The Biophysical Society is grateful to its Industry Partners

Learn more about becoming a Biophysical Society Industry Partner at www.biophysics.org.
Biophysics Week is a global effort aimed at encouraging connections within the biophysics community and raising awareness of the field and its impact among the general public, policy makers, students, and scientists in related fields.

Monday, March 25
Biophysics Week Kickoff Event at Johns Hopkins University

Tuesday, March 26
Capitol Hill Briefing: The Cryo-EM Revolution presented by Eva Nogales
Sponsors: American Society for Cell Biology, JEOL.USA, the Lawrence Berkley National Lab, and Thermo-Fisher Scientific.
Supported by: The University of California, Berkeley

Wednesday, March 27
Webinar: Cover Letters Are Annoying, but Here’s How You Write Them with Alaina G. Levine

Thursday, March 28
John Hopkins University Student Poster Night at Baltimore City Hall
State Advocacy Days

Friday, March 29
To Be Announced

Daily Events:
Cell Picture Show
Take 5 for Science Policy Videos
Using Your PhD in Non-Academic Career Videos

Order Your T-Shirt Today
Order online at biophysics.org/BiophysicsWeek or purchase at the Biophysical Society Booth at the BPS Annual Meeting.

Visit biophysics.org/BiophysicsWeek for more information.
GUIDE TO THE ANNUAL MEETING

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

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

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

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

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

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

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

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

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

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

- **Career Development Center**
  - On publishing, teaching and science education, social media, grant writing, communication, and outreach

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

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

- **New Member Welcome**
  - 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.

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

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

<table>
<thead>
<tr>
<th>Poster Schedule Date</th>
<th>Sunday, March 3</th>
<th>Monday, March 4</th>
<th>Tuesday, March 5</th>
<th>Wednesday, March 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup Time</td>
<td>Saturday after 6 PM</td>
<td>Sunday after 6 PM</td>
<td>Monday after 6 PM</td>
<td>Wednesday after 7 AM</td>
</tr>
<tr>
<td>Removal Time</td>
<td>Sunday before 5:30 PM</td>
<td>Monday before 6 PM</td>
<td>Tuesday before 4 PM</td>
<td>Wednesday before 3 PM</td>
</tr>
</tbody>
</table>

PLEASE NOTE: POSTERS WILL NOT BE COLLECTED OR STORED FOR PICK UP AT A LATER TIME.
WAVELENGTH SWITCHING & SHUTTERING
A broad line of robust and reliable wavelength switching products including the Lambda 10-3 controller which controls up to 3 wheels and 2 shutters. For tunable filters, single and 5-position filter changers provide access to any center bandpass from 338 nm to 900 nm in nanometer increments. Our Smart Shutter® offers the most sophisticated shutter control available.

LIGHT SOURCES
The award winning Lambda OBC and Lambda 421 Optical Beam Combiners use a newly patented concept for combining separate light sources with different spectra into a single output beam. Our wide selection of high-powered LEDs, the highly stable Lambda XL plasma light source and Lambda LS Xenon arc lamp offer versatility and high output.

Visit us at:
Booth #201

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

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

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

MICROINJECTION
The XenoWorks® microinjection system has been designed to meet the needs of a wide variety of applications that require the manipulation of cells and embryonic tissues including ICSI, ES Cell Microinjection, and Adherent Cell Microinjection. Highly responsive movement and excellent ergonomics intuitively link the user with the micropipette, improving yield – saving time and resources.
2019 Biophysical Society Lecturer

Carol Robinson
University of Oxford, United Kingdom

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

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

*About the Image*

**Lipid Connections Caught in the Gas Phase of a Mass Spectrometer**

Protein subunits of LeuT (PDB ID 2A65 green, purple) form a lipid-mediated dimer in the presence of cardiolipin (red head-group, grey side-chain). The quadrupole rods (silver) enable the discovery of lipid binding to membrane proteins through tandem mass spectrometry experiments.
List of Advertisers in the 2019 Annual Meeting Program

Mad City Labs Inc
Molecular Devices
Nanion Technologies
Sutter Instrument

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

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

*As of January 18, 2019*
1. *Baltimore Hilton  
   401 West Pratt Street, Baltimore, MD, 21201  
   415-626-0200

2. Days Inn Inner Harbor  
   100 Hopkins Place, Baltimore, MD, 21201  
   410-576-1000

3. Hampton Inn Baltimore - Downtown  
   550 Washington Blvd, Baltimore, MD, 21230  
   410-685-5000

4. Hotel Monaco Baltimore  
   2 North Charles Street, Baltimore, MD, 21201  
   443-692-6170

5. Lord Baltimore Hotel  
   20 West Baltimore Street, Baltimore, MD, 21201  
   410-539-8400

6. Radisson Hotel Baltimore  
   101 West Fayette Street, Baltimore, MD, 21201  
   410-752-1100

7. Holiday Inn Inner Harbor  
   301 W Lombard Street, Baltimore, MD, 21201  
   410-685-3500

8. Sheraton Inner Harbor  
   300 S. Charles Street, Baltimore, MD, 21201  
   410-962-8300

9. Hyatt Regency  
   300 Light Street, Baltimore, MD 21202  
   410-528-1234

10. Renaissance Harborside Hotel  
    202 East Pratt Street, Baltimore, MD 21202  
    410-547-1200

*Headquarter Hotel
Level 100 (Street Level)

- Society Meeting Office
- Charles Street Lobby
- Registration
- Coat Check
- Luggage Storage
- Society Help Desk
- Cyber Cafe
- Poster Pickup
- Society Booth
- Hall A-E
  - Posters & Exhibits
  - Education and Career Opportunities Fair
  - Career Development Center
  - SRAA Competition
  - Exhibits Office
  - Exhibitor Presentations
  - Image Contest
  - Travel Awardee Reception
- Level 200 (Mezzanine Level)
  - Speed Networking
  - Executive Offices
  - Sharp Street Lobby (7,242 sq. ft.)
  - Conway Street
  - Concourse Lobby (6,220 sq. ft.)
  - Pratt Street
  - Pratt Street Entrance
  - Charles Street
  - Skywalk to Inner Harbor and Hotels
Baltimore Convention Center

Level 300 (Meeting Rooms)

- Meditation Room
- Family Room
- Meeting Rooms
- All Gender Restroom
- Undergraduate Student Lounge
- Speaker Ready Room
- Exhibitor Presentations

Level 400 (Ballroom)

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

BPS19 BALTIMORE, MARYLAND MARCH 2–6, 2019
63rd ANNUAL MEETING OF THE BIOPHYSICAL SOCIETY
The Biophysical Society (BPS) is committed to providing an environment that encourages the free expression and exchange of scientific ideas. As a global, professional Society, the BPS is committed to the philosophy of equal opportunity and respectful treatment for all regardless of national or ethnic origin, religion or religious belief, gender, gender identity or expression, race, color, age, marital status, sexual orientation, disabilities, veteran status, or any other reason not related to scientific merit. All BPS meetings and BPS-sponsored activities promote a working environment that is free of inappropriate behavior and harassment by or toward all attendees of Society meetings and Society-sponsored activities, including scientists, students, guests, exhibitors, staff, vendors, and other suppliers.

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

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

**Definition of Harassment**

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

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

**Investigative Process**

Anyone who feels harassed is encouraged to immediately inform the alleged harasser that the behavior is unwelcome. In many instances, the person is unaware that their conduct is offensive and when so advised can easily and willingly correct the conduct so that it does not reoccur. Anyone who feels harassed IS NOT required to address the person believed guilty of inappropriate treatment. If the informal discussion with the alleged harasser is unsuccessful in remedying the problem or if complainant does not feel comfortable with such an approach, he/she should contact BPS’s Executive Director or the Society President, or any BPS Officer. All complaints will be promptly and thoroughly investigated.

All reports of harassment or sexual harassment will be treated seriously. However, absolute confidentiality cannot be promised nor can it be assured. BPS will conduct an investigation of any complaint of harassment or sexual harassment, which may require limited disclosure of pertinent information to certain parties, including the alleged harasser. No retaliation will be taken against any employee, member, volunteer, exhibitor, or supplier because he or she reports a problem concerning possible acts of harassment. Employees, members, volunteers, exhibitors, or suppliers can raise concerns and make reports without fear of reprise.

**Investigative Procedure**

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

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

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

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

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

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

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

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

**Disciplinary Actions**

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

**BPS Management Responsibility**

Every officer, director, supervisor, and manager is responsible for ensuring that BPS provides an environment free of harassment and inappropriate behavior and that complaints are handled promptly and effectively. The BPS Society Office and Officers must inform the Society membership and all vendors and suppliers about this policy, promptly investigate allegations of harassment, take appropriate disciplinary action, and take steps to assure retaliation is prohibited.
2019 Program Committee

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

BPS Officers

Angela M. Gronenborn, President
David W. Piston, President-Elect
Lukas Tam, Past-President
Kalina Hristova, Treasurer
Frances Separovic, Secretary

BPS Council

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

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

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

Biophysical Journal

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

Society Office Staff

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

Sorting and Programming of 2019 Abstracts

Sorting and programming of the 2019 Annual Meeting abstracts into poster and platform sessions was completed by: Jane Clark, Patricia Clark, Linda Columbus, Bertrand Garcia-Moreno, Rubin Gonzalez, Teresa Giraldez, Anne Kenworthy, William Kobertz, Francesca Marassi, Joseph Mindell, Susan Marqusee, Anna Moroni, Robert Nakamoto, Arthur Palmer, David Piston, Michael Pusch, Marina Ramirez-Alvarado, Arnold Revzin, Jennifer Ross, Catherine A. Royer, Andrej Sali, James Sellers, Frances Separovic, Erin Sheets, Joanna Swain, Eric Sundberg, Pernilla Wittung-Stafshede, Zev Bryant.
Badges
Badges are required for admission to all scientific sessions, including Saturday subgroup symposia, poster areas, exhibits, and social functions. A guest badge for non-scientific guests can be purchased for $65 at the on-site registration counter located in the Charles Street Lobby. Guest registration is only for admittance to the Opening Mixer on Saturday night and Reception on Monday night. It does not include admission to scientific sessions, posters, or exhibits. There is a $30 fee to reprint a lost or forgotten badge.

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

Business Center, 300 Level
The Baltimore Convention Center provides a full-service business center for the convenience of attendees and exhibitors. Services include photocopying, faxing, computer work stations, and printing services. Shipping is provided through UPS. The business center is located in the Pratt Street Lobby adjacent to Room 334. To contact the business center, call 410-649-7194 or email Eking@abcimaging.com.

Certificates of Attendance
Certificates of Attendance may be obtained in person at the Society Help Desk located at registration in the Charles Street Lobby or in the Society Meeting Office, in the VIP Lounge, Charles Street Lobby.

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

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

Coat Check/Luggage Storage, Charles Street Lobby
The cost is $3.00 per item. Please do not bring luggage to meeting rooms. If you are planning to check items, please plan to arrive early to ensure that you are not late for sessions due to long lines.

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

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

Family Room, Room 335
The Family Room is equipped with diapers, electrical outlets for pumps, labels for breast milk, plastic bags for disposing of diapers, a small refrigerator, private areas for nursing, and a small area for rest and play.

First Aid, Exhibit Hall E
In case of medical emergency, dial 7055 from any house phone or 410-649-7055 from a cell phone. The First Aid room is located behind Hall E. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.
Individuals Requiring Assistance
Attendees requiring special assistance during the meeting should visit the Society Meeting Office in the VIP Lounge in the Charles Street Lobby. Society staff will do their best to accommodate requests; however, we cannot ensure that special needs will be met without prior notice.

Internet Access
Wireless Internet access is available free-of-charge throughout the common areas of the Baltimore Convention Center, excluding the Exhibit Hall.

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

Saturday 8:00 AM−7:30 PM
Sunday−Tuesday 7:30 AM−10:00 PM
Wednesday 7:30 AM−3:00 PM

Mobile App and Desktop Planner
The Biophysical Society’s Official Mobile App is available for download in the App Store and Google Play Store. iOS and Android Users can search for “bps events” to download the App. We do not support native apps for Windows Mobile and Blackberry; however, those users may access our mobile-friendly Desktop Planner at www.biophysics.org/2019meeting.

Using the Mobile App you can view/create schedules, view abstracts/authors/exhibitors, receive event alerts from BPS, share your moments in social media, find/interact virtually with other attendees, and sync itineraries that were created with the Desktop Planner.

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

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

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

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

Poster Sessions, Exhibit Hall A−E
Sunday−Wednesday

The Exhibit Hall will open at 8:00 AM each morning. It will remain open for poster viewing until 10:00 PM each night, except for Tuesday, when it will close at 4:30 PM for safety purposes during exhibit tear down. Posters are arranged according to topic. Your poster board number begins with “B.” On the day of presentation, authors assigned odd-numbered poster boards should present 1:45 PM-2:45 PM (10:30 AM–11:30 AM on Wednesday); even-numbered posters should present 2:45 PM-3:45 PM, (11:30 AM–12:30 PM on Wednesday). Other hours, day or evening, may be posted by the authors as desired. Additionally, authors may leave note paper so that visitors may request an appointment. Abstracts submitted after October 8, 2018, are scheduled each day, Sunday–Wednesday, during the regular poster sessions. These board assignments will begin with “LB.”

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

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

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

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

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

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

Registration Hours, Charles Street Lobby

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

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

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

Twitter: @BiophysicalSoc, use hashtag #bps19
Facebook: www.facebook.com/biophysicalsociety
Instagram: @biophysicalsociety
Blog: www.biophysics.org/blog
Society Meeting Office, VIP Lounge, Charles Street Lobby

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

**Speaker Ready Room, Room 312**

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

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

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

**Taxis**

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

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

**Undergraduate Student Lounge, Room 304**

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

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

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

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

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

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

Committee Meetings

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

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<th>Date</th>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
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<td><strong>Friday, March 1</strong></td>
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<tr>
<td></td>
<td>3:30 PM–4:30 PM</td>
<td><em>New Council Orientation</em></td>
<td>Hilton, Peale C</td>
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<tr>
<td></td>
<td>5:00 PM–9:00 PM</td>
<td><em>Joint Council Reception, Dinner, and Meeting</em></td>
<td>Hilton, Peale A/B</td>
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<tr>
<td><strong>Saturday, March 2</strong></td>
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<td>8:30 AM–11:30 AM</td>
<td><em>Joint Council Meeting (continued)</em></td>
<td>Hilton, Peale A/B</td>
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<tr>
<td><strong>Sunday, March 3</strong></td>
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<tr>
<td></td>
<td>8:30 AM–10:30 AM</td>
<td><em>Committee for Inclusion and Diversity Meeting</em></td>
<td>Room 333</td>
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<tr>
<td></td>
<td>12:15 PM–2:15 PM</td>
<td><em>Public Affairs Committee Meeting</em></td>
<td>Room 333</td>
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<td>3:30 PM–5:00 PM</td>
<td><em>Early Careers Committee Meeting</em></td>
<td>Room 333</td>
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<td>6:00 PM–10:00 PM</td>
<td><em>Biophysical Journal Editorial Board Dinner</em></td>
<td>Center Club</td>
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<td><strong>Monday, March 4</strong></td>
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<td>8:30 AM–10:30 AM</td>
<td><em>CPOW Committee Meeting</em></td>
<td>Room 333</td>
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<td>3:30 PM–5:30 PM</td>
<td><em>Membership Committee Meeting</em></td>
<td>Room 333</td>
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<td><strong>Tuesday, March 5</strong></td>
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<td>8:00 AM–9:00 AM</td>
<td><em>Biophysical Society Business Meeting</em></td>
<td>Room 324/325/326</td>
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<td>9:00 AM–10:30 AM</td>
<td><em>Subgroup Chairs Meeting</em></td>
<td>Room 331</td>
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<td>3:00 PM–5:00 PM</td>
<td><em>Education Committee Meeting</em></td>
<td>Room 333</td>
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<td>6:00 PM–10:00 PM</td>
<td><em>Publications Committee Meeting</em></td>
<td>Hilton, Calloway</td>
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<td><strong>Wednesday, March 6</strong></td>
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<td>8:00 AM–11:00 AM</td>
<td><em>New Council Meeting</em></td>
<td>Room 331</td>
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</table>

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

The Society’s committees have planned a variety of professional development activities to take place during the Annual Meeting. Below is a schedule of all of those activities. Detailed descriptions of the sessions can be found in the daily program. In addition, a student lounge for undergraduates will be available Sunday, March 3, to Wednesday, March 6, in Room 304.

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

**Saturday, March 2, 2019**
2:00 PM–4:00 PM  Science Communications Workshop with AAAS**
3:00 PM–4:00 PM  Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More
3:00 PM–5:00 PM  Undergraduate Mixer and Poster Award Competition

**One-on-One Resume and Career Counseling**
1:00 PM–2:20 PM  3:00 PM–5:00 PM

**Sunday, March 3, 2019**
7:30 AM–8:30 AM  Postdoctoral Breakfast
9:00 AM–10:00 AM  Networking for Nerds: How to Create Your Dream Career
10:30 AM–11:30 AM  Green Cards for Scientific Researchers: How to win your EB-1A/NIW Case! with Getson & Schatz, PC
11:15 AM–3:00 PM  Exploring Careers in Biophysics Day**
11:30 AM–1:00 PM  Undergraduate Student Pizza “Breakfast”
12:00 PM–1:00 PM  Demystifying the Academic Job Search I: Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements
1:00 PM–2:30 PM  The World Outside the Lab: Many Ways to Use Your PhD Skills
1:00 PM–3:00 PM  Education & Career Opportunities Fair
2:00 PM–3:30 PM  Teaching Science Like We Do Science
2:30 PM–3:30 PM  The Industry Interview: What you need to do before, during, and after to get the Job
2:30 PM–4:00 PM  Brexit & Science: Consequences for Research Funding and Immigration Flows
4:00 PM–5:00 PM  Nailing the Job Talk, or Erudition Ain’t Enough
5:00 PM–7:00 PM  PI to PI, a Wine & Cheese Mixer

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

**Monday, March 4, 2019**
7:30 AM–8:30 AM  Graduate Student Breakfast
10:00 AM–11:00 AM  Demystifying the Academic Job Search II: Preparing your Written Application Materials: CV, Cover Letter, and Research Statement
11:30 AM–12:30 PM  Networking for Nerds: How to Create Your Dream Career
12:30 PM–2:00 PM  The Nuts and Bolts of Preparing Your NSF Grant
1:00 PM–2:30 PM  Understanding the Congressional Budget Process: How Science is Funded
1:30 PM–3:00 PM  Biophysics 101: Gene Editing
2:30 PM–3:30 PM  The Strategic Postdoc: How to Find & Leverage your Postdoc Experience
2:30 PM–4:00 PM  Virtual Biophysics: Virtual and Augmented Reality Meets Biophysics
2:30 PM–4:00 PM  Designing and Implementing Strategies to Prevent and Recover from Burnout
2:30 PM–4:00 PM  Speed Networking
4:00 PM–5:00 PM  Developing Your 30-Second Value Statement (aka Your Elevator Pitch)

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

**Tuesday, March 5, 2019**
9:30 AM–10:30 AM  Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn & More
11:30 AM–12:30 PM  The Industry Interview: What you need to do before, during, and after to get the Job
12:00 PM–1:30 PM  Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions
12:00 PM–2:00 PM  Postdoc to Faculty Q&A: Transitions Forum and Luncheon
1:15 PM–2:45 PM  Nurturing a More Inclusive STEM Enterprise by Understanding Our Biases
1:30 PM–3:30 PM  The Nuts and Bolts of Preparing Your NIH Grant
1:30 PM–3:00 PM  Industry Panel
2:30 PM–3:30 PM  Nailing the Job Talk, or Erudition Ain’t Enough

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

* Slots for the One-on-One Resume and Career Counseling sessions are available on a first-come, first-served basis and fill up quickly. You may sign up for a slot beginning at 12:00 NOON on Saturday, March 2, in the Career Development Center, Exhibit Hall A. Please come prepared with resumes, CVs, and other appropriate materials.

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

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

Job Postings

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

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

Discover your future...

Biophysical Society
Job Board
www.biophysics.org/jobs
Sunday, March 3

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

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

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

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

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

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

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

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

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

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

Fathima T. Doole, University of Arizona, United States
142-Plat
UNDERSTANDING THE MOLECULAR PARAMETERS DETERMINING THE PATHOLOGICAL PROPERTIES OF AMYLOID FIBRILS.

Byung Ho Lee, Sungkwunkwan University, South Korea
382-Pos, B157
A NEW DNA INVERSION MECHANISM: RECOMBINATION OF THE DNA FOLDBACK INTERCOIL STRUCTURE.
Chantelle L. Leveille, University of Washington, United States
396-Pos, B171
THE ROLE OF ERGOSTEROL IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Vatsal Purohit, Purdue University, United States
321-Pos, B96
UNVEILING THE IMPACT OF THE NEGATIVE ARM OF THE CIRCADIAN CLOCK ON OUTPUT IN NEUROSPORA CRASSA.

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

Nirakar Sahoo, University of Texas Rio Grande Valley, United States
251-Pos, B26
INVESTIGATION OF EXTRACELLULAR GATE MOVEMENT IN A GLUTAMATE HOMOLOGUE.

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

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

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

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

Ashley Simpson, Bay Path University, United States
324-Pos, B99
SEGF GEF ACTIVITY AND ITS REGULATION BY SCRIBBLE AND DLG1.
Louis G. Smith, University of Rochester, United States
705-Pos, B480
EXPLORING HYDROGEN BOND GEOMETRY IN RNA WITH F-SAPT.

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

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

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

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

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

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

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

Monday, March 4

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Honey Priya James, Indian Institute of Technology Bombay
1079-Pos, B181
EFFECT OF CHITOSAN ON MECHANICAL PROPERTIES OF LIPID BILAYERS USING MICROPIPETTE ASPIRATION.
Sina Jazani, Arizona State University, United States
1388-Pos, B490
AN ALTERNATIVE FRAMEWORK FOR FLUORESCENCE CORRELATION SPECTROSCOPY.

Shinhye Jeon, Baruch College – The City University of New York, United States
1341-Pos, B443
LOSS OF MGR2P DEStABILIZES THE TIM23 CHANNEL AND REDuces MITOCHONDRiAL EMISSiON OF REACTiVE OXYGEN SPECiES.

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

Abir Kabbani, University of Michigan, United States
819-Plat
THE iMPORTANCE OF GLYCOLiDP CROSSLiNKiNG iN ALTERiNG THE MEMBRANE CURVATURE.

Reema Kathuria, Indian Institute of Science Education and Research
1106-Pos, B208
iMPLICATION OF CHOLESTEROL iN REGULATING THE MEMBRANE-INTERACTION MECHANiSM OF ViBRiO CHOLERAE CYTOLYSiN, A BETa-BARREL PORe-FORMiNG TOXiN.

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

Soyeon Kim, University Of Akron, United States
1011-Pos, B113
iNVESTIGATiNG THE ACTiVATiON MECHANiSM ALTERATiON OF RECEPTOR TYROSiNE KINASE MUTANTS.

Oisin King, Imperial College London, United Kingdom
759-Plat
ENDOTHELiAL CELL REGULATION OF EXCITATiON-CONTRACTION COUPLiNG iN iNDUCED PLURiPOTENT STEM CELl DERiVED MYOCARDiUM.

Di Lang, University of Wisconsin-Madison, United States
1150-Pos, B252
DISRUPTiON OF CAVEOLAR MiCRoDOMAiNS CREATES “HOT SPOTS” FOR ATRiAL ECTOPY AND ARRYTHMOGENiSIS iN HEART FAILURE MICE.

Zeno Lavagnino, IRCCS Ospedale San Raffaele, Italy
1171-Pos, B273
THE ROLE OF DOpAMiNE iN PACREnATiC α-CELLS CALCiUM HETEROGENIETY AND SYNCHRONIZATION MEASURED BY LIGHT-SHEET MICROSCOPY.

Yi-Hsuan Lin, University of Toronto, Canada
979-Pos, B81
POLyMER THEORY FOR SEQUENCe-SPECiFIC PHASE SEPARATiON BEHAViORS OF CHARGED INTRINSiCALLY DISORDERED PROTEiNS.

Axel Loewe, Karlsruhe Institute of Technology, Germany
1148-Pos, B250
SiNUS BRAyCARDiA DEtO ELECTROLYTE CHANGES AS A POTENTiAL PATHOMETEHiSM OF SUDDEN CARDiAC DEATH iN HEMODiALiSiS PATiENTS.

Charlotte Lorenz, Forschungszentrum Juelich, Germany
786-Plat
ASSEMBLY MECHANiSM OF FARNESyiLATED HGBP1 STUDYED BY TiME-RESOLVED SAXS AND ELECTRON MICROSCOPY.

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

Alexandria N. Miller, Memorial Sloan Kettering Cancer Center, United States
791-Plat
CRYO-EM STRUCTURES REVEAL MECHANiSMs OF ACTiVATION AND INACTiVATION iN BESTROPHiN CHANNeLS.

Julia Miller, Cornell University, United States
840-Plat
A MULTiDRUG AND TOXiN EFFLUX (MATE) TRANSPORter INVOLVED iN ALUMiNiUM RESISTiENCE iS MODuLATED BY A CBL5/CIPKi2 CALCiUM SENSOR/PROTEiN KInASE COMPLEX.

Shriya Mittal, University of Illinois, United States
908-Pos, B10
SIMULATION GUIDED DESIGN OF SPECTROSCOPY EXPERImENTS ViA MAXiMiZING KiNETiC INFORMATION GAIN.

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

Jacqueline Pelham, Rensselaer Polytechnic Institute, United States
981-Pos, B83
CHARACTEriZiNG TiME-OF-DAY CONFORMATIONAL CHANGES IN THE IDP FiQURe AT THE HEART OF THE CIRCADiAN CLOCK IN N. CRASSA USING THE CRATFiY PROTOCOL.

Joseph D. Powers, University of Washington, United States
1305-Pos, B407
PREDICTiNG AND PREVENTiNG MiTYOCARDiAL REMODELiNG iN A MUiRiNE MODEL OF DILATED CARDiOMyOPATHy.

Alessio Prunotto, École Polytechnique Fédérale de Lausanne, Switzerland
1016-Pos, B118
MOLECULAR SIMUlATiONS GIVE INSIGHTS INTO THE NDM-1/ MiMiTORDiAL MEMBRANE INTERACTION THAT CAUSES RiSE OF A SUPER-BACTERiUM.
Ishara Ratnayake, South Dakota School of Mines and Technology, United States
1275-Pos, B377
TOWARDS AN UNDERSTANDING OF KIDNEY DISEASES ASSOCIATED WITH INHIBITION OF NOTCH SIGNALING PATHWAY BY TRANSMISSION ELECTRON MICROSCOPY.

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

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

Luis Santiago, California State University Northridge, United States
770-Plat
MECHANISMS OF G PROTEIN-SELECTIVITY IN MUSCARINIC ACETYLCOLINE RECEPTOR FAMILY.

Santhanan Shanmughapriya, Temple University, United States
1161-Pos, B263
MOLECULAR LINK BETWEEN MCU AND MRS2P CHANNELS FOR MITOCHONDRIAL ION HOMEOSTASIS AND ENERGY METABOLISM.

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

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

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

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

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

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

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

Sanket Walujkar, Ohio State University, United States
1154-Pos, B296
MOLECULAR DYNAMICS SIMULATIONS OF TMC1 HOMOLOGY MODELS.

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

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

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

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

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

Tuesday, March 5

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

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

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

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

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

John Canty, University of California Berkeley, United States
2020-Pos, B383
CARGO ADAPTORS REGULATE THE MECHANICAL PROPERTIES OF MAMMALIAN DYNEIN-DYNACTIN.
Chapin E. Cavender, University of Rochester, United States
1746-Pos, B109
DEVELOPING AN ACCURATE ALL-ATOM FIXED-CHARGE FORCE FIELD FOR RNA WITH IMPLICITLY POLARIZED CHARGES.

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

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

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

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

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

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

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

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

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

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

Kapish Gupta, National University of Singapore
1869-Pos, B232
BILE CANALICULI CONTRACTILITY IS REGULATED BY CANALICULAR PRESSURE SENSING VIA PIEZO1.
Antonia Stuebler, Texas Tech Health Science Center, United States
1941-Pos, B304
A COMPARISON BETWEEN HOMOMERIC AND HETEROMERIC 5-HT3 RECEPTORS IN RESPONSE TO THE ANTIDEPRESSANT BUPROPION.

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

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

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

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

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

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

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

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

Qiaochu Wang, University of Texas Health Science Center, United States
1899-Pos, B262
TIME-RESOLVED X-RAY STUDIES OF SKELETAL MUSCLE FROM A DUCHENNE MUSCULAR DYSTROPHY RAT MODEL.

Chen-Ching Yuan, University of Washington, United States
1998-Pos, B361

Yan Yan, Emory University, United States
1575-Plat
SUPERCOILING MAKES PROTEIN-MEDIATED LOOPING OF DNA TETHERS DETERMINISTIC.
Miriam Garcia Avila, National Autonomous University of Mexico
2655-Pos, B327
SELECTIVITY AND CHARACTERIZATION OF THE PERMEANT ION EFFECT IN THE RAPID TRANSITIONS ON THE PORE OF TRPV1 CHANNEL.

