The Biophysical Society is grateful to its Industry Partners.

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

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

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

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

Research Articles are invited in the following categories:

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

Reports are invited in the following areas:

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

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

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GUIDE TO THE ANNUAL MEETING

About the BPS Annual Meeting

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

Scientific Sessions

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

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

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

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

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

**Biophysical Society Lecture**
- One-hour presentation by a world-renowned biophysicist

Professional Development

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

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

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

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

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

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

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

Social and Networking Events

**Opening Reception**
- Hors d’oeuvres and cash bar

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

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

**Monday Evening Reception**
- The place to meet, drink, eat, dance, and socialize with other meeting attendees

**Exhibitor Presentations**
- Opportunity to meet and socialize with new members and members of Society governance and committees

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.

<table>
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PLEASE NOTE: POSTERS WILL NOT BE COLLECTED OR STORED FOR PICK UP AT A LATER TIME.
OVER 45 YEARS OF QUALITY PERFORMANCE AND INNOVATION

AMPLIFIER SYSTEMS
MICROMANIPULATION
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2020 Biophysical Society Lecturer

**Sunney Xie**  
Peking University, Beijing, China  
*From Single-Molecule Biophysics to Single-Cell Genomics: When Stochasticity Meets Precision*

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

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

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Olympus America Inc
Photonics Media
Physics Today
Sophion Bioscience A/S
Sutter Instrument
The Company of Biologists
The Journal of Physical Chemistry B
The Journal of Physical Chemistry Letters
Wyatt Technology

As of January 10, 2020
The Biophysical Society (BPS) is committed to providing an environment that encourages the free expression and exchange of scientific ideas. As a global, professional society, the BPS is committed to the philosophy of equal opportunity and respectful treatment for all, regardless of national or ethnic origin, religion or religious belief, gender, gender identity or expression, race, color, age, marital status, sexual orientation, disabilities, veteran status, or any other reason not related to scientific merit.

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

**Definition of Harassment**

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

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

Attendees or participants who are asked to stop engaging in harassing behavior are expected to comply immediately. Anyone who feels harassed is encouraged to immediately inform the alleged harasser that the behavior is unwelcome. In many instances, the person is unaware that their conduct is offensive and when so advised can easily and willingly correct the conduct so that it does not reoccur. Anyone who feels harassed is NOT REQUIRED to address the person believed guilty of inappropriate treatment. If the informal discussion with the alleged harasser is unsuccessful in remedying the problem or if the complainant does not feel comfortable with such an approach, they can report the behavior as detailed below.

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

**Reporting a Violation**

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

To report a violation to BPS:

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

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

**Investigative Procedure**

All reports of harassment or sexual harassment will be treated seriously. However, absolute confidentiality cannot be promised nor can it be assured. BPS will conduct an investigation of any complaint of harassment or sexual harassment, which may require limited disclosure of pertinent information to certain parties, including the alleged harasser.

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

- An impartial investigative committee, consisting of the current President, President-Elect, and Executive Officer will be established. If any of these individuals were to be named in an allegation, they would be excluded from the committee.
- The committee will interview the complainant and review the written complaint. If no written complaint exists, one will be requested.
- The committee will speak to the alleged offender and present the complaint.
- The alleged offender will be given the opportunity to address the complaint, with sufficient time to respond to the evidence and bring his/her own evidence.
- If the facts are in dispute, the investigative team may need to interview anyone named as witnesses.
- The investigative committee may seek BPS Counsel’s advice.
- Once the investigation is complete, the committee will report their findings and make recommendations to the Society Officers.
- If the severity of the allegation is high, is a possible repeat offense, or is determined to be beyond BPS’s capacity to assess claims and views on either side, BPS may refer the case to the alleged offender’s home institution (Office of Research Integrity of similar), employer, licensing board, or law enforcement for their investigation and decision.

**Disciplinary Actions**

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

Ground Level Exhibit Halls

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

Gender Inclusive Restrooms

Speed Networking

Lobby G
- Registration
- Coat Check
- Society Help Desk
- Poster Pickup
- Society Booth
Plan the
Perfect Day!

Meeting Mobile App:

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

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The iTunes™ App Store or Google Play™ for “Biophysical Society Events”

SCAN

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

Should you have any questions, please contact society@biophysics.org, or locate your nearest Biophysical Society Meeting Support Staff.
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Tamar Schlick, Associate Editor  
Stanislav Shvartsman, Associate Editor  
Claudia Steinem, Associate Editor

Sorting and Programming of 2020 Abstracts

Sorting and programming of the 2020 Annual Meeting abstracts into poster and platform sessions was completed by: Patricia Bassereau, Zev Bryant, Patricia Clark, Linda Columbus, Michelle Digman, Marta Filizola, Karen Fleming, Teresa Giraldez, Ruben Gonzalez, Angela Gronenborn, Kalina Hristova, William Kobertz, Francesca Marassi, Joseph Mindell, Carolyn Moores, Anna Moroni, Jeanne Nerbonne, David Piston, Jennifer Ross, Catherine Royer, Andrej Sali, Erin Sheets, David Stokes, Joanna Swain, Pernilla Wittung-Stafshede.
Badges
Badges are required for admission to all scientific sessions, including Saturday Subgroup symposia, poster areas, exhibits, and social functions. A guest badge for non-scientific guests can be purchased for $65 at the on-site registration counter located in Lobby G. Guest registration is only for admittance to the Opening Mixer on Saturday night and Reception on Monday night. It does not include admission to scientific sessions, posters, or exhibits. There is a $30 fee to reprint a lost or forgotten badge.

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

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

ATMs are also available in the San Diego Convention Center.

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

Business Center, Lobby Level
The San Diego Convention Center provides a full-service business center for the convenience of attendees and exhibitors. Services include photocopying, faxing, computer work stations, and printing services. Shipping is provided through FedEx. The business center is located in inside the San Diego Convention Center across from Hall D. To contact the business center, call 619-525-5450 or email usa1324@fedex.com.

Sunday–Saturday  8:00 AM–5:00 PM

Career Development Center, Room 26AB
Services are available for both those seeking a position and employers with positions to fill. Please note, the career development center is the only place to post job openings. Unauthorized notices placed elsewhere in the San Diego Convention Center will be removed.

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

Certificates of Attendance
Certificates of Attendance may be obtained in person at the Society Help Desk located at registration in Lobby G or in the Society Meeting Office, in Room 27AB.

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

Code of Conduct
The Biophysical Society Annual Meeting provides an environment that encourages free and respectful expression and exchange of scientific ideas. Please review the code of conduct policy (page III) that all meeting participants must follow.

Coat Check/Luggage Storage, Lobby G
Please do not bring luggage to meeting rooms. If you are planning to check items, please plan to arrive early to ensure that you are not late for sessions due to long lines.

Saturday  8:30 AM–7:30 PM
Sunday–Tuesday  7:30 AM–6:30 PM
Wednesday  7:30 AM–4:00 PM

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

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

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

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

Exhibitor Lounge, Exhibit Hall F
Exhibitors may visit the Exhibitor Lounge at the following times for assistance while at the meeting.

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

Exhibitor Passport Competition
Pick up a Passport Competition booklet inside the entrance of the Exhibit Hall. Visit participating exhibitors, get your passport stamped, and drop your passport at the Society Booth located in Lobby G before 2:30 PM Tuesday. The winner will be announced on Tuesday at 3:00 PM in the Exhibit Hall. You must be present at the drawing to win. Good luck!
Family Room, Room 33B
The Family Room is equipped with diapers, electrical outlets for pumps, labels for breast milk, plastic bags for disposing of diapers, a small refrigerator, private areas for nursing, and a small area for rest and play.

First Aid, Box Office G
In case of medical emergency, dial 5911 from any house phone or 619-525-5911 from a cell phone. For a non-emergency, you may dial 5490. The First Aid room is located in Lobby G. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.

Individuals Requiring Assistance
Attendees requiring special assistance during the meeting should visit the Society Meeting Office in Room 27AB. Society staff will do their best to accommodate requests, however, we cannot ensure that special needs will be met without prior notice.

Internet Access
Wireless Internet access is available free-of-charge in the lobby and common spaces of the San Diego Convention Center, excluding the Exhibit Hall and meeting rooms. Paid access is available in the areas below:

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

Meditation Room, outside entrance of Ballroom 20D
A room will be available for attendees to use for quiet meditation or prayer.

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

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

Photography
Registration for the meeting implies consent to having photographs taken and to their use by officials of the Biophysical Society, or their representatives, for editorial and promotional purposes, on the Society website, social media outlets, and publications. To respect the willingness of presenters to share data at the meeting, as well as their publication opportunities, recordings of any kind (audio, video, camera, or cell phone) in the session rooms, Exhibit Hall, and poster areas are strictly prohibited. Any individual seen taking photographs of any session or presentation will be escorted out by security.

Poster Pickup
Posters ordered in advance through Tray Printing will be available for pick up at the San Diego Convention Center Exhibit Hall entrance during the following hours:

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

Poster Sessions, Exhibit Hall F-H
Sunday–Wednesday
The Exhibit Hall will open at 8:00 AM each morning. It will remain open for poster viewing until 10:00 PM each night, except for Tuesday, when it will close at 4:30 PM for safety purposes during exhibit tear down. Posters are arranged according to topic. Your poster board number begins with “B.” On the day of presentation, authors assigned odd-numbered poster boards should present 1:45 PM–2:45 PM (10:30 AM–11:30 AM on Wednesday); even-numbered posters should present 2:45 PM–3:45 PM, (11:30 AM–12:30 PM on Wednesday). Other hours, day or evening, may be posted by the authors as desired. Additionally, authors may leave note paper so that visitors may request an appointment. Abstracts submitted after October 4, 2019, are scheduled each day, Sunday–Wednesday, during the regular poster sessions. These board assignments will begin with “LB.”

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

Raffles
Exhibitor Raffle: Want to win a Bose Portable Bluetooth Speaker? Pick up an Exhibitor Passport Competition booklet inside the entrance of the Exhibit Hall. Visit participating exhibitors, talk to them to find out the answer to their question, get your passport stamped, and drop off your passport at the Society Booth located in Lobby G before 2:30 PM on Tuesday, February 18. The winner will be announced on Tuesday at 3:00 PM in the Exhibit Hall. You must be present at the drawing to win. Good luck!
Wednesday Poster Session Raffle: Attend the Wednesday poster sessions in the Exhibit Hall for a chance to win a Fitbit Versa! Drop your ticket in the ballot box in the Exhibit Hall. The winner will be announced at 12:30 pm on Wednesday in the Exhibit Hall. You must be present in the Exhibit Hall to win. Good luck!

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

Registration Hours, Lobby G
Friday 3:00 PM–5:00 PM
Saturday 8:00 AM–6:30 PM
Sunday–Tuesday 7:30 AM–5:00 PM
Wednesday 8:00 AM–3:00 PM

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

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

Twitter: @BiophysicalSoc, use hashtag #bps20
Facebook: www.facebook.com/biophysicalsociety
Instagram: @biophysicalsociety
Blog: www.biophysics.org/blog

Society Meeting Office, Room 27AB
Friday 3:00 PM–5:00 PM
Saturday 8:00 AM–6:30 PM
Sunday–Tuesday 7:30 AM–5:00 PM
Wednesday 8:00 AM–3:00 PM

Speaker Ready Room, Room 22
We highly encourage all presenters in Symposia, Workshops, and Platform sessions to visit the Speaker Ready Room one day prior to their scheduled presentation time. This room will be set up for your use, and will contain several screens and data projectors to allow you the opportunity to review your material prior to your scheduled presentation time slot. All speakers must bring their own laptops. An audiovisual technician will be available during room hours to assist you in setting up your laptop with the data projector and to answer any questions. As a courtesy to other presenters, please limit your viewing time to five minutes during peak times.

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

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

Taxis
Taxis will be available from the Transportation Plazas of the San Diego Convention Center.

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

Undergraduate Student Lounge, Room 21
This special space is reserved for undergraduate meeting attendees looking for a place to relax or catch up on coursework they may be missing while at the Annual Meeting.

Saturday–Tuesday 8:00 AM–6:00 PM
Wednesday 8:00 AM–12:00 NOON
Mark Your Calendars! Future BPS Annual Meetings

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

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

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

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

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**Governance and Committee Meetings**

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

**Friday, February 14**

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

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

**Saturday, February 15**

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

**Sunday, February 16**

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

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

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

**Monday, February 17**

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

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

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

**Tuesday, February 18**

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

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

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

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

**Wednesday, February 19**

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

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*The Biophysical Society would like to thank Society members who serve on Council or Committees for their dedication and efforts.*
**Professional Development & Educational Sessions**

The Society's committees have planned a variety of professional development activities to take place during the Annual Meeting. Below is a schedule of all of those activities. Detailed descriptions of the sessions can be found in the daily program. In addition, a student lounge for undergraduates will be available Sunday, February 16, to Wednesday, February 19, in Room 21.

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

### Saturday, February 15, 2020

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

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

### Sunday, February 16, 2020

- **7:30 AM–8:30 AM** | Postdoctoral Breakfast: Tales From Two Sides of Recruitment
- **9:00 AM–10:00 AM** | Networking for Nerds Night: How to Create Your Unicorn Career
- **10:30 AM–11:30 AM** | Green Cards for Scientific Researchers: How to win your EB-1A/NIW Case! with Getson & Schatz, PC
- **11:15 AM–3:00 PM** | Exploring Careers in Biophysics Day**
- **11:30 AM–1:00 PM** | Undergraduate Student Pizza “Breakfast”
- **12:00 PM–1:00 PM** | Demystifying the Academic Job Search I: Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements
- **1:00 PM–2:30 PM** | The World Outside the Lab: Following Your IDP Roadmap to the Career You Want
- **1:00 PM–3:00 PM** | Education & Career Opportunities Fair
- **2:00 PM–4:00 PM** | Teaching Science Like We Do Science
- **2:30 PM–3:30 PM** | The Industry Interview: What You Need to Do Before, During, and After to Get the Job
- **2:30 PM–4:00 PM** | Science and Research in the Global Political Landscape: The US and China
- **4:00 PM–5:00 PM** | Nailing the Job Talk, or Erudition Ain’t Enough
- **4:00 PM–6:00 PM** | PI to PI, a Wine & Cheese Mixer

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

### Monday, February 17, 2020

- **7:30 AM–8:30 AM** | Graduate Student Breakfast
- **10:00 AM–11:00 AM** | Demystifying the Academic Job Search II: Preparing your Written Application Materials: CV, Cover Letter, and Research Statement
- **11:00 AM–1:00 PM** | Annual Meeting of the Student Chapters
- **11:30 AM–12:30 PM** | Networking for Nerds: How to Create Your Unicorn Career
- **12:30 PM–2:00 PM** | The Nuts and Bolts of Preparing Your NSF Grant
- **1:00 PM–2:30 PM** | Careers in Industry: A Q&A Panel
- **1:00 PM–2:30 PM** | How Does Congress Set the Federal Budget for Biomedical Research?
- **1:30 PM–3:00 PM** | Biophysics 101: An Introduction to Molecular Dynamics Simulation and its Application to Biological Systems
- **2:15 PM–3:45 PM** | How to Get Your Scientific Paper Published
- **2:30 PM–3:30 PM** | Translating Your Credentials: Writing Effective Resumes + Cover Letters and Your LinkedIn Profile
- **3:30 PM–4:00 PM** | Beyond Reporting: How to be an Ally to Those Experiencing Harassment
- **4:00 PM–5:00 PM** | Marketing Your Value: Crafting Your Elevator Pitch/30 Second Value Statement/Brand Statement
- **4:30 PM–6:00 PM** | Speed Networking

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

### Tuesday, February 18, 2020

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

**One-on-One Resume and Career Counseling**
* 8:00 AM–12:00 NOON and 1:30 PM–5:00 PM

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* Slots for the One-on-One Resume and Career Counseling sessions are available on a first-come, first-served basis and fill up quickly. You may sign up for a slot beginning at 12:00 NOON on Saturday, February 15, in the Career Development Center, Room 26AB. Please come prepared with resumes, CVs, and other appropriate materials.

** This event requires pre-registration. If space is available, individuals who have not pre-registered may attend. Please stop by the event at the beginning of the session to see if space is available.
Andrew Green earned his PhD at the University of California, Berkeley, and has over 17 years of experience working with graduate students, PhDs, and postdocs as a career advisor. Before returning to Berkeley, where he serves as Associate Director of the Career Center, he spent six years on the faculty of Connecticut College. His specialty is working with PhDs and postdocs in the sciences and engineering pursuing professional opportunities in the business, government, and nonprofit sectors as well as those seeking faculty jobs. He has given invited presentations at major scientific meetings and research universities across the country; and appeared in the Chronicle of Higher Education, NatureJobs, and The Atlantic Online.

Alaina G. Levine is an award-winning entrepreneur, STEM career consultant, science journalist, professional speaker and corporate comedian. Her book, Networking for Nerds (Wiley, 2015), beat out Einstein (really!) for the honor of being named one of the Top 5 Books of 2015 by Physics Today. As President of Quantum Success Solutions, she is a prolific speaker and writer on career development and professional advancement for engineers and scientists. She has delivered over 700 speeches for clients in the US, EU, Mexico, Canada, Africa, and Asia, and has written over 400 articles in publications such as Nature, Science, Scientific American, National Geographic News Watch, and Smithsonian. She has served as a career columnist for Physics Today and is a regular contributor to the American Physical Society’s APS News and ScienceCareers. She also writes “Your Unicorn Career”, a careers column for ScienceCareers about finding your professional bliss. Levine authored two online courses for Oxford University Press on career development and entrepreneurship, is a consultant, speaker, and writer for the Lindau Nobel Laureate Meetings, and served as the event manager for an international conference on phononics. She holds bachelor’s degrees in mathematics and anthropology with a certificate in Middle Eastern Studies from the University of Arizona, and studied at the American University in Cairo as a US Department of Defense Boren Fellow.

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

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

Find a Job. Post a Job.
Visit the BPS Job Board today.
https://biophysics-jobs.careerwebsite.com
Travel Grant Awardees

**Sunday, February 16**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Ahmad Khalifa**, McGill University, Canada
149-Plat
THE INNER JUNCTION COMPLEX OF THE CILIA IS AN INTERACTION HUB THAT INVOLVES TUBULIN POST-TRANSLATIONAL MODIFICATIONS
Dong-Hwee Kim, KU-KIST, South Korea
63-Plat
NUCLEAR MECHANOSENSATION REGULATES IMMUNOLOGICAL SENSITIVITY OF MACROPHAGE ACTIVATION

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Yundti Wang, University of British Columbia, Canada
534-Pos, B365
MEFENAMIC ACID BINDING AND EFFECT ON IKs CHANNEL GATING

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

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

Shiyu Xia, Harvard Medical School
193-Pos, B24
PORE FORMATION MECHANISM OF HUMAN GASDERMIN D
Lili Zhang, McMaster University, Canada
246-Pos, B77
USING FLUORESCENCE CORRELATION SPECTROSCOPY TO ACCURATELY MEASURE PROTEIN CONCENTRATION GRADIENTS IN THE PRESENCE OF NOISE AND PHOTOBLEACHING

Monday, February 17

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

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

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

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

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

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

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

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

Yunfeng Chen, The Scripps Research Institute
786-Plat
DISTINCTIVE MECHANO-SENSITIVITY OF FOCAL ADHESION INTEGRINS α5β1 AND αββ3 IN CONFORMATIONAL CHANGES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Yunfeng Chen, The Scripps Research Institute
786-Plat
DISTINCTIVE MECHANO-SENSITIVITY OF FOCAL ADHESION INTEGRINS α5β1 AND αββ3 IN CONFORMATIONAL CHANGES

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

Kirsten Cottrill, Emory University
1174-Pos, B242
DETERMINING THE LIPID ENVIRONMENT AND INTERACTIONS OF CFTR
Desmond Owusu Kwarteng, Kent State University  
1118-Pos, B186  
IONIZATION PROPERTIES OF PHOSPHATIDIC ACID AND DIACYLGlycerolpyrophosphate IN PC AND PC/PE MODEL MEMBRANES

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

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

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

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

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

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

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

Simon Sehayek, McGill University, Canada  
1517-Pos, B585  
A HIGH-THROUGHPUT IMAGE CORRELATION METHOD FOR RAPID ANALYSIS OF FLUOROPHORE PHOTOBLEACHING AND PHOTOLYSIS RATES
Enrico F. Semeraro, University of Graz, Austria
1151-Pos, B219
ANTIMICROBIAL PEPTIDES IMPAIR BACTERIA CELL STRUCTURES WITHIN SECONDS

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

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

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

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

Li Tian, Institute of Biological Interfaces, Germany
1025-Pos, B145
SELF-ASSEMBLY OF ES/PDGFBR IN MEMBRANES STUDIED BY SOLID-STATE NMR DISTANCE MEASUREMENTS

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

Chiamaka Ukachukwu, University of Michigan
1278-Pos, B346
RELATIVE HERG SUBUNIT ABUNDANCE MODIFIES I_K1 KINETICS AND MAGNITUDE DURING CARDIAC MATURATION

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

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

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

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

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

Tuesday, February 18

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

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

Marcelo Ayllon, Boise State University
2133-Pos, B403
STUDY OF HCM CAUSING β-CARDIAC MYOSIN MUTATIONS LOCATED AT DIFFERENT STRUCTURALLY SIGNIFICANT REGIONS OF THE MYOSIN-HEAD

Debanjan Bhowmik, Stanford University
1689-Pos, B106
ELECTRICAL REMODELLING CONTRIBUTES TO ATRIAL FIBRILLATION IN TYPE 2 DIABETES MELLITUS

Ingrid M. Bonilla, Ohio State University
1755-Pos, B25
PLASMA INDUCED MODIFICATION OF BIOMOLECULES (PLIMB) FOR EPITOPE MAPPING

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

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

Mateusz Czub, University of Virginia
1585-Plat
STRUCTURAL BASIS OF NON-STEROIDAL ANTI-INFLAMMATORY DRUG (NSAID) TRANSPORT BY SERUM ALBUMIN
Orville Kirkland, Jr., Williams College  
2083-Pos, B353  
IMPACT OF REGULATORY LIGHT CHAIN MUTATION (K104E) ON THE ATPASE AND MOTOR PROPERTIES OF HUMAN CARDIAC MYOSIN

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

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

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

Lindsey Lee, University of Colorado Boulder  
1924-Pos, B194  
CELL-FREE EXPRESSION SYSTEMS: PROBING NUCLEAR MECHANOTRANSDUCTION USING NOVEL ENGINEERING PLATFORMS

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

Karen Montoya, University of Michigan  
1704-Plat  
DIRECT IDENTIFICATION AND COUNTING OF MIRNAS IN SINGLE CELLS BY TRANSIENT HYBRIDIZATION AND KINETIC FINGERPRINTING
Emma A. Morrison, Medical College of Wisconsin
1850-Pos, B120
NUCLEOSOME ASSEMBLY STATE GOVERNS HISTONE H3 TAIL
CONFORMATION AND DYNAMICS

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

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

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

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

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

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

Alexandra Paul, Chalmers University of Technology, Sweden
2291-Pos, B561
MOLECULAR MICROSCOPY OF OIL BODY AND LIPID DROPLET
CHEMISTRY <i>&gt;</i> IN SITU &lt;/i&gt; WITH PHYSIOLOGICALLY-RELEVANT
READOUTS

Hans-Michael Pratt, University of Antioquia Chemistry
1706-Plat
COMPUTATIONAL DESIGN OF PEPTIDES BOUND TO THE MAJOR
HISTOCOMPATIBILITY COMPLEX CLASS II

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

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

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

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

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

Eleanor Vane, University of Washington
1870-Pos, B140
MEMBRANE DISRUPTION AND PEPTIDE/LIPID CO-ASSEMBLY BY THE
AMYLoid-FORMING PePTIDE, PAP248-286

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

Kevin J. Walsh, Ohio State University
2263-Pos, B533
A COMPARISON OF HISTO-CHEMICAL AND HISTO-MAGNETIC
DETECTION OF IRON
REGULATION OF ORAI1/STIM1 FUNCTION BY S-ACYLATION

Wednesday, February 19

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

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

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

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

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

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

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

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

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

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

Tapojyoti Das, Weill Cornell Medicine
2646-Pos, B192
THE STRUCTURAL BASIS OF OPPOSING FUNCTIONS OF ALPHA-SYNUCLEIN IN VESICLE EXOCYTOSIS
Yin-wei Kuo, Yale University
EFFECTS OF SEVERING ENZYMES ON THE LENGTH DISTRIBUTION AND TOTAL MASS OF MICROTUBULES

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

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

Manman Lu, University of Pittsburgh
19F NMR STUDIES OF CYCLOPHILIN A AND ITS INTERACTION WITH HIV-1 CAPSID

Beibei Meng, Karlsruhe Institute of Technology, Germany
CORRELATIVE IN VIVO FLUORESCENCE IMAGING AND 19F-MRI OF ZEBRAFISH EMBRYOS

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

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

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

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

Matthew Pittman, Johns Hopkins University
ELEVATED EXTRACELLULAR FLUID VISCOITY STIMULATES MIGRATION OF METASTATIC CANCER CELLS

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

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

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

Rajneet Kaur Saini, Sri Guru Granth Sahib World University, India
HOW L17A/F19A DOUBLE MUTATION DIMINISH Aβ40 AGGREGATION IN ALZHEIMER’S DISEASE: KEY INSIGHTS FROM MOLECULAR DYNAMICS SIMULATIONS

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

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

Maiwase Tembo, University of Pittsburgh
PHOSPHATE POSITION ON PHOSPHOINOSITIDES IS KEY IN MEDIATING TMEM16A CURRENTS IN XENOPUS LAEVIS OOCYTES

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

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

Shuting Zhang, Drexel University
CONFORMATIONAL DYNAMICS OF ALANINE IN WATER AND WATER/ETHANOL MIXTURES: EXPERIMENTALLY DRIVEN EVALUATION OF MOLECULAR DYNAMICS FORCE FIELDS
Ancillary Meetings

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

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

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

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

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

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

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<td>8:00 AM–5:00 PM</td>
<td>Exhibitor Registration</td>
<td>Lobby G</td>
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<tr>
<td>8:00 AM–5:00 PM</td>
<td>Drug Discovery for Ion Channels XX Satellite Meeting</td>
<td>Room 29AB</td>
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<tr>
<td>3:00 PM–5:00 PM</td>
<td>Registration</td>
<td>Lobby G</td>
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<tr>
<td>3:30 PM–4:30 PM</td>
<td>New Council Orientation</td>
<td>Hilton, Cobalt 501C</td>
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<tr>
<td>5:00 PM–9:00 PM</td>
<td>Joint Council Reception, Dinner, and Meeting</td>
<td>Hilton, Cobalt 500AB</td>
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<tr>
<td>5:00 PM–9:00 PM</td>
<td>Society of General Physiologists Meeting</td>
<td>Room 30D</td>
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Friday, February 14

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

Drug Discovery for Ion Channels XX Satellite Meeting
8:00 AM - 5:00 PM, ROOM 29AB

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

Ion channels are an important class of therapeutic drug targets, and mutations in ion channel genes are found to be responsible for an increasing number of diseases. While conventional electrophysiological techniques permit the most detailed and direct study of ion channel function, they are limited due to the manual nature of the method and their low throughput. Because of this, ion channels remain an underrepresented target class for drug discovery. The advent of higher throughput automated electrophysiology systems has changed the face of ion channel drug discovery. Since the inaugural “Drug Discovery for Ion Channels” satellite meeting, there have been many advances in ion channel drug discovery including new instrumentation and techniques.

8:00 AM
REGISTRATION, COFFEE, AND LIGHT BREAKFAST

8:45 AM
WELCOME AND OPENING REMARKS
Thais Johansen

SESSION I
Chair: Mads Korsgaard

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

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

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

10:30 AM
COFFEE BREAK

SESSION II
Chair: Marc Rogers

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

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

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

12:30 PM
SESSION III
Chair: Jeff Roland

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

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

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

3:00 PM
COFFEE BREAK

SESSION IV
Chair: Niels Fertig

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

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

4:45 PM
CLOSING REMARKS
Thomas Binzer

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

New Council Orientation
3:30 PM - 4:30 PM, HILTON, COBALT 501C

Joint Council Reception, Dinner, and Meeting
5:00 PM - 9:00 PM, HILTON, COBALT 500AB

Society of General Physiologists Meeting
5:00 PM - 9:00 PM, ROOM 30D
### Saturday, February 15, 2020

#### Daily Program Summary

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<td>Registration/Exhibitor Registration</td>
<td>Lobby G</td>
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<tr>
<td>8:25 AM–12:30 PM</td>
<td>Bioenergetics, Mitochondria and Metabolism</td>
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<td>8:30 AM–11:30 AM</td>
<td>Joint Council Meeting</td>
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<td>8:30 AM–12:30 PM</td>
<td>Biopolymers in Vivo</td>
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<tr>
<td>8:30 AM–12:30 PM</td>
<td>Membrane Fusion, Fission, and Traffic</td>
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<td>8:30 AM–12:30 PM</td>
<td>Mechanobiology</td>
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<tr>
<td>8:30 AM–12:30 PM</td>
<td>Channels, Receptors, and Transporters</td>
<td>Ballroom 20D</td>
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<td>8:30 AM–12:30 PM</td>
<td>Nanoscale Approaches</td>
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<td>9:00 AM–12:15 PM</td>
<td>Physical Cell Biology</td>
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<tr>
<td>1:25 PM–5:30 PM</td>
<td>Membrane Transport</td>
<td>Ballroom 20D</td>
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<tr>
<td>1:30 PM–5:30 PM</td>
<td>Biological Fluorescence</td>
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<tr>
<td>1:30 PM–5:30 PM</td>
<td>Bioengineering</td>
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<td>1:30 PM–5:30 PM</td>
<td>Intrinsically Disordered Proteins</td>
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<tr>
<td>1:30 PM–5:30 PM</td>
<td>Macromolecular Machines and Assemblies</td>
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</tr>
<tr>
<td>1:30 PM–5:30 PM</td>
<td>Membrane Structure and Function</td>
<td>Room 30ABC</td>
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<td>1:30 PM–5:30 PM</td>
<td>Motility and Cytoskeleton</td>
<td>Room 24ABC</td>
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<tr>
<td>2:00 PM–4:00 PM</td>
<td>Communicating Your Science Workshop</td>
<td>Room 28CDE</td>
</tr>
<tr>
<td>3:00 PM–4:00 PM</td>
<td>Career Development Center Workshop: Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More</td>
<td>Room 26A</td>
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<tr>
<td>3:00 PM–5:00 PM</td>
<td>Undergraduate Mixer and Poster Award Competition</td>
<td>Ballroom Foyer</td>
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<tr>
<td>5:00 PM–6:00 PM</td>
<td>First-Time Attendee Drop By</td>
<td>Ballroom Foyer</td>
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<tr>
<td>5:00 PM–7:00 PM</td>
<td>Opening Mixer</td>
<td>Ballroom Foyer</td>
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<tr>
<td>6:00 PM–7:30 PM</td>
<td>Travel Awardee Reception</td>
<td>Exhibit Hall</td>
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<tr>
<td>6:00 PM–10:00 PM</td>
<td>Cryo-EM</td>
<td>Room 31ABC</td>
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<tr>
<td>6:00 PM–10:00 PM</td>
<td>Poster Viewing</td>
<td>Exhibit Hall</td>
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<tr>
<td>8:00 PM–9:30 PM</td>
<td>Motility and Cytoskeleton Evening Session</td>
<td>Room 24ABC</td>
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</tbody>
</table>

### Subgroup Dinners

- **Bioenergetics, Mitochondria & Metabolism:** 7:00 PM at Marina Kitchen at Marriott Marquis – 333 W. Harbor Drive
- **Bioengineering:** 6:30 PM at Seasons52 Seaport – 789 W. Harbor Drive #134
- **Channels, Receptors & Transporters (Cole Award Dinner):** 6:00 PM at San Diego Water Grill - 615 J Street
- **Membrane Fusion, Fission & Traffic:** Joe’s Crab Shack – 525 E. Harbor Drive
- **Membrane Transport (Cole Award Dinner):** 6:00 PM at San Diego Water Grill - 615 J Street
- **Motility & Cytoskeleton:** 5:40 PM The Smoking Gun San Diego – 555 Market Street
- **Nanoscale Approaches:** 6:00 PM at Patron’s Corner – 332 J Street #102
- **Physical Cell Biology:** Marina Kitchen at Marriott Marquis – 333 W. Harbor Drive
Saturday, February 15

Registration/Exhibitor Registration
8:00 AM - 6:30 PM, LOBBY G

Bioenergetics, Mitochondria and Metabolism
8:25 AM - 12:30 PM, ROOM 24ABC

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

8:25 AM  OPENING REMARKS

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

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

10:00 AM  COFFEE BREAK

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

2-SUBG  10:45 AM
STRUCTURAL AND PHARMACOLOGICAL CHARACTERIZATION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE: A MEGACHannel FORMED BY F1F0 ATP SYNTHASE.  Nelli Mnatsakanyan, Marc C. Llaguno, Youshan Yang, Yangyang Yan, Joachim Weber, Fred J. Sigworth, Elizabeth A. Jonas

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

11:45 AM  YOUNG BIOENERGETICIST AWARD

12:00 PM  SUBGROUP BUSINESS MEETING

Joint Council Meeting
8:30 AM - 11:30 AM, HILTON, COBALT 500AB

Biopolymers in Vivo
8:30 AM - 12:30 PM, ROOM 23ABC

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

8:30 AM  SUBGROUP BUSINESS MEETING

9:00 AM  OPENING REMARKS

9:05 AM  BIG YOUNG INVESTIGATOR AWARD

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

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

NO ABSTRACT  10:40 AM

Membrane Fusion, Fission, and Traffic
8:30 AM - 12:30 PM, ROOM 25ABC

Chair
Ling-Gang Wu, NIH, NINDS

8:30 AM  OPENING REMARKS

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

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

10:05 AM  BREAK

NO ABSTRACT  10:55 AM
SYNAPTOTAGMIN-7 PLACES VESICLES AT THE PLASMA MEMBRANE TO PROMOTE MUNC13-2 DEPENDENT PRIMING.  Jakob Balslev Sorenson

11:20 AM  SUBGROUP BUSINESS MEETING

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

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

8:30 AM  OPENING REMARKS

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

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

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

Detailed Mathematical Models of Stochastic Gene Expression in Eukaryotic Cells.  Ramon Grima

No Abstract  11:20 AM
Emergent Material Properties of Biopolymer Condensates.  Shana Elbaum-Garfinkle

No Abstract  11:50 AM
Heavy Mice and Lighter Things: Using Solid-State NMR to Study the Extracellular Matrix.  Melinda Duer

Biophysical Society
10:05 AM  SELECTED SHORT TALK 1  
10:20 AM  SELECTED SHORT TALK 2  
10:35 AM  COFFEE BREAK  
11:00 AM  MECHANOBIOLOGY EARLY CAREER AWARD  
11:30 AM  SHORT TALK 3  
11:45 AM  ELEVATOR TALKS  
12:10 PM  SUBGROUP BUSINESS MEETING  

Channels, Receptors, and Transporters  
8:30 AM - 12:30 PM, BALLROOM 20D  

Chair  
Crina Nimigean, Weill Cornell Medicine  

8:30 AM  OPENING REMARKS  

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

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

NO ABSTRACT  
9:35 AM  MOLECULAR MECHANISMS OF EXTREME MECHANOSTABILITY IN PROTEIN COMPLEXES.  
Hermann Gaub  

10:05 AM  STRUCTURAL INSIGHTS INTO IP3R GATING AND REGULATION.  
Irina Serysheva  

10:35 AM  BREAK  

10:45 AM  SUBGROUP BUSINESS MEETING  

NO ABSTRACT  
11:00 AM  THE STRUCTURAL PHARMACOLOGY OF HUMAN GABAA RECEPTORS.  
Radu Aricescu  

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

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

12:30 PM  ADJOURNMENT  

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

Chair  
Ozgur Sahin, Columbia University  

8:30 AM  OPENING REMARKS  

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

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

6:00 PM  OPENING REMARKS  

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

9:30 AM  CONTRIBUTED TALK 1  

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

10:15 AM  BREAK  

10:30 AM  SUBGROUP BUSINESS MEETING  

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

Chair  
Julie S. Biteen, University of Michigan  

9:00 AM  OPENING REMARKS  

NO ABSTRACT  
9:30 AM  CONTRIBUTED TALK 2  

10:15 AM  BREAK  

10:30 AM  CONTRIBUTED TALK 3  

11:00 AM  TACKLING ANTIMICROBIAL RESISTANCE, ONE MOLECULE AT A TIME.  
Antoine M. van Oijen  

12:00 PM  SUBGROUP BUSINESS MEETING  

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

Chair  
Susan Rempe, Sandia National Laboratories  

1:25 PM  OPENING REMARKS  

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

NO ABSTRACT  
2:00 PM  EVOLUTION OF DRUG EXPORT BY THE SMALL MULTIDRUG RESISTANCE FAMILY OF TRANSPORTERS.  
Randy Stockbridge
2:30 PM  STUDENT TALK 1

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

3:20 PM  BREAK

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

4:00 PM  STUDENT TALK 2

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

4:50 PM  CLOSING REMARKS

5:00 PM  SUBGROUP BUSINESS MEETING

Biological Fluorescence
1:30 PM - 5:30 PM, ROOM 25ABC

Chair
Diane S. Lidke, University of New Mexico

1:30 PM  OPENING REMARKS

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

NO ABSTRACT  2:05 PM
METABOLIC FLIM AND OXYGEN PLIM: BASICS AND BIOMEDICAL APPLICATIONS. Angelica Rueck

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

3:05 PM  BREAK

3:20 PM  SUBGROUP BUSINESS MEETING

NO ABSTRACT  3:30 PM
SPATIOTEMPORAL DYNAMICS OF MEMBRANE RECEPTORS AT THE NANO SCALE. Diego Krapf

9-SUBG  4:00 PM
PLAYING WITH FLUORESCENCE EMISSION FOR ENHANCED SUPERRESOLUTION MICROSCOPY. Pierre Jouchet, Clement Cabriel, Adrien Mau, Abigail Illand, Guillaume Dupuis, Christian Pois, Emmanuel Fort, Sandrine Leveque-Fort

4:25 PM  RAPID FIRE TALKS FROM POSTER ABSTRACTS

4:45 PM  YOUNG FLUORESCENCE INVESTIGATOR AWARD & LECTURE

5:05 PM  GREGORIO WEBER AWARD & LECTURE

5:25 PM  CLOSING REMARKS & ADJOURNMENT

Bioengineering
1:30 PM - 5:30 PM, ROOM 23ABC

Chair
Raphael C. Lee, University of Chicago

1:30 PM  OPENING REMARKS

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

NO ABSTRACT  2:05 PM
MODULATING CELL PROTEIN ABUNDANCE TO BOTH UNDERSTAND AND MANIPULATE BIOLOGICAL NETWORKS. H. Steve Wiley

NO ABSTRACT  2:35 PM
AN IN VITRO 3D NEURO MUSCULAR PLATFORM REVEALS CROSSTALK BETWEEN NEURAL NETWORKS AND MUSCLES. Taher Salf

3:05 PM  SUBGROUP BUSINESS MEETING

3:30 PM  POSTDOC RECOGNITION

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

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

NO ABSTRACT  4:50 PM
MULTI-SCALE MODELING OF THERAPEUTIC MECHANISMS FOR HEART FAILURE. Andrew McCulloch

5:20 PM  CLOSING REMARKS & ADJOURNMENT

Intrinsically Disordered Proteins
1:30 PM - 5:30 PM, BALLROOM 20BC

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

1:30 PM  SUBGROUP BUSINESS MEETING

1:50 PM  OPENING REMARKS

NO ABSTRACT  2:00 PM
PROBING PROTEINS IN SMALL VOLUMES. Tuomas Knowles

NO ABSTRACT  2:25 PM
LIQUID-LIQUID PHASE SEPARATION OF INTRINSICALLY DISORDERED PROTEINS. Markus Zweckstetter

2:50 PM  ANNOUNCEMENT OF POSTDOC AWARDS

2:55 PM  POSTDOC AWARD TALK

3:10 PM  POSTDOC AWARD TALK

3:25 PM  BREAK

NO ABSTRACT  3:40 PM
EMERGENT STRUCTURE AND DYNAMICS OF LOW-COMPLEXITY NUCLEOPROTEIN CONDENSATES. Priya R Banerjee

NO ABSTRACT  4:05 PM
DISORDERED PROTEINS AS CATALYSTS OF MEMBRANE TRAFFIC. Jeanne Stachowiak

Biophysical Society
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>4:30 PM</td>
<td>KINETIC REGULATION OF IDR-PROTEIN INTERACTIONS IN TRANSCRIPTION</td>
</tr>
<tr>
<td></td>
<td>REGULATION. (Jacqueline Matthews)</td>
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<td>4:55 PM</td>
<td>KARYOPHERIN AS CHAPERONE. (Yuh Min Chook)</td>
</tr>
<tr>
<td>5:20 PM</td>
<td>CLOSING REMARKS &amp; ADJOURNMENT</td>
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</tbody>
</table>

**Macromolecular Machines and Assemblies**

**1:30 PM - 5:30 PM, BALLROOM 20A**

**Chair**

*Ilya Finkelstein, University of Texas, Austin*

**1:30 PM**

*OPENING REMARKS*

**NO ABSTRACT**

**1:45 PM**

IN CELL STRUCTURAL BIOLOGY OF PROTEIN COMPLEXES USING SENSITIVITY ENHANCED SOLID-STATE NMR. (Kendra Frederick)

**NO ABSTRACT**

**2:15 PM**

STRUCTURES OF MANY MACROMOLECULAR MACHINES FROM A SINGLE CRYO-EM EXPERIMENT. (David Taylor)

**NO ABSTRACT**

**3:45 PM**

SINGLE-MOLECULE PROTEIN SEQUENCING. (Edward Marcotte)

**NO ABSTRACT**

**4:15 PM**

UNDERSTAND AND MODULATE THE STABILITY OF FORCE-TRANSMISSION CYTOSKELETAL SUPRAMOLECULAR LINKAGES. (Jie Yan)

**NO ABSTRACT**

**4:45 PM**

SELECTED ABSTRACT

**5:00 PM**

SELECTED ABSTRACT

**5:15 PM**

CLOSING REMARKS

**Membrane Structure and Function**

**1:30 PM - 5:30 PM, ROOM 30ABC**

**Chair**

*Peter Tieleman, University of Calgary, Canada*

**NO ABSTRACT**

**1:30 PM**

MEMBRANE PERMEABILIZATION IN REGULATED CELL DEATH. (Ana Garcia-Saez)

**NO ABSTRACT**

**2:00 PM**

THE REVOLUTION WILL NOT BE SYMMETRIZED: LESSONS FROM ASYMMETRIC MODEL MEMBRANES. (Fred Heberle)

**NO ABSTRACT**

**2:30 PM**

PHOSPHOLIPID SCRAMBLASES AND TRANSBILAYER LIPID ASYMMETRY. (Anant Menon)

**NO ABSTRACT**

**3:00 PM**

SIMULATING PLASMA MEMBRANES: EFFECTS OF LEAFLET ASYMMETRY AND COMPOSITIONAL COMPLEXITY. (Helgi Ingolfsson)

**3:30 PM**

COFFEE BREAK

**NO ABSTRACT**

**3:45 PM**

TUNING CLC DIMERIZATION IN MEMBRANES BY OPTIMIZING THE LIPID SOLVENT. (Janice Robertson)

**Motility and Cytoskeleton**

**1:30 PM - 5:30 PM, ROOM 24ABC**

**Co-Chairs**

*Michael J. Previs, University of Vermont*

*Ahmet Yildiz, University of California, Berkeley*

**1:30 PM**

OPENING REMARKS

**NO ABSTRACT**

**1:35 PM**

DYNEIN REGULATION. (Andrew Carter)

**NO ABSTRACT**

**1:55 PM**

CARDIAC MYOSIN BINDING PROTEIN-C REGULATES CARDIAC CONTRACTILITY. (Sakthivel Sadayappan)

**NO ABSTRACT**

**2:15 PM**

SELECTED TALK 1

**2:25 PM**

SELECTED TALK 2

**NO ABSTRACT**

**2:35 PM**

3D STRUCTURE AND REGULATION OF INTRAFLAGELLAR TRANSPORT BY CLEM AND CRYO-EM. (Gaia Pigino)

**NO ABSTRACT**

**2:55 PM**

HIGH-RESOLUTION CRYO-EM STRUCTURE OF THE DECORATED CILIARY DOUBLET MICROTBULE. (Rui Zhang)

**NO ABSTRACT**

**3:15 PM**

SUBGROUP BUSINESS MEETING AND COFFEE BREAK

**NO ABSTRACT**

**3:40 PM**

ROLES OF VERTICAL AND HORIZONTAL FORCES ON THE PROCESSIVITY OF MOTORS. (Jonathon Howard)

**4:00 PM**

SELECTED TALK 3

**4:10 PM**

SELECTED TALK 4

**NO ABSTRACT**

**4:20 PM**

THE MICROTBULE NETWORK IN CARDIAC HYPERTROPHY AND HEART FAILURE. (Ben Prosser)

**NO ABSTRACT**

**4:40 PM**

A MOLECULAR MECHANISM FOR SYMMETRY BREAKING AT CELL-CELL ADHESION COMPLEXES. (Alexander Dunn)

**NO ABSTRACT**

**5:00 PM**

SELECTED TALK 5

**5:10 PM**

SELECTED TALK 6
Communicating Your Science Workshop

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

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

Speaker
Amy Showalter, The Showalter Group

Career Development Center Workshop

Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More

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

You’ve done some exploration and identified some interesting possibilities as the next step after grad school or your postdoc, but is it enough to convince you that research in industry, medical science liaison, data science, etc. is right for you? More importantly, do you know enough to craft a persuasive story about why you’re a credible and compelling candidate? This presentation provides specific examples of how you build out your knowledge of a new, potential career field, and forge valuable connections that can facilitate your successful transition out of academia using LinkedIn, professional societies, informational interviews, and more.

Undergraduate Mixer and Poster Award Competition

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

If you’re an undergraduate student, plan on attending this social and scientific mixer! Come meet other undergraduates and learn about their research projects. For undergraduate students who will be presenting during the standard scientific sessions, the mixer provides an opportunity to hone presentation skills before the general poster session begin. Undergraduates listed as co-authors on posters are welcome to practice their poster presentation skills in a less formal setting, even if not listed as the presenting author. Additionally, undergrads presenting as first or second author on a poster may participate in the Undergraduate Poster Award Competition and be recognized for their work. Selected students will receive a $100 award and will be recognized by the BPS meeting attendees prior to the 2020 Biophysical Society Lecture. Winners will be selected based on the quality and scientific merit of their research, knowledge of the research problem, contribution to the project, and overall presentation of the poster.

Pre-registration was required to participate in the competition.

First-Time Attendee Drop By

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

Learn to navigate the meeting! If this is your first time attending a BPS Annual Meeting, you may find it helpful to speak to Society staff and committee members who can help you get the most out of your time at the BPS 2020 San Diego Annual Meeting.

Opening Mixer

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

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

Travel Awardee Reception

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

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

Speaker
Yadilette Rivera-Coln, Bay Path University

Cryo-EM

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

Chair
Elizabeth Villa, University of California, San Diego

6:00 PM OPENING REMARKS

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

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

6:49 PM SUBGROUP BUSINESS MEETING

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

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

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

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

8:24 PM COFFEE BREAK

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

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

9:19 PM SELECTED ABSTRACT SPEAKER

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

10:00 PM ADJOURNMENT
Poster Viewing
6:00 PM - 10:00 PM, EXHIBIT HALL

Motility and Cytoskeleton Evening Session
8:00 PM - 9:30 PM, ROOM 24ABC

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

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

8:20 PM  MOTILITY AND CYTOSKELETON JUNIOR FACULTY AWARD

NO ABSTRACT  8:45 PM
SPECTROSCOPIC PROBES OF MUSCLE PROTEINS: MECHANISTIC INSIGHTS
AND THERAPEUTIC DISCOVERY.  David Thomas
**Sunday, February 16, 2020**

**Daily Program Summary**

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

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<tr>
<th>Time</th>
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<th>Location</th>
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<tr>
<td>7:00 AM–9:00 AM</td>
<td>Biophysical Journal Editorial Board Boot Camp</td>
<td>Room 32A</td>
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<tr>
<td>7:30 AM–8:30 AM</td>
<td>Postdoctoral Breakfast: Tales From Two Sides of Recruitment</td>
<td>Room 29AB</td>
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<tr>
<td>7:30 AM–5:00 PM</td>
<td>Registration/Exhibitor Registration</td>
<td>Lobby G</td>
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<tr>
<td>8:00 AM–10:00 PM</td>
<td>Poster Viewing</td>
<td>Exhibit Hall</td>
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<td>8:15 AM–10:15 AM</td>
<td>Symposium: Asymmetric Membranes</td>
<td>Ballroom 20A</td>
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<td><em>Chair: Georg Pabst, University of Graz, Austria</em></td>
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<td>VPS13 PROTEINS ARE CHANNELS THAT TRANSPORT LIPIDS BETWEEN MEMBRANES. <em>Karin Reinisch</em></td>
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<td></td>
<td>STRUCTURAL BASIS OF LIPID AND ION TRANSPORT BY TMEM16 SCRAMBLASES. <em>Alessio Accardi</em></td>
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<td>DYNAMIC IMAGING OF MEMBRANE HYDRATION. <em>Sylvie Roke</em></td>
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<td>ASYMMETRIC LIPID BILAYERS: INSIGHTS FROM LEAFLET-SPECIFIC STRUCTURAL STUDIES. <em>Georg Pabst</em></td>
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<td>8:15 AM–10:15 AM</td>
<td>Symposium: Single-Molecule Visualization of Transcription, Translation and Splicing</td>
<td>Ballroom 20D</td>
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<td><em>Chair: Magnus Johansson, Uppsala University, Sweden</em></td>
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<td>DYNAMIC IMAGING OF NASCENT RNA REVEALS GENERAL PRINCIPLES OF TRANSCRIPTION AND SPlicing.</td>
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<td><em>Daniel R. Larson</em></td>
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<td>IMAGING NON-CANONICAL TRANSLATION DYNAMICS OF SINGLE RNA IN LIVING CELLS. <em>Timothy J. Stasevich</em></td>
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<td>GENE REGULATION BY BACTERIAL SMALL RNA AND RNA CHAPERON HFQ. <em>Jingyi Fei</em></td>
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<td>LIVE-CELL SINGLE-MOLECULE TRACKING FOR PROTEIN SYNTHESIS KINETICS MEASUREMENTS. <em>Magnus Johansson</em></td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Intrinsically Disordered Proteins (IDP) and Aggregates I</td>
<td>Ballroom 20BC</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Cardiac Muscle Mechanics and Structure</td>
<td>Room 23ABC</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Member Organized Session: Multiscale Genome Organization</td>
<td>Room 24ABC</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Ion Channel Regulatory Mechanisms</td>
<td>Room 25ABC</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Membrane Protein Structures</td>
<td>Room 30ABC</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Mechanosensation</td>
<td>Room 31ABC</td>
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<td>8:30 AM–10:30 AM</td>
<td>CID Committee Meeting</td>
<td>Room 30D</td>
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<td>9:00 AM–10:00 AM</td>
<td>Career Development Center Workshop: Networking for Nerds: How to Create Your Unicorn Career</td>
<td>Room 26A</td>
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<td>9:30 AM–11:00 AM</td>
<td>Exhibitor Presentation: Mizar Imaging</td>
<td>Room 33A</td>
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<td>Tilt – A New Angle on Light Sheet Imaging</td>
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<td>10:00 AM–5:00 PM</td>
<td>Exhibits</td>
<td>Exhibit Hall</td>
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<td>10:15 AM–11:00 AM</td>
<td>Coffee Break</td>
<td>Exhibit Hall</td>
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<td>10:30 AM–11:30 AM</td>
<td>Career Development Center Workshop: Green Cards for Scientific Researchers: How to Win Your EB-1A/NIW Case! with Getson &amp; Schatz, PC</td>
<td>Room 26A</td>
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<td>10:30 AM–12:00 PM</td>
<td>Exhibitor Presentation: Wyatt Technology</td>
<td>Room 33C</td>
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<td>Recent Advances in Light Scattering and Related Techniques</td>
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<td>10:45 AM–12:45 PM</td>
<td>Symposium: Mapping the Immune System</td>
<td>Ballroom 20A</td>
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<td><em>Chair: Brian Baker, University of Notre Dame</em></td>
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<td>A SYSTEMS APPROACH TO ENGINEERED IMMUNITY - FROM MOLECULES AND CELLS TO PATIENTS. <em>Krishnendu Roy</em></td>
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<td>HOW TO HIT HIV WHERE IT HURTS. <em>Arup Chakraborty</em></td>
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<td>MULTI-SCALE COMPUTATIONAL MODEL OF IMMUNE CELL ACTIVATION IN CANCER. <em>Stacey D. Finley</em></td>
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<td>DEMYSTIFYING CROSS-REACTIVITY IN CELLULAR IMMUNITY. <em>Brian M. Baker</em></td>
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| 10:45 AM–12:45 PM | Symposium: Cytoskeleton and Motility  
   Chair: Joseph Falke, University of Colorado Boulder  
   Ballroom 20D  
   HOW DOES THE ACTIN CYTOSKELETON REGULATE DISTRIBUTION AND DIFFUSION OF MEMBRANE COMPONENTS? Barbara Baird  
   REGULATION OF ACTIN AND MEMBRANE DYNAMICS BY CLASS I MYOSINS. Mira Krendel  
   MECHANOCHEMICAL CIRCUITS IN THE CYTOPLASM. Margaret Gardel  
   REGULATORY MECHANISMS OF CA²⁺, RECEPTOR, RAS, AND LIPID SIGNALS THAT CONTROL ACTIN POLYMERIZATION DURING CELL MIGRATION. Joseph J. Falke |
| 10:45 AM–12:45 PM | Symposium: Mitochondrial Calcium Fluxes  
   Chair: Gyorgy Csordas, Thomas Jefferson University  
   Ballroom 20BC  
   MITOCHONDRIAL (ATP SYNTHASE) PERMEABILITY TRANSITION PORE. Elizabeth Jonas  
   THE DUAL LIFE OF MITOCNDRIAL F-ATP SYNTHASE. Paolo Bernardi  
   MITOCHONDRIAL CALCIUM AND CELL DEATH. Elizabeth Murphy  
   NON-UNIFORM DISTRIBUTION OF INNER MITOCNDRIAL MEMBRANE CALCIUM TRANSPORT MECHANISMS IN THE CARDIAC MUSCLE. Gyorgy Csordas |
| 10:45 AM–12:45 PM | Platform: Protein-Lipid Interactions I  
   Room 23ABC |
| 10:45 AM–12:45 PM | Platform: Membrane Pumps, Transporters, and Exchangers  
   Room 24ABC |
| 10:45 AM–12:45 PM | Platform: Optical Microscopy and Superresolution Imaging I  
   Room 25ABC |
| 10:45 AM–12:45 PM | Platform: TRP Channels  
   Room 30ABC |
| 10:45 AM–12:45 PM | Platform: Protein Structure and Conformation I  
   Room 31ABC |
| 11:15 AM–3:00 PM | Exploring Careers in Biophysics Day  
   Room 28CDE |
| 11:30 AM–1:00 PM | Undergraduate Student Pizza “Breakfast”  
   Room 28CDE |
| 11:30 AM–1:00 PM | Exhibitor Presentation: NanoSurface Biomedical  
   Recreating the Extracellular Matrix in a Dish  
   Room 33A |
| 12:00 PM–1:00 PM | Career Development Center Workshop:  
   Demystifying the Academic Job Search I: Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements  
   Room 26A |
| 12:00 PM–1:30 PM | Public Affairs Committee Meeting  
   Room 30D |
| 12:00 PM–4:00 PM | BPS/IOP Advisory Board Meeting  
   Room 32B |
| 12:30 PM–2:00 PM | Exhibitor Presentation: Sutter Instrument  
   Scientists Empowering Scientists  
   Room 33C |
| 1:00 PM–2:30 PM | Town Hall for Community Input on the National Academies Decadal Survey of Biological Physics  
   Room 31ABC |
| 1:00 PM–2:30 PM | The World Outside the Lab: Following Your IDP Roadmap to the Career You Want  
   Room 28AB |
| 1:00 PM–3:00 PM | Education & Career Opportunities Fair  
   Exhibit Hall |
| 1:30 PM–3:00 PM | Exhibitor Presentation: Carl Zeiss Microscopy LLC  
   Multiplex Mode for the LSM 9 Series with Airyscan 2: Fast and Gentle Confocal Superresolution in Large Volumes  
   Room 33A |
| 1:45 PM–3:00 PM | Snack Break  
   Exhibit Hall |
| 1:45 PM–3:45 PM | Poster Presentations and Late Posters  
   Exhibit Hall |
| 2:00 PM–4:00 PM | Teaching Science Like We Do Science  
   Room 28CDE |
| 2:30 PM–3:30 PM | Career Development Center Workshop: The Industry Interview: What You Need to Do Before, During, and After to Get the Job  
   Room 26A |
| 2:30 PM–4:00 PM | Exhibitor Presentation: Dynamic Biosensors GmbH  
   switchSENSE® Biophysical Analysis with Electro-Switchable Biosurfaces  
   Room 33C |
| 2:30 PM–4:00 PM | Science and Research in the Global Political Landscape: The US and China  
   Room 29C |
| 3:30 PM–5:00 PM | Early Careers Committee Meeting  
   Room 30D |
| 3:30 PM–5:00 PM | Exhibitor Presentation: Bruker Corporation  
   Multiplexed Imaging and Superresolution Microscopy Using the Vutara 352 Microscope with Integrated Fluidics System  
   Room 33A |
4:00 PM–5:00 PM  Career Development Center Workshop: Nailing the Job Talk, or Erudition Ain’t Enough  Room 26A

4:00 PM–6:00 PM  Biophysical Journal Associate Editors Meeting  Room 30E

4:00 PM–6:00 PM  Symposium: Anion Channels  Ballroom 20A
Chair: Criss Hartzell, Emory University
MECHANISMS OF CLC CL-/H+ TRANSPORTERS. Merritt Maduke
INTRACELLULAR CLC TRANSPORTERS - FROM KIDNEY STONES TO INTELLECTUAL DISABILITY. Michael Pusch
GATING DYNAMICS, REGULATION AND PHARMACOLOGY OF THE CFTR ANION CHANNEL. László Csánydy
AMAZING ANOCTAMINS (TMEM16) ALL AROUND. Criss Hartzell

4:00 PM–6:00 PM  Symposium: “Fuzzy” Interactions and Crowding  Ballroom 20D
Chair: Catherine Musselman, The University of Iowa
THE SHAPE OF (INTRACELLULAR) WATER. Francesco Cardarelli
PROTEINS IN A CROWD UNDER HEAT AND PRESSURE. Margaret S. Cheung
ENCODING MULTIPHASE CYTOPLASMIC STRUCTURE. Clifford Brangwynne
A TALE OF FUZZY TAILS AND THEIR ROLE IN CHROMATIN STRUCTURE REGULATION. Catherine Musselman

4:00 PM–6:00 PM  Platform: Membrane Protein Dynamics and Folding I  Ballroom 20BC

4:00 PM–6:00 PM  Platform: Neuroscience  Room 23ABC

4:00 PM–6:00 PM  Platform: Nucleic Acid Replication, Transcription, Translation, and Repair  Room 24ABC

4:00 PM–6:00 PM  Platform: Microtubules, Actin, Dynamics, and Associated Proteins  Room 25ABC

4:00 PM–6:00 PM  Platform: Optical and Force Microscopy  Room 30ABC

4:00 PM–6:00 PM  Platform: Excitation-Contraction Coupling  Room 31ABC

4:00 PM–6:00 PM  PI to PI: A Wine & Cheese Mixer  Room 28AB

5:30 PM–7:00 PM  Exhibitor Presentation: ELEMENTS SRL  Room 33A
Low-Noise, Handheld Amplifiers for Electrophysiology and Nanopore Applications

6:00 PM–6:30 PM  Korean Biophysicists Meeting  Room 29AB

6:00 PM–8:00 PM  Biophysics Austria Mixer  Room 28CDE

6:00 PM–9:00 PM  Student Research Achievement Award (SRAA) Poster Competition  Exhibit Hall

6:15 PM–7:15 PM  Scientific Societies and Grassroots Movements: What We All Can Do to Combat Sexual Harassment  Ballroom 20D
Chair: Sharona Gordon, University of Washington
Panel:
Sharona Gordon, University of Washington
David W. Piston, Washington University School of Medicine in St. Louis
Billy M. Williams, American Geophysical Union
Gabriela K. Popescu, SUNY Buffalo

7:00 PM–9:00 PM  Biophysical Society of Canada (BSC) Mixer  Jolt’n Joe’s Gaslamp

7:30 PM–8:00 PM  Dinner Meet-Ups  Society Booth/Lobby G

7:30 PM–10:30 PM  Biophysical Journal Editorial Board Dinner  The Ultimate Skybox at Diamond View Tower
Sunday, February 16

Biophysical Journal Editorial Board
Boot Camp
7:00 AM - 9:00 AM, ROOM 32A

Postdoctoral Breakfast
Tales From Two Sides of Recruitment
7:30 AM - 8:30 AM, ROOM 29AB

Support contributed by the Burroughs Wellcome Fund.

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

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

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

Registration/Exhibitor Registration
7:30 AM - 5:00 PM, LOBBY G

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

Symposium
Asymmetric Membranes
8:15 AM - 10:15 AM, BALLROOM 20A

Chair
Georg Pabst, University of Graz, Austria

No Abstract
8:15 AM
VPS13 PROTEINS ARE CHANNELS THAT TRANSPORT LIPIDS BETWEEN MEMBRANES. Karin Reinsch

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

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

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

Symposium
Single-Molecule Visualization of Transcription, Translation and Splicing
8:15 AM - 10:15 AM, BALLROOM 20D

Chair
Magnus Johansson, Uppsala University, Sweden

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

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

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

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

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates I
8:15 AM - 10:15 AM, BALLROOM 20BC

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

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

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

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

23-PLAT
9:00 AM
ALPHA-HELICAL STRUCTURE IN TDP-43 TUNES LIQUID-LIQUID PHASE SEPARATION AND CELLULAR FUNCTION. Alexander E. Concella, Gregory Dignon, G¨ul H. Zerze, Broder Schmidt, Alexandra M. D’Ordine, Youngchan Kim, Rajat Rohatgi, Yuna M. Ayala, Jeetain Mittal, Nicola S. Fawzi

24-PLAT
9:15 AM
FLASH TALKS

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

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

27-PLAT
10:00 AM
EVOLUTIONARILY CONSERVED AMINO ACID ORGANIZATION IN PROTEIN LOW COMPLEXITY REGIONS ENCODES CONFORMATION, DYNAMICS AND ASSEMBLY. Erik W. Martin, Alex S. Holehouse, Ivan Peran, Jeremias Incicco, Andrea Soranno, Rohit V. Pappu, Tanja Mittag
Platform
Cardiac Muscle Mechanics and Structure
8:15 AM - 10:15 AM, Room 23ABC
Co-Chairs
Mathias Gautel, King’s College London, United Kingdom
Rhye-Samuel Kanassatega, University of Arizona

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

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

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

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

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

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

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

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

Platform
Member Organized Session: Multiscale Genome Organization
8:15 AM - 10:15 AM, Room 24ABC
Co-Chairs
Yamini Dalal, National Cancer Institute
Tamar Schlick, New York University, HHMI

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

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

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

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

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

9:30 AM
ELUCIDATING ARCHAEOAL CHROMATIN “SLINKY” DYNAMICS THROUGH SIMULATION AND EXPERIMENT. Samuel Bowerman, Daren Kraft, Jeff Wereszczynski, Karolin Luger

9:45 AM
ANALYZING NUCLEOSOME PLASTICITY VIA ATOMIC MD SIMULATIONS. Anastasia Kniazeva, Grigorii Armeev, Iunona Pospelova, Alexey K. Shaytan

10:00 AM
CONNECTING NUCLEOSOMAL DNA FOLDING TO CHROMATIN ARCHITECTURE AND PROPERTIES. Steffjord Todolli, Wilma K. Olson

Platform
Ion Channel Regulatory Mechanisms
8:15 AM - 10:15 AM, Room 25ABC
Co-Chairs
Rose Dixon, University of California, Davis
Izhar Karbat, Weizmann Institute of Science, Israel

43-PLAT
8:15 AM
TRAVEL Awardee

44-PLAT
8:30 AM
B-ADRENERGIC RECEPTOR-MEDIATED SIGNALING PROMOTES ENHANCED SARCOLEMMLAL INSERTION OFQA.2 FROM RAB4-POSITIVE ENDOSONES. Silvia Garcia del Villar, Eamonn J. Dickson, Rose E. Dixon

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

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

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

48-PLAT
9:30 AM
STEPWISE DISSOCIATION OF AN INNER GATE CONTROLS PORE OPENING IN THE CALCIUM-ACTIVATED CHLORIDE CHANNEL TMEM16A. Andy Lam, Raimund Dutzler
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<th>Membrane Protein Structures</th>
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<td>Co-Chairs</td>
<td>Lise Arleth, University of Copenhagen, Denmark</td>
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<td>James Gumbart, Georgia Institute of Technology</td>
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| 51-Plat | 8:15 AM | CANCER-ASSOCIATED MUTATIONS CO-LOCATE WITH TRPA1 HINGE FORMATION IN THE ANKIRYN REPEAT REGION. 
Subir Sahu, Justen Elenewski, Michael Zwolak |
| 52-Plat | 8:30 AM | CRYOEM STRUCTURE OF THE VIBRIO CHOLEREA TYPE IV PILUS SECRETION PILQ. 
Sara J. Weaver, Matthew Szinsky, Triana Dalia, Ankur Dalia, Grant J. Jensen |
| 53-Plat | 8:45 AM | SMALL-ANGLE NEUTRON SCATTERING SHOWS THAT THE SOLUTION STRUCTURES OF THE BACTERIAL MG²⁺-CHANNEL CORA ARE OVERALL SIMILAR WITH AND WITHOUT MG²⁺-BOUND. 
Lise Arleth, Nicolai T. Johansen, Tone Bengtsen, Andreas Haahr Larsen, Frederik Tidemand, Thomas Pomorski, Kresten Lindorff-Larsen |
| 54-Plat | 9:00 AM | STRUCTURAL ORGANIZATION OF CAVEOLIN-1 85 OLIGOMERS DETERMINED BY CRYO-ELECTRON MICROSCOPY. 
Bing Han, Jason Porta, Elad Binshtein, Erkan Karakas, Melanie D. Oh, Anne K. Kenworthy |
| 55-Plat | 9:15 AM | HIGHLY DYNAMIC C99 OLIGOMERIC STRUCTURE IN CHOLESTEROL AND SPHINGOMYELIN RICH BICELLES. 
James Hutchison, Kuo-chih Shih, George Pantelopoulos, Haley Harrington, Kathleen Mittendorf, Holger Scheidt, Shuo Qian, Scott Collier, Melissa Chambers, Daniel Hunter, John Katsaras, Robert L. McFeeters, John E. Straub, Mu-Ping Nieh, Charles Sanders |
| 56-Plat | 9:30 AM | MODELING THE PLACEMENT OF THE ACRAB-TOLC MULTIDRUG EFFLUX PUMP IN THE BACTERIAL CELL ENVELOPE. 
James C. Gumbart, Josie Ferreira, Sunny hwang, Anthony Hazel, Jerry M. Parks, Jeremy C. Smith, Morgan Beeby, Helen Zgrusikayu |
| 57-Plat | 9:45 AM | HUMAN ADENOSINE A₁R DIMERIZATION IS DRIVEN BY A C-TERMINAL MOTIF. 
Khahn D.Q. Nguyen, Susanna Seppala, Michael Vigers, Nicole S. Schonenbach, Jennifer Hoover, Michelle A. O’Malley, Songi Han |
| 58-Plat | 10:00 AM | SINGLE-PARTICLE CRYO-EM OF MEMBRANE PROTEINS - SUCCESS STORIES AND CURRENT CHALLENGES. 
Doreen Matthies, Biao Qiu, Chanhyung Bae, Eduardo Perozo, Kenton Swartz, Siriram Subramaniam, Olga Boudker, Zhiheng Yu |

**Platform**

**Mechanosensation**

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

Co-Chairs

**59-Plat** 8:15 AM

MECHANOSENSITIVE CHANNELS IN PARABURKHOLDERIA GRAMINIS. 
Brittini L. Miller, Hannah R. Malcolm

**60-Plat** 8:30 AM

STRUCTURING INNER-EAR MECHANOTRANSDUCTION. 
Deepanshu Choudhary, Yoshiie Narui, Brandon Neel, Sanket Walujkar, Jeffrey M. Lotthammer, Joseph C. Sudar, Collin Nisler, Lahiru N. Wimalasena, Carissa F. Klasek, Pedro De-la-Torre, Conghui Chen, Raul R. Araya-Secchi, Elakiya Tamilselvan, Marcos Sotomayor

**61-Plat** 8:45 AM

INVESTIGATING THE INFLUENCE OF MEMBRANE PRETENSION ON SINGLE CELL MECHANOSENSITIVITY WITH FORCE-CONTROLLED MICROPETTIES. 
Ines Lüchtefeld, Christoph Gabelein, Janos Voros, Boris Martinac, Tomaso Zamelli, Massimo Vassalli

**62-Plat** 9:00 AM

MAPPING THE DISTRIBUTION OF MECHANICAL STRESSES IN THE LINC COMPLEX. 
Kamyar Behrouzi, Zeinab Jahed, Mohammad R. Mofrad

**63-Plat** 9:15 AM

NUCLEAR MECHANOSENSATION REGULATES IMMUNOLOGICAL SENSITIVITY OF MACROPHAGE ACTIVATION. 
Dong-Hwee Kim

**64-Plat** 9:30 AM

BACTERIAL-LIKE MECHANOSENSITIVE CHANNELS CONTROL INFECTIVITY AND ORGANELLE DYNAMICS IN PROTOZOAN PARASITES. 
Joshua Fonbuena, Ingrid Augusto, Tiffine Pham, Melvin Williams, Kildare Miranda, Veronica Jimenez

**65-Plat** 9:45 AM

COLLECTIVE MECHANOSENSING REGULATES THE AGONIST-INDUCED CALCIUM RESPONSE IN SMOOTH MUSCLE CELLS. 
Suzanne E. Stasiak, Ryan J. Jamieson, Harikrishnan Parameswaran

**66-Plat** 10:00 AM

PROPAGATION OF MEMBRANE TENSION IN NEURONAL AXONS. 
Zheng Shi, Adam E. Cohen

**CID Committee Meeting**

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

**Career Development Center Workshop**

Networking for Nerds: How to Create Your Unicorn Career

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

Wanna land your dream job? Get ready to network! Most jobs and other game-changing career opportunities are not advertised, and even if they are, there is usually a short-list of candidates already in mind. So how do you find out about and access the 90% of jobs and other opportunities that are “hidden”? In this workshop, we will focus on proven networking strategies and tactics to identify new opportunities, locate decision-makers within organizations, solidify your reputation and brand in the minds of those who hire, and gain access to hidden jobs and game-changing opportunities. Discover how networking and self-promotion can enable you to land or even create your dream job from scratch!
In this presentation we will discuss the recent advances in HPLC, field flow fractionation (FFF) and composition gradient (CG) coupled with multi-angle light scattering (MALS). The use of HPLC has expanded beyond size exclusion chromatography to include ion-exchange, reversed phase and hydrophobic interaction chromatography that enables the assessment of other properties and various types of molecules such as antibody drug conjugates. FFF-MALS is a gentle separation technique that allows for the separation of a wide range of particle sizes in a single channel with low shear. It is done entirely in a liquid stream and is well suited to utilizing the same separation buffer in which the molecules have been formulated, eliminating the worry that the elution buffer may be affecting the molecule in some way. With CG-MALS the user is able to study protein interaction with other molecules of interest again all in solution and label free.

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

Speaker
Kevin McCowen, Regional Manager, Wyatt Technology

Symposium
Mapping the Immune System
10:45 AM - 12:45 PM, BALLROOM 20A

Chair
Brian Baker, University of Notre Dame

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

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

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

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

Symposium
Cytoskeleton and Motility
10:45 AM - 12:45 PM, BALLROOM 20D

Chair
Joseph Falke, University of Colorado Boulder

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

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

71-SYMP
11:45 AM
MECHANOCHEMICAL CIRCUITS IN THE CYTOPLASM. Margaret Gardel
Symposium
Mitochondrial Calcium Fluxes
10:45 AM - 12:45 PM, BALLROOM 20BC
Chair
Gyorgy Csordas, Thomas Jefferson University

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

74-SYMP
11:15 AM
THE DUAL LIFE OF MITOCHONDRIAL F-ATP SYNTHASE. Paolo Bernardi, Ilidio Szabó, Giovanna Lippe, Christoph Gerle, Michael A. Forte

75-SYMP
11:45 AM
MITOCHONDRIAL CALCIUM AND CELL DEATH. Elizabeth Murphy

76-SYMP
12:15 PM
NON-UNIFORM DISTRIBUTION OF INNER MITOCHONDRIAL MEMBRANE TRANSPORT MECHANISMS IN THE CARDIAC MUSCLE. Gyorgy Csordas

Platform
Protein-Lipid Interactions I
10:45 AM - 12:45 PM, ROOM 23ABC
Co-Chairs
Brennica Marlow, Vanderbilt University
Phillip Stansfeld, University of Oxford, United Kingdom

77-PLAT
10:45 AM
STRUCTURAL DETERMINANTS OF CHOLESTEROL RECOGNITION IN HELICICAL MEMBRANE PROTEINS. Brennica Marlow

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

79-PLAT
11:45 AM
MOLECULAR MECHANISM OF SELECTIVE CHOLESTEROL UPTAKE IN CLASS B SCAVENGER RECEPTOR LIMP-2. Anna Liang, Christopher Ing, Richard L. Banh, Régis Pomès

80-PLAT
12:00 PM
SUPPORTED LIPID BILAYERS WITH ASYMMETRIC MEMBRANE PROTEINS: CONTROLLING THE PROTEIN ORIENTATION BY USING PEPTIDE-DISCs. Alessandra Luchini, Frederik G. Tidemand, Raul R. Araya-Secchi, Lise Arleth

81-PLAT
12:15 PM
MODELLING THE DYNAMIC ORGANISATION OF THE β1-ADRENERGIC RECEPTOR IN CROWDED MEMBRANES: FROM THE NANO TO THE MEGASCALE. Anna L. Duncan, Maximillian A.R. Bandurka, Wanling Song, Mark S.P. Sansom

82-PLAT
12:30 PM
ON-CELL MOTION OF SINGLE T4 BACTERIOPHAGES, A HIGHLY DYNAMIC TARGET-FINDING PROCESS. Lisa Dreesens

83-PLAT
12:45 PM
INVESTIGATING THE INFLUENCES OF LIPID BINDING ON RHODOPSIN ACTIVATION USING NATIVE MASS SPECTROMETRY. Carolanne E. Norris, James E. Keener, Nitupa Weerasinghe, Michael F. Brown, Michael T. Marty

Biophysical Society
93-Plat  10:45 AM  NANOSECOND DISTRIBUTION OF NUCLEAR SITES ANALYZED BY SUPERRESOLUTION Tiefbeeld CROSS-CORRELATION SPECTROSCOPY. Michele Oneto, Lorenzo Scipioni, Maria Sarmento, Isotta Cainero, Elena Cerutti, Simone Pellicci, Laura Furia, Pier Giuseppe Pellicci, Gaetano Ivan Dellino, Paolo Bianchini, Mario Farella, Enrico Gratton, Alberto Diaspro, Luca Lanzano

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

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

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

11:45 AM  FLASH TALKS

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

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

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

Platform  Protein Structure and Conformation I

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

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


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

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

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

11:45 AM  FLASH TALKS

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

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

114-Plat  12:30 PM  EVOLUTION AND FUNCTIONAL ADVANTAGES OF PROTEIN METAMORPHOSIS. Acacia F. Dishman, Robert Tyler, Jamie Fox, Michelle Lee, Jaime de Anda, Ernest Lee, Gerard C. Wong, Brian Volkman
Exploring Careers in Biophysics Day
11:15 AM - 3:00 PM, ROOM 28CDE
This free day for San Diego area high school and college students at the BPS 64th Annual Meeting kicks off with an Undergraduate Student Pizza “Breakfast” where participants will have an opportunity to network with their peers and members of the Biophysical Society’s Education Committee in a fun and relaxed environment. The Breakfast will include a panel discussion on academic and career paths in biophysics, with times for questions and answers from the audience. Come prepared to find out about the course of study that aspiring biophysicists undertake, what it means to be a biophysicist, and how biophysicists make important discoveries. Attendees will be permitted to attend any of the meeting’s open sessions and activities for the full day, including the Education & Career Opportunities Fair where they can meet with representatives of, and learn about, opportunities from around the world. In addition, there will be some fun, interactive demos for students to learn about ground-breaking techniques in the field. Pre-registration was required.

Undergraduate Student Pizza “Breakfast”
11:30 AM - 1:00 PM, ROOM 28CDE
This “breakfast” for undergraduate students offers a valuable networking and social opportunity to meet other students, Biophysical Society Committee members, and scientists at all career levels to discuss academic goals and questions, and to develop a biophysics career path. The Breakfast will include a panel discussion on academic and career paths in biophysics, with opportunities for questions and answers from the audience - come prepared to find out about the course of study that aspiring biophysicists undertake, what it means to be a biophysicist, and how biophysicists make important discoveries. Space for this session is limited to the first 100 attendees.

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

Career Talk
Carmilia Jimenez, Ajinomoto Bio-Pharma Services

Exhibitor Presentation
NanoSurface Biomedical
11:30 AM - 1:00 PM, ROOM 33A
Recreating the Extracellular Matrix in a Dish
Cells in the body use a variety of cues (e.g., structural, mechanical, electrical, and chemical) from the extracellular matrix (ECM) to develop and mature physiologically. These influential cues help regulate a broad spectrum of processes such as cell signaling, division, and differentiation. Many in vitro platforms seek to incorporate these cues into the cell’s microenvironment, but often fail, suffering from lack of reproducibility and incompatibility with other well-established end-point assays. Here, we demonstrate biomimetic in vitro platforms capable of reliably reproducing these essential ECM cues. These platforms markedly improve the structural and functional development of a variety of cell types, including stem cells, cardiomyocytes, muscle cells, and many more. Specifically, we show how NanoSurface Plates and Cytostretcher Cell-stretching Instruments can be utilized individually or collectively to study various model systems. The effects of cell-nanotopography interactions on adhesion, signaling, polarity, and migration across many applications such as human epithelia, cardiovascular function, and cancer biology are highlighted. Further, we describe how the differentiation of stem cells can be enhanced by providing a more biomimetic culture environment, with a particular focus on iPSC-derived cardiomyocytes and skeletal muscle cells.

Speaker
Hamed Ghazizadeh, Product Manager, NanoSurface Biomedical

Career Development Center Workshop
Demystifying the Academic Job Search I:
Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements
12:00 PM - 1:00 PM, ROOM 26A
What goes on inside search committees; the “black box” of the academic job search process? How are they constituted, what are their processes, and what do they look for when assessing applicants? Answers to these and other questions presented by Andrew Green, PhD a veteran of the academic job search and numerous search committees.

Public Affairs Committee Meeting
12:00 PM - 1:30 PM, ROOM 30D
BPS/IOP Advisory Board Meeting
12:00 PM - 4:00 PM, ROOM 32B
Exhibitor Presentation
Sutter Instrument
12:30 PM - 2:00 PM, ROOM 33C
Scientists Empowering Scientists
For over 45 years, Sutter Instrument has been collaborating with researchers. During this period, there have been many technological evolutions in patch clamp electrophysiology, and Sutter has introduced many new product families, including pipette pullers, manipulators, light sources, wavelength switchers, specialized microscopes and, most recently, fully integrated patch clamp amplifier systems. At this presentation, we will teach techniques, tips and tricks, and showcase new features, such as dynamic clamp capability.

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

Town Hall for Community Input on the National Academies Decadal Survey of Biological Physics
1:00 PM - 2:30 PM, ROOM 31ABC
The National Academies of Sciences, Engineering, and Medicine is undertaking a decadal survey of biophysics to look at how the approaches and tools of physics can help to answer important questions about living systems. A committee of experts will evaluate the current state of the field, identify important future research directions, and assess workforce and education needs. This study is funded by the National Science Foundation, and will serve as a guide for federal agencies and academic leadership as they make decisions regarding the future of biophysics. Community input for this study is critical—particularly given the interdisciplinary nature of the field—and this town hall will serve as an opportunity for members of the BPS community to express their thoughts directly to the committee members who are conducting the study. This town hall is open to all members of the BPS community, and we encourage your participation.

Speakers
William Bialek, Princeton University
Christopher Jones, National Academies of Sciences, Engineering, and Medicine
Steven Moss, National Academies of Sciences, Engineering, and Medicine
The World Outside the Lab
Following Your IDP Roadmap to the Career You Want
1:00 PM - 2:30 PM, ROOM 28AB
Finding a job is easy, finding the job you want requires a plan! In this interactive workshop, you will be guided through the creation of your Individual Development Plan (IDP) and will develop strategies for utilizing your IDP to find, land, and succeed in a career that fits you best. Learn how to identify what you desire and require a job, evaluate how well potential career fields match your needs, and develop goals to prepare for and land a position you will find satisfying and rewarding. Don’t settle for just any job, join us and plot your course to a fulfilling career! Speaker Heather Dillon has over a decade of experience in recruitment and advising, and has assisted hundreds of graduate students and postdoctoral fellows and their job searches and application materials and is devoted to helping trainees succeed in their chosen professions by providing career guidance and advice through seminars, workshops, and individual meetings.

Speaker
Heather Dillon, University of California, San Diego

Education & Career Opportunities Fair
1:00 PM - 3:00 PM, EXHIBIT HALL
Learn about the different leading biophysics programs and opportunities. This fair will give you the opportunity to speak to representatives from different institutions, agencies, and companies about their biophysics programs and opportunities. All those attending the Annual Meeting are encouraged to attend.

Exhibitor Presentation
Carl Zeiss Microscopy LLC
1:30 PM - 3:00 PM, ROOM 33A
Multiplex Mode for the LSM 9 Series with Airyscan 2: Fast and Gentle Confocal Superresolution in Large Volumes
The LSM 9 family with Airyscan 2 from ZEISS provides more options to enable the perfect balance of speed and resolution for today’s confocal-imaging needs. The new Multiplex mode extends sensitive Airyscan imaging to larger model systems with low expression levels by increasing acquisition speeds even further. It extracts more spatial information; hence, multiple lines can be imaged in a single line scan. This allows for larger acquisition steps to improve image acquisition speeds and reduce the illumination dosage to the sample. This novel concept allows rapid volumetric imaging with unprecedented resolution beyond what is available in traditional confocal systems today.

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

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

Speaker
Renée Dalrymple, Product Marketing Manager-Laser Scanning Microscopy, Carl Zeiss Microscopy LLC

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

Poster Presentations and Late Posters
1:45 PM - 3:45 PM, EXHIBIT HALL

Teaching Science Like We Do Science
2:00 PM - 4:00 PM, ROOM 28CDE
This interactive, hands-on workshop focuses on practice-applicable, easy-to-use strategies and tools that educators at any level of biophysical science education can use to assess what their students’ take away from their teaching, and where changes to their educational methods might be appropriate.

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

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

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

Career Development Center Workshop
The Industry Interview: What You Need to Do Before, During, and After to Get the Job
2:30 PM - 3:30 PM, ROOM 26A
When does the interview begin? Much sooner than you think: it starts from the first point of contact you have with someone from the organization. And when does it end? Only when the offer is extended and accepted. Learn how to convert conversations and networking into interviews and interviews into job offers in this special presentation focusing on industry positions. Discover what you need to know and do throughout the interview process to demonstrate your value to the company and land the job. We will discuss common mistakes that job seekers make, and specific ways in which you can give yourself a competitive edge in the interview. Both academic and non-academic interviewing tactics will be addressed.
As US-China tensions continue to rise, what are the long-term repercussions for scientific research— an endeavor that has always thrived on collaborative efforts and global perspectives? What is the impact of university and federal agency investigations on the participation of Chinese institutions, with collaborations involving US scientists comprising the largest share.

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

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

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

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

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

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

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

**Exhibitor Presentation**

Dynamic Biosensors GmbH

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

**switchSENSE® Biophysical Analysis with Electro-Switchable Biosurfaces**

The presentation will highlight the broad range of applications of the switchSENSE® technology that is supported by the recently launched heliX® biosensor:

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

**Speakers**

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

**Early Careers Committee Meeting**

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

**Exhibitor Presentation**

Bruker Corporation

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

**Multiplexed Imaging and Superresolution Microscopy Using the Vutara 352 Microscope with Integrated Fluidics System**

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

**Speaker**

Robert Hobson, Applications Scientist, Bruker Corporation

**Career Development Center Workshop**

**Nailing the Job Talk, or Erudition Ain’t Enough**

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

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

**Biophysical Journal Associate Editors Meeting**

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

**Symposium**

**Anion Channels**

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

**Chair**

Criss Hartzell, Emory University

**115-SYM**

4:00 PM

MECHANISMS OF CLC CL/H+ TRANSPORTERS. **Merritt Maduke**

**116-SYM**

4:30 PM

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

**117-SYM 5:00 PM**

GATING DYNAMICS, REGULATION AND PHARMACOLOGY OF THE CFTR ANION CHANNEL. **László Csanády**, Csaba Mihályi, Beáta Töröcsik

**118-SYM**

5:30 PM

AMAZING ANOCTAMINS (TMEM16) ALL AROUND. **Criss Hartzell**, Kuai Yu, Steven Foltz, Hyoung Choo, Jarred M. Whitlock
Symposium
“Fuzzy” Interactions and Crowding
4:00 PM - 6:00 PM, BALLROOM 20D

Chair
Catherine Musselman, The University of Iowa

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

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

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

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

Platform
Membrane Protein Dynamics and Folding I
4:00 PM - 6:00 PM, BALLROOM 20BC

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Platform
Nucleic Acid Replication, Transcription, Translation, and Repair
4:00 PM - 6:00 PM, ROOM 24ABC

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

138-PLAT 4:00 PM
VERY FAST CRISPR ON DEMAND. Yang Liu, Roger Zou, Yuta Nihongaki, Shuaixin He, Shiva Razavi, Bin Wu, Taekjip Ha
139-Plat  4:15 PM
VISUALIZING ENDOGENOUS RNA POLYMERASE II PHOSPHORYLATION DYNAMICS AT A SINGLE GENE.  Linda S. Forero Quintero, William Raymond, Tetsuya Handa, Matthew Saxton, Tatsuya Morisaki, Edouard Bertrand, Hiroshi Kimura, Brian Munsy, Timothy J. Stasevich

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

141-Plat  4:45 PM

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

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

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

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

Platform
Microtubules, Actin, Dynamics, and Associated Proteins

4:00 PM - 6:00 PM, ROOM 25ABC

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

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

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

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

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

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

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

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

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

Platform
Optical and Force Microscopy

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

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

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

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

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

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

158-Plat  5:00 PM
A THERMODYNAMIC FRAMEWORK FOR DYNAMIC FORCE SPECTROCOPY.  Alan Y. Liu, Todd A. Sulchek

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

160-Plat  5:30 PM
BIOMOLECULAR DATA ASSIMILATION TO INTEGRATE HIGH-SPEED ATOMICS AND MAMMALIAN CYTOSIS.  Antonio F. Fuchs, Jesse Huang, Richard H. Ebright, Jens H. Gundlach

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

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

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

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

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

164-PLAT 4:30 PM
ALTERNATIVE SPLICING OF CA\textsuperscript{V} \textsubscript{1.2 IN ARVC PATIENTS. Theresa Bourjau, Valentina Di Blase, Marta Campiglio, Maria Gigibergter, Barbara Schober, Teresa Stauber, Gabriela Pietrzyk, Andrea Baessler, Marcus Fischer, Stefan Wagner, Lars S. Maier, Karin P. Hammer

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

166-PLAT 5:00 PM
CARDIAC CAMKII\textsubscript{A} MEMORY: HOW POST-TRANSLATIONAL-MODIFICATIONS ALTER CALMOLUNI AFFINITY. Mitchell Simon, Christopher Y. Ko, Sonya Baidar, Ravzan L. Cornea, Julie Bossuyt, Donald M. Bers

167-PLAT 5:15 PM
EFFECT OF BAPTA AND DYSFERLIN'S C2A DOMAIN ON RECOVERY OF CA\textsuperscript{2+} TRANSIENTS AFTER OSMOTIC SHOCK IN DYSFERLIN-NUL MYOFIBERS. Valery I. Lukyanenko, Joaquim M. Muriel, Robert J. Bloch

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

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

A Wine & Cheese Mixer

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

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

Exhibitor Presentation
ELEMENTS SRL

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

Low-Noise, Handheld Amplifiers for Electrophysiology and Nanopore Applications

Ultra-portable and cost-effective amplifier technology is now a reality accessible to any electrophysiology research lab, thanks to Elements miniaturized products, based on our custom CMOS microchips.

