TUBULINS SHOW SUSCEPTIBILITY TO MAGNETIC NANOPARTICLE INTERACTION. **Mackenna K. Landis**, Anja Kunze

600-POS **BOARD B421**
CHARACTERIZATION OF THE PH RESPONSE OF DISORDERED TUBULIN TAILS. **Allison Whited**, Genesis M. Ferrer, Emma L. Seidler, Jeffrey Moore, Loren Hough

601-POS **BOARD B422**
MICROTUBULE SEVERING BY KATANIN IS REGULATED BY TUBULIN CARBOXY-TERMINAL TAIL SEQUENCE. **Jennifer L. Ross**, K. Alice Lindsay, Nedine Abdelhamid

602-POS **BOARD B423**
MICROTUBULES AND INTRACELLULAR TRANSPORT - A MICROSCOPIC PERSPECTIVE. **Abhilash Sahoo**, Reza Farhadifar, Pilar Cossio, Sonya M. Hanson

603-POS **BOARD B424** **TRAVEL AWARD WINNER**
ABL2 MEDIATES MICROTUBULE NUCLEATION AND REPAIR VIA TUBULIN CO-CONDENSATION. **Daisy Duan**, Wanqing Lyu, Kuanlin Wu, Chunxiang Wu, Yong Xiong, Anthony J. Koleske

604-POS **BOARD B425**
A STRUCTURAL MECHANO-CHEMICAL MODEL OF MICROTUBULE NUCLEATION. **Kenneth K. Tsui**, Shannon F. Stewman, Ao Ma

605-POS **BOARD B426** **TRAVEL AWARD WINNER**
BREAKING DOWN THE HAUS: MOLECULAR INSIGHTS INTO BRANCHING MICROTUBULE NUCLEATION. **Clinton A. Gabel**

606-POS **BOARD B427**
IMPACTS OF VIMENTIN ON CENTROSOME FUNCTIONING AND MICROTUBULE DYNAMICS. **Renita Saldanha**, Alison Patteson, Heidi Hehnly, Minh-Tri Ho Thanh

607-POS **BOARD B428**
DYNAMIC INSTABILITY FROM NONEQUILIBRIUM STRUCTURAL TRANSITIONS ON THE ENERGY LANDSCAPE OF MICROTUBULE. **Ao Ma**, Shannon F. Stewman, Kenneth Tsui

608-POS **BOARD B429**
WORKING STROKES PRODUCED BY CURLING PROTOFILAMENTS AT DISASSEMBLING MICROTUBULE TIPS: THEIR ROLE IN KINETOCHORE MOTILITY AND MICROTUBULE DYNAMICS. **Lucas E. Murray**, Lucia Maki-Fern, Luke Rice, Charles L. Asbury

609-POS Board B430
OPTICAL TWEEZERS AND DDM CHARACTERIZE TIME-VARYING STRAIN FIELDS IN KINESIN -DRIVEN CYTOSKELETON COMPOSITES. **Mehrzad Sasanpour**, Daisy H. Achiriloaie, Karthik R. Pedidireddy, Ryan J. McGorty

610-POS Board B431
ORGANIZATION OF CYTOSKELETAL NETWORKS CREATES NON-EQUILIBRIUM ENERGY GRADIENTS THROUGH SPACE AND TIME. **Ana I. Duarte**, Heun J. Lee, Rachel Banks, Soichi Hirokawa, Catherine Ji, Victor Gomez, Matt Thomson, Rob Phillips

611-POS Board B432
TUNING THE COLLECTIVE MOTION OF MICROTUBULES BY THEIR PERSISTENCE LENGTH. **Hang Zhou**, Wonyeong Jung, Tamanna Ishrat Farhana, Kazuya Fujimoto, Taeyoon Kim, Ryuji Yokokawa

612-POS Board B433
SIMULATION OF CYTOSKELETON PROTEIN FILAMENT NETWORK BEHAVIOR FACILITATED BY MOTOR PROTEINS AND CROSSLINKING AGENTS. **Chris Gunter**, Parag Katira, Rae Robertson-Anderson

613-POS Board B434
CHARACTERIZATION OF PSEUDOPHOSPHORYLATED TAU PROTEIN. **Shaharia Khan**, Banpreet Bawa, Zachary J. Donhauser

614-POS Board B435
DIFFERENTIATING R5L AND WILDTYPE TAU USING ATOMIC FORCE MICROSCOPY. **Micaela Primer**, Kayleigh Mason, Zachary J. Donhauser

615-POS Board B436
INTERROGATION OF C-TERMINALLY TRUNCATED TAU FIBERS USING ATOMIC FORCE MICROSCOPY. **Shira Freilich**, Aanzan Sachdeva, Zachary J. Donhauser

Optical Microscopy and Superresolution Imaging I (Boards B437 - B470)

616-POS Board B437
THREE-DIMENSIONAL SINGLE-MOLECULE LOCALIZATION MICROSCOPY WITH METAL-INDUCED ENERGY TRANSFER. **Joerg Enderlein**, Jan Christoph Thiele, Marvin Jungblut, Dominic A. Helmerich, Roman Tsukanov, Anna Chizhik, Alexey I. Chizhik, Martin J. Schnermann, Markus Sauer, Oleksii Nevskyi

617-POS Board B438
SINGLE-PARTICLE ORIENTATION MICROSCOPY WITH QUANTUM DOTS FOR BIOIMAGING. **Duncan P. Ryan**, James H. Werner, Jennifer A. Hollingsworth, Demosthenes P. Morales

618-POS Board B439
SINGLE-CELL CLINICAL CHEMISTRY: EXPLORING GLUCOSE UPTAKE KINETICS AND HBA1C LEVELS IN INDIVIDUAL RED BLOOD CELLS. **Patrick J. Macdonald**, Joel D. Paprocki, Yongjin Xu, Alan Cheng, Tim C. Dunn, Sergey Y. Tetin

619-POS Board B440
PAIRED-OBJECTIVES PHOTON ENHANCEMENT (POPE) MICROSCOPY. **Mark Tingey**, Weidong Yang, Bailing Zhang, Andrew Ruba, Samuel Junod

620-POS Board B441
TIME-LAPSE SINGLE-MOLECULE IMAGING REVEALED SPATIOTEMPORAL ANTIBODY INTERACTION DYNAMICS IN SITU. **Hirushi T. Gunasekara Kalu Arachchige**, Thilini Perera, Jesse Anderson, Ying Hu

621-POS Board B442
DITHERED SINGLE-OBJECTIVE LIGHT SHEET FOR IMPROVED SUPERRESOLUTION IMAGING THROUGHOUT MAMMALIAN CELLS. **Gabriella Gagliano**, Nahima Saliba, Armando Amador, Anna-Karin Gustavsson

622-POS Board B443
MULTI-PARTICLE TRACKING IN CROWDED ENVIRONMENTS. **Weiqing Xu**, Ioannis Sgouralis, Zeliha Kilic, Steve Pressé

623-POS Board B444
BETTER PHASOR CALIBRATION IN TURBID MEDIA USING MONTE CARLO SIMULATIONS. **Jason T. Smith**, Navid I. Nizam, Mengzhou Li, Amit Verma, Catherine Sherry, Margarida Barroso, Xavier Intes, Xavier Michalet

624-POS Board B445
CHOLESTEROL-ENRICHED NANODOMAINS ANALYSIS BY SINGLE-MOLECULE LOCALIZATION OF UNAG-D4 CHOLESTEROL PROBE AND TRANSIENT FORMATION AND DETECTION OF BODIPY-CHOLESTEROL RED-SHIFTED DIMERS IN THE PLASMA MEMBRANE OF MOUSE SPERM. **David Torres-Hernandez**, Sergio A. Valdés Ramirez, Alma Y. Alva Aviles, Eduardo Brito Alarcón, José L. De la Vega Beltrán, Alberto Darszon Isrrael, Adan O. Guerrero Cárdenas, Christopher D. Wood

625-POS Board B446
CHARACTERIZATION OF (BIO)MOLECULAR DIFFUSION IN POROUS HYDROGELS USING FLUORESCENCE CORRELATION SPECTROSCOPY SUPERRESOLUTION OPTICAL FLUCTUATION IMAGING (FCSSOFI). **Surajit Chatterjee**, Stephanie Kramer, Lydia Kisley

626-POS Board B447
METABOLIC PROFILING OF TRANSFERRED MITOCHONDRIA USING FLIM INTENSITY BASED IMAGE SEGMENTATION (FIBIS). **Yukai Huang**, Mary Zhuang, Michelle A. Digman

627-POS Board B448
SINGLE-MOLECULE ORIENTATION-LOCALIZATION MICROSCOPY RESOLVES THE NANOSCALE ORGANIZATION OF SELF-ASSEMBLED PEPTIDES. **Weiyan Zhou**

628-POS Board B449
SPATIOTEMPORAL SINGLE-CELL PHENOTYPING IN LIVING 3D SKIN ORGANOIDS. **Lorenzo Scipioni**, Giulia Tedeschi, Scott Atwood, Michelle A. Digman, Enrico Gratton

629-POS Board B450
VISUALIZING BOTH NUCLEOSOME DISASSEMBLY AND REASSEMBLY DURING FACT CHAPERONE ACTIVITY. **Micah J. McCauley**, Michael Morse, Nicole A. Becker, Qi Hu, Maria V. Botuyan, Emily Navarrete, Ran Huo, Uma Muthurajan, Ioulia F. Rouzina, Karolin Luger, Georges Mer, L. James Maher, Mark C. Williams

630-POS Board B451
TOWARDS AN UNBIASED SHAPE CLASSIFICATION OF SUPERRESOLUTION MICROSCOPY LOCALIZATIONS. **Siewert Hugelier**, Hannah Kim, Melina Theoni Gyparaki, Melike Lakadamyali

631-POS Board B452
EXPANSION MICROSCOPY THROUGH MECHANICAL FORCE. **Vignesh Venkataramani**, Zhanda Chen, Lydia Kisley

632-POS Board B453
TRACKING DOWN FLUOROPHORES TO THE ANGSTROM LEVEL BY MINSTED. **Michael Weber**, Henrik von der Emde, Marcel Leutenegger, Philip Gunkel, Sivakumar Sambandan, Taukeer A. Khan, Jan Keller-Findeisen, Volker C. Cordes, Stefan W. Hell

633-POS Board B454
WEAK-AFFINITY FLUOROPHORE LABELS FOR MULTI-TARGET SUPERRESOLUTION MICROSCOPY. **Mike Heilemann**, Marius Glogger, Ashwin Balakrishnan, Dongni Wang, Hans-Dieter Barth

634-POS Board B455
A LINE-SCANNING HYPERSPECTRAL RAMAN MICROSCOPE BASED ON BESSEL BEAM ILLUMINATION. **Ellyse Taylor**, Keith A. Lidke, Sandeep Pallikkuth, Sheng Liu

635-POS **Board B456**
SINGLE-SPOT SPIRAL PHASE PLATE FOR TRACKING 3D PARTICLE MOTION. **Keith Bonin**, Sudhakar Prasad, Will Caulkins, George Holzwarth, Stephen R. Baker, Pierre-Alexandre Vidi

636-POS **Board B457**
MULTI-TARGET 3D SINGLE-MOLECULE SUPERRESOLUTION IMAGING THROUGHOUT MAMMALIAN CELLS WITH A SINGLE-OBJECTIVE TILTED LIGHT SHEET. **Nahima Saliba**, Gabriella Gagliano, Armando Amador, Anna-Karin Gustavsson

637-POS **Board B458**
HIGH-THROUGHPUT MULTI-COLOR RELIABLE SMLM NANOSCOPY. Adrien Mau, Karoline Friedl, Valentina Caorsi, **Nicolas Bourg**, Christophe Leterrier, Sandrine Lévêque-Fort

638-POS **Board B459**
LATERAL DIFFUSION IN THE PRESENCE OF OBSTACLES, REEXAMINED. **Michael J. Saxton**

639-POS **Board B460**
MOLECULAR RESOLUTION IMAGING REVEALS STEP-WISE REDUCTION OF AXONEMAL DIAMETER AND ULTRASTRUCTURAL ARCHITECTURE OF INTRAFLAGELLAR TRANSPORT PROTEINS. Man Teng Cheok, Jiabin Xun, **Tony Yang**

640-POS **Board B461**
SUPERRESOLUTION 3D MAPS TO STUDY THE ANTISECRETORY FACTOR'S EFFECTS ON DIFFERENT $GABA_A$ RECEPTOR SUBUNITS IN RAT CEREBELLAR GRANULE CELLS *IN VITRO*. **Virginia Bazzurro**, Elena Gatta, Elena Angeli, Aroldo Cupello, Stefan Lange, Eva Jennische, Mauro Robello, Alberto Diaspro

641-POS **Board B462**
QUANTITATIVE IMAGE RECONSTRUCTION FOR MICROSCOPY WITH CORRECT SUB-PIXEL PHOTON STATISTICS. **Ayush Saurabh**, Shep Bryan IV, Zachary Fox, Peter Brown, Douglas P. Shepherd, Steve Pressé

642-POS **Board B463**
INVESTIGATION OF BREAST CANCER METABOLIC PLASTICITY IN THE TUMOR MICROENVIRONMENT BY SINGLE-CELL ORGANELLE PHENOTYPING. **Giulia Tedeschi**, Songning Zhu, Gabrielle Aleghe, Edouard Aleman, Tyson Finch, Christine Ly, Paul Morenkov, Lorenzo Scipioni, Michelle A. Digman, Enrico Gratton

643-POS **Board B464**
ESTIMATING THE LOCALIZATION SPREAD FUNCTION OF STATIC SINGLE-MOLECULE LOCALIZATION MICROSCOPY IMAGES. Thomas R. Shaw, Frank Fazekas, **Sarah L. Veatch**

644-POS **Board B465**
OPTICAL SECTIONING OF LABEL-FREE SAMPLES USING STANDARD BRIGHT-FIELD MICROSCOPY. **Braulio Gutierrez-Medina**

645-POS **Board B466**
CONSTRUCTION AND CHARACTERIZATION OF A VERSATILE MULTIMODAL SINGLE-MOLECULE SUPERRESOLUTION MICROSCOPE FOR 3D WHOLE CELL STUDIES. **Tyler E. Nelson**, Sofia Vargas-Hernandez, Ivana Hsyung, Margareth Freire, Anna-Karin Gustavsson

646-POS **Board B467**
PROBING MEMBRANE DYNAMICS AND INTERACTIONS BY SAF MICROSCOPY. **Aaron Au**, Thaisa L.C. Kannen, Christopher M. Yip

647-POS **Board B468**
EXPANSION MICROSCOPY FOR IMAGING THE CELL-MATERIAL INTERFACE. **Melissa L. Nakamoto**, Csaba Forro, Wei Zhang, Ching-Ting Tsai, Bianxiao Cui

648-POS **Board B469**
FULL-FIELD SINGLE-MOLECULE LOCALIZATION MICROSCOPY WITH A MONO-DETECTOR. **Maximilian Lengauer**, Emmanuel Fort, Sandrine Lévêque-Fort

649-POS **Board B470**
SUPERRESOLUTION NON-LINEAR MULTIMODAL IMAGING PLATFORM FOR STUDYING SPATIALLY CORRELATED METABOLIC REACTIONS. **Hongje Jang**, Zhi Li, Yajuan Li, Pegah Bagheri, Ellen Ackerstaff, Jason A. Koutcher, Lingyan Shi

Molecular Dynamics I: Docking and Assemblies (Boards B471 - B497)

650-POS **Board B471**
MECHANISM FOR MEMBRANE CONTACT FORMATION WITH FULL-LENGTH OSH4 IN DUAL-MEMBRANE ENVIRONMENT. **Sharmistha Das Karmakar**

651-POS **Board B472**
ABSOLUTE BINDING AFFINITIES OF PHOSPHOLIPIDS TO *ERWINIA*LIGAND-GATED ION CHANNEL (ELIC) BY STREAMLINED ALCHEMICAL FREE ENERGY PERTURBATIONS (SAFEP). **Ezry Santiago-McRae**, John T. Petroff, Wayland W. Cheng, Thomas T. Joseph, Jérôme Hénin, Grace Brannigan

652-POS **Board B473**
COMPUTER MODELING OF THE HEXAMERIC CHANNEL OF VACA FROM H. PYLORI. **Yitao Gou**

653-POS **Board B474**
SELECTIVE PROBES AND ANTAGONISTS FOR G PROTEIN-COUPLED RECEPTOR LPAR1. **Young-sik Sohn**, Sangbae Lee, Eun Sung A. Cho

654-POS **Board B475**
DISCOVERY OF NOVEL POTASSIUM-COMPETITIVE ACID BLOCKERS: PROTONATED FORM OF LIGAND-RECEPTOR COMPLEX SYSTEM. **Yongsu Baek**, Sangbae Lee, Eun Sung A. Cho

655-POS **Board B476**
IN SILICO ANALYSIS OF BIASED SIGNALING IN THE SEROTONIN 2A RECEPTOR. **Logan Wiley**

656-POS **Board B477**
INVESTIGATING MOLECULAR INTERACTION BETWEEN TDP1 AND PARP1. **Purushottam Tiwari**, Aykut Uren

657-POS **Board B478**
IDENTIFYING AND SAMPLING CONFORMATIONAL STATES OF SARS-COV-2 M^{PRO} FOR FLEXIBLE RECEPTOR DOCKING. **Matthew S. Smith**, Michael Grabe, Brian Shoichet

658-POS **Board B479**
ACIDIC PH IMPACT ON BSA DOMAINS I & II ADSORPTION TO A SILICA DIOXIDE SURFACE. **Viana Q. Nguyen**, Garry E. Smith, Adam L. Okerlund, Christopher D. Warner

659-POS **Board B480**
HOW LIPIDS MODULATE ASSOCIATION OF PROTEINS IN LIPID MEMBRANES. **Pawel Chodnicki**, Jacek Czub

660-POS **Board B481**
MECHANICAL ALLOSTERIC COUPLINGS OF REDOX-INDUCED CONFORMATIONAL CHANGES IN RESPIRATORY COMPLEX I. **Panyue Wang**, Igor Leontyev, Alexei A. Stuchebrukhov

661-POS **Board B482** **Travel Award Winner**
SUPRAMOLECULAR ORGANISATION AND DYNAMICS OF MANNOSYLATED PHOSPHATIDYLINOSITOL LIPIDS IN THE MYCOBACTERIAL PLASMA MEMBRANE. **Chelsea M. Brown**, Robin A. Corey, Ya Gao, Yeol Kyo Choi, Martine Gilleron, Nicolas Destainville, Elizabeth Fullam, Wonpil Im, Mathieu G. Chavent, Phillip J. Stansfeld

662-POS **BOARD B483**
THE UNIQUE Q493R MUTATION DRIVES INTERFACIAL INTERACTIONS IN THE SARS-COV-2 OMICRON VARIANT S1-RBD: ACE2-COMPLEX. **Angelin M. Philip**

663-POS **BOARD B484**
UNDERSTANDING THE MECHANISMS OF INCREASED PATHOGENICITY AND VIRULENCE OF SARS-COV-2 DELTA AND OMICRON VARIANTS. **Mandira Dutta**, Gregory A. Voth

664-POS **BOARD B485**
INVESTIGATING MUTANT HYDROPHOBIC PATCH EXPOSURE IN TROPONIN C USING MOLECULAR DYNAMICS-BASED FREE ENERGY METHODS. **William T. Higgins**, Jacob D. Bowman, Steffen Lindert

665-POS **BOARD B486**
INVESTIGATION OF NONSELECTIVE CATION PERMEATION THROUGH CNGA1 CHANNELS BY MD SIMULATIONS. **Haoran Liu**, Han Sun

666-POS **BOARD B487** **TRAVEL AWARD WINNER**
USING TETRAPEPTIDE GSSS AND B-CATENIN$^{17\text{-}48}$TO STUDY THE EFFECTS OF PHOSPHOSERINE ON POLYPEPTIDE CONFORMATIONAL ENSEMBLES. **Laura I. Gil Pineda**, Justin A. Lemkul

667-POS **BOARD B488**
EXPLORING THE CONFORMATIONAL DYNAMICS OF THE DISORDERED LID REGION OF HDM2 N-TERMINAL DOMAIN WITH MOLECULAR DYNAMICS SIMULATION. **Kazuki Watanabe**, Weitong Ren, Qingci Zhao, Ryosuke Iwatsuki, Noritaka Nishida, Yuji Sugita

668-POS **BOARD B489**
PREDICTING PATHOGENICITY OF VARIANTS IN THE CARDIAC THIN FILAMENT USING NEURAL NETWORKS. **Allison B. Mason**, Jil C. Tardiff, Steven D. Schwartz

669-POS **BOARD B490**
MOLECULAR DYNAMICS SIMULATIONS OF F_1-ATPASE'S ANGULAR FLUCTUATIONS AND ASSOCIATED RESTORING FORCE. **Matthew A. Anderson**, Babak Sanei, Nathan Suiter, Sandor Volkan-Kacso

670-POS **BOARD B491**
PREDICTION OF α-MORFS AND FOLDING FREE ENERGIES IN INTRINSICALLY DISORDERED PEPTIDES. **Sthitadhi Maiti**, Matthias Heyden

671-POS **BOARD B492**
DYNAMICS AND THERMOSTABILITY OF HNH NUCLEASE IN DIVERGENT CAS9 SPECIES. **Chinmai Pindi**, Souvik Sinha, Helen Belato, Carmelissa Norbrun, Jinping Luo, Alexandra M. D'Ordine, Gerwald Jogl, George Lisi, Giulia Palermo

672-POS **BOARD B493**
COMPARISON OF CYCLIC AMP BINDING ACTIVITY WITHIN HCN CHANNEL SUBFAMILY USING ATOMISTIC MOLECULAR DYNAMICS SIMULATIONS OF ISOLATED CYCLIC NUCLEOTIDE BINDING DOMAINS. **Matthew Brownd**, Mahmoud Moradi

673-POS **BOARD B494**
THE RIGIDIZATION OF WATER DYNAMICS AROUND PROTEINS: A MOLECULAR DYNAMICS STUDY. **Shiv S. Seshan**

674-POS **BOARD B495**
SIMULATED MECHANICAL TESTING OF AMYLOID FIBRIL STRUCTURES USING MOLECULAR DYNAMICS SIMULATIONS WITH ENHANCED SAMPLING. **Adam R. Ingwerson**, Gianmarc Grazioli

675-POS **BOARD B496**
INVESTIGATING ALLOSTERY IN THE LC8 HUB PROTEIN VIA MOLECULAR DYNAMICS SIMULATIONS. **Shelby D. Santos**, Elisar J. Barbar, Daniel M. Zuckerman

676-POS **BOARD B497**
FROM SINGLE PROTEINS TO EFFICIENT SIMULATION MODELS OF THE CYTOPLASM. **Matthias Heyden**

Computational Methods and Machine Learning, Artificial Intelligence, and Bioinformatics I (Boards B498 - B532)

677-POS **BOARD B498**
MIDLS - MEMBRANE DETECTION IN CRYO-EM USING DEEP LEVEL SETS. **Christopher JF Cameron**, Frederick J. Sigworth, Mark Gerstein, Hemant D Tagare

678-POS **BOARD B499**
ACCOORD - AN ENSEMBLE METHODOLOGY FOR CRYO-EM PARTICLE PICKING. **Christopher JF Cameron**, Sebastian JH Seager, Hemant D Tagare, Mark Gerstein

679-POS **BOARD B500**
DAQ-REFINE: PROTEIN STRUCTURE MODEL EVALUATION AND REFINEMENT FOR CRYO-EM MAPS. **Genki Terashi**, Xiao Wang, Daisuke Kihara

680-POS **BOARD B501**
RAPID COARSE-GRAINED SIMULATION OF WHOLE CRYO-TOMOGRAMS. **Carson Purnell**, Jessica Heebner, Matthew T. Swulius

681-POS **BOARD B502**
FLUORESCENCE LIFETIME ANALYSIS OF SMFRET WITH CONTRIBUTION OF PIFE ON DONOR AND ACCEPTOR. **Sina Jazani**, Taekjip Ha

682-POS **BOARD B503**
QUANTIFYING BINDING KINETICS WITH FLUORESCENCE MICROSCOPY. **Shep Bryan IV**, Steve Pressé, Dirk-Peter Herten, Stanimir Tashev, Johan Hummert, Klaus Yserentant

683-POS **BOARD B504**
FLUORESCENT SINGLE PARTICLE TRACKING ENABLES HIGH SENSITIVITY VISCOMETRY MEASUREMENTS OF MICRO-VOLUME SAMPLES. **Karen L. Lopez**, Francesco Palomba, Michelle A. Digman

684-POS **BOARD B505**
SIMULATION-BASED INFERENCE OF SINGLE-MOLECULE FORCE SPECTROSCOPY. **Roberto Covino**, Pilar Cossio, Lars Dingeldein

685-POS **BOARD B506**
A PYTHON-OPENCV BASED SOFTWARE FOR PROCESSING SINGLE-BACTERIUM TRACKING MICROSCOPY VIDEOS. **Zhiwen Tu**, Xianan Qin

686-POS **BOARD B507**
FULLY AUTOMATED ANALYSIS OF NMR DATA WITH BAYESIAN NONPARAMETRIC STATISTICAL LEARNING. **Ioannis Sgouralis**, Kelechi Akwataghibe, Mubark Mebrat, Wade D. Van Horn

687-POS **BOARD B508**
SSPINE/SSPINE-POKY: AUTOMATED CHEMICAL SHIFT ASSIGNMENT WITH AN INTUITIVE GRAPHICAL USER INTERFACE FOR SOLID-STATE NMR DATA FROM COMPLEX PROTEIN SYSTEMS. **Andrea E. Lopez**, Adilakshmi Dwarasala, Mehdi Rahimi, John L. Markley, Woonghee Lee

688-POS **BOARD B509**
OPTIMIZATION OF HYDROGEN-DEUTERIUM EXCHANGE ENSEMBLE REWEIGHTING (HDXER) TO AID THE BIOPHYSICAL CHARACTERIZATION OF PROTEINS. **Ally K. Smith**, Daniel J. Deredge

689-POS **BOARD B510**
BIOMOLECULE CLASSIFICATION BY MULTISCALE ONE-DIMENSIONAL CONVOLUTIONAL NEURAL NETWORK. **Chia-En Chang**

690-POS **BOARD B511**
A DEEP-LEARNING MODEL FOR GRID-BASED SOLVATION FREE ENERGY. **Yusaku Fukushima**, Takashi Yoshidome

691-POS **BOARD B512**
USING SITEMAP TO AID IN THE IDENTIFICATION OF CRYPTIC BINDING POCKETS. **Yunhui Ge**, Kelly Ganamet

692-POS **BOARD B513**
A DEEP-LEARNING MODEL FOR THE PREDICTION OF PROTEIN DOMAINS. **Renta Sato**, Toru Ekimoto, Takashi Yoshidome

693-POS **BOARD B514**
MACHINE LEARNING ANALYSIS OF SH-DIPEPTIDE DYNAMICS FROM ATOMISTIC MOLECULAR DYNAMICS SIMULATIONS. Zixiao Zong, **Carter T. Butts**

694-POS **BOARD B515**
UNRAVELING THE ENCRYPTED LIPOPHILICITY OF DISULFIDE BRIDGES IN THE MOLECULAR ARCHITECTURE OF PROTEINS AND PEPTIDES: A MACHINE LEARNING APPROACH IN STRUCTURAL BIOINFORMATICS. **William J. Zamora**, Jose Rodríguez, Adriana García, Silvana Pinheiro

695-POS **BOARD B516**
NOVEL BIOMOLECULAR FINGERPRINT USING GRAPH CONVOLUTIONAL NETWORKS. **Ali Risheh**, Negin Forouzesh

696-POS **BOARD B517**
HIGH-THROUGHPUT BINDING FREE ENERGY SIMULATIONS: APPLICATIONS IN DRUG DISCOVERY. **S. Benjamin Koby**, Evgeny Gutkin, Filipp Gusev, Chamali M. Narangoda, Olexandr Isayev, Maria G. Kurnikova

697-POS **BOARD B518**
DETERMINE LIGAND BINDING KINETICS TO A MEMBRANE PROTEIN USING BROWNIAN DYNAMICS SIMULATION. **Esra Mantei**, Zhi-Feng Huang, Yu-ming Huang

698-POS **BOARD B519**
LESSONS LEARNED THROUGH WEIGHTED ENSEMBLE SIMULATIONS OF A (SURPRISINGLY) CHALLENGING PROTEIN-LIGAND UNBINDING SYSTEM. **Anthony T. Bogetti**

699-POS **BOARD B520**
PREDICTING PLANT-SPECIFIC SMALL MOLECULE BINDING VARIABILITY ACROSS SPECIES. **Duncan Boren**

700-POS **BOARD B521**
POSE CLASSIFICATION USING THREE-DIMENSIONAL ATOMIC STRUCTURE-BASED NEURAL NETWORKS APPLIED TO ION CHANNEL-LIGAND DOCKING. **Heesung Shim**, Hyojin Kim, Jonathan Allen, Heike Wulff

701-POS **BOARD B522**
BLIND PROTEIN-LIGAND DOCKING WITH DIFFUSION-BASED DEEP GENERATIVE MODELS. Gabriele Corso, **Bowen Jing**, Hannes Stark, Regina Barzilay, Tommi Jaakkola

702-POS **BOARD B523**
OVERCOMING HYSTERESIS IN LIGAND BINDING POTENTIAL OF MEAN FORCE CALCULATIONS. **Alejandro Martínez-León**, Jochen S. Hub

703-POS **BOARD B524**
MOLECULAR BASIS OF PROTEIN-PROTEIN INTERACTIONS IN A HOMOLOGOUS SET OF DROSOPHILA NEURONAL PROTEINS USING MACHINE LEARNING. **Emma Goulard Coderc de Lacam**, Christophe J. Chipot

704-POS **BOARD B525**
ENSEMBLE OPTIMIZER: INTERPRETABLE SCORING FUNCTIONS FOR VIRTUAL SCREENING. **Roshni Bhatt**, Ann Wang, Jacob D. Durrant

705-POS **BOARD B526**
COMPUTATIONAL DRUG REPURPOSING EFFORT FOR IDENTIFYING NOVEL HITS AGAINST Y BOX BINDING PROTEIN 1 AS A TARGETED THERAPY FOR OVARIAN CANCER. **Serdar Durdagi**, Lalehan Oktay

706-POS **BOARD B527**
DISCOVERY OF POTENTIAL PD-L1 SMALL MOLECULE INHIBITORS AS NOVEL CANCER THERAPEUTICS USING MACHINE LEARNING-BASED QSAR MODELS: A VIRTUAL DRUG REPURPOSING STUDY. **Pinar Siyah**, Serdar Durdagi, Busecan Aksoydan

707-POS **BOARD B528**
HIGHER ANTIGEN OCCUPANCY OF HIGH AVIDITY CSP SERUM ANTIBODIES ASSOCIATES WITH PROTECTION AGAINST HUMAN MALARIA. **Kan Li**, Gillian Q. Horn, Milite Abraha, Rachel L. Spreng, S. Munir Alam, Adrian V.S. Hill, Katie Ewer, Georgia D. Tomaras, S. Moses Dennison

708-POS **BOARD B529**
ANALYSIS OF THE CONSERVED AND MUTATED AMINO ACID SEQUENCES IN THE SPIKE PROTEIN ENHANCES THE UNDERSTANDING OF PHYLOGNETIC RELATIONSHIP AMONG CORONAVIRUS VARIANTS FROM THE WILD TYPE. **Asmaa Awan**, Roshan Paudel

709-POS **BOARD B530**
MORPHODYNAMIC AND MOTILITY FEATURE-BASED DEEP LEARNING CLASSIFICATION FOR SUBTYPES OF CANCER-ASSOCIATED FIBROBLASTS. **Minwoo Kang**, Somayadineshraj D., Chanhong Min, Jennifer H. Shin

710-POS **BOARD B531**
DESIGN OF IMMUNOGENS FOR ELICITING ANTIBODY RESPONSES THAT MAY PROTECT AGAINST SARS-COV-2 VARIANTS. **Eric Wang**, Arup K. Chakraborty

711-POS **BOARD B532**
TOWARDS GENERALIZABLE PREDICTION OF ANTIBODY THERMOSTABILITY USING MACHINE LEARNING ON SEQUENCE AND STRUCTURE FEATURES. **Ameya Uddhav Harmalkar**, Jeffrey J. Gray, Kathy Wei

Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, February 19, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S156, in the Exhibit Hall. S board numbers before each title indicate where the posters will be assigned during the Sunday evening competition. **This poster competition is closed to general attendees and only student participants and judges may access the SRAA poster competition space Sunday evening.**

The posters will be on display during their regular daily sessions as programmed below in parenthesis. Note that only the student applicant's name is listed here. Please refer to the full abstract for all authors.

Bioenergetics, Mitochondria, and Metabolism (Boards S1 – S6)

BOARD S1
CYSTEINE MUTAGENESIS REVEALS NOVEL STRUCTURE-FUNCTION FEATURES WITHIN THE PREDICTED TRANSMEMBRANE DOMAIN OF CHLORIDE INTRACELLULAR ION CHANNEL 1 (CLIC1).
Shridhar K. Sanghvi (555 Pos / B376)

BOARD S2
CHOLESTEROL DEPENDENCE ON THE CONFORMATIONAL CHANGES OF METABOTROPIC GLUTAMATE RECEPTOR 1(MGLUR1).
Ugochi Isu (2447 Pos / B197)

BOARD S3
METABOLIC PROFILING OF TRANSFERRED MITOCHONDRIA USING FLIM INTENSITY BASED IMAGE SEGMENTATION (FIBIS).
Yukai Huang (626 Pos / B447)

BOARD S4
BESTROPHIN-2 AND GLUTAMINE SYNTHETASE FORM A COMPLEX FOR GLUTAMATE RELEASE.
Alec Kittredge (556 Pos / B377)

BOARD S5
CHARACTERIZATION OF THE HUMAN FASTKD4 POST-TRANSCRIPTIONAL REGULATOR.
Justin M. Van Riper (1053 Pos / B182)

BOARD S6
PHARMACOLOGICAL INTERVENTIONS IMPROVE MYOSIN-ACTIN CROSS-BRIDGE FUNCTION IN MICE WITH ADVANCED CHRONIC KIDNEY DISEASE.
Brent Momb (559 Pos / B380)

Bioengineering (Boards S7 – S14)

BOARD S7
A UNIFYING ELECTROSTATIC BASIS FOR DESIGNING ENZYMES FASTER THAN NATURAL ONES.
Chu Zheng (2347 Pos / B97)

BOARD S8
ENGINEERED CARDIAC TISSUE AS A NOVEL IN VITRO HUMAN MYOCARDIUM MODEL FOR STUDYING CARDIAC STRETCH.
Daniel G P Turner (2009 Pos / B414)

BOARD S9
SARS-COV-2 SPIKE PROTEIN-INDUCED INFLAMMATION UNDERLIES PROARRHYTHMIA IN COVID-19.
Louisa Mezache (2111 Pos / B516)

BOARD S10
FACILITATING THE NANOPORE DETECTION OF PROTEIN FRAGMENT WITH A NEUTRAL CHARGE.
Misa Yamaji (2117 Pos / B522)

BOARD S11
DEEP LEARNING DRIVEN ADAPTIVE OPTICS FOR SINGLE MOLECULE LOCALIZATION MICROSCOPY.
Peiyi Zhang (2092 Pos / B497)

BOARD S12
DESIGNER PROTEINS AS POTENTIAL THERAPEUTIC BIOMOLECULAR CONDENSATES.
Tin Long Chris Ng (332 Pos / B153)

BOARD S13
TOWARDS GENERALIZABLE PREDICTION OF ANTIBODY THERMOSTABILITY USING MACHINE LEARNING ON SEQUENCE AND STRUCTURE FEATURES.
Ameya Uddhav Harmalkar (711 Pos / B532)

BOARD S14
A MOLECULAR DYNAMICS STUDY ON SPECIFICITY AND SENSITIVITY OF PDE5 INHIBITORS TO PDE5 AND PDE6.
Seunghun Song (898 Pos / B27)

Biological Fluorescence (Boards S15 – S25)

BOARD S15
TIME-RESOLVED TWO-PHOTON FLUORESCENCE DYNAMICS OF A NOVEL MEGFP-LINKER-MSCARLET-I CROWDING BIOSENSOR.
Sarah Mersch (193 Pos / B14)

BOARD S16
QUANTIFYING THE INTERACTIONS OF MICELLAR DRUG DELIVERY SYSTEM COMPONENTS WITH ALBUMIN USING TIME-RESOLVED FLUORESCENT METHODS.
Iulia Carabadjac (1310 Pos / B439)

BOARD S17
KINETIC ANALYSIS OF CLPB CATALYZED PROTEIN TRANSLOCATION USING VARIOUS RATIOS OF ATP AND ATPGS.
Jaskamaljot Kaur Banwait (2324 Pos / B74)

BOARD S18
DETECTION AND CLASSIFICATION OF CA^{2+} RELEASE EVENTS IN CARDIOMYOCYTES USING 3D-UNET NEURAL NETWORK.
Prisca R. Dotti (1158 Pos / B287)

BOARD S19
PROBING SYNAPTIC DISTRIBUTION AND ARRANGEMENT OF NATIVE SURFACE AMPARS IN MOUSE BRAIN SLICES WITH 3D SUPER-RESOLUTION MICROSCOPY.
Rohit M. Vaidya (2028 Pos / B433)

BOARD S20
QUANTIFYING PROTEIN-PROTEIN INTERACTIONS USING CONFINED PHOTOCONVERSION AND SINGLE-PARTICLE TRACKING.
Sajjad A. Khan (1338 Pos / B467)

Board S21
MULTI-PARTICLE TRACKING IN CROWDED ENVIRONMENTS.
Weiqing Xu (622 Pos / B443)

Board S22
RECOGNITION OF RECOMBINATION INTERMEDIATES BY THE MISMATCH REPAIR PROTEIN MSH2-MSH6.
Zane Lombardo (1072 Pos / B201)

Board S23
CHOLESTEROL BINDING TO BK CHANNEL-FORMING PROTEINS INVOLVES THE CENTRAL TYROSINE OF A CRAC DOMAIN LOCATED AT THE CHANNEL CORE-CYTOSOLIC TAIL INTERFACE.
Elizabeth H. Schneider (1251 Pos / B380)

Board S24
THE INTERACTION OF CC CHEMOKINE BINDING PROTEIN VCCI WITH CCL17(TARC).
Wenyan Guan (203 Pos / B24)

Board S25
A LINE-SCANNING HYPERSPECTRAL RAMAN MICROSCOPE BASED ON BESSEL BEAM ILLUMINATION.
Ellyse Taylor (634 Pos / B455)

Biopolymers in vivo (Boards S26 – S33)

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COMBINING SIMULATIONS AND SINGLE-MOLECULE FLUORESCENCE SPECTROSCOPY TO UNDERSTAND SARS-COV-2 NUCLEOCAPSID PROTEIN RNA INTERACTION.
Jhullian J. Alston (986 Pos / B115)

Board S27
MONITORING THE STRUCTURAL STABILITY OF THE ISOLATED 'MG^{2+}-SENSOR' OF MGTE BY SPECTROSCOPIC AND COMPUTATIONAL APPROACHES.
Rupasree Brahma (2310 Pos / B60)

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UNTANGLING THE RIVALRY BETWEEN CHOLESTEROL AND ANTIMICROBIAL PEPTIDES.
Fathima T. Doole (1795 Pos / B200)

Board S29
COMPARING ELECTROCHEMICAL AND SPECTROSCOPIC PROPERTIES OF THREE CYTOCHROME NANOWIRES FROM GEOBACTER SULFURREDUCENS.
Khawla Mustafa (218 Pos / B39)

Board S30
NASCENT-CHAIN INTERACTION NETWORKS AND THEIR EFFECT ON THE BACTERIAL RIBOSOME.
Meranda Masse (1639 Pos / B44)

Board S31
MOLECULAR DYNAMICS STUDY OF MEIG1 INTERACTIONS WITH PACRG.
Timothy Hasse (917 Pos / B46)

Board S32
FOLDING AND THREADING OF LEPTIN AS A MODEL FOR PIERCED LASSO TOPOLOGIES.
Jennifer Simien (1634 Pos / B39)

Board S33
STRUCTURE OF FUNGAL CELL WALLS AND REMODELING BY ANTIFUNGAL DRUGS ELUCIDATED USING SOLID-STATE NMR.
Liyanage Devthilini P. Fernando (1388 Pos / B517)

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REGULATION OF EGFR PHASE TRANSITION THROUGH GRB2-GRB2 INTERACTIONS.
Henry T. Phan (327 Pos / B148)

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TWO GATES MEDIATE NMDAR ACTIVITY AND ARE UNDER SUBUNIT-SPECIFIC REGULATION.
Miaomiao He (1220 Pos / B349)

Board S36
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Antoni Marciniak (2483 Pos / B233)

Board S37
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Cathrine C. Bergh (1826 Pos / B231)

Board S38
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Haoran Liu (665 Pos / B486)

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Johnathon Emlaw (1197 Pos / B326)

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Simone Pelizzari (1835 Pos / B240)

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Goutham Kodakandla (1821 Pos / B226)

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Linda X. Phan (552 Pos / B373)

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IONIC INTERACTIONS BETWEEN GATING CHARGES AND COUNTER-CHARGES IN VOLTAGE-SENSING DOMAIN I INDEPENDENTLY REGULATE KINETICS AND VOLTAGE-DEPENDENCE OF $CA_V1.1$ GATING.
Martin C. Heiss (523 Pos / B344)

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Alina Milici (1906 Pos / B311)

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Wietske E. Tuinte (514 Pos / B335)

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Behrouz Ghazi Esfahani (2631 Pos / B381)

Board S47
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Przemyslaw Dutka (190 Pos / B11)

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Aoon Rizvi (333 Pos / B154)

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Jonathan W. Mount (withdrawn)

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NEAR-PHYSIOLOGICAL IN VITRO RECONSTITUTION OF 50S SUBUNIT REVEALS PARALLEL ASSEMBLY PATHWAY.
Xiyu Dong (2384 Pos / B134)

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Roksana Azad (1628 Pos / B335)

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Eslam Elhanafy (495 Pos / B316)

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Arup Mondal (2291 Pos / B414)

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David Moses (305 Pos / B126)

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Guy W. Dayhoff, II (300 Pos / B121)

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Ignacio Sanchez Burgos (319 Pos / B140)

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Margot Galle (2256 Pos / B6)

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Shraddha KC (984 Pos / B113)

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Maria C. Zabala Rodriguez (1719 Pos / B124)

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Shujie Li (2369 Pos / B119)

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Juliet O. Obi (1073 Pos / B202)

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Nidhi Walia (209 Pos / B30)

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Phuong Ngoc Pham (2290 Pos / B40)

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Kshitiz Parihar (2493 Pos / B243)

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Michelle C. Rodriguez Garcia (1963 Pos / B368)

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Jacob Kæstel-Hansen (2515 Pos / B265)

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Lisa Hua (398 Pos / B219)

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Ainhoa Collada (431 Pos / B252)

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Noelia Jacobo-Piqueras (516 Pos / B337)

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Kent Wilson (403 Pos / B224)

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John Q. Yap (1843 Pos / B248)

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Natsuki Mizutani (2557 Pos / B307)

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Jennifer A. Rybak (1800 Pos / B205)

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Kevin Jose Cheng (2451 Pos / B201)

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Nate Rogers (1095 Pos / B224)

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Nicholas Cina (275 Pos / B96)

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Oluwatoyin Campbell (2435 Pos / B185)

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Anjali Krishna (2437 Pos / B187)

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Chelsea Brown (661 Pos / B482)

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Jan A. Stevens (2045 Pos / B450)

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Alanah Varricchio (1239 Pos / B368)

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Damayantee Das (2516 Pos / B266)

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Ha Nguyen (1817 Pos / B222)

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Megan Skains (1900 Pos / B305)

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Shalini DS Kadinappulige (1786 Pos / B191)

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Marton A. Simon (550 Pos / B371)

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Valeria Jaramillo-Martinez (1645 Pos / B50)

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Rebecca J. Prest (197 Pos / B18)

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Laidy Maidel Alvero González (1812 Pos / B217)

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Nicole Voce (1761 Pos / B166)

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Jinhui Li (1790 Pos / B195)

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Clinton A. Gabel (605 Pos / B426)

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Philip Woods (558 Pos / B379)

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Ananya Chakraborti (1255 Pos / B384)

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Alma I. Plaza-Rodriguez (1277 Pos / B406)

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Maicon Landim-Vieira (1950 Pos / B355)

Board S113
UNDERSTANDING MECHANISMS OF TOPOGRAPHY SENSING IN MIGRATING CELLS THROUGH SIMULATIONS OF A COUPLED EXCITABLE NETWORK MODEL.
Parijat Banerjee (2596 Pos / B346)

Board S114
MECHANISTIC STUDY OF MECHANICAL STRETCH INDUCED INCREASE IN CA2+ SENSITIVITY OF TROPONIN C.
Xutu Wang (585 Pos / B406)

Multiscale Genome Organization (Boards S115 – S118)

Board S115
SELECTION AND INDUCTION? USING ITGB4 TO TRACK THE ROLE OF SELECTION AND CONSTRICTION-INDUCED CHANGES IN PHENOTYPE AND 3D GENOME STRUCTURE SHIFTS AFTER CONSTRICTED MIGRATION.
Christopher Playter (2601 Pos / B351)

Board S116
SUPER-RESOLVED HETEROCHROMATIN STRUCTURE DURING DNA DAMAGE RESPONSE REVEALED BY CRISPR IMAGING.
Eui Jin Park (2417 Pos / B167)

Board S117
COMPUTATIONAL PREDICTIONS OF 3D CHROMATIN MANY-BODY INTERACTIONS REVEAL ROLES OF CHROMATIN HUBS IN GENE EXPRESSION.
Hammad Farooq (2415 Pos / B165)

Board S118
EXTENSION AND LONG-RANGE CONTACTS DRIVE CHROMATIN CLUTCHES AND AGGREGATES.
Shuming Liu (2398 Pos / B148)

Nanoscale Approaches to Biology (Boards S119 – S127)

Board S119
INFLUENCE OF HIGH HYDROSTATIC PRESSURE ON PROTEIN CLUSTERING: IMPLICATIONS FOR PROCESSING AND MACROSCOPIC CRYSTALLIZATION.
Brian Paul (1716 Pos / B121)

Board S120
STUDIES OF SELECTED CARBON NANOMATERIALS WITH AMYLOID BETA PEPTIDES.
Anna Bisok (1703 Pos / B108)

Board S121
TIME-LAPSE SINGLE-MOLECULE IMAGING REVEALED SPATIOTEMPORAL ANTIBODY INTERACTION DYNAMICS IN SITU.
Hirushi TS Gunasekara Kalu Arachchige (620 Pos / B441)

Board S122
COMBINING FLUORESCENCE CORRELATION SPECTROSCOPY AND LIFETIME IMAGING TO STUDY THE DYNAMICS OF DRUG DELIVERY NANOPARTICLES IN MUCUS.
Irene Gialdini (2077 Pos / B482)

Board S123
IMPACT OF SHELTERIN COMPLEX ON TELOMERE ACCESSIBILITY.
Sajad A. Shiekh (365 Pos / B186)

Board S124
PROBING VOLTAGE-DEPENDENT STABILITY OF NUCLEOSOMES USING GLASS NANOPORES.
Sumanth K. Maheshwaram (1396 Pos / B525)

Board S125
ANALYSIS OF CATION PERMEATION MECHANISM OF CHR2 BY MOLECULAR DYNAMICS SIMULATION.
Kenta Shobu (2531 Pos / B281)

Board S126
MUCINS FORM A NANOSCALE PHYSICAL BARRIER AGAINST IMMUNE CELL ATTACK.
Sangwoo Park (2114 Pos / B519)

Board S127
MOLECULAR MECHANISM OF H2A/H2B DISMANTLING FROM A PARTIALLY UNWRAPPED NUCLEOSOME BY NAP1.
Fritz Nagae (2414 Pos / B164)

Physical Cell Biology (Boards S128 – S136)

Board S128
CONTRACTILE ACTIN FLOWS DRIVE PATTERNING OF MEMBRANE COMPONENTS WITH DIFFERENTIAL ACTIN-BINDING AFFINITIES.
Abrar A. Bhat (1274 Pos / B403)

Board S129
CO-INFECTING PHAGES IMPEDE EACH OTHER'S ENTRY INTO THE CELL.
Thu Vu Phuc Nguyen (1323 Pos / B452)

Board S130
HCM AND DCM ASSOCIATEDTNNT2SARCOMERIC VARIANTS INDUCE NUCLEUS REMODELING IN HUMAN IPSC-CMS.
Isabella Leite Coscarella (1969 Pos / B374)

Board S131
PHOTOPHARMACOLOGICAL DISSOCIATION OF TRANSCRIPTIONAL ACTIVATION AND DEGRANULATION OF MAST CELLS.
Denis Krivic (1241 Pos / B370)

Board S132
OPTOGENETIC REGULATION OF PIP_2 ALTERS THE VOLTAGE-DEPENDENCE OF ACTIVATION AND FAST INACTIVATION OF SKELETAL MUSCLE $NA_V1.4$ CHANNELS.
Jordie M. Kamuene (511 Pos / B332)

Board S133
CHARACTERIZATION OF ATRIAL FIBRILLATION LINKED MUTATIONS USING THE $NA_V1.5$ KNOCK-OUT OF ATRIAL CARDIOMYOCYTES DERIVED FROM IPSCS.
Marion Pierre (492 Pos / B313)

Board S134
DESIGNING BCL-2 PROTEIN BINDING APTAMERS USING AN ENTROPIC FRAGMENT-BASED APPROACH & IN VITRO VALIDATE THE DRUG EFFICACY.
Fatimah M. Alharbi (1649 Pos / B54)

Board S135
NOVEL BIOMOLECULAR FINGERPRINT USING GRAPH CONVOLUTIONAL NETWORKS.
Ali Risheh (695 Pos / B516)

Board S136
ADAPTATIONS OF PROTEINS, RNA AND DNA TO EXTREME TEMPERATURES, SALINITY AND PH.
Aidana Amangeldina (2277 Pos / B27)

Single-Molecule Forces, Manipulation, and Visualization (Boards S137 – S143)

Board S137
CHARACTERIZATION OF UNEXPECTED BLUE-SHIFTED SINGLE MOLECULE FLUORESCENCE OF JF646 AND JF669 FOR SMLM.
Jacob M. Ritz (1353 Pos / B482)

Board S138
SINGLE-MOLECULE SPECTROSCOPY OF THE SARS-COV-2 NUCLEOCAPSID PROTEIN.
Jasmine Cubuk (976 Pos / B105)

Board S139
UNCOVERING INDIVIDUAL PROTONATION EVENTS IN KIR2 CHANNELS.
Michael Bründl-Jirout (2538 Pos / B288)

Board S140
CHOLESTEROL-ENRICHED NANODOMAINS ANALYSIS BY SINGLE MOLECULE LOCALIZATION OF UNAG-D4 CHOLESTEROL PROBE AND TRANSIENT FORMATION AND DETECTION OF BODIPY-CHOLESTEROL RED-SHIFTED DIMERS IN THE PLASMA MEMBRANE OF MOUSE SPERM.
David Torres-Hernandez (624 Pos / B445)

Board S141
TOWARDS A UNIFIED PIPELINE FOR TISSUE-SCALE LOCALIZATION AND IDENTIFICATION OF INDIVIDUAL RNA MOLECULES.
Alex E. Rojewski (1379 Pos / B508)

Board S142
TOWARD MERGING IMAGE ANALYSIS AND GENE NETWORK DISCOVERY FROM FLUORESCENT IN SITU HYBRIDIZATION DATA.
Max Schweiger (342 Pos / B163)

Board S143
HIGH-THROUGHPUT BINDING FREE ENERGY SIMULATIONS: APPLICATIONS IN DRUG DISCOVERY.
S. Benjamin Koby (696 Pos / B517)

Theory and Computation (Boards S144 – S156)

Board S144
MOLECULAR ARCHITECTURE OF NUCLEOSOME REMODELING AND DEACETYLASE SUB-COMPLEXES BY INTEGRATIVE STRUCTURE DETERMINATION.
Shreyas M. Arvindekar (2295 Pos / B45)

Board S145
S_IRE_N (SIMULATION OF RECEPTORS AND ENZYMES): AN INTERACTIVE SIMULATION OF ENZYME KINETICS AND PHARMACODYNAMIC MODELS.
Katherine Arnott (2698 Pos / B448)

Board S146
FLUORESCENT SINGLE PARTICLE TRACKING ENABLES HIGH SENSITIVITY VISCOMETRY MEASUREMENTS OF MICRO-VOLUME SAMPLES.
Karen L. Lopez (683 Pos / B504)

Board S147
ANTIBACTERIAL PATHWAY OF MOS₂ NANOSHEETS AGAINST <I>ESCHERICHIA COLI</I> MEMBRANE VIA PHOSPHOLIPID EXTRACTION AND LOCALIZED PHASE TRANSITION.
Monika Kumari (1114 Pos / B243)

Board S148
MOLECULAR ORIGIN OF THE PROTON SELECTIVITY IN THE HUMAN VOLTAGE-GATED PROTON CHANNEL.
Grace Liu (2534 Pos / B284)

Board S149
CARDIOMYOCYTE SARCOLEMMA MODELLING AND LIPID-PROTEIN INTERACTIONS.
Mariia Borbuliak (1816 Pos / B221)

Board S150
PREDICTING CONDUCTION PROPERTIES OF TMC PROTEINS INVOLVED IN SENSORY PERCEPTION <IN SILICO.
Shounak Mukherjee (458 Pos / B279)

Board S151
EXPLORING THE MECHANISM OF THE BACTERIOPHAGE T7 SINGLE-STRANDED DNA BINDING PROTEIN GP2.5.
Shikai Jin (908 Pos / B37)

Board S152
TARGETING TIGHT JUNCTIONS IN THE BLOOD-BRAIN BARRIER: HINTS FROM MOLECULAR DYNAMICS SIMULATIONS OF ION CONDUCTION IN TWO CLAUDIN-5 STRUCTURAL MODELS.
Alessandro Berselli (2629 Pos / B379)

Board S153
THE UNIQUE Q493R MUTATION DRIVES INTERFACIAL INTERACTIONS IN THE SARS-COV-2 OMICRON VARIANT S1-RBD: ACE2-COMPLEX.
Angelin Mary Philip (662 Pos / B483)

Board S154
SPATIAL DIMENSION AND BINDING KINETICS BETWEEN FG-REPEATS CHARACTERIZE THE FREE/BOUND DIFFUSION OF MOLECULES INSIDE THE NUCLEAR PORE COMPLEX.
Atsushi Matsuda (1686 Pos / B91)

Board S155
ARTIFICIAL INTELLIGENCE FOR MOLECULAR MECHANISM DISCOVERY.
Hendrik Jung (1366 Pos / B495)

Board S156
RELATION IN LIGAND DYNAMICS AND PROTEIN MUTATION USING UNSUPERVISED MACHINE LEARNING.
Ikki Yasuda (891 Pos / B20)

Monday, February 20, 2023

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 1AB**
7:30 AM-5:00 PM	**Registration/Exhibitor Registration**	**Lobby BC**
8:00 AM-10:00 PM	**Poster Viewing**	**Exhibit Hall BC**
8:15 AM-10:15 AM	**Symposium: Future of Biophysics Burroughs Wellcome Fund Symposium** **Co-chairs** *Baron Chanda, Washington University in St. Louis, USA* *Janice Robertson, Washington University in St. Louis, USA* DESIGNER NANODISCS TO PROBE MEMBRANE PORE FORMATION. *Huan Bao* HOW TO FOLD THE PROTEOME (SOME ASSEMBLY REQUIRED). *Stephen D. Fried* IDENTIFICATION AND PREDICTION OF FOLD-SWITCHING PROTEINS. *Lauren L. Porter* TMEM16S UNDER THE ELECTRON MICROSCOPE. *Cristina Puchades*	**Room 6A**
8:15 AM-10:15 AM	**Symposium: Unholy Matrimony of Channels and Transporters** **Chair** *Show-Ling Shyng, Oregon Health and Science University, USA* SPERM FLAGELLAR CATSPER CALCIUM CHANNELS. *Jean-Ju Chung* UNUSUAL SUSPECTS UNDERLYING MULTIMODAL GATING OF KV1.2 CHANNELS. *Harley T. Kurata* STRESS BRINGS OUT THE BEST: POTASSIUM TRANSPORT BY KDPFABC. *David L. Stokes* UNTANGLING THE INSEPARABLE LIFE OF AN ABC TRANSPORTER AND A POTASSIUM CHANNEL: TOWARDS UNDERSTANDING THE STRUCTURE-FUNCTION RELATIONSHIP IN THE K_{ATP} CHANNEL COMPLEX. *Show-Ling Shyng*	**Room 6B**
8:15 AM-10:15 AM	**Platform: Member Organized Session:** **A Multi-Scale Assessment of Biomechanical Regulation by the Myosin Molecular Motor**	**Room 6C**
8:15 AM-10:15 AM	**Platform: Replication, Recombination, Repair, and Transcription**	**Room 6D**
8:15 AM-10:15 AM	**Platform: Protein Stability, Folding, and Chaperones**	**Room 6E**
8:15 AM-10:15 AM	**Platform: Optical Microscopy and Superresolution Imaging II**	**Room 6F**
8:15 AM-10:15 AM	**Platform: Membrane Active Peptides**	**Room 5AB**
8:15 AM-10:15 AM	**Platform: Biosensors**	**Room 11AB**
8:30 AM-10:30 AM	**CPOW Committee Meeting**	**Room 14A**
9:00 AM-10:00 AM	**Career Development Center Workshop:** **Demystifying the Academic Job Search I: Understanding the Search**	**Room 16B**
9:30 AM-11:00 AM	**Exhibitor Presentation: Nanion Technologies** **Need for Speed: No Limits for Automated Electrophysiology**	**Room 9**
10:00 AM-5:00 PM	**Exhibits**	**Exhibit Hall BC**
10:15 AM-11:00 AM	**Meet the Editors, *The Biophysicist***	**Lobby BC/Publications Booth**
10:15 AM-11:00 AM	**Coffee Break**	**Exhibit Hall BC**
10:15 AM-11:15 AM	**New Member Welcome Coffee**	**Room 1AB**
10:30 AM-11:30 AM	**Career Development Center Workshop: Marketing Your Value:** **Crafting your Elevator Pitch/30 Second Value Statement/Brand Statement**	**Room 16B**
10:30 AM-12:00 PM	**Exhibitor Presentation: Bruker** **EPR Research Solutions from Routine Analytics to High-End Experimentation**	**Room 10**

10:45 AM-12:45 PM	**Symposium: Opportunities for Change: Setting Standards to Address Harassment in Science** **Chair** *Renae Ryan, University of Sydney, Australia* **Speakers followed by panel discussion** Renae Ryan, University of Sydney, Australia Michael Lauer, NIH, USA Theresa Good, NSF, USA Beth Reudi, SEA Change, AAAS, USA	**Room 6A**
10:45 AM-12:45 PM	**Symposium: Genome Organization** **Chair** *Elizabeth Hinde, University of Melbourne, Australia* AN INTEGRATED MECHANO-RESPONSE MEDIATED BY ATR AND ATM. *Marco Foiani* MOLECULAR TAKE ON PHASE SEPARATION OF FUS. *Sua Myong* MANIPULATE SINGLE NUCLEIC ACID MOLECULES IN LIVE CELLS. *Bin Wu* HISTONE FRET MICROSCOPY OF LIVE CELL GENOME ARCHITECTURE. *Elizabeth Hinde*	**Room 6B**
10:45 AM-12:45 PM	**Platform: Condensates: Physical Properties and Modeling I**	**Room 6C**
10:45 AM-12:45 PM	**Platform: Member Organized Session: Mechanosensitive Membrane Proteins**	**Room 6D**
10:45 AM-12:45 PM	**Platform: Membrane Protein Dynamics I**	**Room 6E**
10:45 AM-12:45 PM	**Platform: Ion Channels, Pharmacology, and Disease**	**Room 6F**
10:45 AM-12:45 PM	**Platform: Platform: Calcium Handling and Electrophysiology II**	**Room 5AB**
10:45 AM-12:45 PM	**Platform: Motor Proteins and Cytoskeletal Assemblies II**	**Room 11AB**
11:00 AM-1:00 PM	**Annual Meeting of the Student Chapters**	**Room 2**
11:30 AM-1:00 PM	**Exhibitor Presentation: axiVEND - iRiS Kinetics** **Accurate Binding Kinetics for Biological Nanoparticle Analytes**	**Room 9**
12:00 PM-1:00 PM	**Career Development Center Workshop: Translating Your Credentials:** **Writing Effective resumes + Cover Letters for Industry, Government, and Nonprofit Jobs**	**Room 16B**
12:30 PM-2:00 PM	**Exhibitor Presentation: Leica Microsystems** **Molecular Interaction Across Imaging Modalities with the Leica STELLARIS Confocal Platform**	**Room 10**
1:00 PM-2:30 PM	**Envisioning the Future of Biophysical Postdoctoral Training**	**Room 7AB**
1:30 PM-3:00 PM	**Biophysics 101: Incorporating Bayesian and Artificial Intelligence Approaches into Biophysics**	**Room 6E**
1:45 PM-3:00 PM	**Snack Break**	**Exhibit Hall BC**
1:45 PM-3:45 PM	**Poster Presentations and Late Posters**	**Exhibit Hall BC**
2:15 PM-3:45 PM	**Authorship Best Practices in Biophysics**	**Room 8**
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 16B**
2:30 PM-4:00 PM	**Achieving Work-Life Balance Across Different Job Sectors**	**Room 2**
2:30 PM-4:00 PM	**Exhibitor Presentation: Nanosurf** **Application of Low-Force Photothermal Off-Resonance Tapping for In Situ AFM Imaging of Soft Virus Capsids**	**Room 10**
3:00 PM-5:00 PM	**JUST-B (Justice for Underrepresented Scholars Training in Biophysics) Poster Session**	**Ballroom Lobby**
3:30 PM-5:00 PM	**Exhibitor Presentation: HORIBA Scientific** **A-TEEM Molecular Fingerprinting for Biopharmaceutical Products Such as Vaccines,** **Insulin, Viral Vectors (AAVs), Cell Media, Exosomes, and More**	**Room 9**
3:30 PM-5:30 PM	**Membership Committee Meeting**	**Room 14A**
4:00 PM-5:00 PM	**Career Development Center Workshop: Negotiation for Biophysicists:** **Negotiation Strategies and Tactics and Evaluating a Job Offer**	**Room 16B**

4:00 PM-6:00 PM	**Symposium: Bacterial Barriers** **Chair** *Randy Stockbridge, University of Michigan, USA* BACTERIAL BRAINS: HOW BACTERIA USE ELECTROCHEMICAL POTENTIALS TO SOLVE COMPLEX PROBLEMS. *Gurol Suel* GENERAL FEATURES OF TRANSMEMBRANE BETA BARRELS FROM A LARGE DATABASE. *Joanna Slusky* MECHANISTIC BASIS OF CHOLINE IMPORT AND LIPID FLIPPING INVOLVED IN TEICHOIC ACID SYNTHESIS AND MODIFICATION. *Camilo Perez* THE MOLECULAR BASIS FOR ANTISEPTIC RESISTANCE IN BACTERIA. *Randy Stockbridge*	**Room 6A**
4:00 PM-6:00 PM	**Symposium: Artificial Enzymes: Protein Dynamics and Directed Evolution** **Chair** *Shina Caroline Lynn Kamerlin, Georgia Institute of Technology, USA, Chair* DIRECTED EVOLUTION OF ARTIFICIAL ENZYMES WITH NEW-TO-NATURE FUNCTIONS. *Huimin Zhao* EVOLUTION OF ENERGY LANDSCAPES IN DESIGNER ENZYMES. *Donald Hilvert* WHAT DIRECTED EVOLUTION AND PROTEIN DYNAMICS CAN TEACH US ABOUT ARTIFICIAL ENZYME DESIGN. *Steven D. Schwartz* LOOP DYNAMICS AND EVOLVABILITY IN THE TIM-BARREL PROTEINS OF HISTIDINE AND TRYPTOPHAN BIOSYNTHESIS. *Shina Caroline Lynn Kamerlin*	**Room 6B**
4:00 PM-6:00 PM	**Platform: Smooth and Cardiac Muscle I**	**Room 6C**
4:00 PM-6:00 PM	**Platform: Protein-Nucleic Acid Interactions II**	**Room 6D**
4:00 PM-6:00 PM	**Platform: Protein Structure and Conformation II**	**Room 6E**
4:00 PM-6:00 PM	**Platform: Ion Channel Regulatory Mechanisms**	**Room 6F**
4:00 PM-6:00 PM	**Platform: Membrane Physical Chemistry**	**Room 5AB**
4:00 PM-6:00 PM	**Platform: Molecular Dynamics II**	**Room 11AB**
4:30 PM-6:00 PM	**Speed Networking**	**Ballroom Lobby**
4:30 PM-6:00 PM	**Exhibitor Presentation: Sutter Instrument** **Scientists Empowering Scientists**	**Room 10**
5:30 PM-7:00 PM	**Exhibitor Presentation: Elements srl** **Nanopore Measurements at 10 MHz Bandwidth: Let's See the Hidden Data You Were Looking For!**	**Room 9**
6:00 PM-6:30 PM	**Dinner Meet-Ups**	**Lobby BC/Society Booth**
8:00 PM-9:30 PM	**Awards and 2023 Biophysical Society Lecture**	**Room 6**

Monday, February 20

Graduate Student Breakfast

7:30 AM - 8:30 AM, ROOM 1AB

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

Speakers
Eleonora Grandi, University of California, Davis, USA
David Jones, University of Michigan, USA
Jasna Markovac, University of Michigan Medical School, USA
Jeff Schaub, Abbott Labs, USA

Registration/Exhibitor Registration

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

Poster Viewing

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

Symposium
Future of Biophysics Burroughs Wellcome Fund Symposium

8:15 AM - 10:15 AM, ROOM 6A

Co-chairs
Baron Chanda, Washington University in St. Louis, USA
Janice Robertson, Washington University in St. Louis, USA

NO ABSTRACT **8:15 AM**
DESIGNER NANODISCS TO PROBE MEMBRANE PORE FORMATION. **Huan Bao**

NO ABSTRACT **8:45 AM**
HOW TO FOLD THE PROTEOME (SOME ASSEMBLY REQUIRED). **Stephen D. Fried**

NO ABSTRACT **9:15 AM**
IDENTIFICATION AND PREDICTION OF FOLD-SWITCHING PROTEINS. **Lauren L. Porter**

NO ABSTRACT **9:45 AM**
TMEM16S UNDER THE ELECTRON MICROSCOPE. **Cristina Puchades**

Symposium
Unholy Matrimony of Channels and Transporters

8:15 AM - 10:15 AM, ROOM 6B

Chair
Show-Ling Shyng, Oregon Health and Science University, USA

NO ABSTRACT **8:15 AM**
SPERM FLAGELLAR CATSPER CALCIUM CHANNELS. **Jean-Ju Chung**

717-SYMP **8:45 AM**
UNUSUAL SUSPECTS UNDERLYING MULTIMODAL GATING OF KV1.2 CHANNELS. **Harley T. Kurata**

718-SYMP **9:15 AM**
STRESS BRINGS OUT THE BEST: POTASSIUM TRANSPORT BY KDPFABC. **David L. Stokes**

719-SYMP **9:45 AM**
UNTANGLING THE INSEPARABLE LIFE OF AN ABC TRANSPORTER AND A POTASSIUM CHANNEL: TOWARDS UNDERSTANDING THE STRUCTURE-FUNCTION RELATIONSHIP IN THE K_{ATP} CHANNEL COMPLEX. **Show-Ling Shyng**

Platform
Member Organized Session: A Multi-Scale Assessment of Biomechanical Regulation by the Myosin Molecular Motor

8:15 AM - 10:15 AM, ROOM 6C

Co-Chairs
Daniel Bernstein, Stanford University, USA
Michael Regnier, University of Washington, USA

720-PLAT **8:15 AM**
STRUCTURAL CHANGES IN MYOSIN AFFECT CHEMO-MECHANICAL PROPERTIES OF THE MYOSIN-ACTIN INTERACTION. Divya Pathak, Neha Nandwani, James A. Spudich, **Kathleen Ruppel**

721-PLAT **8:30 AM**
MYH7 G256E INDUCED CHANGES IN MYOSIN BIOMECHANICS INFLUENCE FUNCTION OF MYOFIBRIL CONTRACTILE ORGANELLES. **Michael Regnier**

722-PLAT **8:45 AM**
MYH7 MUTATIONS INDUCE CHANGES IN SINGLE CELL MECHANOBIOLOGY. **Beth L. Pruitt**, Cheavar A. Blair, Erica A. Castillo, Orlando Chirikian, Liam Dow, Samuel D. Feinstein, Marissa Gionet-Gonzales, Kerry V. Lane, Miguel Sanchez Lozano, Alison S. Vander Roest, Gabriela Villalpando Torres

723-PLAT **9:00 AM**
CHANGES IN MYOSIN BIOMECHANICS INFLUENCE GROWTH AND MATURATION OF IPSC-CARDIOMYOCYTES. **Daniel Bernstein**, Alison S. Vander Roest, Sean Wu, Beth Pruitt, Mingming Zhao, Giovanni Fajardo, Kathleen Ruppel, James A. Spudich

724-PLAT **9:15 AM**
EFFECTS OF CHANGES IN MYOSIN BIOMECHANICS ON CANONICAL AND NON-CANONICAL SIGNALING AND HCM PHENOTYPES. Paul Heinrich, **Sean M. Wu**

725-PLAT **9:30 AM**
THE POLYAMINE SPERMIDINE ENHANCES CONTRACTILE FUNCTION AND SARCOMERE DYNAMICS POST-DOXORUBICIN TREATMENT. **Cheavar A. Blair**, Beth Pruitt, Samuel D. Feinstein

726-PLAT **9:45 AM**
SARCOMERE DYNAMICS SIMULATIONS TO UNCOVER MECHANISMS IN HYPERTROPHIC CARDIOMYOPATHY. **Alison S. Vander Roest**, James A. Spudich, Kathleen Ruppel, Michael Regnier, Daniel Bernstein

727-PLAT **10:00 AM**
CHARACTERIZING THE FUNCTIONAL IMPACT OF EMBRYONIC MYOSIN MUTATIONS IN STEM CELL-DERIVED SKELETAL MUSCLE. Christian Mandrycky, Saffie Mohran, Matthew C. Childers, Alec S.T. Smith, Michael Regnier, **David L. Mack**

Platform
Replication, Recombination, Repair, and Transcription

8:15 AM - 10:15 AM, ROOM 6D

Co-Chairs
Marcia Levitus, Arizona State University, USA
Christine Stephen, University of California, USA

728-PLAT **8:15 AM**
PROBING THE DAMAGE-SENSING MECHANISM(S) OF A DNA REPAIR HELICASE. **Alice Troitskaia**, Paras Gaur, Masayoshi Honda, Maria Spies, Yann R. Chemla

729-PLAT 8:30 AM
URACIL-DNA GLYCOSYLASE EFFICIENCY IS MODULATED BY SUBSTRATE RIGIDITY. Souvik Poddar, Aerial M. Pratt, Paul B. Orndorff, Arjan van der Vaart, Wade D. Van Horn, **Marcia Levitus**

730-PLAT 8:45 AM
EXPLORING THE MECHANISMS BEHIND THE *E. COLI* PH-RESPONSIVE RIBOSWITCH. **Christine N. Stephen**, Tatiana V. Mishanina

731-PLAT 9:00 AM
RULES OF TRANSCRIPTIONAL BURSTING REVEALED BY ABSOLUTE QUANTIFICATION OF NASCENT RNA IN LIVING FLY EMBRYOS. **Po-Ta Chen**, Benjamin Zoller, Michal Levo, Thomas Gregor

732-PLAT 9:15 AM
MESOSCALE CHROMATIN ORGANIZATION IS REGULATED BY ACTIVE TRANSCRIPTION AND EPIGENETIC REGULATION. **FNU Aayush Kant**, Zixian Guo, Vivek B. Shenoy

733-PLAT 9:30 AM TRAVEL AWARD WINNER
THREE KINETICALLY DISTINCT BUT COMPATIBLE ROUTES OF RHO-DEPENDENT TERMINATION UNCOVERED BY SINGLE-MOLECULE TRANSCRIPTION IMAGING. **Eunho Song**, Heesoo Uhm, Seungha Hwang, Palinda R. Munasingha, Yeon-Soo Seo, Jin Young Kang, Changwon Kang, Sungchul Hohng

734-PLAT 9:45 AM
FORCE AND DNA-BOUND PROTEINS BIAS TRANSCRIPTION OUTPUT FROM CONVERGING OR DIVERGING GENES. **Jin Qian**, Irina Artsimovitch, Yan Yan, Wenxuan Xu, Laura Finzi, David Dunlap

735-PLAT 10:00 AM TRAVEL AWARD WINNER
CRYO-EM VISUALIZATION OF STATE TRANSITION DURING NON-HOMOLOGOUS END-JOINING (NHEJ). **Siyu Chen**, Linda Lee, Tasmin Naila, Ryan McKeown, Susan Fishbain, Alex Vogt, Annie Wang, Alan E. Tomkinson, Susan P. Lees-Miller, Yuan He

Platform
Protein Stability, Folding, and Chaperones
8:15 AM - 10:15 AM, ROOM 6E

Co-Chairs
Karishma Bhasne, University of Massachusetts Amherst, USA
Nicholas Noinaj, Purdue University, USA

736-PLAT 8:15 AM
ONCOGENIC MUTATIONS IN THE DNA-BINDING DOMAIN OF FOXO1 THAT DISRUPT FOLDING: QUANTITATIVE INSIGHTS FROM EXPERIMENTS AND MOLECULAR SIMULATION. **Dylan Novack**, Lei Qian, Gwyneth Acker, Vincent Voelz, Richard Baxter

737-PLAT 8:30 AM TRAVEL AWARD WINNER
OXIDATIVE STRESS REGULATES TALIN MECHANOSENSING. **Marc Mora Hortal**, Rafael Tapia-Rojo, Fani Panagaki, Tania Auchynnikava, Sergi Garcia-Manyes

738-PLAT 8:45 AM
EXTREMOPHILIC PROTEOME REFOLDABILITY STUDIES REVEAL DISTINCT BIOPHYSICAL STRATEGIES TO PROTECT PROTEIN STRUCTURE *IN VIVO*. **Haley M. Moran**, Marie Pearce, Matthew Isada, Ernesto Alvarez, Leeker Lin, Edgar Manriquez-Sandoval, Stephen D. Fried

739-PLAT 9:00 AM
MECHANISM OF PROTEIN STABILIZATION IN CROWDED SOLUTION AND PRESERVATION IN DESICCATED SUGAR GLASS. **Gil I. Olgenblum**

740-PLAT 9:15 AM TRAVEL AWARD WINNER
RECAPITULATING PROTEIN VECTORIAL APPEARANCE ENHANCES FOLDING TO THE NATIVE STRUCTURE IN VITRO. **Iker F. Soto Santarriaga**, Patricia L. Clark

741-PLAT 9:30 AM TRAVEL AWARD WINNER
ELUCIDATING THE ROLE OF THE HSC70 CHAPERONE IN SNARE COMPLEX ASSEMBLY. **Karishma Bhasne**, Eugenia M. Clerico, Antonia Bogoian-Mullen, Lila M. Gierasch

742-PLAT 9:45 AM
FKPA ENHANCES OUTER MEMBRANE PROTEIN FOLDING USING AN EXTENSIVE INTERACTION SURFACE. **Taylor Devlin**, Dagan C. Marx, Michaela A. Roskopf, Quenton R. Bubb, Ashlee M. Plummer, Karen G. Fleming

743-PLAT 10:00 AM
BAM FOLDS OMPS USING A BUDDING MECHANISM. **Nicholas Noinaj**, Runrun Wu

Platform
Optical Microscopy and Superresolution Imaging II
8:15 AM - 10:15 AM, ROOM 6F

Co-Chairs
Leonel Malacrida, Hospital de Clínicas, Montevideo, Uruguay
Lama Zeinab Zeaiter, Italian Institute of Technology, Italy

744-PLAT 8:15 AM
TACKLING THE PUZZLE OF PROTEIN REACTION-DIFFUSION INSIDE LIVING CELLS WITH SUB-5 NM LOCALIZATION. **Yuhan Wang**, Gopika Gopan, Martin Gruebele

745-PLAT 8:30 AM
INDIRECT CORRELATIVE LIGHT AND ELECTRON MICROSCOPY AN INTEGRATED RULE-BASED IMAGING APPROACH WITH ROBUST QUANTITATIVE CAPABILITIES. **Heather L. Struckman**, Rengasayee Veeraraghavan

746-PLAT 8:45 AM
IN SITU CHARACTERIZATION OF NANOPARTICLE PROTEIN CORONA USING REAL-TIME 3D SINGLE PARTICLE TRACKING. **Xiaochen Tan**, Shangguo Hou, Chen Zhang, Anastasia Niver, Alexis Johnson, Kevin D. Welsher

747-PLAT 9:00 AM
MULTI-HARMONIC SPECTRAL PHASOR ANALYSIS OF LAURDAN HYPERSPECTRAL IMAGING ENABLES THE IN VIVO STUDY OF MEMBRANE DYNAMICS OF MULTIPLE MEMBRANE-BOUND ORGANELLES. Alexander Vallmitjana, Paola Lepanto, Florencia Irigoin, **Leonel S. Malacrida**

748-PLAT 9:15 AM
COMBINING OFF-AXIS DIGITAL HOLOGRAPHY WITH FLUORESCENCE FOR SIMULTANEOUS FLUORESCENCE AND QUANTITATIVE PHASE IMAGING. **Lei Jin**, Aaron Au, Ziyang Yu, Yuxi Xiao, Peter Serles, Wentian Tang, Jason Moffat, Tobin Filleter, Yu Sun, Christopher M. Yip

749-PLAT 9:30 AM
IMAGING OF INTERACTIONS OF BIOMOLECULES WITH NANOMATERIALS WITH INTERFEROMETRIC SCATTERING MICROSCOPY. **Jenny Sülzle**, Wayne Yang, Yuta Shimoda, Eveline S. Mayner, Michal Macha, Nathan Ronceray, Aleksandra Radenovic, Suliana Manley

750-PLAT 9:45 AM
SIMULTANEOUS SINGLE-PARTICLE TRACKING AND FLUORESCENCE LIFETIME MEASUREMENT WITH A SINGLE-PHOTON DETECTOR ARRAY. **Andrea Bucci**, Eleonora Perego, Sabrina Zappone, Luca Bega, Eli Slenders, Giuseppe Vicidomini

751-PLAT 10:00 AM
DECIPHERING THE CHROMATIN ORGANIZATION AND EPIGENOMICS INVOLVED IN ADIPOCYTE DIFFERENTIATION AND HYPERTROPHY BY MULTIMODAL NANOSCOPY. **Lama Zeinab Zeaiter**, Francesca Baldini, Lisa Cuneo, Farah Diab, Paolo Bianchini, Piero Portincasa, Laura Vergani, Alberto Diaspro

Platform
Membrane Active Peptides

8:15 AM - 10:15 AM, ROOM 5AB

Co-Chairs
Cristiano Dias, New Jersey Institute of Technology, USA
Dhanushka Weerakoon, University of Southampton, United Kingdom

752-PLAT 8:15 AM
BIOPHYSICAL STUDIES OF PEPTOID INTERACTIONS WITH PHOSPHOLIPIDS. **Grace Y. Stokes**

753-PLAT 8:30 AM
CARDIOLIPIN INDUCES STRONG INHIBITION OF THE SHORT ANTIMICROBIAL PEPTIDE ATRA-1, BUT ONLY WEAK INHIBITION OF LL-37 IN SATURATED MODEL MEMBRANES. Nathalia Calderon, Jessica Munera Jaramillo, Elizabeth Suesca, Sara Isabel Jaramillo Berrio, Marcela Manrique-Moreno, **Chad Leidy**

754-PLAT 8:45 AM
PEPTIDE-INDUCED MYCOBACTERIAL MEMBRANE PERMEABILIZATION STUDIES TO ENHANCE DRUG UPTAKE. **Anjana Peethambaran Menon**, Tzong-Hsien Lee, Mibel Aguilar, Shobhna Kapoor

755-PLAT 9:00 AM
LATARCINS:ANTIMICROBIAL AND CELL-PENETRATING PEPTIDES FROM SPIDER VENOM. **Parvesh Wadhwani**, Saiguru Sekaran, Erik Strandberg, Archana Chugh, Anne S. Ulrich

756-PLAT 9:15 AM
FLUORESCENCE CORRELATION SPECTROSCOPY STUDIES OF ANTIMICROBIAL PEPTIDE BINDING TO PHOSPHOLIPID VESICLES. **Zahra (Nadia) Saadatmand**, Thorsten Wohland, Adam Mechler

757-PLAT 9:30 AM
DE NOVO DESIGN OF PEPTIDES THAT FORM TRANSMEMBRANE BARREL PORES KILLING ANTIBIOTIC RESISTANT BACTERIA. Rahul Deb, Ivo Kabelka, Jan Pribyl, **Robert Vacha**

758-PLAT 9:45 AM
PATHWAY OF PORE FORMATION BY INFLUENZA FUSION PEPTIDES INVESTIGATED IN ATOMISTIC DETAIL. **Amy Rice**, Joshua Zimmerberg, Richard W. Pastor

759-PLAT 10:00 AM
POLYMERS OF THE CANDIDALYSIN PEPTIDE BECOME MEMBRANE PORES. Charles M. Russell, Katherine G. Schaefer, Andrew C. Dixson, Amber L.H. Gray, Robert J. Pyron, Ryan J. Schuck, Daiane S. Alves, Thanh Do, Gavin King, **Francisco N. Barrera**

Platform
Biosensors

8:15 AM - 10:15 AM, ROOM 11AB

Co-Chairs
Michelle Frei, University of California, San Diego, USA
Wenjing Wang, University of Michigan Ann Arbor, USA

760-PLAT 8:15 AM
OPTOGENETIC SENSORS AND TOOLS FOR STUDYING BRAIN SIGNALING AND NEURODEGENERATIVE DISEASES. **Wenjing Wang**

761-PLAT 8:30 AM
MODULAR AND GENETICALLY ENCODABLE RNA-BASED BIOLUMINESCENCE RESONANCE ENERGY TRANSFER (BRET) SENSORS FOR CELLULAR TARGET DETECTION. **Lan Mi**, Qikun Yu, Mingxu You

762-PLAT 8:45 AM
CHEMIGENETIC KINASE BIOSENSORS FOR MULTIPLEXED ACTIVITY SENSING AND SUPERRESOLUTION IMAGING. **Michelle S. Frei**, Jin Zhang

763-PLAT 9:00 AM
CONSTRICTION OF H_2 BIOFUEL CELL VOLTAMMETER BASED ON *ESCHERICHIA COLI* MICROBIAL CELLS. **Meri Iskandaryan**, Torgom Seferyan, Lusine Baghdasryan, Karen Trchounian, Anna Poladyan

764-PLAT 9:15 AM
DNA-TEMPLATED SILVER NANOCLUSTER-BASED CLEAVABLE PROBES FOR NUCLEIC ACID DETECTION. Soonwoo Hong, Aaron Luong, Yu-An Kuo, Yuan-I Chen, Trung D. Nguyen, Limin Chen, Yujie He, Natalie Nguyen, **Tim Yeh**

765-PLAT 9:30 AM
NANOPORE DISCRIMINATION OF COAGULATION BIOMARKER DERIVATIVES AND CHARACTERIZATION OF A POST-TRANSLATIONAL MODIFICATION. Aicha Stierlen, Sandra J. Greive, Laurent Bacri, Philippe Manivet, **Benjamin Cressiot**, Juan Pelta

766-PLAT 9:45 AM
SINGLE-MOLECULE IDENTIFICATION OF FOLDED PROTEINS FROM NANOPORE IONIC CURRENT SIGNATURES. **Kumar Sarthak**, Wei Si, James Wilson, Aleksei Aksimentiev

767-PLAT 10:00 AM
ULTRA-THIN, HIGH-LIFETIME SILICON NITRIDE NANOPORE MEMBRANES FOR BIOSENSING. **Shankar Dutt**, Buddini I. Karawdeniya, Nuwan Bandara, Nahid Afrin, Patrick Kluth

CPOW Committee Meeting

8:30 AM - 10:30 AM, ROOM 14A

Career Development Center Workshop
Demystifying the Academic Job Search I: Understanding the Search

9:00 AM - 10:00 AM, ROOM 16B

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.

Exhibitor Presentation
Nanion Technologies

9:30 AM - 11:00 AM, ROOM 9

Need for Speed: No Limits For Automated Electrophysiology
For over 20 years, Nanion Technologies has been providing diverse solutions for electrophysiologists worldwide. We aim to successfully implement innovative technologies in the fields of ion channel automated patch clamp (APC) electrophysiology, monitoring of cell viability and contraction, as well as electrogenic transporters, with various throughput capabilities. This year, our symposium will start with an introduction by Dr. Andrea Brüggemann (CSO, Nanion) who will guide you through the overall capabilities of Nanion´s portfolio. Following this, we will welcome our speakers, whose work focuses on ion channel and transporter physiology and pathophysiology.

Dr. Jean-Francois Rolland will provide an overview of when and how automated patch clamp instruments are used for supporting ion channel drug discovery programs (cell line generation, primary screening, hit-to-lead/SAR, compound profiling and / or "mode of actions" studies) in Axxam. Dr. Rolland's presentation will also include a comparison of data generated using surrogate techniques and with the manual patch clamp. In particular, he will describe experiments where the intracellular solution perfusion, an extremely difficult technique to perform using conventional patch clamp, was used with ease using the Port-a-Patch and SyncroPatch 384. Additionally, Dr. Rolland will show experiments where ligand-gated ion channels were studied using the 'Ligand Puff' feature of the SyncroPatch 384 (fast external solution addition and low exposure times) and finally, give a glimpse of how automated patch-clamp can be associated with optogenetics.

Dr. James Costantin will focus on activation and pharmacology nicotinic acetylcholine receptors. Nicotinic acetylcholine receptors (nAChR) are cation-permeable ion channels, which mediate fast synaptic transmission when activated by the endogenous neurotransmitter acetylcholine (ACh) or the exogenous natural alkaloid, nicotine. nAChα7R are widely distributed in the mammalian brain including in the cerebral cortex, hippocampus, basal ganglia and cerebellum and have been proposed to play a role in many neurological disorders such as Alzheimer's Disease, Parkinson's, schizophrenia and depression. The most abundantly expressed nAChR in the mammalian brain are the α7 homomeric and α4β2 heteromeric receptors. Nicotinic α7 are particularly challenging to record using patch clamp because of their extremely fast desensitization. Dr. Costantin will show activation and pharmacology of α4β2 and α7/ric3 receptors using the well-based high throughput automated patch clamp system, the SyncroPatch 384.

Transporters and ion pumps are transmembrane proteins that facilitate ion flux across biological membranes against their concentration gradient. Solid supported membrane (SSM) electrophysiology using the SURFE2R instruments from Nanion can be used to measure electrogenic membrane transport, even with low turnover rates, as well as ligand-gated, and leak channels. Any membrane source can be used, meaning that intracellular transporter and channels still present in organellar membrane can be targeted using this method, allowing for direct and functional recordings in a physiologically relevant context. Transporters and intracellular ion channels are increasingly important pharmacological targets for the treatment of a wide variety of diseases. In this presentation, scientist Nataliia Dmitrieva, will present her work on the molecular basis of the function of DgoT, a bacterial homolog of vesicular glutamate transporters.

Speakers
Andrea Brüggemann, CSO, Nanion Technologies
James Costantin, Scientific Market Development Manager – Ion Channels, Eurofins DiscoverX
Nataliia Dmitrieva, Forschungszentrum Jülich
Jean-Francois Rolland, Head, Electrophysiology, Deputy Director, Discovery Services Axxam SpA

Exhibits

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

Meet the Editors, *The Biophysicist*

10:15 AM - 11:00 AM, LOBBY BC/PUBLICATIONS BOOTH

Take this opportunity to meet editors of *The Biophysicist*. Editors will be available to talk about the journal and answer questions about where you should submit your work, what will help to get your work published, and what you can expect when you submit. Editor-in-Chief Sam Safran and other editors will be present at the Biophysical Society publications booth.

Coffee Break

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

New Member Welcome Coffee

10:15 AM - 11:15 AM, ROOM 1AB

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 attend and meet with new members.

Career Development Center Workshop Marketing Your Value: Crafting your Elevator Pitch/30 Second Value Statement/Brand Statement

10:30 AM - 11:30 AM, ROOM 16B

In this workshop, we will address how to effectively market yourself for career opportunities (academia, industry and beyond) and leverage and utilize marketing methods and channels, and we will spend time on how to craft an elevator pitch and what makes a great pitch for employers.

Exhibitor Presentation Bruker

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

EPR Research Solutions from Routine Analytics to High-End Experimentation
Speaker
Ralph Weber, Senior Applications Scientist, Bruker BioSpin Corporation

Bruker EPR presents new hardware and software advances to answer your research needs.

NMR Research Solutions for Biophysical Applications
Speaker
Clemens Anklin, VP of NMR Applications, Bruker BioSpin Corporation

After the successful introduction of 1.2 GHz magnets, Bruker BioSpin has been able to apply the HTS technology to create a 1.0 GHz system with a significantly smaller footprint. The Ascend EVO 1 GHz magnet operates at 4.2 K, using 1.3 of the amount of helium of previous 1GHz magnets. Due to its reduced height and smaller stray field, it can easily be sited in a single story lab. Other new developments include probes, acquisition, processing, and analysis software.

Symposium
Opportunities for Change: Setting Standards to Address Harassment in Science

10:45 AM - 12:45 PM, ROOM 6A

Toxic work environments where bullying, harassment and bad behavior are allowed to persist create unsafe environments for staff and students. Unchecked, this can lead to physical and mental health safety issues, underperformance and ultimately contributes to highly talented people leaving the research/science sector, particularly those from historically underrepresented groups.

This session will be a forum where leaders from national funding agencies and diversity and inclusion accreditation bodies will discuss their role in driving institutional culture change in creating an inclusive scientific climate.

We will hear from representatives from the NIH, the NSF, and gender equity, diversity and inclusion accreditation bodies in Australia (SAGE) and the USA (SEA Change).