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

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

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

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

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

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

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

Sankar Jana, University of St. Andrews, United Kingdom
2803-Pos, B473
TWIN-FRET: A NEW MOLECULAR RULER FOR BIOMOLECULES.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Ancillary Meetings

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

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

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

Tuesday, March 5, 8:00 PM–10:00 PM
SOBLA (The Society for Latinoamerican Biophysicists) Meeting
Room 327/328/329
Friday, March 1, 2019

Daily Program Summary

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

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

Meeting Mobile App:

- Stay organized and keep up with the latest event information
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Friday, March 1

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

Drug Discovery for Ion Channels XIX
Satellite Meeting
8:00 AM - 5:00 PM, ROOM 303

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

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

8:00 AM REGISTRATION
8:45 AM WELCOME AND OPENING REMARKS
Niels Fertig

SESSION I
Chair: David Dalrymple

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

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

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

10:45 AM COFFEE BREAK

SESSION II
Chair: Stephen Hess

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

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

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

12:45 PM LUNCH (PROVIDED)

SESSION III
Chair: Marc Rogers

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

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

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

3:30 PM COFFEE BREAK

SESSION IV
Chair: James Ellis

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

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

5:10 PM CLOSING REMARKS
Thomas Binzer

Working Towards Federating Structural Models and Data
Satellite Meeting
8:30 AM - 6:00 PM, ROOM 301/302

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

The goals of the Workshop are to:

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

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

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<td>8:45 AM</td>
<td>INTRODUCTION Helen Berman</td>
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<tr>
<td>9:00 AM</td>
<td>STATUS REPORT ON INTEGRATIVE MODEL ARCHIVING. Brinda Vallat</td>
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<tr>
<td>9:15 AM</td>
<td>PANEL ON MODEL REPRESENTATION, VISUALIZATION, AND VALIDATION. Chair: Andrej Sali Participants: Alexandre Bonvin, Frank DiMaio, Gerhard Hummer, Jens Meiler, Emad Tajkhorshid</td>
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<tr>
<td>10:45 AM</td>
<td>COFFEE BREAK</td>
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<tr>
<td>11:00 AM</td>
<td>PANEL ON COMMUNITY DATA STANDARDS. Chair: Jill Trewhella Participants: Cathy Lawson, Gaetano Montelione, Juri Rappslber, Alex Leitner, Thomas Prisner, David Schriemer, Claus Seidel, Dmitri Svergun, John Westbrook</td>
</tr>
<tr>
<td>1:00 PM</td>
<td>LUNCH</td>
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<tr>
<td>1:40 PM</td>
<td>VISION FOR THE PDB IN 2021. Stephen K. Burley</td>
</tr>
</tbody>
</table>
| 2:00 PM | BREAKOUT DISCUSSION GROUP.  
1. Standards  
2. Data Exchange  
3. Requirements for Validating Data and Models |
| 4:00 PM | REPORT WRITING                             |
| 5:00 PM | REPORT OUT TO FULL GROUP AND CONCLUSION FOR OPEN REGISTRANTS. |

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

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

Joint Council Reception, Dinner, and Meeting  
5:00 PM - 9:00 PM, HILTON, PEALE A/B
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<td>9:00 AM–12:00 PM</td>
<td>Biophysics Between the Lines: Creating Quantitative Resources for Biology Courses</td>
<td>Room 330</td>
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<tr>
<td>9:00 AM–12:40 PM</td>
<td>Bioengineering Subgroup</td>
<td>Room 327/328/329</td>
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<td>Society of General Physiologists Winter Council Meeting</td>
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<td>Bioenergetics, Mitochondria &amp; Metabolism Subgroup</td>
<td>Room 324/325/326</td>
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<td>9:30 AM–5:20 PM</td>
<td>Mechanobiology Subgroup</td>
<td>Room 321/322/323</td>
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<tr>
<td>10:30 AM–3:00 PM</td>
<td>Molecular Biophysics Subgroup</td>
<td>Ballroom II</td>
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<td>Intrinsically Disordered Proteins Subgroup</td>
<td>Ballroom IV</td>
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<tr>
<td>12:00 PM–6:05 PM</td>
<td>Biopolymers in Vivo Subgroup</td>
<td>Room 301/302/303</td>
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<td>12:30 PM–6:00 PM</td>
<td>Nanoscale Biophysics Subgroup</td>
<td>Room 316/317</td>
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<tr>
<td>1:00 PM–5:30 PM</td>
<td>Biological Fluorescence Subgroup</td>
<td>Room 309/310</td>
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<td>1:00 PM–6:00 PM</td>
<td>Membrane Structure &amp; Function Subgroup</td>
<td>Ballroom I</td>
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<td>1:00 PM–6:15 PM</td>
<td>Cell Biophysics Subgroup</td>
<td>Room 307/308</td>
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<tr>
<td>1:00 PM–6:15 PM</td>
<td>Motility &amp; Cytoskeleton Subgroup</td>
<td>Room 318/319/320</td>
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<td>1:00 PM–9:30 PM</td>
<td>Membrane Biophysics Subgroup</td>
<td>Room 314/315</td>
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<td>1:00 PM–10:00 PM</td>
<td>Exocytosis &amp; Endocytosis Subgroup</td>
<td>Room 331/332</td>
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<td>1:25 PM–5:30 PM</td>
<td>Membrane Transport Subgroup</td>
<td>Ballroom III</td>
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<tr>
<td>2:00 PM–4:00 PM</td>
<td>Science Communications Workshop with AAAS</td>
<td>Room 330</td>
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<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>Exhibit Hall A</td>
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<td>3:00 PM–5:00 PM</td>
<td>Undergraduate Mixer and Poster Award Competition</td>
<td>Ballroom Foyer</td>
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<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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<td>6:00 PM–7:30 PM</td>
<td>Travel Awardee Reception</td>
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<td>6:00 PM–10:00 PM</td>
<td>Poster Viewing</td>
<td>Exhibit Hall C</td>
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<td>7:00 PM–10:00 PM</td>
<td>Cryo-EM Subgroup</td>
<td>Ballroom III</td>
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</table>
Saturday, March 2

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

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

Biophysics Between the Lines: Creating Quantitative Resources for Biology Courses
9:00 AM - 12:00 PM, ROOM 330

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

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

Subgroup Chair
Amir Farnoud, Ohio University

9:00 AM OPENING REMARKS

1-SUBG
9:10 AM NANOPARTICLE-SUPPORTED LIPID BILAYERS: A PLATFORM FOR INTERROGATING LIPID-PROTEIN INTERACTIONS AT HIGHLY CURVED SURFACES. Ka Yee Lee

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

3-SUBG
11:10 AM IMMUNOENGINEERING IN REGENERATIVE MEDICINE. Jennifer Elisseeff

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

Bioenergetics, Mitochondria & Metabolism Subgroup
9:00 AM – 6:00 PM, ROOM 324/325/326

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

BPS19 BALTIMORE, MARYLAND
MARCH 2-6, 2019
63rd ANNUAL MEETING OF THE BIOPHYSICAL SOCIETY
### Mechanobiology Subgroup

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

**Subgroup Chair**  
Kristian Franze, Cambridge University, United Kingdom

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<tr>
<th>Time</th>
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<tr>
<td>9:30 AM</td>
<td>OPENING REMARKS</td>
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<td>9:35 AM</td>
<td>NORMALIZING TRANSFORMED CANCER CELLS WITH RIGIDITY SENSING. Michael Sheetz</td>
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<td>10:05 AM</td>
<td>STUDENT TALK</td>
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<td>12:05 PM</td>
<td>LUNCH BREAK</td>
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<td>12:35 PM</td>
<td>INTGRIN-MEDIATED MECHANO-SENSATION IN INNATE IMMUNITY. Clare Waterman</td>
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<td>2:30 PM</td>
<td>STUDENT TALK</td>
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<td>2:45 PM</td>
<td>STUDENT TALK</td>
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<td>3:00 PM</td>
<td>CELL AND EMBRYO-SCALE MECHANISMS DRIVING EPITHELIAL FOLDING. Matteo Rauzi</td>
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<td>3:30 PM</td>
<td>BREAK</td>
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<td>3:45 PM</td>
<td>FLUID FLOWS SHAPING MORPHOLOGY. Karen Alim</td>
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<td>4:15 PM</td>
<td>STUDENT TALK</td>
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<td>JOURNAL PANEL</td>
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<td>CLOSING REMARKS</td>
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<td>5:05 PM</td>
<td>BUSINESS MEETING</td>
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**NO ABSTRACT**

### Intrinsically Disordered Proteins Subgroup

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

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

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<td>1:40 PM</td>
<td>TARDIGRADE PROTEINS &amp; DESICCATION TOLERANCE. Gary J. Pielak</td>
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<td>2:40 PM</td>
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<td>4:15 PM</td>
<td>ANTAGONIZING ABERRANT PHASE SEPARATION OF RNA-BINDING PROTEINS CONNECTED TO ALS/FTD. James Shorter</td>
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<td>4:45 PM</td>
<td>POSTDOC TALK</td>
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<td>5:05 PM</td>
<td>RECONSTITUTED POSTSYNAPTIC DENSITY AS A MOLECULAR PLATFORM FOR UNDERSTANDING SYNAPSE FORMATION AND PLASTICITY. Mingjie Zhang</td>
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### Molecular Biophysics Subgroup

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

**Subgroup Chair**  
Maria Spies, University of Iowa

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<td>11:10 AM</td>
<td>STUDENT/POSTDOC TALK</td>
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<td>11:35 AM</td>
<td>THE EFFECT OF NUCLEOSOME CONFORMATION ON HISTONE TAIL BINDING AND SPECIFICITY. Emma A. Morrison, Samuel Bowerman, Jeff Wereszczynski, Catherine Musselman</td>
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<td>12:05 PM</td>
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<td>12:15 PM</td>
<td>BUSINESS MEETING</td>
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<td>12:35 PM</td>
<td>DYNAMIC PROTEINS AND INTERACTIONS DRIVING HOMOLOGOUS RECOMBINATION: A BRCA2-CENTRIC VIEW. Claire Wyman</td>
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<td>RECONSTRUCTING 1D FREE-ENERGY LANDSCAPES OF DIVERSE BIO-MOLECULAR SYSTEMS USING AFM. Thomas T. Perkins</td>
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**NO ABSTRACT**
Biopolymers in Vivo Subgroup
12:00 PM - 6:05 PM, ROOM 301/302/303

Subgroup Chair
Simon Ebbinghaus, Technische Universität Braunschweig, Germany

12:00 PM BUSINESS MEETING

1:00 PM OPENING REMARKS

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

1:50 PM JUNIOR FACULTY AWARD WINNER

No ABSTRACT 2:20 PM
ILLUMINATING THE BLACK BOX OF DNA-PROTEIN INTERACTIONS. Mark C. Leake

2:50 PM STUDENT / POSTDOC TALK

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

3:35 PM BREAK

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

4:30 PM STUDENT / POSTDOC TALK

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

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

6:00 PM ADJOURNMENT

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

Subgroup Chair
Keir Neuman, NIH

12:30 PM OPENING REMARKS

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

2:05 PM BREAK

28-SUBG 2:20 PM
NANODISCS AND FREE-STANDING BILAYERS FOR SINGLE-MOLECULE STUDIES AT THE LIPID MEMBRANE. Marie-Eve Aubin-Tam

29-SUBG 2:35 PM
VISUALISING SELF-ASSEMBLY OF PORE FORMING PROTEINS ON THEIR TARGET MEMBRANES. Bart Hoogenboom

3:05 PM STUDENT TALK

3:20 PM STUDENT TALK

3:35 PM STUDENT TALK

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

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

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

5:20 PM BUSINESS MEETING

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

Subgroup Chair
Paul Wiseman, McGill University, Canada

1:00 PM OPENING REMARKS

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

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

4:05 PM STUDENT TALK

4:25 PM STUDENT TALK

4:45 PM STUDENT TALK

5:05 PM BREAK

5:15 PM BUSINESS MEETING

Membrane Structure & Function Subgroup
1:00 PM - 6:00 PM, BALLROOM I

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

1:00 PM OPENING REMARKS
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**Motility & Cytoskeleton Subgroup**

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

**Subgroup Co-Chairs**

William Hancock, Pennsylvania State University  
Neil Kad, University of Kent, United Kingdom

1:00 PM | OPENING REMARKS  
1:05 PM | CYTOSKELETAL DYNAMICS DURING POLARIZED GROWTH. Magdalena Bezanilla, Shu-Zon Wu, Carlisle Bascom, Moe Yamada, Xiaohang Chang

2:00 PM | SEN SING SOUND OVER A LIFETIME: HOW MYOSIN MOTORS CONTINUALLY SHAPE THE STEREOCILIA CYTOSKELETON. Jonathan Bird

2:25 PM | STUDENT/POSTDOC TALK  
2:40 PM | BREAK  
3:00 PM | NO ABSTRACT  
3:05 PM | STUDENT/POSTDOC TALK  
3:20 PM | BREAK  
3:25 PM | NO ABSTRACT  
3:30 PM | STUDENT/POSTDOC TALK  
3:45 PM | BREAK  
3:50 PM | NO ABSTRACT  
3:55 PM | STUDENT/POSTDOC TALK  
4:10 PM | BREAK  
4:15 PM | NO ABSTRACT  
4:20 PM | STUDENT/POSTDOC TALK  
4:35 PM | BUSINESS MEETING  
4:50 PM | NO ABSTRACT  
4:55 PM | STUDENT/POSTDOC TALK  
5:10 PM | BREAK  
5:15 PM | NO ABSTRACT  
5:20 PM | STUDENT/POSTDOC TALK  
5:45 PM | BUSINESS MEETING  
6:10 PM | BUSINESS MEETING
Membrane Biophysics Subgroup
1:00 PM – 9:30 PM, ROOM 314/315

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

1:00 PM OPENING REMARKS

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

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

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

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

3:05 PM BREAK

3:20 PM BUSINESS MEETING

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

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

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

5:20 PM CLOSING REMARKS

6:30 PM COLE AWARD RECEPTION & DINNER

Exocytosis & Endocytosis Subgroup
1:00 PM – 10:00 PM, ROOM 331/332

Subgroup Chair
Amy Lee, University of Iowa

1:00 PM INTRODUCTORY REMARKS

1:05 PM STUDENT/POSTDOC TALK

1:20 PM STUDENT/POSTDOC TALK

1:35 PM STUDENT/POSTDOC TALK

1:50 PM STUDENT/POSTDOC TALK

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

2:40 PM BREAK

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

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

4:05 PM BUSINESS MEETING

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

5:45 PM CLOSING REMARKS & ADJOURNMENT

7:00 PM EXOENDO SUBGROUP DINNER

Membrane Transport Subgroup
1:25 PM - 5:30 PM, BALLROOM III

Subgroup Chair
Susan Rempe, Sandia National Laboratories

1:25 PM OPENING REMARKS

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

3:00 PM STUDENT TALK

59-SUBG 3:50 PM
DYNAMICS OF CO-TRANSLATIONAL MEMBRANE INTEGRATION. Thomas F. Miller

4:20 PM STUDENT TALK

NO ABSTRACT 4:50 PM
INHIBITOR BINDING TO HUMAN SGLT SUGAR TRANSPORTERS. Michael Grabe

5:00 PM BUSINESS MEETING

Science Communications Workshop with AAAS
2:00 PM - 4:00 PM, ROOM 330

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

Career Development Center Workshop
Leveraging LinkedIn in the PhD Job Search: Networking, Informational Interviews, and More
3:00 PM - 4:00 PM, EXHIBIT HALL A

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

**Undergraduate Mixer and Poster Award Competition**

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

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

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

**First-Time Attendee Drop By**

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

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

**Opening Mixer**

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

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

**Travel Awardee Reception**

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

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

**Speaker:**

Yves De Koninck, Université Laval

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**Poster Viewing**

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

**Cryo-EM Subgroup**

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

**Subgroup Chair**

Jenny Hinshaw, NIH

**7:00 PM OPENING REMARKS**

**60-SUBG 7:05 PM**

**MOLECULAR VIEWS INTO CELLULAR FUNCTION BY IN SITU CRYO-ELECTRON TOMOGRAPHY.**

Julia Mahamid

**61-SUBG 7:30 PM**

**CRYOET OF SINGLE PARTICLE CRYOEM GRIDS REVEALS WIDESPREAD, BUT REDUCIBLE, PARTICLE ADSORPTION TO THE AIR-WATER INTERFACE.**

Alex J. Noble, Venkata P. Dandey, Hui Wei, Julia Brasch, Jillian Chase, Priyamvada Acharya, Yong Zi Tan, Zhening Zhang, Laura Y. Kim, Giovanna Scapin, Micah Rapp, Edward T. Eng, William J. Rice, Anchi Cheng, Carl J. Negro

**62-SUBG 7:55 PM**

**STREAMLINING WORKFLOWS FOR STRUCTURE DETERMINATION BY SINGLE PARTICLE CRYO-EM.**

Alberto Bartesaghi

**8:20 PM BUSINESS MEETING**

**NO ABSTRACT 8:35 PM**

**STARMAP: ROSETTA REFINEMENT CONTROLLED FROM CHIMERAX.**

Thomas Marlovits

**63-SUBG 9:00 PM**

**THROUGHPUT AND RESOLUTION WITH A NEXT GENERATION DIRECT DETECTOR.**

Scott M. Stagg, Joshua H. Mendez

**64-SUBG 9:25 PM**

**NEW DEVELOPMENTS IN THE CSTEM SOFTWARE PACKAGE.**

Tim Grant, Alexis Rohou, Nikolaus Grigorieff
### Daily Program Summary

**Sunday, March 3, 2019**

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

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<td>7:30 AM–8:30 AM</td>
<td>Postdoctoral Breakfast</td>
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<td>7:30 AM–5:00 PM</td>
<td>Registration/Exhibitor Registration</td>
<td>Charles Street Lobby</td>
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<tr>
<td>8:15 AM–10:15 AM</td>
<td>Symposium: Biological Systems Single Molecule at the Time</td>
<td>Ballroom I</td>
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<td><strong>Chair:</strong> Ben Schuler, University of Zürich, Switzerland</td>
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<td>THE MECHANISM OF DYNEIN DIRECTIONALITY. Ahmet Yildiz</td>
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<td>IN SITU IMAGING OF TRANSCRIPTOME AND GENOME IN SINGLE CELLS. Xiaowei Zhuang</td>
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<td>ENDOGENOUSLY ENCODED RIBOSOMAL RNA SEQUENCE VARIATION WITHIN THE ASSEMBLE RIBOSOME CAN REGULATE STRESS RESPONSE GENE EXPRESSION AND PHENOTYPE. Scott C. Blanchard</td>
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<td>8:15 AM–10:15 AM</td>
<td>Symposium: Proton-Coupling Bioenergetics</td>
<td>Ballroom II</td>
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<td><strong>Chair:</strong> Liz Carpenter, SGC, University of Oxford, United Kingdom</td>
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<td>THE PROTON/ELECTRON COUPLING MECHANISM OF CYTOCHROME C OXIDASE. Peter R. Rich</td>
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<td>HOW THE C-SUBUNIT STOICHIOMETRY OF F1FO ATP SYNTHASE CONTROLS BIO-ENERGETIC THERMODYNAMIC EFFICIENCY. Todd P. Silverstein</td>
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<td>MITOCHONDRIAL ABC TRANSPORTERS. Liz Carpenter</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Molecular Dynamics I</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Voltage-gated K Channels</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Protein Structure and Conformation I</td>
<td>Room 307/308</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Cell Mechanics, Mechanosensing, and Motility</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Membrane Physical Chemistry I</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: DNA Structure, Dynamics, and Function</td>
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<td>8:30 AM–10:30 AM</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 Dream Career</td>
<td>Exhibit Hall A</td>
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<tr>
<td>9:30 AM–11:00 AM</td>
<td>Exhibitor Presentation: Mizar Imaging</td>
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<td>10:00 AM–5:00 PM</td>
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<td>10:15 AM–11:00 AM</td>
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<td>10:30 AM–12:00 PM</td>
<td>Exhibitor Presentation: HORIBA Scientific</td>
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<td>Unique Fluorescence Molecular Fingerprinting in Action: What Can CCD Detection Do for You?</td>
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<tr>
<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>
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<td>10:45 AM–12:45 PM</td>
<td>Symposium: Proteins: Exploring Sequence Space via Computation and Experiment</td>
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<td><strong>Chair:</strong> Polly Fordyce, Stanford University</td>
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<td><strong>Talks:</strong></td>
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<td>ENGINEERING AND EVOLUTION OF ALLOSTERIC COMMUNICATION. Kimberly A. Reynolds</td>
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<td>HOW DO PROTEINS EVOLVE. Daniel Tawfik</td>
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<td>HYPERVARIABLE PROTEINS IN MICROBES. Eugene Koonin</td>
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<td>BRINGING ENZYMOCYTOLOGY INTO THE GENOMIC ERA: DEVELOPING AND DEPLOYING NEW TOOLS TO QUANTITATIVELY MAP FUNCTIONAL CONNECTIONS THROUGHOUT AN ENZYME. Polly M. Fordyce</td>
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<td>10:45 AM–12:45 PM</td>
<td>Symposium: Glutamate Receptors</td>
<td>Ballroom II</td>
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<td><strong>Chair:</strong> Maria Kurnikova, Carnegie Mellon University</td>
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<td><strong>Talks:</strong></td>
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<td></td>
<td>OPTICAL CONTROL AND REPORT OF AMPA RECEPTOR ACTIVATION. Andrew Plested</td>
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<td>ALLOSTERIC DYNAMICS AND DRUGGABILITY OF AMPA RECEPTORS. Ivet Bahar</td>
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<td>THE EUKARYOTIC SPECIFIC M4 SEGMENTS ARE ALLOSTERIC CONDUITS FOR NMDA RECEPTOR SIGNALING. Lonnie Wollmuth</td>
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<td>AFTER THE STRUCTURE COMES THE DYNAMICS: MOLECULAR MODELING OF GLUTAMATE RECEPTORS REVEALS LONG-RANGE ALLOSTERIC COUPLING BETWEEN LIGAND BINDING SITE AND CHANNEL GATE. Maria G. Kurnikova</td>
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<td>10:45 AM–12:45 PM</td>
<td>Platform: Optical Microscopy and Superresolution Imaging I</td>
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<td>10:45 AM–12:45 PM</td>
<td>Platform: Membrane Proteins I</td>
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<td>10:45 AM–12:45 PM</td>
<td>Platform: Intrinsically Disordered Proteins (IDP) and Aggregates I</td>
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<td>10:45 AM–12:45 PM</td>
<td>Platform: Cardiac Muscle Mechanics, Structure, and Regulation I</td>
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<td>10:45 AM–12:45 PM</td>
<td>Platform: Excitation-Contraction Coupling/Cardiac and Skeletal Muscle Electrophysiology I</td>
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<td>Platform: Micro- and Nanotechnology</td>
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<td>11:15 AM–3:00 PM</td>
<td>Exploring Careers in Biophysics Day</td>
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<td>11:30 AM–1:00 PM</td>
<td>Undergraduate Student Pizza “Breakfast”</td>
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<td>11:30 AM–1:00 PM</td>
<td>Exhibitor Presentation: Leica Microsystems</td>
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<td>Leica SP8 FALCON: A New Way to Generate Fluorescence Lifetime Images at Confocal Speed</td>
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<td>12:00 PM–1:00 PM</td>
<td>Career Development Center Workshop: Demystifying the Academic Job Search I:</td>
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<td>Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements</td>
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<td>12:15 PM–2:15 PM</td>
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<td>1:00 PM–2:30 PM</td>
<td>The World Outside the Lab: Many Ways to Use Your PhD Skills</td>
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<td>1:00 PM–3:00 PM</td>
<td>Education &amp; Career Opportunities Fair</td>
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<td>1:30 PM–3:00 PM</td>
<td>Exhibitor Presentation: Carl Zeiss Microscopy LLC</td>
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<td>ZEISS Elyra 7 with Lattice SIM, a New Platform for Fast and Gentle 3D Superresolution Microscopy</td>
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<td>1:45 PM–3:00 PM</td>
<td>Snack Break</td>
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<td>1:45 PM–3:45 PM</td>
<td>Poster Presentations and Late Posters</td>
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<td>2:00 PM–3:30 PM</td>
<td>Teaching Science Like We Do Science</td>
<td>Room 321/322/323</td>
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<td>2:30 PM–3:30 PM</td>
<td>Career Development Center Workshop: The Industry Interview: What you need to do before, during, and after to get the job</td>
<td>Exhibit Hall A</td>
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<td>2:30 PM–4:00 PM</td>
<td>Brexit &amp; Science: Consequences for Research Funding and Immigration Flows</td>
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<td>3:30 PM–5:00 PM</td>
<td>Exhibitor Presentation: Wyatt Technology Corporation</td>
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<td>From Proteins to Exosomes: Tools for Essential Biophysical QC, Characterization, and Isolation</td>
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<tr>
<td>4:00 PM–5:00 PM</td>
<td>Career Development Center Workshop: Nailing the Job Talk, or Erudition Ain’t Enough</td>
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**Biophysical Society**
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<td>Ballroom I</td>
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<td>MAPPING THE SPATIAL ORGANIZATION OF GENOMES THROUGH DATA INTEGRATION. Frank Alber</td>
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<td>MULTISCALE MODELING OF BIOMOLECULAR PROCESSES BY COMBINING EXPERIMENT AND SIMULATION. Cecilia Clementi</td>
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<td>DEALING WITH DYNAMICS AND DISORDER BY COMBINING SIMULATION AND EXPERIMENT. Gerhard Hummer</td>
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<td>TOWARDS SIMULATING BACTERIAL AND EUKARYOTIC CELLS: INTEGRATION OF EXPERIMENT AND THEORY. Zaida Ann Luthey-Schulten</td>
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<td>4:00 PM–6:00 PM</td>
<td><strong>Symposium: Cytoskeleton</strong>&lt;br&gt;Chair: Sabine Petry, Princeton University</td>
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<td>PHASE SEPARATION OF TPX2 ENHANCES AND SPATIALLY BIASES MICROTUBULE NUCLEATION. Sabine Petry</td>
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<td>REGULATION OF BIDIRECTIONAL MOTILITY OF KINESIN-5 MOTORS. Leah Gheber</td>
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<td>REGULATION OF MYOSIN MOTORS - FROM SINGLE MOLECULES TO FUNCTIONAL ENSEMBLES. Claudia Veigel</td>
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<td>THE MYOSIN MESA AND HYPERTROPHIC CARDIOMYOPATHY: MUTATIONS TO MECHANISMS TO THERAPIES. James Spudich</td>
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<td>4:00 PM–6:00 PM</td>
<td><strong>Platform: Ligand-gated Channels</strong></td>
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<td>4:00 PM–6:00 PM</td>
<td><strong>Platform: Protein Folding, Pathways, and Stability</strong></td>
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<td>4:00 PM–6:00 PM</td>
<td><strong>Platform: Spectroscopy and Single-Molecule Fluorescence</strong></td>
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<td>4:00 PM–6:00 PM</td>
<td><strong>Platform: Membrane Active Peptides and Toxins</strong></td>
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<td><strong>PI to PI: A Wine &amp; Cheese Mixer</strong></td>
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<td>5:30 PM–7:00 PM</td>
<td><strong>Exhibitor Presentation: ELEMENTS SRL</strong>&lt;br&gt;Portable and Cost-Effective Low-Noise Amplifiers for Electrophysiology and Nanopore Applications</td>
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<td>6:00 PM–6:30 PM</td>
<td><strong>Dinner Meet-Ups</strong></td>
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<td>6:00 PM–8:00 PM</td>
<td><strong>Biophysical Society of Canada Mixer</strong></td>
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<td>6:00 PM–9:00 PM</td>
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<td>6:00 PM–10:00 PM</td>
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Sunday, March 3

Editorial Board Boot Camp
7:00 AM - 9:00 AM, ROOM 331

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

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

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

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

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

Symposium
Biological Systems Single Molecule at the Time
8:15 AM - 10:15 AM, BALLROOM I

Chair
Ben Schuler, University of Zürich, Switzerland

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

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

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

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

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

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

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

Platform
Molecular Dynamics I
8:15 AM - 10:15 AM, BALLROOM III

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

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

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

74-PLAT
8:45 AM
TRAVEL Awardee UNCOVERING THE MOLECULAR BASIS FOR THE CLINICAL N642H MUTATION IN STATS5 USING AOMISTIC MOLECULAR SIMULATIONS. Deniz Meneksedag-Erol, Elvin D. de Araujo, Fettah Erdogan, Hyuk-Soo Seo, Sirano Dhe-Paganon, Patrick T. Gunning, Sarah Rauscher

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

9:15 AM
Flash talks

76-PLAT
9:30 AM

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

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

Platform
Voltage-gated K Channels
8:15 AM - 10:15 AM, BALLROOM IV

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

79-PLAT
8:15 AM
ATOMIC-LEVEL CHARACTERIZATION OF C-TYPE INACTIVATION FOR VOLTAGE-GATED POTASSIUM CHANNELS SHAKER AND HERG. Jing Li, Young Hoon Koh, Ahmed Rohaim, Eduardo Perozo, Benoit Roux
80-Plat 8:30 AM  C-TYPE INACTIVATION IN K,2.1 CHANNELS. Carlos A. Villalba-Galea, Takeharu Kawano, Diomedes E. Logothetis