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

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

Attend this presentation to learn about:

- The advantages of using a versatile and compact nano-current amplifier technology
- Portable nanopore solution for protein detection using disposable nanopore chips
- How the world’s smallest and cheapest patch clamp amplifier is radically changing patch-clamp measurements
- Different user experience ranging from patch-clamp on live cells, to exosome detection using solid state nanopores, as well as lipid bilayer experiments

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

Speakers
Federico Thei, Chief Executive Officer, ELEMENTS SRL
Alessandro Porro, Application Scientist, ELEMENTS SRL
Guilherme Henrique Bomfim, Researcher, New York University
Nelly Mnatsakanyan, Assistant Professor, Yale University
David Niedzwiecki, Scientist, Goeppert LLC
Mark Platt, Senior Lecturer, University of Loughborough
Masato Nishio, Tokyo University
Korean Biophysicists Meeting
6:00 PM - 6:30 PM, ROOM 29AB

Biophysics Austria Mixer
6:00 PM - 8:00 PM, ROOM 28CDE

Student Research Achievement Award (SRAA) Poster Competition
6:00 PM - 9:00 PM, EXHIBIT HALL

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

Scientific Societies and Grassroots Movements: What We All Can Do to Combat Sexual Harassment
6:15 PM - 7:15 PM, BALLROOM 20D

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

Moderator
Sharona Gordon, University of Washington

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

Biophysical Society of Canada (BSC) Mixer
7:00 PM - 9:00 PM, JOLT’N JOE’S GASLAMP

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

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

Biophysical Journal Editorial Board Dinner
7:30 PM - 10:30 PM, THE ULTIMATE SKYBOX AT DIAMOND VIEW TOWER
SUNDAY POSTER SESSIONS
1:45 PM–3:45 PM, EXHIBIT HALL

Below is the list of poster presentations for Sunday of abstracts submitted by October 1. The list of late abstracts scheduled for Sunday is available in the Program Addendum, and those posters can be viewed on boards beginning with LB.

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

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

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<td>B36–B53</td>
<td>Protein Structure, Prediction, and Design I</td>
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<td>Protein-Small Molecule Interactions I</td>
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<td>Cardiac, Smooth, and Skeletal Muscle Electrophysiology I</td>
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<td>Bacterial Mechanics, Cytoskeleton, and Motility</td>
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<td>B567–B586</td>
<td>Bioengineering</td>
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<td>B587–B606</td>
<td>Micro- and Nanotechnology I</td>
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It is the responsibility of the poster presenters to remove print materials from the board after their presentations. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected or stored for pick-up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.
**Protein Structure and Conformation I**
(Boards B1 - B35)

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

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

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

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

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

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

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

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

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

**179-Pos** 
**BOARD B10**
A SYSTEMATIC REVIEW OF CHROMOGRAININ A (CGA) AND ITS BIO-MEDICAL APPLICATIONS, UNVEILING ITS STRUCTURE-RELATED FUNCTION. **Manhuyk Han**, Kyuhyung Choi, Seung Joong Kim

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

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

**182-Pos** 
**BOARD B13**
THE STRUCTURE AND MECHANISM OF A UNIQUE RIESKE-TYPE MONO-OXYGENASE ENZYME FROM THE HUMAN GUT MICROBIOTA IMPLI-CATED IN CARDIOVASCULAR DISEASE. **Mussa Quareshy**, Murailitharan Shanmugam, Alexander D. Cameron, Timothy D. Bugg, Yin Chen

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

**184-Pos** 
**BOARD B15**

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

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

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

**188-Pos** 
**BOARD B19**
CRYSTAL STRUCTURE OF AN ANTI-CRISPR PROTEIN, ACRF2, AND ITS INTERACTION WITH TYPE I-F CAS PROTEINS. Donghyun Ka, Nayoung Suh, Euiyoung Bae

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

**190-Pos** 
**BOARD B21**
ELUCIDATING THE STRUCTURE OF AGGREGATION-PRONE INTERMEDIATES IN DIVERSE POINT MUTANTS OF HUMAN ID-CRYSTALLIN. **Jimmy Thai**, Eugene Serebryany, Eugene Shakhnovich

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

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

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

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

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

**196-Pos** 
**BOARD B27**
THE FUNCTION OF LYNX1 AND LYNX2 PROTEIN IN BINDING AFFINITY TO NICOTINIC RECEPTORS AND GENE RESTORATION. **Griffin M. Jones**
Protein-Small Molecule Interactions I  
(Boards B54 - B74)

223-Pos  
**Board B54**  
*ILLUMINATING THE STRUCTURAL DETERMINANTS FOR TETRAMERIC ASSEMBLY OF ONCOGENIC CTBP TO GUIDE INHIBITOR DESIGN.*  
**William E. Royer**, Jeffry C. Nichols, Celia A. Schiffer

224-Pos  
**Board B55**  
*CORRELATIONS BETWEEN THERMODYNAMICS AND STRUCTURE OF CARBONIC ANHYDRASE-INHIBITOR BINDING.*  
**Valida Paketuryte**, Alexey Smirnov, Alberta Jankunaite, Audrius Zaksauskas, Edita Capkauskaite, Daumantas Matulis

225-Pos  
**Board B56**  
*TRAVEL Awardee*  
LIGAND BINDING, UNBINDING AND ALLOSTERIC EFFECTS: DECIPHERING SMALL MOLECULE MODULATION OF HSP90.  
**Daniele Di Marino**, Ilida D’Annessa, Stefano Raniolo, Vittorio Limongelli, Giorgio Colombo

226-Pos  
**Board B57**  
*INTERPLAY OF CONFORMATIONAL PLASTICITY AND SUBSTRATE POLYMORPHISM IN MALARIAL TYROSYL-TRNA SYNTHETASE.*  
**Manish Datt**

227-Pos  
**Board B58**  
*ER STRESS DIRECTLY ACTIVATES INFLAMMATORY RESPONSES THROUGH DAMP PRODUCTION.*  
**Ying Fan**, Darren F. Boehning, Askar M. Akimzhanov, Abdikarim Abdullahi, Marc Jeschke

228-Pos  
**Board B59**  
*AN INTEGRATED COMPUTATIONAL APPROACH FOR THE DISCOVERY OF UBIQUITIN SPECIFIC PROTEASE 7 (USP7) INHIBITORS AS POTENTIAL CANCER THERAPIES.*  
**Serdar Durdagi**

229-Pos  
**Board B60**  
*TRAVEL Awardee*  
TWO STEP MECHANISM OF AN ACTIVITY-BASED FLUORESCENT PROBE FOR CYCLOXYGENASE-2.  
**Andres S. Arango**, Anuj Yadav, Christopher J. Reinhardt, Hannah C. Huff, Liang Dong, Aditi Das, Michael G. Malkowski, Jefferson Chan, Emad Tajkhoshyd

230-Pos  
**Board B61**  
*THE EFFECT OF (-)-EPICHALLOATECHIN-3-GALLATE ON THE AB SECONDARY STRUCTURE.*  
**Atanu Acharya**, Julia Stockmann, Leon Beyer, Andreas Nabers, Klaus Gerwert, James C. Gumbart, Victor S. Batista

231-Pos  
**Board B62**  
*MECHANISM OF PKR ACTIVATION BY SMALL MOLECULES.*  
**Stephen J. Hesler**, Vicky Godoy, **James L. Cole**

232-Pos  
**Board B63**  
*CRYO-EM AS A TOOL FOR DRUG DEVELOPMENT INVOLVING AN INHIBITOR OF A 29 KDA PROTEIN.*  
**Wei Huang**, Hongyun Li, Joseph M. Ready, Sanford D. Markowitz, Derek J. Taylor

233-Pos  
**Board B64**  
*THE ENTHALPY OF PROTEIN-LIGAND INTERACTION.*  
Asta Zubrien, Daumantas Matulis

234-Pos  
**Board B65**  
*DILUTE VS NON-DILUTE FLOODING MOLECULAR DYNAMICS SIMULATIONS - WHERE DO WE DRAW THE LINE.*  
**Leticia Stock**, Leonardo Cirqueira, Werner Tretkow

235-Pos  
**Board B66**  
*IDENTIFYING LIGAND BINDING SITES OF PROTEINS USING CRYSTALLOGRAPHIC BFACTORs AND RELATIVE POCKET SIZES.*  
Navya Shilpa Josyula, Constance Jeffery

236-Pos  
**Board B67**  
*POLYETHYLENE GLYCOL SIZE AND PROTEIN-COMPLEX STABILITY.*  
**Francis J. Lauzier**, Claire J. Stewart, Daniel Harries, Gary J. Pielak, Shannon L. Speer

237-Pos  
**Board B68**  
*THE CONSTRUCTION OF FUNCTIONALIZED BIO-INORGANIC NANOPORES AND ITS APPLICATION.*  
**Sha Wang**, Shuo Huang

238-Pos  
**Board B69**  
*CALCULATION OF BACKBONE AND SIDE CHAIN CONFORMATIONAL ENTROPY CHANGES UPON BINDING OF PROLINE-RICH MOTIFS TO SH3 DOMAIN.*  
**Jie Shi**, Jae-Hyun Cho, Wonmuk Hwang

239-Pos  
**Board B70**  
*STRUCTURAL BASIS OF P97 INHIBITION BY THE ANTI-CANCER COMPOUND CB-5083.*  
**Di Xia**, Wai-Kwan Tang

240-Pos  
**Board B71**  
*FROM BRANCHES TO FIBERS - INVESTIGATING F-ACTIN NETWORKS WITH BIOCHEMISTRY AND MATHEMATICAL MODELING.*  
**Melissa A. Riddle**, Olga Askinazi, Callie Miller, Dorothy Schafer

241-Pos  
**Board B72**  
*ABSOLUTE BINDING FREE ENERGY CALCULATIONS OF DRUGS TO THE HERG CHANNEL FOR THE PREDICTION OF CARDIOTOXICITY.*  
**Tatsuki Negami**, Tohru Terada

242-Pos  
**Board B73**  
*MOLECULAR MECHANISM OF MELATONIN AND SEROTONIN AFFECTING THE AGGREGATION OF AMYLOID-B.*  
**Yehong Gong**, Yu Zhou, Qingwen Zhang

243-Pos  
**Board B74**  
*INVESTIGATION OF THE IMPACT OF POST-TRANSLATIONAL MODIFICATIONS OF HNRP A18 ON SMALL MOLECULE INHIBITORS.*  
**Katherine Coburn**, Eduardo Solano-Gonzalez, Braden Roth, Paul T. Wilder, Kristen Varney, France Carrier, David J. Weber

Protein Dynamics and Allostery I  
(Boards B75 - B96)

244-Pos  
**Board B75**  
*SEARCHING FOR A MECHANISTIC DESCRIPTION OF PAIRWISE EPISTASIS IN PROTEIN SYSTEMS.*  
**Jonathan Barnes**, Kyle Martin, Craig Miller, F. Marty Ytreberg

245-Pos  
**Board B76**  
*MAPPING THE ADENYLATED KINASE REACTION BY TIME-RESOLVED X-RAY SOLUTION SCATTERING.*  
Harsha Ravishankar, Jack Goodman, Martin Nors Pedersen, Michael Wulff, Matteo Levantino, Magnus Wolf-Watz, Magnus Andersson

246-Pos  
**Board B77**  
*TRAVEL Awardee*  
USING FLUORESCENCE CORRELATION SPECTROSCOPY TO ACCURATELY MEASURE PROTEIN CONCENTRATION GRADIENTS IN THE PRESENCE OF NOISE AND PHOTobleaching.  
**Lili Zhang**, Cécile Fradin

247-Pos  
**Board B78**  
*S195A IS A CATALytically INACTIVE MUTANT OF THE PROTEASE DOMAIN OF THE UROKINASE-TYPE PLASMINOGEN ACTIVATOR (UPA).*  
**Francis X. Alipranti**, Mahima Masih, Constanza Torres-Paris, Elizabeth A. Kornives

248-Pos  
**Board B79**  
*BACKBONE DYNAMICS AND CHEMICAL EXCHANGE OF PEROXIDEXIDOXIN Q FROM XANTHAMONAS CAMPESTRIS.*  
**Aidan Estelle**, Patrick N. Reardon, Seth Pinckney, Andrew Karplus, Elizar J. Barbar

249-Pos  
**Board B80**  
*CONFORMATIONAL CONSEQUENCES OF PHOSPHOINOSITIDE BINDING TO DYSFERLIN C2A.*  
**Shauna C. Otto**, Patrick N. Reardon, Tanushri Kumar, Colin P. Johnson
Membrane Protein Dynamics I (Boards B97 - B116)

266-Pos  BOARD B97 INVESTIGATING THE DYNAMICS IN VIBRIO CHOLERAE PATHOGENICITY BY SINGLE-MOLECULE PALM AND BAYESIAN STATISTICS. Eric D. Donarski, Josh D. Karslake, Lucas Demey, Victor J. DiRita, Julie Biteen

267-Pos  BOARD B98 DEVELOPMENT AND IMPLEMENTATION OF A SINGLE-MOLECULE PLATFORM TO STUDY THE MECHANISM OF THE BETA-BARREL ASSEMBLY MACHINE COMPLEX. Megan E. Mitchell, Marcelo C. Sousa

268-Pos  BOARD B99 INVESTIGATION OF THE SPATIO-TEMPORAL DYNAMICS OF GLUT4 IN CARDIOMYOCYTES. Anna Magdalena Koester

269-Pos  BOARD B100 CADHERIN EXTRACELLULAR DOMAIN CLUSTERING IN THE ABSENCE OF TRANS-INTERACTIONS. Connor Thompson, Vinh H. Vu, Deborah E. Leckband, Daniel K. Schwartz

270-Pos  BOARD B101 DETERMINING MEMBRANE PROTEIN INTERACTION KINETICS THROUGH SINGLE-MOLECULE IMAGING AND STOCHASTIC MODELING. Luciana R. de Oliveira, Khuloud Jaqaman

271-Pos  BOARD B102 HOW DIFFERENT ANIONIC LIPIDS SORT DYNAMICS OF KRAS4B ON MODEL MEMBRANES, POPS VERSUS PIP2 IN MILLISECOND ALL ATOM MOLECULAR DYNAMICS SIMULATIONS. Van A. Ngo, Sumantra Sarka, Chris Neale, Angel E. Garcia

272-Pos  BOARD B103 THE INFLUENCE OF LIPIDS ON THE ASSEMBLY OF AQUIPORIN Z. Batiste Thienpont, James N. Sturgis

273-Pos  BOARD B104 DOMAINS OF ACTIVATED GPCRS MEDIATED BY MEMBRANE CURVATURE. Line Lauritsen, Christopher G. Shuttle, Efletheria Kazepeidou, Dimitrios Stamou

274-Pos  BOARD B105 HIGH SPEED AFM IMAGING OF STRUCTURE AND DYNAMICS OF BACTERIAL ABC TRANSPORTER MSBA DURING LIPID TRANSPORT. XuanKien Ngo

275-Pos  BOARD B106 EGF SIGNALING IN EPITHELIAL CARCINOMA CELLS UTILIZES HIGHER ORDER ARCHITECTURES OF EGF AND HER2. Adam J. Wollman, Charlotte Fournier, Isabel Llorente-Garcia, Oliver Harriman, Sviatlana Shashkova, Alex Hargreaves, Peng Zhou, Djamila Ouaret, Jenny Wilding, Akihiro Kusumi, Walter Bodmer, Mark C. Leake

276-Pos  BOARD B107 BRIDGING BIOCHEMICAL ACTIVITIES WITH CONFORMATIONAL DYNAMICS OBSERVED IN ATOMIC FORCE MICROSCOPY. Kanokporn Chattrakun, David P. Hooperheide, Chunfeng Mao, Linda L. Randall, Gavin King
Intrinsically Disordered Proteins (IDP) and Aggregates I (Boards B117- B140)

277-Pos  
BOARD B108  
DYNAMIC INTERNAL MOTION OF GPCR ON LIVE CELLS. Masaki Ishihara, Shoko Fujimura, Kohei Ichiyangi, Shunsuke Nozawa, Shinichi Adachi, Ryo Fukaya, Masahiro Kuramochi, Hiroshi Sekiguchi, Kazuhiro Mio, Yuji C. Sasaki

278-Pos  
BOARD B109  
CORRELATION OF HIGH-SPEED AFM AND ELECTROPHYSIOLOGY MEASUREMENTS TO STUDY ION CHANNEL STRUCTURE-FUNCTION RELATIONSHIPS. Raghavendar Reddy Sanganna Gari, George R. Heath, Crina M. Nimigean, Simon Scheuring

279-Pos  
BOARD B110  
CARDIOLIPIN’S DOUBLE LIFE AS A SUBSTRATE AND DYNAMIC REGULATOR IN PRO-APOTOTIC LIPID PeroXIDATION. Mingyue Li, Abhishek Mandal, Vladimir A. Tyurin, Maria DeLucia, Jinwoo Ahn, Valerian Kagan, Patrick C.A. van der Wel

280-Pos  
BOARD B111  
EXPLORING THE PROTEIN-MEMBRANE INTERACTIONS ON THE INTRACELLULAR SIDE OF PRLR. Raul Araya-Secchi, Katrine Bugge, Birthe B. Kragelund, Lise Arleth

281-Pos  
BOARD B112  
RAS FAMILY MEMBER RIT1 INTERACTS WITH THE MEMBRANE VIA C TERMINAL PEPTIDE TAIL WITHOUT LIPID ANCHOR. Amy Migliori

282-Pos  
BOARD B113  
SINGLE MOLECULE IMAGING OF HIV-1 ENVELOPE DYNAMICS AND GAG LATTICE ASSOCIATION EXPOSES DETERMINANTS RESPONSIBLE FOR VIRUS INCORPORATION. Nairi Pezeshkian, Nicholas S. Groves, Schuyler B. van Engelenburg

283-Pos  
BOARD B114  
AN INVESTIGATION OF THE INFLUENZA HEMAGGLUTININ MEMBRANE FUSION PROCESS USING MICROSECOND-LEVEL MD SIMULATIONS. Vivek Govind Kumar, Dylan S. Ogden, Adithya Polasa, Mahmoud Moradi

284-Pos  
BOARD B115  
PROBING THE FUNCTIONAL RELEVANCE OF THE TIP-TO-TIP ACRA-TOLC STRUCTURAL MODEL. Isoiza Ojo, Yinan Wei

285-Pos  
BOARD B116  
STRUCTURAL DYNAMICS OF SINGLE METABOTROPIC GLUTAMATE RECEPTOR DIMERS. Robert Quast, Anne-Marinette Cao, Fatanneh Fatemi, Linnea Olofsson, Philippe Rondard, Jean Philippe Pin, Emmanuel Margeat

286-Pos  
BOARD B117  
INVESTIGATING THE CONFORMATIONAL ENSEMBLES OF INTRINSICALLY-DISORDERED PROTEINS WITH A SIMPLE PHYSICS-BASED MODEL. Yani Zhao, Robin Cortes-Huerto, Kurt Kremer, Joseph F. Rudzinski

287-Pos  
BOARD B118  
COOPERATIVE INHIBITION OF SNARE-MEDIATED VESICLE FUSION BY ALPHA-SYNUCLEIN MONOMER AND OLIGOMER. Gyeongji Yoo, Youn Jung Cho, Soojin Park, Nam Ki Lee

288-Pos  
BOARD B119  
MULTIVALENCY OF PROTEINS AND THEIR INTERACTIONS PREDICT THEIR PHASE SEPARATION. Dan Devi, Amy R. Strom, Gary Karpen, Samuel Safran

289-Pos  
BOARD B120  
TRAVEL Awardee  
BIOPHYSICAL CHARACTERIZATION OF COVALENTLY MODIFIED PROTEIN TAU: OLIGOMERS, AGGREGATION, AND TUBULIN INTERACTIONS. Diana M. Acosta, David Eliezer

290-Pos  
BOARD B121  
TRAVEL Awardee  
EXPLORING SERUM PROTEINS TO STABILIZE THE CONFORMATION OF THE PRECURSOR PROTEIN OF ANP. Yuji Hidaka, Hayato Ueda, Shigeru Shimamoto

291-Pos  
BOARD B122  
UNRAVELING THE MECHANISM OF FUNCTIONAL AND PATHOLOGICAL AMYLOID FORMATION FROM INTRINSICALLY DISORDERED PROTEINS. Mily Bhattacharya, Anjali Giri, Jaspreeet Kaur, Priyanka Dogra, Samrat Mukhopadhyay

292-Pos  
BOARD B123  
EFFECT OF FAMILIAL ALZHEIMER’S DISEASE MUTATIONS OF THE FOLDING FREE ENERGY OF AMYLOID BETA-PEPTIDE. Darcy S. Davidson, Joshua A. Kraus, Julia M. Montgomery, Justin A. Legleiter

293-Pos  
BOARD B124  
DOMAIN SWAPPING IN CRYSTALLIN PROTEINS CAN DRIVE EARLY STAGES OF CATARACT FORMATION. Govardhan Reddy Patluri, Balaka Mondal

294-Pos  
BOARD B125  
HUNTINGTIN AGGREGATION AND LIPID BINDING ARE INFLUENCED BY PHYSICOCHEMICAL PROPERTIES OF MEMBRANES. Maryssa Beasley, Sharon E. Groover, Nicolas C. Frazee, Blake Mertz, Stephen J. Valentine, Justin A. Legleiter

295-Pos  
BOARD B126  
THE DYNAMISM OF INTRINSICALLY DISORDERED PROTEINS IN LIQUID-LIQUID PHASE SEPARATION. Samrat Mukhopadhyay, Anupa Majumdar, Priyanka Dogra, Shiny Maiti, Ashish Joshi

296-Pos  
BOARD B127  
STRUCTURE AND FUNCTION IMPLICATIONS OF CONFORMATIONAL ENSEMBLES CONSISTENT WITH NMR, SAXS, AND SMFRET DATA. THE DISORDERED PROTEIN SIC1 BEFORE AND AFTER MULTISITE PHOSPHORYLATION. Gregory W. Gomes, Mickael Krzeminski, Erik W. Martin, Tanja Mittag, Julie D. Forman-Kay, Claudiu C. Gradinaru

297-Pos  
BOARD B128  
INTRINSICALLY DISORDERED HAX-1 REGULATES PHOSPHOLAMBAN IN MEMBRANES. Erik K. Larsen, Daniel Weber, Songlin Wang, Seth L. Robia, Gianluigi Veglia

298-Pos  
BOARD B129  
THE EFFICACY OF DESIGNED ANTI-MEASLES VIRUS PEPTIDES DEPENDS ON THE STABILITY OF SELF-ASSEMBLED CLUSTERS. Diogo A. Mendonça

299-Pos  
BOARD B130  
SOLUTION SPACE FINGERPRINTS OF INTRINSICALLY DISORDERED REGIONS. David Moses, Nora Shamoon, Shahar Sukenik

300-Pos  
BOARD B131  
METHIONINE OXIDATION ALTERS THE MECHANISM OF AB INTERACTION WITH DMPC BILAYERS. Christopher Lockhart, Amy K. Smith, Dmitri K. Klimov

301-Pos  
BOARD B132  
STRUCTURAL AND PHYSICAL BASIS FOR THE HIGHER AFFINITY TO ONCOPEPTIDE MM2 OF A PEPTIDE SELECTED WITH MRNA DISPLAY OVER TUMOR SUPPRESSOR PS3. Takashi Nagata, Tatsuya Yamada, Tomohiko Hayashi, Simon Hikiri, Nachiro Kobayashi, Mitsunori Ikeguchi, Masato Katahira, Masahiro Kinoshita, Hiroshi Yanagawa
302-Pos  BOARD B137  SOLUTION STRUCTURE DETERMINATION OF ARABIDOPSIS THALIANA RALF8 ILLUSTRATES THE USE OF CUTTING-EDGE SOFTWARE DEVELOPED AT THE NATIONAL MAGNETIC RESONANCE FACILITY AT MALDI-SON.  Woonghee Lee, Marco Tonelli, Ronnie O. Frederick, Mhioshi Haruta, Gabriel Cornilescu, Claudia C. Cornilescu, Michael R. Sussman, John L. Markley

303-Pos  BOARD B138  REGULATING THE ACTIVATION OF ASH1/ASH1L HISTONE METHYLTRANSFERASE BY INTRINSICALLY DISORDERED REGIONS.  Jing Yang, Meng Gao, Yongqi Huang

304-Pos  BOARD B139  NEAREST NEIGHBOR EFFECTS IN HOMOPEPTIDE SEGMENTS OF SHORT PEPTIDES EXPLORED BY CIRCULAR DICHROISM AND NMR SPECTROSCOPY.  Bridget Milorey, Harald Schwalbe, Reinhard Schwetzer-Stenner

305-Pos  BOARD B140  ENTROPIC LIMITS OF SIMULTANEOUS BINDING TO T CELL RECEPTOR DISORDERED DOMAINS.  Lara Clemens, Omer Dushek, Jun F. Allard

DNA Structure and Dynamics I (Boards B141 - B160)

310-Pos  BOARD B141  HIGH-RESOLUTION SINGLE-CELL MODELS OF ENSEMBLE CHROMATIN STRUCTURES DURING DROSOPHILA EMBRYOGENESIS FROM POPULATION HI-C.  Qiu Sun

311-Pos  BOARD B142  RESTRICTED MOBILITY OF DNA PACKAGED IN PHAGE PH129 VIRAL PROHEADS ASSESSED BY SINGLE-MOLECULE OPTICAL TWEETERS MEASUREMENTS OF DNA EXIT.  Mounir Fizari, Douglas E. Smith

312-Pos  BOARD B143  BACTERIAL NUCLEIC ACID QUADRUPLEX FORMATION.  Lucille H. Tsao, Amelia Cecere, Hikari Murayama, Sally Shepardson-Fungairino, Megan E. Nunez

313-Pos  BOARD B144  LOOP EXTRUSION IN CHROMATIN: A QUESTION OF TIME!  Ajoy Maji, Ranjith Padinhateeri, Mithun K. Mitra

314-Pos  BOARD B145  INVESTIGATION OF THE SPIROIMINODIHYDANTOIN LESION’S STRUCTURAL AND DYNAMIC EFFECTS ON AN 11-MER DEOXYRIBONUCLEOTIDE DUPLEX.  Laurie C. Brutus, Elizabeth Jamieson, Cristina Suarez, Megan E.unez

315-Pos  BOARD B146  NON-ERGODIC TRANSPORT AND CONFORMATIONAL DYNAMICS OF DNA IN BIOMIMETIC CYTOSKELETON NETWORKS.  Jonathan Garamella, Gina Aguirre, Ryan McGorty, Rae Anderson

316-Pos  BOARD B147  DYNAMIC INTERCONVERSIONS BETWEEN G-QUADRUPLEX CONFIGURATIONS IN THE HUMAN BCL-2 PROXIMAL PROMOTER REVEALED BY SINGLE-MOLECULE SPECTROSCOPY.  I-Ren Lee, Hao-Yi Hsu, Chiao-Ying Chen

317-Pos  BOARD B148  TBA MARKEDLY ALTERS A-TRACT Oligos.  Earle Stellwagen

318-Pos  BOARD B149  INTEGRATIVE MODELING OF NUCLEOSOMES AND SUPERNUCLEOSOMAL STRUCTURES.  Grigoriy Armeev, Anna Panchenko, Alexey Feofanov, Alexey K. Shytan

319-Pos  BOARD B150  TWO-METAL ION MECHANISM OF DNA CLEAVAGE IN CRISPR-CAS9.  Giulia Palermo, Lorenzo Casalino, Martin Jinek

320-Pos  BOARD B151  SINGLE-MOLECULE STUDIES OF SUPRAMOLECULAR DNA STRUCTURE AT 1-NM RESOLUTION.  Phil Haynes

321-Pos  BOARD B152  MAPPING LATERAL LOOP CONFORMATIONAL SWITCHING OF THE TELOMERIC DNA G-QUADRUPLEX ON NMM PROPHYRIN BINDING USING FLUORESCENT GUANINE ANALOGS.  Jessica Desamero, Lesley Davenport

322-Pos  BOARD B153  CONFORMATIONAL PREFERENCES OF DNA STRANDS FROM C-MYC PROMOTER REGION.  Lutan Liu, Congshan Ma, James W. Wells, Tigran V. Chalkian

323-Pos  BOARD B154  AN IMAGE-BASED APPROACH TO THE EVALUATION OF ONCOGENE ACTIVATION EFFECTS ON CELL’S GENOMIC STABILITY.  Elena Cerutti, Isotta Cainero, Gaetano Ivan Dellino, Mario Faretta, Pier Giuseppe Pelicci, Alberto Diaspro, Luca Lanza

324-Pos  BOARD B155  DYNAMICS OF THE 1:2:1 AND 1:6:1 C-MYC G-QUADRUPLEXES WITH THE DRUDE POLARIZABLE FORCE FIELD.  Tanner Dean, Anna M. Salsbury, Justin A. Lemkul

325-Pos  BOARD B156  THE INCLUSION OF A GCAT TETRALOOP AFFECTS THE UNFOLDING THERMODYNAMICS OF INTRAMOLECULAR DNA STRUCTURES.  Irene Khutsishvil, Carolyn E. Carr, Luis A. Marky

326-Pos  BOARD B157  USE OF MICROCT SCANNER TO CHARACTERIZE THE HISTOTECHNOLOGICAL PROCESSING OF BONE USING DIFFERENT TISSUE FIXATIVES: RELATIONSHIP TO DNA PRESERVATION (IMMUNOHISTOCHEMISTRY).  Francis G. DeOcampo, Claude E. Gagna, Anthony N. Yodice, Shaheryar M. Gill, Zabi Khwaja, Megha Gupta, Ilaha Jalilova, Mina Ahsan, Alisha Malhotra, Peter Lambert, Clark Lambert
RNA Structure and Dynamics (Boards B161 - B179)

327-Pos BOARD B158
SINGLE-MOLECULE MEASUREMENT OF SHORT DSDNA AND A_7-TRACT STIFFNESS AND BENDING USING DNA NUNCHUCKS. Xinyue Cai, Deborah K. Fygenson

328-Pos BOARD B159
A SIMPLE THERMODYNAMIC MODEL FOR DNA-STRAND DISPLACEMENT REACTIONS IN PRESENCE OF BASE-PAIR MISMATCHES. Patrick Irmisch, Marius Rutkauskas, Ralf Seidel

329-Pos BOARD B160 TRAVEL Awardee
INHOMOGENEOUS FORCES IN SEMIFLEXIBLE BIOPOLYMERS. Ananya Mondal, Gregory Morrison

330-Pos BOARD B161

331-Pos BOARD B162
SINGLE-MOLECULE THREE-COLOR FRET REVEALS MULTI-STATE CONFORMATIONAL DYNAMICS OF RNA FOUR-WAY JUNCTIONS. Anders Barth, Christian A. Hanke, Oleg Opanasyuk, Hayk Vardanyan, Simon Sindbert, Stanislav Kalinin, Claus A. Seidel

332-Pos BOARD B163
RNA STRUCTURAL ENSEMBLES ACT AS A GATE KEEPER OF 3’ ALTERNATIVE SPICING. Robb S. Welty, Nils G. Walter

333-Pos BOARD B164
STRUCTURAL DETERMINANTS OF MRNA TRANSPORT SPECIFICITY IN OLGODENDROCYTES. Ved V. Topkar

334-Pos BOARD B165
BIOPHYSICAL CHARACTERIZATION OF G-QUADRUPLEX STRUCTURE IN LONG NONCODING RNA NEAT1. Emily M. Benner, Mihaela-Rita Mihailescu

335-Pos BOARD B166

336-Pos BOARD B167
COMPETITION BETWEEN LIGAND BINDING AND TRANSCRIPTION RATE MODULATES RIBOSWITCH-MEDIATED REGULATION OF TRANSCRIPTION. Adrien Chauvier, Pujan Ajmera, Nils G. Walter

337-Pos BOARD B168
SOLVATION EFFECTS IN RNA SYSTEMS. Clark Templeton

338-Pos BOARD B169
CAPTURING THE INFLUENCE OF SOLVENT AND NEIGHBORING RESIDUES IN A FIXED-CHARGE FORCE FIELD FOR RNA. Chapin E. Cavender, Louis G. Smith, Alan Grossfield, David H. Mathews

339-Pos BOARD B170
QUANTITATIVE ANALYSIS OF SALT-INDUCED RNA DUPLEX VARIATIONS BY WIDE-ANGLE X-RAY SCATTERING (WAXS). Yen-Lin Chen, Lois Pollack

340-Pos BOARD B171
EXPLORING THE ION-MEDIATED RNA INTERACTIONS OF A HELIX-JUNCTION-HELIX RNA MODEL THROUGH WELL-TEMPERED METADYNAMICS SIMULATIONS. Diego E. Kleiman, Nawawi Naleem, Serdal Kirmizialtin

341-Pos BOARD B172 TRAVEL Awardee
ROLE OF METAL IONS IN RNA TETRALOOP HAIRPIN MOTIF FORMATION. Antarip Halder, Sunil Kumar, Govardhan Reddy Patluri

342-Pos BOARD B173
PROBING Mg^2+-MEDIATED RNA-RNA INTERACTIONS IN THE PRESENCE OF METABOLITES. Derrick R. Lin, Suzette A. Pabit, Lois Pollack

343-Pos BOARD B174
EFFECT OF Mg^2+ IONS ON TPP RIBOSWITCH APTAMER FOLDING. Sunil Kumar, Govardhan Reddy

344-Pos BOARD B175
EFFECT OF PRESSURE ON RNA G-QUADRUPLEX STRUCTURES. Balasubramanian Harish, Roland Winter, Catherine A. Royer

345-Pos BOARD B176
UNDERSTANDING THE SHAPE REAGENT BINDING FROM RNA DYNAMICS. Fengfei Wang, Xiaojun Xu

346-Pos BOARD B177
QUANTIFYING STRUCTURAL DIVERSITY OF CNG TRINUCLEOTIDE REPEATS USING DIAGRAMMATIC ALGORITHMS. Ethan Phan, Chi H. Mak

347-Pos BOARD B178
DISCOVERING DESIGN PRINCIPLES TO RE-ENGINEER FUNCTIONAL RNA ELEMENTS. Alex Plumridge, Lois Pollack

348-Pos BOARD B179
FUNCTIONAL AND TEMPLATING ABILITY OF FLUORESCENT RNA APATAMERS IN POSSIBLE PREBIOTIC CONDITIONS. Ranajay Saha, Samuel Verbanic, Irene A. Chen

Protein-Nucleic Acid Interactions I (Boards B180 - B212)

349-Pos BOARD B180
EXPLORATION OF CONFIGURATIONAL AND TOPOLOGICAL PROPERTIES OF MINICHROMOSOMES USING ELASTIC ENERGY OPTIMIZATIONS AT THE DNA BASE-PAIR LEVEL. Robert T. Young, Wilma K. Olson

350-Pos BOARD B181 E.COLI SINGLE STRANDED BINDING PROTEIN (SSB) SELF-REGULATES WRAPPING OF SSDNA THROUGH COMPETITIVE BINDING. M. Nabuan Naufer, Michael Morse, Gudfridur B. Moller, James McIsaac, Iouila Rouzina, Penny J. Beuning, Mark C. Williams

351-Pos BOARD B182 REGULATION OF NEAREST-NEIGHBOR COOPERATIVE BINDING OF E.COLI SSB PROTEIN TO SSDNA BY ITS INTRINSICALLY DISORDERED REGIONS. Alexander G. Kozlov, Min Kyung Shinn, Timothy M. Lohman

352-Pos BOARD B183 SINGLE MOLECULE BINDING DYNAMICS OF LINE-1 ORF1P TO SSDNA. Benjamin A. Cashen, M. Nabuan Naufer, Charlie E. Jones, Anthony V. Furano, Mark C. Williams

353-Pos BOARD B184 SLIDING, FAST AND SLOW: DISTINCT DIFFUSION MECHANISMS OF EUKARYOTIC AND PROKARYOTIC DNA CLAMPS. Jejoong Yoo, Sang Hak Lee

354-Pos BOARD B185 SINGLE-MOLECULE IMAGING OF PAF15-PCNA USING DNA SKYBRIDGE. Daehyung Kim, Alfredo D. biasio, Amaia Gonzalez-Magaña, Gayun Bu, Fahad Rashid, Samir Hamdan, Francisco Blanco, Jong-Bong Lee Lee
Membrane Physical Chemistry I
(Boards B213 - B237)

382-Pos  BOARD B213
SULFOLOBUS ACIDOCALDARIUSMICROVESICLES EXHIBIT UNUSUAL PHYSI-
CAL PROPERTIES. Alexander P. Bonanno, Parkson L-G. Chong

383-Pos  BOARD B214
THERMODYNAMIC AND MORPHOLOGICAL PROPERTIES OF TRASTU-
ZUMAB REGULATED BY THE LIPID COMPOSITION OF CELL MEMBRANE
MODELS AT THE AIR-WATER INTERFACE. Luciano Caselli, Andrei Sakai, Ana
Paula de Sousa Mesquita, Helena B. Nader, Carla C. Lopes, Waka Nakan-
ishi, Katsukiho Aniga

384-Pos  BOARD B215
FAR FROM INERT - DRUG LIPIDATION IN MEMBRANES. Hannah M. Britt,
Jackie A. Mosely, John M. Sanderson

385-Pos  BOARD B216
HIGH CONTENT IMAGING TO IDENTIFY MODULATORS OF MEMBRANE
PHASE BEHAVIOR. Nico Frick, Aijit Tiwari, Krishnan Raghunathan, Hui
Hang, Ricardo F. Capone, Charles R. Sanders, Anne K. Kenworthy

386-Pos  BOARD B217
HOMEOVISCOUS ADAPTATION IN MAMMALIAN CELL MEMBRANES IN
RESPONSE TO DIETARY LIPID PERTURBATIONS IS NECESSARY FOR CELL
SURVIVAL. Kandice R. Levental, Jessica L. Symons, Yang-Yi Fan, Robert
Chapkin, Robert Ernst, Ilya Levental

387-Pos  BOARD B218
PARTIALLY AUTOMATED IDENTIFICATION OF CURVATURE-SENSITIVE COL-
LECTIVE LIPID STRUCTURE. Andrew H. Bean, Kayla Sapp, Alexander J. Sodt

388-Pos  BOARD B219
EFFECT OF DIPOLE MOMENT ON AMPHIPHILE SOLUBILITY AND PARTI-
TION INTO LIQUID ORDERED AND LIQUID DISORDERED PHASES IN LI-
PIYLAYERS. Renato M.S. Cardoso, Patricia A.T. Martins, Ricardo J.B. Leote,
Kalbe Razi naqvi, Winchil L.C. Vaz, Maria Joao Moreno

389-Pos  BOARD B220
 ADSORPTION AND PERMEATION OF PORPHYRINS THROUGH LIPID
MEMBRANE. Irene Jiménez Munguía, Arsenii Fedorov, Ivan Meshkov, Yuri
Ermakov, Yulia Gorbunova, Valerij Sokolov

390-Pos  BOARD B221
FUNCTIONALIZED POLYSTYRENE NANOPARTICLES ALTER THE STRUCTURE
AND STABILITY OF MODEL CELL MEMBRANES. Paige Ashey, David Van
Doren, Shelli L. Frey

391-Pos  BOARD B222
SPHINGOMYELIN NANODOMAINS MAINLY CONSTITUTE LIQUID-OR-
DERED PHASE OF TERNARY MODEL MEMBRANE. Michio Murata, Shin
y Hanashima, Yo Yano, Tomokazu Yasuda, Hiroshi Tsuchikawa, Nobuaki
Matsumori, Masanao Kinoshita, J.P. Slote

392-Pos  BOARD B223
CO-EXISTING GEL AND FLUID PHASES IN BILAYERS CONTAINING CE-
RAMIDE AND CHOLESTEROL. Alicia Alonso, Emilio González-Ramírez,
Aritz B. García- Arribas, Felix M. Goni

393-Pos  BOARD B224
COMPUTATIONAL INSIGHTS INTO THE MECHANISM AND REGULATION
OF MEMBRANE DOMAIN REGISTRATION/ANTI-REGISTRATION. Xubo Lin,
Siya Zhang

394-Pos  BOARD B225
BODIPY-BASED PHOTOSENSITIZER FOR PHOTODYNAMIC THERAPY - PHO-
TOPHYSICS AND MEMBRANE LOCALISATION VIA CLASSICAL MOLECULAR
DYNAMICS AND SURFACE HOPPING. Lukasz Cwilkik, Marek Pedezolz,
Mirza Wasif Baig, Mojmir Kvyala, Jifi Jifi Pittner

395-Pos  BOARD B226
DROPLET INTERFACE BILAYERS AS A PHYSICO-CHEMICAL TOOL TO ASSESS
AND INVESTIGATE THE CELLULAR MEMBRANE CROSSING OF SMALL
MOLECULES. Vincent Faugeras, Olivier Duclos, Didier Bazile, Abdou
Rachid Thiam

396-Pos  BOARD B227
ATOMIC FORCE MICROSCOPY REVEALS STRUCTURES OF DRIED FATTY
ACIDS AND CONNECTIONS TO AMINO ACID POLYMERIZATION. Brenda L. Kessenich,
Zachary R. Cohen, James J. De Yoreo, Sarah L. Keller,
Roy A. Black

397-Pos  BOARD B228
HOW UREA COUNTERACTS TRIMETHYLAMINE N-OXIDE INDUCED AT-
TRACTION BETWEEN LIPID MEMBRANES. Yuri Shakhaman, Christoph
Allolio, Shahar Sukenik, Daniel Harries

398-Pos  BOARD B229
TRAVEL AWARDEE
WATER AND MEMBRANE LIPIDS GOVERN G-PROTEIN ACTIVATION. Anna R.
Eitel, Nipuna Weerasinghe, Steven D. Fried, Suchihranga M.
Perera, Emily L. Cosgriff, Gabrielle I. Fitzwater, Helen F. Mann, Andrey V.
Struts, Michael F. Brown

399-Pos  BOARD B230
BALANCING ADEPTION AND DIFFUSION IN FLOW TRANSPORT OF
MEMBRANE PROTEINS. Aurelia R. Honerkamp-Smith, Amanda Ratajczak,
Xaymara Rivera Gonzalez, Autumn Anthony

400-Pos  BOARD B231
CRYOPROTECTANTS DISRUPT HYDROGEN-BOND NETWORKS AT THE
LIPID-WATER INTERFACE. Ravi K. Venkatraman, Carlos R. Baiz

401-Pos  BOARD B232
INORGANIC NANOPARTICLES CHALLENGING LAMELLAR AND NON-LA-
MELLAR MODEL MEMBRANES. Lucrezia Caselli, Costanza Monits, Andrea
Ridolfi, Emil Gustafsson, Nina-Juliane Steinke, Debora Berti, Tommy
Nylander

402-Pos  BOARD B233
FINE TUNING OF BILAYER-SUBSTRATE SEPARATION.
David P. Hoogerheide, Dennis J. Michalak, Mathias Loesche

403-Pos  BOARD B234
ELECTROSTATICS AT PEPTIDE-LIPID INTERFACE IN NANO-BIO HYBRID
SYSTEMS BY SPIN-LABELING EPR. Tatyana I. Smirnova, Erkang Ou, Maxim
A. Voinov, Alex Irving, Alex Smirnov

404-Pos  BOARD B235
QUANTIFIED EFFICIENCY OF MEMBRANE LEAKAGE EVENTS RELATES TO
ANTIMICROBIAL SELECTIVITY. Anja Stulz, Stefan Braun, Shuai Shi, Ndjali
Quarta, Maria Hoernke

405-Pos  BOARD B236
NANOSECOND LIFE CYCLE OF BIOMEMBRANE ELECTROPORATION: EX-
PERIMENTAL VALIDATION OF MOLECULAR MODEL. Esin B. Sozer,
Sourav Haldar, Federica Castellani, P. Thomas Vernier, Joshua Zimmerberg

406-Pos  BOARD B237
THE ROLE OF DISORDERED PROTEINS IN MEMBRANE CURVATURE SENS-
ING DURING ENDOCYTOSIS. Wade F. Zeno, Wilton T. Snead, Liping Wang,
Ajay S. Thatte, Jacob B. Hochfelder, Eileen M. Lafer, Jeanne C. Stachowiak
Membrane Dynamics I (Boards B238 - B262)

407-Pos BOARD B238
SPONTANEOUS COMPARTMENTALIZATION IN ADHERENT ARTIFICIAL CELLS. Karolina Spustova, Elf S. Koksal, Alar Ainla, Irep Gozen

408-Pos BOARD B239
SURFACE-ASSISTED SELF-ASSEMBLY OF FATTY ACIDS TO CELL-LIKE COMPARTMENTS. Inga Põldsalu, Elf S. Koksal, Irep Gozen

409-Pos BOARD B240 TRAVEL Awardee
MILD TEMPERATURE GRADIENTS MAY HAVE ENHANCED THE GROWTH AND FUSION OF PROTOCELLS ON THE EARLY EARTH. Elf S. Koksal, Lauri Viitala, Irep Gozen

410-Pos BOARD B241
VESICLE BUDDING INDUCED BY THE ASYMMETRIC MEMBRANE INSERTION OF A SURFACTANT IS LIMITED BY AN OSMOTIC BARRIER. Michael Kaiser, Ndjali Quarta, Annette Meister, Heiko Heerklotz

411-Pos BOARD B242
ASYMMETRIC MEMBRANES AND THE STUDY OF LIPID MOVEMENT ACROSS SINGLE LIPID BILAYERS. Ursula A. Perez-Salas, Yangmingyue Liu, Lionel Porcar

412-Pos BOARD B243 EXTENSIONAL TEST OF HYDROGEN MASS REPARTITIONING ON MD SIMULATIONS OF LIPID MEMBRANES. Chun Hon Lau, Yi Wang

413-Pos BOARD B244 TRAVEL Awardee
GENERALIZATION OF THE KELVIN EQUATION AND MACROMOLECULAR SURFACES. David V. Sviridtszade

414-Pos BOARD B245
ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS OF GALACTOSIDE GM1 AND ITS DEGRADATION PRODUCTS. Andrew H. Beaven, Alexander J. Sodt

415-Pos BOARD B246
CHARACTERIZATION OF SPECIFIC ION EFFECTS ON P(4,5)P2 CLUSTERING USING MOLECULAR DYNAMICS SIMULATIONS AND GRAPH-THEORETIC ANALYSIS. Kyungreem Han, Arne Gericke, Richard W. Pastor

416-Pos BOARD B247
A MICROSCOPIC PICTURE OF CALCIUM-ASSISTED LIPID DEMIXING AND MEMBRANE REMODELING USING MULTI-SCALE SIMULATIONS. Abhilash Sahoo, Silvina Matysiak

417-Pos BOARD B248
CONTINUUM-MODELING SOFTWARE FOR MODELING THE DYNAMICS OF ARBITRARY TOPOLOGY MEMBRANES. Kayla Sapp, Alexander J. Sodt

418-Pos BOARD B249
TRANSMEMBRANE PEPTIDE INSERTION AFFECTS MEMBRANE INTERFACIAL DYNAMICS. Jennifer C. Flanagan, Carlos R. Baiz

419-Pos BOARD B250
MEMBRANE VISCOSITY AND LIPID DIFFUSION IN A MODEL BILAYER MEASURED AT MOLECULAR SCALES. Michihiro Nagao, Elizabeth G. Kelley, Takeshi Yamada, Antonio Faraone, Kaoru Shibata, Paul D. Butler

420-Pos BOARD B251
HIERARCHICAL MEMBRANE DYNAMICS IN PHASE-SEPARATED MODEL MEMBRANES. Saptarshi Chakraborty, Jan Michael Y. Carrillo, Elizabeth G. Kelley, Frederick A. Heberle, John Katsaras, Bobby G. Sumpter, Michihiro Nagao, Rana Ashkar

421-Pos BOARD B252
BREAKDOWN OF THE COUPLING BETWEEN THE LIPID MEMBRANE DYNAMICS OF DIFFERING HIERARCHICAL LEVELS. Cheng-Zhi Xie, Shih-Ming Chang, Eugene Mamontov, Laura R. Stingaciu, Yi-Fan Chen

422-Pos BOARD B253
FAST DYNAMICS OF LIPID MIXTURES INVESTIGATED WITH VIBRATIONAL SPECTROSCOPY. Mason L. Valentine, Alfredo E. Cardenas, Ron Elber, Carlos R. Baiz

423-Pos BOARD B254

424-Pos BOARD B255
SCALING RELATIONSHIPS FOR THE MECHANICAL PROPERTIES OF MIXED LIPID MEMBRANES. Elizabeth G. Kelley, Paul D. Butler, Michihiro Nagao

425-Pos BOARD B256 THE RELATIONSHIP BETWEEN THE COMPRESSIBILITY MODULI OF THE BILAYER AND ITS LEAFLETS - NOT SIMPLE BUT IMPORTANT. Milka Doktorova, Faezeh Darbaniyan

426-Pos BOARD B257
STIFFENING OF PHOSPHOCHOLINE MEMBRANES BY CHOLESTEROL. Saptarshi Chakraborty, Trivikram R. Molugu, Milka Doktorova, Frederick A. Heberle, Haden L. Scott, Elizabeth G. Kelley, Michihiro Nagao, Boris G. Dzikovskii10, Robert F. Staedtner11, Francisco N. Barrera, John Katsaras12, George Khelashvili11, Michael F. Brown, Rana Ashkar

427-Pos BOARD B258
LPS-INDUCED BILAYER DEFORMATION IS MODULATED WITH INCREASING LIPID MEMBRANE COMPLEXITY. Loreen R. Stromberg, James H. Werner, Gabriel A. Montano, Harshini Mukundan

428-Pos BOARD B259
MECHANISTIC INSIGHTS IN THE INTERACTION OF CHEMICALS WITH SURFACTANT MEMBRANE MODELS IN VITRO. Emilie Da Silva, Chiara Autillo, Karin S. Hougaard, Anders Baun, Antonio Cruz, Jesus Perez-Gil, Jorid Birkelund Sørl

429-Pos BOARD B260 TRAVEL Awardee
MILD HYPOTHERMIA ENHANCES LUNG SURFACTANT ACTIVITY: DELVING INTO THE MOLECULAR MECHANISMS. Chiara Autillo, Mercedes Echaide, Cristina Garcia-Mouton, Alberto Hidalgo, Antonio Cruz, Daniele De Luca, Jesus Perez-Gil

430-Pos BOARD B261
USING A MODEL LYSOSOME MEMBRANE TO STUDY NANOMATERIAL-MEMBRANE INTERACTIONS. Donald S. Anderson, Matthew J. Sydor, Harmen B. Steele, Becky Kendall, Sandy Ross, Andrij Holian

431-Pos BOARD B262
DYNAMIC NANOSCALE REORGANIZATION OF LIPID MOLECULES AND NANOPARTICLES REVEALED BY PLASMONIC GAP RESONANCE SPECTROSCOPY. Matthew R. Cheetham, Dart de Nijs, Jack P. Griffiths, Stephen D. Evans, Jeremy J. Baumberg, Rohit Chikkaraddy

Membrane Structure I (Boards B263 - B287)

432-Pos BOARD B263
THE STRUCTURAL BASIS FOR STABILIZATION OF PULMONARY SURFACTANT FILMS BY SUBPHASE MATERIAL. Konstantin Andreev, Michael W. Martynowycz, Ivan Kuzmenko, Stephen B. Hall, David Gidalevitz
Membrane Receptors and Signal Transduction I (Boards B288 - B313)

447-Pos  Board B278  COUPLING OF LEAFLET STRUCTURE IN ASYMMETRIC LIPID VESICLES. Moritz P. Frewein, Haden L. Scott, Milka Doktorova, Frederick A. Heberle, Yuri Gerelli, Lionel Porcar, Georg Pabst

448-Pos  Board B279  PLASMA MEMBRANE PACKING ASYMMETRY DRIVES TRANSMEMBRANE PROTEIN LOCALIZATION. Joseph H. Lorent, Lakshmi Ganesan, Edward R. Lyman, Kandice R. Levental, Ilya Levental

449-Pos  Board B280  LIPID BILAYERS INFLUENCED BY TAU RIN AND BETAIN. Sergio D. Funari, Alexander Schoekel, Sigrid Bernstorff

450-Pos  Board B281  VITAMIN E’S AFFINITY FOR POLYUNSATURATED PHOSPHOLIPIDS STUDIED BY ALL-ATOM MD SIMULATIONS. Samuel W. Canner, Alexander Q. Phillips, Scott I. Feller, Stephen R. Wassall

451-Pos  Board B282  SPONTANEOUS CURVATURE, DIFFERENTIAL STRESS, AND BENDING MODULUS OF ASYMMETRIC LIPID MEMBRANES. Amirali Hossein, Markus Deserno

452-Pos  Board B283  CELL-DERIVED PLASMA MEMBRANE VESICLES ARE PERMEABLE TO HYDROPHILIC MACROMOLECULES. Blanca B. Díaz-Rohrer, Allison Skinke, Kandice R. Levental, Ilya Levental

453-Pos  Board B284  PROBING THE PHASE BEHAVIOR OF HYBRID LIPID/BLOCK COPOLYMER BIOMEMBRANES. Naomi Hamada, Sukriti Gakhar, Marjorie L. Longo

454-Pos  Board B285  X-RAY AND NEUTRON REFLECTIVITY STUDIES OF STYRENE-MALEIC ACID POLYMER INTERACTIONS WITH GALACTOLIPID-CONTAINING MONOLAYERS. Minh D. Phan, Olina I. Korotych, Nathan Brady, Madeline M. Davis, Sushil K. Satija, John F. Ankner, Barry D. Bruce

455-Pos  Board B286  UNRAVELING THE MYSTERY OF MEMBRANE PERMEABILITY OF ANTICANCER DRUGS. Neetu S. Yadav

456-Pos  Board B287  TRAVEL AWARDEE THE TILTED HELIX MODEL OF DYNAMIN OLIGOMERS. Avihay Kadosh

457-Pos  Board B288  ATOMIC-LEVEL CHARACTERIZATION OF THE DISTINCT METHADONE-INDUCED CONFORMATIONAL SAMPLING AND ACTIVATION KINETICS OF THE μ-OPIOID RECEPTOR BY MOLECULAR SIMULATIONS. Abhiijet Kapoor, Davide Provasio, Marta Filizola

458-Pos  Board B289  MECHANISMS OF B-ARRESTIN-DEPENDENT PI(4,5)P2 SYNTHESIS FOR GPCR ENDOCYTOSIS. Seung-Ryoung Jung, Yifei Jiang, Bertl Hille, Duk-Su Koh


460-Pos  Board B291  EFFICIENT PREDICTION OF THE EFFECT OF MUTATIONS ON THE ACTIVATION KINETICS OF G PROTEIN-COUPLED RECEPTORS USING A MAXIMUM CALIBER APPROACH. Steven Ramsey, Davide Provasio, Jan Moeller, Martin Lohse, Marta Filizola
461-Pos  BOARD B292  FUNCTIONAL RELEVANCE OF ORTHOSTERIC BINDING SITE OF 5-HYDROXYTRYPTAMINE 2A RECEPTOR AND THE MECHANISM OF RECEPTOR ACTIVATION. 
  Yu Xu, Guoqing Xiang, Takeharu Kawano, Diomedes E. Logothetis

462-Pos  BOARD B293  INVESTIGATING THE MECHANISM OF STRA6-MEDIATED CELLULAR RETINOL UPTAKE. 
  Brianna K. Costabile, Yun-Ting Chen, Jonathan Kim, Youn-Kyung Kim, Oliver B. Clarke, Paul T. Wilder, David J. Weber, Loredana Quadro, Hui Sun, Filippo Mancia

463-Pos  BOARD B294  NEUROTRANSMITTER RECEPTORS AS KEY PHYSIOLOGICAL REGULATORS OF EPITHELIAL MORPHOGENESIS. 
  Fnu Nilay Kumar, Francisco Huizar, Maria Unger, Dharsan Soundararajan, Vijay Velagala, John Koren, Jeremiah J. Zartman

464-Pos  BOARD B295  SINGLE MOLECULE FORCE SPECTROSCOPY OF CHONDROCYTE ASB1 AND A1B1 INTEGRINS. 
  Divya Kota, Ishara S. Ratnayake, Lin Kang, Phil Ahrenkiel, Congzhou Wang, Scott Wood, Steve Smith

465-Pos  BOARD B296  SIGNALING THROUGH IONS IS ESSENTIAL FOR CHEMOTROPISM AND REPRODUCTION. 
  Jose A. Feijo

466-Pos  BOARD B297  TUNING OF METABOTROPIC GLUTAMATE RECEPTOR ASSEMBLY AND ACTIVATION BY INTERACTIONS BETWEEN TRANSMEMBRANE DOMAINS. 
  Jordana K. Thibado, Vanessa Gutzeit, Josh T. Levitz

467-Pos  BOARD B298  ELUCIDATING THE ADHESIVE MECHANISM OF THE ATYPICAL CADHERIN CELSR1 INVOLVED IN PLANAR CELL POLARITY. 
  Elakkiya Tamilselvan, Marcos M. Sotomayor

468-Pos  BOARD B299  A FLUORESCENCE-BASED BIOSENSOR FOR MONITORING CONFORMATIONAL DYNAMICS IN GPCRS. 
  Anthony D. Shumate, Christopher T. Schafer, David L. Farrrens

Excitation-Contraction Coupling I
(Boards B314 - B331)

469-Pos  BOARD B300  REVEALING THE MECHANISTIC DETAILS OF GROWTH HORMONE RECEPTOR AND PROLACTIN RECEPTOR INTERACTIONS ON THE CELL MEMBRANE. 
  Chen Chen, Jing Jiang, Tejeshwar C. Rao, Stuart J. Frank, André Leier

470-Pos  BOARD B301  EFFECTS OF LUTEINIZING HORMONE RECEPTOR EXPRESSION LEVEL ON RECEPTOR AGGREGATION AND FUNCTION. 
  Duaa Althumairy, Deborah A. Roess, B. George Barisas

471-Pos  BOARD B302  PHARMACOLOGICAL IMPLICATIONS OF ADENOSINE 2A AND DOPAMINE TYPE 2 RECEPTOR HETEROMERIZATION. 
  Yuchen Yang, Candice N. Hatchel-Solis, Maria P. Papakonstantinou, Albert A. Steiner, Takeharu Kawano, Leigh D. Plant, Diomedes E. Logothetis

472-Pos  BOARD B303  GPCR STIMULATION MODULATES CAMKII TRANSLOCATION AND TARGETING IN CARDIOMYOCYTES. 
  Chidera C. Alim, Maura Ferrero, Sonya Baidar, Donald M. Bers, Julie Bossuyt

473-Pos  BOARD B304  UNNATURAL AMINO ACID RECEPTOR INCORPORATION AS A NOVEL PHOTOPAFFINITY TOOL FOR GPCR HETEROMER SIGNALING STUDIES. 
  Brenda T. Winn, Chungsik Kim, Meng Cui, Roman Manetsch, Diomedes E. Logothetis

474-Pos  BOARD B305  DECIPHERING THE NATURE OF M1R TRANSIENT CURRENTS. 
  Verena Burtscher, Peter S. Hasenhuetl, Matej Hotka, Michael Freissmuth, Walter Sandtner

475-Pos  BOARD B306  SEEKING THE INTERFACES OF EPH RECEPTOR INTERACTIONS. 
  Taylor P. Light, Kelly Karl, Jeffrey J. Gray, Kalina Hristova

476-Pos  BOARD B307  INTEGRIN-DEPENDENT DIFFERENCE IN CELL ADHESION AND FORCE EXERTION. 
  Myung Hyun Jo, Jing Li, Timothy A. Springer, Taekjip Ha

477-Pos  BOARD B308  TRAVEL Awardee 
  PROBING THE HOMO- AND HETERO-DIMERIZATION PROPENSITIES OF METABOTROPIC GLUTAMATE RECEPTORS. 
  Joon Lee, Vanessa Gutzeit, Josh T. Levitz

478-Pos  BOARD B309  TRAVEL Awardee 
  BETTA-ADRENERGIC SIGNALING MODULATES CANCER CELL MECHANOTYPE THROUGH A RHOA-ROCK-MYOSIN II AXIS. 
  Tae-Hyung Kim, Esteban Vazquez-Hidalgo, Alexander Abdou, Xing Haw Marvin Tan, Alexei Christodoulides, Carly Farris, Pei-Yu Chiou, Erica Sloan, Parag Katira, Amy Rowat

479-Pos  BOARD B310  DIFFERENT FGFS STIMULATE FGFR1 IN DIFFERENT WAYS. 
  Kelly A. Karl, Kalina Hristova

480-Pos  BOARD B311  FUNCTIONAL OLIGOMERIZATION OF THE EPHA2 RECEPTOR TYROSINE KINASE. 
  Xiaojun Shi, Ryan Lingrak, Carmelle Cuizon, Paul Toth, Ji Zheng, Adam Smith, Bingcheng Wang

481-Pos  BOARD B312  STUDYING THE INTERACTION OF RECEPTOR TYROSINE KINASES AND ADAPTOR PROTEINS AT THE SINGLE-MOLECULE LEVEL WITH SINGLE-PARTICLE TRACKING. 
  Tim Niklas Baldering, Johanna Rahm, Sebastian Maukus, Marina S. Dietz, Mike Heilemann

482-Pos  BOARD B313  SINGLE-MOLECULE IMAGING REVEALS CHEMOKINE RECEPTOR CONTRIBUTIONS TO THE T CELL IMMUNOLOGICAL SYNAPSE. 
  James H. Felce, Michael L. Dustin

483-Pos  BOARD B314  INVESTIGATING DUAL CA++ MODULATION OF THE RYANODINE RECEPTOR 1 BY MOLECULAR DYNAMICS SIMULATION. 
  Wenjun Zheng, Han Wen

484-Pos  BOARD B315  MOLECULAR DYNAMICS AND CA++ IMAGING OF MUTANT TYPE 1 RYANO-DINE RECEPTOR. 
  Yoshiko Yamazawa, Haruo Ogawa, Takashi Murayama, Maki Yamaguchi, Hideto Oyamada, Junji Suzuki, Nagomi Kurebayashi, Kanemaru Kazunori, Takashi Sakurai, Masamitsu Iino

485-Pos  BOARD B316  CHARACTERIZATION OF NOVEL RYR1-SELECTIVE INHIBITORS IDENTIFIED BY HIGH-THROUGHPUT SCREENING USING ER CA++ MEASUREMENT. 
  Hiroyuki Kagechika, Takashi Sakurai

486-Pos  BOARD B317  THERAPEUTIC EFFECTS OF A NOVEL RYR1 INHIBITOR ON MALIGNANT HYPERTHERMIA-SUSCEPTIBLE MODEL MICE. 
  Takashi Murayama, Yoshiko Yamazawa, Takuya Kobayashi, Nagomi Kurebayashi, Satoru Noguchi, Ichizo Nishino, Shuichi Mori, Hiroyuki Kagechika, Jose R. Lopez, Paul D. Allen
487-Pos  BOARD B318  DIRECT VISUALIZATION OF TYPE 2 RYANODINE RECEPTORS USING DSTORM. David R. Scriven, Anne Berit Johnsen, Parisa Ashghar, Keng Chang Chou, Edwin D. Moore

488-Pos  BOARD B319  TOTAL CALCIUM CONTENT OF SARCOPLASMIC RETICULUM AND MYOCHONDRIA IN RYANODINE RECEPTOR VARIANT MUSCLE. Cedric R. Lamboley, Luke Pearce, Bradley S. Laukonikis

489-Pos  BOARD B320  STIM1 AFFECTS INTRACELLULAR Ca²⁺ MOVEMENT AS WELL AS EXTRACELLULAR Ca²⁺ ENTRY IN SKELETAL MUSCLE. Jun Hee Choi, Mei Huang, Changdo Hyun, Mi Ri Oh, Keon Jin Lee, Chung-Hyun Cho, Eun Hui Lee

490-Pos  BOARD B321  MULTIPLE SEQUENCE VARIANTS IN STAC3 AFFECT INTERACTIONS WITH CAV1.1 AND EXCITATION-CONTRACTION COUPLING. Brittany Rufenach


492-Pos  BOARD B323  NEURONAL JUNCTOPHILIN 3 CAN REPLACE MUSCLE JUNCTOPHILIN 2 IN VOLTAGE-INDUCED CALCIUM RELEASE. Stefano Perni, Kurt G. Beam

493-Pos  BOARD B324  WITHDRAWN

494-Pos  BOARD B325  DIFFERENTIAL IMPACT OF SELECTIVE DE-ADHESION WITHIN NAV1.5-RICH INTERCALATED DISK NANODOMAINS ON ATRIAL ARRHYTHMIA RISK. Heather L. Struckman, Louisa Mezache, Anna Phillips, Celine Dagher, Amara Greer-Short, Przemyslaw Radwanski, Thomas J. Hund, Rengasayee Veeraraghavan

495-Pos  BOARD B326  CARDIOPROTECTION CONFERRED BY A CRISPR/CAS9 SINGLE AMINO ACID SUBSTITUTION OF NCX1 (H165A): THE PH INSENSITIVE NCX MOUSE. Rui Zhang, Sabine Lotteau, Adina T. Hazan, Stephan Aynaszyan, Devina Gonzalez, Liang Li, Kenneth D. Philipson, Michelotta Ottolia, Joshua I. Goldhaber

496-Pos  BOARD B327  GENETIC ABLATION OF NCX1.1 NA⁺-DEPENDENT INACTIVATION IMPACTS CARDIAC ACTION POTENTIAL AND Ca²⁺ TRANSIENT. Federica Stecannella, Kyle Scranton, Namuna Panday, Marina Angelini, Rui Zhang, Sabine Lotteau, Scott A. John, Riccardo Olcese, Joshua I. Goldhaber, Michelotta Ottolia

497-Pos  BOARD B328  THE NA⁺-DEPENDENT INACTIVATION OF NCX1.1 IS PHYSIOLOGICALLY RELEVANT TO CARDIAC FUNCTION. Kyle Scranton, Soban Umar, Guil-laueme Calmettes, Mansouregh Eghbal, Joshua I. Goldhaber, Scott A. John, Riccardo Olcese, Ariel L. Escobar, Michelotta Ottolia

498-Pos  BOARD B329  SHAPING ACTION POTENTIAL REPOLARIZATION PHASE I BY STOICHIOMETRIC EXPRESSION OF KV4.3/KCHIP2.1. Nan Wang, Eef Dries, Ewan D. Fowler, Jules C. Hancox, Mark B. Cannell

499-Pos  BOARD B330  AUTOSOMAL-DOMINANT CASQ2-K180R CAUSES CPVT BY A DIFFERENT MECHANISM THAN AUTOSOMAL-RECESSIVE CASQ2 MUTATIONS. Matthew Wleklinski, Shan Parikh, Bjorn C. Knollmann

500-Pos  BOARD B331  TRAVEL Awardee  DIMINISHED β-ADRENERGIC RESPONSE IN PROTEIN KINASE D KNOCKOUT CARDIOMYOCYTES. Juliana Mira Hernandez, Christopher Y. Ko, Bruno Jacobsen, Erin Y. Shen, Benjamin W. Van, Avery Mandel, Zhong Jian, Sabine J. van Dijk, Donald M. Bers, Ye Chen-Izu, Julie Bossuyt

**Cardiac, Smooth, and Skeletal Muscle Electrophysiology I (Boards B332 - B344)**

501-Pos  BOARD B332  SERCA2A IS CRITICAL FOR ARRHYTHMIC RISK IN NONISCHEMIC CARDIOMYOPATHY. An Xie, Zhen Song, Gyeoung-Jin Kang, Feng Feng, Zhilin Qu, Samuel C. Dudley

502-Pos  BOARD B333  MUTATIONS IN KCNE1 PROMOTE CARDIAC ALTERNANS IN LONG QT SYNDROME TYPE 5 RABBITS. Tae Yun Kim, Anatoli Kabakov, Radmila Terentyeva, Dmitry A. Terentyev, Yichun Lu, Katja E. Odening, Andras Varro, Zsuzsanna Bőszé, Gideon Koren, Bum-Rak Choi

503-Pos  BOARD B334  MOLECULAR MECHANISMS UNDERLYING CARDIAC L-TYPE CHANNEL REGULATION BY LRRC10. Pedro del Rivero Morfin, Manu B. Johny

504-Pos  BOARD B335  IMPAIRED PARASYMPATHETIC NERVOUS SYSTEM REGULATION OF HEART RATE AND SINOATRIAL NODE FUNCTION IN TYPE 2 DIABETES MELLITUS. Yingjie Liu, Hailey J. Jansen, Robert A. Rose

505-Pos  BOARD B336  INTRINSIC SINOATRIAL NODE DYSFUNCTION IMPAIRS AUTONOMIC REGULATION OF HEART RATE VARIABILITY IN HYPERTENSIVE HEART DISEASE. Tristan W. Dorey, Motahareh Moghtadaei, Adam Kirkby, Robert A. Rose

506-Pos  BOARD B337  HYPOKALEMIA PROMOTES ARRHYTHMIA BY DISTINCT MECHANISMS IN ATRIAL AND VENTRICULAR MYOCYTES. Kirarsh Tazmini, Michael Frisk, Martin Laasmaa, Alexandre Lewalle, Stefano Morotti, David B. Lipsett, Ornella Manfra, Jonas Skogested, Jan Magnus Aronsen, Ivar Sjaastad, Andrew G. Edwards, Eleonora Grandi, Steven A. Niederer, Erik Øie, William E. Louck

507-Pos  BOARD B338  DISRUPTING THE CIRCADIAN CLOCK MECHANISM IN CARDIOMYOCYTES EXACERBATES THE LQT3-RELATED PHENOTYPE IN SNC5AΔKPQ/+ MICE. Jennifer Wayland, Fiaz Shah, Kaitlyn Samuels, Tanya Seward, Elizabeth Schroder, Brian R. Delisle

508-Pos  BOARD B339  CARDIAC OVEREXPRESSION OF ADENYLYL CYCLASE TYPE VIII AUGMENTS FUNCTION OF THE COUPLED OSCILLATORY SYSTEM AND ACTION POTENTIAL FIRING RATE OF SINOATRIAL NODAL CELLS. Syevda Tagirova, Khalid Chakir, Dongmei Yang, Bruce D. Ziman, Yelena Tarasova, Kirill Tarasov, Pedro del Rivero Morfin, Zhang Huan, Yuqi Yang, Hailey J. Jansen, Robert A. Rose

509-Pos  BOARD B340  O-GLYCOSYLATION OF CAMKI AT SERINE 280 PROMOTES CARDIAC ARRHYTHMIAS IN DIABETIC HYPERGLYCEMIA. Bence Hegyi, Anna Fasoli, Christopher Y. Ko, Marisa M. Ciccozzi, Srinivas Tapa, Benjamin W. Van, Erin Y. Shen, Sonya Baidar, Julie Bossuyt, Crystal M. Ripplinger, Donald M. Bers

510-Pos  BOARD B341  IMAGING AND ELECTROPHYSIOLOGICAL BIOMARKERS IN A NOVEL PRECLINICAL PIG MODEL OF ANTHRACYCLINE-INDUCED CARDIOTOXICITY. Peter Lin, Terenz Escartin, Melissa Larsen, Jennifer Barry, Xiuling Qi, Matthew Ng, Susan Camilleri, Idan Roifman, Mihaela Pop
Voltage-gated Ca Channels
(Boards B345 - B356)

511-POS  BOARD B342
UBIQUITIN LIGASE RIFIFYLIN (RRFL) HAS YIN-YANG EFFECTS ON RABBIT CARDIAC TRANSIENT OUTWARD (Ito) POTASSIUM CHANNELS. Anatoli Y. Kabakov, Karim Roder, Karni S. Moshal, YiChun Lu, Mingwang Zhong, Saroj Dhakal, Alain Karma, Gideon Koren

512-POS  BOARD B343
POTENT SUPPRESSION OF VENTRICULAR ARRHYTHMIA BY SELECTIVELY TARGETING LATE L-TYPE CALCIUM CURRENT. Marina Angelini, Arash Pezhouman, Nicoletta Savalli, Marvin Chang, Guillaume Calmettes, Federica Steccanella, Antonios Pantazis, Hrayr S. Karagueuzian, James N. Weiss, Riccardo Olcese

513-POS  BOARD B344

Voltage-gated K Channels I
(Boards B357 - B385)

514-POS  BOARD B345
PROBING THE EFFECTS OF CALMODULINOPATHY MUTATIONS ON CA,2.1 CHANNELS. John W. Hussey, Helene H. Jensen, Mette Nyegaard, Michael T. Overgaard, Ivy E. Dick

515-POS  BOARD B346
MYOCARDIAL RAD DELETION INCREASES EARLY L-TYPE CALCIUM CURRENT WITHOUT AFFECTING LATE CALCIUM CURRENT THROUGH MULTIPLE MECHANISMS. Brooke Ahern, Andrea Sebastian, Douglas A. Andres, Jonathan Satin

516-POS  BOARD B347
NON-CANONICAL ROLE OF CA,A2D1 IN CARDIAC HYPERTROPHY. Aya Al Katat, Angelino Calderone, Lucie Parent

517-POS  BOARD B348
THE CONTRIBUTION OF THE INDIVIDUAL VOLTAGE SENSORS TO THE ACTIVATION OF SKELETAL CA,1.1 CHANNELS. Nicoletta Savalli, Marina Angelini, Federica Steccanella, Fenfen Wu, Marbella Quinonez, Alan Neely, Steve C. Cannon, Riccardo Olcese

518-POS  BOARD B349
NEURONAL NITRIC OXIDE SYNTHASE REGULATION OF CALCIUM CYCLING IN VENTRICULAR CARDIOMYOCYTES IS INDEPENDENT OF CA,1.2 CHANNEL MODULATION. Janine Michaela Ebner, Michal Cagalinec, Helmut Kubista, Hannes Todt, Petra L. Szabo, Attila Kiss, Bruno K. Podesser, Henrietta Cserne Szappano, Livia C. Hool, Karlheinz Hilber, Xaver Koenig

519-POS  BOARD B350
A POTENT VOLTAGE-GATED CALCIUM CHANNEL INHIBITOR ENGINEERED FROM A NANOBODY TARGETED TO AUXILIARY CAVB SUBUNITS. Travis J. Morgenstern

520-POS  BOARD B351
PHENYLALKYLAMINES IN CALCIUM CHANNELS. EXPERIMENTAL STRUCTURES AND COMPUTATIONAL MODELS. Denis B. Tikhonov, Lianyun Lin, Daniel S. Yang, Zhiguang Yuchi, Boris S. Zhvorov

521-POS  BOARD B352
TWO CAV3.3 (CACNA1I) GAIN-OF-FUNCTION MUTATIONS LINKED TO EPILEPSY AND INTELLECTUAL DISABILITY AFFECT GATING PROPERTIES AND THE WINDOW CURRENT. Yousra El Ghaleb, Pauline E. Schneeberger, Abeltje M. Polstra, Johanna M. van Hagen, Marta Campiglio, Jonas Denecke, Monica Fernandez-Quintero, Klaus R. Liedl, Kerstin Kutsche, Bernhard E. Flucher

522-POS  BOARD B353
ARRHYTHMOGENIC CALMODULIN MUTATIONS CAN DISRUPT THE GLOBULAR STRUCTURE AND UNCOUPLE CA2+ BINDING COOPERATIVITY. Kaiqian Wang, Malene Brohus, Christian Holt, Michael T. Overgaard, Reinhard Wimmer, Filip Van Petegem

523-POS  BOARD B354
STRUCTURAL DETERMINANTS OF VOLTAGE-GATED CALCIUM CHANNEL GATING PROPERTIES. Monica L. Fernandez-Quintero

524-POS  BOARD B355
UNICELLULAR CAVB SUBUNIT MODULATES CALCIUM CHANNELS. Emilie Segura, Amrit Mehta, Mireille Marsolais, Xuan R. Quan, Juan Zhao, Rémy Sauvé, John D. Spafford, Lucie Parent

525-POS  BOARD B356
EXPLORING THE ROLE OF THE FIRST EXTRACELLULAR LOOP OF CA,2.3 IN MEDIATING THE INTERACTION WITH AUXILIARY SUBUNITS. Juan Zhao, Mireille Marsolais, Emilie Segura, Lucie Parent
535-Pos  BOARD B366  
HYPOXIA INHIBITS KV1.5 CURRENTS THROUGH REACTIVE OXYGEN SPECIES-MEDIATED DISULFIDE BOND FORMATION. Nancy You, Wentao Li, Jun Guo, Tonghua Yang, Shetuan Zhang

536-Pos  BOARD B367  
PROBING THE MOLECULAR BASIS OF OPPOSING PUFA EFFECTS ON KV7 CHANNELS. Damon J.A. Frampton, Louise C. Abrahamsson, Johan E. Larsson, Sara I. Lin

537-Pos  BOARD B368  
CHOLESTEROL-INDUCED TRAFFICKING OF BETAl SUBUNITS SWITCHES MODULATION OF BK FUNCTION BY THIS STEROID FROM INHIBITION TO ACTIVATION. Anna N. Bukiya, M. Dennis Leo, Jonathan H. Jaggar, Alex M. McNally, Alfred L. George

538-Pos  BOARD B369  
FUNCTIONAL CONSEQUENCES OF INCIDENTAL DISCOVERED KCNQ1 VARIANTS DETERMINED BY AUTOMATED ELECTROPHYSIOLOGY. Carlos G. Vanoye, Reshma R. Desai, Sneha Adusumilli, Jens Meiler, Charles R. Sanders, Tooraj Mirshahi, Megan J. Puckelwartz, Elizabeth M. McNally, Alfred L. George

539-Pos  BOARD B370  
A FOCUSED ELECTRIC FIELD IN THE BK CHANNEL VOLTAGE SENSOR. Ignacio A. Segura, Willy R. Carrasquelo-Ursulaez, Ramon Latorre

540-Pos  BOARD B371  
CORRECTION OF HERG FUNCTIONAL EXPRESSION AND DEFECTIVE PERIPHERAL PROCESSING IN INHERITED AND ACQUIRED LQT2 SYN-DROMES. Brian Foo, William C. Valinsky, Josua Solomon, Jeemventh Kaur, Elya Quesnel, Camille Barbier, Gergely L. Lukacs, Alvin Shrier

541-Post  BOARD B372  
TETHERED PEPTIDE NEUROTOXINS FACILITATE BIOPHYSICAL STUDY AND REVEAL TWO VOLTAGE-DEPENDENT BLOCKING MECHANISMS FOR SAK1 TOXINS IN THE K+ CHANNEL POPE. Ruiming Zhao, Hui Dai, Netanel Mendlman, Jordan H. Chill, Steve A. Goldstein

542-Pos  BOARD B373  
EXTRACELLULAR HEME MODULATES VOLTAGE-GATING IN CNBD SUPERFAMILY CATION CHANNELS. Timothy J. Jegla, Yuning Zhou, Aditya Pisupati, Benjamin T. Simonson, Kathryn King, Damian B. van Rossum, Andriy Anishkin

543-Pos  BOARD B374  
RATIONALLY DESIGNED PROTON CHANNEL INHIBITORS REVEAL A DRUG-GABLE POCKET IN A VOLTAGE-SENSING DOMAIN. Chang Zhao, Liang Hong, Saleh Riahi, Jason D. Galpin, Christopher A. Ahern, Douglas J. Tobias, Francesco Tombola

544-Pos  BOARD B375  
MOLECULAR DETERMINANTS OF C-TYPE INACTIVATION FOR THE HERG CHANNEL AND ITS DISEASE-ASSOCIATED MUTANTS. Jing Li, Rong Shen, Young Hoon Koh, Eduardo Perozo, Benoit Roux

545-Pos  BOARD B376  
CADMIUM AND PROTONS ACTIVATE THE PLANT HYPERPOLARIZATION-GATED K+ CHANNEL KAT1 THROUGH A CONSERVED BINDING SITE IN THE VOLTAGE SENSOR DOMAIN. Yunqing Zhou, Sarah M. Assmann, Timothy J. Jegla

546-Pos  BOARD B377  
PROBING ION CHANNEL THERMODYNAMICS WITH TEMPERATURE JUMPS IN OOCYTES. Bernardo Pinto, Carlos Alberto Z. Bassetto Jr, Francisco Bezanilla, Ramon Latorre

547-Pos  BOARD B378  
RAPID CHARACTERISATION OF R56Q MUTANT HERG CHANNEL KINETICS USING SINUSOIDAL VOLTAGE PROTOCOLS. Dominic G. Whittaker, Jake M. Kemp, Gary R. Mirams, Tom W. Claydon

548-Pos  BOARD B379  
ELECTROSTATIC INTERACTIONS OF NEGATIVELY CHARGED DHAA DERIVATIVES WITH THE VOLTAGE-GATED POTASSIUM CHANNEL Kv1.7/1.3. Argel Estrada-Mondragon, Nina E. Ottosson, Xiongyu Wu, Peter Konradsson, Fredrik Elinder

549-Pos  BOARD B380  
MOVING GATING CHARGE WITH TEMPERATURE JUMPS. Carlos Alberto Z. Bassetto Jr, Bernardo Pinto, Ramon Latorre, Francisco Bezanilla

550-Pos  BOARD B381  
DOES PHYSICS EXPLAIN THE ACTIVATION OF VOLTAGE-GATED ION CHANNELS? Henry Richard Leuchtag

551-Pos  BOARD B382  
VOLTAGE SENSOR MOVEMENT OF NEURONAL K7 CHANNELS. Michaela Edmond, Rene Barro-Soria

552-Pos  BOARD B383  
A NEW APPROACH TO STUDY NON-CONDUCTING KV2 CHANNELS. Emily E. Maverick, Michael M. Tamkun

553-Pos  BOARD B384  

554-Pos  BOARD B385  

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556-Pos  BOARD B387  
CHARACTERIZATION OF NEW HUMAN KCNMA1 LOSS-OF-FUNCTION MUTATIONS. Hans J. Moldenhauer, Su Mi Park, Andrea L. Meredith

557-Pos  BOARD B388  
FUNCTIONAL AND PHARMACOLOGICAL CHARACTERIZATION OF C. ELEGANS DEG/ENAC/ASIC CHANNELS. Sylvia Fechner, Isabel D’Alessandro, Lingxin Wang, Calvin Tower, Li Tao, Miriam B. Goodman

558-Pos  BOARD B389  
ZEBRAFISH HEART AS A MODEL FOR EARLY-SCREENING OF HUMAN ANTARRHYTHMIC DRUGS. Alicia de la Cruz, Marta E Perez-Rodriguez, Quinn C. Rainer, Sara I. Liin, Peter H. Larsson

559-Pos  BOARD B390  
ALTERED CYTOSOLIC CA2+ SIGNALING AND MITOCHONDRIAL POTENTIAL IN LYMPHOCYTES FROM MICE CARRYING THE GAIN-OF-FUNCTION MUTATION IN RYANODINE RECEPTOR TYPE 1. Lukun Yang, Elena N. Dedkova, Paul D. Allen, Alla F. Fomina

560-Pos  BOARD B391  
RELATIVE AFFINITIES OF GENERAL ANESTHETICS FOR EXPERIMENTALLY-IDENTIFIED BINDING SITES IN RYANODINE RECEPTORS (RyR1). Sruthi Murilidaran, Weiming Bu, Roderic G. Eckenhoff, Grace H. Brannigan, Thomas T. Joseph
561-Pos  BOARD B392

562-Pos  BOARD B393
CYSTEINE-MODIFICATION OF K,7 CHANNELS AS ANALGESIC MECHANISM OF ACTION OF ACETAMINOPHÈN. Isabella Salzer, Sutirtha Ray, Stefan Boehm

563-Pos  BOARD B394
ELUCIDATING THE MOLECULAR DETERMINANTS OF PRO-ARRHYTHMIC PROCLIVITIES OF BETA-BLOCKING DRUGS. John R. Dawson, Kevin DeMarco, Pei-Chi Yang, Slava Bekker, Vladimir Yarov-Yarovoy, Colleen E. Clancy, Igor V. Vorobyov

564-Pos  BOARD B395
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565-Pos  BOARD B396
DISCRIMINATING MECHANISMS OF DRUG ACTION FROM OPTICAL RECORDINGS OF VOLTAGE AND CALCIUM IN HI-PSC CARDIOMYOCYTES. Andrew G. Edwards, Stefano Morotti, Eleonora Grandi

566-Pos  BOARD B397
DIASTOLIC SODIUM CURRENT IN CARDIOMYOCYTES ASSESSED WITH LITHIUM. Kenneth S. Ginsburg, Yanyan Jiang, Daniel C. Bartos, Sanda I. Despa, Donald M. Bers

567-Pos  BOARD B398
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568-Pos  BOARD B399
PREDICTING ARRHYTHMOGENICITY: STRUCTURAL MODELING OF SAFE AND UNSAFE HERG BLOCKERS. Aiyana M. Emigh, Kevin DeMarco, Kazuharu Furutani, Colleen E. Clancy, Igor V. Vorobyov, Vladimir Yarov-Yarovoy

569-Pos  BOARD B400
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570-Pos  BOARD B401
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571-Pos  BOARD B402
PIEZO MECHANORECEPTORS CHANNELS CONTROL CENTRIOLE ENGAGEMENT VIA CALCIUM SIGNALING AT THE CENTROSOME. Liron David

572-Pos  BOARD B403
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573-Pos  BOARD B404
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574-Pos  BOARD B405
THE KC3.1 POTASSIUM CHANNEL MEDIATES THE TAMOXIFEN-DEPENDENT ANTICANCER EFFECTS IN BREAST CANCER. Vitaly Senyuk, Rudy Calderon, Daniel R. Sauter, Saverio Gentile

575-Pos  BOARD B406
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576-Pos  BOARD B407
KINETIC AND PHARMACOLOGICAL PROPERTIES OF P2X AND P2X_{2/3} RECEPTORS. James L. Costantin, Timothy Strassmaier, Giustina M. Rotordam, Tom Goetzte, Nadine Becker, Alison Obergrusssberger, Andrea Bruggemann, Michael George, Niels Fertig

577-Pos  BOARD B408
VOLTAGE DEPENDENT ANION CHANNELS REGULATE PROLIFERATION OF CANCER STEM CELLS. Amandine M. Rovini, Elizabeth Hunt, Kareem A. Heslop, Shenghui Qin, Monika Gooz, Gavin Wang, Eduardo N. Maldonado

578-Pos  BOARD B409
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579-Pos  BOARD B410
PHARMACOLOGICAL CHARACTERIZATION OF NATURAL TOBACCO ALKALOIDS IN THE PRESENCE OF POSITIVE ALLOSTERIC MODULATORS AGAINST HUMAN A4B2 AND A7 NICOTINIC ACETYLCHELONE RECEPTORS. Omar Aljiljevic, Damian Mc Hugh, Anatoly Mazurov, Julia Hoeng, Manuel Peitsch

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581-Pos  BOARD B412
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582-Pos  BOARD B413
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583-Pos  BOARD B414
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584-Pos  BOARD B415
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585-Pos  BOARD B416
IN SITU CHARACTERIZATION OF THE WORKING STROKE OF THE SLOW AND FAST ISOFORMS OF MUSCLE MYOSIN. Marco Caremani, Irene Pertici, Valentia Percario, Vincenzo Lombardi, Marco Linari

586-Pos  BOARD B417
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597-Pos  BOARD B428  QUANTIFICATION OF SURFACE RECEPTOR - ACTIN CORTEX INTERPLAY VIA MULTIPLEXED TWO-COLOR IMAGING. Aparajita Dasgupta, Huong Tra Ngo, Deryl Tschoerner, Nicolas Touret, Bruno Da Rocha-Azevedo, Khuloud Jqaman

598-Pos  BOARD B429  ACTOMYOSIN CONTRACTILITY DRIVES INWARD BLEBBING BY CORRALING MEMBRANE PROTEINS. John Xiaole Li, Bill Brieher

599-Pos  BOARD B430  MYOSIN REGULATION OF ACTIN TURNOVER DYNAMICS. Danielle Scheff, Margaret L. Gardel

600-Pos  BOARD B431  DESIGN AND OPTIMIZATION OF TROPOMYOSIN FRAGMENTS FOR TROPOMODULIN INTERACTION STUDIES. Balaganesh Kuruba, Dmitrii Tolkatchev, Alla S. Kostyukova, Kyle Swain, Natalia Moroz, Trenton Williams, Kaifin A. Smith

601-Pos  BOARD B432  MONITORING PALLADIN'S EFFECT ON ACTIN DYNAMICS AND ORGANIZATION WITH TIRF MICROSCOPY. Abby Jurgensmeier, Moriah R. Beck

602-Pos  BOARD B433  VISUALIZING DYNAMIC ACTIN CROSSLIGHTING PROCESSES DRIVEN BY THE ACTIN BINDING PROTEIN ANILIN. Kyohel Matsuda, Mitsuhiro Sugawa, Masahiko Yamagishi, Noriyuki Kodera, Junichiro Yamja

603-Pos  BOARD B434  ALTERATION OF MESENCHYMAL STEM CELLS POLARITY BY LAMINAR SHEAR STIMULATION PROMOTING B-CATENIN NUCLEAR LOCALIZATION. Jennifer Ho, Oscar K. Lee

604-Pos  BOARD B435  DEEP LEARNING REVEALS THE LINK BETWEEN FILAMENT ARCHITECTURE AND SUBUNIT CONFORMATION IN BENT ACTIN. Matthew J. Reynolds, Rui Gong, Santiago Espinosa de los Reyes, Gregory M. Alushin

605-Pos  BOARD B436  MICRORHEOLOGY OF ACTIVE ACTIN-MICROTUBULE NETWORKS. Gloria Lee, Michael J. Rust, Moumita Das, Jennifer L. Ross, Rae Anderson