Chair
Renae Ryan, University of Sydney, Australia

Speakers with panel discussion
Renae Ryan, University of Sydney, Australia
Michael Lauer, NIH, USA
Theresa Good, NSF, USA
Beth Reudi, AAAS, (SEA Change), USA

Symposium
Genome Organization

10:45 AM - 12:45 PM, ROOM 6B

Chair
Elizabeth Hinde, University of Melbourne, Australia

NO ABSTRACT **10:45 AM**
AN INTEGRATED MECHANO-RESPONSE MEDIATED BY ATR AND ATM. **Marco Foiani**

768-SYMP **11:15 AM**
MOLECULAR TAKE ON PHASE SEPARATION OF FUS. **Sua Myong**, Kevin Rhine, Joey Yoniles, Morgan Dasovich, Mohsen Badiee, Sophie Skanchy, Laura Ganser, Yingda Ge, Charlotte Fare, James Shorter, Anthony K. Leung

769-SYMP **11:45 AM**
MANIPULATE SINGLE NUCLEIC ACID MOLECULES IN LIVE CELLS. Shuaixin He, Lauren Blake, Yang Liu, Taekjip Ha, **Bin Wu**

770-SYMP **12:15 PM**
HISTONE FRET MICROSCOPY OF LIVE CELL GENOME ARCHITECTURE. **Elizabeth Hinde**

Platform
Condensates: Physical Properties and Modeling I

10:45 AM - 12:45 PM, ROOM 6C

Co-Chairs
Sze Ham Chan, University of Virginia, USA
Hue Sun Chan, University of Toronto, Canada

771-PLAT **10:45 AM**
A UNIVERSAL CODE FOR PHASE SEPARATION OF PRION-LIKE LOW COMPLEXITY DOMAINS: INSIGHTS FROM QUANTITATIVE COMPUTER SIMULATIONS. **Maria Julia Maristany**, Anne Aguirre, Jerelle A. Joseph, Rosana Collepardo-Guevara

772-PLAT **11:00 AM**
ELUCIDATING THE DYNAMICS OF INDIVIDUAL IDPS IN A BIOMOLECULAR CONDENSATE USING SINGLE-MOLECULE FRET AND MOLECULAR SIMULATION. **Miloš T. Ivanovic**, Nicola Galvanetto, Aritra Chowdhury, Andrea Sottini, Mark F. Nüesch, Daniel Nettels, Robert B. Best, Benjamin Schuler

773-PLAT **11:15 AM**
MUTUAL REGULATION BETWEEN MEMBRANE RAFTS AND PROTEIN CONDENSATES IN T CELL ACTIVATION. **Sze Ham Chan**, Hongyin Wang, Simli Dey, Ivan Castello-Serrano, Jonathon A. Ditlev, Michael K. Rosen, Kandice R. Levental, Ilya Levental

774-PLAT **11:30 AM**
CHARACTERIZING PROTEIN INTERACTIONS IN BIOMOLECULAR PHASE SEPARATION. **Hannes Ausserwöger**, Georg Krainer, Daoyuan Qian, Timothy Welsh, Tomas Sneideris, Matthias M. Schneider, Gaetano Invernizzi, Therese W. Herling, Nikolai Lorenzen, Tuomas P. Knowles

775-PLAT **11:45 AM**
DYNAMICS OF BACTERIAL RIBONUCLEOPROTEIN BODIES PROBED BY SINGLE-MOLECULE FLUORESCENCE IMAGING OF RNASE E. **Luis A. Ortiz-Rodriguez**, Christopher A. Azaldegui, Jared Schrader, Julie Biteen

776-PLAT **12:00 PM**
ELECTROSTATICS OF SALT-DEPENDENT RE-ENTRANT PHASE BEHAVIORS HIGHLIGHTS DIVERSE ROLES OF ATP IN BIOMOLECULAR CONDENSATES. Yi-Hsuan Lin, Tae Hun Kim, Suman Das, Tanmoy Pal, Jonas Wessen, Lewis E. Kay, Julie D. Forman-Kay, **Hue Sun Chan**

777-PLAT **12:15 PM**
THE IMPACT OF GRB2 ON PHASE CONDENSATION IN LIVE CELLS. **Brittany Stinger**, Chun-Wei Lin, Henry T. Phan, Kiera B. Wilhelm, Anand Vissa, Jay T. Groves

778-PLAT **12:30 PM** **TRAVEL AWARD WINNER**
COMPLEX COACERVATION CONTRIBUTES TO THE JOINT PHASE BEHAVIORS OF MIXTURES OF CHARGE-DEFICIENT PRION-LIKE LOW-COMPLEXITY DOMAINS. **Mina Farag**, Anne Bremer, Wade M. Borcherds, Tanja Mittag, Rohit V. Pappu

Platform
Member Organized Session: Mechanosensitive Membane Proteins

10:45 AM - 12:45 PM, ROOM 6D

Co-Chairs
Charles Cox, The Victor Chang Cardiac Research Institute, Australia
Jerome Lacroix, Western University, USA

779-PLAT **10:45 AM**
EICOSAPENTAENOIC ACID ENHANCES PIEZO2 INACTIVATION AND COUNTERACTS PIEZO2 GAIN OF FUNCTION MUTATIONS. **Luis O. Romero**, Shang Ma, Adrienne E. Dubin, Meaghan Loud, Alexandra Salazar, Yu Wang, Alexander T. Chesler, Katherine Wilkinson, Kara L. Marshall, Ardem Patapoutian, Valeria Vasquez

780-PLAT **11:00 AM**
FORCE-SENSING IN PIEZO ION CHANNELS. **Christoph Haselwandter**

781-PLAT **11:15 AM**
PIEZO1 ACTIVATES NON-CANONICAL EGFR INTERNALIZATION AND SIGNALING. **Carlos Pardo-Pastor**, Jody Rosenblatt

782-PLAT **11:30 AM**
HOW DOES FAST-INACTIVATION PIEZO1 CHANNEL SENSE CONSTANT MECHANICAL FORCES IN NATIVE ENDOTHELIAL CELLS? **Jian Shi**

783-PLAT **11:45 AM**
FOLDING STABILITY AT THE ANION-BINDING SITE DISTINGUISHES PRESTIN FROM OTHER SLC26 TRANSPORTERS AS REVEALED BY HDX-MS. **Xiaoxuan Lin**, Patrick R. Haller, Navid Bavi, Nabil Faruk, Eduardo Perozo, Tobin R. Sosnick

784-PLAT **12:00 PM**
STATE-SPECIFIC MORPHOLOGICAL DEFORMATIONS OF THE LIPID BILAYER EXPLAIN MECHANOSENSITIVE GATING OF MSCS ION CHANNELS. **Yein C. Park**, Bharat Reddy, Navid Bavi, Eduardo Perozo, José D. Faraldo-Gómez

785-PLAT **12:15 PM**
A SEARCH FOR THE RESTING CONFORMATION OF THE BACTERIAL MECHANOSENSITIVE CHANNEL MSCS. **Elissa Moller**, Madolyn Britt, Andriy Anishkin, Doreen Matthies, Sergei Sukharev

786-PLAT **12:30 PM**
MECHANOSENSITIVE ION CHANNEL PIEZO1 AND RARE GENETIC DISORDERS. **Ruhma Syeda**

Platform
Membrane Protein Dynamics I

10:45 AM - 12:45 PM, ROOM 6E

Co-Chairs
Marta Gozzi, Leipzig University, Germany
Gebhard Schertler, ETH Zürich, Switzerland

787-PLAT **10:45 AM**
NEGATIVE ALLOSTERIC MODULATION OF THE GLUCAGON RECEPTOR BY RAMP2. **Evan S. O'Brien**, Kaavya Krishna Kumar, Chris Habrian, Naomi R. Latorraca, Haoqing Wang, Inga Tuneew, Elizabeth Montabana, Susan Marqusee, Daniel Hilger, Ehud Y. Isacoff, Jesper M. Mathiesen, Brian K. Kobilka

788-PLAT **11:00 AM**
ULTRAFAST STRUCTURAL CHANGES DIRECT THE FIRST MOLECULAR EVENTS OF RETINAL ISOMERISATION AND RHODOPSIN ACTIVATION. **Gebhard F.X. Schertler**

789-PLAT **11:15 AM**
PHOTOACTIVATED LOCALIZATION MICROSCOPY COMBINED WITH IMAGE SPATIAL CORRELATION ANALYSIS TO STUDY OF THE DISTRIBUTION AND DIFFUSION OF ANGIOTENSIN II TYPE 1 RECEPTOR IN THE PLASMA MEMBRANE. **Yenisleidy D.L.M. Zulueta Diaz**, Camilla B. Andersen, Jakob L. Kure, Mathias H. Eriksen, Adam L. Lovatt, B. Christoffer Lagerholm, Sebastian V. Morales, Simon Sehayek, Paul W. Wiseman, Eva C. Arnspang

790-PLAT **11:30 AM**
RESOLVING PROTEIN CONFORMATIONAL ENSEMBLES USING 19F-NMR AND CRYO-EM. **Yun Huang**

791-PLAT **11:45 AM**
PRESSURE RESOLVED DEER TO DEFINE THE CONFORMATIONAL LANDSCAPE GOVERNING LIGAND-MEDIATED B2-ADRENERGIC RECEPTOR SIGNAL TRANSDUCTION. **Patrick Brennan**

792-PLAT **12:00 PM**
UNRAVELING THE KEY-LOCK INTERACTION MECHANISMS OF THE HUMAN NEUROPEPTIDE Y TYPE 4 RECEPTOR (HY_4R) VIA SOLID-STATE NMR SPECTROSCOPY. **Marta Gozzi**, Daniel Huster

793-PLAT **12:15 PM** **TRAVEL AWARD WINNER**
CONFORMATION-DEPENDENT DIFFUSION PROPERTIES OF A TRANSMEMBRANE PROTEIN. **Raju Regmi**, Titouan Gressier, Brieuc Chauvin, Alicia Damm, John Manzi, Manuela Dezi, Daniel Levy, Patricia M. Bassereau

794-PLAT **12:30 PM**
NONLINEAR COMPLIANCE OF NOMPC GATING SPRING AND ITS IMPLICATION IN MECHANOTRANSDUCTION. Yukun Wang, Peng Jin, Avinash Kumar, David Bulkley, Lily Y. Jan, Yifan Cheng, Yuh-Nung Jan, **Yongli Zhang**

Platform
Ion Channels, Pharmacology, and Disease

10:45 AM - 12:45 PM, ROOM 6F

Co-Chairs
Stephan Pless, University of Copenhagen, Denmark
Sandra Zakrzewska, University of California, San Francisco, USA

795-PLAT **10:45 AM**
UNRAVELLING THE FUNCTIONAL REGULATION OF THE NALCN SODIUM LEAK CHANNEL COMPLEX BY G PROTEIN-COUPLED RECEPTORS. **Hendrik Harms**, Stephan A. Pless

796-PLAT **11:00 AM**
MEXILETINE BLOCK IN COMMON VARIANTS OF THE CARDIAC SODIUM CHANNEL. **Martina Marras**

797-PLAT **11:15 AM**
UPREGULATION OF RYANODINE RECEPTOR-1 DEPENDENT CALCIUM SIGNALING CONTRIBUTES TO THE MALIGNANCE OF HIGH-GRADE SEROUS OVARIAN CANCER (HGSOC). Kay-Pong D. Yip, Chi-Lam Au-Yeung, Li Zhang, Samuel C. Mok, **James S.K. Sham**

798-PLAT **11:30 AM**
NANOBODY-MEDIATED MODULATION OF HCN1 CHANNELS IN EPILEPTIC DISORDERS. **Roberta Castelli**, Atiyeh Sadat Sharifzadeh, Alessandro Porro, Andrea Saponaro, Anna Moroni

799-PLAT **11:45 AM**
KV1.3 AS A THERAPEUTIC TARGET FOR IMMUNOCYTOPROTECTION AFTER REPERFUSION IN ISCHEMIC STROKE. **Heike Wulff**, Yi-Je Chen, Ruth D. Lee, Yanjun Cui, Latika Singh

800-PLAT **12:00 PM** **TRAVEL AWARD WINNER**
A CELLULAR METABOLITE DIRECTLY AND REVERSIBLY OPENS THE ATP RELEASE PANNEXIN CHANNELS. **Erik K. Henze**, Toshimitsu Kawate

801-PLAT **12:15 PM**
CRYO-EM INVESTIGATION OF THE SUBCONDUCTANCE STATE OF RYANODINE RECEPTOR CALCIUM RELEASE CHANNELS INDUCED BY SCORPION TOXINS. **Filip Van Petegem**, Omid Haji-Ghassemi, Yu Chen, Kellie Woll, Carmen R. Valdivia, Georgina B. Gurrola, Wenxuan Cai, Songhua Li, Hector H. Valdivia

802-PLAT **12:30 PM**
DEFINITION OF A SAXITOXIN (STX) BINDING CODE ENABLES DISCOVERY AND CHARACTERIZATION OF THE ANURAN SAXIPHILIN FAMILY. **Sandra Zakrzewska**, Zhou Chen, Holly S. Hajare, Aurora Alvarez-Buylla, Fayal Abderemane-Ali, Maximiliana Bogan, Dave Ramirez, Lauren A. O'Connell, Justin Du Bois, Daniel L. Minor

Platform
Platform: Calcium Handling and Electrophysiology II

10:45 AM - 12:45 PM, ROOM 5AB

Co-Chairs
Joshua Goldhaber, Cedars-Sinai Smidt Heart Institute, USA
Danika Hayman, Imperial College London, United Kingdom

803-PLAT 10:45 AM
EFFECTS OF PMCA1 KNOCKOUT ON VENTRICULAR CARDIOMYOCYTE CALCIUM HOMEOSTASIS. **Seyi E. Elasoru**, Rui Zhang, Raven Norris, Sabine Lotteau, Joice Gavali, Liang Li, Gary E. Shull, Kenneth D. Philipson, Michela Ottolia, Joshua I. Goldhaber

804-PLAT 11:00 AM
NFATC1 MODULATION OF ATRIAL EXCITABILITY IN ZEBRAFISH. **Natalia S. Torres**, Alexandra Acuna, Christopher A. Kauffman, Martin Tristani-Firouzi

805-PLAT 11:15 AM
DIFFERENT ROLES OF P2X4- AND P2Y1-RECEPTORS IN THE ATRIAL PATHOGENESIS DURING PROLONGED PRESSURE OVERLOAD. **Sun-Hee Woo**, Long NH Do, Joon-Chul Kim, Qui A. Le

806-PLAT 11:30 AM
MODELING THE SPATIOTEMPORAL PROPERTIES OF CROSSTALK BETWEEN RYR AND IP_3R-MEDIATED CA^{2+}RELEASE IN FAILING CARDIOMYOCYTES. **DeAnalisa C. Jones**, Eric A. Sobie

807-PLAT 11:45 AM
DECREASED LEVELS OF S-NITROSYLATED CX43 PREVENT ARRHYTHMOGENICITY AND MYOCARDIAL INFARCTION UPON CARDIAC STRESS IN DUCHENNE MUSCULAR DYSTROPHY. **Manuel F. Munoz Camus**, Mauricio A. Lillo, Thao Nguyen, Jorge E. Contreras

808-PLAT 12:00 PM
DEVELOPMENT OF AN ISCHEMIA/REPERFUSION INJURY MODEL IN THE LIVING MYOCARDIAL SLICE. **Danika Hayman**, Cesare M. Terracciano

809-PLAT 12:15 PM
BIN1 IS ESSENTIAL FOR B-ADRENERGIC REGULATION OF CARDIAC FUNCTION. **Silvia G. del Villar**, Danica W. Ito, Maartje F. Westhoff, Eamonn J. Dickson, Rose E. Dixon

810-PLAT 12:30 PM TRAVEL AWARD WINNER
EMERGENT PACEMAKING AND TISSUE HETEROGENEITY IN A CALCIUM FEEDBACK REGULATORY MODEL OF THE SINOATRIAL NODE. **Nicolae Moise**, Seth H. Weinberg

Platform
Motor Proteins and Cytoskeletal Assemblies II

10:45 AM - 12:45 PM, ROOM 11AB

Co-Chairs
Philip Bleicher, NIH, USA
Beth Pruitt, University of California, Santa Barbara, USA

811-PLAT 10:45 AM
EVALUATION OF STRUCTURAL ALTERATIONS IN ACTIN BY COMPUTATIONAL SIMULATION AND HIGH-SPEED AFM TO STUDY THE MECHANISM OF MYOSIN FORCE GENERATION. **Oleg S. Matusovsky**, Daren Elkrief, Yu-Shu Cheng, Dilson E. Rassier

812-PLAT 11:00 AM
TENSION FORMATION OF A RECONSTRUCTED NONMUSCLE SARCOMERE. **Philip Bleicher**, Neil Billington, Ryan Hart, Christian A. Combs, Shureed Qazi, Indra Chandrasekar, Jay R. Knutson, James R. Sellers

813-PLAT 11:15 AM
THE ARP2/3 COMPLEX CONTRIBUTES TO THE REGENERATION OF BRANCHED ACTIN FILAMENT NETWORKS. **Foad Ghasemi**, LuYan Cao, Antoine Jegou, Guillaume Romet-Lemonne

814-PLAT 11:30 AM
MYOSIN-I FACILITATES SYMMETRY BREAKING AND PROMOTES THE GROWTH OF ACTIN 'COMET TAILS'. **Mengqi Xu**, Luther W. Pollard, Grzegorz Rebowski, Malgorzata Boczkowska, Roberto Dominguez, E. Michael Ostap

815-PLAT 11:45 AM
ACTIN FILAMENT SLIDING IN CAMKII-ACTIN BUNDLES. **Carlos A. Bueno Basurco**, Nicholas P. Schafer, Neal Waxham, Margaret S. Cheung, Peter G. Wolynes

816-PLAT 12:00 PM
MIDZONE MICROTUBULE DYNAMICS IN ANAPHASE CELLS. **Carline A. Fermino do Rosario**, Ying Zhang, Amanda Shorey, Jennifer Stadnicki, Jennifer L. Ross, Patricia Wadsworth

818-PLAT 12:30 PM
SELF-ORGANIZED RHO AND F-ACTIN PATTERNING IN AN ARTIFICIAL CELL CORTEX. **Jennifer Landino**, Marcin Leda, Ani Michaud, Zachary T. Swider, Mariah Prom, Christine M. Field, William M. Bement, Anthony Vecchiarelli, Andrew B. Goryachev, Ann L. Miller

817-PLAT 12:15 PM
CHROMOSOME SIZE AFFECTS ALIGNMENT EFFICIENCY IN MAMMALIAN MITOSIS. **Megan K. Chong**, Sophie Dumont

Annual Meeting of the Student Chapters

11:00 AM - 1:00 PM, ROOM 2

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. The interactive workshop aims to establish chapter interactions, communications, and planning for future Student Chapter Annual Meeting sessions.

Exhibitor Presentation
axiVEND - iRiS Kinetics

11:30 AM - 1:00 PM, ROOM 9

Accurate Binding Kinetics for Biological Nanoparticle Analytes
Accurate characterization of kinetic interactions between biological ligands and analytes is crucial for research in diagnostics and therapeutics. Application areas of label-free kinetics are broad – ranging from drug and antibody screening to characterization of viral carriers for gene therapy and vaccine development. For these diverse applications, the size of biological analytes has a size range spanning many orders of magnitude. Label-free sensing platforms and sensor chips are often optimized for the type of analyte target, for example, Surface Plasmon Resonance (SPR) sensors have thickness and density of the surface hydrogel chemistry optimized for detection of analytes based on their molecular weights. Here, we present a sensor platform that provides accurate binding characterization of broad range of analytes and combines label-free detection of ensembles and single particles on a single reader instrument.

Interferometric reflectance imaging sensor (IRIS) technology is based on interference of light from an optically transparent thin film—the same phenomenon that gives rainbow colors to a soap film when illuminated by white light. IRIS has two modalities: (i) low-magnification (ensemble biomolecular mass measurements) allowing for multiplexed affinity measurements and (ii) high-magnification (digital detection of individual nanoparticles). Single particle IRIS has been demonstrated for multiplexed detection and characterization of individual biological nanoparticles (BNP) such as extra-cellular vesicles and virions in complex samples using disposable cartridges. Low magnification IRIS offers large field of view and ability to simultaneously quantify binding of analytes to highly

multiplexed probe molecules arrayed on the sensor surface. However, accurate characterization of large analytes (50-150nm size) presents challenges due to non-linearity of the optical interference signal with surface binding of sparse BNP analytes. We have recently demonstrated that the affinity of large analytes (extracellular vesicles) can be characterized, qualitatively, on IRIS chips benefiting from IRIS' capability of uniform illumination at different wavelengths.

In this presentation, we will discuss how the improved IRIS platform can bridge the gap between single-particle detection ('digital' configuration) and ensemble reflectance measurements ('analog' configuration), creating a new 'hybrid' system (h-IRIS), providing a substantial improvement in sensitivity, improving the limit of detection by nearly three orders of magnitude. This new hybrid configuration of IRIS combines the advantageous features of high-magnification and low-magnifications modalities. Unique capability of the IRIS platform to conduct kinetic binding measurements of individual analytes has been also demonstrated for antibody characterization and a novel competition assay for therapeutic antibodies for viral infections. We believe that the scientific community will greatly benefit from our approach of combining SP-IRIS platform and use of whole virus particles for obtaining competition information for monoclonal antibodies.

Speaker
Selim Unlu, Distinguished Professor, Boston University

Career Development Center Workshop Translating Your Credentials: Writing Effective resumes + Cover Letters for Industry, Government, and Nonprofit Jobs

12:00 PM - 1:00 PM, ROOM 16B

You have a CV with its list of publications, presentations, honors & awards, etc., but jobs outside of academia typically require a resume. Very few job ads fail to mention the importance of teamwork, collaboration, and communication skills, yet if you take a glance at your CV, these are all likely to be absent or incomplete. Learn how to transform your CV into an effective resume that helps hiring managers recognize and appreciate the value you have to offer.

Exhibitor Presentation Leica Microsystems

12:30 PM - 2:00 PM, ROOM 10

Molecular Interaction Across Imaging Modalities with the Leica STELLARIS Confocal Platform
Molecular interactions and dynamics are the foundation of cellular machinery. For molecules to interact, they must come close enough in space so they can exert a chemical influence on their molecular environment. Confocal fluorescence imaging became a pillar in such endeavors for the specificity conferred by fluorochromes, and the spatial context, spatial and temporal resolution for the inherent dynamic nature of the interaction process.

The ultimate tool of choice to study the interaction of two molecules is Förster Resonant Energy Transfer (FRET), where the molecules of interest are tagged with probes that act as a "donor-acceptor pair" (1).

Many FRET approaches rely on intensity-based measurements such as quenching of donor, acceptor photobleaching, and sensitized emission. Intensity-based FRET requires basic instrumentation but has high risks of artifacts from experimental design.

The gold standard to measure FRET is FLIM (fluorescence lifetime imaging microscopy), as the FRET readout here depends only on the donor fluorescence lifetime changes. The analysis of FLIM-FRET can be done by fitting the fluorescence decay with a multi-exponential model or non-fitting methods, such as phasor FLIM (2) and minimal fraction of donor molecules (mfD) approach (3). All these approaches are available in the STELLARIS confocal platform. In particular, mfD has been implemented as a TauSense tool named TauInteraction.

The advanced tools of STELLARIS confocal platform are also available under cryogenic conditions, enabling advanced cryo correlative (cryo-CLEM) studies. Here, new cellular mechanisms can be unraveled. Intracellular protein interactions can be further resolved by cryo electron microscopy (EM) down to the subnanometer scale. To increase the success rate of these types of studies, Cryo light microscopy enables the identification of specific target proteins prior to the EM imaging. LIGHTNING and TauSense provide high accuracy in identifying and targeting the desired proteins for further analysis.

Speaker
Giulia Ossato, Senior Product Manager, Leica Microsystems

Envisioning the Future of Biophysical Postdoctoral Training

1:00 PM - 2:30 PM, ROOM 7AB

Postdoctoral researchers represent a major portion of the academic research work force. While the position was originally intended as a few years of post-graduate training prior to becoming an independent investigator, it has since evolved into an often long-term position with uncertain outcomes. Not only has this been detrimental to postdocs themselves, but this has led to the development of a host of other systemic issues throughout academic research. Join the Public Affairs Committee as we host a discussion to about the future of a keystone position in biophysics research.

Moderator
Michael Rudokas, Yale University

Speakers
Dorothy Beckett, NIGMS
Melanie Cocco, University of California, Irvine
Devasena Ponnalagu, Ohio State University
Shanna Hamilton, Ohio State University

Biophysics 101: Incorporating Bayesian and Artificial Intelligence Approaches into Biophysics

1:30 PM - 3:00 PM, ROOM 6E

Biophysics 101 is an opportunity to learn about hot topics in Biophysics from experts in the field! This year, speakers will talk about incorporating Bayesian and Artificial Intelligence approaches into Biophysics.

Speakers
Pilar Cossio, Flatiron Institute, USA
Pratyush Tiwary, University of Maryland at College Park, USA

Snack Break

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

Poster Presentations and Late Posters

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

Authorship Best Practices in Biophysics

2:15 PM - 3:45 PM, ROOM 8

This panel, organized by the BPS Publications Committee, will feature a panel of biophysicists to share their experiences and answer your questions about how authorship is determined for research papers in biophysics. Panelists will represent scientists from diverse backgrounds in different types of academic departments. They will discuss their approaches to determining first and corresponding author, navigating disagreements about authorship, and other related topics.

Moderator
Carlos Baiz, University of Texas at Austin, USA

Panelists
Antje Almeida, University of North Carolina Wilmington, USA
Kandice Tanner, NIH, USA
Sarah Veatch, University of Michigan, USA

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 16B

In this session we will focus on learning and using the language of industry and referencing the culture and priorities of industry to ace the interview. We will discuss how to effectively market yourself in these interviews and clarify how your skills and experience are an asset to a company. Specifically, we will address this for pharma and biotech interviews. We will run through some of the most common questions asked in industrial interviews and give specific advice about how to set yourself apart.

Achieving Work-Life Balance Across Different Job Sectors

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

Whether you are in academia thinking about how much more time you would have for family if you worked in the biotechnology sector, or you work in government wishing for more control over your calendar, most people want better work-life balance. It can be tempting to see only the advantages of careers different from yours. In this panel discussion, we will hear from biophysicists working in academia, industry, and the US government about the challenges of achieving work-life balance across different work sectors, and the benefits of each.

Exhibitor Presentation
Nanosurf

2:30 PM - 4:00 PM, ROOM 10

Application of Low-Force Photothermal Off-Resonance Tapping For In Situ AFM Imaging of Soft Virus Capsids
The atomic force microscope (AFM) is becoming an essential tool to image and measure the mechanical properties of biological samples in near-physiological conditions. Unlike optical or electron microscopy techniques, samples measured by AFM require very minimal preparation. The primary feedback mechanism in AFM is the force between the sample being measured and a probe. When working with soft biological samples, the force generated by the probe can often be enough to cause irreversible damage, or in some cases, physically remove the sample from the substrate if lateral stresses become too high. For this reason, imaging soft biological materials such as virus capsids on top of another soft substrate material such as cells or tissue continues to be a challenge for the AFM community.

One of the most popular dynamic force AFM imaging techniques (sometimes called amplitude modulation or tapping mode) works by trying to maintain the amplitude of an oscillating probe near is resonance frequency as it traces the contours of a surface. While it is simple enough to measure changes in amplitude, using this to determine how much force was applied to the surface requires complex technical modeling, which is oftentimes beyond the interest of general microscopists. More often, it takes a skilled AFM operator to instinctively know what settings to use for any specific sample. Developing this level of expertise has a steep learning curve and it is often frustrating for those new to the technique.

Photothermal off-resonance tapping mode (e.g. WaveMode) is a technique that combines the force selectivity of contact mode while at the same time minimizing sheer or lateral forces, which can displace loosely bound or soft materials. The benefits of a photothermally actuated cantilever for imaging at or near the resonance of the cantilever for biological applications has been well documented. Using the same photothermal light source to drive the cantilever off-resonance is a more novel technique. First, since the measurement is done off-resonance, the Q-factor of the cantilever is irrelevant, and thus the imaging bandwidth increases. Second, because the feedback mechanism is force-deflection via amplitude truncation and not peak-to-peak amplitude reduction, the force that is applied to the sample can be precisely controlled down to the low pico-Newton range. Third, off-resonance tapping mode is still considered an intermittent contact mode meaning that the probe only interacts with the surface for only a small portion of its oscillation, thus minimizing lateral stress while the probe is scanned across the surface.

Recently, WaveMode was used to image HSV-1 virus capsids on a soft rat-liver nuclei substrate. One of the challenges for imaging this type of sample with AFM is that the capsid is expected to be stiffer than the surrounding substrate, which could cause the capsid to be pushed into the nuclei. It has been shown that the nucleus exhibits a viscoelastic stiffness response, which increases its stiffness as the AFM indentation velocity increases. Thus, imaging in WaveMode causes the nucleus to stabilize around the capsid and allows for clean images of the complex.

Speaker
Eugene Ogorodnik, Technical Sales and Applications, Nanosurf

JUST-B (Justice for Underrepresented Scholars Training in Biophysics) Poster Session

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

The JUST-B (Justice for Underrepresented Scholars Training in Biophysics) Poster Session will celebrate the achievements of underrepresented and underserved students, postdocs, and early career researchers in the field of biophysics. The poster session will promote the endeavors of trainees, offer support through networking opportunities, and serve as a recruitment venue for those seeking to diversify their pool of future graduate students, postdocs, faculty, staff scientists, journal editors, or any other career within biophysics. All are welcome to attend.

Exhibitor Presentation
HORIBA Scientific

3:30 PM - 5:00 PM, ROOM 9

A-TEEM Molecular Fingerprinting For Biopharmaceutical Products Such As Vaccines, Insulin, Viral Vectors (AAVs), Cell Media, Exosomes, and More
A-TEEM is a novel, robust, and extremely sensitive analytical technique comprising the best attributes of molecular spectroscopy (speed, low per measurement cost, lab-to-line placement) and chromatography (sensitivity, selectivity, low limits of detection and quantification).

The A-TEEM technique combines absorbance and fluorescence spectroscopy in one simultaneous measurement, providing five characteristics that together create a unique A-TEEM fingerprint: The Extinction Coefficient and Absorbance Spectrum (from absorbance) as well as Quantum Efficiency and the entire Excitation and Emission Spectrum in the form of 3D EEM from fluorescence. The absorbance information is also used to

correct the fluorescence EEM for inner filter effects, thus facilitating truly quantitative and highly selectable molecular fingerprints.

A-TEEM fingerprints of very similar components are often unique, enabling quantitative analysis of responsive components to ppb levels. This makes it a natural fit for the characterization of many relevant biopharmaceutical products such as Vaccines, Insulin, Viral Vectors (AAVs), Antibody-Drug Conjugates (ADCs), Cell Media, Exosomes, CRISPr/CAS9, and more.

As a spectroscopic tool, A-TEEM can be deployed for process analytics, used to monitor bioprocesses, or screen for batch-to-batch variance across a variety of relevant biomolecules.

Putting a sample in a cuvette is often the only preparation needed for measurement. For some quantitative measurements, sample dilution may be required.

Speaker
Linda Kidder Yarlott, Life Sciences Business Development Manager, HORIBA Scientific

Membership Committee Meeting

3:30 PM - 5:30 PM, ROOM 14A

Career Development Center Workshop Negotiation for Biophysicists: Negotiation Strategies and Tactics and Evaluating a Job Offer

4:00 PM - 5:00 PM, ROOM 16B

We will address strategies and tactics to evaluate a job offer and to negotiate for what you are worth in the employment marketplace, including postdoc and faculty roles.

Symposium
Bacterial Barriers

4:00 PM - 6:00 PM, ROOM 6A

Chair
Randy Stockbridge, University of Michigan, USA

819-SYMP **4:00 PM**
BACTERIAL BRAINS: HOW BACTERIA USE ELECTROCHEMICAL POTENTIALS TO SOLVE COMPLEX PROBLEMS. **Gurol Suel**

820-SYMP **4:30 PM**
GENERAL FEATURES OF TRANSMEMBRANE BETA BARRELS FROM A LARGE DATABASE. **Joanna Slusky**, Daniel Montezano, Rebecca Bernstein, Matthew Copeland

821-SYMP **5:00 PM**
MECHANISTIC BASIS OF CHOLINE IMPORT AND LIPID FLIPPING INVOLVED IN TEICHOIC ACID SYNTHESIS AND MODIFICATION. **Camilo Perez**

822-SYMP **5:30 PM**
THE MOLECULAR BASIS FOR ANTISEPTIC RESISTANCE IN BACTERIA. **Randy Stockbridge**

Symposium
Artificial Enzymes: Protein Dynamics and Directed Evolution

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

Chair
Shina Caroline Lynn Kamerlin, Uppsala University, Sweden

712-SYMP **4:00 PM**
DIRECTED EVOLUTION OF ARTIFICIAL ENZYMES WITH NEW-TO-NATURE FUNCTIONS. **Huimin Zhao**

713-SYMP **4:30 PM**
EVOLUTION OF ENERGY LANDSCAPES IN DESIGNER ENZYMES. **Donald Hilvert**

714-SYMP **5:00 PM**
WHAT DIRECTED EVOLUTION AND PROTEIN DYNAMICS CAN TEACH US ABOUT ARTIFICIAL ENZYME DESIGN. **Steven D. Schwartz**

715-SYMP **5:30 PM**
LOOP DYNAMICS AND EVOLVABILITY IN THE TIM-BARREL PROTEINS OF HISTIDINE AND TRYPTOPHAN BIOSYNTHESIS. Adrian Romero-Rivera, Marina Corbella Morató, Antonietta Parracino, Wayne M. Patrick, **Shina Caroline Lynn Kamerlin**

Platform
Smooth and Cardiac Muscle I

4:00 PM - 6:00 PM, ROOM 6C

Co-Chairs
Sean Cleary, Loyola University Chicago, USA
Garrett Crosby, University of Arizona, USA

823-PLAT **4:00 PM**
CALCIUM AND MYOSIN S1 BINDING CAUSE STRUCTURAL REARRANGEMENT OF THE C-TERMINUS OF HUMAN CARDIAC TROPONIN T. **Garrett Crosby**, Jil C. Tardiff

824-PLAT **4:15 PM**
DEFINING THE STRUCTURE AND DYNAMICS OF THE N-CTNI- N-CTNC INTERFACE IN CARDIAC THIN FILAMENTS. **Romi Castillo**

825-PLAT **4:30 PM**
MODELING THE TROPONIN CORE DOMAIN ON THIN FILAMENTS USING DATA FROM CRYOELECTRON MICROSCOPY AND FLUORESCENCE APPROACHES. **Michael J. Rynkiewicz**, Elumalai Pavadai, Ivanka Sevrieva, Malcolm Irving, William Lehman

826-PLAT **4:45 PM**
USING 2'-DEOXY-ADP TO PROBE STABILITY OF THE MYOSIN INTERACTING HEADS MOTIF AT ATOMIC RESOLUTION. **Matthew C. Childers**, Michael Regnier

827-PLAT **5:00 PM**
MECHANISMS OF CARDIAC MYOSIN REPLACEMENT. **Colleen M. Kelly**, Jody L. Martin, Molly Coseno, Michael J. Previs

828-PLAT **5:15 PM**
PHOSPHOLAMBAN INHIBITS THE CARDIAC CALCIUM PUMP BY REVERSING ALLOSTERIC EFFECTS OF ATP ON CALCIUM AFFINITY. **Sean R. Cleary**, Jaroslava Seflova, Ellen E. Cho, L. Michel Espinoza-Fonseca, Seth L. Robia

829-PLAT **5:30 PM**
MYOSIN-BINDING PROTEIN C (MYBP-C) STABILIZES, BUT IS NOT THE SOLE DETERMINANT OF SRX MYOSIN IN CARDIAC MUSCLE. **Shane R. Nelson**, Samantha B. Previs, Sakthivel Sadayappan, Carl W.C. Tong, David M. Warshaw

830-PLAT 5:45 PM
AAV9 GENE TRANSFER OF N-TERMINAL TRUNCATED CMYBPC AMELIORATES CARDIAC FUNCTION IN CMYBPC-DEFICIENT MICE. **Katherine L. Dominic**, Joshua B. Holmes, Mandeep Singh, Michael J. Majcher, Julian E. Stelzer

Platform
Protein-Nucleic Acid Interactions II

4:00 PM - 6:00 PM, ROOM 6D

Co-Chairs
Mohammad Ahsan, University of California, Riverside, USA
Utkarsh Kapoor, Texas A&M University, USA

831-PLAT 4:00 PM TRAVEL AWARD WINNER
OCT4 INTERPRETS AND ENHANCES NUCLEOSOME DYNAMICS. **Jan Huertas Martin**, Caitlin M. MacCarthy, Vlad Cojocaru, Hans Schöler

832-PLAT 4:15 PM TRAVEL AWARD WINNER
PRINCIPLES OF DNA CLEAVAGE IN CRISPR-CAS9. **Mohammad Ahsan**, Łukasz Nierzwicki, Kyle W. East, Jonas Binz, Rohaine V. Hsu, Pablo R. Arantes, Erin Skeens, Martin Pacesa, Martin Jinek, George P. Lisi, Giulia Palermo

833-PLAT 4:30 PM TRAVEL AWARD WINNER
NON-SPECIFIC VS SPECIFIC DNA BINDING FREE ENERGETICS OF A TRANSCRIPTION FACTOR DOMAIN PROTEIN BETWEEN SEARCH AND RECOGNITION. **Carmen Al Masri**, Biao Wan, Jin Yu

834-PLAT 4:45 PM
A SINGLE MOLECULE TIRF-BASED PLATFORM TO STUDY DNA SUPERCOILING EFFECT ON DNA PROCESSING ENZYMES. **Huijin Lee**, Taekjip Ha

835-PLAT 5:00 PM
MECHANISM OF ASSEMBLY OF AN ELONGATION-COMPETENT SARS-COV2 REPLICATION TRANSCRIPTION COMPLEX. **Misha Klein**, Subhas C. Bera, Thomas K. Anderson, Bing Wang, Flavia S. Papini, Jamie J. Arnold, Craig E. Cameron, Martin Depken, Robert N. Kirchdoerfer, Irina Artsimovitch, David Dulin

836-PLAT 5:15 PM
HIGH-THROUGHPUT, QUANTITATIVE MEASUREMENTS REVEAL THE BIOPHYSICAL MECHANISMS BY WHICH TRANSCRIPTION FACTOR MUTATIONS DRIVE DISEASE. **Renee Hastings**, Arjun Aditham, Polly Fordyce

837-PLAT 5:30 PM
MOLECULAR FEATURES UNDERLYING PHASE SEPARATION OF PROTEIN-NUCLEIC ACID CONDENSATES REVEALED BY A NEW COARSE-GRAINED DNA MODEL. **Utkarsh Kapoor**, Youngchan Kim, Jeetain Mittal

838-PLAT 5:45 PM
MULTIVALENT INTERACTIONS BETWEEN RNA AND RNA BINDING PROTEINS DRIVE DIFFERENTIAL INTRA-SPECKLE POSITIONING OF RNA TRANSCRIPTS. **Sneha Paul**, Mauricio A. Heranandez, Li Wen, Susan Liao, Jiacheng Zhang, Xiaoshu Wang, Oded Regev, Jingyi Fei

Platform
Protein Structure and Conformation II

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

Co-Chairs
Pooja Kumari, Amity University Jharkhand, India
Dana Westmoreland, MIT, USA

839-PLAT 4:00 PM
STRUCTURAL INVESTIGATION OF 2'-AZIDO-2'-DEOXYRIBONUCLEOSIDE-5'-DIPHOSPHATE INHIBITION OF CLASS IA *ESCHERICHIA COLI* RIBONUCLEOTIDE REDUCTASE. **Dana E. Westmoreland**, Patricia Feliciano, Catherine L. Drennan

840-PLAT 4:15 PM TRAVEL AWARD WINNER
MECHANISM OF SLIDING CLAMP LOADING DURING DNA REPLICATION AND REPAIR IN ATOMIC DETAIL. **Xingchen Liu**, Christl Gaubitz, Joshua Pajak, Brian A. Kelch

841-PLAT 4:30 PM
STRUCTURAL BASIS OF DOMAIN DESTABILIZATION BY DILATED-CARDIOMYOPATHY-CAUSING MISSENSE MUTATIONS IN TITIN. **Ines Martinez-Martin**, Audrey Crousilles, Elias Herrero-Galan, Diana Velazquez-Carreras, Simon A. Mortensen, Juan Pablo Ochoa, Pablo Garcia-Pavia, David de Sancho, Matthias Wilmanns, Jorge Alegre-Cebollada

842-PLAT 4:45 PM
WHAT DOES ALPHAFOLD KNOW ABOUT PROTEIN FOLDING AND PEPTIDE BINDING. **Liwei Chang**, Alberto Perez

843-PLAT 5:00 PM
HUMAN DND1-RRM2 FORMS A NON-CANONICAL DOMAIN-SWAPPED DIMER. **Pooja Kumari**, Neel S. Bhavesh

844-PLAT 5:15 PM
THE PCDDB PROJECT: TOOLS AND RESOURCES FOR CD ANALYSES, ARCHIVING, DISPLAY, AND SHARING. **Bonnie A. Wallace**, Robert W. Janes

845-PLAT 5:30 PM
THE ROLE OF FILAMENT ASSEMBLY IN REGULATING RETINAL IMPDH1 SPLICE VARIANTS. **Justin M. Kollman**

846-PLAT 5:45 PM TRAVEL AWARD WINNER
MUTANT CANCER PROTEIN STAT5B HAS TWO DISTINCT CONFORMATIONAL STATES. **Liam Haas-Neill**, Deniz Meneksedag-Erol, Sarah Rauscher

Platform
Ion Channel Regulatory Mechanisms

4:00 PM - 6:00 PM, ROOM 6F

Co-Chairs
Isabelle Deschenes, Ohio State University, USA
Andrea Saponaro, University of Milan, Italy

847-PLAT 4:00 PM
COMPENSATORY CONTROL OF ASSOCIATED ION CHANNEL MRNAS REGULATES CARDIAC EXCITABILITY. **Erick B. Rios Perez**, Fang Liu, Margaret B. Jameson, Gail A. Robertson

848-PLAT 4:15 PM
LIPID-DRIVEN CFTR CLUSTERING IS IMPAIRED IN CYSTIC FIBROSIS AND RESTORED BY CORRECTOR DRUGS. **Asmahan AbuArish**, Elvis Pandzic, Yishan Luo, Yukiko Sato, Mark J. Turner, Paul W. Wiseman, John W. Hanrahan

849-PLAT 4:30 PM
CONFORMATIONAL REARRANGEMENTS ASSOCIATED WITH PANX1 CHANNEL GATING. **Jacqueline J. Ehrlich**, Erik K. Henze, Toshimitsu Kawate

850-PLAT 4:45 PM
STRUCTURAL DETERMINANT OF THE IVABRADINE-INDUCED BLOCK OF PACEMAKER HCN CHANNELS. **Andrea Saponaro**, Alessandro Porro, Jan H. Krumbach, Atiyeh Sadat Sharifzadeh, Antonio Chaves-Sanjuan, Dario DiFrancesco, Kay Hamacher, Gerhard Thiel, Anna Moroni

851-PLAT 5:00 PM
ACTIVATION OF THE ALKALINE-ACTIVATED K_{2P} K^+ CHANNEL TALK-2 REQUIRES OPENING OF TWO FUNCTIONALLY COUPLED GATES. **Lea C. Neelsen**, Elena B. Riel, Susanne Rinné, Björn C. Jürs, Aytug K. Kiper, Bisher Eymsh, Mauricio Bedoya, Jan Langer, Niels Decher, Thomas Baukrowitz, Marcus Schewe

852-PLAT 5:15 PM
ACUTE PKA MODULATION OF THE CARDIAC SODIUM CURRENT IS MEDIATED BY 14-3-3. **Yang Zheng**, Angelina Ramirez-Navarro, Haiyan Liu, Snizhana Chorna, Xiaoping Wan, Isabelle Deschenes

853-PLAT 5:30 PM
HIGH-SPEED AFM IMAGING OF VOLTAGE GATED SODIUM CHANNEL NACHBAC AND VOLTAGE APPLICATION. **Motonori Imamura**, Atsushi Miyagi, Shuai Gao, Nieng Yan, Simon Scheuring

2521-Pos 5:45 PM
FUNCTIONAL DIFFERENCES BETWEEN VOLTAGE-GATED PROTON CHANNELS FROM FLOWERING AND NON-FLOWERING PLANTS. Chang Zhao, Parker D. Webster, Alexis De Angeli, **Francesco Tombola**

Platform
Membrane Physical Chemistry

4:00 PM - 6:00 PM, ROOM 5AB

Co-Chairs
Rafael Lira, University of Groningen, The Netherlands
Peter Pohl, Johannes Kepler University Linz, Austria

855-PLAT 4:00 PM
OSMOTIC PRESSURE ENABLES FACILE HIGH YIELD ASSEMBLY OF CELL-LIKE GIANT UNILAMELLAR VESICLES IN SOLUTIONS OF PHYSIOLOGICAL IONIC STRENGTH. **Alexis Cooper**, Vaishnavi Girish, Anand B. Subramaniam

856-PLAT 4:15 PM
INTRINSIC STIFFENING AND DYNAMIC SOFTENING BY CHOLESTEROL. Amirali Hossein, Teshani Kumarage, Rana Ashkar, **Alexander J. Sodt**

857-PLAT 4:30 PM
THE EFFECT OF PLASMA MEMBRANE ARCHITECTURE ON THE TRANSPORT PROPERTIES AND REACTION KINETICS OF MEMBRANE ASSOCIATED PROTEINS. **Sankarshan Talluri**, Satyajit Mayor

858-PLAT 4:45 PM
FUSION MODIFIES THE MATERIAL PROPERTIES OF MEMBRANES. **Rafael B. Lira**, Ceri Richards, Rafaela R. M. Cavalcanti, Christoffer Aberg, Karin A. Riske, Wouter H. Roos

859-PLAT 5:00 PM
COMPARING CELL WALL AND MEMBRANE CONTRIBUTIONS TO MESOPHYLL CONDUCTANCE IN PLANTS. **Daipayan Sarkar**, Martin Kulke, Isaiah Kaufman, Josh V. Vermaas

860-PLAT 5:15 PM
TOWARDS PRECISE OPTICAL MEASUREMENTS OF STEADY STATE OF- AND SMALL CHANGES IN RESTING MEMBRANE POTENTIALS. **Debjit Roy**, Xavier Michalet, Kiran Bharadwaj, Evan W. Miller, Yijie Wang, Arjun Deb, Michael A. Wayne, Claudio Bruschini, Edoardo Charbon, Mahbanoo Vakili, Robert Gunsalus, Robert T. Clubb, Shimon Weiss

861-PLAT 5:30 PM
MECHANISM OF UREA AND TMAO COUNTERACTION IN LIPID MEMBRANE INTERACTIONS. Yuri Shakhman, Ilan Shumilin, **Daniel Harries**

862-PLAT 5:45 PM
CAN CELL PENETRATING PEPTIDES ENTER VIA MEMBRANE FUSION? Katarína L. Baxová, Mattia I. Morandi, Ori Avinoam, **Pavel Jungwirth**

Platform
Molecular Dynamics II

4:00 PM - 6:00 PM, ROOM 11AB

Co-Chairs
Iain Smith, University of Southampton, United Kingdom
Ryan Woltz, University of California, Davis, USA

863-PLAT 4:00 PM
METHODS FOR STABLE MULTIMERIC MOLECULAR DYNAMICS SIMULATION AND MODELING OF CARDIAC SK2 CHANNEL FUNCTION. **Ryan L. Woltz**, Nipavan Chiamvimonvat, Vladimir Yarov-Yarovoy, Kevin DeMarco, Adith Srivatsa, Igor V. Vorobyov, Diego Lopez Mateos, Phuong T. Nguyen, Brandon J. Harris, Khoa Ngo[10], Xiao-Dong Zhang[11]

864-PLAT 4:15 PM
ROBOSAMPLE: A SOFTWARE USING CONSTRAINED MOLECULAR DYNAMICS COUPLED WITH GIBBS SAMPLING TO INVESTIGATE MACROMOLECULES. **Laurentiu Spiridon**, Teodor A. Sulea, Victor G. Ungureanu, Eliza C. Martin, David D.L. Minh

865-PLAT 4:30 PM TRAVEL AWARD WINNER
ALLOSTERIC INHIBITION VIA NONPOLAR TERPENOID INHIBITORS. **Anika J. Friedman**, Michael R. Shirts, Jerome M. Fox

866-PLAT 4:45 PM
ULTRAFAST GENERATION OF ATOMISTIC BIOMOLECULAR TRAJECTORIES FOR METHODS DEVELOPMENT. **John D. Russo**, Daniel M. Zuckerman

867-PLAT 5:00 PM
THE PROTON TRANSFER MECHANISM OF THE RAS GTPASES, THE EFFECT OF THE GTPASE ACTIVATING PROTEIN, AND ONCOGENIC MUTATIONS. **Dénes Berta**, Sascha Gehrke, Edina Rosta

868-PLAT 5:15 PM
COMPLEXITY MATTERS: POLYMYXINS AND THE *E. COLI* CELL ENVELOPE. **Iain P.S. Smith**, Conrado Pedebos, Syma Khalid

869-PLAT 5:30 PM
MOLECULAR SIMULATIONS REVEAL CHEMOMECHANICAL FORCES DRIVING BACTERIAL GLIDING MOTILITY. **Jacob Miratsky**, Abhishek Trivedi, John W. Vant, Abhishek Shrivastava, Abhishek Singharoy

870-PLAT 5:45 PM
SCRUTINIZING THE PROTEIN HYDRATION SHELL FROM MD SIMULATIONS AGAINST SAXS/SANS DATA FROM A WORLDWIDE ROUND ROBIN BENCHMARK. **Johanna-Barbara Linse**, Jochen S. Hub

Speed Networking

4:30 PM - 6:00 PM, BALLROOM LOBBY

Career development and networking is important in science but it can be a big time commitment. Attend this session for an opportunity to meet several attendees and make meaningful connections, all in just 2 hours. Advanced registration is preferred.

Exhibitor Presentation
Sutter Instrument

4:30 PM - 6:00 PM, ROOM 10

Scientists Empowering Scientists
For almost 50 years, Sutter Instrument has been collaborating with researchers. During this period, there have been many technological evolutions in both imaging and patch clamp electrophysiology. 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 for both pipette fabrication and electrophysiology, and showcase new products, such as the Lambda 721 Optical Beam Combiner and the NAN™ Open-Design Upright Microscope.

Registration is available online through the Sutter Event Registration Page (https://sutter.eventbrite.com). The number of available spaces is limited, and registrations are accepted on a first-come-first-served basis.

Speakers
Chris Ballard, Vice President, Sutter Instrument
Adair Oesterle, Support Engineer, Sutter Instrument
Telly Galiatsatos, Product Manager, Patch Clamp Systems, Sutter Instrument

Exhibitor Presentation
Elements srl

5:30 PM - 7:00 PM, ROOM 9

Nanopore Measurements At 10 MHz Bandwidth: Let's See the Hidden Data You Were Looking For!
From its introduction in February 2022 of the new 10 MHz bandwidth Nanopore Reader, several labs have started to use our new powerful instrument, featuring unprecedent results and signal quality in high bandwidth nanopore measurements.

We will present data from a recent work of Prof. Marija Drndic about ultrafast translocation and dynamics of double stranded DNA through a nanopore at 10 MHz bandwidth with acquisition of data points per 25 nanoseconds (150 MB/s). By introducing a rigorous algorithm, it was accurately identified each current level present within events. Remarkable sensitivity of this system reveals distortions of short-lived states at a lower bandwidth. This work develops broadly applicable methods that will help uncover a wide range of biomolecular dynamics at unprecedentedly small timescales.

10 MHz bandwidth allows to observe protein conformation and kinetics never observed before: here we present the latest results from protein measurements.

Speakers
Marija Drndic, Professors of Physics, University of Pennsylvania
Federico Thei, CEO, Elements srl

Dinner Meet-Ups

6:00 PM - 6:30 PM, LOBBY BC/SOCIETY BOOTH

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

Awards and 2023 Biophysical Society Lecture

8:00 PM - 9:30 PM, ROOM 6

PRESENTATION OF AWARDS 8:00 PM

871-NATL 8:30 PM
HOW DO YOU FEEL? THE MOLECULES THAT SENSE TOUCH. **Ardem Patapoutian**

MONDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL BC

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 - B17	Protein Structure and Conformation II
B18 - B36	Protein-Small Molecule Interactions I
B37 - B66	Protein Dynamics and Allostery II
B67 - B84	Membrane Protein Structures II
B85 - B103	Membrane Protein Dynamics II
B104 - B128	Intrinsically Disordered Proteins II
B129 - B149	Condensates: Physical Properties and Modeling II
B150 - B174	DNA Structure and Dynamics
B175 - B202	Protein-Nucleic Acid Interactions II
B203 - B225	Membrane Physical Chemistry II
B226 - B245	Membrane Structure II
B246 - B264	General Protein-Lipid Interactions I
B265 - B284	Calcium Signaling
B285 - B294	Intracellular Calcium Channels and Calcium Sparks and Waves
B295 - B298	Intracellular Organelle Dynamics
B299 - B306	Bioenergetics and Photosynthesis
B307 - B325	Voltage-Gated K Channels I
B326 - B350	Ligand-Gated Channels I
B351 - B380	Ion Channels, Pharmacology, and Disease I
B381 - B391	Poster: Myosins
B392 - B407	Cytoskeletal Assemblies and Dynamics
B408 - B438	Cell Mechanics, Mechanosensing, and Motility I
B439 - B449	Modeling of Biological Systems I: Synthesis and Design
B450 - B458	Imaging in Systems and Synthetic Biology
B459 - B489	Optical Microscopy and Superresolution Imaging II
B490 - B516	Computational Methods and Machine Learning, Artificial Intelligence, and Bioinformatics II
B517 - B523	EPR and NMR: Spectroscopy and Imaging
B524 - B539	Biosensors I
B540 - B553	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 II (Boards B1 - B17)

872-POS Board B1
COMPUTATIONAL ASSESSMENT OF MOLECULAR MECHANISMS UNDERLYING HERG K^+ CHANNEL CONDUCTION AND AFFINITY FOR DRUG BINDING. **Khoa Ngo**, Kyle Rouen, John R.D. Dawson, Kevin DeMarco, Aiyana M. Emigh Cortez, Jan Maly, Diego Lopez Mateos, Vladimir Yarov-Yarovoy, Colleen E. Clancy, Igor V. Vorobyov

873-POS Board B2 Travel Award Winner
SIMULATIONS REVEAL MOLECULAR MECHANISMS OF HIGH AFFINITY AND SELECTIVE BINDING OF THE TARANTULA VENOM PROTOXIN-2 TO THE HUMAN $NA_V1.7$ CHANNEL. **Khoa Ngo**, Diego Lopez Mateos, Yanxiao Han, Vladimir Yarov-Yarovoy, Colleen E. Clancy, Igor V. Vorobyov

874-POS Board B3
BESTSEL: UPDATED WEBSERVER FOR SECONDARY STRUCTURE AND FOLD PREDICTION FOR PROTEIN CD SPECTROSCOPY. András Micsonai, Éva Moussong, Frank Wien, Eszter Boros, Henrietta Vadászi, Nikoletta Murvai, Young-Ho Lee, Tamás Molnár, Matthieu Réfrégiers, Yuji Goto, Ágnes Tantos, **József Kardos**

875-POS Board B4
THE POKY SUITE: THE REVOLUTIONIZED PLATFORM FOR BIOMOLECULAR STUDIES. **Woonghee Lee**, Mehdi Rahimi, Adilakshmi Dwarasala, Andrea E. Lopez, Yeongjoon Lee, Abigail Chiu, Zowie Werner

876-POS Board B5
GAUSSIAN-ACCELERATED MOLECULAR DYNAMICS TO PROBE MUTATIONS IN PARKINSON'S LRRK2 GENE. **Aakash Davasam**, Rommie E. Amaro

877-POS Board B6
A TOOLSET FOR THE SOLID-STATE NMR-BASED 3D STRUCTURE CALCULATIONS OF PROTEINS. **Abigail Chiu**, Mehdi Rahimi, Yeongjoon Lee, Huong Nguyen, Woonghee Lee

878-POS Board B7
FLEX-LZERD: PROTEIN DOCKING WITH EXTREMELY LARGE CONFORMATIONAL CHANGES. **Charles Christoffer**, Daisuke Kihara

879-POS Board B8
COMPUTATIONALLY EFFICIENT GRAPH NEURAL /CONVOLUTIONAL NETWORK CAPTURES PROTEIN GEOMETRY TO PREDICT AFFINITY AND DEVELOPABILITY. **Pranav M. Khade**, Vladimir Gligorijevic, Andrew Watkins

880-POS Board B9
PARAMETERIZATION OF A SEQUENCE-SPECIFIC COARSE-GRAINED COLLAGEN MODEL. **George A. Pantelopulos**, Robert B. Best

881-POS Board B10
A BAYESIAN INFERENCE APPROACH TO DETERMINING STRUCTURAL ENSEMBLES USING CRYO-EM AND MOLECULAR DYNAMICS. **Samuel Hoff**, Massimiliano Bonomi

882-POS Board B11 Travel Award Winner
CHARACTERIZING THE HYDROPHOBICITY OF PROTEINS TO PREDICT PROTEIN ASSEMBLY. **Jingjing Ji**, Shikha Nangia

883-POS Board B12
GLOBAL MACHINE LEARNING MODEL PREDICTING ACTIVITY LEVEL OF ANY GPCRS BASED ON PROTEIN STRUCTURE. **Parisa Mollaei**, Amir Barati Farimani

884-POS Board B13
A MOLECULAR DYNAMICS STUDY OF THE FGF1/FGF2 HETERODIMER IN HUMAN FIBROBLASTS. **Shadi A. Badiee**, Mahmoud Moradi

885-POS Board B14
DESIGN AND ENGINEERING SWITCHABLE ARTIFICIAL METALLOPROTEINS. **Peter J. Thompson**, Saman Fatima, Uditha Velidandla, Lisa Olshansky

886-POS Board B15
COMPUTATIONAL CONSTRUCTION OF HEPATITIS C VIRUS CORE PROTEIN TERTIARY STRUCTURE WITH VARIOUS MODELING METHODS. **Je-Wen Liou**, Hemalatha Mani

887-POS Board B16
ANHARMONIC POTENTIAL ENERGY LANDSCAPES OF THERMALLY EXCITED PROTEIN VIBRATIONS. **Michael Sauer**, Matthias Heyden

888-POS Board B17
THE CURIOUS CASE OF THE DISASSEMBLING ATP SYNTHASE STUDIED USING MOLECULAR DYNAMICS SIMULATIONS. **Jacob Layton**, Chun Kit Chan, Jonathan T. Nguyen, Nelli Mnatsakanyan, Abhishek Singharoy

Protein-Small Molecule Interactions I (Boards B18 - B36)

889-POS Board B18
COMPUTATIONAL FRAGMENT SCREENING OF DIMERIC SARS-COV-2 MAIN PROTEASE. **Rashad L. Reid**, Vincent Voelz

890-POS Board B19
FULLY AUTOMATED SCREENING OF COMPOUND LIBRARIES IN DRUG DISCOVERY USING DOCKING AND MOLECULAR DYNAMICS. **Sebastian Wingbermühle**, Erik Lindahl

891-POS Board B20
RELATION IN LIGAND DYNAMICS AND PROTEIN MUTATION USING UNSUPERVISED MACHINE LEARNING. **Ikki Yasuda**, Katsuhiro Endo, Yoshinori Hirano, Eiji Yamamoto, Kenji Yasuoka

892-POS Board B21
BENCHMARKING A NOVEL ENSEMBLE DOCKING METHOD. **Louis G. Smith**, Borna Novak, Gregory R. Bowman

893-POS Board B22
COMPARATIVE INVESTIGATION OF LIGAND BINDING OF HEME-CONTAINING DIOXYGENASES BY COMPUTER MODELING. **Inseok Song**

894-POS Board B23
ABSOLUTE BINDING FREE ENERGY CALCULATIONS FOR MOLECULES BINDING TO THE GPCR GCGR AT THE PROTEIN/BILAYER/WATER INTERFACE. **Charlie Cook**, Ronald Knegtel, Ewa Chudyk, Philip C. Biggin

895-POS Board B24
APPLICATION OF MOLECULAR DYNAMICS TO ELUCIDATE KEY BINDING INTERACTIONS FOR THE DEVELOPMENT OF THERAPEUTICS AGAINST OPIOID OVERDOSE. **Emily N. Robinson**, Alan Grossfield

896-POS Board B25
TARGETING M-RAS AND RAF KINASES BY DUAL ALLOSTERIC INHIBITORS. **Nicholas Nesh**

897-POS Board B26 Travel Award Winner
IDENTIFICATION OF NOVEL INHIBITORS TARGETING KRAS-SOS1 INTERACTIONS BY STRUCTURE-BASED DRUG DESIGN. **Neel A. Patel**, Timothy Hasse, Evan Malin, Jeremy M. Kelm, Navnath Gavande, Yu-ming Huang

898-POS Board B27
A MOLECULAR DYNAMICS STUDY ON SPECIFICITY AND SENSITIVITY OF PDE5 INHIBITORS TO PDE5 AND PDE6. **Seunghun Song**

899-POS **BOARD B28**
IMPROVING THE CHARMM36M FORCE FIELD FOR ARGININE-PHOSPHATE INTERACTIONS. **Jiyeon Min**, Madolyn Britt, Sergei I. Sukharev, Bernard R. Brooks, Jeffery B. Klauda

900-POS **BOARD B29**
REGIOSELECTIVITY OF THE THUNBERGIA ALATA Δ^6-16:0-ACYL CARRIER PROTEIN DESATURASE BY MOLECULAR DYNAMICS. **Marcel D. Baer**, Simone Raugei, John Shanklin

901-POS **BOARD B30**
MOLECULAR INSIGHTS INTO ANTI-MYCOBACTERIAL COMPOUNDS TARGETING MMPL3. **Lixinhao Yang**, Helen I. Zgurskaya, Mary Jackson, Jeffrey North, James C. Gumbart

902-POS **BOARD B31**
FAST ADP RELEASE IN F1-ATPASE. **Sandor Volkan-Kacso**, Rudolph Marcus, Luan Q. Le, Nathan Suiter

903-POS **BOARD B32**
IN-SILICO INSIGHTS INTO AMINOGLYCOSIDE INTAKE BY TMC1. **Harsha Mandayam Bharathi**, Wei-Hsiang Weng, Marcos M. Sotomayor

904-POS **BOARD B33**
MOLECULAR DETERMINANTS OF ANTAGONIST INTERACTIONS WITH CHEMOKINE RECEPTORS CCR2 AND CCR5. **John R.D. Dawson**, Irina Kufareva

905-POS **BOARD B34**
SIMULATIONS REVEAL THE ROLE OF GLUCOSE-6-PHOSPHATASE MUTATIONS IN GLYCOGEN STORAGE DISEASE. **Matt Sinclair**, Jonathan Sheehan, Richard A. Stein, Derek P. Claxton, Emad Tajkhorshid

906-POS **BOARD B35**
DEVELOPMENT OF NOVEL HBV CAPSID ASSEMBLY MODIFIERS THROUGH MOLECULAR DYNAMICS, DOCKING, AND EXPERIMENTS. **Zixing Fan**, Anna Pavlova, Matthew Jenkins, Maksym D. Korablyov, M.G. Finn, James C. Gumbart

907-POS **BOARD B36**
REGULATION OF LRRK2 DYNAMICS AND CONFORMATION STATES BY SMALL MOLECULES. **Jui-Hung Weng**

Protein Dynamics and Allostery II (Boards B37 - B66)

908-POS **BOARD B37** **TRAVEL AWARD WINNER**
EXPLORING THE MECHANISM OF THE BACTERIOPHAGE T7 SINGLE-STRANDED DNA BINDING PROTEIN GP2.5. **Shikai Jin**, Yang Gao, Peter G. Wolynes

909-POS **BOARD B38**
REGULATION OF THE FUNGAL FATTY ACID SYNTHASE THROUGH CONFORMATIONAL SELECTION. **Florian Leidner**, Helmut Grubmuller

910-POS **BOARD B39**
ATOMISTIC BASIS FOR THE DIFFERENTIAL LOAD RESPONSE BY THE ΓΔ AND THE CHIMERIC VΓΔ-CAB T-CELL RECEPTORS. **Sofiya B. Bettencourt**, Robert J. Mallis, Matthew J. Lang, Ellis L. Reinherz, Wonmuk Hwang

911-POS **BOARD B40**
DYNAMIC MECHANISM FOR THE LIGAND DISCRIMINATION BY AB T-CELL RECEPTOR ENHANCED BY MECHANICAL LOAD. **Ana C. Chang-Gonzalez**, Robert J. Mallis, Matthew J. Lang, Ellis L. Reinherz, Wonmuk Hwang

912-POS **BOARD B41**
WHEN THE TCR'S ENGAGED, THE CD3 EPSILONS WILL PLAY: A DYNAMIC T CELL RECEPTOR (TCR) TRIGGERING MECHANISM. **Floris J. van Eerden**, Aalaa Alrahman Sherif, Mara Anais Llamas-Covarrubias, Daron M. Standley

913-POS **BOARD B42**
HYBRID ENHANCED SAMPLING APPROACHES TO GAIN STRUCTURAL INSIGHTS INTO LEUCINE-RICH REPEAT KINASE 2 (LRRK2) PARKINSON'S DISEASE MUTATION. **Anupam A. Ojha**, Rommie E. Amaro

914-POS **BOARD B43**
MOLECULAR DYNAMICS STUDY OF THE MECHANISM OF THE CLIENT UNFOLDED PROTEIN DELIVERY FROM HSP40 TO HSP70. Lisa Matsukura, **Naoyuki Miyashita**

915-POS **BOARD B44**
MOLECULAR MODELS OF HEME TRANSFER IN C. DIPHTHERIAE. **Kade Cheatham**, Jeffery M. Wereszczynski

916-POS **BOARD B45**
DYNAMIC CONFORMATIONAL SWITCHING UNDERLIES TFIIH FUNCTION IN TRANSCRIPTION AND DNA REPAIR AND IMPACTS GENETIC DISEASES. **Jina Yu**

917-POS **BOARD B46**
MOLECULAR DYNAMICS STUDY OF MEIG1 INTERACTIONS WITH PACRG. **Timothy Hasse**, Zhibing Zhang, Yu-ming Huang

918-POS **BOARD B47**
ELUCIDATING THE ROLE OF FURIN CLEAVAGE IN SARS COV-2 SPIKE ALLOSTERY USING MOLECULAR DYNAMICS SIMULATIONS. **Natesan Mani**, Raghavendran Suresh, Srirupa Chakraborty

919-POS **BOARD B48**
TIMELINE OF CHANGES IN SPIKE CONFORMATIONAL DYNAMICS IN EMERGENT SARS-COV-2 VARIANTS REVEAL PROGRESSIVE STABILIZATION OF TRIMER STALK AND ENHANCED NTD DYNAMICS. **Ganesh S. Anand**, Sean Braet, Theresa Buckley, Varun Venkatakrishnan, Kim-Marie Dam, Pamela J. Bjorkman

920-POS **BOARD B49**
MULTI-STATE DIMERIZATION OF THE EFFECTOR DOMAIN MAY REGULATE THE ASSEMBLY OF NON-STRUCTURAL PROTEIN 1 FROM THE INFLUENZA A VIRUS. **James E. Gonzales**, Jae-Hyun Cho, Wonmuk Hwang

921-POS **BOARD B50**
MESOSCALE SIMULATIONS ILLUMINATE THE FUNCTIONAL INTERPLAY AND THE VULNERABILITIES OF INFLUENZA VIRUS GLYCOPROTEINS. **Lorenzo Casalino**, Christian Seitz, Julia Lederhofer, Yaroslav Tsybovsky, Ian A. Wilson, Masaru Kanekiyo, Rommie E. Amaro

922-POS **BOARD B51**
EXAMINING HIV-1 ENVELOPE CONFORMATIONAL TRANSITIONS AT HIGH TEMPORAL RESOLUTION. **Ashley L. Bennett**, Carrie Saunders, Yishak Bililign, Ashliegh Williams, Maya Montani, Priyamvada Acharya, Barton Haynes, Rory C. Henderson

923-POS **BOARD B52**
ILLUSTRATING THE CORRELATIONS BETWEEN PROTEIN DYNAMICS AND GLYCAN SHIELDING OF HIV-1 ENV GP160. **Raghavendran Suresh**, Natesan Mani, Srirupa Chakraborty

924-POS **BOARD B53**
LIGAND-DEPENDENT CONFORMATIONAL DYNAMICS OF MPER-BINDING HIV-1 ANTIBODY FAB235. **Yue Qiu**, Kemin Tan, Ellis L. Reinherz, Mikyung Kim, Wonmuk Hwang

925-POS **BOARD B54**
EXACT REACTION COORDINATES FOR FUNCTIONAL PROTEIN DYNAMICS: FLAP OPENING IN HIV-1 PROTEASE. **Huiyu Li**

926-POS **BOARD B55**
EXPLORING THE CONFORMATIONAL LANDSCAPE OF THE RABIES VIRUS GLYCOPROTEIN USING HDX-MS. **Sophie R. Shoemaker**, Tina X. Li, Wesley Wu, John E. Pak, Susan Marqusee

927-POS **BOARD B56**
DYNAMICS-BASED NETWORK ANALYSIS IDENTIFIES LACI RHEOSTATS WITH HIGH ACCURACY. **Paul Campitelli**, S. Banu Ozkan, Liskin Swint-Kruse, David Ross

928-POS **BOARD B57**
CALCIUM DEPENDENT PROTEIN FOLDING IN A DESIGNED MOLECULAR SWITCH. **Magnus Wolf-Watz**, Malin Jönsson, Ameeq Ul Mushtaq, Sophia Hober

929-POS **BOARD B58**
STRUCTURE AND DYNAMICS OF OFF-TARGET EFFECTS IN CRISPR-CAS9. **Pablo R. Arantes**, Brandon P. Mitchell, Aakash Saha, Lukasz Nierzwicki, Martin Pacesa, Martin Jinek, Giulia Palermo

930-POS **BOARD B59**
CHARACTERIZING AND TUNING THE BACTERIAL SYNTHETIC ADHESION BIOPHYSICS FOR BIOMATERIAL APPLICATIONS. **Stefana A. Costan**, Ingmar H. Riedel-Kruse

931-POS **BOARD B60**
MODE DECOMPOSITION OF PROTEIN DYNAMICS REVEALS FUNCTIONAL COLLECTIVE MOTION IN OXA 24/40. **Luke J. Piszkin**, Jamie VanPelt, Jeffrey W. Peng

932-POS **BOARD B61**
SITE-SPECIFIC VIBRATIONAL SPECTROSCOPY WITH NON-CANONICAL AMINO ACIDS CONTAINING FREQUENCY-RESOLVED LABELS. Aditya S. Chaudhari, Aditi Chatterjee, Spyridon Kaziannis, Petra Čubáková, Miroslav Kloz, Jan Štursa, Lukas Werner, Bohdan Schneider, **Gustavo Fuertes**

933-POS **BOARD B62**
STRUCTURAL DYNAMICS OF SUBSTRATE PROCESSING BY THE PAN-PROTEASOME COMPLEX IN SOLUTION: A TIME-RESOLVED SMALL ANGLE NEUTRON SCATTERING STUDY. **Frank R. Gabel**

934-POS **BOARD B63**
X-RAY SCATTERING EXHIBITS TIME-RESOLVED VIEW OF RHODOPSIN ACTIVATION. **C. Swathi K. Menon**, Konstantinos Karpos, Thomas D. Grant, Andrey V. Struts, Steven D. E. Fried, Suchithranga M.D.C. Perera, Irina V. Kosheleva, Leslie Salas-Estrada, Alan Grossfield, Petra Fromme, Richard A. Kirian, Michael F. Brown

935-POS **BOARD B64** **TRAVEL AWARD WINNER**
MANIPULATING POLYDISPERSITY OF LLENS B-CRYSTALLINS USING DIVALENT CATIONS DEMONSTRATES EVIDENCE OF CALCIUM REGULATION. **Michael Bergman**, Leila Deravi

936-POS **BOARD B65**
MOLECULAR AND FUNCTIONAL INTERACTION OF SINGLE PASS EPHRIN RECEPTOR TYROSINE KINASE, EPHA2 IN LIPID NANODISC USING SOLUTION NMR. **Pravesh Shrestha**

937-POS **BOARD B66**
GEOMETRIC SIGNATURES OF SWITCHING BEHAVIOR IN MECHANOBIOLOGY. **Casey O. Barkan**, Robijn F. Bruinsma

Membrane Protein Structures II (Boards B67 - B84)

938-POS **BOARD B67**
Travel Award Winner
STRUCTURAL BASIS OF METAL IMPORT BY NRAMP FAMILY TRANSPORTERS. **Shamayeeta Ray**, Samuel P. Berry, Rachelle Gaudet

939-POS **BOARD B68**
ELUCIDATING THE MOLECULAR BASIS OF SPONTANEOUS ACTIVATION IN AN ENGINEERED MECHANOSENSITIVE CHANNEL. **Adithya Polasa**, Kalyan Immadisetty, Reid Shelton, Mahmoud Moradi

940-POS **BOARD B69**
BREAKING THE IRON PIRACY CODE OF THE TBP SYSTEM FROM PATHOGENIC *NEISSERIA*. **Shubham Dubey**

941-POS **BOARD B70**
STRUCTURES AND GATING OF THE ARABIDOPSIS MECHANOSENSITIVE ION CHANNEL MSL10. **Jingying Zhang**, Tugba N. Ozturk, Grigory Maksaev, Michael J. Rau, James A.J. Fitzpatrick, Peng Yuan

942-POS **BOARD B71**
STRUCTURE OF SARS-COV-2 M PROTEIN IN LIPID NANODISCS. **Kimberly A. Dolan**, Mandira Dutta, David Kern, Abhay Kotecha, Gregory A. Voth, Steve Brohawn

943-POS **BOARD B72**
REFINING HCN1 CHANNEL CLOSED AND OPEN STATE MODELS USING CYSTEINE BRIDGE SIMULATIONS. **Yi-Chun Lin**, Peter H. Larsson, Yun Lyna Luo

944-POS **BOARD B73** **TRAVEL AWARD WINNER**
STRUCTURE OF THE ARABIDOPSIS THALIANA GLUTAMATE RECEPTOR-LIKE CHANNEL GLR3.4. **Marriah N. Green**, Shanti P. Gangwar, erwan michard, Alex A. Simon, Maria Teresa Portes, Juan Barbosa-Caro, Michael M. Wudick, Michael A. Lizzio, Oleg Klykov, Maria V. Yelshanskaya, Jose A. Feijo, Alexander I. Sobolevsky

945-POS **BOARD B74**
INSIGHTS INTO THE STRUCTURE-FUNCTION RELATIONSHIP OF THE HIV-1 VPU PROTEIN. **Elka R. Georgieva**, Saman Majeed, Oluwatosin Adetuyi, Md Majharul Islam

946-POS **BOARD B75**
THE ROLE OF O-GLCNACYLATION IN MRNA NUCLEAR EXPORT STUDIED BY SINGLE-MOLECULE SUPERRESOLUTION MICROSCOPY. **Samuel L. Junod**, Weidong Yang

947-POS **BOARD B76**
CRISPR-CSX28 FORMS A CAS13B-ACTIVATED LARGE-PORE CHANNEL REQUIRED FOR ROBUST CRISPR-CAS IMMUNITY. **Arica R. VanderWal**, Jung-Un Park, Bogdan Polevoda, Julia K. Nicosia, Adrian M. Molina Vargas, Elizabeth H. Kellogg, Mitchell R. O'Connell

948-POS **BOARD B77**
INVESTIGATION INTO AQUAPORIN 1'S CONSERVED STRUCTURAL FEATURES AND THE C-TERMINAL TAIL. **Philip Drewniak**, Sameer Al-Abdul-Wahid, Vladimir Ladizhansky, Leonid S. Brown

949-POS **BOARD B78**
TEMPLATE-FREE PREDICTION OF A NEW MONOTOPIC MEMBRANE PROTEIN FOLD AND OLIGOMERIC ASSEMBLY BY ALPHAFOLD2. Alican Gulsevin, Bing Han, Jason Porta, Hassane Mchaourab, Jens Meiler, **Anne K. Kenworthy**

950-POS **BOARD B79**
STRUCTURAL BASIS OF GABA REUPTAKE INHIBITION. **Cornelius Gati**

951-POS **BOARD B80**
MEMBRANE COMPOSITION DRIVES SIDECHAIN IONIZATION AND ASSEMBLY OF TRANSMEMBRANE PROTEIN DOMAINS. **Tatyana I. Smirnova**, Maxim A. Voinov, Sergey Milikisiyants, Gabriel A. Cook, Alex I. Smirnov

952-POS **BOARD B81**
DISCOVERY AND CHARACTERIZATION OF ANTIDEPRESSANT MEDIATED ACTIVATION OF 5-HT1E AND 5-HT1F RECEPTORS. **Gregory Zilberg**, Audrey L. Warren, Alexandra Parpounas, Daniel Wacker

953-POS **BOARD B82**
ELECTRONIC STRUCTURE CALCULATIONS AND DEUTERIUM NMR SPECTROSCOPY REVEAL RETINAL MOBILITY IN RHODOPSIN ACTIVATION. **Suchithranga M.D.C. Perera**, Andrew Erly, Anna Makara, Dmitrii M. Nikolaev, Mikhail N. Ryazantsev, Andrey V. Struts, Michael F. Brown

954-POS **BOARD B83**
ASSESSMENT OF THE CYTOSKELETAL IMPACT OF BETA-ACTIN MUTATIONS LEADING TO NON-MUSCLE ACTINOPATHIES BY MEANS OF DUAL LASER OPTICAL TWEEZERS (DLOT). Elena Battirossi, Indra Niehaus, Kejsi Prift, Irene Pertici, Simone Li Puma, Massimo Reconditi, Vincenzo Lombardi, Nataliya Di Donato, **Pasquale Bianco**

955-POS **BOARD B84**
MECHANISM OF TRANSPORT FOLDED PROTEIN ACROSS THE MEMBRANE -- BCS1: CONCERTED OR SEQUENTIAL. **Jingyu Zhan**, Di Xia

Membrane Protein Dynamics II (Boards B85 - B103)

956-POS **BOARD B85**
MESOSCALE MODELLING OF BIOMOLECULAR DIFFUSION IN HETEROGENEOUS BIOLOGICAL MEMBRANES. **Ken Sakamoto**, Takuma Akimoto, Ralf Metzler, Eiji Yamamoto

957-POS **BOARD B86**
UNDERSTANDING THE ASSEMBLY MECHANISM OF THE TWIN ARGININE TRANSPORT SYSTEM. **Mariana Batista**, Phillip J. Stansfeld

958-POS **BOARD B87**
EXPLORING THE DIMER-DIMER ASSOCIATION OF THE EBOLAVIRUS MATRIX PROTEIN VP40 AT THE HUMAN PLASMA MEMBRANE. **Tej K. Sharma**, Prem P. Chapagain, Bernard S. Gerstman, Robert V. Stahelin

959-POS **BOARD B88**
QUANTIFICATION OF LATERAL ASSOCIATIONS OF ACHONDROPLASIA IN FGFR3. **Daniel M. McKenzie**, Kalina Hristova, Tanaya Roy

960-POS **BOARD B89**
PROTEIN-PROTEIN INTERACTIONS OF THE PHENYLPROPANOID PATHWAY IN SORGHUM BICOLOR. **Eric P. Jacobo**, Bixia Zhang, ChulHee Kang, James A. Brozik

961-POS **BOARD B90**
MOLECULAR MECHANISM OF REVERSED TEMPERATURE-DEPENDENCE OF ATP SYNTHESIS IN GLACIER ICE WORMS. **Noureen Abdelrahman**, Anthony Geneva, Guillame Lamoureux, Daniel Shain, Grace H. Brannigan

962-POS **BOARD B91**
UNDERSTANDING THE EVOLUTION OF COLD SENSING AND MENTHOL ACTIVATION IN TRPM8. **Nikhil Ramesh**, Dustin Luu, Karan H. Shah, I. Can (John) Kazan, S. Banu Ozkan, Wade D. Van Horn

963-POS **BOARD B92**
EFFICIENT SAMPLING OF TRKA TRANSMEMBRANE DOMAIN DIMERIZATION CAPTURES FUNCTIONALLY DISTINCT STRUCTURAL ENSEMBLES. **Zichen Wang**, Taras V. Pogorelov

964-POS **BOARD B93**
INFLUENZA VIRUS FUSION PEPTIDE: A SWIMMER OR A DIVER? MEMBRANE INTERACTIONS AND FUSION THERMODYNAMICS OF HAFP. **Piotr Setny**

965-POS **BOARD B94**
SWEET AND SOUR TRANSPORT: SIMULATION INSIGHTS INTO H^+/SUGAR SYMPORT IN PLANTS. **Lorena Zuzic**, Amanda D. Stange, Laust Bavnhøj, Jan H. Driller, Birgit Schiøtt, Bjørn P. Pedersen

966-POS **BOARD B95**
SEQUENCE-BASED KNOWLEDGE DRIVEN STRUCTURAL DESIGN OF PEPTIDE DRUGS AS CO-AGONISTS OF GLP-1/GCG RECEPTORS. **Shubham Vishnoi**, Shayon Bhattacharya, Damien Thompson

967-POS **BOARD B96**
UNDERSTANDING THE VOLTAGE-SENSITIVITY OF ARCH3-BASED MICROBIAL RHODOPSINS. **Tillmann Utesch**, Songhwan Hwang, Arita Silapetere, Rodrigo Fernandez Lahore, Peter Hegemann, Han Sun

968-POS **BOARD B97**
CONFORMATIONAL DYNAMICS AND PUTATIVE SUBSTRATE EXTRUSION PATHWAYS OF THE N-GLYCOSYLATED OUTER MEMBRANE FACTOR CMEC FROM CAMPYLOBACTER JEJUNI. **Kahlan E. Newman**

969-POS **BOARD B98**
STANDARD BINDING FREE-ENERGY CALCULATION OF GLYCOPHORIN A DIMER IN NON-ISOTROPIC MEDIA SHEDS LIGHT ON THE TRANSMEMBRANE ALPHA-HELICES ASSOCIATION MECHANISM. **Marharyta Blazhynska**

970-POS **BOARD B99**
IN SILICO STUDY ON THE INTERNAL SIGNAL PATHWAY OF DIFFERENT MUTANTS OF VASOPRESSIN RECEPTOR 2 WITH ARGININE VASOPRESSIN BOUND. **Ting-Yu Hu**, Hao-Jen Hsu, Chun-Chun Chang

971-POS **BOARD B100**
IN SILICO STUDY ON THE DUAL FUNCTIONS OF ANTIPSYCHOTIC DRUGKURARINONE BOUND TO DOPAMINE D1 AND D2 RECEPTORS. **Xing-Yan Lai**, Hao-Jen Hsu

972-POS **BOARD B101**
FEMTOSECOND DYNAMICS OF RHODOPSIN REVEALED BY X-RAY LASER. **Michael F. Brown**, Thomas D. Grant, Suchithranga M.D.C. Perera, Leslie Salas-Estrada, Andrey V. Struts, Konstantinos Karpos, Udeep Chawla, Steven D. E. Fried, C. Swathi K. Menon, Nipuna Weerasinghe, Domingo Meza, Derek Mendez, Alan Grossfield, Petra Fromme, Richard A. Kirian

973-POS **BOARD B102**
FOR EVERY RETINYLIDENE A FORCE FIELD: USING MACHINE LEARNING TO IMPROVE MOLECULAR SIMULATIONS OF RHODOPSINS. **Andrew M. Erly**, Benjamin I. Gerber, Renee J. Li, Fathima T. Doole, Dmitrii M. Nikolaev, Mikhail N. Ryazantsev, Andrey V. Struts, Michael F. Brown

974-POS **BOARD B103**
REDOX LEVELING OF THE KOK CYCLE OF PHOTOSYSTEM II ESTABLISHED BY WATER LIGAND BINDING TO THE OXYGEN EVOLVING COMPLEX. **Jinchan Liu**, Ke Yang, Gary W. Brudvig, Victor S. Batista

Intrinsically Disordered Proteins II (Boards B104 - B128)

975-POS **BOARD B104**
HOW DOES SEQUENCE INFLUENCE CHARGE REGULATION OF DISORDERED PROTEINS? **Martin J. Fossat**, Ammon E. Posey, Nikita Gupta, Rohit V. Pappu

976-POS **BOARD B105** **TRAVEL AWARD WINNER**
SINGLE-MOLECULE SPECTROSCOPY OF THE SARS-COV-2 NUCLEOCAPSID PROTEIN. **Jasmine Cubuk**, Jeremias Incicco, Jhullian J. Alston, Kathleen B. Hall, Melissa D. Stuchell-Brereton, Andrea Soranno

977-POS **BOARD B106**
DROPLETS, TAILS AND LOOPS: THE ROLE OF INTRINSIC DISORDER IN R-LOOP BIOLOGY. **Leonardo Garcia Dettori**, Diego Torrejon, Arijita Chakraborty, Arijit Dutta, Thibault Viennet, Mohamed Mohamed, Jing Li, Alexander Y. Guerrero, Csaba Papp, Vladimir A. Kuznetsov, Haribabu Arthanari, Patrick Sung, Wenyi Feng, Alaji Bah

978-POS **BOARD B107** **TRAVEL AWARD WINNER**
THE MOLECULAR BASIS FOR THE SYNERGISTIC AGGREGATION OF TAU BY ALPHA-SYNUCLEIN. **Jennifer Ramirez**, E. James Petersson, Elizabeth Rhoades

979-POS **BOARD B108**
INVESTIGATING THE SEQUENCE PROPERTIES THAT GOVERN DISORDER AND SECRETION OF BACTERIAL VIRULENCE PROTEINS. **Cedrick Mukinay**, Michael Baxa, Tobin R. Sosnick, Patricia L. Clark

980-POS **BOARD B109**
UNCOVERING THE MOLECULAR GRAMMAR OF IDPS IN DESICCATION TOLERANCE. **Sourav Biswas**, Feng Yu, Shahar Sukenik, Alex S. Holehouse, Thomas C. Boothby

981-POS **BOARD B110** **TRAVEL AWARD WINNER**
SUBSTITUTIONS AT NON-CONSERVED, RHEOSTAT POSITIONS IN INTRINSICALLY DISORDERED REGIONS OF CIITA MODULATE ITS FUNCTION. **Shwetha Sreenivasan**

982-POS **BOARD B111**
INTERPRETING TRANSIENT INTERACTIONS IN INTRINSICALLY DISORDERED PROTEINS. **Samuel Wohl**, Wenwei Zheng

983-POS **BOARD B112**
MOLECULAR MECHANISM OF PH-DEPENDENT MODULATION OF SUP35 PHASE SEPARATION BY INTRINSICALLY DISORDERED M DOMAIN. **Jeffre H. Allen**, Allison M. Whited, Loren E. Hough

984-POS **BOARD B113**
FUNCTIONAL SYNERGY BETWEEN DISORDERED PROTEINS AND SUGARS IN DESICCATION PROTECTION. **Shraddha KC**, Kenny Nguyen, Hugo Tapia, Thomas C. Boothby

985-POS **BOARD B114**
ENTROPY-ENTHALPY INTERPLAY IN ALUMINUM BOUND NEUROFILAMENTS. **David Silva-Brea**, David de Sancho, Xabier Lopez

986-POS **BOARD B115**
COMBINING SIMULATIONS AND SINGLE-MOLECULE FLUORESCENCE SPECTROSCOPY TO UNDERSTAND SARS-COV-2 NUCLEOCAPSID PROTEIN RNA INTERACTION. **Jhullian J. Alston**, Jasmine Cubuk, Jeremias Incicco, Melissa D. Stuchell-Brereton, Kathleen B. Hall, Alex S. Holehouse, Andrea Soranno

987-POS **BOARD B116**
STRUCTURAL CHARACTERIZATION OF THE RNA POLYMERASE II CTD IN DIFFERENT PHOSPHORYLATION STATES. **Wei Chen**, Oluwadamilare Aboyewa, Scott A. Showalter

988-POS **BOARD B117**
INHIBITION OF CROSS-AMYLOID AGGREGATION OF AMYLOID-BETA AND ISLET AMYLOID PEPTIDE STUDIED BY MOLECULAR DYNAMICS SIMULATION. **Amit Srivastava**, Kenana A. Adem, Sungmun Lee, Dirar M. Homouz

989-POS **BOARD B118**
ALLOSTERIC AND SUBSTRATE SITE EFFECTS OF RELEVANT AMINO ACIDS ON STRUCTURAL STABILITY AND FLEXIBILITY OF GLUTAMATE DEHYDROGENASE-1 (GDH-1). **Bogumil Zelent**, David F. Wilson, Franz M. Matschinky

990-POS **BOARD B119**
PH-DEPENDENT AGGREGATION OF THE PMEL17 REPEAT DOMAIN CHARACTERIZED BY NMR. **Daniel L. Morris**, Dexter N. Dean, Jared Shadish, Jennifer C. Lee, Nico Tjandra

991-POS **BOARD B120** **TRAVEL AWARD WINNER**
SENSITIVITY OR SPECIFICITY IN PROTEIN INTERACTIONS ARE INDEPENDENTLY REGULATED UPON RECOGNITION: AN SH2 CASE STUDY. **Gabriella Gerlach**, Carlos J. Camacho

992-POS **BOARD B121**
A NOVEL INFRARED SPECTROSCOPIC APPROACH TO STUDY THE INTERACTION OF AMYLOID-B WITH CELL-PENETRATING PEPTIDES - A POSSIBLE NEW CLASS OF DRUGS TO COMBAT ALZHEIMER'S DISEASE. **Suman Paul**, Artem Danilov, Tobias Gokus, Andreas Barth

993-POS **BOARD B122**
T-CELL IMMUNOGLOBULIN AND MUCIN-DOMAIN CONTAINING PROTEIN (TIM) STRUCTURAL DYNAMICS REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Mia A. Rosenfeld**, Fiona L. Kearns, Joan Chongsaritsinsuk, Alexandra Steigmeyer, Kiera E. Mahoney, Taryn Lucas, Deniz Ince, Alexandria Battison, Marie A. Hollenhorst, D. Judy Shon, Victor Attah, Catherine Kwon, Carolyn R. Bertozzi, Stacy A. Malaker, Rommie E. Amaro

994-POS **BOARD B123**
COMPLEXES OF CHARGED DISORDERED POLYELECTROLYTE-LIKE PROTEINS: FROM THERMODYNAMICS TO STUCTURAL PLASTICITY. **Aritra Chowdhury**, Andrea Sottini, Alessandro Borgia, Madeleine B. Borgia, Souradeep Ghosh, Soumik Mitra, Tianjin Yang, Nicola Galvanetto, Rohan Eapen, Paweł Łukijańczuk, Ruijing Zhu, Daniel Nettels, Arindam Kundagrami, Benjamin Schuler

995-POS **BOARD B124**
IDPCONFORMERGENERATOR: A FLEXIBLE SOFTWARE SUITE FOR SAMPLING THE CONFORMATIONAL SPACE OF DISORDERED PROTEIN STATES. João M.C. Teixeira, **Zi Hao Liu**, Ashley Namini, Jie Li, Robert M. Vernon, Mickaël Krzeminski, Alaa A. Shamandy, Oufan Zhang, Mojtaba Haghighatlari, Lei Yu, Teresa L. Head-Gordon, Julie D. Forman-Kay

996-POS **BOARD B125**
MODELING THE MECHANISMS THROUGH WHICH PROTEIN PHASE SEPARATION INDUCES MEMBRANE CURVATURE. **Ketsia Zinga**, Jeanne C. Stachowiak, Pengyu Ren

997-POS **BOARD B126**
EFFECTS OF CHARGE RESIDUES ON A-SYNUCLEIN FIBRIL FORMATION. **Emilios K. Dimitriadis**, Ryan P. McGlinchey, Jennifer C. Lee

998-POS **BOARD B127**
PHASE SEPARATION UNDERLIES INTERACTIONS OF THE SARS-COV-2 NUCLEOCAPSID PROTEIN WITH NUCLEOLI. **Priyanka Dogra**, Hazheen Shirnekhi, Mylene C. Ferrolino, Michele Tolbert, Cheon-Gil Park, Richard W. Kriwacki

999-POS **BOARD B128**
PARTIAL MIMICRY OF THE MICROTUBULE BINDING OF TAU BY ITS MEMBRANE BINDING. **Matthew MacAinsh**, Huan-Xiang Zhou

Condensates: Physical Properties and Modeling II (Boards B129 - B149)

1000-POS **BOARD B129**
SALT DOPING OF HYALURONIC ACID GLYCOPOLYMER BIOCONDENSATES. **James D. Sterling**, Lu Fu, Kenisha Pudun, Shenda Baker, Megan Lord

1001-POS **BOARD B130**
EFFECTS OF CROWDERS ON PHASE SEPARATION OF ASSOCIATIVE MACROMOLECULES. **Gaurav Chauhan**, Anne Bremer, Furqan Dar, Tanja Mittag, Rohit V. Pappu

1002-POS **BOARD B131**
MODIFIED ROUSE-ZIMM THEORY FOR COMPUTING SEQUENCE-SPECIFIC VISCOELASTIC PROPERTIES OF BIOMOLECULAR CONDENSATES. **Samuel R. Cohen**, Ibraheem Alshareedah, Wade M. Borcherds, Mina Farag, Tanja Mittag, Priya R. Banerjee, Rohit V. Pappu

1003-POS **BOARD B132**
QUANTITATIVE ANALYSIS OF INTRACELLULAR PROTEIN PHASE TRANSITIONS. **Ammon E. Posey**, Rohit V. Pappu

1004-POS **BOARD B133**
PHASE BEHAVIOR OF 1-RIBBON AND 2-RIBBON FIBRIL SELF-ASSEMBLY IN A SIMPLE NETWORK HAMILTONIAN MODEL OF PROTEIN FIBRILLIZATION. **Elizabeth M. Diessner**, Loring J. Thomas, Carter T. Butts

1005-POS Board B134
ELUCIDATING RESIDUE LEVEL CONTRIBUTIONS TO PHASE SEPARATION USING A MODEL POLYPEPTIDE. **Shiv Rekhi**, Cristobal Garcia, Mayur Barai, Azamat Rizuan, Benjamin S. Schuster, Kristi Kiick, Jeetain Mittal

1006-POS Board B135
BIOMOLECULAR CONDENSATE GROWTH INSIDE NUCLEUS IS REGULATED BY THE INTERPLAY OF THE INTERMOLECULAR INTERACTION STRENGTH AND LOCAL CHROMATIN DENSITY. **Deb S. Banerjee**, Tafadzwa L. Chigumira, Josiah Kratz, David Chenoweth, Banerjee Shiladitya, Huaiying Zhang

1007-POS Board B136
APPROXIMATE ANALYTICAL SOLUTION TO THE FLORY-HUGGINS MODEL. **Daoyuan Qian**, Thomas C.T. Michaels, Tuomas P.J. Knowles

1008-POS Board B137
UNCOVERING THE DISTINCT ROLES OF ENTHALPY AND ENTROPY THAT GIVE RISE TO VISCOELASTICITY IN BIOMOLECULAR CONDENSATES. **Ibraheem Alshareedah**, Wade M. Borcherds, Anurag Singh, Samuel R. Cohen, Mina Farag, Rohit V. Pappu, Tanja Mittag, Priya R. Banerjee

1009-POS Board B138
INTRINSICALLY DISORDERED REGIONS THAT DRIVE PHASE SEPARATION FORM A ROBUSTLY DISTINCT PROTEIN CLASS. Ayyam I. Ibrahim, Nathan Khaodeuanepheng, Dhanush Amarasekara, John J. Correia, Karen Lewis, Nicholas C. Fitzkee, Steven T. Whitten, **Loren Hough**

1010-POS Board B139
ATOMISTIC MODELING OF LIQUID-LIQUID PHASE EQUILIBRIUM EXPLAINS DEPENDENCE OF CRITICAL TEMPERATURE ON G-CRYSTALLIN SEQUENCES. Sanbo Qin, **Huan-Xiang Zhou**

1011-POS Board B140
SELECTIVE AND SENSITIVE SURFACE CONDENSATION DRIVEN BY COUPLED PHASE BEHAVIORS OF MEMBRANE AND BIOPOLYMERS. **Zhuang Liu**, Arun Yethiraj, Qiang Cui

1012-POS Board B141
MOLECULAR INSIGHTS INTO PHASE SEPARATION OF HP1 ISOFORMS USING COARSE-GRAINED AND ATOMISTIC SIMULATIONS. **Tien M. Phan**, Utkarsh Kapoor, Galia T. Debelouchina, Jeetain Mittal

1013-POS Board B142
HYDROPHOBIC RESIDUES IN DISORDERED AND HELICAL REGIONS MEDIATE THE OLIGOMERIZATION AND PHASE SEPARATION OF TDP-43 C-TERMINAL DOMAIN. **Priyesh Mohanty**, Jayakrishna Shenoy, Azamat Rizuan, Nina Jovic, Jose Mercado-Ortiz, Nicolas L. Fawzi, Jeetain Mittal

1014-POS Board B143
PATTERN FORMATION IN NANODOMAIN AGGREGATES OF MEMBRANE PROTEINS. **Lingxia Qiao**

1015-POS Board B144
PROTEIN BEHAVIOR DEPENDS ON THEIR CONFORMATION IN VISCOELASTIC DROPLET. **Fuga Watanabe**, Eiji Yamamoto

1016-POS Board B145
REPULSIVE INTERACTIONS IN REGULATING BIOMOLECULAR CONDENSATION: A CASE STUDY ON TDP-43 AND HERO11. **Cheng Tan**, Ai Niitsu, Yuji Sugita

1017-POS Board B146
LIPID ENVIRONMENT DETERMINES THE DRUG-STIMULATED ATPASE ACTIVITY OF P-GLYCOPROTEIN. **Nghi Tran**

1018-POS Board B147 Travel Award Winner
COILED-COIL DOMAINS CAN DRIVE LIQUID-LIQUID PHASE SEPARATION. **Dominique A. Ramirez**, Loren E. Hough, Michael R. Shirts

1019-POS Board B148
MULTISCALE SIMULATIONS OF TDP-43 FULL-LENGTH UNCOVER MOLECULAR DETERMINANTS OF ITS PHASE SEPARATION BEYOND N/C-TERMINAL OLIGOMERIZATION. **Azamat Rizuan**, Priyesh Mohanty, Nicolas L. Fawzi, Jeetain Mittal

1020-POS Board B149
NON-CANONICAL INTERACTIONS TUNE CONDENSATION AND KINETICALLY ARRESTED MATERIAL STATES OF SHORT RNA HOMOPOLYMERS. **Jenna K.A. Tom**, Paulo L. Onuchic, Ashok A. Deniz

DNA Structure and Dynamics (Boards B150 - B174)

1021-POS Board B150
ROLES OF ELECTROSTRICTED AND STRUCTURAL HYDRATION IN THE STABILITY OF NUCLEIC ACID DUPLEXES. **Luis A. Marky**

1022-POS Board B151
DNA DAMAGE INDUCES DIFFERENTIATED RESPONSE OF CHROMATIN MOTION ACROSS TEMPORAL SCALES. **Fadil Iqbal**, Jing Liu

1023-POS Board B152
DETERMINING THE CONFROMATIONAL ENSEMBLE OF THE HIV-1 LTR G-QUADRUPLEXES THROUGH GAUSSIAN-ACCELERATED MOLECULAR DYNAMICS USING THE DRUDE POLARIZABLE FORCE FIELD. **Haley Michel**, Justin A. Lemkul

1024-POS Board B153
ISOTHERMAL CALORIMETRY STUDIES OF DNA CONDENSATION UNDER OSMOTIC PRESSURE. **Tam Nguyen**, Kurt Andresen

1025-POS Board B154
INTERPLAY OF EPIGENETIC REGULATION AND CHROMATIN-LAMINA INTERACTION MODULATES THE MORPHOLOGY OF LAMINA-ASSOCIATED DOMAINS. **Zixian Guo**, FNU Aayush Kant, Vivek B. Shenoy

1026-POS Board B155
APPLICATIONS OF MACHINE-LEARNED ELECTRON DENSITIES OF NUCLEIC ACIDS. Alex J. Lee, Joshua A. Rackers, **William P. Bricker**

1027-POS Board B156
THERMODYNAMICS AND KINETICS OF THE B-S TRANSITION IN BASE-MODIFIED DNA. Vinoth Edal Joseph Sundar Rajan, Sune Levin, Micah J. McCauley, Mark C. Williams, Ioulia F. Rouzina, Marcus Wilhelmsson, **Fredrik Westerlund**

1028-POS Board B157
MAMMALIAN EMBRYO DEVELOPMENT: TOWARDS A SINGLE-MOLECULE PERSPECTIVE. **Srinjan Basu**

1029-POS Board B158
DNA FOLDING BY PROTAMINE FROM LOOPS TO STACKS. Ryan B. McMillan, Victoria D. Kuntz, Alejandra Velasquez, **Ashley R. Carter**

1030-POS Board B159
EXPLORING NUCLEIC ACID STABILITY IN IONIC LIQUIDS : MEASUREMENTS AND MECHANISMS. **Rajani K**, Sanjib Senapati

1031-POS Board B160
MEASURING ZN^{2+} BINDING TO DNA AND CORRESPONDING STRUCTURAL CHANGES USING CIRCULAR DICHROISM AND ICP-OES. **Sofia Dubois Toscana**, Isatou A. Bah, Katherine M. Buettner, Kurt Andresen

1032-POS Board B161
USING SINGLE MOLECULE POLARIZATION-SWEEP SPECTROSCOPY TO MONITOR SITE-SPECIFIC FLUCTUATIONS OF INTERNAL $(ICY3)_2$ DIMER-LABELED DNA CONSTRUCTS AT SS-DS DNA JUNCTIONS. **Jack W. Maurer**, Claire Albrecht, Patrick J. Herbert, Dylan Heussman, Peter H. von Hippel, Andrew H. Marcus

1033-POS Board B162
KINETICS OF ZN-DNA BINDING STRUCTURAL CHANGES MEASURED THROUGH STOPPED-FLOW CIRCULAR DICHROISM. **Isatou A. Bah**, Sofia Dubois- Toscana, Katherine M. Buettner, Kurt Andresen

1034-POS Board B163
IMPACT OF DIVALENT IONS ON THE CONFORMATIONS OF SINGLE AND DOUBLE STRANDED DNA: A COARSE-GRAINED MOLECULAR DYNAMICS STUDY. **Balaka Mondal**, Naoto Hori, Debayan Chakraborty, Hung T. Nguyen, Dave Thirumalai

1035-POS Board B164
CONFORMATIONAL PREFERENCES OF DNA FROM THE PROMOTER REGIONS OF THE C-MYC, VEGF, AND BCL-2 ONCOGENES. Lutan Liu, James W. Wells, **Tigran V. Chalikian**

1036-POS Board B165 Travel Award Winner
INDIVIDUAL ACTIVATOR AND REPRESSOR TRANSCRIPTION FACTORS ACT AS MODULATORS OF GLOBAL CHROMATIN MOBILITY. **Haitham A. Shaban**, David Suter

1037-POS Board B166
2-AMINO PURINE AS A PROBE OF DNA DEFORMABILITY IN DAMAGED DNA. **Souvik Poddar**, Marcia Levitus

1038-POS Board B167
CTCF-MEDIATED CHROMATIN LOOPING IS COUPLED TO THEFORMATION OF PHASE-SEPARATED TRANSCRIPTIONAL CONDENSATE. **Hwanyong Shim**

1039-POS Board B168
DYNAMICS AND CONFORMATIONAL HETEROGENEITY OF THE PIM1 G-QUADRUPLEX FROM POLARIZABLE MOLECULAR DYNAMICS SIMULATIONS. **Rebekah Fogarty**, Haley Michel, Justin A. Lemkul

1040-POS Board B169
DNA BENDING FACILITATES THE FORMATION OF Z-DNA INVESTIGATED BY SINGLE-MOLECULE FRET. **Jaehun Yi**, Sanghun Yeou, Won Ho Seo, JIYOON JEONG, Nam Ki Lee

1041-POS Board B170
CATIONIC LIPID MEMBRANES CONDENSE DOUBLE-STRAND DNA THROUGH ION BRIDGING. **Weiwei He**, Serdal Kirmizialtin

1042-POS Board B171
INDUCED ION CORRELATIONS LEAD TO DNA ATTRACTION IN MANGANESE. **Marko Brnovic**, Weiwei He, Rafael M. Gutierrez, Serdal Kirmizialtin

1043-POS Board B172
INVESTIGATING FLEXIBLE AND SEMI-FLEXIBLE POLYMERS USING SOLID-STATE NANOPORES. **Philipp Karau**, Martin Charron, Vincent Tabard-Cossa

1044-POS Board B173
INDICATIONS OF A MORE COMPLEX DNA TOROID FORMATION. **Victoria D. Kuntz**, Alejandra Velasquez, Ryan B. McMillan, Ashley R. Carter

1045-POS Board B174
DNA DAMAGE COMPETES WITH SEQUENCE TO PIN A PLECTONEME. **Victoria E. Hill**, Agnes Noy, Timothy D. Craggs

Protein-Nucleic Acid Interactions II (Boards B175 - B202)

1046-POS Board B175
PH DYNAMICS REGULATES TRANSCRIPTION FACTOR-DNA BINDING. **Kyle Kisor**, Diane Barber

1047-POS Board B176
MELD-DNA: ACCURATE STRUCTURAL PREDICTION OF PROTEIN-DNA INTERACTIONS. **Reza Esmaeeli**, Antonio Bauza Riera, Alberto Perez

1048-POS Board B177
UNRAVELING THE MOLECULAR BASIS OF PROTEIN SEARCH ON SSDNA TRACK AND BINDING SPECIFICITY OF THE SSDNA SEQUENCES. **Sangeeta .** Arnab Bhattacherjee

1049-POS Board B178
THEORY OF HIV-1 RNA GENOME SELECTION. **Robijn F. Bruinsma**

1050-POS Board B179
DUAL FUNCTIONS OF THE SARS-COV-2 NUCLEOCAPSID DOMAINS MEDIATE RNA BINDING AND PHASE SEPARATION. **Aidan B. Estelle**, Zhen Yu, Patrick Allen, Elisar J. Barbar

1051-POS Board B180
STRUCTURE AND ACTIVITY OF A BACTERIAL DEFENSE-ASSOCIATED 3'-5' EXONUCLEASE. **Qishan Liang**, Sara T. Richey, Chelsea Blankenchip, Sarah N. Ur, Qiaozhen Ye, Rebecca K. Lau, Kevin D. Corbett

1052-POS Board B181
SUBSTRATE RECOGNITION AND NEAR-COGNATE DISCRIMINATION BY THE WOBBLE-BASE MODIFYING ENZYME TRNA-ISOLEUCINE LYSIDINE SYNTHASE (TILS). **Ferdiemar C. Guinto**, Rebecca W. Alexander, Freddie R. Salsbury

1053-POS Board B182
CHARACTERIZATION OF THE HUMAN FASTKD4 POST-TRANSCRIPTIONAL REGULATOR. **Justin M. Van Riper**, Jason G. Williams, Sweta Maheshwari, Monica Pillon

1054-POS Board B183
UNVEILING CAS8 DYNAMICS AND REGULATION OF A TRANSPOSON-ENCODED CASCADE-TNIQ COMPLEX. **Amun C. Patel**, Souvik Sinha, Pablo R. Arantes, Giulia Palermo

1055-POS Board B184
ENGINEERING SEQUENCE-DIRECTED PROTEIN-RNA COVALENT LINKAGES FOR COMPACT RNA-LABELING TOOLS. **Adam T. Smiley**, Wendy R. Gordon

1056-POS Board B185
ELUCIDATING THE STRUCTURE OF THE HU-JUNCTION COMPLEX. **Qura-Tul-Ain A. Khan**

1057-POS Board B186
ALCHEMICAL FREE ENERGY TO PROBE RNA/LIGAND INTERACTIONS. **Amit Kumar**, Harish Vashisth

1058-POS Board B187
PROTEIN-RNA INTERACTIONS OF FMRP AND CCND1: IMPLICATIONS OF REGULATION IN NEUROGENESIS. **Rosalia Palumbo**, Caylee Cunningham, Caleb J. Frye, Mihaela-Rita Mihailescu

1059-POS Board B188
BEYOND THE DNA BINDING DOMAIN: HOW DO INTRINSICALLY DISORDERED REGIONS WITHIN TRANSCRIPTION FACTORS IMPACT DNA BINDING SPECIFICITY? **Michael G.B. Hayes**, Polly Fordyce