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

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

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

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

85-Plat 9:45 AM  MOLECULAR SIMULATIONS OF ION PERMEATION, GATING AND SELECTIVITY IN K' CHANNELS. Wojciech Kopeć, Bert L. de Groot

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

Platform
Protein Structure and Conformation I
8:15 AM - 10:15 AM, ROOM 307/308
Co-Chairs
Steven Whitten, Texas State University
Vatsal Purohit, Purdue University

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

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

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

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

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

92-Plat 9:45 AM  STRUCTURE DETERMINATION OF ACTIVE FULL LENGTH HUMAN TASP1: TOWARDS NOVEL ANTI-CANCER THERAPEUTICS. Jose M. Garcia, Nirupa Nagaratanam, Rebecca Jernigan, Gihan Ketawala, Silvia Delker, Thomas Edwards, Derek Mendez, Chufeng Li, Nadia Zatepkin, Raimund Fromme, Liang Tong, Joel Schneider, James Hsieh, Andrew Flint, Petra Fromme

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

Platform
Cell Mechanics, Mechano  sensing, and Motility
8:15 AM - 10:15 AM, ROOM 309/310
Co-Chairs
Ritvik Vasan, University of California, San Diego
Aurelia Honerkamp-Smith, Lehigh University

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

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

96-Plat 8:45 AM  NUMERICAL INVESTIGATION OF LEUKOCYTE ROLLING, ADHESION AND BOND FORMATION ON SURFACE COATED WITH VARYING P-SELECTIN DENSITY. Grisha S. Prabhukh  et, Rohan Banton, Charles D. Eggleton

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

98-Plat 9:15 AM  Flash talks

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

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

100-Plat 10:00 AM  NUCLEAR RUPTURE AT SITES OF HIGH CURVATURE COMPROMISES RETENTION OF DNA REPAIR FACTORS. Irena L. Ivanovska, Yuntao Xia, Kuangzheng Zhu, Lucas Smith, Cory Alvey, Jerome Irrianto, Charlotte Pfeifer, Jiazheng Ji, Dazhen Liu, Sangkyun Cho, Rachel Bennett, Andrea Liu, Roger A. Greenberg, Dennis E. Discher
Platform
Membrane Physical Chemistry I
8:15 AM - 10:15 AM, ROOM 314/315
Co-Chairs
Shelli Frey, Gettysburg College
Wade Zeno, University of Texas at Austin
101-Plat
8:15 AM
TUNING LENGTH SCALES OF A MODULATED PHASE IN MODEL AND CELL-DERIVED MEMBRANES. Caitlin E. Cornell, Allison D. Skinkle, Shushan He, Ilya Levental, Kandice R. Levental, Sarah L. Keller
102-Plat
8:30 AM
TWISTING OF A MECHANOSENSITIVE MOLECULAR PROBE DETECTS LIPID ORDER IN MEMBRANES. Giuseppe Licari, Emad Tajkhorshid
103-Plat
8:45 AM
HOMEOVISCOSITY IN MAMMALIAN CELL MEMBRANES IN RESPONSE TO DIETARY LIPID PERTURBATIONS. Kandice R. Levental, Ilya Levental
104-Plat
9:00 AM
LIQUID-CRYSTAL PHASE TRANSITIONS IN CELLULAR LIPID DROPLETS. Julia Mahamid
105-Plat
9:15 AM
TRAVEL AWARDEE CHARACTERISTIC CONFORMATIONS OF PSEUDOMONAS QUINOLONE SIGNAL INTERACTING WITH BACTERIAL OUTER MEMBRANE. Ao Li, Jeffrey W. Schertzer, Xin Yong
106-Plat
9:30 AM
MEASURING THE INTERACTION OF POLYGLUTAMINE PEPTIDES WITH LIPID MEMBRANES. Warren A. Campbell, Maxmore Chaibva, Xiang Gao, Ziliang Zhao, Justin Legleiter, Shelli L. Frey
107-Plat
9:45 AM
A LINK BETWEEN PEPTIDE LIPIDATION AND MEMBRANE CURVATURE MODULUS. John M. Sanderson, Hannah M. Britt, Jackie A. Mosely
108-Plat
10:00 AM

Platform
DNA Structure, Dynamics, and Function
8:15 AM - 10:15 AM, ROOM 316/317
Co-Chairs
Jieqiong Lou, University of Melbourne, Australia
Michele DiPierro, Rice University
109-Plat
8:15 AM
MSH4-MSH5 INDUCED DNA CONFORMATIONAL CHANGES PROVIDE INSIGHTS INTO ITS ROLE IN MEIOTIC RECOMBINATION. Sudipta Lahiri, Bharat Lakhani, Yan Li, Manju M. Hingorani, David L. Beveridge, Ishita Mukerji
110-Plat
8:30 AM
FLUORESCENCE FLUCTUATION SPECTROSCOPY REVEALS DOUBLE STRAND BREAK RECRUITMENT OF 53BP1 DIMERS AND ASSEMBLY INTO HIGHER-ORDER OLIGOMERS AT THE DNA REPAIR LOCU. Jieqiong Lou, Jee Khor, David Priest, Elizabeth Hinde
111-Plat
8:45 AM
REPLICATION ORIGINS EXPOSED ON THE SURFACE OF A REPLICATION DOMAIN BY TRANSCRIPTION ELONGATION ARE PREFERENTIALLY FIRED FOR DNA REPLICATION. Yongzheng Li

112-Plat
9:00 AM
ELUCIDATING COMPLIMENTARY BASE SPECIFICITY OF THYMINE DNA GLYCOSYLASE VIA POTENTIAL OF MEAN FORCE MOLECULAR DYNAMICS SIMULATIONS. Ozge Yoluk, Alexander C. Drohat, Alexander D. MacKerell
113-Plat
9:15 AM
RNAP AS A MOVING BARRIER TO LOOP EXTRUSION. Aafke A. van den Berg, Gordana Wutz, Roman R. Stocsits, Hugo Brandao, Georg Busslinger, Jan-Michael Peters, Leonid Mirny
114-Plat
9:30 AM
SINGLE MOLECULE IMAGING OF CTCF AND COHESIN. DISSECTING THE DYNAMIC INTERPLAY BETWEEN CHROMATIN LOOP REGULATORS. Laura Caccianini, Elphege P. Nora, Johannes Nuebler, Agnes LesSaux, Edith Heard, Leonid Mirny, Benoît Bruneau, Maxime Daham
115-Plat
9:45 AM
THE THREE-DIMENSIONAL ARCHITECTURE OF THE HUMAN GENOME: IT’S NUCLEAR PHYSICS! Michele Di Pierro
116-Plat
10:00 AM
MEASURING THE PHYSICAL PROPERTIES OF DNA ON A GENOMIC SCALE. Aakash Basu, Tunc Kayikcioglu, Thuy Ngo, Quicen Zhang, Basilio Cieza Huaman, Miroslav Hejna, Tomas Rube, Jun Song, Taekjip Ha

CID Committee Meeting
8:30 AM - 10:30 AM, ROOM 333
Career Development Center Workshop
Networking for Nerds: How to Create Your Dream Career
9:00 AM - 10:00 AM, EXHIBIT HALL A
Wanna land your dream job? Get ready to network! Most jobs and other game-changing career opportunities are not advertised, and even if they are, there is usually a short-list of candidates already in mind. So how do you find out about and access the 90% of jobs and other opportunities that are “hidden”? In this workshop, we will focus on proven networking strategies and tactics to identify new opportunities, locate decision-makers within organizations, solidify your reputation and brand in the minds of those who hire, and gain access to hidden jobs and game-changing opportunities. Discover how networking and self-promotion can enable you to land or even create your dream job from scratch!

Exhibitor Presentation
Mizar Imaging
9:30 AM - 11:00 AM, ROOM 303
TILT – HIGH-RESOLUTION LIGHT SHEET IMAGING
Mizar Imaging is proud to introduce the Tilt, the first high-resolution light sheet imaging system that is a simple add-on to most inverted microscopes. When installed on your microscope, the Tilt does not interfere with any existing modalities so you can easily add the Tilt to an inverted microscope, including a TIRF or Spinning Disc confocal microscope system, to add the ability to do long term live cell imaging with the lowest possible photobleaching and phototoxicity.

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

The key benefit of light sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample. The Tilt is no exception.
When imaging with the Tilt, cells can be kept alive for hours and even days. This is aided by an optional incubation chamber for the Tilt, which allows for precise control of temperature (heating and cooling available), CO2 and humidity.

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

Speaker
Chris Baumann, Sales and Product Manager, Mizar Imaging

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

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

Exhibitor Presentation
HORIBA Scientific
10:30 AM - 12:00 PM, ROOM 301

UNIQUE FLUORESCENCE MOLECULAR FINGERPRINTING IN ACTION: WHAT CAN CCD DETECTION DO FOR YOU?

Fluorescence is a standard tool for the study of changes on the molecular level, but it is now also becoming an emerging technique for molecular fingerprinting and spectral kinetics. The Duetta™ 2-in-1 fluorescence and absorbance spectrometer from HORIBA Scientific is a unique and powerful benchtop instrument that provides so much more than standard PMT-based scanning benchtop fluorometers. CCD detection technology, and incorporated absorbance measurements, provide more data, with more accuracy, and in less time. In this presentation, HORIBA Scientific will demonstrate two of many methods for which Duetta is uniquely equipped to measure fluorescent samples. First, Duetta can measure protein binding and FRET over the full emission range (250-1100 nm), demonstrating the effects of both donor and acceptor spectra over time with true spectral kinetics. In addition, the method of measuring Absorbance-Transmittance Excitation Emission Matrices (A-TEEMs) gives information about the molecular fingerprint of a mixture for use in component analysis of mixtures. The use of the absorbance detector enables inner-filter effect correction, which can easily be overlooked using standard fluorometers.

Full Spectral Kinetics and FRET

Because Duetta uses a CCD detector for emission detection, kinetics over the entire emission spectrum (250-1100 nm) instead of only at one or two different emission wavelengths. We will demonstrate the binding of a small molecule, 1,8-anilinonaphthalene sulfonate (ANS), to bovine serum albumin protein (BSA) that shows both the decrease in donor emission (BSA) and the increase of the acceptor emission (ANS) as an example of FRET kinetics. The binding of ANS to hydrophobic pockets in BSA is a known phenomenon, but is typically only measured as a kinetics experiment at the ANS emission wavelength of 475 nm. Historically, concentration-dependent experiments where emission spectra are collected over a range of ANS or protein concentrations, or both, are used to show binding kinetics or FRET as well. Duetta easily measures both the donor BSA (tryptophan) emission as well as the acceptor ANS emission during binding and shows that energy transfer occurs over the full spectral range. This is a unique capability for a benchtop fluorometer in the field of biological fluorescence.

A-TEEM Molecular Fingerprinting

The use of fluorescence for molecular fingerprinting is a relatively new concept and just as exciting if not more so than spectral kinetics. In most applications, changes in fluorescence intensity, or wavelength, or both, correlate to changes in physical properties of a sample. A-TEEM is a method of measuring the full fluorescence contour plot of a sample at all excitation wavelengths and all emission wavelengths. The matrix is then corrected for effects of high concentration (inner-filter effect) using the absorbance spectrum. The resulting A-TEEM gives an accurate profile of all emitting species and in turn, gives more information about the content of the sample in question, thus making it a better data set for chemometric and quantitative analysis. Solutions of tryptophan and 2-aminopurine, a fluorescent derivative of adenine, are used to demonstrate 1.) Effects of high absorbance/concentration on the fluorescence profile; and 2.) The A-TEEM profile for detection of multiple components.

Speaker
Karen Gall, Applications Scientist, HORIBA Scientific

Career Development Center Workshop
Green Cards for Scientific Researchers: How to Win Your EB-1A/NIW Case!
with Getson & Schatz, PC
10:30 AM - 11:30 AM, EXHIBIT HALL A

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

Symposium
Proteins: Exploring Sequence Space via Computation and Experiment
10:45 AM - 12:45 PM, BALLROOM I

Chair
Polly Fordyce, Stanford University

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

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

Symposium
Glutamate Receptors
10:45 AM - 12:45 PM, BALLROOM II

Chair
Maria Kurnikova, Carnegie Mellon University

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

121-Symp
11:45 AM
THE EUKARYOTIC SPECIFIC M4 SEGMENTS ARE ALLOSTERIC CONDUITS FOR NMDA RECEPTOR SIGNALING. Lonnie Wollmuth
AFTER THE STRUCTURE COMES THE DYNAMICS: MOLECULAR MODELING OF GLUTAMATE RECEPTORS REVEALS LONG-RANGE ALLOSTERIC COUPLING BETWEEN LIGAND BINDING SITE AND CHANNEL GATE.

Maria G. Kurnikova

Platform
Optical Microscopy and Superresolution Imaging I
10:45 AM - 12:45 PM, BALLROOM III

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

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

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

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

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

127-PLAT 11:45 AM
THE NUCLEAR PORE COMPLEX AS INTRINSIC REPORTER FOR ISOTROPIC EXPANSION MICROSCOPY. Paolo Bianchini, Luca Pesce, Marco Cozzolino, Luca Lanzano*, Alberto Diaspro

128-PLAT 12:00 PM
MULTICOLOR SINGLE-PARTICLE RECONSTRUCTION OF PROTEIN COMPLEXES. Christian Sieben, Niccoló Banterle, Kyle M. Douglass, Pierre Gönçzy, Suliana Manley

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

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

Platform
Membrane Proteins I
10:45 AM - 12:45 PM, BALLROOM IV

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

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

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

133-PLAT 11:15 AM

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

135-PLAT 11:45 AM
CRYO-EM STRUCTURES REVEAL BILAYER REMODELING DURING CA2+ ACTIVATION OF A TMEM16 SCRAMBLASE. Maria Falzone, Jan Rheinberger, Byoung-Cheol Lee, Thasin Peyear, Linda Sassett, Ashleigh Raczkowski, Edward Eng, Annarita Di Lorenzo, Olaf Anderson, Crina Nimigean, Alessio Accardi

136-PLAT 12:00 PM
UNCOVERING EUKARYOTIC GLYCOSYLATION MECHANISM BY CRYO-EM. Lin Bai, Huilin Li

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

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

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates I
10:45 AM - 12:45 PM, ROOM 307/308

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

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

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

141-PLAT 11:15 AM
ORDERED AND DISORDERED SEGMENTS OF AMYLOID BETA DRIVE SEQUENTIAL STEPS OF THE TOXIC PATHWAY. Barun K. Maity, Anand Kant Das, Simli Dey, Ulhas Kaarthi Moorthi, AmMdeep Kaur, Dayana Suresh, Rucha Pandit, Mamata Kallianpur, Bappaditya Chandra, Murilidharan Chandrakesan, Senthil Arumugam, Sudipta Maiti

142-PLAT 11:30 AM
TRAVEL AWARDEE UNDERSTANDING THE MOLECULAR PARAMETERS DETERMINING THE PATHOLOGICAL PROPERTIES OF AMYLOID FIBRILS. Harish Kumar, Jayant B. Udgaonkar

11:45 AM
Flash talks
143-Plat 12:00 PM
REDOX KINETICS OF THE AMYLOID-BETA-COPPER COMPLEX AND ITS BIOLOGICAL IMPLICATIONS. Paul Girvan, Xiangyu Teng, Nicholas J. Brooks, Geoffrey S. Baldwin, Liming Ying

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

145-Plat 12:30 PM
TARGETING THE FORMATION OF AMYLOID Oligomers Using Rationally Designed Antibodies. Francesco A. Aprile, Pietro Sormanni, Michele Perni, Paolo Arosio, Sara Linse, Tuomas P. Knowles, Christopher M. Dobson, Michele Vendruscolo

Platform
Cardiac Muscle Mechanics, Structure, and Regulation I
10:45 AM - 12:45 PM, Room 309/310

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

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

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

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

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

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

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

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

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

Platform
Excitation-Contraction Coupling/Cardiac and Skeletal Muscle Electrophysiology I
10:45 AM - 12:45 PM, Room 314/315

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

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

155-Plat 11:00 AM
THE EFFECT OF THE 5K CHANNEL INHIBITOR ICAGEN IN INTACT ATRIA AND ATRIAL CARDIOMYOCYTES. Sara Dobi, Godfrey L. Smith

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

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

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

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

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

161-Plat 12:30 PM
S-NITROSYLATION OF CKX3 HEMICHANNELS PROMOTES CARDIAC ARRHYTHMIAS IN A DUCHENNE MUSCULAR DYSTROPHY MOUSE MODEL. Mauricio A. Lillo, Eric Himelman, Lai-Hua Xie, Diego Fraidenraich, Jorge E. Contreras

Platform
Micro- and Nanotechnology
10:45 AM - 12:45 PM, Room 316/317

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

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

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

164-Plat 11:15 AM
MEASURING THE CONFORMATION OF SINGLE STRANDED DNA USING A DNA ORIGAMI NANO-STRUCTURE. Yuval Garini, Efrat Roth, Arkady Bitler, Olga Girshievitz
Undergraduate Student Pizza “Breakfast”  
11:30 AM - 1:00 PM, ROOM 321/322/323

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

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

Exploring Careers in Biophysics Day  
11:15 AM - 3:00 PM, ROOM 321/322/323

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

Career Development Center Workshop  
Demystifying the Academic Job Search I: Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements  
12:00 PM - 1:00 PM, EXHIBIT HALL A

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

Public Affairs Committee Meeting  
12:15 PM - 2:15 PM, ROOM 333

The World Outside the Lab  
Many Ways to Use Your PhD Skills  
1:00 PM - 2:30 PM, ROOM 318/319/320

Have you ever wondered how you can apply the skills learned while working on your PhD in a career away from the bench? This panel will explore multiple career options that exist in government, industry, and...
academia. Panelists with science backgrounds, now involved in a wide variety of careers, will share their personal experiences.

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

Education & Career Opportunities Fair
1:00 PM - 3:00 PM, EXHIBIT HALL C

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

Exhibitor Presentation
Carl Zeiss Microscopy LLC
1:30 PM - 3:00 PM, ROOM 303
ZEISS ELYRA 7 WITH LATTICE SIM, A NEW PLATFORM FOR FAST AND GENTLE 3D SUPERRESOLUTION MICROSCOPY
Life sciences research often requires you to measure, quantify and understand the finest details and sub-cellular structures of the sample. Whether you are working with tissue, bacteria, organoids, neurons, living or fixed cells, ZEISS Elyra 7 takes your images beyond the diffraction limit of conventional microscopy to superresolution. Examine the fastest processes in living samples – in large fields of view, in 3D, over long time periods, and with multiple colors.

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

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

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

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

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

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

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

Teaching Science Like We Do Science
2:00 PM - 3:30 PM, ROOM 321/322/323
How do we know if our teaching is effective? This interactive, hands-on workshop focuses on practice-applicable, easy-to-use strategies and tools that educators at any level of biophysical science education can use to assess what their students take away from their teaching, and where they might make changes to their educational methods. Moderating and participating educators will have a chance to share their first-hand experiences in round table discussions and collaborate, regardless of the extent of previous knowledge, to construct their personal assessment toolbox. Participants will design an individualized action plan for aligning learning goals with suitable assessment techniques and instructional methods. We will use the means of learning evaluation to bringing biophysics education to life in the lab, the classroom and the community.

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

Career Development Center Workshop
The Industry Interview: What you need to do before, during, and after to get the job
2:30 PM - 3:30 PM, EXHIBIT HALL A

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

Brexit & Science
Consequences for Research Funding and Immigration Flows
2:30 PM - 4:00 PM, ROOM 327/328/329
In 2016, the United Kingdom surprised the world by voting to leave the European Union. But what does the Brexit referendum mean for the UK and EU scientific communities? Britain is scheduled to leave the European Union on March 29, 2019, and we expect this session will be extremely timely, as the contours of a Brexit Deal should be established at this point. We will host a panel of experts and on-the-ground researchers to discuss what Brexit means for the UK and EU science work force, research funding and international scientific exchange.

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

Early Careers Committee Meeting
3:30 PM - 5:00 PM, ROOM 333
Exhibitor Presentation
Wyatt Technology Corporation
3:30 PM - 5:00 PM, Room 303
FROM PROTEINS TO EXOSOMES: TOOLS FOR ESSENTIAL BIOPHYSICAL QC, CHARACTERIZATION, AND ISOLATION
In this seminar we will present solutions for some of the key biophysical characterization challenges encountered in the course of biophysical research. The tools to overcome these challenges are based on:
- multi-angle light scattering (MALS) for determining absolute molar mass and size of macromolecules and nanoparticles from small peptides to vesicles;
- dynamic light scattering (DLS) for determining the hydrodynamic radii of particles from 0.2 to 5000 nm;
- asymmetric-flow field-flow fractionation (AF4) for separation and characterization of particle distributions from 1 nm to 10 µm;
- composition-gradient MALS (CG-MALS) for label-free analysis of biomolecular interactions to determine binding affinity and absolute stoichiometry in solution.

The combination of these measurement techniques with each other and with other methods of automated sample preparation and delivery creates a powerful toolkit that is useful across many fields of experimental biology. The presentation will include applications to:
- quality control of proteins and other biomacromolecules to ensure reliable, repeatable studies of structure and interactions;
- rapid optimization of crystallization conditions;
- analysis of oligomeric state, protein-protein and protein-nucleic acid complexes;
- understanding self-assembly, aggregation and fibril formation;
- characterization of vesicle size and content, and high-resolution size-based isolation of exosomes and exomeres.

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

Speaker
Eric Seymour, Senior Application Scientist, Wyatt Technology Corporation

Career Development Center Workshop
Nailing the Job Talk, or Erudition Ain’t Enough
4:00 PM - 5:00 PM, EXHIBIT HALL A
Congratulations! You’ve made it to the finals and are suddenly facing the most important presentation of your life. Answers to your questions about how to structure your presentation, how much detail to include, what they are really looking for, etc.

Symposium
Integrative Modeling from Macromolecules to Cell
4:00 PM - 6:00 PM, BALLROOM I
Chair
Zaida Ann Luthey-Schulten, University of Illinois at Urbana-Champaign
170-SYMP 4:00 PM
MAPPING THE SPATIAL ORGANIZATION OF GENOMES THROUGH DATA INTEGRATION. Frank Alber, Polles Guido, Hua Nan, Yildirim Asli, Zhan Yuxiang
171-SYMP 4:30 PM
MULTISCALE MODELING OF BIOMOLECULAR PROCESSES BY COMBINING EXPERIMENT AND SIMULATION. Cecilia Clementi
172-SYMP 5:00 PM
DEALING WITH DYNAMICS AND DISORDER BY COMBINING SIMULATION AND EXPERIMENT. Gerhard Hummer

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

Symposium
Cytoskeleton
4:00 PM - 6:00 PM, BALLROOM II
Chair
Sabine Petry, Princeton University
174-SYMP 4:00 PM
PHASE SEPARATION OF TPX2 ENHANCES AND SPATIALLY BIASES MICRO-TUBULE NUCLEATION. Sabine Petry
175-SYMP 4:30 PM
REGULATION OF BIDIRECTIONAL MOTILITY OF KINESIN-5 MOTORS. Leah Gheber
176-SYMP 5:00 PM
REGULATION OF MYOSIN MOTORS - FROM SINGLE MOLECULES TO FUNCTIONAL ENSEMBLES. Claudia Veigel
177-SYMP 5:30 PM
THE MYOSIN MESA AND HYPERTROPHIC CARDIOMYOPATHY: MUTATIONS TO MECHANISMS TO THERAPIES. James Spudich

Platform
Ligand-gated Channels
4:00 PM - 6:00 PM, BALLROOM III
Co-Chairs
Sonja Minnberger, Leibniz-Forschungsinstitut für Molekulare Pharmakologie, Germany
Mufeng Li, NINDS, NIH
178-PLAT 4:00 PM
HIGH THROUGHPUT VALIDATION OF NON CANONICAL AMINO ACID INCORPORATION INTO ACID SENSING ION CHANNEL 1A. Nina Braun, Søren Friis, Weihua Tian, Eric P. Bennett, Jacob Andersen, Stephan A. Pless
179-PLAT 4:15 PM
MEASURING DYNAMICS OF THE ACID-SENSING ION CHANNEL N-TERMINUS USING TRANSITION METAL ION FRET. Megan Cullinan, Prafulia Aryal, John Bankston
180-PLAT 4:30 PM
A MECHANISM FOR DESENSITIZATION OF ALL THREE FUNCTIONAL MAMMALIAN ACID SENSING ION CHANNELS. Yangyu Wu, Zhuyuan Chen, Cecilia Canessa
181-PLAT 4:45 PM
A CRITICAL MOBILE DIVALENT CATION SITE IN THE ATP-BINDING POCKET OF P2X3 RECEPTORS THAT CONTROLS CHANNEL GATING. Mufeng Li, Yao Wang, Shai D. Silberberg, Motoyuki Hattori, Kenton Swartz
182-PLAT 5:00 PM
STRUCTURAL STUDIES OF MUTANTS OF THE NAK CHANNEL. Sonja Minnberger, Saed Abdolvand, Han Sun, Andrew J. Plested
183-PLAT 5:15 PM
ROLE OF NMDAR-BK COMPLEXES IN THE INTEGRATION OF SYNAPTIC INPUTS OF BARREL CORTEX PYRAMIDAL NEURONS. Ricardo Gómez, Laura E. Maglio, Alberto J. Gonzalez-Hernandez, Belinda Rivero-Perez, Teresa Giraldez
184-PLAT 5:30 PM
PROBING STRUCTURAL STATES OF A PENTAMERIC LIGAND-GATED ION CHANNEL WITH SMALL ANGLE NEUTRON SCATTERING. Marie Lycksell, Nicolai T. Johansen, Rebecca J. Howard, Lise Arleth, Erik Lindahl

Biophysical Society
Platform
Protein Folding, Pathways, and Stability
4:00 PM - 6:00 PM, BALLROOM IV
Co-Chairs
Taras Pogorelov, University of Illinois at Urbana–Champaign
Siwen Zhang, Rensselaer Polytechnic Institute

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

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

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

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

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

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

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

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

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

Platform
Spectroscopy and Single-Molecule Fluorescence
4:00 PM - 6:00 PM, ROOM 307/308
Co-Chairs
Julia Widom, University of Oregon
Hui-Ting Lee, Johns Hopkins University

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

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

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

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

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

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

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

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

Platform
Protein-Lipid Interactions: Channels/Structures
4:00 PM - 6:00 PM, ROOM 309/310
Co-Chairs
Wayland Cheng, Washington University School of Medicine
Ololade Fatunmbi, University of Pennsylvania

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

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

204-Plat  4:30 PM
MOLECULAR MECHANISM OF VOLTAGE-GATED CA2+ CHANNEL REGULATION BY MEMBRANE PIP2. Cheon-Gyu Park, Byung C. Suh

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

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

207-Plat  5:15 PM
DIFFUSION IN NANOPORE CONNECTED BIAYER NETWORKS. Manon Valet, Léa-Laetitia Pontani, Élie Wandersman, Alexis Prevost
Platform

Intracellular Calcium Signaling, Sparks and Waves
4:00 PM - 6:00 PM, ROOM 314/315

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

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

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

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

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

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

215-Plat 5:15 PM TRAVEL AWARDEE
CALCIUM SENSING AND CONFORMATIONAL REARRANGEMENTS IN STIM1, THE ER CALCIUM SENSOR. Aparna Gudlur, Ana E. Zeraik, Nupura Hirve, V Rajanikanth, Andrey A. Bobkov, Elizabeth A. Komives, Patrick G. Hogan

216-Plat 5:30 PM
ABNORMAL CALCIUM LEAK FROM CARDIAC SARCOPLASMIC RETICULUM: NEW INSIGHTS OFFERED BY STATISTICAL PHYSICS. Anna Maltsev, Michael D. Stern, Victor A. Maltsev

217-Plat 5:45 PM
FILOPODIA DYNAMICS ARE AFFECTED BY CATION FLUX THROUGH TRP CHANNELS. Carol A. Heckman, Marilyn L. Cayer, Omolade M. Ademunwiya

Platform

Membrane Active Peptides and Toxins
4:00 PM - 6:00 PM, ROOM 316/317

Co-Chairs
Myriam Cotten, College of William and Mary
Georg Pabst, University of Graz, Austria

218-Plat 4:00 PM
SYNERGISM OF MAGAININS IS NOT COUPLED TO THE FORMATION OF A WELL-DEFINED PEPTIDE PORE. Michael Pachler, Ivo Kabelka, Regina Leber, Ilse Letofsky-Papst, Karl Lohner, Robert Vacha, Georg Pabst

219-Plat 4:15 PM
COMBINING DESIGN STRATEGIES IN ENGINEERING MORE ACTIVE HYBRID ANTIMICROBIAL PEPTIDES. Anne K. Buck, Louise E. O. Darling, Donald E. Elmore

220-Plat 4:30 PM
HIGH-RESOLUTION STRUCTURES OF TWO METALLATED HOST DEFENSE PEPTIDES THAT FEATURE COPPER-DEPENDENT BACTERICIDAL AND CHEMOTACTIC EFFECTS: IMPORTANCE OF HISTIDINE FOR ANTI-INFECTIVE ACTION. Myriam Cotten, Alexander Greenwood, Steven Paredes, Yimin Miao, Yawei Xiong, Elia Mihaiescu

221-Plat 4:45 PM
COMPARISON OF THE EFFECTS OF DAPTOMYCIN ON BACTERIAL AND MODEL MEMBRANES. Ming-Tao Lee, Pei-Yin Yang, Nicholas E. Charron, Meng-Hsuan Hsieh, Yu-Yung Chang, Wei-Chin Hung, Huey W. Huang

222-Plat 5:00 PM
LIFE AND DEATH IN A BACTERIAL BIOFILM UNDER ANTIBIOTIC ATTACK CHARACTERIZED BY FLUORESCENCE AND ATOMIC FORCE MICROSCOPY. Catherine B. Volle, Kanesha Overton, Helen Greer, Megan A. Ferguson, Eileen M. Spain, Megan E. Nunez

223-Plat 5:15 PM
INTERACTION OF ANTIMICROBIAL PEPTIDE LL-37 WITH LIPOPOLYSACCHARIDES. Michael Martynowycz, Amy Rice, Konstantin Andreev, Thaiane M. Nobre Pavinatto, Jeff Wereszczynski, David Gidalevitz

224-Plat 5:30 PM TRAVEL AWARDEE
SYNCHROTRON X-RAY SCATTERING STUDIES TO DETERMINE STRUCTURE OF AMYLLOID BETA INTERACTIONS WITH LIPID MEMBRANES. Crystal M. Vander Zanden, Jaroslav P. Majewski, Erik B. Watkins, Eva Y. Chi

225-Plat 5:45 PM
CONFORMATIONAL DISORDER IS REQUIRED FOR TOXIN SECRETION, FOLDING AND CELL INTOXICATION. Darragh Patrick O’Brien, Dominique Durand, Sara Cannella, Alexis Voegele, Patrice Vachette, Sébastien Brier, Daniel Ladant, Alexandre Chenal

PI to PI

A Wine & Cheese Mixer
5:00 PM - 7:00 PM, ROOM 324/325/326

You finally have a job working in biophysics, in industry or academia, with some funding and a lab, but you’ve realized that the career challenges continue. Come relax and network with your contemporaries and senior biophysicists over a beer or glass of wine. This event is a great chance to compare notes with colleagues and discuss one-on-one your unique solutions to issues that arise in the time between getting your job and getting your next promotion, including management of lab staff, getting your work published, and renewing your funding. Refreshments will be provided, with cash bar.
Ultra-portable and cost-effective amplifier technology is now a reality accessible to any electrophysiology research lab, thanks to Elements microelectronic-based design of custom microchip (ASIC) using standard and low-cost CMOS processes.