606-Pos  BOARD B437  THE FORMIN INHIBITOR, SMIFH2, INHIBITS MEMBERS OF THE MYOSIN SUPERFAMILY. James R. Sellers, Shidong Shi, Yukako Nishimura, Fang Zhang, Rong Liu, Yasuharu Takagi, Virgile Viasnoff, Alexander D. Bershady

607-Pos  BOARD B438  TALIN ROD MECHANICAL UNFOLDING: IN SILICO STUDY USING BOTH BOXED AND STEERED MOLECULAR DYNAMICS. Vasyl V. Mykuliak, Jonathan J. Booth, Dmitrii V. Shalashilin, Vesa P. Hytönen

608-Pos  BOARD B439  ACTIN CONTROLS THE DYNAMICS AND MICROTUBULE CROSSLIGHTERS TUNE CO-LOCALIZATION IN CROSSLIGHTED COMPOSITE ACTIN-MICROTUBE NETWORKS. Jennifer L. Ross, Shea N. Ricketts, Leila Farhadi, Moumi Das, Michael Rust, Rae Anderson

609-Pos  BOARD B440  CONSERVED TRYPHTHEN MATION LEADS TO DISCOVERY OF OBSCURE TYROSINATE FLUORESCENCE IN IMMUNOGLOBULIN DOMAIN. Ravi Vattepu, Allan Ayella, Rahul Yadav, Joseph Dille, Moriah R. Beck

610-Pos  BOARD B441  CYTOSKELETAL REGULATION OF THREE-DIMENSIONAL EPITHELIAL CELL SHAPE. Theresa A. Chmiel, Margaret L. Gardel

611-Pos  BOARD B442  ACTIN DEPOLYMERIZATION AND COFILIN BINDING INDUCED BY DIELLETRIC ALLOSTERY. Jun Ohnuki, Mitsunori Takano

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612-Pos  BOARD B443  THE BACTERIAL TUBULIN HOMOLOG FTSZ FORMS 2D-SHEETS THAT SUS- TAIN ELECTRICAL OSCILLATIONS. Julieta Bonacina, Monica P. Carabajal, María del Rocío Cantero, Horacio F. Cantillo
613-Pos  BOARD B444  SILVER IONS AFFECT THE MOTILITY OF E. COLI BY DISRUPTING THE MAR-KOVIAN RUN-AND-TUMBLE PROCESS. Benjamin P. Russell, Yong Wang

614-Pos  BOARD B445  ROTATIONAL AND TRANSLATIONAL DRAG COEFFICIENTS OF A HELICAL BACTERIAL CELL. Liu Yu, Lucas Le Nagard, Cécile Fradin

615-Pos  BOARD B446  COMPARISON OF THE DYNAMIC PROPERTIES OF THE BACTERIAL TUBULIN HOMOLOG FTSS FROM BACTERIA TO CHLOROPLAST. Yaqdong Chen, Xueqin Ma, Na Wang, Mugee U. Rahman

616-Pos  BOARD B447  INVESTIGATION OF ADHESION OF EXTRACELLULAR POLYMERIC SUBSTANCES VIA MAGNETIC TWEEZERS. Yu-Ying Hsieh, Yujia Cui, Yu-Tung Weng, Lihan Chung, Shin-Yi Lin, Chi-Shuo Chen

617-Pos  BOARD B448  STRUCTURAL AND FUNCTIONAL INVESTIGATION OF THE MYCOBACTERIAL TYPE VII SECRETION ATPASE ECCA. Tom Crosskey, Kate Beckham, Annabel Parret, Matthias Wilmanms

618-Pos  BOARD B449  ANISOTROPIC SWIMMING M Des IN HELICOBACTER PYLORI. Jyt D. Antani, Pushkar P. Lele

619-Pos  BOARD B450  TRAVEL Awardee PREDATION STRATEGIES OF BDELOVIBRIO BACTERIOVORUS. Mikayla Carlson, Sean L. Seyler, Steve Pressé

620-Pos  BOARD B451  SYNTHETIC CELL-CELL ADHESION MEDIATES AGGREGATION AND BOUNDARY FORMATION IN SWARMING E. COLI. Jung Kim, Ingmar H. Riedel-Kruse

621-Pos  BOARD B452  MECHANICAL STRESS PROMOTES DISASSEMBLY OF THE ANTIBIOTIC EF-FLUX COMPLEX MACAB-TOLC. Christine E. Harper, Wenyao Zhang, Peng Chen, Christopher J. Hernandez

622-Pos  BOARD B453  COMPETITIVE SUBSTRATE BINDING COORDINATES THE TWO ANTAGONISTIC MOTORS OF THE BACTERIAL TYPE IV PILUS. Matthias D. Koch, Cheryn Fei, Ned S. Wingreen, Zemer Gitai, Joshua W. Shaevitz

623-Pos  BOARD B454  GEOMETRIC ENRICHMENT OF ENHANCED CELL WALL SYNTHESIS AND CYTOSKELETAL PROTEINS IN STRAIGHT, CURVED, AND HELICAL RODS. Benjamin P. Bratton, Jennifer A. Taylor, Nicholas R. Martin, Edith S. Blackman, Nina R. Salama, Zemer Gitai, Joshua W. Shaevitz

624-Pos  BOARD B455  MECHANISTIC ORIGIN OF CELL-SIZE CONTROL AND HOMEOSTASIS IN BACTERIA. Fangwei Si, Guillaume Le Treut, John T. Sauls, Stephen Vadla, Petra Anne Levin, Suckjoon Jun

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625-Pos  BOARD B456  THE ION-TRANSPORTER NKCC1 AS A TARGET FOR BRAIN DISEASES. Corinne Portioli, Annalis Savardi, Zhenning Ren, Marco De Vivo, Ming Zhou, Laura Cancedda

626-Pos  BOARD B457  K⁺-DRIVEN ATP SYNTHESIS IN ISOLATED HEART MITOCHONDRIA. Miguel A. Aon, Sonia Cortassa, Magdalena Juhaszova, Evgeny Kobrinsky, Dmitry B. Zorov, Steven J. Sollott

627-Pos  BOARD B458  INSIGHT INTO SODIUM PUMP REGULATION IN THE FAILING HUMAN HEART. Jaroslava Seifova, Marsha Prabadi, Jonathan Kirk, Alain Heroux, Aleksey V. Zima, Seth L. Robia

628-Pos  BOARD B459  ELECTROPHYSIOLOGICAL MEASUREMENT OF MITOCHONDRIAL NA⁺-CA²⁺ EXCHANGE IN MOUSE HEART. Mohammed M. Islam, Ayako Takeuchi, Satoshi Matsuoka

629-Pos  BOARD B460  A NOVEL APPROACH TO DETECT ELECTROGENIC TRANSPORTER ACTIVITY IN INTACT CELLS APPLIED TO INVESTIGATE IPSC DERIVED CARDIOMYO-CYTES AND NEURONS. Maria Barthmes, Riccardo Rizzetto, Anna Mondini, Andre Bazzone, Jean-Francois Rolland, Niels Fertig, Michael George, Andrea Bruggemann

630-Pos  BOARD B461  RETHINKING THE BOUNDS OF ION-COUPL ED TRANSPORT. Nathan E. Thomas, Grant Hussey, Katherine A. Henzler-Wildman

631-Pos  BOARD B462  UNRAVELING THE MOLECULAR DETERMINANTS FOR GABA TRANSPORTER SUBTYPE SELECTIVITY. Stefanie Kickinger, Anas Al-Khawaja, Anne S. Haugaard, Maria E.K. Lie, Francesco Bavo, Rebekka Löffler, Maria Damgaard, Bente Frlund, Gerhard Franz Ecker, Petrine Wollendorph

632-Pos  BOARD B463  OVERLAPPING SUBSTRATE SPECIFICITIES IN THE SMALL MULTIDRUG RESISTANCE (SMR) FAMILY OF TRANSPORTERS. Christian B. Macdonald, Ali A. Kermami, Randy B. Stockbridge


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<td>740-Pos</td>
<td>B571</td>
<td>SENSING MIXED LINEAGE LEUKEMIA WIN MOTIF PEPTIDE-WD REPEAT PROTEIN-5 ASSOCIATION WITH AN ENGINEERED BIOSENSOR. Lauren A. Mayse, Ashley Canning, Ali Imran, Michael Cosgrove, Liviu Movileanu</td>
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<td>741-Pos</td>
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<td>PHOTO-CONTROL OF RAS NUCLEOTIDE EXCHANGE REACTION USING PEPTIDE INHIBITOR MODIFIED WITH SPIROPYRAN DERIVATIVE. Kenichi Taii, Nobuyuki Nishibe, Kei Sadakane, Shinsaku Maruta</td>
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<td>742-Pos</td>
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<td>THE EFFECT OF DIFFERENT FLUOROPHORES ON FLUORESCENCE-BASED TECHNIQUES. Marco Cavaco, Diana Gaspar, Vera Neves, Miguel A. Castanho</td>
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<td>743-Pos</td>
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<td>ENGINEERING A MAGNETIC PROTEIN CRYSTAL. Thomas Li, Zegao Wang, He You, Qunxiang Ong, Vamsi Varanasi, Mingdong Dong, Bai Lu, Sergiu Pastca, Blanxiaoxia Cui</td>
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<tr>
<td>744-Pos</td>
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<td>PAPER-SUPPORTED LIPID BILAYERS THAT CAN BE STORED BEFORE USE. Gabriella R. Kimmerly, Khadijah T. Thibodeaux, Jazmyn Juarez, Lauren Trihy, Babak Sanii</td>
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<td>745-Pos</td>
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<td>OUTER LEAFLET LIPID COMPOSITION AFFECT THE INTERNALIZATION OF NANOPARTICLE IN LIVE CELLS. Saeed Nazemidashtarjandi, Amir Farndon</td>
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<td>746-Pos</td>
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<td>A PIPELINE FOR HIGH-THROUGHPUT ASSESSMENT OF ELECTROPHYSIOLOGY AND PROTEIN QUANTIFICATION IN SMALL SAMPLES OF IPS-CM. WeiZhen Li, Emilia Entcheva</td>
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<td>747-Pos</td>
<td>B578</td>
<td>FABRICATION OF A MICROFLUIDIC DEVICE TO STUDY THE INTERACTIONS BETWEEN HUMAN CHORDOMA UCH-1 AND HUMAN ADIPOSE-DERIVED STEM CELLS. Holly Day, Rosaline Kumar, Carlos Luna</td>
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748-Pos  BOARD B579  ENGINEERING THE MICROENVIRONMENT FOR HEART MUSCLE CELL MECHANOBIOLOGY. Erica A. Castillo, Kerry Lane, Orlando Chirikian, Samuel Feinstein, Cheavar Blair, Alison Schroer, Gaspard Pardon, Tanya Grancharova, Ru Gunawardane, Sarah Heilshorn, Beth L. Pruitt

749-Pos  BOARD B580  PHENOTYPING OF PHAGOCYTOSING NEUTROPHIL POPULATIONS USING DEFORMABILITY CYTOMETRY. Cody Combs, Matthew J. Boyan, Rocelle Radzynski, Daniel Spalinski, Jun F. Allard, Steven Gross, Xiaohui Xie, Zuzanna S. Siwy

750-Pos  BOARD B581  HAIR REGENERATION INDUCED BY MECHANICAL STRETCH THROUGH THE ALTERNATIVE ACTIVATION OF MACROPHAGES. Oscar K. Lee

751-Pos  BOARD B582  PERIODIC BIOMECHANICAL STRESSES AND STRAINS AT NEURAL INTERFACES MODULATE MITOCHONDRIAL AND METABOLIC FUNCTIONALITY. Arati Sridharan, Vladislav Voziyanov, Jit Muthuswamy

752-Pos  BOARD B583  SIMULATED MICROGRAVITY AFFECTS NUMB LOCALIZATION IN HUMAN ADIPOSE-DERIVED STEM CELLS. Areli Jannes Javier, Daniel Roufiael, Shalise Burch, Rosaline Kumar, Holly Day, Carlos Luna

753-Pos  BOARD B584  A MULTI-SCALE MODELING APPROACH TO DETERMINE 3D HEART VALVE INTERSTITIAL CELL BIOPHYSICAL BEHAVIOR IN A HYDROGEL ENVIRONMENT. Michael S. Sacks, Emma Lejeune, Alex Khang

754-Pos  BOARD B585  PHYSICAL CONFINEMENT INDUCES MALIGNANT TRANSFORMATION IN MAMMARY EPITHELIAL CELLS. Yen-Chun Lu

755-Pos  BOARD B586  TRAVEL Awardee  MOUSE MELANOMA B16 TUMORS ARE SOFT AND ENGULFABLE WHEN TARGETED IN COMBINATION WITH MACROPHAGE CHECKPOINT BLOCKADE. Lawrence J. Dooling, Brandon H. Hayes, Jason C. Andrechak, Siddhant Kadu, Dennis E. Discher

Micro- and Nanotechnology I
(Boards B587 - B606)

756-Pos  BOARD B587  STRUCTURAL AND FUNCTIONAL PROPERTIES OF SYNTHETIC TRANSMEMBRANE PEPTIDE PORES. Puthumadathil Neethu Narayanan Anitha, Smrithi Krishnan R., Kozhinjampara R. Mahendran

757-Pos  BOARD B588  IMMobilization of bioengineered portal protein within a solid-state nanopore for molecular sensing. Mehrnaz Mojtabavi, Sandra Greive, Alfred Antson, Meni Wanunu

758-Pos  BOARD B589  Simulating resistive pulses from the translocation of arbitrarily shaped single proteins through nanopores using spherical clusters of beads. Shuran Xu, Cuifeng Ying, Marco Latтуda, Michael Mayer

759-Pos  BOARD B590  Single protein trapping on ultrathin asymmetric solid-state nanopores. Hirohito Yamazaki, Fanjun Li, Abdelkrim Benabbes, Benjamin Cressiot, Paul M. Champion, Min Chen, Meni Wanunu

760-Pos  BOARD B591  Protein trapping in a nanopore well. Jiali Li, Cuifeng Ying, Saubh Ashasthi, Trevor Kalkus, Mitu C. Acharjee, Michael Mayer

761-Pos  BOARD B592  Two protein dynamics through a nanopore in an electrically biased solid-state membrane. Craig C. Wells, Dmitriy V. Melnikov, Maria E. Gracheva

762-Pos  BOARD B593  Orientation-dependent electric potential and ionic current model of a nucleotide in a silicon dioxide nanopore. Arjun Verma, Maria E. Gracheva

763-Pos  BOARD B594  Electronic detection of nucleotides in multi-layered MOS-HBN nanopore FET devices. Nagendra Athreya, Jean-Pierre Leburton

764-Pos  BOARD B595  Investigating C-KIT G-quadruplex stability using nanopore. Trang Vu, Joel Martinez-Goyco, Sun Min Kim, Tae-Joon Jeon, Jiwook Shim

765-Pos  BOARD B596  Repeated sensing of single DNA molecules in a dual nanopore device. Philip Zimny, Yuning Zhang, Ankit Rana, Roland Nagel, Walter Reisner, William B. Dunbar, Xu Liu

766-Pos  BOARD B597  Recent progress in solid-state nanopore DNA sequencing. Paul Masih Das


768-Pos  BOARD B599  Optical observation of DNA translocation dynamics in sin nanopores. Katsuyuki Enomoto, Yuki Ishikawa, Keiko Esashika, Toshiharu Saiti

769-Pos  BOARD B600  Unbalanced ion flushing effect in MOS, nanopore biosensors. Mingye Xiong, Michael Graf, Nagendra Athreya, Aleksandra Radenovic, Jean-Pierre Leburton

770-Pos  BOARD B601  Gating of hydrophobic nanopores with large anions. Jake Polster, Elif T. Acar, Tuan Anh Pham, Zuzanna S. Siwy

771-Pos  BOARD B602  Ionic amplifying circuits inspired by electronics and biology. Rachel A. Lucas, Chih-Yuan Lin, Lane A. Baker, Zuzanna S. Siwy

772-Pos  BOARD B603  Biomimetic signal propagation in a two-pore solid-state system. Cody Combs, Rachel A. Lucas, Jenny Zhou, Nick Teslich, Elif Turker Acar, Francesco Fornasiero, Zuzanna S. Siwy, Steven F. Buchsbaum

773-Pos  BOARD B604  Electrode-free nanopore sensing by diffusiophotophysics (DOP). Yuqin Wang

774-Pos  BOARD B605  TRAVEL Awardee  Direct observation of single biomolecule hidden behaviors by an electro-optical nanopore. Rui Gao, Yilun Ying, Yi-Tao Long

775-Pos  BOARD B606  Dynamics of laser-assisted silicon nitride dielectric breakdown for deterministic fabrication of solid-state nanopore. Zifan Tang, Xiaodong He, Weihua Guan
Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, February 16, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S133, in the Exhibit Hall. S board numbers before each title indicate where the posters will be assigned during the Sunday evening competition.

The posters will also be presented during the regular daily sessions as programmed below. Note that only the applicant’s name is listed. Please refer to the full abstract for all authors. Please also note that only applicants and judges will be allowed in S poster area on Sunday evening.

Bioenergetics, Mitochondria & Metabolism (Boards S1 – S4)

**Board S1**
DYNAMIC PLASTICITY OF MITOCHONDRIAL VDAC2 REVEALED BY SINGLE-MOLECULE ELECTROPHYSIOLOGY William M. Rosencrans (1337-Pos / B405)

**Board S2**
STUDY OF WATER AND PROTON CHANNELS NEAR TO THE OXYGEN EVOLVING COMPLEX OF PHOTOSYSTEM II Divya Kaur Matta (2977-Pos / B523)

**Board S3**
MAMMALIAN STEAROYL-COA DESATURASE FORMS A STABLE TERNARY COMPLEX WITH CYTOCHROME B5 AND CYTOCHROME B5 REDUCTASE Jiemin Shen (2568-Pos / B114)

**Board S4**
LIVE-CELL SUPERRESOLUTION MICROSCOPY OF FAA4 RE-DISTRIBUTION ON LIPID DROPLETS DURING METABOLIC TRANSITIONS IN YEAST Santosh Adhikari (718-Pos / B549)

Bioengineering (Boards S5 – S12)

**Board S5**
CHROMATIN FOLDING UNDER DIFFERENT NUCLEAR CONFINEMENT. Samira Mali (378-Pos / B209)

**Board S6**
PREPARATION OF PEPTIDES WITH HIGH AFFINITY TO CANCER TARGETS IN MRNA DISPLAY VIA CONTINUOUS-FLOW MICROFLUIDICS. Wan-Zhen Lin (739-Pos / B570)

**Board S7**
DUAL EFFECTS OF SUBCELLULAR CALCIUM HETEROGENEITY AND HEART RATE VARIABILITY ON CARDIAC ELECTROMECHANICAL DYNAMICS. Vrishi Phadumdeo (1994-Pos / B264)

**Board S8**
RATIONALIZING THE EFFECT OF MUTATIONS ON THE EDITING EFFICIENCY OF ADENINE BASE EDITORS. Kartik Lakshmi Rallapalli (1455-Pos / B523)

**Board S9**
CONSTRUCTION OF PROGRAMMABLE NANOPORE USING DE NOVO DESIGNED B-SHEET PEPTIDE Keisuke Shimizu (2323-Pos / B593)

**Board S10**
ANALYZING SINGLE-MOLECULE BEHAVIOR OF A SMALL PROTEIN IN CONFINED NANOSPACE OF A BIOLOGICAL NANOPORE. Misa Yamaji (2322-Pos / B592)

Board S11
ALLOSTERIC REGULATION OF GLUTamate DEHYDROGENASE DEAMINATION ACTIVITY. Soumen Bera (2538-Pos / B84)

Board S12
MULTIMODAL NONLINEAR OPTICAL IMAGING OF PLASMA MEMBRANE BY DYE-BASED SUM-FREQUENCY GENERATION USING A COHERENT ANTI-STOKES RAMAN SCATTERING MICROSCOPE. Takaha Mizuguchi (2293-Pos / B563)

Biological Fluorescence (Boards S13 – S24)

**Board S13**
AO-DIVER ADVANCES THE DEPTH LIMITS OF MULTIPHOTON MICROSCOPY IN SCATTERING MEDIA. Simon W. Leemans (1504-Pos / B572)

**Board S14**
BLUE-CONVERSION OF ORGANIC DYES PRODUCES THE ARTIFACTS OF MULTI-COLOR FLUORESCENT IMAGING. Yeonho Chang (1527-Pos / B595)

**Board S15**
DEFINING THE FLEXIBLE CARDIAC TROPONIN T LINKER REGION IN RELATIONSHIP TO ACTIN AND DETERMINING EFFECTS OF PATHOGENIC POINT MUTATIONS. Andrea E. Deranek (2077-Pos / B347)

**Board S16**
INVESTIGATING NOVEL HETERO-FRET BIOSENSORS FOR ENVIRONMENTAL IONIC STRENGTH USING EXPERIMENTAL AND THEORETICAL APPROACHES. Cody P. Aplin (2485-Pos / B31)

**Board S17**
A NOVEL TARGETING APPROACH FOR CANCER TREATMENT BASED ON PHOTODYNAMIC THERAPY. Eleonora Uriati (1533-Pos / B601)

**Board S18**
COTRANSCRIPTIONAL MOONLIGHTING OF RSMC AS AN RNA CHAPERONE PROTEIN. Keshav G C (1102-Pos / B170)

**Board S19**
STRUCTURAL CHANGES TO DESMOSOME ARCHITECTURE DURING ASSEMBLY AND MATURATION. Reena R. Beggs (720-Pos / B551)
Biopolymer in vivo (Boards S25 – S32)

Board S25
THE ROLE OF RAPID PROTEIN DYNAMICS IN ARTIFICIAL ENZYME DESIGN.
Joseph Schaefer (671-Pos / B502)

Board S26
MULTIDIMENSIONAL PHASE DIAGRAMS FOR MULTICOMPONENT SYSTEMS COMPRISING MULTIVALENT PROTEINS.
Furqan Dar (1041-Pos / B109)

Board S27
INHOMOGENEOUS FORCES IN SEMIFLEXIBLE BIOPOLYMERS.
Ananya Mondal (329-Pos / B160)

Board S28
COMPUTATIONAL EVALUATION OF POINT MUTATION PERTURBATIONS TO THE RECOVERY STROKE OF DICTYOSTELIUM MYOSIN II WITH METADYNAMICS.
Anthony Baldo (2138-Pos / B408)

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Priyojit Das (2689-Pos / B235)

Board S30
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Sanjoy Paul (1498-Pos / B566)

Board S31
IN CELL KINETIC FRET ASSAY TO JUDGE SUITABILITY OF BIOORTHOGONAL DYE LABELLING REACTION.
Christine Koehler (1535-Pos / B603)

Board S32
EFFECT OF NASCENT PROTEINS ON THE STABILITY OF THE RIBOSOME.
Meranda Masse (958-Pos / B26)

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FUNCTIONAL UNCOUPLING OF PAIN-LINKED NAV1.7/A1632E DIMERS PARTLY RESCUES ITS PAIN-CAUSING PHENOTYPE.
Annika Ruehlmann (2829-Pos / B375)

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Chiamaka Ukachukwu (1271-Pos / B339)

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Soma S. Singareddy (1271-Pos / B339)

Board S36
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Bharat Poudel (935-Pos / B3)

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Haydee Mesa Galloso (2719-Pos / B265)

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Williams E. Miranda (2725-Pos / B271)

Board S40
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Chiara Autilio (429-Pos / B260)

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Defne Gorgun (1191-Pos / B259)

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Pradyumn Sharma (1451-Pos / B519)

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CLATHRIN-COATED PITS FORM FROM ELASTICALLY LOADED CLATHRIN LATTICES.
Grigory Tagiltsev (1977-Pos / B247)

BOARD S99
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Delbert Yip (1329-Pos / B397)

BOARD S100
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Malwase Tembo (2716-Pos / B262)

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Shanlin Rao (1333-Pos / B401)

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Xiaohan Wu (526-Pos / B357)

BOARD S103
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Yuxuan Zhuang (2852-Pos / B398)

Motility & Cytoskeleton
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Abby Jurgensmeier (601-Pos / B432)

BOARD S105
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Lien A. Phung (1355-Pos / B423)

BOARD S106
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Aniruddha Chattaraj (2146-Pos / B416)

BOARD S107
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Jyot Antani (618-Pos / B449)

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Mikayla Carlson (619-Pos / B450)

BOARD S109
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Maicon Landim Vieira (2089-Pos / B359)

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Tianxin Cao (2896-Pos / B442)

BOARD S111
UNVEILING THE TREND OF CHANGES IN MECHANICAL PHENOTYPES BETWEEN SUBPOPULATIONS OF ISOGENIC CANCER CELLS AT DISTINCT METASTATIC STAGES.
Zhenhui Liu (2950-Pos / B496)

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Mehrnaz Mojtabavi (757-Pos / B588)

BOARD S113
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Popular Pandey (2313-Pos / B583)

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| Board S116 | STED Superresolution Imaging of DUOX1 and CEN2 Reveals Substructure of Membrane Macromolecular Complexes in Human Bronchial Epithelial Cells. | Kamila R. Mustafina (717-Pos / B548) |
| Board S117 | Polarization-Resolved Light Scattering Spectroscopy (PLSS) to Study Chromatin-DNA Organization. | Riccardo Marongiu (660-Pos / B491) |
| Board S118 | Structural and Functional Properties of Synthetic Trans-Membrane Peptide Pores. | Puthumadathil Neethu Narayanan Anitha (756-Pos / B587) |
| Board S119 | Physical Characterization of Silver Nanoparticles for Nano-Detection. | Joanna P. Patalas (3050-Pos / B596) |
| Board S120 | Silver Nanorods Stabilised by Gemini Surfactant as Components for NanoSensing Applications. | Karolina Rucinska (3051-Pos / B597) |
| Board S121 | Single-Molecule Investigation of PRC2 Non-Adjacent Nucleosome Bridging. | Rachel Leicher (1862-Pos / B132) |
| Board S122 | Direct Measurement of Stepping Dynamics of E. Coli UVRD Helicase. | Sean Carney (356-Pos / B187) |
| Board S123 | Temperature Driven Shape Transformation of Nanodiscs by Coarse-Grained Molecular Dynamics Simulations. | Warin Rangubpit (675-Pos / B506) |

**Physical Cell Biology (Boards S124 – S133)**

| Board S124 | Determinants of Influenza A Diffusion through the Mucus Barrier to Infection. | Logan Kaler (2210-Pos / B480) |
| Board S125 | RNA Trafficking Between Membraneless Organelles at Single-Molecule Resolution in Live Cells. | Guoming Gao (2288-Pos / B558) |
| Board S126 | Elucidating the Role of Phosphorylated Regulatory Light Chain Proteins (RLC) During Heart Failure Progression. | Kasturi Markandran (1266-Pos / B334) |
| Board S127 | Study of Self-Association of Human CSTF-64 RNA Recognition Motif. | Elahe Masoumzadeh (2549-Pos / B95) |
| Board S128 | Single Molecule Imaging of HIV-1 Envelope Dynamics and Gag Lattice Association Exposes Determinants Responsible for Virus Incorporation. | Nairi Pezeshkian (282-Pos / B113) |
| Board S129 | Mathematical Modeling of Cell Volume Control. | Maria Jesus Munoz Lopez (2259-Pos / B529) |
| Board S130 | SIM-Enhanced Ptychography Imaging of HeLa Cells. | Alberta Trianni (1529-Pos / B597) |
| Board S132 | Single Molecules Dynamics Learned from Single Photons- Flim and FCS with Bayesian Nonparametrics. | Meysam Tavakoli (1534-Pos / B602) |
| Board S133 | Structure-Function Analysis of E-Cadherin Dimerization at the Plasma Membrane. | Vinh H. Vu (1775-Pos / B45) |
### Monday, February 17, 2020

#### Daily Program Summary

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

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<td>RAD52 DNA REPAIR PROTEIN IS A GATEKEEPER THAT PROTECTS DNA REPLICATION</td>
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<td>RNA HELICASES AND SWITCHES: MOLECULAR MOTORS IN RNA BIOLOGY. Anna Marie</td>
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<td>CRYSTALLINE POLYSACCHARIDE. Ryota lino</td>
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<td>IDENTIFYING AND EXPLOITING CRYPTIC POCKETS. Greg R. Bowman</td>
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<td>BITOPIC AND PERIPHERAL MEMBRANE PROTEINS AS DRUG TARGETS: BROADER</td>
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<td>BIOPHYSICAL INSIGHT FROM BIOMEM-BRANE SIMULATIONS THAT TRANSCENDS</td>
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<td>THE “LOCK AND KEY” PARADIGM. Alex Bunker</td>
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<td>THE CHEOREOGRAPHY OF A PROTEIN’S DANCE AT THE HEART OF DRUG DESIGN.</td>
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<td>Dorothée Kern</td>
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<td>TARGETING RARE CONFORMATIONAL STATES TO ACHIEVE SELECTIVE CASPASE</td>
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<td>PROTEASE INHIBITION. Jeanne Hardy</td>
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<td>8:15 AM–10:15 AM</td>
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<td>8:15 AM–10:15 AM</td>
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<td>Get the High-Resolution Separation That You Have Been Searching for</td>
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<td>Investigation of Mechanics, Structures, and Dynamic Processes in Life</td>
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<td>Letter, and Research Statement</td>
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<td>Resonance) in Biophysics</td>
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<td>FROM STRETCH TO DEFLECTION: FINE TUNING MECHANICAL ACTIVATION OF ION CHANNELS. Kate Poole&lt;br&gt;STRUCTURE AND MECHANOAGATING OF THE MECHANOSENSITIVE PIEZO CHANNEL. Bailong Xiao&lt;br&gt;SENSING SCENTS: STRUCTURAL INSIGHTS INTO INSECT Olfactory RECEPTORS. Vanessa Ruta&lt;br&gt;SENSING SOUR: THE OTOP1 PROTON CHANNEL FROM FUNCTION TO STRUCTURE. Emily Liman</td>
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<td>X-RAY SCATTERING FROM CORRELATED MOTIONS IN PROTEINS. Nozomi Ando&lt;br&gt;EXPLOITING 3D TO 2D LOCALIZATION TO CONTROL PROTEIN SELF-ASSEMBLY. Margaret Johnson&lt;br&gt;CONFORMATIONAL DYNAMICS OF SINGLE VIRAL MEMBRANE FUSION MACHINES. James B. Munro&lt;br&gt;SIGNALING WITH UBIQUITIN - COMMUNICATION BETWEEN METABOLISM AND IMMUNE RESPONSES. Elton Zeqiraj</td>
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<td>NASCENT POLYPEPTIDE CHAIN-MEDIATED TRANSLATION ELONGATION ARREST IN BACTERIA. Shinobu Chiba</td>
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<td>PRECISELY QUANTIFYING THE ENERGETICS OF THE RIBOSOME. Paul C. Whitford</td>
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<td>CAT TAILS DRIVE DEGRADATION OF STALLED POLYPEPTIDES ON AND OFF THE RIBOSOME. Onn Brandman</td>
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<td>ROLE OF RNA MODIFICATIONS IN TRNA STRUCTURAL STABILITY AND ACCURATE PROTEIN SYNTHESIS. Christine Dunham</td>
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<td>Platform: Cell Mechanics, Mechanosensing, and Motility</td>
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<tr>
<td>8:00 PM–9:00 PM</td>
<td>Awards and 2020 Biophysical Society Lecture</td>
<td>Ballroom 20ABCD</td>
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<tr>
<td>9:30 PM–12:00 AM</td>
<td>Reception and Dance</td>
<td>Hilton, Sapphire</td>
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<td>9:30 PM–12:00 AM</td>
<td>Reception and Quiet Room</td>
<td>Hilton, Indigo AE</td>
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Monday, February 17

Graduate Student Breakfast
7:30 AM - 8:30 AM, ROOM 28CDE
Support contributed by the Burroughs Wellcome Fund.

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

Speaker
Martin Guthold, Wake Forest University
Jeanne Small, NSF

Registration/Exhibitor Registration
7:30 AM - 5:00 PM, LOBBY G

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

Symposium
Molecular Motors
8:15 AM - 10:15 AM, BALLROOM 20A

Chair
Bik-Kwoon Tye, Hong Kong University of Science and Technology

776-SYMP
8:15 AM
RAD52 DNA REPAIR PROTEIN IS A GATEKEEPER THAT PROTECTS DNA REPLICATION FORKS FROM REGRESSION BY FORK REVERSAL MOTORS. Masayoshi Honda, Emeleeta A. Paintsil, Maria Spies

No Abstract
8:45 AM
RNA HELICASES AND SWITCHES: MOLECULAR MOTORS IN RNA BIOLOGY. Anna Marie Pyle

777-SYMP
9:15 AM
PROCESSIVE CHITINASE, A BURNT-BRIDGE BROWNIAN MOTOR HYDROLYZING CRYSTALLINE POLYSACCHARIDE. Ryota Iino

778-SYMP
9:45 AM
EVOLUTION OF THE EUKARYOTIC ORIGIN RECOGNITION COMPLEX. Bik-Kwoon Tye, Shuk Kwan C. Lee, Wai Hei H. Lam, Yuanliang Zhai

Symposium
Pharmaceutical Biophysics
8:15 AM - 10:15 AM, BALLROOM 20D

Chair
Jeanne Hardy, University of Massachusetts Amherst

779-SYMP
8:15 AM
IDENTIFYING AND EXPLOITING CRYPTIC POCKETS. Greg R. Bowman

780-SYMP
8:45 AM
BITOPIC AND PERIPHERAL MEMBRANE PROTEINS AS DRUG TARGETS: BROADER BIOPHYSICAL INSIGHT FROM BIOMEMBRANE SIMULATIONS THAT TRANSCENDS THE “LOCK AND KEY” PARADIGM. Alex Bunker

No Abstract
9:15 AM
THE CHOREOGRAPHY OF A PROTEIN’S DANCE AT THE HEART OF DRUG DESIGN. Dorothee Kern

781-SYMP
9:45 AM
TARGETING RARE CONFORMATIONAL STATES TO ACHIEVE SELECTIVE CASPASE PROTEASE INHIBITION. Jeanne Hardy

Platform
Membrane Receptors and Signal Transduction
8:15 AM - 10:15 AM, BALLROOM 20BC

Co-Chairs
Deborah Leckband, University of Illinois at Urbana-Champaign
Carl-Mikael Suomivuori, Stanford University

782-PLAT
8:15 AM
RATIONALIZING THE TRANSPORT OF TROJAN HORSE COMPOUNDS FOR CROSSING THE OUTER MEMBRANE OF GRAM- BACTERIA. Stefan Milenkovic, Igor V. Bodrenko, Mariano Andrea Scorciapino, Matteo Ceccharelli

783-PLAT
8:30 AM
ATOMISTIC MODELING OF NEURO-CARDIOVASCULAR COUPLING MODULATION. Kevin R. DeMarco, John R.D. Dawson, Slava Bekker, Vladimir Yarov-Yarovoy, Colleen E. Clancy, Igor Vorobyov

784-PLAT
8:45 AM
LARGE CONDUCTANCE Ca2+-ACTIVATED K+ CHANNELS REGULATE LPS-INDUCED CYTOKINE SECRETION FROM ALVEOLAR EPITHELIAL AND ENDOTHELIAL CELLS. Tatiana Zyrinova, Benjamin Lopez, Andy Liao, Charles Gu, Leanne Wong, Michela Ottolia, Riccardo Olcese, Andreas Schwingshackl

785-PLAT
9:00 AM
AFFINITY AND STOICHIOMETRY OF E-CADHERIN/EGFR COMPLEXES-RELEVANCE TO PROLIFERATION AND FORCE TRANSDUCTION. Deborah E. Leckband, Taylor P. Light, Vinh H. Vu, Brendan G. Sullivan, Kalina Hristova

786-PLAT
9:15 AM
DISTINCTIVE MECHANO-SENSITIVITY OF FOCAL ADHESION INTEGRINS A5B1 AND AVB3 IN CONFORMATIONAL CHANGES. Yunfeng Chen, Fang Kong, Zhenhai Li, Lining Ju, Steve Park, Andres J. Garcia, Paul Mould, Martin J. Humphries, Cheng Zhu

787-PLAT
9:30 AM
MOLECULAR MECHANISM OF BIASED SIGNALING IN A PROTOTYPICAL G-PROTEIN-COUPLED RECEPTOR. Carl-Mikael Suomivuori, Naomi R. Latorraca, Laura M. Wingler, Stephan Eismann, Matthew C. King, Alissa L.W. Kleinhenz, Meredith A. Skiba, Dean P. Staus, Andrew C. Kruse, Robert J. Leffcowitz, Ron O. Dror

788-PLAT
9:45 AM
CHARACTERIZATION OF A2A R AND G PROTEIN COUPLING BY SURFACE PLASMON RESONANCE. Kirsten S. Koretz, Claire McGraw, Anne S. Robinson

789-PLAT
10:00 AM
INVESTIGATING THE HOMOTYPIC AND HETEROTYPIC INTERACTIONS OF ERBB RECEPTOR TYROSINE KINASES. Soyeon Kim, Adam W. Smith

Platform
Bioengineering, Biosurfaces, and Biomaterials
8:15 AM - 10:15 AM, ROOM 23ABC

Co-Chairs
Henry Brinkerhoff, Delft University of Technology, The Netherlands
Elizabeth Yates, United States Naval Academy

790-PLAT
8:15 AM
SUPRACELLULAR ACTIN CABLES AND ACTOMYOSIN-BASED CONTRACTION IN CARDIAC MORPHOGENESIS. Christopher McFaul, Negar Balaghi, Christopher M. Yip, Rodrigo Fernandez-Gonzalez
791-PLAT 8:30 AM
SINGLE-MOLECLE PROTEIN SEQUENCING USING BIOLOGICAL NANOPORES. Henry Brinkkerhoff, Cees Dekker

792-PLAT 8:45 AM

793-PLAT 9:00 AM
DESIGNING SYNTHETIC BACTERIAL BIOFILMS TO PROBE THE MECHANISMS OF CELL ASSEMBLY. Alex Hamby

794-PLAT 9:15 AM
MEASURING THE PHYSICAL PROPERTIES OF SYNTHETIC CEMENT DERIVED BARNACLE ADHESIVE NANOIMATERIALS FROM THE BARNACLE AMPHIBALANUS AMPHITRITE. Elizabeth A. Yates, Luis A. Estrella, Heonjune Ryoo, Kathryn J. Wahl, Christopher R. So

795-PLAT 9:30 AM

796-PLAT 9:45 AM
NOVEL POLY(ASPARTAMIDE) BASED HYDROGELS FOR CELL CULTIVATION AND TISSUE REGENERATION. David Juriga, Krizstina Tóth, Krizstina S. Nagy, Ágárd Jelóvskzy-Hajdú, Gábor Varga, Miklós Zrínyi

797-PLAT 10:00 AM
ACOUSTOFLUIDIC INTERFEROMETRIC TECHNIQUES FOR SINGLE CELL OPTICAL PHENOTYPING. Julián Mejía Morales, Gian Luca Lippi, Peter Glynne-Jones, Massimo Vassalli

801-PLAT 9:00 AM
DIFFERENTIAL ACTIN BINDING AFFINITY LEADS TO PROTEIN SORTING IN A RECONSTITUTED ACTIVE COMPOSITE LAYER. Abrar A. Bhat, Amit Das, Kabir Husain, Madan Rao, Darius V. Koester, Satyajit Mayor

802-PLAT 9:15 AM
NON-EQUILIBRIUM THERMODYNAMICS AND HYDRODYNAMICS OF LIPID MEMBRANES. Amaresh Sahul, Joel Tchoufag, Yannick Azhari Din Omar, Yulong Pan, Kranti K. Mandadapu

803-PLAT 9:30 AM
MOLECULAR TRANSPORT AND SPATIAL SORTING OF MEMBRANE-BOUND DNA NANOSTRUCTURES BY A BIOLOGICAL REACTION-DIFFUSION SYSTEM. Beatrice Ramm, Alena Khmelinskia, Philipp Blumhardt, Hiromune Eto, Kristina A. Ganzinger, Petra Schwille

804-PLAT 9:45 AM
THE COMBINED HYDRODYNAMIC AND THERMODYNAMIC EFFECTS OF IMMOBILIZED PROTEINS ON THE DIFFUSION OF MOBILE TRANSMEMBRANE PROTEINS. Rohit Singh, Ashok Sangani, Susan Daniel, Donald Koch

805-PLAT 10:00 AM
PHOSPHOLIPID STRUCTURAL FEATURES INFLUENCE LATERAL DIFFUSION. Klaus Gawrisch, Holly C. Gaede, Olivier Soubias, Walter E. Teague

Platform
Optical Microscopy and Superresolution Imaging II
8:15 AM - 10:15 AM, ROOM 24ABC

Co-Chairs
Leone Malacrida, Hospital de Clínicas, Chile
Kaitlin Szedekerkenyi, University of Toronto, Canada

806-PLAT 8:15 AM
INVESTIGATING POLARISATION EFFECTS IN A CONFOCAL TOTAL INTERNAL REFLECTION-SUPERCRITICAL ANGLE FLUORESCENCE (TIR-SAF) GEOMETRY WITH SAMPLE SCANNING. Kaitlin Szedekerkenyi, Bruno Lagarde, Maia Brunstein, Marc Guillon, Christopher M. Yip, Martin Oheim

807-PLAT 8:30 AM
INTERFEROMETRIC SCATTERING MICROSCOPY REVEALS MICROSECOND NANOSECOND PROTEIN MOTION ON A LIVE CELL MEMBRANE. Richard W. Taylor

808-PLAT 8:45 AM
SOVATOCROMIC PROPERTIES OF ACDAN AND SPECTRAL PHASOR ANALYSIS REVEAL THE ROLE OF AQUAPORIN 0A IN REGULATING MACROMOLECULAR CROWDING IN THE ZEBRAFISH LENS IN VIVO. Leonel S. Malacrida, Alexander Vallmitjana, Belén Torrado, Thomas F. Schilling, James E. Hall, Enrico Gratton, Irene Vorontsova

809-PLAT 9:00 AM
STRUCTURED ILLUMINATION MICROSCOPY AS A TOOL TO INVESTIGATE ONCOGENE-INDUCED ALTERATIONS IN CHROMATIN ORGANIZATION. Isotta Cainero, Elena Cerutti, Simone Pellicci, Mario Faretta, Gaetano Ivan Dellino, Pier Giuseppe Pellicci, Alberto Diaspro, Luca Lanzano

810-PLAT 9:15 AM
BINDER/TAG: A VERSATILE APPROACH TO PROBE AND CONTROL THE CONFORMATIONAL CHANGES OF INDIVIDUAL MOLECULES IN LIVING CELLS. Michael Pablo, Bei Liu, Orrin Stone, Onur Dagliyan, Timothy C. Elston, Klaus M. Hahn

811-PLAT 9:30 AM
2-COLOR LOCALIZATION MICROSCOPY AND SIGNIFICANCE TESTING AP-PROACH (2-CLASTA). Magdalena C. Schneider, Andreas M. Arnold, Florian Baumgart, Robert Sablatnig, Christoph Hüsson, Mario O. Brameshuber, Gerhard J. Schütz
812-PLAT 9:45 AM AQUAPORIN 0A IS REQUIRED FOR WATER HOMEOSTASIS IN THE ZEBRAFISH LENS IN VIVO. Irene Vorontsova, Alexander Vallmitjana, Yousef Nakazawa, Belén Torrado, Thomas Schilling, James E. Hall, Enrico Gratton, Leonel S. Malacrida

813-PLAT 10:00 AM TRAVEL Awardee RAPID AND EXTREME LOW-LIGHT SUPERRESOLUTION IMAGING VIA ARTIFICIAL INTELLIGENCE. Bei Liu, Luhong Jin, Bowei Dong, Ruiyan Song, Fenqiang Zhao, Stephen Hahn, Timothy C. Elston, Yingke Xu, Klaus M. Hahn

813-PLAT 10:00 AM TRAVEL Awardee Voltage-gated K Channels

Co-Chairs
Rikard Blunck, Université de Montréal, Canada
Kanchan Gupta, NIH, NINDS

814-PLAT 8:15 AM SIMULATING STREAMING POTENTIALS IN POTASSIUM CHANNELS. Csaba Daday, Wojciech Kopec, Bert L. de Groot

815-PLAT 8:30 AM ASYMMETRIC MUTATIONS IN SELECTIVITY FILTER OF K+ CHANNEL PORE GENERATE C-TYPE INACTIVATION. Marietheres Kleuter, Gerhard Thiel, Oliver Rauh

816-PLAT 8:45 AM REFINEMENT OF HIGH-RESOLUTION CRYO-EM STRUCTURE OF HERG: WHAT CAN WE EXPECT? Hanif Muhammad Khan, Peter D. Tieleman, Sergey Y. Noskov

817-PLAT 9:00 AM IDENTIFICATION OF PUFA INTERACTION SITES ON A CARDIAC POTASSIUM CHANNEL. Samira Yazdji, Johan E. Larsson, Williams E. Miranda, Valentina Corradi, Peter D. Tieleman, Sergey Y. Noskov, Peter H. Larsson, Sara I. Lin

818-PLAT 9:15 AM DYNAMICS OF THE PAS AND CNBH DOMAIN INTERACTION PROBED WITH A FLUORESCENT NONCANONICAL AMINO ACID (L-ANAP) IN HERG POTASSIUM CHANNELS. Ashley A. Johnson, Matt C. Trudeau

819-PLAT 9:30 AM STATE-DEPENDENT PHOTOCROSSLINKING AT THE BK CHANNEL INTER-SUBUNIT INTERFACE. Alberto Jesus Gonzalez Hernandez, Belinda Rivero-Perez, David Bartolome-Martin, Diego Alvarez de la Rosa, Andrew J.R. Plested, Teresa Giráldez

820-PLAT 9:45 AM POSITION OF INACTIVATION PARTICLE OF SHAKER KV CHANNELS IN RESTING STATE. Roshan Pandey, Tanja U. Kalstrup, Rikard Blunck

821-PLAT 10:00 AM EXPLORING STRUCTURAL DYNAMICS OF A MEMBRANE PROTEIN BY COMBINING BIOORTHOGONAL CHEMISTRY AND CYSTEINE MUTAGENESIS. Kanchan Gupta, Gilman E.S. Toombes, Kenton J. Swartz

822-PLAT 8:15 AM UNDERSTANDING ALLOSTERIC INFORMATION TRANSFER ACROSS TIME- AND LENGTH SCALES. Steffen Wolf, Benedikt Sohmen, Bjorn Hellenkamp, Johann Thunn, Thorsten Hugel, Gerhard Stock

823-PLAT 8:30 AM SINGLE MOLECULE DYNAMICS OF AN HSP70 CHAPERONE. Anubhuti Singh, Soumit S. Mandal, Gabriel Žoldák, Matthias Rief

824-PLAT 8:45 AM VISUALIZING DOMAIN MOTIONS IN NF-KB TRANSCRIPTIONAL REGULATION. Wei Chen, Elizabeth A. Komives

825-PLAT 9:00 AM CATCHING FAST PROTEIN FOLDING IN THE ACT: RESOLVING (UN) FOLDING TRANSITION PATHS USING ADVANCED SINGLE-MOLECULE SPECTROSCOPY. Nivin Mothi, Mourad Sadjq, Victor Munoz

826-PLAT 9:15 AM DIRECT DETECTION OF INTRAMOLECULAR DYNAMICS OF MEMBRANE PROTEINS USING TIME-RESOLVED X-RAY SINGLE-MOLECULE TRACKING. Kazuhiro Mio, Shoko Fujimura, Masaki Ishihara, Muneyo Mio, Masahiro Kuramochi, Hiroshi Sekiguchi, Tai Kubo, Yuji C. Sasaki


828-PLAT 9:45 AM TRAVEL Awardee THE EVOLUTIONARY BIOPHYSICS OF A FORCE-CONVEYING PROTEIN COMPLEX REQUIRED FOR VERTEBRATE HEARING. Collin Nisler, Yoshi Narui, Vincent Lynch, Marcos M. Sotomayor

829-PLAT 10:00 AM CONFORMATIONAL DYNAMICS OF THE T-CELL RECEPTOR CHASSIS COORDINATES CDR3 LOOP POSITIONING DURING MECHANOSENSING OF PMHC LIGANDS. Wonmuk Hwang, Robert J. Mallis, Matthew J. Lang, Ellis L. Reinherz

Exhibitor Presentation
Beckman Coulter Life Sciences

8:30 AM - 10:00 AM, Room 33C

Get the High-Resolution Separation That You Have Been Searching for with Preparative and Analytical Ultracentrifugation

Introduction: Purification of biological products, including biotherapeutics, involves the separation of cells from the culture media, followed by extensive processing to isolate the target of interest. Relatively simple separations are often achieved via differential centrifugation (pelleting), though high-resolution separations often utilize density gradient ultracentrifugation to yield high purity. In this presentation, we will discuss the full gamut of preparative (ultra)centrifugation, which permits the isolation and purification of biological components ranging from small peptides and nanoparticles to large nucleic acids, viruses, and organelles. We will then discuss the analytical/characterization aspects of ultracentrifugation, which allow quantitation of size, mass, shape, and density of the biological components that have been purified, along with exploration of their thermodynamic properties and binding interactions. Modern examples will be discussed for both preparative and analytical ultracentrifugation.

Purification: Modern centrifuges reach incredibly high speeds (with centrifugal acceleration sometimes exceeding 1,000,000 x g) to aid the high-resolution separation of particles, typically in the micro- or nanometer range, by size and/or density. Today’s gene therapy products, such as viral vectors, require high-quality purification to ensure...
the consistent production of safe, efficacious therapeutics of the highest quality to further advance this rapidly growing field and deliver solutions to patients in need. Density gradient ultracentrifugation (DGUC) is a centrifuge-based technique for providing superior purification of viral vectors (e.g., isolating full AAV particles from partial and empty capsids), along with other materials (such as plasmid DNA) in gene therapy production workflows. Though a well-established and mature method, DGUC is sometimes viewed as dated, challenging to design and conduct, or only suited for small-scale research applications. In this workshop, we’ll address these perceptions and discuss the premise of DGUC as a modern, high-resolution purification technique for AAVs and plasmid DNA. We’ll also provide guidance on how to get started with DGUC and optimize this technique for gene therapy workflows.

**Characterization:** Analytical ultracentrifugation (AUC) is one of the most versatile biophysical tools used today for the characterization of biological samples ranging from small drug molecules to intact viruses, vesicles and microparticles. AUC works with biological samples in the native state and does not depend on a reporter species or custom-coated substrates. AUC separates biomolecules based upon both molecular mass and anisotropy and can also be used to quantify interactions between different species. In this talk, we will start with the principles of AUC and take a tour through the technology behind modern AUC, including detection methods. We then look at advancements of the latest gen Optima AUC. Next, we go through experiment design – including the use of simulation tools. Following, we will address the different types of AUC experiments (equilibrium and velocity), compare and contrast their merits with sample data, and touch upon the principles of data processing. Finally, we will explore a variety of applications with a focus on the unique advantages that AUC brings to the study of various biotherapeutics, polymers, nanoparticles, and others – and how AUC compares to and complements other analytical techniques.

**Speakers**
Ross VerHeul, Senior Applications Scientist, Beckman Coulter Life Sciences
Akash Bhattacharya, Senior Applications Engineer, Beckman Coulter Life Sciences

**Career Development Center Workshop**
Demystifying the Academic Job Search II: Preparing your Written Application Materials: CV, Cover Letter, and Research Statement

**10:00 AM - 11:00 AM, ROOM 26A**

Over 90% of the cuts in a typical academic job search are made on the basis of your written application materials. Given the large number of candidates in a typical applicant pool, your documents must convey the most important information about you in the most clear and efficient manner. Learn about how your materials should differ based on the type of institution and/or program, and how to create “glance-able” documents to speak most effectively on your behalf.

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

**Coffee Break**
10:15 AM - 11:00 AM, EXHIBIT HALL

**Meet the Editors, The Biophysicist**
10:15 AM - 11:00 AM, SOCIETY BOOTH/LOBBY G

**New Member Welcome Coffee**
10:15 AM - 11:15 AM, ROOM 28CDE

Calling all new BPS members! Come and mingle with BPS Staff, Society Council, and program members as you learn about the Society’s activities. Current members are welcome to come and meet with new members.

**Exhibitor Presentation**
**Bruker Corporation**
10:30 AM - 12:00 PM, ROOM 33C

**Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in Biophysics**

Magnet Resonance offers many insights into how biological systems function. The two techniques shed light on the identity of species, dynamics, and structures of proteins, peptides, nucleotides, and lipids. The speakers will present an overview of these techniques and applications for people who may be new to the field and wish to incorporate them in their studies.

NMR has long been a valuable tool for the determination of structures, the study of dynamic processes and the investigation of interactions in biological molecules. To conduct these studies on larger molecules higher magnetic fields are required. Bruker BioSpin has successfully installed a 1.1 GHz NMR system in a customer laboratory and the delivery of the first 1.2 GHz system is imminent. To complement the higher magnetic fields Bruker Biospin has also introduced several new probes for liquid and solid state NMR.

NMR has recently been used successfully for the characterization of large proteins such as monoclonal antibodies. The statistical analysis of NMR spectra allows the detection of changes in the high order structure of these molecules.
Another growing area is the use of 19F in bio-molecular NMR. Both the introduction of new accessories and method permit more widespread use of this nucleus in NMR studies.

EPR detects unpaired electrons in free radicals and transition metal ions. One electron transfer reactions result in unpaired electrons. Examples of paramagnetic species encountered in biology are: ROS (Reactive Oxygen Species), RNS (Reactive Nitrogen Species), amino acid radicals such as tyrosine and tryptophan radicals, paramagnetic intermediates in photochemistry, and metalloenzymes.

In addition to these naturally occurring paramagnetic species, spin labels can be incorporated into a number of biomolecules via SDSL (Site Directed Spin Labeling). Applications and techniques are: motional dynamics of proteins, peptides, and nucleotides via linsehape analysis, accessibility studies in membrane proteins or peptides via saturation measurements, and distance measurements (2-8 nm) via DEER (Double Electron-Electron Resonance) to complement other structural methods such as X-ray, NMR, CryoEM and FRET.

Speakers
Clemens Anklin, Vice President, NMR Applications & Training, Bruker Corporation
Ralph Weber, EPR Applications Manager, Bruker Corporation

Symposium
Sensational Membrane Proteins
10:45 AM - 12:45 PM, BALLROOM 20A

Chair
Emily Liman, University of Southern California

830-SYMP 10:45 AM
FROM STRETCH TO DEFLECTION: FINE TUNING MECHANICAL ACTIVATION OF ION CHANNELS. Jessica Richardson, Setareh Sianati, Navid Bavi, Lioba Schroeter, Amrutha Patkunarajah, Kate Poole

831-SYMP 11:15 AM
STRUCTURE AND MECHANOGATING OF THE MECHANOSENSITIVE PIEZO CHANNEL. Bailong Xiao

832-SYMP 11:45 AM
SENSING SCENTS: STRUCTURAL INSIGHTS INTO INSECT OLFATORY RECEPTORS. Vanessa Ruta

833-SYMP 12:15 PM
SENSING SOUR: THE OTOP1 PROTON CHANNEL FROM FUNCTION TO STRUCTURE. Emily Liman

Symposium
Biophysical Underpinnings of the Origin of Life
10:45 AM - 12:45 PM, BALLROOM 20D

Chair
Ken A. Dill, Stony Brook University

834-SYMP 10:45 AM
LESSONS FROM EXPERIMENTAL PROTEIN FITNESS LANDSCAPES. Daniel Bolon

No Abstract 11:15 AM
RESURRECTED ENZYMES AS PROXIES FOR ANCIENT BIOMOLECULAR PROCESSES. Betul Kacar

835-SYMP 11:45 AM
LESSONS FROM RIBOZYME EVOLUTION. Irene Chen

836-SYMP 12:15 PM
A CENTRAL ROLE FOR PEPTIDES AND PROTEINS IN THE CHEMISTRY TO BIOLOGY TRANSITION OF THE ORIGINS OF LIFE. Ken Dill

Support contributed by the Burroughs Wellcome Fund.
Weinstein IN LARGE BIOMOLECLES. INDUCED CONFORMATIONAL CHANGES AND INDIVIDUAL PKA VALUES
A NEW CONSTANT PH METHOD TO SIMULTANEOUSLY PREDICT PH-
SIMULATION: LESSONS AND PROGRESS FROM MARKOV STATE MODEL
Yasuhiro Matsunaga, Yuji Sugita
BUILDING A MACRO-MIXING DUAL-BASIN GO MODEL USING THE MUL
DOCKING.
BE PREDICTED FROM A COMBINATION OF MOLECULAR DYNAMICS AND
MECHANISM OF ACTION OF HBV CAPSID ASSEMBLY MODULATORS CAN
MORPHING.
DETERMINING FREE ENERGY DIFFERENCES THROUGH VARIATIONAL
Anna Pavlova, Georgia Institute of Technology
Gregory Babbitt, Rochester Institute of Technology
Co-Chairs
Siemers, Ana-Nicoleta Bondar
Konstantina Karathanou
MORPHING.
Anna Pavlova, Sarah B. Mertz, John G. Wise
PROTON BINDING AT PROTEIN AND MEMBRANE INTERFACES.
Konstantina Karathanou, Lukas Kemmler, Michalis Lazaratos, Malte
Siemens, Ana-Nicoleta Bondar
Platform
Molecular Dynamics
10:45 AM - 12:45 PM, ROOM 31ABC
Co-Chairs
Gregory Babbitt, Rochester Institute of Technology
Anna Pavlova, Georgia Institute of Technology
11:15 AM
STRUCTURES OF UNFOLDED OUTER MEMBRANE PROTEINS IN COMPLEX
WITH CHAPERONES. Neharika Chamachi, Andreas Hartmann, Georg
Krainer, Michael Schlierf
11:30 AM
CONFORMATIONAL DYNAMICS OF THE MEMBRANE ENZYME LSPA USING
EPR AND MD. Tracy A. Caldwell, Owen N. Vickery, Phillip J. Stansfeld,
Linda Columbus
11:45 AM
DYNAMIC FINGERPRINTING OF THE A2A ADENOSINE RECEPTOR IN DIFFERENT LIGAND-BASED STATES. Dennis D. Fernandes, Chris Neale, Gregory W. Gomes, Yuchong Li, Aditya Pandey, Libin Ye, R. Scott Prosser, Claudiu C. Gradinaru
12:00 PM
INSIGHTS INTO THE DYNAMICS AND ASSEMBLY PROPERTIES OF THE ENIGMATIC TSPO PROTEIN. Rajas Rao, Ibba Dhaybi, Julien Diharce, Catherine Etchebest
12:15 PM
INVESTIGATION OF DRUG TRANSPORT BY MTRD FROM NEISSERIA GON-ORRHOEAE. Lauren Ammerman, Sarah B. Mertz, John G. Wise
12:30 PM
PROTON BINDING AT PROTEIN AND MEMBRANE INTERFACES.
Konstantina Karathanou, Lukas Kemmler, Michalis Lazaratos, Malte
Siemens, Ana-Nicoleta Bondar
12:45 PM
ACCELERATED ESTIMATION OF LONG-TIMESCALE KINETICS BY COMBINING WEIGHTED ENSEMBLE SIMULATION WITH MARKOV MODEL “MICRO-STATES” USING NON-MARKOVIAN THEORY. Jeremy T. Copperman, Daniel M. Zuckerman
1:00 PM
DETERMINATION OF PROTEIN COARSE-GRAINED POTENTIALS BY MACHINE LEARNING APPROACHES. Eric Vazquez, Rachel Thomas, Rafael Zamora-Resendiz, Yu-Hang Tang, Masakatsu Watanabe, Silvia Crivelli

Annual Meeting of the Student Chapters
11:00 AM - 1:00 PM, ROOM 28AB
Join BPS Student Chapters from all over the world for a poster session and workshop. Attendees will meet Student Chapter officers and representatives and learn about each chapter. There will also be an interactive workshop that aims to establish chapter interactions, communications, and planning for future Student Chapter Annual Meeting sessions.

Moderators
Seth Weinberg, Ohio State University
Ashley Carter, Amherst College

Career Development Center Workshop
Networking for Nerds: How to Create Your Unicorn Career
11:30 AM - 12:30 PM, ROOM 26A
Wanna land your dream job? Get ready to network! Most jobs and other game-changing career opportunities are not advertised, and even if they are, there is usually a short-list of candidates already in mind. So how do you find out about and access the 90% of jobs and other opportunities that are “hidden”? In this workshop, we will focus on proven networking strategies and tactics to identify new opportunities, locate decision-makers within organizations, solidify your reputation and brand in the minds of those who hire, and gain access to hidden jobs and game-changing opportunities. Discover how networking and self-promotion can enable you to land or even create your dream job from scratch!

Exhibitor Presentation
Leica Microsystems
11:30 AM - 1:00 PM, ROOM 33A
Leica SP8 FALCON: Applications of FLIM for Functional Imaging and STED Nanoscopy
The rapidly growing field of functional imaging helps us understand the complex interactions of molecules, revealing the true nature of the underlying biology. In this context, fluorescence lifetime imaging (FLIM) is a powerful tool, providing valuable information beyond spectral imaging. FLIM is immune to concentration artifacts and highly sensitive to the molecular environment, providing a robust measure of a biological system’s health. However, previous FLIM solutions were slow and difficult to implement, particularly for complex imaging workflows. To address this weakness, we present the Leica SP8 FALCON (Fast Lifetime Contrast), a fast, intuitive and powerful built-in algorithms to manage data acquisition and analysis, while maintaining accuracy and excellent data quality.

This talk explains the technical implementations enabling this new level of performance and provides some interesting application examples, including functional imaging (e.g. metabolic imaging or FRET imaging) and the use of lifetime information to achieve improved live-cell Nanoscopic Imaging (t-STED). t-STED is a revolutionary modality for STED imaging, making use of the FALCON FLIM phase approach, delivering cutting-edge resolu-
Beyond Ion Channels and Transporters: Snapshots of the State-of-the-Art Solutions

For almost two decades Nanion Technologies provides diverse solutions for electrophysiologists worldwide. We aim to successfully implement innovative technologies in the fields of ion channel automated electrophysiology, monitoring of cell viability and contraction, as well as electrogentic transporters, with our chip- and plate-based devices. Covering the needs for low, medium and high throughput assays our portfolio is well suited to advance research and screening projects. During this year’s symposium, five snapshots of successful wide-ranging applications, assays and emerging technologies from our product portfolio will be presented. Our symposium will start with an introduction by Dr. Niels Fertig (CEO, Nanion) as a guide through the overall capabilities of Nanion’s technology portfolio.

In continuation, we will welcome our speakers.

Our first snapshot, presented by Prof. Dr. Jamie Vandenberg (Victor Chang Cardiac Research Institute) will be focusing on the high throughput automated patch clamp (APC) screening of missense variants in KCNH2 mutations, a well-established cause of sudden cardiac death, using the SyncroPatch 384PE. Prof. Vandenberg will present a high throughput functional assay his group developed in order to differentiate between benign and pathogenic variants in KCNH2 gene. Dr. Marc Rogers (Metrion Biosciences) will continue with a snapshot focusing on validation of a CardioExcyte 96 impedance-based phenotypic assay, that is able to reproduce the chronic effects of a range of clinical drugs that affect human iPSC cardiomyocyte contractility and viability by multiple and diverse mechanisms, including ion channel and ionic pump inhibition, DNA intercalation, proteasome and tyrosine kinase inhibition, and myosin component separation.

Moving from cardiac physiology, Nathan Thomas (University of Wisconsin-Madison) will introduce a new application of SSM-based electrophysiology, in the field of ion coupled transporters. With a novel approach the transporter stoichiometry is investigated via reversal potential determination. During his snapshot, SURFE2R N1 data obtained on transporters from the small multidrug resistance (SMR) family, with the goal of providing a better understanding of underlying transport mechanisms, will be presented.

Finally, Dr. Stephen Hess (Evotec) will introduce the use of APC platforms to support ion channel drug discovery, focusing on the Nav1.1 channels, which positive modulators could be useful in treating cognitive disorders, epilepsy, and neurodegenerative diseases. To find novel positive modulators of Nav1.1 channels. Dr. Hess screened over 150K small molecules using the SyncroPatch 384PE and found confirmed hits which could serve as excellent starting points for further MedChem optimization towards potential therapeutics.

The Nanion team is delighted to welcome you to our lunch symposium!

 Speakers
Jamie Vandenberg, Co-Deputy Director, Head of Cardiac Electrophysiology, The Victor Chang Cardiac Research Institute
Marc Rogers, Director, CSO, Metrion Biosciences
Matthias Gossmann, Innovitro (FLX), Co-Founder & CEO, Innovitro
Nathan Thomas, University of Wisconsin-Madison
Stephen Hess, Research Leader-Ion Channels, Evotec

Exhibitor Presentation Nanion Technologies
12:30 PM - 2:00 PM, ROOM 33C

The National Science Foundation’s Biological Sciences Directorate strongly supports biophysics researchers through its Division of Molecular and Cellular Biosciences. The division has awarded over $160 million in funding to researchers in 41 states.

At this session, program directors and officers with expertise in biophysics will be providing details on the NSF grant-making process as it stands in 2019, with a particular emphasis on grant writing and submission for new and early career investigators.

Speaker
Marcia Newcomer, NSF

How Does Congress Set the Federal Budget for Biomedical Research?
1:00 PM - 2:30 PM, ROOM 23ABC

This workshop will review the overall process, including distinctions between authorization and appropriations, discretionary and non-discretionary spending, and the Presidential and Congressional budgets. Understanding where grant giving agencies fit into the broader federal budget will aid you in advocating for basic and biomedical research budgets that truly address national needs. Learn how you can lend your voice to the Biophysical Society’s advocacy for sustained, predictable funding for scientific research.

Moderator
Jonathan King, MIT

Speakers
Angela Diaz, University of California, San Diego
Leah Cairns, BPS Congressional Science Fellow
Eric Sundberg, Emory University School of Medicine
Objective Lenses
Advancements in Lens Manufacturing Technology Develop New X Line

Researchers use microscopes as essential tools for advancing their science, and objective lenses are crucial components of the system. Many applications benefit from high-quality images with a large field of view, but there is usually a trade-off where improvements in one area of imaging, such as flatness of field, lead to a decrease in another area such as chromatic correction. Conventional objective lens manufacturing technology forced a trade-off between numerical aperture, image flatness, and chromatic correction, making it difficult to improve all three in one objective. Olympus, with 100 years of innovative optical solutions for life sciences, has developed a new lens polishing technology that creates lenses with shapes that are difficult to fabricate using other methods. These improvements enable manufacturing of convex lenses with ultra-thin edges as well as ultra-thin concave lenses, which lead to more lenses being packaged in each objective housing, increasing the NA, image flatness, and chromatic correction range. In this presentation, you will learn how these improvements advance optical performance and a range of applications.

Speaker
James Lopez, Manager-Life Science Applications Group, Olympus America Inc

Beyond Reporting: How to be an Ally to Those Experiencing Harassment
2:30 PM - 4:00 PM, ROOM 28CDE

It can be difficult to know how best to support individuals experiencing harassment, or to know what to do or say if you observe problematic conduct. In this workshop participants will learn what it means to be an ally to those experiencing harassment, ways to be an effective ally, and will discuss common concerns of would-be allies. Participants will also learn practical, experience-based actions, strategies, and conversations colleagues can utilize in order to support targets of harassment.

Speaker
Kristina K. Larsen, Kristina Larsen Law

Exhibitor Presentation
Olympus America Inc
1:30 PM - 3:00 PM, ROOM 33A

Advancements in Lens Manufacturing Technology Develop New X Line Objective Lenses

Meet the Editors, Biophysical Journal
1:45 PM - 3:00 PM, SOCIETY BOOTH/LOBBY G

How to Get Your Scientific Paper Published
2:15 PM - 3:45 PM, ROOM 29C

This panel discussion, sponsored by the Publications Committee, will focus on the practical issues involved in publishing a scientific paper. Panelists include Biophysical Journal editors and Publication Committee members who have extensive experience in writing, reviewing, and editing papers. They will provide general information on the dos and don’ts of submitting research manuscripts to journals for publication. For authors, topics encompass writing for your audience and identifying your appropriate journal, writing the cover letter, managing reviews, and suggestions for responding to critiques and even rejection of a paper. For reviewers, topics include how to write a useful review. Attendees are encouraged to pose questions and raise topics for discussion.

Moderator
Kathleen Hall, Washington University in Saint Louis

Panelists
Jason Kahn, University of Maryland, Selecting the Right Journal for Your Paper
Vasanthi Jayaraman, University of Texas Health Science Center, The Path of a Manuscript
Will Hancock, Pennsylvania State University, How to Craft a Narrative
Carlos Baiz, University of Texas at Austin, Design of Effective Figures

Career Development Center Workshop
Translating Your Credentials: Writing Effective Resumes + Cover Letters and Your LinkedIn Profile
2:30 PM - 3:30 PM, ROOM 26A

Translating Your Credentials: Writing Effective Resumes + Cover Letters and Your LinkedIn Profile
1:45 pm - 3:00 pm, Room 29AB

Come join us for a Q&A discussion about science in industry. Hear from a panel of scientists about their career in industry. Learn about the different roles and positions and get perspective about how you can tailor your current research experience to align with industry needs.

Moderator
Ariel Lewis-Ballester, Gilead Sciences

Speakers
Angela Ballosteros, NIH
Jeanne Small, NSF
Akash Bhattacharya, Beckman Coulter Life Sciences
Karl Maluf, KBI Biopharma
Shanti Amagasu, Amgen

Biophysics 101
An Introduction to Molecular Dynamics Simulation and its Application to Biological Systems
1:30 PM - 3:00 PM, ROOM 24ABC

Molecular dynamics (MD) is a computer simulation technique for studying structural dynamics and thermodynamics properties of molecular systems. The atoms and molecules are allowed to interact for a fixed period of time, giving a view of the dynamic “evolution” of the system. Given its high temporal and spatial resolutions, the methodology can be considered as a “computational microscope” to allow for visualization of molecular systems and processes and quantify microscopic properties of interest, including macromolecular interactions, energetics associated with processes, and molecular properties underlying macroscopic behavior observed experimentally. MD is now an indispensable biophysical tool that closely complements many experimental techniques. The technique has benefited tremendously from substantial boost in our computational power and from algorithmic advances, and it can currently describe rather complex biological phenomena. The speakers will introduce the basic theory and system building steps for a MD simulation and present some of the recent successful biophysical applications of the technique including examples of combining the methodology with experimental data.

Speakers
Esmael Haddadian, The University of Chicago
Emad Tajkhorshid, University of Illinois at Urbana-Champaign

Exhibitor Presentation
Olympus America Inc
1:30 PM - 3:00 PM, ROOM 33A

Advancements in Lens Manufacturing Technology Develop New X Line Objective Lenses

This panel discussion, sponsored by the Publications Committee, will focus on the practical issues involved in publishing a scientific paper. Panelists include Biophysical Journal editors and Publication Committee members who have extensive experience in writing, reviewing, and editing papers. They will provide general information on the dos and don’ts of submitting research manuscripts to journals for publication. For authors, topics encompass writing for your audience and identifying your appropriate journal, writing the cover letter, managing reviews, and suggestions for responding to critiques and even rejection of a paper. For reviewers, topics include how to write a useful review. Attendees are encouraged to pose questions and raise topics for discussion.

Moderator
Kathleen Hall, Washington University in Saint Louis

Panelists
Jason Kahn, University of Maryland, Selecting the Right Journal for Your Paper
Vasanthi Jayaraman, University of Texas Health Science Center, The Path of a Manuscript
Will Hancock, Pennsylvania State University, How to Craft a Narrative
Carlos Baiz, University of Texas at Austin, Design of Effective Figures

Career Development Center Workshop
Translating Your Credentials: Writing Effective Resumes + Cover Letters and Your LinkedIn Profile
2:30 PM - 3:30 PM, ROOM 26A

Beyond Reporting: How to be an Ally to Those Experiencing Harassment
2:30 PM - 4:00 PM, ROOM 28CDE

It can be difficult to know how best to support individuals experiencing harassment, or to know what to do or say if you observe problematic conduct. In this workshop participants will learn what it means to be an ally to those experiencing harassment, ways to be an effective ally, and will discuss common concerns of would-be allies. Participants will also learn practical, experience-based actions, strategies, and conversations colleagues can utilize in order to support targets of harassment.

Speaker
Kristina K. Larsen, Kristina Larsen Law
Discover When Change is Significant: Latest Developments in Circular Dichroism and Stopped-Flow Kinetics

Applied Photophysics has remained at the forefront of the technologies of circular dichroism and stopped-flow kinetics since its creation in 1971 by the Royal Institution of Great Britain under the leadership of Nobel Prize-winning Lord Port.

In the first part of the presentation, the latest developments regarding the Chirascan CD spectrometers will be introduced. Case studies will be discussed to illustrate that CD spectroscopy with Chirascan is far more powerful than the traditional use of revealing the protein secondary structures such as α-helix and β-sheet. With Chirascan CD spectrometers, information regarding secondary structures, as well as tertiary structures, thermal and chemical stability can be clearly demonstrated. Moreover, the introduction of automatic CD spectrometers provides unparalleled sensitivity, reproducibility and productivity. It provides a novel approach for objective, quantifiable higher order structure (HOS) comparisons. The introduction of the Circularly Polarized Luminescence (CPL) accessory makes the Chirascan more economical and versatile.

In the second part of the presentation, the latest developments in the SX Stopped-Flow systems will be discussed. Stopped-Flow systems from Applied Photophysics are known for their high performance, ease-of-use and durability and we have made them better. We introduce LED light sources and various accessories, such as dual fluorescence detection, fluorescence polarization/anisotropy, and photodiode array detector. Applications in enzymology and protein structures will be discussed.

Symposium

Kinetic Stability: Controlling Longevity at the Molecular Level

Chair

Jonathan King, MIT

877-SYMP 4:00 PM
DESIGNING PROTEIN STABILITY AND STRAIN FOR FOLDING AND FUNCTION.
Elizabeth M. Meiering

878-SYMP 4:30 PM
COMPETING INTERACTIONS BETWEEN VIRAL RHIM AMYLOID-FORMING PROTEINS AND HOST FUNCTIONAL AMYLOID STRUCTURES MODULATE THE CELLULAR RESPONSE TO INFECTION.
Margaret Sunde, Chi L.L. Pham, Nirukshan Shanmugam, Max O.D.G. Baker, Megan Steain, Allis O’Carroll, James W. Brown, Emma Sirecky, Yann Gambin

879-SYMP 5:00 PM
PROTEOMICS ANALYSES OF KINETIC STABILITY: FROM MOLECULAR TO ORGANISMAL LONGEVITY.
Wilfredo Colon, Evelyn G. Rugaber, Ke Xia

880-SYMP 5:30 PM
BURIED TRYPTOPHANS CONTRIBUTING TO THE HIGH KINETIC STABILITY OF THE LONG-LIVED GAMMA CRYSTALLINS AND THEIR OXIDATIVE DAMAGE OPENING THE PATHWAY TO THE AGGREGATED STATE ASSOCIATED WITH CATARACTS.
Jonathan King, Ishara Mills Henry, Melissa Kosinski-Collins, Shannon Thol, Eugene Serebryany

Symposium

Translational Control

Chair

Christine Dunham, Emory University

881-SYMP 4:00 PM
NASCENT POLYPEPTIDE CHAIN-MEDIATED TRANSLATION ELONGATION ARREST IN BACTERIA.
Shinobu Chiba

882-SYMP 4:30 PM
PRECISELY QUANTIFYING THE ENERGETICS OF THE RIBOSOME.
Mariana Levi, Jeffrey Noel, Huan Yang, Trung Kien Nguyen, Asem H. Hassan, Kelsey N. Walak, Jonathan Perrier, Liah Duekay, Ransom Horne, Paul C. Whitford
Platforms

Protein Structure and Conformation II
4:00 PM - 6:00 PM, BALLROOM 20BC

Co-Chairs
Joanna Long, University of Florida
Joseph Primeau, University of Alberta, Canada

885-PLAT 4:00 PM
ELUCIDATION OF PROTEIN-PROTEIN INTERACTIONS THROUGHOUT E. COU FATTY ACID BIOSYNTHESIS. Thomas G. Bartholow, Terra Sztain-Pedone, Ashay Patel, Ruben Abagyan, Michael D. Burkart

886-PLAT 4:15 PM
CHARACTERIZATION OF INTERMOLECULAR QUATERNARY INTERACTIONS BETWEEN DISCRETE SEGMENTS OF THE STREPTOCOCCUS MUTANS ADHESIN P1 AND THEIR BINDING TO SMALL MOLECULE AMYLOID INHIBITORS VIA NMR SPECTROSCOPY. Gwladys Riviere, Emily Peng, Albert Brotgendal, Jeanine Brady, Joanna R. Long

887-PLAT 4:30 PM
HEAT EFFECTS ON COIL HYDRODYNAMIC SIZE REVEAL THE ENERGETICS OF DENATURED STATE CONFORMATIONAL BIAS. Steven T. Whitten, Lance R. English, Elisia A. Paiz

888-PLAT 4:45 PM
WW DOMAINS FROM WWP2 E3 UBIQUITIN LIGASE RECOGNISE OCT4 AND SMAD7 PEPTIDES. Lloyd C. Wahl, Jessica E. Watt, Danielle De Bourcier, Andrew Chantry, Tharin M.A. Blumenschein

889-PLAT 5:00 PM
THE COMPLETE CHARACTERIZATION OF A TRAPPED ACYL CARRIER PROTEIN-KETOSYNTHASE COMPLEX. Jeffrey T. Mindrebo, G-pop Neason, Ashay Patel, Katia Charov, Joseph P. Noel, Michael D. Burkart

890-PLAT 5:15 PM
STRUCTURE-FUNCTION RELATIONSHIPS IN BIOFILMS CHARACTERIZING THE STAPHYLOCOCCAL AUTOYSIN R2 REPEAT DOMAIN. Yasiru R. Perera, Taylor M. South, Kayla D. McConnell, Rahul Yadav, Nicholas C. Fitzkeee

891-PLAT 5:30 PM
INTERACTION OF A SARCOLIPIN PENTAMER AND MONOMER WITH THE SARCOPLASMIC RETICULUM CALCIUM PUMP, SERCA. John Paul Graves, Joseph O. Primeau, Przemek Gorski, L. Michel Espinoza-Fonseca, M. Joanne Lemieux, Howard S. Young

892-PLAT 5:45 PM
DIMER INTERACTION IN THE HV1 PROTON CHANNEL. Laetitia Mony, Michael Boersch, Martha Braun, Christopher Daniel Rodrigues, Michael Boersch

893-PLAT 6:00 PM
FAST STATES REVEALED BY THEORY OF JUMPS IN F-ATPase ROTATION EXPERIMENTS. Sandor Volkan-Kacso, Luan Q. Le, Haibin Su, Rudolph Marcus

894-PLAT 4:15 PM
REVISITING SUBUNIT ROTATION IN F-, ATP SYNTHASE BY SINGLE-MOLECULE FRET IN AN ABELTRAP. Michael Boersch

895-PLAT 4:30 PM
ANIONIC LIPIDS CONFINE CYTOCHROME C TO THE VICINITY OF BIOENERGETIC MEMBRANES WITHOUT COMPROMISING ITS INTERACTION WITH MEMBRANE-EMBEDDED REDOX PARTNERS. Chun Kit Chan, Abhishek Singharoy, Emad Tajkhorshid

896-PLAT 4:45 PM
VOLTAGE-ENERGIZED CALCIUM-SENSITIVE ATP PRODUCTION BY MITOCHONDRIA. Andrew P. Wesscott, Joseph P. Kao, W. Jonathan Lederer, Liron Boyman

897-PLAT 5:00 PM
A PHOSPHOMIMETIC MUTATION S215E IN VDAC1 INTERFERES WITH HEKOKINASE BINDING. Qunli Cheng, Gayathri K. Natarajan, Meiyng Yang, Po-Chao Wen, Nandan Haloi, Emad Tajkhorshid, Amadou K. Camara, Wai-Meng Kwok

898-PLAT 5:15 PM
OPA1 GTPASE AND GE DOMAIN-SPECIFIC MUTATIONS DIFFERENTIALLY ALTER MITOCONDRIAL FUSION DYNAMICS AND CALCIUM HOMEOSTASIS. Benjamin Cartes-Saaavedra, Duxan Arancibia, Florence Burté, Marcela Sjoberg, Maria Estela Andres, Patrick Wu-Wai-Man, Gyorgy Hajnoczy, Veronica Eisner

899-PLAT 5:30 PM
REDox CONTROL OF SLEEP. Anissa Kempf, Seoho M. Song, Clifford B. Talbot, Gero Miesenböck

900-PLAT 5:45 PM

Platform

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

Co-Chairs
Milka Doktorova, University of Texas Health Science Center at Houston
Félix Goñi, University of the Basque Country, Spain

901-PLAT 4:00 PM
FIB3 MEDIATED MEMBRANE FISSION DURING SPOULATION IN BACILLUS SUBTILIS. Anela Landajuela, Martha Braun, Christopher Daniel Rodrigues, Thierry Doan, David Rudner, Erdem Karatekin

902-PLAT 4:15 PM
PHOSPHOLIPID TRANSLLOCATION AS DRIVER OF CHOLESTEROL (RE) DISTRIBUTION. Milka Doktorova, Jessica L. Symons, Kandice R. Levental, Ilya Levental

903-PLAT 4:30 PM
A SEMI-SUPERVISED LEARNING APPROACH FOR CALCULATION OF MEMBRANE CURVATURE PROPERTIES, WITH APPLICATION TO MITOCONDRIAL MODEL MEMBRANES. Moene Meigooni, Emad Tajkhorshid

904-PLAT 4:45 PM
IMPACT OF DYSLIPIDEMIC LEVELS OF OXIDIZED CHOLESTEROL ON ENDOTHELIAL MEMBRANES. Manuela A. Ayee, Katie Lam, Irena Levitan

905-PLAT 5:00 PM
PATCHES AND BLEBS, A COMPARATIVE STUDY OF TWO PLASMA MEMBRANE PREPARATIONS FROM CHO CELLS. Félix M. Goñi, Bingen G. Monasterio, Noemi Jimenez-Rojo, Aritz Garcia-Arribas, Howard Riezman, Alicia Alonso
906-PLAT  5:15 PM
MONTE CARLO AND MOLECULAR DYNAMICS SIMULATIONS TO EXPLAIN
BIOMEMBRANE Meso-PATTERNING BY A COMPOSITION-CURVATURE
COUPLING MECHANISM.  Julie Cornet, Matthieu Chavent, Manoel
 Manghi, Nicolas Destainville

907-PLAT  5:30 PM
MECHANICAL PROPERTIES OF COMPOSITIONALLY ASYMMETRIC MEM-
BRANES.  Aparna Sreekumari, Reinhard Lipowsky

908-PLAT  5:45 PM
SUPERRESOLVING THE MEMBRANE TOPOGRAPHY OF LIVE CELLS.
Gabriele Kockelkoren, Line Lauritsen, Christopher Shuttle, Dimitrios
Stamou

Platform
Single-Molecule Spectroscopy
4:00 PM - 6:00 PM, Room 25ABC

Co-Chairs
Brett Israels, University of Oregon
Irina Gophich, NIH

909-PLAT  4:00 PM
QUANTIFYING BINDING AFFINITIES, KINETICS AND STOICHIOMETRY OF
BIOMEMBRANAL COMPLEXES WITH MASS PHOTOMETERY.
Fabian Soltermann, Veronica Pagnoni, Eric Foley, Martin Galpin, Justin L.
Benesch, Weston B. Struwe, Philipp Kukura

910-PLAT  4:15 PM
A MODULAR DNA SCAFFOLD TO STUDY PROTEIN-PROTEIN INTERAC-
TIONS AT SINGLE-MOLECULAR RESOLUTION.  Dorota N. Kostrz, Hannah K.
Wayment-Steele, Jinglong Wang, Maryne Follenfant, Vijay S. Pande,
Antoine Triller, Christian G. Specht, Terence R. Strick, Charlie Goss

911-PLAT  4:30 PM
INVESTIGATION OF LENTIVIRUSES AND THEIR INITIAL CONTACTS WITH
CELLS USING REAL-TIME 3D TRACKING.  Jack C. Exell, Shangguo Hou,
Courtney C. Johnson, Kevin D. Welsher

912-PLAT  4:45 PM
FAST THREE-COLOR SINGLE-MOLECULAR FRET USING CONTINUOUS-WAVE
EXCITATION OF DONOR.  Janghyun Yoo, Jae-Yeol Kim, John M. Louis, Irina
V. Gopich, Ho Sung Chung

913-PLAT  5:00 PM
TRAVEL Awardee
SINGLE-MOLECULAR INVESTIGATION OF CONFORMATIONAL CHANGES IN
EPIDERMAL GROWTH FACTOR RECEPTOR.  Raju Regmi, Shwetha
Srinivasan, Xingcheng Lin, Steven Quinn, Wei He, Kermit L. Carraway III,
Matthew A. Coleman, Bin Zhang, Gabriela Schlau-Cohen

914-PLAT  5:15 PM
SINGLE-MOLECULAR DYNAMICS OF THE HUMAN RNA POLYMERASE II PRE-
INITIATION COMPLEX.  Rory Gunnison, Oksana Gonchar, Jonathan Grimm,
Luke Lavis, Zhengjian Zhang, Andrey G. Revyakin

915-PLAT  5:30 PM
TRAVEL Awardee
SUB-MICROSECOND SINGLE-MOLECULAR FRET STUDIES OF SINGLE-
STRANDED DNA CONFORMATION FLUCTUATIONS MEDIATED BY SINGLE-
STRANDED DNA BINDING PROTEINS.  Brett A. Israels, Anson Dang, Peter H.
von Hippel, Andrew H. Marcus

916-PLAT  5:45 PM
HIGH GC CONTENT DNA DOES NOT AFFECT PHAGE T4 DNA PACKAGING --
TEST OF A SCRUNCHWORM MODEL FOR PACKAGING MOTOR FUNCTION.
Youbin Mo, Nicholas A. Keller, Douglas E. Smith

Platform
Cell Mechanics, Mechanosensing, and Motility
4:00 PM - 6:00 PM, Room 30ABC

Co-Chairs
Effie Bastounis, University of Washington
Stephanie Hoehn, University of Cambridge, United Kingdom

917-PLAT  4:00 PM
QUANTIFYING MOLECULAR FORCES WITH SERIALLY CONNECTED FORCE
SENSORS.  Yousif Murad, Adam Yasunaga, Isaac T. Li

918-PLAT  4:15 PM
MORPHOGENESIS IS STRESSFUL - ELASTIC PROPERTIES OF FOLDING CELL
SHEETS.  Stephanie S. Hoehn, Pierre A. Haas, Raymond E. Goldstein

919-PLAT  4:30 PM
EMERGENCE OF CELL ORGANIZATION AND PATTERN SENSING FROM
ENTROPIC SHAPE FLUCTUATIONS.  Nicholas A. Kurniawan

920-PLAT  4:45 PM
STICK-SLIP DYNAMICS OF MIGRATING CELLS.  Rumi De, Partho Sakha De

921-PLAT  5:00 PM
MECHANICALLY-DRIVEN CELLULAR COMPETITION PROMOTES THE COL-
LECTIVE EXTRUSION OF BACTERIA-INFECTED EPITHELIAL CELLS.
Effie E. Bastounis, Prarthima Radhakrishnan, Patrik Engström, Francisco
Alcalde, Maria Gómez Benito, José M. García Aznar, Matthew Welch, Julie
Theriot

922-PLAT  5:15 PM
CORRELATING MECHANICAL AND GENE EXPRESSION DATA ON THE
SINGLE CELL LEVEL TO INVESTIGATE METASTASIS.  Katherine M. Young,
Congmin Xu, Kelly Ahkee, Roman Mezencev, Peng Qiu, Todd Sulchek

923-PLAT  5:30 PM
DIVERSE MODES OF MOTION OF DICTYOSTELIUM DISCOIDEUM CELLS:
CORRELATING CYTOSKELETON ORGANIZATION AND GENERATION
OF TRACTION FORCES.  Elisabeth Ghabache, Yuchuan Miao, Peter N.
Devreotes, Wouter-Jan Rappel

924-PLAT  5:45 PM
TRAVEL Awardee
PLASMA MEMBRANE NANODOMAINS AS AN INTEGRATOR OF SUB-
STRATE ENCODED MECHANANO-CHEMICAL SIGNALS.  Joseph Mathew
Kalappurakkal, Anupama Ambika Anilkumar, Chandrima Patra, Thomas S.
van Zanten, Michael P. Sheetz, Satyajit Mayor

Platform
Ligand-gated Channels
4:00 PM - 6:00 PM, Room 31ABC

Co-Chairs
Sun Joo Lee, Washington University in St. Louis
Erik Lindahl, Stockholm University, Sweden

925-PLAT  4:00 PM
LIGAND BINDING AND VOLTAGE MODULATION OPEN A CYCLIC-NUCLEO-
TIDE GATED ION CHANNEL.  Xiaolong Gao, Chen Fan, Crina M. Nimigean

926-PLAT  4:15 PM
PATCH-CLAMP FLUOROMETRY DEFINES A ROLE FOR SUR1 IN NUCLEO-
TIDE INHIBITION OF K(OUT) CHANNELS.  Samuel Usher, Frances M. Ashcroft,
Michael C. Puljung

927-PLAT  4:30 PM
ELUCIDATE THE BINDING MECHANISM OF VARIOUS SETRONS TO
5-HT3AR.  Sandip Basak, Yvonne W. Gicheru, Arvind Kumar, Sudha
Chakrapani
928-PLAT  4:45 PM
A LIPID RECOGNITION SITE AT A TRANSMEMBRANE HELIX KINK SHAPES THE AGONIST RESPONSE OF A PENTAMERIC LIGAND-GATED ION CHANNEL. 