1060-POS Board B189
THE EFFECT OF DNA TENSION ON CRISPR/CAS12A CLEAVAGE CAN BE REVERSIBLE. **Suleyman Ucuncuoglu**

1061-POS Board B190
INVESTIGATING THE EFFECTS OF THE *GEOBACILLUS KAUSTOPHILUS* TILS LYSIDINE MODIFICATION ON ACCURATE MRNA DECODING AND AMINOACYLATION. **Samantha C. Robinson**

1062-POS Board B191
KCK-TAG-INDUCED QUANTITATIVE AND QUALITATIVE PROPERTY CHANGES OF DNA-BINDING PROTEIN PARB. Miranda Molina, Lindsey E. Way, Zhongqing Ren, Xindan Wang, **HyeongJun Kim**

1063-POS **Board B192** **Travel Award Winner**
HISTONE VARIANT H2A.Z MODULATES NUCLEOSOME DYNAMICS TO PROMOTE DNA ACCESSIBILITY. **Shuxiang Li**, Tiejun Wei, Anna Panchenko

1064-POS **Board B193**
NUCLEUS SIZE AND ITS EFFECT ON NUCLEOSOME STABILITY IN LIVING CELLS. **Artem K. Efremov**, Ladislav Hovan, Jie Yan

1065-POS **Board B194**
INVESTIGATING THE MECHANISM OF INTERACTION OF R-LOOPS AND THE FRAGILE X PROTEIN, FMRP: AN ENTANGLEMENT OF DISORDERED TAILS AND MULTIVALENCY. **Jing Li**, Leonardo Garcia Dettori, Stephen Landry, Alexander Guerrero, Arijita Chakraborty, Wenyi Feng, Alaji Bah

1066-POS **Board B195**
CHEMICAL FRICTION ALONG THE MINOR GROOVE OF DNA FACILITATES ENZYMATIC TRANSLOCATION OF Λ EXONUCLEASE VIA ELECTROSTATIC RATCHET. Jungmin Yoo, **Gwangrog Lee**

1067-POS **Board B196**
BUILDING A QUANTITATIVE AND PREDICTIVE MODEL OF 5'SS SELECTION BY HUMAN U1 SNRNP USING RNA-MAP. **David S. White**, Tucker J. Carrocci, John Shin, Chia-Ho Lin, Douglas L. Black, William Greenleaf, Daniel Herschlag, Aaron A. Hoskins

1068-POS **Board B197**
UPF1 MUTANTS WITH INTACT ATPASE BUT DEFICIENT HELICASE ACTIVITIES PROMOTE EFFICIENT NONSENSE-MEDIATED MRNA DECAY. **Joseph Chapman**

1069-POS **Board B198**
PROTAMINE-INDUCED TOROID FORMATION IN SPERM. **Alejandra Velasquez**, Victoria D. Kuntz, Ryan B. McMillan, Ashley R. Carter

1070-POS **Board B199**
THE MOLECULAR MECHANISM FOR TERRA RECRUITMENT AND ANNEALING TO TELOMERE. **Bersabel Wondimagegnhu**, Tapas Paul, Ting-Wei Liao, Chun-Ying Lee, Sua Myong

1071-POS **Board B200**
EXPLOITING HUH-ENDONUCLEASES FOR BIOCONJUGATION OF MAMMALIAN PROTEINS. **Lidia K. Swanson**

1072-POS **Board B201**
RECOGNITION OF RECOMBINATION INTERMEDIATES BY THE MISMATCH REPAIR PROTEIN MSH2-MSH6. **Zane Lombardo**, Ishita Mukerji

1073-POS **Board B202**
INTER-DOMAIN COORDINATION ESSENTIAL FOR DENGUE VIRUS NONSTRUCTURAL (5) NS5 INTERACTION WITH STEM LOOP A (SLA). **Juliet O. Obi**, Linfah McQueen, Daniel J. Deredge

Membrane Physical Chemistry II (Boards B203 - B225)

1074-POS **Board B203**
UNDERSTANDING THE PANCAKE-LIKE MORPHOLOGY OF GOLGI APPARATUS COMPARTMENTS. **Gianna C. Wolfisberg**, Hendrik T. Spanke, Alexandre L. Torzynski, Eric R. Dufresne, Aleksander A. Rebane

1075-POS **Board B204**
FORMATION OF CURVED LIPID MEMBRANES - SURFACE INTERACTIONS AND CHANGES DUE TO SOLUTION CONDITIONS. **Tommy Nylander**

1076-POS **Board B205**
INTRACELLULAR VARIATION AND MEMBRANE BINDING REQUIRES HIGH PROTEIN EXPRESSION LEVELS TO MAINTAIN THE FIDELITY OF CYANOBACTERIAL CIRCADIAN RHYTHMS IN CLONAL POPULATIONS. **Alexander Z.T. Li**, Andy LiWang, Anand B. Subramaniam

1077-POS **Board B206**
ATOMIC-SCALE CHARACTERISATION OF DIELECTRIC PROPERTIES AND STRUCTURED WATER MOLECULES AT THE INTERFACE OF LIPID MEMBRANES. **Simone Benaglia**, Harriet S.A. Read, Laura Fumagalli

1078-POS **Board B207**
SYNTHESIS OF LARGE LIPID MEMBRANES WITH INTEGRATED MEMBRANE PROTEINS FROM GAS PHASE. **Matthias S. Wilm**

1079-POS **Board B208**
EFFECT OF HYDROPHOBIC AND HYDROPHILIC SURFACES ON THE MORPHOLOGICAL AND PHYSICAL PROPERTIES OF SUPPORTED LIPID MEMBRANES. **Harriet S.A. Read**, Simone Benaglia, Laura Fumagalli

1080-POS **Board B209**
MICROCONTACT-PRINTED PATTERNED SUPPORTED BILAYER FOR MEASUREMENT OF FLOW-MEDIATED PROTEIN MOBILITY. **Gabriel R. Cuce**, Sreeja Sasidharan, Jamila Shah, Matteo Patrone, Johanna Harding, Aurelia R. Honerkamp-Smith

1081-POS **Board B210**
TOWARDS 3D PRINTING OF LIPIDS - THE IMPACT OF SURFACE POLARITY ON LIPID ASSEMBLY UNDER SPATIAL CONFINEMENT. Bradley Harris, Gang Yu Liu, Atul N. Parikh, Yuqi Huang, **Roland Faller**

1082-POS **Board B211**
SURFACE-FUNCTIONALIZED POLYSTYRENE NANOPARTICLES ALTER TRANSMEMBRANE POTENTIAL VIA ION-SELECTIVE PORES MAINTAINING GLOBAL BILAYER INTEGRITY. Deborah Aurora Perini, Elisa Parra-Ortiz, Inmaculada Varó, Maria Queralt-Martin, Martin Malmsten, **Antonio Alcaraz**

1083-POS **Board B212**
ASSOCIATION OF ADENOSINE TRIPHOSPHATE WITH LIPID HEADGROUPS MEASURED BY NMR SPECTROSCOPY. **Horia I. Petrache**, Ryan Z. Lybarger, Azam Shafieenezhad, Carmen Haworth-Zermeno, Bruce D. Ray

1084-POS **Board B213**
HDL-MEMBRANE-INTERACTIONS ARE HIGHLY INFLUENCED BY THE TARGET MEMBRANE-LIPID COMPOSITION. **Florian Weber**, Herbert Stangl, Taras Synch, Birgit Plochberger, Erdinc Sezgin

1085-POS **Board B214**
DISSECTING THE CONTRIBUTION OF STEROL STRUCTURE TO MEMBRANE PHASE SEPARATION IN LIVING CELLS. **Israel Juarez-Contreras**, Adriana Siordia, Benjamin Hinnant, Itay Budin

1086-POS **Board B215**
LIPID NANOPARTICLES USING CATIONIC IONISABLE LIPIDS: EFFECT OF CARGO ON STRUCTURE. **Jennifer Gilbert**, Anna Fornell, Najet Mahmoudi, Ann Terry, Tommy Nylander

1087-POS **Board B216**
EXPLORING THE SELF-QUENCHING OF FLUORESCENT PROBES INCORPORATED INTO MODEL LIPID MEMBRANES USING ELECTROPHORESIS AND FLUORESCENCE LIFETIME IMAGING MICROSCOPY. Sophie A. Meredith, Yuka Kusunoki, Simon D. Connell, Kenichi Morigaki, Stephen D. Evans, **Peter G. Adams**

1088-POS **Board B217**
NANOSCOPIC LIPID DIFFUSION IN THE LIVE CELL PLASMA MEMBRANE REVEALED BY ULTRAFAST SINGLE-MOLECULE TRACKING. **Ching-Ya Cheng**, Yu-Jo Chai, Yi-Hung Liao, Chih-Hsiang Lin, Chia-Lung Hsieh

1089-POS **Board B218**
POLARIZED CELL PLASMA MEMBRANE COMPOSITION AND PROTEIN SORTING. **Carolyn Shurer**, Ilya Levental

1090-POS **Board B219**
GLYCOSPHINGOLIPIDS DRIVE MEMBRANE PHASE SEPARATION IN THE YEAST VACUOLE. **Hyesoo Kim**, Itay Budin

1091-POS **BOARD B220** **TRAVEL AWARD WINNER**
BIPHASIC CONCENTRATION PATTERNS IN IONIC TRANSPORT UNDER NANOCONFINEMENT REVEALED IN STEADY STATE AND TIME-DEPENDENT PROPERTIES. **Maria Queralt-Martin**, José J. Pérez-Grau, Laidy Maidel Alvero González, Deborah Aurora Perini, Javier Cervera, Vicente M. Aguilella, Antonio Alcaraz

1092-POS **BOARD B221**
OPTOCAPACITIVE CURRENT OF NON-THERMAL ORIGIN. Juergen Pfeffermann, Rohit Yadav, Carlos Alberto Z. Bassetto Jr, Toma Glasnov, Francisco Bezanilla, **Peter Pohl**

1093-POS **BOARD B222**
LIPID MEMBRANE ANTIOXIDANT/PLA2-CLEAVAGE PROTECTION BY NATURAL BIOCOMPOUNDS. Tomas J. Buenfil-Chi, Hilda Mercado-Uribe, Omar Lozano García, **Francisco J. Sierra Valdez**

1094-POS **BOARD B223**
MEASURING CELL CYCLE CHANGES IN RBL-2H3 CELLS UPON TREATMENT WITH N-ALCOHOLS. **Xiaolin Rong**, Sarah L. Veatch

1095-POS **BOARD B224**
INVESTIGATING ALLOSTERIC REGULATION BY MEMBRANE DOMAINS OF TWO PENTAMERIC LIGAND-GATED ION CHANNELS. **Nate Rogers**, Isabel Varghese, Thomas R. Shaw, Andrea K. Stoddard, Sarah L. Veatch

1096-POS **BOARD B225**
DISSECTING THE MECHANISMS OF ENVIRONMENT SENSITIVITY OF SMART PROBES FOR QUANTITATIVE ASSESSMENT OF MEMBRANE PROPERTIES. **Franziska Ragaller**, Luca Andronico, Jan Sykora, Waldemar Kulig, Tomasz Rog, Yagmur B. Urem, Abhinav Abhinav, Dmytro I. Danylchuk, Martin Hof, Andrey S. Klymchenko, Mariana Amaro, Ilpo Vattulainen, Erdinc Sezgin

Membrane Structure II (Boards B226 - B245)

1097-POS **BOARD B226**
THE ROLE OF GRAPHENE QUANTUM DOTS IN MITIGATING LIPID PEROXIDATION. **Juhee Kim**, Wade F. Zeno

1098-POS **BOARD B227**
MODEL PREDICTIONS FOR PIP_2 RAFT FORMATION. **Zack Jarin**, Richard M. Venable, Richard W. Pastor

1099-POS **BOARD B228**
INVESTIGATING FITNESS TRADEOFFS IN INFLUENZA VIRUS ATTACHMENT AND ANTIBODY NEUTRALIZATION. **Ananya Benegal**, Michael Vahey

1100-POS **BOARD B229**
HYBRID POLYMER/LIPID VESICLES:INSIGHTS ON PHASE SEPARATION AND DYNAMICS FROM TIME-RESOLVED FLUORESCENCE AND MICROSCOPY. FABIO FERNANDES, T. Tuyen Dao, **Manuel Prieto**

1101-POS **BOARD B230**
HYDRODYNAMICS VS. MEMBRANE DRAG DETERMINES THE MOBILITY OF BIOENGINEERED PROTEINS DURING FLOW. **Sreeja Sasidharan**, Amanda Ratajczak, Emily Ankorm, Samuel Pash, Ethan J. Miller, Damien Thevenin, Aurelia R. Honerkamp-Smith

1102-POS **BOARD B231**
USING FLOW TO INVESTIGATE FRICTION AND PROTEIN TRANSPORT IN LIPID MEMBRANES. **Aurelia R. Honerkamp-Smith**, Amanda M. Ratajczak, Autumn A. Anthony, Sreeja Sasidharan, Ethan J. Miller, Xaymara Rivera, Osman Sahin, Murat K. Yapici, Larissa Socrier, Daniel Rogers

1103-POS **BOARD B232**
ENZYME MEDIATED PRODUCTION OF ASYMMETRICALLY CHARGED LIPOSOMES. **Arjun Vasan**, Yifei Wang, Sheereen Majd

1104-POS **BOARD B233**
COPOLYMERIC NANODISCS DO NOT RETAIN THE NATIVE MEMBRANE ENVIRONMENT, BUT DO MAINTAIN PROTEIN-LIPID INTERACTIONS. **Luis M. Real Hernandez**, Ilya Levental

1105-POS **BOARD B234**
ASYMMETRIC PHASE DIAGRAM OF DPPC/DOPC TO INVESTIGATE INTERLEAFLET COUPLING. **Thais A. Enoki**, Frederick A. Heberle

1106-POS **BOARD B235**
VIA CONFORMATIONAL FLEXIBILITY, TRIGLYCERIDES STABILIZE ORGANIC-WATER INTERFACES OF CHANGING AREA. **Thomas C. Kinard**, Steven P. Wrenn

1107-POS **BOARD B236**
MEMBRANE ORDER IN POLLEN TUBES - METHODOLOGY AND UNEXPECTED FINDINGS. **Ingela Parmryd**, Jeremy Adler, Carolin Fritz

1108-POS **BOARD B237**
MUTUAL REGULATION BETWEEN COUPLED PROTEIN CONDENSATES AND ORDERED MEMBRANE DOMAINS. **Kandice R. Levental**, Hongyin Wang, Sze Ham Chan, Simli Dey, Michael K. Rosen, Jonathon A. Ditlev, Ilya Levental

1109-POS **BOARD B238**
SURFACE VISCOSITIES OF SEVERAL LIPIDS DETERMINED FROM EQUILIBRIUM MOLECULAR DYNAMICS SIMULATIONS. **James E. Fitzgerald**, Richard M. Venable, Richard W. Pastor, Edward R. Lyman

1110-POS **BOARD B239**
MEMBRANES WITH LARGE PHOSPHOLIPID ASYMMETRIES. **Martin Girard**

1111-POS **BOARD B240**
ACCURATE MOLECULAR DYNAMICS MODELING OF PSEUDOMONAS AERUGINOSA OUTER MEMBRANE INTERACTION WITH SIGNALING MOLECULES. **Emad Pirhadi**, Citrupa Gopal, Hasan Al Tarify, Juan M. Vanegas, Jeffrey W. Schertzer, Xin Yong

1112-POS **BOARD B241**
NANO-SCALE "STICKY TAPE" STABILIZES OPEN-EDGE BOUNDARY CONDITIONS IN MD SIMULATIONS OF ASYMMETRIC MEMBRANES. **Samuel L. Foley**, Markus Deserno

1113-POS **BOARD B242**
SPATIAL ORGANISATION OF THE E. COLI OUTER MEMBRANE FROM MULTISCALE COMPUTER SIMULATIONS. **Syma Khalid**, Dheeraj Prakaash, Conrado Pedebos, Kiyoshiro Okada

1114-POS **BOARD B243**
ANTIBACTERIAL PATHWAY OF MOS_2 NANOSHEETS AGAINST *ESCHERICHIA COLI* MEMBRANE VIA PHOSPHOLIPID EXTRACTION AND LOCALIZED PHASE TRANSITION. **Monika Kumari**, Hemant K. Kashyap

1115-POS **BOARD B244**
MEMBRANE MECHANICS REGULATE THE COOPERATIVITY OF PROTEINS IN CURVATURE SENSING. **Yiben Fu**, Alexander J. Sodt, Wade F. Zeno, Margaret E. Johnson

1116-POS **BOARD B245**
NUMBER ASYMMETRY: THE HIDDEN DIMENSION OF MAMMALIAN PLASMA MEMBRANES. **Milka Doktorova**, Jessica L. Symons, Kandice R. Levental, Hongyin Wang, Katherine Zhang, Frederick A. Heberle, Edward R. Lyman, Ilya Levental

General Protein-Lipid Interactions I (Boards B246 - B264)

1117-POS Board B246
A SENSITIVE METHOD TO INVESTIGATE THE INTERACTION OF ALPHA-CRYSTALLIN WITH CORTICAL AND NUCLEAR LENS LIPID MEMBRANES DERIVED FROM A SINGLE LENS. Raju Timsina, Samantha Wellisch, Dieter Haemmerle, **Laxman Mainali**

1118-POS Board B247
INTERACTIONS OF BETA-CRYSTALLIN WITH A MODEL OF HUMAN EYE LENS-LIPID MEMBRANES. **Preston G. Hazen**, Raju Timsina, Nawal Khadka, Laxman Mainali

1119-POS Board B248
BETA-CRYSTALLIN INTERACTS WITH PHOSPHOLIPID MEMBRANE FORMING SEMI-TRANSMEMBRANE DEFECTS: A STUDY USING ATOMIC FORCE MICROSCOPY. **Nawal Khadka**, Laxman Mainali

1120-POS Board B249
THE IMPACT OF ALTERED CHARGE ON HUNTINGTIN AGGREGATION AND LIPID BINDING. **Alyssa R. Stonebraker**, Justin A. Legleiter

1121-POS Board B250
USING GIANT PLASMA MEMBRANE VESICLES (GMPVS) TO STUDY AGE-DEPENDENT CHANGES IN AMYLOID-B OLIGOMER TOXICITY. **Manuel Castro**

1122-POS Board B251
BILAYER-MODIFYING POTENCY OF ANTIPSYCHOTICS AS A FUNCTION OF PH. **Kelsey Brown**, Olaf S. Andersen

1123-POS Board B252
REGULATION OF ACTIN-BINDING PROTEINS BY PI(4,5)P_2. **Yosuke Senju**

1124-POS Board B253
OPTICAL MEMBRANE STUDIES ON THE FUNCTIONALITY AND BIOPHYSICS OF BRUTON'S TYROSINE KINASE. **Alexander D. Fenton**, Jean K. Chung

1125-POS Board B254
TUNING THE COMPOSITION OF SUPPORTED LIPID BILAYERS IN A QCMD TO UNCOVER RULES OF MEMBRANE PROTEIN INCORPORATION. **Aset Khakimzhan**, Ziane Izri, Seth Thompson, Vincent Noireaux

1126-POS Board B255
LIPID DEPENDENCE OF THE CONFORMATIONAL COUPLING ACROSS THE MEMBRANE BILAYER OF FULL-LENGTH EPIDERMAL GROWTH FACTOR RECEPTOR. **Shwetha Srinivasan**, Raju Regmi, Xingcheng Lin, Courtney Dreyer, Xuyan Chen, Steven Quinn, Wei He, Matthew A. Coleman, Kermit L. Carraway III, Bin Zhang, Gabriela Schlau-Cohen

1127-POS Board B256
EXPLORING THE TRANSPORT CYCLE OF DGOT, A BACTERIAL HOMOLOG OF HUMAN VESICULAR GLUTAMATE TRANSPORTERS. **Nataliia Dmitrieva**, Claudia Alleva, Mercedes Alfonso Prieto, Paolo Carloni, Christoph M. Fahlke

1128-POS Board B257
RHODOPSIN IS A DYNAMICALLY ACTIVE RECEPTOR IN LIPID MEMBRANES. Andrey V. Struts, Eglof Ritter, Paul Fischer, Blake Mertz, Franz Bartl, **Michael F. Brown**

1129-POS Board B258
MAKING THE UNDETECTABLE DETECTABLE: PUSHING LIMITS OF BIOMOLECULAR RECOGNITION BY ULTRA-SENSITIVE MULTIPLEXED SINGLE-PARTICLE LIPOSOME READOUTS. **Nikos S. Hatzakis**

1130-POS Board B259
INSIGHT INTO BCL-2 PROTEINS' FUNCTIONING AT MITOCHONDRIAL MEMBRANE LEVEL. Luke A. Clifton, Ameeq Ul Mushtaq, Jörgen Åden, Tobias Sparrman, Hanna Wacklin-Knecht, **Gerhard Grobner**

1131-POS Board B260
NANO AND MICRO-VESICLE DIFFUSION THROUGH PROTEINS, ELECTROSTATICS MEDIATE ITS INTERACTIONS. **Francisco Javier Guevara Pantoja**, JR Guzman-Sepulveda, J.C Ruiz-Suarez

1132-POS Board B261
NANODISCS AS A NOVEL APPROACH TO RESOLVE INTER-PROTEIN ENERGY TRANSFER WITHIN THE PHOTOSYNTHETIC MEMBRANE OF PURPLE BACTERIA. **Olivia C. Fiebig**, Dihao Wang, Dvir Harris, Hila Toporik, Yi Ji, Chern Chuang, Muath Nairat, Ashley L. Tong, John I. Ogren, Stephanie M. Hart, Jianshu Cao, James N. Sturgis, Yuval Mazor, Gabriela Schlau-Cohen

1133-POS Board B262
ACHIEVING ANTICANCER PEPTIDES: PROTEIN-LIPID INTERACTIONS IN BREAST CANCER MODELS. **Faraz Rahimi**, Martin B. Ulmschneider, Ulrike S. Eggert

1134-POS Board B263
NOVEL APPROACHES TO UNDERSTAND FUNCTION AND EXPLORE INHIBITION WITHIN PROTEIN-MEMBRANE INTERFACES. **Brian Fuglestad**

1135-POS Board B264
MECHANISTIC STUDIES OF ENDOLYSOSOMAL MEMBRANE REPAIR BY THE HUMAN ESCRT MACHINERY THROUGH IN VITRO RECONSTITUTION. **Sankalp Shukla**, Kevin P. Larsen, Chenxi Ou, Kevin Rose, James H. Hurley

Calcium Signaling (Boards B265 - B284)

1136-POS Board B265
AUTONOMIC INNERVATION, A PERIPHERAL GLIAL CELL WEB, AND A NOVEL S100B EXPRESSING INTERSTITIAL CELL TYPE IMPART STRUCTURAL AND FUNCTIONAL COMPLEXITY TO THE SINOATRIAL NODE. **Rostislav Bychkov**, Magdalena Juhaszova, Miguel Calvo-Rubio Barrera, Lorenzo A.H. Donald, Christopher Coletta, Chad Shumaker, Kayla Moorman, Syevda Tagirova, Alexander V. Maltsev, Steven J. Sollott, Edward G. Lakatta

1137-POS Board B266
MODELING OF CARDIOMYOCYTE CONTRACTILITY AUTOREGULATION IN THE CELL-IN-GEL SYSTEM. **John A. Shaw**, Mohammad A. Kazemi-Lari, Alan S. Wineman, Rafael Shimkunas, Zhong Jian, Leighton T. Izu, Ye Chen-Izu

1138-POS Board B267
REAL TIME IMAGING OF CALCIUM TRANSIENTS IN SKELETAL MUSCLE FIBERS: AN APPROACH TO THE STUDY OF SPATIOTEMPORAL DYNAMICS. **Hatim Abulola**

1139-POS Board B268
OPTIMIZING PRECISION NANOPARTICLE DELIVERY FOR MAGNETO-MECHANICALLY-BASED CALCIUM MODULATION. **Connor L. Beck**, Anja Kunze

1140-POS Board B269
PHOTO-INACTIVATION DISRUPTS RAPID FLUORESCENCE READOUT OF JGCAMP8 CALCIUM INDICATORS TETHERED TO ORAI1 CHANNELS. **Joseph L. Dynes**, Andriy V. Yeromin, Michael D. Cahalan

1141-POS Board B270
SIMULATED MICROGRAVITY LEADS TO ALTERED INTRACELLULAR CALCIUM HOMEOSTASIS AND PROTEIN EXPRESSION IN C2C12 CULTURES. **Laszlo Csernoch**, Mónika Gönczi, Zsolt Ráduly, László Szabó, Boglárka Molnár, Peter Szentesi, Beatrix Dienes

1142-pos Board B271
CALCIUM SIGNALING CONSEQUENCES OF RYR2-S4938F MUTATION EXPRESSED IN HIPSC-CMS. **Noemi Toth**, Xiaohua Zhang, Naohiro Yamaguchi, Martin Morad

1143-POS Board B272
UPREGULATION OF RYANODINE RECEPTOR 1 IS INVOLVED IN ER STRESS-INDUCED DISRUPTION OF BETA CELL CALCIUM HOMEOSTASIS. Irina X. Zhang, Andrea Hermann, Juan Leon, Anoop Arunagiri, Peter Arvan, **Leslie S. Satin**

1144-POS Board B273
DYNAMIC CALCIUM-CALMODULIN-DEPENDENT STABILIZATION OF LEAKY RYR2 IN LIVE CARDIAC MYOCYTES. **Victor Alencar**

1145-POS Board B274
DANTROLENE IMPROVES DIASTOLIC PROPERTY OF LEFT VENTRICLE IN MINERALCORTICOID-INDUCED HYPERTENSIVE RATS. **Junya Nawata**, Takeshi Yamamoto, Tomoyuki Uchida, Takeshi Suetomi, Hitoshi Uchinoumi, Tetsuro Oda, Shigeki Kobayashi, Masafumi Yano

1146-POS Board B275
DEFECTIVE CALMODULIN BINDING AFFINITY TO RYANODINE RECEPTOR DRIVES HEART FAILURE WITH PRESERVED EJECTION FRACTION PROGRESSION. **Tomoyuki Uchida**, Tetsuro Oda, Junya Nawata, Takeshi Suetomi, Hitoshi Uchinoumi, Shigeki Kobayashi, Takeshi Yamamoto, Masafumi Yano

1147-POS Board B276
POST-TRANSLATIONAL MODIFICATION-DEPENDENT REGULATION OF CAMKII-DELTA CONFORMATION IN LIVE CARDIAC MYOCYTES. **Christopher Y. Ko**, Leann T. Le, Daria Smoliarchuk, Sonya Baidar, Jakub Tomek, Chidera C. Alim, Juliana Mira Hernandez, Jody L. Martin, Donald M. Bers

1148-POS Board B277
DYNAMIC COMMUNICATION BETWEEN TRPC3 AND IP3R SHAPE CA^{2+} SIGNALING SIGNATURES. **Klaus Groschner**, Hazel Erkan-Candag, Sanja Curcic

1149-POS Board B278
SPATIO-SPECIFIC CAMKII ACTIVATION IN CARDIOMYOCYTES FROM HYPERTENSIVE DAHL SALT-SENSITIVE RATS. **Julia Voglhuber**, Ingrid Matzer, Natasa Djalinac, Mara Kiessling, Viktoria Trummer-Herbst, Michael Holzer, Andreas Zirlik, Senka Holzer

1150-POS Board B279
SYNCHRONIZATION OF PACEMAKER CELL FIRING UNDERLIES AUTONOMIC MODULATION OF BEATING INTERVALS AND THEIR VARIABILITY IN A NUMERICAL MODEL OF HETEROGENEOUS SA NODE TISSUE. **Alexander V. Maltsev**, Andy Lu, Michael D. Stern, Edward G. Lakatta, Victor A. Maltsev

1151-POS Board B280
SUPER-RESOLVED SIM IMAGING REVEALED HIERARCHICAL ORGANIZATION OF THE RYANODINE RECEPTOR NETWORK IN 3 DIMENSIONS IN RABBIT SINOATRIAL NODE CELLS. **Valeria Ventura Subirachs**, Alexander V. Maltsev, Michael D. Stern, Edward G. Lakatta, Victor A. Maltsev

1152-POS Board B281
MOLECULAR MECHANISMS OF CARDIAC COMPLICATIONS ASSOCIATED WITH COVID-19. **Steven R. Reiken**, Haikel Dridi, Leah Sittenfeld, Yang Liu, Andrew R. Marks

1153-POS Board B282
HEART FAILURE (HF) ALTERS DISTRIBUTION AND SPATIAL ASSOCIATION PROFILES OF CALMODULIN (CAM) AND CAM TARGET PROTEIN MRNAS. **Vladimir Bogdanov**, Andrew Soltisz, Casey Beard, Benjamin Hernandez Orengo, Galina Sakuta, Rengasayee Veeraraghavan, Jonathan Davis, Sandor Gyorke

1154-POS Board B283
AN INTEGRATE-AND-FIRE APPROACH TO CA^{2+} SIGNALING - THE NOISE OF PUFFS. **Lukas Ramlow**, Martin Falcke, Benjamin Lindner

1155-POS Board B284
PHYSIOLOGICAL SIGNIFICANCE OF TISSUE-SPECIFIC MICU REGULATION OF MITOCHONDRIAL CALCIUM UPTAKE. **Madison Rodriguez**, Chen-Wei Tsai, Ming-Feng Tsai

Intracellular Calcium Channels and Calcium Sparks and Waves (Boards B285 - B294)

1156-POS Board B285
CAVEOLAE-RESTRICTED MECHANO-CHEMICAL SIGNAL TRANSDUCTION IN MOUSE ATRIAL MYOCYTES. **Roman Y. Medvedev**, Daniel G.P. Turner, Julia Gorelik, Francisco Alvarado, Vladimir E. Bondarenko, Alexey V. Glukhov

1157-POS Board B286
INTERSUBUNIT CROSS-LINKING IS THE KEY MECHANISM OF CARDIAC RYANODINE RECEPTOR DYSFUNCTION DURING OXIDATIVE STRESS: THE ROLE OF CYSTEINES 1078 AND 2991. **Roman Nikolaienko**, Elisa Bovo, Ryan Gracia, Thomas Jamrozik, Daniel Kahn, Aleksey V. Zima

1158-POS Board B287
DETECTION AND CLASSIFICATION OF CA^{2+} RELEASE EVENTS IN CARDIOMYOCYTES USING 3D-UNET NEURAL NETWORK. **Prisca R. Dotti**, Miguel Fernandez-Tenorio, Radoslav Janicek, Pablo Márquez-Neila, Marcel Wullschleger, Raphael Sznitman, Marcel Egger

1159-POS Board B288
ARRHYTHMIA SEVERITY IN MOUSE MODELS HARBORING RYR2 MUTATIONS WITH VARIED EXTENT OF CHANNEL ACTIVITY. **Nagomi Kurebayashi**, Masami Kodama, Takashi Murayama, Masami Sugihara, Masato Konishi, Aya Miura, Hajime Nishio, Yukiko U. Inoue, Takayoshi Inoue, Satoru Noguchi, Takashi Sakurai

1160-POS Board B289
ROLE OF NEURONAL RYANODINE RECEPTOR TYPE 2 IN CARDIOGENIC DEMENTIA. **Haikel Dridi**, Yang Liu, Xiaoping Liu, Steven R. Reiken, Marco Miotto, Leah Sittenfeld, Qi Yuan, Rajesh Soni, Alain Lacampagne, Andrew R. Marks

1161-POS Board B290
CNS-FOCUSED HIGH THROUGHPUT SCREENING FOR RYR-TARGETED THERAPEUTICS. **Levy M. Treinen**, Johnathan C. Solberg, Robyn T. Rebbeck, Marzenna Brinkmann, Kaja Berg, Jake A. Schwarz, Andrew R. Thompson, Courtney C. Aldrich, David D. Thomas, Jennifer J. Thomas, Razvan L. Cornea

1162-POS Board B291
MODULATING MITOCHONDRIAL PHOSPHATE TRANSPORT SHAPES INTRACELLULAR CA SIGNALING TO IMPACT ARRHYTHMOGENESIS. **Arpita Deb**, Bjorn C. Knollmann, Bin Liu

1163-POS Board B292
THE ROLE OF MITOCHONDRIAL-ASSOCIATED-MEMBRANES IN CA-DEPENDENT ARRHYTHMIAS. Arpita Deb, Oluwabori Adekanye, Bjorn C. Knollmann, Lufang Zhou, Jonathan P. Davis, **Bin Liu**

1164-POS Board B293
KINETICS AND MAPPING OF CALCIUM-DRIVEN CALMODULIN CONFORMATIONS ON RYANODINE RECEPTORS. **Bengt Svensson**, Robyn T. Rebbeck, Jingyan Zhang, Donald M. Bers, David D. Thomas, Razvan L. Cornea

1165-POS Board B294
GENE THERAPY STRATEGIES USING CRISPR/CAS9 FOR RYR1-RELATED MYOPATHIES. Mathilde Beaufils, Julie Brocard, Julien Faure, John Rendu, **Isabelle Marty**

Intracellular Organelle Dynamics (Boards B295 - B298)

1166-POS Board B295
INVESTIGATING INSULIN VESICLE MATURATION PATHWAYS USING SOFT X-RAY TOMOGRAPHY. **Aneesh Deshmukh**, Shayan Mahmood, Kate L. White

1167-POS **Board B296**
ILLUMINATING DYNAMIC STRUCTURAL STATES IN HIPSCS THROUGH ENDOGENOUS GENE TAGGING. **Brock Roberts**, Allen Institute for Cell Science, Ru Gunawardane

1168-POS **Board B297**
DYNAMICS & TRANSPORT IN 3D MITOCHONDRIAL NETWORKS. **Keaton Holt**, Elena F. Koslover

1169-POS **Board B298**
ORIGINS OF PROTEIN CONCENTRATION NOISE IN MITOCHONDRIA. **Aidan Brown**, Rutvik Patel

Bioenergetics and Photosynthesis (Boards B299 - B306)

1170-POS **Board B299**
MOLECULAR MECHANISM OF GLYCOLYTIC ASSEMBLY ON MITOCHONDRIA THROUGH O-GLCNACYLATION. **John W. Vant**, Haoming Wang, Gulcin Pekkurnaz, Abhishek Singharoy

1171-POS **Board B300**
EXPLOITING STRUCTURAL VARIATIONS IN HIGHLY CONSERVED MITOCHONDRIAL COMPLEX III TO DEVELOP ANTIFUNGAL AGENTS. **Di Xia**, Fei Zhou, Lothar Esser, Zhaohai Qin

1172-POS **Board B301**
LONG-RANGE REGULATION OF CYTOCHROME *C* BINDING TO *BC1* COMPLEX. **Sophia Gross**, Spencer B. Grewe, Oleksandr Kokhan

1173-POS **Board B302**
FRET-BASED NANOSENSOR AMPFRET DISTINGUISHES PHYSIOLOGICAL FROM TOXIC STRESS. **Uwe Schlattner**, Roland Abi Nahed, Francesco Aulicino, Alaa Al Assi, Eric Fontaine, Marie Carriere, Imre Berger

1174-POS **Board B303**
CURIOUS CASE OF A LEAKY MITOCHONDRIA. **Jonathan T. Nguyen**, Chun Kit Chan, Jacob Layton, Nelli Mnatsakanyan, Abhishek Singharoy

1175-POS **Board B304**
REGULATION OF LIGHT-HARVESTING SYSTEMS IN PLANTS: FLEXIBLE CONFORMATION OF LIGHT-HARVESTING COMPLEX II TRIMER DEPENDING ON ITS BINDING SITE. **Eunchul Kim**, Hisako Kubota-Kawai, Fumihiro Kawai, Makio Yokono, Jun Minagawa

1176-POS **Board B305**
STRUCTURAL BASIS FOR EXCITED LIGHT TRANSFER WITHIN BACTERIAL PHOTOSYNTHETIC SUPERCOMPLEX. **Po-Lin Chiu**

1177-POS **Board B306**
RATIONAL DESIGN OF ULTRAFAST PPCA-RU$(BPY)_3$ COMPLEXES. **Zachary D. Ryan**, Oleksandr Kokhan

Voltage-Gated K Channels I (Boards B307 - B325)

1178-POS **Board B307**
KV1 ACTIVATOR MECHANISM OF ACTION IN ACTION POTENTIAL INHIBITION. **Victoria Jiang**, Shanti Amagasu, Bryan Moyer, John M. Gilchrist

1179-POS **Board B308** **Travel Award Winner**
USING MANY DIFFERENT VOLTAGE PROTOCOLS TO CHARACTERISE DISCREPANCY IN MATHEMATICAL ION CHANNEL MODELS. **Joseph G. Shuttleworth**, Chon Lok Lei, Monique Windley, Adam P. Hill, Matthew D. Perry, Simon Preston, Gary R. Mirams

1180-POS **Board B309**
DETERMINING THE FUNCTIONAL SIGNIFICANCE OF KCNH2 VARIANTS OF UNCERTAIN SIGNIFICANCE IDENTIFIED IN A LARGE PATIENT BIOBANK. **Ezekiel Rozmus**

1181-POS **Board B310**
THE EFFECTS OF POLYUNSATURATED FATTY ACIDS ON THE CARDIAC I_{KR} CHANNEL. **Yahnell Judah**, Alicia de la Cruz, Jessica Jowais, Marta E. Perez, H. Peter Larsson

1182-POS **Board B311**
PROTONS AT THE $K_V1.2$ CHANNEL GATE CAN CLOSE THE GATE. Alisher M. Kariev, **Michael E. Green**

1183-POS **Board B312**
MODULATION OF HETEROMERIC KV1 CHANNELS BY TRANSMEMBRANE LECTINS AND REDOX. **Anson Wong**, Shawn M. Lamothe, Victoria A. Baronas, Harley T. Kurata

1184-POS **Board B313**
MODULATION OF KV1.2 REDOX-SENSITIVE GATING BY THE TRANSMEMBRANE LECTIN LMAN2. **Shawn M. Lamothe**, Damayantee Das, Anson Wong, Yubin Hao, Victoria A. Baronas, Harley T. Kurata

1185-POS **Board B314**
MITOCHONDRIAL DYNAMICS CONTROL OF MITO$K_V1.3$ DURING CELL CYCLE PROGRESSION. Jesusa Capera-Aragones, **María Navarro-Pérez**, Carla Viñola-Renart, Anna Benavente-Garcia, Ildiko Szabó, Antonio Felipe

1186-POS **Board B315** **Travel Award Winner**
POINT MUTATIONS IN THE VOLTAGE-GATED POTASSIUM CHANNEL KV7.2/7.3, AND THEIR POSSIBLE INVOLVEMENT IN EPILEPSY AND CHANNEL GATING. **Argel Estrada Mondragon**, Emma Kindström, Annika Blaufuss, Anita Mambwe Nyendwa, Fredrik Elinder

1187-POS **Board B316**
LEARNING HOW CHARYBDOTOXIN DISSOCIATES FROM A VOLTAGE GATED K-CHANNEL. Nieves Navarro, Francisca Salas, Horacio Poblete, **David Naranjo**

1188-POS **Board B317**
TUNING THE TEMPERATURE DEPENDENCE OF SHAKER POTASSIUM CHANNEL WITH MUTATIONS AT S4-S5 LINKER. **Carlos Alberto Z. Bassetto Jr**, Bernardo Pinto, Ramon Latorre, Francisco Bezanilla

1189-POS **Board B318**
PHOTOMODULATION OF RECONSTITUTED VOLTAGE-DEPENDENT K+ CHANNELS. **Rohit Yadav**, Juergen Pfeffermann, Nikolaus Gössweiner-Mohr, Toma Glasnov, Peter Pohl

1190-POS **Board B319** **Travel Award Winner**
FUNCTIONAL CHARACTERIZATION OF GATING POLARITY IN CNBD CHANNELS ACROSS PHYLOGENETICALLY DIVERSE SPECIES. **Jenna L. Lin**, Gurmeet Kaur, Aravind Iyer, Baron Chanda

1191-POS **Board B320**
CHARACTERIZATION OF MECHANOSENSITIVE AND VOLTAGE-ACTIVATED ION CHANNELS IN NOCICEPTIVE SCHWANN CELLS. **Maia Moog**, Angela Ballesteros, Patrik Ernfors, Kenton Swartz

1192-POS **Board B321**
MODULATION OF POTASSIUM CHANNELS PRESERVES TEMPORAL FIDELITY IN AUDITORY NETWORK MODELS. **Leonard K. Kaczmarek**

1193-POS **Board B322**
THE POTASSIUM-SELECTIVE CHANNEL "NAK2K": WHY IS IT A POTASSIUM CHANNEL? **Mohamed Shehata**, Wojciech Kopec, Bert L. de Groot, Rommie E. Amaro

1194-POS BOARD B323
VIRTUAL SCREENING (VS) BASED IN THE COMMON BINDING SITE FOR NEGATIVELY CHARGED ACTIVATORS OF K^+ CHANNELS. A COMPARISON WITH A PHARMACOPHORE-BASED VS. **Wendy Gonzalez**, Marcelo Araneda, Estanislao Marquez, Fernando Vergara, Han Sun, Niels Decher

1195-POS BOARD B324
VOLTAGE SENSITIVE ION CHANNELS, MINIMAL SIZE OF ORDERED PHASES AND THE EVOLUTION OF METAZOA. **H. Richard Leuchtag**

1196-POS BOARD B325
INTRODUCING ELECTROSTATIC STIMULATION TO NORMAL MODE ANALYSIS. Alexandre Beaulac, Olivier Malihot, Rafael Najmanovich, **Rikard Blunck**

Ligand-Gated Channels I (Boards B326 - B350)

1197-POS BOARD B326 TRAVEL AWARD WINNER
RECONSTRUCTING IDENTICAL AGONIST SITES IN THE MUSCLE-TYPE NICOTINIC ACETYLCHOLINE RECEPTOR. **Johnathon R. Emlaw**, Corrie J.B. daCosta

1198-POS BOARD B327
INSIGHTS INTO THE DESENSITIZATION MECHANISMS OF ACID-SENSING ION CHANNELS. **Caroline Marcher Holm**, Stephanie A. Heusser, Asli B. Topaktas, Stephan A. Pless

1199-POS BOARD B328
FMRFAMIDE-GATED SODIUM CHANNEL DIVERSITY RELATIONSHIP TO OTHER DEG/ENAC CHANNELS, AND THE MOLECULAR BASIS FOR NEUROPEPTIDE ACTIVITY. **Mowgli Dandamudi**, Harald Hausen, Timothy Lynagh

1200-POS BOARD B329
DUPLICATED BINDING SITE FOR RIC-3 CHAPERON PROTEIN IN SEROTONIN TYPE 3A SUBUNITS. **Hoa Quynh Do**, Michaela Jansen

1201-POS BOARD B330
AGONIST EFFICIENCY IN A NICOTINIC RECEPTOR. Dinesh Indurthi, **Anthony Auerbach**

1202-POS BOARD B331
STRUCTURAL BASIS FOR THE REGULATION MECHANISM OF CA^{2+}-DEPENDENT ACTIVITY OF TMEM16 SCRAMBLASE. **Zhang Feng**, Omar E. Alvarenga-Cruz, Alessio Accardi

1203-POS BOARD B332
USING CGMP ANALOGUES TO MODULATE PHOTORECEPTOR LIGHT SENSITIVITY. Sophie Wucherpfennig, Wadood Haq, Valerie Popp, Sandeep Kesh, Frank Schwede, Francois Paquet-Durand, **Vasilica Nache**

1204-POS BOARD B333 TRAVEL AWARD WINNER
ANCESTRAL ACETYLCHOLINE RECEPTOR BETA-SUBUNIT FORMS HOMOPENTAMERS THAT PRIME BEFORE OPENING SPONTANEOUSLY. **Christian Tessier**, Raymond M. Sturgeon, Johnathon Emlaw, Gregory McCluskey, F Javier Pérez-Areales, Corrie J.B. daCosta

1205-POS BOARD B334
CONFORMATIONAL DYNAMICS OF THE CYTOPLASMIC CAP DURING DESENSITIZATION OF THE HP2X3R. **Linhan Cheng**, Saskia Cönen, Ralf Hausmann, J.-P. Machtens

1206-POS BOARD B335
STRUCTURAL CHARACTERIZATION OF PH- AND CALCIUM-MODULATED OPEN AND CLOSED STATES OF THE PENTAMERIC LIGAND-GATED ION CHANNEL DECLIC. **Olivia Andén**, Urska Rovsnik, Marie Lycksell, Marc H. Delarue, Rebecca J. Howard, Erik R. Lindahl

1207-POS BOARD B336
ELECTRICAL IMPEDANCE SPECTROSCOPY FOR DRUG SCREENING ON LIGAND-GATED ION CHANNELS. **Ralf Hausmann**, Linhan Cheng, Yuan Cao, Oscar Liborio, Uwe Schnakenberg

1208-POS BOARD B337
MOLECULAR BASIS FOR INACTIVITY OF MAMMALIAN DELTA IGLURS. **Giulio Rosano**

1209-POS BOARD B338
INHIBITION MECHANISM OF AMPA RECEPTORS BY THE PORE BLOCKER MEMANTINE. **Elisa Carrillo**, Cuauhtemoc U. Gonzalez, Vasanthi Jayaraman

1210-POS BOARD B339
IT IS POSSIBLE TO CALCULATE AGONIST EFFICIENCY FROM RECEPTOR STRUCTURE. **Dinesh Indurthi**, Mrityunjay Singh, Shailendra Asthana, Anthony Auerbach

1211-POS BOARD B340
DEREPRESSION MASQUERADES AS ACTIVATION IN A PENTAMERIC LIGAND-GATED ION CHANNEL. **Corrie J.B. daCosta**, Christian J.G. Tessier, Johnathon R. Emlaw, Raymond M. Sturgeon

1212-POS BOARD B341
FUNCTIONAL MODULATION OF A PH-SENSITIVE ION CHANNEL BY A TRANSPORTER FAMILY. **Mette H. Poulsen**, Feng Xue, Svetlana R. Maurya, Stefanie Kickinger, Samuel Usher, Petrine Wellendorph, Alicia Lundby, Stephan A. Pless

1213-POS BOARD B342 TRAVEL AWARD WINNER
STRUCTURAL CHARACTERIZATION OF A FULL-LENGTH HETEROMERIC GLYCINE RECEPTOR IN MULTIPLE FUNCTIONAL STATES. **Eric Gibbs**, Emily Krueger, Arvind Kumar, Seiferth David, Serban Ilca, Philip C. Biggin, Sudha Chakrapani

1214-POS BOARD B343
PHARMACOLOGY OF $P2X_3$ AND $P2X_{2/3}$ RECEPTORS: AN AUTOMATED PATCH CLAMP STUDY. Elena Sirtori, **Jean-Francois Rolland**, Elena L. Budusan, Giustina M. Rotordam, Tom A. Goetze, Nadine Becker, Alison Obergrussberger, Timothy Strassmaier, Andrea Bruggemann, Michael George, Niels Fertig

1215-POS BOARD B344 TRAVEL AWARD WINNER
NANODISC SCAFFOLD ALTERS THE STRUCTURE OF A PENTAMERIC LIGAND-GATED ION CHANNEL REVEALING NEW CONFORMATIONS. **Vikram Dalal**, John T. Petroff, Noah M. Dietzen, Wayland W. Cheng

1216-POS BOARD B345
STRUCTURAL-FUNCTIONAL CHARACTERIZATION OF KCNJ2 VARIANTS ASSOCIATED WITH VENTRICULAR ARRHYTHMIC SYNDROME PHENOTYPES. **Saba Munawar**, Chris Wang, Molly Melnick, Louise Reilly, Corey Anderson, Lee L. Eckhardt

1217-POS BOARD B346
SIGMA CONOTOXIN GVIIIA: BINDING TO $5HT_{3A}$ WITH MICROSECOND SIMULATIONS AND DOCKING OF DIVERSE STRUCTURES. **Robert Allsopp**, Jeffery B. Klauda

1218-POS BOARD B347
BREAKING BRAINS AND BARRIERS: A NOVEL APPROACH TO STUDYING NEUROTRANSMITTER RECEPTOR PROTEIN-PROTEIN INTERACTIONS. **Austin D. Rodgers**, Michaela Jansen

1219-POS BOARD B348
EFFECTS OF RIC-3 ON THE EXPRESSION PROFILE OF SEROTONIN TYPE 3A RECEPTORS. **Lauretta Anne Pierre**, Hoa Quynh Do, Nermina Sarayli Belirgen, Michaela Jansen

1220-POS **Board B349** **Travel Award Winner**
TWO GATES MEDIATE NMDAR ACTIVITY AND ARE UNDER SUBUNIT-SPECIFIC REGULATION. **Miaomiao He**, Johansen Amin, Ramesh Prasad, Xiaoling Leng, Huan-Xiang Zhou, Lonnie P. Wollmuth

1221-POS **Board B350**
FUNCTIONAL ROLE OF CONSERVED AMINO ACID RESIDUES IN THE INTRACELLULAR DOMAIN OF A7 ACETYLCHOLINE RECEPTORS. **Irina Kim Cavdar**, Hoa Quynh Do, Nermina Sarayli Belirgen, Lauretta Anne Pierre, Michaela Jansen

Ion Channels, Pharmacology, and Disease I (Boards B351 - B380)

1222-POS **Board B351**
PATCH CLAMP STUDY OF BENZYDAMINE EFFECT OVER NEURONAL EXCITABILITY ON INFLAMMATION SENSITIZED RAT NOCICEPTORS. **Antonio V. Ferrer-Montiel**, Magdalena Nikolaeva-Koleva, Ana Espinosa, Matteo Vergassola, Lorenzo Polenzani, Lorella Ragni, Sara Zucchi, Isabel Devesa

1223-POS **Board B352**
MAPPING THE BINDING SITE OF NS309, A SUPERAGONISTIC POSITIVE GATING MODULATOR FOR THE CALCIUM-ACTIVATED POTASSIUM CHANNEL KCA3.1. **Joshua A. Nasburg**

1224-POS **Board B353**
STRUCTURE-FUNCTION STUDIES OF LOSS-OF-FUNCTION $K_{CA}2.2$ MUTANT CHANNELS. **Mohammad Asikur Rahman**, Young Woo Nam, Grace Yang, Myles D. Myles, Razan Orfali, Meng Cui, Miao Zhang

1225-POS **Board B354**
NOVEL MECHANISM OF EAG CHANNEL INHIBITION BY IMIPRAMINE. **Ze-Jun Wang**, Xi Chen, Tinatin I. Brelidze

1226-POS **Board B355**
MOLECULAR SIMULATIONS OF STATE-SPECIFIC DRUG INTERACTIONS WITH MULTIPLE CARDIAC ION CHANNELS TO REVEAL MECHANISMS OF ARRHYTHMOGENESIS. **Kyle C. Rouen**, Khoa Ngo, Abhishek A. Kognole, Himanshu Goel, Asuka Orr, Anmol Kumar, Aiyana Emigh Cortez, Jan Maly, Vladimir Yarov-Yarovoy, Alexander D. MacKerell, Igor Vorobyov

1227-POS **Board B356**
COMPARISON OF EFFICACY AND FUNCTIONAL CONSEQUENCES OF SIRNA AND CRISPRI GENE MODULATION WITH DIFFERENT EFFECTOR DOMAINS IN POST-DIFFERENTIATED HUMAN IPSC-CMS. **Julie Han**, Yuli W. Heinson, Emilia Entcheva

1228-POS **Board B357**
THE ENDOCANNABINOID ARA-S DISPLAYS VARIABLY ACTIVATING EFFECTS ON $K_V7.1$/KCNE1 CARRYING LONG QT SYNDROME MUTATIONS. **Irene Hiniesto Iñigo**, Siri A. Lundholm, Sara I. Liin

1229-POS **Board B358**
VOLTAGE SENSOR TARGETED ACTIVATION OF KV7 CHANNELS BY QO-58. **Richard Kanyo**

1230-POS **Board B359**
HUMAN INDUCE PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES TO STUDY PUFA ANALOGUES AS A POTENTIAL TREATMENT OF LONG QT SYNDROME. **Alicia de la Cruz**, Derek M. Dykxhoorn, Rene Barro-Soria, Ashutosh Agarwal, Peter H. Larsson

1231-POS **Board B360**
CHRONIC ANGIOTENSIN II SIGNALING DRIVES SUSTAINED PIP_2 DEFICITS AND ALTERED SARCOLEMMAL $CA_V1.2$ EXPRESSION AND FUNCTION IN CARDIOMYOCYTES. **Taylor L. Voelker**, Silvia G. del Villar, Maartje F. Westhoff, Eamonn J. Dickson, Rose E. Dixon

1232-POS **Board B361**
FURTHER CHARACTERIZATION OF TWO OPPOSITELY-ACTING, EPILEPSY-ASSOCIATED MUTATIONS AT POSITION H310 OF $K_V1.2$ (*KCNA2*) CHANNELS. **Varsha Prakash**, Teresa Minguez Vinas, Kaiqian Wang, Sarah H. Lindström, Cecilia Gunnarsson, Antonios Pantazis

1233-POS **Board B362** **Travel Award Winner**
FROM SIMULATION TO APPLICATION: ELUCIDATING PROTOXIN-2 BINDING MECHANISM IN PAIN CHANNEL $NA_V1.7$ THROUGH DYNAMICS SIMULATION AND BIOPHYSICS. **Joekeem D. Arizala**, Abba Leffler, Sebastien F. Poget

1234-POS **Board B363**
HOTSPOTS DETECTION AND DISTRIBUTION PATTERN OF DISEASE-ASSOCIATED MUTATIONS IN VOLTAGE-GATED SODIUM CHANNELS. **Amin Akbari Ahangar**, Jing Li

1235-POS **Board B364**
INHERITED DISEASE-LINKED ARGININE76 OR EQUIVALENT RESIDUE MUTANTS IN CX50 AND CX45 SHOWED IMPAIRED HOMOTYPIC AND HETEROTYPIC GAP JUNCTION FUNCTION, BUT NOT CX43. Tianhe Li, Honghong Chen, Xiaole Li, Peter B. Stathopulos, **Donglin Bai**

1236-POS **Board B365**
LYSOSOMAL CA^{2+}-FLUX CONTRIBUTES TO ABNORMAL AUTOMATICITY RELATED ARRHYTHMIA IN VENTRICULAR CARDIOMYOPATHY. **An Xie**, Gyeoung-Jin Kang, Eun Ji Kim, Feng Feng, Samuel C. Dudley

1237-POS **Board B366**
PHYSIOLOGICAL ROLE OF SK CHANNELS IN MODULATING CARDIAC REPOLARIZATION: APD AND DISPERSION AT SLOW HEART RATE IN LONG QT SYNDROME. **Peter Bronk**, Tae Yun Kim, Yi Chun Lu, Nilufer Turan, Zhilin Qu, Radmila Terentyeva, Dmitry A. Terentyev, Gideon Koren, Bum-Rak Choi

1238-POS **Board B367**
IQM-22110, A NEW SELECTIVE INHIBITOR OF KCHIP3 AND ITS ELECTROPHYSIOLOGICAL EFFECTS ON $K_V4.3$, $K_V4.3$/KCHIP3 AND $K_V4.3$/KCHIP2 CURRENTS. **Paula G. Socuéllamos**, Angela de Benito-Bueno, Maria Ropero, Sara Diez, Pablo Elizalde, M Angeles Bonache, Carmen Viedma, Mercedes Martín-Martínez, Marta Gutiérrez-Rodríguez, Carmen Valenzuela

1239-POS **Board B368**
SUBTYPE-SPECIFIC BLOCK OF GLIOBLASTOMA MOTILITY THROUGH DUAL INHIBITION OF WATER AND ION FLUX. **Alanah Varricchio**, Andrea J. Yool, Sunita A. Ramesh

1240-POS **Board B369**
INVESTIGATING THE IMPACT AND THE ACTION MECHANISM OF KCA3.1 BLOCKERS ON A METASTATIC MELANOMA CELL LINE. **Paolo Zuccolini**, Raffaella Barbieri, Francesca Sbrana, Cristiana Picco, Paola Gavazzo, Michael Pusch

1241-POS **Board B370**
PHOTOPHARMACOLOGICAL DISSOCIATION OF TRANSCRIPTIONAL ACTIVATION AND DEGRANULATION OF MAST CELLS. **Denis Krivic**, Bernadett Bacsa, Kathrin S. Maitz, Annarita Graziani, Julia Kargl, Klaus Groschner

1242-POS **Board B371**
AUGMENTING THE ACTIVITY OF CALCIUM-ACTIVATED POTASSIUM CHANNEL $K_{CA}3.1$ REVITALIZES T-CELL FUNCTION IN THE IMMUNOSUPPRESSIVE TUMOR MICROENVIRONMENT. **Navin K. Verma**, Brandon Han Siang Wong, Seow Theng Ong, Stephanie Shee Min Goay, Ying Swan Ho, Shuwen Chen, Xuezhi Bi, Heesung Shim, Heike Wulff, Richard D. Webster, Vishalkumar G. Shelat, K George Chandy

1243-POS **Board B372**
IDENTIFICATION OF A NEW FAMILY OF INHIBITORS OF THE HUMAN HV1 PROTON CHANNEL. Adam Feher, Eva Korpos-Pintye-Gyuri, Martina Piga, Tihomir Tomasic, Nace Zidar, Adrienn Gyongyosi, Judit Kallai, Arpad Lanyi, Ferenc Papp, Katinka Gyuris, **Zoltan Varga**

1244-POS BOARD B373
ROLE OF H_V1 CHANNEL IN CANCER IMMUNOPROTECTION AND MALIGNANCY. **Christian A. Carrillo-Soto**, Juan J. Alvear, Antonio Peña-Pichicoi, Miguel Fernandez, Emerson M. Carmona, Jose A. Garate, Carlos L. Gonzalez

1245-POS BOARD B374
PHARMACOLOGICAL MODULATION OF TREK1 CHANNEL. **Edward Francisco Mendez Otalvaro**, Wojciech Kopec, Bert L. de Groot

1246-POS BOARD B375
A NOVEL KIR-SPECIFIC KATP CHANNEL OPENER. **Ivan Gando**, Manuel Becerra-Flores, I-Shan Chen, Hua-Qian Yang, Show-Ling Shyng, Tomoe Y. Nakamura, Timothy J. Cardozo, William A. Coetzee

1247-POS BOARD B376
THALLIUM FLUX ASSAY ADAPTATION FOR MULTI-INSTRUMENT COMPATIBILITY. **Derek S. Hernandez**, C. D. Weaver

1248-POS BOARD B377
A SELECTIVITY FILTER MUTATION PROVIDES INSIGHTS INTO GATING REGULATION OF A K^+ CHANNEL. **Theres Friesacher**, Haritha P. Reddy, Harald Bernsteiner, J Carlo Combista, Boris Shalomov, Amal K. Bera, Eva-Maria Plessl, Nathan Dascal, Anna Stary-Weinzinger

1249-POS BOARD B378
ETHOSUXIMIDE IS AN ALLOSTERIC BLOCKER OF GIRK CHANNELS WITH GBΓ AND IS SUBUNIT DEPENDENT. **Boris Shalomov**, J. Carlo Combista, Haritha P. Reddy, Shoham Dabbah, Daniel Yakubovich, Nathan Dascal

1250-POS BOARD B379 TRAVEL AWARD WINNER
MONTELUKAST ACTIVATES BK CHANNELS ASSOCIATED WITH THE B4 ACCESSORY SUBUNIT AND EMERGES AS A PHARMACOLOGICAL TOOL TO REDUCE HIPPOCAMPAL EXCITABILITY. Federico Orsi, Juliana Monat, Veronica Milesi, Jesica Raingo, **Pedro Martín**

1251-POS BOARD B380
CHOLESTEROL BINDING TO BK CHANNEL-FORMING PROTEINS INVOLVES THE CENTRAL TYROSINE OF A CRAC DOMAIN LOCATED AT THE CHANNEL CORE-CYTOSOLIC TAIL INTERFACE. **Elizabeth H. Schneider**, Alexandria V. Slayden, Sydney M. Hawks, Steven C. Mysiewicz, Kelsey C. North, Alex M. Dopico, Anna N. Bukiya

Poster: Myosins (Boards B381 - B391)

1252-POS BOARD B381
MOLECULAR CHARACTERIZATION OF A NOVEL MYH7 MUTATION Q222H IN A PATIENT WITH SEVERE DILATED CARDIOMYOPATHY. **Masataka Kawana**, Rama Reddy Goluguri, Aminah Dawood, James A. Spudich, Kathleen Ruppel

1253-POS BOARD B382
CRYO-EM STRUCTURE OF THE FOLDED-BACK STATE OF HUMAN B-CARDIAC MYOSIN. Alessandro Grinzato, Daniel Auguin, Carlos Kikuti, Neha Nandwani, Dihia Moussaoui, Divya Pathak, eaazhisai Kandiah, Kathleen Ruppel, James A. Spudich, Anne M. Houdusse, **Julien Robert-Paganin**

1254-POS BOARD B383
DILATED CARDIOMYOPATHY MUTATION (E525K) IN HUMAN BETA-CARDIAC MYOSIN ENHANCES ACTIN-ACTIVATED PHOSPHATE RELEASE BUT STABILIZES THE AUTO-INHIBITED SUPER-RELAXED STATE. **Skylar M.L. Bodt**, David V. Rasicci, Rohini Desetty, Christopher M. Yengo

1255-POS BOARD B384
EXPLORING THE EFFECT OF MYOSIN MODULATORS ON THE ATP HYDROLYSIS STEP OF HUMAN CARDIAC BETA MYOSIN USING TRANSITION PATH SAMPLING. **Ananya Chakraborti**, Jil C. Tardiff, Steven D. Schwartz

1256-POS BOARD B385
CONFORMATIONAL AND ENERGETIC BASIS OF ACTOMYOSIN FORCE GENERATION. **Wen Ma**, Shengjun You, Michael Regnier, James A. McCammon

1257-POS BOARD B386
A POINT MUTATION IN SWITCH 1 ALTERS THE LOAD DEPENDENCE OF PHOSPHATE REBINDING TO ACTOMYOSIN. **Christopher Marang**, Brent Scott, James Chambers, Laura K. Gunther, Christopher M. Yengo, Edward P. Debold

1258-POS BOARD B387
MECHANISTIC INSIGHTS INTO THE REGULATION OF HUMAN MYOSIN-7A. **Alexandra Hollo**, Neil Billington, Yasuharu Takagi, Andras Kengyel, James R. Sellers, Rong Liu

1259-POS BOARD B388
SOLUTION KINETICS ANALYSIS OF VESICLE TRAFFICKING OF ZYMOGEN GRANULE. **Susheel Pangeni**, Justin Raupp, Takeshi Sakamoto

1260-POS BOARD B389
CRYO-EM STRUCTURE OF THE FLIGHT MUSCLE THICK FILAMENT FROM THE BUMBLE BEE, *BOMBUS IGNITUS* WITH NOVEL NON-MYOSIN DENSITIES REVEALED. **Jiawei Li**

1261-POS BOARD B390
SMALL MOLECULES MODULATING FORCE PRODUCTION: A NEW PERSPECTIVE AGAINST MYOSIN-ASSOCIATED DISEASES. Daniel Auguin, Dihia Moussaoui, James P. Robblee, Carlos Kikuti, Maria Elena Sirkia, Louise Canon, Julien Robert-Paganin, Kathleen M. Trybus, **Anne M. Houdusse**

1262-POS BOARD B391
MOTILE PROPERTIES OF NONMUSCLE MYOSIN 2C. **Mohammad Ashikur Rahman**, James R. Sellers

Cytoskeletal Assemblies and Dynamics (Boards B392 - B407)

1263-POS BOARD B392
ELUCIDATING THE MOLECULAR DETERMINANTS OF FORCE TRANSMISSION IN MYOSIN ENSEMBLES USING QCM-D. **Emily M. Kerivan**, Lydia Robbins, Mallory Moffett, Henry Seiler, Dana N. Reinemann

1264-POS BOARD B393
DISSECTING ACTIN-MICROTUBULE CROSSTALK WITH A NOVEL MULTIFILAMENT OPTICAL TRAPPING ASSAY. **Lyle Tobin**, Dana N. Reinemann

1265-POS BOARD B394
MICROSCALE MECHANICS OF ACTIN-VIMENTIN COMPOSITE NETWORKS. **Bekele J. Gurmessa**

1266-POS BOARD B395
CKAP5 ENABLES SEEDING OF ACTIN BUNDLES BY EXPLORATORY MICROTUBULES. **Jan Sabo**, Michaela Zdimalova, Marcus Braun, Zdenek Lansky

1267-POS BOARD B396
CLASP2 FACILITATES DYNAMIC ACTIN FILAMENT ORGANIZATION ALONG THE MICROTUBULE LATTICE. **Nicole C. Rodgers**, Elizabeth J. Lawrence, Avishkar V. Sawant, Nadia Efimova, Gabriela Gonzalez-Vasquez, Tara T. Hickman, Irina Kaverina, Marija Zanic

1268-POS BOARD B397
KINESIN DRIVEN ACTIVE CYTOSKELETAL COMPOSITE RESTRUCTURING. **Maya Hendija**, Rae Robertson-Anderson, Daisy H. Achiriloaie, Jennifer L. Ross

1269-POS **BOARD B398**
MEASUREMENTS AND SIMULATIONS OF LIGHT-ACTIVATED MATTER. **Catherine Ji**, Ana I. Duarte, Soichi Hirokawa, Victor Gomez, Heun J. Lee, Rob Phillips

1270-POS **BOARD B399**
SELF-ORGANIZATION OF THE MICROTUBULE CYTOSKELETON IN DEVELOPING AXONS. **Erin M. Craig**, Calvin Sprouse, Christopher Manry, Dominic Horne, Roy Cruz Jr., Bridie Eckel, Peter W. Baas

1271-POS **BOARD B400**
REARRANGEMENT OF GUV-CONFINED ACTIN NETWORKS IN RESPONSE TO MICROPIPETTE ASPIRATION. **Nadab Wubshet**

1272-POS **BOARD B401**
LIQUID-LIKE ASSEMBLY OF VASP CATALYZES ACTIN POLYMERIZATION AND BUNDLING. **Kristin Graham**, Aravind Chandrasekaran, Liping Wang, Aly Ladak, Eileen M. Lafer, Padmini Rangamani, Jeanne C. Stachowiak

1273-POS **BOARD B402**
SHELLS, RINGS, AND NETWORKS - DETERMINANTS OF ACTIN CONFIGURATION CONFINED WITHIN VASP DROPLETS. **Aravind Chandrasekaran**, Kristin Graham, Liping Wang, Aly Ladak, Eileen M. Lafer, Jeanne C. Stachowiak, Padmini Rangamani

1274-POS **BOARD B403**
CONTRACTILE ACTIN FLOWS DRIVE PATTERNING OF MEMBRANE COMPONENTS WITH DIFFERENTIAL ACTIN-BINDING AFFINITIES. **Abrar A. Bhat**, Amit Das, Darius V. Koester, Madan Rao, Satyajit Mayor

1275-POS **BOARD B404**
MECHANICALLY INDUCED CONFORMATIONAL TRANSITION OF SPECTRIN IN THE MAMMALIAN CELL CORTEX. **Andrea Ghisleni**, Mayte Bonilla-Quintana, Michele Crestani, Padmini Rangamani, Nils C. Gauthier

1276-POS **BOARD B405**
APICAL CONSTRICTION DURING EMBRYOGENESIS IS DRIVEN BY SELF-ASSEMBLED ACTOMYOSIN NETWORKS THAT SPONTANEOUSLY DEVELOP RADIAL POLARITY AND PULSING. **Hongkang Zhu**, Tianyi Zhu, Ben O'Shaughnessy

1277-POS **BOARD B406**
MODELING CONTRACTILITY KIT-MEDIATED CYTOSKELETAL NETWORK ASSEMBLY. **Alma I. Plaza-Rodriguez**, Ly T.S. Nguyen, Douglas N. Robinson, Pablo A. Iglesias

1278-POS **BOARD B407**
PREDICTING PHENOTYPE TO MECHANOTYPE RELATIONSHIP IN CELLS BASED ON INTRACELLULAR SIGNALING NETWORKS. **Esra Tiftik**

Cell Mechanics, Mechanosensing, and Motility I (Boards B408 - B438)

1279-POS **BOARD B408** **TRAVEL AWARD WINNER**
THE ANDROGEN RECEPTOR AS A POTENTIAL REGULATOR OF PROSTATE CANCER CONTRACTILITY. **Clayton W. Molter**, Imen Ben Aissa, Allen J. Ehrlicher

1280-POS **BOARD B409**
CHARACTERIZATION OF INTEGRIN TENSION DURING CHEMOTAXIS OF METASTATIC CANCER CELLS IN CONFINEMENT. **Byoung Choul Kim**

1281-POS **BOARD B410**
SURVIVIN REGULATES INTRACELLULAR STIFFNESS AND EXTRACELLULAR MATRIX PRODUCTION IN VASCULAR SMOOTH MUSCLE CELLS. Amanda Krajnik, Erik Nimmer, Andra Sullivan, Joseph A. Brazzo, Alanna Krug, John Kolega, Su-Jin Heo, Kwonmoo Lee, Brian R. Weil, Deok-Ho Kim, **Yongho Bae**

1282-POS **BOARD B411**
STRETCH-ACTIVATED NUCLEAR YAP LOCALIZATION IN CARDIOMYOCYTES. **Miguel Sanchez-Lozano**, Orlando Chirikian, Kerry V. Lane, Liam P. Dow, Erica A. Castillo, Beth Pruitt

1283-POS **BOARD B412** **TRAVEL AWARD WINNER**
EXAMINING CROSSTALK BETWEEN CD44 AND INTEGRINS AND ITS EFFECTS ON CELL MIGRATION AND TRACTION FORCE IN GLIOBLASTOMA. **Marcus D. Kelly**

1284-POS **BOARD B413**
PIEZO1 REGULATES LEADER CELL FORMATION AND CELLULAR COORDINATION DURING COLLECTIVE CELL MIGRATION: AN INTEGRATIVE MULTI-SCALE MODELING AND EXPERIMENTAL STUDY. **Jesse Holt**, Jinghao Chen, Elizabeth Evans, John Lowengrub, Medha M. Pathak

1285-POS **BOARD B414**
MECHANICAL REGULATION OF VINCULIN CONFORMATIONS AND INTERACTIONS. **Xuyao Liu**, Yinan Wang, Mingxi Yao, Ben Goult, Nicholas H. Brown, Jie Yan

1286-POS **BOARD B415**
STRUCTURAL CHARACTERIZATION OF MINI-PCDH15 PROTEINS FOR USHER SYNDROME TYPE 1F THERAPY. **Pedro De-la-Torre**, Joseph Brower, Yoshie Narui, Haosheng Wen, Maryna Ivanchenko, David P. Corey, Marcos Sotomayor, Artur A. Indzhykulian

1287-POS **BOARD B416**
INVESTIGATING OBSCURIN'S MODULATION THROUGH THE RHOA PATHWAY. **Quinn C. Harkrider**, Kamrin D. Shultz, Nathan T. Wright

1288-POS **BOARD B417**
LONG-TERM REAL-TIME MONITORING OF CELL MIGRATION UNDER B-AMYLOID TREATMENT. **Yuhang Xie**, Xin-Yu Shen, Kele Chen, Cheng Yang, Ru-Jia Yu, Feng Yan, Yi-Lun Ying

1289-POS **BOARD B418**
VIMENTIN INTERMEDIATE FILAMENTS ENHANCES COLLECTIVE CELL MIGRATION THROUGH 3D EXTRACELLULAR MATRIX NETWORKS. **Minh Tri Ho Thanh**, Alison Patteson

1290-POS **BOARD B419**
INVESTIGATING THE RELATIONSHIP BETWEEN CYTOTOXIC T LYMPHOCYTE MECHANICAL OUTPUT AND METABOLISM. **Yung Yu Wong**, Miguel de Jesus, Morgan Huse, Santosha Vardhana

1291-POS **BOARD B420**
SULFOLOBUS ACIDOCALDARIUS ADHESION PILI POWER TWITCHING MOTILITY IN THE ABSENCE OF A DEDICATED RETRACTION ATPASE. **Arthur Charles-Orszag**, Marleen van Wolferen, Samuel J. Lord, Sonja-Verena Albers, Dyche Mullins

1292-POS **BOARD B421**
DISRUPTING BACTERIAL CYTOSKELETAL PROTEIN INTERACTION PARTNERS MODULATES GEOMETRIC LOCALIZATION AND ALTERS CELL SHAPE. **Benjamin P. Bratton**

1293-POS **BOARD B422**
MECHANICAL STABILIZATION OF A BACTERIAL ADHESION COMPLEX. **Wenmao Huang**, Jie Yan

1294-POS **BOARD B423**
MODELING CELLULAR ADHESION. **Clemence Rausa**, Benjamin Yeoman, Gudur Ashrith Reddy, Adam J. Engler, Parag Katira

1295-POS **BOARD B424**
ACTIVATED EGFR-AVB3 INTERACTIONS DIRECTLY DRIVE INTEGRIN-MEDIATED CELL MECHANICS. **Tejeshwar C. Rao**, Monica Patel, Reena R. Beggs, Rong Ma, Khalid Salaita, Alexa L. Mattheyses

1296-POS Board B425
RTK-INTEGRIN INTERACTIONS UNIVERSALLY MODULATE AVB3 INTEGRIN-MEDIATED CELL ADHESION. Tejeshwar C. Rao, **Monica D. Patel**, Reena R. Beggs, Rong Ma, Khalid Salaita, Alexa L. Mattheyses

1297-POS Board B426 Travel Award Winner
SUBSTRATE STIFFNESS REGULATES FOCAL ADHESION KINASE ALTERNATIVE SPLICING IN BREAST CANCER. **Martial Millet**, Emilie Pic, Carole Luthold, Gaelle Bourriquen, Gabriel Khelifi, Samer Hussein, Francois Bordeleau

1298-POS Board B427
ANALYSIS OF THE MECHANICAL CHARACTERISTICS OF COLLECTIVE SKELETAL MUSCLE CELL MIGRATION UPON THE BIOCHEMICAL ENVIRONMENT OF INJURED MUSCLE. **Tae Yoon Kwon**, Hyuntae Jeong, Youngbin Cho, Jennifer H. Shin

1299-POS Board B428
ON MULTISTABILITY AND CONSTITUTIVE RELATIONS OF CELL MOTION ON FIBRONECTIN LANES. **Martin Falcke**, Behnam Amiri, Johannes Heyn, Christoph Schreiber, Joachim O. Rädler

1300-POS Board B429
COMPRESSION FORCE INDUCES TRANSIENT ACTOMYOSIN ACTIVATION AND COMPRESSION-TIME DEPENDENT STIFFENING IN CELLS. **Giulia E.M. Ammirati**, Michele Nava, Krishna Chaitanya Kasuba, Nico Strohmeyer, Jonne Helenius, Daniel Müller

1301-POS Board B430
CONTRACTILE ACTOMYOSIN CABLES AND PULLING FORCES FROM ADJACENT TISSUE COOPERATE TO DRIVE *DROSOPHILA* GERM-BAND EXTENSION. **Tianyi Zhu**, Hongkang Zhu, Ben O'Shaughnessy

1302-POS Board B431
NEUTROPHILS EXHIBIT DISTINCT MIGRATION PHENOTYPES THAT ARE MODULATED BY TRANSENDOTHELIAL MIGRATION. **Amy B. Schwartz**, Adithan Kandasamy, Yi-Ting Yeh, Juan Carlos del Alamo

1303-POS Board B432
LATERAL CONFINED GROWTH OF CELLS ACTIVATES LEF1 DEPENDENT PATHWAYS TO REGULATE CELL-STATE TRANSITIONS. **Luezhen Yuan**, Bibhas Roy, Caroline Uhler, Shivashankar G.V.

1304-POS Board B433 Travel Award Winner
THE MECHANICAL REGULATION OF EPH/EPHRIN SIGNALING IN THE DEVELOPING BRAIN. **Jana Sipkova**, Sudipta Mukherjee, Kristian Franze

1305-POS Board B434 Travel Award Winner
DO CELL MEMBRANES SUPPORT OR RESIST TENSION PROPAGATION? Henry De Belly, **Shannon Yan**, Hudson Borja da Rocha, Sacha Ichbiah, Jason P. Town, Hervé Turlier, Carlos Bustamante, Orion Weiner

1306-POS Board B435
HUNTINGTIN POLYGLUTAMINE EXPANSIONS IMPAIR THE TRANSPORT OF SIGNALLING AND DEGRADATIVE CARGOES. **Emily N.P. Prowse**, Brooke A. Turkalj, Adam G. Hendricks

1307-POS Board B436
KINESIN VESICULAR TRANSPORT THROUGH 2D AND 3D MICROTUBULE INTERSECTIONS. **Brandon M. Bensel**, Samantha B. Previs, Carol S. Bookwalter, Sam Walcott, Kathleen M. Trybus, David M. Warshaw

1308-POS Board B437
IMPACT OF CELL-SIZED CONFINEMENT ON PARTICLE TRANSPORT WITHIN A MOTOR-DRIVEN CYTOSKELETAL NETWORK. **Mehdi Shafiei Aporvari**, Ryan McGorty, Rae Robertson-Anderson

1309-POS Board B438
MODELING STUDY OF THE IMPACT OF ACTOMYOSIN CONTRACTILITY ON CELL PROLIFERATION IN THE *DROSOPHILA* WING IMAGINAL DISC. **Jennifer Rangel Ambriz**, Nilay Kumar, Kevin Tsai, Mayesha S. Mim, Weitao Chen, Jeremiah J. Zartman, Mark Alber

Modeling of Biological Systems I: Synthesis and Design (Boards B439 - B449)

1310-POS Board B439
QUANTIFYING THE INTERACTIONS OF MICELLAR DRUG DELIVERY SYSTEM COMPONENTS WITH ALBUMIN USING TIME-RESOLVED FLUORESCENT METHODS. **Iulia Carabadjac**, Leonie C. Vormittag, Thomas Muszer, Maximilian Ulbrich, Jakob Wuth, Heiko Heerklotz

1311-POS Board B440
SPECIFICITY, COOPERATIVITY, SYNERGY, AND MECHANISMS OF SPLICE-MODIFYING DRUGS. Yuma Ishigami, Mandy S. Wong, Carlos M.G. Aldaravi, Mahdi Kooshkbaghi, Andalus Ayaz, David M. McCandlish, Adrian R. Krainer, **Justin B. Kinney**

1312-POS Board B441
UNRAVELING CONTEXT-SPECIFIC MECHANISMS GOVERNING CALCIUM-YAP/TAZ DISTINCT RELATIONSHIPS THROUGH COMPUTATIONAL MODELING. **Ali Khalilimeybodi**, Stephanie I. Fraley, Padmini Rangamani

1313-POS Board B442
KINETIC MODELLING OF LIGAND TRAPPING INSIDE ACIDIC VESICLES CONTAINING ALPHA-4 BETA-2 NICOTINIC RECEPTORS AS AN EXPLANATION FOR LONG-TERM CESSATION EFFECT OF VARENICLINE (CHANTIX). **Xinyue Liang**, Philip Jordache, William Greem, Esmael J. Haddadian

1314-POS Board B443
MAXIMIZING BIOLOGICAL DISCOVERY THROUGH GLOBAL COMPUTATIONAL ANALYSES OF UNBIASED APEX BIOTINYLATION DATA ON CHEMOKINE RECEPTORS. **Alexis Lona**, Tracy Handel, Irina Kufareva

1315-POS Board B444
CONTACT MAP DEPENDENCE OF A T-CELL RECEPTOR BINDING REPERTOIRE. **Kevin Ng Chau**, Jason T. George, José N. Onuchic, Xingcheng Lin, Herbert Levine

1316-POS Board B445
REACTION-DIFFUSION MODEL OF RHO-GTPASE SIGNALING QUANTITATIVELY REPRODUCES DIFFERENT TYPES OF COMPLEX ACTIN DYNAMICS. **Siarhei Hladyshau**, Mary Kho, Shuyi Nie, Denis Tsygankov

1317-POS Board B446
EXPERIMENTAL METHODS AND MATHEMATICAL MODELING QUANTIFY AND PREDICT DUSP1 RNA EXPRESSION DYNAMICS IN RESPONSE TO DEXAMETHASONE. **Eric M. Ron**, Linda S. Forero Quintero, Luis U. Aguilera, Joshua Cook, Brian Munsky

1318-POS Board B447
Travel Award Winner
ANALYSIS OF ROBUSTNESS OF OSCILLATIONS IN MODELS OF THE MAMMALIAN CIRCADIAN CLOCK. **Xiangyu Yao**, Jing Chen, John J. Tyson, Benjamin Heidebrecht

1319-POS Board B448
THERMORESPONSIVE ARTIFICIAL CELLS. **Maivizhi Thiyagaraja**, Irep Gözen

1320-POS Board B449
BIFURCATION AND MULTISTABILITY IN THREE-GENE-DRIVEN NETWORK MODELS. **Rebecca J. Rousseau**, Rob Phillips

Imaging in Systems and Synthetic Biology (Boards B450 - B458)

1321-POS Board B450
A NOVEL LIPOSOMAL CELLULAR MODEL, COMPLEXED WITH EXTRACELLULAR MATRIX. Huong Thanh Nguyen, Sungwoo Jeong, Albertus Ivan Brilian, Tror Seangly, Keel Yong Lee, **Kwanwoo Shin**

1322-POS **Board B451**
SINGLE-MOLECULE SEQUENCING AND IMAGING OF PSEUDOURIDINE MODIFICATIONS IN THE HUMAN TRANSCRIPTOME. **Sara H. Rouhanifard**, Sepideh Tavakoli, Amr K. Makhamreh, Caroline McCormick, Xinqi Kang, Keqing Nian, Howard Gamper, Ya-Ming Hou, Meni Wanunu

1323-POS **Board B452**
CO-INFECTING PHAGES IMPEDE EACH OTHER'S ENTRY INTO THE CELL. **Thu Vu Phuc Nguyen**, Tianyou Yao, Ido Golding

1324-POS **Board B453**
SPATIALLY RESOLVED DETECTION OF SMALL MOLECULES FROM PRESS-DRIED PLANT TISSUE USING MALDI IMAGING. **Zane Long**, Jonathan V. Le, Benjamin Katz, Belen G. Lopez, Emily Tenenbaum, Bonnie Semling, Ryan Schmidt, Felix Grun, Carter T. Butts, Rachel W. Martin

1325-POS **Board B454**
LILAC: ENHANCED ACTIN IMAGING WITH AN OPTOGENETIC LIFE-ACT. **Kourtney L. Kroll**, Alexander French, Ronald S. Rock, Tobin R. Sosnick

1326-POS **Board B455**
COMPUTATIONAL CONTROL OF GENE EXPRESSION IN INDIVIDUAL YEAST USING REACTIVE MICROSCOPY. **Zachary Fox**, Steven Fletcher, Jakob Ruess, Gregory Batt

1327-POS **Board B456**
IMAGE CORRELATION SPECTROSCOPY APPROACHES TO PROBE DIFFUSION IN CELL. **Simone Civita**, Ranieri Bizzarri, Paolo Bianchini, Alberto Diaspro

1328-POS **Board B457**
Travel Award Winner
PREDICTIVE MODELING OF SIGNAL TRANSDUCTION ANCHORED BY QUANTITATIVE IMAGING. **Lynne Cherchia**, Stacey D. Finley, Scott E. Fraser

1329-POS **Board B458**
MEASURING SPATIALLY-DEPENDENT GENE EXPRESSION ACROSS FUNGAL MYCELIA BY SINGLE-MOLECULE FISH. **Demosthenes P. Morales**, Aaron Robinson, Julia Kelliher, Patrick Chain, James H. Werner

Optical Microscopy and Superresolution Imaging II (Boards B459 - B489)

1330-POS **Board B459**
WHISPERING GALLERY MODE RESONANT MICROSPHERES AS LABELS FOR BIOLOGICAL IMAGING. **Daniel E. Jacobsen**, Jenny K. Banh, Jessica Z. Kubicek-Sutherland, Kirk D. Rector, Ralph Parchment

1331-POS **Board B460**
NEAREST NEIGHBOR SPATIAL STATISTICS AS A FRAMEWORK FOR ANALYZING SPATIAL PATTERNS FROM IMAGE DATA. **Andrew M. Soltisz**, Rengasayee Veeraraghavan

1332-POS **Board B461**
SMITE (SINGLE-MOLECULE IMAGING TOOLBOX EXTRAORDINAIRE), A MATLAB PACKAGE. David Schodt, **Michael J. Wester**, Mohamadreza Fazel, Hanieh Mazloom-Farsibaf, Sandeep Pallikkuth, Sajjad A. Khan, Marjolein B.M. Meddens, Farzin Farzam, William K. Kanagy, Derek A. Rinaldi, Elton D. Jhamba, Keith A. Lidke

1333-POS **Board B462**
METHOD FOR DIRECT MEASURING ANTIBODY AFFINITY IN BIOLOGICAL SAMPLE. **Qiaoqiao Ruan**, Jeffrey M. Schaub, Patrick J. Macdonald, Sergey Y. Tetin

1334-POS **Board B463**
DIVERSE LABELLING OF CELLULAR COMPARTMENTS WITH NHS ESTERS IN EXPANSION MICROSCOPY. **Thomas M.D. Sheard**, Michael E. Spencer, Tayla Shakespeare, Rajpinder S. Seehra, Kin M. Suen, Izzy Jayasinghe

1335-POS **Board B464**
OPTICAL NANOSCOPY CHALLENGES IN THE METAVERSE ERA. THE CASE OF MULTIMODAL IMAGING OF CHROMATIN IN THE NUCLEUS. **Alberto Diaspro**, Paolo Bianchini, Lisa Cuneo, Francesca Baldini, Isotta Cainero, Chantal Usai, Simone Civita, Michele Oneto, Marco Scotto d'Abbusco, Irene Nepita, Lama Zeinab Zeaiter, Matteo Mariangeli, Sajedeh Kerdegari, Marco Castello, Simonluca Piazza

1336-POS **Board B465**
EPIFLUORESCENT SINGLE-MOLECULE COUNTING WITH STREPTAVIDIN-PHYCOERYTHRIN CONJUGATES. **Jeffrey M. Schaub**, Qiaoqiao Ruan, Sergey Y. Tetin

1337-POS **Board B466**
IDENTIFYING HETEROGENEITY IN ORGANELLE POPULATIONS USING MULTIPLEXED DNA-PAINT SUPERRESOLUTION MICROSCOPY. **Charles Bond**, Siewert Hugelier, Elena M. Sorokina, Melike Lakadamyali

1338-POS **Board B467**
QUANTIFYING PROTEIN-PROTEIN INTERACTIONS USING CONFINED PHOTOCONVERSION AND SINGLE-PARTICLE TRACKING. **Sajjad A. Khan**, David Schodt, Diane S. Lidke, Keith A. Lidke

1339-POS **Board B468**
SINGLE-MOLECULE ORIENTATION-LOCALIZATION MICROSCOPY RESOLVES HOW AMYLOIDOPHILIC DYE ORIENTATIONS ARE CORRELATED WITH AMYLOID FIBER GROWTH AND DISRUPTION. **Brian Sun**, Weiyan Zhou, Tianben Ding, Tara S. Porter, Tingting Wu, Matthew D. Lew

1340-POS **Board B469**
FAST ANALYSIS WITH MINIMAL USER INTERACTION IN FLUORESCENCE LIFETIME IMAGING. **Evangelos Sisamakis**, Fabio Barachati, Marcelle Koenig, Maria Loidolt-Krueger, Ellen Schmeyer, Matthias Patting, Marcus Sackrow, Uwe Ortmann, Felix Koberling, Rainer Erdmann

1341-POS **Board B470**
TIME SHIFTING INTERFERENCES FOR IN DEPTH TISSUE IMAGING IN SINGLE-MOLECULE LOCALIZATION MICROSCOPY. **Abigail Illand**, Pierre Jouchet, Celine Malleval, Vincent Gache, Karine Monier, Emmanuel Fort, Sandrine Lévêque-Fort

1342-POS **Board B471**
FLUORESCENCE LIFETIME IMAGING INSIGHT INTO THE EFFECTS OF TAXOL ON CELL METABOLISM. **Rozhin Penjweini**, Katie A. Link, Shureed Qazi, Dan L. Sackett, Jay R. Knutson

1343-POS **Board B472**
SINGLE-MOLECULE TRACKING WITH NONPARAMETRIC BAYESIAN ANALYSIS REVEALS THAT HISTONE MODIFICATION PROTEIN COMPLEXES FORM SPECIFICALLY AT HETEROCHROMATIN SITES. **Ziyuan Chen**

1344-POS **Board B473**
HIGH-THROUGHPUT SINGLE PARTICLE TRACKING REVEALS ESTROGEN RECEPTOR PROTEIN INTERACTION LANDSCAPE IN LIVING CELLS. David McSwiggen, Helen Liu, Hanzhe Chen, Alec Heckert, Jaclyn Ho, **Stephanie L. Johnson**, Lakshmi Akella, Eric Gonzalez, Adi Hanuka, Yan Li, Akshay Sule, Sarah Pierce, Ruensern Tan, Hilary Beck, Daniel Anderson

1345-POS **Board B474**
A FLUOROGENIC METHOD TO DIRECTLY OBSERVE TRANSFER AND DISTRIBUTION OF INFLUENZA VIRAL CONTENTS TO TARGET VESICLES. **Ahanjit Bhattacharya**, Steven G. Boxer

1346-POS **Board B475**
INTELLIGENT ADAPTABLE EXCITATION FIELD FOR UNIFORM DYE PHOTOSWITCHING IN SMLM. **Lancelot Pincet**, Valentina Caorsi, Nicolas Bourg, Sandrine Lévêque-Fort

1347-POS **BOARD B476**
CHARACTERIZING THE STRUCTURAL REARRANGEMENT OF THE BACTERIAL NUCLEOID BY DPS. **David E.H. Fuller**, Lauren A. McCarthy, Xiaofeng Dai, Julie Biteen

1348-POS **BOARD B477** **TRAVEL AWARD WINNER**
DEFECT ENGINEERING OF 2D MATERIAL FOR BIOSENSING APPLICATIONS. **Wayne Yang**, Jenny Sülzle, Yuta Shimoda, Eveline Mayner, Michal Macha, Nathan Ronceray, Suliana Manley, Aleksandra Radenovic

1349-POS **BOARD B478**
NANOSCOPY ON DRUG-ENCAPSULATING NANOSYSTEMS BY PHASOR-BASED FLUORESCENCE LIFETIME ANALYSIS. **Mario Bernardi**, Francesco Cardarelli

1350-POS **BOARD B479**
TOWARDS CLOUD-ENABLED FULLY AUTOMATED END-TO-END SINGLE-MOLECULE IMAGING. Benjamin M. Davis, **Sarah R. Needham**, Sumanth Iyer, Selene K. Roberts, Laura C. Zanetti Domingues, Marisa Martin-Fernandez, Daniel J. Rolfe

1351-POS **BOARD B480**
A MULTI-VIEW REFLECTOR MICROSCOPE VISUALIZES SIX-DIMENSIONAL SINGLE-MOLECULE TRANSLATIONAL AND ROTATIONAL DYNAMICS WITH ISOTROPIC NANOSCALE RESOLUTION. Oumeng Zhang, Zijian Guo, Yuanyuan He, Tingting Wu, Michael Vahey, **Matthew D. Lew**

1352-POS **BOARD B481**
OOPS: A GUI-BASED SOFTWARE PACKAGE FOR OBJECT-ORIENTED ANALYSIS OF FLUORESCENCE POLARIZATION MICROSCOPY DATA. **William F. Dean**, Tomasz J. Nawara, Rose M. Albert, Alexa L. Mattheyses

1353-POS **BOARD B482**
CHARACTERIZATION OF UNEXPECTED BLUE-SHIFTED SINGLE-MOLECULE FLUORESCENCE OF JF646 AND JF669 FOR SMLM. **Jacob M. Ritz**, Aset Khakimzhan, Do-Hyung Kim, Elias M. Puchner

1354-POS **BOARD B483**
QUANTUM-ENABLED GHOST IMAGING FOR NON-INVASIVE IMAGING OF PLANTS. **Duncan P. Ryan**, Kristina Meier, David Thompson, Raymond Newell, James H. Werner

1355-POS **BOARD B484**
FRACTAL PATTERNS FROM DRIED DROPLETS. A METHOD TO TEST NANOSCALE FEATURES OF NANOPARTICLES AND VESICLES. **Francisco Javier Guevara Pantoja**, Lan Jade Bernal-Sánchez, Rafael Guzman-Sepulveda, Enrique Saldivar-Guerra, Rosendo Pérez Isidoro

1356-POS **BOARD B485**
SINGLE-OBJECTIVE SELECTIVE PLANE ILLUMINATION MICROSCOPY FOR MULTI-WELL ORGANOID IMAGING. **Yanru Xu**, Aaron Au, Tiger Jian, Laurence Pelletier, Christopher M. Yip

1357-POS **BOARD B486**
SIMULTANEOUS SINGLE PARTICLE TRACKING, PHASE RETRIEVAL AND PSF RECONSTRUCTION. **Mohamadreza Fazel**, Zeliha Kilic, Oleksii Nevskyi, Soheil Mojiri, Ingo Gregor, Joerg Enderlein, Steve Pressé

1358-POS **BOARD B487**
SIMULTANEOUS FLIM, HARMONIC GENERATION AND HYPERSPECTRAL IMAGING USING A 4-CHANNEL DETECTOR. **Belén Torrado**, Alexander Vallmitjana, Alexander Dvornikov, Enrico Gratton

1359-POS **BOARD B488**
INVERSE MODELLING OF POINT SPREAD FUNCTION FOR SINGLE-MOLECULE LOCALIZATION MICROSCOPY. **Sheng Liu**, Jonas Hellgoth, Jianwei Chen, Lucas-Raphael Müller, Boris Ferdman, Keith A. Lidke, Yoav Shechtman, Rainer Heintzmann, Yiming Li, Jonas Ries

1360-POS **BOARD B489**
THREE-DIMENSIONAL SINGLE-MOLECULE SUPERRESOLUTION IMAGING OF PROTEINS INVOLVED IN PRIMARY CILIA FORMATION. **Julia F. Love**, Saxton D. Fisher, Kanie Tomoharu, Anna-Karin Gustavsson, Peter K. Jackson

Computational Methods and Machine Learning, Artificial Intelligence, and Bioinformatics II (Boards B490 - B516)

1361-POS **BOARD B490**
BICEPS REPX: FORCE FIELD VALIDATION BY A BAYESIAN/MAXIMUM ENTROPY APPROACH. **Robert Raddi**, Tim Marshall, Vincent Voelz

1362-POS **BOARD B491**
NOVEL METHODS FOR THE ACCELERATION OF PROTEIN SIMULATION. **William Rochira**, Philip C. Biggin

1363-POS **BOARD B492**
INTEGRATING SPATIAL BIOPHYSICAL SIMULATIONS ACROSS SCALES AND METHODS. **Blair Lyons**

1364-POS **BOARD B493**
COLLECTIVE VARIABLE ESTIMATION WITH SEEKR. **Ilker Deveci**, Lane Votapka, Rommie Amaro

1365-POS **BOARD B494**
CONFIDENCE FOR EXPLORATORY MACHINE LEARNING. **Peter Salamon**, David Salamon, V. Adrian Cantu, Michelle An, Tyler Perry, Robert A. Edwards, Anca M. Segall

1366-POS **BOARD B495**
ARTIFICIAL INTELLIGENCE FOR MOLECULAR MECHANISM DISCOVERY. **Hendrik Jung**, Roberto Covino, A Arjun, Christian Leitold, Peter G. Bolhuis, Christoph Dellago, Gerhard Hummer

1367-POS **BOARD B496**
SPECTRAL SIGNATURES OF EXCESS-PROTON WAITING AND TRANSFER-PATH DYNAMICS. **Florian N. Brünig**, Manuel Rammler, Ellen M. Adams, Martina Havenith, Roland R. Netz

1368-POS **BOARD B497**
COMPARISON OF CLASSICAL AND AB INITIO SIMULATIONS OF HYDRONIUM AND AQUEOUS PROTON TRANSFER. **Manuela Maurer**

1369-POS **BOARD B498**
MACHINE LEARNING GUIDED SAMPLING OF PROTEIN TRANSITION PATHWAYS. **Hyun Park**, Emad Tajkhorshid

1370-POS **BOARD B499**
EXPLORING EXPERIMENTAL STRUCTURES AND COMPUTED STRUCTURE MODELS FROM ARTIFICIAL INTELLIGENCE/MACHINE LEARNING AT RCSB PROTEIN DATA BANK (RCSB PDB, RCSB.ORG). **Joan Segura**, Jose Duarte, Sebastian Bittrich, Chunxiao Bi, Charmi Bhikadiya, Maryam Fayazi, Jeremy Henry, Igor Khokhriakov, Robert Lowe, Dennis W. Piehl, Brinda Vallat, Maria Voigt, John Westbrook, Yana Rose, Stephen K. Burley

1371-POS **BOARD B500**
A FULLY AUTOMATIZED FRAMEWORK FOR ACCURATE PHASE SPACE CHARACTERIZATION OF FLEXIBLE MOLECULES IN AQUEOUS ENVIRONMENTS. Vladimir Palivec, Ondrej Tichacek, **Hector Martinez-Seara**

1372-POS **BOARD B501**
OPRLM: ORIENTATIONS OF PROTEINS IN REALISTIC LIPID MEMBRANES. **Sang-Jun Park**, Spencer C. Todd, Irina D. Pogozheva, Andrei L. Lomize, Wonpil Im

1373-POS **BOARD B502**
TOWARDS THE DESIGN OF A CONFORMATIONAL SWITCHABLE ZINC FINGER ANALOGUE REGULATING CELLULAR BEHAVIORS. **Ziqi Wang**

1374-POS **Board B503**
SIMULATING ACTIN NETWORKS IN SYNAPTIC SPINE HEADS USING DYNAMICAL GRAPH GRAMMARS. Matthew Hur, Mayte Bonilla-Quinatana, Thomas M. Bartol, Terrence J. Sejnowski, Padmini Rangamani, **Eric Mjolsness**

1375-POS **Board B504**
THE MACHINE LEARNING PIPELINE TO UNRAVEL THE FUNCTIONAL EFFECTS OF INTERACTIONS BETWEEN SODIUM CHANNELS. **Mikhail Tarasov**, Przemysław Radwanski

1376-POS **Board B505**
APPLYING MACHINE LEARNING TO INVESTIGATE LIPID DOMAIN FORMATION BEHAVIORS IN THE PRESENCE OF AMYLOIDOGENIC PROTEINS. **Thuong L.H. Pham**, Amber Lewis, Ngoc Nguyen, Matthew Hibbs, Kwan Hon K. Cheng

1377-POS **Board B506**
ANALYZING SINGLE-MOLECULE IMAGING DATA OF F_1-ATPASE TO DETERMINE CHEMICAL STATES AND BEHAVIOR. **David Enzo S. Florendo**, Kaitlin E. Snodgrass

1378-POS **Board B507**
HOW PRECISELY CAN TRANSPORTER MECHANISMS BE DETERMINED FROM ELECTROPHYSIOLOGY DATA? A BAYESIAN INVESTIGATION. **August George**, Daniel M. Zuckerman

1379-POS **Board B508**
TOWARDS A UNIFIED PIPELINE FOR TISSUE-SCALE LOCALIZATION AND IDENTIFICATION OF INDIVIDUAL RNA MOLECULES. **Alex E. Rojewski**, Max Schweiger, Sina Jazani, Douglas P. Shepherd, Steve Pressé

1380-POS **Board B509**
COMPARISON OF THREE MATHEMATICAL MODELS FOR COVID-19 PREDICTION. Pelayo Martınez Fernandez, Zulima Fernandez-Muniz, Ana Cernea, Juan Luis Fernandez-Martınez, **Andrzej Kloczkowski**