Elements provides an integrative solid-state solution to measure currents in the picoampere (10-12 pA) range, with bandwidths up to hundreds of kHz, featuring very low noise recordings, signal digitization thanks to the internal Analog-to-Digital converter, signal generator, digital data elaboration, and USB powered, all in a tiny form factor (i.e. 42x18x78 mm) or about the size of a point-and-shoot digital camera!

In this presentation, we will be featuring our latest electrophysiology product, the world’s smallest integrated patch clamp amplifier, as well as a portable nanopore kit for protein detection using disposable glass nanopore chips.

During the event will be presented these two use cases:

1. ePatch amplifier was used to record the current of HCN channels transiently expressed in HEK293T cells, with the aim to test the effect of Lamotrigine, a widely used anticonvulsant drug, on the biophysical proprieties of the current. Data courtesy of Dr. A. Moroni - University of Milan - Italy and Dr. Bina Santoro - Columbia University - New York – USA

2. Portable Nanopore Reader: example of DNA fragment translocations through glass nanopore chips. Data courtesy of Dr. D. Niedzwiecki, Goeppert – USA

Attend this presentation to learn about:

- The advantages of using a versatile and compact nano-current amplifier technology,
- Portable nanopore solution for protein detection using disposable nanopore chips,
- How the world smallest and cheapest patch clamp amplifier is radically changing voltage-clamp measurements!

Complimentary Italian hors d’oeuvres and drinks will be served! Seating is limited. Be the first to RSVP by emailing info@elements-ic.com to receive a copy of the presentation and be entered in a raffle to receive a free 30-day trial of the ePatch or nanopore Kit amplifier!

Speakers
Federico Thei, CEO, ELEMENTS SRL
Filippo Cona, Software Engineer, ELEMENTS SRL
Alessandro Porro, Application Scientist, ELEMENTS SRL
Serge Kaddoura, NanoscaleLABS
SUNDAY POSTER SESSIONS
1:45 PM–3:45 PM, EXHIBIT HALL C

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

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

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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.
PROVIDES INSIGHTS INTO THE CONFORMATIONAL TRANSITION OF THE NEW OPEN STRUCTURE OF THE INSULIN DEGRADING ENZYME.

**Membrane Protein Structures (Boards B35 - B64)**

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| B28   | BOARD B28  
ENHANCED SAMPLING OFamyloid beta-42 dimer ensemble: a novel approach with conformational symmetry. Levent Sari, Milo M. Lin |
| B29   | BOARD B29  
Identification and study of polymorphic structures of hierarchically twisted amyloid fibrils by atomic force microscopy. Sergey K. Sekatskii, Jianguo Zhou, Giovanni Dietler |
| B30   | BOARD B30  
Tetratricopeptides, a versatile protein interaction motif. Srihari Shankar, Jayaraman Srivariaman |
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Biophysical insights into the KRAS4B-FME-calmodulin interaction. Constance Agamasu, Rodolfo Ghirlando, Andrew Stephen |
| B32   | BOARD B32  
electric field mediated disruption of beta amyloid: a potential non-invasive therapy for alzheimer's disease. Jahnau Saiika, Vibin Ramakrishnan |
| B33   | BOARD B33  
Kinetic characterization of a novel fosfomycin resistance enzyme from mycobacterium bolletii. Skye R. Travis, Madeline R. Shay, Matthew K. Thompson |
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APPLICATION OF ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY TO PROBE THE STRUCTURAL TOPOLOGY, DYNAMICS AND CONFORMATIONAL CHANGES OF S21 PINHOLIN PROTEIN. Tanbir Ahammad, Daniel L. Drew, Sophia Rafferty, Indra D. Sahu, Robert McMarrick, Gary A. Lorigan |
| B36   | BOARD B36  
Assessing depth-dependence of the azido vibrational probe group in bilayers using transmembrane peptides. Yanyu Zhao |
| B37   | BOARD B37  
Mapping the topological change of sarcolipin upon sarco-plasmic reticulum Ca\(^{2+}\)-ATPase binding along the Ca\(^{2+}\)-transport cycle by solid-state nmr. Songlin Wang, Gopinath Tata, Erik Larsen, Daniel Weber, Gianluigi Veglia |
| B38   | BOARD B38  
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| B39   | BOARD B39  
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| B40   | BOARD B40  
Dimerization of human adenosine A\(_2\)_ receptor - impact of the c-terminus. Khanh D. Nguyen, Susanna Seppala, Michael Vigers, Nicole S. Schonenbach, Songi Han, Michelle A. O'Malley |
| B41   | BOARD B41  
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| B42   | BOARD B42  
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Cryo-em structure of a mitochondrial calcium uniporter. Jiho Yoo, Mengyu Wu, Ying Yin, Mark A. Herzik Jr, Gabriel C. Lander, Seok-yong Lee |
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Structural fluctuations in rhodopsin activation revealed by neutron scattering. Suchithranga M.D.C. Perera, Udeep Chawla, Utsab Shrestha, Dibesindhu Bhowmik, Andrey V. Struts, Shuo Qian, Xiang-Qiang Chu, Michael F. Brown |
| B44   | BOARD B44  
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VDAC1 conformational changes investigated by high pressure deer. Lucie Bergdoll, Matthias Elgett, Wayne Hubbell, Jeff Abramson |
| B45   | BOARD B45  
| B46   | BOARD B46  
Regulation of proton transport in tetrameric UCP2 by an intramolecular salt-bridge network. Afshan Ardalan, Stephanie Uwumarenogie, Michael Fish, Shahin Sowlati-Hashjin, Mikko Karttunen, Matthew D. Smith, Masoud Jelokhani-Niaraki |
| B47   | BOARD B47  
Probing the active and inactive forms of the bacteriophage S21 pinholin protein system using magnetic resonance spectroscopy. Daniel L. Drew, Tanbir Ahammad, Rachel Serafin, Brandon Butcher, Katherine Clowes, Indra D. Sahu, Robert McMarrick, Gary A. Lorigan |
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Exploring (proteo-) liposomes for mass spectrometry. Melissa Frick, Caroline Haupt, Carla Schmidt |
| B49   | BOARD B49  
Lipid-modulation of STK1, a cyclic nucleotide-gated channel. Philipp A.M. Schmidpeter, Jan Rheinberger, Di Wu, Haiping Tang, Carol V. Robinson, Crina M. Nimigean |
| B50   | BOARD B50  
Site-directed labeling of type II cannabinoid receptor CB2 for structural EPR analysis. Levi T. Hooper |
| B51   | BOARD B51  
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| B52   | BOARD B52  
Characterization of the interaction between two influenza A protein (M1 and M2) involved in viral assembly. Abigail Wong-Rolle, Reham Mahgoub, Elizabeth Erler, Kathleen P. Howard |
Fujimoto, Ye Tian, Francesca M. Marassi

CHARACTERIZATION OF THE EXTRA-MEMBRANE DOMAINS OF CRGA
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MODELING EPISTASIS USING PROTEIN BIOPHYSICS AND ΦX174.

Kim Østergaard, Martin Grötzner, Sören M. F. Fimland, Robert Schepers, Lay-Ann Lim, Anthony D. Large, Frank H. Seiler, Gregor G. Wang, Thomas E. Smithgall, Michael R. Scott, Eric S. Lander, Jennifer C. Doudna

A THERMODYNAMICALLY-RIGOROUS, BIOLOGICALLY-DRIVEN ENERGY FUNCTION FOR MEMBRANE PROTEIN MODELING AND DESIGN.

Rebecca F. Alford, Patrick Fleming, Karen G. Fleming, Jeffrey J. Gray

MOLECULAR MODELS OF HUMAN ELASTIN AND ELASTIN BIOMATERIALS.

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REDEFINING THE PROTEIN KINASE CONFORMATIONAL SPACE WITH MACHINE LEARNING.

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Matthew J. Dominguez, Zoey L. Sharp, Valeria Jaramillo Martinez, Benjamin J. Lantz, Elliott J. Stollar

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Narutoshi Kamiya, Benson Ma, Gert-Jan Bekker

A MULTI-OBJECTIVE STOCHASTIC OPTIMIZATION APPROACH FOR DECOY GENERATION IN TEMPLATE-FREE PROTEIN STRUCTURE PREDICTION.

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EXPERIMENTAL CHARACTERIZATION OF “METAMORPHIC” PROTEINS PREDICTED FROM AN EnSEMBLE-BASED THERMODYNAMIC DESCRIPTION.

James O. Wrabl, Miranda Russo, Jordan Hoffmann, Keila Sheetz, James O. Wrabl, Andrew Munoz, Vincent J. Hilser

BIOMOLECULAR SIMULATIONS FOR STRUCTURAL BIOLOGY: INTEGRATING CO-EVOLUTION, SAXS AND FRET.

Alexander Schug

COMPUTATIONAL INVESTIGATION OF THE DISSOCIATION PATHWAYS OF PEPTIDES.

Mary C. Sherman, Luke Metzler, Michael J. Van Stipdonk

IN SILICO EVOLUTION OF AMINOACYL-TRNA SYNTHETASES FOR INCORPORATION OF NONcanonical amino acids.

Tiberiu S. Mihaila, E. James Petersson
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EXPRESSING, PURIFICATION, AND CRYSTALLIZATION OF THE HUMAN OXIDOREDUCTASE, PYROX-D1: A NEW DESCRIBED CAUSE OF EARLY-ONSET MYOPATHY IN HUMANS. Isaac L. Scott, Roger Sutton

307-Pos    BOARD B82
A REGULATORY METABOLIC COMPLEX FOR GLUCOSE METABOLISM IN LIVING CELLS: THE GLUCOSOME. Songon An

308-Pos    BOARD B83
SELF-ASSEMBLY OF GAG IN ETHANOL/WATER MIXTURES EXAMINED BY MOLECULAR DYNAMICS. Shuting Zhang, Cuong Trinh, Reinhard Schweitzer-Stenner, Brigita Urbanc

309-Pos    BOARD B84
QUANTIFYING A PROTEIN-PROTEIN INTERACTION IN LIVING CELLS. Shannon L. Speer, Alex J. Guseman, Gary J. Pielak

310-Pos    BOARD B85
KINETIC TRAPPING AND ROBUSTNESS IN PROTEASOME ASSEMBLY. Anupama Kante, Eric J. Deeds

311-Pos    BOARD B86
IMPROVING THE RECONSTRUCTION OF LOW-RESOLUTION CRYOEM MAP USING ENHANCED MOLECULAR DYNAMICS SIMULATIONS. Cesar A. Lopez, Mark Swift, Xiao-Ping Xu, Dorit Hanein, Niels Volkmann, S. Gnanakaran

312-Pos    BOARD B87
THE MECHANISM OF ACTION FOR DRUGS THAT UNDERMINE HIV-1 VIRAL CAPSID FORMATION AND ACTIVITY: INSIGHTS FROM LARGE-SCALE COARSE-GRAINED SIMULATIONS. Alexander J. Pak, John M. A. Grime, Gregory A. Voth

313-Pos    BOARD B88
E. COUL HIGH THROUGHPUT ASSAY IDENTIFIES REGULATORS OF ENDO- THEIAL BARRIERS. Dario Mizrachi

314-Pos    BOARD B89
TETRAMERIC ASSEMBLY OF THE ONCOGENIC C-TERMINAL BINDING PROTEINS. William E. Royer, Andrew G. Bellesis, Anne M. Jecrois, Brendan J. Hampton, Isaiah Sumner

315-Pos    BOARD B90
SHOULD VIRUS CAPSIDS ASSEMBLE PERFECTLY? A SIMPLE EQUILIBRIUM MODEL FOR DEFECTS. Justin M. Spiriti, James F. Conway, Daniel M. Zuckerman

316-Pos    BOARD B91
STRUCTURES AND FUNCTIONS OF THE HIV-1 PRE-INTEGRATION COMPLEXES. Julien Battise, Eduardo Bruch, Nicolas Levy, Patrice Gouet, Stéphane Emiliani, Vincent Parisi, Marc Ruff

317-Pos    BOARD B92
PROBING AND DIFFERENTIATING THE SHELL AND ENZYME PROTEINS OF THE BACTERIAL MICROCOPARTMENT BY THERMAL SHIFT AS SAY. Naimat Kalim Bari, Gaurav Kumar, Simerpreet Kaur, Sharmistha Sinha

318-Pos    BOARD B93
MODELING PROTEASOME ASSEMBLY PATHWAYS IN BACTERIA. Pushpa Itagi, Eric J. Deeds

319-Pos    BOARD B94
EFFECTS OF CHROMOGRAFIN A AND B ASSOCIATION ON THE ANION CHANNEL FUNCTION IN THE REGULATED SECRETORY PATHWAY. Sutonuka Bhar, Gaye P. Yadav, Mahesh S. Chandak, Qiu-Xing Jiang

320-Pos    BOARD B95
USING NTH AUTOPROTEASE FUSION TECHNOLOGY TO EXPRESS A SEMENOGELIN I PEPTIDE. Fiona Berry, Birgitta Frohm, Sara Linse, Karin Akerfeldt

321-Pos    BOARD B96
UNVEILING THE IMPACT OF THE NEGATIVE ARM OF THE CIRCADIAN CLOCK ON OUTPUT IN NEUROSPORA CRASSA. Alexander E. Mosier, Jennifer M. Hurley

322-Pos    BOARD B97
RESOLVING THE TRANSITION STATES OF HUMAN HEMOGLOBIN ASSEMBLY THROUGH A COMBINATION OF SPECTROSCOPIC STUDIES AND ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. Premila P. Samuel Mohan Dass, George N. Phillips, John S. Olson, David A. Case

323-Pos    BOARD B98
INTERACTIONS BETWEEN THROMBOMODULIN AND THE COMPLEMENT SYSTEM STUDIED BY SURFACE PLASMON RESONANCE AND DEUTERIUM EXCHANGE MASS SPECTROMETRY. Jose Giler, Mary Catherine Rice, Vanessa Wiltse, Kyler Anderson, Julia R. Koeppe

324-Pos    BOARD B99
SGEF GEF ACTIVITY AND ITS REGULATION BY SCRIBBLE AND DLG1. Ashley Simpson

Enzyme Function, Coactors, and Post-translational Modifications (Boards B100 - B119)

325-Pos    BOARD B100
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INVESTIGATING THE EFFECT OF ALPHA-SYNUCLEIN POST-TRANSLATIONAL MODIFICATIONS ON SYNAPTIC VESICLE TRAFFICKING. Buyan Pan, E. James Petersson, Elizabeth Rhoades

326-Pos    BOARD B101
MECHANISTIC STUDY OF PRENYLATED FLAVIN MONONUCLEOTIDE FORMATION. Szymon Zaczeck, Agnieszka Dybala-Defratyka

327-Pos    BOARD B102
STUDY OF THE LYSINE DEPROTONATION MECHANISM IN UBIQUITIN CONJUGATING ENZYME UBC13. Katherine Elliott, N. Cole Sward, Heath Hampton, Isaiah Sumner

328-Pos    BOARD B103

329-Pos    BOARD B104
CAN PHOTOLYSIS OF THE CO-C BOND IN COENZYME B12 DEPENDENT ENZYMES BE USED TO MIMIC THE NATIVE REACTION? Abdullah Al Mamun, Pawel M. Kozlowski

330-Pos    BOARD B105
PHOSPHORYLATION SITES WITH S/T-P MOTIF: POSSIBLE BASAL ANTI-AG- REGRATION MECHANISM. Min Hyung Cho, James Wrabl, Vincent Hilser, James Taylor

331-Pos    BOARD B106
INVESTIGATING THE CATALYTIC BASE RESIDUES IN THE PHOSPHOGLUCOSE ISOMERASE FROM THERMOTOGA MARITIMA. Katherine Lake, Nicole Swope, Linda Columbus

332-Pos    BOARD B107
A KINETIC STUDY OF LIGAND BINDING AND CONFORMATIONAL CHANGES IN INDUCIBLE NITRIC OXIDE SYNTHASE. Karin Nienhaus, Michael Horn, G. Ulrich Nienhaus
Chromatin and the Nucleoid (Boards B120 - B144)

345-Pos BOARD B120 THE REMOVAL OF HISTONES FROM ULTRAFINE ANAPHESE BRIDGES STUDIED BY OPTICAL TWEETERS. Dian Spakman, Andreas S. Biebricher, Graeme A. King, Kata Sarlós, Ian D. Hickson, Erwin J. Peterman, Gijis J. Wuite

346-Pos BOARD B121 SEQUENCE-DEPENDENT ASYMMETRIC UNWRAPPING OF NUCLEOSOMES OF YEAST. Hidetoshi Kono, Di Luo, Daiki Kato, Jumpei Nogami, Yasuyuki Ohkawa, Hitoshi Kurumizaka

347-Pos BOARD B122 UNCOVERING A NOVEL FOLDING LANDSCAPE OF THE DROSOPHILA GENOME THROUGH HI-C NORMALIZATION VIA FRACTAL MONTE CARLO DEEP SAMPLING. Qiu Sun, Alan Perez-Rathke, Daniel Czajkowski, Zhifeng Shao, Jie Liang

348-Pos BOARD B123 DIFFUSION BEHAVIOR OF SUPRAMOLECULAR PROTEIN ASSEMBLIES IN THE LIVING CELL NUCLEUS. Shuji Fujii, Irena Bronshtein, Yuval Garini, Michael Elbaum

349-Pos BOARD B124 TRAVEL AWARDEE MICROCHEMISTRY OF INTERPHASE NUCLEI: A COMPUTER SIMULATION STUDY. Andrea Papale, Angelo Rosa

350-Pos BOARD B125 LEDGF/P75 DECREASES NUCLEOSOME ACCESSIBILITY. Khan Cox, Matthew D. Gibson, Mamuka Kvaratskhelia, Michael G. Poirier


352-Pos BOARD B127 CHROMATIN STRUCTURE REGULATION BY AN EPIGENETIC SWITCH TUNING THE FLEXIBILITY OF THE H1 C-TERMINAL DOMAIN. Akshay Sridhar, Stephen Farr, Guillem Portella, Tamar Schlick, Modesto Orozco, Rosana Collepardo-Guevara

353-Pos BOARD B128 BINDING DYNAMICS OF DISORDERED LINKER HISTONE H1 WITH A NUCLEOSOMAL PARTICLE. Hao Wu, Yamini Dalal, Garegin A. Papoian

354-Pos BOARD B129 PHASE-SEPARATION DRIVEN HETEROCRATIN FORMATION: EXPERIMENT AND THEORY. Dan Deviri, Amy R. Strom, Serafin Colmenares, Shelby Wilson, Collin Hickmann, Gary Karpen, Samuel Safran

355-Pos BOARD B130 IN VIVO CHROMATIN COMPACTION CHANGES AS DETECTED BY WATER DIPOLAR RELAXATIONS: THE MOLECULAR CROWDING ROLE REVEALED BY THE ACDAN FLUORESCENCE. Leonel S. Malacrida, Lorenzo Scipioni, Enrico Gratton

356-Pos BOARD B131 MODULATION OF THE DNA ACCESSIBILITY IN THE NUCLEOSOME -- INSIGHTS FROM PHYSICS MODELS. Alexey V. Onufriev

357-Pos BOARD B132 STRUCTURE AND DYNAMICS OF THE TELOMERIC NUCLEOSOME AND CHROMATIN. Lars Nordenskiöld, Aghil Soman, Nikolay Korolev, Surya Wahyu, Sook Yi Wong, Chong Wai Liew, Simon Lattmann, Hsian Ling Teo, John Van Noort, Daniela Rhodes
DNA Replication, Recombination, and Repair (Boards B145 - B166)

358-Pos  BOARD B133  MULTI-Scale SIMULATION of the CHROMATIN FIBER to ELUCIDATE OCT4 GENE REPRESSION. Michael R. Williams, Dmitri Kireev

359-Pos  BOARD B134  SURFACE FLUCTUATIONS and COALESCENCE of NUCLEOLAR DROPLETS in the HUMAN CELL NUCLEUS. Christina M. Caragine, Shannon Haley, Alexandra Zidovska

360-Pos  BOARD B135  A PLATFORM for INVESTIGATING NUCLEAR ORGANIZATION and its CHANGES during HUMAN IPSC DIFFERENTIATION. Susanne M. Rafelski

361-Pos  BOARD B136  INTENSITY SORTED FLUORESCENCE CORRELATION SPECTROSCOPY: A NOVEL METHOD to PROBE NUCLEAR DYNAMICS and CHROMATIN ORGANIZATION in LIVING CELLS. Melody Di Bona, Simone Pelicci, Isotta Cainero, Giuseppe Vicidomini, Davide Mazza, Michael A. Mancini, Alberto Diaspro, Luca Lanzano

362-Pos  BOARD B137  EFFECT of DIFFERENT TRANSCRIPTIONAL STATES on the SINGLE GENE DYNAMICS. Fang-Yi Chu, Alexandra Zidovska

363-Pos  BOARD B138  DYNAMICAL SIGNATURES of LOCAL DNA DAMAGE in LIVE CELLS. Jonah Eaton

364-Pos  BOARD B139  DESTABILIZING NUCLEOSOMES and the ROLE of HMGB PROTEINS. Michal J. McCauley, Ran Hua, Emily Navarrete, Nicole Becker, Qi Hu, Molly Nelson Holte, Uma Muthurajian, Jolvia Rouzina, Karolin Luger, Georges Mer, L. James Maher III, Nathan Israeloff, Mark C. Williams

365-Pos  BOARD B140  CHROMATIN FOLDING HETEROGENEITY inferred FROM HIGH-RESOLUTION NUCLEOSOME STRUCTURES. Stefjord Todolli, John Yager, Wilma K. Olson

366-Pos  BOARD B141  HISTONE TAIL-DNA INTERACTIONS: CHARGE REGULATION and SEQUENCE SPECIFICITY. Raju Timsina, Xiangyun Qiu

367-Pos  BOARD B142  MANY-BODY CHROMATIN INTERACTIONS in SUPER-ENHANCER TADS. Alan Perez-Rathke, Qiu Sun, Valentina Boeva, Jie Liang

368-Pos  BOARD B143  QUANTITATIVE MEASUREMENT of NUCLEOSOME OCCUPANCY and DNA ACCESSIBILITY. Razvan V. Chereji, Terri D. Bryson, Steven Henikoff

369-Pos  BOARD B144  THE CHROMOSOME’S FIGHT AGAINST DISORDER in E. COLI. Christopher H. Bohrer, Elijah Roberts, Jie Xiao

370-Pos  BOARD B145  DNA MISMATCH REPAIR RELIES ENTIRELY on STOCHASTIC TRANSACTIONS. Jiaquan Liu, Ryang-Geun Lee, Brooke Britton, James London, Jeunghill Hanne, Jong-Bong Lee, Richard Fishel

371-Pos  BOARD B146  DECIPHERING the ESSENTIAL INTERACTION BETWEEN PRIMASE and HELICASE in MYCOBACTERIUM TUBERCULOSIS. Dhakaram P. Sharma, Ramachandran Vijayan, Syed Arif Abdul Rehman, Samudrala Gounith

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386-Pos  BOARD B161
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387-Pos  BOARD B162
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388-Pos  BOARD B163
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389-Pos  BOARD B164
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390-Pos  BOARD B165
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392-Pos  BOARD B167
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393-Pos  BOARD B168
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394-Pos  BOARD B169
THE INFLUENCE OF LIPID COMPOSITION UPON LIPID DOMAIN FORMATION IN THE INNER LEAFLET OF ASYMMETRIC VESICLES USING SPIN-LABELLED LIPIDS. Qing Wang, Erwin London

395-Pos  BOARD B170
THE ROLE OF CERAMIDE STRUCTURE IN REGULATING THE STABILITY OF MEMBRANE DOMAINS. Frederick A. Heberle, Mitchell DiPasquale, Tye Deering, Mark Kester, John Katsaras, Drew Marquardt

396-Pos  BOARD B171
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397-Pos  BOARD B172
COMPLEX COACERVATE FORMATION ON A HETEROGENEOUS MEMBRANE. Andrew Balchunas, Sarah Veatch

398-Pos  BOARD B173
CHARACTERIZING GIANT PLASMA MEMBRANE VESICLES ISOLATED FROM XENOOPS LAEVIS OCYTES. Eva S. Chakravorty

399-Pos  BOARD B174
PHASE BEHAVIOR OF CHOLESTEROL CRYSTALS FORMED IN WATER FROM PURE CHOLESTEROL AND FROM CHOLESTEROL/PHOSPHOLIPID MIXTURES. Laxman Mainali, Marta Pasenkiewicz-Gierula, Witold Subczynski

400-Pos  BOARD B175
DPPC LIPID MELTING TRANSITION IN CONCENTRATED SUCROSE SOLUTIONS. Mattia I. Morandi, Fabrice J. Thalmann, Monika Kluzek, Andre P. Schroder, Carlos M. Marques

401-Pos  BOARD B176
EFFECTS OF PASSIVE FLIP-FLOP PHOSPHOLIPID AND ASYMMETRIC EXTERNAL FIELDS ON BILAYER PHASE EQUILIBRIA. Peter Olmsted, John Joseph Williamson

402-Pos  BOARD B177
INVESTIGATING SINGLE-CELL VARIATION IN MEMBRANE FLUIDITY AND RESPIRATION RATES. Krishna Ojha, Sam Blechman, Joshua Kasburg, Michael C. Konopka

403-Pos  BOARD B178
PREPARATION OF ASYMMETRIC CHARGED LARGE UNILAMELLAR VESICLES CONTAINING BOTH CATIONIC AND ANIONIC LIPIDS. Bingchen Li, Erwin London

404-Pos  BOARD B179
A NEW METHOD TO PREPARE ASYMMETRIC UNILAMELLAR VESICLES: HEMIFUSION. Thais A. Enoki, Gerald W. Feigenson

405-Pos  BOARD B180
TOWARD REALISTIC CELL MEMBRANE MIMICS. Peter Beltramo

406-Pos  BOARD B181
TEMPERATURE-CONTROLLED SINGLE-LIPSOME PROTON PERMEABILITY ASSAY OF EXTREMOPHILE-INSPIRED LIPID MEMBRANES. Anirvan Guha, Melissa McGuire, Thomas B. H. Schroeder, Geoffray Leriche, Jerry Yang, Michael Mayer

407-Pos  BOARD B182
APPLICATION OF LONG-TERM AIR-STABLE LIPID BILAYERS FOR WAVEGUIDE-BASED BIOSENSORS. Christine Pedersen, Aaron Anderson, Harshini Mukundan, Jessica Kubicek-Sutherland

408-Pos  BOARD B183
NESTING LIPID BILAYERS IN NANOPORES: EFFECT OF PORE DIAMETER ON MACROSCOPIC ORDER AND THE LAYER COUNT. Morteza Jafarabadi, Melanie Chestnut, Antonin Marek, Alexander Nevzorov, Alex I. Smirnov

409-Pos  BOARD B184
EFFECT OF SILICA SUPPORT ON ELECTROSTATICS OF LIPID INTERFACES IN NANO-BIO HYBRID SYSTEMS. Erkang Ou, Maxim Voinov, Alex Irving, Alex Smirnov, Tatyana I. Smirnova