929-PLAT  5:00 PM
THE MOLEULAR MECHANISMS OF CHOLESTEROL REGULATION OF KIR CHANNELS REVEALED BY DIRECT AND QUANTITATIVE APPROACHES. 
Sun Joo Lee, Zi-Wei Chen, Melissa Budelier, Kathiresan Krishnan, Douglas F. Covey, Alex S. Evers, Colin G. Nichols

930-PLAT  5:15 PM
MECHANISM OF MODULATION OF AMPA RECEPTORS BY TARP/F8. 
Elisa Carrillo, Sana A. Shaikh, Vladimir Berka, Linda M. Nowak, Vasanthis Jayaraman

931-PLAT  5:30 PM
MECHANISMS OF ACTIVATION AND DESENSITIZATION OF FULL-LENGTH GLYCINE RECEPTOR IN MEMBRANES. 
Arvind Kumar, Sandip Basak, Shanlin Rao, Yvonne W. Gicheru, Megan Mayer, Mark S. Sansom, Sudha Chakrapanii

932-PLAT  5:45 PM
MAPPING PH-DEPENDENT STATE TRANSITIONS OF A PENTAMERIC LIGAND-GATED ION CHANNEL THROUGH MARKOV STATE MODELING. 
Catherine Bergh, Laura Orellana, Stephanie A. Heusser, Rebecca J. Howard, Erik Lindahl

Speed Networking
4:30 PM - 6:00 PM, LOBBY H
Career development and networking is important in science, but can be a big time commitment. Here we offer refreshments and the chance to speed network, an exciting way to connect with a large number of biophysicists (including Biophysical Society committee members) in a short amount of time. Mid-career and more experienced scientists can learn how to get more involved in the Society or network for open positions in their labs. Early career scientists can discuss career goals and challenges, get advice on tenure or grant writing, or find out how to gain recognition for their work. Graduate students and postdocs can make contacts to find their next position. After introductions, each person will have short 3-5 minute meetings with consecutive new contacts. During this time you can exchange information and ask questions. When time is up, you select the next person to talk to. By the end of the event, each participant will have had meaningful interactions with over half a dozen colleagues and the opportunity to meet many more. It’s that simple!

Exhibitor Presentation
Molecular Devices
4:30 PM - 6:00 PM, ROOM 33C
Empower Your Electrophysiology Studies Using New Axon pCLAMP 11 Software and HumSilencer Adaptive Noise Cancellation Technology
The patch-clamp technique remains the best method for examining ion channel physiology and membrane biophysics. Axon Instruments and pCLAMP software continue to push the envelope with new innovations with best-in-class systems and software. In this user meeting we learn how to design protocols easier, analyze data faster, and achieve better data quality.

Speaker
Jeffrey Tang, Senior Global Axon Electrophysiological Application Scientist, Molecular Devices

Exhibitor Presentation
LUMICKS
5:30 PM - 7:00 PM, ROOM 33A
Breaking the Barriers: Providing the Full Workflow for Dynamic Single-Molecule Research from Sample to Publication
Here, we present our newest developments to further support discoveries in the fields of biology and biophysics. Our aim is to enable faster, easier, and more reliable than ever single-molecule research – from sample to publication – by extending the full experimental workflow with new services and open-access initiatives.

To decipher complex molecular interactions, you need to be able to observe the same biological process from multiple points of view. Using LUMICKS’ groundbreaking C-Trap™ Optical Tweezers – Fluorescence & Label-free Microscopy, you can simultaneously visualize individual molecules in real time and measure biological processes in greater detail. The combination of live-imaging and measurements has proven to be a research game changer.

With the ever-increasing pressure to perform breakthrough discoveries in the least amount of time, LUMICKS brings you an instrument with unprecedented high precision, accuracy, reliability, and the shortest time to result. The C-Trap gives you access to three key features: stable and precise sample manipulation and measurements, a wide variety of visualization capabilities, and a high throughput experimental workflow.

With the technology in hand, the major barriers that still remain in dynamic single-molecule research are caused by tedious sample preparation and non-standardized data analysis methods.

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Speakers
Olivier Heyning, Chief Executive Officer & Founder, LUMICKS
Emmanuel Lissek, Application Scientist, LUMICKS
Ali Raja, Director Americas, LUMICKS

Dinner Meet-Ups
6:00 PM - 6:30 PM, SOCIETY BOOTH/LOBBY G
Interested in making new acquaintances and experiencing the cuisine of San Diego? Meet at the Society Booth Monday and Tuesday at 6:00 PM, where a BPS member will coordinate dinner at a local restaurant.

Awards and 2020 Biophysical Society Lecture
8:00 PM - 9:00 PM, BALLROOM 20ABCD
PRESENTATION OF AWARDS 8:00 PM
932.01-BPSL 8:15 PM
FROM SINGLE MOLECULE BIOPHYSICS TO SINGLE CELL GENOMICS: WHEN STOCHASTICITY MEETS PRECISION Xiaoliang Sunney Xie

Reception and Dance
9:30 PM - 12:00 AM, HILTON, SAPPHIRE

Reception and Quiet Room
9:30 PM - 12:00 AM, HILTON, INDIGO AE
MONDAY POSTER SESSIONS
1:45 PM–3:45 PM, EXHIBIT HALL

Below is the list of poster presentations for Monday of abstracts submitted by October 1. The list of late abstracts scheduled for Monday is available in the Program Addendum, and those posters can be viewed on boards beginning with LB.

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

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

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It is the responsibility of the poster presenters to remove print materials from the board after their presentations. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected or stored for pick-up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.
Protein Structure and Conformation II
(Boards B1 - B21)

933-Pos 板 B1
EXPERIMENTAL TEST OF ENSEMBLE-INDUCED EPISTASIS IN MACROMOLECULES. Anneliese J. Morrison, Michael J. Harms

934-Pos 板 B2
PP2A PHOSPHATASE ACTIVATOR (PTPA): KEY TO THE MASTER REGULATOR IS CRUCIAL FOR SURVIVAL OF ENTAMOEBA HISTOLYTICA; STRUCTURAL AND FUNCTIONAL ELUCIDATION. Priya Tomar, Gourinath Samudrala

935-Pos 板 B3
EFFECT OF BILAYER THICKNESS ON MECHANICAL ACTIVATION OF THE ANGIOTENSIN II TYPE 1 RECEPTOR. Bharat Poudel, Rajitha R. Tatikonda, Juan M. Vanegas

936-Pos 板 B4
SINGLE-MOLECULE FLUORESCENCE SPECTROSCOPY OF NON-LIPIDATED FORMS OF APOLIPROTEIN E. Melissa D. Stuchell-Bereton, Logan Calderone, Berevan Baban, Jasmine Cubuk, Greg DeKoster, Carl Frieden, Andrea Soranno

937-Pos 板 B5
ACTIVATION OF A PHOTODRIVER ENZYMES RESULTS IN MODIFIED STRUCTURE AND DYNAMICS. Andreas M. Stadler, Judith Schneidewind, Michaela Zamponi, Esther Kniips-Grühsheim, Samira Ghomlian, Ulrich Schwamborg, Ivan Rivolta, Marco Garavelli, Mehdi Davari, Karl-Erich Jaeger, Frank Krause, Marco Bocola, Ulrich Krauss

938-Pos 板 B6
IN-CELL STRUCTURAL DETERMINATION OF AN ANTINORMAL PEPTIDE BY DNP SOLID-STATE NMR. Shiyong Zhu, Frances Separovic, Marc Antoine Sani

939-Pos 板 B7
PRINCIPLES OF ATP AND GTP SELECTIVITY IN NMP KINASES. Per Rogne, Elisabet Sauer-Ericsson, Uwe Sauer, Christian Hedberg, Magnus Wolf-Watz

940-Pos 板 B8
FLANKING DISORDER AFFECTS THE CONFORMATIONAL ENSEMBLE AND DYNAMICS OF A SMALL FOLDED HUB DOMAIN. Lasse Staby, Micha Kunze, Katherine R. Kemplien, Karen Skriver, Birthe B. Kragelund

941-Pos 板 B9
THE VARIABLE DOMAIN FROM THE MITOCHONDRIAL FISSION MECHANOENZYME DRP1 PROMOTES LIQUID-LIQUID PHASE SEPARATION. Blake Hill, Ammon E. Posey, Mehran Bagheri, Megan C. Harwig, Nolan W. Kennedy, Vincent J. Hilser, James L. Harden

942-Pos 板 B10
STRUCTURE AND FUNCTION OF A SOLUBLE PRECURSOR OF HUMAN PULMONARY SURFACTANT PROTEIN SP-B. Alejandro Alonso, Barbara Olmeda, Olga Cañadas, Jesus Perez-Gil

943-Pos 板 B11
DISSECTING CONTRIBUTIONS TO EFFICIENT CATALYSIS IN THE TRNA MODIFYING ENZYME TILS. Ferdiemar C. Guinto, Rebecca W. Alexander, Freddie R. Salsbury

944-Pos 板 B12
INVESTIGATION OF DRUG RESISTANCE MECHANISMS FOR ANTIANDR-GEN PROSTATE CANCER DRUG ENZALUTAMIDE USING MOLECULAR DYNAMICS SIMULATIONS. Behzad Aslani Avilaiq, Sefer Baday

Protein Stability, Folding, and Chaperones I
(Boards B22 - B40)

945-Pos 板 B13
CHARACTERIZATION OF AIF5A PROTEIN: A MULTIFUNCTIONAL TRANSLATION FACTOR IN THE HYPERTERMOPHILIC ARCHAEON S. SOLFATARI- CUS. Alice Romagnoli, Flavia Bassani, Paolo Moretti, Francesco Spinozzi, Udo Bläsi, Daniele Di Marino, Anna La Teana

946-Pos 板 B14
ELECTROSTATICS AND THE CONTROL OF ENDOGENOUS HEME LIGATION BY PH IN A HEMOGLOBIN. Jaime E. Martinez, Laia Julió Plana, Jamie L. Schlessman, Dario A. Estrin, Luciana Capece, Juliette T. Lecomte

947-Pos 板 B15
HIGH-THROUGHPUT MUTATIONAL SCREEN IDENTIFIES PHENOTYPICALLY RELEVANT CATEGORIES OF MUTATIONS IN FUMARATE HYDRATASE. David Shorthouse, Michael W.J. Hall, Benjamin A. Hall

948-Pos 板 B16
THE DETERMINANTS FOR LIGAND BINDING OF THE DOMESTICATED RETROVIRAL PROTEIN ARC. Christian Parsbæk Pedersen, Lau Dalby Nielsen, Simon Erlandssøn, Kaare Teilm

949-Pos 板 B17
ALTERATION OF TBID-INDUCED APOPTOTIC BAX PORATION IN MITOCHONDRIAL MEMBRANES BY MUTATIONS AND SMALL MOLECULES. Fei Qi

950-Pos 板 B18
MECHANISMS OF CARDIAC ARRHYTHMIAS AND SUDDEN CARDIAC DEATH IN HUMAN CALMODULINOPATHY. Ryan L. Woltz, Hannah A. Leford, Padmini Sirish, Duncan Muir, Wen Smith, Xiao-Dong Zhang, Vladimir Yarov-Yarovov, Nipavan Chiamvimonvat

951-Pos 板 B19
MOLECULAR BASIS FOR HEME EXTRACTION OF THE ANTIMICROBIAL TARGET ISDH FROM STAPHYLOCOCCUS AUREUS FROM HUMAN HEMOGLOBIN. Sandra Valentino Bellido, Vu T. Nhuon, Makoto Nakakido, Jose M. M. Caeveiro, Kouhei Tsumoto

952-Pos 板 B20
DARWINIAN SHIFT: A GENERAL APPROACH FOR ESTABLISHING EVIDENCE AND MECHANISM OF NATURAL SELECTION. Michael W. Hall, David Shorthouse, Philip H. Jones, Benjamn A. Hall

953-Pos 板 B21
ROSSMANN-LIKE PROTEINS FUNCTION AND EVOLUTION ANALYSIS OF A FIFTH OF THE PROTEIN WORLD. Kirill E. Medvedev, Lisa N. Kinch, Nick V. Grishin

Protein Structure and Conformation II
(Boards B1 - B21)

943-Pos 板 B2
PP2A PHOSPHATASE ACTIVATOR (PTPA): KEY TO THE MASTER REGULATOR IS CRUCIAL FOR SURVIVAL OF ENTAMOEBA HISTOLYTICA; STRUCTURAL AND FUNCTIONAL ELUCIDATION. Priya Tomar, Gourinath Samudrala

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SINGLE-MOLECULE FLUORESCENCE SPECTROSCOPY OF NON-LIPIDATED FORMS OF APOLIPROTEIN E. Melissa D. Stuchell-Bereton, Logan Calderone, Berevan Baban, Jasmine Cubuk, Greg DeKoster, Carl Frieden, Andrea Soranno
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STRUCTURE AND AGGREGATION OF ABETA1-42 AND PYROGLUTAMYLATED ABETA1-40 SEPARATELY AND COMBINED. Faisal Abedin, Suren A. Tatulian


STRUCTURAL BASIS OF CURVATURE GENERATION BY DYNAMIN-RELATED PROTEIN 1. Paul V. Thomas

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1015-Pos  Board B83  
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1016-Pos  Board B84  
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1031-Pos  Board B99  
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1032-Pos  Board B100  
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1033-Pos  Board B101  

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1035-Pos  Board B103  
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1036-Pos  Board B104  
STRUCTURAL MODELING OF THE HERG CHANNEL IN AN INACTIVATED STATE AND ASSOCIATED DRUG INTERACTIONS. Jan Malý, Aiyana M. Emigh, Kevin DeMarco, Jon T. Sack, Igor V. Vorobyov, Colleen E. Clancy, Vladimir Yarov-Yarovoy
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1038-Pos BOARD B106
Resolving CD47 structure and function to understand signal transduction mechanism. Sarah M. Young, Tarjani M. Thaker, Thomas M. Tomasiak, William R. Montfort

1039-Pos BOARD B107
Mapping the ATP hydrolysis cycle of a clostridium perfringens ABC transporter. Sergei Pourmal

1040-Pos BOARD B108
Liquid-liquid phase separation of intrinsically disordered proteins for development of membraneless organelles in synthetic cells. Michele Costantino, Prerna Sharma, Sara M. Vaiana, Giovanna Ghirlanda

1041-Pos BOARD B109
Multidimensional phase diagrams for multicomponent systems comprising multivalent proteins. Furqan Dar, Rohit V. Pappu

1042-Pos BOARD B110
Conformational flexibility of p53 transactivation domain controls DNA binding specificity and promoter selectivity. Emily Gregory-Lott, Wade M. Borcherds, Fan He, Mi Zhou, Gary W. Daughdrill

1043-Pos BOARD B111
Secondary structure prediction for intrinsically disordered proteins. Youngchan Kim, Nina Jovic, Jeetain Mittal

1044-Pos BOARD B112
Impact of hydrophobic patterning on conformational ensemble of disordered proteins. Wenwei Zheng, Gregory Dignon, Matthew Brown, Jeetain Mittal

1045-Pos BOARD B113

1046-Pos BOARD B114
Compact disorder of estrogen receptor. Sichun Yang

1047-Pos BOARD B115
Nano-POREs to interrogate the conformational ensembles of intrinsically disordered proteins on a single-molecule level. Saurabh Awasthi, Jared Houghtaling, Cuifeng Ying, Aziz Fennouri, Ivan Shorubalko, Michel Calame, Mitu C. Acharjee, Jiali Li, Michael Mayer

1048-Pos BOARD B116
Tuning the activity of disordered proteins by changing solution conditions. David Moses, Feng Yu, Alex S. Holehouse, Shahar Sukenik

1049-Pos BOARD B117
Molecular mechanisms of low complexity sequence protein assembly. Yuuki Wittmer, Blake Fonda, Rachelle Stowell, Natalie Boulos, Rebecca Rafique, Rong Hu, Truc Le, Dylan T. Murray

1050-Pos BOARD B118
Protein disorder regulates the DNA binding specificity of P53. Robin Levy, Wade M. Borcherds, Fan He, Gary W. Daughdrill, Jian-dong Chen

1051-Pos BOARD B119
Disease associated mutations in intrinsically disordered proteins show evidence of enrichment in hydrophobic blobs. Ruchi Lohia, Kaitlin Bassi, Matthew Hansen, Grace Brannigan

1052-Pos BOARD B120
Thermodynamics of the interaction between biological polyelectrolyte-like disordered proteins: from binary complexes to oligomers. Arika Chowdhury, Andrea Sottini, Alessandro Borgia, Madeleine B. Borgia, Daniel Nettels, Benjamin Schuler

1053-Pos BOARD B121
Molten globule driven liquid-liquid phase separation at the center of viral factory assembly. Mariano Salgueiro, Gabriela Camporeale, Julieta Conci, Belen Sousa, Arcarel Visentin, Agustin Corbat, Hernan Grecco, Guilherme A. de Oliveira, Gonzalez de Prat-Gay

1054-Pos BOARD B122
The improved ability of APOA-I amyloidogenic variants at mediating cholesterol efflux relies on their increased structural flexibility. Jens O. Lagerstedt, Oktawia Nilsson, Mikasa Lindvall, Laura Obici, Simon Ekstrom, Rita Del Giudice

1055-Pos BOARD B123
Water dynamics and interactions inside amyloid-beta fibrils. Sachin Natesh, Alex R. Hummels, Joseph R. Sachleben, Tobin R. Sosnick, Karl F. Freed, Stephen C. Meredith, Esmael J. Haddad

1056-Pos BOARD B124
Structural characterization of huntingtin: mechanism of aggregation and disaggregation. Silvia A. Cervantes Cortes, J. Mario Isas, Janine Kirstein, Ralf Langen, Ansgar B. Siemer

1057-Pos BOARD B125
Cardiolipin modulates huntingtin aggregation and binding to mitochondrial membranes. Adewale Adegbuyiro, Faezeh Sedighi, Justin Legleiter

1058-Pos BOARD B126
Transient structure formation kinetics of monomeric alpha-synuclein derived from MD simulations. Reinhard Klement, Timo Graen, Asaf Grupi, Elisha Haas, Helmut Grubmueller

1059-Pos BOARD B127
All-atom molecular dynamics simulation of the altered protein-protein interaction with metabolites and ions in the cytoplasm. Isseki Yu, Michael Feig, Yui Sugita

1060-Pos BOARD B128

1061-Pos BOARD B129
Integrative sequence-based classification of intrinsically disordered regions. Garrett M. Ginell, Jared Lalmansingh, Megan C. Cohan, Alex S. Holehouse

1062-Pos BOARD B130
Identification of structural defects in amyloid beta fibril as potential sites for inhibition of protein aggregation. Giuseppe Licari, Soumyo Sen, Xing Jiang, Jeffrey S. Moore, Emad Tajkhorshid

1063-Pos BOARD B131
Characterization of small objects in homogenates of the squid optic lobe. Catherine Chang, Amelia Ralowicz, Yuto Kegawa, Jennifer Petersen, Gulcin Pekkurnaz, Paul S. Blank, Joshua Zimmerman
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MOLECULAR CROWDING EFFECTS ON STABILITY AND KINETICS OF TRINUCLEOTIDE REPEAT HAIRPINS. Deema Martini, Brian L. Cannon

1065-Pos BOARD B133
ACCURATE ASSESSMENT OF BIOMOLECULAR PARTIAL SPECIFIC VOLUMES FROM POLARIZABLE MD SIMULATIONS AND ANALYTICAL ULTRACENTRIFUGATION EXPERIMENTS. Alexey Savelyev, Borries Demeler

1066-Pos BOARD B134
CALCULATING THE BINDING FREE ENERGY DIFFERENCE BETWEEN CONFORMATIONAL CHANGES OF AT-RICH DNA SEQUENCES. Md Lokman Hossen, Prem P. Chapagain, Bernard Gerstman

1067-Pos BOARD B135
REAL-TIME CONDENSATION OF NANOCONFINED DNA BY AN INTRINSICALLY DISORDERED POLYCATIONIC PROTEIN. Rajhans Sharma, Sriram KK, Erik D. Holmstrom, Fredrik Westerlund

1068-Pos BOARD B136
LABEL-FREE SINGLE-MOLECULE QUANTIFICATION OF DNA BY MASS PHOTOMETRY. Yiwen Li, Weston B. Struve, Katharina Häußermann, Philipp Kukura

1069-Pos BOARD B137
STUDYING THE INTRAMOLECULAR FORCES OF BASE-MODIFIED NUCLEIC ACIDS USING OPTICAL TWEEZERS. Vinoth Edal Joseph Sundar Rajan, Xavier Viader, Yii-Lih Lin, Felix Ritort, Fredrik Westerlund, Marcus Wilhelmsson

1070-Pos BOARD B138
ATOMIC FORCE MICROSCOPY STUDY OF INTERCALATED DNA MOLECULES. Joseph Tibbs, S. M. Ali Tabei, Timothy E. Kidd, Justin P. Peters

1071-Pos BOARD B139
DIRECT MEASUREMENT OF FLUID SHEAR STRESS IN 3-D MATRICES USING DNA-BASED FORCE SPECTROSCOPY. Peter E. Beshay, Kelly L. Kolotka, Jonathan W. Song, Carlos E. Castro

1072-Pos BOARD B140
MEMORY EFFECTS IN SINGLE-MOLECULAR FORCE SPECTROSCOPY MEASUREMENTS OF BIOMOLECULAR FOLDING. Andrew G. Pyo, Michael T. Woodside

1073-Pos BOARD B141
NANOPORE-BASED ANALYSIS OF CONFORMATIONAL HETEROGENEITY OF NUCLEIC ACIDS USING A GAMMA-HEMOLYSIN PROTEIN CHANNEL. Cherie S. Tan

1074-Pos BOARD B142
A DEEP DIVE INTO DNA BASE PAIRING INTERACTIONS UNDER WATER. Rongpeng Li, Chi H. Mak

1075-Pos BOARD B143
COUNTERION CONDENSATION ON A POLYELECTROLYTE UNDER EXTERNAL ELECTRIC FIELDS. Pyeong Jun Park

1076-Pos BOARD B144
INFLUENCE OF MONOVALENT CATIONS ON THE DYNAMICS OF THE C-KIT1 PROMOTER G-QUADRUPLEX USING POLARIZABLE MOLECULAR DYNAMICS SIMULATIONS. Alexa M. Salisbury, Justin A. Lemkul

1077-Pos BOARD B145
FOLDING/UNFOLDING PATTERN AND STABILITY OF INTRAMOLECULAR G-QUADRUPLEX STRUCTURE BY MYOINOSITOL. Danish Idrees

1078-Pos BOARD B146
POLARIZABLE MOLECULAR DYNAMICS SIMULATIONS OF DNA G-QUADRUPLEXES REVEAL DIFFERENT PROPERTIES OF NUCLEOBASE ELECTRONIC STRUCTURE AND CATION BINDING. Justin A. Lemkul

1079-Pos BOARD B147
IRREVERSIBILITY OF CONFORMATIONAL CHANGES AND ZN²-BINDING TO DNA. Kurt Andresen, Olivia Peduzzi, Claire Woodward, Katie Madore, Shelli L. Frey, Katherine M. Buettner

1080-Pos BOARD B148
DNA ELECTROPHORETIC MOBILITIES IN HIGH IONIC STRENGTH SOLUTIONS. Nancy C. Stellwagen, Earle Stellwagen

1081-Pos BOARD B149
BIOMIMETIC TRANSMEMBRANE SIGNAL TRANSDUCING DNA NANOSENSOR FOR MEMBRANE ENCLOSED NUCLEIC ACID BIOMARKER DETECTION. Swarup Dey, Alonzo Beatty V, Hao Yan

1082-Pos BOARD B150
DNA DIELECTRIC AND ELECTROMAGNETIC PROPERTIES: THEORETICAL BACKGROUND, EXPERIMENTAL FINDINGS AND DISCUSSION. Masroor H.S. Bukhari, Asifa Bukhari, Salma Batool, Yasir Raza, Tashmeem Razzaki

1083-Pos BOARD B151
COARSE-GRAINED MODELING OF DNA PLECTONEME FORMATION IN THE PRESENCE OF BASE-PAIR MISMATCHES. Parth Rakesh Desai, Siddhartha Das, Keir C. Neuman

1084-Pos BOARD B152

Protein-Nucleic Acid Interactions II (Boards B153 - B177)

1085-Pos BOARD B153
USING PROGRAMMABLE ROADBLOCKS TO PROBE DNA TARGET SEARCH. Allen C. Price

1086-Pos BOARD B154
SINGLE-MOLECULAR STUDIES OF DOXORUBICIN-DNA INTERACTIONS USING OPTICAL TWEEZERS. Zachary Ells, Brian Dolle, Mark C. Williams, Thayaparan Paramanathan

1087-Pos BOARD B155
COOPERATIVITY AND COMPETITION IN THE BINDING OF HETERO CYCLIC DIAMIDINES AND RNA POLYMERASES TO PHIX174 DNA. Stephen A. Winkle, Rosalina Fernandez-Paradas, Selma Hernandez, Erney Lorquet, Stephanie Singer, Nidia Rodriguez

1088-Pos BOARD B156

1089-Pos BOARD B157
EVIDENCE THAT PRIMARY MICRORNAs BENDS IN THE PRESENCE OF DGCR8 SEEN USING BOTH SAXS AND FRET MEASUREMENTS. Suzette A. Pabit, Yen-Lin Chen, Grace A. Usher, Erik C. Cook, Lois Pollack, Scott A. Showalter

1090-Pos BOARD B158
VIRAL RNA FOLDING STUDIED THROUGH CONTRAST VARIATION SMALL ANGLE- X RAY SCATTERING. Josue San Emeterio, Lois Pollack
Membrane Dynamics II (Boards B202 - B215)

1118-Pos  Board B186  TRAVEL Awardee  IONIZATION PROPERTIES OF PHOSPHATIDIC ACID AND DIACYLGLYCEROLPYROPHOSPHATE IN PC AND PC/PE MODEL MEMBRANES. Desmond Owusu Kwarteng, Edgar Kooljman

1119-Pos  Board B187  FATTY ACID MEMBRANES BOOST PEPTIDE YIELD AND IMPLICATIONS FOR THE ORIGIN OF CELLULAR LIFE. Zachary R. Cohen, Julia Nguyen, Avijit Hazra, Gojko Lalic, Roy A. Black, Sarah L. Keller

1120-Pos  Board B188  ESR SPECTROSCOPY DETERMINES THE AFFINITY OF CHOLESTEROL FOR LIPIDS WITH VARYING DEGREES OF UNSATURATION. Andres T. Cavazos, Stephen R. Wassall

1121-Pos  Board B189  THE ROLE OF GROWTH TEMPERATURE AND LIPID COMPOSITION IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES. Chantelle L. Leveille, Caitlin E. Cornell, Alexey J. Merz, Sarah L. Keller

1122-Pos  Board B190  DIRECT IMAGING OF LIPID DOMAINS IN NANOSCALE VESICLES BY CRYOEM. Caitlin E. Cornell, Alexander Mileant, Kelly K. Lee, Sarah L. Keller

1123-Pos  Board B191  SCALING BEHAVIOR IN SOFT MATERIALS REVEALED BY LIPID ACYL CHAIN ORDER. Abhinav Ramkumar, Xiaoling Leng, Michael F. Brown, Horia I. Petracek

1124-Pos  Board B192  EFFECT OF POLAR SOLVENTS ON SURFACTANT MEMBRANES. Daniel Berrellez, Judith Tânorî, Alan G. Acedo-Mendoza, Amir Maldonado

1125-Pos  Board B193  PROBING THE RELATIONSHIP BETWEEN CHOLESTEROL CONCENTRATION AND CHEMICAL POTENTIAL IN MODEL MEMBRANES. Anna D. Gaffney, Fiona C. Gaffney, Kathleen Wisser, Sarah L. Veatch

1126-Pos  Board B194  RAPID PRODUCTION OF LIPOSOMES USING ELECTRODIALYSIS. Gamid Abatchev, Andy Bogard, Jason D. Ward, Rikki Fix

1127-Pos  Board B195  ANTIPSYCHOTICS ALTER LIPID BILAYER PROPERTIES. R Lea Sanford, Olaf S. Andersen

1128-Pos  Board B196  MICROFLUIDIC MEASUREMENT OF CARBON DIOXIDE PERMEABILITY ACROSS LIPID BILAYERS. Matthew C. Blosser, Majed S. Madani, Justin So, Noah Malmstadt

1129-Pos  Board B197  DEUTERATED POLYUNSATURATED FATTY ACID RESIDUES PROTECT BILAYER LIPID MEMBRANES FROM PEROXIDATIVE DAMAGE. Alexander M. Firso, Elena A. Kotova, Maksim A. Fomich, Andrei V. Bekish, Olga L. Sharko, Vadim V. Shimnai, Yuri N. Antonenko, Mikhail S. Shchevinov

1130-Pos  Board B198  PERMEABILITY OF HUMAN RED BLOOD CELL MEMBRANES TO HYDROGEN PEROXIDE. Mattias N. Moller, Florencia Orrico, Ana C. Lopez, Ana Denicola, Leonor Thomson

1131-Pos  Board B199  COUNTERINTUITIVE ELECTROSTATIC FORCES IN LIPOSOME COLLOIDAL CRYSTALS. Joel Cohen

1132-Pos  Board B200  EFFECT OF STYRENE MALEIC ACID COPOLYMER LENGTH ON BIOLOGICAL MEMBRANE SOLUBILIZATION AND PROPERTIES OF NATIVE NANO-DISCS. Barend O.W. Elenbaas, Adrian H. Kopf, Martijn C. Kooreneveel, Helene Jahn, J. Antoinette Killian

1133-Pos  Board B201  DEMIXING IN MEMBRANES AND THEIR ENCAPSULATED SOLUTIONS. Heidi M. Spears, Sarah L. Keller

1134-Pos  Board B202  OBSERVATIONS OF COMPOUND PENETRATION IN ESCHERICHIA COLI USING ETHIDIUM BROMIDE AS A MODEL COMPOUND. Michelle Ramsahoye, Ankit Pandeya, Yuguang Cai, Yinan Wei

1135-Pos  Board B203  RECONCILING MEMBRANE PROTEIN SIMULATIONS WITH EXPERIMENTAL SPECTROSCOPIC DATA. Shriyaa Mittal, Diwakar Shukla

1136-Pos  Board B204  LIPID MEMBRANE DEFORMATION INDUCED BY TRANSMEMBRANE PEPTIDES. Kayano Izumi, Keisuke Shimizu, Ryuji Kawano

1137-Pos  Board B205  MECHANISMS OF NEGATIVE MEMBRANE CURVATURE SENSING AND GENERATION. Binod Nepal, Aliaaghbar Sepehri, Themis Lazaridis

1138-Pos  Board B206  RED BLOOD CELL CURVATURE IS CONTROLLED BY THE NON-UNIFORM DISTRIBUTION OF MYOSIN-MEDIATED FORCES AND MEMBRANE TENSION. Haleh Alimohamadi, Alyson Smith, Velia Fowler, Padmimi Ranga

1139-Pos  Board B207  VISUALIZING OPA1-MEDIATED CHANGES TO INNER MITOCHONDRIAL MEMBRANE MORPHOLOGY. Julie L. McDonald, Yifan Ge, Paula P. Navarro, Luke H. Chao

1140-Pos  Board B208  FACILE MEMBRANE FLOW AND TENSION EQUILIBRATION AT A PRESYNAPTIC NERVE TERMINAL. Carolina Gomis Perez, Natasha Dudzinski, Mason Rouches, Benjamin Matcha, David Zenisek, Erdem Karatekin

1141-Pos  Board B209  MELATONIN CHANGES DOMAIN STRUCTURE AND PROTECTS MODEL NEURONAL MEMBRANES AGAINST DAMAGE CAUSED BY AMYLOID-BETA. Carina T. Flicke, Julia Lumini, Brenda Y. Lee, Zoya Leonenko

1142-Pos  Board B210  THE ORGANIZATION AND CLUSTERING OF GIARDIAL LIPID RAFT DOMAINS AFTER TREATMENT WITH OSELTAMIVIR BY DIRECT STOCHASTIC OPTICAL RESOLUTION MICROSCOPY. Carmen Martinez, E. Aslan Gallegos, Aaron Neumann

1143-Pos  Board B211  SUBCELLULAR ACCUMULATION OF FLUOROQUINOLONES IN E. COLI. Ankit Pandeya, Olaniyi Alegun, Yinan Wei

1144-Pos  Board B212  SUPPORTED MODEL MEMBRANES FOR BIOSENSING APPLICATIONS - OPTICAL OXYTOCIN BINDING ASSAY. Aysu Kucukturhan Kubowicz, Kiryl Kustanovich, Agata Gitlin-Domagalska, Ventsislav Yantchev, Mattan Halevich, Shlomo Yitzchaik, Aldo Jesorka, Irep Gozen

1145-Pos  Board B213  SINGLE PROTEIN DYNAMICS IN POLYMER-CUSHIONED LIPID BILAYERS DERIVED FROM CELL PLASMA MEMBRANES. Wai Cheng Wong, Jz-Yuan Juo, Chih-Hsiang Lin, Yi-Hung Liao, Ching-Ya Cheng, Chia-Lung Hsieh

1146-Pos  Board B214  MONOVALENT LABELING OF GOLD NANOPROBES FOR ULTRAFAST TRACKING OF SINGLE-MEMBRANE MOLECULES IN LIVE CELLS. Yi-Hung Liao, Chih-Hsiang Lin, Ching-Ya Cheng, Wai Cheng (Christine) Wong, Jz-Yuan Juo, Chia-Lung Hsieh
Membrane Active Peptides and Toxins I (Boards B216 - B240)

1147-Pos  Board B215  Travel Awardee
QUANTITATIVE ASSESSMENT OF THE DYNAMIC MODIFICATION OF LIPID-DNA PROBES ON LIVE CELL MEMBRANES. Yousef Bagheri, Mingxu You

1148-Pos  Board B216
CROWDING ALTERS THE KINETICS OF POLYPEPTIDE-PROTEIN NANO-PORE INTERACTION. Motahareh Ghahari Larimi, Lauren A. Mayse, Liviu Movileanu

1149-Pos  Board B217
CHARACTERIZATION OF MEMBRANE PORES FORMED BY CATIONIC AMPHIPATHIC A-HELICAL ANTIMICROBIAL PEPTIDES. Erik Strandberg, David Bentz, Parvesh Wadhwani, Jochen Bürrck, Anne S. Ulrich

1150-Pos  Board B218
MEMBRANE PORE FORMATION BY MELITTIN DERIVATIVES. Aliashgar Sepehri, Leo PeBenito, Almudena Pino-Angeles, Themis Lazaridis

1151-Pos  Board B219  Travel Awardee
ANTIMICROBIAL PEPTIDES IMPAIR BACTERIA CELL STRUCTURES WITHIN SECONDS. Enrico F. Semeraro, Johannes Mandl, Lisa Marx, Thuyencheri Narayanan, Sylvain Prévost, Helmut Bergler, Karl Lohner, Georg Pabst

1152-Pos  Board B220
EFFECTS OF MEMBRANE POTENTIAL ON THE ENTRY OF CELL-PENETRATING PEPTIDES TRANSPORTANT 10 INTO SINGLE VESICLES. Md. Mizanur R. Moghal, Md. Zahidul Islam, Farzana Hossain, Samiron Kumar Saha, Masahito Yamazaki

1153-Pos  Board B221
LIPID COMPOSITION, PROTONATION, AND DIVALENT CATIONS AS MODULATORS OF PROTEIN-MEMBRANE INTERACTIONS. Victor Vasquez Montes, Alexey Ladokhin

1154-Pos  Board B222
EFFECTS OF COLD ATMOSPHERIC PLASMAS ON MEMBRANES. Joseph H. Lorent, Min Xie, Fabrice Gilissen, J. Antoinette Killian

1155-Pos  Board B223
THE ANTIMICROBIAL PEPTIDE POLYMIXIN B1 ENCOUNTERS MANY MOLECULAR OBSTACLES IN THE PERIPLASMEN ROUTETO THE INNER MEMBRANE OF E. COLI. Syma Khalid, Conrado Pedebos

1156-Pos  Board B224
DEPROTONATION OF C-TERMINAL ACIDIC RESIDUES HOLDS THE KEY TO THE EXIT PATHWAY OF PHILP. Violeta Burns, Blake Mertz

1157-Pos  Board B225
DISCOVERING NOVEL HEMOCOMPATIBLE ANTIMICROBIAL PEPTIDES USING HIGH-THROUGHPUT SCREENING AND RATIONAL VARIATION. Jenisha Ghimire, Charles G. Starr, William C. Wimley, Shantanu Guha, Joseph P. Hoffmann, Yihui Wang, Lisa A. Morici

1158-Pos  Board B226
CHARACTERIZATION OF CHARGE-ZIPPER TETRAMERIC ASSEMBLY OF THE STRESS RESPONSE PEPTIDE TISS FROM E. COLI IN MODEL MEMBRANES. Parvesh Wadhwani, Benjamin Zimpfer, Violette Schneider, Jochen Burck, Johannes Reichert, Erik Strandberg, Stephan L. Grage, Markus Elstner, Tomás Kubar, Anne S. Ulrich

1159-Pos  Board B227
RHombohedral Trap for Studying Molecular Oligomerization in Membranes: Application to Daptomycin. Ming-Tao Lee, Wei-Chin Hung, Huey W. Huang

1160-Pos  Board B228
INDUCED-FIT PATHWAY ACCELERATED BINDING OF AGITOXIN-2 TO A K+ CHANNEL IMAGED BY HS-AFM. Ayumi Sumino, Takashi Sumikama, Takayuki Uchihashi, Shigetoshi Oiki

1161-Pos  Board B229  Travel Awardee
NMR STRUCTURAL STUDIES AND ANTIBACTERIAL KILLING MECHANISMS OF ANTIMICROBIAL PEPTIDES WITH HIGHER ACTIVITY. Yongae Kim

1162-Pos  Board B230  Travel Awardee

1163-Pos  Board B231
DIVALENT CATIONS AND LIPID COMPOSITION MODULATE MEMBRANE INSERTION AND CANCER-TARGETING ACTION OF PHILP. Victor Vasquez Montes, Janessa S. Gerhart, Damien Thevenin, Alexey Ladokhin

1164-Pos  Board B232
SELECTIVE CARGO RELEASE FROM LIPID VESICLES BY A SYNTHETICALLY EVOLVED, NON-TOXIC, VESICLE-PERMEABILIZING PEPTIDE. Leisheng Sun, Kalina Hristova, William Wimley

1165-Pos  Board B233
MEMBRANE PERFORATION BY THE PORE-FORMING TOXIN PNEUMOLYSIN. Martin Vögele, Ramachandra M. Bhaskara, Estefania Mulvihill, Katharina van Pee, Özkan Yildiz, Werner Kühbrandt, Daniel J. Müller, Gerhard Hummer

1166-Pos  Board B234
CATIONIC ANTIMICROBIAL PEPTIDES HAVE REDUCED BINDING TO MPRF-MODIFIED MEMBRANES. Patrick W. Simcock, Mark S. Sansom, Phillip J. Stansfeld, Maike Bublitz, Jason Crain, Maxim G. Ryadnov, Flaviu Cipcigan

1167-Pos  Board B235  Travel Awardee
MEMBRANE POTENTIAL IS VITAL FOR RAPID PERMEABILIZATION OF PLASMA MEMBRANES AND LIPID BILAYERS BY THE ANTIMICROBIAL PEPTIDE LACTOFERRICIN B. Farzana Hossain, Md. Mizanur Moghal, Md. Zahidul Islam, Md. Moniruzzaman, Masahito Yamazaki

1168-Pos  Board B236
EFFECTS OF POLYUNSATURATED FATTY ACIDS AND METALLATION ON THE ANTIMICROBIAL ACTIVITY AND MEMBRANE-DISRUPTIVE PROPERTIES OF HOST-DEFENSE METALLOPEPTIDE PISCIDIN 1. Myriam Cotten, Steven Paredes, Sarah Kim, Alexander Greenwood, Yawei Xiong, Kalina Hristova, David Giles

1169-Pos  Board B237
AMPHOTERICINB INTERACTION WITH DMPC/ERGO MIXED LIPID BILAYERS. Wei-Chin Hung, Chi-Jiun Hung

1170-Pos  Board B238
PISCIDINS AT MEMBRANE INTERFACES: PHOSPHOLIPIDS VERSUS LPS. Hannah Cetuk, Joseph Maramba, Madelyn Brit, Robert K. Ernst, Ella Mihailescu, Myriam Cotten, Sergei I. Sukharev

1171-Pos  Board B239
INCREASED POTENCY OF ANTIMICROBIAL PISCIDINS IN THE PRESENCE OF COPPER (II) CORRELATES DIRECTLY WITH INSERTION DEPTH AND ORIENTATION IN MEMBRANES. Fatih Comert, Frank Heinrich, Alexander Greenwood, Vitalii I. Silin, Myriam Cotten, Ella Mihailescu

1172-Pos  Board B240
PEPTIDE-DRUG CONJUGATES ACROSS THE BLOOD-BRAIN BARRIER: USING VIRAL PROTEIN DOMAINS TO SHUTTLE SMALL DRUGS TO THE CENTRAL NERVOUS SYSTEM. Miguel A.R.B. Castanho
General Protein-Lipid Interactions I
(Boards B241 - B267)

1173-Pos Board B241 UNDERSTANDING KEY INTERACTIONS BETWEEN LIPID MEMBRANES AND PERIPHERAL MEMBRANE PROTEINS INVOLVED IN CELLULAR SIGNALING. Andreas H. Larsen, Laura John, Liliya Tata, Mark S. Sansom

1174-Pos Board B242 TRAVEL Awardee DETERMINING THE LIPID ENVIRONMENT AND INTERACTIONS OF CFTR. Kirsten Cottrill, Kerry M. Strickland, Nael A. McCarty

1175-Pos Board B243 BINDING OF ALPHA-CRYSTALLIN TO PHOSPHOLIPID MEMBRANE: EPR SPIN-LABELING APPROACH. Laxman Mainali

1176-Pos Board B244 SOFT MATTER CONTROL OF GPCR FUNCTION BY MEMBRANE LIPIDS AND WATER. Nipuna Weerasinge, Helen Mann, Anna R. Eitel, Steven D. Fried, Emily Cosgrie, Andrey V. Struts, Suchithranga M. Perera, Michael F. Brown

1177-Pos Board B245 FUNCTIONAL AND STRUCTURAL STUDIES OF OPA PROTEINS FROM NEISSERIA. Meagan L. Belcher Dufrisne, Linda M. Columbus

1178-Pos Board B246 CHOLESTEROL CONTROL OF INFLUENZA FUSION PEPTIDE BEHAVIOR WITHIN LIPID MEMBRANES. Piotr M. Setny

1179-Pos Board B247 TRANSMEMBRANE AND JUXTAMEMBRANE INTERACTIONS OF EPHA2 WITH LIPID MEMBRANES IN THE ACTIVE AND INACTIVE STATES. Katherine M. Stefanski, Justin M. Westerfield, Francisco N. Barrera

1180-Pos Board B248 AN IMPLICIT LIPID MODEL FOR EFFICIENT REACTION DIFFUSION SIMULATIONS OF PROTEINS BINDING TO ARBITRARY SURFACES. Yiben Fu, Alexander J. Sodt, Margaret E. Johnson

1181-Pos Board B249 TRAVEL Awardee MEASURING MEMBRANE PROTEIN-LIPID INTERACTIONS IN NANODISCS WITH NATIVE MASS SPECTROMETRY. James E. Keener, Julia Townsend, Megan Mowad, Michael T. Marty

1182-Pos Board B250 STRENGTHENING INTERACTIONS WITH THE MEMBRANE INTERFACE THROUGH GRAFTED AROMATIC COMPOUNDS PRODUCES EXTREMELY POTENT HIV-1 NEUTRALIZING ANTIBODIES. Jose L. Nieva, Edurne Rujas, Sara Insausti, Daniel P. Learman, Pablo Carravilla, Ruben Sanchez-Eugenio, Lei Zhang, Miguel Garcia-Porras, Christian Egelgeling, Jean-Philippe Julien, Akio Ojida, Michael B. Zwick, Joseph M. Caaveiro

1183-Pos Board B251 WATER FOR STEROL: AN UNUSUAL MECHANISM OF STEROL EGRESS FROM A STARLIN DOMAIN. George Khelashvili, Neha Chauhan, Kalpana Pandey, David Eliezer, Anant K. Menon

1184-Pos Board B252 SIGMA 1 RECEPTOR REMODELS ENDOPLASMIC RETICULUM MEMBRANE. Vladimir Zhemkov, Ilya Bezprozvanny

1185-Pos Board B253 MODULATION OF INSULIN RECEPTOR KINASE ACTIVITY BY LIPID ENVIRONMENT. Pavana Suresh, Erwin London, W. Todd Miller

1186-Pos Board B254 IMPROVED SOLUBILITY OF MEMBRANE PROTEINS WITH ZSMA POLYMERS. Mariana C. Fiori, Yunjiang Jiang, Wan Zheng, Guillermo A. Altenberg, Hongjun Liang

1187-Pos Board B255 TRAVEL Awardee CHARACTERIZING THE TRANLOCATION OF CHARGED PEPTIDE LOOPS ACROSS LIPID BILAYERS WITH MOLECULAR DYNAMICS SIMULATIONS. Samarthaben J. Patel, Reid C. Van Lehn

1188-Pos Board B256 MEMBRANE CURVATURE EFFECTS ON RHODOPSIN ACTIVATION INVESTIGATED BY TIME-RESOLVED ELECTRONIC SPECTROSCOPY. Steven D. Fried, James W. Lewis, Istvan Szundi, Karina Martinez-Mayorga, Mohana Mahalingam, Reiner Vogel, David S. Kliger, Michael F. Brown

1189-Pos Board B257 TRAVEL Awardee LIPID CHAIN ENTROPY AND EXCHANGE IN THE VICINITY OF G-PROTEIN COUPLED RECEPTORS. Alison Leonard, Alexander J. Sodt, Edward R. Lyman

1190-Pos Board B258 TRAVEL Awardee DISSECTING THE FUNCTIONAL ROLE OF PALMITOYLATION ON RPE65 PROTEIN. Sheetal Uppal, Tingting Liu, Eugenia Poliakov, Susan Gentleman, Thomas M. Redmond

1191-Pos Board B259 MOLECULAR BASIS OF CHOLESTEROL-DEPENDENT BINDING AND SELECTIVITY OF A CHOLESTEROL SENSOR. Defne Gorgun, Myun Li Han, Emad Tajkhorshid

1192-Pos Board B260 TRAVEL Awardee ANNEXIN-AS STABILIZES MEMBRANE DEFECTS VIA MODULATING LIPID ORDER. Yi-Chih Lin, Christophe Chipot, Simon Scheuring

1193-Pos Board B261 MECHANISTIC DISSECTION OF SPHINGOLIPID BINDING TO THE ER STRESS TRANSDUCER ATF6 - INSIGHTS INTO THE COORDINATION OF SPHINGOLIPID AND PROTEIN PRODUCTION. Toni Radanovic, Michael Gecht, Roberto Covino, Gerhard Hummer, Maho Niwa, Robert Ernst

1194-Pos Board B262 THE INTERACTION WITH DIFFERENT MEMBRANES OF THE C2 DOMAIN OF PKC-_EPSILON. Juan C. Gomez-Fernandez, Senena Corbalán-García, Alessio Ausili

1195-Pos Board B263 The Thermodynamic Landscape of Nanodisc Self-Assembly. Tyler Camp, Stephen G. Sligar

1196-Pos Board B264 AN AXON-MYELIN INTERFACE MODEL TO EXAMINE MULTIVALENT INTERACTIONS BETWEEN GANGLIOSIDES AND MYELIN-ASSOCIATED GLYCOPROTEIN. Jennie Cauley, Nathan J. Wittenberg

1197-Pos Board B265 INTERACTION OF CARDIOLIPIN WITH LC3/GABARAP FAMILY MEMBERS IN CARGO RECOGNITION DURING MITOPHAGY. Asier Etxaniz, Marina N. Iriondo, Yaiza Varela, Javier Hervás, Ruth Montes, Felix Gofil, Alicia Alonso

1198-Pos Board B266 MECHANISM OF THE INHIBITORY INTERFERENCE IN HUMAN ANTIMICROBIAL PEPTIDES. Ewa Drab, Kaori Sugihara

1199-Pos Board B267 THERMODYNAMIC CHARACTERIZATION OF THE MITOCHONDRIAL CALCIUM UNIPORTER. Francisco J. Sierra Valdez
Membrane Receptors and Signal Transduction II (Boards B268 - B293)

1200-Pos Board B268 Travel Awardee
INNATE ANTIFUNGAL IMMUNE RECEPTOR, DECTIN-1, UNDERGOES LIGAND-INDUCED OLIGOMERIZATION WITH HIGHLY STRUCTURED B-GLUCANS AND AT FUNGAL CELL CONTACT SITES. Edward John Anaya, Aaron Neumann

1201-Pos Board B269
AN UNUSUAL HYDROGEN BOND IN THE KDEL RECEPTOR. Zhiyi Wu, Simon Newstead, Philip C. Biggin

1202-Pos Board B270
ACCELERATED MOLECULAR SIMULATIONS OF SUBSTRATE RECOGNITION BY G-SECRETASE. Apurba Bhattacharai, Sujan Devkota, Yilong Miao, Michael S. Wolfe, Sanjay Bhattacharai

1203-Pos Board B271
MODELING THE BINDING MECHANISM OF A T CELL RECEPTOR AND MAJOR HISTOCOMPATIBILITY COMPLEX. Erin Groth, Cory M. Ayres, Brian M. Baker, Steven A. Corcelli

1204-Pos Board B272

1205-Pos Board B273
SPATIAL REQUIREMENTS FOR T-CELL RECEPTOR TRIGGERING PROBED VIA FUNCTIONALIZED DNA ORIGAMI PLATFORMS. Joschka P. Hellmeier, Rene Platzer, Andreas Karner, Victoria Motsch, Victor Bamilieh, Johannes Preiner, Mario O. Brameshuber, Hannes Stockinger, Gerhard J. Schütz, Johannes B. Huppa, Eva Sevcik

1206-Pos Board B274
MAGNESIUM DEFICIENCY CAUSES REVERSIBLE DIASTOLIC AND SYSTOLIC CARDIOMYOPATHY. Man Liu, Hong Liu, An Xie, Gyeoung-Jin Kang, Feng Feng, Xiaoxu Zhou, Yang Zhao, Samuel C. Dudley

1207-Pos Board B275
COMPARATIVE ANALYSIS OF THE RESIDUE CO-EVOLUTION OF THE DNA-BINDING RESPONSE REGULATOR SUBFAMILIES. Mayu Shibata, Xingcheng Lin, Ryan R. Cheng, Kei Yura, José N. Onuchic

1208-Pos Board B276
SOLUBLE ADENYLYL CYCLASE AT THE NANOSCALE: IMAGING AND FUNCTION IN HEART. Uron Boyman, Konstantinos Lefkimmiatis, Tulio Pozzan, W. Jonathan Lederer, Maura Greiser

1209-Pos Board B277
IQGAP1 SCAFFOLDING CONNECTS EGFR AND PHOSPHOINOSITIDE SIGNALING TO CYTOSKELETAL REORGANIZATION. V Siddartha Yerramilli, Alonzo H. Ross, Jessica Reisinger, Karin Plante, Suzanne F. Scarlata, Arne Gercke

1210-Pos Board B278
EXPANDING NUMBER AND BRIGHTNESS TO DETERMINE THE OLIGOMER SIZE OF MEMBRANE PROTEINS IN LIVE CELLS AS A FUNCTION OF CONCENTRATION. Michael D. Paul, Yi Zu, Randall Rainwater, Luo Gu, Kalina Hristova

1211-Pos Board B279 Travel Awardee
PAIR CORRELATION ANALYSIS REVEALS BARRIERS TO NATURAL KILLER CELL RECEPTOR MOTION AT THE SYNAPSE. Per Niklas Hedde, Elina Staaf, Sunitha Bagawath Singh, Sofia Johansson, Enrico Gratton

1212-Pos Board B280 Travel Awardee
COACTION OF ELECTROSTATIC AND HYDROPHOBIC INTERACTIONS IN SIGNALING: DYNAMIC CONSTRAINTS ON DISORDERED TRKA JUXTA-MEMBRANE DOMAIN. Zichen Wang, Huaxun Fan, Xiao Hu, John Khamo, Jiage Diao, Kai Zhang, Taras V. Pogorelov

1213-Pos Board B281 Travel Awardee
DNA PROBES THAT STORE MECHANICAL INFORMATION REVEAL TRANSPORT PORES ON THE SURFACE OF B Lymphocytes. Yunmin Jung, Lai Wen, Sara McArdle, Klaus Ley

1214-Pos Board B282
EXPANSION MICROSCOPY REVEALS THAT CD45 IS EXCLUDED FROM THE TIPS OF MICROVILLI IN T AND B LYMPHOCYTES. Nirmalya Bag, David A. Holowka, Barbara A. Baird

1215-Pos Board B283
PLASMA MEMBRANE ORGANIZATION IS POISED TO MEDIATE STIMULATED TRANSMEMBRANE SIGNALING. Nirmalya Bag, David A. Holowka, Barbara A. Baird

1216-Pos Board B284
MECHANICAL STRESS MAY IMPACT THE FORMATION OF STRESS GRANULES. Androniqi Qifti, Suzanne F. Scarlata

1217-Pos Board B285
DISCRETE-STATE STOCHASTIC MODELING OF T-CELL ACTIVATION. Hamid Teimouri, Anatoly B. Kolomeisky

1218-Pos Board B286
THE FORMATION OF LAT PROTEIN CONDENSATES IN RESPONSE TO SINGLE PMHC-TCR BINDING EVENTS. Darren McAffee, Shalini Low-Nam, Jenny J. Lin, Scott D. Hansen, Steven Alvarez, Jay T. Groves

1219-Pos Board B287
HOW GROWTH FACTOR RECEPTOR CLUSTERING PROMOTES DOWNSTREAM SIGNALING. Kelvin J. Peterson, Leslie M. Loew

1220-Pos Board B288
PI 4-KINASE AND PIP 5-KINASE COOPERATE TO REPLENISH PTDINS(4,5)2 AFTER RECEPTOR-MEDIATED DEPLETION. Jill B. Jensen, Lizbeth de la Cruz, Alexis Traynor-Kaplan, Bertil Hille

1221-Pos Board B289
GENETIC BIOSENSORS FOR REAL TIME MONITORING OF THE ACTIVATION OF SIGNAL TRANSDUCERS AND ACTIVATORS OF TRANSCRIPTION (STAT). Aisha M. Attar

1222-Pos Board B290
RHOA MEDIATED JUXTACRINE REGULATION OF GLUCAGON SECRETION. Yong Hee Chung, David W. Piston

1223-Pos Board B291
LATTICE LIGHT-SHEET MICROSCOPY MULTI-DIMENSIONAL ANALYSES (LAMDA) OF T-CELL RECEPTOR DYNAMICS PREDICT T-CELL SIGNALING STATES. Jun Huang

1224-Pos Board B292
REGULATION OF DHHC5 ENZYMATIC ACTIVITY IN CARDIOMYOCYTES. Jie Chen, Autumn N. Marsden, C. Anthony Scott, Askar M. Akimzhanov, Darren F. Boehning

1225-Pos Board B293
LIPID REMODELLING IN CD36 NANOCLUSTERS PROMOTES FYN ACTIVATION IN RESPONSE TO THROMBOSPONDIN-1. Nicolas Touret, Swai Mon Khaing
**Mechanosensation I (Boards B294 - B312)**

**1226-Pos** Board B294

**Characterizing the Expression and Function of the Mechanosensitive Piezo1 Channel in the Heart.** Fan Jiang

**1227-Pos** Board B295

**Different Mechanical Responses to Substrate Stiffness Between Cancer Cells and Normal Cells.** Fang Tian, Tsung-Cheng Lin, Liang Wang, Sidong Chen, Caishan Yan, Pak Man Yiu, Ophelia K.C. Tsui, Jun Chu, Ching-Hwa Kiang, Hyokeun Park

**1228-Pos** Board B296

**Corynebacterial “force-from-lipids” mechanosensation for msg production.** Yoshitaka Nakayama, Ken-ichi Hashimoto, Hisashi Kawasaki, Boris Martinac

**1229-Pos** Board B297

**Quantitative nano-platforms for interrogation of curvature sensitive proteins.** Ching-Ting Tsai

**1230-Pos** Board B298

**Structure and mechanogating of the mammalian tactile channel piezo2.** Wenhao Liu

**1231-Pos** Board B299

**Cadherin Complexes Are Combinatorial Mechano-switches That Differentially Regulate Cell Mechanics.** Vinh H. Vu, Zainab Rahil, Brendan G. Sullivan, Deborah E. Leckband

**1232-Pos** Board B300

**Survivin is a mechanosensitive regulator of vascular smooth muscle cell proliferation.** John C. Biber, Yongho Bae

**1233-Pos** Board B301

**Quantifying the Effect of Fatty Acids on the Elasticity of Model Membranes.** Miranda L. Jacobs, Neha P. Kamat

**1234-Pos** Board B302

**The Influence of Substrate Elasticity on Cell Adhesion Mechanisms.** Zbigniew Baster, Zenon Rajfur

**1235-Pos** Board B303

**Travel Awardee**

**Exploring the Structural Elements Responsible for Cis-Homodimerization of Inner Ear Cadherin-23.** Joseph C. Sudder, Jasanvir Sandhu, Pedro De-la-Torre, Deepanshu Choudhary, Marissa Boyer, Florencia Velez-Cortes, Jeshua K. Avila-Estrada, Collin Nisler, Michael L. Leake, Marcos S. Sotomayor

**1236-Pos** Board B304

**Contractility autoregulation in cardiomyocytes emerges from mechanosensor geometry and mechano-chemo-transduction.** Leighton T. Izu, Rafael Shimkunas, Zhong Jian, Tamas Banyasz, Ye Chen-Izu

**1237-Pos** Board B305

**Travel Awardee**

**Mscs Is a Critical Component for Osmotic Survival of Vibrio Cholerae.** Madolyn Brit, Kristen Ramsey, Joseph Maramba, Blake Ushijima, Elissa Moller, Andriy Anishkin, Claudia Hase, Sergei I. Sukharev

**1238-Pos** Board B306

**Exploring the Functional Implications of the Structural Relationship Between Tmcl and Tmem16 Proteins.** Angela Ballesteros, Kenton Swartz

**1239-Pos** Board B307

**Mechanical Forces Alter Endothelin-1 Signaling: Comparative Ovine Models of Congenital Heart Disease.** Antoni Garcia-Herreros, Rebecca J. Kameny, Terry Zhu, Jason Boehme, Gary Raff, Juan C. Lasheras, Stephen M. Black, Emin Maltepe, Sanjeev A. Datar, Jeffrey R. Fineman

**1240-Pos** Board B308

**Active Forces on Cell-Cell Contacts Enable Efficient Immune Discrimination.** Shenshen Wang

**1241-Pos** Board B309

**A FRET-based sensor for probing forces exerted by single T cell receptors on their ligands.** Lukas Schrangl, Janett Goehring, Florian Kellner, Johannes B. Huppa, Gerhard J. Schütz

**1242-Pos** Board B310

**Cell geometry modulates the activation of fibroblasts in 3D tumor microenvironments.** Saradha Venkatachalapathy, D.S. Jokhun, G.V. Shivashankar

**1243-Pos** Board B311

**Travel Awardee**

**Yap Activity Directly Scales with Nuclear Deformation and Lamin A Distribution.** Newsha Koushki, Allen J Ehrlicher

**1244-Pos** Board B312

**Mechanical Characterization of Extracellular Vesicles Derived From Immortalized Adipose Stromal Cells.** Melissa C. Piontek, Sourav Maity, Linda A. Brouwer, Martin C. Harmsen, Wouter H. Roos

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**Intracellular Calcium Channels and Calcium Sparks and Waves I (Boards B313 - B329)**

**1245-Pos** Board B313

**Characterization of RyR2 Mutations Located at the Caffeine and FKBP Binding Sites in Hips-Cms.** Jose Carlos Fernandez Morales, Xiaohua Zhang, Yanli Xia, Naohiro Yamaguchi, Martin Morad

**1246-Pos** Board B314

**Increased Sr Calcium Leak Is Promoted by O-Glcnacylation of Camkii in Diabetes and Hyperglycemia.** Anna Fasoli, Christopher Y. Ko, Bence Hegyi, Wenzjun Pan, Benjamin W. Van, Erin Y. Shen, Sonya Baidar, Julie Bossuyt, Donald M. Bers

**1247-Pos** Board B315

**Role of Sk Current Rectification in Shaping Action Potential of Ventricular Cardiomyocytes.** Peter Bronk, Tae Yun Kim, Iuliia Polina, Shanna Hamilton, Radmila Terentieva, Karim Roder, Gideon Koren, Dmitriy A. Terentyev, Bum-Rak Choi

**1248-Pos** Board B316

**Sorafenib Suppresses Basal Spontaneous Beating of Rabbit Sinoatrial Node Cells (San) Through Inhibition of Vascular Endothelial Growth Factor Receptor 1 (Vegfr1).** Tatiana M. Vinogradova, Kirill Tarasov, Yelena Tarasova, Edward G. Lakatta

**1249-Pos** Board B317

**A Novel In Vitro Model Using Organotypic Cardiac Slices Reveals Transmural Heterogeneity in Arrhythmogenic Ca**2+ Events After Cardiac Injury. Eef Dries, Ifigenia Bardi, Fotios Pitoulis, Raquel Nunez-Toldra, Warragong Kit-Anan, Cesare M. Terracciano
1250-Pos  BOARD B318  SERCA STIMULATION TRIGGERS ARRHYTHMOGENIC CA\textsuperscript{2+} EVENTS IN MOUSE CARDIOMYOCYTES HARBORING THE RYR\textsuperscript{2M202I/2} MUTATION. Ruben Jose Lopez Dicuru, Miguel Fernandez-Tenorio, Radoslav Janicek, Ana M. Gomez, Ernst Niggli

1251-Pos  BOARD B319  IMPROVEMENTS OF ER-CA\textsuperscript{2+} BASED HIGH-THROUGHPUT SCREENING METHOD FOR SEARCHING NOVEL RYR2 INHIBITORS. Masatoshi Ito, Nagomi Kurebayashi, Takashi Murayama, Mai Tamura, Junji Suzuki, kazunori Kanemaru, Masamitsu Iino, Takashi Sakurai

1252-Pos  BOARD B320  EFFECTS OF RYR2 INHIBITORS ON CA\textsuperscript{2+} SIGNALS IN HEALTHY AND DISEASED CARDIAC CELLS. Nagomi Kurebayashi, Takashi Murayama, Masato Konishi, Shuichi Mori, Mari Ishigami-Yuasa, Hiroyuki Kagechika, Haruo Ogawa, Sachio Morimoto, Takashi Sakurai


1254-Pos  BOARD B322  PROBING THE RYR2 CA\textsuperscript{2+} AND CAFFEINE BINDING SITES BY MUTAGENESIS IN HUMAN STEM-CELL DERIVED CARDIOMYOCYTES BY CRISPR/CAS9 GENE EDITING. Yani Xia, Xiaohua Zhang, Naohiro Yamaguchi, Martin Morad

1255-Pos  BOARD B323  ANALYSIS OF LOCAL CALCIUM FLUCTUATIONS IN CARDIAC MYOCYTES. Cherrie H. Kong, Mark B. Cannell

1256-Pos  BOARD B324  CPVT-ASSOCIATED MUTATION P.G357S-RYR2 PROMOTES A GAIN OF FUNCTION IN PATIENT-SPECIFIC INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES (IPS-CM). David Carreras, Rebecca Martinez-Moreno, Elisabet Selga, Ramon Brugada, Fabiana S. Sornick, Guillermo J. Perez

1257-Pos  BOARD B325  TRAVEL Awardee  HYPERACTIVITY OF RYR2 IN CARDIAC DISEASE IS EXACERBATED BY CALCIUM LEAK-INDUCED MITOCHONDRIAL ROS. Shanna Hamilton, Radmila Terentyeva, Jiaoni Li, Andrei Stepanov, Ingrid M. Bonilla, Bjorn C. Knollmann, Przemyslaw Radwanski, Sandor Gyorke, Andriy E. Belevych, Dmitry Terentyev

1258-Pos  BOARD B326  EFFECTS OF ULTRASTRUCTURAL REMODELING ON CALCIUM SIGNALING AND ELECTROPHYSIOLOGY IN A THREE-DIMENSIONAL MODEL OF THE HUMAN ATRIAL MYOCYTE. Xianwei Zhang, Haibo Ni, Stefano Morotti, William E. Louch, Andrew G. Edwards, Daisuke Sato, Fabiana S. Sornick

1259-Pos  BOARD B327  ELEMENTARY INTRACELLULAR CALCIUM SIGNALS ARE INITIATED BY A PHASE TRANSITION OF CALCIUM RELEASE CHANNELS IN A METASTABLE STATE. Guillermo Veron, Anna Maltsev, Michael D. Stern, Victor A. Maltsev

1260-Pos  BOARD B328  NOVEL MITOCHONDRIAL CA\textsuperscript{2+} UPTAKE ENHANCERS FOR THE TREATMENT OF CARDIAC ARRHYTHMIA. Paulina Sander, Daniela M. Arduino, Maria K. Schweitzer, Fabiola Wilting, Thomas Guddermann, Fabiana Perocchi, Johann Schredelseker

1261-Pos  BOARD B329  PHARMACOLOGICAL MODULATION OF MITOCHONDRIA CA\textsuperscript{2+} EXERTS DIVERGENT EFFECTS ON ARRHYTHMOGENIC CALCIUM WAVES IN CA\textsuperscript{2+}-DEPENDENT AND METABOLIC CARDIAC DISEASE. Brian Tow, Anna-Beth Loper, Dongyu Wang, Bjorn C. Knollmann, Sandor Gyorke, Bin Liu

1262-Pos  BOARD B330  RIBONUCLEOTIDE REDUCTASE IS ESSENTIAL IN ADULT CARDIOMYOCYTES. Kristina B. Kooiker, Djelli Berisha, Amy Martinson, Joelle Tudor, Jeremy Freeman, Claire Branley, Farid Moussavi-Harami

1263-Pos  BOARD B331  CARDIAC PALMITOME SHEDS NEW LIGHT ON THE STRUCTURAL AND FUNCTIONAL ROLES OF S-PALMITOYLATION IN CARDIAC MYOCYTES. Madeleine Miles, Nicholas Rodriguez, Min Jiang, Jane E. Tomaszewzki, Isabelle Deschenes, Gea-Ny Tseng

1264-Pos  BOARD B332  HYPERVENTRICULAR CARDIOMYOPATHY: PROLONGED TWITCH, CALCIUM TRANSIENTS AND ACTION POTENTIALS IN HUMAN STEM CELL-DERIVED CARDIOMYOCYTES WITH B-MYOSIN MUTATION R723G. Natalie Weber, Tim Holler, Joachim Meibner, Judith Montag, Martin Fischer, Jeanne de la Roche, Stefan Thiemann, Neele Peschel, Anne Kathrin Mayer, Kristin Schwane, Birgit Piep, Ulrich Martin, Robert Zweigerdt, Theresa Kraft

1265-Pos  BOARD B333  THE MECHANICAL PROPERTIES OF A UTROPHIN CONSTRUCT ENCODING THE TANDEM CH ACTIN BINDING DOMAIN THROUGH SPECTRIN REPEAT 3 IS ALTERED BY THE CELL EXPRESSION SYSTEM THROUGH POST-TRANSLATIONAL MODIFICATIONS. Maria Paz Ramirez Lopez, Sivaraman Rajaganapathy, Wendy R. Gordon, Murti V. Salapaka, James M. Ervasti

1266-Pos  BOARD B334  ELUCIDATING THE ROLE OF PHOSPHORYLATED REGULATORY LIGHT CHAIN PROTEINS (RLC) DURING HEART FAILURE PROGRESSION. Kasturi Markandran

1267-Pos  BOARD B335  CALCIUM REGULATES AVERAGE TIME AND NOT VELOCITY A THIN FILAMENT MOVES. Henry G. Zot, Javier E. Hasbun, Prescott B. Chase, J. Renato D. Pinto

1268-Pos  BOARD B336  ESSENTIAL ROLE OF SEPTIN 7 IN SKELETAL MUSCLE STRUCTURE AND FUNCTION. Laszlo Csernocheck, Mónika Gónicz, Zsolt Ráduly, László Szabó, Nóra Dobrosi, Péter Szentesi, Beatrix Dienes

1269-Pos  BOARD B337  STUDY BIOPHYSICS OF ESOPHAGEAL TRANSPORT BY COMBINING SIMULATION, MODELING AND BIO-MECHANICAL ANALYSIS BASED ON IN-VIVO DATA. Wenjun Kou, Shashank Acharya, Sourav Halder, Neelesh Patankar, John Pandolfino

1270-Pos  BOARD B338  THE GLU-RICH C-TERMINAL EXTENSION OF INSECT TROPONIN T IS AN ESSENTIAL STRUCTURE CRITICAL TO EMBRYONIC DEVELOPMENT. Alyson Sujkowski, Tianxin Cao, J.-P. Jin

1271-Pos  BOARD B339  K\textsubscript{ATP} CHANNELS IN ZEBRAFISH CARDIOVASCULAR SYSTEM: A MODEL TO STUDY CANTÚ SYNDROME. Sonia S. Singareddy, Helen I. Roessler, Conor McClenaghan, Rob C. Tryon, Gis van Haasten, Colin G. Nichols

1272-Pos  BOARD B340  UNIVERSAL INVERSE SQUARE RELATIONSHIP BETWEEN HEART RATE VARIABILITY AND HEART RATE. Anna Maltsev, Oliver J. Monfredi, Victor A. Maltsev

1273-Pos  BOARD B341  TISSUE MECHANISMS OF ADULT ZEBRAFISH VENTRICULAR ECG PATTERNS UNDER BASELINE AND OXIDATIVE STRESS CONDITION. Yali Zhao, Nicholas James, Ashraf Beshay, Eileen Chang, Thao P. Nguyen
**Ion Channel Regulatory Mechanisms I**  
(Boards B375 - B394)

**1302-Pos** **BOARD B370**
Using onsets-of-block kinetic analysis of HERG1 current with a Markov model to improve in silico proarrhythmic risk prediction.  
Bogdan P. Amuzescu, Thomas Knott, Stefan A. Mann, Julianne Knuelping, Razvan Airini, Florin Bogdan Epureanu, Beatrice Mihaela Radu

**1303-Pos** **BOARD B371**
Kv1.3 regulates the driving force for calcium entry through P2X4 in microglia.  
Hai M. Nguyen, Yi-Je Chen, Jacopo Di Lucente, Lee-Way Jin, Izumi Maezawa, Heike Wulff

**1304-Pos** **BOARD B372**
Identification of sodium sensitive site and chloride sensitive site on the C-terminus of rat KCN1 channel.  
Jie Xu, Xiao-Yun Zhao, Yan-Tian Lv, Yun Xu, Jing-Jing Wang, Qiong-Yao Tang, Zhe Zhang

**1305-Pos** **BOARD B373**
SLC7A5 alters the functional interaction between KV1.2 and KVB.  
Shawn M. Lamotho, Harley T. Kurata

**1306-Pos** **BOARD B374**
Identification of extracellular pH-sensing residues in the voltage-gated proton channel HV1.  
Ashley L. Bennett, Giuliano Melki, I. Scott Ramsey

**1307-Pos** **BOARD B375**
Relationship between amino acid sequence mutations and human diseases revealed by Piezo 1 ion channel structural analysis.  
Zikai Zhou

**1308-Pos** **BOARD B376**
Acid-sensing ion channel currents of the hypothalamus are increased by hydrogen sulfide.  
Zhong Peng, Stephan Kellenberger

**1309-Pos** **BOARD B377**
Mechanisms of dominance of MLC2B mutations in glialcam, a regulatory subunit of the CLC-2 chloride channel.  
Raul Estevez

**1310-Pos** **BOARD B378**
The road not taken - lipid/ion conduction pathways in TMEM16 protein family.  
ZhiGuang Jia, Pengfei Liang, Trieu Le, Huanghe Yang, Jianhan Chen

**1311-Pos** **BOARD B379**
Computational insights into voltage dependence of polyamine block in inwardly rectifying K+ channels.  
Michael Bründl, Xingyu Chen, Anna Stary-Weinzinger

**1312-Pos** **BOARD B380**
Atrial myocytes maintain low [Na+]i through specialized Na+/K+ ATPase microdomain.  
Humberto C. Joca, Libet Garber, Andrew Coleman, Uron Boyman, Mariusz Karbowksi, Christopher W. Ward, W. Jonathan Lederer, Maura Greiser

**1313-Pos** **BOARD B381**
Energetics of calmodulin recognition of a skeletal muscle ryanodine receptor site.  
Adina M. Kilpatrick, Ryan W. Mahling, Madeline A. Shea

**1314-Pos** **BOARD B382**
How do KCNQ1 and KCNE1 assemble to form the slow-de layed-rectifier (Ih) channels in adult ventricular myocytes (AVMs)?  
Sukhleen Kaur, Tytus Bernas, Zachary Wilson, Taylor Schultz, Min Jiang, Gea-Ny Tseng

**1315-Pos** **BOARD B383**
Arrhythogenic vulnerability is associated with alterations in ion channel expression, localization and function in hypertrophic cardiomyopathy.  
Henrietta Cserne-Szappanos, Daniea W. Ito, Rose E. Dixon, Livia C. Hool

**1316-Pos** **BOARD B384**
EAG channel PAS domain binder inhibits currents from EAG channels and decreases tumor growth in zebrafish xenograft model.  
Ze-Jun Wang, Pareesa Kamgar-Dayhoff, Purushottam B. Tiwari, Eric Glasgow, TinaTin I. Breidze

**1317-Pos** **BOARD B385**
Control of SL7A5 sensitivity by the voltage-sensing domain of Kv1 channels.  
Shawn M. Lamotho, Nazlee Sharmin, Victoria A. Baronas, Grace Silver, Yubin Hao, Harley T. Kurata

**1318-Pos** **BOARD B386**
The energy landscape of voltage sensing in Ci-VSP.  
Rong Shen, Benoit Roux, Eduardo Perozo

**1319-Pos** **BOARD B387**
Both lobes of calmodulin bound to KCA2.2 respond to Ca2+.  
David Brent Halling, Ashley Philpo, Richard W. Aldrich

**1320-Pos** **BOARD B388**
Characterisation of the versatile gating behaviour in talk-2 K+ channels.  
Elena B. Riel, Björn Jürs, Jan Langer, Marianne Musinszki, Sönke Cordeiro, Susanne Rinné, Niels Decher, Marcus Schewe, Thomas Baukrowitz

**1321-Pos** **BOARD B389**
Solving the gating mechanism of the mitochondrial B-barrel metabolite channel VDAC.  
Maria Queralt-Martín, Van A. Ngo, Lucie A. Bergdoll, Jeff Abramson, David P. Hoogerheide, Tatiana K. Rostovtseva, Sergey M. Bezrukov, Sergey V. Noskov

**1322-Pos** **BOARD B390**
An allosteric gating mechanism of TMEM16A calcium-activated chloride channel.  
Son C. Le, Huanghe Yang

**1323-Pos** **BOARD B391**
Novel biophysical properties of molecular permeation in CALHM1 and connexin channels.  
Pablo S. Gaete, Mauricio A. Lillo, William I. Lopez, Yu Liu, Andrew L. Harris, Jorge E. Contreras

**1324-Pos** **BOARD B392**
Ankyrin-G mediates targeting of both Na+ and KATP channels to the cardiac intercalated disc.  
Hua-Qian Yang, Marta Pérez-Hernández, Jose L. Sanchez-Alonso, Andriy Shevchuk, Julia Gorelik, Eli Rothenberg, Mario Delmar, William A. Coetzee

**1325-Pos** **BOARD B393**
G8T activates GIRK2 with low-micromolar affinity with distinct activation pattern compared to GIRK1/2.  
Daniel Yakubovich, Uri Kahanovitch, Galit Tabak, Tal Keren Raifman, Vladimir Tsemakhovich, Debi Ranjan Tripathy, Carmen W. Dessauer, Joel A. Hirsch, Nathan Dascal

**1326-Pos** **BOARD B394**
Low-nano as a new tool for the regulation of HCN channels by blue light.  
Michal Laskowski, Andrea Saponaro, Alessandro Porro, Matias Zurbriggen, Gerhard Thiel, Anna Moroni
### Other Channels (Boards B395 - B420)

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**Monday, 2020 Biophysical Society Annual Meeting**

Biophysical Society 2020

64th Annual Meeting of the Biophysical Society
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Skeletal Muscle Mechanics, Structure, and Regulation (Boards B421 - B437)

1353-Pos Board B421
ACTIVE AND PASSIVE CONTRIBUTION TO FORCE IN SKELETAL MUSCLE FIBRES: EFFECT OF AN ACTIVE STRETCH. Venus Joumaa, Faruk Ortes, Walter Herzog

1354-Pos Board B422
BINDING SITE ANALYSIS OF AN ANTI-TROPOMYOSIN DESTABILIZING PEPTIDE USING FLUORESCENCE MICROSCOPY AND SPECTROSCOPY. Blessing I. Oloyede, Douglas D. Root

1355-Pos Board B423
TRAVEL Awardee DETECTION OF SUPER-RELAXED MYOSIN IN SPECIFIC HUMAN SKELETAL MUSCLE FIBER TYPES. Lien A. Phung, Aurora D. Foster, Mark S. Miller, Dawn A. Lowe, David D. Thomas

1356-Pos Board B424
REGULATORY LIGHT CHAIN ORIENTAITON ON MYOSIN S1 USING A BIFUNCTIONAL SPIN LABEL. Yahir Savich, Megan R. McCarthy, David D. Thomas

1357-Pos Board B425
MITOCHONDRIAL ORGANIZATION IS SEVERLY MODIFIED IN SKELETAL MUSCLES OF SEPTIN7 KNOCKDOWN ANIMALS. Mónika Göröcs, László Szabó, Zsolt Ráduly, Nóra Dobrosi, Gréta Kis, Karolina Cseri, Beatrix Dienes, László Csernoch

1358-Pos Board B426
DEVELOPMENT OF MECHANICAL AND STRUCTURAL DYSFUNCTION IN SKELETAL MUSCLE FROM A DUCHENNE MUSCULAR DYSTROPHY RAT MODEL. Saffie Mohran, Chen-Ching Yuan, Shawn M. Luttrell, Weikang Ma, Thomas C. Irving, David L. Mack, Michael Regnier

1359-Pos Board B427
CROSS-BRIDGE CYCLING KINETICS SLOW AT LONGER MUSCLE LENGTH IN TETANIC CONTRACTING MOUSE SOLEUS MUSCLE. Axel J. Fenwick, David C. Lin, Bertrand C. Tanner

1360-Pos Board B428
REAL-TIME INVESTIGATION OF SARCOMERE STRUCTURE-FUNCTION IN LIVE SKELETAL MUSCLE THROUGH FRET. Ashley A. Martin, Brian R. Thompson, Joseph M. Metzger

1361-Pos Board B429

1362-Pos Board B430
USE OF CELLS FROM REMOTELY COLLECTED URINE TO GENERATE HUMAN INDUCED PLURIPOTENT STEM CELLS AND MYOFIBERS THAT RECAPITULATE UNCONVENTIONAL MYOPATHIES. Shawn M. Luttrell, Saffie Mohran, Kati Buckingham, Michael J. Bamshad, Michael Regnier, David L. Mack

1363-Pos Board B431
STEP STRETCHES AND SHORTENINGS ELICIT SIMILAR TRANSIENT FORCE OVERSHOOTS. Joel C. Robinett, Laurin M. Hanft, Kerry S. McDonald

Cell Mechanics, Mechanosensing, and Motility I (Boards B438 - B460)

1364-Pos Board B432
INSIGHTS INTO VARIOUS TYPES OF MYOPATHY USING THE ATOMIC MODEL OF LETHOCERUS MYOSIN FILAMENTS. Hamidreza Rahmani, Nadia Daneshparvar, Dianne Taylor, Kenneth A. Taylor

1365-Pos Board B433
MUTATIONS IN THE LARGE PROTEIN NEBULIN TRIGGER TYPICAL NEUROGENIC MYOPATHY WITH A UNIQUE MOLECULAR MECHANISM. Johan Lindqvist, Weikang Ma, Yaren Hernandez, Frank W. Li, Justin Kolb, Paola Tonino, Balazs Kiss, Robbert van der Pijl, Esmat Karimi, Zaynab Hourani, John E. Smith, Coen A. Ottenheijm, Thomas C. Irving, Henk L. Granzier

1366-Pos Board B434
MOLECULAR DYNAMICS SIMULATIONS OF ALPHA-BETA-TROPOMYOSIN SHOW CONFORMATIONAL PROPERTIES OF HETERODIMERIC TROPOMYOSIN. Michael J. Rynklewich, William Lehman

1367-Pos Board B435
STRESS-DEPENDENT ACTIVATION OF MYOSIN MOTORS CONTROLS THE COOPERATIVITY AND DYNAMICS OF FORCE GENERATION IN SKELETAL MUSCLE. Luca Fusi, Elisabetta Brunello, Lorenzo Marcucci, Qiqian Yan, Yin-Biao Sun, Malcolm Irving

1368-Pos Board B436
MEASUREMENT OF SKELETAL MUSCLE FIBER CONTRACTILITY WITH HIGH-SPEED TRACTION MICROSCOPY. David Böhinger, Martin Rausch, Martin Steinmann, Stefan Schruefer, Dirk W. Schubert, Annamaria Härtl, Christoph Mark, Ben Fabry

1369-Pos Board B437
USING POSITIONAL ISOMERS OF A SYNTHETIC NON-NUCLEOSIDE TRIPHOSPHATE TO CONTROL MYOSIN FUNCTION. Mike Woodward, Eric Ostrander, Xiaorong Liu, Seung Pyo Jeong, Jianhan Chen, Dhandapani Venkataraman, Edward P. Debold

1370-Pos Board B438
REDUCED VIMENTIN LEVEL IN FIBROBLASTS REGULATES CELL TRACTION FORCE BUT NOT MECHANOSENSING. Minh-Tri Ho Thanh

1371-Pos Board B439
DYNAMIC CROSSLINKING OF THE ACTIN CYTOSKELETON GOVERS CELL MECHANICS. Loïc Chauvet, Hossein Khadivi Heris, Allen J. Ehrlicher, Adam G. Hendricks

1372-Pos Board B440
MECHANOBIOLOGY OF EXTRAVASATING CD4(+) T-CELL CYTOSKELETON. Alexander S. Zhovmer, Emilio K. Dimitriadis, Xuefei Ma, Paolo P. Provenzano, Erdem D. Tabdanov

1373-Pos Board B441
EFFECTS OF INTER-DOUBLET COUPLING ON FLAGELLAR BEATING. Louis Woodham, Yenan Shen, Philip Bayly

1374-Pos Board B442
AN ARTIFICIAL PROTEIN-BASED BURNT-BRIDGES MOLECULAR MOTOR DESIGN. Chapin S. Korosec, Nancy R.福德

1375-Pos Board B443
REAL-TIME NANOMETER-ACCURACY TRACKING OF SINGLE LIPID DROP-LETS IN LIVING CELLS. Hoi Man Lau, Hyokeun Park

1376-Pos Board B444
ROLE OF BRAF IN CANCER CELL EXTRAVASATION, MECHANOTRANSDUC TION IN ENDOTHEIAL MONOLAYERS. Anna Hollosi, Katalin Paszty, Balint Bunta, Miklós S.Z. Kellermayer, Andrea Varga
1377-Pos  Board B445  BIOMECHANICS OF JAM-C-MEDIATED NEUTROPHIL REVERSE TRANSENDOTHELIAL MIGRATION. Yi-Ting Yeh, Ricardo Serrano, Ernesto Criado-Hidalgo, Juan Carlos del Álamo, Juan Carlos Lasheras

1378-Pos  Board B446  BINDING OF RAS TO PI3K: MEASURING BINDING AFFINITY, AND THE EFFECTS OF DISEASE-LINKED H-RAS MUTATIONS ON AFFINITY. Hayden Swisher, Nicholas J. Cordaro, Justin G. Martyr, Annette H. Erbse, Johnathon H. Hannan, Emily M. Kibby, Joseph J. Falke

1379-Pos  Board B447  EFFECT OF EXTRACELLULAR MATRIX STIFFNESS GRADIENT ON DUROTAXIS MOTION AND CELL MIGRATION OF CELLS USING DYNAMIC CELLULAR FINITE ELEMENT MODEL (DYCELFEM). Pourya Delafrouz, Jieling Zhao, Wei Tian, Jie Liang

1380-Pos  Board B448  PTEN-Pi(4,5)P, POSITIVE FEEDBACK MECHANISM FOR STABILIZING ASYMMETRIC Pi(3,4,5)P, LOCALIZATION IN MIGRATING CELL. Daisuke Yoshioka, Seiya Fukushima, Hiroyasu Koteishi, Daichi Okuno, Toru Ide, Satomi Matsuoka, Masahiro Ueda

1381-Pos  Board B449  DIRECT FORCE MEASUREMENT OF THE PANc-1’S TRACTION FORCE. Takeshi Sakamoto, Yuwen Mei, Justin Raupp

1382-Pos  Board B450  CELL MECHANICS AND INVASION ARE INFLUENCED BY ST6GAL-I MEDIATED SIALYLATION OF EGFR. Tejeshwar C. Rao, Reena R. Beggs, Katie L. Dietz, Victor Pui-Yan Ma, Khalid Salaita, Susan L. Bellis, Alexa L. Mattheyes


1384-Pos  Board B452  UNDERSTANDING MECHANICAL EFFECTS ON THE DYNAMICS OF NASCENT ADHESIONS. Laurent MacKay, Etienne Lehman, Anmar Khadra

1385-Pos  Board B453  LIPID DROPLETS DEFORM NUCLEUS AND CAUSE MISLOCALIZATION OF DNA REPAIR FACTORS. Irena L. Ivanovska, Michael P. Tobin, Charlotte R. Pfeifer, Dennis E. Discher

1386-Pos  Board B454  ROS INDUCED CELL MECHANICAL ALTERATIONS IN SUSPENSION AND ADHERENT CELLS. Yesawmini Komaragiri

1387-Pos  Board B455  THE DYNAMICS OF PROTEIN TRANSLATION IN THE PROCESS OF CELLULAR ADHESION. Alexia Caillier, Jonathan Bergeman, Marc-Étienne Huot

1388-Pos  Board B456  UTILIZING MOLECULAR DYNAMICS SIMULATIONS TO PROBE THE RELEASE OF SIGNAL FACTORS FROM THE ADHERENS JUNCTION. Brandon L. Neel, Marcos M. Sotomayor

1389-Pos  Board B457  GENETICALLY ENGINEERED MYOBLASTS FOR MEASURING NUCLEAR LAMINA STRESS. Thomas M. Suchyna, Frederick Sachs, Fanjie Meng, Wilma A. Hofmann

1390-Pos  Board B458  SUPER-RESOLVED MEASUREMENT OF PICONEWTON RECEPTOR FORCES VIA TENSION-PAINT. Joshua M. Brockman, Hanquan Su, Alexia L. Mattheyes, Yonggang Ke, Khalid Salaita

1391-Pos  Board B459  PHYSICAL DETERMINANTS OF PARTICLE UPTAKE AND TRANSPORT DURING PHAGOCYTOSIS. Steve Keller, Simon Wieland, Wolfgang Gross, Konrad Berghoff, David Gitschier, Manuel Eisentraut, Holger Kress

1392-Pos  Board B460  A SIDE-VIEW ON NUCLEAR MECHANICS: COMBINED ATOMIC FORCE MICROSCOPY AND LIGHT SHEET MICROSCOPY INFORM CHROMATIN’S ROLE IN REGULATING NUCLEAR MORPHOLOGY. Chad Hobson, Evan F. Nelsen, Joe Hsiao, Megan E. Kern, Andrew Stephens, E. Timothy O’Brien, Michael R. Falvo, Richard Superfine

Genetic Regulatory Systems (Boards B461 - B467)

1393-Pos  Board B461  AGE-DEPENDENT PROTEIN DEGRADATION MODULATES NOISE OF AUTO-REGULATED GENE EXPRESSION. Ji-Hyun Kim, Jaeyoung Sung

1394-Pos  Board B462  PROBABILITY LANDSCAPE OF COUPLED EPIGENETIC AND GENETIC NETWORK WITH EDDY-LIKE PROBABILITY CURRENTS. Bhattacharyya, Masaki Sasai

1395-Pos  Board B463  REPLICATION INITIATION CONTROL IN E. COLI. Dongyang Li, Sukjooon Jun