1381-POS **Board B510**
FUNCTIONAL CONNECTOMICS AND THE MULTISCALE VIEW OF ACUTE MYOCARDIAL INFARCTION (MI). **Leighton T. Izu**, Esha Datta, Aditya Ballal, Miki R. Izu, Elizabeth Cortez-Toledo, Anna Awolope, Javier E. López

1382-POS **Board B511**
A COMPUTATION MODEL OF THE MULTI-LAYER BRAIN-TUMOR-BLOOD BARRIER STRUCTURE UNDER MECHANICAL LOAD. **Xian Wang**, Xin Chen, Savo Bajic, Yu Sun, Xi Huang

1383-POS **Board B512**
DEEP LEARNING-BASED PHENOTYPING OF BREAST CANCER CELLS USING LENS-FREE DIGITAL IN-LINE HOLOGRAPHY. Tzu-Hsi Song, Mengzhi Cao, Jouha Min, Hyungsoon Im, Hakho Lee, **Kwonmoo Lee**

1384-POS **Board B513**
BIOMARKERS OF CHROMOSOME 17 AND THEIR ASSOCIATION WITH ACUTE LYMPHOCYTIC LEUKEMIA. **Peiqi Qin**

1385-POS **Board B514**
SIX SINGLE NUCLEOTIDE POLYMORPHISMS FOUND ON TWO DIFFERENT CHROMOSOMES ARE COMMON ACROSS SEVEN DISTINCT CANCER TYPES. **Bowen Jiang**, Roberto Aguilar

1386-POS **Board B515**
IN SILICO ANALYSIS OF A LUNG CANCER VACCINE. **Danyan Li**

1387-POS **Board B516**
IMPACT OF BIOSCIENCE DAOS ON RESEARCH AND INNOVATION. Sarah Hamburg, Kasian Franks, **Sarah L. Rouse**

EPR and NMR: Spectroscopy and Imaging (Boards B517 - B523)

1388-POS **Board B517** **Travel Award Winner**
STRUCTURE OF FUNGAL CELL WALLS AND REMODELING BY ANTIFUNGAL DRUGS ELUCIDATED USING SOLID-STATE NMR. **Liyanage Devthilini P. Fernando**, Malitha C. Dickwella Widanage, Andrew S. Lipton, Nancy Washton, Frederic Mentik-Vigier, Jean-Paul Latge, Wang Tuo

1389-POS **Board B518**
CATARACTS AND COPPER: A SPECTROSCOPIC PERSPECTIVE OF COPPER-INDUCED AGGREGATION OF BETAB2-CRYSTALLIN. **Martin E. Tovar**, Nils Schuth, Thomas Kroll, Gloria Saab-Rincon, Kirsten Lampi, Liliana Quintanar

1390-POS **Board B519**
THE MECHANISM OF USING NMR FOR CANCER DETECTION. **Donald C. Chang**

1391-POS **Board B520**
NEW APPROACHES TO TRACK CHEMOENZYMATIC LOADING REACTIONS OF NRPS CARRIER PROTEIN DOMAINS USING NMR. **Kenneth A. Marincin**, Yousang Hwang, Everett S. Kengmana, David J. Meyers, Dominique P. Frueh

1392-POS **Board B521**
PROBING P(T/S)XP PEPTIDES FOR NOVEL STRUCTURAL INTERACTIONS WITH TSG101 UEV. **David Nyenhuis**, Nico Tjandra

1393-POS **Board B522**
LIGHT TRIGGERED FUNCTIONAL DYNAMICS OF ASLOV2 BY TIME-RESOLVED EPR AT HIGH MAGNETIC FIELDS. **Shiny Maity**, Brad D. Price, C.Blake Wilson, Arnab Mukherjee, Matthieu M. Starck, David Parker, Maxwell Z. Wilson, Janet E. Lovett, Songi Han, Mark S. Sherwin

1394-POS **Board B523**
A STRUCTURAL INSIGHT INTO THE PPIX DEGRADATION ACTIVITY OF THE TRANSLOCATOR MEMBRANE PROTEIN TSPO. **Pei-Shan Yeh**, Yun-Wei Chiang

Biosensors I (Boards B524 - B539)

1395-POS **Board B524**
ULTRA-LOW CONCENTRATION DETECTION OF DNA WITHOUT ITS AMPLIFICATION USING A BIOLOGICAL NANOPORE. **Nanami Takeuchi**, Ryuji Kawano

1396-POS **Board B525**
PROBING VOLTAGE-DEPENDENT STABILITY OF NUCLEOSOMES USING GLASS NANOPORES. **Sumanth K. Maheshwaram**, Divya Shet, Serene R. David, Mahesh B. Lakshminarayana, Gautam V. Soni

1397-POS **Board B526**
DIRECT AND HIGH-THROUGHPUT DETECTION OF DNA METHYLATION AND DEMETHYLATION INTERMEDIATES USING BIOLOGICAL NANOPORE. **Ping Liu**

1398-POS **Board B527**
THE ROLE OF THE CONSTRICTION IN DEFINING THE MOLECULAR SENSING TRAP OF AEROLYSIN-BASED PORES. Tobias Ensslen, **Jan C. Behrends**

1399-POS **Board B528**
DIRECT IDENTIFICATION OF AMINO ACID-DERIVED HORMONES WITH SINGLE-ATOM RESOLUTION USING AN ENGINEERED AEROLYSIN NANOPORE. Jie Jiang, **Junge Li**, Yan Gao, Meng-Yin Li, Yi-Tao Long

1400-POS Board B529
OUR HEALTH IN OUR HANDS: SURFACE DECORATED METASURFACES FOR SENSING EXHALED BREATH MARKERS & SOLID-STATE NANOPORES TOWARDS COMPLEX SAMPLE SENSING. Shridhar Manjunath, **Buddini I. Karawdeniya**, Shankar Dutt, Alishba John, Krishnan Murugappan, Nuwan Bandara, Aarti Gautam, Anne Bruestle, Antonio Tricoli, Patrick Kluth, Dragomir Neshev

1401-POS Board B530
SENSING OF PROTEIN AND DNA COMPLEXES USING SOLID-STATE NANOPORES. **Saumey Jain**, Madeleine Birgersson, Javier Kipen, Joakim Jaldén, Göran Stemme, Frank Niklaus, Shyamprasad N. Raja, Cecilia Williams, Anna Herland

1402-POS Board B531
FINGERPRINTING FULL-LENGTH PROTEINS THROUGH SINGLE-FILE TRANSLOCATIONS. **Luning Yu**, Xinqi Kang, Fanjun Li, Behzad Mehrafrooz, Amr K. Makhamreh, Ali Fallahi, Joshua C. Foster, Aleksei Aksimentiev, Min Chen, Meni Wanunu

1403-POS Board B532
ADVANCEMENTS IN THE PERFORMANCE OF NANOPORE SENSING AND ITS IMPLICATIONS TOWARDS THE IDENTIFICATION OF BIOMARKERS. **Nuwan Bandara**, Buddini I. Karawdeniya, Shankar Dutt, Tianshi Zhou, Nahid Afrin, Parisa Moazzam, Antonio Tricoli, Patrick Kluth

1404-POS Board B533
EXPLORING THE WATER OSMOSIS WITHIN PHYSICAL AND CHEMICAL CONTROLLED CONFINEMENT FOR PROTEIN SENSING. **Yan Gao**, Jie Jiang, Meng-Yin Li, Yi-Tao Long

1405-POS Board B534
BREAKING SENSITIVITY LIMITS OF QCM-D: AN INTEGRATED NANO-HONEYCOMB SENSOR FOR CHARACTERIZATION MOLECULAR INTERACTIONS WITH LIPID BILAYERS. **Sultan Ahmed**, Antonin Marek, Jacqueline Krim, Alex I. Smirnov

1406-POS Board B535
MESSENGER-RNA MODIFICATION STANDARDS AND MACHINE LEARNING MODELS FACILITATE ABSOLUTE SITE-SPECIFIC QUANTIFICATION OF URIDINE MODIFICATIONS. **Amr K. Makhamreh**, Sepideh Tavakoli, Howard Gamper, Mohammad Nabizadehmashhadtoroghi, Ali Fallahi, Caroline McCormick, Ya-Ming Hou, Sara H. Rouhanifard, Meni Wanunu

1407-POS Board B536
IMMOBILIZATION AND ENHANCEMENT OF A HETERODIMERIC FLUORESCENT BIOSENSOR IN FIBROUS PROTEIN BIOMATERIALS VIA GENE FUSION. **Sarah E. Bondos**

1408-POS Board B537
ELECTROCHEMICAL CLASSIFICATION AND QUANTIFICATION OF BIOLOGICS USING CYCLIC VOLTAMMETRY AND MACHINE LEARNING. **Kayla Chun**, William Bentley

1409-POS Board B538
LIGAND-INDUCED CHROMOPHORE MATURATION AS A MECHANISM FOR DETECTING INTRACELLULAR PROTEINS. **Harsimranjit Sekhon**

1410-POS Board B539
A GENETICALLY ENCODED BRET-BASED SARS-COV-2 MAIN PROTEASE ACTIVITY SENSOR. **Anupriya M. Geethakumari**, Wesam S. Ahmed, Saad Rasool, Asma Fatima, S.M. Nasir Uddin, Mustapha Aouida, Kabir H. Biswas

Biomaterials (Boards B540 - B553)

1411-POS Board B540
CIRCADIAN CLOCK PROTEINS DRIVE STRUCTURAL OSCILLATIONS IN COLLOIDAL FLUIDS. **Gregor Leech**, Michelle W. Chiu, Maya Nugent, Lauren Melcher, Jennifer L. Ross, Moumita Das, Michael J. Rust, Rae Robertson-Anderson

1412-POS Board B541
PREDICTING THE INTERACTION OF NANOPARTICLES WITH PROTEINS USING LAB AUTOMATION AND MACHINE LEARNING. **Karsten M. Poulsen**, Christine K. Payne

1413-POS Board B542
PEPTIDE FUNCTIONALIZED NANOCARRIERS FOR TARGETED DRUG DELIVERY IN CANCER THERAPY. **Palanikumar Loganathan**, Mazin Magzoub

1414-POS Board B543
DYNAMIC CONCATENATION OF RING DNA LEADS TO NON-EQUILIBRIUM VISCOELASTICITY TUNED BY DNA SIZE AND CONCENTRATION. **Philip Neill**, Juexin Marfai, Cindy Sumair, Ryan McGorty, Rae Robertson-Anderson

1415-POS Board B544
VISCOELASTICITY OF EXTRACELLULAR MATRIX REGULATE SENESCENCE TO CANCER PHENOTYPE. **Sanjay K. Kureel**, Michael P. Sheetz

1416-POS Board B545
CELL RESPONSE TO SUBSTRATE ENERGY DISSIPATION OUTWEIGHS RIGIDITY SENSING. **Jorge Alegre-Cebollada**, Carla Huerta-Lopez, Alejandro Clemente-Manteca, Diana Velazquez-Carreras, Francisco M. Espinosa, Pablo Saez, Alvaro Martinez-del-Pozo, Maria Garcia-Garcia, Sara Martin-Colomo, Ricardo Garcia, Pere Roca-Cusachs, Alberto Elosegui-Artola, Miguel A. del Pozo, Elías Herrero-Galán, Gustavo R. Plaza

1417-POS Board B546
BIOPHYSICAL AND MOLECULAR CHARACTERIZATION OF THE IMMOBILIZATION OF BIOMIMETIC PEPTIDE-POLYMER CONJUGATES AS BUILDING BLOCKS FOR ANTIMICROBIAL CATHETER SURFACES TO PREVENT INFECTIOUS DISEASES. **Valerie Ortiz Gómez**, Adriana Gómez, Rafael Maldonado-Hernández, Eduardo Nicolau

1418-POS Board B547
THE FRAGILITY OF VITRIFIED GLASSES CORRELATES WITH THEIR PROTECTIVE CAPACITY DURING DESICCATION. **John F. Ramirez**, Navamoney Arulsamy, Thomas C. Boothby

1419-POS Board B548
COACERVATION AND ADHESION MECHANISM OF PEI/TA HYDROGEL REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Tianjie Li**

1420-POS Board B549
CELL-CELL ADHESION CONTROL IN MULTICELLULAR ASSEMBLIES UNDER THE INFLUENCE OF EXTERNAL FLUID FLOW. **Alex Hamby**, Ingmar H. Riedel-Kruse

1421-POS Board B550
HELICAL PIPES MAY ACT AS HYDRODYNAMIC "DIODES": ANOMALOUS FLUID FLOW INSPIRED BY SHARK INTESTINES. **Ido Levin**, Naroa Sadaba, Alshakim Nelson, Sarah L. Keller

1422-POS Board B551 Travel Award Winner
NOVEL, HIGH-THROUGHPUT COLLAGEN-BASED BIOPRINTING FOR TISSUE ENGINEERING. Xiangyu Gong, Zhang Wen, **Sein Lee**, Michael Mak

1423-POS Board B552
EFFECT OF GAMMA IRRADIATION ON HPC PHASE SEPARATION. Donatella Bulone, Clelia Dispenza, Lorena A. Ditta, **Daniela Giacomazza**, Mats Jonsson, Maria Antonietta Sabatino, Romano Lapasin, Pier L. San Biagio

1424-POS Board B553
UNDERSTANDING THE STRUCTURAL AND CONDUCTIVE PROPERTIES OF GLYONIC LIQUIDS WITH COMPUTATIONAL METHODS. **Bai Hei**

Tuesday, February 21, 2023

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 BC**
8:00 AM-9:00 AM	**Biophysical Society Business Meeting**	**Room 2**
8:00 AM-4:00 PM	**Poster Viewing**	**Exhibit Hall BC**
8:15 AM-10:15 AM	**Symposium: Cytoskeletal Cross Talk** **Chair** *Marileen Dogterom, Delft University of Technology, The Netherlands* REGULATION OF ACTIN AND MICROTUBULES BY TDP-43 AND PROFILIN. *Jessica L. Henty-Ridilla* F-ACTIN ARCHITECTURES DIFFERENTIALLY CONSTRAIN MYOSIN THICK FILAMENT MOTION. *Michael Murrell* ELUCIDATING MECHANISMS OF CYTOSKELETAL ENSEMBLE SYNERGY USING OPTICAL TWEEZERS. *Dana Nicole Reinemann* RECONSTITUTING ACTIN-MICROTUBULE CROSSTALK. *Marileen Dogterom*	**Room 6A**
8:15 AM-10:15 AM	**Symposium: Ion Channels on Drugs** **Chair** *Vera Moiseenkova-Bell, University of Pennsylvania, USA* POTASSIUM CHANNEL OPENERS TARGETING DIFFERENT SITES OF THE CHANNEL. *Fredrik Elinder* A NANOBODY TOOLKIT FOR THE REGULATION OF K2P CHANNEL FUNCTION. *Stephen J. Tucker* NICOTINIC ACETYLCHOLINE RECEPTOR STRUCTURAL PHARMACOLOGY AND GATING TRANSITIONS. *Ryan Hibbs* STRUCTURAL PHARMACOLOGY OF TRPV CHANNELS. *Vera Moiseenkova-Bell*	**Room 6B**
8:15 AM-10:15 AM	**Platform: Condensates: Physical Properties and Modeling II**	**Room 6C**
8:15 AM-10:15 AM	**Platform: Biophysics Education**	**Room 6D**
8:15 AM-10:15 AM	**Platform: Membrane Protein Dynamics II**	**Room 6E**
8:15 AM-10:15 AM	**Platform: Modeling of Biological Systems**	**Room 6F**
8:15 AM-10:15 AM	**Platform: Mitochondria, Endoplasmic Reticulum and Bioenergetics**	**Room 5AB**
8:15 AM-10:15 AM	**Platform: Single-Molecule Spectroscopy**	**Room 11AB**
9:00 AM-11:00 AM	**Subgroup Chairs Meeting**	**Room 17B**
9:30 AM-10:30 AM	**Career Development Center Workshop: Demystifying the Academic Job Search II: Preparing your Written Application Materials**	**Room 16B**
9:30 AM-11:00 AM	**Exhibitor Presentation: Bruker** **Single-Molecule Localization Microscopy for Advanced Biological and Genomic Imaging in Three Dimensions: The Bruker Vutara VXL**	**Room 9**
10:00 AM-4:00 PM	**Exhibits**	**Exhibit Hall BC**
10:15 AM-11:00 AM	**Meet the Editors, *Biophysical Reports***	**Lobby BC/Publications Booth**
10:15 AM-11:00 AM	**Coffee Break**	**Exhibit Hall BC**
10:45 AM-12:45 PM	**Symposium: Viral Recognition, Entry, and Egress** **Chair** *James Munro, University of Massachusetts, USA* HERPESVIRUSES DEFORM MEMBRANE DURING CAPSID NUCLEAR EXPORT BY LIPID ORDERING AND PROTEIN SCAFFOLDING. *Ekaterina Heldwein* DISSECTING HOST/PATHOGEN INTERACTIONS IN THE GASTROINTESTINAL EPITHELIUM. *Megan L. Stanifer* STRUCTURE, FUNCTION AND DYNAMICS OF ALPHAVIRUS CAPPING PORES. *Juan Reguera* CONFORMATIONAL DYNAMICS OF VIRAL FUSION PROTEINS AT SINGLE-MOLECULE RESOLUTION. *James B. Munro*	**Room 6A**

10:45 AM-12:45 PM	**Symposium: Proton Coupled Transport in Organelles** **Chair** *Simon Newstead, University of Oxford, United Kingdom* LIPID MODULATION YIELDS INSIGHTS INTO CLC-7 GATING MECHANISMS. *Joseph Mindell* ENDOSOMES AS A SIGNALING HUB: THE ROLE OF NHE TRANSPORTERS. *Rajini Rao* MITOCHONDRIAL UNCOUPLERS INDUCE PROTON LEAK BY ACTIVATING AAC AND UCP1. *Ambre Bertholet* STRUCTURAL BASIS FOR PROTON COUPLED CYSTINE TRANSPORT BY CYSTINOSIN. *Simon Newstead*	**Room 6B**
10:45 AM-12:45 PM	**Symposium: Best of *Biophysical Journal*: From Single Molecules to Systems** **Chair** *Vasanthi Jayaraman, University of Texas Health Science Center at Houston, USA* DISTRIBUTION OF CHOLESTEROL IN ASYMMETRIC MEMBRANES DRIVEN BY COMPOSITION AND DIFFERENTIAL STRESS. *Markus Deserno* DECIPHERING THE MOLECULAR ORGANIZATION OF GET PATHWAY CHAPERONES THROUGH NATIVE MASS SPECTROMETRY. *Kallol Gupta* AN OPEN STATE OF A VOLTAGE-GATED SODIUM CHANNEL INVOLVING A Π-HELIX AND CONSERVED PORE-FACING ASPARAGINE. *Rebecca J. Howard* EFFECTS OF CLOT CONTRACTION ON CLOT DEGRADATION: A MATHEMATICAL AND EXPERIMENTAL APPROACH. *Valerie Tutwiler* RAPID EXTRACTION AND KINETIC ANALYSIS OF PROTEIN COMPLEXES FROM SINGLE CELLS. *Daniel J. Dickinson* PRECISION IN ITERATIVE MODULATION ENHANCED SINGLE-MOLECULE LOCALIZATION MICROSCOPY. Paper of the Year - Early Career Investigator *Carlas S. Smith*	**Room 6C**
10:45 AM-12:45 PM	**Platform: Chromatin and the Nucleoid**	**Room 6D**
10:45 AM-12:45 PM	**Platform: Protein Structure and Conformation III**	**Room 6E**
10:45 AM-12:45 PM	**Platform: Voltage-Gated Na and Ca Channels**	**Room 6F**
10:45 AM-12:45 PM	**Platform: Protein Structure, Prediction, and Design**	**Room 5AB**
10:45 AM-12:45 PM	**Platform: Intrinsically Disordered Proteins II**	**Room 11AB**
11:30 AM-12:30 PM	**Career Development Center Workshop: How and When to Say Yes or No to Opportunities**	**Room 16B**
11:30 AM-1:00 PM	**Exhibitor Presentation: Sophion Bioscience A/S** **Electrophysiological Characterization of Cardiac Myocytes Using Sophion Bioscience's Automated Patch Clamp Systems and the Intracellular Side of Axxam Electrophysiology**	**Room 9**
12:00 PM-1:30 PM	**Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions**	**Room 7AB**
1:00 PM-2:30 PM	**Careers in Industry: A Q&A Panel**	**Room 8**
1:00 PM-3:00 PM	***The Biophysicist* Editorial Board Meeting**	**Room 14A**
1:30 PM-3:00 PM	**Exhibitor Presentation: Delmic** **Streamline the Cryo-ET Workflow and Get More Useful Biological Insights with Delmic's METEOR and CERES Systems**	**Room 9**
1:45 PM-3:00 PM	**Meet the Editors, *Biophysical Journal***	**Lobby BC/Publications Booth**
1:45 PM-3:00 PM	**Snack Break**	**Exhibit Hall BC**
1:45 PM-3:45 PM	**Poster Presentations and Late Posters**	**Exhibit Hall BC**
2:00 PM-3:00 PM	**Overview of NIGMS/NIH Funding Programs Available to Biophysical Society Investigators**	**Room 6E**
2:30 PM-3:30 PM	**Career Development Center Workshop: The Strategic Postdoc: How to Find and Leverage Your Postdoc Experience**	**Room 16B**
3:00 PM-5:00 PM	**Education Committee Meeting**	**Room 14B**
3:30 PM-5:30 PM	***Biophysical Reports* Editorial Board Meeting**	**Room 14A**
4:00 PM-6:00 PM	**Symposium: Amyloid Structure, Dynamics, and Proteostasis** **Chair** *Elizabeth Rhoades, University of Pennsylvania, USA* STRUCTURE-BASED DISCOVERY OF SMALL MOLECULES THAT DISAGGREGATE AMYLOID FIBRILS FROM POST-MORTEM ALZHEIMER'S AND PARKINSON'S BRAINS STRUCTURE-BASED DISCOVERY OF SMALL MOLECULES THAT DISAGGREGATE AMYLOID FIBRILS FROM POST-MORTEM ALZHEIMER'S AND PARKINSON'S BRAINS. *David S. Eisenberg* EARLY STAGES AND FINAL RESULTS OF AMYLOID-BETA SELF-ASSEMBLY. *Robert Tycko* LYSOSOMAL EXOCYTOSIS RELEASES PATHOGENIC α-SYNUCLEIN SPECIES FROM NEURONS. *Manu Sharma* STRUCTURAL BASIS OF α-SYNUCLEIN UPTAKE BY NEURONS. *Elizabeth Rhoades*	**Room 6A**

4:00 PM-6:00 PM	**Symposium: Allosteric Modulation of GPCRs** **Chair** *Madan Babu, St. Jude Children's Research Hospital, USA, Chair* NOVEL PARADIGMS OF GPCR ACTIVATION. *Celine Valant* REVEALING STRUCTURAL MECHANISMS OF ALLOSTERIC MODULATION TO ENABLE THE DESIGN OF SAFE, EFFECTIVE GPCR-TARGETED DRUGS. *Ron O. Dror* THE 'HUNGER GAMES' - STRUCTURAL STUDIES OF THE MC4 RECEPTOR REVEAL MECHANISM FOR SATIETY. *Moran Shalev-Benami* DATA SCIENCE APPROACHES TO GPCR SIGNALING SYSTEMS. *Madan Babu*	**Room 6B**
4:00 PM-6:00 PM	**Platform: Spectroscopy and Imaging**	**Room 6C**
4:00 PM-6:00 PM	**Platform: Ribosomes and Translation**	**Room 6D**
4:00 PM-6:00 PM	**Platform: Enzyme Function, Cofactors, and Post-Translational Modifications**	**Room 6E**
4:00 PM-6:00 PM	**Platform: TRP Channels**	**Room 6F**
4:00 PM-6:00 PM	**Platform: Membrane Structure and Fusion**	**Room 5AB**
4:00 PM-6:00 PM	**Platform: Cell Mechanics, Mechanosensing, and Motility**	**Room 11AB**
6:00 PM-6:30 PM	**Dinner Meet-Ups**	**Lobby BC/Society Booth**
6:00 PM-10:00 PM	**Publications Committee Meeting**	**Hilton, Indigo 202**
7:30 PM-9:30 PM	**Workshop: Computational Modeling of Binding Thermodynamics** **Chair** *Carol Post, Purdue University, USA* PROTEIN-LIGAND BINDING WITH MARTINI 3. *Siewert Marrink* BINDING FREE ENERGIES FROM THE POLARIZABLE AMOEBA FORCE FIELD. *Jay Ponder* PREDICTING PROTEIN-MEMBRANE INTERFACES USING MOLECULAR SIMULATIONS AND ENSEMBLE MACHINE LEARNING. *Zoe Cournia* ADVANCING DRUG DISCOVERY WITH ACCURATE AND RELIABLE PROTEIN-LIGAND BINDING FREE ENERGY CALCULATIONS. *Lingle Wang* COMPUTATION OF CONFORMATIONAL TRANSITIONS AND ACTIVATION OF SRC TYROSINE KINASE. *Carol Post*	**Room 6C**
7:30 PM-9:30 PM	**Workshop: Developments in Nanopore Biosensors** **Chair** *Giovanni Maglia, University of Groningen, The Netherlands* PROBING PROTEIN STRUCTURAL DYNAMICS AT THE SINGLE-MOLECULE LEVEL BY NANOPORE TWEEZERS. *Min Chen* ULTRA-PRECISE SINGLE-MOLECULE NANOPORE TOOL TO WATCH ENZYMES AT WORK. *Jens H. Gundlach* NANOPORES AS VERSATILE SINGLE-MOLECULE TOOLS -FROM DNA TURBINES TO PROTEIN SEQUENCING. *Cees Dekker* NEW PORES, NEW TRICKS. *Giovanni Maglia*	**Room 6D**
7:30 PM-9:30 PM	**Workshop: Vibrational Tools for Biomolecular and Cellular Studies** **Chair** *Nien-Hui Ge, University of California, Irvine, USA* STIMULATED RAMAN SCATTERING MICROSCOPY: THE NEXT FRONTIER OF OPTICAL IMAGING. *Wei Min* CHARACTERIZING PROTEIN CONFORMATIONAL ENSEMBLES AND DYNAMICS WITH 2D IR SPECTROSCOPY. *Andrei Tokmakoff* REACTIONS ON THE LIPID MEMBRANE INTERFACE PROBED BY NONLINEAR VIBRATIONAL SUM FREQUENCY GENERATION SPECTROSCOPY. *Shen Ye* BIOLOGICAL IMAGING WITH HYPERSPECTRAL VIBRATIONALLY RESONANT SUM-FREQUENCY GENERATION MICROSCOPY. *Nien-Hui Ge*	**Room 6E**
7:30 PM-9:30 PM	**Workshop: High Throughput Single Molecule Spectroscopy** **Chair** *Joseph Puglisi, Stanford University, USA* OPTIMIZING SINGLE-MOLECULE EXPERIMENTAL APPROACHES FOR THE STUDY OF COMPLEX PROTEIN ASSEMBLIES ON DNA. *Nynke H. Dekker* SINGLE MOLECULE MANIPULATION AND IMAGING OF COMPLEX DNA-PROTEIN INTERACTIONS. *Gijs Wuite* RNA STRUCTURE DIRECTS THE TARGETING SPECIFICITY OF CAS13D. *Ilya Finkelstein* SINGLE-MOLECULE INVESTIGATION OF LIGAND-ACTIVATION MECHANISMS FOR MEMBRANE PROTEINS IN CELL-DERIVED NANOVESICLES. *Marcel P. Goldschen-Ohm* ANIMATING BIOLOGICAL MECHANISM. *Joseph Puglisi*	**Room 6F**
8:00 PM-10:00 PM	**SOBLA (The Society for Latinoamerican Biophysicists) Meeting**	**Room 8**

Tuesday, February 21

Registration/Information

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

Biophysical Society Business Meeting

8:00 AM - 9:00 AM, ROOM 2

Poster Viewing

8:00 AM - 4:00 PM, EXHIBIT HALL BC

Symposium
Cytoskeletal Cross Talk

8:15 AM - 10:15 AM, ROOM 6A

Chair
Marileen Dogterom, Delft University of Technology, The Netherlands

1425-SYMP 8:15 AM
REGULATION OF ACTIN AND MICROTUBULES BY TDP-43 AND PROFILIN. **Jessica L. Henty-Ridilla**

1426-SYMP 8:45 AM
F-ACTIN ARCHITECTURES DIFFERENTIALLY CONSTRAIN MYOSIN THICK FILAMENT MOTION. Camelia Muresan, Zachary Sun, Vikrant Yadav, Alan Tabatabai, Laura Lanier, June Kim, Tae Yoon Kim, **Michael Murrell**

1427-SYMP 9:15 AM
ELUCIDATING MECHANISMS OF CYTOSKELETAL ENSEMBLE SYNERGY USING OPTICAL TWEEZERS. **Dana Nicole Reinemann**

1428-SYMP 9:45 AM
RECONSTITUTING ACTIN-MICROTUBULE CROSSTALK. **Marileen Dogterom**

Symposium
Ion Channels on Drugs

8:15 AM - 10:15 AM, ROOM 6B

Chair
Vera Moiseenkova-Bell, University of Pennsylvania, USA

1429-SYMP 8:15 AM
POTASSIUM CHANNEL OPENERS TARGETING DIFFERENT SITES OF THE CHANNEL. **Fredrik Elinder**

1430-SYMP 8:45 AM
A NANOBODY TOOLKIT FOR THE REGULATION OF K2P CHANNEL FUNCTION. **Stephen J. Tucker**

1431-SYMP 9:15 AM
NICOTINIC ACETYLCHOLINE RECEPTOR STRUCTURAL PHARMACOLOGY AND GATING TRANSITIONS. **Ryan Hibbs**

1432-SYMP 9:45 AM
STRUCTURAL PHARMACOLOGY OF TRPV CHANNELS. **Vera Moiseenkova-Bell**

Platform
Condensates: Physical Properties and Modeling II

8:15 AM - 10:15 AM, ROOM 6C

Co-Chairs
Joshua Riback, Baylor College of Medicine, USA
Tingting Wu, Washington University in St. Louis, USA

1433-PLAT 8:15 AM
OLIGOMERIZATION AND SEQUENCE PATTERNING CAN TUNE MULTIPHASIC CONDENSATE MISCIBILITY. **Ushnish Rana**, Ke Xu, Amal Narayanan, Mackenzie T. Walls, Jose L. Avalos, Athanassios Z. Panagiotopoulos, Clifford P. Brangwynne

1434-PLAT 8:30 AM
RNA STRUCTURE CONTROLS COMPOSITION AND NETWORK DYNAMICS OF CONDENSATES. **Ian Seim**, Austin J. Graham, Arnold Mathijssen, Amy S. Gladfelter

1435-PLAT 8:45 AM
ELUCIDATING THE LIQUID STRUCTURE WITHIN BIOMOLECULAR CONDENSATES. **Christina M. Dollinger**, Archish Anand, Joshua A. Riback

1436-PLAT 9:00 AM TRAVEL AWARD WINNER
PHYSICAL DETERMINANTS OF MULTIPHASE ORGANISATION IN MULTICOMPONENT PROTEIN/RNA CONDENSATES. **Pin Yu Chew**, Jerelle A. Joseph, Rosana Collepardo-Guevara, Aleks Reinhardt

1437-PLAT 9:15 AM TRAVEL AWARD WINNER
MAPPING INHOMOGENEOUS NETWORK STRUCTURES WITHIN BIOMOLECULAR CONDENSATE USING SINGLE-MOLECULE IMAGING AND TRACKING OF FLUOROGENIC PROBES. **Tingting Wu**, Matthew R. King, Mina Farag, Rohit V. Pappu, Matthew D. Lew

1438-PLAT 9:30 AM
A STICKERS-AND-SPACERS FRAMEWORK EXPLAINS THE VISCOELASTIC AND AGING PROPERTIES OF BIOMOLECULAR CONDENSATES. **Wade M. Borcherds**, Ibraheem Alshareedah, Anurag Singh, Tapojyoti Das, Anne Bremer, Priya R. Banerjee, Rohit V. Pappu, Tanja Mittag

1439-PLAT 9:45 AM
STRUCTURE AND DYNAMICS OF RNA IN BIOMOLECULAR CONDENSATE. **Hung T. Nguyen**, D. Thirumalai

1440-PLAT 10:00 AM
TOWARDS A MECHANISTIC DESCRIPTION OF POPZ SELF-ASSEMBLY FROM MONOMERS TO MICRON-SIZED CONDENSATES. **Daniel Scholl**, Asma Khan, Ishan Taneja, Ashok Deniz, Keren Lasker

Platform
Biophysics Education

8:15 AM - 10:15 AM, ROOM 6D

Co-Chairs
Constance Jeffery, University of Illinois Chicago, USA
Julia Koeppe, State University New York Oswego, USA

1441-PLAT 8:15 AM
CENTRALIZED FACILITIES IMPROVE BIOMEDICAL RESEARCHERS' ACCESS TO CRYOEM TECHNOLOGY. **Edward T. Eng**, Christina M. Zimanyi, Elina Kopylov, Cathleen Castello, Charlie Dubbeldam

1442-PLAT 8:30 AM
DEEP-LEARNING APPLICATIONS IN THE AUTOMATED IMAGE ANALYSIS OF GIANT UNILAMELLAR VESICLES. **Il-Hyung Lee**, Weitian Wang

1443-Plat 8:45 AM
TEACHING MOLECULAR INTERACTIONS AND COUPLING IN BINDING REACTIONS. **Paulo F. Almeida**, Koby Higgs, Elizabeth Shingleton, Antje Pokorny

1444-Plat 9:00 AM
LEARNING BIOLOGICAL PHYSICS VIA MODELING AND SIMULATION: A COURSE FOR SCIENCE AND BIOENGINEERING UNDERGRADUATES. **Philip C. Nelson**

1445-Plat 9:15 AM
THE BASIL CURE: USING STRUCTURE TO PREDICT FUNCTION IN PROTEIN BIOCHEMISTRY. **Julia R. Koeppe**, Rebecca Roberts, Bonnie L. Hall, Paul A. Craig

1446-Plat 9:30 AM
MSFP: UNDERGRADUATE 'COLLABORATE FROM HOME' RESEARCH IN MACROMOLECULAR STRUCTURE AND FUNCTION. **Constance Jeffery**

1447-Plat 9:45 AM
ASSESSMENTS AS RESEARCH EDUCATION TOOLS IN AN UNDERGRADUATE CELL BIOLOGY COURSE. **Rita E. Sirrieh**

1448-Plat 10:00 AM Travel Award Winner
IMPLEMENTATION OF SPECIFICATIONS GRADING IN AN UPPER-DIVISION CHEMICAL BIOLOGY COURSE. **Jessica I. Kelz**, Jose L. Uribe, Mahtab Rasekh, Renée D. Link, Kate J. McKnelly, Rachel W. Martin

Platform
Membrane Protein Dynamics II

8:15 AM - 10:15 AM, Room 6E

Co-Chairs
Katie Kuo, Georgia Institute of Technology, USA
Themis Lazaridis, The City College of New York, USA

1449-Plat 8:15 AM
INVESTIGATION OF G-PROTEIN SPECIFICITY AND BIASED AGONISM AT THE BETA-2 ADRENERGIC RECEPTOR (B2AR). **Marina Casiraghi**

1450-Plat 8:30 AM
PROTEIN-PROTEIN INTERACTIONS AT THE TIGHT JUNCTIONS INTERFACE. **Shikha Nangia**, Nandhini Rajagopal

1451-Plat 8:45 AM
POST-TRANSLATIONAL MODIFICATIONS OPTIMIZE THE ABILITY OF SARS-COV-2 SPIKE FOR EFFECTIVE INTERACTION WITH HOST CELL RECEPTORS. **Tianle Chen**, Karan Kapoor, Emad Tajkhorshid

1452-Plat 9:00 AM
MOLECULAR ORIGINS OF ASYMMETRIC PROTON CONDUCTION IN THE INFLUENZA M2 CHANNEL. **Themis Lazaridis**

1453-Plat 9:15 AM
FROM CLOSED TO OPEN: ADDRESSING THE ROLE OF THE EFFLUX PUMP ACRAB-TOLC IN ANTIBIOTIC RESISTANCE. **Katie M. Kuo**, Helen I. Zgurskaya, James C. Gumbart

1454-Plat 9:30 AM
MECHANISM OF MULTIMODAL SUBSTRATE TRANSLOCATION IN P-GLYCOPROTEIN. Theresa Gewering, Deepali Waghray, Kristian Parey, **Dovile Januliene**, Ina Urbatsch, Arne Moeller, Qinghai Zhang

1455-Plat 9:45 AM
INHIBITORY EFFECTS OF ANTIBODY CROSSLINKING ON INFLUENZA VIRUS ASSEMBLY AND RELEASE. **Yuanyuan He**, Sofie Subiaur, Michael Vahey

1456-Plat 10:00 AM
MOLECULAR CHARACTERISATION OF THE TRANSGLYCOSYLASES INVOLVED IN LIPOPOLYSACCHARIDE MATURATION AND PEPTIDOGLYCAN BIOGENESIS. **Phillip J. Stansfeld**, Jonathan D. Colburn, Owen N. Vickery, Rie Nygaard, Khuram U. Ashraf, Meagan L. Belcher Dufrisne, Jonathan Dworkin, Linda M. Columbus, Stephen Trent, David I. Roper, Filippo Mancia

Platform
Modeling of Biological Systems

8:15 AM - 10:15 AM, Room 6F

Co-Chairs
Ximena Garcia Arceo, University of California, San Diego, USA
Fabian Spill, University of Birmingham, United Kingdom

1457-Plat 8:15 AM
DYNAMICAL SYSTEMS THEORY ANALYSES REVEAL CELL CYCLE-COUPLED PATHS OF EPITHELIAL-TO-MESENCHYMAL TRANSITION. Sophia Hu, Ke Ni, yong lu, Yaxuan Yang, Weikang Wang, Dante Poe, Yang Zhang, Yuanyuan Chen, Kazuhide Watanabe, **Jianhua Xing**

1458-Plat 8:30 AM
TRANSLATION KINETICS AND DIFFUSIVE TIMESCALES REGULATE MITOCHONDRIAL LOCALIZATION OF MRNAS IN YEAST AND MAMMALIAN CELLS. **Ximena Garcia Arceo**, Elena F. Koslover, Brian M. Zid, Aidan Brown

1459-Plat 8:45 AM
HIGH-SPEED IMAGING OF GIANT UNILAMELLAR VESICLE PRODUCTION IN CDICE. **Lori Van de Cauter**, Yash Jawale, Daniel Tam, Lucia Baldauf, Gijsje H. Koenderink, Marileen Dogterom, Kristina A. Ganzinger

1460-Plat 9:00 AM
4D DYNAMICAL WHOLE-CELL SIMULATIONS OF A GROWING MINIMAL CELL. **Zane R. Thornburg**, Benjamin R. Gilbert, David Bianchi, Troy A. Brier, Jiwoong Kwon, Taekjip Ha, Clyde A. Hutchison III, John I. Glass, Zaida Luthey-Schulten

1461-Plat 9:15 AM
UTILIZING MICRO-CT IMAGING TO DEFINE COLLAGEN MODELING IN MURINE AORTA. **Tanvi Subramanian**, Kathleen Cao, Kameel Khabaz, Junsung Kim, Willa Li, Vandana Sampathkumar, Narayanan Kasthuri, Pavel Shevchenko, Luka Pocivavsek

1462-Plat 9:30 AM
EFFECT OF PHYSICAL AND GEOMETRICAL STIMULI ON MICROVASCULAR DYNAMICS. Pradeep Keshavanarayana, Yousef Javanmardi, Emad Moeendarbary, **Fabian Spill**

1463-Plat 9:45 AM
VAST HETEROGENEITY IN CYTOPLASMIC DIFFUSION RATES REVEALED BY NANORHEOLOGY AND DOPPELGÄNGER SIMULATIONS. Rikki M. Garner, **Arthur T. Molines**, Julie Theriot, Fred Chang

1464-Plat 10:00 AM
TOWARDS CELLULAR DIGITAL TWINS OF IN VIVO TUMORS. **Eric Behle**, Julian M. Herold, Alexander H. Schug

Platform
Mitochondria, Endoplasmic Reticulum and Bioenergetics

8:15 AM - 10:15 AM, ROOM 5AB

Co-Chairs
Nelli Mnatsakanyan, Penn State University, USA
Ildikò Szabò, University of Padova, Italy

1465-PLAT 8:15 AM
LIVING ON HYDRAZINE: METABOLIC PROTEIN COMPLEXES FROM AN ANAEROBIC AMMONIUM OXIDIZER. Lea Dietrich, Tadeo Moreno Chicano, Naomi M. Almeida, Mohd Akram, Mike Jetten, Laura van Niftrik, Andreas Dietl, Boran Kartal, Thomas R.M. Barends, **Kristian Parey**

1466-PLAT 8:30 AM TRAVEL AWARD WINNER
DISORDERED REGIONS OF RESPIRATORY SUPERCOMPLEXES OFFER NEW PATHWAYS FOR SUBSTRATE CHANNELING IN CROWDED MEMBRANES. **Chun Kit Chan**, Jonathan T. Nguyen, Chitrak Gupta, Alberto Perez, Eugenia Mileykovskaya, Emad Tajkhorshid, Abhishek Singharoy

1467-PLAT 8:45 AM
ATP SYNTHASE C-SUBUNIT LEAK CHANNEL AS A NOVEL THERAPEUTIC TARGET. Amrendra Kumar, Daniel Morris, Yangyu Wu, Emma Amjad, Han-A Park, **Nelli Mnatsakanyan**

1468-PLAT 9:00 AM
A NOVEL THERAPEUTIC STRATEGY AGAINST MITOCHONDRIAL RESPIRATORY CHAIN DYSFUNCTION-LINKED DISEASES. Daniele Bonesso, Andrea Mattarei, Roberta Peruzzo, Marta Favero, Andrea Rossa, Massimo Zeviani, Carlo Viscomi, **Ildikò Szabò**

1469-PLAT 9:15 AM
CAUSES AND CONSEQUENCES OF SUCCINATE ACCUMULATION DURING CARDIAC ISCHEMIA. **Nicole L. Collins**, Françoise Van den Bergh, Daniel A. Beard

1470-PLAT 9:30 AM
4D MITOCHONDRIAL BIOPHYSICAL PARAMETERS PREDICT CELL TYPE IN HUMAN ORGANOID TISSUE. **Gillian McMahon**, McKenna Rude, Challana Tea, Zichen Wang, Parth Natekar, Hiroyuki Hakozaki, Johannes Schöneberg

1471-PLAT 9:45 AM
CRYOEM OF OPA1 HELICAL STRUCTURES GIVES PERSPECTIVE TO MITOCHONDRIAL DYSFUNCTION. **Sarah B. Nyenhuis**, Xufeng S. Wu, Abigail Stanton, Marie-Paule Strub, Yang-In Yim, Bertram J. Canagarajah, Jenny E. Hinshaw

1472-PLAT 10:00 AM
WANDERING THE INTRACELLULAR MAZE. **Zubenelgenubi C. Scott**, Laura M. Westrate, Elena F. Koslover

Platform
Single-Molecule Spectroscopy

8:15 AM - 10:15 AM, ROOM 11AB

Co-Chairs
William Carpenter, Stanford University, USA
Mark Wallace, King's College London, United Kingdom

1473-PLAT 8:15 AM
FLUORESCENT PROTEINS FOR FLUCTUATION SPECTROSCOPY *IN VIVO*. **Falk Schneider**, Le A. Trinh, Scott E. Fraser

1474-PLAT 8:30 AM
TOWARDS A NEW MODULAR POLYPROTEIN SYSTEM COMPATIBLE WITH SINGLE-MOLECULE FORCE SPECTROSCOPY BY ATOMIC FORCE MICROSCOPY AND MAGNETIC TWEEZERS. **Diana Velázquez-Carreras**, Manuel Gavilan-Herrera, Ines Martinez-Martin, Carmen Suay-Corredera, Andra C. Dumitru, Elías Herrero Galán, Jorge Alegre-Cebollada

1475-PLAT 8:45 AM
THE FACTORS THAT DETERMINE THE FORCE NEEDED TO UNFOLD A MEMBRANE PROTEIN *IN SILICO* DEPEND ON THE PULLING DIRECTION. **Nabil F. Faruk**, Xiangda Peng, Tobin R. Sosnick

1476-PLAT 9:00 AM
RATIOMETRIC SENSING OF REDOX ENVIRONMENTS INSIDE INDIVIDUAL CARBOXYSOMES TRAPPED IN SOLUTION. **William B. Carpenter**, Abhijit A. Lavania, Julia B. Turnšek, Davis Perez, Luke M. Oltrogge, Peter D. Dahlberg, David F. Savage, William E. Moerner

1477-PLAT 9:15 AM
REACTMIN: REACTIVE SCANNING BASED SINGLE PARTICLE TRACKING USING A MINIMUM OF LIGHT. Nicholas A. Vickers, **Sean B. Andersson**

1478-PLAT 9:30 AM
UNPICKING DNA TRANSLOCATION IN NANOPORES WITH SIMULTANEOUS SINGLE-MOLECULE FLUORESCENCE AND OPTICAL SINGLE CHANNEL RECORDING. Daisy Rogers-Simmonds, Steven Vanuytsel, **Mark I. Wallace**

1479-PLAT 9:45 AM
ENABLING MULTIPERSPECTIVE SINGLE-MOLECULE FRET. **Roman Kiselev**, Arnab Modak, Daniel Terry, Alessandro Borgia, Roger Altman, Scott C. Blanchard

1480-PLAT 10:00 AM
HIGH THROUGHPUT SINGLE-MOLECULE TECHNOLOGY. **Sung Hyun Kim**, Ivo Severins, Frank Brandenburg, Carolien Bastiaanssen, Chirlmin Joo

Subgroup Chairs Meeting

9:00 AM - 11:00 AM, ROOM 17B

Career Development Center Workshop
Demystifying the Academic Job Search II: Preparing your Written Application Materials

9:30 AM - 10:30 AM, ROOM 16B

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.

Exhibitor Presentation
Bruker

9:30 AM - 11:00 AM, ROOM 9

Single-Molecule Localization Microscopy for Advanced Biological and Genomic Imaging in Three Dimensions: The Bruker Vutara VXL
Most sub-cellular structures are smaller than 300 nm, beyond the optical resolution limit for fluorescence microscopy. The single-molecule localization microscope (SMLM) Bruker Vutara VXL overcomes this limitation. With an optical resolution of 20 nm, SMLM is uniquely qualified to address biological mysteries that require specific labeling as used in fluorescence microscopy but higher resolution than can be achieved with diffraction-limited microscopy. In addition to SMLM, the Vutara VXL implements imaging workflows for multiplexed chromatin tracing and smFISH applications. The system images, resolves, and quantifies cellular structures, molecular machines, proteins, RNA, and chromosomal structures.

SMLM modulates the emission from dye molecules to prevent their point-spread-function (PSF) spatial overlap. Advanced fitting algorithms localize the position of each dye molecule with a resolution well below the optical resolution limit. The proprietary bi-plane technology of the Bruker Vutara VXL extends the traditional 2D fitting into the third dimen-

sion, far away from the coverslip. In STORM and PALM, a laser switches dye molecules actively on and off. Special imaging buffers create a similar blinking spontaneously in dSTORM. DNA-PAINT relies on oligonucleotides' transient binding, and genomic applications use sparse labeling and multiplexing.

In this presentation, we will discuss how the Bruker Vutara VXL compact bench-top system brings the power of SMLM into your lab.

Speaker
Winfried Wiegraebe, Product Manager Superresolution Microscopy, Bruker

Exhibits

10:00 AM - 4:00 PM, EXHIBIT HALL BC

Meet the Editors, *Biophysical Reports*

10:15 AM - 11:00 AM, LOBBY BC/PUBLICATIONS BOOTH

Take this opportunity to meet editors of the Society's newest journal, *Biophysical Reports*. Editors will be available to talk about the journal and answer questions about where you should submit your work, what will help to get your work published, and what you can expect when you submit. Editor-in-Chief Jörg Enderlein and other editors will be present at the Biophysical Society booth.

Coffee Break

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

Symposium
Viral Recognition, Entry, and Egress

10:45 AM - 12:45 PM, ROOM 6A

Chair
James Munro, University of Massachusetts, USA

1481-SYMP **10:45 AM**
HERPESVIRUSES DEFORM MEMBRANE DURING CAPSID NUCLEAR EXPORT BY LIPID ORDERING AND PROTEIN SCAFFOLDING. **Ekaterina Heldwein**

1482-SYMP **11:15 AM**
DISSECTING HOST/PATHOGEN INTERACTIONS IN THE GASTROINTESTINAL EPITHELIUM. **Megan L. Stanifer**

1483-SYMP **11:45 AM**
STRUCTURE, FUNCTION AND DYNAMICS OF ALPHAVIRUS CAPPING PORES. Rhian Jones, Michael Hons, Nadia Rabah, Noelia Zamarreno Fernandez, Rocio Arranz Avila, **Juan Reguera**

1484-SYMP **12:15 PM**
CONFORMATIONAL DYNAMICS OF VIRAL FUSION PROTEINS AT SINGLE-MOLECULE RESOLUTION. Natasha D. Durham, Aastha Jain, **James B. Munro**

Symposium
Proton Coupled Transport in Organelles

10:45 AM - 12:45 PM, ROOM 6B

Chair
Simon Newstead, University of Oxford, United Kingdom

No Abstract **10:45 AM**
LIPID MODULATION YIELDS INSIGHTS INTO CLC-7 GATING MECHANISMS. **Joseph Mindell**

No Abstract **11:15 AM**
ENDOSOMES AS A SIGNALING HUB: THE ROLE OF NHE TRANSPORTERS. **Rajini Rao**

1485-SYMP **11:45 AM**
MITOCHONDRIAL UNCOUPLERS INDUCE PROTON LEAK BY ACTIVATING AAC AND UCP1. **Ambre Bertholet**, Andrew Natale, Paola Bisignano, Junji Suzuki, Andriy Fedorenko, James Hamilton, Tatiana Brustovetsky, Lawrence Kazak, Edward T. Chouchani, Nickolay Brustovetsky, Michael Grabe, Yuriy V. Kirichok

1486-SYMP **12:15 PM**
STRUCTURAL BASIS FOR PROTON COUPLED CYSTINE TRANSPORT BY CYSTINOSIN. **Simon Newstead**

Symposium
Best of *Biophysical Journal*: From Single Molecules to Systems

10:45 AM - 12:45 PM, ROOM 6C

Chair
Vasanthi Jayaraman, University of Texas Health Science Center at Houston, USA

No Abstract **10:45 AM**
DISTRIBUTION OF CHOLESTEROL IN ASYMMETRIC MEMBRANES DRIVEN BY COMPOSITION AND DIFFERENTIAL STRESS. **Markus Deserno**

No Abstract **11:15 AM**
DECIPHERING THE MOLECULAR ORGANIZATION OF GET PATHWAY CHAPERONES THROUGH NATIVE MASS SPECTROMETRY. **Kallol Gupta**

No Abstract **11:25 AM**
AN OPEN STATE OF A VOLTAGE-GATED SODIUM CHANNEL INVOLVING A Π-HELIX AND CONSERVED PORE-FACING ASPARAGINE. **Rebecca J. Howard**

No Abstract **11:45 AM**
EFFECTS OF CLOT CONTRACTION ON CLOT DEGRADATION: A MATHEMATICAL AND EXPERIMENTAL APPROACH. **Valerie Tutwiler**

No Abstract **12:05PM**
RAPID EXTRACTION AND KINETIC ANALYSIS OF PROTEIN COMPLEXES FROM SINGLE CELLS. **Daniel J. Dickinson**

No Abstract **12:25PM**
Paper of the Year-Early Career Investigator Award
PRECISION IN ITERATIVE MODULATION ENHANCED SINGLE-MOLECULE LOCALIZATION MICROSCOPY. **Carlas S. Smith**

Platform
Chromatin and the Nucleoid

10:45 AM - 12:45 PM, ROOM 6D

Co-Chairs
Alberto Marin-Gonzalez, Johns Hopkins University, USA
Lauren McCarthy, University of Michigan, USA

1487-PLAT **10:45 AM**
HIGH-CONTENT IMAGE-BASED CRISPR SCREENING REVEALS REGULATORS OF 3D GENOME ARCHITECTURES. Bing Yang, Mengwei Hu, Tyler Jensen, Jonathan Radda, Yubao Cheng, Shengyan Jin, **Siyuan Wang**

1488-PLAT **11:00 AM**
THE CHROMATIN REMODELER ISWI REGULATES CHROMATIN MOBILITY IN AN ATP-DEPENDENT MANNER. Petra Vizjak, Dieter Kamp, **Johannes Stigler**, Felix Mueller-Planitz

1489-PLAT **11:15 AM**
POLYMER MODEL PREDICTS HISTORY DEPENDENT EPIGENETIC AND LAMIN-ASSOCIATED DOMAIN SIZES. **Vinayak Vinayak**, Ramin Basir, Lucas Sant'Anna, Vivek B. Shenoy

1490-PLAT **11:30 AM** **TRAVEL AWARD WINNER**
MULTIPLEXING CAS9 ACTIVITY WITH MULTI-TARGET CRISPR. **Alberto Marin-Gonzalez**, Roger Zou, Yang Liu, Leo Shen, Rachel Dveirin, Jay Luo, Reza Kalhor, Taekjip Ha

1491-Plat 11:45 AM
ISOLATING THE EFFECT OF NUCLEOSOME MODIFICATION DRIVEN PHASE SEPARATION ON CHROMATIN ORGANIZATION. **Advait Athreya**, Shuming Liu, Sangwoo Park, Taekjip Ha, Bin Zhang

1492-Plat 12:00 PM
INVESTIGATING HUMAN CHROMOSOME ORGANIZATION BY WHOLE-GENOME SIMULATIONS. **Matheus F. Mello**, Esteban Dodero-Rojas, Antonio B. Oliveira Jr, Vinicius Contessoto, José N. Onuchic

1493-Plat 12:15 PM
INVESTIGATING THE BIOPHYSICAL MECHANISMS REGULATING TRANSCRIPTION IN STARVED *ESCHERICHIA COLI VIA* SINGLE-MOLECULE TRACKING. **Lauren A. McCarthy**, David E.H. Fuller, Xiaofeng Dai, Vyom Grover, Lindsey E. Way, Xindan Wang, Julie Biteen

1494-Plat 12:30 PM
CORRELATIVE VISIBLE LIGHT AND SOFT X-RAY TOMOGRAPHY OF *IN-SITU* MESOSCALE HETEROCHROMATIN ORGANIZATION. **Rajshikhar Gupta**, Luezhen Yuan, Yagyik Goswami, Bibhas Roy, Eva Pereiro, G.V. Shivashankar

Platform
Protein Structure and Conformation III

10:45 AM - 12:45 PM, Room 6E

Co-Chairs
Maximilian Carl Zinke, Institut Pasteur Paris, France
Zhicheng Cui, University of California, Berkeley, USA

1495-Plat 10:45 AM
INSIGHTS INTO THE MECHANISM OF THE BACTERIAL, PERIPLASM-SPANNING TRANSPORTER SYSTEM 'TON'. **Maximilian Carl Zinke**, Maylis Lejeune, Benjamin Bardiaux, Michael Nilges, Nadia Izadi Pruneyre

1496-Plat 11:00 AM
SECONDARY STRUCTURE AND STABILITY OF A GEL-FORMING TARDIGRADE DESICCATION-TOLERANCE PROTEIN. **Jonathan E. Eicher**, Julia A. Noonan Brom, Shikun Wang, Sergei Sheiko, Joanna Atkin, Gary J. Pielak

1497-Plat 11:15 AM
ALTERNATE CONFORMATIONAL STATES OF THE HIV-1 CAPSID PROTEIN: ATOMISTIC STRUCTURES AND DYNAMICS OF INTERCONVERSION. **Darian T. Yang**, Angela M. Gronenborn, Lillian T. Chong

1498-Plat 11:30 AM
NOVEL INSIGHTS INTO THE STRUCTURE AND FUNCTION OF DENGUE VIRUS NS1 PROTEIN. **Jack M. Copping**, Peter J. Bond, Jane Allsion

1499-Plat 11:45 AM Travel Award Winner
STRUCTURAL BASIS FOR MTORC1-DEPENDENT REGULATION OF THE LYSOSOMAL AND AUTOPHAGIC TRANSCRIPTION FACTOR EB. **Zhicheng Cui**, James H. Hurley

1500-Plat 12:00 PM
THE ATPASE CYCLE OF THE AAA-ATPASE PROTEIN TRANSPORTER BCS1 IS HIGHLY CONCERTED. **Yangang Pan**, Jingyu Zhan, Di Xia, Simon Scheuring

1501-Plat 12:15 PM
PROTEIN PROTIC AND APROTIC INTERACTIONS SYSTEMATICALLY MAPPED VIA IR SPECTROSCOPY AND POLARIZABLE MOLECULAR DYNAMICS. **Jacob M. Kirsh**, Jacek Kozuch, Jared B. Weaver, Steven G. Boxer

1502-Plat 12:30 PM
MARCUS-LIKE TRANSLOCATION KINETICS OF A KNOTTED PROTEIN. **Prabhat Tripathi**, Behzad Mehrafrooz, Aleksei Aksimentiev, Sophie E. Jackson, Meni Wanunu

Platform
Voltage-Gated Na and Ca Channels

10:45 AM - 12:45 PM, Room 6F

Co-Chairs
Ivy Dick, University of Maryland, USA
Antonios Pantazis, Linköping University, Sweden

1503-Plat 10:45 AM
COMPUTATIONAL DESIGN OF PEPTIDES TO TARGET $NA_V1.7$ CHANNEL WITH HIGH POTENCY AND SELECTIVITY FOR THE TREATMENT OF PAIN. **Phuong T. Nguyen**, Hai M. Nguyen, Karen M. Wagner, Robert Stewart, Vikrant Singh, Parashar Thapa, Anh Tuan Ton, Richard P. Kondo, Andre Ghetti, Michael W. Pennington, Bruce Hammock, Theanne N. Griffith, Jon T. Sack, Heike Wulff, Vladimir Yarov-Yarovoy

1504-Plat 11:00 AM
A LEAKY INACTIVATED STATE IN NAV1.4 CREATED BY MUTATING HYDROPHOBIC RESIDUES IN DIII, DIV S6 SEGMENTS. **Yichen Liu**, Francisco Bezanilla

1505-Plat 11:15 AM
SELECTIVITY THROUGH ION MODULATED CHANGES IN PKA VALUES. Ada Y. Chen, Bernard R. Brooks, **Ana Damjanovic**

1506-Plat 11:30 AM Travel Award Winner
NANOSCALE REMODELING OF SODIUM CHANNELS IN THE CARDIAC TRANSVERSE TUBULES CONTRIBUTES TO ABERRANT CALCIUM RELEASE IN A *SCN1A*HAPLOINSUFFICIENT MOUSE. **David R. King**, Mustafa Demirtas, Mikhail Tarasov, Xiaolei Meng, Heather Struckman, Dennison Min, Drew M. Nassal, Thomas J. Hund, Rengasayee Veeraraghavan, Przemyslaw Radwanski

1507-Plat 11:45 AM Travel Award Winner
INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES ENABLE THE DEVELOPMENT OF NEW THERAPEUTIC STRATEGIES FOR THE TREATMENT OF LQT8. **Daiana C.O. Vieira**, Josiah O. Owoyemi, Deborah DiSilvestre, Schuyler Brown, Ivy E. Dick

1508-Plat 12:00 PM
FACEPALM: PROBING DYNAMIC S-PALMITOYLATION OF CAV CHANNEL COMPLEXES USING ENGINEERED DEPALMITOYLASES. **Srinidhi Jayaraman**, Thy-Lan Alacay, Pedro J. del Rivero Morfin, Audrey Lauris Kochiss, Manu Ben-Johny

1509-Plat 12:15 PM
GBΓ INDUCES RELUCTANT VSD-I ACTIVATION IN $CA_V2.2$ (N-TYPE) VOLTAGE-GATED CALCIUM CHANNELS. **Michelle Nilsson**, Kaiqian Wang, Teresa Minguez Vinas, Stina Berglund, Antonios Pantazis

1510-Plat 12:30 PM
THE COUPLING BETWEEN CALCIUM CHANNEL ACTIVITY/CALCIUM OSCILLATION AND NEURITOGENESIS IN CORTICAL NEURONS. **Jinli Geng**, Xiaodong Liu

Platform
Protein Structure, Prediction, and Design

10:45 AM - 12:45 PM, Room 5AB

Co-Chairs
Peter Freddolino, University of Michigan, USA
Xinru Wang, University of Washington, USA

1511-Plat 10:45 AM
COMPUTATIONAL MUTATION PREDICTION TO ENHANCE OR RECOVER ENZYMATIC ACTIVITY. **Gerardo A. Cisneros**

1512-Plat 11:00 AM
DEEP-LEARNING GENERATIVE MODELS ENABLE DESIGN OF SYNTHETIC ORTHOLOGS OF A SIGNALING PROTEIN. **Xinran Lian**, Niksa Praljak, Andrew L. Ferguson, Rama Ranganathan

1513-PLAT 11:15 AM
DESIGN OF CONCATENATED ION CHANNELS USING ALPHAFOLD2: A NEW ERA? **Zheng Chen**, Kristen K. Skarratt, Stephen Fuller, Kam Wa Lam, Thomas Balle

1514-PLAT 11:30 AM
HIGH THROUGHPUT STRUCTURE-GUIDED FUNCTIONAL ANNOTATION OF MICROBIAL PROTEOMES. **Peter L. Freddolino**, Eric Bell, Jacob Schwartz, Manasa Yadavalli, Catherine Barnier

1515-PLAT 11:45 AM
DE NOVO DESIGN OF BMP MIMICS. **Xinru Wang**, Jordi M. Guillem, David Lee, Andrew Hinck, Roman Beth, David Baker

1516-PLAT 12:00 PM
STABILIZED SARS-COV-2 SPIKE S2 IMMUNOGENS DESIGNED USING INSIGHTS FROM ENHANCED SAMPLING MOLECULAR DYNAMICS SIMULATIONS. **Xandra Nuqui**, Lorenzo Casalino, Mohamed Shehata, Anupam A. Ojha, Fiona L. Kearns, Mia Rosenfeld, Jason S. McLellan, Rommie E. Amaro

1517-PLAT 12:15 PM
AB INITIO PREDICTION AND CHARACTERIZATION OF MEMBRANE BINDING OF HIV-1 BROADLY NEUTRALIZING ANTIBODIES BY MULTI-SCALE SIMULATIONS. **Colleen Maillie**, Jay Golden, Andrew Ward, Marco Mravic

1518-PLAT 12:30 PM
USING TURNOVER DYNAMICS TO REDESIGN KARI FOR IMPROVED CATALYTIC ACTIVITY. **Elijah Karvelis**, Bruce Tidor

Platform
Intrinsically Disordered Proteins II

10:45 AM - 12:45 PM, ROOM 11AB

Co-Chairs
Anthony Fitzpatrick, Columbia University, USA
Dinesh Sundaravadivelu Devarajan, Texas A&M University, USA

1519-PLAT 10:45 AM
Travel Award Winner
PHOTO-INDUCED ELECTRON TRANSFER BETWEEN TRYPTOPHAN AND CYSTEINE: PH DEPENDENCE. **Crystal F. Ottoway**, Lillian Otteson, Gerdenis Kodis, Sara M. Vaiana

1520-PLAT 11:00 AM
DYNAMICS AND RHEOLOGY OF POLYAMPHOLYTE CONDENSATES. **Dinesh Sundaravadivelu Devarajan**, Youngchan Kim, Jeetain Mittal

1521-PLAT 11:15 AM
DYNAMIC INTERACTIONS BETWEEN ALPHA-SYNUCLEIN AND CURVED MEMBRANE SURFACES. **David H. Johnson**, Wade F. Zeno

1522-PLAT 11:30 AM TRAVEL AWARD WINNER
CRYO-EM STRUCTURES OF THE D290V VARIANT OF THE HNRNPA2 LOW COMPLEXITY DOMAIN REVEAL THE MECHANISM OF ITS PATHOGENICITY. **Jiahui Lu**

1523-PLAT 11:45 AM
STABILIZATION OF SMALL AB OLIGOMERS IN SDS MICELLES. **Fidha Nazreen Kunnath Muhammedkutty**, Ramesh Prasad, Yuan Gao, Alicia S. Robang, Jens O. Watzlawik, Terrone Rosenberry, Anant K. Paravastu, Huan-Xiang Zhou

1524-PLAT 12:00 PM TRAVEL AWARD WINNER
CHAIN LENGTH AND AMINO ACID COMPOSITION DEPENDENCE OF COIL-GLOBULE TRANSITION IN INTRINSICALLY DISORDERED PROTEINS. **Lipika Baidya**, Kurt Kremer, Govardhan Reddy Patluri

1525-PLAT 12:15 PM
HOMOTYPIC FIBRILLIZATION OF TMEM106B ACROSS DIVERSE NEURODEGENERATIVE DISEASES. **Anthony W. Fitzpatrick**

1526-PLAT 12:30 PM
PERTURBING THE CONFORMATION OF DIABETES-ASSOCIATED OLIGOMERS USING MOLECULAR FOLDAMERS. **Bryan A. Bogin**, Zachary A. Levine

Career Development Center Workshop
How and When to Say Yes or No to Opportunities

11:30 AM - 12:30 PM, ROOM 16B

We are often faced with multiple opportunities- should we pursue this job, that fellowship, or this collab? But how do you decide what opportunities to go for? And how do you figure out when you should say no, not now, or never ever? In this session, you will learn a process to decide when and how to say yes or no to opportunities and we will discuss how to leverage every opportunity, including the opportunity to say yes or no, into something of value for you and your team, project, and community.

Exhibitor Presentation
Sophion Bioscience A/S

11:30 AM - 1:00 PM, ROOM 9

Electrophysiological Characterization of Cardiac Myocytes Using Sophion Bioscience's Automated Patch Clamp Systems and the Intracellular Side of Axxam Electrophysiology
Successful ion channel drug discovery requires the integration of multiple technologies and workflows. Sophion Bioscience is a leader in automated patch clamp technology, providing low, medium and high throughput patch clamp systems to the drug discovery industry and academia. The QPatch and Qube are fully automated patch clamp systems, executing simultaneous 16, 48 or 384 parallel patch clamp recordings in conjunction with computer controlled liquid handling and on-board cell handling. The QPatch Compact is a manual patch clamp system that can execute individual or simultaneous 8 patch clamp recordings. Sophion provides customers with robust, ion channel and electrophysiological workflows for drug development of ion channel targets.

During this workshop, industry speakers will provide insight into the use of these systems in the drug discovery process. Dr Daniel Sauter will present automated patch clamp data to show the electrophysiological characterization of cardiac myocytes using automated patch clamp on Sophion Bioscience systems. Dr Manuel Paina will present data on the use of Sophion to research intracellular ion channel targets.

Speakers
Daniel Sauter, Scientific Sales Manager, Sophion Bioscience A/S
Manuel Paina, Organellar Electrophysiology Supervisor, Axxam S.p.A

Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions

12:00 PM - 1:30 PM, ROOM 7AB

Get guidance on founding, establishing, and maintaining a research laboratory at Primarily Undergraduate Institutions. Panelists are faculty members at PUI's who have been successful in their positions and will share their experiences and answer your questions.

Careers in Industry: A Q&A Panel

1:00 PM - 2:30 PM, ROOM 8

Join us for a Q&A discussion about scientific careers in industry. Industry panelists will answer audience questions and share their career experiences. Hear from professionals in different roles and positions and get tangible advice for identifying and pursuing a career in industry.

Chair
Erin Dueber, Genentech, CA, USA

Speakers
Speakers to be announced.

The Biophysicist Editorial Board Meeting

1:00 PM - 3:00 PM, ROOM 14A

Exhibitor Presentation Delmic

1:30 PM - 3:00 PM, ROOM 9

Streamline the Cryo-ET Workflow and Get More Useful Biological Insights with Delmic's METEOR and CERES Systems
Cryo-ET is a powerful imaging technique that allows protein complexes in their near-native cellular environment to be resolved at a nanometre resolution. Unfortunately the uptake of this powerful technique is hampered by its current error prone workflow, which often results in damaged, contaminated, and devitrified samples that cannot be used for data analysis. At Delmic we developed a host of technologies to unleash cryo-ET's full potential.

We will present METEOR, a fluorescent light microscope that is directly integrated into a cryo-FIB/SEM. It allows the user to skip unnecessary transfer steps and therefore decrease ice contamination. The presence of the targeted fluorescent signal in the lamellae can be checked during and after the milling process and cryo-CLEM data quality is improved. METEOR can therefore dramatically increase cryo-ET sample yield.

We will also present the CERES Ice Defence System, which increases sample throughput and quality by minimizing ice contamination throughout the cryo-ET sample preparation workflow. We will show that the samples can be prepared contamination free in the CERES Clean Station, a dedicated and moisture free workstation for cryo-ET sample preparation. From this workstation the samples can be transferred to the cryo-FIB/SEM using the CERES Vitri-Lock providing a high vacuum, anhydrous environment. In the FIB/SEM the sample is protected by the CERES Ice Shield, which protects against AMorphous ice build-up on the sample. This protection is crucial for high cryo-ET data quality and allows long automated milling sessions.

Delmic's cryo solutions allow researchers to obtain better quality cryo-ET results, higher throughput, and higher resolution.

Speaker
Marit Smeets, Product Manager, Delmic

Meet the Editors, *Biophysical Journal*

1:45 PM - 3:00 PM, LOBBY BC/PUBLICATIONS BOOTH

Take this opportunity to meet editors of *Biophysical Journal*. Editors will be available to talk about the journal and answer questions about where you should submit your work, what will help to get your work published, and what you can expect when you submit. Editor-in-Chief Vasanthi Jayaraman and other editors will be present at the Biophysical Society publications booth.

Snack Break

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

Poster Presentations and Late Posters

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

Overview of NIGMS/NIH Funding Programs Available to Biophysical Society Investigators

2:00 PM - 3:00 PM, ROOM 6E

The National Institute of General Medical Sciences (NIGMS) at the NIH offers an array of funding programs to investigators at all career stages. NIGMS staff will provide an overview of these programs, highlighting opportunities of particular interest to the Biophysical Society community. The overview will be followed by an in-depth presentation of the "Maximizing Investigators Research Award (MIRA, R35)" funding program. Since 2016, the NIGMS has been funding individual laboratory research programs that are within the NIGMS scientific mission through the MIRA program. The program aims to increase the efficiency of funding for investigators; decrease the administrative burden of grant application, review, and management; allow flexibility of future research directions in an investigator's laboratory; maintain a more stable research environment; and enhance the opportunities for breakthrough discoveries. The MIRA program includes two companion funding opportunity announcements (FOAs), one for Early-Stage Investigators (PAR-20-117) and the other for Established Investigators and New Investigators (PAR-22-180). NIGMS staff will discuss the key features of the MIRA FOAs and answer questions about MIRA funding. If you are an Established Investigator holding an eligible NIGMS award (a single-PI R01, R35, R37, DP1, DP2, SC1, NRMN U01), or if you are an Early-Stage Investigator or a New Investigator performing research within the NIGMS mission, you are encouraged to attend this session.

Presenters
Dorothy Beckett, Director, Division of Biophysics, Biomedical Technology, and Computational Biosciences
Zhongzhen Nie, Chief, Pharmacological and Physiological Sciences Branch, PPBC, NIGMS

Career Development Center Workshop The Strategic Postdoc: How to Find and Leverage Your Postdoc Experience

2:30 PM - 3:30 PM, ROOM 16B

Many PhDs just kind of fall into a postdoc, rather than thinking about it from a strategic perspective. Your postdoc is never an end in itself; rather it's a means to another end whether that goal is a faculty position at a research university, a small college, national lab, or perhaps an industry job. Learn how to find postdoc opportunities that will best prepare you for that next step, and how to use your postdoc experience to facilitate the transition to the next step in your career.

Education Committee Meeting

3:00 PM - 5:00 PM, ROOM 14B

Biophysical Reports Editorial Board Meeting

3:30 PM - 5:30 PM, ROOM 14A

Symposium
Amyloid Structure, Dynamics, and Proteostasis

4:00 PM - 6:00 PM, ROOM 6A

Chair
Elizabeth Rhoades, University of Pennsylvania, USA

1527-SYMP 4:00 PM
STRUCTURE-BASED DISCOVERY OF SMALL MOLECULES THAT DISAGGREGATE AMYLOID FIBRILS FROM POST-MORTEM ALZHEIMER'S AND PARKINSON'S BRAINS STRUCTURE-BASED DISCOVERY OF SMALL MOLECULES THAT DISAGGREGATE AMYLOID FIBRILS FROM POST-MORTEM ALZHEIMER'S AND PARKINSON'S BRAINS. **David S. Eisenberg**

1528-SYMP 4:30 PM
EARLY STAGES AND FINAL RESULTS OF AMYLOID-BETA SELF-ASSEMBLY. **Robert Tycko**, Jaekyun Jeon, Myungwoon Lee, Kent Thurber, Wai-Ming Yau

1529-SYMP 5:00 PM
LYSOSOMAL EXOCYTOSIS RELEASES PATHOGENIC A-SYNUCLEIN SPECIES FROM NEURONS. **Manu Sharma**

1530-SYMP 5:30 PM
STRUCTURAL BASIS OF A-SYNUCLEIN UPTAKE BY NEURONS. **Elizabeth Rhoades**, Christopher Brue, Melissa Birol

Symposium
Allosteric Modulation of GPCRs

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

Chair
Madan Babu, St. Jude Children's Research Hospital, USA, Chair

No Abstract 4:00 PM
NOVEL PARADIGMS OF GPCR ACTIVATION. **Celine Valant**

1531-SYMP 4:30 PM
REVEALING STRUCTURAL MECHANISMS OF ALLOSTERIC MODULATION TO ENABLE THE DESIGN OF SAFE, EFFECTIVE GPCR-TARGETED DRUGS. **Ron O. Dror**

1532-SYMP 5:00 PM
THE 'HUNGER GAMES' - STRUCTURAL STUDIES OF THE MC4 RECEPTOR REVEAL MECHANISM FOR SATIETY. **Moran Shalev-Benami**

No Abstract 5:30 PM
DATA SCIENCE APPROACHES TO GPCR SIGNALING SYSTEMS. **Madan Babu**

Platform
Spectroscopy and Imaging

4:00 PM - 6:00 PM, ROOM 6C

Co-Chairs
John Franck, Syracuse University, USA
Lindsey Young, University of California, San Diego, USA

1533-PLAT 4:00 PM
TIME-RESOLVED CRYO-EM VISUALIZES SNAPSHOTS OF DYNEIN'S ACTIVATION PATHWAY. **Agnieszka Kendrick**, Samara L. Reck-Peterson, Andres Leschziner

1534-PLAT 4:15 PM
UNUSUAL WATER MOLECULES AT SURFACTANT, LIPID, AND PROTEIN INTERFACES. **John M. Franck**

1535-PLAT 4:30 PM
HOW DANGLING ENDS OF DISORDERED PEPTIDES AFFECT PHOTOINDUCED ELECTRON TRANSFER RELAXATION. **Gabor Nagy**, Wenwei Zheng, Andrea C. Vaiana, Crystal Ottoway, Aaron C. Globisch, Sara M. Vaiana, Helmut Grubmuller

1536-PLAT 4:45 PM
GETTING TO THE HEART OF IT - SMALL GTPASE ACTIVITY PROBED AT AN ATOMIC LEVEL IN CELLS. **Fatema Bhinderwala**, Angela M. Gronenborn

1537-PLAT 5:00 PM
ILLUMINATING RNA THROUGH MULTIPLEXING IN LIVE MAMMALIAN CELLS. **Nadia Sarfraz**, Esther Braselmann

1538-PLAT 5:15 PM
QUANTITATIVE ANALYSIS WITH DEEP LEARNING SEGMENTATION AND MODELING OF 3D ELECTRON MICROSCOPY DATA. **Kurtis D. Ottman**, Cassidy S. Nordmann, Sagar S. Matharu, Rahul R. Akkem, Denzel R. Cruz, Douglas J. Palumbo, Irina D. Pokrovskaya, Brian Storrie, Richard D. Leapman, Maria A. Aronova

1539-PLAT 5:30 PM
OVERCOMING RESOLUTION-LOSS MECHANISMS IN LASER PHASE PLATE CRYO-ELECTRON MICROSCOPY. **Jeremy J. Axelrod**, Petar N. Petrov, Jonathan Remis, Robert M. Glaeser, Holger Mueller

1540-PLAT 5:45 PM
VERSATILE NANOGOLD TAGGING SYSTEM APPLIED TO THE IDENTIFICATION OF HETEROCHROMATIN THROUGH CRYO-FIB-ET. **Lindsey N. Young**, Alice Sherrard, Joshua Hutchings, Antonio Giraldez, Elizabeth Villa

Platform
Ribosomes and Translation

4:00 PM - 6:00 PM, ROOM 6D

Co-Chairs
Dagmar Klostermeier, University of Muenster, Germany
Paul Whitford, Northeastern University, USA

1541-PLAT 4:00 PM
A NOVEL MECHANISM OF 5' UTR STRUCTURE IN PROMOTING PROKARYOTIC TRANSLATIONAL INITIATION. Chun-Ying Lee, **Meera Joshi**, Sua Myong

1542-PLAT 4:15 PM
LINKING TRANSLATION FACTOR CONFORMATIONAL DYNAMICS WITH TRANSLATION EFFICIENCIES AND GENE EXPRESSION. Linda Krause, Anirban Chakraborty, Florian Willing, Vaibhav Mhaindarkar, Alexandra Z. Andreou, **Dagmar Klostermeier**

1543-PLAT 4:30 PM
BASIS OF SPEED AND FIDELITY IN EUKARYOTIC TRANSLATION TERMINATION. **Michael R. Lawson**, Laura N. Lessen, Rachel Green, Joseph D. Puglisi

1544-PLAT 4:45 PM
A NOVEL GENETICALLY ENCODABLE TAGGING SYSTEM FOR VISUALIZING TRANSLATION DYNAMICS IN LIVING CELLS. **Ning Zhao**, Szu-Hsuan Chen, Hunter Ogg, Christopher D. Snow, Timothy J. Stasevich

1545-PLAT 5:00 PM
UNDERSTANDING THE ENERGETICS OF TRANSLATION IN BACTERIAL AND EUKARYOTIC RIBOSOMES. Ailun Wang, Asem H. Hassan, Frederico C. Freitas, Vivek Singh, Alexey AMunts, **Paul C. Whitford**

1546-PLAT 5:15 PM
INTRAMOLECULAR TENSION AND CATCH BONDS PLAY KEY ROLES IN THE CONFORMATIONAL CYCLE OF THE DYNEIN-LIKE AAA MECHANOENZYME MDN1. **Keith J. Mickolajczyk**

1547-Plat 5:30 pm
PRINCIPLES OF MITORIBOSOMAL SMALL SUBUNIT ASSEMBLY IN EUKARYOTES. **Chloe L. Burnside**, Nathan Harper, Sebastian Klinge

1548-Plat 5:45 pm
UNSUPERVISED VOXEL-BASED SEGMENTATION REVEALS LANDSCAPE OF BACTERIAL RIBOSOME LARGE SUBUNIT EARLY ASSEMBLY. **Kai Sheng**, Ning Li, Jessica N. Rabuck-Gibbons, Xiyu Dong, Dmitry Lyumkis, James R. Williamson

Platform
Enzyme Function, Cofactors, and Post-Translational Modifications

4:00 pm - 6:00 pm, Room 6E

Co-Chairs
Simou Sun, University of California, Berkeley, USA
Chu Zheng, Stanford University, USA

1549-Plat 4:00 pm
ULTRAFAST REPAIR DYNAMICS OF CPD PHOTOLESION ISOSTERES BY DNA PHOTOLYASE. **Debanjana Chakraborty**, Chao Yang, Lijuan Wang, Dongping Zhong

1550-Plat 4:15 pm
SMALL MOLECULE CO-SOLVENTS ENHANCE ACTIVITY OF SARS-COV-2 MAIN PROTEASE THROUGH A DIELECTRIC EFFECT. **Marquise G. Crosby**

1551-Plat 4:30 pm
ELUCIDATING SIGNAL TRANSDUCTION PATHWAY IN LIGHT-ACTIVATED ADENYLYL CYCLASE USING UNNATURAL AMINO ACID MUTAGENESIS. **Samruddhi S. Jewlikar**, Jinnette Tolentino, Madeeha Ali, Peter J. Tonge

1552-Plat 4:45 pm
PHOSPHORYLATION-DEPENDENT KINETICS OF ZAP70 ACTIVATION AND DISSOCIATION. **Simou Sun**, Eric Gai, Lap Jung Nugent Lew, Neil (Hyuneil) Kim, Jay T. Groves

1553-Plat 5:00 pm
DIRECTLY MAPPING THE O-SULFATION SITES WITHIN CCR2 VIA AN ENGINEERED NANOPORE. **Hongyan Niu**, Meng-Yin Li, Xue-yuan Wu, Yi-Tao Long

1554-Plat 5:15 pm Travel Award Winner
USING SINGLE-MOLECULE FLUORESCENCE TECHNIQUES TO UNDERSTAND THE ENZYMATIC CYCLE OF SEX-BIASED RNA HELICASES DDX3X AND DDX3Y. **Amber M. Yanas**, Him Shweta, Michael Owens, Yale E. Goldman, Kathy F. Liu

1555-Plat 5:30 pm
LON PROTEASE DEGRADES STABLE SUBSTRATES SLOWLY BUT WITH ENHANCED PROCESSIVITY, REDEFINING THE MODEL OF A STRONG AND ROBUST AAA+ PROTEASE. **Meghann Kasal**, Hema Chandra Kotamarthi, Madeline M. Johnson, Hannah Stephens, Matthew J. Lang, Robert T. Sauer, Tania Baker

1556-Plat 5:45 pm
AN ANSWER TO THE FIBRINOLYSIS "CHICKEN-OR-THE-EGG" PROBLEM: THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR (UPA) CAN AUTOACTIVATE. **Constanza Torres-Paris**, Pingyu Chen, Harriet J. Song, Elizabeth A. Komives

Platform
TRP Channels

4:00 pm - 6:00 pm, Room 6F

Co-Chairs
Paul DeCaen, Northwestern University, USA
Roberta Gualdani, University Catholique Louvain, Belgium

1557-Plat 4:00 pm
EXPLORING FUNCTIONAL CONSERVATION OF THE COOLING AGENT BINDING SITE IN THE TRANSIENT RECEPTOR POTENTIAL MELASTATIN SUBFAMILY. **Katherine Huffer**, Kenton Swartz

1558-Plat 4:15 pm
HIGH-THROUGHPUT INVESTIGATION OF TEMPERATURE- AND LIGAND-ACTIVATION OF THE TRPM8 CHANNEL. Ashlin Turner, Ashley Vazhavilla, **Andres Jara-Oseguera**

1559-Plat 4:30 pm
HIGH-SPEED AFM REVEALS A RARE STRUCTURAL STATE FOR TRPV3. **Shifra Lansky**, John M. Betancourt, Simon Scheuring

1560-Plat 4:45 pm
GENETICALLY-ENCODED BRET PROBES ENLIGHT LIGAND BIAS-INDUCED VARIABLE ION SELECTIVITY IN TRPV1 AND P2X5/7. Yann Chappe, Sandra Pierredon, Alexandre Joushomme, Pablo Molle, André Garenne, Anne Canovi, Solène Barbeau, Florence Poulletier De Gannes, Annabelle Hurtier, Isabelle Lagroye, Thomas Ducret, Jean-François Quignard, Vincent Compan, **Yann Percherancier**

1561-Plat 5:00 pm
ENERGETICS AND STRUCTURAL DETERMINATIONS OF TRPV1 ACTIVATION BY VANILLOIDS. **Shisheng Li**, Phuong T. Nguyen, Vladimir Yarov-Yarovoy, Jie Zheng

1562-Plat 5:15 pm Travel Award Winner
A TR(I)P THROUGH TRPA1 MECHANOSENSITIVITY. **Justyna B. Startek**, Alina Milici, Thomas Voets, Karel Talavera

1563-Plat 5:30 pm
A TRPM7 MUTATION LINKED TO FAMILIAL TRIGEMINAL NEURALGIA: OMEGA CURRENT AND HYPEREXCITABILITY OF TRIGEMINAL GANGLION NEURONS. **Roberta Gualdani**, Philippe Gailly, Jun-Hui Yuan, Xavier Yerna, Giulia Di Stefano, Andrea Truini, Giorgio Cruccu, Sulayman D. Dib-Hajj, Stephen G. Waxman

1564-Plat 5:45 pm
PRIMARY CILIA TRP CHANNELS REGULATE HIPPOCAMPAL EXCITABILITY. Thuy Vien, My C. Ta, **Paul G. DeCaen**

Platform
Membrane Structure and Fusion

4:00 pm - 6:00 pm, Room 5AB

Co-Chairs
Milka Doktorova, University of Virginia, USA
Kailu Yang, Stanford University, USA

1565-Plat 4:00 pm
DEMONSTRATION, USING NOVEL SUPPORTED PLANAR ENDOSOMAL MEMBRANES (SPEM), THAT FURTHER CATHEPSIN ACTION AUGMENTS THE FUSION ACTIVITY OF THE PRIMED (19-KDA) EBOLA VIRUS GLYCOPROTEIN. **Laura Odongo**, Volker Kiessling, Judith M. White, Lukas K. Tamm

1566-Plat 4:15 pm
DRUG DISCOVERY TARGETING SARS-COV-2 MEMBRANE FUSION. **Kailu Yang**, Chuchu Wang, Alex J.B. Kreutzberger, Ravi Ojha, Suvi Kuivanen, Sergio Couoh-Cardel, Serena Muratcioglu, Timothy J. Eisen, K. Ian White, Richard Pfuetzner, John Kuriyan, Olli Vapalahti, Giuseppe Balistreri, Tomas Kirchhausen, Axel T. Brunger

1567-Plat 4:30 pm
COHERENT DIFFRACTIVE IMAGING OF LIPID VESICLES AND SYNAPTIC VESICLES BY FEMTOSECOND X-RAY FEL PULSES. **Charlotte Neuhaus**, Jette Alfken, Karlo Komorowski, Moritz L. Stammer, Richard Bean, Johan Bielecki, Raphael de Wijn, Romain Letrun, Safi Rafie-Zinedine, Juncheng E, Adrian Mancuso, Reinhard Jahn, Tim Salditt

1568-Plat 4:45 pm
REMODELING AND DYNAMICS OF MEMBRANE-PROXIMAL ACTIN IN LIVE B CELLS. **Adam M. Decker**, Jennifer C. Flanagan-Natoli, Andrea K. Stoddard, Sarah L. Veatch

1569-Plat 5:00 pm
POLYUNSATURATED LIPIDS PROMOTE MEMBRANE PHASE SEPARATION AND ANTIMICROBIAL SENSITIVITY. Hugo MacDermott-Opeskin, Katie A. Wilson, Bart Eijkelkamp, **Megan L. O'Mara**

1570-Plat 5:15 pm
ANNEXIN PROTEINS INVOLVED IN PLASMA MEMBRANE REPAIR RESHAPE A MEMBRANE EDGE: DIRECT EVIDENCE FROM MOLECULAR SIMULATIONS. Mayank P. Pandey, Weria Pezeshkian, **Himanshu Khandelia**

1571-Plat 5:30 pm
WATER IS A POWERFUL DYNAMIC ALLOSTERIC MODULATOR IN RHODOPSIN ACTIVATION. **Kushani S.K. Hewage**, Steven D.E. Fried, Shalini D.S. Kadinappulige, Andrey V. Struts, Suchithranga M.D.C. Perera, Michael F. Brown

1572-Plat 5:45 pm
STRUCTURE OF A CHOLINERGIC CELL MEMBRANE. **Nigel Unwin**

Platform
Cell Mechanics, Mechanosensing, and Motility

4:00 pm - 6:00 pm, Room 11AB

Co-Chairs
Sayantika Ghosh, University of Warwick, United Kingdom
Joseph Szulczewski, University of North Carolina at Chapel Hill, USA

1573-Plat 4:00 pm
PROBING MECHANOTRANSDUCTION PATHWAYS THROUGH VISUALIZATION AND CONTROL OF VINCULIN CONFORMATION. **Joseph M. Szulczewski**, Mingyu Choi, Shiqiong Hu, Klaus M. Hahn

1574-Plat 4:15 pm
IMAGING SINGLE INTEGRIN TENSIONS IN FILOPODIA. Ying Tu, **Xuefeng Wang**

1575-Plat 4:30 pm
YIELD STRESS: A TIPPING POINT OF CELL UNJAMMING. **Xiaofan Xie**

1576-Plat 4:45 pm
RESOLVING CADHERIN-MEDIATED INTER-CELL CONTRACTILE TENSION IN MULTICELLULAR MIGRATION. **Anna Clouvel-Gervaiseau**, Lara Elis, Gregory Emery, Allen J Ehrlicher

1577-Plat 5:00 pm
PROBING SPIROPLASMA'S CYTOSKELETAL MOTILITY MECHANISM THROUGH HYDRODYNAMIC MODELLING AND EXPERIMENT. **Paul M. Ryan**, Charles W. Wolgemuth

1578-Plat 5:15 pm
CELL MIGRATION CAPACITY ALONE CAN BE HEREDITARY AND PREDICT METASTATIC BURDEN. **Nicolas Desjardins-Lecavalier**, Matthew G. Annis, Alexander Nowakowski, Alexander Kiepas, Loic Binan, Joannie Roy, Graziana Modica, Steven Hebert, Claudia L. Kleinman, Peter M. Siegel, Santiago Costantino

1579-Plat 5:30 pm
CONTACT-FREE HIGH-THROUGHPUT MEASUREMENTS OF LIVING CELL MECHANICS USING QUANTITATIVE ACOUSTOPHORESIS. **Vadim Bogatyr**, Andreas S. Biebricher, Giulia Bergamaschi, Erwin J.G. Peterman, Gijs J.L. Wuite

1580-Plat 5:45 pm Travel Award Winner
STUDY OF CELL-CELL ADHESION FORMATION AND DYNAMICS IN CANCER CELLS USING A HYBRID CELL - LIPID BILAYER SYSTEM. **Sayantika Ghosh**, Darius V. Koester

Dinner Meet-Ups

6:00 pm - 6:30 pm, Lobby BC/Society Booth

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

Publications Committee Meeting

6:00 pm - 10:00 pm, Hilton, Indigo 202

Workshop
Computational Modeling of Binding Thermodynamics

7:30 pm - 9:30 pm, Room 6C

Chair
Carol Post, Purdue University, USA

1581-Wkshp 7:30 pm
PROTEIN-LIGAND BINDING WITH MARTINI 3. **Siewert Marrink**

1582-Wkshp 7:54 pm
BINDING FREE ENERGIES FROM THE POLARIZABLE AMOEBA FORCE FIELD. Moses K.J. Chung, Zhi Wang, Roseane dos Reis Silva, **Jay Ponder**

1583-Wkshp 8:18 pm
PREDICTING PROTEIN-MEMBRANE INTERFACES USING MOLECULAR SIMULATIONS AND ENSEMBLE MACHINE LEARNING. **Zoe Cournia**

1584-Wkshp 8:42 pm
ADVANCING DRUG DISCOVERY WITH ACCURATE AND RELIABLE PROTEIN-LIGAND BINDING FREE ENERGY CALCULATIONS. **Lingle Wang**, Wei Chen, Gregory Ross, Di Cui, Ed Harder, Robert Abel

1585-Wkshp 9:06 pm
COMPUTATION OF CONFORMATIONAL TRANSITIONS AND ACTIVATION OF SRC TYROSINE KINASE. **Carol Post**, Bradley Dickson

Workshop
Developments in Nanopore Biosensors

7:30 PM - 9:30 PM, ROOM 6D

Chair
Giovanni Maglia, University of Groningen, The Netherlands

1586-WKSHP 7:30 PM
PROBING PROTEIN STRUCTURAL DYNAMICS AT THE SINGLE-MOLECULE LEVEL BY NANOPORE TWEEZERS. **Min Chen**

1587-WKSHP 8:00 PM
ULTRA-PRECISE SINGLE-MOLECULE NANOPORE TOOL TO WATCH ENZYMES AT WORK. **Jens H. Gundlach**

1588-WKSHP 8:30 PM
NANOPORES AS VERSATILE SINGLE-MOLECULE TOOLS -FROM DNA TURBINES TO PROTEIN SEQUENCING. **Cees Dekker**

1589-WKSHP 9:00 PM
NEW PORES, NEW TRICKS. **Giovanni Maglia**

Workshop
Vibrational Tools for Biomolecular and Cellular Studies

7:30 PM - 9:30 PM, ROOM 6E

Chair
Nien-Hui Ge, University of California, Irvine, USA

1590-WKSHP 7:30 PM
STIMULATED RAMAN SCATTERING MICROSCOPY: THE NEXT FRONTIER OF OPTICAL IMAGING. **Wei Min**

1591-WKSHP 8:00 PM
CHARACTERIZING PROTEIN CONFORMATIONAL ENSEMBLES AND DYNAMICS WITH 2D IR SPECTROSCOPY. **Andrei Tokmakoff**

No Abstract 8:30 PM
REACTIONS ON THE LIPID MEMBRANE INTERFACE PROBED BY NONLINEAR VIBRATIONAL SUM FREQUENCY GENERATION SPECTROSCOPY. **Shen Ye**

No Abstract 9:00 PM
BIOLOGICAL IMAGING WITH HYPERSPECTRAL VIBRATIONALLY RESONANT SUM-FREQUENCY GENERATION MICROSCOPY. **Nien-Hui Ge**

Workshop
High Throughput Single Molecule Spectroscopy

7:30 PM - 9:30 PM, ROOM 6F

Chair
Joseph Puglisi, Stanford University, USA

1592-WKSHP 7:30 PM
OPTIMIZING SINGLE-MOLECULE EXPERIMENTAL APPROACHES FOR THE STUDY OF COMPLEX PROTEIN ASSEMBLIES ON DNA. **Nynke H. Dekker**

1593-WKSHP 7:54 PM
SINGLE-MOLECULE MANIPULATION AND IMAGING OF COMPLEX DNA-PROTEIN INTERACTIONS. **Gijs Wuite**

1594-WKSHP 8:18 PM
RNA STRUCTURE DIRECTS THE TARGETING SPECIFICITY OF CAS13D. **Ilya Finkelstein**

1595-WKSHP 8:42 PM
SINGLE-MOLECULE INVESTIGATION OF LIGAND-ACTIVATION MECHANISMS FOR MEMBRANE PROTEINS IN CELL-DERIVED NANOVESICLES. Karleen Wu, **Marcel P. Goldschen-Ohm**

No Abstract 9:06 PM
ANIMATING BIOLOGICAL MECHANISM. **Joseph Puglisi**

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

8:00 PM - 10:00 PM, ROOM 8

TUESDAY POSTER SESSIONS

1:45 PM–3:45 PM, EXHIBIT HALL BC

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 - B35	Protein Structure and Conformation III
B36 - B52	Protein Stability, Folding, and Chaperones I
B53 - B70	Protein-Small Molecule Interactions II
B71 - B82	Membrane Protein Folding
B83 - B106	Intrinsically Disordered Proteins III
B107 - B129	Protein Aggregates
B130 - B142	Poster: DNA Replication, Recombination, and Repair
B143 - B162	RNA Structure and Dynamics
B163 - B191	Membrane Dynamics
B192 - B215	Membrane Active Peptides
B216 - B231	Protein-Lipid Interactions: Channels
B232 - B247	Excitation-Contraction Coupling
B248 - B271	Cardiac, Smooth, and Skeletal Muscle Electrophysiology
B272 - B275	Muscle Regulation
B276 - B302	Voltage-Gated K Channels II
B303 - B325	Ligand-Gated Channels II
B326 - B334	Ion Channels, Pharmacology, and Disease II
B335 - B353	Membrane Pumps, Transporters, and Exchangers I
B354 - B381	Smooth Muscle and Cardiac Muscle Mechanics and Structure
B382 - B393	Actin Structure, Dynamics, and Associated Proteins
B394 - B407	Kinesins, Dyneins, and Other Microtubule-based Motors
B408 - B420	Modeling of Biological Systems II: Immunology and Evolution
B421 - B428	Novel Techniques for Systems and Synthetic Biology
B429 - B442	Molecular and Cellular Neuroscience
B443 - B472	Molecular Dynamics II: Method Development
B473 - B499	Single-Molecule Spectroscopy
B500 - B524	Bioengineering
B525 - B543	Biosensors II

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

Protein Structure and Conformation III (Boards B1 - B35)

1596-Pos Board B1
ELUCIDATING THE ORIGINS OF ACYLTRANSFERASE SELECTIVITY IN PRIMARY AND SECONDARY METABOLISM. **Ashay Patel**, Jeffrey T. Mindrebo, Laetitia E. Misson, James A. McCammon, Joseph P. Noel, Michael D. Burkart

1597-Pos Board B2
INSULIN MODULATES THE FREE ENERGY LANDSCAPE OF INSULIN DEGRADING ENZYME AS IT TRANSITIONS BETWEEN CLOSED AND OPEN STATES. **Mukerrem Tufekcioglu**, David Tang, Esmael J. Haddadian

1598-Pos Board B3
BIOPHYSICAL CHARACTERIZATION OF RAF RBD-CRD-KD INTERACTIONS IN THE AUTOINHIBITED STATE. **Baasit Jamal**, Ruihan Quan, Maria Iannucci, Zhenlu Li, Chinmayi Prasanna, Amita R. Sahoo, Matthias Buck

1599-Pos Board B4
TIME-RESOLVED MECHANISMS OF ESSENTIAL BIOLOGICAL PATHWAYS. **Sharonda LeBlanc**, Andi Morgan, Ashley Drew, Kenya Gordon, Meredith Frazier, Andrew Atisa, Malikiya A. Hinds, Robin Stanley

1600-Pos Board B5
APPLICATION OF IN-CELL FAST PHOTOCHEMICAL OXIDATION OF PROTEINS (IC-FPOP) FOR THE STUDY OF ORGANOIDS. **Raquel L. Shortt**, Lisa M. Jones

1601-Pos Board B6
LIGAND BINDING AND PH INFLUENCE CONFORMATIONAL FLEXIBILITY OF DOMAINS I AND III IN BOVINE SERUM ALBUMIN. **Garry E. Smith**, viana nguyen, Adam Okerlund, Christopher D. Warner

1602-Pos Board B7
DEFINING THE ROLE OF THE N-TERMINAL HELIX IN THE ARF1 NUCLEOTIDE SWITCH TRANSITION USING PRESSURE PERTURBATION. **Edgar Peters**, Tejaswi Naidu Koduru, Noam Hantman, Jacqueline Cherfils, Scott A. McCallum, Richard E. Gillilan, Catherine A. Royer

1603-Pos Board B8 Travel Award Winner
ELUCIDATION OF A DYNAMIC INTERPLAY BETWEEN GUANINE NUCLEOTIDE AND THE TERNARY COMPLEX OF A BETA-ADRENERGIC RECEPTOR, ITS AGONIST AND STIMULATORY G PROTEIN. **Yanxiao Han**, John R.D. Dawson, Kevin DeMarco, Kyle Rouen, Khoa Ngo, Borislava Bekker, Vladimir Yarov-Yarovoy, Colleen E. Clancy, Yang K. Xiang, Igor V. Vorobyov