410-Pos  BOARD B185
IMAGING OF LIPID METABOLISM THROUGH A PHASOR ANALYSIS OF MEMBRANE MICROPOLARITY. Flavio Di Giacinto, Marco De Spirito, Giuseppe Maulucci

411-Pos  BOARD B186
PHOTOPHYSICAL CHARACTERIZATION AND MICROSCOPY APPLICATION OF AN ANTHRACENE ANALOGOUS OF LAURDAN. German Gunther, Javier Gajardo, Vicente Castro, Catalina Sandoval, Susana A. Sanchez, Leonel Malacrida

412-Pos  BOARD B187
THE ROLE OF PACKING DENSITY ON FLUORESCENCE INTENSITY MEASUREMENTS OF COMMON FLUOROPHORES IN LIPID MONOLAYERS. Benjamin L. Stottrup, Dametre Thunberg, Joan C. Kunz

413-Pos  BOARD B188
ITRACONAZOLE PERTURBS BEHAVIOR OF FLUORESCENT PROBES IN LIPID BILAYER. Chetan Poopari, Natalia Wilkosz, Piotr Jurkiewicz, Ilpo Vattulainen, Mariusz Kepczynski, Tomasz Rog
Membrane Active Peptides and Toxins I
(Boards B193 - B214)

418-Pos  BOARD B193
CHARACTERIZATION OF HYBRIDS MADE FROM TWO MEMBRANE TRANSLOCATING ANTIMICROBIAL PEPTIDES. Ju Young Kwag, Hannah Klim, Donald E. Elmore

419-Pos  BOARD B194
MECHANISM OF ACTION OF PH-TRIGGERED, MEMBRANE ACTIVE PEPTIDES. Sarah Y. Kim, Anna Pittman, Gavin King, William C. Wimley, Kalina Hristova

420-Pos  BOARD B195
DISCOVERING NOVEL ANTIMICROBIAL PEPTIDES USING HIGH-THROUGHPUT SCREENING AND RATIONAL VARIATION. Jenisha Ghimire, Charles G. Starr, William C. Wimley

421-Pos  BOARD B196
TOXICITY AND STRUCTURE OF ANTIMICROBIAL PEPTIDES DERIVED FROM THE CHEMOKINE, CXCL10. Peter Bailar, Amanda E. Ward, Matthew Crawford, Debra Fischer, Lukas K. Tamm, Molly Hughes

422-Pos  BOARD B197
CHARACTERIZATION OF A HISTIDINE CONTAINING ANTIMICROBIAL PEPTIDE WITH PH DEPENDENT ACTIVITY. Luis Santiago-Ortiz, Morgan Hitchner, Thaddeus Palmer, Gregory A. Caputo

423-Pos  BOARD B198
MEMBRANE REMODELING INDUCED BY A PH DEPENDANT PORE FORMING PEPTIDE VIA ATOMIC FORCE MICROSCOPY. Anna Pittman, Sarah Y. Kim, William C. Wimley, Kalina Hristova, Gavin King

424-Pos  BOARD B199
ELASTIC BEHAVIOR OF MODEL MEMBRANES WITH ANTIMICROBIAL PEPTIDES DEPENDS ON LIPID SPECIFICITY AND D-ENANTIOMERS. Akari Kumagai, Fernando G. Dupuy, Zoran Arsov, Yasmeen Elhady, Diamond Moody, Belita Opene, Robert K. Ernst, Berthony Desloches, Ronald C. Montelaro, Y.P. Peter Di, Stephanie A. Tristram-Nagle

425-Pos  BOARD B200
HUMAN ANTIBACTERIAL PEPTIDES MODIFY LATERAL STRUCTURE IN LIPID MONOLAYERS UPON INTERFACIAL ADSORPTION. Thomas Gutsaman, Beate Klösgen, Christian Nehls, Laura Paulowski, Chen Shen

426-Pos  BOARD B201
CAN MOLECULAR DYNAMICS SIMULATIONS PREDICT THE EFFECT OF TRUNCATING HISTONE-DERIVED ANTIMICROBIAL PEPTIDES? Kerry Gao, Donald E. Elmore

427-Pos  BOARD B202
EFFECTS OF CHOLESTEROL ON FENGYCIN, AN ANTIMICROBIAL LIPOPEPTIDE USING WEIGHTED ENSEMBLE PATH SAMPLING METHOD. Sreyoshi Sur, Alan Grossfield

428-Pos  BOARD B203
TRAVEL AWARDEE
EFFECT OF BIOPOLYMER TETHERS ON ANTIMICROBIAL PEPTIDE ACTIVITY IN BIOMEMBRANES. Fatihima T. Doole, Abhishek Singharyor, Michael F. Brown, Minkyu Kim

429-Pos  BOARD B204
EFFECT OF N-TERMINAL METALATION AND LIPID COMPOSITION ON THE ACTIVITY OF ANTIMICROBIAL PISCIDINS IN MEMBRANES. Ella Mihalescu, Roderico Acevedo, Vitalii Silin, Frank Heinrich, Myriam Cotten

430-Pos  BOARD B205
BIOPHYSICAL PROPERTIES OF MAGAININ-TREATED BIOFILMS. Ryan MacVicar, Thelma Mashaka, Catherine B. Volle, Megan E. Nunez

431-Pos  BOARD B206
MECHANISTIC STUDIES ON DAPTOMYCIN-INDUCED PHASE-TRANSITIONS ON MODEL LIPID MEMBRANES: EFFECT ON MEMBRANE PERMEABILITY. Alaina K. Howe, Stavroula Sofou

432-Pos  BOARD B207
CORRELATION OF AN ANTIMICROBIAL PEPTIDE’S POTENCY AND ITS INFLUENCES ON MEMBRANE ELASTICITY. Wen-Fang Chang, Si-Han Chen, Yi-Fan Chen

433-Pos  BOARD B208
MEASURING THE STOICHIOMETRY OF ANTIMICROBIAL PEPTIDES IN NANODISCS WITH NATIVE MASS SPECTROMETRY. Michael T. Marty, Lawrence Walker, Marius Kostelic, Elaine Marzluff

434-Pos  BOARD B209
ANTIMICROBIAL PEPTIDOMIMETICS WITH ACTIVITY TOWARDS CANCER CELLS. Konstantin Andreew, Michael W. Martynowycz, Mahesh Lingaraju, Christopher Bianchi, Amram Mor, David Gidalevitz

435-Pos  BOARD B210
TRAVEL AWARDEE
RATIONAL DESIGN OF POLYLEUCINE-BASED ANTIMICROBIAL PEPTIDES AS PROMISING AGENTS AGAINST CANCER CELLS. Charles H. Chen, Arvin Eskandari, Jenisha Ghimire, William C. Wimley, Kogularaman Suntharalingam, Martin B. Ulmschneider

436-Pos  BOARD B211
AUREIN 1.2, A SHORT AND POTENT ANTIMICROBIAL PEPTIDE, CHANGES CHARGED LIPID DISTRIBUTION AND LIPID DYNAMICS IN BILAYER. Shuo Qian, Veerendra K. Sharma

437-Pos  BOARD B212
THE ROLE OF GREASY RESIDUES IN TEIXOBACTIN DERIVATIVES. Po-Chao Wen, Emad Takhirshord, Susan B. Rempe

438-Pos  BOARD B213
USE OF A STEROCHENICAL STRATEGY TO PROBE THE MECHANISM OF PHENOL-SOLUBLE MODULIN A3 TOXICITY. Zhihui Yao, Brian P. Cary, Craig A. Bingman, Samuel H. Gellman

439-Pos  BOARD B214
INVESTIGATING INTRACELLULAR FUNCTIONS OF ANTIMICROBIAL PEPTIDES USING AN INTERNAL GENE EXPRESSION SYSTEM. Sattar Taheri-Araghi, Salimeh Mohammadi, Federico Prokopczuk, Xintian Li
Membrane Structure I (Boards B215 - B235)

440-Pos  BOARD B215
STRUCTURAL PROPERTIES OF INNER AND OUTER MEMBRANE MIMICS OF GRAM-NEGATIVE BACTERIA. Lisa Marx, Enrico Semeraro, Karl Lohner, Georg Pabst

441-Pos  BOARD B216
LIPOPOLYSACCHARIDE SIMULATIONS ARE HIGHLY SENSITIVE TO ION PARAMETERS AND PHOSPHATE CHARGE STATE. Amy Rice, Jeffery M. Wereszczynski

442-Pos  BOARD B217

443-Pos  BOARD B218
EFFECT OF ALCOHOL ON WATER TRANSLLOCATION IN ALL-ATOM SIMULATIONS OF OSMOTIC GRADIENT ACROSS LIPID MEMBRANES. Robert E. Coffman, David D. Busath, Dixon J. Woodbury

444-Pos  BOARD B219
THE EFFECT OF PHLORETIN ON THE THERMOTROPIC BEHAVIOR OF MEMBRANE FORMING LIPIDS. Svetlana S. Efimova, Olga S. Ostrovumova

445-Pos  BOARD B220
MORPHOLOGY AND DYNAMIC EFFECT OF ERGOSTEROL OR CHOLESTEROL ON DOMAINS PRESENT IN POPC-ESM-STEROL SLB. Arturo Galván-Hernández, Armando Antillón, Jorge Hernández-Cobos, Iván Ortega-Blake

446-Pos  BOARD B221
CHOLESTEROL-DEPENDENT BENDING ENERGIES IN BOTH LEAVES PLAY A SIGNIFICANT ROLE IN DETERMINING THE CHOLESTEROL DISTRIBUTION IN THE PLASMA MEMBRANE. David Allender, Alexander J. Sodt, Michael Schick

447-Pos  BOARD B222
EFFECT OF STEROL STRUCTURE ON ORDERED LIPID DOMAINS IN SYMMETRIC AND ASYMMETRIC MODEL MEMBRANES. Johnna R. St Clair

448-Pos  BOARD B223
INFLUENCE OF STEROL IN TERNARY MIXTURES CONTAINING SPHINGOMYELIN: AN ALL-ATOM MOLECULAR DYNAMICS STUDY. Fernando Favela-Rosas, Arturo Galván-Hernández, Jorge Hernández-Cobos, Iván Ortega-Blake

449-Pos  BOARD B224
DOES CHOLESTEROL MATTER IN THE LUNG SURFACTANT? A BIOPHYSICAL STUDY ON REALISTIC LUNG SURFACTANT LIPID MIXTURES. Agnieszka Olzynska, Pauline Delcroix, Lukasz Cwiklik

450-Pos  BOARD B225
RIGIDITY OF ASYMMETRIC AND ASYMMETRICALLY STRESSED MEMBRANES. Amirali Hossein, Markus Deserno

451-Pos  BOARD B226
EXTENDING A HIGHLY COARSE-GRAINED LIPID MODEL TO ASYMMETRIC MEMBRANES FOR MD SIMULATIONS. Samuel Foley, Markus Deserno

452-Pos  BOARD B227

453-Pos  BOARD B228
SURFACE ROUGHNESS AND PALMITOYLATION OF TRANSMEMBRANE HELICES INFLUENCE MEMBRANE STRUCTURE AND DYNAMICS. Adéla Melcrová, Marie Olšinová, Marek Cebecauer, Lukasz Cwiklik

Exocytosis and Endocytosis I
(Boards B236 - B248)

454-Pos  BOARD B229
THE ROLE OF HYDROPHOBIC MISMATCH ON TRANSMEMBRANE HELIX DIMERIZATION IN LIVING CELLS. Braynan Grau, Matti Javanainen, María Jesús García-Murria, Waldemar Kulig, Ilpo Vattulainen, Ismael Mingarro, Luis Martínez-Gil

455-Pos  BOARD B230
DEVELOPMENT AND APPLICATION OF OBICELLE BUILDER CHARMMM-GUI. Christopher J. Sohn

456-Pos  BOARD B231
NANOSCALE STRUCTURE OF LIPID BILAYERS REVEALED BY IN-SILICO AND EXPERIMENTAL SMALL ANGLE NEUTRON SCATTERING. Mitchell Dorrell, Frederick A. Heberle, John Katsaras, Edward Lyman, Alexander J. Sodt

457-Pos  BOARD B232
EFFECTS OF MONOVALENT SALT ON ETHER-LINKED PHOSPHOLIPID BILAYERS. Matthew W. Saunders, Mark Steele, Wyatt Lavigne, Sameer Varma, Sagar A. Pandit

458-Pos  BOARD B233
DISTINCT INTERACTIONS OF SODIUM AND CALCIUM IONS WITH NEUTRAL PHOSPHOLIPID MEMBRANES AND HOW TO SIMULATE THEM. Hector Martínez-Seara, Matti Javanainen, Adéla Melcrová, Piotr Jurkiewicz, Pavel Jungwirth, Aniket Magarkar, Martin Hof, Josef Melcr, Ricky Nencini, Samuli O. Ollila

459-Pos  BOARD B234
MEMSURFER: A TOOL FOR ROBUST COMPUTATION AND CHARACTERIZATION OF BILAYER MEMBRANES. Harsh Bhatia, Helgi I. Ingolfsson, Timothy S. Carpenter, Felice C. Lightstone, Peer-Timo Bremer

460-Pos  BOARD B235
LDB: LIPID DATABASE FROM THE NMRLIPIDS PROJECT. Markus S. Miettinen, NMRLipids Collaboration, O. H. Samuli Ollila

461-Pos  BOARD B236
DIFFERENTIAL ROLES OF PIONEER PROTEINS IN INITIATION AND STABILIZATION OF EARLY CLATHRIN COAT UNVEILED BY A NOVEL DISASSEMBLY BIAS SCORE. Xinxin Wang, Zhiming Chen, Sandra L. Schmid, Gaudenz M. Danuser

462-Pos  BOARD B237
TRAVEL AWARD
CELL TO CELL HETEROGENEITY OF CLATHRIN COAT DYNAMICS IS CELL CYCLE DEPENDENT. Umidahan Djakbarova, Nathan Willy, Shahrir Shahmilulu, Comert Kural

463-Pos  BOARD B238
CURVATURE GENERATION BY ENDOCYTIC CLATHRIN COATS. Joshua Ferguson, Cemal Cakez, Farah Hasan, Emanuele Cocucci, Comert Kural

464-Pos  BOARD B239
HIGH-SPEED ATOMIC FORCE MICROSCOPY (HS-AFM) OF CLATHRIN-COATED ED PITS. Grigory Tagiltsev, Simon Scheuring

465-Pos  BOARD B240
PIP2 LIPIDS AS REGULATORS OF MEMBRANE CURVATURE SENSING BY ENTH DOMAINS. Alexis Belessiottis-Richards, Molly M. Stevens, Alfredo Alexander-Katz

466-Pos  BOARD B241
CRYO-EM STUDIES OF CLASSICAL DYNAMINS TO REVEAL THE MECHANISM OF MEMBRANE FISSION. John Jimah, Abigail Stanton, Huaibin Wang, Jenny E. Hinshaw
Excitation-Contraction Coupling I
(Boards B249 - B264)

467-Pos  BOARD B242
GTP CONCENTRATION BURSTS LocALLY AT ENDOCYTIC SITES FOR DYNAMIN-DEPENDENT MEMBRANE FISSON. Aisha Azhar, Yuuta Imoto, Shigeki Watanabe

468-Pos  BOARD B243
DYNAMIN-1 DRIVES FISSION OF VESICLES WITHIN 100 MS DURING SYNAPTIC VESICLE ENDOCYTOSIS. Yuuta Imoto, Sumana Raychaudhuri, Aisha Azhar, Shigeki Watanabe

469-Pos  BOARD B244
TRAVEL AWARDEE MECHANOCHEMICAL FEEDBACK CONTROL OF DYNAMIN INDEPENDENT ENDOCYTOSIS MODULATES MEMBRANE TENSION IN ADHERENT CELLS. Joseph Jose Thottachary, Anita Joanna Kosmalska, Susav Pradhan, Parvinder Pal Singh, Xavier Trepot, Ram Vishwakarma, Pramod Pullarkat, Pere Rosa-Cusachs, Satyajit Mayor

470-Pos  BOARD B245
THE EFFECT OF ACUTE ATP DEPLETION ON SYNAPTIC VESICLE ENDOCYTOSIS AT THE ULTRASTRUCTURAL LEVEL. Quan Gan, Shigeki Watanabe

471-Pos  BOARD B246
QUANTIFYING CEACAM TARGETED LIPOSMES DELIVERY USING IMAGING FLOW CYTOMETRY. Jason P. Kuhn, Asya Smirnov, Alison Criss, Linda Columbus

472-Pos  BOARD B247
3D TRAFFICKING OF EPIDERMAL GROWTH FACTOR RECEPTOR IN LIVE CELLS. Marco A. Alfonzo Mendez, Harshad Viswasrao, Hari Shroff, Justin W. Taraska

473-Pos  BOARD B248
PHOSPHATIDYLSTERINE (PS) EXTERNALIZATION FACILITATES MEMBRANE VESICULATION THROUGH DECREASING MEMBRANE STIFFNESS. Hongyun Wang, Joseph H. Lorent, Lakshmi Ganesan, Blanca D. Diaz-Rohrer, Kandice R. Levental, Eric Malmberg, Ilya Levental

474-Pos  BOARD B249
CHRONIC EFFECTS OF ALDOSTERONE ON CARDIAC EC COUPLING AND OXIDANT STRESS. María Guadalupe Montiel-Jaen, Adrian Monsalvo-Villegas, Guillermo Avila

475-Pos  BOARD B250
UNDERLYING PHYSIOLOGICAL CONDITION ACT AS A CRITICAL FACTOR IN PHENOTYPIC REALIZATIONS OF EXCITATION COUPLING (EC) ABNORMALITIES IN TARGETED CANCER THERAPEUTIC TREATED HIPSC CARDIOMYOCYTES. Jaehee Shim

476-Pos  BOARD B251
IMPERACALCIN’S ANTIARRHYTHMIC EFFECTS ARE PRESERVED AT 37°C IN WHOLE HEARTS FROM A CPAV MOUSE MODEL. Rachael N. Thorson, Jordan Price, Yuriana Aguilar, Carmen R. Valdivia, Héctor Valdivia, Rafael Mejía-Alvarez

477-Pos  BOARD B252
IMPAIRED B-ADRENERGIC RESPONSIVENESS IN HFPEF RATS. Peter J. Kilfoil, Daniel Soetkamp, Rui Zhang, Jae Cho, Stephan Aynaszyan, Eugenio Cingolani, Eduardo Marbán, Joshua I. Goldhaber

478-Pos  BOARD B253
QUANTITATIVE IN SILICO ANALYSIS OF THE ARRHYTHMOGENIC CAMKII-SODIUM-CALCIUM-CAMKII FEEDBACK IN THE FAILING RABBIT VENTRICULAR MYOCYTE. Caroline Liu, Bence Hegyi, Haibo Ni, Donald M. Bers, Eleonora Grandi, Stefano Morotti

479-Pos  BOARD B254
LOSS OF DYSTROPHIN ALTERS CALCIUM-HANDLING MATURATION IN RESPONSE TO MICROENVIRONMENT IN HIPSC-CARDIOMYOCYTES FROM DUCHENNE MUSCULAR DYSTROPHY PATIENTS. J. Manuel Pioner, Raffaele Coppini, Lorenzo Santinii, Chiara Palandri, Flavia Lupi, Marriana Langione, Patrizia Benzoni, Sara Landi, Andrea Barbuto, Chiara Tesi, David L. Mack, Michael Regnier, Camilla Parmeggiani, Corrado Poggesi, Cecilia Ferrantini

480-Pos  BOARD B255
DUAL CALCIUM AND VOLTAGE MAPPING REVEALS DIFFERENCES IN MATURITY OF EXCITATION-CONTRACTION COUPLING IN YOUNG RATS. Luke Swift, Rafael Jaimes, Nikki G. Posnack

481-Pos  BOARD B256
IN VIVO GENE DELIVERY OF R-CEPIA1ER: A NEW APPROACH TO STUDY [CA]. HANDLING IN CARDIOMYOCYTES. Elisa Bovo, Quan Cao, Daniel Kahn, Roman Nikolaenko, Jody L. Martin, Ivana Y. Kuo, Aleksey V. Zima

482-Pos  BOARD B257
AN AUTOSOMAL DOMINANT MUTATION IN CALSEQUESTRIN 2 CAUSES CPVT WITHOUT CHANGING PROTEIN LEVELS. Matthew Wleklinski, Shan Parikh, Bjorn C. Knollmann

483-Pos  BOARD B258
BRIDGING HTS ION CHANNEL AND MYOCYOTE DATA. George O. Okeyo, Sonja Stoezl-B-Feix, Timothy Strassmair, Krisztina Juhasz, Nadine Becker, Ulrich Thomas, Leo Doerr, Markus Rapelius, Nina Brinkwirth, Claudia Haarmann, Tom Goetze, Matthias Beckler, Michael George, Andrea Brüggemann, Niels Fertig

484-Pos  BOARD B259
THE ABSENCE OF ACTIVE CREATINE KINASE SYSTEM INFLUENCES CARDIAC CALCIUM HANDLING. Martin Laasmaa, Jelena Branovets, Niina Karro, Rikke Birksdal, Marko Vendelin

485-Pos  BOARD B260
FUNCTIONAL IMPACT OF CELL CULTURE ON EXCITATION-CONTRACTION COUPLING IN CANINE MYOCYTES. Alida Cooke, Zachary Williams, Samuel Olczyk, Robert J. Goodrow, Jonathan A. Cordeiro, Jacqueline A. Treat, Gary L. Aistrup, Jonathan M. Cordeiro

486-Pos  BOARD B261
DOUBLE REGULATION OF CARDIAC EXCITATION-CONTRACTION COUPLING AND OXIDANT STRESS BY PIRFENIDONE. Adrian Monsalvo-Villegas, Guillermo Avila

487-Pos  BOARD B262
MECHANICAL LOAD EFFECTS ON CARDIAC ACTION POTENTIAL AND ARRHYTHMOGENIC CA2+ ACTIVITIES REVEALED BY A NOVEL PATCH-CLAMP IN-GEL TECHNOLOGY. Zhong Jian, Bence Hegyi, Mark Jaradeh, Zana A. Coulibaly, Yi-je Chen, Kit S. Lam, Leighton T. Izu, Ye Chen-Izu

488-Pos  BOARD B263
THE EFFECTS OF MECHANICAL LOAD ON TRANSMURAL DIFFERENCES IN MECHANO-ELECTRIC FEEDBACK IN SINGLE CARDIOMYOCYTES. Anastasia Khokhlova, Gentaro Iribe, Pavel Konovalov, Leonid Katsnelson, Olga Solovyova

489-Pos  BOARD B264
FUNCTIONAL CONNECTOME OF THE MECHANICALLY LOADED CARDIOMYOCYTE II: COORDINATED CHANGES OF SUBSYSTEMS. Zana Coulibaly, Zhong Jian, Rafael Shimkunas, Ye Chen-Izu, Leighton T. Izu
Cardiac Smooth and Skeletal Muscle Electrophysiology I
(Boards B265 - B280)

490-Pos  BOARD B265  PHARMACOLOGICAL AND ISCHEMIC PRECONDITIONING UP-REGULATE THE EXPRESSION OF SOCS IN ADULT CARDIAC MYOCYTES: ITS PHYSIOLOGICAL SIGNIFICANCE. Raúl Sampaier, Joice Thomas, Maria C. Garcia, Elba D. Carrillo, Eridani Fuentes, Wilibaldo Orea, Jorge A. Sanchez

491-Pos  BOARD B266  TRAVEL Awardee DIABETIC HYPERGLYCEMIA REGULATES POTASSIUM CHANNELS AND ARRHYTHMIAS IN THE HEART VIA AUTONOMOUS CAMKII ACTIVATION BY O-LINKED GLYCOSYLATION. Bence Hegyi, Johanna M. Borst, Austen J. Lucena, Logan R.J. Bailey, Julie Bossuyt, Donald M. Bers

492-Pos  BOARD B267  AGE DEPENDENT REGULATION OF CARDIAC SODIUM CHANNEL GAIN OF FUNCTION. Madison B. Nowak, David Ryan King, Steven Poelzeth, Seth H. Weinberg

493-Pos  BOARD B268  INHIBITION OF PROTEIN KINASE G PRESERVES PROLONGED VENTRICULAR ACTION POTENTIALS VIA IMPROVEMENT OF SLOW-ACTIVATED VOLT-AGE-DEPENDENT K+-CHANNEL CURRENTS IN AGED RAT CARDIOMYOCYTES. Belma Turan, Yusuf Olgar, Erkan Tuncay

494-Pos  BOARD B269  THE EFFECTS OF PINACIDIL, AN ATP SENSITIVE K+ CHANNEL OPENER ON CARDIAC NA+/CA2+ EXCHANGER FUNCTION IN GUINEA PIG CARDIOMYOCYTES. Keisuke Iuchi, Masao Satoome, Kanna Yamashita, Takenori Ikoma, Prottay Hasan, Yuihiro Maekawa, Yasuhide Watanabe

495-Pos  BOARD B270  EXTRACELLULAR PH BUT NOT OSMOTIC PRESSURE MODULATES CL- CURRENT IN FRESHLY-ISOLATED GUINEA PIG DETRUSOR SMOOTH MUSCLE CELLS. Viktor Yarotskyy, Georgi V. Petkov

496-Pos  BOARD B271  ENGINEERING AN OPTOGENETIC SYSTEM FOR POINT-PACING CARDIOMYOCYTES IN CULTURE. Geran Kostecki, Shivani Pandey, Renjun Zhu, Emilia Entcheva, Leslie Tung

497-Pos  BOARD B272  INTRODUCING SIMULATED IK1 INTO HUMAN IPSC-CARDIOMYOCYTES USING DYNAMIC CLAMP ON AN AUTOMATED PATCH CLAMP SYSTEM. Gang Lu, Andrásd Horváth, Nadine Becker, Alan Fabbr, Christian Grad, Michael George, Niels Fertig, Teun P. de Boer

498-Pos  BOARD B273  ESTABLISHING PATHOGENICITY OF NOVEL LQT5 VARIANTS VIA GENOMIC EDITING OF HUMAN IPSC. Dmytro O. Kryshtal, Nikhil V. Chavali, Shan S. Parikh, Lili Wang, Andrew M. Glazer, Moore B. Shoemaker, Bjorn C. Knollmann

499-Pos  BOARD B274  EFFECT OF A SMALL MOLECULE ACTIVATOR OF POTASSIUM CURRENTS ON REPOLARIZATION RESERVE IN HIPSC-CARDIOMYOCYTES. Jacqueline A. Treat, Robert J. Goodrow, Gary L. Aistrup, Corina T. Bot, Jonathan M. Cordeiro

500-Pos  BOARD B275  HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES AS EARLY-SCREENING PLATFORM OF ANTI-ARRHYTHMIC EFFECTS BY PUFAS. Alicia de la Cruz, Rene Barro-Soria, Sara I. Lin, H. Peter Larson

501-Pos  BOARD B276  OPTOGENETIC CONTROL OF RE-ENTRANT WAVES DEMONSTRATED IN HUMAN INDUCED STEM CELL DERIVED CARDIOMYOCYTES (HIPSC-CMS). B Adrienne Caldwell, Miguel Romero Sepulveda, Gil Bub, Alvin Shrier

502-Pos  BOARD B277  EFFECT OF REAL-TIME LEAK CURRENT CORRECTION ON ACTION POTENTIALS RECORDED FROM INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. Brian Panama, Mark Nowak, Brandon Franks, Leigh Korbel, Glenna Bett, Randall Rasmussen

503-Pos  BOARD B278  THE EFFECTS OF NOISE IN BIOLOGICAL EXCITABLE MEDIA. J. Miguel Romero Sepulveda, B. Adrienne Caldwell, Alvin Shrier, Gil Bub

504-Pos  BOARD B279  LONGITUDINAL CARDIOTOXIC EFFECT OF DOXORUBICIN IN A MULTICELLULAR CARDIAC MODEL. Viviana Zlochiver, Stacie Edwards, Rosy Joshi-Mukherjee

505-Pos  BOARD B280  A COMPUTATIONAL APPROACH TO PREDICT MECHANISMS OF PHENOTYPIC VARIABILITY IN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. Diyya C. Kernik, Stefano Morotti, Garg Priyanka, Joseph C. Wu, Jose Jalife, Eleonora Grandi, Colleen E. Clancy

Voltage-gated K Channels I
(Boards B281 - B298)


507-Pos  BOARD B282  DYNAMICS OF PORE DOMAIN AFFECTED BY SINGLE MUTATIONS IN S4 SEGMENT OF SHAKER POTASSIUM CHANNEL. Carlos Alberto Z. Bassetto Jr, Joao Luis Carvalho-de-Souza, Francisco Bezanilla

508-Pos  BOARD B283  SCREENING OF NEGATIVE CHARGES BY CA2+ IN THE TURRET REGION CONTROLS KV7.1 INACTIVATION GATING AND IS REGULATED BY PIP2 AND CALMODULIN. Bernard Attali, William S. Tobelaim, Maya Lipinsky, Asher S. Peretz, Daniel Yakubovich, Yoav Paas