1396-Pos  Board B464  IN SITU SINGLE-MOLECULE DYNAMICS OF THE SOS-REPRESSOR LEXA DURING ANTIBIOTIC STRESS. Leonard Schärfen, Milos Tisma, Andreas Hartmann, Michael Schlierf

1397-Pos  Board B465  CHEMICAL DYNAMICS IN LIVING CELLS. Jaeyoung Sung

1398-Pos  Board B466  DYSREGULATED CILIARY, AUTOPHAGY AND CELL CYCLING PATHWAYS MANIFEST IN HEPATOBLASTOMA TUMORS REQUIRING LIVER TRANSPLANTATION - A SYSTEMS BIOLOGY ANALYSIS. Tejaswini Narayanan, Mylarappa Ningappa, Rakesh Sindhi, B. W Higgs, Shankar Subramaniam

1399-Pos  Board B467  THE EFFECT OF TIME-DEPENDENT DRIVE AND DELAYED FEEDBACK LOOP IN TWO-DIMENSIONAL GENE REGULATORY NETWORK. Bivash Kaity, Ratan Sarkar, Buddhapriya Chakrabarti, Mithun K. Mitra

Computational Neuroscience (Boards B468 - B475)

1400-Pos  Board B468  CORRELATING DENDRITIC SPINE GEOMETRY AND CALCIUM TRANSIENTS TO LEARNING AND INFORMATION PROCESSING. Christopher T. Lee, Justin G. Laughlin, Miriam Bell, Michael Holst, Padmini Rangamani

1401-Pos  Board B469  PHOSPHAGENS AS ENERGETIC MODERATORS AT CHEMICAL SYNAPSES: A COMPUTATIONAL APPROACH. Sergio Sempertegui, Youen Fily, Gregory T. Ma

1402-Pos  Board B470  COMPUTATIONAL MODELLING FRAMEWORK TO STUDY CA2+ ACTIVATION OF SYNAPSEC VESICLE FUSION BY DIFFERENT SYNAPTOTAGMIN ISOFORMS. Christopher A. Norman, Kirill E. Volynski, Skym S. Krishnakumar, Yulio Timofeeva

1403-Pos  Board B471  A COMPUTATIONAL MODEL OF PH DYNAMICS WITHIN THE CLEFT OF CONVENTIONAL NEURONAL SYNAPSES. Touhid Feghhi, Gregory T. Macleod, Roberto X. Hernandez, AWC Lau, Michal Stawarski, Jolanta A. Borycz, Zhiyuan Lu, Andrea Aragwal, Ian A. Meinertzhagen, Robert Renden
Neuroscience: Experimental Approaches and Tools (Boards B476 - B488)

Optical modulation of receptor tyrosine kinase signaling during cell differentiation and embryonic development. Savanna R. Sharum, Payel Mondal, Vishnu Krishnamurthy, Kritika Mehta, Huaxun Fan, Jing Yang, Kai Zhang

Travel awardee for MagnetoGenetics: Sharing the load. Guillaume Duret, Jacob T. Robinson

A mathematical model of cerebral cortical folding development. Ahmet Kilinc, Monica K. Hurdal

Transmembrane hemoprotein optical reporters (THORS) for membrane potential sensing. Martin J. Iwanicki, Brian Y. Chow, Christopher C. Moser, Bohdana M. Discher

A ratiometric calcium sensors using bright green and red fluorescent proteins for neural calcium imaging. Diming Zhang, Kimberly L. Lennox, Zhijing Zhu, Emily Redington, Yiyang Gong

Influence of mid-infrared laser irradiation on membrane potentials in neuron-like cells. Yoshiyuki Shimizu, Gen Takebe, Toyohiko Yamauchi, Tatsuo Dougakiuchi

Dense neuronal reconstruction through X-ray holographic nano-tomography. Aaron T. Kuan


Biomechanical stresses due to tissue micromotion at the neural interface modulate intracellular membrane potentials. Jonathan L. Duncan, Swathy Sampath Kumar, Diane Iradukunda, Arati Sridharan, Jitendra Muthuswamy

Live cell storm studies on the perineuronal net in cultured neurons. Dickinson L. Nall, Paul R. Selvin

External charges influence fluorescent protein proton wires. Bok Eum Kang, Leticia Leong, Bradley J. Baker

Effectiveness of the QUBE in studying the rapidly-desensitizing alpha7 nicotinic acetylcholine receptor. Sung H. Park

Electron Microscopy (Boards B489 - B512)

What to expect from cryo-EM at the NCCTR national service center. Edward T. Eng, Elina Kopylov, Clinton S. Potter, Bridget Carragher

NIH transformative high resolution cryo-EM and cryo-electron tomography initiatives. Malgorzata Klosek, Mary Ann Wu, Paula F. Flicker, Hounam Araj

Bottom-up structural proteomics: cryo-EM of protein complexes enriched from the cellular milieu. Chi-Min Ho, Xiaorun Li, Mason Lai, Thomas Terverliger, Josh Beck, James A. Wohlschlegel, Daniel E. Goldberg, Anthony W.P. Fitzpatrick, Hong Zhou

Automated cryo-EM structure refinement using correlation-driven molecular dynamics. Andrea C. Vaiana, Maxim Igaev, Lars V. Bock, Carsten Kutzner, Helmut Grubmueller

Damped dynamics as a validation platform for the flexible refinement of atomic models against cryo-EM maps. Willy R. Wriggers, Vitold E. Galkin, Wade A. Hunter, Julio A. Kovacs

Z-contrast enhancement for small protein cryo-EM structure determination. Adam Oken, Jaeick Lee, Sholto David, Qing Xie, Christopher Dennison, James Z. Chen

Automated segmentation and correction of missing-wedge artifacts in cryo-electron tomography maps by shape-constrained deconvolution. Wade A. Hunter, Julio A. Kovacs, Willy R. Wriggers

Semi-automated 3D segmentation of human skeletal muscle using focused ion beam-scanning electron microscopic images reveals network of mitochondria. Alexander V. Maltsev, Brian Caffrey, Marta Gonzalez-Freire, Lisa Hartnell, Srimam Subramaniam, Luigi Ferrucci
1457-Pos  BOARD B525
OBTAINING 3D ATOMIC STRUCUTURE OF SACCHARIDES FROM RAMAN/ROA/NMR SPECTROSCOPIC TECHNIQUES. Vladimir Palivec, Petr Bour, Pavel Junghwirth, Jakub Kaminsky, Hector Martinez-Seara

1458-Pos  BOARD B526
MECHANISTIC STUDIES OF THE CATALYTIC PROCESS OF MORPHINONE REDUCTASE. Xi Chen

1459-Pos  BOARD B527
BINDING OF MDM2 INHIBITORS VIA BIASED SAMPLING AND MULTI-ENSEMBLE MARKOV MODELS. Matthew F. Hurley, Vincent Voelz

1460-Pos  BOARD B528
MOLECULAR DYNAMICS INVESTIGATION OF THE PHYSICAL BINDING OF THE NKX DIAZONIUM ION TO TP53 EXON 5. David Wahl, Christos Deligkaris, Evan Millam

1461-Pos  BOARD B529
TRANSLOCATION OF ANTHRAX LETHAL FACTOR: PERSPECTIVES FROM ATOMIC MOLECULAR DYNAMICS SIMULATIONS. Piao Ma, Alfredo E. Cardenas, Mangesh Chaudhari, Ron Elber, Susan L. Rempe

1462-Pos  BOARD B530
SOLVATION THERMODYNAMIC PROPERTIES OF ANIONIC AND NATURAL SULFATE-FREE SURFACTANT MOLECULES. Manori Jayasinghe, Harshini Fernando

1463-Pos  BOARD B531
COMPUTATIONAL STUDIES OF THE ORANGE CAROTENOID PROTEIN (OCP) FAMILIES, COMBINING COMPARATIVE MODELING AND MOLECULAR DYNAMICS SIMULATION. Youngmoon Cho, Manhyuk Han, Yvette V. Villafani, Seung Joong Kim, Jiyoung Park, Younil Park

1464-Pos  BOARD B532
UNVEILING THE STRUCTURAL PROPERTIES OF HIV-1 VESICLE FROM COARSE-GRAIN MOLECULAR DYNAMICS SIMULATIONS. Fabio A. Gonzalez-Arias, Tyler J. Reddy, Juan R. Perilla

1465-Pos  BOARD B533
HOOGSTEEEN BASE PAIRING IN DNA VS RNA: THERMODYNAMICS AND KINETICS FROM ENHANCED SAMPLING SIMULATION AND MARKOV STATE MODELING. Dhiman Ray, Ioan Andricioaei

1466-Pos  BOARD B534
EVALUATING BINDING AFFINITIES OF DIMERIZATION OF BAR PROTEINS IN SOLUTION AND ON MEMBRANE SURFACE. Adip Jhaveri

1467-Pos  BOARD B535
TRAVEL AWARDEE
PROTON TRANSPORT THROUGH E. COLI C3 LC CHLORIDE/PROTON ANTIPORTER IN THE PRESENCE OF BOUND FLUORIDE. Baris O. Aydintug

1468-Pos  BOARD B536
LIPID PORE INSTABILITY IN BIPOLAR ELECTRICALLY STRESSED MEMBRANES. Federica Castellani, Esin B. Sozer, P. Thomas Vernier

1469-Pos  BOARD B537
MULTI-RESOLUTION MODEL OF THE EUKARYOTIC CYTOPLASM. Han-Yi Chou, David N. Winogradoff, Christopher M. Maffeo, Aleksei Aksimentiev

1470-Pos  BOARD B538
MULTI-RESOLUTION SIMULATIONS OF HIV GLYCAN SHIELD REVEAL MECHANISTIC ASPECTS OF IMMUNE EVASION. Srirupa Chakraborty, Cesar A. Lopez, Sandrasegaram Gnanakaran

Computational Methods and Bioinformatics I (Boards B539 - B568)

1471-Pos  BOARD B539
INVESTIGATING THE CHANGES IN AMINO ACID PROPERTIES IN THE EVOLUTIONARY AND MULTI-SCALE CONTEXT. Daniel Kool

1472-Pos  BOARD B540
GENOME DASHBOARDS: A FRAMEWORK FOR UNIFYING INFORMATICS AND STRUCTURE. Zilong Li, Thomas C. Bishop

1473-Pos  BOARD B541
SENSITIVITY OF DNA DAMAGE TO VARIANCE OF SIMULATION PARAMETERS IN MICROSCOPIC MONTE CARLO SIMULATION. Yujie Chi, Youfang Lai, Congchong Yan, Min-yu Tsai, Xun Jia

1474-Pos  BOARD B542
CONVOLUTIONAL NEURAL NETWORKS BRIDGE MOLECULAR MODELS AND SOLUTION X-RAY SCATTERING EXPERIMENTS. Yen-Lin Chen, Lois Pollack

1475-Pos  BOARD B543
STRUCTURAL INTERPRETATION OF HYDROGEN-DEUTERIUM EXCHANGE WITH MAXIMUM-ENTROPY SIMULATION REWEIGHTING. Fabrizio Marinelli, Richard Bradshaw, José D. Faraldo-Gómez, Lucy R. Forrest

1476-Pos  BOARD B544
FRET-BASED INTEGRATIVE STRUCTURAL MODELS AND THEIR DATABASE DEPOSITION. Christian A. Hanke, Hayk Vardanyan, Claus A. Seidel

1477-Pos  BOARD B545
MULTI-SCALE IMPLEMENTATION OF 3D-RISM TO THE ELECTRONIC STRUCTURE THEORY BEING APPLICABLE FOR SOLVATED BIOMOLECULES. Norio Yoshida

1478-Pos  BOARD B546
A DIFFUSION BASED EMBEDDING OF THE STOCHASTIC SIMULATION ALGORITHM IN CONTINUOUS SPACE. Marcus Thomas, Russell S. Schwartz

1479-Pos  BOARD B547
THEORETICAL INVESTIGATIONS OF SELECTED MUTATIONS AND EXPLORING THE CATALYTIC SPACE OF ADENYLOSUCCINATE LYASE - A POTENTIAL TARGET FOR L DONOVANI. Nikita Bora

1480-Pos  BOARD B548
TARGETING COVALENT COMPLEX OF HUMAN TOPOISOMERASE I WITH DNA. Purushottam Tiwari, Yuk-Ching Tse-Dinh, Aykut Üren

1481-Pos  BOARD B549
IDENTIFYING TIME-RESOLVED ALLOSTERIC SIGNALING PATHWAYS IN PROTEINS USING SUPERVISED MACHINE LEARNING. NaLi Duro, Sameer Varma

1482-Pos  BOARD B550
PROTEIN TRANSITION PATHWAY GENERATION GUIDED BY INTERNAL COORDINATE NORMAL MODES. Byung Ho Lee, Soon Woo Park, Hyunki Kim, Moon Ki Kim

1483-Pos  BOARD B551
LEARNING DYNAMICAL INFORMATION FROM STATIC PROTEIN AND SEQUENCING DATA. Philip Pearce, Francis G. Woodhouse, Aden Forrow, Halim Kusumaatmaja, Jorn Dunkel

1484-Pos  BOARD B552
DETECTING FUNCTIONAL DYNAMICS IN PROTEINS WITH COMPARATIVE PERTURBED-ENSEMBLES ANALYSIS. Xin-Qiu Yao, Donald Hamelberg

1485-Pos  BOARD B553
STATISTICAL ANALYSIS OF PROTEIN DYNAMICS USING THE KOSMOS DATABASE. Hyunki Kim, Soon Woo Park, Byung Ho Lee, Moon Ki Kim
Biosensors I
(Boards B604 - B618)
NANOPIN - A MEMS BASED SENSOR FOR THE ANALYSIS OF SINGLE-CELL MECHANICAL PROPERTIES. Stanislav Karsten, Lili Kudo, Zhongcai Ma, Momoko Kumemura

DEVELOPMENT OF A SMELL BIOSENSOR SYSTEM FOR EARLY DETECTION OF PLANT DISEASES. Timea Dóra Miskolczi, Katalin Zboray, Anikó Keszöce, Zainab Quddoos, Zsuzsanna Ambrózy, Kamirán Áron Hamow, Adam Toth, László Sági, Magdolna Oliva Szelényi, Dalma Radványi, Mátéyás Csaba Földi, Béla Péter Molnár, Krisztina Pesti, Arpad Mike, Péter Lukács

CHARACTERIZATION AND ANALYSIS OF LEUKOTOXIN-CONTAINING OUTER MEMBRANE VESICLES. Megan E. Blauch, Justin B. Nice, Angela C. Brown, Nathan J. Wittenberg

DETECTION OF SPHINGOMYELINASE ENZYME BY METHYLENE BLUE ENCAPSULATED LIPOSOME APPLYING ELECTROCHEMICAL AMPLIFIED PROCESS. Ankan Dutta Chowdhury, Enoch Y. Park

FLUOROMETRIC SENSING PLATFORM BASED ON LOCALIZED SURFACE PLASMON RESONANCE USING QUANTUM DOTS-GOLD NANOCOMPOSITES OPTIMIZING THE LINKER LENGTH VARIATION. Fahmida Nasrin, Ankan Dutta Chowdhury, Kenshin Takemura, Enoch Y Park

WIDE DYNAMIC RANGE DETECTION OF TARGET DNA BY SINGLE PARTICLE MICROSCOPY OF DNA-GOLD NANOCLUSTER MULTIMERS. Keiko Esashika, Takaha Mizuguchi, Yoshiharu Saiki

THE OPENPICOAMP-100K, AN OPEN-SOURCE HIGH PERFORMANCE AMPLIFIER FOR SINGLE CHANNEL RECORDING IN PLANAR LIPID BILAYERS. Vadim Shlyonsky, David Gall

RESISTIVE PULSE SENSORS FOR BIOSENSORS. Marcus Pollard, Federico Thei, Mark Platt

1024-CH ELECTROCHEMICAL RECORDINGS OF SINGLE-CELL NEUROTRANSMITTER SECRETION FROM HUMAN NEUROBLASTOMA CELLS USING MONOLITHIC CMOS BIOELECTRONICS. Kevin A. White, Geoffrey Mulberry, Brian N. Kim

USING ELECTRIC CELL-SUBSTRATE IMPEDANCE SENSING TO CHARACTERIZE EFFECTS OF CURCUMIN ON NRK CELLS. Erin M. Troy, Derek L. Beahm

SCIENTIFIC SOCIETIES JOIN FORCES TO AMPLIFY EFFECTIVENESS OF STEM WORKFORCE DIVERSIFICATION PROGRAMMING. Marina Ramirez-Alvarado, Veronica Segarra

TEACHING BIOPHYSICS TO BLIND OR LOW VISION (BLV) STUDENTS AT MIDDLE SCHOOL. Yuly E. Sánchez, Angie V. Rodriguez, Edgar A. Reyes

HELPING UNDERGRADUATE STUDENTS TO UNDERSTAND THE CONNECTION BETWEEN PHYSICS AND BIOLOGY. Christopher Bassey

INTEGRATING COMPUTATION AND WET LAB METHODS IN A BIOCHEMISTRY LAB COURSE-BASED UNDERGRADUATE RESEARCH EXPERIENCE (CURE). Julia R. Koeppen, Ashley Ringer McDonald, Rebecca Roberts, Paul A. Craig

MULTIMEDIA JUPYTER NOTEBOOKS FOR LEARNING STRUCTURE PREDICTION AND DESIGN. Kathy H. Le, Sergey Lyskov, Jeffrey J. Gray

INVESTIGATION OF SEA URCHIN SPERM MOTILITY: AN UNDERGRADUATE PROJECT. Jesús González, Ana G. Villalba-Villalba, Amir Maldonado

RESEARCH PROJECT FOR UNDERGRADUATE LEVEL STUDENTS: TOXIC METALS BIOSORPTION POTENTIAL OF ASPERGILLUS SPP. Brenda Leyva-Amaya

INCREASING BIOCHEMISTRY SELF-EFFICACY IN FRESHMEN STUDENTS THROUGH HANDS-ON EXPERIENCE. Clarisse L. van der Feltz, Mario Pernella, Lynne Prost
## Tuesday, February 18, 2020

**Daily Program Summary**

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

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<tr>
<td>8:00 AM–9:00 AM</td>
<td>Biophysical Society Business Meeting</td>
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<td>8:00 AM–4:00 PM</td>
<td>Poster Viewing</td>
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<td>8:15 AM–10:15 AM</td>
<td><strong>Symposium: ATP-driven Maintenance of Protein Homeostasis</strong></td>
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<td><em>Chair: Aaron Lucius, University of Alabama at Birmingham</em></td>
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<td><strong>REVISITING THE ATP-DRIVEN CHAPERONIN GROEL-GROES REACTION CYCLE. Hideki Taguchi</strong></td>
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<td><strong>COTRANSLATIONAL FOLDING OF PROTEIN DOMAINS ON THE RIBOSOME. Marina Rodnina</strong></td>
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<td><strong>PROTEOSTASIS AND VIRAL EVOLUTION. Matthew D. Shoulders</strong></td>
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<td>*<em>MOLECULAR MECHANISMS OF ENZYME CATALYZED PROTEIN UNFOLDING AND TRANSLOCATION BY CLASS 1 AAA</em></td>
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<td><strong>MOTOR. Aaron L. Lucius</strong></td>
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<tr>
<td>8:15 AM–10:15 AM</td>
<td><strong>Symposium: Synthetic Biology</strong></td>
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<td><em>Chair: Yvonne Chen, University of California, Los Angeles</em></td>
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<td><strong>ENGINEERING DNA NANODEVICES TO ADVANCE BIOMOLECULAR ANALYSIS. Peng Yin</strong></td>
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<td><strong>MULTIPLEXABLE MOLECULAR CIRCUIT REPORTERS DESIGNED FOR NANOPORE SENSOR READOUT. Jeff Nivala</strong></td>
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<td><strong>PROTEIN FOLDING ON THE RIBOSOME - INSIGHTS FROM GENE EDITING AND STRUCTURAL BIOLOGY. John</strong></td>
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<td><strong>ENGINEERING NEXT-GENERATION T CELLS FOR CANCER IMMUNOTHERAPY. Yvonne Y. Chen</strong></td>
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<td>8:15 AM–10:15 AM</td>
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<td><strong>Looking Beyond Academia: Identifying your Career options using MyIDP, LinkedIn &amp; More</strong></td>
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<td>9:30 AM–11:00 AM</td>
<td><strong>Exhibitor Presentation: Sophion Bioscience A/S</strong></td>
<td>Room 33A</td>
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<td></td>
<td><strong>Characterization of the Rapidly Desensitizing α7 Nicotinic Acetylcholine Receptor on the Qube,</strong></td>
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<td><strong>NaV1.1 Assays on Automated Electrophysiology Platforms and Developing NMDA Assays on the Qube System</strong></td>
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<tr>
<td>10:00 AM–4:00 PM</td>
<td>Exhibits</td>
<td>Exhibit Hall</td>
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<tr>
<td>10:15 AM–11:00 AM</td>
<td><strong>Coffee Break</strong></td>
<td>Exhibit Hall</td>
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<tr>
<td>10:45 AM–12:45 PM</td>
<td><strong>Symposium: Awards</strong></td>
<td>Ballroom 20A</td>
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<td><em>Chair: David Piston, Washington University in St. Louis and BPS President</em>*</td>
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<td><strong>PAPER OF THE YEAR. Carlos R. Baiz</strong></td>
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<td><strong>IGNACIO TINOCO AWARD. Elliot L. Elson</strong></td>
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<td><strong>FOUNDERS AWARD. Don M. Herschlag</strong></td>
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<td><strong>MARGARET OAKLEY DAYHOFF AWARD. Valeria Vásquez</strong></td>
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<td><strong>MICHAEL AND KATE BÁRÁNY AWARD. Clifford P. Brangwynne</strong></td>
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<td><strong>AVANTI AWARD IN LIPIDS. Akihiro Kusumi</strong></td>
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<td><strong>BIOPHYSICS IN HEALTH AND DISEASE. Alexandra C. Newton</strong></td>
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<td><strong>KAZUHIKO KINOSITA AWARD IN SINGLE MOLECULE BIOPHYSICS. Yale E. Goldman</strong></td>
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<td><strong>INNOVATION AWARD. G. Marius Clore</strong></td>
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<td><strong>ANATRACE MEMBRANE PROTEIN AWARD. Gunnar von Heijne</strong></td>
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<td>10:45 AM–12:45 PM</td>
<td>Platform: Optical Microscopy and Superresolution Imaging III</td>
<td>Ballroom 20BC</td>
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<tr>
<td>10:45 AM–12:45 PM</td>
<td>Platform: Voltage Sensor to Pore Coupling</td>
<td>Room 23ABC</td>
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<td>10:45 AM–12:45 PM</td>
<td>Platform: DNA/RNA Structure and Dynamics</td>
<td>Room 24ABC</td>
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<tr>
<td>10:45 AM–12:45 PM</td>
<td>Platform: Protein Structure and Conformation III</td>
<td>Room 25ABC</td>
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<tr>
<td>10:45 AM–12:45 PM</td>
<td>Platform: Protein Stability, Folding, and Chaperones</td>
<td>Room 30ABC</td>
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<td>10:45 AM–12:45 PM</td>
<td>Platform: Computational Methods and Bioinformatics</td>
<td>Room 31ABC</td>
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<tr>
<td>11:30 AM–12:30 PM</td>
<td>Career Development Center Workshop: Negotiation for Nerds: Negotiation Strategies and Tactics and Evaluating a Job Offer</td>
<td>Room 26A</td>
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<td>12:00 PM–1:30 PM</td>
<td>Funding Opportunities for Faculty at Primarily Undergraduate Institutions</td>
<td>Room 29AB</td>
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<tr>
<td>12:00 PM–1:30 PM</td>
<td>Postdoc to Faculty Q&amp;A: Transitions Forum and Luncheon</td>
<td>Room 32AB</td>
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<tr>
<td>1:00 PM–3:00 PM</td>
<td>The Biophysicist Editorial Board Meeting</td>
<td>Room 30D</td>
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<tr>
<td>1:15 PM–2:45 PM</td>
<td>Climate Change We Want to See: Mitigating Unconscious Bias in the Biophysical Professions</td>
<td>Room 28AB</td>
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<td>1:30 PM–3:00 PM</td>
<td>The Nuts and Bolts of Preparing Your NIH Grant</td>
<td>Room 28CDE</td>
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<tr>
<td>1:30 PM–3:00 PM</td>
<td>Exhibitor Presentation: HORIBA Scientific A New Imaging Camera Technology Featuring TDC In-Pixel Architecture for Simple Dynamic FLIM Imaging at Video Rates</td>
<td>Room 33A</td>
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<tr>
<td>1:45 PM–3:00 PM</td>
<td>Snack Break</td>
<td>Exhibit Hall</td>
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<tr>
<td>1:45 PM–3:45 PM</td>
<td>Poster Presentations and Late Posters</td>
<td>Exhibit Hall</td>
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<tr>
<td>2:30 PM–3:30 PM</td>
<td>Career Development Center Workshop: Going Live: Preparing for Interviews in Industry and Academia</td>
<td>Room 26A</td>
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<tr>
<td>3:00 PM–5:00 PM</td>
<td>Education Committee Meeting</td>
<td>Room 30D</td>
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<tr>
<td>4:00 PM–6:00 PM</td>
<td>Symposium: Neuron–glia Interactions</td>
<td>Ballroom 20A</td>
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<td>4:00 PM–6:00 PM</td>
<td>Symposium: Exocytosis &amp; Autophagy</td>
<td>Ballroom 20D</td>
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<td>4:00 PM–6:00 PM</td>
<td>Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II</td>
<td>Ballroom 20BC</td>
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<td>4:00 PM–6:00 PM</td>
<td>Platform: Membrane Active Peptides and Toxins</td>
<td>Room 23ABC</td>
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<tr>
<td>4:00 PM–6:00 PM</td>
<td>Platform: Cardiac, Smooth, and Skeletal Muscle Electrophysiology and Regulation I</td>
<td>Room 24ABC</td>
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<tr>
<td>4:00 PM–6:00 PM</td>
<td>Platform: Genetic, Cellular, Synthetic, and Systems Biology</td>
<td>Room 25ABC</td>
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<td>4:00 PM–6:00 PM</td>
<td>Platform: Micro- and Nanotechnology</td>
<td>Room 30ABC</td>
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<tr>
<td>4:00 PM–6:00 PM</td>
<td>Platform: Cytoskeletal Assemblies, Dynamics, Transport, and Motility</td>
<td>Room 31ABC</td>
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<td>6:00 PM–6:30 PM</td>
<td>Dinner Meet-Ups</td>
<td>Society Booth/Lobby G</td>
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<td>6:00 PM–10:00 PM</td>
<td>Publications Committee Meeting</td>
<td>Hilton, Cobalt 500AB</td>
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<tr>
<td>Time</td>
<td>Workshop</td>
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<td>7:30 PM–9:30 PM</td>
<td><strong>Workshop: Design and Constructing Quantitative Biosensors</strong>&lt;br&gt;Chair: Edward Lemke, IMB Mainz, Germany</td>
<td>24ABC</td>
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<td>FOLDING-BASED ELECTROCHEMICAL BIOSENSORS: A GENERALIZABLE APPROACH TO REAL-TIME, IN-VIVO MOLECULAR MEASUREMENTS. Kevin W. Plaxco&lt;br&gt;TMP-TAG: A CHEMICAL SURROGATE TO THE FLUORESCENT PROTEINS FOR LIVE CELL IMAGING. Virginia W. Cornish&lt;br&gt;NEW FLUORESCENT AND BIOLUMINESCENT PROBES AND SENSORS. Kai Johnsson&lt;br&gt;HIGH PERFORMANCE GENETICALLY ENCODED BIOSENSORS OF CELL METABOLISM. Robert E. Campbell&lt;br&gt;VERSATILE SENSOR DESIGN IN CELLULO BY COMBINING MEMBRANELESS ORGANELLES WITH CLICK CHEMISTRY. Edward A. Lemke</td>
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<td>7:30 PM–9:30 PM</td>
<td><strong>Workshop: Chemical Biology Tools for Biophysics</strong>&lt;br&gt;Chair: Henry Colecraft, Columbia University</td>
<td>25ABC</td>
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<td>ADJUSTING MAIN-CHAIN CHEMISTRY IN ION CHANNEL VOLTAGE-SENSORS. Christopher A. Ahern&lt;br&gt;INSERTION OF SYNTHETIC PEPTIDES INTO PROTEINS BY TANDEM PROTEIN TRANS-SPlicing. Stephan A. Pless&lt;br&gt;GENETICALLY-ENCODED TAGS FOR CORRELATIVE FLUORESCENCE AND ELECTRON MICROSCOPY. Kimberly Beatty&lt;br&gt;CONTROLLING THE FATE AND FUNCTION OF PROTEINS WITH PHOTOPHARMACOLOGY. Dirk Trauner&lt;br&gt;TARGETED (DE)UBIQUITINATION OF ION CHANNELS: FROM MECHANISTIC INSIGHTS TO TRANSLATION. Henry Colecraft</td>
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<tr>
<td>7:30 PM–9:30 PM</td>
<td><strong>Workshop: Simulation Strategies for Large Scales</strong>&lt;br&gt;Chair: Tobin Sosnick, University of Chicago</td>
<td>30ABC</td>
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<td>WEIGHTED ENSEMBLE SIMULATION: TACKLING THE CHALLENGES OF LONG-TIMESCALE KINETICS. Lillian Chong&lt;br&gt;ON THE ALGORITHMIC IDENTIFICATION OF OPTIMAL COARSE-GRAINED REPRESENTATIONS OF BIOMOLECULES. Raffaello Potestio&lt;br.GOING BIG: MILLION ATOM SIMULATIONS OF RIBOSOMES AND BILLION ATOM SIMULATIONS OF CHROMATIN. Karissa Y. Sanbonmatsu&lt;br.CHALLENGES TO THE CREATION OF DYNAMIC STRUCTURAL MODELS OF INTRACELLULAR SYSTEMS. Adrian H. Elcock&lt;br.UPSIDE: PROTEIN FOLDING IN CPU-HOURS WITH APPLICATIONS TO FORCE-UNFOLDING OF MEMBRANE PROTEINS. Tobin R. Sosnick</td>
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<td>7:30 PM–9:30 PM</td>
<td><strong>Workshop: Fluorescence Correlation Spectroscopy</strong>&lt;br&gt;Chair: Elizabeth Hinde, University of Melbourne, Australia</td>
<td>31ABC</td>
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<td>MEASURING BARRIERS TO DIFFUSION IN LIVE CELLS. Enrico Gratton&lt;br&gt;MINING MOLECULAR NOISE VIA IMAGE CORRELATION SPECTROSCOPY TO MAP MOLECULAR TRANSPORT AND INTERACTIONS IN LIVING CELLS. Paul W. Wiseman&lt;br&gt;APPLICATION OF SPOT VARIATION FCS (SVFCS) ANALYSIS TO T CELL MEMBRANE DYNAMICS. Didier Marguet&lt;br&gt;PITCHING SINGLE FOCUS CONFOCAL SPECTROSCOPY TO MAP LIGHT AT A TIME WITH BAYESIAN NONPARAMETRICS. Steve Presse&lt;br&gt;MAPPING THE DIFFUSIVE ROUTE OF OLIGOMERIC TRANSCRIPTION FACTORS DURING DNA TARGET SEARCH. Elizabeth Hinde</td>
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<td>8:00 PM–10:00 PM</td>
<td>SOBLA (The Society for Latinoamerican Biophysicists) Meeting</td>
<td>29C</td>
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Tuesday, February 18

**Biophysical Society Business Meeting**
8:00 AM - 9:00 AM, ROOM 28AB

**Poster Viewing**
8:00 AM - 4:00 PM, EXHIBIT HALL

**Symposium**
**ATP-driven Maintenance of Protein Homeostasis**
8:15 AM - 10:15 AM, BALLROOM 20A

Chair
Aaron Lucius, University of Alabama at Birmingham

**No Abstract**
8:15 AM
REVISITING THE ATP-DRIVEN CHAPERONIN GROEL-GROES REACTION CYCLE. Hideki Taguchi

1559-SYMP 8:45 AM
COTRANSLATIONAL FOLDING OF PROTEIN DOMAINS ON THE RIBOSOME. Marina Rodnina, Marija Liutkute, Meline Macher, Evan Mercier, Manisan kar Maiti, Ekaterina Samatova, Wolfgang Wintermeyer

1560-SYMP 9:15 AM
PROTEOSTASIS AND VIRAL EVOLUTION. Matthew D. Shoulders

1561-SYMP 9:45 AM
MOLECULAR MECHANISMS OF ENZYME CATALYZED PROTEIN UNFOLDING AND TRANSLOCATION BY CLASS 1 AAA+ MOTOR. Aaron L. Lucius

**Symposium**
**Synthetic Biology**
8:15 AM - 10:15 AM, BALLROOM 20D

Chair
Yvonne Chen, University of California, Los Angeles

1562-SYMP 8:15 AM
ENGINEERING DNA NANODEVICES TO ADVANCE BIOMOLECULAR ANALYSIS. Peng Yin

1563-SYMP 8:45 AM
MULTIPLEXABLE MOLECULAR CIRCUIT REPORTERS DESIGNED FOR NANOPORE SENSOR READOUT. Jeff Nivala

No Abstract
9:15 AM
PROTEIN FOLDING ON THE RIBOSOME - INSIGHTS FROM GENE EDITING AND STRUCTURAL BIOLOGY. John Christodoulou

1564-SYMP 9:45 AM
ENGINEERING NEXT-GENERATION T CELLS FOR CANCER IMMUNOTHERAPY. Yvonne Y. Chen

**Platform**
**Protein Dynamics and Allostery II**
8:15 AM - 10:15 AM, BALLROOM 20BC

Co-Chairs
Galía Debelouchina, University of California, San Diego
Naomi Latorraca, University of California, Berkeley

1565-PLAT 8:15 AM
DETERMINING HOW GPCR PHOSPHORYLATION PATTERNS AFFECT ARRESTIN-MEDIATED SIGNALING. Naomi R. Latorraca, Ron O. Dror

1566-PLAT 8:30 AM
SIMULATION OF SPONTANEOUS G PROTEIN ACTIVATION REVEALS A NEW INTERMEDIATE DRIVING GDP UNBINDING. Sukrit Singh, Xianqiang Sun, Kendall J. Blumer, Gregory Bowman

1567-PLAT 8:45 AM
UNCOVERING THE DYNAMICAL LANDSCAPE OF PSI DNA BINDING DOMAIN WITH MARKOV STATE MODELS. Emilia Pecora de Barros, Ozlem Demir, Rommie E. Amaro

1568-PLAT 9:00 AM
A MOLECULAR VIEW OF THE LIQUID TO GEL PHASE TRANSITION OF HETEROCHROMATIN PROTEIN HP1. Bryce Ackermann, Galía T. Debelouchina

1569-PLAT 9:15 AM
DEEP DOMAIN INSERTION PROFILING IS A WINDOW INTO INWARD RECTIFIER K+ CHANNEL DYNAMICS AND GATING. Willow Coyote-Maestas, Antonio Suma, David Nedrud, Vincenzo Carnevale, Daniel Schmidt

1570-PLAT 9:30 AM
THE INTERNAL ALLOSTERIC ARCHITECTURE OF DIHYDROFOLATE REDUCTASE. James W. McCormick, Samuel Thompson, Kimberly A. Reynolds

1571-PLAT 9:45 AM
A METHOD FOR THE INCORPORATION OF PROTEIN DYNAMICS INTO COMPUTATIONAL ENZYME DESIGN USING THE ROSETTA SOFTWARE SUITE. Bethany K. Kartchner, Ismail C. Kazan, S. Banu Ozkan, Jeremy H. Mills

1572-PLAT 10:00 AM
COMBINING BIOPHYSICAL EXPERIMENTS AND BIOMOLECULAR SIMULATIONS. Kresten Lindorff-Larsen

**Platform**
**Membrane Physical Chemistry**
8:15 AM - 10:15 AM, ROOM 23ABC

Co-Chairs
Arne Gericke, Worcester Polytechnic Institute
Chad Leidy, Universidad de los Andes, Colombian

1573-PLAT 8:15 AM
OIL-IN-WATER EMULSION DROPLETS AND MICROFLUIDIC TOOLS TO STUDY B CELLS POLARIZATION AND MECHANICS OF IMMUNOLOGICAL SYNAPSE. Léa Pinon, Judith Pineau, Lorraine Montel, Olivier Mesdjian, Paolo Pierobon, Jacques Fattaccioi

1574-PLAT 8:30 AM
CAROTENOID CONTENT AND COMPOSITION IN EXPONENTIAL, STATIONARY AND BIOFILM STATES OF STAPHYLOCOCCUS AUREUS AND THEIR INFLUENCE ON MEMBRANE BIOPHYSICAL PROPERTIES. Chad Leidy, Maria I. Perez, Rudy M. Méndez Reina, Steven Trier, Cornelia Herrfurth, Gerson-Dirceu Lopez, Chiara Carazzone, Ivo Feussner, Adriana Bernal, Manu Forero-Shelton, Elizabeth Suesca

Biophysical Society
1575-PLAT 8:45 AM MEMBRANE SOLUBILIZATION BY DISOBUTYLENE-MALEIC ACID (DIBMA) COPOLYMERS AND CHARACTERIZATION OF THE RESULTING NATIVE NANODISCS. Adrián H. Kopf, Barend O.W. Elenbaas, Martijn C. Koorengengevel, Cornelis A. van Walree, J. Antoinette Killian

1576-PLAT 9:00 AM TRANSIENT ELECTRODEFORMATION OF GIANT UNILAMELLAR VESICLES (GUVS) TO PROBE MEMBRANE VISCOSITY. Hammad A. Faizi, Rumiana Dimova, Petia M. Vlahovska

1577-PLAT 9:15 AM CURVED LIPID INTERFACES STUDIED WITH GRAZING INCIDENT SANS. Karolina Mothander, Tommy Nylander, Adrian Rennie

1578-PLAT 9:30 AM THE STRUCTURAL ORIGIN OF CHOLESTEROL INDUCED PHOSPHOINOSITIDE CLUSTERING. Kyungreem Han, Anne-Marie Bryant, Richard W. Pastor, Arne Gericke


1580-PLAT 10:00 AM USING AFM-NANO IR SPECTROSCOPY AND SUM-FREQUENCY GENERATION (SFG) VIBRATIONAL SPECTROSCOPY TO INVESTIGATE SICKLE CELL DISEASE. Alexander P. Fellows, Mike T.L. Casford, John N. Brewin, David C. Rees, Paul B. Davies, John S. Gibson

Platform: Protein-Small Molecule Interactions
8:15 AM - 10:15 AM, Room 24ABC

Co-Chairs
Karan Kapoor, University of Illinois at Urbana-Champaign
Matthias Preller, Medizinische Hochschule Hannover, Germany

1581-PLAT 8:15 AM MULTISTAGE INHIBITION OF THE MYOSIN XIV-BASED INVASION MOTOR IN THE MALARIA PARASITE AND RELATED PATHOGENS. Matthias Preller, Janna Ehlert

1582-PLAT 8:30 AM COMPUTING POSES OF LIGANDS BOUND TO PROTEINS USING MELD ACCELERATED MOLECULAR DYNAMICS. Cong Liu, Emiliano Brini, Alberto Perez, Ken A. Dill

1583-PLAT 8:45 AM CHARACTERIZING EVOLUTION OF BINDING SITES IN P-GLYCOPROTEIN THROUGH EXTENDED-ENSEMBLE DOCKING. Karan Kapoor, Sundarapandian Thangapandian, Emad Tahjhorshid

1584-PLAT 9:00 AM EXPLORING THE BINDING POTENCY AND SPECIFICITY OF SMALL MOLECULES AGAINST THE TRANSMEMBRANE AMYLOID PRECURSOR PROTEIN FRAGMENT, C99. Manuel Castro

1585-PLAT 9:15 AM TRAVEL Awardee STRUCTURAL BASIS OF NON-STEROIDAL ANTI-INFLAMMATORY DRUG (NSAID) TRANSPORT BY SERUM ALBUMIN. Mateusz P. Czub, Katarzyna B. Handing, Barat S. Venkataramany, Ivan G. Shabalin, Wladek Minor

1586-PLAT 9:30 AM USING REVERSE MICELLES TO EXTEND THE DETECTION LIMIT OF WEAK LIGAND-PROTEIN INTERACTIONS. Brian Fuglestad, Nicole E. Kerstetter, Sabrina Bedard, A. Joshua Wand

1587-PLAT 9:45 AM FLUORESCENCE-BASED BIOSENSOR TO QUANTIFY SMALL MOLECULE BINDING KINETICS WITH TARGET SPATIAL RESOLUTION. Joanna Deek, Thomas Weber, Ulrich Rant

1588-PLAT 10:00 AM STRUCTURALLY-DIVERSE NON-COVALENT ALLOSTERIC KRAS INHIBITORS. Cynthia Pagba, Amit K. Gupta, Michael McCarthy, Yong Zhou, Alemayehu A. Gorfe

Platform: Ion Channels, Pharmacology, and Disease
8:15 AM - 10:15 AM, Room 25ABC

Co-Chairs
Mercedes Alfonso-Prieto, University of Barcelona, Spain
Paul DeCaen, Northwestern University

1589-PLAT 8:15 AM MOLECULAR REGULATION OF POLYCYSTIN TRP CHANNELS. Thuy Vien, Jinhliang Wang, Leo C. Ng, Erhu Cao, Paul G. DeCaen

1590-PLAT 8:30 AM MODULATION OF GIRK CHANNEL BY PROTEIN KINASE C AND ITS ROLE IN ATRIAL FIBRILLATION. Kirin Gada, Aishwarya Chandrashekar, Yu Xu, Takeharu Kawano, Leigh D. Plant, Diomedes E. Logothetis

1591-PLAT 8:45 AM TRAVEL Awardee MOLECULAR MECHANISM OF MODULATION OF THE TMEM16A CHANNEL BY ANTHRACENE-9-CARBOXYLIC ACID: IMPLICATIONS FOR CHANNEL GATING. Ria Dinsdale, Angela Russell, Phillip J. Stansfeld, Paolo Tammaro

1592-PLAT 9:00 AM AN ALL-OPTICAL ELECTROPHYSIOLOGY SCREENING PLATFORM TO IDENTIFY NAV CHANNEL MODULATORS AS PAIN THERAPEUTICS. Hongkang Zhang, Kit Werley, Pin Liu, Gabriel Borja, Steven Nagle, Graham Dempsey, Owen McManus

1593-PLAT 9:15 AM DEMONSTRATION OF A PREDICTIVE MULTISCALE MODEL FOR DRUG-INDUCED ARRHYTHMOGENIC RISK. Kevin R. DeMarco, Pei-Chi Yang, Parya Aghasafari, John R.D. Dawson, Slava Bekker, Sergey Y. Noskov, Vladimir Yarov-Yarovoy, Igor Vorobyov, Colleen E. Clancy


1595-PLAT 9:45 AM FLUORESCENCE MICROSCOPE TOOLS TO STUDY THE HETEROMERIC ASSEMBLY OF AN ION CHANNEL. Gerardo Abbandonato, Alessandro Porro, Lorenzo Brocca, Anna Moroni

1596-PLAT 10:00 AM TARGETED DEUBIQUITINATION AS A GENERAL STRATEGY TO RESCUE TRAFFICKING-DEFICIENT ION CHANNELOPTHES. Scott A. Kanner, Zunaira Shuja, Papiya Choudhury, Ananya Jain, Henry M. Colecraft
Platform
Cardiac Muscle Regulation
8:15 AM - 10:15 AM, ROOM 30ABC

Co-Chairs
Osha Roopnarine, University of Minnesota Medical School
Danuta Szczesna-Cordary, University of Miami

1597-PLAT  8:15 AM
ACTIN-BINDING COMPOUNDS THAT AFFECT THE ATP-INDUCED DISSOCIATION OF THE ACTIN-MYOSIN COMPLEX. Osha Roopnarine, David D. Thomas

1598-PLAT  8:30 AM
A MOLECULAR DYNAMICS STUDY OF SMALL MOLECULES BOUND TO A FULL ATOMISTIC MODEL OF CARDIAC THIN FILAMENT AS A METHOD TO IDENTIFY POSSIBLE TREATMENTS FOR GENETIC CARDIOMYOPATHIES. Elango Munusamy, Steven D. Schwartz, Jill C. Tardiff

1599-PLAT  8:45 AM
FLEXIBLE SUBSTRATE IS KEY TO APPROPRIATE CONTRACTILE BEHAVIOUR OF HIPSC DERIVED CARDIOMYOCYTES. Eline Huetherost, Francis L. Burton, Nikolaj Gadegaard, Godfrey L. Smith

1600-PLAT  9:00 AM
TWO SMALL MOLECULE INHIBITORS OF MYOSIN DECREASE FORCE AND INCREASE RATES OF RELAXATION IN DEMEMBRANATED RAT LEFT VENTRICULAR TISSUE. Kristina B. Kooiker, Qing-Fen Gan, Ming Yu, Yuanna Cheng, Na Sa, Min Zhong, Tim McMillen, Farid Moussaiv-Harami, Michael Regnier

1601-PLAT  9:15 AM
TRAVERSE AWARDEE
MOLECULAR MECHANISMS AND THERAPEUTIC APPROACHES OF MYOFILAMENT GLYCATION AS A RESULT OF DIABETES. Maria Papadaki, Theerachat Kampaengsri, Raiza Bonomo, Chelsea White, Virginie Aubert, Greg Aubert, Stuart Campbell, Jonathan A. Kirk

1602-PLAT  9:30 AM
TRAVERSE AWARDEE
STOPPED-FLOW CALCIUM KINETICS OF HYPERTROPHIC CARDIOMYOPATHY-ASSOCIATED TROPONIN T MUTATIONS. Matthew M. Klass, Grace Hefferon, Garrett Hauck, Sarah Lehman, Jonathan P. Davis, Jill C. Tardiff

1603-PLAT  9:45 AM
DISTINCT MUTATION-SPECIFIC EFFECTS ON THIN FILAMENT ACTIVATION LEAD TO DILATED CARDIOMYOPATHY PHENOTYPE IN CELLS. Samantha K. Barrick, Lina Greenberg, Michael J. Greenberg

1604-PLAT  10:00 AM
TRAVERSE AWARDEE
DELETION OF THE N-TERMINUS OF MYOSIN ESSENTIAL LIGHT CHAIN (N-ELC) IN THE BACKGROUND OF HCM-A57G MUTATION IN DOUBLE MUTANT MICE RESCUES HYPERCONTRACTILE MYOSIN PHENOTYPE. Yoel H. Sitbon, Katarzyna Kazmierczak, Melanie Veerasamy, Jingsheng Liang, Danuta Szczesna-Cordary

Platform
Calcium Signaling
8:15 AM - 10:15 AM, ROOM 31ABC

Co-Chairs
Christopher Weber, University of Chicago
Lisha Yang, University of Nevada, Reno

1605-PLAT  8:15 AM
TARGETING CA2+ FLUXES IN ATRIAL FIBRILLATION. Wenli Dai, Stefano Morotti, Iva Moskowitz, Eleonora Grandi, Christopher Weber

1606-PLAT  8:30 AM
PKA-DEPENDENT PHOSPHORYLATION OF MITOCONDRIAL SK2 CHANNELS REGULATES MITOCONDRIAL CALCIUM UPTAKE IN VENTRICULAR CARDIOMYOCYTES. Shanna Hamilton, Radmila Terentyeva, Benjamin Martin, Karim Roder, Gideon Koren, Richard T. Clements, Dmitry Terentyev

1607-PLAT  8:45 AM
BETA-ADRENERGIC SIGNALING IN ISOLATED CARDIOMYOCYTES PROPAGATES SPATIALLY OVER TIME. Thomas R. Shannon, Dan J. Bare, Shayan Raofi, Kenneth S. Ginsburg, Donald M. Bers

1608-PLAT  9:00 AM
MITOCONDRIAL NCX INHIBITION REDUCES OXIDATIVE STRESS AND SR CALCIUM LEAK IN DIABETIC MYOCYTES. Sathya Velumurugan, Amanda Hoskins, Sarah Fleischer, Florin Despa, Sanda I. Despa

1609-PLAT  9:15 AM
SODIUM-CALCIUM EXCHANGE (NCX1) IS ESSENTIAL FOR ATRIOVENTRICULAR NODE AUTOMATICITY AND CONDUCTION, AS REVEALED THROUGH ATRIAL-SPECIFIC KNOCKOUT OF NCX1. Adina Hazan, Rui Zhang, Sabine Lotteau, Yen-Nien Lin, Devina Gonzalez, Kenneth D. Philipson, Michela Ottolia, Joshua I. Goldhaber

1610-PLAT  9:30 AM
STIM1 MAINTAINS STABLE PERIPHERAL COUPLING IN FULLY DIFFERENTIATED CONTRACTILE VASCULAR SMOOTH MUSCLE CELLS INDEPENDENTLY OF CA2+ STORE DEPLETION. Vivek Krishnan, Sher Ali, Prattish Thakore, Martin Johnson, Evan Yamasaki, Mohamed Trebak, Scott Earley

1611-PLAT  9:45 AM
MEMBRANE DEPOLARIZATION IS ESSENTIAL FOR TRIGGERING CA2+ INFLUX INTO ADRENAL CHROMAFFIN CELLS EXPOSED TO NANOSECOND ELECTRIC PULSES. Lisha Yang, Sophia Pierce, Gale L. Craviso, Normand Leblanc

1612-PLAT  10:00 AM

Subgroup Chairs Meeting
9:00 AM - 10:30 AM, ROOM 32A

Career Development Center Workshop
Looking Beyond Academia: Identifying Your Career Options Using MyIDP, LinkedIn & More
9:30 AM - 10:30 AM, ROOM 26A

Not sure where your professional future lies or how to approach the process in an organized and strategic manner? This presentation provides a framework and resources for moving forward with confidence towards the next step in your professional future. In addition, it will provide specific examples of how to build out your knowledge of a new potential career field and forge valuable connections that can facilitate a successful transition.

Exhibitor Presentation
Sophion Bioscience A/S
9:30 AM - 11:00 AM, ROOM 33A

Characterization of the Rapidly Desensitizing α7 Nicotinic Acetylcholine Receptor on the Qube, NaV1.1 Assays on Automated Electrophysiology Platforms and Developing NMDA Assays on the Qube System

Successful ion channel drug discovery requires the integration of multiple technologies and workflows. Sophion Bioscience is a leader in automated patch clamp technology, providing medium to high throughput, automated patch clamp to the pharmaceutical industry and universities. The QPatch and Qube are fully automated patch clamp systems, executing simultane-
uous 8, 16, 48 or 384 parallel patch clamp recordings in conjunction with computer controlled liquid handling and on-board cell handling. Sophion partners with other biotech companies to create robust, ion channel and electrophysiological workflows for drug development for ion channel targets. During this workshop, three industry speakers will provide insight into the use of these systems in the drug discovery process. Dr Sung Hoon Park will present Qube data to show the characterization of rapidly desensitizing α7 nicotinic acetylcholine receptor on the Qube. Next, Dr Shanti Amagasu from Amgen will present data from Amgen’s Nav1.1 work on automated electrophysiological platforms. Finally, Dr Abigail Marklew will present on the development of NMDA Assays on the Qube system.

Speakers
Sung Hoon Park, Field Application Scientist, Sophion Bioscience A/S
Shanti Amagasu, Senior Scientist, Amgen
Abigail Marklew, Scientist, Charles River Laboratories

Exhibits
10:00 AM - 4:00 PM, EXHIBIT HALL

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

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

Chair
David Piston, Washington University in St. Louis and BPS President

No Abstract
10:45 AM
PAPER OF THE YEAR. Carlos R. Baiz

No Abstract
10:57 AM
IGNACIO TINOCO AWARD. Elliot L. Elson

No Abstract
11:09 AM
FOUNDDERS AWARD. Dan M. Herschlag

No Abstract
11:21 AM
MARGARET OAKLEY DAYHOFF AWARD. Valeria Vásquez

No Abstract
11:33 AM
MICHAEL AND KATE BÁRÁNY AWARD. Clifford P. Brangwynne

No Abstract
11:45 AM
AVANTI AWARD IN LIPIIDS. Akihiro Kusumi

No Abstract
11:57 AM
BIOPHYSICS IN HEALTH AND DISEASE. Alexandra C. Newton

No Abstract
12:09 PM
KAZUHIKO KINOSITA AWARD IN SINGLE MOLECULE BIOPHYSICS. Yale E. Goldman

No Abstract
12:21 PM
INNOVATION AWARD. G. Marius Clore

No Abstract
12:33 PM
ANATRACE MEMBRANE PROTEIN AWARD. Gunnar von Heijne

Platform
Optical Microscopy and Superresolution Imaging III
10:45 AM - 12:45 PM, BALLROOM 20BC

Co-Chairs
Anthony Fernandez, University of Southern California
Madoka Suzuki, Osaka University, Japan

1613-PLAT
10:45 AM
DUAL-FUNCTIONALIZED FLUORESCENT NANODIAMOND AS NANOHEATER AND NANOTHERMOMETER IN CELLS. Chongxia Zhong, Shingo Sotoma, Taras Plakhnotik, James Chen Yong Kah, Yoshie Harada, Madoka Suzuki

1614-PLAT
11:00 AM
TRAVEL AWARDEE
MULTI-PARAMETER FLUORESCENCE LIFETIME IMAGING MICROSCOPY (FLIM) FOR IMAGING METABOLISM IN THE INTESTINAL ORGANOIDS MODEL. Ruslan Dmitriev, Irina Okkelman

1615-PLAT
11:15 AM
NANOSCALE NUCLEI CLENS DYNAMICS AND SPATIAL ORGANIZATION OF THE MUSCULAR DYSTROPHY PROTEIN EMERIN. Anthony M. Fernandez, Markville B. Bautista, Fabien Pinaud

1616-PLAT
11:30 AM
SUPERRESOLUTION MAPPING OF INTRINSICALLY DISORDERED REGIONS OF NUCLEOPRINS IN SITU. Miao Yu, Nike Andrea Heinss, Sofya Mikhailova, Jun Hee Kang, Edward A. Lemke

1617-PLAT
11:45 AM
SUPERRESOLUTION TRACTION FORCE MAPPING WITH STRUCTURED ILLUMINATION MOLECULAR FORCE MICROSCOPY. Aaron Blanchard, Dale Combs, Joshua Brockman, Alexa L. Mattheyses, Khalid Salaita

1618-PLAT
12:00 PM
ACTIVE FEEDBACK 3D SINGLE-MOLECULE TRACKING. Shangguo Hou, Jack C. Exell, Kevin D. Welsher

1619-PLAT
12:15 PM
MAPPING PROTEIN COUNTS IN LIVE CELLS. Derek Thirstrup, Winfried Wiegrabe, Allen Institute for Cell Science Team

1620-PLAT
12:30 PM
N-COLOR SPATIAL CUMULANT ANALYSIS TO DETECT G-PROTEIN DYNAMICS. Derek Thirstrup, Winfried Wiegrabe, Allen Institute for Cell Science Team

1621-PLAT
10:45 AM
STRUCTURAL DETERMINANTS OF THE HYPERPOLARIZATION-DEPENDENT GATING OF HCN CHANNELS. Gucan Dai, William N. Zagotta

1622-PLAT
11:00 AM
GATING MECHANISM OF HYPERPOLARIZATION-ACTIVATED HCN PACEMAKER CHANNELS. Rosamary Ramon, Marta E. Perez, Peter H. Larsson

1623-PLAT
11:15 AM
CONSERVED VOLTAGE-DEPENDENT GATING ELEMENTS BETWEEN SHAKE AND HERG KV CHANNELS. Ana I. Fernández-Mariño, Kenton Swartz

1624-PLAT
11:30 AM
IKS ION-CHANNEL PORE CONDUCTANCE CAN RESULT FROM INDIVIDUAL VOLTAGE SENSOR MOVEMENTS. David Fedida, Maartje F. Westhoff, Jodene R. Elstrom, Christopher I. Murray, Emely Thompson
Cohesin is a motor that bends and compacts DNA. Maxim Molodtsov, Benedikt Bauer, Iain Davidson, Alipasha Vaziri, Jan-Michael Peters

Folding kinetics of multiple G-quadruplex telomeric DNA structures. Emil L. Kristoffersen, Andrea Coletta, Line Lund, Birgit Schiøtt, Victoria Birkedal

Platform
Protein Stability, Folding, and Chaperones
10:45 AM - 12:45 PM, Room 30ABC

Co-Chairs
Stephen Fried, Johns Hopkins University
Meredith Jackrel, Washington University

Ubiquitination modulates a protein energy landscape site-specifically with consequences for proteasomal degradation. Emma Carroll, Eric R. Greene, Andreas Martin, Susan Marqusee

Investigation of natural and synthetic aggregation inhibitors using microfluidic applications. Tom Scheidt, Jacqueline Carozza, Justin L. Benesch, Paolo Arosio, Sara Linse, Tuomas P. J. Knowles

Open and closed states of the AAA+ protease Lon provide the structural basis for distinct operational modes. Mia Shin, Cristina Puchades Garcia, Ananya Asmita, Eric Adjei, R. L. Wiseman, A. W. Karzai, Gabriel C. Landers
Career Development Center Workshop
Negotiation for Nerds: Negotiation Strategies and Tactics and Evaluating a Job Offer
11:30 AM - 12:30 PM, ROOM 26A

Funding Opportunities for Faculty at Primarily Undergraduate Institutions
12:00 PM - 1:30 PM, ROOM 29AB

Information regarding how PUI faculty can generate funds to support their undergraduate research laboratory will be covered in this session.

Moderators
Elizabeth Yates, United States Naval Academy
Kambiz Hamadani, California State University, San Marcos

Presenters
Wilson Francisco, NSF
Silvia Ronco, Research Corporation for Science Advancement
Joe Gindhart, NIH

Postdoc to Faculty Q&A
Transitions Forum and Luncheon
12:00 PM - 1:30 PM, ROOM 32AB

This question-and-answer luncheon is designed for postdocs finishing and actively applying for academic faculty positions. Discussion will be led by a panel of new faculty in basic science and/or medical school departments and experienced faculty who have served as department chairs and/or part of faculty search committees. Topics for discussion include how to prepare the curriculum vitae, the interview process, networking, how to negotiate the job offer, and advice for new faculty as they balance research with their department obligations. Pre-registration was required for lunch. If you are interested in attending and did not register in advance, you are welcome to participate in the discussion on a space-available basis.

Chairs
David Warshaw, University of Vermont
Stephen Cannon, University of California, Los Angeles

Panelists
Howard Young, University of Alberta, Canada
David Jones, University of Michigan
Sarah Hiessler, Ohio State University
Krishna Chinthalapudi, Ohio State University

The Biophysicist Editorial Board Meeting
1:00 PM - 3:00 PM, ROOM 30D

Climate Change We Want to See
Mitigating Unconscious Bias in the Biophysical Professions
1:15 PM - 2:45 PM, ROOM 28AB

Why does the same uncontrollable, subconscious feeling that tells us to flock to a flower and flee from an insect rear its head in our professional lives? Whether it’s instantaneous like a microaggression or spans decades like salary disparities, it matters. We are talking about bias. We all have it and we can never escape it fully, so let’s learn how to deal with it.

Heather Metcalf and Aspen Russell of the Association for Women in Science (AWIS) will be presenting an hour-long workshop on unconscious bias. In this workshop, participants will learn the history of bias, how it manifests in STEM, and lastly, how to work together to enact
solutions to actively combat against it so we don’t have to wait until after the year 2100 for women in biophysical professions to finally reach parity.

Speakers
Heather Metcalf, Association for Women in Science
Aspen Russell, Association for Women in Science

The Nuts and Bolts of Preparing Your NIH Grant
1:30 PM - 3:00 PM, ROOM 28CDE

The National Institutes of Health is the world's largest funder of fundamental biomedical research. You have likely spent years training and are now ready to apply for a NIH grant. But where do you start? At this session, program directors and officers with expertise in biophysics will be providing details on the NIH grant-making process as it currently stands, with a particular emphasis on grant writing and submission for new and early career investigators.

Moderator
Eric Sundberg, Emory University School of Medicine

Speaker
Michele McGuirl, NIH
Peter Preusch, NIH
Ruth Grossman, NIH
Eleazar Cohen, NIH
Manana Sukhareva, NIH

Exhibitor Presentation
HORIBA Scientific
1:30 PM - 3:00 PM, ROOM 33A

A New Imaging Camera Technology Featuring TDC In-Pixel Architecture for Simple Dynamic FLIM Imaging at Video Rates

A new wide-field video rate TCSPC imaging camera from HORIBA Instruments will be introduced. This camera is a CMOS manufactured array of single photon avalanche diode (SPAD) detectors, with each detection "pixel" having its own time-to-digital converter (TDC). Thus each pixel is capable of measuring precise fluorescence decays in time-domain, and the entire camera is providing a complete fluorescence lifetime image map (FLIM) with each frame of the camera. This new technology is much faster than traditional scanning FLIM modalities thus making it ideal for live cell FLIM dynamics.

Speaker
Cary Davies, Global Product Manager-Fluorescence Division, HORIBA Scientific

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

Poster Presentations and Late Posters
1:45 PM - 3:45 PM, EXHIBIT HALL

Career Development Center Workshop
Going Live: Preparing for Interviews in Industry and Academia
2:30 PM - 3:30 PM, ROOM 26A

Education Committee Meeting
3:00 PM - 5:00 PM, ROOM 30D

Symposium
Neuron–glia Interactions
4:00 PM - 6:00 PM, BALLROOM 20A

Chair
Kira Poskanzer, University of California, San Francisco

1661-Symp 4:00 PM
CONSEQUENCES OF ASTROGLIAL MODULATION OF EXTRACELLULAR CALCIUM CONCENTRATION ON NEURONAL FIRING INVOLVING SODIUM CHANNELS. Arlette Kolta

No Abstract 4:30 PM
DISSECTING THE METABOLIC RESPONSE TO NEURONAL STIMULATION. Gary Yellen

No Abstract 5:00 PM
NEURON-Glia INTERACTION IN THE LIGHT OF TWO-PHOTON IMAGING. Bruno Weber

1662-Symp 5:30 PM
OPTICALLY DECODING ASTROCYTIC NETWORKS. Kira Poskanzer

Symposium
Exocytosis & Autophagy
4:00 PM - 6:00 PM, BALLROOM 20D

Chair
Arun Anantharam, University of Michigan

1663-Symp 4:00 PM
ARCHITECTURE OF MAMMALIAN RETROMER BY SINGLE PARTICLE CRYO-EM. Amy K. Kendall, Boyang Xie, Peng Xu, Elad Binshtein, Hui Wei, Todd Graham, Terunaga Nakagawa, Lauren P. Jackson

1664-Symp 4:30 PM
EXOCYST TETHERING COMPLEX REGULATION OF SNARE PROTEINS AND MEMBRANE FUSION. Mary Munson, Dante Lepore, Michael Feyder, Guendalina Rossi, Alexander B. Czuchra, Lillian Kenner, Leonora Martinez-Nunez, Jacqueline M. Forson, Adam Frost, Patrick Brennwald

1665-Symp 5:00 PM
CA2+- AND PHOSPHOLIPID-DEPENDENT MECHANISMS FOR THE COUPLING OF SYNAPTIC VESICLE CONSUMPTION AND RE-SUPPLY RATES. Noa Lipstein-Thoms, Shuwen Chang, KunHan Lin, Holger Taschenberger, Nils Brose

1666-Symp 5:30 PM
PRE- AND POST-SYNAPTIC ROLES OF SYNAPTOTAGMIN-7 IN EXOCYTOSIS. Arun Anantharam

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates II
4:00 PM - 6:00 PM, BALLROOM 20BC

Co-Chairs
Elisar Barbar, Oregon State University
Tanja Mittag, St. Jude Children's Research Hospital

1667-Plat 4:00 PM
GLOBAL DIMENSIONS REPORT ON PHASE SEPARATION OF LCDS WITH A WIDE RANGE OF SEQUENCE FEATURES. Anne Bremer, Erik W. Martin, Matthew J. Cuneo, Tanja Mittag

1668-Plat 4:15 PM
EMERGING FEATURES OF LINEAR MOTIF-BINDING HUB PROTEINS. Elisar J. Barbar, Nathan Jespersen
Platform
Membrane Active Peptides and Toxins
4:00 PM - 6:00 PM, ROOM 23ABC

Co-Chairs
Sónia Troeira Henriques, Queensland University of Technology, Australia
Marc-Antoine Sani, University of Melbourne, Australia

1669-PLAT 4:30 PM
A DESIGNER FG-NUP THAT RECONSTITUTES THE SELECTIVE TRANSPORT BARRIER OF THE NUCLEAR PORE COMPLEX. Alessio Fragasso, Henry de Vries, Eli van der Sluis, Erik Van der Giessen, Patrick R. Onck, Cees Dekker

1670-PLAT 4:45 PM
INSIGHTS INTO SPO-SPUBE-BSTRATE BEHAVIOR THROUGH STUDIES OF PDX1-SPO-INTERACTIONS. Grace A. Usher, Roman Rohac, Nafiseh Sabri, Tanja Mattig, Amie K. Boal, Scott A. Showalter

1671-PLAT 5:00 PM
DECIPHERING THE CONFORMATIONAL STATE OF FG-NUCLEOPORINS IN SITU. Sofya Mikhailova, Piau Siong Tan, Miao Yu, Edward A. Lemke

1672-PLAT 5:15 PM
MOLECULAR DETERMINANTS OF LARGE CARGO TRANSPORT INTO THE NUCLEUS. Joana Caria, Giulia Paci, Tiantian Zheng, Anton Zilman, Edward A. Lemke

1673-PLAT 5:30 PM
SPECIFIC SEQUENCE FEATURES REGULATE THE TRANSIENT BINDING BETWEEN FG NUCLEOPORINS AND CARGO COMPLEXES. Mohaddeseh Peyro, Mohammad Movafad

1674-PLAT 5:45 PM
COARSE-GRAINED MODELING OF NUCLEAR PORE COMPLEX MIMICS COMPRISING DESIGNER FG-NUCLEOPORINS. Henry de Vries, Alessio Fragasso, Eli O. van der Sluis, Cees Dekker, Erik Van der Giessen, Patrick R. Onck

Platform
Cardiac, Smooth, and Skeletal Muscle Electrophysiology and Regulation I
4:00 PM - 6:00 PM, ROOM 24ABC

Co-Chairs
Eleonora Grandi, University of California, Davis
Hailey Jansen, University of Calgary, Canada

1683-PLAT 4:00 PM
QUANTITATIVE CROSS-SPECIES PREDICTION OF B-ADRENERGIC RESPONSE IN VENTRICULAR MYOCYTES. Stefano Morotti, Haibo Ni, Lianguo Wang, Alex Fogli Ieppe, Donald M. Bers, Andrew G. Edwards, Crystal M. Ripplinger, Eleonora Grandi

1684-PLAT 4:15 PM
HEXOSAMINE PATHWAY INDUCES CARDIAC ARRHYTHMIA VIA MODULATION OF SUSTAINED POTASSIUM CURRENT MODULATION OF SUSTAINED POTASSIUM CURRENT. Matthieu Douard, Fanny Vaillant, Emma Abell, Pierre Dos Santos, Fabien Brette

1685-PLAT 4:30 PM
REGIONAL AND TEMPORAL CHANGES IN ATRIAL ELECTROPHYSIOLOGY CONTRIBUTE TO ATRIAL FIBRILLATION IN ANGIOTENSIN II INDUCED HYPERTENSION. Hailey J. Jansen, Robert A. Rose

1686-PLAT 4:45 PM
HIERARCHICAL PACEMAKER CLUSTERING WITHIN THE RABBIT SINOATRIAL NODE IS DRIVEN BY DYNAMIC INTERACTION BETWEEN THE COMPONENTS OF THE COUPLED-CLOCK SYSTEM. Xiaoyu Yuan, Lucas N. Ratajczyk, Francisco Alvarado, Hector H. Valdivia, Alexey V. Glukhov, Di Lang

1687-PLAT 5:00 PM
DYNAMIC REGULATION OF K AND CA CURRENTS IN LIPOTOXIC SUPRAVENTRICULAR ARRHYTHMIAS. Laura Martinez-Mateu, Claudia Ademuyiwa, Marco Lang, Paul Last, Phung N. Thai, Raghavender R. Gopireddy, Valery Timofeyev, Hannah A. Ledford, Ryan L. Woltz, Seojin Park, Claudia M. Moreno, Luis F. Santana, Alan C. Conti, Yang K. Xiang, Vladimir Yarov-Yarovoy, Ebenezer I. Nyonoh, Manuel F. Navedo, Dario C. Gerasimov, Shantanu Guha, Mohammadali Moghtadaei, Robert A. Rose

1688-PLAT 5:15 PM
FUNCTIONAL MICRODOMAIN OF ADENYLYL CYCLASE ISOFORM 1 CONTRIBUTES TO SINOATRIAL NODE AUTOMATICITY VIA B-ADRENERGIC RECEPTOR PATHWAY. Lu Ren, Phung N. Thai, Raghavender R. Gopireddy, Valery Timofeyev, Hannah A. Ledford, Ryan L. Woltz, Seojin Park, Claudia M. Moreno, Luis F. Santana, Alan C. Conti, Yang K. Xiang, Vladimir Yarov-Yarovoy, Ebenezer N. Yamoah, Manuel F. Navedo, Nipavan Chiamvimonvat

1689-PLAT 5:30 PM
ELECTRICAL REMODELLING CONTRIBUTES TO ATRIAL FIBRILLATION IN TYPE 2 DIABETES MELLITUS. Loryn J. Bohne, Hailey J. Jansen, Motahareh Moghtadaei, Robert A. Rose

1690-PLAT 5:45 PM
STABILIZER CELLS: A LESS-IS-MORE GENE THERAPY STRATEGY TO PREVENT CARDIAC ARRHYTHMIAS. Michael B. Liu, Silvia Priori, Zhilin Qu, James N. Weiss
1701-PLAT 4:30 PM

1702-PLAT 4:45 PM
A MICROFLUIDIC DEVICE FOR MULTIPLE ANALYSIS OF SINGLE EXOSOMES. Quentin Lubart, Sune Levin, Stephan Block, Silver Jøemetsa, Sriram Kesari, P. Amal, Fredrik Hook, Marta Bally, Fredrik Westerlund, Elin Ebsjöner

1703-PLAT 5:00 PM
DEVELOPMENT OF SIMPLE AND RAPID FABRICATIONS FOR SOLID-STATE NANOPORES. Natsumi Takai, Masaki Matsuhashi, Kan Shoie, Tei Maki, Ryuji Kawano

1704-PLAT 5:15 PM
DIRECT IDENTIFICATION AND COUNTING OF MiRNA IN SINGLE CELLS BY TRANSIENT HYBRIDIZATION AND KINETIC FINGERPRINTING. Karen Montoya, Lidan Li, Greg Shelley, Evan Keller, Nils G. Walter

1705-PLAT 5:30 PM
INVERSE HEXAGONAL LIPID PHASE ENCAPSULATING SIRNA IN LIPID NANOPARTICLES. Roy Pattipeiluhu

1706-PLAT 5:45 PM
POLYMER FORCE CLAMPS FOR THE MECHANICAL UNFOLDING OF TARGET MOLECULES. Haibin Su, Joshua Brockman, Aaron Blanchard, Travis Meyer, Yuxin Duan, Zheng Liu, Jing Zhao, Yang Liu, Victor Pui-Yan Ma, Kornelia Galior, Richard B. Dyer, Yonggang Ke, Khalid Salaita

Platform
Cytoskeletal Assemblies, Dynamics, Transport, and Motility

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

Co-Chairs
Rae Anderson, University of San Diego
Wolfgang Losert, University of Maryland

1707-PLAT 4:00 PM
EXTRACTION OF ACTIVE RHOGTPASES BY RHODGI REGULATES SPATIO-TEMPORAL PATTERNING OF RHOGTPASES. Adriana Golding, Ilaria Visco, Peter Bieling, William Bement

1708-PLAT 4:15 PM
SHAPING THE CYTOSKELETON WITH ELECTRIC FIELDS. Wolfgang Losert

1709-PLAT 4:30 PM
BRIDGING MICROTUBULES PROMOTE CENTERING OF THE KINETOCHORES BY LENGTH-DEPENDENT PULLING FORCES. Agneza Bosilj, Mihaela Jagric, Jelena Martincic, Patrik Risteski, Nenad Pavin

1710-PLAT 4:45 PM
MACROMOLECULAR CROWDING MODULATES THE ORGANIZATION AND STRUCTURE OF ACTIN BUNDLES CROSSLINKED BY FASCIN AND ALPHA-ACTININ. Jinho Park, Myeongsang Lee, Briana Lee, Nicholas Castaneda, Lauren Greinert, Christoph Held, Hauke Harms, Thomas Maskow

1711-PLAT 5:00 PM
TAU DIFFERENTIALLY REGULATES THE DYNAMIC LOCALIZATION OF EARLY ENDOSOMES AND LYSOSOMES. Linda Balabanian, Christopher L. Berger, Adam G. Hendricks

1712-PLAT 5:15 PM
DYNAMICS AND OPTIMAL BEHAVIORAL STRATEGIES OF MOTILE NETWORKS. Ingmar H. Riedel-Kruse, Nate Cira
TRIGGERING SALT-INDUCED CONTRACTION OF CYTOSKELETAL NETWORKS WITH MICROFLUIDICS. Shea N. Ricketts, Pawan Khanal, Michael J. Rust, Moumita Das, Jennifer L. Ross, Rae M. Robertson-Anderson

EFFECT OF CYTOPLASM CONCENTRATION ON CYTOSKELETON DYNAMICS. Arthur T. Molines, Joel Lemiere, Gohta Goshima, Fred Chang

Dinner Meet-Ups
6:00 PM - 6:30 PM, SOCIETY BOOTH/LOBBY G
Interested in making new acquaintances and experiencing the cuisine of San Diego? Meet at the Society Booth today at 6:00 PM, where a BPS member will coordinate dinner at a local restaurant.

Publications Committee Meeting
6:00 PM - 10:00 PM, HILTON, COBALT 500AB

Workshop
Design and Constructing Quantitative Biosensors
7:30 PM - 9:30 PM, ROOM 24ABC

Chair
Edward Lemke, IMB Mainz, Germany

FOLDING-BASED ELECTROCHEMICAL BIOSENSORS: A GENERALIZABLE APPROACH TO REAL-TIME, IN-VIVO MOLECULAR MEASUREMENTS. Kevin W. Plaxco

TMP-TAG: A CHEMICAL SURROGATE TO THE FLUORESCENT PROTEINS FOR LIVE CELL IMAGING. Virginia W. Cornish

Workshop
Chemical Biology Tools for Biophysics
7:30 PM - 9:30 PM, ROOM 25ABC

Chair
Henry Colecraft, Columbia University

ADJUSTING MAIN-CHAIN CHEMISTRY IN ION CHANNEL VOLTAGE-SENSORS. Christopher A. Ahern

INSERTION OF SYNTHETIC PEPTIDES INTO PROTEINS BY TANDEM PROTEIN TRANS-SPlicing. Stephan A. Pless

GENETICALLY-ENCODED TAGS FOR CORRELATIVE FLUORESCENCE AND ELECTRON MICROSCOPY. Kimberly Beatty

No Abstract
CONTROLLING THE FATE AND FUNCTION OF PROTEINS WITH PHOTO-PHARMACOLOGY. Dirk Trauner

Workshop
Simulation Strategies for Large Scales
7:30 PM - 9:30 PM, ROOM 30ABC

Chair
Tobin Sosnick, University of Chicago

WEIGHTED ENSEMBLE SIMULATION: TACKLING THE CHALLENGES OF LONG-TIMESCALE KINETICS. Lillian Chong

ON THE ALGORITHMIC IDENTIFICATION OF OPTIMAL COARSE-GRAINED REPRESENTATIONS OF BIOMOLECULES. Raffaello Potestio

GOING BIG: MILLION ATOM SIMULATIONS OF RIBOSOMES AND BILLION ATOM SIMULATIONS OF CHROMATIN. Karissa Y. Sanbonmatsu

CHALLENGES TO THE CREATION OF DYNAMIC STRUCTURAL MODELS OF INTRACELLULAR SYSTEMS. Adrian H. Elcock

Workshop
Fluorescence Correlation Spectroscopy
7:30 PM - 9:30 PM, ROOM 31ABC

Chair
Elizabeth Hinde, University of Melbourne, Australia

MEASURING BARRIERS TO DIFFUSION IN LIVE CELLS. Enrico Gratton

APPLICATION OF SPOT VARIATION FCS (SVFCS) ANALYSIS TO T CELL MEMBRANE DYNAMICS. Yannick Hamon, Anne-Marie Sartre, Anthony Formisano, Sébastien Mailfert, Didier Marguet, Hai-Tao He

PITCHING SINGLE FOCUS CONFOCAL ANALYSIS ONE PHOTON AT A TIME WITH BAYESIAN NONPARAMETRICS. Steve Presse

MAPPING THE DIFFUSIVE ROUTE OF OLIGOMERIC TRANSCRIPTION FACTORS DURING DNA TARGET SEARCH. Elizabeth Hinde

SOBLA (The Society for Latinoamerican Biophysicists) Meeting
8:00 PM - 10:00 PM, ROOM 29C

No Abstract
TARGETED (DE)UBIQUITINATION OF ION CHANNELS: FROM MECHANISTIC INSIGHTS TO TRANSLATION. Henry Colecraft
TUESDAY POSTER SESSIONS
1:45 pm–3:45 pm, Exhibit Hall

Below is the list of poster presentations for Tuesday of abstracts submitted by October 1. The list of late abstracts scheduled for Tuesday is available in the Program Addendum, and those posters can be viewed on boards beginning with LB.

Posters should be mounted beginning at 6:00 pm on Monday and removed by 4:00 pm on Tuesday evening. Posters will be on view until 10:00 pm the night before presentation. Poster numbers refer to the program order of abstracts as they appear in the online Abstract Issue. Board numbers indicate where boards are located in the Exhibit Hall.

On Tuesday, the Exhibit Hall will close completely at 4:00 pm to accommodate the tear down of exhibit. ALL POSTERS MUST BE REMOVED BY 4:00 pm. Posters remaining on the boards after this time will be discarded. Posters being presented on Wednesday may be mounted beginning at 7:00 am on Wednesday.