1604-Pos Board B9
SINGLE-MOLECULE SPECTROSCOPY OF APOLIPOPROTEIN E REVEALS A COMPLEX CONFORMATIONAL ENSEMBLE. **Melissa D. Stuchell-Brereton**, Maxwell I. Zimmerman, Justin J. Miller, Upasana L. Mallimadugula, Juan J. Incicco, Debjit Roy, Louis G. Smith, Jasmine Cubuk, Berevan Baban, Gregory T. DeKoster, Carl Frieden, Gregory R. Bowman, Andrea Soranno

1605-Pos Board B10
STRUCTURAL BASIS FOR THE MOLECULAR RECOGNITION OF VARIOUS RGD-CONTAINING LIGANDS BY INTEGRIN AVB3: THE ROLE OF THE SPECIFICITY-DETERMINING LOOP (SDL). **Ramya Chandar Charles Maria Soosai**, Santanu Bose, Senthil Natesan

1606-Pos Board B11
A SCALE-SPANNING INTEGRATIVE MODELING STRATEGY TO STUDY STRUCTURE, DYNAMICS, AND FUNCTION OF VITAL MOLECULAR MACHINES. **Till Rudack**

1607-Pos Board B12
CHARACTERIZING THE APOBEC3B CLOSED TO OPEN PATHWAY WITH WEIGHTED ENSEMBLE. **Clare K. Morris**

1608-Pos Board B13
BIOPHYSICAL CHARACTERIZATION OF PATHOGENIC MISSENSE MUTATION IN THE ARID DOMAIN OF ARID1A. **Rajen K. Goutam**, Emil Alexov, William J. Edenfield, Hugo Sanabria

1609-Pos Board B14
HDX-MS GUIDED ENSEMBLE REWEIGHTING APPROACH REVEALS CRYPTIC DRUG BINDING SITES IN THE CYTOPLASMIC HEME BINDING PROTEIN, PHUS. **Kyle C. Kihn**, Nicholas Montes, Kellie Hom, Wenbo Yu, Fengtian Xue, Alexander D. MacKerell, Angela Wilks, Daniel Deredge

1610-Pos Board B15
UNEXPECTED, PERVASIVE, CONSERVED SECONDARY STRUCTURE IN HIGHLY CHARGED PROTEIN REGIONS. **Catherine Triandafillou**, Rosalind Pan, David A. Drummond, Aaron Dinner

1611-Pos Board B16
EPITOPE MAPPING OF DIAGNOSTIC ANTI-RABIES MONOCLONAL ANTIBODIES PROVIDE STRUCTURAL INSIGHT INTO RABIES VARIANT IDENTIFICATION IN INFECTED WILDLIFE. **Megan Luo**, Sophie Shoemaker, John E. Pak, Susan Marqusee

1612-Pos Board B17
INVESTIGATING DNASE1L3'S ROLE IN INFLAMMATION AND REDESIGNING THE ENZYME TO BE USED AS A THERAPEUTIC. **Johanna Villarreal**, Jon J. McCord, Minal Engavale, Elliot Radovan, Peter Keyel, Roger B. Sutton

1613-Pos Board B18
5'ADENOSINE MONOPHOSPHATE PROMOTES SIGNAL ADAPTATION IN PKA SIGNALING. **Varun Venkatakrishnan**, Ganesh S. Anand

1614-Pos Board B19
INVESTIGATING THE IMPACT OF ATPASE MUTATION ON MUTL FUNCTION. **Ashley Drew**, Andi Morgan, Sharonda LeBlanc

1615-Pos Board B20
SOLUTION SCATTERING AND SCANNING BASED IMAGING AT THE LIFE SCIENCES X-RAY SCATTERING BEAMLINE (LIX). **Shirish N. Chodankar**

1616-Pos Board B21
GOOD FENCES MAKE DISTANT NEIGHBORS: DETERMINING THE EFFECT OF LOCAL SEQUENCE CONTEXT ON MET-MET INTERACTIONS. **Connor Pitman**, Anthony Geneva, Matthew Hansen, Grace H. Brannigan

1617-Pos Board B22
STRUCTURE STUDY REVEALS ACTIVE AND INACTIVE CONFORMATIONS OF PROTEIN KINASE C B1. **Anh T.Q. Cong**, Taylor L. Witter, Bruinsma S. Elizabeth, Swaathi Jayaraman, Maria Dugan, John R. Hawse, Matthew P. Goetz, Matthew J. Schellenberg

1618-Pos Board B23 Travel Award Winner
EFFECT OF NANOPARTICLES ON THE AGGREGATION AND AMYLOID FORMATION OF AMYLOID-BETA PEPTIDE. **Éva Moussong**, Márton Péter Nyiri, Nikoletta Murvai, Judit Kun, Attila Kovács, Tamás Molnár, András Micsonai, Jozsef Kardos

1619-Pos Board B24
INTERACTIONS OF LI^+ ION WITH NCS1: A POTENTIAL MECHANISM OF LI^+ NEUROPROTECTIVE ACTION AGAINST PSYCHOTIC DISORDERS. **Md. Shofiul Alam**, Jaroslava Miksovska

1620-Pos Board B25
MODELING BINDING PLASTICITY IN BET PROTEINS THROUGH SIMULATIONS AND NMR. **Alberto Perez**

1621-Pos Board B26
MOLECULAR AND STRUCTURAL INSIGHT INTO THE DIFFERENCES AMONG COMMON AND RARE ALZHEIMER'S DISEASE-ASSOCIATED APOE VARIANTS. **Rory A. Greer**, Ryan A. Tuckey, Hunter B. Dean, Erik D. Roberson, Yuhua Song

1622-Pos **Board B27** **Travel Award Winner**
SEQUENCE ADAPTATION IN VARIOUS ENVIRONMENTS ACROSS ORGANISMS; SIMILAR YET DIFFERENT SUPEROXIDE DISMUTASE. **Ivy D. Vo**, Ellinor Haglund

1623-Pos **Board B28**
INVESTIGATION OF REFRACTIVE INDEX INCREMENT WITH CRYSTALLIN PROTEIN AGGREGATION. **Amanda Abiad**, Megan A. Rocha, Rachel W. Martin

1624-Pos **Board B29**
INVESTIGATION OF THE POTENTIAL OFF-TARGET EFFECTS ON MUNC 18 (P67) INVOLVED IN SYNAPTIC VESICAL TRANSPORT DUE TO THE INTERACTION WITH PEPTIDE P5. **Tejaswi Tammareddy**, Antonio Cardone, Harish C. Pant, Walid Keyrouz, Ram Sriram, Jeffery B. Klauda

1625-Pos **Board B30**
APPLICATIONS OF HYDROGEN DEUTERIUM EXCHANGE ENSEMBLE REWEIGHTING TO MODEL NATIVE PROTEIN ENSEMBLES, MACROMOLECULAR INTERACTIONS AND PROTEIN DRUG INTERACTIONS. Kyle C. Kihn, Ally K. Smith, **Daniel J. Deredge**

1626-Pos **Board B31**
STRUCTURAL EFFECTS OF ALS-ASSOCIATED MUTATIONS ON PROFILIN. **Mortaza Derakhshani-Molayousefi**, Vivek Govind Kumar, Mahmoud Moradi

1627-Pos **Board B32**
THE FATE OF THE CDTA SUBUNIT FROM THE *HAEMOPHILUS DUCREYI* CYTOLETHAL DISTENDING TOXIN. **Robb Huhn**, Nalysha Torres, Mike Talyor, Ken Teter

1628-Pos **Board B33** **Travel Award Winner**
STRUCTURAL BASIS OF SIGNAL TRANSDUCTION WITHIN PAS REGULATED SER/THR KINASE. **Roksana Azad**

1629-Pos **Board B34**
STRUCTURAL BASIS FOR THE RECRUITMENT OF PARP4 AND NAD^+TO THE VAULT COMPLEX. **Jane E. Lodwick**, Minglei Zhao

1630-Pos **Board B35**
EFFECT OF FATTY ACIDS AND PH ON THE BINDING OF BSA TO SILICA AND POLYSTYRENE. **Adam Okerlund**, Alexis Rose, Viana Nguyen, Christopher Warner

Protein Stability, Folding, and Chaperones I (Boards B36 - B52)

1631-Pos **Board B36**
ON THE ROLE OF COOPERATIVITY IN FUNNELED ENERGY LANDSCAPES. **David Wang**, Layne Frechette, Robert B. Best

1632-Pos **Board B37**
STABILITY OF TANDEM IG DOMAIN UNFOLDING WITHIN PROXIMAL IG SEGMENT OF TITIN. **Smita Chatterjee**, Matthew Gage

1633-Pos **Board B38**
LEARNING REACTION COORDINATES FOR ENHANCED SAMPLING DIRECTLY USING ATOMIC POSITIONS. **Subarna Sasmal**, Martin McCullagh, Glen M. Hocky

1634-Pos **Board B39**
FOLDING AND THREADING OF LEPTIN AS A MODEL FOR PIERCED LASSO TOPOLOGIES. **Jennifer M. Simien**, Ellinor Haglund

1635-Pos **Board B40**
TOPOLOGICAL TWISTS IN NATURE: PROTEINS WITH A PIERCED LASSO TOPOLOGY. **Ellinor Haglund**

1636-Pos **Board B41**
PROBING THE ROLE OF RNA ON PRION PROTEIN AND PRION FIBRIL RECOGNITION. **Brian W. Paul**, Hannah O. Brockman, Patricia Soto

1637-Pos **Board B42**
UNRAVELING THE ENTHALPY OF MACROMOLECULAR CROWDING. **Claire J. Stewart**, Gil Olgenblum, Daniel Harries, Gary J. Pielak

1638-Pos **Board B43**
ALTERED CONFORMATIONAL LANDSCAPE UPON SENSING GUANINE NUCLEOTIDES IN A DISEASE MUTANT OF ELONGATION FACTOR-LIKE 1 (EFL1) GTPASE. **Jesús P.J. Pérez Juarez**

1639-Pos **Board B44**
NASCENT-CHAIN INTERACTION NETWORKS AND THEIR EFFECT ON THE BACTERIAL RIBOSOME. **Meranda Masse**, Angela Varela, Valeria Guzman Luna, Rachel Hutchinson, Aniruddha Srivastava, Wanting Wei, Andrew M. Fuchs, Silvia Cavagnero

1640-Pos **Board B45**
EXAMINING THE IMPORTANCE OF TERMINI LOCATION IN SUCCESSFUL PROTEIN FOLDING WITH HALOTAG CIRCULAR PERMUTANTS IN VITRO, IN E. COLI, AND IN MAMMALIAN CELLS. **Natalie R. Dall**, Carolina A.T.F. Mendonca, Susan Marqusee

1641-Pos **Board B46**
INVESTIGATING THE STRUCTURAL MECHANISM OF GAMMA-D CRYSTALLIN AGGREGATION. **Sara Volz**, Alex J. Guseman, Susan Marqusee, Angela M. Gronenborn

1642-Pos **Board B47**
INVESTIGATING THE MECHANISM OF SUPPRESSION OF HUMAN ΓD-CRYSTALLIN AGGREGATION BY *MYO*-INOSITOL. **Constance Kraay**, Eugene Serebryany, Srivastav Ranganathan, Eugene Shakhnovich

1643-Pos **Board B48**
A NATIVE CHEMICAL CHAPERONE IN THE HUMAN EYE LENS SUPPRESSES REDOX-DEPENDENT LENS CRYSTALLIN MISFOLDING. **Eugene Serebryany**, Sourav Chowdhury, Christopher Woods, David C. Thorn, Nicki E. Watson, Arthur McClelland, Rachel Klevit, Eugene Shakhnovich

1644-Pos **Board B49**
PHARMACOCHAPERONES AS A NOVEL APPROACH TO RESCUE MISFOLDING ROD OPSIN MUTANTS ASSOCIATED WITH RETINITIS PIGMENTOSA. **Beata Jastrzebska**

1645-Pos **Board B50**
BIOCHEMICAL AND MOLECULAR CHARACTERIZATION OF THE MOST-COMMON SLC13A5-EPILEPSY CAUSING MISSENSE-MUTATIONS. **Valeria Jaramillo-Martinez**, Vadivel Ganapathy, Ina Urbatsch

1646-Pos **Board B51**
PROBING UNFOLDING BARRIERS IN HIGH THROUGHPUT. **Eva Gerber**, Miriam R. Hood, Susan Marqusee

1647-Pos **Board B52**
INVESTIGATING DIFFERENCES BETWEEN THERMODYNAMICALLY AND KINETICALLY STABLE SUBTILISINS TO IDENTIFY SEQUENCE SIGNATURES OF KINETIC STABILITY. **Miriam R. Hood**, Susan Marqusee

Protein-Small Molecule Interactions II (Boards B53 - B70)

1648-Pos **Board B53**
DESIGNING BCL-2 PROTEIN BINDING APTAMERS USING SCREENED COULOMB INTERACTION METHOD & REGULATE APOPTOSIS. **Ekram Hawsawi**, Hanouf Almansour, Md. Ashrafuzzaman

1649-Pos Board B54
DESIGNING BCL-2 PROTEIN BINDING APTAMERS USING AN ENTROPIC FRAGMENT-BASED APPROACH & IN VITRO VALIDATE THE DRUG EFFICACY. **Fatimah M. Alharbi**, Nayyar Rabbani, Chih-Yuan Tseng, Jack Tuszynski, Md Ashrafuzzaman

1650-Pos Board B55
BLOCKING HUNTINGTIN OLIGOMERS FROM BINDING LIPID MEMBRANES IMPROVES PHENOTYPE IN A *C.ELEGANS* MODEL OF HUNTINGTON'S DISEASE. **Chathuranga Siriwardhana**, Justin A. Legleiter

1651-Pos Board B56
REGIOSELECTIVE METABOLISM OF CANNABINOIDS BY CYTOCHROME P450 2J2. **Hale S. Hasdemir**, Pritam Roy, Aditi Das, Emad Tajkhorshid

1652-Pos Board B57
BANDAIDS ON BROKEN HEARTS: PREVENTING PROTEASE-MEDIATED DEGRADATION OF DESMOPLAKIN WITH SMALL MOLECULES. **Roujon A. Nowzari**, Isabel M. Romov, Nathan T. Wright

1653-Pos Board B58
QUALITY CONTROL OF FLUORESCENCE POLARIZATION ASSAY OVER GEL-BASED ASSAY. **Clay P. Page**

1654-Pos Board B59
PROTEIN - LIGAND BINDING AFFINITY BY DIFFERENTIAL SCANNING CALORIMETRY. **Daumantas Matulis**, Asta Zubriene, Vaida Linkuviene

1655-Pos Board B60
SOLID-STATE NMR SPECTROSCOPY UNCOVERS INTERNAL DYNAMICS OF ANTIVIRAL COMPOUNDS. **Ankan Nath**, Soohyun Lee, Trivikram R. Molugu, Jun Wang, Andrey V. Struts, Michael F. Brown

1656-Pos Board B61
INHIBITION OF THE SARS-COV-2 MAIN PROTEASE BY A THIADIAZOLIDINONE DERIVATIVE. **Katarina Jovic**, Logan Brown, Harish Vashisth, Krisztina Varga

1657-Pos Board B62
NATURAL EFFECTORS FOR CONFORMATIONAL CONTROL OF CORONAVIRUS SPIKE PROTEINS. **Daniel Asarnow**, David Veesler

1658-Pos Board B63
USE OF COMPLEMENTARY BIOPHYSICAL METHODS TO CHARACTERIZE LIGAND BINDING TO IL-17A. **Parag Sahasrabudhe**, Shenping Liu

1659-Pos Board B64
PROBING PROTEIN-KETONE BODY INTERACTION TO ELUCIDATE THE FUNCTION OF PUTATIVE ABC TRANSPORTERS. **Bryant J. Kane**, Junko Okuda-Shimazaki, Koji Sode

1660-Pos Board B65
MECHANISM OF SLOW HERG1 CHANNEL DEACTIVATION INDUCED BY RPR260243. **Eva-Maria Plessl**, Michael C. Sanguinetti, Anna Stary-Weinzinger

1661-Pos Board B66
TUNING THE SIZE AND SOLVENT-EXPOSED HYDROPHOBICITY OF A PORE-FORMING PEPTIDE ELIMINATES ITS CYTOTOXICITY USING A NATURAL PRODUCT. **Justus M. Gabriel**, Thomas Tan, Claire M. Hsu, Caleb Buettner, Ryan Limbocker

1662-Pos Board B67
EXOGENOUS LIGAND BINDING KINETICS OF GLOBIN X. **Jonathan Cedeno-Lugo**, Jaroslava Miksovska, Sophie Bernad, Valerie Derrien

1663-Pos Board B68
GLOBIN X: A TARGET FOR SURFACTANT-LIKE MOLECULES. **Rifat Farhana**, Valerie Derrien, Sophie Bernad, Jaroslava Miksovska

1664-Pos Board B69
BINDING OF E. COLI SINGLE-STRANDED DNA BINDING PROTEIN TO DAMAGED DNA SUBSTRATES MEASURED AT SINGLE MOLECULE LEVEL USING AFM. **Francesco C. Navarro Roby**

1665-Pos Board B70
FORK REGRESSION VISUALIZATION USING SINGLE-MOLECULE FRET. **Penelope Romo**, Rajen Goutam, Danielle R. Latham, Hugo Sanabria, Coby Bowman, Inna Yanez

Membrane Protein Folding (Boards B71 - B82)

1666-Pos Board B71 Travel Award Winner
MECHANISMS BY WHICH WATER-MEDIATED HYDROGEN-BOND NETWORKS GOVERN PH-DEPENDENT REACTIONS AT MEMBRANE INTERFACES. Eva Bertalan, Honey Ashok A. Jain, Kalina Hristova, William C. Wimley, **Ana-Nicoleta Bondar**

1667-Pos Board B72
PARKINSON'S DISEASE-ASSOCIATED MUTANTS SHIFT EQUILIBRIUM BOUND STATE OF ALPHA-SYNUCLEIN TOWARDS THE SECOND HELIX. **Sofiya Maltseva**, Daniel H. Kerr, Miah J. Turke, Ka Yee C. Lee

1668-Pos Board B73
THE DEPENDENCY OF SLOW CLC-EC1 DIMERIZATION KINETICS ON LIPID SOLVENT VOLUME. **Taeho Lee**, Rahul Chadda, Tugba N. Ozturk, Robyn Mahoney-Kruszka, Janice L. Robertson

1669-Pos Board B74
THE ROLE OF PROTEIN-PROTEIN INTERACTIONS IN FLUC DIMERIZATION STABILITY AND FUNCTION. **Melanie Ernst**, Jennifer Chen, Janice L. Robertson

1670-Pos Board B75 Travel Award Winner
THE ROLE OF LIPID BILAYER COMPOSITION IN CELL-FREE EXPRESSED ABC TRANSPORTER FOLDING. **Citlayi G. Villaseñor**, Valentina Dimitrova, Alexandra Karagiaridi, Kristen Rivera, Heather Pinkett, Neha P. Kamat

1671-Pos Board B76
USING HDX-MS TO PROBE THE DYNAMICS AND DENATURED STATE OF GLPG, A HELICAL MEMBRANE PROTEIN. **Abigail L. Schroeter**, Saba Kanwal, Heedeok Hong, Tobin R. Sosnick

1672-Pos Board B77
EFFECTS OF NATURAL PRODUCTS ON CYSTIC ACTIVITY IN KIDNEY CELLS. **Jorge A. Hurtado Camacho**, Marshall Gilmer, Justus Gabriel, Tristan McKenzie, Claire M. Hsu, Martin Park, Ryan Limbocker

1673-Pos Board B78
REGULATION OF THE BACTERIAL TRANSLOCON SECYEG BY PERIPLASMIC PH. **Denis G. Knyazev**, Nora Hagleitner-Ertugrul, Laura Nübl, Janin Simader, Nikolaus Gössweiner-Mohr, Christine Siligan, Peter Pohl

1674-Pos Board B79
THE DELIVERY COMPLEX IN OUTER MEMBRANE PROTEIN BIOGENESIS: HOW THE SURA CHAPERONE INTERACTS WITH THE BAM ENZYME. **Jim E. Horne**, Katherine Fenn, Joel A. Crossley, Sheena E. Radford, Neil A. Ranson

1675-Pos Board B80
INTERACTIONS OF B-BARREL ASSEMBLY MACHINERY PROTEIN D (BAMD) WITH PHOSPHOLIPID BILAYERS. Ly Nguyen, **Joerg H. Kleinschmidt**

1676-Pos Board B81
CAN A SIMPLE AND GENERALIZABLE ASSAY DISTINGUISH BETWEEN MUTANT PHENOTYPES OF MODEL MEMBRANE PROTEINS? **Henry Gatica-Gutierrez**

1677-Pos **Board B82**
DELIVERY OF NONBIOLOGICALLY-COMPATIBLE MEMBRANE PROTEIN CONSTRUCTS TO MAMMALIAN CELLS FOR FUNCTIONAL CHARACTERIZATION. **Wade D. Van Horn**, Helen F. Mann, Karan H. Shah, Dustin D. Luu, Aerial M. Pratt, Cade F. Bennett, Katherine R. Clowes, Charles R. Sanders

Intrinsically Disordered Proteins III (Boards B83 - B106)

1678-Pos **Board B83**
STRATEGIES TOWARD UNDERSTANDING INTRINSICALLY DISORDERED PROTEINS. **Monica D. Rieth**

1679-Pos **Board B84**
DISORDERED-ORDERED PROTEIN BINARY CLASSIFICATION BY CIRCULAR DICHROISM SPECTROSCOPY. **András Micsonai**, Éva Moussong, Nikoletta Murvai, Ágnes Tantos, Orsolya Toke, Matthieu Réfrégiers, Frank Wien, József Kardos

1680-Pos **Board B85** **Travel Award Winner**
PHOSPHORYLATION REFINES THE CONTROL OF COMPLEX FORMATION IN IDPS. **Jordan A.P. McIvor**, Karin Buholzer, Franziska Zosel, Christian Teppich, Daniel Nettels, Benjamin Schuler, Davide Mercadante

1681-Pos **Board B86**
UNDERSTANDING CONDENSATE FORMATION BY FUSION ONCOPROTEIN-DERIVED INTRINSICALLY DISORDERED REGIONS. **Swati Kinger**, Brittany J. Pioso, Swarnendu Tripathi, Aaron H. Phillips, Cheon-Gil Park, Snigdha Maiti, Scott D. Gorman, Gitanjali Asampille, FNU Wahiduzzaman, Toler Freyaldenhoven, David W. Baggett, Hazheen Shirnekhi, Bappaditya Chandra, Richard Kriwacki

1682-Pos **Board B87**
INVESTIGATING THE INTERACTION OF TDP-43 WITH RNA USING STRUCTURAL MASS SPECTROMETRY. **Thomas C. Minshull**, Antonio Calabrese

1683-Pos **Board B88**
INVESTIGATING THE ROLE OF SERBP1 IN TRANSLATION. **Margherita Guaita**, Jax I. Maya, Patrick R. Smith, Zachary T. Campbell, Sarah Loerch

1684-Pos **Board B89**
INSIGHT INTO THE INTRINSICALLY DISORDERED TRANSACTIVATION DOMAIN OF NFKB AS A REGULATOR OF DNA BINDING USING UV-INDUCED UNNATURAL AMINO ACID CROSSLINKING. **Tristan R. Gunther**, Hannah E.R. Baughman, Elizabeth A. Komives

1685-Pos **Board B90**
A MOLECULAR IMPRINT OF INTRACELLULAR AMYLOID-BETA APOE INTERACTION CORRELATES WITH ITS TOXICITY MOLECULAR IMPRINT OF INTRACEWLLULAR AMYLOID BETA APOE INTERACGTION. arpan dey, Aditi Verma, Uchit Bhaskar, vicky vishvakarma, Mamata Kallianpur, Kanchan Garai, Odity Mukherjee, **Sudipta Maiti**

1686-Pos **Board B91**
SPATIAL DIMENSION AND BINDING KINETICS BETWEEN FG-REPEATS CHARACTERIZE THE FREE/BOUND DIFFUSION OF MOLECULES INSIDE THE NUCLEAR PORE COMPLEX. **Atsushi Matsuda**, Mohammad R.K. Mofrad

1687-Pos **Board B92**
UNRAVELING THE PHASE SEPARATION OF EWS LOW COMPLEXITY DOMAIN USING MOLECULAR DYNAMICS SIMULATIONS. **Kandarp A. Sojitra**, Courtney Johnson, Erich Sohn, David Libich, Jeetain Mittal

1688-Pos **Board B93**
PHOTO-INDUCED ELECTRON TRANSFER BETWEEN TRYPTOPHAN AND CYSTEINE: TEMPERATURE DEPENDENCE. **Lillian Otteson**, Crystal F. Ottoway, Gerdenis Kodis, Sara M. Vaiana

1689-Pos **Board B94**
LEA_4 MOTIFS ACT SYNERGISTICALLY WITH DRYING-ENRICHED METABOLITES TO INCREASE THEIR PROTECTIVE ABILITY. **Vincent M. Nicholson**, Kenny Nguyen, Feng Yu, Shahar Sukenik, Thomas C. Boothby

1690-Pos **Board B95**
FORSTER RESONANCE ENERGY TRANSFER STUDIES OF AN INTRINSICALLY DISORDERED PEPTIDE USING A CYANOPHENYLALANINE DERIVATIVE. **Ange-Emanuel H. Morignot**, Joshua P. Martin

1691-Pos **Board B96**
EFFECT OF ENVIRONMENT AND CHARGE PATTERNING ON THE DYNAMICS OF MARGINALLY DISORDERED PROTEINS. **Arash Firouzbakht**, Austin Haider, Kingshuk Ghosh, Martin Gruebele

1692-Pos **Board B97**
SINGLE-CHAIN AND CONDENSED-STATE BEHAVIOR OF HNRNPA1 FROM MOLECULAR SIMULATIONS. **Janka Bauer**, Lukas S. Stelzl, Arash Nikoubashman

1693-Pos **Board B98**
PROBING SEQUENCE SPACE AND NON-NATURAL AMINO ACIDS TO UNCOVER MOLECULAR INTERACTIONS DRIVING FUS LIQUID-LIQUID PHASE SEPARATION. **Noah Wake**

1694-Pos **Board B99** **Travel Award Winner**
MULTIVALENCY IN 53BP1-LC8 INTERACTIONS SUGGEST NEW BINDING MODE IN LC8 INTERACTIONS. **Jesse J. Howe**, Austin Weeks, Maya Sonpatki, Patrick N. Reardon, Elisar Barbar

1695-Pos **Board B100**
GREEN TEA POLYPHENOL EGCG ACTS DIFFERENTIALLY ON THE END STAGE AGGREGATED POLYMORPHS OF A-SYNUCLEIN GENERATED IN THE PRESENCE OF POLYOL OSMOLYTES. **Santosh Devi**, Dushyant K. Garg, Rajiv Bhat

1696-Pos **Board B101**
UNDERSTANDING THE EFFECT OF TAU PROTEIN PHOSPHORYLATION ON NUCLEOSOME ARRAY COMPACTION. **Manasi Movva**

1697-Pos **Board B102**
EXPLORING THE STRUCTURAL CONFORMATIONS OF AMYLOID-BETA OLIGOMERS ON SELF-ASSEMBLED MONOLAYERS AND IN WATER UNDER CONFINEMENT, A MOLECULAR DYNAMICS STUDY. **Polly Ren**, Esmael J. Haddadian

1698-Pos **Board B103**
ANALYZING THE BINDING AFFINITY OF POTENTIAL HOMODIMERS PRODUCED BY THE C55 PORTION OF THE AMYLOID PRECURSOR PROTEIN, A MOLECULAR DYNAMICS STUDY. **Joseph Farrell**, Esmael J. Haddadian

1699-Pos **Board B104**
A STEERED MOLECULAR DYNAMICS INVESTIGATION ON THE ROLE OF GLYCATION ON THE ENERGY DISSIPATION CAPACITY OF OSTEOPONTIN AT MINERAL INTERFACES IN BONE. **Mehdi Tavakol**, Ted Vaughan

1700-Pos **Board B105**
MOLECULAR BASIS OF POLYGLUTAMINE-MODULATED ELF3 AGGREGATION IN ARABIDOPSIS TEMPERATURE RESPONSE. **Richard J. Lindsay**, Philip A. Wigge, Sonya M. Hanson

1701-Pos **Board B106**
ROLE OF DISORDERED REGIONS BEYOND THE BINDING MOTIF OF THE MEASLES VIRUS NTAIL. Lillian Otteson, Gabor Nagy, John D. Kunkel, Gerdenis Kodis, Wenwei Zheng, Christophe Bignon, Sonia Longhi, Helmut Grubmuller, Andrea C. Vaiana, **Sara M. Vaiana**

Protein Aggregates (Boards B107 - B129)

1702-Pos Board B107
TRANSIENT OLIGOMERIZATION CAUSING PROTEINOPATHIES. **Grace E. Orellana**, Ellinor Haglund

1703-Pos Board B108
STUDIES OF SELECTED CARBON NANOMATERIALS WITH AMYLOID BETA PEPTIDES. **Anna Bisok**, Marietta Koźlarek, Anna Burwiel, Julia Telus, Joanna M. Wolak, Żaneta Polańska, Maciej Kozak

1704-Pos Board B109
PROBING THE MORPHOLOGICAL AND MECHANICAL CHANGES IN A *C. ELEGANS*MODEL OF HUNTINGTON'S DISEASE. **Zachary L. Ellis**, Chathuranga C. Siriwardhana, Justin A. Legleiter

1705-Pos Board B110
ROLE OF N17'S HYDROPHOBIC FACE IN MEMBRANE CURVATURE SENSING AND POLYQ AGGREGATION. **Neha Nanajkar**, Abhilash Sahoo, Silvina Matysiak

1706-Pos Board B111
MEMBRANE PROTEIN CHAPERONE AFFECTS THE KINETICS AND MORPHOLOGY OF AMYLOID BETA AGGREGATION. **Hunter T. Ordner**

1707-Pos Board B112
AB PROTEIN GROWTH MONITORING BY STRUCTURE-SPECIFIC LABEL-FREE THZ SPECTROSCOPY. **Chaejeong Heo**

1708-Pos Board B113
COMPARING THE STRUCTURE AND STABILITY OF DIVERSE AMYLOID BETA OLIGOMERS USING FLUORESCENCE CORRELATION SPECTROSCOPY. **Kamila Nurmakova**, Zachary Levine

1709-Pos Board B114
INHIBITION STUDIES ON AGGREGATION AND CYTOTOXICITY OF ALZHEIMER'S AMYLOID-B PEPTIDE. **Nikoletta Murvai**, Yuxi Lin, Tamás Molnár, Attila Kovács, András Micsonai, Jeong Kyu Bang, Young-Ho Lee, Jozsef Kardos

1710-Pos Board B115 Travel Award Winner
DETECTING PHYSIOLOGICAL CONCENTRATIONS OF ALZHEIMER'S ASSOCIATED AMYLOID-B OLIGOMERS WITH A CELL-BASED RESPONSE. **Brittany E. Watson**

1711-Pos Board B116
ASSESSING P53 AGGREGATES OVER A LIFETIME: STUDIES ON YOUNG, ADULT, AND AGED MICE. **Matthew Steinsaltz**, Zachary A. Levine

1712-Pos Board B117
MUTATIONS AFFECT THE CONFORMATIONAL PLASTICITY OF THE B2-A2 LOOP OF HUMAN PRION PROTEIN. Aliciarose John, David Kemper, Pedro Fernandez-Funez, **Alessandro Cembran**

1713-Pos Board B118 Travel Award Winner
ANALYSIS AND COMPARISON OF AMORPHOUS & AMYLOID AGGREGATES OF THE TUMOR SUPPRESSOR P53. **Emi Hibino**, Takeshi Tenno, Hidekazu Hiroaki

1714-Pos Board B119
STRUCTURAL FLEXIBILITY OF HUNTINGTIN OLIGOMERS PLAYS A KEY ROLE IN DIRECTLY BINDING LIPID MEMBRANES. **Justin A. Legleiter**

1715-Pos Board B120
MICRO-FLOW IMAGING AND FLOW VIROMETRY AS PREFERRED METHODS TO MONITOR PARTICULATE MATTER FOR A HUMAN CYTOMEGALOVIRUS VACCINE CANDIDATE. **Ashley L. Hardy**

1716-Pos Board B121
INFLUENCE OF HIGH HYDROSTATIC PRESSURE ON PROTEIN CLUSTERING: IMPLICATIONS FOR PROCESSING AND MACROSCOPIC CRYSTALLIZATION. **Brian Paul**, Susana Cristina Marujo Teixeira, Eric M. Furst, Abraham M. Lenhoff, Norman Wagner

1717-Pos Board B122
DIFFERENTIAL BINDING DYNAMICS OF FOUR MICROTUBULE-BINDING REPEATS OF TAU WITH AN AMYLOID-B FIBRIL SEED. **Zhiyuan Song**, Feng Ding, Yunxiang Sun

1718-Pos Board B123
PROBING REGULATORY MECHANISMS OF THE*DE NOVO* DNA METHYLTRANSFERASE DNMT3A. **Emma M. Garcia**, Nicholas Z. Lue, Keith Rivera, Maya Virshup, Jessica K. Liang, Derek D. Hwang, Steven A. Carr, Brian B. Liau

1719-Pos Board B124
PEPTIDE-BASED INHIBITORS OF AMYLOID BETA AGGREGATION AND TOXICITY. **Maria Zabala Rodriguez**, Ken Teter, Suren Tatulian

1720-Pos Board B125 Travel Award Winner
PEPTOIDS AS POTENTIAL THERAPEUTICS TO REDUCE S100B-INDUCED RAGE-ASSOCIATED NEUROINFLAMMATION IN ALZHEIMER'S DISEASE. **Mihyun L. Waugh**, Shannon Servoss, Melissa A. Moss

1721-Pos Board B126
COFACTOR-DEPENDENT STRUCTURAL TRANSITION OF SOD1 MODULATES ITS ABILITY TO UNDERGO LIQUID-LIQUID PHASE SEPARATION. **Sumangal Roychowdhury**, Bidisa Das, Priyesh Mohanty, Azamat Rizuan, Jeetain Mittal, Krishnananda Chattopadhyay

1722-Pos Board B127
DIRECT OBSERVATION OF SINGLE-MOLECULAR HIAPP FIBRIL ELONGATION REVEAL MOLECULAR MECHANISMS OF MORPHOLOGICAL DEPENDENCE AND ASYMMETRIC GROWTH. **Gangtong Huang**, Feng Ding

1723-Pos Board B128
POLYGLUTAMINE CORE IS THE PRIMARY DRIVER OF SEEDED HUNTINGTIN AGGREGATION. **Adam Skeens**, Justin A. Legleiter

1724-Pos Board B129
NANOSCALE INFRARED SPECTROSCOPY IDENTIFIES STRUCTURAL EVOLUTION OF AB 16-22 FIBRILS FROM PARALLEL TO ANTIPARALLEL BETA SHEETS. **Divya Lnu**, Siddhartha Banerjee, Ayanjeet Ghosh

Poster: DNA Replication, Recombination, and Repair (Boards B130 - B142)

1725-Pos Board B130
HUMAN XPD IS AN ACTIVE HELICASE WITH LOW PROCESSIVITY AND OVERALL UNWINDING RATE. Chunfeng Mao, **K. Maria Mills**

1726-Pos Board B131
SINGLE-MOLECULE STUDIES REVEAL THAT MUTS'S BINDING CHARACTERISTICS ARE MISMATCH TYPE AND CONTEXT DEPENDENT AND CORRELATE WITH MISMATCH REPAIR EFFICIENCY *IN VIVO*. **Jasmin Zarb**, James London, Richard Fishel, Taekjip Ha

1727-Pos Board B132 Travel Award Winner
SINGLE-MOLECULE DYNAMICS OF RIBONUCLEASE H ENZYMES IN *BACILLUS SUBTILIS*. **Jewel Ashbrook**, Ziyuan Chen, Julianna Cresti, Lyle A. Simmons, Julie Biteen

1728-Pos Board B133
A BIOCHEMISTRY PLATFORM TO INCORPORATE REPLICATION FORKS, DNA LESIONS, AND NUCLEOSOME ARRAYS TO SINGLE-MOLECULE EXPERIMENTS. **Trey Simpson**, Marco Simonetta, Mattijs de Groot, Bas Groen

1729-Pos Board B134 Travel Award Winner
MTB UVRD1 MONOMER UNWINDS A KU NUCLEOPROTEIN FILAMENT. **Ankita Chadda**, Eric A. Galburt

1730-Pos **Board B135**
SINGLE-MOLECULE FRET REVEALS DINSTINCT MUTS CONFORMATIONAL DYNAMICS ON DIFFERENT DNA MISMATCHES. **Rachel Evans**, Dorothy A. Erie, Keith R. Weninger

1731-Pos **Board B136**
STIMULATION OF TDG BY UV-DDB. **Brittani L. Schnable**, Matthew A. Schaich, Alexander C. Drohat, Bennett Van Houten

1732-Pos **Board B137**
RAD51 FILAMENT FORMATION, DYNAMICS, AND REGULATION. **Kailey Cash**, Maria Spies

1733-Pos **Board B138**
NOVEL INSIGHTS ABOUT RIBOSOMAL DNA DOUBLE STRAND BREAK REPAIR REVEALED BY SUPERRESOLUTION IMAGING TECHNIQUES AND VERY FAST CRISPR. **Ye Ma**

1734-Pos **Board B139**
FOCUS IN NUMBERS: CHARACTERIZING PROTEIN OLIGOMERIZATION DYNAMICS AT DNA DOUBLE STRAND BREAKS. **Graziana Modica**, Joannie Roy, Hugo Wurtele, Santiago Costantino

1735-Pos **Board B140**
STUDIES OF THE LOCAL ASSEMBLY DYNAMICS OF THE T4 BACTERIOPHAGE HELICASE LOADING PROTEIN (GP59) AND SINGLE-STRANDED (SS) DNA BINDING PROTEIN (GP32) AT AND NEAR $(ICY3)_2$-LABELED SS-DSDNA JUNCTIONS BY ENSEMBLE AND SINGLE-MOLECULE POLARIZATION SWEEP MICROSCOPY. **Lulu Enkhbaatar**, Dylan Heussman, Jack W. Maurer, Patrick J. Herbert, Peter H. von Hippel, Andrew H. Marcus

1736-Pos **Board B141**
STUDY ON BIOPHYSICAL PROPERTIES OF PHI29 DNA POLYMERASE USING A NOVEL SINGLE-MOLECULE IMAGING TECHNIQUE DNA CURTAIN. **Subin Kim**, Ja Yil Lee

1737-Pos **Board B142**
INVESTIGATING LOCAL DNA CONFORMATIONAL TRAPPING DYNAMICS DURING DNA POLYMERASE HOLOENZYME ASSEMBLY AND EXONUCLEASE PROOF-READING ACTIVITY. **Patrick J. Herbert**, Jack W. Maurer, Dylan Heussman, Steven E. Weitzel, Peter H. von Hippel, Andrew H. Marcus

RNA Structure and Dynamics (Boards B143 - B162)

1738-Pos **Board B143**
DEVELOPMENT OF AN APTAMER-BASED SCREENING FOR IDENTIFICATION AND CHARACTERIZATION OF NOVEL RNA THERAPEUTICS USING SWITCHSENSE® TECHNOLOGY. **Mareike Weller**, Michael Sattler, Ulrich Rant

1739-Pos **Board B144**
MECHANISM OF LIGAND BINDING SIGNAL TRANSDUCTION IN A TRANSCRIPTIONAL RIBOSWITCH. Sunil Kumar, **Govardhan Reddy Patluri**

1740-Pos **Board B145** **Travel Award Winner**
COARSE-GRAINED RNA SIMULATIONS WITH CONCERTED C2'/C3'-ENDO SUGAR PUCKER TRANSITIONS. **Yiheng Wu**, Riccardo Alessandri, Aria Coraor, Xiangda Peng, Tobin R. Sosnick, Juan J. de Pablo

1741-Pos **Board B146**
SINGLE-MOLECULE SPATIAL TRANSCRIPTOMICS DEMONSTRATES SPATIAL HETEROGENEITY OF PRE-MIRNA AND CLASSIFIES B-CELLS IN TYPE 1 DIABETES. **Hok Wai Chang**, Clayton Seitz, Farooq Syed, Carmella Evans-Molina, Jing Liu

1742-Pos **Board B147**
D-RNA SELECTS L-AMINO ACIDS IN A NEWLY CHARACTERIZED AMINOACYL-RNA LOOP LIGATION. **Shannon N. Kim**

1743-Pos **Board B148**
MECHANISTIC INSIGHTS INTO THE 2-STEP DIMERIZATION PROCESS FO THE HEPATITIS C VIRUS RNA GENOME. **Parker D. Sperstad**, Erik D. Holmstrom

1744-Pos **Board B149**
DELTA VARIANT VERSUS ANCESTRAL SARS-COV-2 S2M DYNAMICS AND RELATIVE ENTROPY. **Joseph A. Makowski**, Adam H. Kensinger, Kendy A. Pellegrene, Caylee Cunningham, Caleb J. Frye, Patrick E. Lackey, Mihaela-Rita Mihailescu, Jeffrey D. Evanseck

1745-Pos **Board B150**
REDUCTIONIST INSIGHTS INTO HOW CHAPERONE CHARGE INFLUENCES RNA FOLDING. **Gabrielle Perkins**, Erik D. Holmstrom

1746-Pos **Board B151** **Travel Award Winner**
SOLUTION STRUCTURE OF POLY(UG) RNA REVEALS A NEW FOLD THAT DRIVES GENE SILENCING. **Cristian A. Escobar**, Riley J. Petersen, Marco Tonelli, Lixin Fan, Yun-Xing Wang, Jenny Yan, Scott G. Kennedy, Samuel E. Butcher

1747-Pos **Board B152**
MOLECULAR MODELING OF PARP1 INHIBITION THROUGH MIRNA GENE SILENCING FOR THE TREATEMENT OF RETINITIS PIGMENTOSA. **Lalehan Oktay**, Aylin Moayedi, Zohreh Hosseinzadeh, Serdar Durdagi

1748-Pos **Board B153**
VIRAL-HOST RNA-RNA INTERACTIONS IN SARS-COV-2: STUDY OF MIR-34A-5P BINDING INTERACTIONS WITHIN THE GENOME 3'-UNTRANSLATED REGION. **Caleb J. Frye**, Caylee Cunningham, Adam H. Kensinger, Joseph A. Makowski, Jeffrey D. Evanseck, Mihaela-Rita Mihailescu

1749-Pos **Board B154**
SINGLE-MOLECULE FRET REVEALS DYNAMICS OF DENGUE VIRAL REPLICATION PROMOTER STEM-LOOP A INTERACTING WITH NS5-POLYMERASE. **Alexander R. Smith**, Joel A. Crossley

1750-Pos **Board B155**
SYSTEMATIC RECONSTRUCTION OF THE FULL GENOME STRUCTURE OF AN RNA VIRUS USING RESTAINED MULTISCALE SIMULATIONS ON A DISTRIBUTED COMPUTATION PLATFORM. **Simón Poblete**, Fernando Mora, Pablo Huijse, Cristian Huijse, Sebastian Etchegaray

1751-Pos **Board B156**
STRUCTURAL AND THERMODYNAMIC CONSEQUENCES OF THE G31U AND U5C MUTATIONS IN THE SARS-COV-2 S2M. **Adam H. Kensinger**, Joseph A. Makowski, Kendy A. Pellegrene, Caylee L. Cunningham, Caleb J. Frye, Patrick E. Lackey, Mihaela-Rita Mihailescu, Jeffrey D. Evanseck

1752-Pos **Board B157**
UNCOVERING THE BIOPHYSICAL MECHANISMS OF RIBOREGULATORY INTERACTIONS INVOLVING THE HEPATITIS C VIRUS 3´X RNA USING SINGLE-MOLECULE FRET. Parker Sperstad, **Erik D. Holmstrom**

1753-Pos **Board B158**
UNSUPERVISED LEARNING FROM TOPOLOGICAL DATA ANALYSIS TO IDENTIFY CELLULAR STATES FROM SINGLE-CELL RNA-SEQ ANALYSIS. **Aydolun Petenkaya**, Chuansheng Hu, Constantinos Chronis, Zhifeng Shao, Jie Liang

1754-Pos **Board B159**
RIBOSOME HYPER-SWIVEL HEAD DOMAIN MOTIONS ARE REQUIRED FOR TRANSLOCATION AND RESETTING. Dylan J. Girodat, Wataru Nishima, Mikael Holm, Emily J. Rundlet, Jigneshkumar D. Prajapati, Jose L. Alejo Amaya, Kara Fischer, Scott C. Blanchard, **Karissa Y. Sanbonmatsu**

1755-Pos Board B160 Travel Award Winner
STRUCTURAL AND BIOPHYSICAL STUDIES OF THE T-BOX RIBOSWITCH. **Eduardo Campos Chavez**

1756-Pos Board B161
A G-QUADRUPLEX STRUCTURE WITHIN THE 3'-UNTRANSLATED REGION OF HNRNP K AFFECTS ITS TRANSLATION BY CONTROLLING THE ACCESSIBILITY OF MIR-1249-3P TO ITS BINDING SITE. **Carlan Gray**, Bryan Kelleher, Lydia Grimaldi, Mihaela-Rita Mihailescu

1757-Pos Board B162
CHARACTERIZATION OF A G-QUADRUPLEX STRUCTURE AT THE 3' END OF NEAT1_2 AND ITS ROLE IN REGULATING ITS STABILITY. **Caylee L. Cunningham**, Emily M. Benner, Mihaela-Rita Mihailescu

Membrane Dynamics (Boards B163 - B191)

1758-Pos Board B163
A STUDY ON MEMBRANE CAPACITANCE OF FISH ERYTHROCYTES THROUGH A COMPUTER AIDED TECHNIQUE OF DIELECTROPHORESIS. Zia Ur Rahaman, Mohd Abdul Saleem, Adeel Ahmad, **Kaleem Ahmed Jaleeli**

1759-Pos Board B164
PASSIVE PERMEABILITY CONTROLS SYNTHESIS FOR THE ALLELOCHEMICAL SORGEOLEONE IN SORGHUM ROOT EXUDATE. **Saad Raza**, Troy Sievertsen, Sakiko Okumoto, Josh V. Vermaas

1760-Pos Board B165
BINDING OF CALCIUM IONS TO PUTATIVE ANTIBIOTICS. **Benjamin R. Healy**, Paulo F. Almeida, Antje Pokorny

1761-Pos Board B166
EXPERIMENTALLY CHARACTERIZING THE ORIGINS OF CONFINEMENT EFFECTS IN MEMBRANES. **Nicole Voce**, Paul Stevenson

1762-Pos Board B167
IMPACT ON BACTERIAL MEMBRANES AND MEMBRANE BOUND PROTEINS OF TREATMENT WITH CHLORHEXIDINE IN AQUEOUS AND ALCOHOL SOLUTIONS: INSIGHTS FROM MOLECULAR SIMULATIONS AND NUCLEAR MAGNETIC RESONANCE. **Callum P.M. Waller**, Peter J. Bond, Syma Khalid, Philip T.F. Williamson, Eilish W. McBurnie, Jan K. Marzinek

1763-Pos Board B168
MEASURING THE FLUIDITY OF THE MEMBRANE OF BACILLUS SUBTILIS USING TIR-FCS. **Aurélien G.L. Barbotin**, Armand Lablaine, Cyrille Billaudeau, Erdinc Sezgin, Rut Carballido-López

1764-Pos Board B169
THICKET AND MESH: UNDERSTANDING TURGOR PRESSURE RESISTANCE OF OUTER MEMBRANE-CELL WALL SYSTEM. **David Ryoo**, Hyea Hwang, James C. Gumbart

1765-Pos Board B170
CONTROLLING THE MECHANISTIC PROPERTIES OF LIPID MEMBRANES USING AMPHIPHILIC BLOCK COPOLYMERS. **Yusuf Qutbuddin**, Kareem Al Nahas, Petra Schwille

1766-Pos Board B171
ANALYZING MEMBRANE MECHANICS AND LIPID DYNAMICS USING LATERAL LIPID DENSITY FLUCTUATIONS. **Kayla Sapp**, Alexander J. Sodt

1767-Pos Board B172
USING RECURSIVE SEEDING TO DETECT STABLE ATTRACTORS FOR THE MATRIX EFFECT IN VESICLES IN A PREBIOTICALLY-PLAUSIBLE CHEMICAL SYSTEM. **Tymofii Sokolskyi**, Pavani Ganju, David Baum

1768-Pos Board B173
MOLECULAR SIMULATIONS AND NMR REVEAL HOW LIPID FLUCTUATIONS AFFECT MEMBRANE MECHANICS. **Milka Doktorova**, Rana Ashkar, George Khelashvili, Michael F. Brown

1769-Pos Board B174
ANALYSIS AND QUANTIFICATION OF LIPID BILAYER BENDING ENERGETICS IN ATOMIC DETAIL AND UNDER APPLIED CURVATURE. **Giacomo Fiorin**, Lucy R. Forrest, José D. Faraldo-Gómez

1770-Pos Board B175
NANOSCALE DYNAMICS OF MEMBRANE DOMAINS WITH DIFFERENT STEROLS. **Fernando Favela-Rosales**, Arturo Galván-Hernández, Jorge Hernández-Cobos, Ivan Ortega-Blake

1771-Pos Board B176
A DEEP LEARNING MODEL THAT ACCURATELY PREDICTS VESICLE-VESICLE FUSION AND ACCELERATES MOLECULAR DYNAMICS SIMULATIONS. **Hongkang Zhu**, Dong An, Ben O'Shaughnessy

1772-Pos Board B177
MICROSCOPIC SPRINGS: INVESTIGATING VISCOELASTIC AND ELASTIC TENDENCIES OF THE CELL MEMBRANE. **Alexander Sedley**, Callie Miller, Nathan T. Wright

1773-Pos Board B178
COLLECTIVE DYNAMICS IN THE LIPID PHASES OF DMPC/CHOLESTEROL BILAYERS: A NEUTRON SPIN-ECHO STUDY. **Minh D. Phan**, Kuo-Chih Shih, Elizabeth G. Kelley, Paul D. Butler, Norman J. Wagner, Michihiro Nagao

1774-Pos Board B179
PATTERN FORMATION ON DYNAMIC MEMBRANES. **David V. Svintradze**

1775-Pos Board B180
DOMAIN-INDUCED DYNAMICS IN PHASE-SEPARATING LIPID MEMBRANES. Sudipta Gupta, Henry J. Lessen, Frederick A. Heberle, Alexander J. Sodt, **Rana Ashkar**

1776-Pos Board B181
PHASE SEPARATION ON GIANT LIPOSOMES PREPARED BY GEL-ASSISTED SWELLING. Khasey Keith, **Yifei Wang**, Sheereen Majd

1777-Pos Board B182
DISORDER WITHIN DISORDERED REGIONS OF PROTEIN-FREE LIPID BILAYERS. **Akanksha Chauhan**, Aditya Mittal

1778-Pos Board B183
LEMONADE: LEGO-LIKE MEMBRANE TENSION ANALYZER BASED ON SELF-ASSEMBLED DNA ELASTIC NETWORKS. **Qi Yan**, Longfei Liu, Erdem Karatekin, Chenxiang Lin

1779-Pos Board B184
CHOLESTEROL CONCENTRATION EFFECT ON BILAYER MEMBRANES AND ITS ROLE IN DESIGNING EFFICIENT LIPOSOMAL DRUG DELIVERY SYSTEMS. **Ehsaneh Khodadadi**, Mahmoud Moradi

1780-Pos Board B185
MOLECULAR DYNAMICS STUDY OF THE INFLUENCE OF CHOLESTEROL ON THE RIGIDITY OF AN ASYMMETRIC MEMBRANE OF RED BLOOD CELLS. **Jessica Pallarez**

1781-Pos Board B186
ASYMMETRIC DISTRIBUTION OF AMINOPHOSPHOLIPIDS STIFFENS FLUID MEMBRANES. Moritz P.K. Frewein, Paulina Piller, Enrico F. Semeraro, Orsolya Czakkel, Yuri Gerelli, Lionel Porcar, **Georg Pabst**

1782-Pos Board B187
PACKING AND ELASTICITY IN MEMBRANE MECHANICAL PROPERTIES. Fathima T. Doole, Chun Kit Chan, Daipayan Sarkar, Ankan Nath, Constantin Job, Andrey V. Struts, Abhishek Singharoy, **Michael F. Brown**

1783-Pos Board B188
DETERMINATION OF WATER PERMEABILITY THROUGH STRESS-FREE LIPID MEMBRANES USING TIME-RESOLVED SMALL ANGLE NEUTRON SCATTERING. Lionel Porcar, Moritz FREWEIN, Georg Pabst, **Ursula A. Perez-Salas**

1784-Pos **Board B189**
NUCLEAR MEMBRANE DEFORMATION VIA PROGERIN CLUSTERING. **YigJi Lee**

1785-Pos **Board B190**
LIPID-MEDIATED INTERPLAY BETWEEN HOST RESTRICTION FACTOR SERINC5 AND HIV-1 ENV GLYCOPROTEIN. **Daria Sokovikova**, Volker Kiessling, Lukas K. Tamm

1786-Pos **Board B191**
INFLUENCE OF SOFT MATTER ON RHODOPSIN ACTIVATION. **Shalini D.S. Kadinappulige**, Kushani S.K. Hewage, Eric N. Primack, Andrey V. Struts, Michael F. Brown

Membrane Active Peptides (Boards B192 - B215)

1787-Pos **Board B192**
INTERACTIONS OF UNMODIFIED AND PYROGLUTAMYLATED AMYLOID BETA PEPTIDES WITH LIPID MEMBRANES. **Suren A. Tatulian**

1788-Pos **Board B193**
CONSTRUCTION OF NANOPORES USING B-HAIRPIN PEPTIDES SYNTHESIZED BY A CELL-FREE SYSTEM. **Shoko Fujita**, Miyu Fukuda, Ikuro Mizoguchi, Izuru Kawamura, Ryuji Kawano

1789-Pos **Board B194**
ANALYSIS OF DIRECT TRANSMEMBRANE PERMEABILITY OF MONOAMINO ACIDS BY THE PLANAR MEMBRANE SYSTEM. **Kaiyi Zheng**, Kayano Izumi, Ryuji Kawano

1790-Pos **Board B195**
CLUSTERING AND BINDING OF OLEANOLIC ACID SAPONINS WITH BACTERIAL MEMBRANES. **Jinhui Li**, Viviana Monje-Galvan

1791-Pos **Board B196**
LEAFLET DEPENDENT EFFECT OF ANIONIC PHOSPHOLIPIDS ON THE PERMEATION OF CELL PENETRATING PEPTIDES INTO MODEL MEMBRANES. **Sydney C. Povilaitis**, Lauren J. Webb

1792-Pos **Board B197**
CELL PENETRATING PEPTIDES FACILITATE PROTEIN TRANSPORT INTO THE CELL-SIZED ASYMMETRIC LIPID VESICLES AT ARBITRARY TIMING. **Akari Miwa**, Koki Kamiya

1793-Pos **Board B198**
USE OF SCATTERING TECHNIQUES TO PROBE MOLECULAR INTERACTIONS BETWEEN NOVEL TRP- AND ARG-RICH ANTIMICROBIAL PEPTIDES (AMPS) IN LIPID MODEL MEMBRANES (LMMS). **Saheli Mitra**, Mark Coopershlyak, Yunshu Li, Bhairavi Chandersekhar, Rachel Koenig, Mei-Tung Chen, Brandt Evans, Frank Heinrich, Berthony Deslouches, Stephanie Tristram-Nagle

1794-Pos **Board B199**
BIOPHYSICAL INVESTIGATIONS OF ANTIMICROBIAL PEPTIDE MIMICS FOR MECHANISTIC STUDIES. **Kathakali De**, Christopher Aisenbrey, Jayanta Haldar, Sophie Faure, Christiane Forestier, Nicolas Charbonnel, Burkhard Bechinger

1795-Pos **Board B200**
Travel Award Winner
UNTANGLING THE RIVALRY BETWEEN CHOLESTEROL AND ANTIMICROBIAL PEPTIDES. **Fathima T. Doole**, Chun Kit Chan, Daipayan Sarkar, Andrey V. Struts, Abhishek Singharoy, Michael F. Brown

1796-Pos **Board B201**
THE MEMBRANE ACTIVITY OF THE ANTIMICROBIAL PEPTIDE CAERIN 1.1 IS PH DEPENDENT. Marc-Antoine Sani, Anton P. Le Brun, Sunnia Rajput, Troy Attard, **Frances Separovic**

1797-Pos **Board B202**
MECHANISM OF ACTION OF BETA-STRANDED ANTIMICROBIAL $(KL)_N$ MODEL PEPTIDES. **Erik Strandberg**, Fabian Schweigardt, Parvesh Wadhwani, Anne S. Ulrich

1798-Pos **Board B203**
CHARACTERIZING THE ROLE OF THE CELL WALL IN BACTERIAL DEATH CAUSED BY TREATMENT WITH ANTIMICROBIAL PEPTIDES. **Kenneth L. Lutz**, Catherine B. Volle, Ana Schurr

1799-Pos **Board B204**
EXPLORING AND CHARACTERIZING THE SENSITIVITY OF *BDELLOVIBRIO BACTERIOVORUS*AGAINST DIFFERENT STRESSORS. **Ryan Zurick**, Jonathan Azenon, Catherine B. Volle

1800-Pos **Board B205**
INHIBITION OF EGFR VIA AN ACIDITY-RESPONSIVE TRANSMEMBRANE PEPTIDE LIGAND. **Jennifer A. Rybak**, Amita R. Sahoo, Soyeon Kim, Robert J. Pyron, Savannah B. Pitts, Adam W. Smith, Matthias Buck, Francisco N. Barrera

1801-Pos **Board B206**
CALCIUM-DEPENDENT MEMBRANE INTERACTIONS OF TUMOR-TARGETING PEPTIDE PHLIP. Victor Vasquez Montes, Vivek Tyagi, Eden Sikorski, Alexander Kyrychenko, J. Alfredo Freites, Damien Thevenin, Douglas J. Tobias, **Alexey S. Ladokhin**

1802-Pos **Board B207**
QUANTIFICATION OF BIOPHYSICAL PROPERTIES OF CANDIDALYSIN, A FUNGAL PEPTIDE TOXIN SECRETED BY C. ALBICANS DURING INVASION. **Gaukhar Zhurgenbayeva**, Christian Eggeling

1803-Pos **Board B208**
CYAA TOXIN TRANSLOCATION ACROSS HOST CELL PLASMA MEMBRANE REQUIRES HIJACKING OF CALMODULIN. Alexis Voegele, Mirko Sadi, Darragh P. O'Brien, Pauline Gehan, Sylviane Hoos, Sébastien Brûlé, Bertrand Raynal, Ariel Mechaly, Ahmed Haouz, Nicolas Rodriguez, Patrice Vachette, Dominique Durand, Sébastien Brier, Daniel Ladant, **Alexandre Chenal**

1804-Pos **Board B209**
IDENTIFICATION OF A CYAA REGION EXHIBITING HIGH AFFINITY FOR MEMBRANES MIMICKING THE LIPID COMPOSITION OF THE INNER MEMBRANE OF BORDETELLA PERTUSSIS. **Nicolas Carvalho**, Corentin C. Leger, Dorothée Raoux-Barbot, Frank Wien, Sylviane Hoos, Inaki Guijarro, Sébastien Brier, Alexandre Chenal, Daniel Ladant

1805-Pos **Board B210**
PHYSICS-BASED INVERSE DESIGN OF CURVATURE SENSING ANTIVIRAL PEPTIDES. **Niek van Hilten**, Herre Jelger Risselada

1806-Pos **Board B211**
UNRAVELLING THE ATOMISTIC DETAILS OF PEPTIDE INDUCED MEMBRANE ALTERATIONS. **Prasanjeet Kaur**, Archana Chugh

1807-Pos **Board B212**
INTERACTIONS OF POLYMYXIN B1 WITH THE GRAM-NEGATIVE INNER MEMBRANE: A SIMULATION STUDY. **Dhanushka Weerakoon**, Jan K. Marzinek, Peter J. Bond, Conrado Pedebos, Syma Khalid

1808-Pos **Board B213**
COARSE GRAINED ANTIMICROBIAL COACERVATED NANOPARTICLE DYNAMICS. **Edward Lambden**, Martin B. Ulmschneider

1809-Pos **Board B214**
TRANSLOCATION OF CELL-PENETRATING PEPTIDES USING THE WEIGHTED ENSEMBLE METHOD WITHIN MOLECULAR DYNAMICS SIMULATIONS APPROACH. **Seungho Choe**

1810-Pos Board B215
ATOMIC INSIGHTS INTO AMYLOID-INDUCED MEMBRANE DAMAGE. **Cristiano L. Dias**, Yanxing Yang

Protein-Lipid Interactions: Channels (Boards B216 - B231)

1811-Pos Board B216
ARE THERE PICO(NANO)-PLASTICS IN A POLYETHYLENE COATED PAPER CUP? **Geonho Cho**, Sun Min Kim, Tae-Joon Jeon

1812-Pos Board B217
EXPERIMENTAL AND COMPUTATIONAL STUDY OF MEMBRANE PERMEABILIZATION AND TRANSLOCATION OF THE DYNORPHIN A NEUROPEPTIDE. **Laidy Maidel Alvero González**

1813-Pos Board B218
PHOSPHOINOSITIDES REGULATION OF HYPERPOLARIZATION-ACTIVATED CYCLIC-NUCLEOTIDE GATED (HCN) CHANNELS. **Sultan Mayar**, Ainara Claveras Cabezudo, Asma Feriel Khoualdi, Nazzareno D'Avanzo

1814-Pos Board B219
ION CHANNELS ACTIVITY OF SARS-COV-2 ENVELOPE PROTEIN THROUGH CALCIUM INFLUX ASSAY USING LARGE UNILAMELLAR VESICLES. **Hyejin Jeong**

1815-Pos Board B220
MEMBRANE THICKNESS AFFECTS ELIC ACTIVITY & M4 HELIX STRUCTURE. **Brandon K. Tan**, Wayland W. Cheng

1816-Pos Board B221
CARDIOMYOCYTE SARCOLEMMA MODELLING AND LIPID-PROTEIN INTERACTIONS. **Mariia Borbuliak**, Haydee Mesa Galloso, Valentina Corradi, Peter D. Tieleman

1817-Pos Board B222
FUNCTIONAL CHARACTERIZATION OF A NOVEL PIP_2-INDEPENDENT GIRK2 CHANNEL GATING MECHANISM. **Ha Nguyen**, Ian W. Glaaser, Yamuna K. Mathiharan, Yulin Zhao, Paul A. Slesinger

1818-Pos Board B223
IDENTIFICATION OF SPECIFIC SPHINGOLIPID-BAMA INTERACTIONS USING COARSE-GRAINED MOLECULAR DYNAMICS SIMULATION OF THE *C.CRESCENTUS* OUTER MEMBRANE. **Mariadelia Argüello Acuña**, Jahmal J. Ennis, Jesse Sandberg, Ezry Santiago-McRae, Eric Klein, Grace H. Brannigan

1819-Pos Board B224
IN SILICO STUDY OF CIB N-MYRISTOYLATION'S ROLE IN INNER-EAR MECHANOTRANSDUCTION. **Wei-Hsiang Weng**, Marcos M. Sotomayor

1820-Pos Board B225
VDAC INTERACTIONS WITH LIPIDS AND THEIR EFFECT ON ISOFORM SPECIFICITY. Jean-Pierre Duneau, Maria Queralt-Martin, **Lucie Bergdoll**

1821-Pos Board B226
S-ACYLATION OF SARAF REGULATES STORE-OPERATED CALCIUM ENTRY. **Goutham Kodakandla**, Michael X. Zhu, Askar M. Akimzhanov, Darren F. Boehning

1822-Pos Board B227
MECHANISMS OF LIGAND REGULATION IN HUMAN VOLTAGE-GATED PROTON CHANNEL. Shuo Han, Kimberly Tran, Samuel Jones, Xiang-Ping Chu, **Shizhen Wang**

1823-Pos Board B228
EFFICIENT COARSE-GRAINED SIMULATIONS OF MULTIPLE PIEZO CHANNELS IN FLAT MEMBRANE AND VESICLES. **Chen Yun Wen**, Jesper J. Madsen, Yun Lyna Luo

1824-Pos Board B229
PHASE STATE OF LIPID BILAYERS MODULATES AMMONIA AND WATER PERMEABILITY THROUGH *AT*TIP2;1. Thomas Barta, Deepak Kumar, Christine Siligan, Johann Wachlmayr, Tomás Kubar, **Andreas Horner**

1825-Pos Board B230
DYNAMICS TRANSITIONS OF THE KVAP VOLTAGE SENSOR DURING LIPID-DEPENDENT GATING. Anindita Das, **H Raghuraman**

1826-Pos Board B231
DISCOVERY OF LIPID BINDING SITES IN THE LIGAND-GATED ION CHANNEL GLIC THROUGH SIMULATIONS AND CRYO-EM. **Cathrine C. Bergh**, Urska Rovsnik, Rebecca J. Howard, Erik R. Lindahl

Excitation-Contraction Coupling (Boards B232 - B247)

1827-Pos Board B232
CARDIAC SIGNALING CLOUD REGULATES INTRACELLULAR [NA^+], [CA^{2+}] AND ADRENERGIC SIGNALING IN ATRIAL MYOCYTES. Mariusz Karbowski, Humberto C. Joca, Libet Garber, Liron Boyman, Christopher W. Ward, **W. Jonathan Lederer**, Maura Greiser

1828-Pos Board B233
RESTORATION OF*B*-ADRENERGIC RESPONSIVITY IN THE AGING HEART. **Maartje Westhoff**, Silvia G. del Villar, Taylor L. Voelker, Phung N. Thai, Nipavan Chiamvimonvat, Eamonn J. Dickson, Rose E. Dixon

1829-Pos Board B234
CARDIAC ACTION POTENTIAL PROLONGATION IN THE ABSENCE OF NCX1 NA^+-DEPENDENT INACTIVATION: A MECHANISTIC INSIGHT. **Kyle Scranton**, Marina Angelini, Scott John, Rui Zhang, Joshua I. Goldhaber, Riccardo Olcese, Michela Ottolia

1830-Pos Board B235
AUTOREGULATION OF EXCITATION-CA^{2+} SIGNALING-CONTRACTION AND ARRHYTHMOGENESISIN CARDIOMYOCYTE UNDER MECHANICAL LOAD. **Ye Chen-Izu**, Zhong Jian, Bence Hegyi, Rafael Shimkunas, Mohammad A. Kazemi-Lari, Marina Gabriel, Daisuke Sato, Nipavan Chiamvimonvat, Donald M. Bers, Kit S. Lam, John A. Shaw, Leighton T. Izu

1831-Pos Board B236
IDENTIFYING THE STAC3/$CA_V1.1$ INTERACTIONS RESPONSIBLE FOR $CA_V1.1$ EXPRESSION IN SKELETAL MUSCLE. **Eniko Török**, Wietske E. Tuinte, Marta Campiglio

1832-Pos Board B237
RESTORATION OF MITOCHONDRIAL CA^{2+} AND REDOX HOMEOSTASIS BY ENHANCEMENT OF SK CHANNELS RESCUES CA^{2+}CYCLING IN HFPEF. **Radmila Terentyeva**, Shanna Hamilton, Roland Veress, Fruzsina Perger, Matthew W. Gorr, Sandor Gyorke, Przemyslaw Radwanski, Andriy E. Belevych, Dmitry A. Terentyev

1833-Pos Board B238
EMPAGLIFLOZIN PREVENTS OXIDATIVE STRESS INDUCED BY ACUTE HYPERGLYCEMIA IN CARDIAC MYOCYTES. **Tory A. Edwards**, Kim T. Hellgren, Bence Hegyi, Donald M. Bers

1834-Pos Board B239
TRIM32 AS A NOVEL REGULATOR OF SKELETAL MUSCLE FUNCTIONS. **Jun Hee Choi**, Seung Yeon Jeong, Jooho Kim, Jin Seok Woo, Eun Hui Lee

1835-Pos Board B240 Travel Award Winner
IDENTIFYING THE $CA_V1.1$ VOLTAGE-SENSING DOMAINS INVOLVED IN CHANNEL GATING AND EXCITATION CONTRACTION COUPLING. **Simone Pelizzari**, Monica L. Fernandez-Quintero, Marta Campiglio, Petronel Tuluc, Yousra El Ghaleb, Martin C. Heiss, Bernhard E. Flucher

1836-Pos Board B241
DYSFUNCTIONAL CA^{2+} DYNAMICS IN PRIMARY SKELETAL MYOCYTES FROM R2509C-RYR1 MICE. Yoshitaka Tsuboi, Kotaro Oyama, Fuyu Kobirumaki-Shimozawa, Takashi Murayama, Nagomi Kurebayashi, Toshiaki Tachibana, Yoshinobu Manome, Emi Kikuchi, Madoka Suzuki, Norio Fukuda, **Toshiko Yamazawa**

1837-Pos **Board B242**
SPATIALLY DISCORDANT ALTERNANS OCCURRING WHEN CARDIAC TISSUE IS PACED ALTERNATIVELY FROM TWO SITES. **Tymoteusz F. Bak**, Daisuke Sato

1838-Pos **Board B243**
CHARACTERIZATION OF ORAI1$^{G100S/+}$ MOUSE MODEL OF TUBULAR AGGREGATE MYOPATHY. **Nan Zhao**, Antonio Michelucci, Miao He, Sundeep Malik, Laura Pietrangelo, Simona Boncompagni, Feliciano Protasi, Robert T. Dirksen

1839-Pos **Board B244**
PKD1 IS NECESSARY FOR FULL CARDIAC ANGII-INDUCED HYPERTROPHY BUT NOT FOR FULL ACUTE ANGII-INDUCED CALCIUM HANDLING CHANGES. **Juliana Mira Hernandez**, Christopher Y. Ko, Avery Mandel, Erin Y. Shen, Ashley R. Christensen, Julie Bossuyt, Donald M. Bers

1840-Pos **Board B245**
EFFECTS OF CIGARETTE SMOKE EXTRACTS (COMBUSTIBLE AND HEATED TOBACCO) ON RAT AND HUMAN IPS CELL-DERIVED CARDIOMYOCYTES. Jumpei Yasuda, Sakiko Matsumura, Takuya Notomi, I-Shan Chen, Takahiro Horinouchi, **Tomoe Y. Nakamura**

1841-Pos **Board B246**
14-3-3 REGULATES CARDIAC $CA_V1.2$ CLUSTERING, EXPRESSION, AND TRAFFICKING. **Heather Spooner**, Maartje F. Westhoff, Husna Ibrahimkhail, Aleena Yarovaya, Eamonn J. Dickson, Rose E. Dixon

1842-Pos **Board B247**
RYANODINE RECEPTOR HYPERACTIVITY PROMOTES MITOCHONDRIAL DYSFUNCTION VIA CALPAIN-DEPENDENT OPA1 PROTEOLYSIS. **Shanna Hamilton**, Radmila Terentyeva, Roland Veress, Fruzsina Perger, Zuzana Nichtova, Benjamin Martin, Sandor Gyorke, Andriy E. Belevych, Gyorgy Csordas, Dmitry Terentyev

Cardiac, Smooth, and Skeletal Muscle Electrophysiology (Boards B248 - B271)

1843-Pos **Board B248**
A SWITCH IN FXYD PROTEINS DYSREGULATES NKA IN DILATED CARDIOMYOPATHY. **John Q. Yap**, Taylor Phillips, Jaroslava Seflova, Jacob Cunningham, Seth L. Robia

1844-Pos **Board B249**
KCNH2 ENCODES A NUCLEAR-TARGETED POLYPEPTIDE THAT MEDIATES HERG1 CHANNEL GATING AND EXPRESSION. **Abhilasha Jain**, Olivia Stack, David K. Jones, Chiamaka Ukachukwu, Francisco G. Sanchez-Conde, Eric jimenez Vazquez, Shreya Salwi, Saba Ghodrati

1845-Pos **Board B250**
DATA-DRIVEN, PATIENT-SPECIFIC SIMULATIONS OF LONG-TERM HEART RATE VARIABILITY AND CARDIAC ALTERNANS FORMATION. **Vrishti M. Phadumdeo**, Brianna L. Mallare, Thomas J. Hund, Seth H. Weinberg

1846-Pos **Board B251**
MODELING INCOMPLETE PENETRANCE IN LONG QT SYNDROME TYPE 3 (LQT3) THROUGH ION CHANNEL HETEROGENEITY: AN *IN SILICO* POPULATION STUDY . **Jacob A. Miller**, Seth H. Weinberg, Nicolae Moise

1847-Pos **Board B252**
THE HERG PAS DOMAIN: A MAJOR REGULATOR OF I_{KR} AND A PROMISING ANTI-ARRHYTHMIC DRUG TARGET. **Chiamaka U. Ukachukwu**, Eric N. Jiménez-Vázquez, Abhilasha Jain, David K. Jones

1848-Pos **Board B253**
PLASMA MEMBRANE CURVATURE PROMOTES ER-PM CONTACT FORMATION MEDIATED BY JUNCTOPHILIN. **Yang Yang**, Bianxiao Cui

1849-Pos **Board B254**
MODELING SEX DIFFERENCES IN HUMAN ATRIAL MYOCYTE STRUCTURAL AND CA^{2+} HANDLING PROPERTIES: IMPACT ON CA^{2+}-DRIVEN ARRHYTHMIA. **Xianwei Zhang**, Yixuan Wu, Charlotte Smith, Stefano Morotti, Eleonora Grandi, Haibo Ni

1850-Pos **Board B255**
AUTOCORRELATION-BASED ALGORYTHM TO DETECT ALTERNANS IN CALCIUM BUFFERED VENTRICULAR MYOCYTES. **Mark Warren**, Steven Poelzing

1851-Pos **Board B256** **Travel Award Winner**
SEX DIFFERENCES IN ELECTROPHYSIOLOGY OF THE INTACT ATRIA. **Charlotte E.R. Smith**, Amanda M. Guevara, Lianguo Wang, Eleonora Grandi, Crystal M. Ripplinger

1852-Pos **Board B257**
CALCIUM INHIBITS THE FUNNY CURRENT (I_F)IN SINOATRIAL MYOCYTES. **Colin H. Peters**, Diego A. Peraza, Lucas M. Blecker, John Bankston, Cathy Proenza

1853-Pos **Board B258**
ROLE OF AMPK PATHWAY INACTIVATION IN HIGH FAT DIET RELATED CARDIAC ELECTROPHYSIOLOGICAL REMODELING. **Michael W. Rudokas**, Marine Cacheux, Xiaohong Wu, Madelyn E. Hummel, Lawrence H. Young, Fadi G. Akar

1854-Pos **Board B259**
PREDICTING PATIENT-SPECIFIC SINGLE-CELL PARAMETERS IN COMPUTATIONAL CARDIAC MODELS USING MACHINE LEARNING. **Lucas Lee**, Jonathan D. Moreno, Jonathan R. Silva

1855-Pos **Board B260** **Travel Award Winner**
COMPENSATORY CALCIUM HANDLING MAY UNDERLIE INCREASED ARRHYTHMIA SUSCEPTIBILITY OF SARCOSPAN-DEFICIENT MICE AFTER ISCHEMIA-REPERFUSION INJURY. **Aida Rahimi Kahmini**, Isela C. Valera, Alexis Cejas Carbonell, Julia Prascak, Florence Mumbi, Michelle S. Parvatiyar, Hyun S. Hwang

1856-Pos **Board B261**
NEAR INFRARED VOLTAGE SENSITIVE DYES BASED ON CHROMENE ELECTRON DONORS. Ping Yan, Valentina Biasci, Giuliana Judge, Corey D. Acker, Alexa Monroe, Leonardo Sacconi, **Leslie M. Loew**

1857-Pos **Board B262** **Travel Award Winner**
3D SPATIAL MODELING OF SINOATRIAL NODE CELLS REVEALS A CRITICAL ROLE OF SUBCELLULAR RYANODINE RECEPTOR DISTRIBUTION IN PACEMAKER AUTOMATICITY. **Haibo Ni**, Xianwei Zhang, Yixuan Wu, Di Lang, Stefano Morotti, Alexey V. Glukhov, Eleonora Grandi

1858-Pos **Board B263**
SEX-SPECIFIC CONTRIBUTION OF SMALL-CONDUCTANCE CA^{2+}-ACTIVATED K^+ CURRENT TO ATRIAL ELECTROPHYSIOLOGY AND ARRHYTHMOGENESIS. **Nathaniel T. Herrera**, Haibo Ni, Dobromir Dobrev, Stefano Morotti, Eleonora Grandi

1859-Pos **Board B264**
SINOATRIAL NODE CELLS AND TISSUE OPERATE VIA STOCHASTIC RESONANCE. **Victor A. Maltsev**, Alexander V. Maltsev, Anna Maltsev, Edward G. Lakatta, Michael D. Stern

1860-Pos **Board B265**
EXPLORING THE PATHOPHYSIOLOGICAL ROLE OF THE PLN-R14DEL MUTATION IN A NOVEL HETEROZYGOUS MOUSE MODEL OF DILATED CARDIOMYOPATHY. **Francesco Lodola**, Claudia Maniezzi, Marem Eskandr, Chiara Florindi, Rudolf A. de Boer, Herman Silljé, Antonio Zaza

1861-Pos **Board B266**
INPUT OF EXPRESSED HERG CURRENT INTO A COMPLEX NEURON *IN SILICO* CARDIAC ATRIAL CELL: IMPLICATIONS FOR CARDIOTOXICITY SCREENING. **Mark W. Nowak**, Leigh Korbel, Alex Kane, Brian K. Panama, Michael L. Hines, Nicholas T. Carnevale, Glenna C. Bett, Randall L. Rasmusson

1862-Pos Board B267
S-NITROSYLATION OF CAMKII CYS273 SUPPRESSES CAMKII ACTIVATION AND TRANSLOCATION WITHIN CARDIAC MYOCYTES. **Chidera C. Alim**, Christopher Y. Ko, Julie Bossuyt, Donald M. Bers

1863-Pos Board B268
SPECTRAL PROPERTIES OF THE VOLTAGE-SENSITIVE DYE DI4-ANBDQBS. **Brian K. Panama**, Anthony Costantino, Mark W. Nowak, Andrew A. Daddario, Randall L. Rasmusson, Glenna C. Bett

1864-Pos Board B269
INITATION OF EARLY AFTERDEPOLARIZATIONS BY COMPLEX SPATIAL DYNAMICS IN CARDIAC TISSUE. **Noah A. Wiesner**, Daisuke Sato

1865-Pos Board B270
DYSREGULATION OF INTRACELLULAR PH IN THE FAILING HEART. **Yankun Lyu**, Phung Thai, Pauline Trinh, Valeriy Timofeyev, Kenneth S. Ginsburg, Julie Bossuyt, Donald M. Bers, Ebenezer N. Yamoah, Nipavan Chiamvimonvat, Xiao-Dong Zhang

1866-Pos Board B271
MG^{2+} EXTRUSION ACTIVATED BY HYDROGEN PEROXIDE IN RAT VENTRICULAR MYOCYTES. **Michiko Tashiro**, Masato Konishi, Makino Watanabe, Utako Yokoyama

Muscle Regulation (Boards B272 - B275)

1867-Pos Board B272
ANALYSIS OF LIPID COMPOSITION IN MUSCLE TISSUE OF OBESE AND LEAN RATS. **Morgan Manns**, Dhruv Ramesh Nakhwa, Edgar E. Kooijman, Madisyn Langdon, DESMOND OWUSU KWARTENG, Colleen Novak, Christina Watts

1868-Pos Board B273
PROTEIN DENSITOMETRY PROFILING IN MOUSE HEARTS CARRYING AN HCM CARDIAC TROPONIN T MUTATION. **Paula F. Nieto Morales**, Isabella Coscarella, Emily Farrar, Nikita Zalenski, Maicon Landim-Vieira, P. Bryant Chase, Jose R. Pinto

1869-Pos Board B274
MODELING MECHANISMS OF THE THICK-FILAMENT OFF-STATE DYNAMICS IN CARDIAC MUSCLE. **Alexandre Lewalle**, Gregory Milburn, Kenneth S. Campbell, Steven A. Niederer

1870-Pos Board B275
GLU-RICH N-TERMINAL VARIABLE REGION OF TROPONIN T FUNCTIONS AS A MYOFILAMENT CA^{2+}-RESERVOIR TO REDUCE SR CA^{2+}-CYCLING. Han-Zhong Feng, Tianxin Cao, **J.-P. Jin**

Voltage-Gated K Channels II (Boards B276 - B302)

1871-Pos Board B276
REGULATION OF KIR2.1 CHANNELS BY UBIQUITIN-LIKE MODIFIER PROTEINS. **Jenna G. Connolly**, Yu Xu, Takeharu Kawano, Leigh D. Plant

1872-Pos Board B277 Travel Award Winner
ENDOCANNABINOID REGULATION OF INWARD RECTIFIER (KIR2.1) CHANNELS. **Ameneh Ahrari**, Sultan Mayar, Madeleine M. Labonte, Niveny Sinniah, Mina Memarpoor-Yazdi, Nazzareno D'Avanzo

1873-Pos Board B278
CRYO-EM STRUCTURE OF THE MAMMALIAN KV2.1 CHANNEL AND EPILEPTIC ENCEPHALOPATHY MUTATIONS PROVIDE INSIGHT INTO ELECTROMECHANICAL COUPLING AND SLOW INACTIVATION. **Ana I. Fernández-Mariño**, Xiaofeng Tan, Chanhyung Bae, Kenton J. Swartz

1874-Pos Board B279
MODULATION OF DELAYED RECTIFYING K^+ CURRENTS BY SILENT KV SUBUNITS. Michael D. Flood, **Joao L. Carvalho-de-Souza**

1875-Pos Board B280
KCNQ CHANNELS OPEN WITH AT LEAST TWO S4 ACTIVATION. Andy Hinojo-Perez, Kevin P. Cunningham, Michaela Edmond, Marta E. Perez, **Rene Barro-Soria**

1876-Pos Board B281
COMPOUNDS SPECIFICALLY ENHANCE I_{KS} BY MODULATING VSD-PORE COUPLING. **Lu Zhao**, Xianjin Xu, Jingyi Shi, Guohui Zhang, Ira S. Cohen, Xiaoqin Zou, Jianmin Cui

1877-Pos Board B282
MUTATIONS AFFECTING ELECTRO-MECHANICAL COUPLING IN KCNQ CHANNELS ALTER KINETICS AND VOLTAGE DEPENDENCE OF ACTIVATION. **Nien-Du Yang**, Lu Zhao, Richard Kanyo, Jingru Li, Po wei Kang, Alex K. Dou, Kelli McFarland White, Jingyi Shi, Jeanne M. Nerbonne, Harley T. Kurata, Jianmin Cui

1878-Pos Board B283
FUNCTIONAL IMPACT OF THE INTERACTION BETWEEN S1 SEGMENT AND KCNE SUBUNIT IN THE MODULATION OF KCNQ1 CHANNELS. Go Kasuya, **Koichi Nakajo**

1879-Pos Board B284
INVESTIGATING THE MECHANISM BEHIND THE EFFECT OF PUFA ANALOGUES IN INCREASING THE MAXIMUM CONDUCTANCE OF KCNQ1 CHANNELS. **Alessia Golluscio**, Jessica Jowais, Jodene Eldstrom, David Fedida, Peter H. Larsson

1880-Pos Board B285
A MUTATIONAL AND MODELING STUDY OF A BINDING POCKET FOR I_{KS} ACTIVATORS BETWEEN KCNQ1 AND KCNE1. **Magnus Chan**, Harutyun Sahakyan, Yundi Wang, Jodene R. Eldstrom, Marc Pourrier, Vitya A. Vardanyan, David Fedida

1881-Pos Board B286
COMPUTER-AIDED DRUG DESIGN OF MOLECULES THAT POTENTIALLY BIND TO THE CARDIAC KCNQ1 POTASSIUM CHANNEL. **Laura Maria Castro Gonzalez**, Jessica Jowais, Peter H. Larsson, Peter D. Tieleman

1882-Pos Board B287
STRUCTURAL BASES FOR BLOCKADE AND ACTIVATION OF BK CHANNELS BY BA^{2+} IONS. **Shubhra Srivastava**, Pablo Miranda, Natalia de Val, Teresa Giraldez, Jianghai Zhu, Raul Cachau, Miguel Holmgren

1883-Pos Board B288
ROLE OF THE NMDAR-GLUN2B SUBUNITS IN THE FUNCTION OF SUPRAMOLECULAR NMDAR-BK CHANNEL COMPLEXES. **Rebeca Martínez Lázaro**, David Bartolome-Martin, Teresa Giraldez

1884-Pos Board B289
ALDOSTERONE ACTIVATES CEREBROVASCULAR SMOOTH MUSCLE BK CHANNELS IN ABSENCE OF B_1 SUBUNITS, YET THESE POTENTIATE STEROID ACTION AND THUS FACILITATE ALDOSTERONE-INDUCED DILATION OF CEREBRAL ARTERIES. **Steven Mysiewicz**, Alexandria Slayden, Sydney Hawks, Anna N. Bukiya, Alex M. Dopico

1885-Pos Board B290
A PREDICTIVE MODEL OF VOLTAGE GATING OF BK CHANNELS VIA PHYSICAL MODELING AND MACHINE LEARNING. **Erik B. Nordquist**, ZhiGuang Jia, Jianhan Chen

1886-Pos Board B291
GATING TRANSITIONS IN THE MTHK POTASSIUM CHANNEL. **Reinier de Vries**, Wojciech Kopec, Bert L. de Groot

1887-Pos Board B292
NONCANONICAL ELECTROMECHANICAL COUPLING PATHS IN THE CARDIAC HERG CHANNEL. **Carlos Alberto Z. Bassetto Jr**, Flavio Costa, Carlo Guardiani, Francisco Bezanilla, Alberto Giacomello

1888-Pos **Board B293**
REKINDLE THERAPEUTIC STRATEGIES FOR LONG QT SYNDROME FROM GAIN OF FUNCTION (IKR) MUTATIONS IN HERG. **Amit Kumawat**, Carlo Camilloni

1889-Pos **Board B294**
NON-STATIONARY NOISE ANALYSIS OF WHOLE-CELL CURRENTS FROM CHO HERG EXPRESSION SYSTEMS. **Alejandra Donaji Herrera Reyes**, Gary R. Mirams

1890-Pos **Board B295**
RESTORING THE FUNCTION OF HERG LQT2 N-TERMINAL MUTANTS WITH NON-CANONICAL AMINO ACIDS. **Ileana Raquel Hernandez Araiza**, Matt C. Trudeau

1891-Pos **Board B296** **Travel Award Winner**
DETERMINING THE ROLE OF THE UNIQUE N-TERMINAL 1B DOMAIN IN THE GATING OF HETEROTETRAMERIC HERG1A/HERG1B POTASSIUM CHANNELS. **Taylor R. Crawford**, Matt C. Trudeau

1892-Pos **Board B297** **Travel Award Winner**
USING THE PHOTO-CROSSLINKABLE NON-CANONICAL AMINO ACID BZF TO CAPTURE U.V.-DRIVEN, STATE-DEPENDENT DISRUPTION OF KINETICS AND VOLTAGE DEPENDENCE OF ACTIVATION IN HERG POTASSIUM CHANNELS. **Sara J. Codding**, Gail A. Robertson, Matt C. Trudeau

1893-Pos **Board B298**
A POSSIBLE ROLE FOR PHASE SEPARATION IN HETEROMERIC BIOGENESIS OF HERG1A/1B CHANNELS. **Sudharsan Kannan**, Peter Luong, William Kasberg, Anjon Audhya, Gail A. Robertson

1894-Pos **Board B299**
SPECIFIC INTERACTIONS CRITICAL FOR THE GATING OF HCN CHANNELS. **Kevin P. Cunningham**, Xiaoan Wu, Marta E. Perez, Peter H. Larsson

1895-Pos **Board B300**
DESIGN OF A PHOTO-ACTIVATABLE IVABRADINE TO ENABLE LIGHT INDUCED BLOCK OF HCN CURRENT IN TISSUES. **Alessandro Porro**, Cristiano Bolchi, Federico Brandalise, Rebecca Appiani, Roberta Leone, Federico Thei, Gerhard Thiel, Marco Pallavicini, Anna Moroni

1896-Pos **Board B301**
S5-S6 INTERACTIONS IMPORTANT FOR THE ELECTROMECHANICAL COUPLING IN HCN CHANNELS. **Xiaoan Wu**, Kevin P. Cunningham, Marta E. Perez, Peter H. Larsson

1897-Pos **Board B302**
MEMBRANE PHOSPHOLIPIDS INDUCE MODERATE POSITIVE COOPERATIVITY IN CLOSED PACEMAKER CHANNELS. **Vinay Idikuda**, SUSOVAN ROY CHOWDHURY, Randall H. Goldsmith, Baron Chanda

Ligand-Gated Channels II (Boards B303 - B325)

1898-Pos **Board B303**
EXPLORING THE EFFECTS OF NANODISCS ON THE CONFORMATION OF A PENTAMERIC LIGAND-GATED ION CHANNEL. **Mark J. Arcario**, Vikram Dalal, Grace H. Brannigan, Wayland W. Cheng

1899-Pos **Board B304**
MUSCLE-TYPE NICOTINIC ACETYLCHOLINE RECEPTOR STRUCTURE, FUNCTION, AND PHARMACOLOGY. **Umang Goswami**, Md Mahfuzur Rahman, Jinfeng Teng, Ryan E. Hibbs

1900-Pos **Board B305**
A NOVEL APPROACH TO DISSECT IONS OCCUPANCY AND DISSOCIATION CONSTANT OF INDIVIDUAL BINDING SITES WITHIN THE K^+-CHANNEL SELECTIVITY FILTER. **Megan M. Skains**, D. Marien Cortes, Luis G. Cuello

1901-Pos **Board B306**
STATE-DEPENDENT SALT BRIDGE INTERACTION DURING ACTIVATION IN PROKARYOTIC CYCLIC NUCLEOTIDE-GATED CHANNEL STHK. **Pierce Eggan**, Eric Evans, William N. Zagotta

1902-Pos **Board B307**
IDENTIFICATION AND CHARACTERISATION OF LIPIDS THAT ARE POSITIVE ALLOSTERIC MODULATORS OF GLYCINE RECEPTORS. Casey I. Gallagher, Yie Chang Lin, Arvind Kumar, Damian Ha, Christopher L. Cioffi, Sudha Chakrapani, Megan L. O'Mara, **Robert J. Vandenberg**

1903-Pos **Board B308**
STRUCTURAL BASIS FOR THE ALLOSTERIC MODULATION OF $GABA_A$ RECEPTORS BY NEUROSTEROIDS. **Ayobami Diyaolu**, Peter Obi, Pavan Payghan, Senthil Natesan

1904-Pos **Board B309**
OXIDATION DRIVEN REVERSAL OF PIP_2-DEPENDENT GATING IN GIRK2 CHANNELS. **Sun Joo Lee**, Shoji Maeda, Colin G. Nichols

1905-Pos **Board B310**
THE MOLECULAR MECHANISM OF SNAKE SHORT-CHAIN ALPHA-NEUROTOXIN BINDING TO MUSCLE-TYPE NICOTINIC ACETYLCHOLINE RECEPTORS. Mieke Nys, Eleftherios Zarkadas, Marijke Brams, Aujan Mehregan, Kumiko Kambara, Jeroen Kool, Nicholas Casewell, Daniel Bertrand, John E. Baenziger, Hugues Nury, **Chris Ulens**

1906-Pos **Board B311** **Travel Award Winner**
SILICA NANOPARTICLES INHIBIT RESPONSES TO ATP IN HUMAN AIRWAY EPITHELIAL 16HBE CELLS. **Alina Milici**, Karel Talavera, Alicia Sanchez Linde

1907-Pos **Board B312**
ION PERMEATION PATHWAY WITHIN THE INTERNAL PORE OF P2X RECEPTOR CHANNELS. **Stephanie W. Tam**, Katherine Huffer, Mufeng Li, Kenton Swartz

1908-Pos **Board B313**
CELL DEATH IN ISOLATED XENOPUS LAEVIS (AFRICAN CLAWED FROG) OOCYTES IS A TEMPERATURE-DEPENDENT PROCESS. **Nils Otten**, Michael Hollmann, Horst Lohmann

1909-Pos **Board B314**
MODULATION OF A LIGAND-GATED ION CHANNEL BY AN AMPHETAMINE DERIVATIVE. **Emelia Karlsson**, Olivia Andén, Marc H. Delarue, Rebecca J. Howard, Erik R. Lindahl

1910-Pos **Board B315**
CBD SPECIFIC ACTION ON $GABA_A$ RECEPTOR ALPHA SUBUNITS. **Ashley Davies**, Ali Yehia, Charlotte Caddick, Nathan Hunt, Tommaso Iannitti

1911-Pos **Board B316** **Travel Award Winner**
REVEALING THE ARRANGEMENT OF THE INTRACELLULAR TERMINI OF ASIC1A USING TRANSITION METAL ION FRET. **Megan Cullinan**, John Bankston

1912-Pos **Board B317**
CHARGED RESIDUES IN THE GABA-A RECEPTOR INTRACELLULAR DOMAIN IMPACT CHANNEL ACTIVATION AND DESENSITIZATION. **John C.I. Merrick**, Cynthia Czajkowski, Anton J. Tung

1913-Pos **Board B318**
FLUORESCENT, NON-HYDROLYZABLE NUCLEOTIDE PROBES FOR ATP-ACTIVATED ION CHANNELS. **Christina Alcaro**, Priscilla Rubio, Michael C. Puljung

1914-Pos **Board B319**
STRUCTURAL AND EVOLUTIONARY STUDIES ON CEPHALOPOD CHEMOTACTILE RECEPTORS. **Guipeun Kang**, Corey Allard, Wendy Valencia-Montoya, Jeong Joo Kim, Lena van Giesen, Peter Kilian, Xiaochen Bai, Nicholas Bellono, Ryan E. Hibbs

1915-Pos Board B320
COMPUTATIONAL ANALYSIS OF INTERACTIONS BETWEEN AMPA RECEPTOR AND CON-IKOT-IKOT CONOTOXIN. **Natalia A. Szlachetka**, Christopher W. Wood, Jelena Baranovic

1916-Pos Board B321
USING FLUORESCENCE TO MEASURE REAL-TIME BINDING OF SEROTONIN TO ITS RECEPTORS. **Aspen Hawkins**, Olivia Brado, Michael C. Puljung

1917-Pos Board B322
PENTAMERIC LIGAND GATED ION CHANNELS' INTRACELLULAR DOMAIN INTERACTION WITH RIC3 CHAPERONE. **Nermina Sarayli Belirgen**, Hoa Quynh Do, Austin D. Rodgers, Lauretta Anne Pierre, Irina Kim Cavdar, Michaela Jansen

1918-Pos Board B323
MOLECULAR DYNAMICS SIMULATIONS OF NEURONAL NICOTINIC ACETYLCHOLINE RECEPTOR ALLOSTERIC MODULATION. Cristian Sales Garcia, Cynthia Hu, Elle Albrecht, Yuxuan Zhuang, Rebecca J. Howard, Erik R. Lindahl, **Mark M. Levandoski**

1919-Pos Board B324 Travel Award Winner
MECHANISTIC INSIGHTS INTO LIPID REGULATION OF THE ACID-SENSING ION CHANNELS. **Robert C. Klipp**, John R. Bankston

1920-Pos Board B325
A SYNTHETIC APPROACH TO YUGO K^+ CHANNEL BIOPHYSICS. **Megan Larmore**, Orhi Esarte Polomero, Neha P. Kamat, Paul G. DeCaen

Ion Channels, Pharmacology, and Disease II (Boards B326 - B334)

1921-Pos Board B326
EXAMINING THE EFFECT OF A SUBSTITUTED CARBAMATE POSITIVE ALLOSTERIC MODULATOR ON THE (A4)3(B2)2 AND (A4)2(B2)3 NICOTINIC ACETYLCHOLINE RECEPTORS. **Josue Gaona**, Musharaf Mohiuddin, Ayman K. Hamouda

1922-Pos Board B327
CYTOTOXICITY AND INTERNALIZATION PROPERTIES OF NOVEL ALPHA7 NICOTINIC RECEPTOR SELECTIVE PEPTIDES. **Lahra Weber**, Brittany C.V. OBrien, Maegan M. Weltzin

1923-Pos Board B328
DESIGN AND OPTIMIZATION OF NICOTINIC ACETYLCHOLINE RECEPTOR SUBTYPE SELECTIVE PEPTIDES. **Brittany C.V. OBrien**, Lahra Weber, Maegan M. Weltzin

1924-Pos Board B329
SUBTYPE-SPECIFIC POTENTIATION OF OTOPETRIN PROTON CHANNELS BY ZN^{2+} AND ITS STRUCTURAL BASIS. **Joshua P. Kaplan**, Bochuan Teng, Marcel P. Goldschen-Ohm, Emily R. Liman

1925-Pos Board B330 Travel Award Winner
KINETIC MECHANISM OF NMDA RECEPTOR INHIBITION BY THE KETAMINE METABOLITE 2R,6R-HYDROXYNORKETAMINE. **Faye Raymond**

1926-Pos Board B331
NOVEL SMALL-MOLECULE MODULATION OF PIEZO1 INVESTIGATED BY CONVENTIONAL AND AUTOMATED PATCH-CLAMP. **Jacob A. Kinsella**, Gregory Parsonage, Oleksandr V. Povstyan, Nicoletta Murciano, Rachel Trowbridge, Charlotte Revill, Adam Nelson, Maria Giustina Rotordam, Nadine Becker, Andrea Bruggemann, Richard Foster, David J. Beech

1927-Pos Board B332
RATIONALE DESIGN OF NOVEL PIEZO1 MODULATORS. Wenjuan Jiang, Tharaka D. Wijerathne, Han Zhang, Yi-Chun Lin, Wonpil Im, **Jerome J. Lacroix**, Yun Lyna Luo

1928-Pos Board B333
THE SODIUM LEAK COMPLEX AND FRIENDS: IDENTIFYING PROTEIN PARTNERS OF THE NALCN CHANNELOSOME. **Samuel Usher**, Stephan A. Pless

1929-Pos Board B334
PARACELLULAR ION TRANSPORT IN CLAUDIN-15 ION CHANNELS. **Sarah McGuinness**, Sukanya Konar, Shadi Fuladi, Fatemeh Khalili-Araghi

Membrane Pumps, Transporters, and Exchangers I (Boards B335 - B353)

1930-Pos Board B335
THE EFFECTS OF DISEASE-CAUSING CLC-7 MUTATIONS ON LYSOSOMAL PH. **Vedrana Mikusevic**, Jacob K. Hilton, Reena Jethva, Joseph A. Mindell

1931-Pos Board B336
MECHANISM OF CLC-7 TRANSPORTER INHIBITION BY THE LYSOSOMAL PHOSPHOLIPID PI(3,5)P2. **Jacob K. Hilton**, Joseph A. Mindell

1932-Pos Board B337
MOLECULAR DYNAMICS CHARACTERIZATION OF THE MECHANISM OF INHIBITION OF CLC-7 ACTIVITY BY PI(3)P. **Eric Sefah**, Jacob K. Hilton, Joseph A. Mindell, Michael Grabe

1933-Pos Board B338
THE HOMOLOGY OF ELEVATOR AND ROCKING BUNDLE TRANSPORTERS. **Noah Trebesch**, Emad Tajkhorshid

1934-Pos Board B339
INVESTIGATION OF CONFORMATIONAL SAMPLING OF LEUT DUE TO NA SITE MUTATIONS AT THR 354 AND SER 355 WITH DEER EPR SPECTROSCOPY. **Brynn E. Elson**, Kelli N. Kazmier, Richard A. Stein