509-Pos  BOARD B284  QUANTUM CALCULATIONS ON PROTON TRANSPORT IN THE KV1 CHANNEL VOLTAGE SENSING DOMAIN, WITH COMPARISON TO ANALOGS IN BACTERIORHODOPSIN, CYTOCHROME C, AND THE H+-PROTON CHANNEL. Alisher M. Kariev, Michael E. Green

510-Pos  BOARD B285  MOBILITY OF S3-S4 LINKER MODULATES ACTIVATION PROCESS IN SHAKER POTASSIUM CHANNELS. Joao L. Carvalho-de-Souza, Carlos Bassetto Jr, Elizabeth EL Lee, Francisco Bezanilla

511-Pos  BOARD B286  VOLTAGE DEPENDENT GATING OF BK CHANNELS - WHERE IS THE SPRING? Karl L. Magleby, Yanyan Geng

512-Pos  BOARD B287  INFLUENCE OF DIMERIC INTERACTIONS ON VOLTAGE SENSING PHOSPHATASE ACTIVITY. Vamseedhar Rayaprolu, Perrine Royal, Guillaume Sandoz, Susy C. Kohout
Ligand-gated Channels I (Boards B299 - B325)

512-Pos  BOARD B288
NATURE UTILIZATION OF THE SLOW INACTIVATION MECHANISM IN VOLTAGE GATED K’ CHANNELS. Izhar Karbat, Hagit Gueta, Tibor Szanto, Shelly Hamer-Rogotner, Orly Dym, Felix Frolow, Dalia Gordon, Gyorgy Panyi, Michael Gurevitz, Eitan Reuveny

514-Pos  BOARD B289
CALCULUM REGULATION OF KV4-KCHIP ION CHANNEL COMPLEXES. Jonathan G. Murphy, Dax A. Hoffman

515-Pos  BOARD B290
IN SILICO DETERMINATION OF OPEN CONDUCTING AND INACTIVATED ATOMISTIC K,1.1 CHANNEL MODELS. John R. D. Dawson, Kevin R. DeMarco, Borislava Bekker, Sergei Y. Noskov, Colleen E. Clancy, Igor V. Vorobyov

516-Pos  BOARD B291
THE ROLE OF HCN DOMAIN IN THE FUNCTION OF HCN CHANNELS. Zejun Wang, Sebastien Hayoz, Tatintin I. Breidz

517-Pos  BOARD B292
TRAPPING THE 2,4-K’-ION BIND ON CONFUGRION OF KCAS’S SELECTIVITY FILTER. Cholpon Tilegenova, D. Marien Cortes, Nermina Jahovic, Emily Hardy, Parameswaran Hariharan, Lan Guan, Luis G. Cuello

518-Pos  BOARD B293
QUANTUM CALCULATIONS ON THE K’ ION IN THE K,1.2 CHANNEL POOE: HYDRATION AND COSOLVATION. Alisher M. Kariev, Michael E. Green

519-Pos  BOARD B294
NOBILETIN INHIBITION OF BK CHANNELS. Liang Sun, Lorie Ann Gonzalez, Frank T. Horrigan

520-Pos  BOARD B295
LOSS OF HAX-1 MAY CONTRIBUTE TO THE NEURODEGENERATION CAUSED BY A KV3.3 MUTATION. Yalan Zhang, Luis Varela, Klara Szigeti-Buck, Tamás L. Horvath, Leonard K. Kaczmarek

521-Pos  BOARD B296
MODULATION OF KV7.1/KCNE1 CHANNEL ACTIVITY BY NAVB1. Spencer Mason Webber, Carlos Villalba-Galea

522-Pos  BOARD B297
STRUCTURAL MODELING OF THE HERG CHANNEL IN AN INACTIVATED STATE AND ITS DRUG INTERACTIONS. Jan Maly, Ayiana M. Emigh, Kevin R. DeMarco, Jon T. Sack, Igor Vorobyov, Colleen E. Clancy, Vladimir Yarov-Yarovoy

523-Pos  BOARD B298
DIFFERENTIAL REGULATION OF BK CHANNELS BY FRAGILE X MENTAL RETARDATION PROTEIN. Aravind Kshatri, Alejandro Cerrada, Roger Gimeno, Teresa Giraldes

524-Pos  BOARD B299
FORSTER RESONANCE ENERGY TRANSFER (FRET) ANALYSIS OF THE C-TERMINAL DOMAIN OF FP-TAGGED HOMOMERIC AND HETEROMERIC AMPARs UPON PHOSPHORYLATION. Linda G. Zachariassen, Anne-Sophie Hafner, Daniel Choquet, Anders S. Kristensen

525-Pos  BOARD B300
THE STRUCTURAL ARRANGEMENT AND DYNAMICS OF HOMOMERIC KAINEATE RECEPOTRS DETERMINED BY SMFRET. Douglas B. Litwin, Elisa Carrillo, Sana A. Shaikh, Vladimir Berka, Vasanthi Jayaraman

526-Pos  BOARD B301
SINGLE-MOLECULE FRET INVESTIGATIONS OF NEGATIVE COOPERATIVITY IN THE NMDA RECEPTOR. Ryan J. Durham, Nabina Paudyal, Elisa Carrillo, Vladimir Berka, Vasanthi Jayaraman

527-Pos  BOARD B302
STUDY OF A HETEROMERIC KAINEATE RECEPTOR GLUK2/K5 BY PROBING SINGLE-MOLECULE FRET. Nabina Paudyal, Douglas B. Litwin, Vladimir Berka, Elisa Carrillo Flores, Vasanthi Jayaraman

528-Pos  BOARD B303
COMPUTING FREE ENERGY OF THE MAGNESIUM BLOCK IN N-METHYL-D-ASPARTATE RECEPTORS. Christopher Kottke, Samanesh Mesbah-Vasey, Maria G. Kurnikova

529-Pos  BOARD B304
MECHANISM OF AMPA RECEPTOR MODULATION BY GAMMA-8. Elisa Carrillo Flores, Sana A. Shaikh, Vasanthi Jayaraman

530-Pos  BOARD B305
MAPPING STRUCTURAL ELEMENTS TO NMDA RECEPTOR ACTIVATION STEPS. Gary J. Iacobucci, Han Wen, Matthew Helou, Wenjun Zheng, Gabriela K. Popescu

531-Pos  BOARD B306
GATING OF SINGLE AMPA RECEPTORS CROSS-LINKED AT THE LIGAND BINDING DOMAIN LAYER. Sebastian Opfermann, Jelena Baranovic, Andrew J.R. Plested

532-Pos  BOARD B307
COMPUTATIONAL CHARACTERIZATION OF THE BINDING OF NON-COMPETITIVE INHIBITORS TO AMPA RECEPTORS. Chamali Narangoda, Serzhan Sakipov, Maria G. Kurnikova

533-Pos  BOARD B308
LIFE IN THE FAST LANE: BINDING TO GLUTAMATE RECEPTORS. Alvin Yu, Hector P. Salazar, Andrew J. Plested, Albert Y. Lau

534-Pos  BOARD B309
AGONIST AND INHIBITOR BINDING EFFECTS ON AMPA RECEPTOR INTERNAL STRUCTURE AND DYNAMICS. Serzhan Sakipov, Chamali m. Narangoda, Samanesh Mesbah, Jose C. Flores-Canales, Christopher Kottke, Maria G. Kurnikova

535-Pos  BOARD B310
SUBUNIT-DEPENDENT MODULATION OF AMPAR GATING BY AUXILIARY PROTEINS. Irene Riva, Jelena Baranovic, Anna L. Carbone, Andrew J. Plested

536-Pos  BOARD B311
SIGNAL PEPTIDE REPRESSES KAINEATE RECEPTOR GLUK1 SURFACE AND SYNAPTIC TRAFFICKING THROUGH DIRECT INTERACTION WITH AMINO-TERMINAL DOMAIN. Guifang Duan

537-Pos  BOARD B312
DEVELOPMENT OF A HIGH-THROUGHPUT CA²⁺ FLUX SCREENING ASSAY TO MONITOR CYCLIC NUCLEOTIDE-GATED CHANNEL ACTIVITY AND EVALUATE ACHROMATOPSIA DISEASE MUTANT CHANNEL FUNCTION. Jacqueline Tanaka, Cristy Almonte, Elizabeth McDuffie, Laura Jones, Dennis Colussi, Marlene Jacobson

538-Pos  BOARD B313
ALLOSTERIC GATING REARRANGEMENTS OF A PROKARYOTIC CYCLIC NUCLEOTIDE-GATED ION CHANNEL REVEALED WITH PULSED DIPOLAR SPECTROSCOPY. Eric G.B. Evans, Jacob L.W. Morgan, Stefan Stoll, William N. Zagotta

539-Pos  BOARD B314
FUNCTIONAL CHARACTERIZATION OF GATING IN A BACTERIAL CYCLIC NUCLEOTIDE-GATED CHANNEL. Jacob Morgan, Eric Evans, William Zagotta

540-Pos  BOARD B315
OPPOSING SUBUNITS INTERACT TO STABILIZE THE CLOSED STATE IN HCN2 CHANNELS. Mahesh Kondapuram, Sezin Yüksel, Tina Schwabe, Benedikt Frieg, Holger Gohlke, Ralf Schmauder, Klaus Benndorf, Jana Kusch
541-Pos  BOARD B316
UNCOUPLING THE CAMP BINDING DOMAIN FROM THE CHANNEL GATE IN HCN2 CHANNELS. Sezín Yüksel, Mahesh Kondapuram, Tina Schwabe, Michele Bonus, Holger Gohike, Ralf Schmauder, Jana Kusch, Klaus Bendendorf

542-Pos  BOARD B317
NUCLEOTIDE MODULATION OF Kᵥ channels disentangled with FRET. Michael C. Pulpjung, Samuel Usher, Natascia Vedovato, Frances Ashcroft

543-Pos  BOARD B318

544-Pos  BOARD B319
MULTIPLE NUCLEOTIDE-DEPENDENT CONFORMATIONS OF A MYCOBACTERIAL RCK DOMAIN. Alexandre G. Vouga, Katia K. Matychak, Michael E. Rockman, Lisandra Flores, Sebastian Brauchi, Brad S. Rothberg

545-Pos  BOARD B320
RCK DOMAINS CAN ASSEMBLE AS HETERO-OCTAMERS AND CONTROL DIFFERENT LIGAND-GATED CHANNELS. Rita Rocha, Celso Teixeira Duarte, Joao M. P. Jorge, Joao H. Morais Cabral

546-Pos  BOARD B321
CHARACTERIZING P2X, MUTANTS ASSOCIATED WITH PROGRESSIVE SENSORINEURAL HEARING LOSS (DFNA41). Benjamin I. George, Mufeng Li, Kenton J. Swartz

547-Pos  BOARD B322
ELUCIDATING THE FUNCTION AND CELL-SPECIFIC INTERACTIONS OF P2X MUTANT VARIANTS LINKED TO MENTAL DISORDERS. Mette Homann Poulsen, Jamie Fang, Stephan A. Pless

548-Pos  BOARD B323
TRAVEL AWARDEE STOMATIN DEPENDENT REGULATION OF THE ACID SENSING ION CHANNELS. Robert C. Klipp, John Bankston

549-Pos  BOARD B324
INDIRECT DETERMINANTS OF ION SELECTIVITY IN ACID-SENSING ION CHANNELS AND EPITHELIAL SODIUM CHANNELS. Zeshan P. Sheikh, Timothy Lynagh, Anders S. Kristensen, Stephan A. Pless

550-Pos  BOARD B325
MOLECULAR BASIS FOR ION SELECTIVITY IN HETEROMERIC ACID-SENSING ION CHANNELS. Zeshan P. Sheikh, Timothy Lynagh, Emelie Flood, Celine Boiteux, Toby W. Allen, Stephan A. Pless

551-Pos  BOARD B326
TRAVEL AWARDEE A MUTATION LINKED TO MALIGNANT HYPERTHERMIA IN THE SKELETAL CA, 1.1 CHANNEL STABILIZES THE RESTING STATE OF VOLTAGE SENSOR I AND IMPAIRS CHANNEL ACTIVATION. Nicoletta Savalli, Fenfen Wu, Marbella Quinonez, Stephen C. Cannon, Riccardo Olcese

552-Pos  BOARD B327
DESIGN AND APPLICATIONS OF THE NEW CALCIUM SENSOR GCAMP-X. Xiaodong Liu

553-Pos  BOARD B328
TRAVEL AWARDEE PROBING L-TYPE CHANNEL CALCIUM-DEPENDENT INACTIVATION – A BILOCAL MODEL OF CALMODULATION. Worawan B. Limpitkul, Joseph L. Greenstein, David T. Yue, Ivy E. Dick, Raimond L. Winslow

554-Pos  BOARD B329
CARDIAC Q, SENSOR: A TRIO OF HEMEOXYGENASE, CAMKII & CARBOXYL TAIL OF CA²⁺ CHANNEL. Jose Carlos Fernandez Morales, Naohiro Yamaguchi, Martin Morad

555-Pos  BOARD B330
TREATMENT OF CA, 1.2 CHANNELOPATHIES MAY BE COMPLICATED BY ALTERED CHANNEL INACTIVATION. Moradeke A. Bamgboye, Maria Traficante, David T. Yue, Ivy E. Dick

556-Pos  BOARD B331
POSSIBLE MECHANISM OF CALCIUM-DEPENDENT BLOCK OF L-TYPE CALCIUM CHANNEL BY GLACONTRYPHAN-M. Vyacheslav S. Korkosh, Denis B. Tikhonov, Boris S. Zhorov

557-Pos  BOARD B332
BETA AMYLOID PEPTIDE (1-42) MEDIATED DYSREGULATION OF L-TYPE VOLTAGE GATED CALCIUM CHANNEL 1.2 THROUGH THE BETA-2 ADRENERGIC RECEPTOR. Liangying Li, Jennifer Price, Boram Lee, Johannes Hell

558-Pos  BOARD B333
STRUCTURE MODELING OF CA, 1.1 REVEALS FUNCTIONAL TRANS-DOMAIN INTERACTIONS INVOLVED IN VOLTAGE SENSING. Monica L. Fernandez-Quintero, Yousra El Ghaieb, Petronel Tuluc, Campiglio Campiglio, Klaus R. Liedl, Bernhard E. Flucher

559-Pos  BOARD B334
SKELETAL γ1 SUBUNIT MODULATION OF HUMAN CA, 1.1 AND CA, 1.2 CHANNELS. Marina Angelini, Nicoletta Savalli, Taleh Yusifov, Riccardo Olcese

560-Pos  BOARD B335
A LOCAL-CONTROL MODEL OF THE GUINEA PIG VENTRICULAR MYOCYTE ALLOWS UNDERSTANDING OF FORCE-INTERVAL RELATIONS AT THE CALCIUM SPARK LEVEL. Roshan Paudel

561-Pos  BOARD B336
HOW DOES THE A, 0.1 SUBUNIT MODULATE SKELETAL CA, 1.1 CHANNELS? Federica Steccanella, Nicoletta Savalli, Taleh Yusifov, Giovanni Battista Luciani, Alan Neely, Riccardo Olcese

562-Pos  BOARD B337
AUXILIARY BETA SUBUNITS ARE NOT OBLIGATORY FOR CA, 1.3 FUNCTION. Sharon Rivas, Johanna Diaz, Henry M. Colecraft, Manu Ben Johny

563-Pos  BOARD B338
PORE-BLOCKING EFFECT OF ISOINDOLINE MDIMP ON VOLTAGE-GATED CALCIUM CHANNELS. Juan Antonio M. De La Rosa, Maricela Garcia-Castafieta, Takuya Nishigaki, Juan Carlos Gomora, Teresa Mancilla-Percino, Guillermo Avila

564-Pos  BOARD B339
TROPTONIN-T CARDIOMYOPATHY MUTATIONS DEPRESS ITS HIBITATORY PROPERTIES, IN VITRO, AND STIMULATE MYOCARDIAL DYSFUNCTION, IN VIVO. Aditi Madan, Meera C. Viswanathan, Georg Vogler, Kathleen C. Woulfe, William Schmidt, Bosco Trinh, Sineej Madathil, Cortney Wilson, Larry S. Tobacman, Anthony Cammarato

565-Pos  BOARD B340
566-Pos  BOARD B341
DIABETES WITH HEART FAILURE INCREASES METHYLGLOXAL MODIFICATIONS IN THE SARCOMERE WHICH HINDER FUNCTION. Maria Papadaki, Ronald Holeswinski, Samantha Previs, Thomas Martin, Marisa Stachowsk-ki, Amy Li, Cheavar Blair, Kenneth Campbell, Moravec Christine, Jennifer Van Eyk, Virginie Aubert, David Warshaw, Jonathan Kirk

567-Pos  BOARD B342
TROPONIN I TYROSINE PHOSPHORYLATION: NOVEL REGULATOR OF CARDIAC FUNCTION. Elizabeth A. Brundage, Vikram Shettigar, Ying-Hsi Lin, Brendan Agatista-Boyle, Mark Jeong, Mark T. Ziolo, Brandon J. Biesiadecki

568-Pos  BOARD B343
PREDICTING EFFECTS OF TROPOMYSOIN STIFFNESS ON CARDIAC MUSCLE CONTRACTION USING COARSE-GRAINED STOCHASTIC MODELING. Yasser Aboelkassem, Kimberly J. McCabe, Michael Regnier, James B. Bassingthwaite, Andrew D. McCulloch

569-Pos  BOARD B344
MOLECULAR MECHANISM OF A MUTATION IMPLICATED IN PEDIATRIC-ONSET HEART DISEASE. Samantha K. Barrick, Michael J. Greenberg

570-Pos  BOARD B345
LOSS OF BINDING BETWEEN GIANT OBSCURIN AND TITIN RESULTS IN CARDIAC MALADAPTATION. Alyssa Grogan, Li-Yen R. Hu, Christopher Ward, Arkaiterini Kontogianni-Konstantopou

571-Pos  BOARD B346
CHARACTERIZATION OF THE ALPHA-KAP FRET BIOSENSOR TO DETERMINE COMPARTMENTALIZED BETA-ADRENERGIC RECEPTOR CAMP SIGNALING IN DISTINCT INTRACELLULAR LOCATIONS. Michael W. Rudokas, John P. Post, Alejandra Sataray-Rodriguez, Chase M. Fiore, Shailesh R. Agarwal, Robert D. Harvey

572-Pos  BOARD B347
ENGINEERED THIN FILAMENT MUTATION TO INCREASE CALCIUM SENSITIVITY OF FORCE IN TROPOMYSOIN MUTATION OF DILATED CARDIOMYOPATHY. Kristina B. Kooiker, Joseph D. Powers, Lil Tardiff, Michael Regnier, Jennifer Davis, Farid Moussavi-Harami

573-Pos  BOARD B348
THE ROLE OF CARDIAC MYBP IN REGULATING FRANK STARLING RELATIONSHIPS. Laurin M. Hanft, Daniel P. Fitzsimons, Timothy A. Hacker, Richard L. Moss, Kerry S. McDonald

574-Pos  BOARD B349
RESOLVING THE ACTIN LATTICE AND IDENTIFYING THE RELATIVE POSITION OF MYBP-C’S N-TERMINUS IN CARDIAC MUSCLE USING STORM MICROSCOPY. Sheema Rahmanseresht, Kyoonghwan Lee, Jeffrey Robbins, David M. Warshaw, Roger Craig, Michael J. Previs

575-Pos  BOARD B350
MODULATION OF CALCIUM SENSITIVITY AND TWITCH CONTRACTIONS IN CARDIAC MUSCLE WITH TROPONIN-C MUTATIONS: SIMULATIONS AND EXPERIMENTS. Srboljub M. Mijailovich, Momcilo Prodanovic, Lazar Vasovic, Boban Stojanovic, Mladen Maric, Danica Prodanovic, Joseph D. Powers, Jennifer Davis, Michael A. Geeves, Michael Regnier

576-Pos  BOARD B351
Cd IG-DOMAIN OF CARDIAC MYOSIN BINDING PROTEIN-C INTERACTS WITH THE REGULATORY LIGHT CHAIN OF MYOSIN-S1 BOUND TO THE NATIVE CARDIAC THIN FILAMENT. Cristina Risi, Betty Belknap, Samantha Harris, Howard White, Vitold E. Galkin

577-Pos  BOARD B352
OBSCURIN IN HEART FAILURE. Aidan M. Ex-Willey, Heather R. Manring, Ahmet Kilic, Paul M.L. Janssen, Nathan T. Wright, Maegen A. Ackermann

578-Pos  BOARD B353
BIOPHYSICS OF SERCA2A DWORF COMPLEX AND IMPLICATIONS FOR THERAPEUTIC DESIGN. Ang Li, Daniel Stroik, Terry Schaaf, David D. Thomas

579-Pos  BOARD B354
CARDIAC OVEREXPRESSION OF HUMAN ADENYLYL CYCLASE TYPE 8 IN MICE ELICITS PHOSPHORYLATION-DEPENDENT MECHANISMS THAT PERMIT PERPETUAL HEART EXERCISE WHILE CONFEERING PROTECTION AGAINST EXCESSIVE CAMP-PKA SIGNALING. Khalid Chakir, Alexey E. Lyashkov, Kirill V. Tarasov, Ismayil Ahmet, Dongmei Yang, Yelena S. Tarasova, Daniel Riordon, Yevgeniya O. Lukyanenko, Thanh Huynh, Karel Pacak, Edward G. Lakatta

580-Pos  BOARD B355
SINGLE MOLECULE VISUALIZATION OF CARDIAC MYOSIN-BINDING PROTEIN C N-TERMINAL FRAGMENTS INTERACTING WITH REGULATED ACTIN FILAMENT: MECHANISMS OF CALCIUM SENSITIZATION. Alessio V. Inchingolo, Samantha B. Previs, Michael J. Previs, David M. Warshaw, Neil M. Kad

581-Pos  BOARD B356
REGULATION OF MYOFILAMENT CONTRACTILE FUNCTION IN HUMAN DONOR AND FAILING HEARTS. Kerry S. McDonald, Laurin M. Hanft, Joel C. Robinett, Maya E. Guglin, Kenneth S. Campbell

582-Pos  BOARD B357
TRAVEL Awardee
IN HUMAN EMBRYONIC STEM CELL-DERIVED CARDIOMYOCYTES TWITCH KINETICS, ACTION POTENTIAL PARAMETERS AND MYH-MRNA FRAC- TIONS ARE INDEPENDENT OF THE EXPRESSED MYOSIN HEAVY CHAIN ISOFORM. Natalie Weber, Kathrin Kowalski, Tim Holler, Ante Radocaj, Martin Fischer, Jeanne de la Roche, Stefan Thiemann, Kristin Schwanke, Alexander Lingk, Uwe Krumm, Birgit Piep, Ulrich Martin, Robert Zweigerdt, Bernhard Brenner, Theresia Kraft

583-Pos  BOARD B358
ADOLESCENT BINGE ALCOHOL EXPOSURE AFFECTS CARDIOVASCULAR FUNCTION. Lizhuo Ai, Edith Perez, Quan Cao, Maxime Heroux, Andrei Zlobin, AnnaDorothea Asimes, Toni R. Pak, Jonathan A. Kirk

584-Pos  BOARD B359
TRAVEL Awardee
IMPACT OF HYPERTROPHIC CARDIOMYOPATHY MUTATIONS ON THE CARDIAC MYOSIN SUPER-RELAXED STATE. Sriya Byrapuneni, Sami Chu, Joseph M. Muretta, David D. Thomas

585-Pos  BOARD B360
A NOVEL A-TROPOMYSOIN MUTATION (D55N) ASSOCIATED WITH FAMILIAL DILATED CARDIOMYOPATHY INCREASES TROPOMYSIN BINDING TO ACTIN. Xiaomei Yang, Michelle A. Recto, Xinyu Zhang, Yuejin Li, Genaro A. Ramirez Correa, William M. Schmidt, Brittney Murray, Anne M. Murphy

586-Pos  BOARD B361
ACTIN-BINDING COMPOUNDS THAT AFFECT THE WEAK-TO-STRONG ACTIN-MYOSIN INTERACTION. Osha Roopnarine, David D. Thomas

Cell Mechanics, Mechanosensing, and Motility I (Boards B362 - B387)

587-Pos  BOARD B362
RESCUE OF DNA DAMAGE AFTER CONSTRICTEO MIGRATION BY DNA REPAIR FACTOR OVEREXPRESSION. Yuntao Xia, Charlotte Pfeifer, Kuangzheng Zhu, Jerome Brianto, Dennis Discher

588-Pos  BOARD B363
SPATIAL SEGREGATION AND BOUNDARY FORMATION IN BREAST CANCER AGGREGATES. Alex Devanny, Daniel Lee, Laura Kaufman

589-Pos  BOARD B364
590-Pos  BOARD B365  
DETERMINING INTEGRIN MOLECULAR TENSION FOR THE RECRUITMENT AND THE ACTIVATION OF FOCAL ADHESION KINASE.  Anwesha Sarkar, Yingxiao Wang, Xuefeng Wang

591-Pos  BOARD B366  
CALPONIN 2 MEDIATES ACTIVATION AND MYOFIBROBLAST-LIKE DIFFERENTIATION OF HUMAN AORTIC VALVE INTERSTITIAL CELLS IN CALCIFIC AORTIC VALVE DISEASE.  Olesya Plazyo, Xue-Qun Chen, Kenneth S. Campbell, Joy Lincoln, J.-P. Jin

592-Pos  BOARD B367  
EFFECTS OF OPSONIN DENSITY ON PHAGOCYTIC BEHAVIOR OF HUMAN NEUTROPHILS.  Emmet A. Francis, Volkmar Heinrich

593-Pos  BOARD B368  
LARGE SCALE SIMULATIONS OF CELL RESOLVED TISSUE BY A CELLULAR POTTS MODEL.  Jakob Rosenbauer

594-Pos  BOARD B369  
VERSATILE AND HIGH-THROUGHPUT MICROFLUIDICS PLATFORM FOR DORSAL CELL MECHANICS.  Seungman Park, Yoon Ki Joo, Yun Chen

595-Pos  BOARD B370  
A COUPLED EXCITABLE NETWORK MODEL DICTATES CORTICAL WAVE PATTERNS AND CONTROLS CELLULAR PROTRUSION MORPHOLOGY.  Sayak Bhattacharya, Yuchuan Miao, Peter N. Devreotes, Pablo A. Iglesias

596-Pos  BOARD B371  
INVESTIGATING APICAL CONSTRICITION FORCE OF MADIN-DARBY CANINE KIDNEY CELLS BY LASER ABLATION.  Keng-hui Lin

597-Pos  BOARD B372  
A MECHANICAL CUSP CATASTROPHIMPOSES A UNIVERSAL DEVELOPMENTAL MENTAL CONSTRAINT ON THE SHAPES OF TIP-GROWING CELLS.  Enrique R. Rojas, Jacques Dumais

598-Pos  BOARD B373  
EVOLUTION OF STRESSES AT CELL-GEI INTERFACES DURING CONFINED INTERFACIAL MIGRATION.  Abhishek Mukherjee, Ramesh Singh, Wenyi Yan, Shamik Sen

599-Pos  BOARD B374  
A COMPUTATIONAL MODEL TO UNVEIL THE ROLE OF THE NUCLEUS IN 2D CELL MIGRATION.  Adrian Mourer Rosende, Hector Gomez

600-Pos  BOARD B375  
SPREADING OUT: MODELING THE PHYSICS OF CELL-SUBSTRATE INTERACTION IN CELL SPREADING AND FOCAL ADHESION EVOLUTION.  Magdalena Stolarska, Aravind R. Rammohan

601-Pos  BOARD B376  

602-Pos  BOARD B377  
COOPERATIVE TRANSPORT BY AMOEBOID CELLS: A CELLULAR TUG-OF-WAR.  Valentino Lepro, Oliver Nagel, Stefan Klumpp, Reinhard Lipowsky, Carsten Beta

603-Pos  BOARD B378  
SCUTOIDS: UNDERSTANDING THE 3D PACKING OF CURVED EPITHELIAL.  Javier Buceta, Gómez-Gálvez Pedro, Pablo Vicente-Munuera, Luis M. Escudero

604-Pos  BOARD B379  
ACTIN FLOW DEPENDENT AND INDEPENDENT FORCE TRANSMISSION IN INTEGRIN-MEDIATED ADHESIONS.  Tristan P. Driscoll, Billy Huang, Sang Joon Ahn, Abhishek Kumar, Martin Schwartz

605-Pos  BOARD B380  
MECHANICS OF CELLS - IMPLICATIONS FOR ADHESION AND MOTILITY.  Andreas Janshoff

606-Pos  BOARD B381  
SPATIOTEMPORAL ANALYSIS OF INTEGRIN MOLECULAR TENSION DURING CANCER CELL ADHESION.  Byoung Choul Kim

607-Pos  BOARD B382  
FROM NUCLEI TO ARTIFICIAL CELLS: PROBING THE MECHANICS OF MINIMAL SYSTEMS.  Giulia Bergamaschi, Andreas Biebricher, Gijs J.L. Wuite

608-Pos  BOARD B383  
HIGH THROUGHPUT MICROFLUIDIC CHARACTERIZATION OF ERYTHROCYTE SHAPES AND MECHANICAL VARIABILITY.  Felix Reichel, Johannes Mauer, Ahmad Ahsan Nawaz, Gerhard Gompper, Jochen R. Guck, Dmitry Fedosov

609-Pos  BOARD B384  
TRAVEL AWARDEE RHO MEDIATED MECHANICAL FORCE GENERATION THROUGH DECTIN-1.  Rohan Choraghe, Alen Buser, Aaron Neumann