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

<table>
<thead>
<tr>
<th>Board Numbers</th>
<th>Category</th>
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<tbody>
<tr>
<td>B1 – B28</td>
<td>Protein Structure and Conformation III</td>
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<tr>
<td>B29 – B41</td>
<td>Protein Structure, Prediction, and Design II</td>
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<tr>
<td>B42 – B62</td>
<td>Membrane Protein Dynamics II</td>
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1887-POS BOARD B157
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<td>DIRECT IMAGING OF NANOSCALE LIPID ORGANIZATION IN PROBE-FREE BIOMIMETIC MEMBRANES. Frederick A. Heberle, Milka Doktorova, Haden L. Scott, Allison Skinke, Edward R. Lyman, Neal Waxham, Ilya Levental</td>
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<td>1983</td>
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<td>SPONTANEOUS CURVATURE GENERATION IN ASYMMETRIC LIPID BILAYERS WITH TENSIONLESS LEAFLETS. Markus S. Miettinen, Reinhard Lipowsky</td>
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<td>1984</td>
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<td>EXPERIMENTAL EVIDENCE THAT BILAYER ASYMMETRY DECREASES LO/LD LINE TENSION. Thais A. Enoki, Frederick A. Heberle, Gerald W. Feigenson</td>
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<td>1985</td>
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<td>CHOLESTEROL SPATIAL DISTRIBUTION IN ASYMMETRIC LIPID BILAYERS. Mohammadreza (Reza) Aghaaminiha (Amini), Sumit Sharma</td>
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<td>1986</td>
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<td>THE EFFECTS OF PHOTOSENSITIZED LIPID OXIDATION ON SUPPORTED LIPID BILAYER FORMATION AND MEMBRANE DEFORMATION. Ashley M. Baxter, Nathan J. Wittenberg</td>
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<td>1987</td>
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<td>A MEMBRANE TUbULE BILAYER ASSAY FOR CURVATURE SORTING OF PHOSPHATIDIC ACID. Broderick L. Bills, Michelle K. Knowles</td>
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<td>MEASUREMENTS OF LIPID COMPOSITION FLUCTUATIONS AROUND A PLASMA MEMBRANE ION CHANNEL: IMPLICATIONS FOR FUNCTION. Thomas R. Shaw, Sarah L. Veatch</td>
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<td>THE ROLE OF LIPID STRUCTURE IN DISRUPTION OF LIPID MEMBRANES BY SILICA NANOPIERCLES. Saeed Nazemidashtarjandi, Amir Farnoud</td>
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<td>COLLOIDAL GUEST PARTICLES IN CUBIC MO-PHASES: TRANSITORY STATES AND PHASE DISTORTION. Christian K. Christensen, Chen Shen, Tanaka Shinpe, Beate M. Klösgen</td>
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<td>INTERLEAFLET INTERACTION IN PHASE SEPARATED ASYMMETRIC LIPID BILAYERS. Ali Saltov, Krystina Pluhackova, Timur R. Galimzyanov, Rainer Böckmann, Sergey A. Akimov, Peter Pohl</td>
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<td>FUNCTIONAL AND STRUCTURAL CHARACTERIZATION OF A LYPHILIZED PULMONARY SURFACTANT DIRECTLY APPLIED ONTO THE AIR-LIQUID INTERFACE. Mercedes Echaide, Sonia Vazquez-Sanchez, Antonio Cruz, Jesus Perez-Gil</td>
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<td>SPHERICAL NANOVESICLES TRANSFORM INTO A MULTITUDE OF NON-Spherical SHAPE. Rikhia Ghosh, Vahid Satarifard, Andrea Grafmüller, Reinhard Lipowsky</td>
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<td>ON THE MECHANISM OF BILAYER SEPARATION BY EXTRUSION; OR, WHY YOUR LARGE UNILAMELLAR VESICLES ARE NOT REALLY UNILAMEL-LAR. Haden L. Scott, Allison Skinke, Elizabeth G. Kelley, Neal Waxham, Ilya Levental, Frederick A. Heberle</td>
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<td>POTENTIALS OF MEAN FORCE OF BILAYER DEFORMATION. Giacomo Fiorin, Fabrizio Marinelli, José D. Faraldo-Gómez</td>
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<td>DIFFERENTIATING BETWEEN MEMBRANE TOPOGRAPHY AND MOLECULAR CLUSTERING. Ingela Parmyrd, Sven-Goran Eriksson, Kristoffer Bernheim, Jeremy Adler</td>
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<td>SIMULATIONS OF AN ASYMMETRIC MAMMALIAN LIPIDOME. Milka Doktorova, Kandice R. Levental, Erđinc Sezgin, Ilya Levental, Edward R. Lyman</td>
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<td>CANNABIDIOL AFFECTS CHAIN PACKING IN LIPID MEMBRANES. Arika R. Watkins, Tejas Phaterpekar, Peter C. Ruben, Jenifer L. Thewalt</td>
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<td>ALTERATION OF LIPID BILAYER STRUCTURE BY FREE FATTY ACID: A COMPARATIVE STUDY OF FREE FATTY ACID AND CHOLESTEROL. Mohammad Alwarawrah, Jacquelyne Rea</td>
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<td>THE EFFECT OF SEROTONIN ON THE LATERAL SEGREGATION OF A RAFT MEMBRANE MIXTURE. Oskar Engberg, Simly Dey, Holger A. Scheidt, Sudipta Maiti, Daniel Huster</td>
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<td>2002</td>
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<td>ORIGIN OF LIPID TILT IN FLAT LIPID MONOLAYERS AND BILAYERS. Boris B. Kheyfets, Timur R. Galimzyanov, Sergei I. Mukhin</td>
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<td>EFFECT OF LIPID STRUCTURE AND MATERIAL PROPERTIES ON THE MEMBRANE STABILITY TO PORE FORMATION. Timur R. Galimzyanov, Andrew H. Beaven, Maxim A. Kaluttsky, Alexander J. Sott, Paul S. Blank, Joshua Zimmerberg, Sergey A. Akimov, Oleg V. Batishchev</td>
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<td>PROPERTIES OF ASYMMETRIC MEMBRANES FROM COARSE GRAINED MOLECULAR DYNAMICS SIMULATIONS. Samuel Foley, Markus Deserno</td>
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<td>STUDY ON ERGOSTEROL AND CHOLESTEROL CONFORMATIONAL FREEDOM AND THEIR DIFFERENT INTERACTION WITH A POPC/SM BILAYER. AN AFM AND MD STUDY. Arturo Galván-Hernández, Jorge Hernández-Cobos, Armando Antillón, Ivan Ortega-Blake</td>
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<td>CHARACTERIZATION OF PHOSPHOLIPID COMPOSITION IN THE OUTER LEAFLET OF RED BLOOD CELLS. Amid Vahedi, Amir Farnoud</td>
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<td>INTERACTION OF ALPHA-SYNUCLEIN WITH RAFT CONTAINING MODEL LIPID MEMBRANES: MORPHOLOGY AND STRUCTURE. Loredana Casalis, Pietro Parisse, Fabio Perissinotto, Valeria M. Rondelli, Denis Scaini, Giuseppe A. Legname, Chiaramaria Stani</td>
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<td>MOLECULAR DYNAMICS STUDY OF MULTIDRUG EFFLUX TRANSPORTER ACRA-ACRB-ACRA-TOLC COMPLEX EMBEDDED IN LIPID BILAYER. Keiko Shindó</td>
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<td>BINDING AND INTERACTION OF HUMAN BETA DEFENSIN TYPE 3 WITH MIXED PIP2 LIPID MEMBRANES. Liquan Zhang</td>
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<td>EFFECT OF CHARGED LIPIDS ON THE IONIZATION BEHAVIOR OF GLUTAMIC ACID-CONTAINING TRANSMEMBRANE HELICES. Brooke Nunn, Matthew McKay, Denise V. Greathouse, Roger E. Koeppen</td>
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1922-Pos  BOARD B192  A MOLECULAR SIMULATION METHOD TO PREDICT THE SOLVATION, FOLD, SELF-ASSEMBLY, AND PORATION OF PEPTIDES AND PROTEINS IN MEMBRANES. Jingjing Huang, Régis Pomès


1924-Pos  BOARD B194  CELL-FREE EXPRESSION SYSTEMS: PROBING NUCLEAR MECHANOTRANSDUCTION USING NOVEL ENGINEERING PLATFORMS. Sagardip Majumder

1925-Pos  BOARD B195  A SINGLE PARTICLE TRACKING STUDY OF MORE NATIVELY FOLDED RECOMBINANT HUMAN AQUAPORIN-4 ORTHOGONAL ARRAY OF PARTICLES. Jessica D. Carder, Michael J. Martinez, Francesco Pisani, Antonio Frigeri, Grazi P. Nicchia, James A. Brozik

1926-Pos  BOARD B196  LIPID-DEPENDENT TITRATION OF GLUTAMIC ACID AT A MEMBRANE INTERFACE. Roger E. Koepp, Matthew J. McKay

1927-Pos  BOARD B197  EFFECT OF PH AND LIPID COMPOSITION ON MEMBRANE-SPANNING HELICES WITH GLUTAMIC ACID EXAMINED BY SOLID-STATE NMR. Kelsey A. Marr, Matthew McKay, Denise V. Greathouse, Roger E. Koepp

1928-Pos  BOARD B198  THE INFLUENCE OF LIPID TAIL COMPOSITION ON BID-MEDIATED BAX PORE FORMATION. Ahmad Mahmood, Helen M. Zhu, Cécile Fradin

1929-Pos  BOARD B199  DISPOSITION OF ESCHERICHIA COLI SECA ATPASE MOTOR PROTEIN BOUND TO LIPID VESICLES. Guillaume Roussel, Stephen H. White

1930-Pos  BOARD B200  STRUCTURAL TRANSITIONS IN MEMBRANE PROTEINS REVEALED BY INFRARED REFLECTION ABSORPTION SPECTROSCOPY. Christian Schwieger

1931-Pos  BOARD B201  PROBING THE INTERACTIONS BETWEEN THE SMALL GTPASE ARF1 AND ITS ARF GAP ASAP1 AT THE MEMBRANE INTERFACE. Olivier Soubias, Frank Heinrich, Shashank Pant, Yue Zhang, Paul Randazzo, Mathias Losche, Emad Tajkhorshid, Robert A. Byrd

1932-Pos  BOARD B202  RECONSTITUTION REVEALS HOW MYOSIN-VI SELF-ORGANISES TO GENERATE A DYNAMIC MECHANISM OF MEMBRANE SCULPTING. Dario Saczko-Brack, Benoit Rogez, Laeschkir Wörthner, Anastasia B. Petrova, Felix Zierhut, Maria-Ana Huergo, Christopher Batters, Erwin Frey, Claudia Veigel

1933-Pos  BOARD B203  SIGNIFICANCE OF SECONDARY STRUCTURE DETERMINATION WHEN EVALUATING RATIONALLY DESIGNED ANTIMICROBIAL PEPTIDES. Aria Salyapongse, Anja Penk, Daniel Huster, Robert K. Ernst, Berthony Deslouches, Y.P. Peter Di, Stephanie A. Tristram-Nagle


1935-Pos  BOARD B205  NATIVE LUMINESCENCE AND LUMINESCENCE LIFETIME OF CYTOCHROME P450 3A4 WITHIN ENDOPLASMIC RETICULUM BIOMIMETIC NANODISCS. Michael J. Martinez, Bryan C. Borders, Stephen Mather, Carlo Barnaba, Bixia Zhang, ChuHee Kang, James A. Brozik

1936-Pos  BOARD B206  USING HIGH-THROUGHPUT STRUCTURE PREDICTION AND EVOLUTIONARY ALIGNMENT TO MAP ELECTROSTATIC PROTEIN-MEMBRANE INTERACTIONS. Nara L. Chon, Sherleen Tran, Christopher S. Miller, Hai Lin, Jefferson D. Knight

1937-Pos  BOARD B207  ATTEMPTED “RESCUE” OF GLUTAMIC ACID BY ARGININE IN A TRANS-MEMBRANE HELIX. Jake R. Price, Fahmida Afrose, Roger E. Koepp

1938-Pos  BOARD B208  INVESTIGATING THE STRUCTURE AND TOPOLOGY OF THE PINHOLIN MEMBRANE PROTEIN USING PULSED DEER AND CW-EPR SPECTROSCOPIC TECHNIQUES. Gary A. Lorigan, Tanbir Ahammad, Rasal Khan

**Mechanosensation II (Boards B209 - B226)**

1939-Pos  BOARD B209  GLYCOSYLATION INHIBITS JUNCTION MECHANICS BY PERTURBING ACTIN AND FOCAL ADHESIONS IN ENDOTHELIAL CELLS. Gregory J. Schwarz, Priyanka Gajwani, Jalees Rehman, Deborah E. Leckband

1940-Pos  BOARD B210  MATRIX STIFFNESS MEDIATES RADIO-RESISTANCE OF HEPATOCELLULAR CARCINOMA THROUGH REGULATION OF REACTIVE OXYGEN SPECIES. Lihan Chung, Megha Jhunjhunwala, Yu-Ying Hsieh, Yu-Tung Weng, Chi-Shuo Chen

1941-Pos  BOARD B211  QUANTIFICATION OF THE FORCES INVOLVED IN ROLLING ADHESION WITH DNA FORCE SENSORS AND FLUORESCENCE IMAGING. Adam B. Yasunaga

1942-Pos  BOARD B212  EFFECTS OF MECHANICAL STRESS ON CALCIUM TRANSPORT IN CELLS OF THE IMMUNE SYSTEM. Rosey Whiting, Daniel Fologea

1943-Pos  BOARD B213  LARGE GLYCOSALXY PROTEINS ARE EXCLUDED FROM THE INTERFACE BETWEEN CELL MEMBRANE AND VERTICAL NANOSTRUCTURES. Chih-Hao Lu, Taylor Jones, Kayvon Pedram, Carolyn Bertozzi, Matthew Paszek, Bianxiao Cui

1944-Pos  BOARD B214  TALIN IMPACTS FORCE-INDUCED VINCULIN ACTIVATION THROUGH ‘LOOSENING’ THE VINCULIN INACTIVE STATE. Florian S. Franz, Csaba Daday, Frauke Gräter

1945-Pos  BOARD B215  AN OSMOSENSITIVE CATION CHANNEL REQUIRED FOR HEARING. Yun S. Shi

1946-Pos  BOARD B216  PIEZO2 INTEGRATES MECHANICAL AND THERMAL CUES IN VERTEBRATE MECHANORECEPTORS. Yury A. Nikolaev, Wang Zheng, Elena O. Gracheva, Sviatoslav N. Bagriantsev

1947-Pos  BOARD B217  DOMAIN-DEPENDENT FORCE SELECTIVITY IN THE MECHANOSENSITIVE ION CHANNEL PIEZO1. Alper D. Ozkan, Jerome J. Lacroix

1948-Pos  BOARD B218  SINGLE-MOLECULE MECHANICS OF THE TALIN-INTTEGRIN BOND. Mihai-Adrian Bodescu, Marco Grison, Jonas Aretz, Matthias Rief, Reinhard Fassler
Exocytosis and Endocytosis
(Boards B227 - B251)

1949-Pos  Board B219
CALCIUM INFUX THROUGH PIEZO1 CHANNELS TRANSIENTLY CLUSTERS P(4,5)P2 AND RECRUTS ACTIN POLYMERIZATION. Michael Zucker, Arnd Pralle

1950-Pos  Board B220
VISCOELASTIC MECHANICAL MODELS OF THE LINC COMPLEX. Kamyar Behrouzi, Zeinab Jahed, Mohammad Mofrad

1951-Pos  Board B221
STRESS FIBER CONTRACTILITY IS ESSENTIAL IN MOTOR-CLUTCH DYNAMICS AND CELL REMODELING UNDER CYCLIC STRETCH. Namrata Gundiah, Siddhartha Jaddiivada

1952-Pos  Board B222
MARGARIC ACID DECREASES SENSORY NEURONS MECHANICAL EXCITABILITY BY INHIBITING PIEZO2 CHANNELS. Luis O. Romero, Julio F. Cordero-Morales, Valeria Vasquez

1953-Pos  Board B223
HETEROGENEOUSLY STRAINED TISSUE COLLAGEN RESISTS COLLAGENASE DEGRADATION WHERE STRAINS ARE HIGH. Karanvir Saini, Manu Tewari, Sangkyun Cho, Abdelaziz Jalil, Jerome Irianto, Manasvita Vashisth, Charlotte Pfeifer, Lawrence J. Dooling, Cory Alvey, Alex Kasznels, David Chenoweth, Kazihiro Yamamoto, Dennis E. Discher

1954-Pos  Board B244
A NOVEL ROLE FOR PIEZO1 IN DIABETES-ASSOCIATED THROMBOSIS. Wandi Zhu, Cissy Nsubuga, Shane Wright, Manu Beeners, Tuomas Kiviniemi, Vanessa Raskin, Rahul C. Deo, Calum A. MacRae

1955-Pos  Board B224
CHARACTERIZATION OF KINDLIN-2 VARIANTS’ MOLECULAR BEHAVIOR UNDER APPLIED TENSION. Fayyaz R. Ahamed, Brian Jeffers, Zeinab Jahed, Mohammad Mofrad

1956-Pos  Board B225
MEASURING THE EFFECT OF SUBSTRATE STIFFNESS ON CELL MEMBRANE TENSION USING OPTICAL TWEEZERS. Jeffrey Mc Hugh, Eva Kreyssing, Sarah K. Foster, Kurt Andersen, Kristian Franze, Ulrich F. Keyser

1957-Pos  Board B227
CATIONIC CELL-PENETRATING PEPTIDES TRAVERE MEMBRANES THROUGH LYSIS OR DIRECT TRANSLATION PROTEINS. Jason M. Warner, Dong An, Benjamin S. Stratton, Ben O’Shaughnessy

1958-Pos  Board B228
VESICLE SHRINKING AND ENLARGEMENT: THE YIN AND YANG OF EXOCYTOTIC CONTENT RELEASE. Wonchul Shin, Gianvito Arpino, Satish Thiyagarajan, Rui Su, Zachary A. McDargh, Lihao Ge, Xiaoli Guo, Lisi Wei, Oleg Shupliakov, Albert J. Woodbury, Zachary A. McDargh, Albert J. Jin, Ben O’Shaughnessy, Ling-Gang Wu

1959-Pos  Board B229
EFFECT OF SIMPLE ANESTHETICS ON SNARE FUSION PROTEINS AND ON FUSING MEMBRANES. Robert E. Coffman, Samuel W. Shumway, Andrew T. Barton, Mark T. Parsons, Austin L. Zimmerman, Ryan D. Sorensen, Dixon J. Woodbury

1960-Pos  Board B230
SYNAPTIC VESICLE RELEASE PROBABILITY, KINETICS, AND CA-SENSITIVITY ARE REGULATED BY SNARE-PROTEINS. Zachary A. McDargh, Ben O’Shaughnessy

1961-Pos  Board B231
INHIBITION OF AIRWAY EPITHELIAL SNARE/SYNAPTOTAGMIN MEDIATED MEMBRANE FUSION BY HYDROCARBON-STAPLED PEPTIDES. Ying Lai, Giorgio Fois, Manfred Frick, Burton Dickey, Axel T. Brunger

1962-Pos  Board B232
A POLYBASED PATCH ON SYNAPTOTAGMIN-1 C2A DOMAIN IS ESSENTIAL FOR EVOKED RELEASE AND DILATION OF FUSION PORES. Zhenyong Wu, Lu Ma, Jie Zhu, Nicholas Courtney, Yongli Zhang, Edwin R. Chapman, Erdem Karatekin

1963-Pos  Board B233
THE SYNAPTOTAGMIN-1 ARGinine APEX BINDS TO MEMBRANES AND THE SNARE-COMPLEX, BUT ONLY TO MEMBRANES IN THE PRESENCE OF ATP/MG2+. Sarah B. N yenhu is, Nakul Karandikar, Anusa Thapa, Binyong Liang, Lukas K. Tamm, David S. Caffso

1964-Pos  Board B234
IN VITRO CONFIGURATION OF MUNC13-1 BRIDGING OF PHOSPHOLIPID BILAYERS AT RESTING CONDITIONS. Kirill S. Grushin, R. Venkat Kalyana Sundaram, Kimberly Gibson, Shyam S. Krishnakumar, Charles V. Sindelar, James Rothman

1965-Pos  Board B235
MUNC13-1 AND MUNC18-1 COOPERATIVELY CHAPERONE SNARE ASSEMBLY THROUGH A TETRAMERIC COMPLEX. Yongli Zhang, Tong Shu, James Rothman

1966-Pos  Board B236
MUNC13 RECRUITS SNAP25 TO FACILITATE SNARE COMPLEX ASSEMBLY. R Venkat Kalyana Sundaram, Feng Li, Jeff Coleman, Frederic Pincet, James Rothman, Shyam S. Krishnakumar

1967-Pos  Board B237
THE C2C-MCT DOMAIN OF MUNC13 IS ESSENTIAL FOR PRIMING SYNAPTIC VESICLES. Murugesh Narayanapapa, Haowen Liu, Lei Li, Francesco Michelassi, Zhihao Hu, Jeremy Dittman

1968-Pos  Board B238
BINDING OF COMPLEXIN TO T-SNARE COMPLEX IS MEDIATED BY SNAP25. Binyong Liang, Julian Stashower, Alex J. Kreutzberger, Volker Kiessling, Lukas K. Tamm

1969-Pos  Board B239

1970-Pos  Board B240
PLASMA MEMBRANE ORDER REGULATES INSULIN GRANULE EXOCYTOSIS. Chase Amos, Noah Schenk, Volker Kiessling, Alex J. Kreutzberger, Weronika Tomaka, Mounir Bendahmane, Hitomi Seki, Yosuke Niko, Andrey S. Klymchenko, Lukas K. Tamm

1971-Pos  Board B241
TWO DISTINCT POPULATIONS OF INSULIN GRANULES THAT HAVE UNIQUE PROPERTIES. Alex J. Kreutzberger, Noah Schenk, Amanda E. Ward, Catherine A. Doyle, Megan T. Harris, Binyong Liang, Arun Anantharam, Volker Kiessling, Lukas K. Tamm, J. David Castle

1972-Pos  Board B242
SPATIOTEMPORAL ORGANIZATION OF MMP9 AND ITS EXOCYTOTIC ORGANIZING ELEMENTS IN MCF7 BREAST CANCER CELLS. Dominique C. Stephens

1973-Pos  Board B243
USING FLUORESCENT PROTEINS TO MONITOR GLUCAGON GRANULES IN LIVE CELLS. Alessandro Ustione, Priya Mathur, David W. Pinston
1974-Pos  BOARD B244  CAVI CAPTURE LIMITS CATECHOLAMINE RELEASE FROM VESICLES. Meyer B. Jackson, Yu-Tien Hsiao, Che-Wei Chang

1975-Pos  BOARD B245  CA2+ -INDEPENDENT BUT VOLTAGE-DEPENDENT QUANTAL CATECHOLAMINE SECRETION (CIVDS) IN SYMPATHETIC NERVOUS SYSTEM. Zhuan Zhou, Rong Huang, Yuan Wang, Jie Li, Xiaohan Jiang, Yinglin Li, Xi Wu, Yongxin Xu, Xingyu Du, Yuqi Hang, Feipeng Zhu

1976-Pos  BOARD B246  RECEPTORS UTILIZE COATED VESICLE HETEROGENEITY TO EVADE COMPETITION DURING ENDOCYTOSIS. Andre DeGroot, Sadhana Gollapudi, Chi Zhao, Carl C. Hayden, Jeanne C. Stachowiak

1977-Pos  BOARD B247  CLATHRIN-COATED PITS FORM FROM ELASTICALLY LOADED CLATHRIN LATTICES. Grigory Tagilsev, Simon Scheuring

1978-Pos  BOARD B248  TRAVEL Awardee  LINKING THE DYNAMICS OF CLATHRIN-MEDIATED ENDOCYTOSIS WITH MEMBRANE SHAPE CHANGES IN LIVING CELLS WITH NANOMETER AXIAL RESOLUTION. Tomasz J. Nawara, Tejeshwar C. Rao, Gracemarie Cepero-Lopez, Alexa L. Mattheyes

1979-Pos  BOARD B249  MULTISCALE MOLECULAR MODELING OF DYNAMIN PROTEIN-PROTEIN INTERACTIONS. Frank X. Vázquez, Dalia M. Hassan, Joseph A. Marte, Patsy J. Griffin, Teagan F. Sweet

1980-Pos  BOARD B250  DYNAMICS OF DYNAMIN BY CRYO-EM. Nidhi Kundu, John Jimah, Abigail Stanton, Lieza M. Chan, Venkata P. Dandey, Clinton S. Potter, Bridget Carragher, Jenny E. Hinshaw

1981-Pos  BOARD B251  PREFUSED LYSOSOMES CLUSTER ON AUTO PHAGOSOME REGULATED BY VAMP8. Jiajie Diao

**Calcium Signaling I**
(Boards B252 - B267)

1982-Pos  BOARD B252  THE EFFECT OF OESTROGEN WITHDRAWAL ON CA2+ REGULATION AND THE INFLUENCE OF GPER1. Alice J. Francis, Jahn M. Firth, Najah Islam, Julia Gorenlik, Kenneth T. Macleod

1983-Pos  BOARD B253  LONG-QT SYNDROME-ASSOCIATED CALMODULIN MUTATIONS AND THEIR INTERACTIONS AT THE KV7.1 POTASSIUM CHANNEL. Liam F. McCormick, Nitika Gupta, Lee P. Haynes, Svetlana Antonyuk, Caroline Dart, Nordine Helassa

1984-Pos  BOARD B254  TRAVEL Awardee  REGULATION OF ORAI1/STIM1 FUNCTION BY S-ACYLATION. Savannah J. West, Qiaochu Wang, Michael X. Zhu, Askar M. Akimzhanov, Darren Boehning

1985-Pos  BOARD B255  DIFFERENT WAYS OF CALCIUM SIGNALING DISRUPTION IN HUNTINGTON’S DISEASE AND SPINOCEREBELLAR ATAXIA TYPE 1. Dmitry Grekhnov, Vladimir Vigont, Elena Kaznacheyeva

1986-Pos  BOARD B256  DESIGN AND APPLICATION OF ULTRAFAST FLUORESCENT CALCIUM INDICATORS FOR MONITORING SUBCELLULAR CALCIUM DYNAMICS. Xiaonan Deng, Cassandra L. Miller, Bin Dong, Florence N. Reddish, You Zhuo, Cheyenne McBean, Daniel Ouedraogo, Giovanni Gadda, Ning Fang, Jenny J. Yang

1987-Pos  BOARD B257  RYANODINE RECEPTOR-1 MEDITED ENDOPLASMATIC RETICULUM - MITOCHONDRIAL CALCIUM TRANSFER IN HIGH-GRADE SERIAL SQUAMES OCCYRAN CANCER CELLS (HGSOC). Kay-Pong D. Yip, Byeong-Jik Cha, Omkar Paudel, Samuel C. Mok, James S. Sham

1988-Pos  BOARD B258  TRAVEL Awardee  LQTS-ASSOCIATED MUTANTS OF CALMODULIN SHOW DISRUPTED INTERACTION WITH L-TYPE CALCIUM CHANNELS. Nitika Gupta, Liam F. McCormick, Lee P. Haynes, Caroline Dart, Nordine Helassa

1989-Pos  BOARD B259  TRANSPORT OF VITAMIN A VIA STRA6 IS CALCIUM-DEPENDENT. Brianna Young

1990-Pos  BOARD B260  PYRIDOSTIGMINE REDUCES ARRHYTHMOGENIC STORE OPERATED CALCIUM ENTRY IN A TRANSVERSE AORTIC CONSTRUCTION HF MODEL IN MICE. Stephen H. Baine, Ingrid M. Bonilla, Andriy E. Belevych, Sandor Gyorko

1991-Pos  BOARD B261  TRAVEL Awardee  PLASMA MEMBRANE PERMEABILIZATION TO CA2+ IN ADRENAL CHROMAFFIN CELLS DEPENDS ON THE DURATION OF APPLIED NANOSECOND ELECTRIC PULSES. Sophia Pierce, Lisha Yang, Normand Leblanc, Gale L. Craviso

1992-Pos  BOARD B262  TRAVEL Awardee  SOCE CONTRIBUTES TO NORMAL CALCIUM HOMEOSTASIS AND RHYTHMIC ACTIVITY OF ATRIAL MYOCARDIUM. Ingrid M. Bonilla, Stephen Baine, Andrei Stepanov, Jiaoni Li, Andriy E. Belevych, Przemyslaw Radwanski, Pomeol Volpe, Silvia Priori, Dmitry A. Terentyev, Sandor Gyorko

1993-Pos  BOARD B263  THE ANTIARRHYTHMIC COMPOUND EFSEVIN BINDS TO THE VOLTAGE-DEPENDENT ANION CHANNEL 2 AND MODULATES CHANNEL GATING. Fabiola Witting, Robin Kopp, Philip A. Gurney, Anna Schedel, Nathan J. Dupper, Ohyun Kwon, Annette C. Nicke, Thomas Gudermann, Johann Schredlatsker

1994-Pos  BOARD B264  TRAVEL Awardee  DUAL EFFECTS OF SUBCELLULAR CALCIUM HETEROGENEITY AND HEART RATE VARIABILITY ON CARDIAC ELECTROMECHANICAL DYNAMICS. Vrishti M. Phadumdeo, Seth H. Weinstein

1995-Pos  BOARD B265  A DUAL ROLE FOR SARAF IN REGULATION OF CALCIUM-RELEASE ACTIVATED CALCIUM (CRAC) CHANNEL ACTIVITY. Elia Zmot, Hadas Achildiev, Raz Palty

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2213-Pos  Board B483  RESOLVING THE CONNECTION BETWEEN MAJOR HISTOCOMPUTABILITY COMPLEXES AND IMMUNE OUTCOMES USING UNSUPERVISED CLUSTERING OF MOLECULAR DYNAMICS SIMULATIONS. Eric A. Wilson, Karen Anderson, Abhishek Singhary

2214-Pos  Board B484  CELLULAR NOISE AND RESPONSE TO ANTIBIOTICS. Shahla Nemati, Daniel M. Weinreich, Andreas E. Vasdekis

2215-Pos  Board B485  SINGLE-CELL ANALYSIS ON BACTERIAL COMPETITION BETWEEN MICROCOLONIES. Tianyi Ma, Joshua Milstein

2216-Pos  Board B486  DELAYED ONSET MUSCLE SORENESS (DOMS): COMPARATIVE ION HOMOSTASIS MODELING SHOWS HOW DONNAN EFFECTS PROTECT DAMAGED MUSCLE FIBERS. Catherine E. Morris, Joshua J. Wheeler, Bela Joos

2217-Pos  Board B487  AMELIORATIVE EFFECTS OF TRANSCRIPTION FACTOR DFOXO OVER-EXPRESSION IN A DROSOPHILA CARDIOVASCULAR DISEASE MODEL. Marissa Sumathipala, Meera C. Viswanathan, Anna C. Blice-Baum

2218-Pos  Board B488  IMPAIRED MYOCARDIAL ENERGETICS CONTRIBUTES TO MECHANICAL DYSFUNCTION IN DECOMPENSATED FAILING HEARTS. Rachel Lopez, Xin Gao, Bahador Marzban, Ellen Lauinger, Françoise Van den Bergh, Daniel A. Beard

Molecular and Cellular Neuroscience (Boards B489 - B504)

2219-Pos  Board B489  DIFFERENCES IN POTASSIUM CHANNEL COMPOSITION UNDERLY DISTINCT ACTION POTENTIAL KINETICS IN TRANSCRIPTOMICALLY IDENTIFIED NEOCORTICAL MOUSE CELL TYPES. Jim Berg, Brian Lee, Rusty Mann, Lindsay Ng, Agata Budzillo, Brian Kalmbach, Katherine Baker, Hongkui Zeng, Gabe Murphy

2220-Pos  Board B490  THE DEVELOPMENT OF COOPERATIVE CHANNELS EXPLAINS THE MATURATION OF HAIR CELL'S MECHANOTRANSDUCTION. Francesco Gianoli, Thomas Risler, Andrei S. Kozlov

2221-Pos  Board B491  NANOSCALE DYNAMICS OF VOLTAGE-GATED CALCIUM CHANNELS AT PRESYNAPTIC ACTIVE ZONES IN LIVE C. ELEGANS. Yunke Zhao

2222-Pos  Board B492  COUNTING THE NUMBER OF GLUTAMATE MOLECULES IN SINGLE SYNAPTIC VESICLES. Ann-Sofie U. Cans, Yuanmo Wang, Hoda Mashadi Fathali, Devesh Mishra, Thomas Olsson, Jacqueline Keighron, Karolina Skibicka

2223-Pos  Board B493  RAPID CELL TYPE-DEPENDENT UPTAKE OF ON4R TAU MONOMER IS NOT SOLELY HEPARIN SULFATE PROTEOGLYCAN DEPENDENT. Anne S. Robinson, Daniel Oseid, Evan Wells, Liqing Song

2224-Pos  Board B494  PLASMA MEMBRANE DYNAMICS AND PROTEOLYTIC PROCESSING OF APP FROM A SINGLE MOLECULE/SINGLE CELL PERSPECTIVE. Claudia Capittini, Cristina Cecchi, Francesco S. Pavone, Martino Calamai

2225-Pos  Board B495  ACETYL MIMICKING K274Q MUTATION ENHANCES TAU AGGREGATION, INCREASES THE AFFINITY OF TAU FOR METAL IONS AND REDUCES ITS ABILITY TO PROTECT DNA. Jitendra S. Rane, Anuradha Kumari, Dulal Panda

2226-Pos  Board B496  CONFORMATIONAL STATES OF NITRIC OXIDE SYNTHASE CHARACTERIZED BY TIME-RESOLVED FLUORESCENCE. Carey K. Johnson, Alexa A. Snyder, Alexandria K. Gambill, David C. Arnett, Brian C. Smith

2227-Pos  Board B497  SUPERRESOLUTION MICROSCOPY TO STUDY THE ENDOGENOUS ROLE OF ALPHA-SYNUCLEIN IN SYNAPTOSOMES. Pedro P. Vallejo Ramirez

2228-Pos  Board B498  A SNAKE UNCOILED: ACTIVATION OF PARKIN, A UBIQUITIN LIGASE INVOLVED IN PARKINSON'S DISEASE. Kalle Gehring, Véronique Sauvé

2229-Pos  Board B499  EFFECTS OF AU-FE NANOCLUSTER ON NEURON DIFFERENTIATION WITH ELECTRIC STIMULATION. Yu-Tung Weng, Yu-Jhe Chiu, Li-Han Chung, Yu-Ying Hsieh, Tsan-Yao Chen, Chi-Shuo Chen

2230-Pos  Board B500  REAL-TIME IMAGING FOR THE INVESTIGATION OF CORRELATION BETWEEN FACTOR AGGREGATION AND TRANSPORT MECHANISM VARIATION OF MOTOR PROTEIN IN NEURONAL CELLS. Yo Han Song, Kyujin Shin, Kang Taek Lee

2231-Pos  Board B501  SIGNAL INTEGRATION MECHANISM OF CA2+/CALMODULIN-DEPENDENT PROTEIN KINASE II REVEALED BY HIGH-SPEED AFM. Mikihiro Shibata, Hideji Murakoshi

2232-Pos  Board B502  NEURODEGENERATIVE DISEASE AND CAMP SIGNALING DYNAMICS. Elsa Roush, Kevin Harlen, Mike Hendrickson, Thomas E. Hughes

2233-Pos  Board B503  ACTIVITY-DEPENDENT PLASTICITY AT ASSOCIATIVE MEMORY CELLS IN THE PREFRONTAL CORTEX. Jin-Hui Wang, Jing Feng, Wei Lu

2234-Pos  Board B504  THE REGULATORY MEMBRANE PROTEIN FXYD6: LOCALIZATION IN THE CNS AND INTERACTION WITH THE NA+ K+-ATPASE. Ryan Sweazey, Craig Gatto, Pablo Artigas

Sensory Neuroscience (Boards B505 - B510)

2235-Pos  Board B505  THE GROWTH DYNAMICS OF DROSOPHILA CLASS IV DENDRITES ACCORDING TO A THREE-STATE MARKOV MODEL. Sabyasachi Sutradhar, Sonal Shree, Kevin Harlen, Craig Trottier, Jonathon Howard

2236-Pos  Board B506  ACTION POTENTIAL ACTIVITY AND MEMBRANE STRUCTURE IN NEURONS OF THE GOLDFISH RETINA UNDERGO SEASONAL CHANGES. Michael G. Jonz, Michael W. Country, Katrin Blank, Jeffrey C. Smith

2237-Pos  Board B507  NONLINEAR DYNAMICS OF HEARING. Dolores Bozovic
2238-Pos  BOARD B508
STIM1 THERMOSENSITIVITY DEFINES THE OPTIMAL PREFERENCE TEMPERATURE FOR WARM SENSATION IN MICE. Xiaoling Liu, Haiping Wang, Yan Jiang, Qiu Zheng, Matt Petrus, Mingmin Zhang, Sizi Zheng, Christian Schmidt, Xinzhong Dong, Bailong Xiao

2239-Pos  BOARD B509
EVALUATION OF THE COGNITIVE EVOKE POTENTIAL P300 IN MEDICAL STUDENTS UNDER DIFFERENT LEVELS OF ACADEMIC STRESS. Ana Luisa Alvarez, Marco Antonio Delaney Martinez, Raúl Sampieri

2240-Pos  BOARD B510
THE OSMOSENSITIVE CATION CHANNEL TMEM63B IS REQUIRED FOR AUDITORY SYSTEM. Chang Ye

Computational Methods and Bioinformatics II (Boards B511 - B532)

2241-Pos  BOARD B511
SINGLE-PARTICLE TRACKING OF DNA-BINDING BIOMOLECULES IN THE NUCLEUS: WHY A POWER-LAW DISTRIBUTION OF DWELL TIMES? Michael J. Saxton

2242-Pos  BOARD B512
REALISTIC, VECTORIAL MODELING OF THE DETECTION POINT SPREAD FUNCTION FOR SINGLE MOLECULE AND BRIGHTFIELD MICROSCOPY. Michael J. Nasse, Jorg C. Woehl

2243-Pos  BOARD B513
THREE-DIMENSIONAL FAST OPTIMIZED CLUSTERING ALGORITHM (FOCAL3D) FOR SINGLE-MOLECULE LOCALIZATION MICROSCOPY. Daniel F. Nino, Joshua N. Milstein

2244-Pos  BOARD B514
DECODING THE VARIANCE IN INTRACELLULAR ORGANIZATION OF THE UNDIFFERENTIATED HIPS CELL. Matheus Palhares Viana, Susanne M. Rafelski

2245-Pos  BOARD B515
OPERATOR ALGEBRAS FOR DYNAMIC TOPOLOGY MODELS OF CYTOSKELETON. Eric Mjolsness

2246-Pos  BOARD B516
BAYESIAN CELL FORCE ESTIMATION INTRODUCING CELL SHAPE PRIOR. Ryosuke Fujikawa, Satoshi Kozawa, Kentarou Baba, Naoyuki Inagaki, Kazushi Ikeda, Yuichi Sakamura

2247-Pos  BOARD B517
MODELLING IN VITRO AGGREGATION OF CANCER CELLS. Léo L. Adenis, Olivier Seksek, Marjorie Juchaux, Christophe Derouleurs, Mathilde Badoual

2248-Pos  BOARD B518
LIPIDOME PROFILES OF GLIOBLASTOMA AND DUCTAL CARCINOMA CELL LINES. Edmundo Medina-Gurrola, Steve Berruecos, Michael C. Canton, Alexis S. Torres, Barry Dungan, F. Omar Holguin, Elba E. Serrano

2249-Pos  BOARD B519
SUPPRESSING ALTERNANS BY FEEDBACK CONTROL DEPENDS ON UNDERLYING INSTABILITY FACTORS. Arvind Krishnan, Daisuke Sato

2250-Pos  BOARD B520
ANALYSIS OF DIFFERENTIAL GENE EXPRESSION IN RESPONSE TO ANISOTROPIC STRETCH USING A SYSTEMS MODEL OF CARDIAC MYOCYTE MECHANOTRANSDUCTION. Shulin Cao, Kyle Buchholz, Philip M. Tan, Yasser Aboelkassem, Jennifer C. Stowe, Jeffrey J. Saucerman, Jeffrey Omens, Andrew D. McCulloch

2251-Pos  BOARD B521
WHOLE-ATRIA OPTICAL ANALYSIS OF TRANSVERSE-AXIAL TUBULE SYSTEM FOR IDENTIFICATION OF VULNERABLE “HOT SPOTS” FOR ARRHYTHMIA DEVELOPMENT. Lucas N. Ratajczyk, Ashley K. Irwin, Di Lang, Alexey V. Glukhov

2252-Pos  BOARD B522
BREAKDOWN IN THE CONTINUUM: EXPLORING THE LIMITATIONS OF CONTINUUM MODELS OF CALCIUM ION SIGNALING IN DENDRITIC SPIINES. Meagan P. Rowan, Mason V. Holst, Miriam Bell, Christopher T. Lee, Michael J. Holst, Padmangi Rangamani

2253-Pos  BOARD B523
BIOLOGICAL APPLICATIONS FOR ONLINE METHODS OF RESOURCE ALLOCATION. Andrea Boskovic, Ashley Carter, Jeeyon Jeong

2254-Pos  BOARD B524

2255-Pos  BOARD B525
MODELLING THE GENETIC INFORMATION PROCESSES OF A GENETICALLY MINIMAL CELL. Zane R. Thornburg, Marcelo Cardoso dos Reis Melo, David Bianchi, Troy A. Brier, Marian Breuer, Hamilton O. Smith, Clyde A. Hutchison III, John I. Glass, Zaida Luthey-Schulten

2256-Pos  BOARD B526
FUNCTIONAL ANNOTATION OF CODING AND NON-CODING RNA IN NON-MODEL ORGANISMS. Sayane Shome, Robert L. Jernigan

2257-Pos  BOARD B527
3D MOVEMENT ANALYSIS USING DEEP LEARNING ALGORITHMS REVEALS ALTERATIONS IN MOTOR FUNCTIONS AFTER NEUROLOGICAL INJURIES IN RAT SPASTICITY MODEL. Demeter Túrós, Adami I. Horvath, Mate Gyimesi, Andras Malmasi-Csizmadia

2258-Pos  BOARD B528

2259-Pos  BOARD B529
MATHEMATICAL MODELING OF CELL VOLUME CONTROL. Maria Jesus Munoz Lopez, Yoichiro Mori

2260-Pos  BOARD B530
3D CONVOLUTIONAL NEURAL NETWORK FOR PREDICTING FREE ENERGIES OF PARTITIONING. Stewart He, Helgi Ingolfsson, Delin Sun, W.F. Drew Bennett, Jonathan Allen, Felice C. Lightstone, Camille Biloadeau

2261-Pos  BOARD B531
AN OPEN SOURCE PLATFORM FOR CONTINUUM SIMULATIONS OF BIOLOGICAL MEMBRANES. Yulong Pan, Yannick Azhri Din Omar, Arvind Krishnan, Farid Manuchehrfar, Anna Terebus, Jie Liang
Optical Microscopy and Superresolution Imaging III (Boards B533 - B542)

2263-Pos  BOARD B533  TRAVEL Awardee
A COMPARISON OF HISTO-CHEMICAL AND HISTO-MAGNETIC DETECTION OF IRON. Kevin J. Walsh, Stavan Shah, Ping Wei, Samuel Oberdick, Dana McGuie, Gunjan Agarwal

2264-Pos  BOARD B534  INTERPLAY OF RADITATIVE AND NON RADITATIVE RATE CONSTANTS IN THE PHOTOPHYSICS OF FLUORESCENT PROTEINS. Srijit Mukherjee


2266-Pos  BOARD B536  PUMPLESS MICROFLUIDIC SYSTEM FOR BONE MARROW NICHE-ON-A-CHIP IN VITRO MODELLING AND MULTIPHOTON IMAGING IN LEUKEMIA. Giulia Borile, Giulia Borella, Camille Charoy, Andrea Filippi, Filippo Romanato, Martina Pigazzi, Kurt Anderson

2267-Pos  BOARD B537  EXCLUSION OF RNA-ASSOCIATED PROTEINS FROM THE CELL CYTOSOL OBSERVED BY DUAL COLOR Z-SCAN FLUORESCENCE MICROSCOPY. Siddarth Reddy Karuka, Isaac Angert, John Kohler, Louis M. Mansky, Joachim D. Mueller

2268-Pos  BOARD B538  AN ULTRA-SENSITIVE IMMUNOHISTOCHEMICAL (IHC) IMAGING METHOD FOR LOW-ABUNDANT TARGETS DETECTION. Haiyan Wu, Shu Kan, Deven Patel, Qin Zhao, Pengfei Dong, Liu Jixiang, Jinfang Liao, Zhenjun Diwu

2269-Pos  BOARD B539  REAL-TIME POINT SPREAD FUNCTION ENGINEERING FOR ISCAT. Vivien Walter, Mark I. Wallace

2270-Pos  BOARD B540  LARGE-SCALE SPECIES-SPECIFIC MICROBIAL IDENTIFICATION BY FLUORESCENCE IN SITU HYBRIDIZATION. Sungho Kim, Jae-Kyeong Im, Seungmin Yun, Hwasoooh Koh, Donghoon Kang, Taejoon Kwon, Hajin Kim

2271-Pos  BOARD B541  SIMULTANEOUS IMAGING OF INSULIN VESICLE DYNAMICS AND CALCIUM ACTIVITY IN LIVE INTACT MOUSE ISLETS BY DISPIM. Xue Wen Ng, Michael R. DiGruccio, Tomasz S. Tkaczyk, David W. Piston

2272-Pos  BOARD B542  POINT SPREAD FUNCTION ENGINEERING TO MAP 3D PARTICLE MOTION. Keith Bonin, Sudhakar Prasad, Paul Kefer, George M. Holzwarth, Pierre-Alexandre Vidi

Single-Molecule Spectroscopy I
(Boards B543 - B559)


2274-Pos  BOARD B544  THE ROTARY MOTOR OF LIFE: SINGLE-MOLECULE IMAGING AND MOLECULAR DYNAMICS SIMULATION OF F1-ATPASE. Nathan Suiter, Jason Portillo, Matthew A. Anderson

2275-Pos  BOARD B545  EGFR MEMBRANE DYNAMICS AND ORGANIZATION INVESTIGATED BY CAMERA-BASED MULTI-PARAMETER FLUORESCENCE IMAGING WITH HIGH SPATIOTEMPORAL RESOLUTION. Thorsten Wohland, Jagadish Santhanaran, Harikrishnan Balasubramanian

2276-Pos  BOARD B546  INSIDE-OUT REGULATION OF CADHERIN ADHESION. Ramesh Koirala, Andrew V. Priest, Soichiro Yamada, Martijn Gloerich, Sanjeevi Sivasankar

2277-Pos  BOARD B547  RAISING THE BAR ON SINGLE-MOLECULE BIOPHYSICS: DNA/RNA SECONDARY/TERTIARY FOLDING USING EXTREME PRESSURE AS A CONTROL VARIABLE. Hsuan-Lei Sun, David J. Nesbitt

2278-Pos  BOARD B548  SINGLE-MOLECULE G-QUADRUPLEX NANOPORE ASSAY. Filip N. Boskovic, Jinbo Zhu, Kaikai Chen, Ulrich F. Keyser

2279-Pos  BOARD B549  TRAVEL Awardee
CGP METHYLATION DETECTION WITH SINGLE-MOLECULE RECOGNITION THROUGH EQUILIBRIUM POISSON SAMPLING. Liuhian Dai, Alexander Johnson-Buck, Muneesh Tewari, Nils G. Walter

2280-Pos  BOARD B550  SPCAS9 DISPLAYS BIASED ONE-DIMENSIONAL DIFFUSION ON DSDNA TO SEARCH FOR A TARGET. Chunjai Chen, Mengyi Yang

2281-Pos  BOARD B551  SPECTRAL ANALYSIS OF A FAST BIOMOLECULAR TRANSITION IN MAGNETIC TWEETERS MEASUREMENTS. Sebastian Belau, Ralf Seidel

2282-Pos  BOARD B552  ANTIBODY BINDING BACTERIA SAMPLE THEIR ENVIRONMENT THROUGH A SECOND BINDING SITE, WHICH CAN ACT AS A FORCE-SENSOR UNDER MECHANICAL SHEER. Narayan Dahal, Joel Nowitzke, Annie Eis, Ionel Popa

2283-Pos  BOARD B553  COMBINED SINGLE-MOLECULE FRET AND SINGLE-CHANNEL RECORDING TO LINK ION CHANNEL CONFORMATION AND FUNCTION. Steven Vanuytsel, Christopher L. Parperis, Mark I. Wallace

2284-Pos  BOARD B554  RESOLUTION OF ANGSTROM-SCALE PROTEIN-CONFORMATIONAL CHANGES IN THE REGULATORY DOMAIN OF A K+ CHANNEL BY ANALYZING FLUORESCENCE ANISOTROPY. John H. Lewis, Zhe Lu

2285-Pos  BOARD B555  MULTIVALENT EFFECTS ON INTERACTIONS BETWEEN THE LIGAND AND CELL-SURFACE RECEPTORS PROBED BY A BINDING FORCE SPECTROSCOPY. Lina A. Alhalhooly, Matthew Confeld, Yongki Choi, Sanku Malik

2286-Pos  BOARD B556  USING SINGLE-MOLECULE SPECTROSCOPY TO DISSECT THE HEPATITIS C VIRUS NUCLEOCAPSID ASSEMBLY PATHWAY. Saptaswa Sen, Shamalungwai Durayalage, Erik D. Holmstrom

2287-Pos  BOARD B557  A STUDY OF TRANSCRIPTIONAL ACTIVATION BY THE TRANSCRIPTION FACTOR GAL4 IN SACCHAROMYCES CEREVISIAE BY 3D ORBITAL TRACKING AND IN VIVO RNA LABELLING. Abigail Figueroa, Iris L. Torres, Julianna Goezler, Michael Pool, Tineke Lenstra, Matthew L. Ferguson

2288-Pos  BOARD B558  TRAVEL Awardee
RNA TRAFFICKING BETWEEN MEMBRANELESS ORGANELLES AT SINGLE-MOLECULE RESOLUTION IN LIVE CELLS. Guoming Gao, Ameya P. Jallalha, Andreas Schmidt, Nils G. Walter

2289-Pos  BOARD B559  SINGLE-MOLECULE MEASUREMENTS TO CAPTURE THE DISTRIBUTION OF CONFORMATIONAL AND DIMERIC STATES OF THE CYTOSOLIC PROTEIN CRAFT IN LIVE CELLS. Kenji Okamoto, Kayo Hibino, Yasushi Sako
Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence (Boards B560 - B582)

2290-Pos  Board B560  Travel Awardee
IN SITU MEASUREMENT OF PROTEIN AND LIPID MASS BY NORMALIZED RAMAN IMAGING. Seungeun Oh, Changhee Lee, Dan Fu, Wenlong Yang, Ang Li, Chongzhao Ran, Wei Yin, Clifford J. Tabin, X. Sunnery Xie, Marc W. Kirschner

2291-Pos  Board B561  Travel Awardee
MOLECULAR MICROSCOPY OF OIL BODY AND LIPID DROPLET CHEMISTRY IN SITU WITH PHYSILOGICALLY-RELEVANT READOUTS. Alexandra Paul, Sapun H. Parekh

2292-Pos  Board B562
WEAK INTRINSIC LUMINESCENCE IN MONOMERIC PROTEINS ARISING FROM CHARGE RECOMBINATION. Amrendra Kumar, Dileep Ahari, Anurag Priyadarshi, Mohd. Z. Ansari, Rajaram Swaminathan

2293-Pos  Board B563
MULTIMODAL NONLINEAR OPTICAL IMAGING OF PLASMA MEMBRANE BY DYE-BASED SUM-FREQUENCY GENERATION USING A COHERENT ANTI-STOKES RAMAN SCATTERING MICROSCOPE. Takaha Mizuguchi, Atsuya Momotake, Mafumi Hishida, Masato Yasui, Yasuhiko Yamamoto, Mutsuo Nuriya

2294-Pos  Board B564
HIGH-THROUGHPUT FRET SCREENING IN LIVING CELLS BASED ON LIFETIME DETECTION TO IDENTIFY SMALL-MOLECULE EFFECTORS OF SERCA. Tony Schaff, Samantha Yuen, Andrew R. Thompson, Benjamin D. Grant, Ang Li, Evan Kleinboehl, Lauren Roelike, Ji Li, Razvan L. Cornea, David D. Thomas

2295-Pos  Board B565
A SELF ALIGNING MACROSCOPIC SELECTIVE PLANE ILLUMINATION MICROSCOPE WITH NEAR UNIFORM AXIAL RESOLUTION. Arianna Gentile Polese, Gregory Seedorf, Dominik Stich, Douglas P. Shepherd

2296-Pos  Board B566
UNRAVELING THE ORIGIN OF MULTI-EXponential FLUORESCENCE INTENSITY DECAY OF TRYPTOPHAN IN PROTEINS. Amrendra Kumar, Shah E. Alom, Anurag Priyadarshi, Dileep Ahari, Mohd. Z. Ansari, Rajaram Swaminathan

2297-Pos  Board B567
INTERFEROMETRIC FLUORESCENCE CROSS CORRELATION SPECTROCOPY. Ipsita Saha, Savee Saffarian

2298-Pos  Board B568
STEPS TOWARD FULL WAVELENGTH RANGE CALIBRATION FOR CIRCULAR DICHROISM SPECTROSCOPY. Curtis W. Meuse

2299-Pos  Board B569

2300-Pos  Board B570
TOPOLOGY, LANDSCAPES, AND BIOMOLECULAR ENERGY TRANSPORT. Michael Zwolak, Justin Elenewski

2301-Pos  Board B571
ACRIDINIUM AND ACRIDONE CONSTRUCTS WITH RED-SHIFTED EMISSION. Kerry M. Swift, Richard Haack, Anastasiia A. Tikhomirova, Stefan Hershberger, Sergey Y. Tetin

2302-Pos  Board B572
TOOLS AND RESOURCES FOR CIRCULAR DICHROISM SPECTROSCOPY. Bonnie A. Wallace, Robert W. Janes, Andrew Miles, Elliot D. Drew, Lee Whitmore, Sergio Gomes Ramalhi

2303-Pos  Board B573
MODULATING AND DETECTING THE DYNAMIC CHANGES OF INTERMOLECULAR HYDROGEN BONDING IN PLASMONIC MOLECULAR JUNCTION. Jing Guo, Tao Ma, Eugene Li, Jin He

2304-Pos  Board B574
LOCALIZED SURFACE PLASMON RESONANCE SPECTROSCOPY FOR THE DETECTION OF MICROTUBULE NUCLEATION. Runyao Yin, Dreycen Foiles, Otubek Nazarov, Evan Porter, Keisuke Hasegawa

2305-Pos  Board B575
SYNCHRON-RELATED INFRARED MICROSCOPY STUDIES OF THE RADIOSENSITIZATION EFFECTS OF NANOPARTICLES USED IN RADIOTHERAPY. Immaculada Martinez-Rovira, Olivier Seksek, Ibraheem Yousef

2306-Pos  Board B576
USE OF RAMAN SPECTRUM FROM CELLS TO EVALUATE GENETIC CARDIOMYOPATHY. Hideaki Fujita, Arno Germond, Kazuhiro Sudo, Kuniya Abe, Tomonobu Watanabe

2307-Pos  Board B577
UTILIZING TYROSINE ANALOGS TO ALTER PHOTOPHYSICAL PROPERTIES OF GREEN FLUORESCENT PROTEIN. Darcy R. Harris, Scott H. Brewer, Christine M. Phillips-Piro

2308-Pos  Board B578
QUALITATIVE ANALYSIS AND PHENOTYPING WITH RAMAN SPECTROCOPY. Mark A. Krimmer, Charles Farber, Dzmitry Kurouski

2309-Pos  Board B579
FOLLOWING SPATIAL DISTRIBUTION OF PHOTOSYNTHETIC PIGMENTS ACROSS THE DEVELOPMENT OF A LEAF USING HYPERSPECTRAL FLUORESCENCE MICROSCOPY. Sandeep Pallikkuth, Roxana Khoshravesh, David T. Hanson, Jerilyn A. Timlin, Keith A. Lidke

2310-Pos  Board B580
QUANTITATIVE FLUORESCENCE QUENCHING BY AROMATIC AMINO ACIDS. Danielle R. Latham, Arturo R. Diaz, Jake Ribich, Nabanita Saikia, Emma Mulry, Leah Casabianca, Feng Ding, Hugo Sanabria

2311-Pos  Board B581
21-PLEX MICROFLUIDIC FLOW CYTOMETER AND ITS POTENTIAL APPLICATIONS TO PEDIATRIC MALARIAL IMMUNE RESPONSE ANALYSIS. Gillian McMahon, Judith R. Mourant, Kristen Wilding, Douglas J. Perkins

2312-Pos  Board B582
INVESTIGATIONS OF PROTEIN AND BIOMOLECULES USING A 280 NM OR 295 NM PICOSECOND LASER FOR HIGH SPEED MEASUREMENTS AND HIGH TIME RESOLUTION. Christian Oelsner, Eugeny Ermilov, Thomas Schönaus, Dietmar Klemme, Guillaume Delport, Kristian Lauritsen, Rainer Erdmann

Biosensors II (Boards B583 - B601)

2313-Pos  Board B583
NANOIMPACT BASED SINGLE-ENTITY DETECTION OF PROTEINS USING A NANOPORE-NANOELECTRODE NANOPIPETTE. Popular Pandey, Jin He

2314-Pos  Board B584
MICROSCOPIC IMAGING OF ENGINEERED BIOLOGICAL NANOPORES Aiming FOR HIGH THROUGHPUT NANOPORE SENSING AND SEQUENCING. Shuo Huang
2315-Pos Board B585
STABLE HYBRID POLYMER-LIPID MEMBRANE FOR HIGH VOLTAGE BIOLOGICAL NANOPORE EXPERIMENTS. Lunying Yu, Xinqi Kang, Mohammad Amin Alibakhshi, Meni Wanunu

2316-Pos Board B586
MULTIPLEXED MOLECULAR COUNTERS USING A HIGH-VOLTAGE TRANSMEMBRANE PORE PLATFORM. Xinqi Kang, Mohammad Amin Alibakhshi, Meni Wanunu

2317-Pos Board B587
EXOSOME CHARACTERIZATION UTILIZING THE IMMUNE SYSTEM BASED ON THE INTERRUPTING CURRENTS BY SOLID STATE NANOPORE. Masato Nishio, Federico Thei

2318-Pos Board B588
EFFECT OF ELECTROOSMOSIS ON ANTIBIOTIC TRANSLLOCATION THROUGH OUTER MEMBRANE PORIN OMPF. Jayesh A. Bafna, Sushil Pangeni, Eshita Paul, Mathias Winterhalter, Alphan M. Aksoyoglu

2319-Pos Board B589
INTERACTION OF CUCURBITURIL MOLECULAR CONTAINERS WITH THE AEROLYSIN NANOPORE FOR MOLECULAR RECOGNITION. Hadjer Ouldali, Abdelghani Oukhaled

2320-Pos Board B590
DETECTION OF TUBULIN AND TAU PROTEINS AGGREGATIONS USING SOLID-STATE NANOPORE AND ATOMIC FORCE MICROSCOPY (AFM). Mitu C. Acharjee, Haopeng Li, Bo Ma, Steve Tung, Jiali Li

2321-Pos Board B591
REVEALING THE HETEROGENEOUS PHOSPHORYLATION STATES FOR A SINGLE OLIGONUCLEOTIDE AND PEPTIDE BY NANOPORE SENSOR. Meng-Yin Li, Yi-Lun Ying, Yi-Tao Long

2322-Pos Board B592
ANALYZING SINGLE-MOLECULE BEHAVIOR OF A SMALL PROTEIN IN CONFINED NANOSPACE OF A BIOLOGICAL NANOPORE. Misa Yamaji, Natsumi Takai, Mauro Chinappi, Ryuji Kawanoto

2323-Pos Board B593
CONSTRUCTION OF PROGRAMMABLE NANOPORE USING DE NOVO DESIGNED B-SHEET PEPTIDE. Keisuke Shimizu, Shungo Sakashita, Yoshio Hamada, Kenji Usui, Batsaiikhon Mijiddorj, Izuru Kawamura, Ryuji Kawanoto

2324-Pos Board B594
MASS-INDEPENDENT, HIGH-FIDELITY SINGLE-MOLECULE DIFFERENTIATION USING THE AEROLYSIN PROTEIN PORE. Tobias Ensslen, Hadjer Ouldali, Abdelghani Oukhaled, Jan C. Behrends

2325-Pos Board B595
PROTEIN FINGERPRINTING USING THE AEROLYSIN NANOPORE. Mazdak Afshar Bakshloo, Monasadat Talarimoghari, Hadjer Ouldali, Jan C. Behrends, Abdelghani Oukhaled

2326-Pos Board B596
KINETIC ANALYSIS OF THE EFFECT OF CHARGE NEUTRALIZATION ON SINGLE-MOLECULE ELECTRO-DIFFUSION BETWEEN TWO ENERGY MINIMA IN A PROTEIN PORE. Tobias Ensslen, Jan C. Behrends

2327-Pos Board B597
CAPTURE AND TRANSLLOCATION CHARACTERISTICS OF DNA NANOSTRUCTURES THROUGH SOLID-STATE NANOPORES. Liquan He, Martin Charron, Daniel Tessier, Kyle Briggs, Vincent Tabard-Cossa

2328-Pos Board B598
OPTIMIZING THE SENSITIVITY OF DNA CONCENTRATION MEASUREMENTS USING NANOPORES. Martin Charron, Lucas Philipp, Kyle Briggs, Vincent Tabard-Cossa

2329-Pos Board B599
NANOPORE DETERMINATION OF NUCLEIC ACIDS IN WHOLE BLOOD BASED ON A DISPLACEMENT REACTION STRATEGY. Liang Wang, Xiaohuan Chen, Yunjiao Wang, Shuo Zhou, Deqiang Wang, Xiyun Guan

2330-Pos Board B600
DIRECT MICRORNA SEQUENCING USING NANOPORE INDUCED PHASE-SHIFT SEQUENCING (NIPSS). Jinyue Zhang

2331-Pos Board B601
NANOPORE RESISTIVE PULSE SENSING WITH MULTIPLE ALPHA-HEMOLOYEE-SIN PORES IMPROVES THE DETECTION LIMIT OF MICRORNAs. Ruoyu Hu, Maurits R.R. de Planque

Biomaterials (Boards B602 - B618)

2332-Pos Board B602
DNA LOOING BY MULTIVALENT CATIONS. Donna M. Roscoe, Ashwin Balaji, Luka Matej Devenica, Ashley Carter

2333-Pos Board B603
IONS EXCLUSION BY THE BIO-INSPIRED WS2 LAMELLAR MEMBRANE UNDER DIFFERENT DRIVING FORCES. Laxmi K. Pandey, Bedangra Sapkota, Meni Wanunu

2334-Pos Board B604
UNUSUAL PROPERTIES OF WATER AT HETEROGENEOUS BIOLOGICAL INTERFACES. Jae Kyoo Lee, Hong Gil Nam, Richard Zare

2335-Pos Board B605
THE DYNAMICS OF LIGNIN IN MELT. Marcella Berg

2336-Pos Board B606
A MOLECULAR PROBE TO TRACK MITCHONDRIA-LYSOSOME INTERACTIONS IN LIVE CELLS. Qixin Chen, Hongbao Fang, Weijiang He, Jiajie Diao

2337-Pos Board B607
A FLUORESCENT NANOPORE TO DETECT LOCAL TEMPERATURE CHANGES DURING ANTITUMORAL HYPERTHERMIA THERAPY. Cynthia El Hedjaj, Imène Chebbi, Olivier Seksek, Edouard Alphandery

2338-Pos Board B608
PH RESPONSIVE UPCONVERSION MESOPOROUS SILICA NAPARICLES FOR TARGETED PHOTODYNAMIC AND PHOTOTHERMAL CANCER THERAPY. Palanimukaram Loganathan, Mazin M. Magzoub

2339-Pos Board B609
PHOTOSENSITIZATION OF HUMAN SERUM ALBUMIN PROMPTS DIFFERENTIAL UPTAKE OF PACLITAXEL IN CANCER CELLS. Omar J. Castillo, Sandra Cardona, Lorenzo Brancaloni

2340-Pos Board B610
CHARACTERIZATION OF BIOPHARMACEUTICAL CELL GROWTH MEDIA BY ABSORBANCE-TRANSMITTANCE EXCITATION-EMISSION (A-TEEM) SPECTROSCOPY AND EXTREME GRADIENT BOOSTING ANALYSES. Adam M. Gilmore, Karoly Csatorday

2341-Pos Board B611
CONJUGATED POLYMERS OPTICALLY REGULATE THE FATE OF ENDOTHELIAL COLONY FORMING CELLS. Francesco Lodola, Vittorio Rosti, Gabriele Tuilli, Andrea Desii, Laura Tapella, Paolo Catarsi, Dmitry Lim, Francesco Moccia, Maria Rosa Antognazza

2342-Pos Board B612
DE NOVO-DESIGNED NEAR-INFRARED NANO-AGGREGATES FOR THE SUPERRESOLUTION MONITORING OF LYSOSOMES IN CELLS, IN WHOLE ORGANOIDS, AND IN VIVO. Hongbao Fang, Jiajie Diao
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<td>2343-</td>
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<td>MICROPATTERNED ADHESION SITES FOR SPHEROID CULTIVATION UNDER FLOW.</td>
<td>Miriam Balles, Shokoufeh Teymouri, Roman Zantl, Jan Schwarz</td>
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<td>2344-</td>
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<td>DESIGNING A MECHANO-CHEMICAL HYBRID HYDROGEL BASED ON A BISTABLE KINASE-PHOSPHATASE SWITCH INTEGRATED IN COLLAGEN MESHWORK.</td>
<td>Andrey Y. Mikheev, Aleksandr S. Maiorov, Fazly I. Ataul-lakhanov, Ekaterina L. Grishchuk</td>
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<td>FLOW-INDUCED SELF-ASSEMBLY OF SPIDER SILK FROM MULTI-SCALE SIMULATIONS.</td>
<td>Ana M. Herrera, Anil Kumar Dasanna, Ulrich S. Schwarz, Frauke Gräter</td>
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<td>2346-</td>
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<td>FLOW-INDUCED SELF-ASSEMBLY OF SPIDER SILK FROM MULTI-SCALE SIMULATIONS.</td>
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<td>2347-</td>
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<td>SIMULATED MECHANICAL AND ELECTRICAL PROPERTIES OF THREE-DIMENSIONAL PROTEIN LATTICES.</td>
<td>Rachel Baarda, Simon Kit Sang Chu, Tegan Marianchuk, Daniel L. Cox</td>
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<td>2348-</td>
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<td>HIGHLY PROCESSIVE DNA ORIGAMI NANOSCALE MOTORS.</td>
<td>Alisina Bazrafshan, Travis Meyer, Hanquan Su, Joshua Brockman, Selma Piranej, Aaron Blanchard, Khalid Salaita, Yonggang Ke</td>
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## Daily Program Summary

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

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<td>New Council Meeting</td>
<td>Room 32A</td>
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<tr>
<td>8:00 AM–3:00 PM</td>
<td>Poster Viewing</td>
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<tr>
<td>8:15 AM–10:15 AM</td>
<td><strong>Symposium: Membrane Proteins in Infectious Disease</strong></td>
<td>Ballroom 20A</td>
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<td>Chair: Francesca Marassi, Sanford Burnham Prebys Medical Discovery Institute</td>
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<td>ASSEMBLY AND BUDDING OF FILOVIRUSES FROM THE HOST CELL PLASMA MEMBRANE. Robert V. Stahelin</td>
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<td>Ballroom 20BC</td>
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<td><strong>Platform: Other Channels</strong></td>
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<td><strong>Platform: Protein Assemblies</strong></td>
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<td>8:15 AM–10:15 PM</td>
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<td>8:15 AM–10:15 AM</td>
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<td>8:15 AM–10:15 AM</td>
<td><strong>Platform: Protein-Nucleic Acid Interactions</strong></td>
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<td>10:30 AM–12:30 PM</td>
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<td>1:00 PM–3:00 PM</td>
<td><strong>Symposium: New and Notable</strong></td>
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<td>Co-Chairs: Patricia Clark, University of Notre Dame, William Koberz, University of Massachusetts Medical School</td>
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<td>SINGLE-MOLECULE TRAINSPOTTING: STUDIES OF EUKARYOTIC GENOME MAINTENANCE. Gheorghe Chistol</td>
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<td>COUPLING MOLECULAR ACTIVATION AND ITS FUNCTIONAL OUTPUT THROUGH MULTISCALE IMAGING. Dorit Hanein</td>
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<td>HOW INFLUENZA HEMAGGLUTININ ACTS WITHIN MEMBRANES TO DRIVE MEMBRANE FUSION. Peter Kasson</td>
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<td>LIPIDS AND CATIONS AS COUPLED REGULATORS OF MEMBRANE PROTEIN INSERTION AND FOLDING. Alexey S. Ladokhin</td>
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<td><strong>Symposium: Personalized Medicine: Protein Sequence Variation on Human Health</strong></td>
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<td><strong>Platform: Cardiac, Smooth, and Skeletal Muscle Electrophysiology and Regulation I</strong></td>
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<td>Platform: Protein Structure and Conformation IV</td>
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Wednesday, February 19

New Council Meeting
8:00 AM - 11:00 AM, ROOM 32A

Poster Viewing
8:00 AM - 3:00 PM, EXHIBIT HALL

Symposium
Membrane Proteins in Infectious Disease
8:15 AM - 10:15 AM, BALLROOM 20A

Chair
Francesca Marassi, Sanford Burnham Prebys Medical Discovery Institute

2349-Symp 8:15 AM
ASSEMBLY AND BUDDING OF FILOVIRUSES FROM THE HOST CELL PLASMA MEMBRANE. Robert V. Stahelin

2350-Symp 8:45 AM
SMALL MOLECULE INHIBITION OF MEMBRANE FUSION MEDIATED BY THE FLAVIVIRUS ENVELOPE PROTEIN. Priscilla L. Yang

No Abstract 9:15 AM
CONFORMATIONAL STATES OF THE HIV-1 ENVELOPE GLYCOPROTEIN OBSERVED BY SMFRET. Walther Mothes

2351-Symp 9:45 AM
MOLECULAR BASIS FOR PATHOGEN-Host INTERACTIONS. Francesca M. Marassi

Symposium
Shapeshifting: Proteins with More Than One Structure
8:15 AM - 10:15 AM, BALLROOM 20D

Chair
Sarah Bondos, Texas A&M University

2352-Symp 8:15 AM
IDENTIFICATION AND PREDICTION OF FOLD-SWITCHING PROTEINS. Loren Looger, Ananya K. Majumdar, Lauren Porter

2353-Symp 8:45 AM
EVOLUTION OF A METAMORPHIC PROTEIN. Brian F. Volkman

2354-Symp 9:15 AM
PROTEIN FOLDING AND CONFORMATIONAL FRUSTRATION. Shachi Gosavi

2355-Symp 9:45 AM
SHAPE-SHIFTING TO REGULATE AND DIVERSIFY TRANSCRIPTION FACTOR FUNCTION. Sarah Bondos, Kelly Churion, Rebecca Booth, Sydney Tippelt

Platform
Protein Structure, Prediction, and Design
8:15 AM - 10:15 AM, BALLROOM 20BC

Co-Chairs
Caitlin Davis, Yale University
Christopher Prior, Durham University, United Kingdom

2356-PLAT 8:15 AM
CHARACTERIZATION OF A PH-DEPENDENT CARGO-DELIVERY PROTEIN CHIMERA. Suzanne I. Sandin, Christopher Randolph, Eva de Alba

2357-PLAT 8:30 AM
DESIGN AND CONSTRUCTION OF AN AEROLYSIN SINGLE-MOLECULE INTERFACE FOR SINGLE-MOLECULE SENSING. Xue-yuan Wu, Meng-Yin Li, Yi-Lun Ying, Yi-Tao Long

2358-PLAT 8:45 AM
AB INITIO TERTIARY STRUCTURE PREDICTION FROM SMALL ANGLE SCATTERING DATA. Christopher Prior, Ehmke Pohl, Owen Davies

2359-PLAT 9:00 AM
DE NOVO PROTEIN STRUCTURE MODELING TOOL MAINMAST ENHANCED FOR MULTIPLE CHAIN COMPLEXES AND BOUND LIGANDS. Genki Terashi, Daisuke Kihara

2360-PLAT 9:15 AM
FRET-ASSISTED PROTEIN STRUCTURE POSTDICTION OF CASP13 TARGETS. Mykola Dimura, Holger Gohlke, Claus A. Seidel

2361-PLAT 9:30 AM
COMBINING PHYSICS-BASED AND EVOLUTION-BASED METHODS TO DESIGN ANTIBODIES AGAINST AN EVOLVING VIRUS. Eric Jakobsson, Amir Barati Farimani, Emad Tajkhorshid, Narayana Aluru

2362-PLAT 9:45 AM
TOWARDS THE DE NOVO DESIGN OF FUNCTIONAL METALLOPROTEINS. Ketaki Belsare, Nicholas Polilzi, Lior Shtayer, William DeGrado

2363-PLAT 10:00 AM
QUINARY STRUCTURE MODULATES CONSENSUS PROTEIN SEQUENCE STABILITY IN CELLS. Caitlin Davis, Martin Gruebele

Platform
Other Channels
8:15 AM - 10:15 AM, ROOM 23ABC

Co-Chairs
Michael Pusch, Istituto di Biofisica, CNR, Italy
Ingrid Skerrett, SUNY Buffalo State College

2364-PLAT 8:15 AM
FUNCTIONAL ANALYSIS OF THE ISOLATED VOLTAGE SENSOR DOMAIN PRESENT IN THE MAMMALIAN SPERM-SPECIFIC NA+/H+ EXCHANGER BY PATCH-CLAMP CURRENT RECORDING. César Arcos Hernández, Esteban Suarez, Leon Islas, Takuya Nishigaki

2365-PLAT 8:30 AM
A MODULAR TOOLBOX FOR OPTOGENETIC MANIPULATION OF K+ CONDUCTANCE. Gerhard Thiel, Anja J. Engel, Kerri Kukovetz, Kerri Kukovetz, Matea Cortolano, Sebastian Höler, Monica Beltrame, Anna Moroni

2366-PLAT 8:45 AM
MOLECULAR MECHANISMS UNDERLYING OXIDATION SENSITIVITY OF VRAC. Sara Bertelli, Michael Pusch

2367-PLAT 9:00 AM
CONNEXIN 31 MUTATIONS ASSOCIATED WITH SKIN DISEASE AND DEAFNESS DISPLAY A VARIETY OF PHENOTYPES WHEN EXPRESSED IN XENOPUS OOCYTES. Samuel Sunners, Anhthi Tanguyen, Adedoyin Akingbade, Ingrid M. Skerrett

2368-PLAT 9:15 AM
REPURPOSING INTRACELLULAR FLUORESCENT BIOSENSORS TO VISUALIZE EXTRACELLULAR FLUXES. Daniel A. Gutierrez

2369-PLAT 9:30 AM
ROLES OF HYDROGEN-BONDING NETWORKS IN PROTON CHANNEL FUNCTION AS REVEALED THROUGH DE NOVO DESIGNED PROTON CHANNELS. Huong T. Kratochvil, John M. Nicoludis, William F. DeGrado
2370-PLAT  9:45 AM  DE NOVO DESIGN OF ION CONDUCTING TRANSMEMBRANE PROTEIN NANOPORES.  Siddhuja K. Marx, Anastassia Vorobjieva, Cameron Chow, Jonathan M. Craig, Hwanhee C. Kim, Sarah J. Abell, Jesse Huang, Stacey Gerben, David Baker, Jens H. Gundlach

2371-PLAT  10:00 AM  EXPRESSION AND CHARACTERIZATION OF CONNEXIN30.3. Jesse Asiedu, Ingrid M. Skerrett

Platform  Protein Assemblies
8:15 AM - 10:15 AM, ROOM 24ABC

Co-Chairs
Marcia Levitus, Arizona State University
Allen Minton, NIH, NIDDK

2372-PLAT  8:15 AM  E. COLI SINGLE-STRANDED DNA BINDING (SSB) PROTEIN UNDERGOES DYNAMIC LIQUID-LIQUID PHASE SEPARATION CONTROLLED VIA PROTEIN-PROTEIN AND PROTEIN-DNA INTERACTIONS.  Gabor Harami, Zoltan J. Kovacs, Janos Palinkas, Rita Pancsa, Veronika Bardath, Krisztian Tarnok, Hajnalka Harami-Papp, Andras Malnasi-Csizmadia, Mihaly Kovacs

2373-PLAT  8:30 AM  DIRECT OBSERVATION OF PRION PROTEIN FIBRIL ELONGATION KINETICS.  Yuanzi Sun, Mark Batchelor, John Collinge, Jan Bieschke

2374-PLAT  8:45 AM  MODULATION OF THE OLIGOMERIZATION STATE OF PROTEINS BY IONS AND SMALL MOLECULES. AN FCS STUDY. Anirban Purohit, Linda B. Bloom, Marcia Levitus

2375-PLAT  9:00 AM  SIMPLE CALCULATION OF PHASE DIAGRAMS FOR LIQUID-LIQUID PHASE TRANSITIONS IN SOLUTIONS OF TWO MACROMOLECULAR SOLUTE SPECIES.  Allen P. Minton

2376-PLAT  9:15 AM  COMPUTER SIMULATIONS OF KEY PEPTIDES INVOLVED IN PREECLAMPSIA AND ALZHEIMER’S DISEASE.  Maksim Kouza, Andrzej Kolinski, Irina Buhimschi, Andrzej Kloczkowski

2377-PLAT  9:30 AM  DETERMINING THE OLIGOMERIC STATE OF A GPI-ANCHORED MODEL PROTEIN VIA COLOCALIZATION-BASED SINGLE-MOLECULE MICROSCOPY.  Clara Bodner, Mario Bramshuber, Gerhard J. Schütz

2378-PLAT  9:45 AM  LIQUID-LIQUID PHASE SEPARATION OF WHEAT GLIADINS - TOWARDS PHYSIOLOGICAL CONDITIONS.  Line Sahli, Denis Renard, Véronique Solé-Jamault, Adeline Boire

2379-PLAT  10:00 AM  PS3 DEAMIDATION AS A MOLECULAR TIMER FOR CELL DEATH.  Karola Gerecht, Sofia Margiola, Manuel M. Müller

Platform  Exocytosis and Endocytosis
8:15 AM - 10:15 AM, ROOM 30ABC

Co-Chairs
Bianxiao Cui, Stanford University
Satish Thiyagarajan, Columbia University

2380-PLAT  8:15 AM  CRYO-EM OF INTACT CLATHRIN-COATED VESICLES REVEALS ADAPTOR DISTRIBUTION AND NOVEL INTERACTIONS BETWEEN SUBUNITS.  Mohammdreza Paraan, Scott M. Stagg

2381-PLAT  8:30 AM  INDIRECT BACTERIAL TRANSCRIPTION-TRANSLATION COUPLING MECHANISM REVEALED BY IN SITU INTEGRATIVE STRUCTURAL BIOLOGY.  Liang Xue, Francis O’Reilly, Ludwig Sinn, Jurij Rappaport, Julia Mahamid

2382-PLAT  8:45 AM  THE IN SITU STRUCTURE OF PARKINSON’S DISEASE-LINKED LRRK2.  Reika Watanabe, Robert Buschauer, Jan Böhnig, Martina Audagnotto, Keren Lasker, Tzan Wen Lu, Daniela Boassa, Susan S. Taylor, Elizabeth Villa

2383-PLAT  9:00 AM  IN SITU ARRANGEMENT OF INFLUENZA A VIRUS MATRIX PROTEIN M1 RESOLVED BY CRYO ELECTRON TOMOGRAPHY SUGGESTS A MODEL FOR VIRUS ASSEMBLY.  Julia Peukes, Serge Dmitrieff, John A.G. Briggs

2384-PLAT  9:15 AM  NMR “CRYSTALLOGRAPHY” OF MEMBRANE PROTEINS ALIGNED IN NATIVE-LIKE BILAYERS.  Joel Lapin, Emmanuel Awoseyanya, Alexander Nevzorov

2385-PLAT  9:30 AM  AB INITIO ELECTRON DENSITY DETERMINATION DIRECTLY FROM SOLUTION SCATTERING DATA.  Thomas D. Grant

2386-PLAT  9:45 AM  PROTEIN CRYSTAL MOTIONS FROM TIME-RESOLVED DIFFRACTED X-RAY BLINKING.  Yuji C. Sasaki, Masahiro Kuramochi, Kazuhiro Mio, Hiroshi Sekiguchi, Ayana Sato-Tomita, Naoya Shibayama

2387-PLAT  10:00 AM  OVERHAUSER DYNAMIC NUCLEAR POLARIZATION: A TOOL FOR BUILDING MAPS OF HYDRATION WATER.  John M. Franck

Platform  NMR, Diffraction, and EM
8:15 AM - 10:15 PM, ROOM 25ABC

Co-Chairs
John Franck, Syracuse University
Jessica Rabuck-Gibbons, The Scripps Research Institute

2388-PLAT  8:15 AM  CRYSOPT-III ASSEMBLES SIMULTANEOUSLY AND WITHOUT PREFERENCE ON SUPPORTED LIPID BILAYERS OF VARYING CURVATURES.  Nebojsa Jukic, Alma P. Perrino, Simon Scheuring

2389-PLAT  8:30 AM  DEMYSTIFYING DYNAMICS OF DYNAMIN DURING CLATHRIN MEDIATED ENDOCYTOSIS.  Ning Fang, Xiaodong Cheng, Kuangcai Chen, Bin Dong

2390-PLAT  8:45 AM  CRYO-EM STRUCTURES OF FULL-LENGTH DYNAMIN ASSEMBLED ON MEMBRANES IN VITRO AND WITHIN CELLS.  John Jimah, Abigail Stanton, Kem A. Sochacki, Lieza M. Chan, Haifeng He, Huaibin Wang, Justin W. Taraska, Jenny E. Hinshaw

2391-PLAT  9:00 AM  DEMYSTIFYING DYNAMICS OF DYNAMIN DURING CLATHRIN MEDIATED ENDOCYTOSIS.  Ning Fang, Xiaodong Cheng, Kuangcai Chen, Bin Dong

2392-PLAT  9:15 AM  CRYSOPT-III ASSEMBLES SIMULTANEOUSLY AND WITHOUT PREFERENCE ON SUPPORTED LIPID BILAYERS OF VARYING CURVATURES.  Nebojsa Jukic, Alma P. Perrino, Simon Scheuring
Platform
Protein-Nucleic Acid Interactions
8:15 AM - 10:15 AM, ROOM 31ABC

Co-Chairs
Kumar Sarthak, University of Illinois Urbana-Champaign
Judong Fu, The Ohio State University

2396-Plat 8:15 AM
TRANSIENT_BINDING AND NON-ROTATIONAL COUPLED MOTION OF PS3 REVEALED BY SUB-MILLISECOND RESOLVED SINGLE-MOLECULE FLUORESCENCE TRACKING. Dwicky R.G. Subekti, Satoshi Takahashi, Kiyo Kamagata

2397-Plat 8:30 AM
CRYO-EM STRUCTURE OF SUBSTRATE-ENGAGED NUCLEAR EXOSOME TARGETING (NEXT) COMPLEX. Marc Rhyan Puno, Christopher D. Lima

2399-Plat 9:00 AM
THE UNCONVENTIONAL BIOPHYSICAL FUNCTION OF MICRORNA-1 IN MODULATING CARDIAC ELECTROPHYSIOLOGY. Dandan Yang

2401-Plat 9:30 AM
A DNA ORIGAMI PLATFORM FOR SINGLE-PAIR FÖRSTER RESONANCE ENERGY TRANSFER INVESTIGATION OF DNA-DNA AND DNA-PROTEIN INTERACTIONS. Kira Bartnik, Anders Barth, Mauricio Piló-Pais, Alvaro H. Crevenna, Tim Liedl, Don C. Lamb

Symposium
Personalized Medicine: Protein Sequence Variation on Human Health
1:00 PM - 3:00 PM, Ballroom 20D

Chair
Christian Landry, Laval University, Canada

2404-Symp 1:00 PM
MAKING AND MEASURING THE EFFECT OF MUTATIONS ON A MASSIVE SCALE. Douglas M. Fowler

2405-Symp 1:30 PM
DECODING MOLECULAR MECHANISMS OF DISEASE WITH MEDICAL BIOPHYSICS. Anna Panchenko

2406-Symp 2:00 PM
EVOLUTION-GUIDED DISSECTION AND ENHANCEMENT OF RESTRICTION OF VIRUSES BY HOST ANTIVIRAL PROTEINS. Harmit Malik

Symposium
Intrinsically Disordered Proteins (IDP) and Aggregates III
1:00 PM - 3:00 PM, Ballroom 20BC

Co-Chairs
Rajeswari Appadurai, Indian Institute of Science (IISc), India
Birthe Kragelund, University of Copenhagen, Denmark

2407-Plat 1:00 PM
CONTEXT MATTERS IN DISORDER BASED PROTEIN COMMUNICATION. Birthe B. Kragelund, Andreas Prestel, Nanna Wickmann, Joao Martins, Wouter Boomsma, Lasse Staby, Ruth Hendus-Altenburger, Karen Skriver

2408-Plat 1:15 PM
AN ADVANCED REPLICA EXCHANGE METHOD FOR EXPLORING UNCHARTED PROTEIN LANDSCAPES. Rajeswari Appadurai, Anand Srivastava

2409-Plat 1:30 PM
DIVERSE TRANSITION PATHS OF COUPLED BINDING AND FOLDING OF INTRINSICALLY DISORDERED PROTEIN PROVED BY THREE-COLOR SINGLE-MOLECULE FRET. Jae-Yeol Kim, Hoi Sung Chung
THE STICKERS AND SPACERS FRAMEWORK FOR DESCRIBING PHASE BEHAVIOR OF MULTIVALENT INTRINSICALLY DISORDERED PROTEINS. 

2410-PLAT

THE STICKERS AND SPACERS FRAMEWORK FOR DESCRIBING PHASE BEHAVIOR OF MULTIVALENT INTRINSICALLY DISORDERED PROTEINS.

2411-PLAT

SIZE-DEPENDENT CHARACTERIZATION OF ALPHA-SYNUCLEIN AGGREGATES UNVEILS THEIR TOXICITY. Derya Emin, Margarida Rodrigues, Zengjie Xia, Antonina Kouli, Helen Henson, Caroline Williams-Gray, David Kienerman

2412-PLAT

QUANTIFYING THE THERMODYNAMIC STABILITY OF AMYLOID FIBRILS. Kimberley L. Callaghan, Quentin Peter, Janet R. Kumita, Tuomas P. Knowles, Christopher M. Dobson

2413-PLAT

BACKBONE DYNAMICS OF THE TAZ1 DOMAIN OF THE CREB-BINDING PROTEIN MODULATE COMPETITION BETWEEN DISORDERED LIGANDS. Rebecca B. Berlow, Jane Dyson, Peter E. Wright

2414-PLAT

RATIONAL DESIGN OF PEPTIDE TARGETING INTRINSICALLY DISORDERED PROTEIN P53 -REGULATION OF FUNCTION AND PHASE SEPARATION. Kyoto Kamagata, Ryo Kitahara, Tomoshi Kameda

Platform
Cardiac, Smooth, and Skeletal Muscle Electrophysiology and Regulation II

1:00 PM - 3:00 PM, ROOM 23ABC

Co-Chairs
Balazs Horvath, University of Debrecen, Hungary
Joyce Lin, California Polytechnic State University

2415-PLAT

TARGETED REMUSCULARIZATION CAN REDUCE VENTRICULAR TACHYCARDIA (VT) BURDEN IN A COMPUTATIONAL HUMAN HEART MODEL OF POST-MYOCARDIAL INFARCTION (MI). Jialiu A. Liang, Joseph K. Yu, Natalia A. Trayanova

2416-PLAT


2417-PLAT

A NEW MECHANISM OF CELLULAR AND TISSUE AUTOMATICITY. Steven Poelzing, James P. Keener, Kees McGahan

2418-PLAT

SPATIOTEMPORAL MODULATION OF ACTION POTENTIAL DURATION IN INTACT HEARTS BY SUB-THRESHOLDS OPTOGENETICS STIMULATION. Valentina Blasci, Marina Scardigli, Lorenzo Santini, Raffaele Coppini, Cecilia Ferranti, Caroline Muellenbroich, Leslie M. Loew, Elisabetta Cerbai, Corrado Poggesi, Marfina Campione, Francesco S. Pavone, Leonardo Sacconi

2419-PLAT

CREATING ION CHANNEL MODELS WITH UNBIASED GRAPHS. Kathryn Mangold, Jonathan R. Silva

2420-PLAT

EXPLORING THE EFFECTS OF CONDUCTION RESERVE AND EPHAPTIC COUPLING IN CARDIAC CELLS. Joyce Lin, Steven Poelzing, Sharon A. George, Amara Greer-Short, Matthew W. Kay

2421-PLAT

INTERPLAY BETWEEN B-ADRENERGIC STIMULATION AND CAMKII SIGNALING FAVORS HUMAN ATRIAL ARRHYTHMOGENESIS: INSIGHTS FROM POPULATIONS OF MODELS. Haibo Ni, Xianwei Zhang, Stefano Morotti, Eleonora Grandi

2422-PLAT


Platform
Skeletal and Smooth Muscle Mechanics, Structure, and Regulation

1:00 PM - 3:00 PM, ROOM 24ABC

Co-Chairs
Belinda Bullard, University of York, United Kingdom
Miklós Kellermayer, Semmelweis University, Hungary

2423-PLAT

STRUCTURAL INSIGHTS INTO F-ACTIN REGULATION AND SARCOMERE ASSEMBLY VIA MYOTILIN. Kristina Djinovic-Carugo, Julius Kostan

2424-PLAT

SAR ANALYSIS OF LINKER DERIVATIVES OF THE SMOOTH MUSCLE MYOSIN SPECIFIC CK-571 COMPOUND. Sharad K. Suthar, Mate Gyimesi, Csilla Kurdi, Andras Malnasi-Csizmadia

2425-PLAT

TROPOMYSOSIN AS A STRETCH SENSOR IN THE TROPONIN BRIDGES OF INSECT FLIGHT MUSCLE. Konstantinos Drousiotis, Demetris Koutalianos, Christoph G. Baumann, Belinda Bullard

2426-PLAT


2427-PLAT

MICROTUBULE REMODELING CONTRIBUTES TO THE LOSS OF FORCE AND POWER IN AGING SKELETAL MUSCLE. Humberto Cavalcante Joca, Anica Harriot, Jenna Leser, Andrew Coleman, Guol Shi, Joseph P. Stains, Christopher W. Ward

2428-PLAT

WEAKLY-BOUND, NON-LINEAR ELASTIC CROSS-BRIDGES ARE REQUIRED TO SELF-CONSISTENTLY MODEL THE FENN EFFECT, FORCE VELOCITY AND TENSION TRANSIENTS IN MUSCLE FIBERS. Katelyn Jarvis, Kaylyn Bell, Amy K. Loya, Douglas M. Swank, Sam Walcott

2429-PLAT

THICK FILAMENT ACTIVATION AND POST-TETANIC POTENTIATION MECHANISMS EVOLVED DIFFERENTLY IN INVERTEBRATE AND VERTEBRATE STRIATED MUSCLE. Raul Padron, Weikang Ma, Sebastian Duno Miranda, Natalia Koubassova, Kyounghwan Lee, Prince Tiwari, Antonio Pinto, Pura Bolaños, Andrey Tsaturyan, Thomas C. Irving, Roger Craig
Co-Chairs
Constance Agamasu, Frederick National Laboratory for Cancer Research
Alemayehu Gorfe, University of Texas Health Science Center at Houston

1:00 PM - 3:00 PM, ROOM 25ABC

Emerging Insights into the Membrane Binding Domain of Raf Engaging with the Plasma Membrane and Its Implication on Raf Activation. Constance Agamasu, De Chen, John Columbus, Frank Heinrich, Marco Tonelli, Christopher B. Stanley, Thomas Turbyville, Frank McCormick, Dwight V. Nissley, Andrew G. Stephen

1:15 PM
DHHIC20 Palmitoyl-Transferase Reshapes the Membrane to Foster Catalysis. Robyn Stix, James Song, Anirban Banerjee, José D. Faraldo-Gómez

1:30 PM
Using Machine Learning to Predict Membrane Protein States Based on Their Lipid Environment. Adam T. Moody, Gautham Dharaman, Timothy S. Carpenter, Helgi I. Ingolfsson, Brian C. Van Essen, James N. Gosli, Felice C. Lightstone

1:45 PM
State-Dependent and Mutation-Induced Differences in Protein-Lipid Interactions in the Na,K ATPase. Dhaní R. Mahato, Magnus Andersson

2:00 PM

2:15 PM
Cryo-EM Structures of the GIRK2 Channel Reveal Mechanisms for Lipid Modulation. Ian W. Glaser, Yamuna K. Mathiharan, Yulin Zhao, Georgios Skiniotis, Paul A. Slesinger

2:30 PM
Crystal Structure of MIDS1 Bound to Phospholipid. Nikhil Bharambe

2:45 PM
Dynamics of Oncogenic KRAS Mutants on Bilayer Surfaces. Priyanka Prakash Srivastava, Douglas B. Utwin, Liang Hong, Suparna Sarkar-Banerjee, Drew M. Dolino, Yong Zhou, Vasanthi Jayaraman, John F. Hancock, Alemayehu A. Gorfe

Co-Chairs
Constance Agamasu, Frederick National Laboratory for Cancer Research
Alemayehu Gorfe, University of Texas Health Science Center at Houston

1:00 PM - 3:00 PM, ROOM 31ABC

Targeting of NAV1.6 and NAV1.2 to Inhibit Excitatory vs Inhibitory Neural Circuits. Samuel J. Goodchild, Mohammad-Reza Ghovaneloo, Tagore Sanketh Bandaru, Koushik Choudhury, Mohamed Fouda, Kaveh Rayani, Daman Poburko, Lucie Delemotte, Peter C. Ruben

Comparative Study of the Effects of an SCNSA Mutation Within a Family Diagnosed with Brugada Syndrome Using iPSC-M. Rebecca Martinez-Moreno, David Carreras, Elisabet Selga, Georgia Sarquella-Brugada, Ramon Brugada, Guillermo J. Perez, Fabiana S. Scornik

Co-Chairs
Wei Liu, University of Science and Technology of China, China
Marc Ruff, IGBMC, CERBM, France

1:00 PM
Pathogenic Siderophore ABC Importer YBTPQ Adopts a Surprising Fold of Exporter. Zhiming Wang, Wenxin Hu, Hongjin Zheng

1:15 PM
Atomic Structure of the Human Herpesvirus 6B Capsid and Capsid-Associated tegument Complexes. Wei Liu, Yibo Zhang, Zhihang Li, Vinay Kumar, Ana L. Alvarez-Cabrera, Emily C. Leibovitch, Yanxiang Cui, Ye Mei, Guo-Qiang Bi, Steve Jacobson, Z. Hong Zhou

1:30 PM

Proteasome Conformational Regulation of Substrate Engagement and Degradation. Eric R. Greene, Ellen Goodall, Andres H. de la Peña, Mary Matyskiela, Gabriel Lander, Andreas Martin

2:00 PM
A Structural and Mechanistic Model for the Interaction of Parkinson’s Disease-Related LRRK2 with Microtubules. Colin K. Deniston, Andres Leschziner, John Saliogianis, David Sneyd, Indrajit Lahiri

Biophysical Society
64th Annual Meeting of the Biophysical Society
February 15–19, 2020 • San Diego, California

2020
2452-Plat  2:15 PM
STRUCTURAL STUDIES USING CRYO-EM TO UNRAVEL MECHANISTIC DETAILS OF P47 BINDING TO P97.  Purbasha Nandi, Po-Lin Chiu

2453-Plat  2:30 PM
FTIP - AN ACCURATE AND EFFICIENT METHOD FOR GLOBAL PROTEIN SURFACE COMPARISON.  Yuan Zhang, Xin Sui, Scott M. Stagg, Jinfeng Zhang

2454-Plat  2:45 PM
SINGLE-PARTICLE CRYO-EM STUDIES OF ERP44-ERAP1 AND ERP44-ERAP2 REVEAL THEIR ER-RETENTION MECHANISM.  Richa Arya, Lawrence J. Stern
Below is the list of poster presentations for Wednesday of abstracts submitted by October 1. The list of late abstracts scheduled for Wednesday is available in the Program Addendum, and those posters can be viewed on boards beginning with LB.

Posters should be mounted beginning at 7:00 AM on Wednesday and removed by 3:00 PM. Poster numbers refer to the program order of abstracts as they appear in the online Abstract Issue. Board numbers indicate where boards are located in the Exhibit Hall.