1935-Pos Board B340
THE MOLECULAR PUZZLE OF THE HUMAN SEROTONIN TRANSPORTER: WHERE A PROTON AND A POTASSIUM FIT IN THE PICTURE. **Eva Hellsberg**, Danila Boytsov, Walter Sandtner, Lucy R. Forrest

1936-Pos Board B341
INVESTIGATION OF THE TRANSPORT CYCLE OF SODIUM GLUCOSE TRANSPORT PROTEINS THROUGH COMPUTATIONAL SIMULATION. **Fiona B. Naughton**, John M. Rosenberg, Michael Grabe

1937-Pos Board B342
AN ELECTROPHYSIOLOGICAL APPROACH FOR LOW TURNOVER AND INTRACELLULAR TRANSPORT PROTEINS: IMPROVING AMPLIFICATION AND ACCESSIBILITY. **George Okeyo**, Andre Bazzone, Maria Barthmes, Rocco Zerlotti, Cecilia George, Niels Fertig

1938-Pos Board B343
CRYO-EM STRUCTURE DETERMINATION OF THE HUMAN REDUCED FOLATE CARRIER SLC19A1 IN COMPLEX WITH METHOTREXATE. **Nicholas J. Wright**, Justin G. Fedor, Han Zhang, Pyeonghwa Jeong, Yang Suo, Jiho Yoo, Jiyong Hong, Wonpil Im, Seok-Yong Lee

1939-Pos Board B344
METHOTREXATE RECOGNITION BY THE HUMAN REDUCED FOLATE CARRIER SLC19A1. **Justin G. Fedor**, Nicholas J. Wright, Han Zhang, Pyeonghwa Jeong, Yang Suo, Jiho Yoo, Jiyong Hong, Wonpil Im, Seok-Yong Lee

1940-Pos Board B345
RESIDUES INVOLVED IN PROTON-COUPLED TRANSPORT OF ANTIMALARIAL DRUGS BY PFCRT. **Ali Rasouli**, Shashank Pant, Jonathan Kim, Filippo Mancia, Emad Tajkhorshid

1941-Pos Board B346
PHYLOGENETIC AND LOCALISATION ANALYSES OF MAMMALIAN VNUT REVEAL A UNIQUE ER-RETENTION SEQUENCE REPLACES VESICULAR TARGETING MOTIFS IN THE C-TERMINUS. **Stephanie Rayner**, Gaby Jensen, Lara Gastaldello, Damon Poburko

1942-Pos **Board B347**
DUAL TRANSPORT FUNCTION OF UNCOUPLING PROTEIN 3. Tatiana Tyshchuk, Juergen Kreiter, **Elena E. Pohl**

1943-Pos **Board B348**
CONFORMATIONAL AND FUNCTIONAL INTERRELATION BETWEEN MITOCHONDRIAL CARRIER PROTEINS: UCP4, ANT, P_iT. **Marzieh Tabefam**, Matthew D. Smith, Masoud Jelokhani-Niaraki

1944-Pos **Board B349**
SITE-SPECIFIC PHOSPHORYLATION OF VDAC1 DECREASES ITS SUSCEPTIBILITY TO OLIGOMERIZATION. **Gayathri K. Natarajan**, Jyotsna Mishra, Qunli Cheng, Ailing Tong, Amadou K. Camara, Wai-Meng Kwok

162-Plat **Board B350** **Travel Award Winner**
ELUCIDATING THE ROLE OF A TRANS-ENVELOPE MCE TRANSPORT SYSTEM IN PSEUDOMONAS AERUGINOSA. **Sabrina I. Giacometti**, Rachel L. Redler, Krishna Mody, Damian C. Ekiert, Gira Bhabha

1946-Pos **Board B351**
USING SOLID-SUPPORTED MEMBRANE ELECTROPHYSIOLOGY TO PROBE THE TRANSPORT MECHANISM OF EMRE. **Merissa Brousseau**, Nathan E. Thomas, Peyton J. Spreacker, Katherine A. Henzler-Wildman

1947-Pos **Board B352**
LIGAND BINDING BY THE SMALL MULTIDRUG RESISTANT TRANSPORTER EMRE. **Da Teng**, Gregory A. Voth

1948-Pos **Board B353**
EXPLORING SMALL MULTIDRUG RESISTANCE (SMR) PROTEIN INTERACTIONS WITH METFORMIN DEGRADATION PRODUCTS. **Rachael M. Lucero**, Randy Stockbridge

Smooth Muscle and Cardiac Muscle Mechanics and Structure (Boards B354 - B381)

1949-Pos **Board B354**
DEFINING THE STRUCTURE AND ORIENTATION OF THE N-TERMINAL DOMAIN OF CARDIAC TROPONIN T IN RELATIONSHIP TO ACTIN. **Grace Heffernon**, Romi Castillo, Garrett Crosby

1950-Pos **Board B355** **Travel Award Winner**
DISSECTING THE MECHANISMS BY WHICH A PATHOGENIC VARIANT IN CARDIAC TNT TAIL DOMAIN LEADS TO DISTURBED MYOFILAMENT PERFORMANCE. **Maicon Landim-Vieira**, Weikang Ma, Taejeong Song, Hosna Rastegarpouyani, Coen A. Ottenheijm, Hyun S. Hwang, Henry M. Gong, Maria Papadaki, Bjorn C. Knollmann, Sakthivel Sadayappan[10], Thomas Irving, Vitold E. Galkin[11], Prescott B. Chase[12], J. Renato D. Pinto

1951-Pos **Board B356**
THE STRUCTURE OF THE JUNCTION REGION OF THE NATIVE CARDIAC THIN FILAMENT. **Cristina M. Risi**, Betty Belknap, Howard D. White, J. Renato D. Pinto, Prescott B. Chase, Vitold E. Galkin

1952-Pos **Board B357**
MYOSIN S2 STABILIZER PEPTIDE DECREASES RECOVERY RATES OF CONTRACTION. Thomas Kampourakis, Theodore J. Kalogeris, Rohit R. Singh, Dua'a Quedan, Kerry S. McDonald, **Douglas D. Root**

1953-Pos **Board B358**
THE ROLE OF MYOSIN LOOP-4 IN LOCALIZING TROPOMYOSIN ON ACTIN DURING MUSCLE ACTIVATION AND RELAXATION. Matthew Doran, Michael J. Rynkiewicz, Elumalai Pavadai, Skylar M.L. Bodt, Dave Rasicci, Jeffrey R. Moore, Esther Bullitt, Christopher M. Yengo, **William Lehman**

1954-Pos **Board B359**
THE PERFORMANCE OF ATRIAL AND VENTRICULAR MYOSIN ISOFORMS PURIFIED FROM BOVINE HEART AND MEASURED ON A HALF-SARCOMERE LIKE SYNTHETIC NANOMACHINE. **Irene Pertici**, Valentina Buonfiglio, Christine Rivera, Suman Nag, Duccio Fanelli, Vincenzo Lombardi, Pasquale Bianco

1955-Pos **Board B360**
A MOLECULAR SCALE INVESTIGATION OF THE MECHANISMS OF CONTRACTILE DYSFUNCTION FOR THE HYPERTROPHIC CARDIOMYOPATHY MYH7 G256E MUTATION. **Kerry Y. Kao**, Matthew C. Childers, Saffie Mohran, Michael A. Geeves, Michael Regnier

1956-Pos **Board B361**
THE B-MYOSIN G256E MUTATION IMPAIRS RELAXATION BY ALTERING TRANSDUCER STIFFNESS. **Matthew C. Childers**, Kerry Y. Kao, Saffie Mohran, Michael Regnier

1957-Pos **Board B362**
MYOFIBRIL RELAXATION WITH MAVACAMTEN IS MODIFIED BY CMYBP-C. **Alexey V. Dvornikov**, Samantha P. Harris

1958-Pos **Board B363** **Travel Award Winner**
THE C5C7 DOMAINS OF CMYBP-C DO NOT ALTER MYOFILAMENT CALCIUM SENSITIVITY OF TENSION. **Angela C. Greenman**, Rachel Sadler, Nichlas M. Engels, Samantha Harris

1959-Pos **Board B364**
EFFECTS OF PHOSPHOMIMETIC MUTATIONS IN THE M-DOMAIN OF CARDIAC MYOSIN BINDING PROTEIN-C. **Nichlas M. Engels**, Samantha Harris

1960-Pos **Board B365**
THE EFFECT OF PHYSIOLOGICAL AND PHARMACOLOGICAL INOTROPIC INTERVENTIONS ON THE REGULATORY STATE OF THE THICK FILAMENT IN INTACT CARDIAC TRABECULAE. Massimo Reconditi, Marco Caremani, Marco Linari, Ilaria Morotti, Matteo Marcello, Theyencheri Narayanan, **Vincenzo Lombardi**, Gabriella Piazzesi

1961-Pos **Board B366**
MYBP-C BINDS MYOSIN S2 IN MOUSE HEART AS REVEALED BY SUPER-RESOLUTION MICROSCOPY. **Dua'a Quedan**, Bertrand C.W. Tanner, Douglas D. Root

1962-Pos **Board B367**
THE Z-DISC: MECHANOSENSOR AT THE INTERFACE BETWEEN MYOSIN BIOMECHANICS AND HYPERTROPHIC SIGNALING. **Prerna Giri**, Alison S. Vander Roest, Soah Lee, Paul Heinrich, Alexander R. Dunn, Sean Wu, Daniel Bernstein

1963-Pos **Board B368**
ABNORMAL KINETICS OF CONTRACTION CAUSED BY AN A-ACTININ 2 MISSENSE VARIANT IN THE EF-3-4 HAND DOMAIN IN HUMAN MYOCARDIUM. **Michelle C. Rodriguez Garcia**, Jeffrey Schmeckpeper, Maicon Landim-Vieira, Isabella Leite Coscarella, Xuan Fang, Weikang Ma, Aida Rahimi Kahmini, Lili Wang, Moore B. Shoemaker, James B. Atkinson, Peter Kekenes-Huskey, Thomas Irving, Prescott B. Chase, Bjorn C. Knollmann, J. Renato Pinto

1964-Pos **Board B369** **Travel Award Winner**
INVESTIGATING THE SARCOLEMMA-SARCOMERE CONNECTION AND FORCE TRANSMISSION IN THE HEART. **Florence D. Mumbi**, Maicon Landim-Vieira, Bolade S. Olateju, Isabella Leite Coscarella, Prescott B. Chase, J. Renato Pinto, Michelle S. Parvatiyar

1965-Pos **Board B370**
SARCOMERE REMODELING OF LEFT ATRIAL MYOCYTES IN NON-FAILING ATRIAL FIBRILLATION PATIENTS. **Christine E. Delligatti**, Parth V. Desai, Michaela Door, Geena E. Fritzmann, Thomas G. Martin, Marisa J. Stachowski, Maria Papadaki, David Y. Barefield, Jonathan A. Kirk

1966-Pos Board B371
CARDIAC MYOSIN VELOCITY AND FORCE ARE DRAMATICALLY IMPROVED WITH AN ALTERNATIVE TRIPHOSPHATE SUBSTRATE. **Mike K. Woodward**, Christopher Marang, Brent Scott, Eric Ostrander, Dhandapani Venkataraman, Edward P. Debold

1967-Pos Board B372
DEOXY-ATP PRODUCING HIPSC-DERIVED CARDIOMYOCYTES IMPROVE CARDIAC FUNCTION IN CHRONICALLY INFARCTED HEARTS. Ketaki N. Mhatre, Charles E. Murry, **Michael Regnier**

1968-Pos Board B373
MYOCARDIAL VISCOELASTICITY IMPAIRS LATE-FILLING IN WORKING MYOCARDIAL SLICE PREPARATIONS. **Emmaleigh N. Hancock**, Alexa R. Price, Matthew A. Caporizzo

1969-Pos Board B374 Travel Award Winner
HCM AND DCM ASSOCIATED*TNNT2*SARCOMERIC VARIANTS INDUCE NUCLEUS REMODELING IN HUMAN IPSC-CMS. **Isabella Leite Coscarella**, Prescott B. Chase, Lili Wang, Bjorn C. Knollmann, Jerome Irianto, J. Renato D. Pinto

1970-Pos Board B375
MOLECULAR MECHANICS OF E525K DILATED CARDIOMYOPATHY MUTANT HUMAN CARDIAC MYOSIN. **Sebastian Duno-Miranda**, Shane R. Nelson, David Rasicci, Skylar M.L. Bodt, Duha Vang, Sivaraj Sivaramakrishnan, Christopher M. Yengo, David M. Warshaw

1971-Pos Board B376
ANGIOGENESIS AND ACTIVATED FIBROBLAST IN A MODEL OF PREMATURE VENTRICULAR CONTRACTIONS-INDUCED CARDIOMYOPATHY. **Jaime Balderas Villalobos**, JML Medina-Contreras, Montserrat Samso, Alex Y. Tan, Karoly Kaszala, Jose F. Huizar, Jose M. Eltit

1972-Pos Board B377
A NOVEL APPROACH FOR QUANTIFYING ACTIVE VISCOELASTIC CELLULAR MECHANICS USING CARDIOMYOCYTE CONTRACTILITY. **Cameron Hastie**, Pouria Tirgar Bahnamiri, Miguel R. Sepúlveda, Gil Bub, Paul W. Wiseman, Allen J. Ehrlicher

1973-Pos Board B378
PROTEOMIC SIGNATURES PREDICT DEPRESSED COOPERATIVITY AND INCREASED CALCIUM SENSITIVITY IN HEART FAILURE WITH PRESERVED EJECTION FRACTION. **Vivek P. Jani**, Edwin Yoo, Aleksandra Binek, Alina Guo, Imran Aslam, Kavita Sharma, Jennifer Van Eyk, Virginia Hahn, David A. Kass

1974-Pos Board B379
MULTISCALE SIMULATIONS OF CARDIAC GROWTH BASED ON SARCOMERE BIOPHYSICS. **Kenneth S. Campbell**

1975-Pos Board B380
INTEGRATIVE MULTISCALE MODEL OF CARDIAC MUSCLE CONTRACTION USING PROTEIN ELASTIC NETWORK. **Yasser Aboelkassem**

1976-Pos Board B381
WRINKLING AND BUCKLING INSTABILITIES OF CONTRACTILE SUSPENDED ACTOMYOSIN SHEETS. **Gefen Livne**, Shahaf Armon, Anne Bernheim

Actin Structure, Dynamics, and Associated Proteins (Boards B382 - B393)

1977-Pos Board B382
DISASSEMBLY OF FASCIN BUNDLED ACTIN BY MICAL. **Sudeepa Rajan**, Jimok Yoon, Taehong Yang, Jonathan R. Terman, Emil Reisler

1978-Pos Board B383
PROFILIN ENHANCES COFILIN INDUCED ACTIN DYNAMICS. **Madhura Duttagupta**, Bill Brieher

1979-Pos Board B384
TUNING THE DEPOLYMERIZATION AND RESTRUCTURING OF ACTIN NETWORKS VIA THYMOSIN AND COFILIN. **Alyxandra Vyn**, Mehrzad Sasanpour, Michael J. Rust, Jennifer L. Ross, Rae Robertson-Anderson

1980-Pos Board B385
REGULATION OF PROCESSIVE ACTIN FILAMENT ELONGATION MEDIATED BY FORMIN. **Biswaprakash Mahanta**, Naomi Courtemanche

1981-Pos Board B386
HOW SIPA, A TOXIN FROM *SALMONELLA*, INCREASES STABILITY OF F-ACTIN. **Ewa Niedzialkowska**, Lucas Runyan, Dmitri S. Kudryashov, Edward H. Egelman

1982-Pos Board B387
TOWARDS CELL SCALE AGENT-BASED MODELS FOR MEMBRANE CYTOSKELETON INTERACTIONS. **Nathan Zimmerberg**, Haoran Ni, Garegin A. Papoian

1983-Pos Board B388
MECHANICAL BOUNDARY OF MOTOR PROTEINS DICTATES DYNAMIC CELL FUNCTIONS. **Donyoung Kang**, Minseo Kim, Jonghyeok Back, Hyungsuk Lee

1984-Pos Board B389
IN SITU CRYO-ELECTRON TOMOGRAPHY AT THE NUCLEUS-CYTOSKELETON INTERFACE. **Joshua Hutchings**, Farhaz Shaikh, Elizabeth Villa

1985-Pos Board B390
CONVOLUTIONAL NEURAL NETWORK SEGMENTATION OF BARE AND DECORATED ACTIN FILAMENTS IN CELLULAR CRYO-TOMOGRAPHY. **Jessica Heebner**, Carson Purnell, Matthew T. Swulius

1986-Pos Board B391
THE CD169^{+} MACROPHAGE ACTIN CYTOSKELETON REGULATES MEMBRANE TOPOGRAPHY, IMMUNE COMPLEX MOBILITY AND B CELL ACTIVATION. **Maro Iliopoulou**, Anna T. Bajur, Hannah McArthur, Carl Coyle, Favour Ajao, Robert Köchl, Andrew Cope, Katelyn M. Spillane

1987-Pos Board B392
SMALL FAT DROPLETS INTERACT WITH STRUCTURAL FILAMENTS IN MACROPHAGES WITH CYTOSKELETAL DYSFUNCTION CONTRIBUTING TO PERTURBED PHAGOCYTOSIS AND MIGRATION. **Michael P. Tobin**, Irena L. Ivanovska, Dennis E. Discher

1988-Pos Board B393
THE EFFECTS OF X-RAY AND PARAMAGNETIC CONTRAST AGENTS ON ACTIN. Elek Telek, Szilvia Barkó, Gábor Hild, **Zoltan Ujfalusi**

Kinesins, Dyneins, and Other Microtubule-based Motors (Boards B394 - B407)

1989-Pos Board B394
TAU ACTS AS A SELECTIVE BARRIER ALONG MICROTUBULES TO REGULATE MULTI-MOTOR CARGO TRANSPORT. **Daniel Beaudet**, Christopher L. Berger, Adam G. Hendricks

1990-Pos Board B395
OPTOGENETIC CONTROL OF KINESINS AND DYNEIN REVEALS THEIR SPECIFIC ROLES IN VESICULAR TRANSPORT. **Adam G. Hendricks**, Sahil Nagpal, Karthikeyan Swaminathan, Samuel Wang

1991-Pos Board B396
PHOTO-SWITCHING COMPOUND THAT CONTROL ATPASE AND MOTOR ACTIVITIES OF MITOTIC KINESIN EG5. **Islam Md Alrazi**, Shinsaku Maruta

1992-Pos Board B397
EFFECTS OF MOTOR MOBILITY IN CARGO TRANSPORT. **Nimisha Krishnan**, Jennifer L. Ross

1993-Pos **Board B398**
IN-SERIES VS. IN-PARALLEL: THE ROLE OF CARGO-MOTOR CONNECTIVITY IN TRANSPORT BY ENSEMBLES OF CYTOSKELETAL MOTOR PROTEINS. **Hana M. Hieshima**, Genevieve Torrence, Nathan Derr

1994-Pos **Board B399**
NANO-PARTICLES CARRIED BY MULTIPLE DYNEIN MOTORS SELF-REGULATE THEIR NUMBER OF ACTIVELY PARTICIPATING MOTORS. **Gal Halbi**

1995-Pos **Board B400**
EXTREME-VALUE ANALYSIS OF INTRACELLULAR CARGO TRANSPORT BY MOTOR PROTEINS. **Kumiko Hayashi**

1996-Pos **Board B401**
KINESIN-1, -2 AND -3 USE FAMILY-SPECIFIC MECHANOCHEMICAL STRATEGIES TO EFFECTIVELY COMPETE WITH DYNEIN DURING BIDIRECTIONAL TRANSPORT. Allison M. Gicking, TZU-CHEN MA, Qingzhou Feng, Rui Jiang, Somaye Badieyan, Michael A. Cianfrocco, **William O. Hancock**

1997-Pos **Board B402**
THE DYNEIN ADAPTER BICD2 RECOGNIZES ITS CARGO THROUGH SHORT CARGO-RECOGNITION ALPHA-HELICES. James M. Gibson, Heying Cui, M. Yusuf Ali, Xiaoxin Zhao, Tingyao Wang, David L. Moraga, Erik W. Debler, Jing Zhao, Kathleen M. Trybus, **Sozanne R. Solmaz**, Chunyu Wang

1998-Pos **Board B403**
BIOPHYSICAL CHARACTERIZATION OF RAB6 MUTANTS THAT ARE IMPORTANT FOR THE INTERACTION WITH THE DYNEIN ADAPTOR BICD2. **Tingyao Wang**, Xiaoxin Zhao, Heying Cui, David L. Moraga, Sozanne R. Solmaz

1999-Pos **Board B404**
RECOGNITION OF RAB6 BY THE DYNEIN ADAPTOR BICD2. **Xiaoxin Zhao**, Heying Cui, David Moraga, Tingyao Wang, Sozanne R Solmaz

2000-Pos **Board B405**
ARCHITECTURE OF THE DYNEIN ADAPTOR COMPLEX FTS-HOOK3-FHIP1B. **Ferdos Abid Ali**, Andrew Carter

2001-Pos **Board B406**
TOWARDS ENGINEERING ARTIFICIAL KINESIN-14 MOTORS WITH PLUS-END-DIRECTED PROCESSIVITY. **Yuan Gao**, Owen Williamson, Akasit Visootsat, Weihong Qiu

2002-Pos **Board B407** **Travel Award Winner**
TINA ENABLES PLUS-END-DIRECTED KINESIN-14/KLPA TO ACHIEVE ENHANCED MINUS-END-DIRECTED PROCESSIVITY ON SINGLE MICROTUBULES. **Akasit Visootsat**, Andrew Popchock, Jun Zhang, Xinglei Liu, Yuan Gao, Xin Xiang, Arne Gennerich, Weihong Qiu

Modeling of Biological Systems II: Immunology and Evolution (Boards B408 - B420)

2003-Pos **Board B408**
STOCHASTIC CANCER IMMUNE EVASION VIA TUMOR ANTIGEN DOWN-REGULATION SCULPTS POST-ESCAPE IMMUNOGENICITY. **Jason T. George**

2004-Pos **Board B409**
MODELING INFLUENZA A VIRUS MULTICYCLE TRANSMISSION USING PROBABILISTIC VIRUS ATTACHMENT. **Zijian Guo**, Michael Vahey

2005-Pos **Board B410**
A SEGMENTATION CLOCK PATTERNS CELLULAR DIFFERENTIATION IN A BACTERIAL BIOFILM. Kwang-Tao Chou, Dong-yeon D. Lee, **Jian-geng Chiou**, Leticia Galera-Laporta, San Ly, Jordi Garcia-Ojalvo, Gurol M. Suel

2006-Pos **Board B411**
DIFFERENCES IN CELL DEATH AND DIVISION RULES CAN ALTER TISSUE RIGIDITY AND FLUIDIZATION. **Gudur Ashrith Reddy**, Parag Katira

2007-Pos **Board B412**
USING MACHINE LEARNING TO PARAMETRIZE LARGE SCALE TUMOR SIMULATIONS. **Julian M. Herold**, Eric Behle, Alexander H. Schug

2008-Pos **Board B413**
MONKEYING AROUND WITH MONKEYFLOWERS: MODELING PIGMENTATION PATTERNING MECHANISMS IN MIMULUS. **Michael L. Blinov**, Nathan Schaumburger, Yaowu Yuan

2009-Pos **Board B414** **Travel Award Winner**
ENGINEERED CARDIAC TISSUE AS A NOVEL *IN VITRO* HUMAN MYOCARDIUM MODEL FOR STUDYING CARDIAC STRETCH. **Daniel G.P. Turner**, Willem J. De Lange, Di Lang, Gina Kim, Yanlong Zhu, Ying Ge, Timothy J. Kamp, John C. Ralphe, Alexey V. Glukhov

2010-Pos **Board B415**
RECONSTRUCTING ACTION POTENTIAL AND IONIC CURRENT DYNAMICS OF A MAMMALIAN VENTRICULAR CELL USING DATA ASSIMILATION. **Mario J. Mendez**, Matthew J. Hoffman, Elizabeth Cherry, Seth H. Weinberg

2011-Pos **Board B416**
INVESTIGATING THE EARLY STAGES OF INFECTION OF NUCLEUS-FORMING JUMBO PHAGE. **Zaida K. Rodriguez**, Thomas G. Laughlin, Arica VanderWal, Ann Aindow, Alma Razavilar, Amy M. Prichard, Jina Lee, Emily Armbruster, Joe Pogliano, Elizabeth Villa

2012-Pos **Board B417**
COOPERATIVITY IN BACTERIAL MEMBRANE ASSOCIATION CONTROLS SYNERGISTIC ACTIVITIES OF ANTIMICROBIAL PEPTIDES. **Thao N. Nguyen**

2013-Pos **Board B418**
VIRTUAL CELL MODELING AND SIMULATION SOFTWARE. **Michael L. Blinov**, Ion I. Moraru, James C. Schaff, Leslie M. Loew

2014-Pos **Board B419**
MODELING THE TRANSITION FROM UNICELLULAR TO MULTICELLULAR LIFE. **Yanghuan Yu**, Alex Hamby, Ingmar H. Riedel-Kruse

2015-Pos **Board B420**
OPTIMIZATION OF CD200 CHECKPOINT IMMUNOTHERAPY FOR TREATING GLIOBLASTOMA. **Nikolaos Memmos**, Jaciah Rashid, Elisabet Ampudia-Mesias, Michael Olin, David J. Odde

Novel Techniques for Systems and Synthetic Biology (Boards B421 - B428)

2016-Pos **Board B421**
A NOVEL ELECTRICAL DEVICE DEMONSTRATES LOCALIZED STIMULATION TRIGGERS CELL-TYPE-SPECIFIC PROLIFERATION IN BIOFILMS. **Colin J. Comerci**, Alan L. Gillman, Leticia Galera-Laporta, Edgar Gutierrez, Alex Groisman, Joseph Larkin, Jordi Garcia-Ojalvo, Gurol M. Suel

2017-Pos **Board B422**
IVF BOVINE OOCYTE CLASSIFICATION AND SELECTION. **Songning Zhu**, Michelle A. Digman, Jamie Thompson, Fernando Campos-Chillon

2018-Pos **Board B423**
BIOLOGICAL NANOPORE CONTROL OF SYNTHESIS: SINGLE-MOLECULE REACTION AND CHARACTERIZATION. **Chao-Nan Yang**, Yi-Lun Ying, Yi-Tao Long

2019-Pos **Board B424**
MAPPING FUNCTIONAL REGIONS OF ESSENTIAL BACTERIAL PROTEINS WITH DOMINANT-NEGATIVE PROTEIN FRAGMENTS. **Andrew Savinov**, Andres Fernandez, Stanley Fields

2020-Pos **Board B425**
THE ROLE OF RNA CONDENSATION IN REDUCING GENE EXPRESSION NOISE. **Alexander J. Mayer**, Marcus Roper, Amy S. Gladfelter, Grace McLaughlin

2021-Pos Board B426
USING GEOMETRY AND BIOMECHANICS TO UNDERSTAND AORTIC PATHOLOGY AND ENDOVASCULAR AORTIC REPAIR OUTCOMES. Kameel Khabaz, Karen Yuan, **Kathleen Cao**, Sanjeev Dhara, Žiga Donik, Junsung Kim, Willa Li, Blessing Nnate, Seth Sankary, M. Alyssa Varsanik, Janez Kramberger, Cheong Jun Lee, Ross Milner, Nhung Nguyen, Luka Pocivavsek

2022-Pos Board B427 Travel Award Winner
A SYNTHETIC BIOLOGY TOOL FOR CONTACT-DEPENDENT SYNTHETIC CELL COMMUNICATION. **Hossein Moghimianavval**, Kyle Loi, Allen Liu

2023-Pos Board B428
NUCLEOCYTOPLASMIC TRANSPORT DETERMINES THE BIOPHYSICAL PROPERTIES IN THE NUCLEUS. **Yi-Shuan Tseng**, Liam J. Holt

Molecular and Cellular Neuroscience (Boards B429 - B442)

2024-Pos Board B429
THE ROLE OF NAV1.9 IN THE SENSORY PERCEPTION OF ITCH. **Wayra Brackx**

2025-Pos Board B430
AGING MICROGLIA AND PHAGOCYTOSIS. **Emily R. Krueger**

2026-Pos Board B431
ACTION POTENTIAL FIRING AND SENSORY TRANSDUCTION ARE SUSTAINED BY MEMBRANE POTENTIAL INSTABILITIES IN PERIPHERAL SENSORY NEURONS. **Enrique (Quique) Velasco Serna**, Julio Alvarez, Víctor M. Meseguer Vigueras, Juana Gallar, Karel Talavera

2027-Pos Board B432
SYNGAP LLPS CONDENSATES AS THE BASIC PLATFORM FOR RECRUITING PSD95 AND RECEPTOR OLIGOMERS FOR GENERATING NEURONAL EXCITATORY SYNAPSES. **Saahil Acharya**, Taka A. Tsunoyama, Christian Hoffmann, Gerard Aguilar, Irina Meshcheryakova, Yuri L. Nemoto, Aya Nakamura-Norimoto, Takahiro Fujiwara, Dragomir Milovanovic, Akihiro Kusumi

2028-Pos Board B433
PROBING SYNAPTIC DISTRIBUTION AND ARRANGEMENT OF NATIVE SURFACE AMPARS IN MOUSE BRAIN SLICES WITH 3D SUPERRESOLUTION MICROSCOPY. **Rohit M. Vaidya**, Duncan L. Nall, Donghan Ma, Fang Huang, Shiegeki Kiyonaka, Itaru Hamachi, Hee Jung Chung, Paul R. Selvin

2029-Pos Board B434
EVIDENCE FOR LONG-TERM POTENTIATION IN LIPID MEMBRANES. **Haden L. Scott**, Dima Bolmatov, Zening Liu, Jacob Kinnun, Benjamin Doughty, Ralph Lydic, Robert Sacci, Charles P. Collier, John Katsaras

2030-Pos Board B435
CONFORMATION OF NEUROFILAMENT HEAVY CHAIN EFFECT ON NEUROFILAMENT-NEUROFILAMENT ASSOCIATION AND BUNDLING. **Ibtissem Derouiche**

2031-Pos Board B436
OPTICAL IMAGING OF SYNAPTIC ACTIVITY IN AUDITORY HAIR CELLS. **Martín A. Toderi**, Dzmitry Vaido, Dolores Bozovic

2032-Pos Board B437
DECIPHERING THE BIOPHYSICAL GATING PROPERTIES OF AMPA RECEPTORS BY 2,3-BENZODIAZEPINE DERIVATIVES. **Sosana S.M. Bdir**, Mohammad S. Qneibi

2033-Pos Board B438
MECHANICAL FORCES PROMOTE ACTIN-MEDIATED STRUCTURAL PLASTICITY. **Mayte Bonilla Quintana**, Padmini Rangamani

2034-Pos Board B439
SCN1A GAIN OF FUNCTION CAUSES INTERNEURON HYPEREXCITABILITY AND NETWORK INSTABILITY THROUGH INHIBITORY SYNAPTIC PLASTICITY IN EARLY INFANTILE ENCEPHALOPATHY. **Geza Berecki**, Alexander Bryson, Steven Petrou

2035-Pos Board B440
BEHIND SPORADIC ALS: A BIOPHYSICAL CHARACTERIZATION OF MOTOR NEURONS IN HEALTH AND DISEASE. **Martina Bonucci**, Güney Akbalik, Yi-Shuan Tseng, Hemali Phatnani, Liam J. Holt

2036-Pos Board B441
SUPRAMOLECULAR ORGANIZATION OF THE POSTSYNAPTIC DENSITY FOR TRANS-SYNAPTIC ALIGNMENT IN EXCITATORY SYNAPSE OBSERVED BY CRYO-ELECTRON TOMOGRAPHY. **Rong Sun**, Liana Wilson, Mariam Haider, Xinyi Wang, Baris Alten, Qiangjun Zhou

2037-Pos Board B442
STRUCTURE-FUNCTION INSIGHTS INTO THE ROLE OF D-AMINO ACID OXIDASE MUTATIONS IMPLICATED IN AMYOTROPHIC LATERAL SCLEROSIS. **Shumayila Khan**, James Gomes

Molecular Dynamics II: Method Development (Boards B443 - B472)

2038-Pos Board B443
THE MARTINI 3 ECOSYSTEM FOR COARSE-GRAINED SIMULATIONS. **Fabian Grunewald**, Paulo Cesar T. Souza, Siewert J. Marrink

2039-Pos Board B444
AN EVALUATION OF FORCE FIELD ACCURACY FOR THE MINI-PROTEIN CHIGNOLIN USING MARKOV STATE MODELS. **Tim Marshall**, Robert Raddi, Vincent Voelz

2040-Pos Board B445
SELF-GUIDED MOLECULAR DYNAMICS SIMULATION BASED ON CONCERTED MOVEMENT. **Xiongwu Wu**, Bernard R. Brooks

2041-Pos Board B446
BUILDING A COMMUNITY-DRIVEN ECOSYSTEM FOR FAST, REPRODUCIBLE, AND REUSABLE MOLECULAR SIMULATION ANALYSIS USING MDANALYSIS. **Irfan Alibay**, Jonathan Barnoud, Oliver Beckstein, Richard J. Gowers, Philip R. Loche, Hugo MacDermott-Opeskin, Micaela Matta, Fiona B. Naughton, Tyler Reddy, Lily Wang[10]

2042-Pos Board B447
HYPERSOUND-PERTURBED MOLECULAR DYNAMICS SIMULATION FOR ACCELERATING SLOW BIOMOLECULAR INTERACTION PROCESSES. **Mitsugu Araki**, Yasushi Okuno

2043-Pos Board B448
EXTRACELLULAR PROTEOGLYCANS: A MULTISCALE COMPUTATIONAL STUDY. **Saber Shakibi**, Patrick R. Onck, Erik Van der Giessen

2044-Pos Board B449
DEVELOPMENT AND BENCHMARKING OF AN OPEN, SELF-CONSISTENT FORCE FIELD FOR PROTEINS AND SMALL MOLECULES FROM THE OPEN FORCE FIELD INITIATIVE. **Chapin E. Cavender**, Pavan K. Behara, Simon Boothroyd, David L. Dotson, Joshua T. Horton, Joshua A. Mitchell, Ivan Pulido, Matthew W. Thompson, Jeffrey Wagner, Lily Wang, John D. Chodera, Daniel J. Cole, David L. Mobley, Michael R. Shirts, Michael K. Gilson

2045-Pos Board B450
THE ONSET OF WHOLE-CELL MODELING USING THE MARTINI FORCE FIELD. **Jan A. Stevens**, Fabian Grunewald, Marco van Tilburg, Zane R. Thornburg, Benjamin R. Gilbert, Troy A. Brier, Zaida Luthey-Schulten, Siewert J. Marrink

2046-Pos **Board B451**
EVALUATION OF THE CHARMM36M FORCE FIELD COMBINED WITH THE OPC WATER MODEL FOR PROTEIN SIMULATIONS. **Nicolai Kozlowski**, Gabor Nagy, Helmut Grubmuller

2047-Pos **Board B452**
DATA-DRIVEN GENOME COMPARTMENTALIZATION WITH NUCLEAR LANDMARKS. **Zhuohan Lao**

2048-Pos **Board B453**
MODELLING SOLUTION STRUCTURES OF CYCLIC PEPTIDES - HOW GOOD ARE WE? **Daniel Crusius**, Jason R. Schnell, Flaviu Cipcigan, Philip C. Biggin

2049-Pos **Board B454**
SHAMAN: A MIXED SOLVENT MOLECULAR DYNAMICS PROTOCOL TO IDENTIFY SMALL-MOLECULES BINDING SITES ON RNA STRUCTURAL ENSEMBLES. **Francesco Paolo Panei**, Paraskevi Gkeka, Massimiliano Bonomi

2050-Pos **Board B455**
QUANTITATIVE VIEWS OF PROTEIN DYNAMICS THROUGH THE COMPUTATIONAL MICROSCOPE. **Ravindra Venkatramani**, Mitradip Das, Sanjoy Paul

2051-Pos **Board B456**
LIPID BACKMAPPING AND ITS APPLICATION TO MEMBRANE BUILDER. **Siyoung Kim**

2052-Pos **Board B457**
TOWARDS ALL-ATOMS SAMPLING OF MEMBRANE CONFIGURATIONS USING NON-EQUILIBRIUM MOLECULAR DYNAMICS. **Flo Szczepaniak**, François Dehez, Benoit Roux

2053-Pos **Board B458**
MINIMIZING VARIANCE OF REACTION RATE ESTIMATION IN WEIGHTED ENSEMBLE SIMULATION USING SYNTHETIC MOLECULAR DYNAMICS. **Won Hee Ryu**, John Russo, Mats S. Johnson, Jeffrey P. Thompson, David N. LeBard, Gideon Simpson, David Aristoff, Robert J. Webber, Jeremy T. Copperman, Daniel M. Zuckerman

2054-Pos **Board B459**
PROTEIN FOLDING PATHWAY AND INTERMEDIATES ON THE DIMENSIONALITY REDUCED LANDSCAPE WITH UMAP AND NATIVE CONTACT LIKELIHOOD. **Mao Oide**, Yuji Sugita

2055-Pos **Board B460**
INSIGHTS FROM THE SAMPL8 PHYSICAL PROPERTIES BLIND PREDICTION CHALLENGE. **Aakankschit Nandkeolyar**, Matthew N. Bahr, David L. Mobley

2056-Pos **Board B461**
PARTITIONING FREE ENERGIES AND INDUCED DIPOLE RESPONSE OF SMALL MOLECULES ACROSS A POPC MEMBRANE USING POLARIZABLE MOLECULAR DYNAMICS. **Julia M. Montgomery**, Justin A. Lemkul

2057-Pos **Board B462**
METADYNAMICS STUDY OF BENZYLTRIMETHYLAMMONIUM BINDING FREE ENERGY TO EMRE PROTEIN IN ALL ATOM MOLECULAR DYNAMICS SIMULATIONS. **Jessica Bodosa**, Jeffery B. Klauda

2058-Pos **Board B463**
MACHINE LEARNING GUIDED WEIGHTED ENSEMBLE FOR RARE EVENT SIMULATION IN BIOPHYSICS. **Praveen Ranganath Prabhakar**, Dhiman Ray, Ioan Andricioaei

2059-Pos **Board B464**
"A UNITED-ATOM REPRESENTATION FOR SPHINGOLIPIDS IN THE CHARMM FORCE FIELD". **Joshua Lucker**, Jeffery B. Klauda

2060-Pos **Board B465**
MULTI-SCALE QM/QM/MM MOLECULAR DYNAMICS THROUGH QUANTUM EMBEDDING. **Chenghan Li**

2061-Pos **Board B466**
CONSTANT PH MOLECULAR DYNAMICS SIMULATIONS OF MEMBRANE PROTEINS. **Balarama Sridhar Dwadasi**, Hristina R. Zhekova, Sergei Y. Noskov, Dennis R. Salahub, Peter D. Tieleman

2062-Pos **Board B467**
ELUCIDATION OF THE MECHANISM AND THE FREE ENERGY OF A MORITA-BAYLIS-HILLMAN TYPE REACTION CATALYZED BY ENZYMES USING TRANSITION PATH SAMPLING. **Sree Ganesh Balasubramani**, Steven D. Schwartz

2063-Pos **Board B468**
CHARMM-GUI QM/MM INTERFACER FOR THE HYBRID QM/MM MOLECULAR DYNAMICS SIMULATIONS. **Donghyuk Suh**, Kwangho Nam, Wonpil Im

2064-Pos **Board B469**
LOOS: A SUITE OF TOOLS FOR ANALYZING MOLECULAR DYNAMICS SIMULATIONS. **Alan Grossfield**, Tod D. Romo

2065-Pos **Board B470**
ACCELERATION OF RESIDUE-LEVEL COARSE-GRAINED MOLECULAR DYNAMICS BY EFFICIENT PARALLELIZATION. **Jaewoon Jung**, Cheng Tan, Chigusa Kobayashi, Diego Ugarte, Yuji Sugita

2066-Pos **Board B471**
DEVELOPMENT OF CHARMM ADDITIVE POTENTIAL ENERGY PARAMETERS FOR A-METHYL AMINO ACIDS. **Anthony J. Pane**, Wenbo Yu, Asaminew H. Aytenfisu, Achombom (Jude) Tunyi, Richard M. Venable, Alexander D. MacKerell, Richard W. Pastor

2067-Pos **Board B472**
DEVELOPMENT AND APPLICATION OF COMPUTATIONAL METHODS FOR THE STUDY OF PROTEIN DYNAMICS WITH PM-HMGR AS A MODEL SYSTEM. **Mikaela Farrugia**, Himani Patel, Taylor Quinn, Brandon Haines, Paul Helquist, Per-Ola Norrby, Olaf Wiest

Single-Molecule Spectroscopy (Boards B473 - B499)

2068-Pos **Board B473**
INTERFEROMETRIC PHOTON-CORRELATION TOOLS FOR SPECTRAL DIFFUSION MEASUREMENTS OF SINGLE MOLECULES. **Hendrik Utzat**

2069-Pos **Board B474**
A NOVEL FRET-BASED DNA NANOSENSOR TO QUANTIFY CLUSTERING FORCES OF MEMBRANE PROTEINS. **Ranjit Gulvady**

2070-Pos **Board B475**
THE ENERGETICS OF SILENT TRANSLOCATION THROUGH A BIOLOGICAL NANOPORE. Joshua J. Meyer, Sophie Anderson, Rich Michael, Lisa Burden, **Daniel L. Burden**

2071-Pos **Board B476**
COMBINED ELECTRICAL AND FLUORESCENCE RECORDINGS OF SINGLE MOLECULES IN BILAYERS FORMED ON MECA-OPTO CHIPS. **Sophia Pena**, Kristin Joy Leong-Fern, Sarah Koeneman, Sophie C. Anderson, Richard J. Michael, Joshua J. Meyer, Lisa M. Burden, Daniel L. Burden

2072-Pos **Board B477**
TOOLS FOR COMBINED SINGLE MOLECULE FLOURESCENCE AND ELECTRICAL RECORDINGS THAT REVEAL SILENT NANOPORE TRANSLOCATIONS. **Richard Michael**, Sophie C. Anderson, Joshua J. Meyer, Lisa Burden, Daniel L. Burden

2073-Pos **Board B478**
INTEGRATION OF A SUPERCONDUCTING NANOWIRE DETECTOR INTO A CONFOCAL MICROSCOPE FOR TRPL-MAPPING: SENSITIVITY AND TIME RESOLUTION. **Christian Oelsner**, Volker Buschmann, Eugeny Ermilov, Felix Koberling, Rainer Erdmann

2074-Pos Board B479
CHARACTERIZATION OF HETEROGENEOUS DIMER AND OLIGOMER FORMATION OF AMYLOID-BETA USING SINGLE-MOLECULE FRET. Fanjie Meng, Jae-Yeol Kim, Irina V. Gopich, **Hoi Sung Chung**

2075-Pos Board B480
STORM IMAGING PROVIDES NANODOMAIN-LENGTHSCALE OBSERVATION OF COORDINATION BETWEEN ARABIDOPSIS ROOT HAIR MEMBRANE PROTEINS. **Jeremiah Traeger**

2076-Pos Board B481
AN EASY AND RELIABLE WAY TO PERFORM SINGLE-MOLECULE FRET MEASUREMENTS. **Marcelle Koenig**, Evangelos Sisamakis, Maria Loidolt-Krueger, Fabio Barachati, Matthias Patting, Marcus Sackrow, Kamil Bobowski, Mathias Bayer, Felix Koberling, Rainer Erdmann

2077-Pos Board B482
COMBINING FLUORESCENCE CORRELATION SPECTROSCOPY AND LIFETIME IMAGING TO STUDY THE DYNAMICS OF DRUG DELIVERY NANOPARTICLES IN MUCUS. **Irene Gialdini**, Bettina Gabold, Antonietta Greco, Gemma Conte, Xiaoxuan Wang, Olivia Merkel, Don C. Lamb

2078-Pos Board B483
SINGLE-MOLECULE STUDIESOF NUCLEAR TRANSPORT USINGBIOMIMETIC NUCLEAR PORE COMPLEXES. **Anders Barth**, Eva Bertosin, Nils Klughammer, Alejandro M. Gonzalez, Eli van der Sluis, Maurice Dekker, Patrick R. Onck, Cees Dekker

2079-Pos Board B484
MEASURING THE RUPTURE FORCE BETWEEN ADENOSINE A_{2A} G-PROTEIN COUPLED RECEPTORS AND G-PROTEINS USING AXIAL OPTICAL TWEEZERS. **Zheng Zhang**, Louis-Philippe Picard, R. Scott Prosser, Joshua Milstein

2080-Pos Board B485
REAL-TIME VIDEO MICROSCOPY FOR TETHERED PARTICLE MOTION ASSAY. **Karen S. Lee**, Melanie Huq, Ashley R. Carter

2081-Pos Board B486
KINETIC COMPETITION BETWEEN THEOPHYLLINE SENSITIVE RIBOZYME CLEAVAGE AND TERMINATION IN LIVING CELLS BY 3D ORBITAL TRACKING-FLUORESCENT CROSS-CORRELATION SPECTROSCOPY. Jessica Roberts, **Gretchen Kunz**, Eric Hayden, Matthew L. Ferguson

2082-Pos Board B487
MEASURING HYBRIDIZATION KINETICS IN LIVE CELLS USING A SINGLE-MOLECULE IMAGING AND TRACKING METHOD. **Limin H. Chen**, Yuan-I Chen, Trung Duc Nguyen, Yu-An Kuo, Soonwoo Hong, Tim Yeh

2083-Pos Board B488
DYNAMICS OF RIBOSOME SCANNING DURING TRANSLATION INITIATION. **Hea Jin Hong**

2084-Pos Board B489 Travel Award Winner
LIVE CELL SINGLE MOLECULE IMAGING REVEALS CONCENTRATION DEPENDENT CHANGES TO DYNAMIC BEHAVIOR OF NUCLEAR RECEPTORS RAR AND RXR. **Liza Dahal**, Alec Heckert, Gina Dailey, Robert Tjian, Xavier Darzacq

2085-Pos Board B490
UNPARALLELED APPROACHES TO DIRECTLY VISUALIZE DNA-BINDING PROTEINS AND BIOMOLECULAR CONDENSATES. **Nastaran Hadizadeh Yazdi**, Trey Simpson, Andrea Candelli

2086-Pos Board B491
SINGLE-MOLECULE FORCE MANIPULATION FACILITATED MULTIPLE REREADS OF A DRUG-BOUND DNA AT SPECIFIED SITES BY SURFACE-ENHANCED RAMAN SPECTROSCOPY. **Jinqing Huang**

2087-Pos Board B492
FCSNET AND IMFCSNET,CONVOLUTIONAL NEURAL NETWORK APPROACHESTO FCS DATA ANALYSIS. **Thorsten Wohland**, Wai Hoh Tang, Shao Ren Sim, Daniel Y. Aik, Ashwin V.S. Nelanuthala, Adrian Röllin

2088-Pos Board B493
SINGLE-MOLECULE LOCALIZATION-INTEGRATED TRAJECTORY ANALYSIS FOR THE DYNAMIC INTERACTION OF CHROMATIN STRUCTURE AND TRANSCRIPTION MACHINERY. **Yuma Ito**, Makio Tokunaga

2089-Pos Board B494
SINGLE-MOLECULE STUDIES OF RNA APTAMERS BINDING TO SARS-COV-2 SPIKE PROTEINS EXPRESSED ON VIRUS-LIKE PARTICLES. **Brett Israels**, Aleksandra Bednarz, Julian Valero Molero, Laia Civit Pitarch, Daniel Dupont, Mette Malle, Jorgen Kjems, Victoria Birkedal

2090-Pos Board B495
PROBING SINGLE-MOLECULE DNA-PROTEIN INTERACTIONS USING ABEL-FRET AND ABEL-PIFE. **Quan Wang**

2091-Pos Board B496
DNA-INDUCES INTRA- AND INTER-MOLECULAR CHANGES IN DIMERIZATION OF THE HUMAN FOXP1. Narendar Kolimi, Thomas-Otavio O. Peulen, Jake H. Ballard, Jose Alejandro Molina Ramirez, Cesar A. Ramirez-Sarmiento, Jorge Babul, Exequiel Medina, **Hugo Sanabria**

2092-Pos Board B497
Travel Award Winner
DEEP LEARNING DRIVEN ADAPTIVE OPTICS FOR SINGLE MOLECULE LOCALIZATION MICROSCOPY. **Peiyi Zhang**, Donghan Ma, Xi Cheng, Andy Tsai, Yu Tang, Hao-Cheng Gao, Li Fang, Cheng Bi, Gary Landreth, Alexander Chubykin, Fang Huang

2093-Pos Board B498
THEORETICAL CHALLENGES IN SINGLE MOLECULE. **Steve Pressé**

2094-Pos Board B499
EXTRACTING INFORMATION ON REACTION INTERMEDIATES FROM SINGLE-MOLECULE DATA RESULTING FROM PARALLEL REACTION MECHANISMS. **Candice M. Etson**

Bioengineering (Boards B500 - B524)

2095-Pos Board B500
CRYSTALLIZATION BY SINGLE DIFFUSION THROUGH AGAR GEL. **Mohsin J. Qazi**, Nate J. Cira

2096-Pos Board B501
CONTROL OF CASCADE REACTION BY PROXIMITY OF ENZYMES. **Aoi Mameuda**, Koki Kamiya

2097-Pos Board B502
A VERSATILE NANOELECTRODE PLATFORM FOR ELECTRICAL RECORDING OF DIVERSE CELL TYPES. **Shivani R. Shukla**, Ching-Ting Tsai, Zeinab Jahed, Bianxiao Cui

2098-Pos Board B503
REMOTE SHOCKWAVES TO EXTERNALLY ACTIVATE PIEZOELECTRIC PVDF-TRFE NANOFIBERS FOR PERIPHERAL NERVE SYSTEM REGENERATION. **Maksym Krutko**, Andrew Bryan, Maulee Sheth, Yara Izhiman, Holly M. Poling, Greg Harris, leyla Esfandiari

2099-Pos Board B504
DEVELOPMENT OF AN OPTOGENETIC TRKB.T1 PROBE. **Luis A. Valencia**, Bianxiao Cui

2100-Pos Board B505
OPTIMIZATION OF CELL WALL BREAKING PROCESS OF THE MICROALGAE HAEMATOCOCCUS PLUVIALIS. Huiyong Lian, Zhiyong Pan, **Xinyu Yue**, Jia Yan

2101-Pos Board B506
EXTERNAL BIOELECTRIC CONTROL OF TISSUE HYDROSTATIC PRESSURE AND ION PUMPING. **Daniel Cohen**

2102-Pos **Board B507**
CANCER-ASSOCIATED FIBROBLASTS IN A 3D ENGINEERED TISSUE MODEL INDUCE TUMOR-LIKE MATRIX STIFFENING AND EMT TRANSITION. Enola Bollmann, Martial Millet, Cassandra Ringuette Goulet, Genevieve Bernard, Stephane Chabaud, Marc-Etienne Huot, Frederic Pouliot, Stephane Bolduc, **Francois Bordeleau**

2103-Pos **Board B508**
ALTERATION OF MEMBRANE POTENTIAL OF HEAD AND NECK CANCER CELLS USING A PIEZOELECTRIC NANOFIBER INTERFACE. **Maulee Sheth**, Maksym Krutko, Maria Lehn, Vinita Takiar, Trisha Wise-Draper, Leyla Esfandiari

2104-Pos **Board B509**
HIGH THROUGHPUT IMAGE PROCESSING SOFTWARE FOR ANALYZING HIPSC-CM SARCOMERE PHYSIOLOGY AND CARDIAC FIBROBLAST ACTIVATION. **Alan R. Levinson**, Rebecca E. Slater, Sylwia M. Figarska, Hannah M. Kleppe, Anastasiia Budan, Olga Cisne-Thompson, Jonathan H. Tsui, James R. Priest, Timothy Hoey

2105-Pos **Board B510**
AN AMPHIPHILIC PLASMA MEMBRANE-TARGETED PHOTO-TRANSDUCER MEDIATES OPTICAL PACING IN CARDIOMYOCYTES DERIVED FROM HUMAN INDUCED PLURIPOTENT STEM CELLS. **Francesco Lodola**

2106-Pos **Board B511**
MEASURING TENSION STATES OF HIPSC-CARDIOMYOCYTES VIA TRACTION FORCE MICROSCOPY. **Gabriela Villalpando Torres**, Kerry V. Lane, Samuel D. Feinstein, Liam Dow, Beth Pruitt

2107-Pos **Board B512**
VARIABILITY AND SEXUAL DIMORPHISM IN HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED CARDIOMYOCYTES. **Samuel D. Feinstein**, Orlando Chirikian, Beth Pruitt

2108-Pos **Board B513**
BIOENGINEERING APPROACHES TO PROMOTE MATURITY IN HUMAN SKELETAL MUSCLE CONSTRUCTS. **Benjamin R. Tollitt**, Samantha W. Jones, Kai F. Hoettges, James R. Henstock, Gianluca Neri, Malcolm J. Jackson, Anne McArdle

2109-Pos **Board B514**
THE CONTROL OF BIONANOMACHINE USING CALMODULIN BASED IONOCHROMIC NANODEVICE. **Yassine Sabek**, Ziyun Zhang, Yuichi Imamura, Nobuyuki Nishibe, Kazunori Kondo, Shinsaku Maruta

2110-Pos **Board B515**
THE EFFECT OF NEURONAL ATROPHY ON THE PATHOGENESIS OF HUNTINGTON'S DISEASE. **Sara Sameni**

2111-Pos **Board B516** **Travel Award Winner**
SARS-COV-2 SPIKE PROTEIN-INDUCED INFLAMMATION UNDERLIES PROARRHYTHMIA IN COVID-19. **Louisa Mezache**, Gerard Nuovo, David Suster, Esmerina Tili, Hamdy Awad, Przemyslaw Radwanski, Rengasayee Veeraraghavan

2112-Pos **Board B517**
DHM-VIEWER: COMPREHENSIVE, OPEN-SOURCE IMAGE PROCESSING SUITE FOR DIGITAL HOLOGRAPHIC MICROSCOPY. Ziyang Yu, **Lei Jin**, Christopher M. Yip

2113-Pos **Board B518**
OVEREXPRESSION AND CELL-PENETRATING PEPTIDE-MEDIATED DELIVERY OF CAS9 AND ITS VARIANT(S) FOR TARGETED GENOME EDITING. **Shilpi Agrawal**, Morgan Reese, Christopher Nelson

2114-Pos **Board B519**
MUCINS FORM A NANOSCALE PHYSICAL BARRIER AGAINST IMMUNE CELL ATTACK. **Sangwoo Park**, Marshall Colville, Carolyn Shurer, Ling-Ting Huang, Joe Kuo, Justin Paek, Marc Goudge, Jin Su, Matthew DeLisa, Jan Lammerding, Warren Zipfel, Claudia Fischbach, Heidi Reesink, Matthew Paszek

2115-Pos **Board B520**
STUDY THE DISASSEMBLY OF EPITHELIAL TIGHT JUNCTION UNDER THE INFLUENCE OF NANOPLASTICS USING AN IN VITRO MULTICELLULAR MODEL. **Jui-Hsun Chang**, Jia-Jun Liu, Megha Jhunjhunwala, Chia-Yu Yeh, Chih-Tung Liu, Chi-Shuo Chen

2116-Pos **Board B521**
TOWARDS DIRECT RNA SEQUENCING WITH ELECTRO-OPTICAL WAVEGUIDES. **Fatemeh Farhangdoust**, Li-Tao Guo, Drew Bostrom, Sara H. Rouhanifard, Anna M. Pyle, Meni Wanunu

2117-Pos **Board B522**
FACILITATING THE NANOPORE DETECTION OF PROTEIN FRAGMENT WITH A NEUTRAL CHARGE. **Misa Yamaji**, Ryuji Kawano

2118-Pos **Board B523**
NANOPORE-BASED IMMUNOASSAY BASED ON ROLLING CIRCLE AMPLIFICATION AND DNA FRAGMENTATIONS. **Xinqi Kang**, Connie Wu, Luning Yu, Mohammad Amin Alibakhshi, Xingyan Liu, David R. Walt, Meni Wanunu

2119-Pos **Board B524**
EXTRACELLULAR MATRIX CONTROLLED NANOMECHANICS OF SELF ASSEMBLED SYNOVIAL FLUID FILMS. **Roberto C. Andresen Eguiluz**, Syeda Tajin Ahmed, Dion Deng

Biosensors II (Boards B525 - B543)

2120-Pos **Board B525**
APOLLO-IRE1: A GENETICALLY ENCODED SENSOR FOR LIVE CELL AND MULTIPLEXED IMAGING OF ER STRESS. **Eric J. Floro**, Jonathan V. Rocheleau

2121-Pos **Board B526**
RAPID LIVE-CELL SEQUENTIAL MULTIPLEXED IMAGING WITH FLUOROGENIC RNAS. **Ru Zheng**, Rigumula Wu, Yuanchang Liu, Mingxu You

2122-Pos **Board B527**
REAL-TIME MODULATION OF A DNA ORIGAMI FORCE PROBE. **Ariel Robbins**, Peter Beshay, Carlos E. Castro, Michael G. Poirier

2123-Pos **Board B528** **Travel Award Winner**
INVESTIGATING OPTIMAL KINETIC PARAMETERS OF EXONUCLEASE III TO CREATE A NEXT-GENERATION, ROBUST, SELF-AVOIDING ROLLING MOTOR BIOSENSOR. **Bakai Sheyitov**, Yusha Imtiaz, Alisina Bazrafshan, Khalid Salaita

2124-Pos **Board B529**
YPET THROUGH THE EYES OF MCLIFY. Him Shweta, Kushol Gupta, Yufeng Zhou, Xiaonan Cui, Yale E. Goldman, **Jody A. Dantzig**

2125-Pos **Board B530**
APPLICATION OF AN ELECTRIC FIELD TO AN OXIDOREDUCTASE ENZYME: IMPLICATIONS FOR BIOSENSING. **Meagan C. Small**, Margaret M. Hurley

2126-Pos **Board B531**
SELECTING FOR PH SENSITIVE FLOURESCENT PROTEINS WITH LIBRARY SCREENING METHODS. **Jacob E. Wagner**, Katharine A. White, Casey Knuth

2127-Pos **Board B532**
RECONFIGURABLE LOGIC GATES IN BIOLOGICAL CROSSBAR NEURAL NETWORKS USING STDP LEARNING. **Yonghee Bae**, Kyo-Seok Lee, Sun-Mi Lee, Kyung-Hwa Yoo

2128-Pos Board B533
IMPROVING INSERTIONS OF MUTATED G20C PORTAL PROTEIN INTO LIPID BILAYERS FOR NANOPORE SENSING. **Yuanyuan Shi**, Amr K. Makhamreh, Maria Chechik, Alferd Antson, Meni Wanunu

2129-Pos Board B534
DISCRIMINATION OF CATIONIC PEPTIDES USING MALARIA TRANSLOCON, EXP2, NANOPORES. **Mitsuki Miyagi**, Nina Kurokawa, Masafumi Yohda, Ryuji Kawano

2130-Pos Board B535
EXPERIMENTAL INVESTIGATION OF THE FORCES DICTATING POLYMER TRANSLOCATION THROUGH SOLID-STATE NANOPORES. **Martin Charron**, Breeana Elliott, Vincent Tabard-Cossa

2131-Pos Board B536
TOWARD PROTEIN FINGERPRINTING WITH A SOLID-STATE NANOPORE. **Breeana Elliott**, Martin Charron, Dmytro Lomovtsev, Emily Majaesic, Walid A. Houry, Vincent Tabard-Cossa

2132-Pos Board B537
CHARACTERIZATION OF AVIDIN AND CASE9 SINGLE PROTEIN MOLECULES BY A SOLID-STATE NANOPORE DEVICE. **Haopeng Li**

2133-Pos Board B538
DENSE PROTEIN DATA STORAGE BASED ON NANOPORE SENSING. **Kai-Li Xin**, Zheng-Li Hu, YI-LUN YING, Yi-Tao Long

2134-Pos Board B539
ELECTRICAL DETECTION AND ANALYSIS OF EXOSOMES BY A GLASS CAPILLARY NANOPORE. **Kohei Hayashi**

2135-Pos Board B540
UNFOLDING OF B-HAIRPIN AND A-HELICAL PEPTIDES THROUGH A BIOLOGICAL NANOPORE. **Miyu Fukuda**, Ryuji Kawano

2136-Pos Board B541
TERMINAL TAGGING OF FULL-LENGTH PROTEINS FOR ENHANCED CAPTURING BY BIOLOGICAL NANOPORES. **Zhuoyu Zhang**, Luning Yu, Joshua C. Foster, Min Chen, Meni Wanunu

2137-Pos Board B542
RECOGNITION OF TAU PROTEIN GLYCATION WITH A TAILORED AEROLYSIN NANOPORE. **Jia-Hong Wang**, Zheng-Li Hu, Kai-Li Xin, Jun-Ge Li, Yi-Lun Ying, Yi-Tao Long

2138-Pos Board B543
DISCRIMINATION OF L- AND D-CHIRALITY IN OLIGOARGININE PEPTIDES USING THE WILD-TYPE AND R220S MUTANT AEROLYSIN PORES. **Priyanka Jain**, Tobias Ensslen, Jan C. Behrends

Wednesday, February 22, 2023

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 17B**
8:00 AM-3:00 PM	**Poster Viewing**	**Exhibit Hall BC**
8:15 AM-10:15 AM	**Symposium: Biophysics of Mitosis** **Chair** *Mary Elting, North Carolina State University, USA* ACTION AT A DISTANCE ALONG THE MICROTUBULE COUPLES KINESIN MOTORS. *Meredith Betterton* *NAEGLERIA*'S MITOTIC SPINDLES ARE BUILT FROM UNIQUE TUBULINS AND ASSOCIATED MICROTUBULE BINDING PROTEINS. *Lillian Fritz-Laylin* BUILDING THE CYTOKINETIC RING: FROM MOLECULAR MECHANISMS TO CELLULAR FUNCTION. *Dimitrios Vavylonis* DESTRUCTIVE TESTING ON MITOTIC MACHINERY: PROBING THE MECHANICS OF FISSION YEAST CELL DIVISION BY LASER ABLATION. *Mary W. Elting*	**Room 6A**
8:15 AM-10:15 AM	**Symposium: Mechanotransduction Complex in Hair Cells** **Chair** *Robert Fettiplace, University of Wisconsin–Madison, USA* TOWARDS AN ATOMISTIC MODEL OF THE VERTEBRATE INNER-EAR TRANSDUCTION APPARATUS. *Marcos Sotomayor* FUNCTION AND REGULATION OF TMC1, LHFPL5, AND TMIE IN AUDITORY MECHANOTRANSDUCTION COMPLEX. *Pingbo Huang* REGULATION OF MEMBRANE HOMEOSTASIS BY TMC1 MECHANOELECTRICAL TRANSDUCTION CHANNELS. *Angela Ballesteros Morcillo* THE CONDUCTANCE OF TMC1-CONTAINING MECHANOTRANSDUCER CHANNELS AND THE ROLES OF LHFPL5 AND TMIE IN COCHLEAR HAIR CELLS. *Robert Fettiplace*	**Room 6B**
8:15 AM-10:15 AM	**Platform: Condensates in Physiology and Disease**	**Room 6C**
8:15 AM-10:15 AM	**Platform: RNA Structure and Dynamics**	**Room 6D**
8:15 AM-10:15 AM	**Platform: Protein Dynamics and Allostery II**	**Room 6E**
8:15 AM-10:15 AM	**Platform: Membrane Protein Structures**	**Room 6F**
8:15 AM-10:15 AM	**Platform: Protein-Lipid Interactions: Structures**	**Room 5AB**
8:15 AM-10:15 AM	**Platform: Optical Microscopy and Superresolution Imaging III**	**Room 11AB**
10:30 AM-12:30 PM	**Poster Presentations and Late Posters**	**Exhibit Hall BC**
1:00 PM-3:00 PM	**Symposium: Mechanisms of Membrane Insertion** **Chair** *Bil Clemons, California Institute of Technology, USA* THE BACTERIAL *SECRETOSOME* FOR BACTERIAL ENVELOPE BIOGENESIS. *Ian Collinson* CRYO-EM AND PHOTOCROSSLINKING STUDIES REVEAL THE MECHANISM OF MITOCHONDRIAL PROTEIN IMPORT BY THE TIM COMPLEX. *Eunyong Park* BIOGENESIS OF MITOCHONDRIAL OUTER MEMBRANE PROTEINS. *Rebecca Voorhees* A STRUCTURALLY DERIVED UNIVERSAL MECHANISM FOR THE CATALYTIC CYCLE OF THE TAIL-ANCHORED TARGETING FACTOR GET3. *Bil Clemons*	**Room 6A**
1:00 PM-3:00 PM	**Symposium: Fuzzy Complexes** **Chair** *Benjamin Schuler, University of Zurich, Switzerland* EVOLUTION OF EUKARYOTIC TRANSCRIPTIONAL ACTIVATION DOMAINS. *Max V. Staller* INTRINSIC DISORDER IN THE HIGHLY ORDERED CIRCADIAN CLOCK: A TALE OF TWO ISOFORMS. *Jennifer M. Hurley* A MODEL SYSTEM REVEALS HOW DIFFERENT LINKER HISTONES DIRECT CHROMATIN TO LIQUID-LIKE OR FIBRE-LIKE CONDENSED STATES. *Katherine Stott* INTERACTION DYNAMICS OF DISORDERED PROTEINS FROM SINGLE-MOLECULE SPECTROSCOPY. *Benjamin Schuler*	**Room 6B**

1:00 PM-3:00 PM	Platform: Smooth and Cardiac Muscle II	Room 6C
1:00 PM-3:00 PM	Platform: Micro- and Nanotechnology and Biomaterials	Room 6D
1:00 PM-3:00 PM	Platform: Protein Assemblies	Room 6E
1:00 PM-3:00 PM	Platform: Ligand-Gated and Anion Channels	Room 6F
1:00 PM-3:00 PM	Platform: Exocytosis and Endocytosis	Room 5AB
1:00 PM-3:00 PM	Platform: Computational Methods and Machine Learning, Artificial Intelligence, and Bioinformatics	Room 11AB

Wednesday, February 22

New Council Meeting

8:00 AM - 11:00 AM, ROOM 17B

Poster Viewing

8:00 AM - 3:00 PM, EXHIBIT HALL BC

Symposium
Biophysics of Mitosis

8:15 AM - 10:15 AM, ROOM 6A

Chair
Mary Elting, North Carolina State University, USA

2139-SYMP 8:15 AM
ACTION AT A DISTANCE ALONG THE MICROTUBULE COUPLES KINESIN MOTORS. Sithara Wijeratne, Shane A. Fiorenza, Alex Neary, Radhika Subramanian, **Meredith Betterton**

2140-SYMP 8:45 AM
NAEGLERIA'S MITOTIC SPINDLES ARE BUILT FROM UNIQUE TUBULINS AND ASSOCIATED MICROTUBULE BINDING PROTEINS. Andrew Kennard, Katrina Velle, **Lillian Fritz-Laylin**

2141-SYMP 9:15 AM
BUILDING THE CYTOKINETIC RING: FROM MOLECULAR MECHANISMS TO CELLULAR FUNCTION. **Dimitrios Vavylonis**

2142-SYMP 9:45 AM
DESTRUCTIVE TESTING ON MITOTIC MACHINERY: PROBING THE MECHANICS OF FISSION YEAST CELL DIVISION BY LASER ABLATION. **Mary W. Elting**

Symposium
Mechanotransduction Complex in Hair Cells

8:15 AM - 10:15 AM, ROOM 6B

Chair
Robert Fettiplace, University of Wisconsin–Madison, USA

2143-SYMP 8:15 AM
TOWARDS AN ATOMISTIC MODEL OF THE VERTEBRATE INNER-EAR TRANSDUCTION APPARATUS. **Marcos Sotomayor**

2144-SYMP 8:45 AM
FUNCTION AND REGULATION OF TMC1, LHFPL5, AND TMIE IN AUDITORY MECHANOTRANSDUCTION COMPLEX. Xiaojie Yu, Yulin Li, Wanying Feng, **Pingbo Huang**

2145-SYMP 9:15 AM
REGULATION OF MEMBRANE HOMEOSTASIS BY TMC1 MECHANOELECTRICAL TRANSDUCTION CHANNELS. **Angela Ballesteros Morcillo**, Kenton J. Swartz

2146-SYMP 9:45 AM
THE CONDUCTANCE OF TMC1-CONTAINING MECHANOTRANSDUCER CHANNELS AND THE ROLES OF LHFPL5 AND TMIE IN COCHLEAR HAIR CELLS. **Robert Fettiplace**

Platform
Condensates in Physiology and Disease

8:15 AM - 10:15 AM, ROOM 6C

Co-Chairs
Meredith Jackrel, Washington University in St. Louis, USA
Sarah Woodson, Johns Hopkins University, USA

2147-PLAT 8:15 AM
RESTRICTING INTERMOLECULAR INTERACTIONS AMONG COMPLEMENTARY SEQUENCES IS REQUIRED FOR THE SPECIFICITY OF HOMOTYPIC MRNA ASSEMBLY. **Siran Tian**, Ziqing Ye, Silvi Rouskin, Tatjana Trcek

2148-PLAT 8:30 AM
DIRECT OBSERVATION OF RNA STRUCTURE AND DYNAMICS IN REPEAT-RNA ASSEMBLIES USING SINGLE MOLECULE FLUORESCENCE MICROSCOPY. **Roumita Moulick**, Margaret L. Rodgers, Sarah A. Woodson

2149-PLAT 8:45 AM TRAVEL AWARD WINNER
EBOLA VIRAL FACTORIES ARE BIOMOLECULAR CONDENSATES WITH SPECIALIZED ASSEMBLY DYNAMICS FOR VIRAL RNA SYNTHESIS. **Jingru Fang**, Guillaume Castillon, Sebastien Phan, Sara McArdle, Chitra Hariharan, Mark Ellisman, Erica Ollmann Saphire

2150-PLAT 9:00 AM
NUCLEAR PHASE SEPARATION DIRECTS HOX TRANSCRIPTION IN ACUTE MYELOID LEUKEMIA. **Gandhar K. Datar**, Archish Anand, Marwa Sadek, Christina Dollinger, English Laserna, Lorenzo Brunetti, Nidhi Sahni, Margaret Goodell, Joshua A. Riback

2151-PLAT 9:15 AM
EFFECT OF A MEMBRANE PROTEIN CONDENSATION PHASE TRANSITION ON REACTION-DIFFUSION KINETICS. **L.J. Nugent Lew**, Joseph B. DeGrandchamp, Henry T. Phan, Chun-Wei Lin, He Ren, Albert Lee, Jay T. Groves

2152-PLAT 9:30 AM
INTERFACE RESISTANCE OF BIOMOLECULAR CONDENSATES. **Yoyo Jiang**, Andrew Pyo, Clifford P. Brangwynne, Howard A. Stone, Ned S. Wingreen, Yaojun Zhang

2153-PLAT 9:45 AM
MOLECULAR DETERMINANTS AND MODIFIERS OF THE TOXICITY, CONDENSATE DYNAMICS, AND DROPLET MORPHOLOGY OF THE ALS/FTD-ASSOCIATED PROTEIN MATRIN-3. **Meredith Jackrel**

2154-PLAT 10:00 AM
DEMIXING OF DISTINCT RIBONUCLEOPROTEIN CONDENSATES IS UNDER DYNAMICAL CONTROL. **Rohit V. Pappu**, Andrew Z. Lin, Kiersten M. Ruff, Ameya P. Jalihal, Furqan Dar, Ammon E. Posey, Matthew R. King, Jared M. Lalmansingh, Amy S. Gladfelter

Platform
RNA Structure and Dynamics

8:15 AM - 10:15 AM, ROOM 6D

Co-Chairs
Kush Coshic, University of Illinois Urbana-Champaign, USA
Yuan Yang, University of California, USA

2155-PLAT 8:15 AM
STRUCTURAL BASIS OF RNA CONFORMATIONAL SWITCHING IN THE TRANSCRIPTIONAL REGULATOR 7SK RNP. **Yuan Yang**, Shiheng Liu, Sylvain Egloff, Catherine D. Eichhorn, Tanya Hadjian, James Zhen, Tamás Kiss, Hong Zhou, Juli Feigon

2156-PLAT 8:30 AM
UNDERSTANDING COOPERATIVITY EFFECTS IN RNA STRUCTURE PROBING EXPERIMENTS. Emma Bose, **Alisha Jones**

2157-Plat 8:45 am
MECHANICS OF DIVALENT ION SENSITIVITY OF THE MANGANESE-SENSING RIBOSWITCH MEASURED BY COMBINED HIGH-RESOLUTION OPTICAL TWEEZERS AND SINGLE-MOLECULE FLUORESCENCE. **Rajeev Yadav**, Shankar Mandal, Shiba S. Dandpat, Nils G. Walter, Matthew J. Comstock

2158-Plat 9:00 am
THE STRUCTURE AND DYNAMICS OF A FULLY PACKAGED RNA VIRUS. **Kush Coshic**, Aleksei Aksimentiev

2159-Plat 9:15 am
IDENTIFICATION AND CHARACTERISATION OF G-QUADRUPLEXES FROM VIRAL GENOMES. Darren L. Gemmill, Higor S. Pereira, Maulik D. Badmalia, Corey R. Nelson, Michael T. Wolfinger, **Trushar R. Patel**

2160-Plat 9:30 am
PREDICTING 3D RNA STRUCTURE FROM SOLELY THE NUCLEOTIDE SEQUENCE USING EUCLIDEAN DISTANCE NEURAL NETWORKS. **Congzhou M. Sha**, Jian Wang, Nikolay V. Dokholyan

2161-Plat 9:45 am
CHARGE DENSITY EFFECT IN COUNTER ION CONDENSATION ON RNA. **Anja Henning-Knechtel**, Weiwei He, Serdal Kirmizialtin

2162-Plat 10:00 am
CHEMICAL PROBING PROFILING OF 2'-DEOXYGUANOSINE SENSING RNA REVEALS MAGNESIUM ION-DEPENDENT CONFORMATIONAL SWITCHING. **Susmitnarayan Chaudhury**, Erdong Ding, Scott P Hennelly, José Onuchic, Karissa Y. Sanbonmatsu

Platform
Protein Dynamics and Allostery II

8:15 am - 10:15 am, Room 6E

Co-Chairs
Canan Atilgan, Sabanci University, Turkey
Lee Roy De Velez, University of the Philippines, Philippines.

2163-Plat 8:15 am Travel Award Winner
INCREASED IONIC STRENGTH TRIGGERS MULTIPLE CONFORMATIONS IN BOTH APO AND HOLO FORMS OF BACTERIAL FERRIC BINDING PROTEIN. **Canan Atilgan**, Goksin Liu, Farzaneh Jalalypour, Erhan Ekmen, Melike Berksoz, Ali Rana Atilgan, Zehra Sayers

2164-Plat 8:30 am
PREDICTING THE LOCATIONS OF CRYPTIC POCKETS FROM SINGLE PROTEIN STRUCTURES USING THE POCKETMINER GRAPH NEURAL NETWORK. **Artur Meller**, Michael D. Ward, Jonathan H. Borowsky, Jeffrey M. Lotthammer, Meghana Kshirsagar, Felipe Oviedo, Juan Lavista Ferres, Gregory Bowman

2165-Plat 8:45 am
QUASI MARKOV STATE MODELS ELUCIDATES THE ROLE OF BACTERIAL RNA POLYMERASE LOADING GATE AND TRIGGER LOOP DYNAMICS IN ANTIBIOTICS INHIBITION. **Ilona C. Unarta**, Siqin Cao, Xuhui Huang

2166-Plat 9:00 am
FROM CLOSED TO OPEN: OMICRON MUTATIONS INCREASE INTERDOMAIN INTERACTIONS AND REDUCE EPITOPE EXPOSURE. **Phu Tang**, Pilar Cossio

2167-Plat 9:15 am
PERTURBATION-HDX REVEALS GLYCOSYLATION SITES AS WEAKEST LINKS IN DENGUE CAPSID QUATERNARY STRUCTURE. **Theresa Buckley**, Ranita Ramesh, Ganesh S. Anand

2168-Plat 9:30 am
CHARACTERING IONIZABLE RESIDUE NETWORKS AT SH2 INTERFACES IN PH SENSITIVE PROTEINS. **Papa Kobina Van Dyck**, Katharine A. White

2169-Plat 9:45 am Travel Award Winner
ACTIVE-SITE ELECTRONIC PROPERTIES AND CONFORMATIONAL DYNAMICS OF PET-DEGRADING ENZYMES. **Marcelo D. Polêto**, Justin A. Lemkul

2170-Plat 10:00 am
ACTIVATION MECHANISM OF THE M5 MUSCARINIC ACETYLCHOLINE RECEPTOR. **Lee Roy A. De Velez**, Jokent T. Gaza, Ricky B. Nellas

Platform
Membrane Protein Structures

8:15 am - 10:15 am, Room 6F

Co-Chairs
Claire Overly Cottom, Purdue University, USA
Digvijay Singh, University of California, San Diego, USA

2171-Plat 8:15 am
STRUCTURAL BASIS FOR CANNABINOID-INDUCED POTENTIATION OF ALPHA1-GLYCINE RECEPTORS IN LIPID NANODISCS. Arvind Kumar, **Kayla J. Kindig**, Shanlin Rao, Afroditi-Maria Zaki, Sandip Basak, Mark S. Sansom, Philip C. Biggin, Sudha Chakrapani

2172-Plat 8:30 am
STRUCTURAL INSIGHT INTO THE MITOCHONDRIAL TOM HOLO COMPLEX. **Pamela Ornelas**, Thomas Bausewein, Janosch Martin, Nina Morgner, Stephan Nussberger, Werner Kuehlbrandt

2173-Plat 8:45 am
STRUCTURAL BASIS OF RAPID INACTIVATION OF HERG POTASSIUM CHANNELS. **Carus Lau**, Emelie Flood, Mark Hunter, Karen Corbett, Chai Ng, James Bouwer, Alastair Stewart, Eduardo Perozo, Toby W. Allen, Jamie Vandenberg

2174-Plat 9:00 am
LINKING THE OUTER MEMBRANE COMPOSITION OF SALMONELLA TO PROTECTIVE ANTIBODY RESPONSES. **Gvantsa Gutishvili**, Vassiliy N. Bavro, Adam F. Cunningham, James C. Gumbart

2175-Plat 9:15 am
THE STRUCTURAL BASIS OF LIPID A MODIFICATION WITH AMINOARABINOSE REVEALED BY CRYOEM STRUCTURES OF S. ENTERICA ARNT. **Vasileios I. Petrou**, Khuram U. Ashraf, Stephannie Rosario-Garrido, Filippo Mancia

2176-Plat 9:30 am
CHARACTERIZATION OF THE B-BARREL ASSEMBLY MACHINERY IN FUSOBACTERIUM. **Claire Overly Cottom**, Nicholas Noinaj

2177-Plat 9:45 am
STRUCTURAL BASIS FOR CORA CHANNEL GATING USING CONFORMATION-SPECIFIC SYNTHETIC ANTIGEN BINDERS AND SINGLE-PARTICLE CRYO-EM. **Satchal K. Erramilli**, Pawel K. Dominik, Tian Li, Kamil Nosol, Piotr Tokarz, Przemyslaw Dutka, Minglei Zhao, Eduardo Perozo, Anthony A. Kossiakoff

2178-Plat 10:00 am
MAPPING THE DETERMINANTS OF SUBSTRATE SELECTIVITY IN A BACTERIAL METAL TRANSPORTER WITH MODEL-GUIDED DEEP MUTAGENESIS. **Samuel P. Berry**, Camille B. Freedman, Debora S. Marks, Rachelle Gaudet

Platform
Protein-Lipid Interactions: Structures

8:15 am - 10:15 am, Room 5AB

Co-Chairs
Timothy Carpenter, Lawrence Livermore National Laboratory, USA
Olivier Soubias, NIH, USA

2179-Plat 8:15 am
PIP2 STERICALLY INHIBITS PORE OPENING OF A CNG CHANNEL. Oliver Thon, **Philipp A.M. Schmidpeter**, Crina M. Nimigean

2180-Plat 8:30 AM
STRUCTURAL INSIGHTS INTO THE COMPLEX BETWEEN ARF1 AND ASAP1 AT THE MEMBRANE SURFACE BY NMR. **Olivier Soubias**, Yue Zhang, Rebekah Jackson, Jess Li, Andrew Byrd

2181-Plat 8:45 AM
PROTEIN RECONSTITUTION INTO GIANT UNILAMELLAR VESICLES FROM NATIVE NANODISCS. **Bence Ezsias**, Simon Strassgschwandtner, Marco Halbeisen, Christine Siligan, Sandro Keller, Peter Pohl

2182-Plat 9:00 AM
MEMBRANE BINDING IS INVOLVED IN THE ACTION OF BROADLY NEUTRALIZING INFLUENZA ANTIBODIES. **Defne Gorgun**, Timothy James Tan, Po-Chao Wen, Martin Frank, Zhaleh Ghaemi, Nicholas C. Wu, Emad Tajkhorshid

2183-Plat 9:15 AM Travel Award Winner
BINDING OF HIS-TAGGED MOLECULES TO GIANT VESICLES VIA ANCHOR LIPIDS. **Shreya Pramanik**, Amelie Benk, Jan Steinkuehler, Rumiana Dimova, Joachim P. Spatz, Reinhard Lipowsky

2184-Plat 9:30 AM
THE ROLE OF CONFORMATIONAL DYNAMICS IN INTRINSICALLY DISORDERED LIPID ANCHORS OF PERIPHERAL MEMBRANE PROTEINS IN SPECIFYING INTERACTIONS WITH MEMBRANE LIPIDS. Mussie K. Araya, **Alemayehu A. Gorfe**

2185-Plat 9:45 AM
COMPLEX, CONVOLUTED, YET CONSISTENT: PROTEIN INDUCED MEMBRANE REMODELING AROUND GPCRS. Harsh Bhatia, Delin Sun, Tomas Oppelstrup, Helgi I. Ingolfsson, **Timothy S. Carpenter**

2186-Plat 10:00 AM
HIGH-THROUGHPUT SCREENING TO IDENTIFY MODULATORS OF MEMBRANE PROTEIN RAFT AFFINITY IN GIANT PLASMA MEMBRANE VESICLES. **Katherine M. Stefanski**, Joshua Bauer, Anne K. Kenworthy, Charles R. Sanders

Platform
Optical Microscopy and Superresolution Imaging III

8:15 AM - 10:15 AM, Room 11AB

Co-Chairs
Sandrine Lévêque-Fort, CNRS, France
Steffen Sahl, Max Planck Institute for Multidisciplinary Sciences, Germany

2187-Plat 8:15 AM
SUPERCRITICAL ANGLE FLUORESCENCE FOR ENHANCED AXIAL RESOLUTION IN CLASSICAL AND SUPERRESOLUTION MICROSCOPY. Lancelot Pincet, Abigail Illand, Laurent LE, Emmanuel Fort, **Sandrine Lévêque-Fort**

2188-Plat 8:30 AM
COMPARISON OF INTENSITY VERSUS LIFETIME-BASED APPROACHES FOR QUANTITATIVE *IN VIVO* FRET IMAGING. **Jason T. Smith**, Nattawut Sinsuebphon, Xavier Intes, Xavier Michalet, Margarida M. Barroso

2189-Plat 8:45 AM
DELIVERY AND IMAGING OF FUNCTIONALIZED DNA ORIGAMI IN CELLS. **Patricia L. Colosi**, Elena M. Sorokina, Golbarg Mohammadiroozbahani, Wolfgang Pfeifer, Attila Oravecz, Laszlo Tora, Melike Lakadamyali, Michael G. Poirier, Carlos E. Castro

2190-Plat 9:00 AM
MAXSIM: MULTI-ANGLE-CROSSING STRUCTURED ILLUMINATION MICROSCOPY WITH HEIGHT-CONTROLLED MIRROR FOR 3D TOPOLOGICAL MAPPING OF LIVE CELLS. Pedro Felipe G. Rodriguez, Yigal Lilach, Abhijit Ambegaonkar, Haani Jafri, Hae Won Sohn, Matthew Dalva, Susan Pierce, **Inhee Chung**

2191-Plat 9:15 AM Travel Award Winner
INVESTIGATING MOLECULAR MECHANISMS OF KEY PROTEINS UNDERLYING SYNAPTIC PLASTICITY USING SINGLE-MOLECULE TRACKING AND SUPERRESOLUTION IMAGING. **Sofia Vargas-Hernandez**, Yuya Nakatani, Ivana Hsyung, Tyler Nelson, Margareth Freire, Neal Waxham, Anna-Karin Gustavsson

2192-Plat 9:30 AM
DIRECT OPTICAL RESOLUTION IN THE INTRA-MOLECULAR DISTANCE RANGE. **Steffen J. Sahl**, Jessica Matthias, Kaushik Inamdar, Taukeer A. Khan, Michael Weber, Johannes Broichhagen, Stefan W. Hell

2193-Plat 9:45 AM
SUPERRESOLUTION PAINT IMAGING WITH MOLECULAR BEACON. **Seong Ho Kim**, Isaac T.S. Li

2194-Plat 10:00 AM Travel Award Winner
NEW INSIGHTS IN PROGERIN-INDUCED MODIFICATIONS OF CHROMATIN LANDSCAPES. **Isotta Cainero**, Francesca Baldini, Chantal Usai, Paolo Bianchini, Luca Lanzano', Alberto Diaspro

Poster Presentations and Late Posters

10:30 AM - 12:30 PM, Exhibit Hall BC

Symposium
Mechanisms of Membrane Insertion

1:00 PM - 3:00 PM, Room 6A

Chair
Bil Clemons, California Institute of Technology, USA

2195-Symp 1:00 PM
THE BACTERIAL *SECRETOSOME* FOR BACTERIAL ENVELOPE BIOGENESIS. Sara Alvira, Dan Watkins, Sophie Williams, **Ian Collinson**

2196-Symp 1:30 PM
CRYO-EM AND PHOTOCROSSLINKING STUDIES REVEAL THE MECHANISM OF MITOCHONDRIAL PROTEIN IMPORT BY THE TIM COMPLEX. **Eunyong Park**

2197-Symp 2:00 PM
BIOGENESIS OF MITOCHONDRIAL OUTER MEMBRANE PROTEINS. **Rebecca Voorhees**

2198-Symp 2:30 PM
A STRUCTURALLY DERIVED UNIVERSAL MECHANISM FOR THE CATALYTIC CYCLE OF THE TAIL-ANCHORED TARGETING FACTOR GET3. **Bil Clemons**, Michelle Fry

Symposium
Fuzzy Complexes

1:00 PM - 3:00 PM, Room 6B

Chair
Benjamin Schuler, University of Zurich, Switzerland

2199-Symp 1:00 PM
EVOLUTION OF EUKARYOTIC TRANSCRIPTIONAL ACTIVATION DOMAINS. **Max V. Staller**, Margot Galle

2200-Symp 1:30 PM
INTRINSIC DISORDER IN THE HIGHLY ORDERED CIRCADIAN CLOCK: A TALE OF TWO ISOFORMS. **Jennifer M. Hurley**

2201-Symp 2:00 PM
A MODEL SYSTEM REVEALS HOW DIFFERENT LINKER HISTONES DIRECT CHROMATIN TO LIQUID-LIKE OR FIBRE-LIKE CONDENSED STATES. **Katherine Stott**

2202-Symp **2:30 PM**
INTERACTION DYNAMICS OF DISORDERED PROTEINS FROM SINGLE-MOLECULE SPECTROSCOPY. **Benjamin Schuler**

Platform
Smooth and Cardiac Muscle II
1:00 PM - 3:00 PM, Room 6C

Co-Chairs
Piyali Guhathakurta, University of Minnesota, USA
Sayli Modak, Washington University in St. Louis, USA

2203-Plat **1:00 PM** **Travel Award Winner**
ELUCIDATING THE MECHANISM OF DANICAMTIV ON FORCE, KINETICS, AND MYOSIN STRUCTURE AND FUNCTION. **Kristina B. Kooiker**, Saffie Mohran, Weikang Ma, Galina V. Flint, Kerry Y. Kao, Lin Qi, Timothy McMillen, Stephanie Neys, Christian Mandrycky, Thomas C. Irving, Michael A. Geeves, Michael Regnier, Farid Moussavi-Harami

2204-Plat **1:15 PM**
REGULATION OF BAG3 LOCALIZATION AND SARCOMERIC PROTEIN TURNOVER IN THE CARDIAC MYOCYTE. **Ahmed Zied**

2205-Plat **1:30 PM**
ESTABLISHMENT OF AN *IN VIVO* HUMAN ENGINEERED HEART TISSUE PLATFORM TO MODEL IRON OVERLOAD CARDIOMYOPATHY. **Sayli S. Modak**, Lina Greenberg, William Stump, Weikai Li, Nathaniel Huebsch, Michael J. Greenberg

2206-Plat **1:45 PM** **Travel Award Winner**
ENGINEERING VISCOELASTIC ALGINATE HYDROGELS FOR HIPSC CARDIOMYOCYTE CULTURE. **Marissa Gionet-Gonzales**, Jonah Rosas, Angela Pitenis, Beth Pruitt, Ryan Stowers

2207-Plat **2:00 PM**
TRUNCATED TITIN IS INTEGRATED INTO THE HUMAN DILATED CARDIOMYOPATHIC SARCOMERE. Dalma Kellermayer, Hedvig Tordai, Balazs Kiss, György Török, Alex A. Sayour, Miklós Pólos, István Hartyánszky, Bálint Szilveszter, Siegfried Labeit, Ambrus Gángó, Gábor Bedics, Csaba Bödör, Tamás Radovits, Béla Merkely, **Miklós Kellermayer**

2208-Plat **2:15 PM**
CYCLICAL SHORTENING PROMOTES MATURATION OF ATRIAL ENGINEERED HEART TISSUES. **Ilhan Gokhan**, Stuart G. Campbell

2209-Plat **2:30 PM**
DRUG DISCOVERY FOR HEART FAILURE: TARGETING THE MYOSIN-BINDING PROTEIN C INTERACTIONS WITH ACTIN. **Piyali Guhathakurta**, Thomas A. Bunch, Andrew Thompson, Victoria C. Lepak, Anna L. Carter, Jennifer J. Thomas, Brett A. Colson, David D. Thomas

2210-Plat **2:45 PM**
TOWARDS AUTOMATED ASSESSMENT OF DRUG EFFICACY ON CARDIOMYOPATHIC HUMAN HEART FUNCTION. **Srboljub M. Mijailovich**, Momcilo Prodanovic, Danica Prodanovic, Boban Stojanovic, Thomas C. Irving

Platform
Micro- and Nanotechnology and Biomaterials
1:00 PM - 3:00 PM, Room 6D

Co-Chairs
Jacob Rosenstein, Brown University, USA
Shoukath Sulthana, University of Texas at Tyler, USA

2211-Plat **1:00 PM** **Travel Award Winner**
FLUOROPHORE-INDUCED PLASMONIC CURRENT FOR SOLAR ENERGY COLLECTION. **Lahari Saha**, Chris D. Geddes

2212-Plat **1:15 PM**
LABEL-FREE, FAST ELECTRONIC CLASSIFICATION OF BACTERIA. **Savannah Silva**, Cody Combs, Wilfred S. Russell, Leora Duong, Katherine McCarthy, Albert Siryaporn, Zuzanna S. Siwy

2213-Plat **1:30 PM**
NANOPORE-BASED QUANTIFICATION OF VIRAL VECTORS AND NANOPARTICLES AS AN ANALYTICAL TOOL FOR GENE THERAPY PRODUCTS. **Ali Fallahi**, Yifang Liu, Amr K. Makhamreh, Wentao Liang, Jacob Potts, Sara H. Rouhanifard, Meni Wanunu

2214-Plat **1:45 PM**
TUMOR-DERIVED EXTRACELLULAR VESICLES HYBRIDIZED LIPOSOMES IN CANCER THERAPY. **Shoukath Sulthana**, Santosh Aryal

2215-Plat **2:00 PM**
UPDATED NANOSCALE TWEEZERS FOR SINGLE-CELL BIOPSIES APPLIED TO PRE-ADAPTED DORMANT BREAST CANCER CELLS. **Anthony Monteza Cabrejos**

2688-Pos **2:15 PM**
ALL-ELECTRICAL IMAGING OF CULTURED CELLS WITH SEMICONDUCTOR SENSOR ARRAYS. **Jacob K. Rosenstein**, Kangping Hu, Pushkaraj Joshi, Joseph T. Incandela, Joseph Larkin

2217-Plat **2:30 PM**
DETECTION OF AB 1-42 AGGREGATES BY RT-FAST : TOWARD A NEW TOOL FOR THE DIAGNOSTIC OF ALZHEIMER'S DISEASE. **Nathan Meyer**, Jean-Marc Janot, Joan Torrent, Sebastien Balme

2218-Plat **2:45 PM**
NANOZYME MEDIATED SOD1 STRATEGY LINKED TO NANOCHAPERONE FACILITATE AGGREGATION INHIBITION IN AMYOTROPHIC LATERAL SCLEROSIS. **Parth Sarathi Nayak**

Platform
Protein Assemblies
1:00 PM - 3:00 PM, Room 6E

Co-Chairs
Puja Banerjee, University of Chicago, USA
Nadia Izadi Pruneyre, Institut Pasteur, France

2219-Plat **1:00 PM**
HDX-MS REVEALS THAT BACTERIAL CHEMORECEPTOR SIGNALING COMPLEXES CONTROL KINASE ACTIVITY BY STABILIZING THE CATALYTIC DOMAIN OF CHEA. **Thomas Tran**, Aruni Karunanayake Mudiyanselage, Stephen J. Eyles, Lynmarie K. Thompson

2220-Plat **1:15 PM** **Withdrawn**
RAPID EXTRACTION AND QUANTITATIVE ANALYSIS OF MEMBRANE PROTEIN COMPLEXES FROM SINGLE CELLS. **Daniel J. Dickinson**, Sena Sarikaya, Lars N. Deutz

2221-Plat **1:30 PM**
OLIGOMERIC DISTRIBUTION OF MEMBRANE PROTEINS IN NATIVE-MEMBRANE ENVIRONMENT AT NANOSCALE SPATIAL AND SINGLE-MOLECULE RESOLUTION. Gerard Walker, Caroline Brown, Xiangyu Ge, Kallol Gupta, Mandar Muzumdar, **Moitrayee Bhattacharyya**

2222-Plat **1:45 PM** **Travel Award Winner**
ARCHITECTURE AND ASSEMBLY MECHANISM OF HUMAN LACTB. **Lottie R. Steward**

2223-Plat **2:00 PM**
BIOPHYSICS OF IL-22 RECEPTOR INTERACTION WITH SELECTED INTERLEUKINS. **Hussein Forsberg Chaaban**, Jennifer Loschwitz, Marco van de Weert, Birgit Strodel, Martin Stahlhul, Vito Foderà

2224-PLAT 2:15 PM
2-D LIQUID-LIQUID PHASE SEPARATION OF GM130 GOLGIN PROTEIN BOUND TO SUPPORTED BILAYER. **Jean N. Goder**, Maohan Su, Abhijith Radhakrishnan, Ivan Lopez-Montero, Frederic Pincet, James Rothman

2225-PLAT 2:30 PM
ROLE OF GRNA BINDING IN HIV-1 GAG ASSEMBLY PROCESS. **Puja Banerjee**, Gregory A. Voth

2226-PLAT 2:45 PM
A MECHANISM FOR TRANSCRIPTIONAL REGULATION OF INNATE IMMUNE RESPONSE GENES BY RSV NS1 PROTEIN. Jiawei Dong, Vincent Basse, Maxime Bierre, Pierre Sibille, Pierre-Olivier Vidalain, Jean-Francois Eleouet, Marie Galloux, Monika Bajorek, **Christina Sizun**

Platform
Ligand-Gated and Anion Channels

1:00 PM - 3:00 PM, ROOM 6F

Co-Chairs
Alessio Accardi, Weill Cornell Medical College, USA
Cynthia Czajkowski, University of Wisconsin Madison, USA

2233-PLAT 1:00 PM
IDENTIFICATION OF RESIDUES INVOLVED IN HOMOTRIMERIC ASSEMBLY OF THE HUMAN P2X4 RECEPTOR BY SIMULATIONS AND SITE-DIRECTED MUTAGENESIS. **Aparna Sai Malisetty**, Lukas Schaffrath, Fritz Markwardt, Saskia Cönen, Jan-Philipp Machtens, Susan Köppen, Guenther Schmalzing

2228-PLAT 1:15 PM
POSTTRANSLATIONAL MODIFICATIONS OF CYCLIC AMP-DEPENDENT PROTEIN KINASE A AFFECT ITS BINDING TO THE CFTR ANION CHANNEL. **Andras Szollosi**, Csaba Mihalyi, Iordan Iordanov, Laszlo Csanady

2229-PLAT 1:30 PM
MOLECULAR MECHANISM UNDERLYING DESENSITIZATION OF THE HUMAN PROTON-ACTIVATED CHLORIDE (PAC) CHANNEL. James Osei-Owusu, Zheng Ruan, **Daniel S. Matasic**, Wei Lu, Zhaozhu Qiu

2230-PLAT 1:45 PM
A LRRC8 CHIMERA WITH NATIVE FUNCTIONAL PROPERTIES IS A HEPTAMER WITH A LARGE LIPID-BLOCKED PORE. **Hirohide Takahashi**, Toshiki Yamada, Jerod S. Denton, Kevin Strange, Erkan Karakas

2231-PLAT 2:00 PM
COTRANSLATIONAL ASSOCIATION OF MRNA TRANSCRIPTS ENCODING HETEROMERIC GABA-A RECEPTORS. Nathalie M. Dinguirard, Navya K. Tarikere, Fang Liu, Gail A. Robertson, **Cynthia Czajkowski**

2232-PLAT 2:15 PM TRAVEL AWARD WINNER
ELUCIDATING THE STRUCTURE-FUNCTION OF THE IONOTROPIC DELTA RECEPTOR IN THE PRESENCE OF TRANS-SYNAPTIC PARTNERS. **Cuauhtemoc U. Gonzalez**, Elisa Carrillo, Vladmir Berka, Anindita Das, Vasanthi Jayaraman

2227-PLAT 2:30 PM
NEW INSIGHTS INTO THE MOLECULAR BASIS OF ALLOSTERIC ACTIVATION OF THE TMEM16A CHANNEL AND CONSEQUENCES FOR THE CONTROL OF VASCULAR TONE. **Rumaitha Al Hosni**, Emilio Agostinelli, Zeki Ilkan, Lara F. Scofano, Kathryn Acheson, Andrew MacDonald, Dean Rivers, Martin Gunthorpe, Frances Platt, Paolo Tammaro

2234-PLAT 2:45 PM
STRUCTURAL BASIS FOR LIGAND MODULATION AND PARTIAL AGONISM OF THE 5-HT_3R. **Kevin C. Felt**, Letty Leslie Ann A. Salas Estrada, Madeleine Stauffer, Peter R. Guzzo, Dejian Xie, Jinkun Huang, Marta Filizola, Sudha Chakrapani

Platform
Exocytosis and Endocytosis

1:00 PM - 3:00 PM, ROOM 5AB

Co-Chairs
Ioana Butu, Columbia University, USA
Feng Yuan, University of Texas at Austin, USA

2235-PLAT 1:00 PM
POLY-UBIQUITIN CATALYZES ENDOCYTOSIS BY PROMOTING LIQUID-LIKE ASSEMBLY OF EARLY ENDOCYTIC PROTEINS. **Feng Yuan**, Sadhana Gollapudi, Brandon T. Malady, Arjun Sangani, Liping Wang, Eileen M. Lafer, Jeanne C. Stachowiak

2236-PLAT 1:15 PM
A CONFORMATIONAL SWITCH IN CLATHRIN LIGHT CHAIN REGULATES LATTICE STRUCTURE AND ENDOCYTOSIS AT THE PLASMA MEMBRANE OF MAMMALIAN CELLS. **Kazuki Obashi**, Kem A. Sochacki, Marie-Paule Strub, Justin W. Taraska

2237-PLAT 1:30 PM
SHEAR STRESS SHIFTS CLATHRIN-COATED VESICLE FORMATION TO FAVOR THE FLAT-TO-CURVED MODEL IN ENDOTHELIAL CELLS. **Tomasz J. Nawara**, William F. Dean, Alexa L. Mattheyses

2238-PLAT 1:45 PM
A DYNAMIC MECHANICALLY STABILIZED MEMBRANE RESERVOIR MEDIATES FAST ENDOCYTOSIS. **Dong An**, Rui Su, Peter Wen, Chung Yu Chan, Ling-Gang Wu, Ben O'Shaughnessy

2239-PLAT 2:00 PM
OBSERVING SINGLE DYNAMIN-MEDIATED FISSION EVENTS IN TIRFM-AMENABLE SYNAPSES. **Sai Krishnan**

2240-PLAT 2:15 PM
DUAL FUNCTIONS OF DYNAMIN IN BETA CELL ENDOCYTOSIS AND AUTOPHAGY TRAFFICKING AS A MEMBRANE FISSION MOLECULE. Fan Fan, Jenifer Wendlick, **Xuelin Lou**

2241-PLAT 2:30 PM
SYNAPTOTAGMIN IS NOT ONLY A CALCIUM SENSOR, BUT ALSO EXERTS ENTROPIC FORCES THAT DRIVE MEMBRANE FUSION. **Ioana C. Butu**, Dong An, Zachary A. McDargh, Ben O'Shaughnessy

2242-PLAT 2:45 PM
THE NUMBER OF SNAP25 MOLECULES CHANGING CONFORMATION PRECEDING A FUSION EVENT INCREASES WITH VESICLE SIZE. Ying Zhao, Qinghua Fang, **Manfred Lindau**

Platform
Computational Methods and Machine Learning, Artificial Intelligence, and Bioinformatics

1:00 PM - 3:00 PM, ROOM 11AB

Co-Chairs
Mary Jo Ondrechen, Northeastern University, USA
Laila Sakhnini, Novo Nordisk, Denmark

2243-PLAT 1:00 PM
KEY INTERACTIONS CONVERT AMINO ACID SIDE CHAINS INTO STRONG ACIDS AND BASES IN THE ACTIVE SITES OF ENZYMES. Suhasini M. Iyengar, Kelly K. Barnsley, Atif Shafique, **Mary Jo Ondrechen**

2244-PLAT 1:15 PM TRAVEL AWARD WINNER
HARNESSING NATURAL EVOLUTION AND COMPUTATION TOWARDS SYSTEMS ENZYMOLOGY. **Wenjun Xie**, Arieh Warshel

2245-Plat 1:30 pm
BAYESIAN STRUCTURE DETERMINATION OF MULTIPLE CONFORMATIONAL STRUCTURES FROM SINGLE MOLECULE X-RAY SCATTERING IMAGES. **Steffen Schultze**, Helmut Grubmuller

2246-Plat 1:45 pm
OT2REC: A SEMI-AUTOMATIC, EXTENSIBLE, MULTI-SOFTWARE TOMOGRAPHIC RECONSTRUCTION WORKFLOW. **Neville Bor-yior Yee**, Elaine M. L. Ho, Michele Darrow, Mark Basham

2247-Plat 2:00 pm
A DEEP LEARNING METHOD TO SEPARATE FLUOROPHORES BASED ON THEIR FLUORESCENCE LIFETIME. **Lisa Cuneo**, Marco Castello, Simonluca Piazza, Irene Nepita, Luca Lanzano', Paolo Bianchini, Giuseppe Vicidomini, Alberto Diaspro

2248-Plat 2:15 pm
IDENTIFICATION OF MESENCHYMAL STEM CELLS BASED ON THE PASSAGING EFFECT USING MACHINE LEARNING APPROACHES. **Ching-Fen Jiang**, Shan-hui Hsu, Yu-Man Sun

2249-Plat 2:30 pm
DEVELOPMENT OF MACHINE LEARNING MODELS FOR PREDICTION OF ANTIBODY NON-SPECIFICITY. **Laila Sakhnini**, Nikolai Lorenzen, Pietro Sormanni, Michele Vendruscolo, Daniele Granata

2250-Plat 2:45 pm
MUMMI, A MACHINE LEARNING-DRIVEN MODELING INFRASTRUCTURE FOR COUPLING DIFFERENT SIMULATION SCALES; SHOWCASED FOR RAS-RAF ACTIVATION. **Helgi I. Ingólfsson**

WEDNESDAY POSTER SESSIONS

10:30 AM–12:30 PM, EXHIBIT HALL BC

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 Abstracts Issue. Board numbers indicate where boards are located in the Exhibit Hall.