610-Pos  BOARD B385  
A MINIMAL MECHANO-CHEMICAL MODEL FOR GROWTH CONE DYNAMICS.  Aravind R. Rammohan, Padmini Rangamani, Magdalena Stolarska

611-Pos  BOARD B386  
EXTERNAL HYDRAULIC RESISTANCE INFLUENCES CELL MOTILITY.  Yizeng Li, Debonil Maity, Sean Sun

612-Pos  BOARD B387  
DEVELOPING NUCLEASE-RESISTANT DNA-BASED TENSION SENSOR FOR CELLULAR FORCE IMAGING.  Yuanchang Zhao, Xuefeng Wang

Cytoskeletal-based Intracellular Transport
(Boards B388 - B391)

613-Pos  BOARD B388  
KINESIN-1 ACTS INDEPENDENTLY AND ALSO REGULATES KINESIN-3-DEPENDENT TRANSPORT OF SYNAPTOPHYSIN VESICLES IN MAMMALIAN AXONS.  Sandra E. Encalada

614-Pos  BOARD B389  
LATE ENDOSOMAL MEMBRANE-LIPID COMPOSITION IMPACTS CHANGE IN OXYSTEROL-BINDING PROTEIN-RELATED PROTEIN 1L’S (ORP1L) NANO-SCALE ORGANIZATION WHICH EFFECTS ORGANELLE MOTILITY.  Shreyasi Thakur, Peter Relich, Melike Lakadamyali

615-Pos  BOARD B390  
RECONSTITUTING MITOTIC CHROMOSOME MOVEMENT IN VITRO.  Sagar U. Setru, Joshua W. Shavevitz, Sabine Petry

616-Pos  BOARD B391  
LOCAL ACTIN FILAMENT GEOMETRY DICTATES HOW MYOSIN VA-MOLECULAR MOTOR TEAMS TRANSPORT LIPOSOMES THROUGH 3D ACTIN NETWORKS IN VITRO.  Sam Walcott, Andrew T. Lombardo, Kathleen M. Trybus, David M. Warshaw

Membrane Pumps, Transporters, and Exchangers I (Boards B392 - B410)

617-Pos  BOARD B392  
DRUG-BINDING TO DISTINCT SITE OF THE MULTIDRUG EXPORTER P-GLYCOPEPTIDE MONITORED BY TRYPTOPHAN FLUORESCENCE.  Ina Urbatsch, Douglas J. Swartz, Anukriti Singh, Courtney Katz, Sakshi Gautam, Joachim Weber
618-Pos
Board B393
P-Glycoprotein activity is non-monotonically modulated by transmembrane voltage. Thomas B.H. Schroder, Haiyan Liu, David Sept, Khyati Kapoor, Divya K. Rao, Suresh V. Ambudkar, Michael Mayer

619-Pos
Board B394
Conformational coupling to asymmetric ATP hydrolysis in the transport cycle of P-glycoprotein. Sepehr Dehghani-Ghahnaviyeh, Karan Kapoor, Emad Tajkhorshid

620-Pos
Board B395
Lipid-mediated inhibition mechanism of P-glycoprotein. Karan Kapoor, Shashank Pant, Emad Tajkhorshid

621-Pos
Board B396
Mechanistic study of a peptidase containing ABC-transporter, employing microsecond level molecular dynamics simulations and enhanced sampling techniques. Dylan S. Ogden, Vivek Govind Kumar, Mahmoud Moradi

622-Pos
Board B397
Electrostatic lock in the transport cycle of the multidrug resistance transporter EmrE. Josh V. Vermaas, Susan L. Rempe, Emad Tajkhorshid

623-Pos
Board B398
Spontaneous phospholipid binding to the bacterial flipase MSBA. Po-Chao Wen, Pius Padayattiy, Qinghai Zhang, Emad Tajkhorshid

624-Pos
Board B399

625-Pos
Board B400
Photocycle and abnormal activity of the dual chromophore proton pump archaeorhodopsin-4 with and without the second chromophore. Xiaoyan Ding, Chao Sun, Haolin Cui, Sijin Chen, Xinyi Dong, Xinru Meng, Ming Wang, Yanan Yang, Weimin Liu, Qixi Mi, Xiao He, Anthony Watts, Xin Zhao

626-Pos
Board B401
What is your machine really doing? Systematic exploration of alternative mechanisms as applied to transport. August George, Michael Grabe, John M. Rosenberg, Daniel M. Zuckerman

627-Pos
Board B402
Comparative analysis of pulsed EPR distance measurements in an E. coli cobalamin transporter in cells versus isolated outer membranes reveals novel conformational changes dependent on the native environment. David Nyenhuis, Thushani Nilaweera, David S. Cafiso

628-Pos
Board B403
An approach for exploring novel conformational states and membrane organization of BTUB in whole cells using EPR spectroscopy. Thushani D. Nilaweera, David A. Nyenhuis, Robert K. Nakamoto, David S. Cafiso

629-Pos
Board B404
Live-cell FRET biosensors for high-throughput screening targeting the SERCA2a/PLB complex. Dan Stroik, Samantha Yuen, Evan Kleinboehl, Kevyn Janicek, Tory Schaaf, Razvan Cornea, David Thomas

630-Pos
Board B405
The phospholamban pentamer functionally interacts with the sarcoplasmic reticulum calcium pump SERCA. John Paul Glaives, Joseph O. Primeau, L. Michel Espinoza-Fonseca, M. Joanne Lemieux, Howard S. Young

631-Pos
Board B406
Single-molecule studies of ATP binding to the sodium pump. Sushil Madhira, Don C. Lamb, Promod R. Pratap

632-Pos
Board B407
The brine shrimp’s fight against hypersaline environments requires a Na/K pump with reduced stoichiometry. Dylan J. Meyer, Victoria C. Young, Jessica Eastman, Jessica Drenth, Abigail Benson, Kerri Spontarelli, Craig Gatto, Pablo Artigas

633-Pos
Board B408
Extracellular Na+ interactions in the WT HNa'/K'ATPase alpha 3 and alternating hemiplegia of childhood. Cristina Moreno Vadillo, Miguel Holmgren

634-Pos
Board B409
Expression of the Na'/K'-ATPase subunits in adult mouse brain analyzed by single-cell RNA-seq profiling. Song Jiao, Cristina Moreno Vadillo, Miguel Holmgren

635-Pos
Board B410
The single channel configuration of Na/K pump. Pengfei Liang, Jason Mast, Wei Chen

Cellular Signaling and Metabolic Networks
(Boards B411 - B425)

636-Pos
Board B411
New tools for bacterial biofilm electrophysiology. Alan L. Gillman, Joseph W. Larkin, Edgar Gutierrez, Jordi Garcia-Ojalvo, Alex Grosman, Gurul M. Suel

637-Pos
Board B412
Predicting TGF-β-induced epithelial-mesenchymal transition using data assimilation. Mario J. Mendez, Matthew J. Hoffman, Elizabeth M. Cherry, Christopher A. Lemmon, Seth H. Weinberg

638-Pos
Board B413
Signalling growth through lipid kinases. Sanjeev Sharma, Swarna Mathre, Visvanathan Ramya, Dhananjay Shinde, Padinjat Raghu

639-Pos
Board B414
Dynamine-related protein 1 (DRP1) contributes to hypertensive cardiac hypertrophy and fibrosis in vivo and in vitro model. Prottoy Hasan

640-Pos
Board B415
Quantification of dynamic glucokinase regulation in islets using a homotransfer FRET reporter. Sheng Huey Wong

641-Pos
Board B416

642-Pos
Board B417
Toward a multiscalar model of valvular interstitial cells: an integrin-mediated mechanotransduction module. Daniel P. Howsmon, Michael S. Sacks

643-Pos
Board B418
Characterization of the contribution of retinoic acid receptor isoforms in the suppression of cardiac hypertrophy. Lauren Parker, Ni Yang, Brian O'Rourke, D. Brian Foster
Cusp artifacts in high order superresolution optical fluctuation imaging (SOFI). Xiuyi Yi, Shimon Weiss
761-Pos  Board B446  
SINGLE MOLECULE MEASUREMENTS BASED ON INFORMATION THEORY. Sheng Liu, Fang Huang

762-Pos  Board B447  
HUMAN STEM CELL STRUCTURES MEASURED WITH CONCENTRATION-CALIBRATED SUPER-RESOLUTION MICROSCOPY. Derek Thirstrup, Winfried Wiegrebe, Allen Institute for Cell Science Team

763-Pos  Board B448  
NUCLEAR PORES AS UNIVERSAL REFERENCE STANDARDS FOR QUANTITATIVE MICROSCOPY. Jervis V. Thevathasan, Ulf Matti, Maurice Kahnewald, Sudheer Kumar Peneti, Bianca Nijmeijer, Moritz Kuebler, Jan Ellenberg, Jonas Ries

764-Pos  Board B449  
FLUORESCENCE LIFETIME IMAGING MICROSCOPY USING COMPRESSED PHASORS. Ryan A. Colyer, Sarah Grant, Sarah Eplett

765-Pos  Board B450  

766-Pos  Board B451  
AUTOMATING LOCALIZATION MICROSCOPY. Joran Deschamps, Yiming Li, Markus Mund, Jonas Ries

767-Pos  Board B452  
TRAVEL AWARDEE  
QUANTITATIVE AND MOTION-CORRECTED SUPER-RESOLUTION IMAGING OF ENDOSOME DYNAMICS IN LIVING CELLS. Elias M. Puchner, Santosh Adhikari

Single-Molecule Spectroscopy I  
(Boards B453 - B466)

768-Pos  Board B453  
TIME-TAGGED SINGLE PHOTON COUNTING EXAMINATION OF ROTATION OF RECEPTOR-BOUND QUANTUM DOTS. Dongmei Zhang, Jason Pace, Deborah A. Roess, B. George Barisas

769-Pos  Board B454  
STABLE OFF-PATH STRUCTURES IN THE FOLDING DYNAMICS OF TWO CONSECUTIVE TELOMERIC DNA G-QUADRUPLEXES. Emil L. Kristoffersen, Victoria Birkedal

770-Pos  Board B455  
TRAVEL AWARDEE  
RIGIDIFICATION OF THE E. COLI CYTOPLASM BY THE HUMAN ANTIMICROBIAL PEPTIDE LL-37 REVEALED BY SUPERRESOLUTION FLUORESCENCE MICROSCOPY. Yanyu Zhu, Sonisilpa Mohapatra, James C. Weisshaar

771-Pos  Board B456  
A DIVISIVE SEGMENTATION AND CLUSTERING SCHEME FOR ACCELERATED AND IMPROVED SINGLE-MOLECULE TIME SERIES IDEALIZATION (DISC). David S. White, Marcel P. Goldschen-Ohm, Randall H. Goldsmith, Baron Chanda

772-Pos  Board B457  
THREE-COLOR SINGLE-MOLECULE FRET AND FLUORESCENCE LIFETIME ANALYSIS OF FAST PROTEIN FOLDING. Jaehyun Yoo, John M. Louis, Irina V. Gopich, Hoi Sung Chung

773-Pos  Board B458  
INVESTIGATION OF SINGLE PARTICLE TRACKING PERFORMANCE BY DIFFERENT PARTICLE FILTER AND SMOOTHER ALGORITHMS. Ye Lin, Sean B. Andersson

774-Pos  Board B459  
BAYESIAN APPROACH TO FLUORESCENCE CORRELATION SPECTROSCOPY DATA ANALYSIS - THE DANGER OF LEAST-SQUARE FITTING. Helmut H. Strey
DETERMINING FREE ENERGY DIFFERENCES THROUGH NON-LINEAR MORPHING. Martin Reinhardt, Helmut Grubmuller

EXPLORING OPTIMAL RESOURCE ALLOCATION FOR WEIGHTED ENSEMBLE RESAMPLING OF RARE EVENTS. Jeremy T. Copperman, David Aristoff, Daniel M. Zuckerman

NEW TOOLS FOR CONFORMATIONAL AND BINDING FREE ENERGY SIMULATIONS. Giacomo Fiorin, Grace Brannigan, Jérôme Hénin

OPTIMIZED PARAMETERS FOR THE DRUDE POLARIZABLE FORCE FIELD FOR SMALL ORGANIC MOLECULES. Chetan Rupakheti, Alexander D. MacKerell, Benoit Roux


COMPARISON OF FUNCTIONAL GROUP AFFINITY PATTERNS FROM THE ADDITIVE VERSUS DRUDE POLARIZABLE FORCE FIELDS FROM THE SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS) APPROACH. Himanshu Goel, Delin Sun Sun, Wenbo Yu, Alexander D. MacKerell

GROMAPS: A GROMACS-BASED TOOLSET TO ANALYSE DENSITY MAPS DERIVED FROM MOLECULAR DYNAMICS SIMULATIONS. Rodolfo Briones, Christian Blau, Carsten Kutzner, Bert L. de Groot, Camilo Aponte-Santamaría

EXPLORING HYDROGEN BOND GEOMETRY IN RNA WITH F-SAPT. Louis G. Smith, Chapin E. Cavender, Alan Grossfield, David H. Mathews

MARKOV MODELING OF PROTEIN DIFFUSION ON TELOMERIC DNA. Milosz Wieczor, Antoni Marciniak, Jacek Czub

CAPTURING THE COOPERATIVITY OF BACKBONE HYDROGEN BONDING WITH POLARIZABLE FORCE FIELDS. Jing Huang

WATERFALL SAMPLING: AN ONLINE SEQUENTIAL MONTE CARLO STRATEGY FOR CONFORMATIONAL SAMPLING OF BIOMOLECULAR SYSTEMS. Mir Ishruna Muniyat, Justin L. MacCallum

CHARTING THE HYDROPHOBIC EFFECT: COMPUTING SPATIALLY RESOLVED ABSOLUTE HYDRATION SHELL ENTROPIES. Leonard P. Heinz, Helmut Grubmuller

HAMILTONIAN REPLICA EXCHANGE FOR ENHANCED SAMPLING OF THE CONFORMATIONAL LANDSCAPE FOR INTRINSICALLY DISORDERED PROTEINS. Justin SH Kim, Sarah Rauscher

PROTEIN-WATER AND SOLVENT-MEDIATED INTERACTIONS IN MULTISCALE SIMULATIONS. Matthias Heyden

CONNECTIVITY, DYNAMICS AND BIOMOLECULAR ENERGY TRANS-PORT. Justin Elenewski, Kirill Velizhanin, Michael Zwolak
LUMINESCENT MOLECULAR SENSORS FOR THE SELECTIVE DETECTION OF NEURODEGENERATIVE DISEASE PROTEIN PATHOLOGY IN CSF. 
Florencia Monge, Adeline Fanni, Shanya Jiang, David G. Whitten, Kiran Bhaskar, Eva Y. Chi

TRAVEL Awardee NOVEL SENSORS FOR DETECTING ALZHEIMER’S DISEASE RELATED TAU PROTEIN AGGREGATES. Salomon L. Alires, Florencia A. Monge, David G. Whitten, Eva Y. Chi

ELECTRIC FIELD AND IONIC STRENGTH DEPENDENT TRANSLOCATION OF TAU PROTEIN THROUGH SOLID-STATE NANOPORE. Mitu C. Acharjee, Haopeng Li, Jiali Li

A-SYNUCLEIN INTERACTION WITH AND TRANSLOCATION BY THE MSPA PORIN. Philip A. Gurnev, David P. Hoogerheide, Jens H. Gundlach, Andrew H. Laszlo, Sergey M. Bezrukov

NANOPORE SPECTROSCOPY: A SINGLE MOLECULE APPROACH TO ANALYZE PROTEIN STRUCTURAL DYNAMICS. Min Chen, Xin Li

NANOZYME MODIFIED ELECTROCHEMICAL BIOSENSORS AS RAPID SCREENING TOOLS FOR BIOMOLECULES. Monica Florescu, Melinda David, Adrian Serban

TEMPERATURE STUDIES REVEAL THE ROLES OF ENTROPY AND ENTHALPY IN POLYMER-PORIN INTERACTIONS. Joseph W. Robertson, Joseph Reiner, Christopher Angevine, Nuwan Kothalawala, Amala Dass

IMPROVED BILAYER MEMBRANE STABILITY FOR NANOPORE SENSING APPLICATIONS. Xinqi Kang, Mohammad Amin Aibakhsh, Meni Wanunu

LABEL-FREE DETECTION OF SOLO OLIGONUCLEOTIDE LESION BASED ON SITE-DIRECT MUTAGENIZED AEROLYSIN NANOPORE. Jiajun Wang, Meng- yin Li, Jie Yang, Xue-yuan Wu, Jin Huang, Yi-lun Ying, Yi-tao Long

KINETIC ANALYSIS OF SINGLE MOLECULE ELECTRODIFFUSION IN A BIOLOGICAL NANOPORE WITH TWO BINDING SITES. Norbert Ankri, Mordjane Boukhet, Gerhard Baaken, Murugappan Muthukumar, Jan C. Behrends

REAL- TIME NANOPORE COUTING OF AMPLICONS FOR ULTRASENSITIVE AND LABEL- FREE SEQUENCE -SPECIFIC DNA DETECTION. Zifan Tang, Weihua Guan

dna based nanopore sensing. Haichen Wu

EMBEDDING SINGLE METAL IONS WITHIN A BIOLOGICAL NANOPORE FOR AMPLIFIED ION AND SSDNA SENSING. Jiao Cao, Shuo Huang

HIGH-THROUGHPUT OPTICAL SENSING FROM IMMOBILIZED BIOLOGICAL NANOPORES IN A MICRO-BILAYER ARRAY. Yuqin Wang, Shuo Huang

MICROSCOPIC IMAGING OF RESTRICTION ENGINEERED BIOLOGICAL NANOPORES FOR HIGHLY SPECIFIC SPOTTING OF EPIGENETIC MARKERS. Shuo Huang

Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, March 3, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S188, in the Exhibit Hall. S board numbers before each title indicate where the posters will be assigned during the Sunday evening competition.

The posters will also be presented during the regular daily sessions as programmed below. Note that only the applicant’s name is listed. Please refer to the full abstract for all authors. Please also note that only applicants and judges will be allowed in S poster area on Sunday evening.

Bioenergetics, Mitochondria & Metabolism

Board S1
REGULATION OF PROTON TRANSPORT IN TETRAMERIC UCP2 BY AN INTRAMOLECULAR SALT-BRIDGE NETWORK.
Afshan Ardalan (271-Pos / B46)

Board S2
STRUCTURAL REARRANGEMENTS IN THE C-TERMINAL DOMAIN HOMOLOG OF ORANGE CAROTENOID PROTEIN ARE CRUCIAL FOR CAROTENOID TRANSFER.
Dvir Harris (237-Pos / B12)

Board S3
MITOCHONDRIAL MEMBRANE POTENTIAL HETEROGENEITY IN CANCER CELLS IS INDEPENDENT OF THE CELL CYCLE AND INFLUENCES RESPONSE TO HYPERPOLARIZING AGENTS.
Morgan E. Morris (1339-Pos / B441)

Board S4
MINIMIZING THE NUMBER OF MEASUREMENTS REQUIRED TO PREDICT A PHENOTYPIC LANDSCAPE IN BACTERIAL FOLATE METABOLISM.
Andrew D. Mathis (647-Pos / B422)

Board S5
MITOCHONDRIAL MEMBRANE POTENTIAL OSCILLATIONS PERSIST DURING REPERFUSION AFTER ISCHEMIA IN MCU KNOCKOUT CARDIOMYOCYTES.
Deepthi Ashok (1328-Pos / B430)

Board S6
MODELING THE INSERTION OF HEXOKINASE IN THE MITOCHONDRIAL OUTER MEMBRANE AND ITS COMPLEX FORMATION WITH VDAC.
Nandan Haloi (1319-Pos / B421)

Board S7
MODULATION OF ORIENTATIONAL DYNAMICS OF EXCITATORY AMINO ACID TRANSPORTER-1 BY CHOLESTEROL.
Shashank Pant (2758-Pos / B430)

Bioengineering

Board S8
UNDERSTANDING CARDIAC TUBE FORMATION IN DEVELOPING DROSOPHILA EMBRYOS USING LIGHT SHEET MICROSCOPY AND CARDIAC DRUG SCREENING.
Christopher McFaul (2162-Pos / B525)

Board S9
LUMINESCENT MOLECULAR SENSORS FOR THE SELECTIVE DETECTION OF NEURODEGENERATIVE DISEASE PROTEIN PATHOLOGY IN CSF.
Florence Monge (727-Pos / B502)
Biopolymers in vivo

Board S33
INVESTIGATING THE KEY STRUCTURAL ELEMENTS THAT CONFER SPECIFICITY TO THE ACETYLTRANSFERASES ENZYME FAMILY.
Sara K. Lowe (338-Pos / B113)

Cell Biophysics

Board S34
DEVELOPMENT OF AN ATOMIC STRUCTURE OF MYOSIN BOUND CARDIAC THIN FILAMENT AND FREE ENERGY DETERMINATION OF THE CLOSE TO OPEN TRANSITION.
Anthony Baldo (1297-Pos / B399)

Board S35
DISULFIDE BONDS MODULATE LYSOZYME FOLDING PATHWAYS.
Aswathy Muttathukattil Narayanan (945-Pos / B47)

Board S36
IDENTIFYING INTERMEDIATE STATES IN PRION PROTEIN FOLDING PATHWAY: A POSSIBLE PRECURSOR TO THE MISFOLDED STATE?
Balaka Mondal (944-Pos / B46)

Board S37
QUANTIFYING DNA ELASTICITY IN THE COURSE OF BINDING OF SMALL MOLECULE TO DNA.
Anurag Singh (1774-Pos / B137)

Board S38
THE EARLIEST STAGES OF A PROTEIN’S LIFE INFLUENCES ITS LONG-TERM SOLUBILITY AND STRUCTURAL ACCURACY.
Matthew D. Dalphin (949-Pos / B51)

Board S39
RIGIDIFICATION OF THE E. COLI CYTOPLASM BY THE HUMAN ANTIMICROBIAL PEPTIDE LL-37 REVEALED BY SUPERRESOLUTION FLUORESCENCE MICROSCOPY:
Yanyu Zhu (680-Pos / B455)
Board S44
USING SCAM TO INVESTIGATE RECONFIGURATION OF MOLECULAR DETERMINANTS IN D1-S6 DURING SLOW INACTIVATION OF hNAV1.4.
Jon M. Beard (1926-Pos / B289)

Board S45
STRUCTURAL ANALYSIS OF MOUSE PLATELETS USING SERIAL BLOCK-FACE SCANNING ELECTRON MICROSCOPY.
Kenny Ling (2845-Pos / B517)

Board S46
SIGNALLING GROWTH THROUGH LIPID KINASES.
Sanjeev Sharma (638-Pos / B413)

Board S47
METABOLIC-RESPONSE ASSESSMENT OF MURINE BREAST CANCER CELLS IN 2D AND 3D CULTURES USING TWO-PHOTON FLUORESCENCE LIFETIME IMAGING MICROSCOPY OF INTRINSIC NAD(P)H.
Anh Cong (2079-Pos / B442)

Board S48
A MEMBRANE-ACTIVATED, UNIVERSAL T-CELL RECEPTOR AGONIST.
Kiera Wilhelm (2631-Pos / B303)

Cryo-EM
Board S49
MULTI-STEP 2D PROTEIN CRYSTALLIZATION VIA STRUCTURAL CHANGES WITHIN AN ORDERED LATTICE.
Jonathan Herrmann (963-Pos / B65)

Board S50
BIOPHYSICAL CHARACTERIZATION OF FULL LENGTH EXOG A HUMAN MITOCHONDRIAL INNER MEMBRANE NUCLEASE.
Andrzej B. Dubiel (384-Pos / B159)

Board S51
INVESTIGATING THE STRUCTURAL MECHANISM OF THE STALLED BACTERIAL RIBOSOME BOUND TO A DRUG THAT TARGETS TRANS-TRANSLATION.
Atousa Mehrani (2848-Pos / B520)

Board S52
THE STRUCTURAL BASIS FOR RELEASE FACTOR ACTIVATION DURING TRANSLATION TERMINATION REVEALED BY TIME-RESOLVED CRYOGENIC ELECTRON MICROSCOPY.
Ziao Fu (2853-Pos / B525)

Exocytosis & Endocytosis
Board S53
RATIONAL TARGETING AND TESTING OF MYCOBACTERIAL L-ASPARAGINASE, ESSENTIAL FOR SURVIVAL OF MTB INSIDE HOSTS.
Arti Kataria (1643-Pos / B6)

Board S55
MECHANOCHEMICAL FEEDBACK CONTROL OF DYNAMIN INDEPENDENT ENDOCYTOSIS MODULATES MEMBRANE TENSION IN ADHERENT CELLS.
Joseph J. Thottacherry (469-Pos / B244)

Board S56
SPATIOTEMPORAL DYNAMICS OF RON AND EGFR CROSSTALK AT THE PLASMA MEMBRANE.
Justine Keth (1152-Pos / B254)

Intrinsically Disordered Proteins
Board S57
A RECEPTOR-INDEPENDENT LIPID MEMBRANE-MEDIATED PATHWAY FOR SEROTONIN ACTION.
Simli Dey (2102-Pos / B465)

Board S58
DIVULGING CHARACTERISTIC FEATURES OF THE NOVEL α-SYNUCLEIN OLIGOMERS AUGMENTING PARKINSON’S DISEASE.
Animesh Mondal (915-Pos / B17)

Board S59
THE INTERPLAY OF STRUCTURAL AND CELLULAR BIOPHYSICS CONTROLS THE CLUSTERING OF MULTIVALENT SIGNALING MOLECULES: THE NEPHRIN-NCK-NWASP SYSTEM.
Aniruddha Chattaraj (1165-Pos / B267)

Board S60
COMPARISON OF FORCEFIELDS IN THE PREDICTION OF INTRINSIC RESIDUE-SPECIFIC BACKBONE DIHEDRAL ANGLE DISTRIBUTIONS OF BLOCKED AMINO ACIDS.
Jared M. Lalmansingh (720-Pos / B495)

Board S61
WHAT MODULATES THE USP7 FUNCTION…A DYNAMIC POCKET OR INTER-REGULATORY DOMAINS?
Mitul Srivastava (1686-Pos / B49)

Board S62
INSIGHT INTO AMYLOID INTERACTIONS: MOLECULAR DYNAMICS SIMULATIONS OF MODEL PEPTIDE FRAGMENTS.
Nicholas A. Cramer (2159-Pos / B522)

Board S63
BIOPHYSICAL CHARACTERIZATION OF DIFFERENCES IN DOMAIN-DOMAIN INTERACTIONS BETWEEN THE APOLIPOPROTEIN E4 AND E3.
Subhrajyoti Dolai

Board S64
CHARACTERISTICS OF THE BINDING INTERACTION BETWEEN PDZ1 AND SPOP.
Grace A. Usher (993-Pos / B95)

Board S65
STRUCTURAL OPTIMIZATION OF α-SYNUCLEIN FIBRIL GROWTH INHIBITORS.
Kseniia Afitska (2438-Pos / B110)

Board S66
TIGHT BINDING OF NATURAL POLYPHENOLS TO THE INTRINSICALLY DISORDERED MAMMALIAN HIGH MOBILITY GROUP PROTEIN AT-HOOK 2.
Linjia Su (2386-Pos / B58)

Board S67
MEASURES ADAPTED FROM INFORMATION THEORY AND ENERGY LANDSCAPE THEORY FOR QUANTIFYING SEQUENCE-TO-CONFORMATION RELATIONSHIPS OF INTRINSICALLY DISORDERED REGIONS.
Megan Cohan (992-Pos / B94)

Board S68
BINDING SPECIFICITY OF E. COLI SSB C-TERMINAL TAILS TO SIPS.
Min Kyung Shinn (391-Pos / B166)
Mechanobiology

Board S70
UNFOLDING TRANSITIONS AND INTERDOMAIN COUPLING IN HUMAN DYSTROPHIN SPECTRIN REPEATS.
Lisa Ito, Madison Nohner (1681-Pos / B44)

Board S71
THE HCM-CAUSING Y235S CMYBPC MUTATION ACCELERATES CONTRACTILE FUNCTION BY ALTERING C1 DOMAIN STRUCTURE.
Chang Yoon Doh (1312-Pos / B414)

Board S72
PHYSICAL MODEL FOR CELL MIGRATION GUIDED BY ELASTIC PROPERTIES OF THE SUBSTRATE.
Susana Márquez (2714-Pos / B386)

Membrane Biophysics

Board S74
PHARMACOLOGICAL CHARACTERIZATION OF THE ZINC-ACTIVATED CHANNEL: A CYS-LOOP RECEPTOR GATED BY ZN2+, CU2+ AND PROTONS.
Nawid Madjroh (1956-Pos / B319)

Board S75
PHOSPHATIDYLINOSITOL INHIBITS TRPV1 VIA ITS VANILLOID BINDING SITE.
Aysenur T. Yazici (2660-Pos / B332)

Board S76
STRUCTURE-ACTIVITY RELATIONSHIP OF POTENT PHOTO-SWITCHABLE NEUROMUSCULAR INHIBITORS.
Clara Herrera-Arozamena (1951-Pos / B311)

Board S77
PROTEIN-LIPID INTERACTIONS REGULATE ATG3 ACTIVITY IN AUTOPHAGY.
Erin R. Tyndall (2568-Pos / B240)