**Odd-Numbered Boards 10:30 AM–11:30 AM | Even-Numbered Boards 11:30 AM–12:30 PM**

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<td>B33 – B51</td>
<td>Protein Stability, Folding, and Chaperones II</td>
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<td>B52 – B71</td>
<td>Protein-Small Molecule Interactions II</td>
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<td>Intracellular Calcium Channels and Calcium Sparks and Waves II</td>
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<td>B331 – B345</td>
<td>Cardiac, Smooth, and Skeletal Muscle Electrophysiology II</td>
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<td>B414 – B436</td>
<td>Ion Channels, Pharmacology, and Disease II</td>
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<td>Cardiac Muscle Regulation</td>
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<td>Cell Mechanics, Mechanosensing, and Motility II</td>
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<td>B526 – B535</td>
<td>Emerging Techniques and Synthetic Biology</td>
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<td>B546 – B561</td>
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<td>B580 – B600</td>
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It is the responsibility of the poster presenters to remove print materials from the board after their presentations. Please do not leave materials or belongings under poster boards or in the poster area. Posters will not be collected or stored for pick-up at a later time. The Biophysical Society is not responsible for any articles left in the poster area.
Protein Structure and Conformation IV (Boards B1 - B32)

2455-Pos Board B1 Travel Awardee
CONFORMATIONAL DYNAMICS OF ALANINE IN WATER AND WATER/ETHANOL MIXTURES: EXPERIMENTALLY DRIVEN EVALUATION OF MOLECULAR DYNAMICS FORCE FIELDS. Shuting Zhang, Reinhard Schweitzer-Stenner, Brígita Urbanc

2456-Pos Board B2
NANOMECHANICAL DIFFERENCES BETWEEN INACTIVE AND ACTIVE STATES OF RHODOPSIN FROM MOLECULAR-SCALE SIMULATION. Adolfo B. Poma, Slawomir Filipiak, Paul Park

2457-Pos Board B3
PROTEINS ON THE WATER/AIR INTERFACES: INSIGHTS FROM SIMULATIONS USING POLARIZABLE FORCE FIELDS. Jian Zhu, Zongyang Qiu, Jing Huang

2458-Pos Board B4

2459-Pos Board B5
LOCAL UNFOLDING RELATES TO PROTEOLYTIC SUSCEPTIBILITY OF THE MAJOR BIRCH POLLEN ALLERGEN BET V 1. Anna S. Kamenik, Florian Hofer, Klaus R. Liedl

2460-Pos Board B6
INVESTIGATING THE ROLE OF B6FACILITATING THE REGULATION OF PROTEIN-PROTEIN RECOGNITION MECHANISM. Dhananjay C. Joshi, Jung-Hsin Lin

2461-Pos Board B7
SAXS SIGNATURES OF CONFORMATIONAL HETEROGENEITY AND HOMOGENEITY OF DISORDERED PROTEIN ENSEMBLES. Jianhui Song, Jichen Li, Hue Sun Chan

2462-Pos Board B8
INTERACTIONS OF THE GDP DISSOCIATION STIMULATOR SMGGDS WITH KRAS: X-RAY SCATTERING AND ROSETTA DOCKING STUDIES AND DIFFERENCES IN INTERACTION OF TWO ISOFORMS WITH MEMBRANE-BOUND KRAS4B. Dennis J. Michalak, Ellen Lorimer, Bethany Unger, Carol L. Williams, Frank Heinrich, Mathias Lösche

2463-Pos Board B9 Travel Awardee
19F NMR STUDIES OF CYCLOPHILIN A AND ITS INTERACTION WITH HIV-1 CAPSID. Manman Lu, Tatyana E. Polenova, Angela M. Gronenborn

2464-Pos Board B10
PURIFICATION AND BIOPHYSICAL CHARACTERIZATION OF L. E MEMBRANE EXPORTER FROM MYCOBACTERIUM TUBERCULOSIS IN LIPOIDSCS MADE OF NATIVE E. COLI MEMBRANES AND DETERGENT. Elka R. Georgieva, Christina Fanouraki, Peter P. Borbat

2465-Pos Board B11
EF-X IN SILICO – MODELING PROTEIN DYNAMICS IN AN ELECTRIC FIELD. Eugene Klyshko, Lauren McGough, Justin S. Kim, Rama Ranganathan, Sarah Rauscher

2466-Pos Board B12
CANCER ACTIVATING MUTATIONS IN STAT5B: ELUCIDATING THE IMPACT ON PROTEIN STRUCTURE AND DYNAMICS USING ATOMIC MOLECULAR SIMULATIONS. Deniz Menekse ık Erol, Elvin D. de Araujo, Fettah Erdogan, Hyuk-Soo Seo, Sirano Dhe-Paganon, Patrick T. Gunning, Sarah Rauscher

2467-Pos Board B13
KINDLIN COOPERATES WITH TALIN FOR INTEGRIN ACTIVATION, A MOLECULAR DYNAMICS APPROACH. Zainab Haydari, Hengameh Shams, Zeinab Jahed, Mohammad Mofrad

2468-Pos Board B14

2469-Pos Board B15
IDENTIFYING CONFORMATIONS OF AMYLOID PRECURSOR PROTEIN DIMER STRUCTURES. Alexander Gonzalez, Jacob B. Usadi, Esmael J. Haddadian

2470-Pos Board B16
EXPLORING ARTIFICIALLY CONJUGATED UBIQUITIN DIMERS BY MEANS OF NMR SPECTROSCOPY AND MD SIMULATIONS. Tobias Schneider, Andrej Berg, Christine Peter, Michael Kovernmann

2471-Pos Board B17
STRUCTURAL AND DYNAMIC ELUCIDATION OF NATURAL POLYREACTIVITY IN ANTIBODIES. Marta T. Borowska, Christopher T. Boughter, Erin J. Adams

2472-Pos Board B18
IN-SILICO EXPLORATION OF ANTIVIRAL LECTIN GRIFFITHSIN. Clarence B. Le, Patricia LiWang, Michael E. Colvin

2473-Pos Board B19
MOLECULAR DYNAMICS SIMULATIONS OF A 2.8-Å RESOLUTION CRYO-EM STRUCTURE OF THE A1IB3-ABCI XIMAB COMPLEX. Aleksandar Spasic, Davide Provasi, Dragana Nestic, Yixiao Zhang, Jihong Li, Barry S. Collier, Thomas Walz, Marta Filizola

2474-Pos Board B20
COMPUTATIONAL STUDY OF THE MOLECULAR DETAILS OF EBOLA VIRUS MATRIX PROTEIN VP40 AND HUMAN SEC24C PROTEIN INTERACTION. Nisha Bhattarai, Bernard S. Gerstman, Prem P. Chapagain

2475-Pos Board B21 Travel Awardee
HOW L17A/F19A DOUBLE MUTATION DIMINISH Aβ40 AGGREGATION IN ALZHEIMER’S DISEASE: KEY INSIGHTS FROM MOLECULAR DYNAMICS SIMULATIONS. Rajneet Kaur Saini

2476-Pos Board B22
USING MOLECULAR SIMULATION TO UNDERSTAND THE ROLE OF CONSERVED RESIDUES IN AN EXTREMOPHILIC BETA-GALACTOSIDASE. Shahlo Solieva, Vincent A. Voelz

2477-Pos Board B23
CONFORMATIONAL TRANSITIONS OF HISTIDINE KINASES USING MOLECULAR DYNAMICS. Fathia Idiris

2478-Pos Board B24
MD SIMULATION OF HIGH TEMPERATURE ENZYME ACTIVITY. Samin Tajik

2479-Pos Board B25
DETERMINING FACTORS THAT INFLUENCE VCCI LOOP INTERACTIONS IN VCCI-CHEMOKINE BINDING THROUGH MD SIMULATION. Lauren E. Stark, Patricia LiWang, Michael E. Colvin

2480-Pos Board B26
DEVELOPMENT OF THE CHARM Force Field for Cyclosporine A and Application to Molecular Dynamics Simulations Using a Membrane-Water System. Tsutomu Yamane, Ryo Takahashi, Akani Ito, Toru Ekimoto, Mitsunori Ikekuchi
2481-Pos  Board B27  
Molecular Dynamics Simulations for Improving Crystal Quality and Illuminating the Function of Taspase1: A Therapeutic Target. Jacob Layton, Nirupa Nagaratnam, Rebecca J. Jernigan, Joel Schneider, Andrew Flint, Barbara Mroczkowski, Petra Fromme, Jose M. Garcia, Abhishek Singhary

2482-Pos  Board B28  
Studying Bba Protein Folding Using the Gradient Descent Method to Modify the Sigmoid Function as the Order Parameter of the Umbrella Sampling Method. Hamed Meshkin

2483-Pos  Board B29  
Dynamics and energetics of loss-of-function variant Willebrand factor mutants, determined through molecular dynamics simulations and free energy calculations. Valeria Mejia-Restrepo

2484-Pos  Board B30  
An atomic level interactions of phosphorylated Tau repeat with microtubule using molecular modeling approach. Vishwambhar V. Bhandare, Ambarish Kunwar

2485-Pos  Board B31  
Travel Awardee

2486-Pos  Board B32  
Development of New Methods for Enhanced Conformational Sampling of Gpcrs. Erin A. Serrano, Ravinder Abrol

Protein Stability, Folding, and Chaperones II (Boards B33 - B51)

2487-Pos  Board B33  
Mechanism of the disulfide-coupled folding of a de novo designed prouroguanylin protein. Mayu Fukutsuji, Aman L. Maharjan, Toi Osumi, Shigeru Shimamoto, Yuji Hidaka

2488-Pos  Board B34  
Single-molecule afm imaging of thermally denatured firefly luciferase. Dimitra Apostolidou, Piotr E. Marszalek

2489-Pos  Board B35  
Investigation of Mechanically Labile Type III secretion protein effectors. Katherine E. DaPrun, Morgan Fink, Marc-André LeBlanc, Devin T. Edwards, Thomas T. Perkins, Marcelo C. Sousa

2490-Pos  Board B36  
Denaturing effect of guanidine hydrochloride on amyloid fibrils. Anna I. Sulatskaya, Maksim I. Sulatsky, Olga V. Stepanenko, Olga I. Povarova, Irina M. Kuznetsova, Konstantin K. Turoverov

2491-Pos  Board B37  
Structural Dynamics of Mammalian Prion Protein Correlates with Degree of Susceptibility to Prion Diseases. Patricia Soto, Alyssa L. Bursott, Hannah O. Brockman, Garrett M. Gloeß

2492-Pos  Board B38  
Characterizing the Interplay Between Dynamics and Regulation in the Trypsinogen/trypsin Protease System. Sarah Duggan

2493-Pos  Board B39  
Evaluation of the Protein Stability by Molecular Dynamics Simulation. Tomoshi Kameda, Kaito Kobayashi, Shin Irumagawa, Ryoichi Arai, Yutaka Saito, Takeshi Miyata, Mitsuo Umetsu

2494-Pos  Board B40  
Using Circular Permutation to Probe the Role of Chain Connectivity in the Co-Translational Folding Process of Haloglu. Natalie R. Dall, Susan Marqusee

2495-Pos  Board B41  
Interpreting Transition Path Time Extrapolation by Single Molecule FRET with MD Simulations. Grace H. Taumoefolau, Robert B. Best

2496-Pos  Board B42  
Ph Dependence of Oligomerization and Functional Activity of Alpha B Crystallin. Kashmeera D. Baboolall, Yusrah B. Kaudeer, Anne Gershenson, Patricia B. O’Hara

2497-Pos  Board B43  
Theoretical Investigations of a Multi-Domain Protein Folding Under Confinements and Crowders. Xiakun Chu, Jin Wang

2498-Pos  Board B44  
Monitoring Protein Folding on and off the Ribosome Using X-Ray Footprinting/Mass Spectrometry (Xf/MS). Shawn M. Costello

2499-Pos  Board B45  
Intra-Molecular Chaperone Mediated Folding of a Peptide Hormone in Molecular Evolution. Toi Osumi, Aman L. Maharjan, Mayu Fukutsuji, Shigeru Shimamoto, Yuji Hidaka

2500-Pos  Board B46  
Identifying the Structural Features that Differentiate Client Proteins of Ab-Crystallin. Marc Sprauge-Piercy, Kyle Roskamp, Rachel W. Martin

2501-Pos  Board B47  
Fxo1 Transcription Factor Folding Landscape Elucidates the Role of Disease Mutations. Dylan Novack, Lei Qian, Richard H.G. Baxter, Vincent Voelz

2502-Pos  Board B48  
Travel Awardee
Improving Personalized Medicine Through Systematic Protein Engineering of LDH. Shamir A. Khan

2503-Pos  Board B49  
Comparing Stabilization Strategies Between Engineered and Naturally Thermostable Proteins. Catrina Nguyen, Lauren M. Yearwood, Michelle E. McCully

2504-Pos  Board B50  
Rational Mutagenesis to Engineer Heme Stability in Recombinant Human Hemoglobin to Design Potential Hemoglobin Based Oxygen Carrier. Mohd A. Khan, Nidhi Mittal, Kajal Yadav, Sanjeev K. Yadav, Gaurav Mittal, Amit Tyagi, Suman Kundu

2505-Pos  Board B51  
Microfluidic Diffusional Sizing for Studying Protein-Protein Interactions. Matthias M. Schneider, Tom Scheidt, Christopher M. Dobson, Tuomas P.J. Knowles

Protein-Small Molecule Interactions II (Boards B52 - B71)

2506-Pos  Board B52  

2507-Pos  Board B53  
Binding Mechanism of Anti-Cancer Target Hsp90 and Peptide Drug. Lisa Matsukura, Naoyuki Miyashita
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Protein Assemblies II (Boards B72 - B83)

2523-Pos  BOARD B69  DRUGGING PROTEIN-PROTEIN INTERFACES OF A SUPRAMOLECULAR ASSEMBLY AS A MEANS TO OVERCOME RESISTANCE TO ACTIVE SITE THYMIDYLATE SYNTHASE INHIBITORS. Tigran M. Abramyan, Alexander Troshpa, Andrew L. Lee, Paul J. Sapienza

2524-Pos  BOARD B70  BIOPHYSICAL CHARACTERIZATION OF THE BINDING OF HRSV M2-1 PROTEIN TO RNA AND SOLASODINE. Vitor Brassolatti Machado, Giovana Cavenaghi Guimarães, Marcelo Andrés Fossey, Ícaro Putinhon Caruso, Fatima Pereira de Souza

2525-Pos  BOARD B71  CONSTRUCTING GPR6 HOMOLOGY MODEL, DOCKING STUDIES AND DRUG DESIGN. Israa Isawi, Paula Morales, Dow P. Hurst, Diane L. Lynch, Patricia H. Reggio

2526-Pos  BOARD B72  DIRECTED EVOLUTION OF STRUCTURAL PROTEINS USING A HIGH THROUGHPUT APPROACH. Melik C. Demirel

2527-Pos  BOARD B73  COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS OF TRIMSA- PHA SELF-ASSEMBLY AND RESTRICTION OF HIV. Alvin Yu, Katarzyna Skorupka, Alexander Pak, Barbie K. Ganser-Pornillos, Owen Pornillos, Gregory A. Voth

2528-Pos  BOARD B74  PROTEIN DOCKING REFINEMENT WITH SYSTEMATIC CONFORMATIONAL SEARCH - APPLICATION TO MODELS INSIDE THE DOCKING FUNNEL. Taras Dauzhenka, Ivan Anishchenko, Petras Kundrotas, Ilya Yakser

2529-Pos  BOARD B75  DYNAMIC INTERROGATION OF A VIRAL DNA PACKAGING MOTOR COMPLEX. Joshua Pajak, Erik Dill, Mark A. White, Paul Jardine, Marc C. Morais, Gaurav Arya

2530-Pos  BOARD B76  INTERFACEA: OPEN-SOURCE LIBRARY FOR PROTEIN INTERFACE ANALYSIS. João Pedro Garcia Lopes Maia Rodrigues, Michael Levitt

2531-Pos  BOARD B77  TRAVEL Awardee BREAKING THE SYMMETRY OF PROTEIN ASSEMBLIES: STRUCTURAL FLEXIBILITY AS A DE NOVO DESIGN PRINCIPLE. Alena Khmelinskaia, Andrew J. Borst, Yang Hsia, Quinton Dowling, David Veesler, Neil P. King

2532-Pos  BOARD B78  UNDERSTANDING SEPARATION OF TIME SCALES IN BACTERIAL PROTEASESOME ASSEMBLY. Pushpa Itagi, Anupama Kante, Anjana Suppahia, Jeroen Roelfs, Eric J. Deeds

2533-Pos  BOARD B79  EVALUATING SELF-ASSEMBLY PROPENSITY OF TETRA-PEPTIDE USING MD AND MACHINE LEARNING. Yoichi Kurumida, Keisuke Ikeda, Yusuke Nakamichi, Kaito Kobayashi, Yutaka Saito, Tomoshi Kameda

2534-Pos  BOARD B80  ON NON-MONOTONIC DEPENDENCE OF PHASE SEPARATION PROPERTIES ON MOLECULAR INTERACTION PARAMETERS. George M. Thurston, Douglas L. Hayden, Giuseppe Foffi, David S. Ross, John F. Hamilton

2535-Pos  BOARD B81  MODELING SYNTHESIZED PROTEIN MEGAMOLECULES: STRUCTURE, DYNAMICS, AND FUNCTIONS. Peng He, Josh Zuchniarz, Shengwang Zhou, Justin Modica, Sonali Dhindwal, Ying Li, Gregory A. Voth, Milan Mrksich, Vinayak P. Dravid, Benoit Roux
**Protein Dynamics and Allostery III (Boards B84 - B106)**

2538-Pos  **Board B84**
ALLOSTERIC REGULATION OF GLUTAMATE DEHYDROGENASE DEAMINATION ACTIVITY. Soumen Bera

2540-Pos  **Board B86**
SOLUTION NMR INVESTIGATION OF HIV-1 REPLICATION CYCLE. Bhargavi Ramaraju, Lalit Deshmukh

2545-Pos  **Board B91**
UNVEILING THE PH-DEPENDENT TRANSITION OF A TC TOXIN. Svetlana Kucher, Daniel Roderer, Tufa E. Abizaid, Alejandro Giorgetti, Giulia Rossetti

2546-Pos  **Board B92**
THE ROLE OF BACKBONE AND SIDECHAIN DYNAMICS ON FIMH ALLOSTERY. Jenny Liu, Kerim Dansuk, Sinan Keten, Luis Amaral

2547-Pos  **Board B93**
TRAVEL AWARDEE AB-INIPTICION OF NMR SPIN-RELAXATION PARAMETERS FROM MD SIMULATIONS. Po-Chia Chen, Maggy Hologne, Olivier Walker, Janosch Hennig

2548-Pos  **Board B94**
SILVER IONS CAUSED FASTER DIFFUSION OF H-NS PROTEINS IN LIVE E. COLI BY WEAKENING THE BINDING BETWEEN H-NS PROTEINS AND DNA. Asmaa A. Sadoon, Prabhut Khadka, Jack freeland, Ravi Gundampati, Rayan Mason, Mazon Ruiz, Suresh K. Thallapuranam, Jing Chen, Yong Wang

2549-Pos  **Board B95**
STUDY OF SELF-ASSOCIATION OF HUMAN CSTF-64 RNA RECOGNITION MOTIF. Elahe Masoumzadeh, Michael Latham, Clinton MacDonald, Petar Grozdanov

2550-Pos  **Board B96**
EPIDERMAL GROWTH FACTOR RECEPTOR KINASE EXON 19 DELETION MUTATIONS DISPLAY VARIABILITY IN ACTIVATION AND DRUG RESPONSIVENESS. Benjamin P. Brown

2551-Pos  **Board B97**
The Staphylococcus Aureus Isdh receptor forms a dynamic complex with human hemoglobin and triggers Heme release via two distinct hot spots. Joseph A. Clayton, Jeffrey M. Wereszczynski

2552-Pos  **Board B98**
WHAT TIME IS IT? RECONSTITUTING A CYANOBACTERIA CLOCK TO TIME THE GENE EXPRESSION IN VITRO. Archana G. Chavan, Joel Heisler, Yong-gang Chang, Andy LiWang

2553-Pos  **Board B99**
IS THE PROTEIN DYNAMICAL TRANSITION USEFUL? Akansha Sharma, Deepu K. George, Kimberly Crossen, Jeffrey McKinney, Cheryl Kerfeld, Andrea Markelz

2554-Pos  **Board B100**
PERIODIC TABLE OF F-TYPE ATPASES. John W. Vant, Abhishek Singharoy

2555-Pos  **Board B101**
RECEPTORS’ MOSAICS AND ALLOSTERY FOR PHARMACOLOGY. Zeineb Si Chalb, Alessandro Marchetto, Klevia Dishnica, Paolo Carloni, Alejandro Giorgetti, Giulia Rossetti

2556-Pos  **Board B102**
DYNAMIC DISEASE LANDSCAPE OF A CANCER DRIVING FUSION KINASE. Philipp C. Aoto, Susan S. Taylor

2557-Pos  **Board B103**
TRAVEL AWARDEE MECHANISM OF ALLOSTERIC INHIBITION OF PLASMODIUM FALCIPARUM CGMP-DEPENDENT PROTEIN KINASE. Olivia Byun, Katherine Van, Philipp Henning, Friedrich W. Herberg, Giuseppe Melacini

2558-Pos  **Board B104**
STRUCTURAL BASIS FOR THE ROBUST SUBSTRATE PHOSPHORYLATION BY MAPK P38A UNDER THE STRESS-ASSOCIATED ATP-DECREASED, WEAKLY ACIDIC PH CONDITION ELUCIDATED BY SOLUTION NMR. Yuji Tokunaga, Koh Takeuchi, Hideo Takahashi, Ichio Shimada

2559-Pos  **Board B105**
ALLOSTERY AND CONFORMATIONAL DYNAMICS IN TYROSINE KINASE REGULATION. William Marsiglia, Joseph Katigbak, Sijin Zheng, Moosa Mohammadi, Yingkai Zhang, Nate Traseth

2560-Pos  **Board B106**
SOLVENT MAPPING APPROACH FOR UNCOVERING CRYPTIC POCKETS IN MEMBRANE-BOUND PROTEINS. Lorena Zucic, Jan K. Marzinek, Jim Warwicker, Peter J. Bond

**Membrane Protein Structures II (Boards B107 - B124)**

2561-Pos  **Board B107**
PROTEIN-LIPID INTERACTIONS IN FORMATION OF VIRAL ENVELOPES. Natalia V. Kuzmina, Anna S. Loshkareva, Liudmila A. Shilova, Eleonora V. Shtykova, Denis G. Knyazev, Joshua Zimmerman, Oleg V. Batitschev

2562-Pos  **Board B108**
PHASE PLATE CRYO-EM STRUCTURE OF FORMYLPEPTIDE RECEPTOR 2 BOUND TO AN INHIBITOR G PROTEIN. Gongpu Zhao, Xing Meng

2563-Pos  **Board B109**
INFLUENCE OF THE LIPID-PROTEIN INTERFACE ON MSCS MECHANOSENSITIVE CHANNEL GATING AT HIGH RESOLUTIONS. Bharat Reddy, Navid Bavi, Eduardo Perozo
Enzyme Function, Cofactors, and Post-translational Modifications (Boards B145 - B170)

2590-Pos  Board B136  PREDICTING THE PK$_r$ SHIFT OF ACIDIC RESIDUES IN THE CALCIUM-BINDING SITES OF SERCA USING ALCHEMICAL FREE-ENERGY CALCULATIONS. Rodrigo Aguayo-Ortiz, Laura Dominguez, L. Michel Espinoza-Fonseca

2591-Pos  Board B137  VISUALIZING SINGLE MOLECULE DYNAMICS OF SYNTAXIN SIMULTANEOUS WITH CLUSTERS USING DYE LABELED NANOBODIES. Alan Weisgerber

2592-Pos  Board B138  IMMUNE CELL TRIGGERING BY SPATIAL SEGREGATION STUDIED USING STOCHASTIC RARE EVENT SIMULATION. Robert Taylor, Jun F. Allard, Elizabeth Read

2593-Pos  Board B139  USING FLUORESCENCE MICROSCOPY TO CHARACTERIZE THE ROLE OF MECHANOSENSATION IN CELL DIVISION. Allen Lu, Seongjin Park, Bharat Reddy, Jingyi Fei, Eduardo Perozo

2594-Pos  Board B140  3D DSTORM IMAGING REVEALS CAMKII-DEPENDENT DISPERSAL OF RYANODINE RECEPTOR CLUSTERS IN FAILING RAT CARDIOMYOCYTES. Xin Shen, Terje R. Kolstad, Jonas van den Brink, Michael Frisk, Yufeng Hou, Einar Norden, Andrew G. Edwards, Ivar Sjaastad, Christian Soeller, William L.ouch

2595-Pos  Board B141  A COMPARISON OF IN VIVO AND IN VITRO BAMA BARREL SEAM DYNAMICS. Matthew A. Brown

2596-Pos  Board B142  INFLUENCE OF PRESENILIN H1-H2 LINKER MUTATIONS ON THE APP PROCESSING BY GAMMA-SECRETASE. Michal M. Olewniczak, Lukasz Nierzwicki, Jacek Czub

2597-Pos  Board B143  DYNAMIN PH DOMAIN INTERACTIONS WITH PHOSPHATIDYLINOSITOL LIPIDS IN MEMBRANE. Joseph A. Marte, Dalia M. Hassan, Frank X. Vázquez

2598-Pos  Board B144  ALUMINUM INTERACTS DIFFERENTLY WITH LIPID BILAYERS AND MODULATES THE PLASMA MEMBRANE CALCIUM ATPASE (PMCA) ACTIVITY. Marilina de Sautu, Gustavo Scanavachi, Mariela Soledad Ferreira-Gomes, Juan Pablo F. Rossi, Rosangela Itri, Irene C. Mangialavori

2600-Pos  Board B146  SOLUTION STRUCTURE STUDIES OF ESS1 INTERACTIONS WITH THE RNA-P II CTD SUGGEST A DUAL BINDING MECHANISM THAT DIFFERS FROM THAT OF HUMAN PIN1. Tongyin Zheng, Kevin Namitz, Ashley Canning, Nilda Alicea-Velazquez, Carlos A. Castaneda, Micheal S. Cosgrove, Steven D. Hanes


2602-Pos  Board B148  TRAVEL Awardee  LIGAND BINDING STUDIES OF A TRIMETHOPRIM-RESISTANT DIHYDROFOLATE REDUCTASE BY FLUORINE NMR. Gabriel J. Fuente Gomez, Michael Duff, Elizabeth Howell

2603-Pos  Board B149  TRAVEL Awardee  THE DISSOCIATION MECHANISM OF THE PROCESSIVE CELLULASE TREC-L7A. Josh V. Vermaas, Riin Kont, Gregg T. Beckham, Michael F. Crowley, Mikael Gudmundsson, Mats Sandgren, Jerry Stählberg, Priit Välimäe, Brandon C. Knott

2604-Pos  Board B150  EFFECT OF BINDING SITE MUTATIONS IN FIBRINOGEN ΑC (233-425) ON FXIII SUBSTRATE SPECIFICITY. Francis Dean O. Ablan, Nicholas M. McCann, Mohammed M. Hindi, Muriel C. Maurer

2605-Pos  Board B151  EFFECT OF CARGO IDENTITY ON ACYL CARRIER PROTEIN STRUCTURE. Terra Sztain-Pedone, Michael D. Burkart, James A. McCammon

2606-Pos  Board B152  ENZYME ACTIVATION MECHANISM OF COCOONASE. Mai Takegawa, Tsubasa Tagawa, Ayumi Ogata, Shigeru Shimamoto, Yuji Hidaka

2607-Pos  Board B153  STRUCTURAL AND FUNCTIONAL STUDIES OF HUMAN TYPE II TOPOISOMERASES AND THEIR POST-TRANSLATIONAL MODIFICATIONS. Christophe Lotz, Claire Bedez, Claire Batisse, Arnaud Vanden Broeck, Robert Drillien, Marc Ruff, Valérie Lamour

2608-Pos  Board B154  USING HIGH ORDER COEVOLUTION CORRELATIONS TO IDENTIFY SITES FOR COMPENSATING MUTATIONS TO RESCUE FUNCTION. Kejue Jia, Nikita Chopra, Amy H. Andreotti, Robert L. Jernigan

2609-Pos  Board B155  PURIFICATION AND KINETIC CHARACTERIZATION OF PROTEIN TYROSINE PHOSPHATASE 1B (1-393). Kyle M. Jones, Erik Zavala, J. Patrick Loria

2610-Pos  Board B156  ALLOSTERIC REGULATION OF GLUTAMATE DEHYDROGENASE. Zoe A. Hoffpauir, Eleena Sherman, Hong Q. Smith, Thomas J. Smith

2611-Pos  Board B157  RCAN1 AND ITS ROLE IN DOWN SYNDROME VIA ITS REGULATION OF CALCINEURIN. Yang Li

2612-Pos  Board B158  THERMODYNAMIC PROFILES OF PHOSPHOPROTEINS SUGGEST A GENERAL FUNDAMENTAL ROLE FOR SERINE/THREONINE PHOSPHORYLATION SITES WITH +1 PROLINE (S/T-P) IN EUKARYOTES. Min Hyung Cho, Vincent J. Hilser, James Taylor

2613-Pos  Board B159  ENZYME FUNCTION PREDICTION USING DEEP LEARNING. Safyan Aman Memon, Kinaa Aamir Khan, Hammad Naveed

2614-Pos  Board B160  EFFECT OF TYR116 IN MYCOBACTERIAL 3-KETOSTEROID-Δ1'-DEHYDROGENASE ON ITS SUBSTRATE SPECIFICITY. Shikui Song, Xin Li, Tian Chen, Cheryl X. Y. Cheng, Zhengkun Kuang, Yongqi Huang, Zhengding Su

2615-Pos  Board B161  SIROHEME SYNTHASE ORIENTS SUBSTRATES FOR DEHYDROGENASE AND CHELATASE ACTIVITIES IN A SINGLE ACTIVE SITE. Elizabeth Stroupe, Joseph M. Pennington

2616-Pos  Board B162  A COMPUTATIONAL STUDY OF THE ROLE OF THE E3 LIGASE IN THE UBIQUITINATION REACTION. Jay-Anne K. Johnson
Intrinsically Disordered Proteins (IDP) and Aggregates IV (Boards B171 - B196)

2625-Pos  BOARD B171
MEMBRANE ASSOCIATION OF THE INTRINSICALLY DISORDERED N-TERMINAL REGION OF CHIZ. Alan Hicks, Cristian A. Escobar, Timothy A. Cross, Huan-Xiang Zhou

2626-Pos  BOARD B172
UNCOVERING THE STRUCTURAL BASIS FOR THE MECHANICAL PROPERTIES OF ELASTIN. Lamia Hossain, Ananya Srivastava, Quang Huynh, Régis Pomès

2627-Pos  BOARD B173
INTRINSICALLY UNFOLDED ALPHA-C REGION OF FIBRINOGEN IS MAJOR CONTRIBUTOR TO MECHANICAL STRENGTH OF FIBRIN FIBERS. Ali Daraei, Taylor C. Dement, Nathan E. Hudson, Martin Guthold

2628-Pos  BOARD B174
DYNAMICS IN NATURAL AND DESIGNED ELASTINS AND THEIR RELATION TO ELASTIC FIBER STRUCTURE AND RECOIL. Ma. Faye Charmagne Carvajal, Jonathan Preston, Nour Jamhawi, Christo Vairamon, Dernae Rowe, Joel Bresland, James Aramini, Thomas Michael Sabo, Richard Witteborn, Ronald Koder

2629-Pos  BOARD B175
MAP OF GENETICALLY CONSTRAINED REGIONS IN HUMAN INTRINSICALLY DISORDERED PROTEINS. Zaara Rifat, Shehab Ahmed, Arthur J. Campbell, A. Keith Dunker, Sohel Rahman, Sumaiya Iqbal

2630-Pos  BOARD B176
DESTABILIZING BETA SHEET PEPTIDES FROM THE HYDROPHOBIC CORE OF ALPHA SYNUCLEIN. Sarah A. Petty, Michael J. Calceterra, Matthew W. Fernandez, Christopher G. Fernandez, Sophia A. Von Fedak

2631-Pos  BOARD B177
MICROSCOPIC MODEL OF A BIOLOGICAL CONDENSATE. Swan Htun, Kumar Sarthak, Han-Yi Chou

2632-Pos  BOARD B178
STUDYING RNA MODULATED PROTEIN LIQUID-LIQUID PHASE SEPARATION USING COARSE-GRAINED MODELS. Roshan M Regy, Gregory L. Dignon, Youngchan Kim, Jeetain Mittal

2633-Pos  BOARD B179
ALPHA-SYNUCLEIN MODULATES STIMULATED EXOCYTOSIS AND BINDS TO MITOCHONDRIA WITH FUNCTIONAL CONSEQUENCES. Meraj Ramezani, Tapojyoti Das, David A. Holowka, David Eliezer, Barbara A. Baird

2634-Pos  BOARD B180
COMPUTATIONAL CHARACTERIZATION OF FUS DISASSEMBLY BY KAPB2. Genevieve Kunkel

2635-Pos  BOARD B181
FORCE FIELD REFINEMENT BASED ON HIGH RESOLUTION PROTEIN STRUCTURES. Robert Best

2636-Pos  BOARD B182
BASIN MAPPING METHOD FOR EXTRACTING COMPARATIVE ASSESSMENTS OF PROTEIN PHASE BEHAVIOR FROM IN VIVO MEASUREMENTS. Jared M. Lalmansingh, Ammon E. Posey, Tejbjir Kandola, Randal Halfmann, Rohit V. Pappu

2637-Pos  BOARD B183
DESTABILIZATION AND RESISTING GROWTH OF ALPHA-SYNUCLEIN FIBRIL BY SYNUCLEIN-D. Soumyo Sen, Emad Tajkhorshid

2638-Pos  BOARD B184
ROLE OF INTERACTION MODULARITY IN GOVERNING PHASE BEHAVIOR, STRUCTURE AND DYNAMICS OF TERNARY PROTEIN-RNA CONDENSATES. Taranpreet Kaur, Priya R. Banerjee

2639-Pos  BOARD B185
STRUCTURAL STUDIES OF AMYLOIDOGENIC PEPTIDES WITH CATIONIC GEMINI IMIDAZOLIUM SURFACTANTS. Julia Ludwiczak, Maciej Kozak, Aneta Szymanska, Kosma Sztukowski, Michalina M. Wilkowska

2640-Pos  BOARD B186
NPM1 EXHIBITS STRUCTURAL AND DYNAMIC HETEROGENEITY UPON PHASE SEPARATION WITH THE TUMOR SUPPRESSOR ARF. Eric B. Gibbs, Barbara Perrone, Aila Hassan, Rainer Kümerle, Richard Kriwacki

2641-Pos  BOARD B187
TRAVEL Awardee
ALPHA-SYNUCLEIN DETECTS AND PREFERENTIALLY BINDS TO OSMOTICALLY TENSE SYNAPTIC VESICLE-LIKE MEMBRANES. Peter J. Chung

2642-Pos  BOARD B188
ENERGETICS OF IT-IT INTERACTIONS IMPLICATED IN LIQUID-LIQUID PHASE SEPARATION. Andrea Guljas, Robert M. Vernon, Julie D. Forman-Kay, Martin J. Fossrat, Genevieve Kunkel

2643-Pos  BOARD B189
HEURISTICS FOR THE EFFECTS OF SEQUENCE AND CONFORMATIONAL CONTEXTS ON PK, VALUES OF IONIZABLE RESIDUES INFERRED FROM Q-CANONICAL MONTE CARLO SIMULATIONS. Martin J. Fossat, Ammon E. Posey, Rohit V. Pappu
A TAIL OF NIGHT OWLS: THE MAMMALIAN CRY1 C-TERMINAL TAIL CONTROLS CIRCADIAN TIMING BY REGULATING ITS ASSOCIATION TO CLOCK:BMAL1. Gian Carlo G. Parico

AGGREGATION STATE OF HUNTINGTIN REGULATES ITS INTERACTION WITH LIPID MEMBRANES. Faezeh Sedighi, Adewale Adegbuyi, Justin A. Legleiter

THE STRUCTURAL BASIS OF OPPOSING FUNCTIONS OF ALPHA-SYNUCLEIN IN VESICLE EXOCYTOSIS. Tapojyoti Das, Meraj Ramezani, David A. Holowka, Barbara A. Baird, David Eliezer

QUANTIFYING THE EFFECTS OF CHARGE REGULATION ON DISORDER-ORDER TRANSITIONS OF HIGHLY CHARGED PROTEIN SEQUENCES. Ammon E. Posey, Martin J. Fossat, Rohit V. Pappu

INTERNAL DYNAMICS OF THE MEASLES VIRUS N PROTEIN BY PHOTO-INDUCED ELECTRON TRANSFER EXPERIMENTS AND MOLECULAR SIMULATIONS. John Kunkel, Gerdenis Kodis, Priscila Sutto-Ortiz, Christophe Bignon, Nina Jovic, Jeetain Mittal, Sonia Longhi, Sara M. Vaiana

MODELING LIQUID-LIQUID PHASE SEPARATIONS OF INTRINSICALLY DISORDERED PROTEINS ON THE MICROMETER-SCALE. Viren Pattni, Sara M. Vaiana, Giovanna Ghirlanda, Matthias Heyden

PROTEOLYTIC FRAGMENTS OF TAU PRODUCE SEEDING-COMPETENT FIBRILS. Michael Vigers, Songi Han

TRANSCRIPTION (Boards B197 - B217)

THE ROLE OF TRANSCRIPTION FACTOR - DNA RESIDENCE TIME IN TRANSCRIPTION. Achim P. Popp, Karen Clauss, Lena Schulze, Johannes Hettich, Matthias Reisser, Christof J. Gebhardt

DISCRIMINATOR EFFECTS ON OPEN COMPLEX FORMATION, STABILIZATION, AND TRANSCRIPTION INITIATION. Hao-Che Wang

LONG-DISTANCE COOPERATIVE AND ANTAGONISTIC RNA POLYMERASE DYNAMICS VIA DNA SUPERCOILING. Sangjin Kim

EFFECT OF ENGINEERED PHAGE PROTEINS ON THE TRANSCRIPTION BY SIGMA70-ASSOCIATED HOST RNA POLYMERASE. Vikas Jain

SINGLE-MOLECULE NAVIGATION OF THE NUCLEOSOMAL TRANSCRIPTION LANDSCAPE. Zhijie Chen, Ronen Gabizon, Tingting Yao, Carlos Bustamante


FORCE AND GREA MODULATE TRANSCRIPTIONAL PAUSES AT ELONGATIONAL OBSTACLES. Jin Qian, Wexuan Xu, Yan Yan, Irina Artsimovitch, David Dunlap, Laura Finzi

MONOVALENT SALT DEPENDENCE OF THE BACTERIAL RNA POLYMERASE OPEN COMPLEX DYNAMICS. Subhas C. Bera, Mona Seifert, Eugeni Ostrofet, Monika Spermann, Flavia Sap Papini, Anssi M. Malinen, David Dulin


DECIPHERING KINETICS OF RNA POLYMERASE I MULTI-NUCLEOTIDE TRANSCRIPTION. Zachariah Ingram, David A. Schneider, Aaron L. Lucius

A UNIFYING MECHANISTIC MODEL OF BACTERIAL TRANSCRIPTION WITH THREE INTERCONNECTED PAUSE STATES AND NON-DIFFUSIVE BACK-TRACK RECOVERY. Richard Janissen, Behrouz Esfami-Mossallam, Irina Artsimovitch, Martin Depken, Nynke H. Dekker

KINETIC REGULATION OF TRANSCRIPT FLUX RATIOS. Eric A. Galburt

RNA POLYMERASE DYNAMICS AND OTHER SINGLE-MOLECULE CONTINUOUS TIME PROBLEMS. Zelha Kilic, Ioannis Sgouralis, Steve Pressé

FREQUENCY SPECTRUM OF CHEMICAL FLUCTUATION: A PROBE OF REACTION MECHANISM AND DYNAMICS. Sanggeun Song, Gil-Suk Yang, Seong Jun Park, Sungguan Hong, Ji-Hyun Kim, Jaeyoung Sung

INTERACTION BETWEEN TRANSCRIPTION AND TRANSLATION MACHINERIES ON A NASCENT RNA WITH HIGHER ORDER STRUCTURE. Surajit Chatterjee, Adrien Chauvier, Nils G. Walter

ENHANCER RNA TRANSCRIPTION DYNAMICS IN SINGLE CELLS. Gable M. Wadsworth, Joseph Rodriguez

USING MULTI-FOCUS MICROSCOPY TO CAPTURE TRANSCRIPTIONAL DYNAMICS AT THE SECOND TIMESCALE. Robert I. Shelansky, Hinrich Boeger, Sara Abrahamson

SINGLE-MOLECULE NANOSCOPY OF RNA POLYMERASE II, POL II CO-FACTORS, CHROMATIN REGULATORS AND GENOME ORGANIZATION IN LIVE CELLS. Alexandros Pertsinidis

REAL-TIME IMAGING OF TRANSCRIPTION AND TRANSPORT OF SINGLE ARC MRNA IN LIVE NEURONS. Hyungseok C. Moon, Byeong-Kwon Sohn, Urmimala Basu, Hayoon Cho, Jiayu Shen, Aishwarya Deshpande, Smita S. Patel, Hajin Kim

THE MOLECULAR BIOPHYSICS OF ADAPTATION. Griffin Chure, Rob Phillips

SINGLE-MOLECULE TRACKING OF TRANSCRIPTIONAL AND TRANSLATIONAL MACHINERY IN STATIONARY PHASE E. COU. Yanyu Zhu, Mainak Mustafi, James C. Weisshaar
Ribosomes and Translation (Boards B218 - B231)

2672-Pos  BOARD B218
KINETIC VARIABILITY AT THE 3' UTR OF BACTERIAL MRNA LEADS TO NARROW DYNAMIC RANGE AND HIGH SENSITIVITY IN 30S RIBOSOME BINDING. Shiba S. Dandpat, Sujay Ray, Surajit Chatterjee, Nils G. Walter

2673-Pos  BOARD B219

2674-Pos  BOARD B220
A MAXIMUM ENTROPY MODEL FOR TRNA ABUNDANCES INITIATING PROTEIN SYNTHESIS. Rebecca J. Rousseau, William Bialek

2675-Pos  BOARD B221
MODULATION AND VISUAL DETECTION OF CROSSLINKED EF-G DURING TRANSLLOCATION. Yuhong Wang, Heng Yin, Shoujun Xu

2676-Pos  BOARD B222
KINETICS AND THERMODYNAMICS OF -1 RIBOSOMAL FRAMESHIFTING. Lars V. Bock, Neva Caliskan, Bee-Zen Peng, Natalia Korniy, Riccardo Belardinelli, Frank Peske, Marina V. Rodnina, Helmut Grubmüller

2677-Pos  BOARD B223
SINGLE-MOLECULE AND ENSEMBLE ANALYSIS OF PROTEIN-MEDIATED FRAMESHIFTING. Neva Caliskan

2678-Pos  BOARD B224
SINGLE-MOLECULE APPROACHES TO STUDY FRAMESHIFTING MECHANISMS AND EFFICIENCY. Lukas Pekarek, Matthias Zimmer, Anuja Kibe, Neva Caliskan

2679-Pos  BOARD B225
ERROR-SPEED CORRELATIONS IN BIOPOLYMER SYNTHESIS. Davide Chiuchiu, Yuhai Tu, Simone Pigolotti

2680-Pos  BOARD B226
TRNA DISASSOCIATION FROM EF-TU AFTER GFP HYDROLYSIS - PRIMARY STEPS AND ANTIBIOTIC INHIBITION. Malte Warias, Helmut Grubmüller, Lars V. Bock

2681-Pos  BOARD B227

2682-Pos  BOARD B228
COMPUTATIONAL DESIGN AND INTERPRETATION OF SINGLE-RNA TRANSLATION EXPERIMENTS. Luis U. Aguilera, Kenneth Lyon, William Raymond, Tatsuya Morisaki, Timothy J. Stasevich, Brian Munsky

2683-Pos  BOARD B229
USING SIMULATIONS TO IDENTIFY PRECISE SINGLE-MOLECULAR PROBES FOR RIBOSOME DYNAMICS. Asem H. Hassan, Paul C. Whitford

2684-Pos  BOARD B230
OPTIMIZING RECOMBINANT PROTEIN EXPRESSION WITH SYNONYMOUS CODONS. Daniel Wong, Kam-Ho Wong, Gregory Boël, John F. Hunt, Daniel P. Aalberts

2685-Pos  BOARD B231
EXPANDING MASS SPECTROMETRY TOOLBOX FOR RNA MODIFICATION PROFILING. Anna Popova, Luigi D’Ascenzo, James R. Williamson

Chromatin and the Nucleoid II (Boards B232 - B247)

2686-Pos  BOARD B232
INFLUENCE OF MICROPILLAR INDUCED DEFORMATION ON CHROMATIN ARCHITECTURE IN REGULATING STEM CELL DIFFERENTIATION. Vasundhara Agrawal, Xinlong Wang, Guillermo Ameer, Vadim Backman

2687-Pos  BOARD B233
CHROMATIN FOLDING COORDINATE AND LANDSCAPE UNRAVELED BY DEEP LEARNING ANALYSIS OF SINGLE-CELL IMAGING DATA. Wenjun Xie, Yifeng Qi, Bin Zhang

2688-Pos  BOARD B234
MESOSCALE PHASE SEPARATION OF CHROMATIN IN THE NUCLEUS: Gaurav Bajpai, Daria A. Pavlov, Dana Lorber, Talila Volk, Samuel Safran

2689-Pos  BOARD B235
INFERRING RADIAL ORGANIZATION OF CHROMOSOMAL TERRITORIES FROM HI-C DATA. Priyojit Das, Jacob T. Sanders, Tongye Shen, Rachel P. McCord

2690-Pos  BOARD B236
LANDSCAPE OF MULTIVALENT CHROMATIN INTERACTIONS IN TRANSCRIPTIONALLY ACTIVE LOCI. Alan Perez-Rathke, Qiu Sun, Boshen Wang, Valentina Boeva, Zhifeng Shao, Jie Liang

2691-Pos  BOARD B237
CREATING AN INTEGRATED LANDSCAPE OF HUMAN IPSC NUCLEAR STATES. Christopher L. Frick, Susanne M. Rafelski

2692-Pos  BOARD B238
DISORDERED CHROMATIN PACKING REGULATES ENSEMBLE GENE EXPRESSION AND PHENOTYPIC PLASTICITY. Ranya Virk, Wenli Wu, Luay M. Almassalha, Greta M. Bauer, Yue Li, David VanDerway, Jane Frederick, Di Zhang, Adam Eshein, Igal Szleifer, Vadim Backman

2693-Pos  BOARD B239
IMPROVING CHEMOTHERAPY TREATMENT EFFICACY WITH CHROMATIN PROTECTION THERAPIES. Jane Frederick, Greta Wodarcyk, Luay M. Almassalha, Wenli Wu, David VanDerway, Ranya Virk, Vadim Backman

2694-Pos  BOARD B240
BRIDGING CHROMATIN NANOIMAGING AND MOLECULAR MODELING: CHROMATIN PACKING AS A REGULATOR OF TRANSCRIPTIONAL HETEROGENEITY IN CARCINOGENESIS. Vadim Backman

2695-Pos  BOARD B241
EXPERIMENTALLY-DRIVEN MODELS OF BACTERIAL CHROMOSOMES. Michael Feig

2696-Pos  BOARD B242
TRAVEL AWARDSEE POLYMER MODELING OF WHOLE-NUCLEUS DIPLOID GENOME ORGANIZATION. Yifeng Qi, Bin Zhang

2697-Pos  BOARD B243
MODELING HIGH-ORDER CHROMATIN STRUCTURE IN SINGLE CELLS. Kai Huang, Vadim Backman, Igal Szleifer

2698-Pos  BOARD B244
LARGE-SCALE HETEROPOLYMER MODEL OF CHROMATIN DYNAMICS AND MECHANICS. Anne Shim, Kai Huang, Vadim Backman, Igal Szleifer

2699-Pos  BOARD B245
THE EFFECT OF NUCLEAR ENVELOPE ON CHROMATIN ARCHITECTURE IN DROSOPHILA MELANOGASTER: MODELING OF THREE-DIMENSIONAL INTERPHASE CHROMOSOME ORGANIZATION. Igor S. Tolokh, Nicholas A. Kinney, Igor V. Sharakhov, Alexey V. Onufriev
Membrane Fusion and Non-Bilayer Structures (Boards B248 - B261)

2702-Pos  BOARD B248
COMPLEXIN 1 AND SYNTAPOTAGMIN 1 COMPETE FOR MEMBRANE BINDING IN A PIP2 DEPENDENT MANNER. Qian Liang, Volker Kiessling, Binyong Liang, Lukas K. Tamm, David S. Cafiso

2703-Pos  BOARD B249
A MODEL FOR MYOMERGER FUNCTION IN MYOBLAST FUSION. Gonen Golani, Evgenia Leikina, Douglas P. Millay, Leonid V. Chernomordik, Michael M. Kozlov

2704-Pos  BOARD B250
CALCium IONS ENHANCE ENTRY OF EBOLA VIRUS BY DIRECTLY TARGETING THE FUSION PEPTIDE. Liqi Lai, Lakshmi Nathan, Jean K. Miller, Jack H. Freed, Gary R. Whitaker, Susan Daniel

2705-Pos  BOARD B251
DIFFERENTIATING ANTIBODY NEUTRALISATION MECHANISMS USING A SINGLE VIRUS-ASSAY. Anjali Sengar, Rebecca R. Pompano, Peter Kasson

2706-Pos  BOARD B252
STRUCTURAL DETERMINANTS OF LIPID MEMBRANE THICKENING AT CLOSE DISTANCES. Leonard P. Heinz, Agata Witkowska, Helmut Grubmuller, Reinhard Jahn

2707-Pos  BOARD B253
INVERTED CUBIC (Q) PHASE STABILIZING EFFECTS OF MEMBRANE ACTIVATING PEPTIDES AS AN INDEX OF ANTIMICROBIAL PEPTIDE (AMP) AND FUSION PEPTIDE ACTIVITY. David P. Siegel

2708-Pos  BOARD B254
RESOLVING KINETIC INTERMEDIATES DURING THE REGULATED ASSEMBLY AND DISASSEMBLY OF FUSION PORES. Huan Bao

2709-Pos  BOARD B255
DECONVOLUTION OF INFLUENZA A VIRAL BINDING AND FUSION WITH A CHEMICALLY-DEFINED GLYCOCALYX. Elizabeth R. Webster, Corleone S. Delaveris, Carolyn R. Bertozzi, Steven G. Boxer

2710-Pos  BOARD B256
IMPACTS OF BIOCHEMICAL COMPLEXITY ON CLIMATE-RELEVANT PROPERTIES OF MODEL MARINE AEROSOLS. Abigail C. Dommer, Rommie E. Amaro

2711-Pos  BOARD B257
KINETIC AND CELLULAR AUTOMATON MODELS OF WEST NILE VIRUS HEMIFUSION. Abraham Park, Robert J. Rawle

2712-Pos  BOARD B258
SINGLE VIRUS INVESTIGATION OF SENDAI VIRUS BINDING AND FUSION TO SUPPORTED LIPID BLAYERS. Amy Lam, Nandini Seetharaman, Robert J. Rawle

2713-Pos  BOARD B259
TWO FORMS OF OPA1 COOPERATE TO COMPLETE MITOCHONDRIA INNER MEMBRANE FUSION. Yifan Ge, Sivakumar Boopathy, Xiaojun Shi, Julie L. McDonald, Adam W. Smith, Luke Chao

Protein-Lipid Interactions: Channels (Boards B262 - B272)

2714-Pos  BOARD B260
SYNTAPOTAGMIN-1/CA2+OVERCOMEs INEFFICIENCY OF SNARE COMPLEX IN DILATING THE FUSION PORE. Ryan Khounlo

2715-Pos  BOARD B261
CHOLESTEROL ALTERS PHYSICAL PROPERTIES OF THE TARGET MEMBRANE TO FACILITATE INFLUENZA MEMBRANE FUSION AT THE SINGLE-PARTICLE LEVEL. Katherine N. Liu, Steven G. Boxer
**General Protein-Lipid Interactions II (Boards B273 - B297)**

**2726-Pos** Board B272
ROLE OF LIPID ENVIRONMENT IN THE PORE-FORMING ACTIVITY OF CECROPIN A. Anastaslia A. Zakharova, Svetlana S. Efimova, Olga S. Ostroumova

**2727-Pos** Board B273
VARYING THE PH AND LIPOSE CONTENT OF CYTOCHROME C - LIPOSE MIXTURES. Rajed Kurban

**2728-Pos** Board B274
CHARGE DRIVES INITIATION AND REGULATION OF BLOOD COAGULATION CASCADE: IONS AND PROTEINS. Ashley M. De Lio, Riya Jain, Divyani Paul, James H. Morrissey, Taras V. Pogorelov

**2729-Pos** Board B275
THE N-TERMINAL REGION OF A PH-RESPONSIVE PEPTIDE CONTROLS ITS INTERACTION WITH PHOSPHATIDYLSERINE-CONTAINING BILAYERS. Andrew C. Dixon, Vanessa P. Nguyen, Francisco N. Barrera

**2730-Pos** Board B276
LIPID COMPOSITION MODULATES MEMBRANE BINDING OF PHOSPHATIDYLSERINE-RECEPTOR TIM-3. Sofiya Maltseva, Daniel H. Kerr, Ka Yee C. Lee

**2731-Pos** Board B277
FISL-LIPID INTERACTIONS DURING SPORULATION IN BACILLUS SUBTILIS. Martha Braun, Ane Landajuela, Christopher Rodrigues, Thierry Doan, David Rudner, Erdem Karatekin

**2732-Pos** Board B278
EFFECT OF ACYL CHAIN SATURATION ON PERILINP 3 BINDING TO MODEL LIPID DROPLETS. Elyse N. Ridgway, Rebecca Douglas, Amber R. Titus, Elizabeth K. Mann, Edgar E. Kooijman

**2733-Pos** Board B279
DIRECT DETECTION AND CHARACTERIZATION OF A PHOSPHOinositide Dependent Kinase-1 (PDK1) HOMODIMER ON A TARGET MEMBRANE SURFACE VIA SINGLE MOLECULE FLUORESCENCE. Moshe T. Gordon, Joseph J. Falke

**2734-Pos** Board B280
BENEFITS OF THE ELECTRONIC CONTINUUM CORRECTION IN BIOFORCE FIELDS. Ricky Nencini, Vladimir Palivec, Carmelo Tempra, Pauline Delcroix, Samuli O. Ollila, Matti Javanainen, Pavel Jungwirth, Hector Martinez-Seara

**2735-Pos** Board B281

**2736-Pos** Board B282
A MONTE CARLO FRAMEWORK FOR MODELING PROTEIN ASSEMBLY ON LIPID MEMBRANES. Carlos A. Osorio Mereza, Ashutosh Agrawal

**2737-Pos** Board B283
INTERACTIONS OF VARIABLE DOMAIN (VD) OF DRP1 WITH LIPIDS REVEALED BY MD SIMULATIONS. Nidhin Thomas, Rajesh Ramachandran, Ashutosh Agrawal

**2738-Pos** Board B284
PHOSPHATIDYLETHANOLAMINE: BETWEEN OXIDATIVE STRESS AND UNCOUPLING. Olga Jovanovic, Mario Vazdar, Elena E. Pohl

**2739-Pos** Board B285
MEMBRANE BINDING OF ALPHA-SYNUCLEIN CONFERS STERIC STABILIZATION OF NANOPARTICLE-SUPPORTED LIPID BILAYERS. Hyeondo (Luke) Hwang, Peter J. Chung, Benjamin R. Slaw, Alessandra Leong, Ka Yee C. Lee

**2740-Pos** Board B286
THE INTERPLAY OF MEMBRANE TENSION AND OSMOTIC PRESSURE IN MODULATING ALPHA-SYNUCLEIN BINDING. Benjamin R. Slaw, Peter J. Chung, Hyeondo (Luke) Hwang, Ka Yee C. Lee

**2741-Pos** Board B287
ROLE OF CHOLESTEROL ON BINDING OF AMYLOID FIBRILS WITH LIPID BILAYERS. Cristiano L. Dias, Luis R. Cruz Cruz

**2742-Pos** Board B288
CONFORMATIONAL DYNAMICS AND ENERGETICS OF MELITTIN AND ITS DIAMEREOM INTERACTING WITH POPC AND POPG LIPID BILAYERS: A MOLECULAR DYNAMICS STUDY. Milica Utjesanovic, Ioan Kosztin

**2743-Pos** Board B289
OPTIMIZING A CELL-BASED ASSAY FOR FLUORESCENT PHOSPHOLIPID SCRAMBLING. John M. Gilchrist, Lilly Y. Jan

**2744-Pos** Board B290
BIOPHYSICAL ORIGINS OF CALCIUM-INHIBITED MEMBRANE BINDING BY THE C2A DOMAIN OF SYNAPTOTAGMIN-LIKE PROTEIN 2. Timothy Spotts, David Flores, Abena Watson-Siribo, David N. Jones, Markus Zweckstetter, Jefferson Knight

**2745-Pos** Board B291
TOWARDS A MOLECULAR MECHANISM OF DYNAMIN POLYMERIZATION WITH MASS PHOTOMETRY. Manish S. Kushwah

**2746-Pos** Board B292
DISSOCIATION KINETICS OF PLECKSTRIN HOMOLOGY DOMAINS FROM UNROOFED HEK293T CELLS. Madeline R. Sponholtz, Eric N. Senning

**2747-Pos** Board B293

**2748-Pos** Board B294
UNRAVELING THE MYSTERY OF THREE-STATE DIFFUSION MODEL OF KRAS4B ON PLASMA MEMBRANE. Rebika Shrestha, De Chen, Thomas Turbyville

**2749-Pos** Board B295
PHASE SEPARATION STUDIES OF COMPLEXES OF INTRINSICALLY DISORDERED PROTEIN TAU AND ANIONIC LIPOSOMES. Christine Thounouw, Bronett Fletcher, Rebecca Best, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

**2750-Pos** Board B296
DETERMINING THE STRUCTURAL TOPOLOGY AND DYNAMICS OF CANONICAL HOLIN USING CONTINUOUS WAVE-EPR SPECTROSCOPY. Renhui S. Perera, Indra Dev Sahu, Gary A. Lorigan

**2751-Pos** Board B297
Calcium Signaling II
(Boards B298 - B313)

2752-Pos  Board B298
TO FACE OR NOT TO FACE: RELATIONSHIP OF IP3 RECEPTORS AND MITOCHONDRIA IN PURKINJE FIBERS OF CEREBELLM. Clara Franza-Armstrong, V. Ramesh lyer

2753-Pos  Board B299
COMPUTATIONAL MODELING OF LPS- AND ATP-MEDIATED CYTOKINE PRODUCTION IN MACROPHAGES. Byeongjae Chun, Peter M. Kekecs-Huskey, Chris Richards

2754-Pos  Board B300
MULTIPLE FEEDBACK MECHANISMS UNDERLYING BETA CELL SECRETORY OSCILLATIONS. Benjamin M. Thompson, Isabella Marinelli, Richard Bertram, Arthur Sherman, Leslie S. Satin

2755-Pos  Board B301
CARDIAC CAMKIIIA MEMORY: POST-TRANSLATIONAL MODIFICATION-MEDIATED PROLONGATION OF CAMKIIA IN AUTONOMOUSLY ACTIVE OPEN STATE. Christopher Y. Ko, Leann T. Le, Mitchell R. Simon, Razvan L. Cornea, Julie Bossuyt, Donald M. Bers

2756-Pos  Board B302
MUSCARINIC RECEPTOR STIMULATION DIFFERENTIALLY REGULATES NUCLEOPLASMIC CALCIUM IN ATRIAL AND VENTRICULAR MYOCYTES. Andriy E. Belevych, Jiaojia Li, Andrei Stepanov, Ingrid M. Bonilla, Dmitry A. Terentyev, Sandor Gyorke

2757-Pos  Board B303
CALCICUM STORE-OPERATED CURRENTS IN HUMAN SKIN CELLS. Declan Manning, Richard L. Evans, Caroline Dart

2758-Pos  Board B304
MUSCARINIC RECEPTOR STIMULATION DIFFERENTIALLY REGULATES NUCLEOPLASMIC CALCIUM IN ATRIAL AND VENTRICULAR MYOCYTES. Andriy E. Belevych, Jiaojia Li, Andrei Stepanov, Ingrid M. Bonilla, Dmitry A. Terentyev, Sandor Gyorke

2759-Pos  Board B305
ZINC PROTECTION OF FERTILIZED EGGS IS CONSERVED IN NON-MAMMALIAN SPECIES. Rachel E. Bainbridge, Katherine Wozniak, Welsey A. Phelps, Steven M. Sanders, Matthew L. Nicotra, Miler T. Lee, Anne E. Carlson

2760-Pos  Board B306
LOW RYR2 SENSITIVITY TO FLECAINIDE COMBINED WITH SLOW SARCOLUMMENAL ENTRY AND RAPID MITOCHONDRIAL ACCUMULATION MAY EXPLAIN THE ABSENCE OF RYR2 EFFECTS INTACT WILDE TYPE MYOCYTES. Emma J. Steer, Zhaokang Yang, Declan Manning, Richard L. Evans, Caroline Dart

2761-Pos  Board B307
ANO1, CA1_2 AND IP, R FORM A FUNCTIONAL UNIT OF EXCITATION-CONTRACTION COUPLING DURING AGONIST-MEDIATED CONTRACTION OF MOUSE PULMONARY ARTERIAL SMOOTH MUSCLE. Joydeep Aoun, Katie Mayne, Julius Baekk, Kenton M. Sanders, Sean M. Ward, Iain A. Greenwood, Simon A. Bulley, Jonathan H. Jaggar, Scott Earley, Normand Leblanc

2762-Pos  Board B308
HETERO-OLIGOMERIZATION OF THE MICROPEPTIDE REGULINS THAT MODULATE CALCIUM TRANSPORT ACTIVITY. Garrett T. Hauck, Sean R. Cleary, Seth L. Robia

2763-Pos  Board B309
DATA DRIVEN MODELING OF ALZHEIMER’S DISEASE ASSOCIATED BETA AMYLOID POLES HINTS TOWARDS PROGRESSIVE CA2+ INDUCED CELL TOXICITY. Syed Islamuddin Shah, Ian Parker, Angelo Demuro, Ghanim Ullah

2764-Pos  Board B310
CYTOKINESIS TRIGGERS TWO SEPARATE SPIKES OF INTRACELLULAR CALCIUM. Qian Chen

2765-Pos  Board B311
A POWERFUL TRANSFECTION REAGENT FOR BUILDING STABLE GPCR EXPRESSING CELL LINES. Shu Kan, Jinfang Liao, Zhenjun Diwu

2766-Pos  Board B312
CATERPILLAR ORAL SECRETION ELICITS REACTIVE OXYGEN SPECIES IN ISOLATED PLANT PROTOPLASTS. Akanksha Gandhi, Cruz Chapa, Rupesh Kariya, Nirakar Sahoo

2767-Pos  Board B313
CALCIUM BUFFERING BY FLUORESCENT INDICATORS - IMPLICATIONS AND EASY SOLUTIONS. Krysztof Hyrc, Ziemowit Rzeszotnik, Mark P. Goldberg, Colin G. Nicholas

Intracellular Calcium Channels and Calcium Sparks and Waves II
(Boards B314 - B330)

2768-Pos  Board B314
DETECTIVE INTERACTION OF CAM WITH RYR2 CAM-BINDING POCKET MIGHT CONTRIBUTE TO ARRHYTHMOGENIC CARDIAC DISEASE. Michel Nomikos, Angelos Thanassoulas, Vironia Vassilakopoulou, Brian L. Calver, Evangelia Livaniou, Bared Safieh-Garabedian, Egon Toft, George Nounesis, F. Anthony Lai

2769-Pos  Board B315
RYR2 HYPERACTIVITY GENERATES VENTRICULAR TACHYCARDIA SUSCEPTIBILITY IN STRUCTURAL HEART DISEASE. Kyungsoo Kim, Bjorn C. Knollmann

2770-Pos  Board B316
RECRUITING RYRS TO OPEN IN A CA2+ RELEASE UNIT. Dirk Gillespie

2771-Pos  Board B317
SLOW-RAPID-SLOW PACING IN THE HEART HAVING CASQ2 G112S X GENE MUTATION PRODUCES EADS AS THE MECHANISM OF CPVT DURING ADRENERGIC STIMULATION. Roshan Paudel, Aman Ullah, Mohsin S. Jafri

2772-Pos  Board B318
INHIBITION OF TYROSINE KINASE PYK2 IN HYPERTROPHIC HEARTS: CELULAR MECHANISMS OF ANTI-ARRHYTHMIC EFFECTS. Radmila Terentieva, Shanna Hamilton, Tae Yun Kim, Iulia Polina, Peter Bronk, Karim Roder, Jin O-Uchi, Gideon Koren, Sandor Gyorke, Andriy E. Belevych, Bun-Rak Choi, Dmitry A. Terentyev

2773-Pos  Board B319
PROTOCOL DEVELOPMENT FOR EXPRESSING FUNCTIONAL RYANODINE RECEPTORS IN HEK293-6E SUSPENSION CELLS. Michael Wold, Robyn T. Rebeck, Elisa Bovo, Aleksey V. Zima, David D. Thomas, Razvan L. Cornea

2774-Pos  Board B320
LUMINAL CALCIUM CONTROL OF TYPE-1 INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR. Allison M. Tambeaux, LUMINAL CALCIUM CONTROL OF TYPE-1 INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR. Allison M. Tambeaux, Robyn T. Rebeck, Elisa Bovo, Aleksey V. Zima, Michael Wold, Robyn T. Rebeck, Elisa Bovo, Aleksey V. Zima

2775-Pos  Board B321
CORRELATING CALCIUM SPARKS AND RYANODINE RECEPTOR LOCALIZATION IN LIVE CARDIOMYOCYTES. Yufeng Hou, Martin Laasmaa, Jia Li, Ornellia Manfra, Xin Shen, Peter P. Jones, Christian Soeller, William E. Louch

2776-Pos  Board B322
REGULATION OF HUMAN RYR2 BY CALMODULIN. Roman Nikolaenko, Elisa Bovo, Christopher Hoover, Robyn Rebeck, David D. Thomas, Razvan L. Cornea, Aleksey V. Zima

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64th Annual Meeting of the Biophysical Society
February 15–19, 2020 • San Diego, California
J. Gavaghan, Johannes Stiehler, Liudmila Polonchuk, Ken Wang, Gary R. CAPTURE HERG KINETICS AND TEMPERATURE DEPENDENCE USING AUTOMATED HIGH-THROUGHPUT PATCH CLAMP AND MODELLING TO 2788-

Nuñez, Ariel L. Escobar, Emiliano Medei THE ROLE OF IL-1Β ON ATRIAL FIBRILLATION PHYSIOPATHOLOGY . 2787-

SIONAL “SPARK-CELL” SPHEROIDS AND HUMAN CARDIAC TISSUE. CRISPRI ION CHANNEL GENE MODULATION IN HUMAN IPSC-CARDIOMYOCYTES. 2785-

ALTERNANS IN CARDIAC MYOCYTES. MECHANISMS OF SUBCELLULAR SPATIALLY DISCORDANT CALCIUM ALTERNANS IN CARDIAC MYOCYTES. 2783-

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**Cardiac, Smooth, and Skeletal Muscle Electrophysiology II** (Boards B331 - B345)

**Board B331**

Crispr ION Channel Gene Modulation In Human IPSc-Cardiomyocytes. Julie L. Han, Emilia Entcheva

**Board B332**

Probing the Timeline of Integration Between Three-Dimensional “Spark-Cell” Spheroids and Human Cardiac Tissue. Christianne Chua, Weizhen Li, Julie Han, Emilia Entcheva

**Board B333**

The Role of Il-1B on Atrial Fibrillation Physiopathology. Oscar Moreno-Loaiza, Ainhoa Rodriguez de Yurre Guirao, Narender Vera-Nuñez, Arial L. Escobar, Emiliano Medei

**Board B334**

Automated High-Throughput Patch Clamp and Modelling to Capture Herg Kinetics and Temperature Dependence Using Optimised Voltage Protocols. Chon Lok Lei, Michael Clerx, David J. Gavaghan, Johannes Stiehler, Liudmila Polonchuk, Ken Wang, Gary R. Mirams

**Board B335**

Upregulation of the Maguk Sap97 Enhances Protein Expression in Stem Cell Derived Myocytes. Tamirat Ali, Jeffery Creech, Andre Monteiro Da Rocha, Todd J. Herron, Justus M. Anumonwo

**Board B336**

Unidirectional Block Demonstrated on Ventricular Monolayers Expressing Channelrhodopsin-2 Using Optogenetics. José Miguel Romero Sepúlveda, Alvin Shrier, Gil Bub

**Board B337**

Combining Physiological Relevance and Throughput for In Vitro Cardiac Contractility Measurement. Ronald Knox, Andrea Bruggemann, Matthias Gossman, Ulrich Thomas, András Horváth, Elena Dragicevic, Sonja Stoezlle-Feix, Niels Fertig, Alexander Jung, Alexander H. Raman, Manfred Staat, Peter Linder

**Board B338**

Automated Patch Clamp System Introducing Simulated Ik1 Into Stem Cell-Derived Cardiomyocytes Using Dynamic Clamp. George O. Okeyo, Andrárs Horváth, Nadine Becker, Alan Fabbri, Christian Grad, George George, Teun P. de Boer, Glenna Bett

**Board B339**

The Bistable Resting Potential of Skeletal Muscle in Hypokalemic Periodic Paralysis. Marino G. Di Franco, Steve C. Cannon

**Board B340**

Low-Noise Fluorescent Infrared Detection of Single-Cell Cardiac Action Potentials. Anthony Costantino, Brian K. Panama, Mark W. Nowak, Randall L. Rasmusson, Glenna Bett

**Board B341**

Natriuretic Peptide Receptor-C Mitigates Angiotensin II Induced Fibrosis in the Atria and Sinoatrial Node. Martin Mackasey, Hailey J. Jansen, Motahareh Moghtadei, Robert A. Rose

**Board B342**

Chronic Hemodynamic Overload of the Atria is an Important Factor for Shear Signaling Remodeling in Rat Hearts. Qui A. Le, Joon-Chul Kim, Berihun D. Mihiretu, Sun-Hee Woo

**Board B343**

Post-Prandial Inotropic Response in Python Cardiomyocytes is Supported by Distinct Metabolic Adaptation. Claudia Crocini, Kathleen C. Woulfe, Leslie A. Leinwand

**Board B344**

Cardioprotective Effects of Rotigaptide are Dependent on Per fusate Ionic Composition During Ischemia/Reperfusion. Gregory S. Hoeker, Steven Poelzing

**Board B345**

Quantifying Hypoxia in Human Ips-Cardiomyocytes Under Optogenetic Pacing. Wei Liu, Weizhen Li, Julie Han, Emilia Entcheva

**Intracellular Transport** (Boards B346 - B353)

**Board B346**


**Board B347**

Organelle Structural Features Can Accelerate Diffusive Transport and Reaction Rates. Aidan I. Brown, Elena F. Koslover
Angsutarux GROWTH FACTOR HOMOLOGOUS FACTOR (FHF).

**2811-P**

**THE MECHANISM OF ION CONDUCTION AND SELECTIVITY IN THE EUKARYOTIC NA\(_1\) P Channel.** Juan Nogueira, Ben Corry

**2812-P**

**RELATIVE VOLTAGE SENSOR ACTIVATION KINETICS DETERMINES THE EFFECTS OF SENSOR NEUTRALIZATION IN VOLTAGE-GATED SODIUM CHANNELS.** Niklas Brake, Adamo Mancino, Yuhao Yan, Takushi Shimomura, Yoshihiro Kubo, Derek Bowie, Anmar Khadra

**2813-P**

**REVISITING NA\(_1\)_CHANNEL INACTIVATION: THE ROLE OF FIBROBLAST GROWTH FACTOR HOMOLOGOUS FACTOR (FHF).** Paweorn Angsutarux, Taylor L. Voelker, Catherine Malcolm, Wandu Zhu, Jonathan R. Silva

**2814-P**

**MYOTONIC MUTATIONS OF NAV1.4 LOCATED AT EF HAND-LIKE MOTIF IN C-TERMINUS IMPAIR FAST INACTIVATION.** Riho Horie, Tomoya Kubota, Jinsoo Koh, Rieko Tanaka, Yuichiro Nakamura, Sasaki Ryogen, Hidefumi Ito, Masanori P. Takahashi

**2815-P**

**CRYSTAL STRUCTURES OF CALCIUM-LOADED CALMODULIN IN COMPLEX WITH C-TERMINAL DOMAINS OF VOLTAGE-GATED SODIUM CHANNELS.** Filip Van Petegem, Ching-Chieh Tung, Bernd Gardill, Ricardo E. Rivera-Acevedo

**2816-P**

**A CALMODULIN MUTATION THAT DYSREGULATES NA\(_1\) P.** Yusuf Olgar, Sandor Gyorke, Rengasayee Veeraraghavan, Jonathan P. Davis, Przemyslaw Radwanski

**2817-P**

**RILUZOLE AS A PROTOTYPE OF A NEW CLASS OF SODIUM CHANNEL INHIBITORS.** Mátyás Csaba Földi, Péter Lukács, Krisztina Pestl, András Malnasi-Csizmadia, Arpad Mike

**2818-P**

**HOW FAST IS RILUZOLE.** Krisztina Pestl, Péter Lukács, Arpad Mike

**2819-P**

**WHAT MAKES A COMPOUND A SODIUM CHANNEL INHIBITOR.** Adam Toth, Peter Lukacs, Arpad Mike

**2820-P**

**ABERRANT CALMODULIN REGULATION OF NAV1.5 CHANNELS LINKED TO INHERITED CARDIAC ARRHYTHMIA.** Nourdine Chakouri, Po wei Kang, Johanna Diaz, Gordon F. Tomaselli, Manu B. Johny

**2821-P**

**IDENTIFICATION OF A NEW GAIN-OF-FUNCTION MUTATION OF NAV1.5 ASSOCIATED WITH ATRIAL FIBRILLATION IN AN AFRICAN-AMERICAN FAMILY.** Liang Hong, Faisal A. Darbar, Meihong Zhang, Dawood Darbar

**2822-P**

**REDUCED SODIUM CURRENTS AND INCREASED SENSITIVITY TO FLECAINIDE IN ATRIAL CARDIOMYOCYTES, COMPARED TO VENTRICULAR.** Sian-Marie O'Brien, Andrew P Holmes, Daniel M. Johnson, Madalena Tessari, Giuseppe Faggian, Larissa Fabritz, Paulus Kirchhof, Elena F. Koslover, Andreas Schmidt, Péter Lukács, Krisztina Pestl, Adamo Mancino, Yuhao Yan, Takushi Shimomura, Mohammad-Reza Ghovanloo, Anh Tuan Ton, Andrea Ghetti, Guy Page, Paul E. Miller, Naja Abi Gerges

**2823-P**

**AN SCN5A SPlice VARIANT ASSOCIATED WITH HEART FAILURE LEADS TO A REDUCTION IN SODIUM CURRENT THROUGH COUPLED GATING WITH THE WT CHANNEL.** Yang Zheng, Haiyan Liu, Xiaoping Wan, Isabelle Deschenes

**2824-P**

**LATE SUSTAINED SODIUM CURRENT (INA,L) IN ADULT HUMAN PRIMARY CARDIOMYOCYTES.** Anh Tuan Ton, Andrea Ghetti, Guy Page, Paul E. Miller, Najah Abi Gerges

**2825-P**

**PROTECTIVE EFFECT OF CANNABIDIOL AGAINST OXIDATIVE STRESS AND CYTOTOXICITY EVOKED BY HIGH GLUCOSE IN CARDIAC VOLTAGE-GATED SODIUM CHANNELS.** Mohamed A. Fouda, Mohammad-Reza Ghovanloo, Peter C. Ruben

**2826-P**

**ALTERED AXONAL TRAFFICKING OF NAV1.7 IN CULTURED PERIPHERAL NEURONS IN RESPONSE TO INFLAMMATORY MEDIATORS AND PACLITAXEL.** Elizabeth J. Akin, Grant P. Higerd, Shujun Liu, Fadia B. Dib-Hajj, Stephen G. Waxman, Sulayman D. Dib-Hajj

**2827-P**

**THE SUBCELLULAR LOCALIZATION OF SODIUM CHANNELS & POTASSIUM CHANNELS IN THE NODES OF RANVIER.** Jiemin Lou
2828-Pos BOARD B374
IDENTIFICATION OF A NOVEL GAIN-OF-FUNCTION SODIUM CHANNEL B2 SUBUNIT MUTATION IN SMALL FIBER NEUROPATHY. Matthew Alsaloum, Peng Zhao, Monique M. Gerrits, Rowida Almomani, Jannieke Hoeijmakers, Maurice Sopacua, Giuseppe Lauria, Catharina G. Faber, Sulaayman Dib-Hajj, Stephen G. Waxman

2829-Pos BOARD B375
FUNCTIONAL UNCOUPLING OF PAIN-LINKED NAV1.7/A1632E DIMERS PARTLY RESCUES ITS PAIN-CAUSING PHENOTYPE. Annika Ruehlmann, Jannis Körner, Nikolay Bebrivenski, Silvia Detro-Dassen, Petra Hautvast, Carène Benasolo, Jannis Meents, Jan-Philipp Machtens, Günther Schmalzing, Angelika Lampert

2830-Pos BOARD B376
EFFICIENT AND HIGHLY SCALABLE MECHANISTIC CHARACTERIZATION OF ION CHANNEL FUNCTION IN DRUG DISCOVERY. Tianbo Li, Martin Ginkel, Ada Yee, Leigh Foster, Renee Emkey, Jun Chen, Stephan Heyse, Stephan Steigle

2831-Pos BOARD B377
PROBING ALTERED CALMODULIN INTERACTIONS IN SODIUM CHANNELOPATHIES USING FLOW-CYTOMETRIC FRET. Johanna Diaz, Khadija Hanif, Viviana Laines, Nourdine Chakouri, Manu B. Johny

Ligand-gated Channels (Boards B379 - B413)

2832-Pos BOARD B378
RAPIDLY ASSAYING VOLTAGE-GATED SODIUM CHANNELS USING LIGHT-INDUCED ACTION POTENTIALS AND FLUORESCENT RECORDINGS OF THE MEMBRANE POTENTIAL IN AN INSTRUMENT WITH A NOVEL DETECTOR ARRAY. Joerg Oestreich, Stephen S. Smith, Jay Trautman, Andrew L. Blatz

2833-Pos BOARD B379
TRANSITION PATHWAY FOR ACTIVATION OF LIGAND-GATED ION CHANNELS AND THE ROLE OF CHOLESTEROL. Sunny Hwang, Christophe J. Chipot, Emad Tajkhorshid

2834-Pos BOARD B380
POLYUNSATURATED FATTY ACID REGULATION OF THE ACID-SENSING ION CHANNELS. Robert C. Klipp, John R. Bankston

2835-Pos BOARD B381
THE BINDING SITE OF TETS IN THE PORE OF THE A2B3’2L GABA-A RECEPTOR. Brandon Pressly, Heike Wulff, Ruth Lee

2836-Pos BOARD B382
SCREENING OF EPILEPSY-LINKED GABAA RECEPTOR MUTANTS FOR ASSEMBLY DEFECTS. Sarah Ziemons, Günther Schmalzing

2837-Pos BOARD B383
A RE-EVALUATION OF GAIN-OF-FUNCTION DISEASE-ASSOCIATED MUTATIONS IN NMDA RECEPTORS. Gary J. Iacobucci

2838-Pos BOARD B384
DYNAMICAL MECHANISMS OF GLUTAMATE RECEPTOR GATING AND SUB-CONDUCTANCE. Maria G. Kurnikova, Serzhan Sakipov, Christopher Kotte, Chamali Narangoda, Jessica Scaranto

2839-Pos BOARD B385
MOLECULAR MECHANISM OF PH REGULATION ON TMEM16F LIPID SCRAMBLASE AND ION CHANNEL. Pengfei Liang, Trieu P. Le, Son C. Le, Huanghe Yang

2840-Pos BOARD B386
LIFE IN THE FAST LANE: BINDING TO GLUTAMATE RECEPTORS. Remy Yovanno, Tyler J. Wied, Alvin Yu, Hector P. Salazar, Andrew J. Plessted, Albert Y. Lau

2841-Pos BOARD B387
USING A NETWORK OF SINGLE SITE SPECIFIC MUTATIONS AND CROSS-LINKING MASS SPECTROMETRY (CXMS) TO REFINING THE STRUCTURE AND DYNAMICS OF THE HUMAN ALPHA 1 GLYCINE RECEPTOR (GLYR). Kayce A. Tomcho, Hannah E. Gering, Amanda Pellegrino, David J. Lapinsky, Michael Cascio

2842-Pos BOARD B388
CRYO-EM STRUCTURE DETERMINATION AND MODEL FITTING OF THE PROTON-GATED LIGAND-GATED ION CHANNEL GLIC AT MULTIPLE PH STATES. Urska Rovsnik, Victoria Lim, Christian Blau, Rebecca J. Howard, Erik Lindahl

2843-Pos BOARD B389
FUNCTIONAL RECONSTITUTION OF THE 5-HT, RECEPTOR. Uriel López Sánchez, Eleftherios Zarkadas, Guy Schoehn, Hugues Nury

2844-Pos BOARD B390

2845-Pos BOARD B391

2846-Pos BOARD B392
POINT MUTATIONS OF P2X7 RECEPTORS. Hannah Dentler, Manuela Klapperstür, Günther Schmalzing, Fritz Markwardt

2847-Pos BOARD B393

2848-Pos BOARD B394
MECHANISM OF CALCIUM GATING AND INACTIVATION IN A POTASSIUM CHANNEL. Chen Fan, Nattakan Sukomon, Jan Rheinberger, Crina M. Nimigean

2849-Pos BOARD B395

2850-Pos BOARD B396
TRAVEL Awardee
STOICHIOMETRY OF ACID-SENSING ION CHANNEL (ASIC) PHARMACOLOGY. Matthew L. Rook, David M. MacLean

2851-Pos BOARD B397

2852-Pos BOARD B398
MOLECULAR DYNAMICS SIMULATION OF LIGAND BINDING AND ION PERMEATION IN A GANGLIONIC NICOTINIC RECEPTOR. Yuxuan Zhuang, Anant Gharpure, Ryan E. Hibbs, Rebecca J. Howard, Erik R. Lindahl

2853-Pos BOARD B399
PROBABILITY OF OPENING DURING RECOVERY FROM ACHR DESENSITIZATION. Radhakrishnan Gnanasambandam, Anthony Auerbach
2854-Pos BCEP Board B400
PROTEIN-PROTEIN INTERACTIONS OF HUMAN P2X7 IN MICROGLIA AND HUMAN ASCIA IN KIDNEY CELLS. Mette H. Poulsen, Svetlana R. Maurya, Johann Sigurdsson, Alicja Lundyby, Stephan A. Pless

2855-Pos BCEP Board B401
DICATONIC, TRICATONIC AND TETRACATONIC SURFACTANTS AS TRANSGENE CARRIERS - COMPARISON OF THEIR ABILITY TO SRNA BINDING. Weronika J. Andrzejewska, Michalina M. Wilkowska, Andrzej Skrzypczak, Anna Woźniak, Barbara Peplińska, Maciej Kozak

2856-Pos BCEP Board B402
ALLOSTERIC GATING DETERMINANTS IN THE TRANSMEMBRANE DOMAIN OF PENTAMERIC LIGAND-GATED ION CHANNELS. Rebecca J. Howard, Yuxuan Zhuang, Stephanie A. Heusser, Cathrine C. Bergh, Urska Rosvnik, Laura Orellana, Erik Lindahl

2857-Pos BCEP Board B403
UNDERSTANDING THE MECHANISM OF AGONIST EFFICACY IN A FULL-LENGTH GLUK2/K5 USING SINGLE MOLECULE FRET. Nabina Paudyal, Douglas B. Litwin, Vladimir Berka, Elisa Carrillo, Vasanthi Jayaraman

2858-Pos BCEP Board B404
MOLECULAR RECOGNITION OF NEONICOTINOID INSECTICIDES BY HONEYBEE NICOTINIC RECEPTORS AND ACHBOM HOMOLOGUES. Chris Ulens, Quinty Bisseling, Marijke Brams, Aujan Mehregan, Genevieve L. Evans, Diletta Pasini, Hester Beard, Steven Verhelst, Alexander Fish, Sofie van Dorst, Kumiko Kamba, Daniel Bertrand

2859-Pos BCEP Board B405
LOWERING EXCITOTOXICITY AND STABILIZING SERIAL ACTIVATION OF NMDA RECEPTORS IN AUTOMATED PATCH CLAMP ASSAYS. Ali Yehia, Alexandra Stevens

2860-Pos BCEP Board B406
A MATHEMATICAL MODEL FOR LIGAND POTENCY IN THE HCN2 CHANNEL. Leo Ng, Meiyong Zhuang, Filip Van Petegem, Yue-Xian Li, Eric Accili

2861-Pos BCEP Board B407
IDENTIFICATION OF THE BINDING SITE OF BUPROPION ON SEROTONIN TYPE 3A RECEPTORS. Jessica Shepherd, Dubem Onyejegbu, Antonia Stuebler, Zackary Gallardo, Chris Hornback, Michaela Jansen

2862-Pos BCEP Board B408
HEARING LOSS MUTATIONS ALTER THE FUNCTIONAL PROPERTIES OF HUMAN P2X2 RECEPTOR CHANNELS THROUGH DISTINCT MECHANISMS. Benjamin I. George, Kenton Swartz, Mufeng Li

2863-Pos BCEP Board B409
FUNCTIONAL CHARACTERIZATION OF ION CHANNELS EXPRESSED IN EUKARYOTIC CELL-FREE SYSTEMS USING LIPID BILAYER ARRAYS. Ekaterina Zaitseva, Srujan Dondapati, Jeffrey SchloRhauer, Anne Zemmela, Priyavathi Dhandapani, Stefan Kubick, Gerhard Baaken

2864-Pos BCEP Board B410

2865-Pos BCEP Board B411
ROLE OF CONFORMATIONAL DYNAMICS IN NMDA RECEPTOR NEGATIVE COOPERATIVITY. Ryan J. Durham, Nabina Paudyal, Elisa Carrillo, David M. MacLean, Vladimir Berka, Drew M. Dolino, Nidhi Kaur Bhatia, Alemanyehu A. Gorfe, Vasanthi Jayaraman

2866-Pos BCEP Board B412
MOLECULAR EVOLUTION OF PLANT GLUTAMATE RECEPTORS. Alex A. Simon, Juan Barbosa-Caro, Jose Feijo, Erwan Michaël

2867-Pos BCEP Board B413
MEASURING INTERACTIONS BETWEEN THE INTRACELLULAR DOMAINS OF THE ACID-SENSING ION CHANNEL. Megan M. Cullinan, John R. Bankston

Ion Channels, Pharmacology, and Disease II (Boards B414 - B436)

2868-Pos BCEP Board B414
ION SELECTIVE PENTAMERIC PORE FORMATION BY EBOLA VIRUS DELTA PEPTIDE. Rudramani Pokhrel, Elumalai Pavadai, Bernard Gerstman, Prem P. Chapagain

2869-Pos BCEP Board B415
INTRACELLULAR RECORDING USING TRANSMEMBRANE CONDUCTIVE NANOPARTICLES. Mitsuyoshi L. Saito

2870-Pos BCEP Board B416
STRUCTURAL MODELING OF ION CHANNEL - SMALL MOLECULE INTERACTIONS USING ROSETTA’S GALIGANDDOCK. Brandon J. Harris, Phuong T. Nguyen, Vladimir Yarov-Yarovoy

2871-Pos BCEP Board B417
BINDING WITHOUT BLOCK. AN ANALYSIS OF AMANTADINE AND RIMANTADINE BLOCK OF THE INFLUENZA M2 531N CHANNEL. Kelly L. McGuire, David D. Busath

2872-Pos BCEP Board B418
SELECTIVE INHIBITION OF DIFFERENT ISOFORMS OF CONNEXIN HEMI-CHANNELS BY NEW AMINOGLYCOSIDES. Abbey Kjellgren, Marianna C. Fiori, Madher N. Alfindee, Yagya P. Subedi, Srinivasan Krishnan, Cheng-Wei T. Chang, Guillermo A. Altenberg

2873-Pos BCEP Board B419
TRAVEL AWARD: CYSL1 RECEPTOR ANTAGONISTS PRUNLAKUST AND ZAFIRLAKUST INHIBIT LRC8-MEDIATED VOLUME REGULATED ANION CHANNELS INDEPENDENTLY OF THE RECEPTOR. Eric E. Figueroa, Jerod S. Denton

2874-Pos BCEP Board B420
ALTERATION OF MEMBRANE CHOLESTEROL CONTENT PLAYS A KEY ROLE IN REGULATION OF CFTR CHANNEL ACTIVITY. Guiling Cui, Kirsten A. Cottrill, Kerry M. Strickland, Barry R. Imhoff, Nael A. McCarty

2875-Pos BCEP Board B421
CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR GENE VARIATIONS IN CODING AND NONCODING REGIONS IN CONGENITAL BILATERAL ABSENCE OF THE VAS DEFERENS DEPENDENT INFERTILITY. Semire Uzun Göçmen, Klaus Wagner, Sina Gökçe

2876-Pos BCEP Board B422
ANTIEPILEPTIC DRUG ETHOSUXIMIDE MAY REGULATE ABSENCE SEIZURES THROUGH DIFFERENT ION CHANNELS. Boris Shalomov, Shoham Dabbah, Nathan Dascal

2877-Pos BCEP Board B423
PHARMACOLOGICAL SENSITIVITY OF KCNQ & GIRK K+ CHANNELS AND CA2+, CA3+ CHANNELS TO COMMONLY-USED DRUGS. Victor de la Rosa, Mark S. Shapiro

2878-Pos BCEP Board B424
POTASSIUM CHANNEL ACTIVITY UNVEILS CANCER VULNERABILITY: FROM SIGNALING CONTROLLING TUMOR GROWTH AND METASTASIS TO PRECISION MEDICINE. Saverio Gentile

2879-Pos BCEP Board B425
KV11.1 CHANNEL ACTIVITY CONTROL REACTIVE OXYGEN SPECIES (ROS) HOMEOSTASIS IN BREAST CANCER CELLS. Vitaly Senyuk, Alexandra Hegel, Saverio Gentile
Cardiac Muscle Regulation
(Boards B437 - B458)

2891-Pos  BOARD B437  TRAVEL Awardee
SELECTIVE PHOSPHORYLATION OF CMYBP-C INCREASES CROSS-BRIDGE CYCLING RATES IN PERMEABILIZED CARDIOMYOCYTES FROM SPY-C MICE. Nathaniel C. Napierksi, Kevin Granger, Samantha P. Harris

2892-Pos  BOARD B438  A TROPOMYOSIN CABLE MODEL ON THIN-FILAMENTS DEDUCED BY PROTEIN-PROTEIN DOCKING. Elumalai Pavadai, Michael J. Rynkiewicz, William Lehman


2894-Pos  BOARD B440  THE C-TERMINAL END PEPTIDE OF TROPONIN I AS A MYOFILAMENT CA2+-DESENSITIZER. Sienna Wong, Han-Zhong Feng, J.p. Jin

2895-Pos  BOARD B441  AN INDEPENDENT POOL OF GSK-3B MODULATES CALCIUM SENSITIVITY AT THE CARDIAC MYOFILAMENT. Marisa J. Stachowski, Andrei Zlobin, Maria Papadaki, Edith Perez, Jody L. Martin, Nitha Aima Muntu, Christine S. Moravec, Jonathan A. Kirk


2897-Pos  BOARD B443  BIOPHYSICS OF THE SERCA2A/DWORF COMPLEX, IMPLICATIONS FOR TREATMENT OF HEART FAILURE. Ang Li, Daniel Stroik, Torny Schaaf, Samantha Yuen, Evan Kleinboehl, Razvan L. Cornea, David D. Thomas

2898-Pos  BOARD B444  DEAMIDATION OF ASPARAGINE14 PREVENTS SERINE15 PHOSPHORYLATION OF HUMAN CARDIAC MLC2V. Paul Goldspink, Jody L. Martin, Chad M. Warren, Walter Thompson, Elena Levi-D’Ancona, Pieter P. de Tombe

2899-Pos  BOARD B445  MODULATION OF INOTROPIC INTERVENTIONS OF THE REGULATORY STATE OF THE CARDIAC THICK FILAMENT IN DIASTOLE. Marco Faremani, Serena Governani, Massimo Reconditi, Francesca Pinzauti, Theyencheri Narayanan, Ger J. Stienen, Marco Linari, Vincenzo Lombardi, Gabriella Piazzesi