ODD-NUMBERED BOARDS 10:30 AM–11:30 AM | EVEN-NUMBERED BOARDS 11:30 AM–12:30 PM

Board Numbers	Category
B1 - B25	Protein Structure and Conformation IV
B26 - B58	Protein Structure, Prediction, and Design
B59 - B77	Protein Stability, Folding, and Chaperones II
B78 - B97	Enzyme Function, Cofactors, and Post-Translational Modifications
B98 - B120	Condensates in Physiology and Disease
B121 - B136	Ribosomes and Translation
B137 - B169	Chromatin and the Nucleoid
B170 - B182	Membrane Fusion and Non-Bilayer Structures
B183 - B202	Protein-Lipid Interactions: Structures
B203 - B225	General Protein-Lipid Interactions II
B226 - B242	Membrane Receptors and Signal Transduction
B243 - B265	Exocytosis and Endocytosis
B266 - B289	Ion Channel Regulatory Mechanisms
B290 - B311	Other Channels
B312 - B327	Membrane Pumps, Transporters, and Exchangers II
B328 - B357	Cell Mechanics, Mechanosensing, and Motility II
B358 - B371	Genetic, Metabolic, and Cellular Networks
B372 - B380	Neuroscience: Computational and Experimental Approaches and Tools
B381 - B397	Electron Microscopy
B398 - B400	Diffraction and Scattering Techniques
B401 - B408	Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence
B409 - B419	Force Spectroscopy and Scanning Probe Microscopy
B420 - B440	Micro- and Nanotechnology
B441 - B449	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 IV (Boards B1 - B25)

2251-Pos Board B1
CHARACTERIZATION OF BINDING INTERACTION BETWEEN S100A1 AND TITIN'S UN2A REGION. **Sabrina I. Apel**

2252-Pos Board B2
FORCE TRANSMISSION AND SUN-KASH HIGHER-ORDER ASSEMBLY IN THE LINC COMPLEX MODELS. **Nya Domkam**

2253-Pos Board B3
UNDERSTANDING THE ROLE OF THE LRRK2 TAIL IN THE CROSSTALK BETWEEN KINASE AND THE N-TERMINAL DOMAINS. **Pallavi Kaila Sharma**, Jascha T. Manschwetus, Jui-Hung Weng, Jian Wu, Friedrich W. Herberg, Susan S. Taylor

2254-Pos Board B4
CRYO-EM REVEALS STRUCTURAL BASIS OF EPITOPE SELECTIVITY AND PROTECTION FROM MALARIA INFECTION IN THE HIGHLY POTENT ANTIBODY FAMILY IGHV3-33. **Gregory M. Martin**, Andrew B. Ward

2255-Pos Board B5
COMPARISION OF STRUCTURAL NETWORK BETWEEN HOMOLOGOUS PROTEINS WITH VARIABILITY DERIVED FROM MULTIPLE CONFORMERS. **Vasam Manjveekar Prabantu**, Vasundhara Gadiyaram, Saraswathi Vishveshwara, Narayanaswamy Srinivasan

2256-Pos Board B6
PHOSPHORYLATION-DEPENDENT REGULATION OF THE TRANSCRIPTIONAL ACTIVITY OF ARABIDOPSIS SOG1. **Margot Galle**, Jordan Stefani, Tamas Lazar, Lieven De Veylder, Max V. Staller, Remy Loris

2257-Pos Board B7 Travel Award Winner
POSTTRANSLATIONAL MODIFICATIONS DECERASE SOLUBILITY OF CRYSTALLIN PROTEINS, WHILE ENHANCING CRYSTALLIZABILITY. **Collin Sroge**, Megan A. Rocha, Brenna Norton-Baker, Rachel Martin

2258-Pos Board B8
STRUCTURAL STUDIES OF HUMAN SERUM ALBUMIN USING CRYO-EM UP TO 0.38 NM RESOLUTION. **Maciej Kozak**, Michał Taube, Michał Rawski, Daria Wojciechowska, Joanna Sławek

2259-Pos Board B9
ATAXIA-LINKED SLC1A3 MUTATIONS ALTER EAAT1 CHLORIDE CHANNEL ACTIVITY AND GLIAL REGULATION OF CNS FUNCTION. **Qianyi Wu**, Azman Akhter, Shashank Pant, Eunjoo Cho, Jin X. Zhu, Alastair Garner, Tomoko Ohyama, Emad Tajkhorshid, Donald van Meyel, Renae M. Ryan

2260-Pos Board B10
STRUCTURAL AND DYNAMICAL EFFECTS OF PHOSPHORYLATION ON DNA POLYMERASE B STUDIED BY MOLECULAR DYNAMICS SIMULATIONS. **Dirar M. Homouz**, Amit Srivastava

2261-Pos Board B11 Travel Award Winner
CHARACTERIZATION OF THE 10MAG/LDAO REVERSE MICELLE SURFACTANT SYSTEM, A USEFUL TOOL FOR STUDYING PROTEIN BIOPHYSICS. **Crystal I. Stackhouse**, Kali N. Pierson, Nathaniel V. Nucci

2262-Pos Board B12 Travel Award Winner
^{19}F NMR REVEALS DYNAMICS NOT EVIDENT IN CRYSTAL STRUCTURE OF LONG-CHAIN FLAVODOXIN. **Sharique Khan**, Anne-Frances Miller, Ahmadullah Ansari

2263-Pos Board B13
MOLECULAR CHARACTERIZATION OF PHOTOTROPIN SIGNALOSOME REGULATING PHOTOPHYSIOLOGICAL PROCESSES IN GREEN ALGAE. **Sunita Sharma**, Kumari Sushmita, Sibaji K. Sanyal, Irina Sizova, Peter Hegemann, Suneel Kateriya

2264-Pos Board B14
EXPERIMENTAL AND COMPUTATIONAL STUDIES OF THE EFFECTS OF HIGH HYDROSTATIC PRESSURE ON BIOMOLECULAR INTERACTIONS. **George I. Makhatadze**

2265-Pos Board B15 Travel Award Winner
STRUCTURAL INSIGHTS INTO SUBSTRATE ACCOMMODATION BY *ESCHERICHIA COLI* ADENINE PHOSPHORIBOSYLTRANSFERASE (APRT) REVEAL A UNIQUE MECHANISM IN ENTEROBACTERALES. **Priya Yadav**, Gajraj Singh Kushwaha, Neel Sarovar Bhavesh

2266-Pos Board B16
TESTING MECHANISMS FOR HOMOMERIC PROTEIN ASSEMBLY IN VIVO. **McKenze J. Moss**, Patricia L. Clark

2267-Pos Board B17 Travel Award Winner
A STRUCTURAL MECHANISM OF NUCLEAR RECEPTOR BIASED AGONISM. **Michelle D. Nemetchek**, Ian Chrisman, Mariah Rayl, Andrew Voss, Travis Hughes

2268-Pos Board B18
VITRONECTIN, THE MAJOR REGULATOR OF AGE-RELATED MACULAR DEGENERATION. **Kyungsoo Shin**, James E. Kent, Alexander E. Aleshin, Ye Tian, L. Miya Fujimoto, Chandan Singh, Francesca M. Marassi

2269-Pos Board B19
SEPARATING CONFINEMENT EFFECTS FROM INTERFACIAL INTERACTIONS FOR THE MODEL PROTEIN MYOGLOBIN USING ENCAPSULATION IN REVERSE MICELLES OF VARYING COMPOSITIONS. **Kyle C. Fennimore**, Crystal I. Stackhouse, Cora L. Mejia, Lauren A. Staman, Nathaniel V. Nucci

2270-Pos Board B20
WAVELENGTH-DEPENDENT FLUORESCENCE FLUCTUATION AND MOLECULAR BRIGHTNESS ANALYSIS OF A NOVEL MEGFP-LINKER-MSCARLET-I CROWDING BIOSENSOR AT THE SINGLE-MOLECULE LEVEL. **Sarah Bergman**, Sarah Mersch, Austin Yang, Dan Bamigbade, Arnold J. Boersma, Erin D. Sheets, Ahmed A. Heikal

2271-Pos Board B21
HIGH-PRESSURE STUDIES REVEAL THE CONFORMATIONAL LANDSCAPE OF THE SMALL GTPASE ARF6. **Noam Hantman**, Edgar Peters, Tejaswi Naidu Koduru, Jacqueline Cherfils, Scott A. McCallum, Richard E. Gillilan, Catherine A. Royer

2272-Pos Board B22
COMPARATIVE ANALYSIS OF THE STRUCTURAL DYNAMICS OF THE DOPPEL PROTEIN AND THE C-TERMINUS OF THE CELLULAR PRION PROTEIN. **James A. Janos**, Joohyun Cho, Kaitlin Tsuchida, Patricia Soto

2273-Pos Board B23
KEY ROLE OF AN ALPHA-HELICAL LID IN DRIVING THE TARGET DNA TOWARD CATALYSIS IN CRISPR-CAS12A. **Aakash Saha**, Mohd Ahsan, Pablo R. Arantes, Christelle Chanez, Michael Schmitz, Martin Jinek, Giulia Palermo

2274-Pos Board B24
MAPPING THE INTERACTIONS BETWEEN PRION PROTEIN (PRPC) AND PRION PROTEIN FIBRILS (PRPSC). **Alyssa M. Thallemer**, Linh Bui, Patricia Soto

2275-Pos Board B25
SARS-COV-2 SPIKE OPENING DYNAMICS AND ENERGETICS REVEAL THE INDIVIDUAL ROLES OF GLYCANS AND THEIR COLLECTIVE IMPACT. **Yui Tik Pang**, Atanu Acharya, Diane L. Lynch, Anna Pavlova, James C. Gumbart

Protein Structure, Prediction, and Design (Boards B26 - B58)

2276-Pos **Board B26**
DE NOVO DESIGN OF B-BARREL NANOPORE WITH GLY-KINK TOWARDS SINGLE-MOLECULE DETECTION. **Ikuro Mizoguchi**

2277-Pos **Board B27**
ADAPTATIONS OF PROTEINS, RNA AND DNA TO EXTREME TEMPERATURES, SALINITY AND PH. **Aidana Amangeldina**, Zhen Wah Tan, Igor N. Berezovsky

2278-Pos **Board B28** **Travel Award Winner**
OPTIMIZING THE FUNCTION AND DYNAMICS OF DE NOVO DESIGNED FLUORESCENT B-BARREL PROTEINS. **Justin P. Nguyen**, Tyla Holoman, Jaime Cardenas, Colleen Carrigan, Colin A. Smith

2279-Pos **Board B29**
QUANTIFYING OBSCURIN'S IMPACT ON EPITHELIAL CELL AREA, PERIMETER & LOCALIZATION WITH THE CELL MEMBRANE. **Mason F. Ong**, Callie Miller, Nathan T. Wright

2280-Pos **Board B30**
PREDICTING HYDRATION PROPERTIES OF PROTEINS. **Britnie Carpentier**, Shikha Nangia

2281-Pos **Board B31**
ARCHITECTURE AND FUNCTION OF THE MEIOTIC METAZOAN HORMAD CHROMATIN BINDING REGION (CBR). **Alyssa A. Rodriguez**

2282-Pos **Board B32**
A TOOLKIT OF CUSTOMISED PROTEIN SENSORS FOR INTERROGATING MECHANICAL FORCES IN THE CELL. **Maria Zacharopoulou**, Marie Synakewicz, Janet R. Kumita, Mohsin Mubarak Naqvi, Laura S. Itzhaki

2283-Pos **Board B33**
MUTATIONAL FITNESS LANDSCAPE OF HUMAN INFLUENZA H3N2 NEURAMINIDASE. **Ruipeng Lei**, Andrea Hernandez Garcia, Timothy J.C. Tan, Qi Wen Teo, Yiquan Wang, Xiwen Zhang, Shitong Luo, Satish K. Nair, Jian Peng, Nicholas C. Wu

2284-Pos **Board B34** **Withdrawn**
IDENTIFICATION AND PREDICTION OF FOLD-SWITCHING PROTEINS. **Lauren L. Porter**, Joseph W. Schafer, Devlina Chakravarty, Allen Kim, Swechha Rimal, Loren Looger, Ananya K. Majumdar, Mary Starich, Marie-Paule Strub

2285-Pos **Board B35**
DE NOVO DESIGN OF BETA HAIRPIN PEPTIDES WITH CUSTOM INSTALLED HALOGEN-BONDING GROUPS. **Thi Dung Nguyen**, Vincent Voelz

2286-Pos **Board B36**
INVESTIGATING THE STRUCTURAL AND DYNAMICAL BASIS FOR ION AFFINITY IN THE ION-BINDING SITES OF SIGNALING PROTEINS. **Eman Alasadi**

2287-Pos **Board B37**
GENERATIVE MODELING OF SHORT, DISORDERED PROTEINS WITH HOMOGENEOUS SEQUENCE COMPOSITION. **Ishan Taneja**, Keren Lasker

2288-Pos **Board B38**
DESIGN AND CHARACTERIZATION OF HYPER STABLE VARIANT OF HUMAN FIBROBLAST GROWTH FACTOR1 (HFGF1). **Shiva Sonnaila**

2289-Pos **Board B39**
COMPUTATIONAL MODELING AND MOLECULAR MAPPING OF SERINE PROTEASE INHIBITOR FAMILY A5 (SERPINA5) STRUCTURE, ASSOCIATED WITH TAU EXPRESSION AND ALZHEIMER'S DISEASE. **Oleksandr V. Savytskyi**, Tiffany N.H. Sirmans, Mathew A. Coban, Caleb A. Weber, Melissa E. Murray, Thomas R. Caulfield

2290-Pos **Board B40** **Travel Award Winner**
PHOTOREGULATION OF IL-24/IL-20R2 COMPLEX FORMATION USING A LIGHT-RESPONSIVE NON-CANONICAL AMINO ACID. **Phuong Ngoc Pham**, Jiří Zahradník, Gustavo Fuertes, Lucie Kolářová, Bohdan Schneider

2291-Pos **Board B41** **Travel Award Winner**
LOW INFORMATION NMR DATA GUIDED PROTEIN-PEPTIDE COMPLEX STRUCTURE DETERMINATION WITH MELDXMD. **Arup Mondal**, Alberto Perez, Gaetano T. Montelione

2292-Pos **Board B42**
ENCODING DYNAMICAL INFORMATION OF PROTEIN FROM NORMAL MODE ANALYSIS AS MULTIGRAPHS FOR FUNCTION PREDICTION BY GRAPH NEURAL NETWORKS AND HIGHLIGHTING FUNCTIONALLY-CRITICAL RESIDUES. **Yenlin Chen**, Yuan Chiang, Wei-Han Hui, Shu-Wei Chang

2293-Pos **Board B43**
A *DE NOVO*-DESIGNED MINI-PROTEIN CAN INHIBIT FGFR SIGNALING IN AN ISOFORM-SPECIFIC MANNER. **Sangwon Lee**

2294-Pos **Board B44**
A MULTIPRONGED FOOTPRINTING MAP VALIDATES THE PREDICTED STRUCTURE OF STRESS BIOMARKER NEUROPEPTIDE Y (NPY) AND ITS BINDING WITH NOVEL PEPTIDE BINDERS. **Rohit Jain**, Erik R Farquhar, Janna Kiselar, David T. Lodowski, Mark R. Chance

2295-Pos **Board B45**
MOLECULAR ARCHITECTURE OF NUCLEOSOME REMODELING AND DEACETYLASE SUB-COMPLEXES BY INTEGRATIVE STRUCTURE DETERMINATION. **Shreyas M. Arvindekar**, Matthew J. Jackman, Jason K.K. Low, Michael J. Landsberg, Joel P. Mackay, Shruthi Viswanath

2296-Pos **Board B46**
DESIGNING OCCLUDED-OPEN ENV-BASED IMMUNOGENS FOR HIV-1. **Andrew T. DeLaitsch**, Nathaniel Liendo, Pamela J. Bjorkman

2297-Pos **Board B47**
COMPUTATIONAL PROGNOSTIC EVALUATION OF ALZHEIMER'S DRUGS FROM FDA-APPROVED DATABASE THROUGH STRUCTURAL CONFORMATIONAL DYNAMICS AND DRUG REPOSITIONING APPROACHES. **Mubasher Hassan**, Saba Shahzadi, Andrzej Kloczkowski

2298-Pos **Board B48**
STRUCTURAL FEATURES OF EWSR1 AFFECTING EWING'S SARCOMA. COMPUTATIONAL DOMAIN ASSEMBLY AND CONFORMATIONAL DYNAMICS STUDIES. **Saba Shahzadi**, Mubashir Hassan, Andrzej Kloczkowski

2299-Pos **Board B49**
COMPUTATIONAL PROTEIN STRUCTURE ELUCIDATION FROM COVALENT LABELING MASS SPECTROMETRY DATA. **Steffen Lindert**

2300-Pos **Board B50** **Travel Award Winner**
COMPARATIVE DYNAMICS AND STRUCTURAL ANALYSIS OF EXTREMOPHILIC SERINE PROTEASES FROM DIVERSE ENVIRONMENTS. Elizabeth Diessner, **Gemma R. Takahashi**, Rachel W. Martin, Carter T. Butts

2301-Pos **Board B51** **Travel Award Winner**
VARIANT EFFECT PREDICTION USING STRUCTURE-INFORMED PROTEIN LANGUAGE MODELS. **Yuanfei Sun**, Yang Shen

2302-Pos **Board B52**
ATOMIC-LEVEL CHARACTERIZATION OF THE HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 ENVELOPE GLYCOPROTEINS USING MOLECULAR DYNAMIC SIMULATIONS. **Stephanie M. Sauve**, Maolin Lu, Mahmoud Moradi

2303-Pos **Board B53**
IN SILICO SIMULATIONS FOR PREDICTION AND MODELING OF PROTEIN ENGINEERING WITHIN CATALYTIC SUBUNIT OF DIRECT ELECTRON TRANSFER TYPE FAD GLUCOSE DEHYDROGENASE FOR INCREASES IN SUBSTRATE SPECIFICITY AND STRUCTURAL STABILITY. **Joseph A. Kerrigan Jr**, Koji Sode

2304-Pos Board B54
STRUCTURE OF A NON-MAMMALIAN CADHERIN HETERODIMER SUGGESTS A GENERAL BINDING MECHANISM ESSENTIAL FOR HAIR-CELL MECHANOTRANSDUCTION. **Emily Scheib**, Collin R. Nisler, Marcos Sotomayor

2305-Pos Board B55
REACTION COORDINATE DEPENDENT FIBRILLAR FORMATION OF HUMAN GLUTAMINE SYNTHETASE TUNES ACTIVITY. **Eric R. Greene**, Richard Muniz, Angelika Arada, D. John Lee, Daphne Chen, Erin Thompson, Hiroki Yamamura, Justin M. Kollman, James Fraser

2306-Pos Board B56
ENGINEERING OF THE HIGH-AFFINITY CHEMOKINE CXCL13 TO SCREEN CXCR5 ANTAGONISTS TO TREAT CANCER AND AUTOIMMUNE DISEASES. **Manjula Ramu**, Eric Rosenberg, Sam Kartz, Francine Foss, Elias J. Lolis

2307-Pos Board B57
EVOLUTIONARY SELECTION OF PROTEINS WITH TWO FOLDS. **Joseph W. Schafer**, Lauren L. Porter

2308-Pos Board B58
A CURATED *ALPHAFOLD 2* / *ALPHAFILL* CADHERINOSOME. **Haosheng Wen**, Wei-Hsiang Weng, Marcos Sotomayor

Protein Stability, Folding, and Chaperones II (Boards B59 - B77)

2309-Pos Board B59
ZYMOMONAS MOBILIS PYRUVATE KINASE: RISE OF THE UNSTABLE ZOMBIES. **Pierce T. ONeil**, Katheryn Vela, Braelyn M. Page, Jeffrey S. McFarlane, Collette L. Wright, Kathleen M. Meneely, Aron W. Fenton, Audrey L. Lamb, Liskin Swint-Kruse

2310-Pos Board B60 Travel Award Winner
MONITORING THE STRUCTURAL STABILITY OF THE ISOLATED 'MG^{2+}-SENSOR' OF MGTE BY SPECTROSCOPIC AND COMPUTATIONAL APPROACHES. **Rupasree Brahma**, H. Raghuraman

2311-Pos Board B61 Travel Award Winner
ELUCIDATING THE ROLE OF NUCLEOPHOSMIN IN PROTEIN QUALITY CONTROL MECHANISMS INSIDE THE NUCLEOLUS. **Carolyn Maslanka**, Priyanka Dogra, Swarnendu Tripathi, Aaron H. Phillips, Richard Kriwacki

2312-Pos Board B62 Travel Award Winner
SOLUTION NMR STUDIES REVEAL NOVEL CLIC4 CHAPERONE ACTIVITY WITH RESPECT TO PROFILIN-1. **Kevin Y. Mak**, M. Rafid Feisal, Zabed Mahmud, Philip B. Liu, Laiji Li, Shu Y. Luo, Olivier Julien, Richard Schulz, Barbara J. Ballermann, Peter M. Hwang

2313-Pos Board B63
RESISTING DESICCATION: A PROTEOMIC-SCALE ANALYSIS. **P. Sofia Romero-Perez**, Haley M. Moran, Stephen D. Fried, Shahar Sukenik

2314-Pos Board B64
EXPANDING SDS-BASED PROBES TO INVESTIGATE KINETICALLY STABLE PROTEINS. **Evelyn-Grace Rugaber**

2315-Pos Board B65
MEASURING THE CONFINEMENT EFFECT ON P53 STABILITY USING REVERSE MICELLES. **Jacob T. Zangaro**, Kyle C. Fennimore, Nathaniel V. Nucci

2316-Pos Board B66
SEPARATING THE EFFECTS OF CONFINEMENT AND INTERFACIAL INTERACTIONS FORTHE MODEL PROTEIN CYTOCHROME C USING REVERSE MICELLE ENCAPSULATION. **Brea-Anna Berry-White**, Kali N. Pierson, Kyle C. Fennimore, Cora L. Mejia, Crystal I. Stackhouse, Lauren A. Staman, Nathaniel V. Nucci

2317-Pos Board B67
SMALL MOLECULE TOOLS FOR MOLECULAR RECOGNITION OF TAU FIBRIL CONFORMATIONS. **Emma Carroll**, Kelly Montgomery, Taia Wu, Julia Jones, Jason E. Gestwicki

2318-Pos Board B68
SEPARATING THE THERMODYNAMIC IMPACT OF NON-SPECIFIC INTERFACIAL INTERACTIONS FROM CONFINEMENT EFFECTS ON PROTEIN STABILITY. **Nathaniel V. Nucci**, Kyle J. Fennimore, Brea-Anna Berry-White, Cora L. Mejia, Crystal I. Stackhouse, Lauren A. Staman, Jacob T. Zangaro

2319-Pos Board B69
MAPPING PROTEIN ENERGY LANDSCAPES WITH X-RAY FOOTPRINTING MASS SPECTROMETRY. **Shawn M. Costello**, Sayan Gupta, Corie Ralston, Susan Marqusee

2320-Pos Board B70
THE PURELY THERMODYNAMIC ANTI-PRIONIC MODE OF ACTION FOR THE TREATMENT OF NEURODEGENERATIVE DISEASES - REALIZED BY TARGET PROTEIN SPECIFIC ALL-D-PEPTIDES. **Dieter Willbold**

2321-Pos Board B71
NANOLUC TANDEM REPEATS SHOW MISFOLDING DURING THERMAL DENATURATION WHICH IS REVERSIBLE BY E. COLI CHAPERONES (DNAK/DNAJ/GRPE). **Dimitra Apostolidou**, Pan Zhang, Weitao Yang, Piotr E. Marszalek

2322-Pos Board B72
EXPLORING HSP90 AS A POSSIBLE PSEUDO-SUBSTRATE RECEPTOR FOR E3 LIGASES. **Nathan H. Lee**, Calvin Lin, Elizabeth A. Komives

2323-Pos Board B73
OLIGOMERIC STATE AND CHAPERON ACTIVITY OF HSP60. Celeste Caruso bavisotto, Rosa Passantino, Alessia Provenzano, Francesco Cappello, Pier L. San Biagio, **Donatella Bulone**

2324-Pos Board B74
KINETIC ANALYSIS OF CLPB CATALYZED PROTEIN TRANSLOCATION USING VARIOUS RATIOS OF ATP AND ATPGS. **Jaskamaljot Kaur Banwait**, Aaron L. Lucius

2325-Pos Board B75
CLIENT-INDUCED ELONGATION, EXPANSION, AND CO-AGGREGATION OF THE LENS ALPHA-CRYSTALLINS. **Adam P. Miller**, Susan E. O'Neill, Kirsten Lampi, Steve L. Reichow

2326-Pos Board B76
THE MECHANICAL ROLES OF CHAPERONES. **Shubhasis Haldar**

2327-Pos Board B77
CHAPERONE-PROTEIN INTERACTIONS IN LIVE ZEBRAFISH LARVAE. **Aniket Ravan**, Yann R. Chemla, Martin Gruebele

Enzyme Function, Cofactors, and Post-Translational Modifications (Boards B78 - B97)

2328-Pos Board B78
UNVEILING THE MECHANISTIC REGULATION OF T148 PHOSPHORYLATION-MEDIATED NEUROPROTECTION BY AA-CRYSTALLIN. **Zachary B. Sluzala**, Amanda L. Garner, Patrice E. Fort

2329-Pos Board B79
MAPPING RESIDUES WITHIN THE FACTOR XIII-A* ACTIVATION PEPTIDE CLEFT THAT INTERACT WITH GLUTAMINE CONTAINING SUBSTRATES. **Rameesa Darul Amne Syed Mohammed**, Muriel C. Maurer

2330-Pos Board B80
ATYPICAL REGULATION OF AN ATYPICAL CHEMOKINE RECEPTOR: ACKR3 'SENSES' CXCR4 ACTIVATION THROUGH PHOSPHORYLATION. **Christopher T. Schafer**, Qiuyan Chen, John J. Tesmer, Tracy M. Handel

2331-Pos Board B81
FBGAC 389 - 402 ENHANCES FACTOR XIII CROSSLINKING IN THE FIBRINOGENAC REGION VIA ELECTROSTATIC AND HYDROPHOBIC INTERACTIONS. **Francis Dean O. Ablan**, Muriel Maurer

2332-Pos Board B82
THE REPROGRAMMED MOUSE HEART PHOSPHOPROTEOME IN RESPONSE TO THE CHRONIC STRESS OF MARKEDLY HIGH CARDIAC-SPECIFIC ADENYLYL CYCLASE TYPE 8 OVEREXPRESSION. **Jia-Hua Qu**, Khalid Chakir, Kirill Tarasov, Daniel R. Riordon, Maria G. Prino, Allwin J. Silvester, Edward G. Lakatta

2333-Pos Board B83
REACTIVITY OF 2,4-DICHLOROPHENOL IN HEMOGLOBIN-DEHALOPEROXIDASE A & B. **Mst Sharmin Aktar**

2334-Pos Board B84
THE MOLECULAR ORIGIN OF VARIOUS DNA-REPAIR QUANTUM YIELD IN PHOTOLYASES. **Chao Yang**, Debanjana Chakraborty, Lijuan Wang, Dongping Zhong

2335-Pos Board B85
NMR-ASSISTED CRYSTALLOGRAPHY OF THE TRYPTOPHAN SYNTHASE A-AMINOACRYLATE INTERMEDIATE: PROTON POSITIONS AND ROLE IN INHIBITION. Jacob Holmes, Rittik Ghosh, Michael F. Dunn, **Leonard J. Mueller**

2336-Pos Board B86
INVESTIGATION OF PKA INTERACTIONS WITH CARDIAC VOLTAGE GATED CALCIUM CHANNEL AND RAD GTPASE. **Omid Haji-Ghassemi**, Randy Yoo, Jiaming Xu, Ciaran McFarlane, Filip Van Petegem

2337-Pos Board B87
UNRAVELING DISEASE MECHANISMS USING MOLECULAR MODELING OF BIO-INTERFACES. **Isabell Louise Grothaus**, Giovanni Bussi, Janine Kirstein, Susan Köppen, Lucio Colombi Ciacchi

2338-Pos Board B88
CARBON-DEUTERIUM BONDS AS REPORTERS OF ELECTRIC FIELDS IN SOLVENT AND PROTEIN ENVIRONMENTS. **Steven D.E. Fried**, Jacob M. Kirsh, Chu Zheng, Yuezhi Mao, Thomas E. Markland, Steven G. Boxer

2339-Pos Board B89
FACTOR XIII ACTIVATION AND SUBSTRATE CROSSLINKING CAN BE INFLUENCED BY AMINO ACID SUBSTITUTIONS FROM TRANSGLUTAMINASE-2. Richard L. Lumata, Divya A. Kumaravelu, Anoushka Bhat, Rameesa Darul Amne Syed Mohammed, **Muriel C. Maurer**

2340-Pos Board B90
SMALL GTPASE RAS FUSED WITH LIGHT RESPONSIVE PROTEIN EXHIBITS PHOTO-REVERSIBLE REGULATION OF GTPASE ACTIVITY. **Nobuyuki Nishibe**

2341-Pos Board B91
A SINGLE AMINO ACID SUBSTITUTION ALTERS ACTIVITY AND SPECIFICITY IN PLASMODIUM FALCIPARUM ASPARTYL & ASPARAGINYL-TRNA SYNTHETASES. **Swati Gupta**

2342-Pos Board B92
ACTIVATION OF ADENOSINE A2A RECEPTORS INDUCES SUMOYLATION OF HIF-1A. **Anne Yauch**, Yuchen Yang, Takeharu Kawano, Leigh D. Plant

2343-Pos Board B93
BIOCHEMICAL CHARACTERIZATION OF LSD1 MUTANTS WITH ENHANCED DEMETHYLASE ACTIVITY TOWARD ACETYLATED SUBSTRATES. **Katherine Neal**, Kwangwoon Lee, Philip A. Cole

2344-Pos Board B94
IDENTIFYING ESTERASE AND LIPASE ACTIVITY IN PROTEINS OF UNKNOWN FUNCTION. **Julia R. Koeppe**, Christopher Serrano, Sylvia Thompson, Gregg Holliday, Veronica Singh, Theodore Cup

2345-Pos Board B95
DISEASE-ASSOCIATED MUTATIONS IN DRP1 HAVE FUNDAMENTALLY DIFFERENT EFFECTS ON THE MITOCHONDRIAL FISSION MACHINERY. **Brianna L. Bauer**, Kristy Rochon, Jasmine Liu, Rajesh Ramachandran, Jason A. Mears

2346-Pos Board B96
PHOTO-CONTROL OF SMALL GTPASE RAS GTPASE CYCLE USING PHOTOCHROMIC MOLECULE. **Yuichi Imamura**

2347-Pos Board B97
A UNIFYING ELECTROSTATIC BASIS FOR DESIGNING ENZYMES FASTER THAN NATURAL ONES. **Chu Zheng**, Zhe Ji, Irimpan I. Mathews, Steven G. Boxer

Condensates in Physiology and Disease (Boards B98 - B120)

2348-Pos Board B98
DE NOVO P62 CONDENSATION FACILITATES AGGREGATE COARSENING IN A SIZE-DEPENDENT MANNER. **Chang-Hyun Choi**, Daniel S. Lee, David W. Sanders, Clifford P. Brangwynne

2349-Pos Board B99
STRUCTURAL INVESTIGATION OF THE SMALL HEAT SHOCK PROTEIN HSPB1 IN THE PRESENCE OF A PHASE-SEPARATED CLIENT. **Raymond F. Berkeley**, Galia T. Debelouchina

2350-Pos Board B100
COMPLEX MULTIVALENT PROTEIN INTERACTIONS INVOLVING ENDOPHILIN, LAMELLIPODIN AND VASP REGULATE MEMBRANE SHAPING PHENOMENA AND ACTIN ASSEMBLY. **Karthik B. Narayan**, Samsuzzoha Mondal, HONEY PRIYA JAMES, Laura Baeyens, Jason Zheng, Tobias Baumgart

2351-Pos Board B101
ELUCIDATING THE MECHANISM OF POLYPHOSPHATE GRANULE CONSOLIDATION IN BACTERIA. **Ravi Chawla**, Nicholas Tu, Ashok Deniz, Lisa Racki

2352-Pos Board B102
MOLECULAR INSIGHTS INTO THE EFFECT OF ALKANEDIOLS ON FUS LIQUID-LIQUID PHASE SEPARATION. Theodora Myrto Perdikari, Anastasia Murthy, **Nicolas L. Fawzi**

2353-Pos Board B103
LINKING MOLECULAR-LEVEL RNA-PROTEIN INTERACTIONS WITH MESOSCALE PROPERTIES OF THE NUCLEOLUS. **Anita Donlic**, Elizabeth Zheleznyakova, Lennard Wiesner, Clifford P. Brangwynne

2354-Pos Board B104
RNA SECONDARY STRUCTURE MODULATES THE CO-TRANSLATIONAL ASSOCIATION OF *HERG1A* AND *1B* MRNAS. **Lisandra Flores Aldama**, Breanna L. Raab, Erick B. Rios Perez, Fang Liu, Gail A. Robertson

2355-Pos Board B105
COMPOSITION CAN BUFFER PROTEIN DYNAMICS WITHIN LIQUID-LIKE CONDENSATES. Stela Jelenic, Janos Bindics, Philipp Czermak, Balashankar R. Pillai, Martine Ruer, Carsten Hoege, Alex S. Holehouse, **Shambaditya Saha**

2356-Pos Board B106
THE FUNCTIONAL AND MOLECULAR DETERMINANTS OF STRESS-INDUCED MRNA CONDENSATION. **Hendrik Glauninger**, Jared Bard, Caitlin Wong Hickernell, Tobin R. Sosnick, Edward Wallace, D Allan Drummond

2357-Pos Board B107
UNDERSTANDING THE MECHANISM OF FIBRILLIZATION OF HNRNPA1 FROM PHASE-SEPARATED CONDENSATES. **Fatimah K. Zaidi**, Tapojyoti Das, Tanja Mittag

2358-Pos Board B108
PROTEIN PHASE SEPARATION HELPS TO EXPLAIN EXCLUSION OF INITIATOR PROTEINS FROM CLATHRIN-COATED VESICLES. **Brandon T. Malady**, Feng Yuan, Kasey Day, Jeanne C. Stachowiak, Liping Wang, Eileen M. Lafer, David G. Owen

2359-Pos Board B109
RECRUITING THE AUTOPHAGY-LYSOSOME PATHWAY TO ENGINEERED CONDENSATE-FORMING PROTEINS. **Mateo P. Hoare**, Daniel Mcilwaine, Tin Long Chris Ng, Luisa Capalbo, Ellis J. Wilde, Laura S. Itzhaki, Janet R. Kumita

2360-Pos Board B110
MECHANOCHEMICAL INDUCTION OF NUCLEAR CONDENSATES DURING CELL CONFINED MIGRATION. **Jessica Zhao**, Britt Adamson, Clifford P. Brangwynne

2361-Pos Board B111
INTRICATE NETWORK OF NUCLEAR MORPHOLOGY, CHROMATIN DYNAMICS AND MACROMOLECULAR CROWDING FACILITATE EFFICIENT NUCLEAR FUNCTIONING. **Gururaj R. Kidiyoor**, Tamas Szoradi, Gregory Brittingham, Sarah Keegan, Liam J. Holt

2362-Pos Board B112
DEFINING THE CONDENSATE LANDSCAPE OF FUSION ONCOPROTEINS. **David W. Baggett**, Hazheen Shirnekhi, Bappaditya Chandra, Swarnendu Tripathi, Brittany J. Pioso, Richard Kriwacki

2363-Pos Board B113
UNCOVERING THE LEUKEMOGENIC MECHANISM OF NON-CANONICAL NUP98 FUSION ONCOPROTEINS. **Brittany J. Pioso**, Nicole L. Michmerhuizen, Swarnendu Tripathi, Toler Freyaldenhoven, Aaron H. Phillips, Charles G. Mullighan, Richard Kriwacki

2364-Pos Board B114
TUNING THE PHASE SEPARATION PROPERTIES OF HP1A THROUGH LIGAND INTERACTIONS. **Cheenou Her**

2365-Pos Board B115 Travel Award Winner
IN VIVO DISRUPTION OF NUCLEAR HSATII RNA BIOMOLECULAR CONDENSATES. **Thembalami Dube**, Christina A. Rabeler, Dawn Carone

2366-Pos Board B116
DYNAMICS OF MITOCHONDRIA PROMOTE STRESS GRANULE FUSION. **Tae Lim Park**, Won-Ki Cho

2367-Pos Board B117
INVESTIGATIONS INTO THE PHASE SEPARATION AND NUCLEAR ROLE OF TAU. **Lannah Abasi**, Nesreen Elathram, Manasi Movva, Galia T. Debelouchina

2368-Pos Board B118
BIOPHYSICAL CHARACTERIZATION OF ABERRANT CONDENSATES BY QUANTITATIVE MICROSCOPY. **Archish Anand**, Christina M. Dollinger, Joshua A. Riback

2369-Pos Board B119
PRESSURE-JUMP KINETICS OF LIQUID-LIQUID PHASE SEPARATION OF FUSED IN SARCOMA. **Shujie Li**, Yutaro Shiramasa, Keiji Kitamura, Norika Kashiwagi, Soichiro Kitazawa, Ryo Kitahara

2370-Pos Board B120
TRACKING THE MORPHOLOGICAL DIVERSITY OF HNRNPA1 PRION-LIKE DOMAIN CONDENSATES. **My D. Quan**, Shih-Chu Liao, Phoebe Tsoi, Josephine C. Ferreon, Allan Chris M. Ferreon

Ribosomes and Translation (Boards B121 - B136)

2371-Pos Board B121
MECHANISMS OF RIBOSOME STALLING AND UNSTALLING STUDIED BY MD SIMULATIONS. **Lars V. Bock**, Helmut Grubmuller

2372-Pos Board B122
REAL-TIME TRACKING OF TRANSCRIPTION-TRANSLATION COUPLING. Nusrat Qureshi, **Olivier Duss**

2373-Pos Board B123
EFFECTS OF CRYO-EM COOLING ON STRUCTURAL ENSEMBLES OF BIOMOLECULES AND THEIR SOLVATION SHELL. **Helmut Grubmuller**, Lars V. Bock

2374-Pos Board B124
STUDY OF COLLOIDAL PHYSICS THAT INSTANTIATE LIFE IN BIOLOGICAL CELLS. **Roseanna N. Zia**

2375-Pos Board B125
GEOMETRIC ALIGNMENT OF AMINOACYL-TRNA RELATIVE TO CATALYTIC CENTERS OF THE RIBOSOME UNDERPINS ACCURATE MRNA DECODING. **Dylan J. Girodat**, Hans-Joachim Wieden, Scott C. Blanchard, Karissa Y. Sanbonmatsu

2376-Pos Board B126
ELUCIDATION OF FRAMESHIFTING MECHANISM VIA FMFRET. **Mariah Noggler**, Yuhong Wang

2377-Pos Board B127
CONFORMATIONAL DYNAMICS OF EUKARYOTIC TRANSLATION. **Zheren Ou**, Alexey Petrov

2378-Pos Board B128
STRUCTURAL DEFECTS OF HYPOPSEUDOURIDYLATED RIBOSOME OBSERVED DURING IRES-MEDIATED TRANSLATION INITIATION. Yu Zhao, Jay Rai, **Hong Li**

2379-Pos Board B129
SINGLE MOLECULE STUDIES OF EF-TU ACCOMMODATION AND PROOFREADING MECHANISM. **Jordan Johnson**, Yuhong Wang

2380-Pos Board B130 Travel Award Winner
CONTEXT-SPECIFIC INHIBITION OF TRANSLATION IN MYCOBACTERIUM. **Mohamad T. Dandan**, James S. Fraser

2381-Pos Board B131
PROTEIN-PROTEIN INTERACTIONS FACILITATE TRANSPORT OF TRANSLATION MOLECULES IN *ESCHERICHIA COLI*: THE ROLES OF VALENCY, AFFINITY, AND CROWDING. **Jennifer L. Hofmann**, Theodore S. Yang, Alp M. Sunol, Roseanna N. Zia

2382-Pos Board B132
TRANSLATIONAL READTHROUGH INDUCING DRUG (TRID) EFFECTS ON EUKARYOTIC TERMINATION INVESTIGATED AT THE SINGLE-MOLECULE LEVEL. **Arpan Bhattacharya**, Mikel D. Ghelfi, Xiaonan Cui, Clark Fritsch, Hong Li, Barry S. Cooperman, Yale E. Goldman

2383-Pos Board B133
INFLUENCE OF MRNA SEQUENCES DOWNSTREAM OF A PREMATURE STOP CODON ON NONSENSE SUPPRESSION. **Saleem Y. Bhat**, Mikel D. Ghelfi, Arpan Bhattacharya, Hong LI, Yale E. Goldman, Barry S. Cooperman

2384-Pos Board B134
NEAR-PHYSIOLOGICAL IN VITRO RECONSTITUTION OF 50S SUBUNIT REVEALS PARALLEL ASSEMBLY PATHWAY. **Xiyu Dong**, Lili Doerfel, Kai Sheng, Jessica N. Rabuck-Gibbons, Anna Popova, Dmitry Lyumkis, James R. Williamson

2385-Pos **Board B135** **Travel Award Winner**
MUTAGENESIS OF *ESCHERICHIA COLI* FOR SM-FRET & FIRMS STUDY OF DOMAIN IV EF-G STUDIES. **Jacob H. Steele**, Yuhong Wang

2386-Pos **Board B136**
DEPENDENCE OF P/E TRNA HYBRID FORMATION ON SUBUNIT ROTATION IN THE RIBOSOME. **Sandra Byju**, Paul C. Whitford

Chromatin and the Nucleoid (Boards B137 - B169)

2387-Pos **Board B137**
OPTICAL NANOSCOPY APPROACH TO UNVEIL CHROMATIN ALTERATIONS IMPLICATED IN NEUROBLASTOMA TRANSFORMATION. **Francesca Baldini**, Lama Zeaiter, Isotta Cainero, Lisa Cuneo, Paolo Bianchini, Laura Vergani, Aldo Pagano, Alberto Diaspro

2388-Pos **Board B138**
UNDERSTANDING THE THREE-DIMENTIONAL STRUCTURES OF CHROMATINS AT NUCLEOSOME RESOLUTION. **Ailun Wang**, Michele Di Pierro

2389-Pos **Board B139** **Travel Award Winner**
DECRYPTING THE SPATIAL RELATIONSHIP BETWEEN PERIPHERAL CHROMATIN AND NUCLEAR LAMINA IN HUTCHINSON-GILFORD PROGERIA SYNDROME USING SUPERRESOLUTION MICROSCOPY TECHNIQUES. **Chantal Usai**, Isotta Cainero, Lisa Cuneo, Matteo Mariangeli, Francesca Baldini, Paolo Bianchini, Alberto Diaspro

2390-Pos **Board B140**
TARGETING CHROMATIN MEDIATED CELLULAR PLASTICITY *IN VIVO*. **Jane Frederick**, Ranya Virk, Greta Wodarcyk, Luay M. Almassalha, David VanDerway, Vasundhara Agrawal, John Carinato, Igal Szleifer, Vadim Backman

2391-Pos **Board B141**
PREDICTING COARSE-GRAINED CHROMATIN POLYMER PROPERTIES FROM NUCLEOSOME-LEVEL CONTACT DATA. Sangram Kadam, Kiran Kumari, Vinoth M, Shuvadip Dutta, Mithun Mitra, **Ranjith Padinhateeri**

2392-Pos **Board B142**
MECHANICAL STRESS AFFECTS DYNAMICS AND RHEOLOGY OF THE HUMAN GENOME. Christina M. Caragine, **Nikitas Kanellakopoulos**, Alexandra Zidovska

2393-Pos **Board B143**
INTERPHASE CHROMATIN UNDERGOES A LOCAL SOL-GEL TRANSITION UPON CELL DIFFERENTIATION. **Iraj Eshghi**, Jonah Eaton, Alexandra Zidovska

2394-Pos **Board B144**
ACETYLATION AND PHOSPHORYLATION OF MITOCHONDRIAL TRANSCRIPTION FACTOR A PROMOTE MITOCHONDRIAL TRANSCRIPTION PROCESSIVITY. **Sean D. Reardon**, Tatiana V. Mishanina

2395-Pos **Board B145**
DECODING CHROMATIN ORGANIZATION IN THE NUCLEAR ENVIRONMENT. **Xingcheng Lin**, Shuming Liu, Bin Zhang

2396-Pos **Board B146**
THE DYNAMICS OF PARTITION PROTEIN B (PARB) SPREADING ON THE DNA AND BRIDGING-INDUCED DNA CONDENSATION. **Milos Tisma**, Richard Janissen, Alejandro Martin Gonzalez, Hammam Antar, davide michieletto, Stephan Gruber, Cees Dekker

2397-Pos **Board B147**
REVEALING THE ACCESSIBILITY AND SURFACE MORPHOLOGY OF THE ESCHERICHIA COLI NUCLEOID BY GENETICALLY ENCODED LIVE-CELL SINGLE-PARTICLE TRACKING. **Xiaofeng Dai**, Lauren A. McCarthy, David E.H. Fuller, Julie Biteen

2398-Pos **Board B148**
EXTENSION AND LONG-RANGE CONTACTS DRIVE CHROMATIN CLUTCHES AND AGGREGATES. **Shuming Liu**, Xingcheng Lin, Bin Zhang

2399-Pos **Board B149**
EFFECT OF NUCLEOSOME DENSITY, NUCLEOSOME POSITIONS AND COHESIN ON THE STRUCTURE OF CHROMATIN STUDIED WITH MONTE CARLO SIMULATIONS. **Gero Wedemann**, Tilo Zülske, Aymen Attou

2400-Pos **Board B150**
A STANDARD REFERENCE FRAME AND GEOMETRY FOR NUCLEOSOMES. **Tom C. Bishop**, Ran Sun

2401-Pos **Board B151**
THE EFFECTS OF VIRAL NUCLEOSOME-LIKE PARTICLES ON DNA COMPACTION, DYNAMICS, AND ACCESSIBILITY. **Melanie E. Melo**

2402-Pos **Board B152**
DECORRELATING HI-C CONTACTS ENHANCES IDENTIFICATION OF THE INTERACTIONS DRIVING GENOMIC STRUCTURE AND ORGANIZATION. **Greg Schuette**, Xinqiang Ding, Bin Zhang

2403-Pos **Board B153**
UNRAVELING THE EFFECTS OF UBIQUITYLATION ON NUCLEOSOME ASSEMBLY AND DYNAMICS WITH COARSE-GRAIN SIMULATIONS. **Lokesh Baweja**, Jeffery M. Wereszczynski

2404-Pos **Board B154**
PREDICTING CHEMOEVASION POTENTIAL OF CANCER CELLS FROM STATISTICAL CHROMATIN PACKING BEHAVIOR. **Ranya Virk**, Jane Frederick, Luay M. Almassalha, Vasundhara Agrawal, Yue Li, Greta M. Bauer, Wenli Wu, Wing Shun Li, David VanDerway, Igal Szleifer, Vadim Backman

2405-Pos **Board B155**
PHASE SEPARATION OF AB COMPARTMENTS ARE MODULATED BY LAMINA-CHROMATIN INTERACTION. **Esteban Dodero-Rojas**, Vinicius Contessoto, Matheus F. Mello, José N. Onuchic

2406-Pos **Board B156**
NONCODING VARIANT EFFECT PREDICTION USING GENOME SEQUENCE AND CHROMATIN STRUCTURE. **Wuwei Tan**, Yang Shen

2407-Pos **Board B157**
POLYMER MODELLING ACCURATELY PREDICTS THREE-DIMENSIONAL CHROMOSOME REORGANIZATION WITH A SEASONAL CORONAVIRUS INFECTION. **Ankush Singhal**, Cullen Roth, Sofiya Micheva-Viteva, Anna Lappala, Jeannie T. Lee, Shawn R. Starkenburg, Karissa Y. Sanbonmatsu

2408-Pos **Board B158**
DYNAMICS OF HETEROCHROMATIN FORMATION AT SUBMOLECULAR RESOLUTION. Michael R. Williams, Yan Xiaokang, Nathaniel Hathaway, **Dmitri Kireev**

2409-Pos **Board B159**
CENTROMERE AND TELOMERE DYNAMICS REVEAL HETEROGENEITY OF THE HUMAN CELL NUCLEUS. **Alexis S. Clavijo**, Steven Ionov, Alexandra Zidovska

2410-Pos **Board B160**
THE ROLE OF B-TYPE LAMINS IN GENOME ARCHITECTURE, CHROMATIN DYNAMICS, AND GENE REGULATION. **Emily Pujadas**, Nicolas Acosta, Lucas Carter, Ali Daneshkahah, Vasundhara Agrawal, Jiekun Yang, Xiaolong Wei, Suhas Rao, Erez Lieberman-Aiden, Masato Kanemaki, Mazhar Adli, Vadim Backman

2411-Pos **Board B161**
THREE-DIMENSIONAL CHROMATIN ENSEMBLE RECONSTRUCTION VIA STOCHASTIC EMBEDDINGREVEALS A MISSING LINK FROM COVID-19 INFECTION TO ANOSMIA. **Igor N. Berezovsky**

2412-Pos Board B162
DEFINING CELL-SPECIFIC PHYSICAL BASIS OF GENE EXPRESSION AND SIGNATURES OF FUNCTIONAL CHROMATIN 3D INTERACTIONS: INTEGRATED ANALYSIS OF SINGLE-CELL 3D CHROMATIN MODELS, RNA/ATAC-SEQ, AND EPIGENETIC DATA. **Lin Du**, Hammad Farooq, Konstantinos Chronis, Jie Liang

2413-Pos Board B163
NUCLEOSOME BINDING TO THE MICA SURFACE UNDER DIFFERENT IONIC ENVIRONMENTS. **Nilusha L. Kariyawasam**, Jeffery M. Wereszczynski

2414-Pos Board B164
MOLECULAR MECHANISM OF H2A/H2B DISMANTLING FROM A PARTIALLY UNWRAPPED NUCLEOSOME BY NAP1. **Fritz Nagae**, Shoji Takada, Tsuyoshi Terakawa

2415-Pos Board B165 Travel Award Winner
COMPUTATIONAL PREDICTIONS OF 3D CHROMATIN MANY-BODY INTERACTIONS REVEAL ROLES OF CHROMATIN HUBS IN GENE EXPRESSION. **Hammad Farooq**, Lin Du, Alan Perez-Rathke, Konstantinos Chronis, Jie Liang

2416-Pos Board B166
EFFECTS OF CHROMATIN-NUCLEAR ENVELOPE AND CHROMATIN-CHROMATIN INTERACTIONS ON CHROMATIN SPATIAL ACCESSIBILITY FROM ENSEMBLES OF SINGLE-CELL 3D CHROMATIN MODELS AT WHOLE DIPLOID GENOME SCALE. **Pourya Delafrouz**, Hammad Farooq, Lin Du, Jie Liang

2417-Pos Board B167
SUPER-RESOLVED HETEROCHROMATIN STRUCTURE DURING DNA DAMAGE RESPONSE REVEALED BY CRISPR IMAGING. **Eui Jin Park**, Narendra Chaudhary, Minsu Kang, Jae-Kyeong Im, Si-Hyeong Nho, Kihyeon Nam, Jae Sun Ra, Kyungjae Myung, Sang-Hee Shim, Hajin Kim

2418-Pos Board B168
UNRAVELING MITOTIC CHROMOSOME STRUCTURE USING OPTICAL TWEEZERS. **Constantijn P. van der Smagt**, Christian F. Nielsen, Ian D. Hickson, Erwin J. Peterman, Gijs J. wuite

2419-Pos Board B169
MODELING HETEROCHROMATIN DYNAMICS IN S. POMBE ACROSS DIVERSE TIMESCALES. **Ali M. Farhat**, Saikat Biswas, Ziyuan Chen, Ajay Larkin, Kaushik Ragunathan, Julie Biteen, Peter L. Freddolino

Membrane Fusion and Non-Bilayer Structures (Boards B170 - B182)

2420-Pos Board B170
STEROL PHYSICAL PROPERTIES AND RELATIONSHIPS TO ENDO-/EXOCYTOSIS. **Andrew H. Beaven**, Kevin R. Francis, Alexander J. Sodt

2421-Pos Board B171
FUSION RATES ENHANCED BY INTRACELLULAR ALCOHOL ARE BLOCKED BY EXTRACELLULAR ALCOHOL IN A MODEL OF EXOCYTOSIS. **Jared K. Leblow**, Robert E. Coffman, Juliana M.K. Banks, Dixon J. Woodbury

2422-Pos Board B172
FUSION BETWEEN BARE LIPOSOMES AND EXOSOMES IS ENHANCED THROUGH INDUCED DEPLETION ATTRACTION OR IN ACIDIC CONDITIONS. **William S. Fisher**, Kai K. Ewert, Cyrus R. Safinya

2423-Pos Board B173
COMBINING FLUORESCENCE AND ELECTROCHEMICAL IMAGING OF CHROMAFFIN GRANULE FUSION WITH SUPPORTED BILAYERS. Nadia Prasad, Weronika Tomaka, **Federica Castellani**, Onsang Yau, Katelyn Kraichely, Shailendra Rathore, Alex J.B. Kreutzberger, Volker Kiessling, Manfred Lindau

2424-Pos Board B174
A DYNAMIC TEMPLATE COMPLEX MEDIATES MUNC18-CHAPERONED SNARE ASSEMBLY. **Jie Yang**

2425-Pos Board B175
SIMULATIONS ON PHYSIOLOGICAL TIMESCALES SHOW SNARES DRIVE MEMBRANE FUSION BY ENTROPIC FORCES. Dong An, Jin Zeng, Zachary A. McDargh, Ben O'Shaughnessy, **Rui Su**

2426-Pos Board B176
ELUCIDATING CORONAVIRUS FUSION MECHANISMS. **Tobin Hess**, Marcos Cervantes, Anjali Sengar, Peter Kasson

2427-Pos Board B177
THE SARS-COV-2 FUSION DOMAIN PREFERENTIALLY INITIATES FUSION IN THE LATE ENDOSOME. **Daniel Birtles**, Jinwoo Lee

2428-Pos Board B178
INVESTIGATION INTO THE DISTINCT STRUCTURAL FEATURES OF THE INTERNAL FUSION LOOP WITHIN THE LASV FUSION DOMAIN. **Hallie N. Pennington**, Zoe W. Shi, Jinwoo Lee

2429-Pos Board B179
QUANTITATIVE SIMILARITY OF HIV GP160 V513E-DOMINANT REDUCTION OF FUSION AND INFECTION WITH FUSION BY THE GP41 ECTODOMAIN HAIRPIN SUPPORTS AN IMPORTANT FUSION ROLE FOR THE FINAL TRIMER-OF-HAIRPINS STRUCTURE. Md. Rokonujjaman, Abdulrazak Sahyouni, Robert Wolfe, Lihui Jia, Ujjayini Ghosh, **David P. Weliky**

2430-Pos Board B180
INFLUENZA MEMBRANE FUSION IS SENSITIVE TO ENDOSOMAL LIPIDS BUT ROBUST TO MEMBRANE CURVATURE. Ana Villamil, Steinar Mannsverk, **Peter Kasson**

2431-Pos Board B181
WHY WE SHOULD STUDY PROTEIN BINDING TO BICONTINUOUS INVERTED CUBIC PHASES, TO BETTER UNDERSTAND MEMBRANE TRAFFICKING. **David P. Siegel**

2432-Pos Board B182
PATCHY CATIONIC LIPOSOMES AS FUSOGENIC PARTICLES. **Yifei Wang**, Dang Dang, Sheereen Majd

Protein-Lipid Interactions: Structures (Boards B183 - B202)

2433-Pos Board B183
MYELIN PROTEIN ZERO - THE STRUCTURAL FOUNDATION BEHIND PERIPHERAL COMPACT MYELIN. **Arne Raasakka**, Oda C. Krokengen, Robert Schneider, Petri Kursula

2434-Pos Board B184
MOLECULAR BASIS OF APOLIPOPROTEIN E POLYMORPHISM IN LIPID METABOLISM AND NEURODEGENERATIVE DISEASES. **Sang Ho Park**, Gregory N. Gomes, Brittney A. Beyer, Zachery A. Levine

2435-Pos Board B185
MOLECULAR DYNAMICS SIMULATIONS OF HEPATITIS C VIROPORIN AND LIPID MEMBRANES. **Oluwatoyin Campbell**, Viviana Monje-Galvan

2436-Pos Board B186
PROBING ACTIN COATED PLANAR LIPID BILAYERS WITH LIGHT AND ELECTRICITY IN A MICROELECTRODE CAVITY ARRAY. **Joshua J. Meyer**, Amanda J. Smith, Theo Larsen, Lisa Burden, Daniel L. Burden

2437-Pos Board B187
H-RAS INDUCED INTERACTION OF PI3KA WITH THE MEMBRANE: A MOLECULAR DYNAMICS STUDY. **Anjali Krishna**, Shamim Z. Shadfar, Jane R Allison, Jack Flanagan

2438-Pos **Board B188**
CHARMM-GUI BICELLE BUILDER FOR MODELING AND SIMULATIONS OF BICELLE SYSTEMS. **Seonghan Kim**

2439-Pos **Board B189**
THE EFFECT OF LIPID COMPOSITION ON PRION PROTEIN BEHAVIOR. **Davis Thalhuber**, Frank Luceri, Noah Greenwood, Patricia Soto

2440-Pos **Board B190**
ASCERTAINING MESOSCOPIC PARAMETERS FOR SARS-COV-2 ASSEMBLY FROM ALL ATOM AND COARSE-GRAINED SIMULATIONS OF THE ASSOCIATED MEMBRANE PROTEIN. **Joseph McTiernan**, Ajay Gopinathan, Michael E. Colvin

2441-Pos **Board B191**
SURFACE-INDUCED PROTEIN FOLDING OF HUMAN ISLET AMYLOID POLYPEPTIDE ON NEURONAL MEMBRANE DOMAINS. **Amber Lewis**, Thuong L. Pham, Kwan Hon K. Cheng

2442-Pos **Board B192**
Travel Award Winner
MEMBRANE CURVATURE SENSED AND INDUCED BY FORMIN BINDING PROTEIN 17. **Abdel-Ghafar Yerima**, Zeinab Jahed, Mohammad Mofrad

2443-Pos **Board B193**
THE MOLECULAR BASIS FOR DYSFUNCTIONAL BACTERIAL LIPOPOLYSACCHARIDE-MEDIATED IMMUNE RECEPTOR ACTIVATION BY SARS-COV-2 SPIKE. Firdaus Samsudin, Venkata Raghuvamsi Palur, Ganna Petruk, Manoj Puthia, Jitka Petrlova, Paul MacAry, Ganesh S. Anand, Artur Schmidtchen, **Peter J. Bond**

2444-Pos **Board B194**
EXPLORING MEMBRANE BINDING TARGETS OF TAU OLIGOMERS ON PHASE-SEPARATED LIPID BILAYERS USING MULTISCALE MD SIMULATIONS. **Kwan Hon K. Cheng**, Angela Graf, Amber Lewis, Thuong L. Pham, Aakriti Aacharya

2445-Pos **Board B195** **Travel Award Winner**
HOW OSTREOLYSIN A DETECTS SM/CHOLESTEROL IN MEMBRANES. **Jared Smothers**, Arun Radhakrishnan

2446-Pos **Board B196**
TRACKING LIPID-INDUCED EFFECTS ON MEMBRANE PROTEIN STRUCTURE IN REAL TIME. Fredrik Oradd, Irfan Prabudiansyah, Konstantinos Magkakis, **Magnus Andersson**

2447-Pos **Board B197**
CHOLESTEROL DEPENDENCE ON THE CONFORMATIONAL CHANGES OF METABOTROPIC GLUTAMATE RECEPTOR 1(MGLUR1). **Ugochi Isu**, Adithya Polasa, Seyed Hamid Tabari, Mortaza Derakhshani-Molayousefi, Mahmoud Moradi

2448-Pos **Board B198**
BEING PICKY: MECHANISM FOR PLAFP PICKING UP THE SIGNALING LIPID PA FROM PLASMA MEMBRANES. **Martin Kulke**, Dayna M. Olson, Duncan Boren, Evan Kurtz, Amanda M. Koenig, Susanne Hoffmann-Benning, Josh V. Vermaas

2449-Pos **Board B199**
A CONFINED NANOPIPETTE FOR TIME-RESOLVED PROTEIN-LIPID INTERACTIONS. **Kele Chen**, Yuhuang Xie, Ru-Jia Yu, Yi-Lun Ying, Yi-Tao Long

2450-Pos **Board B200**
STRUCTURE, TOPOLOGY, OLIGOMERIZATION AND DYNAMICS OF THE MHC II TRANSMEMBRANE DOMAINS AND THE ROLE OF HIGHLY SPECIFIC SHINGOMYELIN INTERACTIONS. **Burkhard Bechinger**, Evgeny S. Salnikov, Christopher Aisenbrey

2451-Pos **Board B201**
LACTADERHIN'S C1 DOMAIN RESTRICTS PROTEIN'S ENSEMBLE AS IT BINDS TO CHARGED MEMBRANES. **Kevin Jose Cheng**, Taras V. Pogorelov

2452-Pos **Board B202** **Travel Award Winner**
DIRECT DETERMINATION OF MEMBRANE PROTEIN-LIPID ORGANIZATION FROM CUSTOMIZABLE BILAYER AND ITS APPLICATION IN SYNAPTIC VESICLE FUSION. **Aniruddha Panda**, Kallol Gupta

General Protein-Lipid Interactions II (Boards B203 - B225)

2453-Pos **Board B203**
LIPID DROPLET MONOLAYER PROTEIN BINDING AND COMPLEXATION. **Shahnaz Parveen**, Sonali A. Gandhi, Matthew A. Sanders, James G. Granneman, Christopher V. Kelly

2454-Pos **Board B204**
DIFFERENTIAL LIPID INTERACTION OF THE C-TERMINUS AND FULL LENGTH PERILIPIN 3. **Elena Sanchez-Brenes**, Amber Titus, Ellyse N. Ridgway, Rebecca Douglas, Elizabeth K. Mann, Edgar E. Kooijman

2455-Pos **Board B205**
THE IMPACT OF CHANGES IN MEMBRANE LIPID COMPOSITION ON THE CB1 RECEPTOR. **Nils A. Berglund**

2456-Pos **Board B206**
QUANTIFYING THE CHARGE DEPENDENCES OF ALPHA-SYNUCLEIN'S MEMBRANE INTERACTIONS. **Krishna M. Raghavan**, Miah J. Turke, Sofiya Maltseva, Daniel H. Kerr, Ka Yee C. Lee

2457-Pos **Board B207**
INVESTIGATING PS SURFACE SENSITIVITY AND CALCIUM DEPENDENCY OF HTIM1 AND HTIM4. **Shou-Ting Hsieh**

2458-Pos **Board B208**
TYROCIDINE POTENTIATES THE PORE-FORMING ABILITY OF THE LINEAR GRAMICIDINS. **Sara Bahri**, Daniel S. Stor, Olaf S. Andersen

2459-Pos **Board B209**
ANTIMICROBIAL PEPTIDES ALTER LIPID BILAYER PROPERTIES BEFORE DISRUPTING MEMBRANE BARRIER PROPERTY. **Daniel S. Stor**, Olaf S. Andersen

2460-Pos **Board B210** **Travel Award Winner**
EFFECTS OF CHOLESTEROL ON MEMBRANE BINDING BY SYNAPTOTAGMIN-7 C2 DOMAINS. **Vrishank Bikkumalla**, Ariel E. Matthews, Andrew H. Beaven, Favinn Maynard, Alexander J. Sodt, Jefferson Knight

2461-Pos **Board B211**
PREDICTING MEMBRANE ORIENTATIONAL STATES OF RAS AND RAS-RAF BASED ON THE LIPID ENVIRONMENT USING DEEP LEARNING. **Fikret Aydin**, Konstantia Georgouli, Gautham Dharuman, James N. Glosli, Timothy S. Carpenter, Felice C. Lightstone, Helgi Ingolfsson, Peer-Timo Bremer, Harsh Bhatia

2462-Pos **Board B212**
ROLE OF LIPID COMPOSITION ON HUMAN PLASMA MEMBRANE INTERACTIONS WITH THE EBOLA VIRUS MATRIX PROTEIN VP40. **Michael D. Cioffi**

2463-Pos **Board B213**
MECHANISM OF THE CHOLESTEROL TRANSPORT IN SMOOTHENED. **Prateek D. Bansal**, Diwakar Shukla

2464-Pos **Board B214**
COMPUTATIONAL DISSECTION OF THE STRUCTURE-DYNAMICS-FUNCTION RELATIONSHIP OF HUMAN SOLUTE CARRIER PROTEINS. **Jing Huang**

2465-Pos Board B215
EFFECTS OF FAMILIAL ALZHEIMER'S DISEASE MUTATIONS ON GAMMA-SECRETASE ACTIVATION FOR CLEAVAGE OF AMYLOID PRECURSOR PROTEIN. Hung N. Do, Sujan Devkota, Apurba Bhattarai, Michael S. Wolfe, **Yinglong Miao**

2466-Pos Board B216
COMPARING ELASTIC AND MOLECULAR MODELS OF MEMBRANE BENDING LOCAL TO SARS-COV-2 ENVELOPE PROTEIN FOR MECHANISTIC UNDERSTANDING. **Jesse W. Sandberg**, Grace H. Brannigan

2467-Pos Board B217
VOLTAGE SENSING BY DIPOLAR TRANSMEMBRANE PEPTIDES. **Konark Bisht**, Michael A. Lomholt, Himanshu Khandelia

2468-Pos Board B218
EFFECT OF AMYLOID-BETA AGGREGATION AND ABSORPTION ON LIPID DEMIXING IN MIXED ANIONIC/ZWITTERIONIC BILAYERS. **Meenal Jain**, Silvina Matysiak

2469-Pos Board B219
EQUILIBRIUM BINDING EQUATIONS FOR PERIPHERAL MEMBRANE-BINDING PROTEINS. **Daniel H. Kerr**, Tiffany Suwatthee, Sofiya Maltseva, Miah J. Turke, Erin J. Adams, Ka Yee C. Lee

2470-Pos Board B220
MICROFLUIDIC FORMATION AND MANIPULATION OF OLA-BASED LIPOSOMES FOR SYNTHETIC BIOLOGY RESEARCH. **Chang Chen**, Ketan Ganar, Siddharth Deshpande

2471-Pos Board B221
QUANTITATIVE STUDY OF THE DYNAMICS AND ENERGETICS OF PEPTIDE-LIPID MEMBRANE INTERACTION USING COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Ryan Smith**, Ioan Kosztin

2472-Pos Board B222
THE IMPACT OF LIPID PACKING DEFECTS ON ALPHA-SYNUCLEIN BINDING TO LIPID MEMBRANES. **Miah J. Turke**, Benjamin R. Slaw, Daniel H. Kerr, Sofiya Maltseva, Krishna M. Raghavan, Ka Yee C. Lee

2473-Pos Board B223
UNCOVERING THE CONFORMATIONAL DYNAMICS OF DENGUE VIRUS AND ITS VIRUS-LIKE PARTICLES AS NOVEL VACCINE CANDIDATES. **Jan K. Marzinek**, Venkata Raghuvamsi Palur, Gielenny Salem, Fan-Chi Chen, Shang-Rung Wu, Peter J. Bond, Day-Yu Chao

2474-Pos Board B224
LIPID MODULATION OF MEMBRANE PROTEIN CONFORMATIONAL EQUILIBRIA DOES NOT REQUIRE LIPID IMMOBILIZATION IN LONG-LASTING PROTEIN-LIPID COMPLEXES. **Nathan Bernhardt**, Janice L. Robertson, José D. Faraldo-Gómez

2475-Pos Board B225
PREDICTING PROTEIN-LIPID INTERACTIONS THROUGH MACHINE LEARNING METHODS EMPLOYING NEW TOKENIZATION TECHNIQUES. **Carlos R. Cuellar Rodriguez**, Emad Tajkhorshid

Membrane Receptors and Signal Transduction (Boards B226 - B242)

2476-Pos Board B226
BUILDING AN AFFINITY PANEL OF SYNTHETIC POLYCLONAL T-CELL RECEPTOR LIGANDS THAT MIMIC NATIVE PEPTIDE-MHC. **Anand Vissa**, Kiera B. Wilhelm, Brittany Stinger, Jay T. Groves

2477-Pos Board B227
COMPUTATIONAL CHARACTERIZATION OF THE BINDING MODE AND MECHANISM OF ACTION OF TRICYCLIC SMALL MOLECULES AT 5-HT1E AND 5-HT1F RECEPTORS. **Bianca Fiorillo**, Gregory Zilberg, Daniel Wacker, Marta Filizola

2478-Pos Board B228
DISSECTING THE CONTRIBUTIONS OF EPITOPE ACCESSIBILITY IN B CELL ACTIVATION. **Jessica P. Kuppan**, Michael D. Vahey

2479-Pos Board B229
QUANTITATIVE FRET STUDIES OF EPHA2-LYN INTERACTIONS. **Evgenia V. Azarova**, Elena B. Pasquale, Kalina Hristova

2480-Pos Board B230
THE IMPACT OF ENDOPLASMIC RETICULUM MORPHOLOGY ON IRE1 PROTEIN CLUSTERING. **Liam Kischuck**, Aidan Brown

2481-Pos Board B231
UNDERSTANDING THE SPATIAL AND FUNCTIONAL LINK BETWEEN THE IL-2R AND TCR AT THE IMMUNOLOGICAL SYNAPSE. **Jesusa Capera-Aragones**, Lina Chen, Salvatore Valvo, Anish Suri, Raymond Moniz, Michael L. Dustin

2482-Pos Board B232
PHOSPHATIDYL SERINE PRECONDITIONS THE A_{2A}AR FOR G-PROTEIN COUPLING VIA A CONSERVED MOTIF ON TM6 AND TM7. **Liam M. Sharp**, Matthew T. Eddy, Naveen Thakur, Arka Prabha Ray, Edward R. Lyman

2483-Pos Board B233
MOLECULAR DETERMINANTS OF DISTINCTIVE OPIOID RECEPTOR SUBTYPE AFFINITIES. **Antoni Marciniak**, Darko Mitrovic, Lucie Delemotte

2484-Pos Board B234
AI-ASSISTED DE NOVO DESIGN OF SELECTIVE K-OPIOID RECEPTOR ANTAGONISTS FOR THE TREATMENT OF OPIOID ADDICTION. **Letty Leslie Ann Salas Estrada**, Davide Provasi, Joao Marcelo Lamim Ribeiro, Bianca Fiorillo, Marta Filizola

2485-Pos Board B235
DISSECTING DIFFUSION AND OLIGOMERIZATION DYNAMICS OF GPCRS IN LIVE CELLS USING SINGLE-PARTICLE TRACKING. **Xiaohan Zhou**, Claudiu C. Gradinaru

2486-Pos Board B236
COMPREHENSIVE ELUCIDATION OF DEVELOPMENTAL FUNCTIONS OF ARACHIDONIC ACID-DERIVED LIPID MEDIATORS IN ZEBRAFISH. **Kyoshiro Tsuge**, Ryosuke Wakabayashi, Satoru Yamamoto, Chika Koishihara, Akira Shimamoto

2487-Pos Board B237
THE ROLE OF CARDIAC CAPILLARY ENDOTHELIAL CELLS IN ELECTRO-METABOLIC SIGNALING AND BLOOD FLOW REGULATION. Guiling Zhao, Schuyler Brown, **W. J. Lederer**

2488-Pos Board B238
EUGENOL RESCUES THE TRPV1-DEPENDENT INHIBITION OF KCNQ2/3. Juan Jose Romero-Tovar, Alejandro Rafael Medina-Vilchis, Adrian Rivera-Ruedas, **Victor De la Rosa**

2489-Pos Board B239
ROLE OF MITOCHONDRIAL PKA IN COMPARTMENTATION OF CAMP SIGNALING IN CARDIAC VENTRICULAR MYOCYTES. **Rinzhin Tshering Sherpa**, Karni S. Moshal, Shailesh R. Agarwal, Robert D. Harvey

2490-Pos Board B240
REGULATION OF CARDIAC MYOCYTE CYCLIC AMP PRODUCTION BY INTRACELLULAR A_1-ADRENERGIC RECEPTORS. **Chase M. Fiore**, Michael Rudokus, Rinzhin Tshering Sherpa, Karni S. Moshal, Shailesh R. Agarwal, Robert D. Harvey

2491-Pos Board B241
KIR SIGNALING IS REGULATED BY ELECTROSTATIC INTERACTION OF ITS CYTOSOLIC TAIL WITH THE PLASMA MEMBRANE DESPITE BEING NEUTRAL POLYAMPHOLYTE. **Santosh Kumar**

2492-Pos Board B242
OBSERVING RAPID PHOSPHATIDYLINOSITOL 3,4-BISPHOSPHATE KINETICS DURING ACTIVATION OF VOLTAGE-SENSING PHOSPHATASE (VSP) IN MAMMALIAN CELLS USING TOTAL INTERNAL REFLECTION MICROSCOPY AT HIGH FRAME RATES. **Christian R. Halaszovich**, Dominik Oliver

Exocytosis and Endocytosis (Boards B243 - B265)

2493-Pos Board B243
MECHANOSENSITIVE (DE)REGULATION OF EXOSOME PRODUCTION IN TUMORS. **Kshitiz Parihar**, Ravi Radhakrishnan

2494-Pos Board B244
MODELLING THE EFFECT OF TETHERING ON EXOSOME SECRETION. **Zdenek Otruba**, Anarkali Mahmood, Alan Weisgerber, Michelle K. Knowles

2495-Pos Board B245
PHOSPHOLIPASE D1 LOCALIZES TO MOBILE, DOCKING AND FUSING SECRETORY VESICLES AND MULTIVESICULAR ENDOSOMES. **Broderick L. Bills**, Megan Hulser, Michelle K. Knowles

2496-Pos Board B246
IN A MODEL OF EXOCYTOSIS, ALCOHOL ENHANCES VESICLE FUSION BY ACTING ON MEMBRANE LIPIDS, NOT SNARE PROTEINS. **Robert E. Coffman**, Katelyn N. Kraichely, Alex J.B. Kreutzberger, Volker Kiessling, Lukas K. Tamm, Dixon J. Woodbury

2497-Pos Board B247
MECHANOINHIBITION OF ENDOCYTOSIS SENSITIZES CANCER CELLS TO FAS-INDUCED APOPTOSIS. Mehmet H. Kural, Umidahan Djakbarova, Emily T. Chan, Yasaman Madraki, Laura Niklason, **Comert Kural**

2498-Pos Board B248
COUNTING AP2 USING QUANTITATIVE CORRELATIVE LIGHT AND ELECTRON MICROSCOPY (QUANT-CLEM). **Andreas M. Arnold**, Justin W. Taraska

2499-Pos Board B249
COMPUTATIONAL MODELING OF ENDOCYTIC VESICLE FORMATION IMAGED BY SIMULTANEOUS TWO-WAVELENGTH AXIAL RATIOMETRY. **Yancey A. Williams**, Tomasz J. Nawara, Jie Yuan, Alexa L. Mattheyses

2500-Pos Board B250
INSIGHT INTO THE INTRA- AND INTER- MOLECULAR INTERACTIONS OF CLATHRIN ISOFORMS CHC17 AND CHC22. **Sarah M. Smith**, Gabrielle Laroque, Katherine M. Wood, Kyle L. Morris, Alan M. Roseman, Richard B. Sessions, Stephen J. Royle, Corinne J. Smith, Frances M. Brodsky

2501-Pos Board B251
CA^{2+}-INDEPENDENT BUT VOLTAGE DEPENDENT TRANSMISSION (CIVDS) AT A CENTRAL SYNAPSE FORMED BETWEEN DORSAL ROOT GANGLION AND DORSAL HORN NEURONS. Yuan Wang, Rong Huang, Zuying Chai, Changhe Wang, Xingyu Du, Yuqi Hang, Jie Li, Xiaohan Jiang, Xi Wu, Zhongjun Qiao, Yinglin Li, Bing Liu, Peng Cao, Feipeng Zhu, **Zhuan Zhou**

2502-Pos Board B252
FAST SYNAPTIC VESICLE DOCKING AND CLUSTER REARRANGEMENT AFTER SHORT STIMULI. **Junxiu Duan**, Jurgen Klingauf

2503-Pos Board B253
SINGLE SYNAPTIC VESICLE TRACKING IN TIRFM-AMENABLE HIPPOCAMPAL SYNAPSES. **Hunki Lee**, Jurgen Klingauf

2504-Pos Board B254
SYNAPTOTAGMIN-1 IS A BIDIRECTIONAL CA^{2+} SENSOR FOR NEURONAL ENDOCYTOSIS. Yang Chen, Shaoqin Hu, Xuanang Wu, Zhenli Xie, Bianbian Wang, Yuhao Gu, Jingxiao Huo, Anqi Wei, Qian Song, Huadong Xu, Xinjiang Kang, **Zhuan Zhou**, Rong Huang, Zuying Chai, Changhe Wang

2505-Pos Board B255
ROLE OF COMPLEXIN-LIPID INTERACTIONS IN CONTROLLING SNARE-MEDIATED MEMBRANE FUSION. **Katelyn N. Kraichely**, Volker Kiessling, Lukas K. Tamm

2506-Pos Board B256
COMPARING DIFFERENT FLUORESCENT PROBES TO QUANTIFY LIPID ORDER ALTERATIONS DURING CA^{2+} MEDIATED SYNAPTOTAGMIN C2 DOMAIN BINDING TO MEMBRANES. **Volker Kiessling**, Connor R. Sandall, Ofosuhene Akosua Pomaa, David S. Cafiso, Lukas K. Tamm

2507-Pos Board B257
MUNC18-LIPID INTERPLAY AND SPATIAL ARRANGEMENTS OF SYNTAXIN-1A. **Weronika Tomaka**, Volker Kiessling, Lukas K. Tamm

2508-Pos Board B258
OXIDATION STATE OF SNAP-25 AND FORMATION OF ADDUCTS. **Jarom S. Sumsion**, Samuel W. Shumway, Tasha M. Chambers, Dixon J. Woodbury

2509-Pos Board B259
COCAINE INCREASES QUANTAL NOREPINEPHRINE SECRETION THROUGH NET-DEPENDENT PKC ACTIVATION IN LOCUS COERULEUS NEURONS. Feipeng Zhu, Lina Liu, Jie Li, Bing Liu, Qinglong Wang, Lun Wang, Suhua Sun, Xiaoxuan Sun, Muhammad Younus, Changhe Wang, Tomas Hokfelt, Bo Zhang, Howard Gu, Zhi-Qing David Xu, **Zhuan Zhou**

2510-Pos Board B260
REGULATING QUANTAL SIZE OF NEUROTRANSMITTER RELEASE THROUGH A GPCR VOLTAGE SENSOR. Quanfeng Zhang, Bing Liu, Yinglin Li, Lili Yin, Muhammad Younus, Xiaohan Jiang, Zhaohan Lin, Xiaoxuan Sun, Rong Huang, Bin Liu, Qihui Wu, Feipeng Zhu, **Zhuan Zhou**

2511-Pos Board B261
DISSECTING MOLECULAR REGULATION OF UNCONVENTIONAL PROTEIN SECRETION. **Prabhodh S. Abbineni**, Vi Tang, David Ginsburg

2512-Pos Board B262
DEVELOPING A HIGH-THROUGHPUT ASSAY TO STUDY GLUCAGON SECRETION. **Alessandro Ustione**, David W. Piston

2513-Pos Board B263
A SURPRISE FROM SPATIOTEMPORAL ANALYSIS OF EXOCYTIC EVENTS IN CHROMAFFIN CELLS. **Shailendra Rathore**, Manfred Lindau

2514-Pos Board B264
REGULATION OF ATRIAL NATRIURETIC PEPTIDE SECRETION IN CARDIOMYOCYTES BY RAB3A AND ZDHHC9-MEDIATED PALMITOYLATION OF RAB3GAP1. Kobina Essandoh, Arasakumar Subramani, James P. Teuber, Sribharat Koripella, **Matthew J. Brody**

2515-Pos Board B265
RAPID EXTRACTION OF TIME-DEPENDENT BEHAVIORS OF ENDO-LYSOSOMAL STRUCTURES AND THEIR CARGO AIDED BY DEEP LEARNING. **Jacob Kæstel-Hansen**, Alex Kreutzberger, Tomas Kirchhausen, Nikos S. Hatzakis

Ion Channel Regulatory Mechanisms (Boards B266 - B289)

2516-Pos Board B266
COMPETITION BETWEEN SLC7A5 AND LMAN2 FOR MODULATION OF KV1.2 GATING. **Damayantee Das**, Shawn M. Lamothe, Victoria A. Baronas, Harley T. Kurata

2517-Pos Board B267
DISCRIMINATION BETWEEN CYCLIC-NUCLEOTIDES BY CYCLIC-NUCLEOTIDE GATED ION CHANNELS. **Andrea C. Vaiana**, Yangang Pan, Emmi Pohjolainen, Helmut Grubmuller, Simon Scheuring

2518-Pos Board B268
PROTEIN KINASE A (PKA) ACTIVATION REORGANIZES MICROTUBULES AND MICROTUBULE-PLUS-END-BINDING-PROTEIN 1 (EB1) AND ENRICHES NAV1.5 AT THE INTERCALATED DISCS (ICDS) OF ADULT VENTRICULAR MYOCYTES. **Gea-Ny Tseng**

2519-Pos Board B269
THE OPEN STRUCTURE OF A NEONATAL DIABETES-CAUSING VARIANT OF THE PANCREATIC K_{ATP} CHANNEL DETERMINED USING CRYO-ELECTRON MICROSCOPY. **Camden M. Driggers**, Show-Ling Shyng

2520-Pos Board B270
THE LEUCINE ZIPPER EF-HAND CONTAINING TRANSMEMBRANE PROTEIN-1 EF-HAND IS AN ATYPICAL TRIPARTITE CALCIUM, TEMPERATURE, AND PH SENSOR. **QiTong Lin**, Peter B. Stathopulos

854-Plat Board B271
A SMALL MOLECULE INHIBITOR OF SUMO PREVENTS THE HYPOXIA-INDUCED DECREASE IN IK1 CURRENT. **Aishwarya Chandrashekar**, Kirin Gada, Yu Xu, Yuchen Yang, Leigh D. Plant

2522-Pos Board B272
LOSS OF VISION CAUSED BY AN ALKALINE SHIFT IN THE $_{p}$H-DEPENDENCE OF THE CORNEAL H^+/OH^--CONDUCTING MEMBRANE PROTEIN SLC4A11. Bianca N. Quade, Aniko Marshall, **Mark D. Parker**

2523-Pos Board B273
STUDYING PROTEIN VARIATION IN EVOLUTION, DISEASE, AND BIOLOGY THROUGH DEEP INSERTION, DELETION, AND MISSENSE MUTATIONAL SCANNING. **Christian B. Macdonald**

2524-Pos Board B274
RE-ASSESSING THE ROLE OF THE HELIX BUNDLE CROSSING IN NAK. **Vilius Kurauskas**, Marco Tonelli, Katherine A. Henzler-Wildman

2525-Pos Board B275
PERTURBATION OF HCN1 RESPONSE TO SMALL MOLECULE MODULATION. **Elizabeth D. Kim**, Maria E. Falzone, Gareth R. Tibbs, Matthew Ferrer, Peter A. Goldstein, Crina M. Nimigean

2526-Pos Board B276
ESTABLISHING THE ROLE OF THE MITOCHONDRIAL VOLTAGE-DEPENDENT ANION CHANNEL (VDAC), IN *TRYPANOSOMA CRUZI*. **Sebastian Mesones Mancilla**, Kyle Poon, Veronica Jimenez

2527-Pos Board B277
DIFFERENTIAL MODULATION OF ALPHA 7 NICOTINIC ACHRS BY PICOMOLAR VS HIGH NANOMOLAR OR MICROMOLAR CONCENTRATIONS OF AMYLOID BETA 42 PEPTIDE. **Joseph Farley**, Jonathan B. Anderson

2528-Pos Board B278
AB INITIO MD FOR K+ CHANNEL PARAMETER OPTIMIZATION. **Chenggong Hui**, Wojciech Kopec, Bert L. de Groot

2529-Pos Board B279
ELEMENTARY MECHANISMS UNDERLYING ACTIVATION OF LEAK SODIUM CHANNELS. **Allen L. Hsu**, Nourdine Chakouri, Manu Ben-Johny

2530-Pos Board B280
LIPID DEPENDENCE OF BSYETJ CALCIUM TRANSPORT ACTIVITY BY FLUORESCENCE AND ESR TECHNIQUES. **Yu-Jing Lan**, Yun-Wei Chiang

2531-Pos Board B281
ANALYSIS OF CATION PERMEATION MECHANISM OF CHR2 BY MOLECULAR DYNAMICS SIMULATION. **Kenta Shobu**, Yoshinori Hirano, Hiroshi Watanabe, Kenji Yasuoka

2532-Pos Board B282
VISUALIZING ION CHANNELS IN LIPID NANODOMAINS USING LIVE-CELL FLUORESCENCE LIFETIME IMAGING. **Gucan (Gabriel) Dai**

2533-Pos Board B283
REDUCTION OF SK CURRENT IN RAT CPVT MODEL WITH HETEROZYGOUS CALMODULIN 3 MUTATION D132E IS CAUSED BY IMPAIRED INTRACELLULAR CA2+ HOMEOSTASIS. **Roland Veress**, Benjamin Y. Martin, Shanna Hamilton, Vladimir Bogdanov, Radmila Terentyeva, Fruzsina Perger, Andrew M. Soltisz, Svetlana Tikunova, Rengasayee Veeraraghavan, Sandor Gyorke, Jonathan P. Davis, Dmitry A. Terentyev

2534-Pos Board B284 Travel Award Winner
MOLECULAR ORIGIN OF THE PROTON SELECTIVITY IN THE HUMAN VOLTAGE-GATED PROTON CHANNEL. **Grace Liu**, Chenghan Li, Gregory A. Voth

2535-Pos Board B285
FUNCTIONAL CHARACTERIZATION OF A METAL ION COORDINATION SITE IN HCN4. **Lucas M. Blecker**, Colin H. Peters, Diego A. Peraza, John Bankston, Cathy Proenza

2536-Pos Board B286
VOLTAGE-SENSOR TRAPPING IN HV1 CHANNEL (*Ci*H_V1). **Miguel Fernández**, Juan J. Alvear-Arias, Emerson M. Carmona, Antonio Peña-Pichicoi, Christian A. Carrillo-Soto, Jose A. Garate, Carlos Gonzalez

2537-Pos Board B287
ENERGETIC DESTABILIZATION OF SHUT STATES UNDERPINS THE MEMBRANE STRETCH DEPENDENT ACTIVATION OF PIEZO1. **Tharaka D. Wijerathne**, Alper D. Ozkan, Jerome J. Lacroix

2538-Pos Board B288
UNCOVERING INDIVIDUAL PROTONATION EVENTS IN KIR2 CHANNELS. **Michael Bründl-Jirout**, Grigory Maksaev, Sun Joo Lee, Anna Stary-Weinzinger, Eva-Maria Plessl, Colin G. Nichols

2539-Pos Board B289
POTENTIATION OF CNG CHANNEL GATING BY MATRIX METALLOPROTEINASES IS GOVERNED BY THE TURRET REGION AND INTRACELLULAR DISULFIDE BONDS. **Sophie I. Biencourt**, Peter Meighan, Kemal Donlic, Michael D. Varnum

Other Channels (Boards B290 - B311)

2540-Pos Board B290
SMALL MOLECULE DISCOVERY FOR MODULATION OF OTOPETRIN PROTON CHANNELS. **Batuujin Burendei**, Joshua Kaplan, Stefano Forli, Emily R. Liman, Andrew B. Ward

2541-Pos Board B291
THE HUMAN ERYTROCYTE MECHANO-ACTIVATED K^+ CHANNEL A (HEMKCA): EFFECT OF INTERACTION OF INTRACELLULAR CALCIUM AND PH ON CONDUCTION AND KINETICS VARIABLES. A PARTIAL STUDY. Michelle Cuccillo, **Jesus G. Romero**

2542-Pos Board B292
ANALYZING SMALL MOLECULE AND POLYMER EVENTS IN A PROTEIN NANOPORE FOR PAIRED OPTICAL AND ELECTRICAL MEASUREMENTS. **Sophie C. Anderson**, Hannah M. Burden, Lisa Burden, Daniel L. Burden

2543-Pos Board B293
A NOVEL ACTIVATOR OF PIEZO1: WOUND HEALING ASSAY. **Ajan Ahmed**, Olajuwon Sally, Chilman Bae

2544-Pos Board B294
A SINGLE HIGH INTENSITY NANOSECOND ELECTRIC PULSE STIMULATES NALCN AND TRPC4/5 CHANNELS LEADING TO NA^+ ACCUMULATION IN ADRENAL CHROMAFFIN CELLS AS DETECTED BY LIVE CELL NA^+ FLUORESCENCE IMAGING. **Lisha Yang**, Gale L. Craviso, Normand Leblanc

2545-Pos **Board B295**
NANOFLUIDICS: TRANSPORT IN CHIRALITY-CONTROLLED CARBON NANOTUBE PORINS (CNTPS) AND FLUORESCENCE ULTRASHORT NANOTUBES (FUNS). **Sidi Zhao**

2546-Pos **Board B296**
K_{ATP} CHANNELS CONTRIBUTE TO NK CELL CYTOTOXICITY. **Natalie Samper**, Ivan Gando, Liwei Wang, Anthony Tao, Stefan Feske, William A. Coetzee

2547-Pos **Board B297**
WATER MOVEMENT IN VOLTAGE-GATED PROTON CHANNEL (HV1). **Juan J. Alvear**, Miguel Fernández, Antonio Peña-Pichicoi, Christian A. Carrillo-Soto, Dario Basaez, Marcelo Ozu, Jose Garate, Carlos L. Gonzalez

2548-Pos **Board B298** **Travel Award Winner**
FUNCTION MODULATION OF MDSC MHV1 CHANNEL BY N TERMINAL LENGTH. **Antonio Peña-Pichicoi**, Juan J. Alvear, Christian A. Carrillo-Soto, Miguel Fernández, Emerson M. Carmona, Jose Garate, Angelica M. Lopez-Rodriguez, Carlos L. Gonzalez

2549-Pos **Board B299**
H^+ FLUX OF THE VOLTAGE-GATED PROTON CHANNEL HV1 IN GIANT UNILAMELLAR VESICLE (GUV). **Stefania Brescia**, Peter Pohl

2550-Pos **Board B300**
SIMULTANEOUS SINGLE PHOTON COUNTING AND ION CHANNEL RECORDING FROM FREE-STANDING LIPID BILAYERS ON A MICROSTRUCTURED ARRAY. **Tobias Ensslen**, Jan C. Behrends

2551-Pos **Board B301**
THE ROLES OF TWO EXTRACELLULAR LOOPS IN PROTON SENSING AND PERMEATION IN HUMAN OTOP1 CHANNEL. Yong Yu, Bin Li, **Yan Wang**, Alexis Castro, Courtney Ng, Zhifei Wang

2552-Pos **Board B302**
ELUCIDATING THE PH GATING MECHANISM OF *HELICOBACTER PYLORIS* UREA CHANNEL UREI. **Anna Stoib**, Christine Siligan, Nikolaus Goessweiner-Mohr, Sahar Shojaei, Andreas Horner

2553-Pos **Board B303** **Travel Award Winner**
THE FOURTH WHEEL: STRUCTURAL STUDIES OF HETEROTRIMERIC DELTA BETA GAMMA ENAC. **Alexandra M. Houser**, Arpita Bharadwaj, Isabelle Baconguis

2554-Pos **Board B304**
THE PORE OF THE KCSA CHANNEL, INCLUDING THE ENTIRE CAVITY UP TO THE SELECTIVITY FILTER, PARTICIPATES IN SELECTIVITY, RECTIFICATION, AND ION TRANSPORT. **Alisher M. Kariev**, Michael E. Green

2555-Pos **Board B305**
EXPLORING VOLTAGE SENSING IN PROTEIN-TRANSLOCATING CHANNEL SECYEG. **Nikolaus Gössweiner-Mohr**, Stefanie Lenzeder, Ferdinand Horvath, Denis G. Knyazev, Thomas Renger, Peter Pohl

2556-Pos **Board B306**
A NOVEL ACTIVATOR OF PIEZO1: ELECTROPHYSIOLOGICAL STUDY. **Donggyeom Yu**, Chilman Bae

2557-Pos **Board B307**
IS VOLTAGE-SENSING PHOSPHATASE (VSP) REGULATED BY PHOSPHOINOSITIDE, $PI(4,5)P_2$?: QUESTION REVISITED WITH ANAP. **Natsuki Mizutani**, Yasushi Okamura

2558-Pos **Board B308**
THE ROLE OF THE MEMBRANE IN DRIVING CLC-EC1 DIMERIZATION. **Tugba N. Ozturk**, Nathan Bernhardt, Rahul Chadda, Janice L. Robertson, José D. Faraldo-Gómez

2559-Pos **Board B309**
CHOLESTEROL AFFECTS VOLTAGE-GATED PROTON CHANNELS INDIRECTLY. **Thomas E. DeCoursey**, Artem G. Ayuyan, Vladimir V. Cherny, Fredric S. Cohen

2560-Pos **Board B310**
POLY(ETHYLENE GLYCOLS) TO PROBE THE ANTHRAX TOXIN TRANSLOCATION MACHINERY. **Goli Yamini**, Wenxing Liu, Stephen H Leppla, Sergey M. Bezrukov, Ekaterina M. Nestorovich

2561-Pos **Board B311**
CHARACTERIZATION OF HUMAN AQP5 MUTATIONS FOUND IN PATIENTS SUFFERING FROMPALMOPLANTAR KERATOSIS (BOTHNIAN TYPE). **Christine Siligan**, Nikolaus Gössweiner-Mohr, Peter Pohl

Membrane Pumps, Transporters, and Exchangers II (Boards B312 - B327)

2562-Pos **Board B312**
A DILATED CARDIOMYOPATHY MUTATION OF PHOSPHOLAMBAN, R14DEL, INCREASES PHOSPHOLAMBAN PENTAMER STABILITY. Sean R. Cleary, Allen C.T. Teng, **Taylor A. Phillips**, Xuan Fang, Ellen E. Cho, Peter M. Kekenes-Huskey, Anthony O. Gramolini, Seth L. Robia

2563-Pos **Board B313**
THE MECHANISM OF DWARF OPEN READING FRAME (DWORF) ACTIVATION OF THE SARCOPLASMIC RETICULUM CALCIUM PUMP SERCA. M'Lynn Fisher, Elisa Bovo, Rodrigo Aguayo-Ortiz, Ellen E. Cho, Marsha P. Pribadi, Michael P. Dalton, Nishadh Rathod, M. Joanne Lemieux, L. Michel Espinoza-Fonseca, Seth L. Robia, Aleksey V. Zima, **Howard S. Young**

2564-Pos **Board B314**
POISON PEPTIDES INTERACTIONS WITH THE SARCOPLASMIC RETICULUM CA-ATPASE (SERCA). **Jacob Cunningham**, Taylor Phillips, Jaroslava Seflova, Ellen E. Cho, Jonothan A. Kirk, Seth L. Robia

2565-Pos **Board B315**
ALZHEIMER'S DISEASE-RELATED PRESENILIN 1 M146L MUTATION DISRUPTS SERCA2A REGULATION AND INCREASES PROPENSITY OF CA WAVES IN VENTRICULAR CARDIOMYOCYTES. **Elisa Bovo**, Roman Nikolaienko, Daniel Kahn, Jody L. Martin, John Q. Yap, Seth L. Robia, Aleksey V. Zima

2566-Pos **Board B316**
CALCIUM-DEPENDENT SHIFTS BETWEEN PHOSPHOLAMBAN (PLB) MONOMERS AND HOMO-PENTAMERS REVEAL THE INTERACTIONS BETWEEN PLB AND SERCA IN NATIVE CARDIAC MEMBRANES. Jin Guo, **Zhenhui Chen**

2567-Pos **Board B317**
DEEP LEARNING IDENTIFICATION OF CARDIAC TRANSPORTERS AS TARGETS FOR APPROVED DRUGS. **Carlos Cruz Cortes**, Manuel Andres Velasco Saavedra, Eli Fernandez-De Gortari, Guadalupe Guerrero-Serna, Rodrigo Aguayo-Ortiz, L. Michel Espinoza-Fonseca

2568-Pos **Board B318**
FUNCTIONAL ANALYSIS OF PLASMA MEMBRANE CA^{2+}ATPASE 3 AND ITS PRIMARY ALDOSTERONISM-ASSOCIATED MUTATIONS. **Victoria C. Young**, Marilina de Sautu, Irene C. Mangialavori, Pablo Artigas

2569-Pos **Board B319**
DISEASE MUTATIONS OF HUMAN A3 NA^+/K^+-ATPASE DEFINE EXTRACELLULAR NA^+ BINDING/OCCLUSION KINETICS AT ION BINDING SITE III. **Cristina Moreno Vadillo**, Sho Yano, Song Jiao, Miguel Holmgren

2570-Pos **Board B320**
SODIUM PUMP REGULATION IN HEALTH AND DISEASE. **Jaroslava Seflova**, Nima R. Habibi, Ryan Sweazey, John Q. Yap, Xuan Fang, Peter Kekenes-Huskey, L. Michel Espinoza-Fonseca, Julie Bossuyt, Seth L. Robia

2571-Pos Board B321
INVOLVEMENT OF ALPHA-SUBUNIT N-TERMINI IN THE MECHANISM AND REGULATION OF THE NA^+,K^+- AND H^+,K^+-ATPASES. **Ronald J. Clarke**, Bogdan Lev, Milna Chennath, Toby W. Allen, Charles G. Cranfield, Emma-Lucille Blayney, Flemming Cornelius

2572-Pos Board B322
DISSECTING MOVEMENT OF THE TRANSMEMBRANE SEGMENTS OF NON-GASTRIC PROTON PUMP MUTANTS WITH VOLTAGE-CLAMP FLUOROMETRY. **Daniel Self**, Victoria C. Young, Hanayo Nakanishi, Kazuhiro Abe, Pablo Artigas

2573-Pos Board B323 Travel Award Winner
MECHANISM OF K+ TRANSPORT ALONG THE INTERSUBUNIT TUNNEL OF KDPFABC. **Hridya Valia Madapally**, David L. Stokes, Himanshu Khandelia

2574-Pos Board B324
TOWARDS A MULTISCALE MODEL OF P-GLYCOPROTEIN EFFLUX. **Christian Jorgensen**, Kasper B. Pedersen, Martin B. Ulmschneider, Birgit Schiøtt, Peter C. Searson

2575-Pos Board B325
FINDING INHIBITORS AND NEW ACTIVATORS FOR THE BILIVERDIN TRANSPORTER ABCB10. Annabella Nouel Barreto, **Maria E. Zoghbi**

2576-Pos Board B326
INFERRING THE TRANSPORT STOICHIOMETRY OF THE PROTON/ZINC TRANSPORTER YIIP FROM MICROSCALE THERMOPHORESIS AND SIMULATIONS. **Shujie Fan**, Adel K. Hussein, Ian M. Kenney, David L. Stokes, Oliver Beckstein

2577-Pos Board B327
THE ROLE OF ZINC BINDING SITES IN THE CATION DIFFUSION FACILITATOR YIIP. **Adel K. Hussein**, Maria L. Lopez-Redondo, Shujie Fan, Xihui Zhang, Oliver Beckstein, David L. Stokes

Cell Mechanics, Mechanosensing, and Motility II (Boards B328 - B357)

2578-Pos Board B328
THE MECHANOBIOLOGY OF FIBROBLAST ACTIVATION. Yuan Hong, Xiangjun Peng, Haomin Yu, Mohammad Jafari, Delaram Shakiba, Jacob A. Sandler, Kenneth M. Pryse, Elliot L. Elson, Farid Alisafaei, **Guy M. Genin**

2579-Pos Board B329
MEASUREMENT OF CELLULAR STIFFNESS FOR DIAGNOSTIC APPLICATIONS. **Saurabh Kaushik**, Gautam V. Soni

2580-Pos Board B330 Travel Award Winner
CELLULAR COMMUNICATION IN CANCER: INTERPLAY OF SIGNALLING AND ELECTRICITY. **Mirna Elizabeta Kramar**, Mathieu Coppey

2581-Pos Board B331
SEQUENTIAL COUPLING OF PHASES IN UNJAMMING TRANSITION OF EPITHELIAL CELLS VIA SPATIOTEMPORAL ANALYSIS ON PHYSICAL PHENOTYPES. **Hyuntae Jeong**, Youngbin Cho, Jennifer H. Shin

2582-Pos Board B332
SEARCH AND RESPONSE MECHANISMS IN ACTIVE SOFT MATTER. **Alireza Abbaspourrad**, Meisam Zaferani

2583-Pos Board B333
THE MECHANICS OF TUMOR CELLS DICTATE MALIGNANCY. Xi Chen, Kai Tang, Cunyu Zhang, **Youhua Tan**

2584-Pos Board B334
THE COLLECTIVE MECHANOSENSING OF GLIOMA SPHEROID AT THE CELL-ECM INTERFACES. **Chih-Tung Liu**, Ping-Chen Kuo, Meng-Ling Chiang, Megha Jhunjhunwala, Jui-Hsun Chang, Rong-Shing Chang, Chi-Shuo Chen

2585-Pos Board B335
PROBING MECHANICAL FORCES IN CURVATURE-SENSITIVE CELL ADHESIONS. **Christina E. Lee**, Wei Zhang, Bianxiao Cui

2586-Pos Board B336
UNCERTAINTY QUANTIFICATION IN TRACTION FORCE MICROSCOPY. **Adithan Kandasamy**, Juan Carlos del Álamo, Adithan Kandasamy

2587-Pos Board B337
EPITHELIAL MONOLAYERS DEVELOP DENSITY AND EFFECTIVE TEMPERATURE DIFFERENTIALS TO MIGRATE ACROSS CONFINED MATRICES. **Wan-Jung Lin**

2588-Pos Board B338
HELICAL BENDING WAVES SUPERIMPOSED ON LARGE HELICAL WAVES OF AN EXTREMELY LONG SPERM FLAGELLUM OF *DROSOPHILA MELANOGASTER*. Sho Tamai, Hitoshi Sakakibara, Kosei Sato, **Kazuhiro Oiwa**

2589-Pos Board B339
EVALUATION OF THE DEFORMATION INDEX OF SEA URCHIN *ECHINOMETRA VANBRUNTI* OVULES BY MICROFLUIDICS. Ana G. Villalba-Villalba, **Carlos Muñoz**, Amir Maldonado

2590-Pos Board B340 Travel Award Winner
DETERMINING THE ROLES OF MEMBRANE TENSION IN BREAST CANCER CELL MIGRATION. **Emily T. Chan**, Yasaman Madraki, Umidahan Djakbarova, Travis H. Jones, Jonathan W. Song, Comert Kural

2591-Pos Board B341
EXPERIMENTAL INVESTIGATION OF EFFECTS OF INDENTATION DEPTH AND PROBE TIP RADIUS ON APPARENT YOUNG'S MODULUS OF XENOPUS LAEVIS OOCYTES. **Tatiana Kardashina**, Elba Serrano, Charles B. Shuster, Borys Drach

2592-Pos Board B342
MECHANOIMMUNOLOGICAL CONTROL OF METASTATIC SITE PREFERENCE. **Yassmin Elbanna**, Maria Tello-Lafoz, Ye Zhang, Elisa E. Sanchez, Scott Manalis, Morgan Huse

2593-Pos Board B343
LOW TEMPERATURE AND HIGH HYDROSTATIC PRESSURE HAVE COMPOUNDING EFFECTS ON MARINE MICROBIAL MOTILITY. Kelli K. Mullane, **Masayoshi Nishiyama**, Tatsuo Kurihara, Douglas Bartlett

2594-Pos Board B344
PANCREATIC CANCER METASTASIS: ADHESION AND STIFFNESS. **Shruti G. Kulkarni**, Manfred Radmacher, Malgorzata Lekka

2595-Pos Board B345
EFFERENT IMMUNE-MECHANICAL ACTIVITIES REFLECT CELL FUNCTION AND STATE. **Miguel de Jesus**, Alexander Settle, Daan Vorselen, Michael Galiano, Endi Santosa, Taha Merghoub, Joseph Sun, Pavak Shah, Julie Theriot, Morgan Huse

2596-Pos Board B346 Travel Award Winner
UNDERSTANDING MECHANISMS OF TOPOGRAPHY SENSING IN MIGRATING CELLS THROUGH SIMULATIONS OF A COUPLED EXCITABLE NETWORK MODEL. **Parijat Banerjee**, Qixin Yang, Wolfgang Losert, Peter N. Devreotes, Pablo A. Iglesias

2597-Pos Board B347
EFFECTS OF MATRIX VISCOELASTICITY AND GEOMETRICAL CONSTRAINT ON CELL MIGRATIONS: A MULTISCALE BIO-CHEMO-MECHANICAL MODEL. **Wenya Shu**, C. Nadir Kaplan

2598-Pos Board B348
MACROPHAGE SPECIFICITY: IMAGING AND CHARACTERIZATION OF INTERACTION BETWEEN MACROPHAGES AND FLUORESCENT ORGANOSILICA NANOPARTICLES DEPENDING ON SURFACE STRUCTURE AND SIZE. **Michihiro Nakamura**

2599-Pos **Board B349**
THE ENTROPY OF CANCER CELL MIGRATION: BIOENERGETICS AND CELL PROLIFERATION SUPPORT INVASIVE MIGRATION IN 3D. **Jian Zhang**, Jenna Mosier, Yusheng Wu, Paul Taufalele, Wenjun Wang, Heng Sun, Cynthia Reinhart-King

2600-Pos **Board B350**
NUCLEAR SHAPES ARE GEOMETRICALLY DETERMINED BY LAMINA EXCESS AREA. **Richard B. Dickinson**, Tanmay P. Lele

2601-Pos **Board B351**
SELECTION AND INDUCTION? USING ITGB4 TO TRACK THE ROLE OF SELECTION AND CONSTRICTION-INDUCED CHANGES IN PHENOTYPE AND 3D GENOME STRUCTURE SHIFTS AFTER CONSTRICTED MIGRATION. **Christopher Playter**, Samuel Benson, Ahmed Saad, Rachel P. McCord

2602-Pos **Board B352**
MECHANICS AND STRESS PROPAGATION IN NON-EQUILIBRIUM CYTOSKELETON COMPOSITES. **Daisy H. Achiriloaie**, Mehrzad Sasanpour, Karthik R. Peddireddy, Janet Y. Sheung, Ryan J. McGorty, Rae Robertson-Anderson

2603-Pos **Board B353**
MODELING THE INTERPLAY OF MECHANOSENSITIVE ADHESION AND MEMBRANE TENSION FOR POLARIZATION AND SHAPE DETERMINATION IN CRAWLING CELLS. **Yuzhu Chen**, Padmini Rangamani, David Saintillan

2604-Pos **Board B354**
HIGH THROUGHPUT MECHANOTYPING VIA FLOW CYTOMETRY AND DNA SEQUENCING. **Matthew R. Pawlak**

2605-Pos **Board B355**
BORRELIA BURGDORFERI INDUCES CHANGES IN THE PHYSICAL FORCES AND IMMUNITY SIGNALING PATHWAYS OF ENDOTHELIAL CELLS EARLY BUT NOT LATE DURING *IN VITRO* EXPOSURE. Raul Aparicio-Yuste, Marie Muenkel, Maria Gómez Benito, Michal Caspi Tal, Peter Kraiczy, **Effie Bastounis**

2606-Pos **Board B356**
MODELING FROG SACCULAR HAIR-BUNDLE DYNAMICS USING SYSTEMS OF DIFFERENTIAL EQUATIONS. **Joseph M. Marcinik**, Dolores Bozovic

2607-Pos **Board B357**
A COMPUTATIONAL FLUID DYNAMICS MODEL OF SEAL ZONE STABILITY IN ENDOVASCULAR ANEURYSM REPAIR. **Willa Li**, Žiga Donik, Seth Sankary, Nguyen T. Nguyen, Sanjeev Dhara, Janez Kramberger, Kathleen D. Cao, Nhung Nguyen, Luka Pocivavsek

Genetic, Metabolic, and Cellular Networks (Boards B358 - B371)

2608-Pos **Board B358**
A REMARKABLE ADAPTIVE PARADIGM OF HEART PERFORMANCE AND PROTECTION EMERGES IN RESPONSE TO THE CONSTITUTIVE CHALLENGE OF MARKED CARDIAC-SPECIFIC OVEREXPRESSION OF ADENYLYL CYCLASE TYPE 8. **Kirill V. Tarasov**, Khalid Chakir, Daniel R. Riordon, Alexey E. Lyashkov, Ismayil Ahmet, Maria G. Perino, Allwin J. Silvester, Mingyi Wang, Yevgeniya O. Lukyanenko, Jia-Hua Qu, Miguel C-R. Barrera, Yelena S. Tarasova, Karel Pacak, Loren Field, Edward G. Lakatta

2609-Pos **Board B359**
EFFECTS OF *MONASCUS* PIGMENTS ON FAT METABOLISM IN *CAENORHABDITIS ELEGANS*. **Bojiao Ma**, Xiaojing Du, Yunhang Xing, Yurong Wang

2610-Pos **Board B360**
DECIPHERING THE INFLUENCE OF GENOME ARCHITECTURE IN MINIMIZED BACTERIA. **Troy A. Brier**, Pratap Venepally, John I. Glass, Zaida Luthey-Schulten

2611-Pos **Board B361**
THE EFFECT OF MICRORNA ON PROTEIN VARIABILITY AND GENE EXPRESSION FIDELITY. **Andreas Hilfinger**, Raymond Fan

2612-Pos **Board B362**
GENERALIZED MICHAELIS-MENTEN RATE LAW BEYOND STEADY-STATE ASSUMPTIONS. **Junghun Chae**, Cheol-Min Ghim

2613-Pos **Board B363**
RECOVERING HIDDEN INFORMATION FROM LIVE-CELL TRAJECTORIES TO PREDICT THE BIOLOGICAL PATHWAY ACTIVITY UNDERLYING CELL STATE CHANGE DECISIONS. **Jeremy Copperman**, Young Hwan Chang, Ian McLean, Laura M. Heiser, Daniel M. Zuckerman

2614-Pos **Board B364**
ELECTROCHEMICAL POTENTIAL ENABLES DORMANT SPORES TO INTEGRATE ENVIRONMENTAL SIGNALS. **Leticia Galera-Laporta**, Kaito Kikuchi, Colleen Weatherwax, Jamie Y. Lam, Eun Chae Moon, Emmanuel A. Theodorakis, Jordi Garcia-Ojalvo, Gurol M. Suel

2615-Pos **Board B365**
QUANTIFYING PHOTOSYNTHETIC METABOLITES PERMEABILITY ACROSS BACTERIAL MICROCOMPARTMENTS USING COMPUTATIONAL MICROSCOPY. **Daipayan Sarkar**, Markus Sutter, Cheryl A. Kerfeld, Josh V. Vermaas

2616-Pos **Board B366**
MPHY GENE IS INVOLVED IN TEMPERATURE-REGULATED PIGMENT METABOLISM IN *MONASCUS*. **Yurong Wang**, Yuqing Bai, Wei Zhang, Ruonan Guo

2617-Pos **Board B367**
A CLOCK AND WAVEFRONT MECHANISM ORGANIZES CELL TYPES IN A BACTERIAL BIOFILM. **Todd K.T. Chou**, Dong-yeon D. Lee, Jian-geng Chiou, Leticia Galera-Laporta, San Ly, Jordi Garcia-Ojalvo, Gurol M. Suel

2618-Pos **Board B368**
LINKING CHEMICAL SIGNALING TO MECHANICAL COMPONENTS TO DETERMINE TISSUE SHAPE IN THE *DROSOPHILA* WING IMAGINAL DISC. **Alysha Toomey**, Nilay Kumar, Mayesha S. Mim, Mark Alber, Weitao Chen, Jeremiah J. Zartman

2619-Pos **Board B369**
QUANTIFYING EFFECTS OF STOCHASTIC FOCUSING AND DEFOCUSING ON NOISE PROPAGATION IN BIOCHEMICAL REACTION NETWORKS. **Ali Farhat**, Farid Manuchehrfar, Gamze Gursoy, Jie Liang

2620-Pos **Board B370**
ACCELERATING LIKELIHOOD CALCULATIONS FOR BIOCHEMICAL NETWORK DISCOVERY. **Pedro Pessoa**, Max Schweiger, Ioannis Sgouralis, Steve Pressé

2621-Pos **Board B371**
PROBABILITY LANDSCAPE OF A STOCHASTIC MODEL OF GENE EXPRESSION IN SINGLE CELLS THROUGH EXACT SOLUTION OF CHEMICAL MASTER EQUATION. **Yiyu Pang**, Jie Liang

Neuroscience: Computational and Experimental Approaches and Tools (Boards B372 - B380)

2622-Pos Board B372
EXTRACTION OF MURINE FECAL BACTERIAL DNA FOR 16S RRNA SEQUENCING IN GUT MICROBIOME ANALYSIS. **Jonathan L. Duncan**, Alice H. Lee, George F. Hoeferlin, Jeffrey Capadona

2623-Pos Board B373 Travel Award Winner
OSCILLATORY EFFECTS OF KETAMINE USING FOCUSED ULTRASOUND SENSITIVE LIPOSOMES. **Brenda Yu**, Ali K. Taoube, Raag D. Airan

2624-Pos Board B374
COHERENT EXCITON COUPLING IN FLUORESCENT PROTEIN DIMERS PROBED BY TWO-PHOTON POLARIZATION RATIO. **Mikhail Drobizhev**, Henry L. Puhl, Kirk Hines, Steven S. Vogel

2625-Pos Board B375
DIMINISHING NEURONAL ACIDIFICATION BY CHANNELRHODOPSINS WITH LOW PROTON CONDUCTION. **Rebecca Frank Hayward**, F. Phill Brooks III, Shang Yang, Shiqiang Gao, Adam E. Cohen

2626-Pos Board B376
HIGH RESOLUTION OPTICAL RECORDING OF BIOELECTRIC SIGNALS USING ELECTROCHROMIC MATERIALS. **Burhan Ahmed**, Kenneth Nakasone, Dana Griffith, Yuecheng Zhou, Erica Liu, Felix S. Alfonso, Bianxiao Cui, Holger Mueller

2627-Pos Board B377
LABEL-FREE OPTICAL DETECTION OF CELLULAR ACTION POTENTIALS USING ELECTROCHROMIC MATERIALS. **Erica Liu**, Yuecheng Zhou, Felix S. Alfonso, Yang Yang, Burhan Ahmed, Kenneth Nakasone, Victoria Xu, Holger Mueller, Bianxiao Cui

2628-Pos Board B378
MORPHOLOGICAL HETEROGENEITY OF HUMAN ASTROCYTES IN A CEREBRAL ORGANOID. **Kaitlin Szederkenyi**, Lilliana Attisano, Martin Oheim, Christopher M. Yip

2629-Pos Board B379
TARGETING TIGHT JUNCTIONS IN THE BLOOD-BRAIN BARRIER: HINTS FROM MOLECULAR DYNAMICS SIMULATIONS OF ION CONDUCTION IN TWO CLAUDIN-5 STRUCTURAL MODELS. **Alessandro Berselli**, Giulio Alberini, Fabio Benfenati, Luca Maragliano

2630-Pos Board B380
USING REACTION-DIFFUSION MODELING TO PROBE HIGH FREQUENCY CHOLINERGIC TRANSMISSION. Ivan L'Heureux, Elham Alkhammash, Catherine E. Morris, **Bela Joos**

Electron Microscopy (Boards B381 - B397)

2631-Pos Board B381
USING ALTERNATIVE PRESERVATION METHOD IN CRYO-EM TO OVERCOME CHALLENGING SPECIMEN METHIONINE TRNA SYNTHETASE. **Behrouz Ghazi Esfahani**, Marc Muraski, Rebecca W. Alexander, Elizabeth Stroupe

2632-Pos Board B382
STRUCTURAL BASIS OF ANTIBODIES TARGETING NEUTRALIZING EPITOPES REVEALED BY CRYOEMPEM. **Shiyu Zhang**, Gabriel Ozorowski, Aleksandar Antanasijevic, Jelle van Schooten, Sara Richey, Jeffrey Copps, Gunilla Karlsson Hedestam, Rogier W. Sanders, Andrew Ward

2633-Pos Board B383
UNDERSTANDING CELL BIOLOGY USING CRYO ELECTRON MICROSCOPY. **Natalia de Val**

2634-Pos Board B384
SUBTOMOGRAM AVERAGING OF PROTEIN STRUCTURES IN ISOLATED HEK293 CELL PLASMA MEMBRANES. **Dennis J. Michalak**, Willy W. Sun, Kem A. Sochacki, Jenny E. Hinshaw, Justin W. Taraska

2635-Pos Board B385
STRUCTURAL ENSEMBLE REFINEMENT WITH CRYO-EM. **Wai Shing Tang**, David Silva, Julian Giraldo Barreto, Erik H. Thiede, Sonya M. Hanson, Pilar Cossio

2636-Pos Board B386
ENHANCING THE CHAMELEON GRID RANGE TO UNLOCK FASTER AND MORE PRECISE SAMPLE OPTIMISATION. Miriam Weckener, **Ouliana Panova**, Herve Vandekerckhove, Nicolas Marro, Russell King, Paul Thaw, Daniel K. Clare, Michele C. Darrow

2637-Pos Board B387
DAQ-SCORE DATABASE: DEEP-LEARNING BASED QUALITY ESTIMATION OF CRYO-EM DERIVED PROTEIN MODELS. **Tsukasa Nakamura**, Xiao Wang, Genki Terashi, Daisuke Kihara

2638-Pos Board B388 Travel Award Winner
3D RECONSTRUCTION SHOWS MOUSE SKELETAL MUSCLE MAY DECLINE IN FUNCTION ACROSS AGING DUE TO THE MICOS COMPLEX. **Kit Neikirk**, Zer Vue, Edgar Garza-Lopez, Larry Vang, Amber Crabtree, Heather Beasley, Andrea Marshall, Steven Damo, Antentor O. Hinton

2639-Pos Board B389
IMPROVING CRYO-ELECTRON TOMOGRAPHY DATA QUALITY AND THROUGHPUT BY STREAMLINING THE WORKFLOW. **Marit Smeets**, Katherine Lau

2640-Pos Board B390
THE EVOLUTION OF ARCHAEAL FLAGELLAR FILAMENTS. **Mark A. Kreutzberger**, Virginija Cvirkaite-Krupovic, Ying Liu, Diana P. Baquero, Fengbin Wang, Mart Krupovic, Edward H. Egelman

2641-Pos Board B391
STRUCTURE AND DYNAMICS OF THE ESSENTIAL ENDOGENOUS MYCOBACTERIAL POLYKETIDE SYNTHASE PKS13 BY CRYOGENIC ELECTRON MICROSCOPY. **Robert M. Stroud**, Sun Kyung Kim, Miles Sasha S. Dickinson, Oren S. Rosenberg

2642-Pos Board B392
CORRELATIVE MICROSCOPY APPROACH FOR MICRO- AND NANOPLASTICS DETECTION IN PLANT MATRIX. **Joerg Wissler**, Philipp Haefner, Dominik Szwajgier, Hans-Achim Reimann

2643-Pos Board B393
EXPEDITING CRYO-EM SAMPLE PREPARATION USING DESIGN OF EXPERIMENTS. **Rose Marie Haynes**, Janette B. Myers

2644-Pos Board B394
MOLECULAR ARCHITECTURE OF LRRK2 IN ASSOCIATION WITH CELLULAR ORGANELLES. **Tamar Basiashvili**, Soojin Kim, Siyu Chen, JOSHUA HUTCHINGS, Samara L. Reck-Peterson, Elizabeth Villa

2645-Pos Board B395
AUTOMATED PHASE PLATE CRYO-EM IMAGING USING SERIALEM. **Gongpu Zhao**, Xing Meng

2646-Pos Board B396
MITIGATING RISK AND ENHANCING REPRODUCIBILITY IN CRYO-EM SAMPLE PREPARATION. **Bob Ashley**, Giulia Weissenberger, Rene Henderikx

2647-Pos Board B397
MICROBIAL NANOWIRES: CYTOCHROME FILAMENTS IN *GEOBACTER* AND MORE. Diana Baquero, Virginija Cvirkaite-Krupovic, Khawla Mustafa, Chiho Chan, Allon Hochbaum, Daniel Bond, Edward H. Egelman, Mart Krupovic, **Fengbin Wang**

Diffraction and Scattering Techniques (Boards B398 - B400)

2648-Pos **Board B398**
BAYESIAN STRUCTURE DETERMINATION FROM FLUCTUATION X-RAY SCATTERING EXPERIMENTS. **Michael Maihöfer**, Helmut Grubmuller

2649-Pos **Board B399**
USING MACROMOLECULAR PHASING AND REFINEMENT TECHNIQUES FOR A SMALL MOLECULE GYRASE INHIBITOR. **Markus G. Rudolph**, Wolfgang Guba, Tan Xuefei, Bruce Xu

2650-Pos **Board B400**
FEMTOSECOND IMAGING OF GIANT-HEMEPROTEIN WITH XFEL PULSES. **Paul Lourdu Xavier**, Ajda Kunavar, Julia Maracke, Frederic Poitevin, Patrick Adams, Thomas D. Grant, Mark S. Hunter, Dominik Oberthuer, Janina Sprenger, Jannik Lübke, Amit K. Samanta, Jochen Küpper, Andrew V. Martin, Saša Bajt, Henry N. Chapman

Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence (Boards B401 - B408)

2651-Pos **Board B401**
FLUCTUATION OF RAMAN SCATTERING CAN BE AN INITIAL MARKER FOR IPSC DIFFERENTIATION. **Hideaki Fujita**, Kensuke Sasaki, Kazuhiro Sudo, Yumiko Koga, Yukio Nakamura, Kuniya Abe, Yasuhiko Yoshida, Takayuki Haruki, Keiichi Koizumi, Tomonobu M. Watanabe

2652-Pos **Board B402**
DEVELOPMENT OF A CONFOCAL SYSTEM FOR BIOIMAGING. **Declan Donahue**, Natanel Monosov, Zachary VanSickle, Annie Carani, Sarah Erickson-Bhatt

2653-Pos **Board B403**
DETERMINING THE STRUCTURAL ORIGIN OF QUANTUM BEHAVIORS IN FLUORESCENT PROTEINS. **Grace H. Taumoefolau**, Henry L. Puhl, Kirk G. Hines, Tuan A. Nguyen, Eefei Chen, Robert B. Best, Steven S. Vogel

2654-Pos **Board B404**
FLUORESCENT PROTEIN REPORTERS FOR UNDERSTANDING HOW GLUTATHIONE MODULATES METAL INTERACTIONS. **Joel C. Rosenbaum**, Anne E. Carlson

2655-Pos **Board B405**
UNRAVELING COUPLED FOLDING AND BINDING DYNAMICS OF RIBONUCLEASE S WITH TRANSIENT INFRARED SPECTROSCOPY. **Yumin Lee**, Brennan Ashwood, Andrei Tokmakoff

2656-Pos **Board B406**
SPECTRAL SIMILARITY: FULL-WAVELENGTH COMPARISONS OF CIRCULAR DICHROISM SPECTRA. **Curtis W. Meuse**

2657-Pos **Board B407**
MONITORING PHOSPHORYLATION IN PROTEINS USING A NOVEL TECHNIQUE: PROTEIN CHARGE TRANSFER SPECTRA. **Alka Singh**, Gadicherla Harikrishna, Rajaram Swaminathan

2658-Pos **Board B408**
TIME-RESOLVED IN-CELL IR SPECTROSCOPY ON THE BACTERIAL CHLORIDE PUMP NMHR. **Sabine Oldemeyer**, Mariafrancesca La Greca, Luiz Schubert, Pit Langner, Ramona Schlesinger, Joachim Heberle

Force Spectroscopy and Scanning Probe Microscopy (Boards B409 - B419)

2659-Pos **Board B409**
PHOTOSENSITIZERS AGAINST PATHOGENS: MODEL MEMBRANES CHARACTERIZATION WITH HYPERICIN. **Matteo Mariangeli**, Chantal Usai, Simone Civita, Silvia Dante, Pietro Delcanale, Stefania Abbruzzetti, Alberto Diaspro, Cristiano Viappiani, Paolo Bianchini

2660-Pos **Board B410**
REVEALING AND MANIPULATING THE STRUCTURE OF MITOTIC CHROMOSOMES USING ATOMIC FORCE MICROSCOPY. **Andrea Ridolfi**, Christian F. Nielsen, Erwin J. Peterman, Ian D. Hickson, Gijs J. wuite

2661-Pos **Board B411**
SINGLE-MOLECULE EXPERIMENTS REVEAL THE ELBOW AS AN ESSENTIAL FOLDING GUIDE IN SMC COILED COIL ARMS. **Marvin Freitag**, Sigrun Jaklin, Francesco Padovani, Ecaterina Radzichevici, Sarah Zernia, Kurt M. Schmoller, Johannes Stigler

2662-Pos **Board B412**
STABILIZING A CENTRIFUGAL FORCE MICROSCOPE TO STUDY DNA FOLDING. **Audrey A. Orlowski**, Melanie Huq, Ashwin Balaji, Ashley R. Carter

2663-Pos **Board B413** **Travel Award Winner**
UNFOLDING/REFOLDING OF SINGLE POLYPROTEINS HELD UNDER CONSTANT TENSION: EFFECT OF MONOVALENT SALTS ON FOLDING/UNFOLDING RATES. Jian-Yu Chen, Yoriko Lill, **Bianca C. Caminada**, Caitlin Gish, Matthew Tao, Frank DiBartolomeo, Kenneth Ritchie

2664-Pos **Board B414**
NOISE CORRECTION OF ATOMIC FORCE MICROSCOPY-BASED INTEGRIN FREQUENCY ANALYSIS. **Logan C. Jundt**, Zachary Nix, Divya Kota, Scott Wood

2665-Pos **Board B415**
PHOTOTHERMALLY DRIVEN AFM OF BIOLOGICAL SAMPLES. Hans Gunstheimer, Pieter van Schendel, Gotthold Fläschner, Patrick Frederix, Dominik Ziegler, **Christian Bippes**, Jonathan Adams

2666-Pos **Board B416**
ATOMIC FORCE MICROSCOPY KYMOGRAPHS PROVIDE ROBUST ACCESS TO CONFORMATIONAL TRANSITIONS IN MEMBRANE PROTEINS. **Dylan R. Weaver**, Katherine G. Schaefer, Divya N. Amin, Arthur G. Roberts, Gavin M. King

2667-Pos **Board B417**
EFFECTS OF AGING ON NANOMECHANICAL PROPERTIES OF MICE BONE MARROW DERIVED ADHERENT CELLS USING ATOMIC FORCE MICROSCOPY (AFM). **Carson Stanley**, Ananya Ananya, Balaji Narasimhan, Marian Kohut, Anwesha Sarkar

2668-Pos **Board B418**
MEASURING DNA EXTENSION DURING UNFOLDING IN A CENTRIFUGAL FORCE MICROSCOPE. **Melanie S. Huq**, Audrey A. Orlowski, Ashwin Balaji, Ashley R. Carter

2669-Pos **Board B419**
HIGH CONTENT CELLULOMICS BY CORRELATIVE MICROSCOPY. **Tanya E.S. Dahms**, Supriya V. Bhat

Micro- and Nanotechnology (Boards B420 - B440)

2670-Pos Board B420
A COMBINED EXPERIMENTAL-COMPUTATIONAL APPROACH TO STUDY INTERACTIONS OF TOPICAL OPHTHALMOLOGIC DRUGS WITH A TEAR FILM MODEL. **Lukasz Cwiklik**

2671-Pos Board B421
A DELIVERY SYSTEM INTO THE DERMIS LAYER OF SKIN USING SMALL UNILAMELLAR LIPOSOMES AND TARGETED COLLAGEN REGENERATION STIMULATED BY ELECTRIC FIELD. **Albertus Ivan Brilian**, Chang Ho Kim, Soo Ryeon Ryu, Sang Ho Lee, Agustina Setiawati, Kwanwoo Shin

2672-Pos Board B422
VESOSOMAL DRUG DELIVERY SYSTEM WITH MULTI-COMPARTMENTS FOR CONTROLLED AND SUSTAINED RELEASE. Deborah Lee, Seoyoon Song, Suheon Kim, Mina Lee, Eunsu Kim, Yun Suk Huh, Sun Min Kim, **Tae-Joon Jeon**

2673-Pos Board B423
FRAGMENT-BASED DRUG NANOAGGREGATION REVEALS DRIVERS OF SELF-ASSEMBLY. **Chen Chen**, You Wu, Shih-Ting Wang, Naxhije Berisha, Oleg Gang, Daniel Heller

2674-Pos Board B424
DNA NANOSTRUCTURES AS A TOOL FOR TARGETED ANTIMICROBIAL DELIVERY. **Ioanna Mela**, Pedro P. Vallejo Ramirez, Stanislav Makarchuk, Graham Christie, Robert M. Henderson, Hiroshi Sugiyama, Masayuki Endo, Clemens F. Kaminski

2675-Pos Board B425
REGULATION OF THE PHAGE LAMBDA VIRAL PACKAGING MOTOR'S GRIP AND DNA END-CLAMP MECHANISM. **Brandon Rawson**, Qin Yang, Douglas E. Smith, Carlos E. Catalano

2676-Pos Board B426
NANOPORE-ENABLED MACROSCOPIC ALIGNMENT OF 700 KDA MEMBRANE PROTEIN COMPLEX: CHARACTERIZATION BY PULSED EPR. Sergey Milikisiyants, Antonin Marek, Maxim A. Voinov, Jan F. Kern, **Alex I. Smirnov**

2677-Pos Board B427
SINGLE-MOLECULE PROTEOMICS USING NANOPORES. **Meni Wanunu**

2678-Pos Board B428
UNRAVELING THE RELATIONSHIP BETWEEN MOLECULAR PROPERTIES AND RAPID DIFFUSION IN SMOOTH NANOPORES. **Steven F. Buchsbaum**, Sei Jin Park, Melinda L. Jue, April M. Sawvel, Chiatai Chen, Eric Meshot, Marissa Wood, Kuang Jen Wu, Camille Bilodeau, Fikret Aydin, Tuan Anh Pham, Edmond Y. Lau, Francesco Fornasiero

2679-Pos Board B429
TUNING INTERACTIONS IN NANOPORE ARRAYS WITH CHARGES ON THE PORE WALLS. **Ethan J. Cao**, DaVante Cain, Savannah Silva, Zuzanna S. Siwy

2680-Pos Board B430
ENGINEERING ELECTRO-OSMOTIC FLOW THROUGH BIOLOGICAL CHANNELS FOR NANOPORE PROTEIN SEQUENCING. **Behzad Mehrafrooz**, Aleksei Aksimentiev

2681-Pos Board B431
PRUSSIAN BLUE NANOPARTICLES AS ISOTOPE-LABELED AND FLUORESCENT CONTRAST MATERIAL. **László Forgách**, Nikolett Kiss-Hegedus, Zoltan Varga, Noemi Kovacs, Ildikó Horváth, Domokos Mathe, Krisztian Szigeti

2682-Pos Board B432
INVESTIGATING THE ROLE OF MEMBRANE COMPOSITION ON THE STABILITY OF DECORATED NANOPARTICLE AGGREGATES. **Jahmal J. Ennis**, Jesse Sandberg, Ezry Santiago-McRae, Julie Griepenburg, Grace H. Brannigan

2683-Pos Board B433
CHARACTERIZING FIELD-DEPENDENT STRENGTH AND ORIENTATION OF SUPERPARAMAGNETIC BEAD MAGNETIZATION VIA DNA ORIGAMI MICROLEVERS. **Linnea K. Larson**, Khadija Hamisi, Abigail gilreath, Avery Buchanan, Kayla Loescher, Dylan Roderick, Ratnasingham Sooryakumar, Stephanie Lauback

2684-Pos Board B434 Travel Award Winner
OPTIMIZING THE SENSITIVITY OF MICROCANTILEVERS TO MONITOR THE MASS OF SINGLE ADHERENT LIVING CELLS. **Ilaria Incaviglia**, Sophie Herzog, Gotthold Fläschner, Nico Strohmeyer, Daniel J. Müller

2685-Pos Board B435
NANOSCALE TWEEZERS FOR SPATIALLY RESOLVED SINGLE-CELL ANALYSIS. **Annie Sahota**, Michael Devine, Aleksandar Ivanov, Joshua Edel

2686-Pos Board B436
MODULATION OF NUCLEAR MEMBRANE REPAIR MACHINERY BY NANONEEDLE ARRAYS. **Ryan Hosseini**, Shivani Shukla, Einollah Sarikhani, Dhivya Meganathan, Rutuja Badle, Leah Spain, Jonathan Okerblom, Ching-Ting Tsai, Bianxiao Cui, Zeinab Jahed

2687-Pos Board B437
DESIGN OF AN ISLET-ON-A-CHIP DEVICE TO DYNAMICALLY MEASURE INSULIN SECRETION FROM INDIVIDUAL ISLETS. Yufeng Wang, Romario Regeenes, **Jonathan V. Rocheleau**

2216-Plat Board B438
AMPLIFICATION-FREE RAPID DETECTION OF VIRAL GENOMES AT SINGLE MOLECULE LEVEL. Hajime Shinoda, Tatsuya Iida, Asami Makino, Mami Yoshimura, **Rikiya Watanabe**

2689-Pos Board B439
ENGINEERING CELL MORPHOLOGY USING MASKLESS 2D PROTEIN MICROPATTERNING ON 3D NANOSTRUCTURES. **Einollah Sarikhani**, Lasse Klausen, Dhivya Pushpa Meganathan, Abel Marquez Serrano, Ching-Ting Tsai, Bianxiao Cui, Zeinab Jahed

2690-Pos Board B440
MODULATING NEURONAL CELL MIGRATION UNDER CURVED CONFINEMENTS. Jacob M. Smith, Mackenna K. Landis, **Anja Kunze**

Biophysics Education (Boards B441 - B449)

2691-Pos Board B441
OPTIMAL EFFICACY IN MOSQUITO-HOST INTERACTION INHIBITION BY 35-60 KHZ ANIMAL SOUNDS FOR MALARIA CONTROL. **Philip A. Mang'are**, Jacqueline K. Makatiani, Samwel Rotich

2692-Pos Board B442
BIOMIMICKING THE TUMOR MICROENVIRONMENT FOR BIOMECHANICAL STUDY OF GLIOBLASTOMA CELLS ANALYZED BY SINGLE CELL TRACTION FORCE MICROSCOPY. **Mishal Khan**

2693-Pos Board B443
AN IMPROVED LYSOZYME SUBSTRATE PREPARATION METHOD FOR THE BIOCHEMISTRY KINETICS LABORATORY. **Koppany Bodor**, Kelli N. Kazmier

2694-Pos Board B444
INTEGRATING IMAGING PHYSICS INTO UNDERGRADUATE STEM EDUCATION. Bethe A. Scalettar, **James R. Abney**

2695-Pos **Board B445** **Travel Award Winner**
BIOPHYSICS CONCEPT INVENTORY SURVEY: AN ASSESSMENT IN BIOPHYSICAL UNDERGRADUATE EDUCATION. **Danielle R. Latham**, Joshua Alper, Hugo Sanabria

2696-Pos **Board B446**
THE PRACTICE AND THINKING OF THE CONSTRUCTION OF THE EXAMINATION DATABASE OF BIOCHEMISTRY. Huiyong Lian, **Xinyu Yue**, Jia Yan

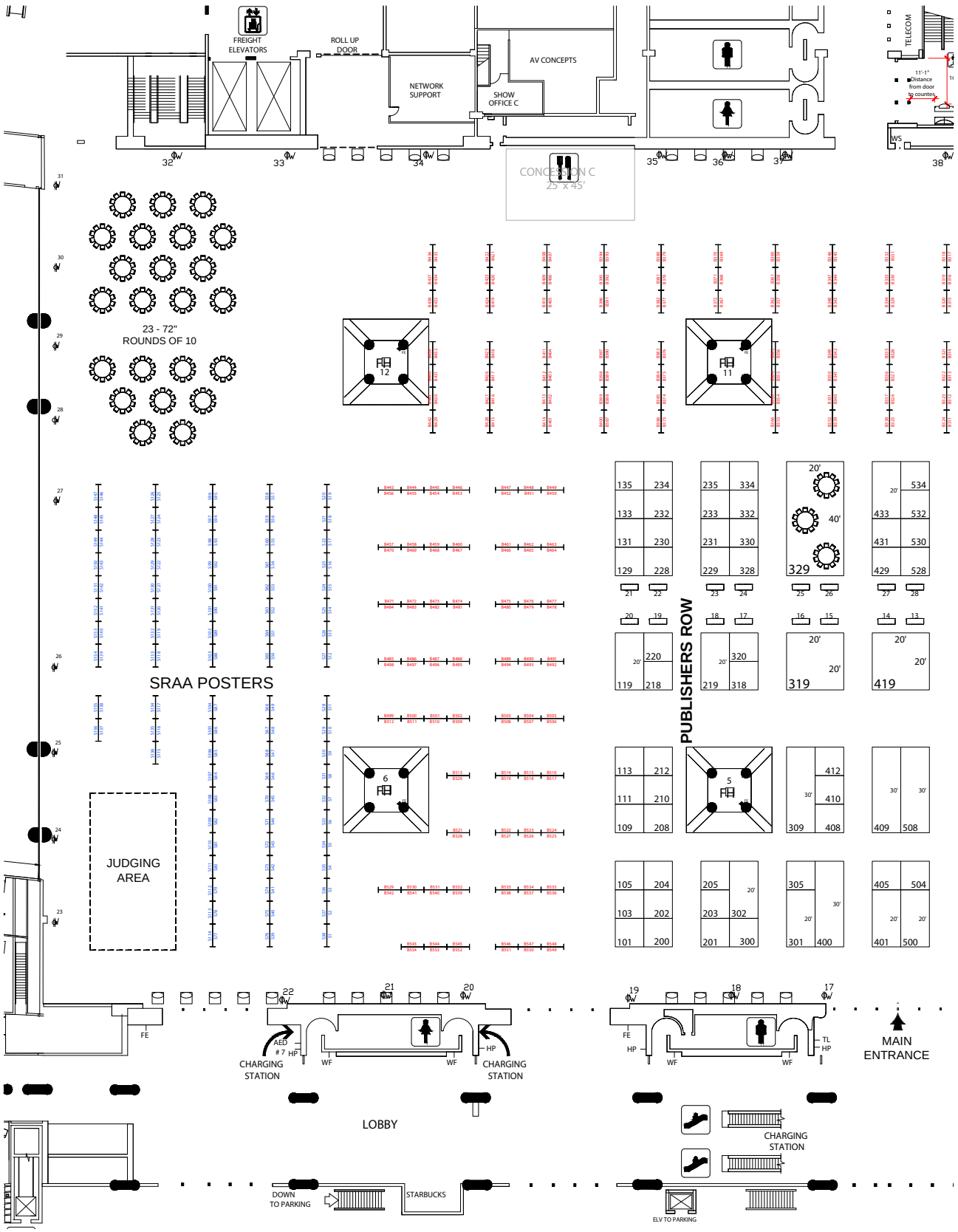
2697-Pos **Board B447**
NMJLAB: AN INTERACTIVE SIMULATION PROGRAM FOR TEACHING THE PHYSIOLOGY AND PATHOLOGIES OF THE NEUROMUSCULAR JUNCTION. **Camille Ng**, Cobi B. Diaz, Ishaq Aslam, Kyle R. Taing, Jose L. Puglisi

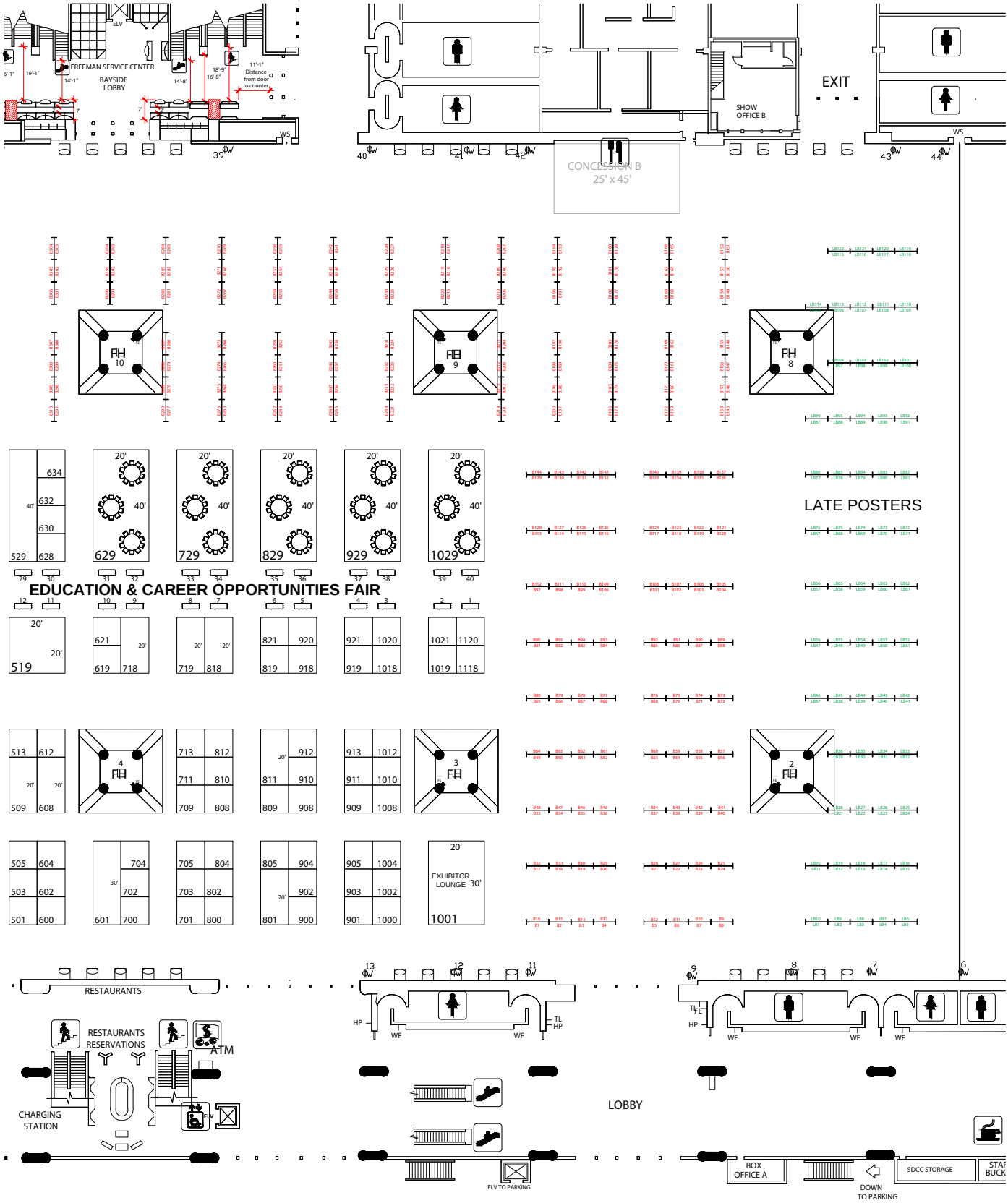
2698-Pos **Board B448**
S_IRE_N(SIMULATION OF RECEPTORS AND ENZYMES): AN INTERACTIVE SIMULATION OF ENZYME KINETICS AND PHARMACODYNAMIC MODELS. **Katherine Arnott**, Reem Al Olabi, Hongbin Wang, Jose L. Puglisi

2699-Pos **Board B449**
BRINGING BIOPHYSICS OUTREACH TO A COUNTY FAIR. **Nathan T. Wright**

Exhibitor List and Booth Numbers

Booth Number	Exhibitor
812	AAT BIOQUEST
612	Abbelight
705	Abberior Instruments America
602	ACS Publications
208	NEW 2023 Affinité Instruments
229	Agilent Technologies Inc
204	AIP Publishing
534	ALA Scientific Instruments Inc
210	American Physical Society
809	Anatrace | Molecular Dimensions
621	ASI/Applied Scientific Instrumentation
334	Aurora Scientific Inc
302	Avanti Polar Lipids
431	axiVEND
919	Biosensing Instrument Inc
601	Bruker
103	Cambridge University Press
811	Carl Zeiss Microscopy LLC
219	Cell Press
519	Chroma Technology
913	NEW 2023 Creative Biostructure
105	NEW 2023 Cube Biotech Inc
101	Cytocybernetics Inc
800	Delmic
918	Dynamic Biosensors
513	Ecocyte Bioscience US LLC
328	Edinburgh Instruments
320	Electron Microscopy Sciences
528	Elements srl
912	eLife
805	Etaluma Inc
818	Evident Scientific
532	NEW 2023 Exciting Instruments
808	Fida Biosystems Aps
910	Fluidic Analytics
718	Fluxion Biosciences
405	Gene Tools LLC
711	Gold Biotechnology
133	Good Food Institute
433	Hamamatsu Corporation
600	HarvardBioscience
220	Hellma USA Inc
319	HORIBA Scientific
300	ibidi USA Inc
713	ION Biosciences
530	NEW 2023 IonLab
401	IonOptix
301	Ionovation GmbH
719	IOP Publishing
608	ISS Inc
119	JASCO
200	Journal of General Physiology (JGP)
501	KinTek Corporation
503	Larodan AB
504	Leica Microsystems
409	LUMICKS
508	Mad City Labs Inc
505	Malvern Panalytical
203	Metrion Biosciences Ltd
412	MiTeGen
634	Molecular Devices
702	Molecular Machines & Industries
529	Nanion Technologies
810	NanoandMore USA Corp
802	NEW 2023 Nanoscience Instruments
902	NEW 2023 Nanoscopy&Nic@IIT - Italian Institute of Technology
709	Nanosurf
901	National CryoEM Facility
704	National NMR Resources
212	Nicoya Lifesciences
500	Nikon Instruments Inc
619	Northern Nanopore Instruments Inc
330	ONI
135	NEW 2023 Oroboros Instruments GmbH
410	Oxford Instruments
309	PicoQuant Photonics North America Inc
305	Quantum Northwest Inc
628	Rapp OptoElectronic GmbH
218	Refeyn Inc
703	NEW 2023 Resonon
205	Royal Society Publishing
1118	RPMC Lasers Inc
129	RWD Life Science
429	SB Drug Discovery
904	Science Partner Journals
819	Scientifica
701	SLAC National Accelerator Lab
509	Sophion Bioscience A/S
821	SPT Labtech | Quantifoil
908	St. Jude Children's Research Hospital
804	Strex
400	Sutter Instrument
905	TA Instruments
700	Teledyne Photometrics
201	The Company of Biologists
202	NEW 2023 The Hauptman-Woodward Medical Research Institute
900	NEW 2023 Thermo Fisher Scientific
419	Thorlabs Inc
318	TOKAI HIT USA INC
604	TOPTICA Photonics
801	Zaber Technologies


FREIGHT ELEVATORS
ROLL UP DOOR
NETWORK SUPPORT
SHOW OFFICE C
AV CONCEPTS
TELECOM
CONCESSION C
25' x 45'
23 - 72" ROUNDS OF 10
SRAA POSTERS
JUDGING AREA
PUBLISHERS ROW
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319
419
CHARGING STATION
CHARGING STATION
MAIN ENTRANCE
LOBBY
DOWN TO PARKING
STARBUCKS
CHARGING STATION
ELV TO PARKING


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14'-1"
18'-9"
16'-8"
14'-8"
11'-1"
Distance from door to counter
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SHOW OFFICE B
EXIT
CONCESSION B
25' x 45'
FIB 10
FIB 9
FIB 8
LATE POSTERS
EDUCATION & CAREER OPPORTUNITIES FAIR
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RESTAURANTS
RESTAURANTS RESERVATIONS
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CHARGING STATION
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BOX OFFICE A
SDCC STORAGE
DOWN TO PARKING

Introducing AtlaZ

Quantitative Live-Cell Analytics

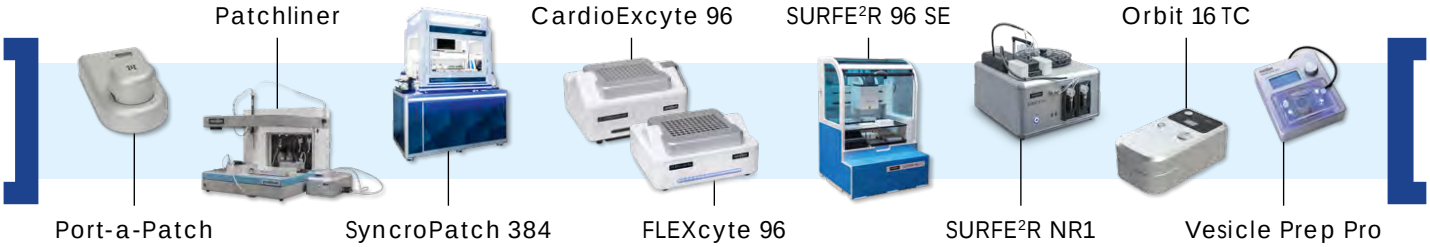
Visit us at **booth #529** to learn more



Symposium

Need for speed: No limits for automated electrophysiology

Monday, February 20, 9:30 – 11:00 AM, Room 9



nanion

Exhibit Dates and Times

Sunday, February 19 ..... 10:00 AM – 5:00 PM
Monday, February 20..... 10:00 AM – 5:00 PM
Tuesday, February 21..... 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 Samsung Galaxy Tablet, 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 before 2:30 PM on Tuesday, February 21. Raffle will be announced on Tuesday, February 21, at 3:00 PM in the Exhibit Hall. You must be present to win.

Exhibitor Presentations

Exhibitor Presentations will take place in Rooms 9 and 10 of the San Diego Convention Center.
See pages 158 for detailed descriptions.

Room 9

Sunday, February 19

9:30 AM – 11:00 AM	Oroboros Instruments GmbH
11:30 AM – 1:00 PM	Journal of General Physiology (JGP)
1:30 PM – 3:00 PM	Mad City Labs Inc
3:30 PM – 5:00 PM	Fluxion Biosciences
5:30 PM – 7:00 PM	LUMICKS

Monday, February 20

9:30 AM – 11:00 AM	Nanion Technologies
11:30 AM – 1:00 PM	axiVEND - iRiS Kinetics
3:30 PM – 5:00 PM	HORIBA Scientific
5:30 PM – 7:00 PM	Elements srl

Tuesday, February 21

9:30 AM – 11:00 AM	Bruker
11:30 AM – 1:00 PM	Sophion Bioscience A/S
1:30 PM – 3:00 PM	Delmic

Room 10

Sunday, February 19

10:30 AM – 12:00 PM	Carl Zeiss Microscopy LLC
12:30 PM – 2:00 PM	PicoQuant Photonics North America Inc
2:30 PM – 4:00 PM	Oxford Instruments
4:30 PM – 6:00 PM	Fluidic Analytics

Monday, February 20

10:30 AM – 12:00 PM	Bruker
12:30 PM – 2:00 PM	Leica Microsystems
2:30 PM – 4:00 PM	Nanosurf
4:30 PM – 6:00 PM	Sutter Instrument

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Journal of General Physiology (JGP)
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LUMICKS
Mad City Labs Inc
Nanion Technologies
Nanosurf
Oroboros Instruments GmbH
Oxford Instruments
PicoQuant Photonics North America Inc
Physics Today
RWD Life Science
Sophion Bioscience A/S
Sutter Instrument

As of January 3, 2023

Room 9: Sunday, February 19

9:30 AM – 11:00 AM

Oroboros Instruments GmbH

Mitochondrial Bioenergetics – A Quantitative Analytical and Diagnostic Approach

Mitochondrial fitness is essential for brain and muscle function, for resistance against preventable and age-related degenerative diseases and therefore for quality of life. The capacity of oxidative phosphorylation (OXPHOS) is a fundamental part of mitochondrial fitness and a key element in bioenergetics. Comprehensive and real-time OXPHOS analysis is based on biophysical and biochemical concepts related to mitochondrial core energy metabolism. It extends bioenergetics to the level of mitochondrial physiology for functional diagnosis in health and disease.

The Oroboros O2k is the state-of-the art respirometer for quantitative high-resolution respirometry (HRR) and comprehensive OXPHOS analysis. It has the high signal stability and unrestricted flexibility of titrations suited for application of complex substrate-uncoupler-inhibitor titration (SUIT) protocols which are the basis for investigating mitochondrial pathways and respiratory control in health and disease. High resolution and precise control of oxygen concentration enable studies of mitochondrial functions under normoxia, hypoxia, and hyperoxia.

With the O2k-FluoRespirometer, fluorometric assays for ROS production, mitochondrial membrane potential, ATP production, and calcium uptake can be measured in real-time and simultaneously in direct conjunction with HRR. Modules for monitoring Q- and NAD-redox states and PhotoBiology are implemented in the NextGen-O2k, further extending the analytical resolution and opening new windows to study biophysical principles of bioenergetics.

We will present applications of the NextGen-O2k and O2k-FluoRespirometer to explore mitochondrial physiology and pathology in various types of samples and find solutions to mitochondria-associated diseases.

Speaker
Erich Gnaiger, Founder & CEO, Oroboros Instruments GmbH

11:30 AM – 1:00 PM

Journal of General Physiology (JGP)

PRESENTATION TITLE AND SUMMARY INCLUDED IN ADDENDUM

1:30 PM – 3:00 PM

Mad City Labs Inc

Open & Flexible Microscopy Systems for Combined Single Molecule Methods

Eric Drier
Open and flexible microscopy systems have distinct advantages for implementing novel biophysical methods. This session focuses on 3 such systems, each of which combines precision motion control with single molecule measurements.

Quantification of Lipid Diffusion Dynamics on Live Cell Membranes Through Interferometric Scattering Microscopy

Francesco Reina
The study of single lipid dynamics on membranes requires simultaneously high localization precision and temporal resolution, a feat that few microscopy techniques are able to achieve. We show how Single Particle Tracking through Interferometric Scattering (ISCAT) microscopy has given us new insights in the compartmentalization of plasma membrane structure, and the diffusion modes of single, gold-nanoparticle tagged lipids. The tracked lipids appear to diffuse through a "hopping" motion between compartments of nanoscopic size (100-120nm) with a probability of crossing the boundary. These results were confirmed with the use of particle diffusion simulations in a corralled, two-dimensional plane, which also serve to estimate the "hopping" probability.

A Single-Molecule View on Dynamic Chromatin Access of Epigenetic Regulatory Factors

Beat Fierz
The dynamic organization of the eukaryotic genome into chromatin is integral to its regulation. We develop single-molecule colocalization imaging and single-molecule FRET approaches to directly observe the dynamic architecture of chemically defined chromatin fibers. We found that local chromatin undergoes structural fluctuations on the micro- to millisecond timescale. Internal chromatin dynamics are exploited by transcription factors to invade chromatin structure. Using single-molecule imaging, we recently revealed DNA access mechanisms for pioneer TFs, genome editors and centromeric proteins. Overall, our results show that compact chromatin structure hinders factor access, but mechanisms that open nucleosome contacts, including histone variants and chromatin remodeling complexes can help key factors to overcome these obstacles.

Magnetic Tweezers Investigations of the Type IA Topoisomerase of Mycobacterium Smegmatis

Maria Mills
Type IA topoisomerases relieve torsional strain in supercoiled DNA. These enzymes work by cleaving the backbone of one strand of a DNA duplex, passing the other strand through the break, and re-ligating the DNA. We have used magnetic tweezers to characterize Mycobacterium smegmatis topoisomerase I (MsmTOP1). In addition to a conserved core domain common to all type IA topoisomerases, Mycobacteria type IA topoisomerases have unique DNA-binding C-terminal domains that are involved in passage of the second DNA strand through a protein-mediated DNA gate. In separate magnetic tweezers assays, we measured the supercoil relaxation activity and DNA-gate dynamics of the wildtype and mutants lacking portions of the C-terminus. Our results

provide new information on the role of these C-terminal domains in the topoisomerase activity.

Speakers
Eric Drier, Senior Scientist, Mad City Labs Inc
Beat Fierz, École Polytechnique Fédérale de Lausanne, Switzerland
Maria Mills, Department of Physics and Astronomy, University of Missouri
Francesco Reina, Leibniz-Institut für Photonische Technologien e.V. and Institute of Applied Optics and Biophysics, Friedrich Schiller University Jena, Germany

3:30 PM – 5:00 PM

Fluxion Biosciences

From Immunology to Ion Channels: Microfluidic Approaches to Automated Patch Clamp and Cellular Analysis. A Look at IonFlux Mercury and BioFlux Systems from Fluxion Biosciences.

Leveraging proprietary microfluidic approaches, Fluxion Biosciences provides unique solutions that simplify and automate complex cell-based assays. This presentation will cover two Fluxion systems used extensively in biophysical characterization of cells: IonFlux and BioFlux.

IonFlux Mercury automated patch clamp (APC) systems are capable of recording from 16 to 256 separate cells simultaneously in whole cell patch clamp mode. With unique features such as industry-leading fast in-plate compound exchange and continuous solution flow, IonFlux systems are used globally in pharma and academic laboratories for both ligand and voltage-gated ion channel screening. Recent developments include automated IC/EC50 calculation workflows, and the introduction of a new range of GABA cells for complete sample-to-result analysis.

The BioFlux system is the world's leading platform for analyzing cell-cell interactions in a flow-controlled environment. Applications include characterization of cell migration, adhesion strength, transmigration, and chemotaxis. BioFlux assays for research and drug development in immunology, vascular biology, and cancer will be reviewed. Recent research in covid-induced thrombocytopenia and functional analysis of CAR-T cells will be highlighted.

Speakers
Jeff Jensen, Chief Executive Officer, Fluxion Biosciences
Ali Yehia, Chief Scientific Officer, Fluxion Biosciences

5:30 PM – 7:00 PM

LUMICKS

From Dynamic Single-Molecule Data to Direct Quantitative Insights into Biological Mechanisms

The value of dynamic single-molecule research in providing direct insight into the molecular mechanisms of biology has been proven for many years. However, this realm of science has long been accessible only to experts that could build and operate complex instruments, had the knowledge to produce specific samples, and could develop sophisticated methods for analyzing the data.

The LUMICKS C-Trap enabled studying dynamic molecular mechanisms with a ready-to-go instrument. It uniquely correlates single-molecule force and fluorescence measurements to capture all molecular interactions in real time. With the release of biochemistry products, scripting library, and sharing platform an ecosystem was initiated with the aim to provide researchers with all the tools to do their research. We are now taking the next big step in this by launching Lakeview data analysis: a software platform that enables any scientist to instantaneously analyze their science – from raw data to quantitative insights into mechanisms with a couple of clicks.

In this talk we will present Lakeview and show how it can be used to organize, manage, and visualize all your dynamic single-molecule data on any laptop and PC. We will show how it enables automatic tracking of the location and dynamics of individual proteins on DNA and how that can be used to instantaneously visualize resulting data. From here you gain direct quantitative insights into biological mechanisms. And there is more to come!

Speaker
Trey Simpson, Application Scientist Manager, LUMICKS

Room 9: Monday, February 20

9:30 AM – 11:00 AM

Nanion Technologies

Need for Speed: No Limits for Automated Electrophysiology

For over 20 years, Nanion Technologies has been providing diverse solutions for electrophysiologists worldwide. We aim to successfully implement innovative technologies in the fields of ion channel automated patch clamp (APC) electrophysiology, monitoring of cell viability and contraction, as well as electrogenic transporters, with various throughput capabilities. This year, our symposium will start with an introduction by Dr. Andrea Brüggemann (CSO, Nanion) who will guide you through the overall capabilities of Nanion´s portfolio. Following this, we will welcome our speakers, whose work focuses on ion channel and transporter physiology and pathophysiology.

Dr. Jean-Francois Rolland will provide an overview of when and how automated patch clamp instruments are used for supporting ion channel drug discovery programs (cell line generation, primary screening, hit-to-lead/SAR, compound profiling and / or "mode of actions" studies) in Axxam. Dr. Rolland's presentation will also include a comparison of data generated using surrogate techniques and with the manual patch clamp. In particular, he will describe experiments where the intracellular solution perfusion, an extremely difficult technique to perform using conventional patch clamp, was used with ease using the Port-a-Patch and SyncroPatch 384. Additionally, Dr. Rolland will show experiments where ligand-gated ion channels were studied using the 'Ligand Puff' feature of the SyncroPatch 384 (fast external solution addition and low exposure times) and finally, give a glimpse of how automated patch-clamp can be associated with optogenetics.

Dr. James Costantin will focus on activation and pharmacology nicotinic acetylcholine receptors. Nicotinic acetylcholine receptors (nAChR) are cation-permeable ion channels, which mediate fast synaptic transmission when activated by the endogenous neurotransmitter acetylcholine (ACh) or the exogenous natural alkaloid, nicotine. nAChα7R are widely distributed in the mammalian brain including in the cerebral cortex, hippocampus, basal ganglia and cerebellum and have been proposed to play a role in many neurological disorders such as Alzheimer's Disease, Parkinson's, schizophrenia and depression. The most abundantly expressed nAChR in the mammalian brain are the α7 homomeric and α4β2 heteromeric receptors. Nicotinic α7 are particularly challenging to record using patch clamp because of their extremely fast desensitization. Dr. Costantin will show activation and pharmacology of α4β2 and α7/ric3 receptors using

the well-based high throughput automated patch clamp system, the SyncroPatch 384.

Transporters and ion pumps are transmembrane proteins that facilitate ion flux across biological membranes against their concentration gradient. Solid supported membrane (SSM) electrophysiology using the SURFE2R instruments from Nanion can be used to measure electrogenic membrane transport, even with low turnover rates, as well as ligand-gated, and leak channels. Any membrane source can be used, meaning that intracellular transporter and channels still present in organellar membrane can be targeted using this method, allowing for direct and functional recordings in a physiologically relevant context. Transporters and intracellular ion channels are increasingly important pharmacological targets for the treatment of a wide variety of diseases. In this presentation, scientist Nataliia Dmitrieva, will present her work on the molecular basis of the function of DgoT, a bacterial homolog of vesicular glutamate transporters.

Speakers
Andrea Brüggemann, CSO, Nanion Technologies
James Costantin, Scientific Market Development Manager – Ion Channels, Eurofins DiscoverX
Nataliia Dmitrieva, Forschungszentrum Jülich
Jean-Francois Rolland, Head, Electrophysiology, Deputy Director, Discovery Services Axxam SpA

11:30 AM – 1:00 PM

axiVEND – iRiS Kinetics

Accurate Binding Kinetics for Biological Nanoparticle Analytes

Accurate characterization of kinetic interactions between biological ligands and analytes is crucial for research in diagnostics and therapeutics. Application areas of label-free kinetics are broad – ranging from drug and antibody screening to characterization of viral carriers for gene therapy and vaccine development. For these diverse applications, the size of biological analytes has a size range spanning many orders of magnitude. Label-free sensing platforms and sensor chips are often optimized for the type of analyte target, for example, Surface Plasmon Resonance (SPR) sensors have thickness and density of the surface hydrogel chemistry optimized for detection of analytes based on their molecular weights. Here, we present a sensor platform that provides accurate binding characterization of broad range of analytes and combines label-free detection of ensembles and single particles on a single reader instrument.

Interferometric reflectance imaging sensor (IRIS) technology is based on interference of light from an optically transparent thin film—the same phenomenon that gives rainbow colors to a soap film when illuminated by white light. IRIS has two modalities: (i) low-magnification (ensemble biomolecular mass measurements) allowing for multiplexed affinity measurements and (ii) high-magnification (digital detection of individual nanoparticles). Single particle IRIS has been demonstrated for multiplexed detection and characterization of individual biological nanoparticles (BNP) such as extra-cellular vesicles and virions in complex samples using disposable cartridges. Low magnification IRIS offers large field of view and ability to simultaneously quantify binding of analytes to highly multiplexed probe molecules arrayed on the sensor surface. However, accurate characterization of large analytes (50-150nm size) presents challenges due to non-linearity of the optical interference signal with surface binding of sparse BNP analytes. We have recently demonstrated that the affinity of large analytes (extracellular vesicles) can be characterized, qualitatively, on IRIS chips benefiting from IRIS' capability of uniform illumination at different wavelengths. In this presentation, we will discuss how the improved IRIS platform can bridge the gap between single-particle detection ('digital' configuration) and ensemble reflectance measurements ('analog' configuration), creating a new 'hybrid' system (h-IRIS), providing a substantial improvement in sensitivity, improving the limit of detection by nearly three orders of magnitude. This new hybrid configuration of IRIS combines the advantageous features of high-magnification and low-magnifications modalities. Unique capability of the IRIS platform to conduct kinetic binding measurements of individual analytes has been also demonstrated for antibody characterization and a novel competition assay for therapeutic antibodies for viral infections. We believe that the scientific community will greatly benefit from our approach of combining SP-IRIS platform and use of whole virus particles for obtaining competition information for monoclonal antibodies.

Speaker
Selim Unlu, Distinguished Professor, Boston University

3:30 PM – 5:00 PM

HORIBA Scientific

A-TEEM Molecular Fingerprinting for Biopharmaceutical Products Such as Vaccines, Insulin, Viral Vectors (AAVs), Cell Media, Exosomes, and More

A-TEEM is a novel, robust, and extremely sensitive analytical technique comprising the best attributes of molecular spectroscopy (speed, low per measurement cost, lab-to-line placement) and chromatography (sensitivity, selectivity, low limits of detection and quantification).

The A-TEEM technique combines absorbance and fluorescence spectroscopy in one simultaneous measurement, providing five characteristics that together create a unique A-TEEM fingerprint: The Extinction Coefficient and Absorbance Spectrum (from absorbance) as well as Quantum Efficiency and the entire Excitation and Emission Spectrum in the form of 3D EEM from fluorescence. The absorbance information is also used to correct the fluorescence EEM for inner filter effects, thus facilitating truly quantitative and highly selectable molecular fingerprints.

A-TEEM fingerprints of very similar components are often unique, enabling quantitative analysis of responsive components to ppb levels. This makes it a natural fit for the characterization of many relevant biopharmaceutical products such as Vaccines, Insulin, Viral Vectors (AAVs), Antibody-Drug Conjugates (ADCs), Cell Media, Exosomes, CRISPr/CAS9, and more.

As a spectroscopic tool, A-TEEM can be deployed for process analytics, used to monitor bioprocesses, or screen for batch-to-batch variance across a variety of relevant biomolecules.

Putting a sample in a cuvette is often the only preparation needed for measurement. For some quantitative measurements, sample dilution may be required.

Speaker
Linda Kidder Yarlott, Life Sciences Business Development Manager, HORIBA Scientific

5:30 PM – 7:00 PM

Elements srl

Nanopore Measurements at 10 MHz Bandwidth: Let's See the Hidden Data You Were Looking For!

From its introduction in February 2022 of the new 10 MHz bandwidth Nanopore Reader, several labs have started to use our new powerful instrument, featuring unprecedent results and signal quality in high bandwidth nanopore measurements.

We will present data from a recent work of Prof. Marija Drndic about ultrafast translocation and dynamics of double stranded DNA through a nanopore at 10 MHz bandwidth with acquisition of data points per 25 nanoseconds (150 MB/s). By introducing a rigorous algorithm, it was accurately identified each current level present within events. Remarkable sensitivity of this system reveals distortions of short-lived states at a lower bandwidth. This work develops broadly applicable methods that will help uncover a wide range of biomolecular dynamics at unprecedentedly small timescales.

10 MHz bandwidth allows to observe protein conformation and kinetics never observed before: here we present the latest results from protein measurements.

Speakers
Marija Drndic, Professors of Physics, University of Pennsylvania
Federico Thei, CEO, Elements srl

Room 9: Tuesday, February 21

9:30 AM – 11:00 AM

Bruker

Single-Molecule Localization Microscopy for Advanced Biological and Genomic Imaging in Three Dimensions: The Bruker Vutara VXL

Most sub-cellular structures are smaller than 300 nm, beyond the optical resolution limit for fluorescence microscopy. The single-molecule localization microscope (SMLM) Bruker Vutara VXL overcomes this limitation. With an optical resolution of 20 nm, SMLM is uniquely qualified to address biological mysteries that require specific labeling as used in fluorescence microscopy but higher resolution than can be achieved with diffraction-limited microscopy. In addition to SMLM, the Vutara VXL implements imaging workflows for multiplexed chromatin tracing and smFISH applications. The system images, resolves, and quantifies cellular structures, molecular machines, proteins, RNA, and chromosomal structures.

SMLM modulates the emission from dye molecules to prevent their point-spread-function (PSF) spatial overlap. Advanced fitting algorithms localize the position of each dye molecule with a resolution well below the optical resolution limit. The proprietary bi-plane technology of the Bruker Vutara VXL extends the traditional 2D fitting into the third dimension, far away from the coverslip. In STORM and PALM, a laser switches dye molecules actively on and off. Special imaging buffers create a similar blinking spontaneously in dSTORM. DNA-PAINT relies on oligonucleotides' transient binding, and genomic applications use sparse labeling and multiplexing.

In this presentation, we will discuss how the Bruker Vutara VXL compact bench-top system brings the power of SMLM into your lab.

Speaker
Winfried Wiegraebe, Product Manager Super-Resolution Microscopy, Bruker

11:30 AM – 1:00 PM

Sophion Bioscience A/S

Electrophysiological Characterization of Cardiac Myocytes Using Sophion Bioscience's Automated Patch Clamp Systems and the Intracellular Side of Axxam Electrophysiology

Successful ion channel drug discovery requires the integration of multiple technologies and workflows. Sophion Bioscience is a leader in automated patch clamp technology, providing low, medium and high throughput patch clamp systems to the drug discovery industry and academia. The QPatch and Qube are fully automated patch clamp systems, executing simultaneous 16, 48 or 384 parallel patch clamp recordings in conjunction with computer controlled liquid handling and on-board cell handling. The QPatch Compact is a manual patch clamp system that can execute individual or simultaneous 8 patch clamp recordings. Sophion provides customers with robust, ion channel and electrophysiological workflows for drug development of ion channel targets.

During this workshop, industry speakers will provide insight into the use of these systems in the drug discovery process. Dr Daniel Sauter will present automated patch clamp data to show the electrophysiological characterization of cardiac myocytes using automated patch clamp on Sophion Bioscience systems. Dr Manuel Paina will present data on the use of Sophion to research intracellular ion channel targets.

Speakers
Daniel Sauter, Scientific Sales Manager, Sophion Bioscience A/S
Manuel Paina, Organellar Electrophysiology Supervisor, Axxam S.p.A

1:30 PM – 3:00 PM

Delmic

Streamline the Cryo-ET Workflow and Get More Useful Biological Insights with Delmic's METEOR and CERES Systems

Cryo-ET is a powerful imaging technique that allows protein complexes in their near-native cellular environment to be resolved at a nanometre resolution. Unfortunately the uptake of this powerful technique is hampered by its current error prone workflow, which often results in damaged, contaminated, and devitrified samples that cannot be used for data analysis. At Delmic we developed a host of technologies to unleash cryo-ET's full potential.
We will present METEOR, a fluorescent light microscope that is directly integrated into a cryo-FIB/SEM. It allows the user to skip unnecessary transfer steps and therefore decrease ice contamination. The presence of the targeted fluorescent signal in the lamellae can be checked during and after the milling process and cryo-CLEM data quality is improved. METEOR can therefore dramatically increase cryo-ET sample yield.

We will also present the CERES Ice Defence System, which increases sample throughput and quality by minimizing ice contamination throughout the cryo-ET sample preparation workflow. We will show that the samples can be prepared contamination free in the CERES Clean Station, a dedicated and moisture free workstation for cryo-ET sample preparation. From this workstation the samples can be transferred to the cryo-FIB/SEM using the CERES Vitri-Lock providing a high vacuum, anhydrous environment. In the FIB/SEM the sample is protected by the CERES Ice Shield, which protects against amorphous ice build-up on the sample. This protection is crucial for high cryo-ET data quality and allows long automated milling sessions.

Delmic's cryo solutions allow researchers to obtain better quality cryo-ET results, higher throughput, and higher resolution.

Speaker
Marit Smeets, Product Manager, Delmic

Room 10: Sunday, February 19

10:30 AM – 12:00 PM

Carl Zeiss Microscopy LLC

Discover How Accessible Lattice Light Sheet Technology and Image Analysis Really are with ZEISS Lattice Lightsheet 7

In order to best understand the world around us it is necessary to observe microscopic specimens in as natural a state as possible. This requires a transition from imaging fixed to live specimens and expanding from 2D to 3D model organisms. The drive towards live-cell imaging over long timeframes and at high volume speeds brings new challenges. There is evidence that traditional imaging techniques can influence the behavior of specimens due to phototoxicity, thus affecting the integrity of the results, and with the push to perform long-term volumetric imaging comes a need to analyze increasingly larger data sets.

This talk will describe how ZEISS Lattice Lightsheet 7 makes long-term volumetric imaging of living cells with subcellular resolution possible without having to change your standard sample preparation protocols to accommodate the instrument. With automatic alignment and easy acquisition workflows, lattice light-sheet imaging is now as accessible as using a standard inverted microscope. ZEISS ZEN microscopy software and arivis Vision4D provide analysis pipelines which can easily be utilized to go from large image datasets to results.

Join us for this presentation to learn how accessible lattice light sheet technology and image analysis really are with ZEISS Lattice Lightsheet 7, ZEN microscopy software and arivis Vision 4D.

Speaker
Renée Dalrymple, Life Science Business Sector Marketing Manager, Carl Zeiss Microscopy LLC

12:30 PM – 2:00 PM

PicoQuant Photonics North America Inc

Quantitative, Reproducible Fluorescence Microscopy Made Easy

Quantitative single molecule and time-resolved fluorescence techniques offer new insights into many samples in life and materials sciences. So far, their adoption has been slow because expert knowledge was required for correct data acquisition and analysis. Now, PicoQuant developed a new single photon counting confocal microscope, called Luminosa. It combines state-of-the-art hardware with cutting edge software to deliver high quality data while simplifying daily operation. The system software includes context-based workflows for each technique, which improve accuracy and reproducibility of experiments.

Advanced integration of hardware and software enables new features such as sample-free auto-alignment, excitation laser power calibration, and automatic configuration of hardware parameters for time-resolved measurements. These features make experiments more efficient and reliable.

Dr. Koenig and Dr. Sisamakis will present how Luminosa brings single molecule Förster Resonance Energy Transfer (smFRET) experiments to a new level. For example, FRET efficiency (E) and stoichiometry (S) are calculated online, corrected according to the standard procedure of the community, and displayed live in an E/S histogram during the measurement.

Finally, Dr. Koenig and Dr. Sisamakis will describe how fluorescence lifetime imaging (FLIM) is streamlined with Luminosa. Its rapidFLIM hardware can record several frames per sec with very high photon count rates. The software handles these with a novel dynamic binning format. In combination with GPU-accelerated algorithms, this enables high-speed analysis of FLIM images. The automated analysis algorithm suggests the best model for multiexponential fitting, calculates a phasor plot and offers pattern matching.

A lot of expert knowledge went into the design of Luminosa. This empowers researchers to confidently explore new paths with time-resolved fluorescence techniques.

Speakers
Evangelos Sisamakis, Product Manager Microscopy, PicoQuant GmbH
Marcelle Koenig, PicoQuant GmbH

2:30 PM – 4:00 PM

Oxford Instruments

Multi-Modal Microscopy: Challenges and Workflows for Correlative Microscopy Acquisition and Analysis

Correlative microscopy data is beautiful and incredibly complex, particularly when dealing with data acquired at significantly different magnification scales, 3D data, data acquired using analytical techniques or dynamic data that has been acquired at multiple time points with more than one type of imaging technique. Combining multiple microscopy techniques can have more than one purpose, enabling researchers to better target regions of interest and optimize microscope and researcher time, and also to enable a deeper insight into the structural and functional properties of your sample.

Where do you begin with multi-modal microscopy?
This interactive workshop will take you through some of the considerations for biological microscopists when approaching correlative microscopy, including sample preparation, how to find your regions of interest, and how to determine the sequence of microscopy techniques. We will also provide case studies using a range of techniques for correlative microscopy research on biological samples, including analytical techniques that go beyond structural imaging; Raman spectroscopy, atomic force microscopy (AFM), electron microscopy, and energy dispersive x-ray spectrometry (EDS).

How do you analyze the data?
Collecting the data is only the start, a significant proportion of research time is spent on data collation and interpretation. The final part of this workshop will discuss techniques to process correlative data and optimize your analysis, taking you beyond image overlays through to producing quantitative, analytical results.

Speaker
Louise Hughes, Business Manager, Oxford Instruments

4:30 PM – 6:00 PM

Fluidic Analytics

Introducing Microfluidic Diffusional Sizing (MDS) Technology; Quantify and Characterize any Protein Interaction – Even In Complex Backgrounds, Even with Challenging Targets

Studying protein interactions is of fundamental importance in a wide variety of research fields, including neurobiology, oncology, immunology, structural biology, and molecular biology.

The more scientists understand about protein interactions, the more we will know about the inner workings of a cell, and crucially, the better we will understand what happens when normal cellular function is subverted in human disease. But, with a multitude of different technologies on the market, how do researchers know which technique is right for them?

Microfluidic Diffusion Sizing technology (MDS) brings a new tool to the analytical characterization toolbox: a different approach that enables the analysis of protein interactions close to in vivo conditions.

Measuring What Matters
With MDS, scientists can determine affinity of interaction (KD), concentration of bound protein, and stoichiometric information, in solution, and all in a single experiment, whether using simple biological buffer systems or complex backgrounds such as serum, plasma, saliva, and cell lysates.
The MDS technology enables quantification and characterization of any protein interaction – even in complex backgrounds or with challenging targets

- Characterize membrane proteins
- Track functional immune response in serum samples
- Reveal therapeutic antibody / protein interaction mechanisms
- Characterize disordered proteins, higher-order complexes, or amyloids under close to in vivo conditions
- Explore aggregation effects and distinguish between specific and non-specific binding

During our presentation we will describe a series of case studies and collaborations with pioneering researchers covering such topics:
- Purification-free affinity and concentration measurement of membrane-protein targets
- Determination of antibody affinities and concentrations directly in clinical samples
- In-solution measurement of antibody affinities and binding stoichiometries to neurotoxic amyloid species
- Binding of Fc-engineered IgG antibodies to FcRn
- In-solution affinity measurement of a drug-induced protein complex

Speaker
Molly Coseno, Sales Application Specialist, Fluidic Analytics

Room 10: Monday, February 20

10:30 AM – 12:00 PM

Bruker

EPR Research Solutions from Routine Analytics to High-End Experimentation

Ralph Weber

Bruker EPR presents new hardware and software advances to answer your research needs.

NMR Research Solutions for Biophysical Applications

Clemens Anklin

After the successful introduction of 1.2 GHz magnets, Bruker BioSpin has been able to apply the HTS technology to create a 1.0 GHz system with a significantly smaller footprint. The Ascend EVO 1 GHz magnet operates at 4.2 K, using 1.3 of the amount of helium of previous 1GHz magnets. Due to its reduced height and smaller stray field, it can easily be sited in a single story lab. Other new developments include probes, acquisition, processing, and analysis software.

Speakers
Clemens Anklin, Vice President of NMR Applications, Bruker BioSpin Corporation
Ralph Weber, Senior Applications Scientist, Bruker BioSpin Corporation

12:30 PM – 2:00 PM

Leica Microsystems

Molecular Interaction Across Imaging Modalities with the Leica STELLARIS Confocal Platform

Molecular interactions and dynamics are the foundation of cellular machinery. For molecules to interact, they must come close enough in space so they can exert a chemical influence on their molecular environment. Confocal fluorescence imaging became a pillar in such endeavors for the specificity conferred by fluorochromes, and the spatial context, spatial and temporal resolution for the inherent dynamic nature of the interaction process.

The ultimate tool of choice to study the interaction of two molecules is Förster Resonant Energy Transfer (FRET), where the molecules of interest are tagged with probes that act as a “donor-acceptor pair” (1).

Many FRET approaches rely on intensity-based measurements such as quenching of donor, acceptor photobleaching, and sensitized emission. Intensity-based FRET requires basic instrumentation but has high risks of artifacts from experimental design.

The gold standard to measure FRET is FLIM (fluorescence lifetime imaging microscopy), as the FRET readout here depends only on the donor fluorescence lifetime changes. The analysis of FLIM-FRET can be done by fitting the fluorescence decay with a multi-exponential model or non-fitting methods, such as phasor FLIM (2) and minimal fraction of donor molecules (mfD) approach (3). All these approaches are available in the

STELLARIS confocal platform. In particular, mfD has been implemented as a TauSense tool named TauInteraction.

The advanced tools of STELLARIS confocal platform are also available under cryogenic conditions, enabling advanced cryo correlative (cryo-CLEM) studies. Here, new cellular mechanisms can be unraveled. Intracellular protein interactions can be further resolved by cryo electron microscopy (EM) down to the subnanometer scale. To increase the success rate of these types of studies, Cryo light microscopy enables the identification of specific target proteins prior to the EM imaging. LIGHTNING and TauSense provide high accuracy in identifying and targeting the desired proteins for further analysis.

Speaker
Giulia Ossato, Senior Product Manager, Leica Microsystems

2:30 PM – 4:00 PM

Nanosurf

Application of Low-Force Photothermal Off-Resonance Tapping for In Situ AFM Imaging of Soft Virus Capsids

The atomic force microscope (AFM) is becoming an essential tool to image and measure the mechanical properties of biological samples in near-physiological conditions. Unlike optical or electron microscopy techniques, samples measured by AFM require very minimal preparation. The primary feedback mechanism in AFM is the force between the sample being measured and a probe. When working with soft biological samples, the force generated by the probe can often be enough to cause irreversible damage, or in some cases, physically remove the sample from the substrate if lateral stresses become too high. For this reason, imaging soft biological materials such as virus capsids on top of another soft substrate material such as cells or tissue continues to be a challenge for the AFM community.

One of the most popular dynamic force AFM imaging techniques (sometimes called amplitude modulation or tapping mode) works by trying to maintain the amplitude of an oscillating probe near is resonance frequency as it traces the contours of a surface. While it is simple enough to measure changes in amplitude, using this to determine how much force was applied to the surface requires complex technical modeling, which is oftentimes beyond the interest of general microscopists. More often, it takes a skilled AFM operator to instinctively know what settings to use for any specific sample. Developing this level of expertise has a steep learning curve and it is often frustrating for those new to the technique.

Photothermal off-resonance tapping mode (e.g. WaveMode) is a technique that combines the force selectivity of contact mode while at the same time minimizing sheer or lateral forces, which can displace loosely bound or soft materials. The benefits of a photothermally actuated cantilever for imaging at or near the resonance of the cantilever for biological applications has been well documented. Using the same photothermal light source to drive the cantilever off-resonance is a more novel technique. First, since the measurement is done off-resonance, the Q-factor of the cantilever is irrelevant, and thus the imaging bandwidth increases. Second, because the feedback mechanism is force-deflection via amplitude truncation and not peak-to-peak amplitude reduction, the force that is applied to the sample can be precisely controlled down to the low pico-Newton range. Third, off-resonance tapping mode is still considered an intermittent contact mode meaning that the probe only interacts with the surface for only a small portion of its oscillation, thus minimizing lateral stress while the probe is scanned across the surface.

Recently, WaveMode was used to image HSV-1 virus capsids on a soft rat-liver nuclei substrate. One of the challenges for imaging this type of sample with AFM is that the capsid is expected to be stiffer than the surrounding substrate, which could cause the capsid to be pushed into the nuclei. It has been shown that the nucleus exhibits a viscoelastic stiffness response, which increases its stiffness as the AFM indentation velocity increases. Thus, imaging in WaveMode causes the nucleus to stabilize around the capsid and allows for clean images of the complex.

Speaker
Eugene Ogorodnik, Technical Sales and Applications, Nanosurf

4:30 PM – 6:00 PM

Sutter Instrument

Scientists Empowering Scientists

For almost 50 years, Sutter Instrument has been collaborating with researchers. During this period, there have been many technological evolutions in both imaging and patch clamp electrophysiology. 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 for both pipette fabrication and electrophysiology, and showcase new products, such as the Lambda 721 Optical Beam Combiner and the NAN™ Open-Design Upright Microscope.

Registration is available online through the Sutter Event Registration Page (https://sutter.eventbrite.com). The number of available spaces is limited, and registrations are accepted on a first-come-first-served basis.

Speakers
Chris Ballard, Vice President, Sutter Instrument
Adair Oesterle, Support Engineer, Sutter Instrument
Telly Galiatsatos, Product Manager, Patch Clamp Systems, Sutter Instrument

Company Name *Booth Number*

89 North 519

20 Winter Sport Lane, Suite 135
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Originally founded as a manufacturer of illumination systems for fluorescence microscopy, 89 North now also distributes a broad range of instruments for microscopy manufactured by Cairn, Crest, Rapp, and 89 North. Complementing these product offerings, and in addition to offering these commercial products, 89 North provides comprehensive contract engineering and manufacturing solutions for the OEM community.

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Abbelight 612

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Founded in 2016, Abbelight is a fast-growing start-up specialized in super-resolution fluorescence microscopy (SMLM). The product portfolio integrates a constantly evolving know-how and allows Abbelight to offer a complete solution, from sample preparation to data management, including modular instrumentation that can be adapted to researchers' needs. At Abbelight we aim to support global life science actors in their own research, as well as multiple application areas of tomorrow.

Abberior Instruments America 705

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Abberior Instruments is an innovator and manufacturer of super-resolution microscopes. Our STED microscopes meet a range of user needs. The 2D STEDYCON is compact, reliable, and easy to use for even new users. Our Facility Line 3D STED system is ideal for core facilities that need to support a large number of users. And our Infinity Line 3D STED systems features open architecture that supports your research needs immediately and into the future. Our MINFLUX system is the first commercially available fluorescence light microscope with 3D resolution capabilities down to the size of a molecule.

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Avanti is primarily focused on developing innovative lipid-based products of unparalleled purity to address specific medical challenges that are not resolved by current technology or drug products. For over 30 years, Avanti has been working with the pharmaceutical and diagnostic industry to provide solutions that save or improve lives. More recently, we have concentrated on developing the lipid components used in Lipid Nanoparticle (LNP) delivery technology to solve the stability and delivery issues associated with mRNA-based vaccines and therapeutics, as well as gene editing technology.

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Delmic is a passionate high-tech company based in Delft, the Netherlands that develops powerful and user friendly solutions for light and electron microscopy. Since Delmic was founded in 2011, the company's goal was to create powerful and easy-to-use microscopy systems for the researchers who are looking into the essence of things every day. Delmic's product line consists of cathodoluminescence solutions, fast electron microscopy systems, and solutions that optimize the cryo-ET workflow.

Dynamic Biosensors 918

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Etaluma is a bio imaging technology company offering compact microscopy technologies including multichannel fluorescence, solid state filters, and small form factor for high resolution, high-photonic efficiency, camera compatibility, and flexible motion control. The inverted design allows live cell imaging inside incubators and hoods producing single images, time-lapse movies, or live video. We offer low power OEM microscope modules to be integrated into clinical and research instruments that greatly accelerate instrument development for our partners.

Evident Scientific 818

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Evident Life Science empowers scientists and researchers through collaboration and cutting-edge life science solutions. Dedicated to meeting the challenges and supporting the evolving needs of its customers, Evident Life Science advances a comprehensive range of clinical research, educational, and premium microscopes and microscope systems.

Exciting Instruments 532

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Fida Biosystems Aps 808

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FIDA technology quantifies biomolecules and characterizes their behavior in complex samples like plasma, serum and fermentation broth. It is possible to work with molecules and particles ranging from 0,5-1000 nm. FIDA offers highly reproducible in-solution data, rapid assay development and minimal sample preparation while consuming only nL of sample.

Fluidic Analytics 910

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United Kingdom
fluidic.com

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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.

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Company Name Booth Number

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ION Biosciences is a reagent and assay technologies company headquartered in San Marcos, TX. We specialize in pioneering new approaches to ion channel and ion transporter-focused basic and translational research. ION provides reagents, assays, and assay development services. Our hallmark products include fluorescent calcium, sodium, and thallium assays.

IonLab 530

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med.nyu.edu/research/scientific-cores-shared-resources/ion-laboratory

IonLab is part of the Ion Channels and Transporters in Immunity (ICTI) Research Program in the Department of Pathology. IonLab was created to facilitate research in the area of ion channel and transporter function and ionic signaling in immune cell, but is open to any user who studies ion channels and transporters, regardless of cell type or organ system.

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Journal of General Physiology (JGP) publishes mechanistic and quantitative cellular and molecular physiology of the highest quality; provides a best-in-class author experience; and nurtures future generations of researchers. Editorial decisions on research manuscripts are made through a collaborative consultation between the Editor-in-Chief and Associate Editors, all of whom are active scientists. JGP was established in 1918. JGP Editor-in-Chief David Eisner is The British Heart Foundation Professor of Cardiac Physiology at Manchester University. We look forward to discussing your research.

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Speakers: Francesco Reina (Leibniz IPHT/ Friedrich Schiller University Jena), Beat Fierz (EPFL), Maria Mills (Univ. of Missouri). See program for individual abstracts.

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www.cancer.gov/research/resources/cryoem

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National NMR Resources 704

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The Company of Biologists 201

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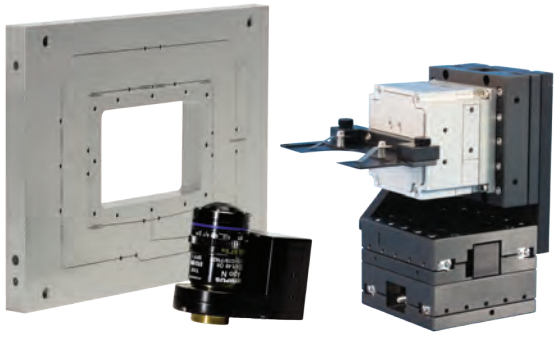
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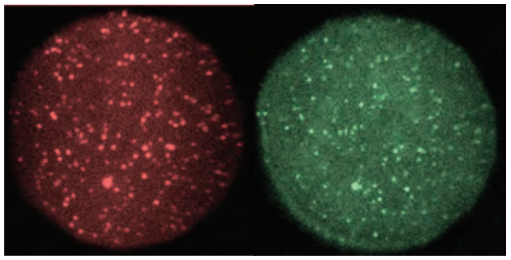
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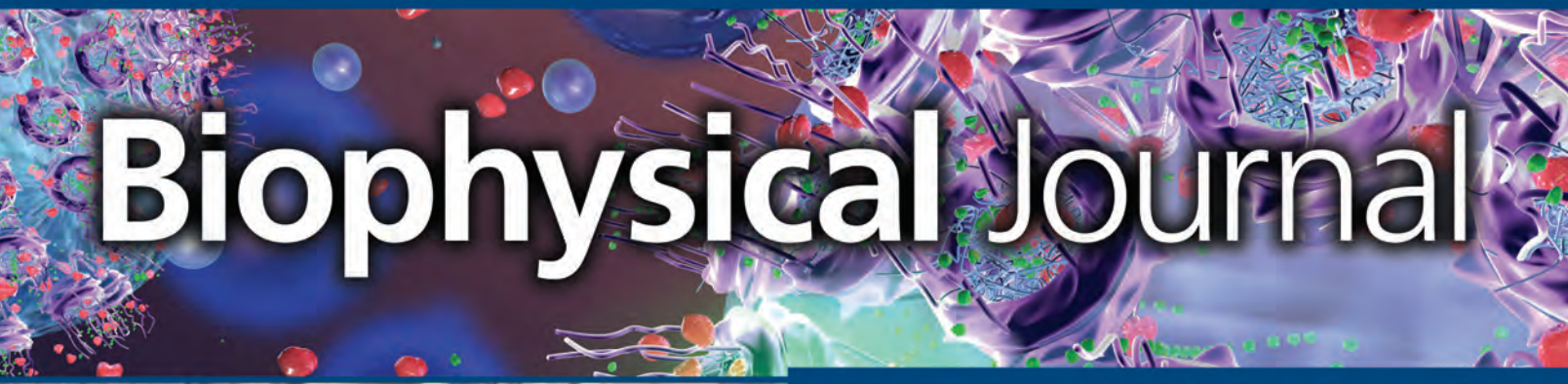
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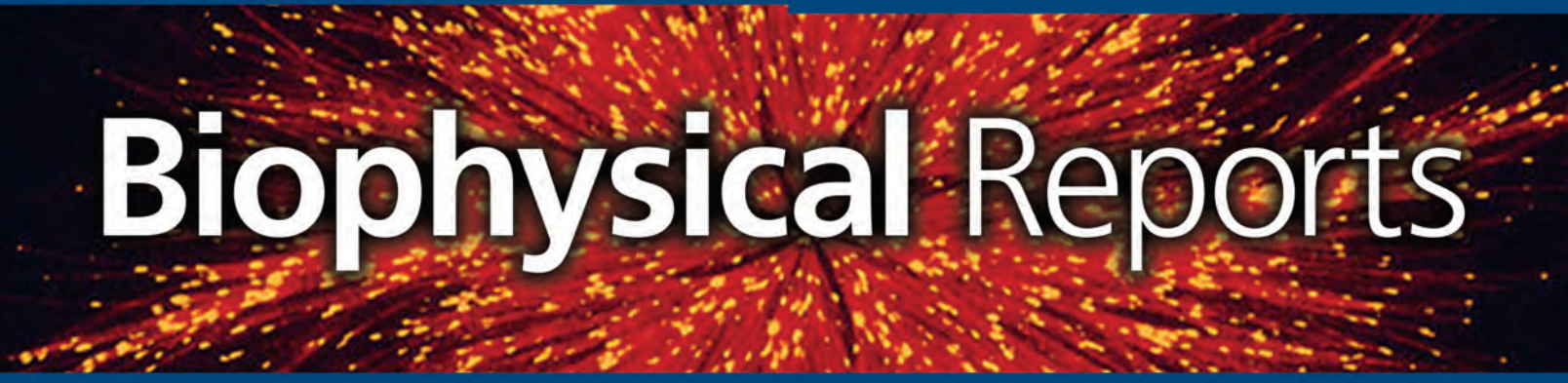
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