2900-Pos  BOARD B446  ACTIN-BINDING COMPOUNDS, DISCOVERED FROM FRET-BASED HIGH-THROUGHPUT SCREENING, DIFFERENTIALLY AFFECT SKELETAL AND CARDIAC MUSCLE. Piyali Guhathakurta, Lien Phung, Sarah Lichtenberger, Ewa Prochniewicz, David D. Thomas

2901-Pos  BOARD B447  MAVACAMTEN DECREASES MAXIMAL FORCE AND CA2+-SENSITIVITY OF CONTRACTION IN MYOCARDIAL STRIPS FROM A MOUSE MODEL FOR HYPERTROPIC CARDIOMYOPATHY. Peter O. Awinda, Marissa Watanabe, Yemeserach Bishaw, Katarzyna Kazmierczak, Danuta Szczesna-Cordary, Bertrand C. Tanner

2902-Pos  BOARD B448  IN SILICO ENGINEERING OF CALMODULIN TO BIND THE CARDIAC RY-ANODINE RECEPTOR WITH HIGH AFFINITY. Vladimir Bogdanov, Svetlana Tikunova, Yongjun Kou, Nick Fadell, Julia Evans, Anthony Tirone, Garrett Hauck, Christopher Johnson, Steffen Lindert, Sandor Gyorke, Jonathan P. Davis

2903-Pos  BOARD B449  TWO MYOFILAMENT-BASED APPROACHES TO PREVENT GENETIC DILATATED CARDIOMYOPATHY. Claire E. Branley, Farid Moussavi-Harami, Kristina B. Kooiker, Michael Regnier, Jill C. Tardiff, Joelle Tudor, Jeremy Freeman
SEX DIFFERENCES IN REGULATING THE CARDIAC TRANSCRIPTOME WITHIN A MURINE MODEL FOR HYPERTROPHIC CARDIOMYOPATHY. 
Karissa M. Dieseldorff Jones, Cynthia Vied, Isela C. Valera, Prescott B. Chase, Michelle S. Parvatiyar, J. Renato Pinto

A HIGH ALA MUTANT OF THE C-TERMINAL REGION OF HUMAN CARDIAC TNT HAS A LARGE IMPACT ON REGULATION. Dylan Johnson, Li Zhu, Maicon Landim Vieira, J. Renato D. Pinto, Joseph M. Chalovich

CONNECTING CARDIAC SARCOLEMMA PROTEIN CONTENT WITH SARCOMERIC FUNCTION. Isabella Leite Coscarella, Maicon Landim Vieira, Isela C. Valera, Amanda L. Wacker, Prescott B. Chase, J. Renato Pinto, Michelle S. Parvatiyar

THE ROLE OF CMVBP-C IN REGULATING THE FRANK-STARLING RELATIONSHIP. Laurin M. Hanft, Daniel P. Fitzsimons, Timothy A. Hacker, Richard L. Moss, Kerry S. McDonald

PHOSPHODIESTERASE 2 AND 3 REGULATE COMPARTMENTALIZED BETA2-ARADENERGIC RECEPTOR CAMP SIGNALING. Michael W. Rudokas, John P. Post, Chase M. Fiore, Shailesh R. Agarwal, Robert D. Harvey

OBSERVING THE MYOSIN SUPER-RELAXED STATE (SRX) IN CARDIAC THICK FILAMENTS. Sami Chu, Sriya Byrapuneni, David D. Thomas, Joseph M. Muretta


DESIGN OF AN OPTICAL TWEEZERS SYSTEM WITH FAST DIGITAL FEEDBACK FOR STUDYING THE MECHANOCHEMISTRY OF CARDIAC MYOSIN. William Stump, Thomas Blackwell, Sarah R. Clippinger, Michael J. Greenberg


TUBULIN TAILS AND THEIR MODIFICATIONS REGULATE PROTEIN DIFFUSION ON MICROTUBULES. Koby Levy

GMPCPP-TUBULIN ISLANDS REGULATE THE MECHANISM AND KINETICS OF MICROTUBULE DEPOLYMERIZATION. George D. Bachand, Jonathan A. Bollinger, Zachary Imam, Mark J. Stevens

STUDY OF TAU N-TERMINAL MUTATION, R5L, ON TAU INTERACTION WITH THE MICROTUBULE LATTICE. Alisa Cario, Morgan Dexter, Christopher L. Berger

WITH THE MICROTUBULE LATTICE. 
STUDY OF TAU N-TERMINAL MUTATION, R5L, ON TAU INTERACTION 
A. Bollinger, Zachary Imam, Mark J. Stevens

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MICROTUBULE POLARITY IN AXONS IS SORTED BY A MOLECULAR GRADIENT OF DYNACTIN. Maximilian A. Jakobs, Kristian Franze

ULTRAFAST FORCE-CLAMP STUDIES OF THE DIFFUSING MICROTUBULE-BINDING PROTEINS. Ekaterina L. Grishchuk, Vladimir Demidov, Shaowen Wu, Ivan V. Gonchar, Fazly I. Ataullakhanov

COMPUTATIONAL ANALYSIS OF NUCLEOTIDE-DEPENDENT MECHANICAL PROPERTIES OF MICROTUBULE PROTOFILAMENTS. James E. Gonzales, Wonmuk Hwang

A REAL-SPACE METHOD TO MEASURE THE PERSISTENCE LENGTH OF DYNAMIC MICROTUBULES. Jeffrey Specter, Gilman E.S. Toombes, Kenton Swartz, Antonina Roll-Mecak

MICROTUBULE IN VITRO BUNDLE STRUCTURES DEPENDS ON TAU PROJECTION DOMAIN AND IONIC STRENGTH. Hasaeam Cho, Hanjoon Nho, Juncheol Lee, Sang Yeop Lee, Kyeong Sik Jin, Herbert P. Miller, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya, Myung Chul Choi

CAN THRESHOLD CHOICES INFLUENCE OBSERVED MICROTUBULE AGING? Kristopher S. Murray, Ava J. Mauro, Holly V. Goodson

MATHEMATICAL MODELING AND SIMULATIONS OF CENTRIOLE POSITIONING DURING MITOSIS OF CELLS IN CONFINED ENVIRONMENTS. Nadia C. Beydoun, Parag Katira, Christian Mercado, Brianna Roseberry

BRAIN MICROTUBULE STRUCTURES BEHAVE AS MEMRISTIVE DEVICES. Maria del Rocío Cantero, Paula L. Perez, Noelia Scarinci, Brenda C. Gutierrez, Horacio F. Cantillo

THE DEPENDENCE OF TAU-MEDIATED MICROTUBULE ASSEMBLY AND BUNDLE FORMATION ON GTP AND MG2+. Breton Fletcher, Chaeyeon Song, Phillip A. Kohl, Herbert P. Miller, Youli Li, Myung Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

STRUCTURAL EVOLUTION OF ENERGY-CONSUMING TAU MEDIATED MICROTUBULE BUNDLES. Phillip A. Kohl, Breton Fletcher, Chaeyeon Song, Peter J. Chung, Herbert P. Miller, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

MICROTUBULE MECHANICAL PROPERTIES. Kathryn P. Wall, Harold Hart, Thomas Lee, Cynthia Page, Taviare L. Hawkins, Loren E. Hough

ALL TUBULINS ARE NOT ALIKE: HETERODIMER DISSOCIATION DIFFERS AMONG DIFFERENT BIOLOGICAL SOURCES: COMPARISON WITH DIMER ASSOCIATION. Felipe A. Montecinos-Franjola, Sumit K. Chaturvedi, Peter Schuck, Dan L. Sackett

SUBNANOMETER MECHANICS OF MICROTUBULE SELF-(DIS)ASSEMBLY. Maxim Igaev, Helmut Grubmueller

EFFECTS OF SEVERING ENZYMES ON THE LENGTH DISTRIBUTION AND TOTAL MASS OF MICROTUBULES. Yin-wei Kuo, Olivier Trottier, Mohammed Mahamdeh, Jonathan Howard

PHOSPHODIESTERASE 2 AND 3 REGULATE COMPARTMENTALIZED BETA2-ARADENERGIC RECEPTOR CAMP SIGNALING. Michael W. Rudokas, John P. Post, Chase M. Fiore, Shailesh R. Agarwal, Robert D. Harvey

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64th Annual Meeting of the Biophysical Society
February 15–19, 2020 • San Diego, California
Cell Mechanics, Mechanosensing, and Motility II (Boards B476 - B509)

2930-Pos  BOARD B476
DYNAMICAL INITIATION OF THE SYNERGETIC MIGRATION IN EPITHELIAL WOUND. Hyuntae Jeong, Yeojin Wook, Seunghwa Ryu, Jennifer H. Shin

2931-Pos  BOARD B477
MESENCHYMAL-LIKE MIGRATION STRATEGIES OF IMMUNE CELLS IN A 3D ENVIRONMENT. Tina Czerwinski, Christoph Mark, Susanne Rossner, Caroline Bosch-Voskens, Tapomoy Bhattacharjee, Thomas E. Angelini, Ben Fabry

2932-Pos  BOARD B478
INFLUENCE OF CELL CONFLUENCY ON MECHANICAL PROPERTIES OF BREAST CELLS. Hyunsu Lee, Keith Bonin, Martin Guthold

2933-Pos  BOARD B479
AGILITY IN MECHANOCHEMICAL CELLULAR RESPONSES: SPATIALLY-LOCALIZED COUPLING OF CELLULAR CONTROL MODULATES TRACTION STRESSES AND RETROGRADE FLOW WITHIN CELLS. Magdalena Stolarska, Aravind R. Rammoohan

2934-Pos  BOARD B480
A CAPILLARY CONTROLLED HYDROGEL MICROCHANNEL FOR ISOTROPIC COMPRESSIVE STRESS QUANTIFICATION. Ernesto Criado-Hidalgo, Antoni Garcia-Herreros, Yi-Ting Yeh, Juan C. Lasheras, Juan C. del Alamo

2935-Pos  BOARD B481
WHAT IS GENETIC ENTROPY. AN EQUILIBRIUM OR A NON EQUILIBRIUM ENTROPY. Bailey Smoot, Randal L. Halford, Salvatore Capotosto, Preet Sharma

2936-Pos  BOARD B482
EFFECT OF VARYING MECHANICAL ENVIRONMENT IN 2D CULTURE ON SUBSEQUENT METASTASIS PROCESS OF OVARIAN CANCER. Jiwon Kim, Sangyoon Oh, Jennifer H. Shin

2937-Pos  BOARD B483
TOWARDS NANOMECHANICAL PROPERTIES FROM PIPETTE ION CURRENTS. Nicola Lacleandola, Ankita Gangotra, Geoff R. Willmott

2938-Pos  BOARD B484
RETARDATION CAN QUANTIFY TENSION IN SINGLE STRESS FIBERS? Shukei Sugita, Masatoshi Hozaki, Tsubasa S. Matusi, Yoshihiro Ujihara, Shinji Deguchi, Masanori Nakamura

2939-Pos  BOARD B485
TRAVEL Awardee ELEVATED EXTRACELLULAR FLUID VISCOSITY STIMULATES MIGRATION OF METASTATIC CANCER CELLS. Matthew Pittman, Keva Li, Yun Chen

2940-Pos  BOARD B486
NEUROMECHANICS OF MAMMALIAN CORTICAL NEURONS. Krishna Chaitanya Kasuba, Benjamin M. Gaub, Silvia Ronchi, Daniel J. Mueller, Andreas Hierlemann

2941-Pos  BOARD B487
SELF-ORGANIZATION OF HUMAN SPERMATOZOA IN RECTANGULAR MICROCHANNELS. Anton Bukatin, Vasily Kantlsler

2942-Pos  BOARD B488
A BALANCE BETWEEN TURNING AND PERSISTENT MOTION IS CRITICAL FOR FAST AND EFFICIENT 3-DIMENSIONAL NEUTROPHIL MIGRATION. Joshua Francois, Yi-Ting Yeh, Cindy Ayala, Richard Firtel, Juan Carlos del Alamo, Shu Chien, Juan C. Lasheras

2943-Pos  BOARD B489
ENGINEERED PERICELLULAR MATRIX DEPOSITION CONTROLS MESENCHYMALstromal CELL VOLUME EXPANSION AND FATE. Sing-Wan Wong, Raymond Bargi, Celine Macaraniag, Zhangli Peng, Jae-Won Shin

2944-Pos  BOARD B490
LABEL-FREE CYTOMETRY IN VIRTUAL FLUIDIC CHANNELS - HIGH-THROUGHPUT CELL RHEOLOGY AND TISSUE MECHANICS. Muzaffar H. Panhwar, Fabian Czerwinski, Bob Fregin, Venkata A. Dabbiru, Yesaswini Komaragiri, Doreen Biedenweg, Ricardo H. Pires, Oliver Otto

2945-Pos  BOARD B491
PREDICTING COLLECTIVE MIGRATION OF HETEROGENEOUS CELL POPULATIONS. Jairaj Mathur, Amit Pathak

2946-Pos  BOARD B492
SPATIAL CONFINEMENT MODULATES CELL VELOCITY IN COLLECTIVE CELL MIGRATION. Sylvain Gabriele

2947-Pos  BOARD B493
LEADING EDGE MAINTENANCE IN MIGRATING NEUTROPHIL-LIKE HL-60 CELLS IS AN EMERGENT PROPERTY OF BRANCHED ACTIN GROWTH. Rikki M. Garner, Elena F. Koslover, Andrew J. Spakowitz, Julie Theriot

2948-Pos  BOARD B494

2949-Pos  BOARD B495
TRACTION FORCES CONTROL CELL-EDGE DYNAMICS AND MEDIATE DISTANCE-SENSITIVITY DURING CELL POLARIZATION. Zeno Messi

2950-Pos  BOARD B496
TRAVEL Awardee UNVEILING THE TREND OF CHANGES IN MECHANICAL PHENOTYPES BETWEEN SUBPOPULATIONS OF ISOGENIC CANCER CELLS AT DISTINCT METASTATIC STAGES. Zhenhui Liu, Se Jong Lee, Seungman Park, Konstantinos Konstantopoulos, Kristine Glunde, Yun Chen, Ishan Barman

2951-Pos  BOARD B497
CELL MORPHOLOGY AND SUBSTRATE LIGAND DENSITY DETERMINES ADHESION STRENGTH AND REMODELLING UNDER DYNAMIC SHEAR. Neha Paddilaya, Paturu Kondaiah, Pramod A. Pullarkat, Gautam I. Menon, Namrata Gundiah

2952-Pos  BOARD B498
QUANTIFYING SUBRIDGE RIGIDITY EFFECTS ON CANCER CELL MECHANICS USING SINGLE CELL FORCE SPECTROSCOPY. Tsung-Cheng Lin, Jingqiang Li, Sihara S. Wijeratne, Xin He, Xuewen Feng, Nicolas Nikoloutsos, Raymond Fang, Kevin Jiang, Ian Y. Lian, Ching-Hwa Kiang

2953-Pos  BOARD B499
SPHERICAL MICROWELL ARRAYS TO CULTURE CELLS IN 3D CONFINEMENT. Keng-hui Lin, Cheng-Kuang Huang, Giovanni Paylaga

2954-Pos  BOARD B500
DYNAMIC REAL-TIME DEFORMABILITY CYTOMETRY - TIME-RESOLVED MECHANICAL SINGLE CELL ANALYSIS AT 100 CELLS/S. Bob Fregin, Fabian Czerwinski, Doreen Biedenweg, Salvatore Girardo, Stefan Groß, Konstanze Aurich, Oliver Otto

2955-Pos  BOARD B501
EVOLUTION OF CELL/SUBSTRATE STRESSES DURING CONFINED INTERFACIAL MIGRATION. Abhishek Mukherjee, Ramesh Singh, Wenyi Yan, Shamik Sen
Cytoskeletal-based Intracellular Transport (Boards B510 - B514)

2964-Pos  Board B510
STEPWISE MOVEMENT OF MYOSIN-10 WITHIN THE FILOPODIUM OF LIVE MAMMALIAN CELLS. Gregory I. Mashanov, Tatiana A. Nenaseva, Francine Parker, Laura Knipe, Michelle Peckham, Justin E. Molloy

2965-Pos  Board B511
DYNAMICS AND MECHANICS OF DC-SIGN RECRUITMENT TO THE C. ALBICANS FUNGAL CONTACT SITE WITH MICROMANIPULATOR SYSTEM. Rohan Choraghe, Aaron Neumann

2966-Pos  Board B512
IN SILICO MODEL OF MYOSIN VA-MEDIATED LIPOSOME TRANSPORT PREDICTS ACTIN FILAMENT DENSITY AND LIPOSOME DIAMETER DICTATE TRANSPORT MODES. Sam Walcott, David M. Warshaw

2967-Pos  Board B513
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Join our Symposium
Monday Feb. 17, 12:30 – 2:00 PM, Room 33C

Jamie Vandenberg, Victor Chang Institute
High throughput screening of missense variants in KCNH2

Marc Rogers, Metrion
Validation of impedance-based phenotypic screening assay able to detect multiple mechanisms of chronic cardiotoxicity in human stem cell-derived cardiomyocytes

Matthias Gossmann, innoVitro
Mechanobiology of in vitro assays: tackling prevailing challenges in pre-clinical drug development

Nathan Thomas, Univ. of Wisconsin-Madison
Unlocking the (reversal) potential of SSM electrophysiology; transporter stoichiometry with the SURFE\(R\) N1

Stephen Hess, Evotec
Use of automated patch clamp platforms to support ion channel drug discovery

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Exhibit Dates and Times

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Exhibit Raffle

To win a Bose Portable Bluetooth Speaker, pick up a 2020 Passport Competition booklet inside the entrance of the Exhibit Hall. Visit participating exhibitors, talk to them to find out the answer to their question, get your passport stamped, and drop off your passport at the Society Booth before 2:30 PM on Tuesday, February 18. Raffle will be announced on Tuesday, February 18, at 3:00 PM in the Exhibit Hall. You must be present to win.

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Annual Meeting Sponsors*

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*As of January 10, 2020
**Exhibitor Presentations**  
Rooms 33A 33C, San Diego Convention Center

**Room 33A: Sunday, February 16**

9:30 AM – 11:00 AM

**Mizar Imaging**

**Tilt – A New Angle on Light Sheet Imaging**

Mizar Imaging is proud to introduce the Tilt, the first light sheet imaging system that is a simple add-on to most inverted microscopes. The key benefit of light sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample and the Tilt excels at this. When imaging with the Tilt, cells can be kept alive for hours and even days. This is aided by an optional incubation chamber for the Tilt, which allows for precise control of temperature (heating and cooling available), CO2 and humidity.

When installed on your microscope, the Tilt does not interfere with any existing modalities so you can easily add the Tilt to an existing TIRF or spinning disc confocal microscope system to add the ability to do long-term, live-cell imaging with the lowest possible photobleaching and phototoxicity.

The Tilt is well suited to image both larger organisms, such as C. elegans, Drosophila, zebra fish and other similar model organisms as well imaging high-resolution intracellular dynamics inside single cells. This remarkable diversity is realized because the Tilt can work with any objective on your microscope – from 20x through 150x. This makes the Tilt the only light sheet imaging system that can use high NA/high magnification objectives such as high resolution 60x and 100x objectives. There is no limit to what you can do with the Tilt.

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

**Speaker**

Paul Maddox, Founder & President, Mizar Imaging

11:30 AM – 1:00 PM

**NanoSurface Biomedical**

**Recreating the Extracellular Matrix in a Dish**

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

**Speaker**

Hamed Ghazizadeh, Product Manager, NanoSurface Biomedical

1:30 PM – 3:00 PM

**Carl Zeiss Microscopy LLC**

**Multiplex Mode for the LSM 9 Series with Airyscan 2: Fast and Gentle Confocal Superresolution in Large Volumes**

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

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

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

**Speaker**

Renée Dalrymple, Product Marketing Manager-Laser Scanning Microscopy, Carl Zeiss Microscopy LLC
Bruker Corporation

Multiplexed Imaging and Superresolution Microscopy Using the Vutara 352 Microscope with Integrated Fluidics System

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

Speaker
Robert Hobson, Applications Scientist, Bruker Corporation

ELEMENTS SRL

Low-Noise, Handheld Amplifiers for Electrophysiology and Nanopore Applications

Ultra-portable and cost-effective amplifier technology is now a reality accessible to any electrophysiology research lab, thanks to Elements miniaturized products, based on our custom CMOS microchips. In this presentation, we will be featuring our latest products through the hands-on experience of current customers from the US, Europe, and Japan. You will hear first-hand accounts about their research and the results they got using:
- The world’s smallest integrated patch clamp amplifier, ePatch
- A handheld nanopore kit for nanoparticle detection using disposable glass nanopore chips, eNPR

Attend this presentation to learn about:
- The advantages of using a versatile and compact nano-current amplifier technology
- Portable nanopore solution for protein detection using disposable nanopore chips
- How the world’s smallest and cheapest patch clamp amplifier is radically changing patch-clamp measurements
- Different user experience ranging from patch-clamp on live cells, to exosome detection using solid state nanopores, as well as lipid bilayer experiments

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

Speakers
Federico Thei, Chief Executive Officer, ELEMENTS SRL
Alessandro Porro, Application Scientist, ELEMENTS SRL
Guilherme Henrique Bomfim, Researcher, New York University
Nelly Mnatsakanyan, Assistant Professor, Yale University
David Niedzwiecki, Scientist, Goeppert LLC
Mark Platt, Senior Lecturer, University of Loughborough
Masato Nishio, Tokyo University
Room 33A: Monday, February 17

9:30 AM – 11:00 AM

Bruker Corporation

From Single Molecules to Tissues – A New AFM Toolkit for Nanoscopic Investigation of Mechanics, Structures, and Dynamic Processes in Life Science

The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biological molecules and complexes with nanometer resolution and under near-physiological conditions remains unmatched by other imaging techniques. JPK BioAFM has developed a new NanoWizard® 4 XP AFM which not only enables the high-speed study of the time-resolved dynamics associated with cellular processes, it’s latest scanner technologies and compact design also allow full integration of AFM into advanced commercially available light microscopy techniques. This seminar will focus on how the advances in Bruker’s latest BioAFM can be applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues in real-time, in-situ experiments. We will present examples of how we are able to resolve the nanoscale structure of individual biomolecules at high-speed scan rates (150 Hz), follow the dynamic reorganization of the membrane-associated cytoskeleton of living cells at high-temporal and high-spatial resolution, and automatically map the topography of cell cultures across the entire area of the microscope stage. We will also discuss the full suite of BioAFM modes and accessories for studying the nanomechanical properties of cells and tissues, including direct correlation of multiparametric, quantitative AFM and super-resolution (STED) datasets.

Speaker
Andrea Slade, BioAFM Product Manager, Bruker Corporation

11:30 AM – 1:00 PM

Leica Microsystems

Leica SP8 FALCON: Applications of FLIM for Functional Imaging and STED Nanoscopy

The rapidly growing field of functional imaging helps us understand the complex interactions of molecules, revealing the true nature of the underlying biology. In this context, fluorescence lifetime imaging (FLIM) is a powerful tool, providing valuable information beyond spectral imaging. FLIM is immune to concentration artifacts and highly sensitive to the molecular environment, providing a robust measure of a biological system’s health. However, previous FLIM solutions were slow and difficult to implement, particularly for complex imaging workflows. To address this weakness, we present the Leica SP8 FALCON (Fast Lifetime Contrast), a fast, intuitive and totally integrated, all-Leica FLIM solution. The SP8 FALCON delivers video-rate FLIM with pixel-by-pixel quantification, due to a unique combination of fast electronics, sensitive spectral hybrid detectors (Leica HyDs), and a novel concept for measuring time. The system has ultra-short dead time and powerful built-in algorithms to manage data acquisition and analysis, while maintaining accuracy and excellent data quality.

This talk explains the technical implementations enabling this new level of performance and provides some interesting application examples, including functional imaging (e.g. metabolic imaging or FRET imaging) and the use of lifetime information to achieve improved live-cell Nanoscopic Imaging (τ-STED). τ-STED is a revolutionary modality for STED imaging, making use of the FALCON FLIM phasor approach, delivering cutting-edge resolution and image quality at low light dose, especially beneficial for live-cell nanoscopy applications. τ-STED takes the fluorescence lifetime information from all detected photons combined with phasor analysis in a novel way to increase the resolution and eliminate uncorrelated background in an automated manner. The τ-STED implementation on Leica SP8 STED 3x systems works for 2D and 3D STED in live and in fixed specimens, and for multicolor applications.

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

Speaker
Haridas Pudavar, Product Performance Manager-Confocal Systems, Leica Microsystems
Speakers
Applications in enzymology and protein structures will be discussed. Conventional objective lens manufacturing technology forced a trade-off between numerical aperture, image flatness, and chromatic correction, making it difficult to improve all three in one objective. SX Stopped-Flow systems will be discussed. Stopped-Flow systems from Appli- cations in enzymology and protein structures will be discussed. Conventional objective lens manufacturing technology forced a trade-off between numerical aperture, image flatness, and chromatic correction, making it difficult to improve all three in one objective. SX Stopped-Flow systems will be discussed. Stopped-Flow systems from Applied Photophysics has remained at the forefront of the technologies in Circular Dichroism and Stopped-Flow Kinetics since its creation in 1971 by the Royal Institution of Great Britain under the leadership of Nobel Prize-winning Lord Port.

In the first part of the presentation, the latest developments regarding the Chirascan CD spectrometers will be introduced. Case studies will be discussed to illustrate that CD spectroscopy with Chirascan is far more powerful than the traditional use of revealing the protein secondary structures such as α-helix and β-sheet. With Chirascan CD spectrometers, information regarding secondary structures, as well as tertiary structures, thermal and chemical stability can be clearly demonstrated. Moreover, the introduction of automatic CD spectrometers provides unparalleled sensitivity, reproducibility and productivity. It provides a novel approach for objective, quantifiable higher order structure (HOS) comparisons. The introduction of the Circularly Polarized Luminescence (CPL) accessory makes the Chirascan more economical and versatile.

In the second part of the presentation, the latest developments in the SX Stopped-Flow systems will be discussed. Stopped-Flow systems from Applied Photophysics are known for its high performance, ease-of-use and durability and we have made them better. We introduce LED light sources and various accessories, such as dual fluorescence detection, fluorescence polarization/anisotropy, and photodiode array detector. Applications in enzymology and protein structures will be discussed.

Speakers
James Lopez, Manager-Life Science Applications Group, Olympus America Inc

3:30 PM – 5:00 PM
Applied Photophysics
Discover When Change is Significant: Latest Developments in Circular Dichroism and Stopped-Flow Kinetics
Applied Photophysics has remained at the forefront of the technologies of circular dichroism and stopped-flow kinetics since its creation in 1971 by the Royal Institution of Great Britain under the leadership of Nobel Prize-winning Lord Port.

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Room 33A: Tuesday, February 18

9:30 AM – 11:00 AM
Sophion Bioscience A/S

Characterization of the Rapidly Desensitizing α7 Nicotinic Acetylcholine Receptor on the Qube, NaV1.1 Assays on Automated Electrophysiology Platforms and Developing NMDA Assays on the Qube System

Successful ion channel drug discovery requires the integration of multiple technologies and workflows. Sophion Bioscience is a leader in automated patch clamp technology, providing medium to high throughput, automated patch clamp to the pharmaceutical industry and universities. The QPatch and Qube are fully automated patch clamp systems, executing simultaneous 8, 16, 48 or 384 parallel patch clamp recordings in conjunction with computer controlled liquid handling and on-board cell handling. Sophion partners with other biotech companies to create robust, ion channel and electrophysiological workflows for drug development for ion channel targets. During this workshop, three industry speakers will provide insight into the use of these systems in the drug discovery process. Dr Sung Hoon Park will present Qube data to show the characterization of rapidly desensitizing α7 nicotinic acetylcholine receptor on the Qube. Next, Dr Shanti Amagasu from Amgen will present data from Amgen’s Nav1.1 work on automated electrophysiological platforms. Finally, Dr Abigail Marklew will present on the development of NMDA Assays on the Qube system.

Speakers
Sung Hoon Park, Field Application Scientist, Sophion Bioscience A/S
Shanti Amagasu, Senior Scientist, Amgen
Abigail Marklew, Scientist, Charles River Laboratories

1:30 PM – 3:00 PM
HORIBA Scientific

A New Imaging Camera Technology Featuring TDC In-Pixel Architecture for Simple Dynamic FLIM Imaging at Video Rates

A new wide-field video rate TCSPC imaging camera from HORIBA Instruments will be introduced. This camera is a CMOS manufactured array of single photon avalanche diode (SPAD) detectors, each having its own time-to-digital converter (TDC). Thus each pixel is capable of measuring precise fluorescence decays in time-domain, and the entire camera is providing a complete fluorescence lifetime image map (FLIM) with each frame of the camera. This new technology is much faster than traditional scanning FLIM modalities thus making it ideal for live cell FLIM dynamics.

Speaker
Cary Davies, Global Product Manager-Fluorescence Division, HORIBA Scientific

Room 33C: Sunday, February 16

10:30 AM – 12:00 PM
Wyatt Technology

Recent Advances in Light Scattering and Related Techniques

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

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

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

Speaker
Kevin McCowen, Regional Manager, Wyatt Technology

12:30 PM – 2:00 PM
Sutter Instrument

Scientists Empowering Scientists

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

The IPA®, Double IPA® and new dPatch® Ultra-fast, Low-noise Integrated Patch Clamp Amplifiers and SutterPatch® Software are being used for a variety of common experiments, including characterization of ionic current and recording synaptic events in tissue slices. We will demonstrate how the SutterPatch Software’s online measurements and sophisticated control of experimental workflow can be used to aid real-time decision-making and eventually simplify analysis.
2:30 PM – 4:00 PM

Dynamic Biosensors GmbH

switchSENSE® Biophysical Analysis with Electro-Switchable Biosurfaces

The presentation will highlight the broad range of applications of the switchSENSE® technology that is supported by the recently launched heliX® biosensor:

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

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

Room 33C: Monday, February 17

8:30 AM – 10:00 AM

Beckman Coulter Life Sciences

Get the High-Resolution Separation That You Have Been Searching for with Preparative and Analytical Ultracentrifugation

Introduction: Purification of biological products, including biotherapeutics, involves the separation of cells from the culture media, followed by extensive processing to isolate the target of interest. Relatively simple separations are often achieved via differential centrifugation (pelleting), though high-resolution separations often utilize density gradient ultracentrifugation to yield high purity. In this presentation, we will discuss the full gamut of preparative (ultra)centrifugation, which permits the isolation and purification of biological components ranging from small peptides and nanoparticles to large nucleic acids, viruses, and organelles. We will then discuss the analytical/characterization aspects of ultracentrifugation, which allow quantitation of size, mass, shape, and density of the biological components that have been purified, along with exploration of their thermodynamic properties and binding interactions. Modern examples will be discussed for both preparative and analytical ultracentrifugation.

Purification: Modern centrifuges reach incredibly high speeds (with centrifugal acceleration sometimes exceeding 1,000,000 x g) to aid the high-resolution separation of particles, typically in the micro- or nanometer range, by size and/or density. Today’s gene therapy products, such as viral vectors, require high-quality purification to ensure the consistent production of safe, efficacious therapeutics of the highest quality to further advance this rapidly growing field and deliver solutions to patients in need. Density gradient ultracentrifugation (DGUC) is a centrifuge-based technique for providing superior purification of viral vectors (e.g., isolating full AAV particles from partial and empty capsids), along with other materials (such as plasmid DNA) in gene therapy production workflows. Though a well-established and mature method, DGUC is sometimes viewed as dated, challenging to design and conduct, or only suited for small-scale research applications. In this workshop, we’ll address these perceptions and discuss the premise of DGUC as a modern, high-resolution purification technique for AAVs and plasmid DNA. We’ll also provide guidance on how to get started with DGUC and optimize this technique for gene therapy workflows.

Characterization: Analytical ultracentrifugation (AUC) is one of the most versatile biophysical tools used today for the characterization of biological samples ranging from small drug molecules to intact viruses, vesicles and microparticles. AUC works with biological samples in the native state and does not depend on a reporter species or custom-coated substrates. AUC separates biomolecules based upon both molecular mass and anisotropy and can also be used to quantify interactions between different species. In this talk, we will start with the principles of AUC and take a tour through the technology behind modern AUC, including detection methods. We then look at advancements of the latest gen Optima AUC. Next, we go through experiment design – including the use of simulation tools. Following, we will address the different types of AUC experiments (equilibrium and velocity), compare and contrast their merits with sample data, and touch upon the principles of data processing. Finally, we will explore a variety of applications with a focus on the unique advantages that AUC brings to the study of various biotherapeutics, polymers, nanoparticles, and others – and how AUC compares to and complements other analytical techniques.

Speakers
Ross VerHeul, Senior Applications Scientist, Beckman Coulter Life Sciences
Akash Bhattacharya, Senior Applications Engineer, Beckman Coulter Life Sciences
Corporation

10:30 AM – 12:00 PM

Bruker Corporation

Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in Biophysics

Magnet Resonance offers many insights into how biological systems function. The two techniques shed light on the identity of species, dynamics, and structures of proteins, peptides, nucleotides, and lipids. The speakers will present an overview of these techniques and applications for people who may be new to the field and wish to incorporate them in their studies.

NMR has long been a valuable tool for the determination of structures, the study of dynamic processes and the investigation of interactions in biological molecules. To conduct these studies on larger molecules higher magnetic fields are required. Bruker BioSpin has successfully installed a 1.1 GHz NMR system in a customer laboratory and the delivery of the first 1.2 GHz system is imminent. To complement the higher magnetic fields Bruker BioSpin has also introduced several new probes for liquid and solid state NMR.

NMR has recently been used successfully for the characterization of large proteins such as monoclonal antibodies. The statistical analysis of NMR spectra allows the detection of changes in the high order structure of these molecules.

Another growing area is the use of 19F in bio-molecular NMR. Both the introduction of new accessories and method permit more widespread use of this nucleus in NMR studies.

EPR detects unpaired electrons in free radicals and transition metal ions. One electron transfer reactions result in unpaired electrons. Examples of paramagnetic species encountered in biology are; ROS (Reactive Oxygen Species), RNS (Reactive Nitrogen Species), amino acid radicals such as tyrosine and tryptophan radicals, paramagnetic intermediates in photosynthesis, and metalloenzymes.

In addition to these naturally occurring paramagnetic species, spin labels can be incorporated into a number of biomolecules via SDSL (Site Directied Spin Labeling). Applications and techniques are; motional dynamics of proteins, peptides, and nucleotides via linsehape analysis, accessibility studies in membrane proteins or peptides via saturation measurements, and distance measurements (2-8 nm) via DEER (Double Electron-Electron Resonance) to complement other structural methods such as X-ray, NMR, CryoEM and FRET.

Speakers

clemens Anklin, Vice President, NMR Applications & Training, Bruker Corporation

Ralph Weber, EPR Applications Manager, Bruker Corporation

12:30 PM – 2:00 PM

Nanion Technologies

Beyond Ion Channels and Transporters: Snapshots of the State-of-the-Art Solutions

For almost two decades Nanion Technologies provides diverse solutions for electrophysiologists worldwide. We aim to successfully implement innovative technologies in the fields of ion channel automated electrophysiology, monitoring of cell viability and contraction, as well as electrogenic transporters, with our chip- and plate-based devices. Covering the needs for low, medium and high throughput assays our portfolio is well suited to advance research and screening projects. During this year’s symposium, five snapshots of successful wide-ranging applications, assays and emerging technologies from our product portfolio will be presented. Our symposium will start with an introduction by Dr. Niels Fertig (CEO, Nanion) as a guide through the overall capabilities of Nanion’s technology portfolio. In continuation, we will welcome our speakers.

Our first snapshot, presented by Prof. Dr. Jamie Vandenberg (Victor Chang Cardiac Research Institute) will be focusing on the high throughput automated patch clamp (APC) screening of missense variants in KCNH2 mutations, a well-established cause of sudden cardiac death, using the SyncroPatch 384PE. Prof. Vandenberg will present a high throughput functional assay his group developed in order to differentiate between benign and pathogenic variants in KCNH2 gene. Dr. Marc Rogers (Metrion Biosciences) will continue with a snapshot focusing on validation of a CardioExcyte 96 impedance-based phenotypic assay, that is able to reproduce the chronic effects of a range of clinical drugs that affect human iPSC cardiomyocyte contractility and viability by multiple and diverse mechanisms, including ion channel and ionic pump inhibition, DNA intercalation, proteasome and tyrosine kinase inhibition, and myosin disruption. One of the newest Nanion’s releases, the FLEXcyte 96, will be highlighted in the snapshot presented by Dr. Matthias Gossmann (Innovitro). Dr. Gossmann will introduce the important impact this technology has on cardiac research, as it offers the potential to scale-up mechanical testing of cardiac contractile behavior, maturation and drug screening towards medium-throughput analysed under true physiological conditions.

Moving from cardiac physiology, Nathan Thomas (University of Wisconsin-Madison) will introduce a new application of SSM-based electrophysiology, in the field of ion coupled transporters. With a novel approach the transporter stoichiometry is investigated via reversal potential determination. During his snapshot, SURFE2R N1 data obtained on transporters from the small multidrug resistance (SMR) family, with the goal of providing a better understanding of underlying transport mechanisms, will be presented.

Finally, Dr. Stephen Hess (Evotec) will introduce the use of APC platforms to support ion channel drug discovery, focusing on the Nav1.1 channels, which positive modulators could be useful in treating cognitive disorders, epilepsy, and neurodegenerative diseases. To find novel positive modulators of NaV1.1 channels. Dr. Hess screened over 150K small molecules using the SyncroPatch 384PE and found confirmed hits which could serve as excellent starting points for further MedChem optimizations for scale-up mechanical testing of cardiac contractile behavior, maturation and drug screening towards medium-throughput analysed under true physiological conditions.

The Nanion team is delighted to welcome you to our lunch symposium!

Speakers

Jamie Vandenberg, Co-Deputy Director, Head of Cardiac Electrophysiology, The Victor Chang Cardiac Research Institute

Marc Rogers, Director, CSO, Metrion Biosciences

Matthias Gossmann, Innovitro (FLX), Co-Founder & CEO, Innovitro

Nathan Thomas, University of Wisconsin-Madison

Stephen Hess, Research Leader-Ion Channels, Evotec
2:30 PM – 4:00 PM
HORIBA Scientific

A New Modular Research Fluorometer Pushes Detection, Stray-Light, and Wavelength Limits of Fluorescence Spectroscopy

HORIBA Instruments Inc is proud to introduce the new FluorologQM modular research spectrofluorometer. This is the fourth generation of the world famous, all reflective, Fluorolog modular research spectrofluorometer and it pushes the sensitivity, performance and flexibility of fluorescence spectroscopy to new heights. Featuring the world’s highest guaranteed sensitivity specification, the longest focal length monochromators in the industry, and a wavelength coverage range from 180 to 5,500 nm, the FluorologQM pushes the detection, stray light, and wavelength limits of fluorescence to new levels. With new software, a new design and complete automation, this advanced research fluorometer, is also equally well suited for the simplest of tasks. The biophysical applications of the FluorologQM will be presented.

Speaker
Cary Davies, Global Product Manager-Fluorescence Division, HORIBA Scientific

4:30 PM – 6:00 PM
Molecular Devices

Empower Your Electrophysiology Studies Using New Axon pCLAMP 11 Software and HumSilencer Adaptive Noise Cancellation Technology

The patch-clamp technique remains the best method for examining ion channel physiology and membrane biophysics. Axon Instruments and pCLAMP software continue to push the envelope with new innovations with best-in-class systems and software. In this user meeting we learn how to design protocols easier, analyze data faster, and achieve better data quality.

Speaker
Jeffrey Tang, Senior Global Axon Electrophysiological Application Scientist, Molecular Devices
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<th>Company Name</th>
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<td>1 Mill Street, Unit 285, Burlington, VT 05401, <a href="http://www.89north.com">www.89north.com</a></td>
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<td>89 North provides products to improve research and clinical fluorescence imaging for the life sciences. Our products surround the research microscope including light sources, image splitters, laser combiners and filter wheels. We also offer engineering and manufacturing expertise to customize existing products or to create new solutions for systems integration.</td>
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<td>Abberior Instruments develops and markets STED super resolution microscopes. Founded by Stefan Hell our imaging systems are highly innovative. Further, we provide STED microscopes from low to high budget.</td>
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<td><strong>ALA Scientific Instruments Inc</strong></td>
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<td>As manufacturers (fluidics, chambers, etc) and distributors (npi, Sutter, Narishige, TMC) of instruments for patch/ cellular electrophysiology, our scientists/ engineers have decades of experience assembling systems and building custom setups. We focus on your equipment needs so you can focus on your research.</td>
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<td><strong>AAT Bioquest Inc</strong></td>
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<tr>
<td>520 Mercury Drive, Sunnyvale, CA 94085, <a href="http://www.aatbio.com">www.aatbio.com</a></td>
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<td>AAT Bioquest develops, manufactures, and markets bioanalytical reagents and assay kits for life science research and drug discovery. We specialize in absorption, fluorescence and luminescence-based biological detection technologies. Our products include the outstanding Fluo-8®, Cal-520™, Cal-590™, Cal-630™, Calbryte™-520 and FLIPR calcium assay kits, fluorescent ion indicators, fluorescent labeling reagents, cell and in vivo imaging probes. We also offer a full spectrum of apoptosis probes and assay kits.</td>
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<tr>
<td><strong>Agilent</strong></td>
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<tr>
<td>121 Hartwell Avenue, Lexington, MA 02421, <a href="http://www.agilent.com">www.agilent.com</a></td>
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<td>Agilent Technologies Inc. is a global leader in life sciences, diagnostics and applied chemical markets. With more than 50 years of insight and innovation, Agilent instruments, software, services, solutions, and people provide trusted answers to its customers’ most challenging questions. Agilent employs about 13,500 people worldwide.</td>
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<tr>
<td><strong>Alembic Instruments Inc</strong></td>
<td>802</td>
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<tr>
<td>3285 Cavendish Boulevard, Suite 570, Montreal, QC H4B 2L9, Canada, <a href="http://www.alembicinst.com">www.alembicinst.com</a></td>
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<tr>
<td>Alembic Instruments makes patch clamps amplifiers with 100% Rs Compensation! Our patented Rs Compensator™ can voltage clamp the largest, fastest ionic currents, under physiologic conditions - currents that are simply out of reach without it. Come see the NEW Alembic VE-3 computer controlled Patch clamp amplifier: 4 channels with integrated data acquisition, can run 4 separate patch clamp rigs simultaneously, true current-clamp, embedded computer with dedicated FPGA for real-time AP Clamp / Dynamic Clamp experiments, and more.</td>
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<tr>
<td><strong>Abbelight</strong></td>
<td>730</td>
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<tr>
<td>6 rue Jean Calvin, Paris, 75005, France, <a href="http://www.abbelight.com">www.abbelight.com</a></td>
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<td>Single Molecule Localization Microscopy (SMLM) combines quantitative information with the highest resolution achievable in light microscopy and is therefore a game changer in many biological studies. Abbelight is the result of 10 years of academic research on cutting-edge detection methods in fluorescence microscopy. Our unique offers are designed to provide the best instruments, software, and scientific expertise to speed-up the entire imaging workflow - from sample preparation, to image acquisition and analysis - within a wide range of research applications in biology and pharmacology.</td>
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<tr>
<td><strong>AIP Publishing</strong></td>
<td>305</td>
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<tr>
<td>1305 Walt Whitman Road, Suite 300, Melville, NY 11747, scitation.aip.org</td>
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<td>AIP Publishing is a wholly owned not-for-profit subsidiary of the American Institute of Physics (AIP). Our portfolio offers scientists, engineers, researchers and students a foundation of interdisciplinary and emerging basic and applied research. Spanning the physical sciences, publications cover physics, plasmas, fluids, mathematical physics, instrumentation, and education. For more information visit publishing.aip.org.</td>
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<tr>
<td><strong>Allen Institute for Cell Science</strong></td>
<td>418</td>
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<tr>
<td>615 Westlake Avenue North, Seattle, WA 98109, <a href="http://www.allencell.org">www.allencell.org</a></td>
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<td>Launched by Paul G. Allen in 2014, the Allen Institute for Cell Science studies the cell as an integrated system. The Institute is producing novel visual, dynamic, predictive models of the cell to accelerate biological research. The Institute provides public tools, including gene edited cell lines, methods, images, and models, on allencell.org.</td>
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Alvéole specializes in bioengineering technologies and tools for better cell sample preparation. Its main product PRIMO is a contactless and maskless photopatterning system allowing to perform: protein micropatterning on all cell culture substrates (stiff, soft, flat, microstructured), microfabrication and hydrogel structuration. Via the custom control it provides over cell microenvironment it can be a game changer for many applications such as: studying cell mechanisms (via polarity, adhesion, migration), controlling cell position and intra-cellular organization for cryo-ET, disease modeling.

American Physical Society 231
1 Physics Ellipse
College Park, MD 20740
journals.aps.org

The American Physical Society (APS) is a non-profit membership organization that publishes the Physical Review collection, the world’s most widely read physics research and review journals. Please stop by booth 231 in the Exhibit Hall to meet the editors and discuss the Physical Review family of journals.

AnaBios 211
3030 Bunker Hill Street, Suite 312
San Diego, CA 92109
www.anabios.com

Located in San Diego, California, AnaBios aims to establish the safety and efficacy of novel compounds through its advanced, human-focused translational technologies. AnaBios primarily focuses on areas of high, unmet medical need, including cardiac disease, pain and itch. In addition to working with Fortune 500 biotech companies, contract research organizations and academic institutions, AnaBios drives an internal drug discovery platform via in-licensed programs from partners in the pharmaceutical industry. For more information, visit http://www.anabios.com.

Anatrace
Anatrace Molecular Dimensions
434 West Dussel Drive
Maumee, OH 43537
www.anatrace.com/MD

Anatrace and Molecular Dimensions are seriously committed to helping you set higher standards this year with our detergents, lipids, crystallization screens, and tools for structural biology. Whether you’re involved with soluble proteins, membrane proteins, NMR, Crystallography, or even Cryo-EM, we can help you achieve more in your research. Stop by our booth to learn about our new and innovative products we have been busy developing this past year.

Andor Technology, an Oxford Instruments Company
300 Baker Avenue, Suite 150
Concord, MA 01742
www.andor.com

Andor manufactures scientific imaging cameras and microscopy systems. Our EMCCDs are the ideal for low light applications; single molecule detection, ion (calcium) imaging, superresolution and TIRF.

Anton Paar 704
10215 Timber Ridge Drive
Ashland, VA 23005
www.anton-paar.com

Anton Paar is a leading supplier of analytical instrumentation focused on the biophysical characterization of proteins, liposomes and other nanoscale analytes. Specific technologies include: Small-angle X-ray Scattering (SAXS) for the nano and sub-nano scale characterization of sample size, shape, inner structure and orientation of proteins, nanoparticles, liposomes and core/shell particles as well as Dynamic Light Scattering (DLS) for the measurement of particle size, zeta potential, molecular mass and transmittance of proteins, liposomes, nanoparticles, emulsions and protein complexes.

Pick up a Passport Competition booklet inside the entrance of the Exhibit Hall, visit participating companies, answer their questions, get your passport stamped, and enter for a chance to win a Bose Portable Bluetooth Speaker!
Applied Scientific Instrumentation, Inc. (ASI) is a company with decades of experience meeting researchers’ technical needs for microscope automation and imaging. Precision motion control is the foundation of our products, including extremely precise DC servo stages, piezo stages, and low vibration filter wheels. ASI’s Modular Infinity Microscope (MIM) system makes it easy to build a complete microscope customized to the user’s needs. We offer a range of related products including autofocus devices, LED illumination and light sheet microscope components. Our RAMM frame microscope is stable and open platform perfect for innovative techniques. Systems have been built for multi-photon and 2nd harmonic microscopy, rapid tracking of freely moving organisms, TIRF, and wide field fluorescence. ASI has worked with a number of partners over the years to help develop and supply innovative technology to the scientific community. One example of this is our recent collaboration with Special Optics to develop an immersion objective lens specifically designed for cleared tissue imaging with light sheet microscopy. We offer light sheet microscope systems for imaging a wide variety of samples. Several light sheet geometries can all be built from our modular optical and control systems.


Axiom Optics offers sales, support, and expertise in advanced light microscopy. We are known for the following applications: rescan confocal microscopy, fluorescence lifetime imaging microscopy (FLIM), single molecule localization microscopy and 3D super resolution, high-speed fluorescence imaging, microscopy quality assessment slides (Argolight).
BioCAT
Argonne National Laboratory,
9700 South Cass Avenue,
Building 435B
Argonne, IL 60439
bio.aps.anl.gov

Our mission is to develop and operate state-of-the-art x-ray facilities for the study of the structure and dynamics of biological systems under non-crystalline conditions similar to their functional states in living tissues. Our primary research tool is a very high brightness X-ray beam-line at the Advanced Photon Source (APS) at Argonne National Laboratory. BioCAT is a member of Illinois Institute of Technology’s (IIT) Center for Synchrotron Radiation Research and Instrumentation (CSSRI) and is funded by the National Institutes of Health.

Bio-Logic USA
9050 Executive Park Drive, Suite 110C
Knoxville, TN 37923
www.bio-logic.net

Bio-Logic USA is the leading manufacturer of stopped flow, quench flow, and freeze quench mixers for examining reaction kinetics in biochemistry, molecular biology, and biophysics. The SFM-4000 series of mixers deliver dead times of 200 microseconds or faster, with asymmetrical mixing, modular design, and unsurpassed performance. They can be connected to spectrometers, x-ray and neutron lines, and EPR systems. The MOS-500 spectropolarimeter delivers auto-optimized performance from near IR to UV in CD, LD, absorbance, fluorescence, and anisotropy modes. Sample handling options include cuvette, dry powder, magnetic CD, peltier temperature control, and more. The MOS-500 can be used standalone or with the SFM-4000 series stopped flow mixers.

BioTek Instruments Inc
Highland Park, Box 998
Winooski, VT 05404
www.biotek.com

BioTek, now a part of Agilent, is a worldwide leader in the design, manufacture, and distribution of innovative life science instrumentation including cell imaging systems, microplate readers, washers, dispensers, automated incubators and stackers. Our products enable life science research by providing high performance, cost-effective analysis and quantification of biomolecules, biomolecular interactions and cellular structure and function across diverse applications.

Bon Opus Biosciences
150 Essex Street, Suite 301
Millburn, NJ 07041
www.bonopusbio.com

Bon Opus Biosciences is an NJ-based contract research organization. Our areas of expertise include gene synthesis, custom protein expression, and custom antibody production. All proteins have activity and purity data testing performed and reported. In addition to our vast recombinant protein catalog, we also carry a comprehensive catalog of over 3,000 primary antibodies. Bon Opus has built several service programs that are specifically designed to support the development of targeted therapeutics - in particular, antigen production and monoclonal antibodies.

Boston Electronics
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About Boston Electronics - Boston Electronics are specialists in providing electro-optical solutions including photodetectors, LEDs, tunable lasers imaging arrays and photon counting detection, spanning the spectrum from ultraviolet to visible and infrared. Boston Electronics distributes advanced electro-optical products from premier manufacturers worldwide. We specialize in products related to photodetection including especially detectors, sources, and signal processing electronics.

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Bruker enables scientists to make breakthrough discoveries and develop new applications that improve the quality of human life. Our high-performance scientific instruments and high-value analytical and diagnostic solutions enable scientists to explore life and materials at molecular, cellular and microscopic levels. Visit our booth to learn about Bruker’s comprehensive selection of biology atomic force microscopes (BioAFMs), electron paramagnetic resonance (EPR) and nuclear magnetic resonance (NMR) spectroscopy systems, and super-resolution single molecule localization (SML) microscopes.

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Cambridge University Press is a not-for-profit organization that advances learning and research via the global publication of academic books, journals, and digital content.

Carl Zeiss Microscopy LLC
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www.zeiss.com/microscopy

Carl Zeiss Microscopy is part of the ZEISS Group, a leading organization of companies operating worldwide in the optical and optoelectronic industry. As the world’s only manufacturer of light, X-ray and electron/ion microscopes, we offer tailor-made systems for 3D imaging in biomedical research, life sciences and healthcare. A dedicated and well-trained sales force, an extensive support infrastructure and a responsive service team enable customers to use their ZEISS microscope systems to their full potential.
Cedarlane offers a myriad of biologicals and biochemicals to researchers and clinicians, providing products from virtually all of the World’s most renowned international manufacturers. Cedarlane works closely with both customers and suppliers offering a personalized and comprehensive experience to reflect the core value that customers are of the utmost importance. By providing a gateway to over six million global kits and reagents, customers have the advantage of freight consolidation and the convenience and cost savings inherent within. Cedarlane is the one-stop-shop for your research needs.

Cell Press is proud to publish Biophysical Journal for the Biophysical Society. Cell Press is a leading publisher of cutting-edge life, physical, and earth science research and reviews. We continue leading in the innovative presentation of exciting scientific discoveries, consistently focusing on delivering research that drives scientific discovery, spanning a wide range of scientific disciplines. Pick up the latest free journal copies of your favorite Cell Press journals, including Cell and Biophysical Journal.

Chroma Technology designs and manufactures optical interference filters using advanced sputtering technologies. Our high performance filters are intended for imaging applications ranging from widefield and confocal fluorescence microscopy, TIRF and super-resolution techniques to flow cytometry, high content screening multi-photon and Raman spectroscopy. Chroma also provides comprehensive technical and applications support.

Crayon Technologies Inc develops and provides innovative technologies that allow researchers to study detailed molecular and structural information of biological samples in three dimensions. Our products achieve unprecedented ultra-rapid and complete processing and immunostaining of 3-dimensional biological samples while preserving structural integrity. Through continuous technology development, we aim to develop an integrated platform for analyzing 3D molecular signatures of deep tissues and phenotyping various organ systems for clinical diagnostic purposes.

Dynamic Biosensors is a provider of instruments, consumables, and services in the field of analytical systems for the characterization of biomolecules and molecular interactions. Dynamic Biosensors commercializes switchSENSE® technology, a groundbreaking platform technology for the analysis of biomolecules with applications in R&D and drug development. The switchSENSE® technology is protected worldwide and only available through Dynamic Biosensors. The company is headquartered in the south of Munich, Germany and runs offices in the United States, the United Kingdom, Japan and Singapore.
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<tr>
<th>Company Name</th>
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<tr>
<td>Ecocyte Bioscience US LLC</td>
<td>728</td>
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<tr>
<td>111 Ramble Lane, Suite 109</td>
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<tr>
<td>Austin, TX 78745</td>
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<td>ecocyte-us.com/</td>
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Ecocyte Bioscience supports research labs in Europe and USA with freshly prepared or mRNA/cDNA preinjected Xenopus Oocytes, lab chemicals and standard or customized cell and tissue media. Our mother company Lohmann Research Equipment (LRE) develops and distributes high quality products for biomedical research. Our multiple electrophysiological platform Synchroslice/Autoslice became a standard in brain and heart slice high throughput screening. Furthermore, as a renowned CRO, LRE offers electrophysiological contract research in Xenopus Oocytes (Preinjection, TEVC) and brain/heart slices.

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<th>Company Name</th>
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<td>ELEMENTS SRL</td>
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<td>Viale G. Marconi 438</td>
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<td>Cesena, IT 47521</td>
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<td>Italy</td>
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<td>elements-ic.com</td>
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Elements srl produces electronic instrumentation for the pico- and nano-scale measurements in the electrochemistry field, ranging from electrophysiology on live cells to bio- and solid-state nanopore sensing. Elements technology is based on custom microchip, designed by the company microelectronic engineers, that allows ultra-low noise current measurement starting from very low ranges (few hundreds of fA). Elements microchips allow to produce miniaturized devices that enable nanotechnologies to be used in the new generation of portable diagnostic instruments and nanoparticle analysis.

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<th>Company Name</th>
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<tr>
<td>Edinburgh Instruments</td>
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<tr>
<td>2 Bain Square, Kirkton Campus</td>
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<td>Livingston, EHS47DQ</td>
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<td>United Kingdom</td>
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<td><a href="http://www.edinst.com">www.edinst.com</a></td>
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Edinburgh Instruments are global providers of Molecular Spectroscopy solutions covering techniques such as Photoluminescence, Raman, UV-Vis, Transient Absorption, and pulsed lasers and LEDs. We are world leaders in cutting-edge fluorescence spectroscopic instrumentation. Over the years we have developed new and innovative products, winning many international designs, technology and export achievement awards. We excel in providing one-to-one comprehensive customer service and continue to meet the needs of our customers worldwide.

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<th>Company Name</th>
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<td>Etaluma Inc</td>
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<tr>
<td>4360 Viewridge Avenue, Suite B</td>
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<tr>
<td>San Diego, CA 92123</td>
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<td><a href="http://www.etaluma.com">www.etaluma.com</a></td>
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Etaluma provides fluorescence microscopes for live cell imaging as well as an instrument development ecosystem of OEM microscopy components with compact multi-channel solid-state optics, maximum resolution and high sensitivity, and zero pixel shift. This system allows partners to easily configure their clinical or research instruments using a unifying gRPC layer running on Linux. Multiple options for cameras/sensors, LED wavelength control, automated XY, motorized Z for autofocus, and dimensions offer flexibility and customization.

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<th>Company Name</th>
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<td>FLuicell AB</td>
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<td>Arvid Wallgrens Backe 20</td>
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<td>Gothenburg, 41346</td>
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<td>Sweden</td>
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<td><a href="http://www.fluicell.com">www.fluicell.com</a></td>
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Fluicell is a public company that has commercialized single-cell discovery platforms for life science to study single cells, primarily in the field of drug development. Fluicell’s existing products are the research tools Biopen® and Dynaflow® Resolve, which allow researchers to investigate the effects of drugs on individual cells at a unique level of detail. Fluicell is developing a unique high-resolution bioprinting technology in both 2D and 3D under the name Biopixlar™. With this system, complex tissue-like structures can be created where positioning of individual cells can be controlled.

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<th>Company Name</th>
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<tr>
<td>Fluidic Analytics</td>
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<tr>
<td>Unit A, The Paddocks, Cherry Hinton Road</td>
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<tr>
<td>Cambridge, CB1 8DH</td>
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<td>United Kingdom</td>
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<td><a href="http://www.fluidic.com">www.fluidic.com</a></td>
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We envision a world where information about proteins and their behavior transforms our understanding of how the biological world operates, and helps all of us make better decisions about how we diagnose diseases, develop treatment, and maintain our personal well-being.

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<td>Fluxion Biosciences</td>
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<tr>
<td>1600 Harbor Bay Parkway, Suite 150</td>
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<tr>
<td>Alameda, CA 94502</td>
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<td><a href="http://www.fluxionbio.com">www.fluxionbio.com</a></td>
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Using proprietary microfluidic approaches, Fluxion manufactures the IonFlux Mercury automated patch clamp system. IonFlux is used all over the world in industry and academic laboratories. It is well established in ligand and voltage gated ion channel screening. Its unique in-plate perfusion, providing continuous flow, allows for the simplification and speed of otherwise complicated assays. Fluxion’s other developments include liquid biopsy workflows (IsoFlux CTC Liquid Biopsy System and Spotlight NGS Oncology Panels) as well as BioFlux systems for cell-cell interaction analysis.

Electron microscopy sciences will have on display their complete line of accessories, chemicals, supplies and equipment for all fields of microscopy, biological research and general laboratory requirements. As well as our full line of tools, tweezers and dissecting equipment.
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<td>Gene Tools LLC</td>
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<td>1001 Summerton Way Philomath, OR 97370 <a href="http://www.gene-tools.com">www.gene-tools.com</a></td>
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<td>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.</td>
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<td>GoldBio</td>
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<td>1328 Ashby Road St. Louis, MO 63132 <a href="http://www.goldbio.com">www.goldbio.com</a></td>
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<td>GoldBio has been committed to researchers around the world by providing our customers with the best research reagents. GoldBio's line of high-quality reagents include products for DNA and protein research, cloning, cell culture, bioluminescence and so much more.</td>
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<tr>
<td>Hamamatsu Corporation</td>
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<tr>
<td>360 Foothill Road Bridgewater, NJ 08807 <a href="http://www.hamamatsu.com">www.hamamatsu.com</a></td>
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<td>Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan), a leading manufacturer of devices for the generation and measurement of infrared, visible, and ultraviolet light. We offer photomultiplier tubes and other low-light detectors, image sensors, light sources, and cameras (sCMOS, CCD, and EM-CCD) for biological applications.</td>
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<td>HEKA</td>
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<td>84 October Hill Road Holliston, MA 01746 <a href="http://www.heka.com">www.heka.com</a></td>
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<td>HEKA provides complete solutions for electrophysiology and electrochemistry applications. We deliver complete set-ups with optional installation. HEKA provides hardware such as Patch-Clamp Amplifiers, Potentiostat and Galvanostat Amplifiers, entire E-chem scanning probes and much more! Our new PATCHMASTER NEXT software features a brand-new user-interface that is specifically designed for modern computer operating systems, making it easy to use for beginners and HEKA-veterans alike. Visit us to learn how HEKA can be a trusted partner in your laboratory.</td>
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<td>Hellma USA</td>
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<td>80 Skyline Drive Plainview, NY 11803</td>
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<tr>
<td>Hellma is the world's leading manufacturer of cells and optical components for optical analysis. For 97 years, since Hellma GmbH was founded in 1922 in Müllheim, southern Germany, our commitment has been to provide the best possible quality in order to guarantee the most precise analytical results. Welcome to the fine art of precision!</td>
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<tr>
<td>Hinds Instruments Inc</td>
<td>830</td>
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<tr>
<td>7245 NE Evergreen Parkway Hillsboro, OR 97124 <a href="http://www.hindsinstruments.com">www.hindsinstruments.com</a></td>
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<td>Hinds Instruments is the manufacturer of the Photoelastic Modulator, the PEM100 and soon to be released PEM200. The PEM is used in commercial CD and VCD systems and bench-top laboratory research in CD, VCD, fluorescence, and other spectroscopic applications. Benefits for using the PEM are the wide spectral range (DUV to FIR), high sensitivity (10^-6), and large useful apertures. Stop by our booth for more information on the new, fully digital, PEM200.</td>
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<tr>
<td>ibidi USA Inc</td>
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<td>2920 Marketplace Drive, Suite 102 Fitchburg, WI 53719 ibidi.com</td>
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<td>ibidi's position as a leader for functional cell-based assay technologies is based on more than 18 years of experience and a passion for quality and service. The ibidi product portfolio provides the largest and most sophisticated selection of microscopy slides worldwide. Applications range from standard microscopy techniques for high quality and super resolution imaging to more advanced cell-based assays including migration and chemotaxis, cell culture under flow conditions, and angiogenesis. Moreover, ibidi has an extended expertise in solutions for stage top incubation and perfusion.</td>
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<tr>
<td>HORIBA Scientific</td>
<td>409</td>
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<tr>
<td>20 Knightsbridge Road Piscataway, NJ 08854 <a href="http://www.horiba.com/scientific">www.horiba.com/scientific</a></td>
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<td>HORIBA Scientific offers the most sensitive, flexible, simple, affordable steady state &amp; lifetime fluorometers, modular, expandable open architecture, tabletop systems &amp; ion ratio imaging microscopy solutions, software &amp; accessories. Duetta offers simultaneous Fluorescence/Absorbance from UV to NIR, uses CCD detection for fluorescence spectral acquisitions, &amp; offers enhanced dynamic range &amp; precise multivariate analysis capabilities for molecular fingerprinting. New FLUMera camera enables fluorescence lifetime imaging at real-time video rates for up to 24,576 simultaneous lifetime measurements.</td>
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<td>Company Name</td>
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<td>IDQ's visible &amp; NIR (near infrared) SPAD detectors, superconducting nanowire SNOPD systems, and picosecond timing electronics are used in membrane biophysics and single cell dynamics with TCSPC. TCSPC is at the heart of many methods in photoluminescence, phosphorescence and fluorescence lifetime (e.g. FLIM, FRET) and fluorescence correlation spectroscopy (FCS, etc.) and is applied to e.g. protein-protein, receptor-ligand, RNA-protein, and biopolymer interactions, in studies of conformational changes in membrane channels &amp; other heterostructures, and with quantum dots and other nanomaterials.</td>
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<tr>
<td>IonOptix</td>
<td>703</td>
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<tr>
<td>396 University Avenue</td>
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<tr>
<td>Westwood, MA 02090</td>
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<td><a href="http://www.ionoptix.com">www.ionoptix.com</a></td>
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<tr>
<td>IonOptix manufactures high-performance fluorescence and muscle function data acquisition and analysis systems. Well known for our popular Cardiomyocyte Calcium and Contractility System, we’re proud to offer our new MultiCell high-throughput system for fast calcium and contractility data acquisition and analysis in isolated myocytes. Always innovating, IonOptix now offers calcium and force measurements in whole muscle as well as isolated cardiomyocytes, and our C-Stretch enables combined stretch and electrical stimulation in cultured cells – easy-to-use with the new C-Pace Navigator software.</td>
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<tr>
<td>ISS Inc</td>
<td>715</td>
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<tr>
<td>1602 Newton Drive</td>
<td></td>
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<tr>
<td>Champaign, IL 61822</td>
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<tr>
<td><a href="http://www.issem.com">www.issem.com</a></td>
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<tr>
<td>For over 30 years, ISS has been a pioneer in producing scientific instrumentation. Applications include FRET, FLIM, FCS, FCCS, PCH, STED and all FFS techniques. Experts in absolute measurements of oxygen saturation in brain and muscle tissue. We host a variety of modular components that complement the instrumentation: laser diodes, LEDs, high pressure cell and fiber optic sensors among an extensive line of accessories; data acquisition cards for FCS and FLIM, laser launchers, galvo-scanning mirrors and detector units. Stop by our booth to learn more.</td>
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<tr>
<td>JASCO</td>
<td>617</td>
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<tr>
<td>JASCO will be exhibiting a range of biophysical characterization tools including Circular Dichroism, Fluorescence and FTIR instrumentation. The JASCO J-1000 Series Spectrophotometers provide an optical bench specifically designed for high sensitivity measurements in the far- and near-UV regions. Temperature control systems can be coupled with multi-position cells to run thermal melts. Automated high-throughput CD can obtain measurements on up to 192 samples without user intervention, saving both time and money. Microsampling cells provide measurements on sample volumes as low as 2 microliters.</td>
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<tr>
<td>JASCO</td>
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<td>28600 Mary’s Court</td>
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<tr>
<td>Easton, MD 21601</td>
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<td><a href="http://www.jascoinc.com">www.jascoinc.com</a></td>
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<tr>
<td>The Journal of General Physiology (JGP) publishes mechanistic and quantitative cellular and molecular physiology of the highest quality. All editorial decisions are made by research-active scientists. Established in 1918, JGP recently celebrated 100 years. JGP publishes 12 issues per year.</td>
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<td>Company Name</td>
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<tr>
<td><strong>KinTek Corporation</strong></td>
<td>401</td>
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<tr>
<td>7604 Sandia Loop</td>
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<tr>
<td>Austin, TX 78735</td>
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<tr>
<td><a href="http://www.kintekcorp.com">www.kintekcorp.com</a></td>
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KinTek is the world leader for the highest quality state-of-the-art comprehensive kinetic analysis. We offer premier research instruments supported by first-class service. We will show our new Auto-Stopped-Flow, offering the highest signal using the smallest sample volumes, and our Rapid Chemical/Freeze-Quench-Flow instruments. We also will introduce the new book by our founder, Kenneth A. Johnson, “Kinetic analysis for the New Enzymology.” Advances in KinTek Explorer software for dynamic simulation and fitting of kinetic data will be revealed – available for PC and Mac.

<table>
<thead>
<tr>
<th>Laboratory for Fluorescence Dynamics</th>
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<tbody>
<tr>
<td>3120 National Sciences II, University of California, Irvine</td>
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<tr>
<td>Irvine, CA 92697</td>
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<tr>
<td><a href="http://www.lfd.uci.edu">www.lfd.uci.edu</a></td>
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The Laboratory for Fluorescence Dynamics (LFD) is a national research resource center for biomedical fluorescence spectroscopy, supported by the National Institute of Health (NIGMS) and the University of California, Irvine (UCI). Main activities: Services and Resources: state-of-the-art lab for fluorescence measurements, microscopy, spectroscopy. Research and Development: design, test, and implement advances in the technology of hardware, software, biomedical applications. Training and Dissemination: disseminates knowledge of fluorescence spectroscopic principles, instrumentation, applications.

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<th>Larodan AB</th>
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<td>Nobels väg 16</td>
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<td>Solna, 17165</td>
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<td>Sweden</td>
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<td><a href="http://www.larodan.com">www.larodan.com</a></td>
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Larodan makes a comprehensive range of research grade lipids for use as analytical standards and reagents with customers all over the world. Our products include all classes of neutral and polar lipids, from simple fatty acids and methyl esters to complex oxylipins, glycerides and phospholipids. We also provide specialty products to the Nordic market, in collaboration with other international research chemicals companies. Our facilities are located at the Karolinska Institute in Stockholm, Sweden with a US office in Michigan.

<table>
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<tr>
<th>Leica Microsystems</th>
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<td>1700 Leider</td>
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<tr>
<td>Buffalo Grove, IL 60089</td>
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<tr>
<td><a href="http://www.leica-microsystems.com">www.leica-microsystems.com</a></td>
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Leica Microsystems develops and manufactures microscopes and scientific instruments for the analysis of microstructures and nanostructures. The company is one of the market leaders in compound and stereo microscopy, digital microscopy, confocal laser scanning microscopy, electron microscopy sample preparation, optical coherence tomography, and surgical microscopes.

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<th>Linnowave</th>
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<td>Henkestrasse 91</td>
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<td>Erlangen, 91052</td>
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<td>Germany</td>
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<td><a href="http://www.linnowave.com">www.linnowave.com</a></td>
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</table>

Linnowave is a startup company from Erlangen (Germany) caring about precise and dynamic temperature control in optical high-resolution microscopy. Our newly developed micro heating system VAHEAT is designed to measure and actively control the temperature in your field of view even when working with immersion medium. Its compact and versatile design ensures compatibility with almost all commercially available upright and inverted microscopes while providing unprecedented temperature precision. Exploit the capabilities of VAHEAT to design your own temperature sensitive experiments.

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<th>Live Cell Instrument</th>
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<tr>
<td>4038 Hagye-technotown, 10, NoWon Ro 15gil, Nowon Gu Seoul, 01988</td>
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<td>South Korea</td>
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<td><a href="http://www.lcibio.com">www.lcibio.com</a></td>
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</table>

Live Cell Instrument (LCI), found in 2008, is highly experienced company specialized in developing and manufacturing scientific instruments and laboratory consumables to bio industry. Our products are dedicated to the technology of live cell microscopy including ‘Bio Instruments’ such as Automated All-in-one Imaging System, Microscope Incubator System, Anti-vibration Platform, IVF (In Vitro Fertilization), Gas controller, Heating Glass, Heating Plate and Adapters; ‘Bio Consumables’ such as Magnetic Imaging Chamber, Customized Well Plates, Dishes and so on.

<table>
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<tr>
<th>LUMICKS</th>
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<tr>
<td>552 Massachusetts Ave, Suite 204</td>
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<tr>
<td>Cambridge, MA 02139</td>
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<tr>
<td><a href="http://www.lumicks.com">www.lumicks.com</a></td>
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</table>

LUMICKS is the leading supplier of Dynamic Single-Molecule instruments for the study of molecular motor activity, protein folding and conformational changes, DNA/RNA-protein interactions, and the properties of protein droplets. To decipher complex molecular interactions, you need to be able to observe the same biological process from multiple points of view. Our groundbreaking instrument, the C-Trap™ Optical Tweezers – Fluorescence & Label-free Microscopy, enables for the first time the analysis of complex dynamic details related to the behavior and interaction of single molecules.
<table>
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<tr>
<th>Company Name</th>
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<tr>
<td>Mad City Labs Inc</td>
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<tr>
<td>2524 Todd Drive</td>
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<tr>
<td>Madison, WI 53713</td>
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<td><a href="http://www.madcitylabs.com">www.madcitylabs.com</a></td>
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For over 20 years, Mad City Labs has been the trusted name in designing and manufacturing nanoscopy systems and precision microscopy instruments for biophysicists. Our products include Piezo Nanopositioners, Microscope stages, Modular motion control, Atomic Force Microscopes (AFM), Near Field Scanning Optical Microscopes (NSOM), and RM21® Single Molecule Microscopes.

Our nanopositioners feature proprietary PicoQ® sensors with ultra-low noise & high stability performance. PicoQ® sensors combined with our innovative flexure guided stage designs leads to outstanding stability & sub-nanometer precision for super resolution microscopy, atomic force microscopy, optical/magnetic tweezers, and high resolution imaging. When paired with our high precision micropositioning systems they are the ideal building blocks for nanoscopy applications. Mad City Labs AFMs achieve atomic step resolution by leveraging the performance of our closed loop nanopositioners. Affordable and available in a variety of configurations with automated software and calibration.

The RM21® MicroMirror TIRF microscope is a unique multi-spectral TIRF microscope. The MicroMirror TIRF spatially segregates the excitation wavelengths leading to improved signal-to-noise ratios and efficient data collection. Ideal for Colocalization single molecule spectroscopy, smFRET, and dark-field TIRF.

RM21® single molecule microscopes are designed for advanced fluorescence microscopy and are nanopositioner-ready to facilitate nanoscopy methods. Advantages: direct optical pathway access, high stability & precision alignment, flexible configurations, and TIRF module options.


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<th>Company Name</th>
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<tr>
<td>Malvern Panalytical</td>
<td>431</td>
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<tr>
<td>117 Flanders Road</td>
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<tr>
<td>Westbourough, MA 01581</td>
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<tr>
<td><a href="http://www.malverpanalytical.com">www.malverpanalytical.com</a></td>
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Malvern Panalytical is a leader in analytical characterization, creating expert solutions for the challenges associated with maximizing productivity, developing better quality products and getting them to market faster. We provide superior, customer-focused solutions and services which deliver tangible economic impact through chemical, biophysical and structural analysis.

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<th>Company Name</th>
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<tr>
<td>Matreya LLC</td>
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<tr>
<td>2178 High Tech Road</td>
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<tr>
<td>State College, PA 16803</td>
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<td><a href="http://www.matreya.com/">www.matreya.com/</a></td>
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Matreya is a manufacturer of high purity lipids for Life Science Research. We offer gangliosides, sphingolipids, glycolipids, ceramides, phospholipids, enzyme inhibitors, fluorescent/isotope/biotin labeled glycolipids, tocopherols, tocotrienols, fatty acids, hydroxy fatty acids, reference mixtures, and custom synthesis. When you require quality and consistency, along with rapid delivery, you may rely on us. Matreya is now a part of Cayman Chemical to better serve the lipid community.

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<th>Company Name</th>
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<td>MDPI IJMS</td>
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<td>Basel, 4052</td>
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<td><a href="http://www.mdpi.com/journal/ijms">www.mdpi.com/journal/ijms</a></td>
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International Journal of Molecular Sciences is an international peer-reviewed open access journal providing an advanced forum for biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry, and is published semi-monthly online by MDPI.

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<th>Company Name</th>
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<tr>
<td>Mizar Imaging</td>
<td>820</td>
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<tr>
<td>7 MBL Street, Lillie 220</td>
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<tr>
<td>Woods Hole, MA 02543</td>
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<tr>
<td><a href="http://www.mizarimaging.com">www.mizarimaging.com</a></td>
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</table>

Mizar Imaging is proud to introduce the Tilt, the first light sheet imaging system that is a simple add-on to most inverted microscopes. The key benefit of light-sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample and the Tilt excels at this. When imaging with the Tilt, cells can be kept alive for hours and even days. This is aided by an optional incubation chamber for the Tilt, which allows for precise control of temperature (heating and cooling available), CO2 and humidity.
Molecular Devices is one of the world's leading providers of high-performance bioanalytical measurement systems, software and consumables for life science research, pharmaceutical and biotherapeutic development. Included within a broad product portfolio are platforms for high-throughput screening, genomic and cellular analysis, colony selection and microplate detection. These leading-edge products enable scientists to improve productivity and effectiveness, ultimately accelerating research and the discovery of new therapeutics.

Molecular Vista provides tools that probe and understand matter at the molecular level through quantitative visualization. Its flagship product, VistaScope, is a flexible hybrid atomic force microscope (AFM) and optical spectroscopy platform for studying material & biological systems with chemical specificity and nanometer spatial resolution. VistaScope is equipped with patented photo-induced force microscopy (PiFM) which can resolve the nanometer-scale distribution of chemical species in multi-component systems, revealing an unprecedented and spectacular molecular vista to the researcher.

Montana Molecular develops genetically-encoded fluorescent biosensors for drug discovery and to observe and measure cell signaling with high spatiotemporal resolution. Detection is compatible with fluorescence imaging systems, microscopes, and automated plate readers. Each biosensor is packaged in a viral vector for detection in any cell type and can be used to make direct measurements of arrestin CAMP, DAG, Ca²⁺, cGMP, PIP2, PIP3 and ER stress. Custom BacMam vector production services are available to enable efficient expression of any gene including ion channels and other large constructs.

Multi Channel Systems provides scientific equipment for in vitro and in vivo electrophysiological research including MEA-Systems for extracellular recordings using microelectrode arrays, automated patch clamp systems, and robots for TEVC in Xenopus oocytes. Our automated devices, Robocyte2 and PatchServer are ideal for time saving allowing you to focus on what really matters, research. Visit our booth to see why our over 20 years of experience and international distribution network have made us a global market leader in the field of non-clinical electrophysiology with microelectrode arrays.

Nanon is a leading provider of automated patch clamp systems with throughput capabilities ranging from 50 to 20,000 high quality dp/day, in formats from 1 to 384 recording channels. Since 2002, Nanion expanded its product range to in vitro systems for membrane pump/transporter, and bilayer recordings, and confluency and contractility measurements from cells monolayers (impedance/EFP). Join us at Booth 514 to discover Nanion’s newest automated patch clamp family additions (SyncroPatch 384i, Dynamite8 and Port-a-Patch mini), and the newest add-on for measuring true contractility (FLEXcyte 96).

Don’t forget to pick up a Passport Competition booklet inside the entrance of the Exhibit Hall and enter to win a Bose Portable Bluetooth Speaker!
NeoBiosystems Inc designs and manufactures automated patch clamp and two electrode voltage clamp (TEVC) products. These products include automated manipulators, pressure controllers, and integrated patch clamp and TEVC systems. These computer-controlled systems improve the success rate of making seals in patch clamp and increase the throughput for two-electrode voltage clamps. The systems are also less expensive than the traditional method, and can reach high success rates in making gig ohm seals even for beginners. They can be used on any kind of cells and tissues.

Nicoya is a Canadian biotechnology company whose mission is to extend human life by helping scientists succeed. Using nanotechnology and digital microfluidics, Nicoya created Alto™ - the world’s first fully automated, high-throughput, benchtop SPR instrument. Nicoya supports hundreds of leading institutions and organizations to accelerate their next big discovery.

Nikon Instruments Inc is a world leader in the development and manufacture of optical and digital imaging technology. Nikon provides complete optical imaging systems, offering cutting-edge microscopes with optimal performance and expandability, from basic documentation to confocal, and superresolution, powered by NIS-Elements imaging software.

The National Center for NMR Data Processing and Analysis (NMRbox) disseminates and supports NMR software and a cloud-based platform featuring substantial computational resources.

The Center on Macromolecular Dynamics by NMR (CoMD/NMR) provides advanced NMR spectroscopic and computational methods for characterizing protein and nucleic acid conformational dynamics.

The National Resource for Advanced NMR Technology advances the sensitivity and spectral resolution of NMR at high magnetic fields through development of state-of-the-art probes and techniques.

OLIS Inc, On-Line Instrument Systems, reduce sample preparation & clarification when you have an OLIS CLARiTY UV/Vis for absorbance and fluorescence spectroscopy. True in situ spectroscopy -- keeping sample & environment intact -- is successful on nanoparticles to living cells. The small & affordable OLIS CPL Solo supports study of chiral molecules in their excited state. Stopped-flow kinetics, Phosphorescence Lifetime, Spectroelectrochemistry, Circular Dichroism (CD), & upcycling Cary 14 & 17, HP 8452 & 8453, and PE 983 IR specs complete a product line rich with brilliant breakthroughs, ours & those you can make with them.
**Olympus America Inc** 604
48 Woerd Avenue
Waltham, MA 02453
www.olympus-lifescience.com

Olympus is a global technology leader, crafting innovative optical and digital solutions in medical technologies; life sciences; industrial solutions; and cameras and audio products. Throughout our nearly 100-year history, Olympus has focused on being true to society and making people’s lives healthier, safer and more fulfilling. Our life sciences business is dedicated to meeting and exceeding the evolving needs and expectations of life science professionals through a comprehensive range of clinical, educational and research microscopes and microscope systems.

**OriginLab Corporation** 432
1 Roundhouse Plaza, Suite 303
Northampton, MA 01060
www.originlab.com

Origin is an industry-leading graphing and data analysis software for science and engineering. Features include 100+ customizable 2D, 3D, statistical and specialized graphs, batch plotting, curve fitting, peak analysis, signal processing, advanced statistics, result recalculation on data or parameter change, batch analysis, and programming support for C, R, and Python.

**Oxford Instruments America Inc** 414
300 Baker Avenue, Suite 150
Concord, MA 01742
www.afm.oxinist.com

Oxford Instruments offers a range of microanalytical techniques, such as EDS and EBSD, which provide critical information to complement conventional imaging-based techniques. Our analytical systems are optimized for applications in the bio and life sciences, improving sensitivity, throughput and broadening the range of biological applications.

**PCO America** 621
6930 Metroplex Drive
Romulus, MI 48174
www.pco-tech.com

PCO is a leading specialist and pioneer in cameras and optoelectronics with more than 30 years of expert knowledge and experience of developing and manufacturing high-end imaging systems. The company’s cutting edge sCMOS and high-speed cameras are used in scientific and industrial research, automotive testing, quality control, metrology and a large variety of other applications all over the world.

**Photometrics** 615
3440 E Britannia Drive, Suite 100
Tucson, AZ 85706
www.photometrics.com

Founded in 1978, Teledyne Photometrics is now part of the Teledyne Imaging Group. Teledyne Photometrics is the world’s premier designer and manufacturer of high-performance sCMOS, EMCCD and CCD cameras for life science research. The original architect of the world’s first scientific-grade microscopy EMCCD camera, Teledyne Photometrics maintains its leadership role with the release of the Prime 95B, the first sCMOS camera with 95% quantum efficiency. Teledyne Photometrics also offers comprehensive OEM support, including fully characterized, cost-efficient imaging systems and components.

**PI (Physik Instrumente)** 610
16 Albert Street
Auburn, MA 01501
www.pi-usa.us


**PicoQuant Photonics** 609
9 Trinity Drive
West Springfield, MA 01089
www.picquant.com

Product lines include Pulsed Diode Lasers, Time-Correlated Single Photon Counting (TCSPC) electronics and detectors, fluorescence lifetime spectrometers, time-resolved fluorescence microscopes and upgrade kits for Laser Scanning Microscopes. Applications include Single Molecule Spectroscopy, Fluorescence Lifetime Imaging (FLIM), Fluorescence Resonance Energy Transfer (FRET), Fluorescence Correlation Spectroscopy (FCS), superresolution microscopy.

**PIEZOCONCEPT** 732
15 Rue du Bocage
Lyon, 69008
France
www.piezoconcept.com

PIEZOCONCEPT is the leading provider of nanopositioners dedicated to applications such as superresolution microscopy, optical trapping and atomic force microscopy. Our customers include many leading scientists engaged in leading edge research at world class universities and institutes. We developed a range of ultra-stable nanopositioner able to meet a wide range of microscopy applications with significant advantages over the currently available nanopositioners. As one of our biggest advantages, the sensor we use has exceptionally high signal, leading to picometric stability.

**Quantum Design** 205
10307 Pacific Center Court
San Diego, CA 92121
www.qdusa.com

Since its inception in 1982, Quantum Design International (a privately held corporation) has developed and manufactured automated temperature and magnetic field testing platforms for materials characterization. These systems offer a variety of measurement capabilities and are in widespread use in the fields of physics, chemistry, biotechnology, materials science, nanotechnology, and quantum information research.
<table>
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<th>Company Name</th>
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<tr>
<td>Quantum Northwest Inc</td>
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<td>22910 E Appleway Avenue, Suite 4</td>
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<tr>
<td>Liberty Lake, WA 99019</td>
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<tr>
<td><a href="http://www.qnw.com">www.qnw.com</a></td>
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<tr>
<td>Rapp OptoElectronic GmbH</td>
<td>710</td>
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<td>Gehlenkamp 9a</td>
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<td>Hamburg, 22559</td>
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<td><a href="http://www.rapp-opto.com">www.rapp-opto.com</a></td>
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<td>Quantum Northwest builds Peltier-based, temperature-controlled cuvette holders for spectroscopy. Our 18 models of cuvette holder are optimized for UV-Vis absorption, fluorescence, circular dichroism, Raman and FTIR. We make single cell holders as well as multi-cell cuvette changers. We are particularly adept at configuring these models of cuvette holder for many different spectrometer designs. We make stand-alone cuvette holders for laser spectroscopy and for use with fiber optic spectroscopy systems. New products are now available for neutron scattering.</td>
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<td>Refeyn</td>
<td>109</td>
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<td>1 Electric Avenue, Ferry Hinksey Road</td>
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<td>Oxford, OX2 0BY</td>
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<td>United Kingdom</td>
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<td><a href="http://www.refeyn.com">www.refeyn.com</a></td>
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<td>Refeyn – Weighing molecules with light The pioneer in mass photometry, Refeyn produces a disruptive new generation of analytical instruments that measure the mass of individual molecules directly in solution. Mass photometry transforms our ability to characterize the composition, structure and dynamics of biomolecules, revealing the true behavior of molecules in their native environment. Simply, Refeyn instruments can show sample purity and homogeneity, analyze biomolecular complex assembly or disassembly, quantify strength and kinetics of complex molecular interactions, and much more.</td>
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<td>Royal Society Publishing</td>
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<tr>
<td>6-9 Carlton House Terrace</td>
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<td>London, SW1Y 5AG</td>
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<td><a href="http://www.royalsocietypublishing.org">www.royalsocietypublishing.org</a></td>
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<td>The Royal Society journal Interface, edited by Prof Richard Cogdell, Univ of Glasgow, publishes research and reviews. Its sister journal Interface Focus, edited by Prof Russell Foster FRS, Univ of Oxford, publishes themed issues. Our authors benefit from constructive and timely peer review, where both the physical and life sciences are considered equally; open access options; high production standards; high levels of article usage rates; and promotion by a dedicated press office. To find out more, visit booth 330, where our representative Tim Holt will be happy to answer your questions.</td>
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<td>SB Drug Discovery</td>
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<td>West of Scotland Science Park</td>
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<td><a href="http://www.sbdrugdiscovery.com">www.sbdrugdiscovery.com</a></td>
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<td>SB Drug Discovery is a contract research organization specializing in cell line generation and biochemical &amp; cell-based screening assays against targets such as ion channels, GPCRs, phosphodiesterases and nuclear receptors. SB has an extensive portfolio of ion channel and GPCR cell lines and assays available for HTS and medicinal chemistry campaigns.</td>
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<td>sciencellonline.com</td>
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<td>ScienCell Research Laboratories is an expanding biotechnology company established in 1999. Our mission is to research and develop cell products for experimental use. ScienCell provides a variety of high quality normal human and animal cells, cell culture media and reagents, gene analysis tools, cell-derived molecular biology products, cell-based assay kits, and stem cell products for the research community. We offer specialty medium designed to selectively promote unique cell growth, including STEMium™.</td>
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<td><a href="http://www.siskiyou.com">www.siskiyou.com</a></td>
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<td>Siskiyou Corporation manufacures micromanipulators, motion control devices, tissue slicers, translation stages, probe clamps, construction hardware, adjustable platforms, tilt tables, and other laboratory equipment for microbiological research and general experimenting. Siskiyou Corporation carries a full line of micromanipulators: coarse manual, Huxley style, hydraulic, and motorized.</td>
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<td>Sophion was founded almost 20 years ago by a group of passionate electrophysiologists, with the purpose of making patch clamping objective and independent of user skills to provide faster, more accurate and objective patch clamping results. With our products QPatch and Qube we cover most throughput needs and provide the user with real whole-cell patch-clamp data based on true gigaseals. With our technical, biological and application support we help our partners achieving their targets and ensuring uncompromised data quality in a user-friendly environment from assay setup to data analysis.</td>
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<td>10060 Carroll Canyon Road, Suite 100</td>
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<td>strexcell.com</td>
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<td>Strax manufactures cyclic cell stretching instruments, used in mechanotransduction experimentation on cardiomyocytes and lung cells. Our most popular products are our Cell Stretching Systems for uniaxial and biaxial stretch used for various mechanostimuli and stretch experiments. These devices mimic cell strain and create an environment similar to that of in-vivo physiology. Microscope-mountable options are available for enhanced live cell-strain imaging. Strax also features a device that applies pressurizing stimulation to cardiac cells, kidney cells, etc. Contact us for more information.</td>
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United Kingdom
www.physoc.org

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