Board S78
SINGLE-MOLECULE FRET INVESTIGATIONS OF NEGATIVE COOPERATIVITY IN THE NMDA RECEPTOR.
Ryan J. Durham (526-Pos / B301)

Board S79
EFFECTS OF CHOLESTEROL ON FENGYCIN, AN ANTIMICROBIAL LIPOPEPTIDE USING WEIGHTED ENSEMBLE PATH SAMPLING METHOD.
Sreyoshi Sur (427-Pos / B202)

Board S80
STRUCTURE MEETS FUNCTION: AGONIST ACTIONS AT NEUROTTRANSMITTER BINDING SITES.
Sushree Tripathy (1948-Pos / B311)

Board S81
ALLOSTERIC MODULATION OF CA2+-ACTIVATED CL-CHANNEL TMEM16A BY PIP2 AND CAMKII.
Woori Ko (1103-Pos / B205)

Board S82
MYOCARDIAL RAD DELETION MODULATES L-TYPE CALCIUM CHANNEL CURRENT.
Brooke Ahern (1177-Pos / B279)

Board S83
PIP2 POTENTIATES THE CA2+-ACTIVATED CL-CHANNEL TMEM16A IN XENOPUS LAEVIS OOCYTES.
Maiwase Tembo (1104-Pos / B206)

Board S84
DYNAMIC ACTIN MEDIATED NANOCLUSTERING OF CD44 REGULATES ITS MESO-SCALE ORGANIZATION AT THE PLASMA MEMBRANE.
Parijat Sil (1023-Pos / B125)

Board S85
IMPLICIT OF CHOLESTEROL IN REGULATING THE MEMBRANE-INTERACTION MECHANISM OF VIBRIO CHOLERAE CYTOLYSIN, A BETA-BARREL PORE-FORMING TOXIN.
Reema Kathuria (1106-Pos / B208)

Board S86
LIPID NANOTUBES: A POSSIBLE ROUTE TO PROTOCELL FORMATION AND GROWTH.
Elif S. Koksal (1081-Pos / B183)

Board S87
BAYESIAN ESTIMATION OF THE DIFFUSION CONSTANT FOR MEMBRANE PROTEIN DYNAMICS IN AN ARBITRARY LANDSCAPE OF OBSTRUCTING BOUNDARIES.
Hanieh Mazloom-Farsibaf (1710-Pos / B73)

Board S88
EFFECTS OF DC MAGNETIC FIELDS ON MAGNETOLIPOSOMES.
Raymundo Rodríguez López (1802-Pos / B165)

Membrane Structure & Function

Board S89
EXPLORING (PROTEO-) LIPOSOMES FOR MASS SPECTROMETRY.
Melissa Frick (273-Pos / B48)

Board S90
MEMBRANES MATTER: PREDICTING DRUG TOXICITY.
R Lea Sanford (2536-Pos / B208)

Board S91
MECHANISM OF ACTION OF PH-TRIGGERED, MEMBRANE ACTIVE PEPTIDES.
Sarah Y. Kim (419-Pos / B194)

Board S92
THE ROLE OF ERGOSTEROL IN PHASE SEPARATION OF YEAST VACUOLE MEMBRANES.
Chantelle Leveille (396-Pos / B171)
Board S93
PREDICTING SPECTRAL PROPERTIES OF POLARITY SENSITIVE DYES WITH QM/MM SIMULATION.
Swapnil Baral (1111-Pos / B213)

Board S94
EFFECT OF BIOPOLYMER TETHERS ON ANTIMICROBIAL PEPTIDE ACTIVITY IN BIOMEMBRANES.
Fathima T. Doole (428-Pos / B203)

Board S95
INCORPORATING PROTEINS INTO GEOMETRICALLY COMPLEX, CELL-SCALE MEMBRANE MODELS FOR MOLECULAR DYNAMICS SIMULATIONS.
Noah Trebesch (1413-Pos / B515)

Board S96
AMINO ACIDS BIND TO AND INFLUENCE THE STRUCTURE OF FATTY ACID VESICLES.
Zachary R. Cohen (2527-Pos / B199)

Board S97
SINGLE-LIPID SORTING AND DYNAMICS AT MEMBRANE CURVATURE SITES: THE EFFECTS OF FLUORESCENCE LABELING, COMPOSITION, PHASE, AND TEMPERATURE.
Xinxin Woodward (1110-Pos / B212)

Board S98
MECHANISM OF EPHA2 DIMERIZATION IN RESPONSE TO MONOMERIC LIGANDS.
Elmer A. Zapata-Mercado (1155-Pos / B257)

Board S99
HUMAN PICOBIRNAVIRUS CAPSIDS AS POTENTIAL NANOCARRIERS FOR DRUG DELIVERY WITHIN PULMONARY SURFACTANT CONTEXTS.
Cristina García Mouton (1835-Pos / B198)

Board S100
CHARACTERIZING P2X2 MUTANTS ASSOCIATED WITH PROGRESSIVE SENSORINEURAL HEARING LOSS (DFNA41).
Benjamin I. George (546-Pos / B321)

Board S101
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Alexandre G. Vouga (2691-Pos / B363)

Board S102
MICROSECOND KINETICS OF ION TRANSPORT AND MEMBRANE INTERFACE BINDING IN ELECTRICALLY STRESSED LIPID BILAYERS.
Federica Castellani (2834-Pos / B506)

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Han Wen (2584-Pos / B256)

Board S104
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Pengyu Zheng (1206-Pos / B308)

Board S105
FUNCTIONAL CHARACTERIZATIONS OF PURIFIED CTR COPPER TRANSporter PROTEINS REVEAL A NOVEL MECHANISM OF ION SELECTIVITY AND TRANSPORT.
Kehan Chen (2741-Pos / B413)

Board S106
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Nara L. Chon (1971-Pos / B334)

Board S107
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Sayane Shome (1719-Pos / B82)

Board S108
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Williams E. Miranda (506-Pos / B281)

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CLC CONFORMATIONAL LANDSCAPE AS STUDIED BY SMFRET.
Ayush Krishnamoorti (2751-Pos / B423)

Board S110
PROBING AND DIFFERENTIATING THE SHELL AND ENZYME PROTEINS OF THE BACTERIAL MICROCOMPARTMENT BY THERMAL SHIFT ASSAY.
Naimat Kalim Bari

Molecular Biophysics

Board S111
SPECTRAL ASSIGNMENT OF LYSOZYME COLLECTIVE VIBRATIONS.
Yanting Deng (2797-Pos / B469)

Board S112
IMPAIRED LIGAND REGULATION OF NATIVE RYR2 CHANNELS IN THE CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA MUTATION, RYR2-V2475F(+/-).
Abigail D. Wilson (1887-Pos / B250)

Board S113
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Ashley Simpson (324-Pos / B99)

Board S114
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Hao-Che Wang (1042-Pos / B144)

Board S115
CYTOTOXICITY OF VARIOUS GOLD NANOPARTICLES - AN IN VITRO STUDY.
Marika Musielak (2092-Pos / B455)

Board S116
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Soyeon Kim (1011-Pos / B113)

Board S117
GPU ACCELERATED COMPUTATION OF ISOTROPIC CHEMICAL SHIFTS OFFERS NEW DIMENSION OF STRUCTURE REFINEMENT IN LARGESCALE MOLECULAR DYNAMICS SIMULATION.
Alexander J. Bryer (2826-Pos / B498)
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PH-DEPENDENT PROPERTIES OF IONIZABLE RESIDUES IN THE HYDROPHOBIC INTERIOR OF A PROTEIN.
Ankita Sarkar (2356-Pos / B28)

Board S119
A NEW DNA INVERSION MECHANISM: RECOMBINATION OF THE DNA FOLDBACK INTERCOIL STRUCTURE.
Byung Ho Lee (382-Pos / B157)

Board S120
CALIBRATION-INDEPENDENT ATOMIC FORCE MICROSCOPY.
Carmen Suay Corredera (2112-Pos / B475)

Board S121
MOLECULAR DYNAMICS INVESTIGATION OF THE PHYSICAL BINDING OF THE NNK DIAZONIUM ION TO EXON 5 OF TP53.
David Wahl (2160-Pos / B523)

Board S122
EXAMINING THE REFOLDING OF PERTURBED PROTEIN STRUCTURE INTERMEDIATES USING VARIOUS MOLECULAR MECHANICS FORCE FIELDS.
David Wang (2136-Pos / B499)

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Joanna Maksim (2213-Pos / B576)

Board S124
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Joanna P. Patalas (2196-Pos / B559)

Board S125
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Karolina Rucinska (2212-Pos / B575)

Board S126
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Shahla H. Partowmah (305-Pos / B80)

Board S127
THE STRUCTURAL ARRANGEMENT AND DYNAMICS OF HOMOMERIC KAINATE RECEPTORS DETERMINED BY SMFRET.
Douglas B. Litwin (525-Pos / B300)

Motility & Cytoskeleton

Board S128
DIFFERENTIAL ACTIN BINDING AFFINITY LEADS TO PROTEIN SORTING IN A RECONSTITUTED ACTIVE COMPOSITE LAYER.
Abrar A. Bhat (1085-Pos / B187)

Board S129
FLEXURAL RIGIDITY OF MICROTUBULES MEASURED WITH NANOMETER-LEVEL LOCALIZATION PRECISION.
Hang Zhou (2015-Pos / B378)

Board S130
IMPACT OF HUMAN BETA-CARDIAC MYOSIN MUTATION IMPLICATED IN BOTH HYPERTROPHIC AND DILATED CARDIOMYOPATHY.
Wanjian Tang (1300-Pos / B402)

Board S131
TUNING OF MEMBRANE SPHINGOLIPID CONTENT INFLUENCES THE LINKS OF OUTER-LEAFLET MEMBRANE LIPID DYNAMICS TO CHOLESTEROL AND CYTOSKELETON.
Anjali Gupta (1077-Pos / B179)

Board S132
PROBING THE CHAPERONE ACTIVITY OF ERYTHROID SPECTRIN.
Dipayan Bose (946-Pos / B48)

Board S133
ONE NANOMETER PRECISION BY BAYESIAN GROUPING OF LOCALIZATIONS.
Mohamadreza Fazel (1435-Pos / B537)

Nanoscale Biophysics

Board S134
AFM SHOWS THAT HUMAN CtIP FORMS A TETRAMERIC DUMBELL-SHAPED PARTICLE WHICH BINDS AND BRIDGES DNA ENDS.
Alejandro Martin-Gonzalez (372-Pos / B147)

Board S135
PEPTIDE ASSISTED SUPRAMOLECULAR POLYMERIZATION OF THE ANIONIC PORPHYRIN MESOTETRA(4-SULFONATOPHENYL)PORPHINE.
Eric Kohn (2365-Pos / B37)

Board S136
LABEL-FREE CHROMATIN-DNA IMAGING BY CIRCULAR POLARIZED LIGHT SCATTERING SCANNING MICROSCOPY.
Riccardo Marongiu (2475-Pos / B147)

Board S137
METAL OXIDE COATING OF SILVER NANOPARTICLES TO IMPROVE THEIR PHYSICOCHEMICAL AND OPTICAL PROPERTIES.
Soha AbdelHamied Mohamed (2210-Pos / B573)

Board S138
A NOVEL VIEWPOINT TO ANALYZE STRUCTURED ILLUMINATION MICROSCOPY (SIM) DATA.
Isotta Cainero (2166-Pos / B529)

Board S139
CHARACTERIZATION OF ONC112 EFFECT ON RIBOSOMES AND ASSOCIATED PROTEINS IN LIVE E. COLI CELLS USING SUPERRESOLUTION MICROSCOPY.
Mainak Mustafi (1794-Pos / B157)

Board S140
OPTIMIZING ASTIGMATISM FOR 3D STOCHASTIC OPTICAL RECONSTRUCTION MICROSCOPY.
Alondra Escobar (2172-Pos / B535)

Board S141
CONVERTING FRET SIGNAL INTO FORCE INFORMATION USING SHORT LOOPED DNA AS FORCE TRANSDUCER.
Golam Mustafa (2187-Pos / B550)

Board S142
ELECTRIC FIELD MEDIATED DISRUPTION OF BETA AMYLOID; A POTENTIAL NON-INVASIVE THERAPY FOR ALZHEIMER'S DISEASE.
Jahnu Saikia (257-Pos / B32)
# Daily Program Summary

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<td>Symposium: Large Macromolecular Machines in the Cell</td>
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<td>Chair: Titia Sixma, Netherlands Cancer Institute, The Netherlands</td>
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<td>Kelly Nguyen</td>
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<td>APPROACHES. Julian Berro</td>
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<td>ELECTRON TOMOGRAPHY. John Briggs</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Energy Transducing Complexes and Mitochondria in Cell Life and Death</td>
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<td>8:15 AM–10:15 AM</td>
<td>Platform: Microtubules, Structure, Dynamics and Associated Proteins</td>
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<td>Platform: Protein Assemblies/Enzyme Function, Cofactors and Post-translational</td>
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<td>Advances In Dye Development and Microscopy for Live Cell Superresolution Microscopy with</td>
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<td>Career Development Center Workshop: Demystifying the Academic Job Search II</td>
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<td>Preparing Your Written Application Materials: CV, Cover Letter, and Research Statement</td>
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<td>Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in</td>
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<td>Chair: Geeta Narlikar, University of California, San Francisco</td>
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<td>PHASE SEPARATION: PREDICTION AND ROLE IN BIOLOGICAL REGULATION. Julie D. Forman-Kay</td>
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<td>A PROTEIN CONDENSATE DRIVES ACTIN-INDEPENDENT ENDOCYTOSIS. Stephen Michnick</td>
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<td>MAKING AND BREAKING THE SYMMETRY BETWEEN SEQUENCE-SPECIFIC CONFORMATIONAL AND PHASE</td>
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<td>BEHAVIORS OF DISORDERED PROTEINS. Rohit V. Pappu</td>
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<td>THE ROLE OF PHASE-SEPARATION IN HETEROCHROMATIN. Geeta Narlikar</td>
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| 10:45 AM–12:45 PM | Symposium: Regulation of Cardiomyocyte Beating  
**Chair:** Beth L. Pruitt, University of California, Santa Barbara | Ballroom II       |
|            | MULTIMERIC PROTEIN COMPLEXES IN REGULATION OF CARDIOMYOCYTE CALCIUM CYCLING AND SURVIVAL. Litsa Kranias  
 SLOW AND FAST TIME SCALES IN CARDIOMYOCYTE BEATING. Ohad Cohen  
 WHY AND WHEN YOUR NEXT HEARTBEAT WILL OCCUR. Edward G. Lakatta  
 INVITED SPEAKER: MECHANOBIOLOGY OF ENGINEERED HIPSC CARDIOMYOCYTES. Beth L. Pruitt |                   |
| 10:45 AM–12:45 PM | Symposium: Future of Biophysics  
**Co-Chairs:** Susan Marqusee, University of California, Berkeley, Andrej Sali, University of California, San Francisco | Ballroom III      |
|            | LIVE CELL IMAGING OF RNA DYNAMICS IN MAMMALIAN CELLS USING RIBOGLOW, A RIBOSWITCH-BASED FLUORESCENCE TAGGING PLATFORM. Esther Braselmann  
 SCULPTING EMBRYOS VIA CONTROLLED FLUID-TO-SOLID TISSUE TRANSITIONS. Otger Campas  
 OPTICAL DISSECTION OF CLASS C GPCR ASSEMBLY, ACTIVATION, AND SIGNALING MECHANISMS. Joshua Levitz  
 MESOSCALE ARCHITECTURE OF B-CELLS UPON STIMULATION WITH GLUCOSE AND EX-4. Kate L. White |                   |
| 10:45 AM–12:45 PM | Platform: Protein Dynamics and Allostery I                           | Ballroom IV       |
| 10:45 AM–12:45 PM | Platform: Membrane Structure                                         | Room 307/308      |
| 10:45 AM–12:45 PM | Platform: Computational Methods and Bioinformatics                   | Room 309/310      |
| 10:45 AM–12:45 PM | Platform: Protein Structure and Conformation II                      | Room 314/315      |
| 10:45 AM–12:45 PM | Platform: Membrane Pumps, Transports, and Exchangers                 | Room 316/317      |
| 11:00 AM–12:30 PM | Annual Meeting of the Student Chapters                               | Room 324/325/326  |
| 11:30 AM–12:30 PM | Career Development Center Workshop: Networking for Nerds: How to Create Your Dream Career | Exhibit Hall A    |
| 11:30 AM–1:00 PM  | Exhibitor Presentation: Asylum Research  
Capturing Biochemical Reactions with Video-Rate AFM | Room 303          |
| 12:30 PM–2:00 PM  | The Nuts and Bolts of Preparing Your NSF Grant                       | Room 321/322/323  |
| 12:30 PM–2:00 PM  | Exhibitor Presentation: Nanion Technologies  
Ion Channels and Transporters in the Spotlight           | Room 301          |
| 1:00 PM–2:30 PM   | Understanding the Congressional Budget Process:  
How Science is Funded                                    | Room 318/319/320  |
| 1:30 PM–3:00 PM   | Biophysics 101: Gene Editing                                          | Room 307/308      |
| 1:30 PM–3:00 PM   | Exhibitor Presentation: Bruker Corporation  
Investigating Dynamic Biological Processes with High-Speed, High-Resolution Correlative AFM-Light Microscopy | Room 303          |
| 1:45 PM–3:00 PM   | Snack Break                                                           | Exhibit Hall      |
| 1:45 PM–3:45 PM   | Poster Presentations and Late Posters                                | Exhibit Hall      |
| 2:15 PM–3:45 PM   | Virtual Biophysics: Virtual and Augmented Reality Meets Biophysics   | Room 324/325/326  |
| 2:30 PM–3:30 PM   | Career Development Center Workshop: The Strategic Postdoc:  
How to Find & Leverage your Postdoc Experience                  | Exhibit Hall A    |
| 2:30 PM–4:00 PM   | Speed Networking                                                     | Mezanine Level    |
| 2:30 PM–4:00 PM   | Designing and Implementing Strategies to Prevent and Recover from Burnout | Room 321/322/323  |
| 2:30 PM–4:00 PM   | Exhibitor Presentation: Alvéole  
Bioengineering Relevant Cellular Microenvironments With PRIMO® | Room 301          |
| 3:30 PM–5:00 PM   | Exhibitor Presentation: NanoSurface Biomedical  
Biomimetic Cell Culture Platforms for Enhancing Cell Biology Studies | Room 303          |
<p>| 3:30 PM–5:30 PM   | Membership Committee Meeting                                          | Room 333          |
| 4:00 PM–5:00 PM   | Career Development Center Workshop: Developing Your 30-Second Value Statement (aka Your Elevator Pitch) | Exhibit Hall A    |</p>
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| 4:00 PM–6:00 PM | **Symposium: Chromatin Organization and Regulation:** From Physical Principles to Biological Phenomena  
**Chair:** Karolin Luger, University of Colorado Boulder  
DNA SHAPE SHIFTING AS A GENE THERAPY TOOL. Lynn Zechiedrich  
CHROMOSOME ORGANIZATION BY LOOP EXTRUSION AND PHASE SEPARATION. Leonid Mirny  
HOW TO READ AND WRITE MECHANICAL INFORMATION IN DNA MOLECULES. Helmut Schiessel  
OFF TO THE RACES - QUANTITATING THE RECRUITMENT OF PROTEINS TO SITES OF DNA DAMAGE. Karolin Luger | Ballroom I |
| 4:00 PM–6:00 PM | **Symposium: Synthetic Biology**  
**Chair:** Luis Serrano, Centre for Genomic Regulation, Spain  
SYNTHETIC BIOLOGY APPROACHES TO BIO-ORTHOGONAL CHEMISTRY. Michelle Chang  
SYNTHETIC ELECTROPHYSIOLOGY. Adam Cohen  
MECHANISMS, DIVERSITY AND OPTOGENETIC APPLICATIONS OF CHANNELRHODOPSINS FROM CRYPTOPHYTE ALGAE. Elena G. Govorunova  
ENGINEERING OF MYCOPLASMA PNEUMONIAE AS A THERAPEUTIC VEHICLE TO TREAT LUNG DISEASES. Luis Serrano | Ballroom II |
| 4:00 PM–6:00 PM | **Platform: Ion Channels, Pharmacology, and Disease**  
**Platform: Optical Microscopy and Superresolution Imaging II**  
**Platform: Membrane Receptors and Signal Transduction**  
**Platform: Myosin and Skeletal/Smooth Muscle Mechanics, Structure, and Regulation**  
**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II**  
**Platform: Macromolecular Interactions and Effects on Membranes** | Ballroom III |
| 4:00 PM–6:00 PM | **Platform: Myosin and Skeletal/Smooth Muscle Mechanics, Structure, and Regulation**  
**Room 307/308** | Room 309/310 |
| 4:00 PM–6:00 PM | **Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II**  
**Room 314/315** | Room 316/317 |
| 4:00 PM–6:00 PM | **Platform: Macromolecular Interactions and Effects on Membranes**  
**Room 314/315** | Room 316/317 |
| 4:30 PM–6:00 PM | **Exhibitor Presentation:** Molecular Devices  
**SUPERCHARGE YOUR PATCH-CLAMP DATA ACQUISITION AND ANALYSIS WITH THE NEW AXON PCLAMP 11 SOFTWARE**  
**Room 301** | Room 303 |
| 5:30 PM–7:00 PM | **Exhibitor Presentation:** LUMICKS  
**A VERSATILE PLATFORM FOR HIGH-RESOLUTION SINGLE-MOLECULE RESEARCH: EXPANDING CAPABILITIES AND EXPLORING NEW POSSIBILITIES**  
**Room 301** | Room 303 |
| 6:00 PM–6:30 PM | **Dinner Meet-Ups**  
**Society Booth/Charles Street Lobby** | |
| 8:00 PM–9:00 PM | **Awards and 2019 Biophysical Society Lecture**  
**Ballrooms I-IV** | |
| 9:30 PM–12:00 AM | **Reception and Dance**  
**Hilton, Key Ballroom** | |
| 9:30 PM–12:00 AM | **Reception and Quiet Room**  
**Hilton, Peale A/C** | |
Monday, March 4

Graduate Student Breakfast
7:30 AM - 8:30 AM, ROOM 321/322/323

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

Speakers
Lamar Mair, Weinberg Medical Physics
Frank Sachse, University of Utah

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

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

Symposium
Large Macromolecular Machines in the Cell
8:15 AM - 10:15 AM, BALLROOM I

Chair
Titia Sixma, Netherlands Cancer Institute, The Netherlands

743-SYMP 8:15 AM
CRYO-EM STRUCTURE OF HUMAN TELOMERASE AND NEW INSIGHT INTO ITS ASSEMBLY AND FUNCTION. Kelly THD Nguyen, Jane Tam, Robert Alexander Wu, Basil J. Greber, Eva Nogales, Kathleen Collins

744-SYMP 8:45 AM
HIGH-RESOLUTION MODELING AND SIMULATION OF CELLULAR STRUCTURES AND PROCESSES, ONE ATOM AT A TIME. Emad Tajkhorshid

745-SYMP 9:15 AM
STRUCTURE-FUNCTION MAPPING OF THE NUCLEAR PORE COMPLEX. Michael P. Rout

746-SYMP 9:45 AM
STEPPING THROUGH DNA MISMATCH REPAIR INITIATION. Rafael Fernandez-Leiro, Doreth Bhaerosing-Kok, Flora Groothuizen, Laffeerbe Charlie, Joyce H. Lebbink, Peter Friedhoff, Meindert Lamers, Titia K. Sixma

Symposium
Biological Membranes and Vesicles
8:15 AM - 10:15 AM, BALLROOM II

Chair
John Briggs, MRC Laboratory of Molecular Biology, United Kingdom

No Abstract 8:15 AM
STRUCTURAL CELL BIOLOGY OF VIRUS-HOST INTERACTIONS. Kay Grünewald

747-SYMP 8:45 AM
UNCOVERING THE MECHANISMS OF CLATHRIN-MEDIATED ENDOCYTOSIS USING QUANTITATIVE BIOLOGY APPROACHES. Julien Berro

748-SYMP 9:15 AM
CROWDING IN THE CELLULAR CONTEXT: TALES OF CLUSTERS AND DYNAMICS. Michael Feig

No Abstract 9:45 AM
REVEALING THE STRUCTURES OF TRAFFICKING VESICLES AND ENVELOPED VIRUSES USING CRYO-ELECTRON TOMOGRAPHY. John Briggs

Co-Chairs
Alex Dickson, Michigan State University
Rezvan Shahoei, University of Illinois at Urbana-Champaign

749-Plat 8:15 AM
MAPPING LIGAND BINDING LANDSCAPES USING WEIGHTED ENSEMBLES OFTRAJECTORIES. Alex Dickson

750-Plat 8:30 AM
THE RELEVANCE OF CONFORMATIONAL ENTROPY FOR PROTEIN LIGAND INTERACTIONS: THE CASE OF BIOTIN AND STREPTAVIDIN. Mona Sarter, Andreas M. Stadler, Doreen Niether, Bernd W. Koenig, Michaela Zamponi, Lohstroh Wiebke, Simon Wiegand, Joerg Fitter

751-Plat 8:45 AM
STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF PERIPLASMIC SIALIC ACID BINDING PROTEINS FROM PATHOGENIC BACTERIA. Thanuja Gangi Setty, Ramaswamy S

752-Plat 9:00 AM
MECHANICAL STRENGTH OF CATCH BOND FORMING FIMH AND MANNOSE. Laura A. Carlucci, Keith Johnson, Wendy E. Thomas

753-Plat 9:15 AM
MENTHOL BINDS TO EXTRACELLULAR AND TRANSMEMBRANE DOMAINS OF THE HUMAN A4B2 NICOTINIC RECEPTOR. Rezvan Shahoei, Emad Tajkhorshid

754-Plat 9:30 AM
MOLECULAR DETERMINANTS OF NON-OXIME BISPYRIDINIUM ACTIVITY AT ADULTS MUSCLE NACHRS. Max Epstein

755-Plat 9:45 AM
TARGETING THE MRN4S TRANSLATION PROCESS: A NOVEL THEORETICAL BASED APPROACH TO DESIGN TAILORED ANTICANCER AGENTS. Daniele Di Marino, Stefano Raniolo, Alessandro Gori, Vittorio Limongelli

756-Plat 10:00 AM
PROTEIN DATABANK SURVEY HINTS INTO THE EMERGENCE OF PROTEIN-ADENINE RECOGNITION IN EVOLUTION. Aya Narunsky, Ron Solan, Amir Kessel, Rachel Kolodny, Nir Ben-Tal

Platform
Excitation-Contraction Coupling/Cardiac and Skeletal Muscle Electrophysiology II
8:15 AM - 10:15 AM, BALLROOM IV

Co-Chairs
Sabine Lotteau, Smit Heart Institute
Filip Van Petegem, University of British Columbia, Canada

757-Plat 8:15 AM
L-TYPE CALCIUM CHANNELS ARE A MAJOR SOURCE OF PLASMALEMMEL CALCIUM INFUX FOR DROSPHILA CARDIOMYOCYTES. Worawan B. Limptitkul, Meera C. Viswanathan, Brian O’Rourke, David T. Yue, Anthony Cammarato

758-Plat 8:30 AM
EFFICIENT HIGH-THROUGHPUT SCREENING FOR TYPE 1 RYANODINE RECEPTOR INHIBITORS USING ER CAA2+ MEASUREMENTS. Takashi Murayama, Nagomi Kurebayashi, Mari Yuasa-Ishigami, Shuichi Mori, Haruo Ogawa, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Hiroyuki Kagechika, Takashi Sakurai

Biophysical Society
Monday

Platform

Microtubules, Structure, Dynamics and Associated Proteins

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

Co-Chairs
Annapurna Vemu, NIH
William Hancock, Pennsylvania State University

773-Plat
8:45 AM
SEVERING ENZYMES AmPLIFY MICROTUBULE ARRAYS THROUGH LATTICE GTP-TUBULIN INCORPORATION. Annapurna Vemu, Ewa Szczesna, Elena A. Zehr, Jeffrey O. Spector, Nikolaus Grigorieff, Alexandra M. Deaconescu, Antonina Roll-Mecak

774-Plat
8:30 AM
DIRECT OBSERVATION OF INDIVIDUAL TUBULIN DIMERS BINDING TO GROWING MICROTUBULES. Keith J. Mickolajczyk, Elisabeth Geyer, Tae Kim, Luke Rice, William O. Hancock

775-Plat
8:45 AM
COMPUTATIONAL MODELING AND CRYO ELECTRON TOMOGRAPHY REVEAL A NEW MECHANISM FOR MICROTUBULE ASSEMBLY AND DYNAMICS. Nikita B. Gudimchuk, Evgeni V. Ulyanov, Eileen O’Toole, Dmitrii S. Vinogradov, Fazly I. Ataullakhanov, J. Richard McIntosh

776-Plat
9:00 AM
DYNAMIC INSTABILITY AND TREADMILLING COEXIST FOR IN VITRO MICROTUBULES. Goker Arpag, Marija Zanic

777-Plat
9:15 AM
ACTIVE FLUCTUATIONS OF MICROTUBULE NETWORKS FACILITATE FASTER MOTILITY OF DyneIN. Yasin Ezber

778-Plat
9:30 AM
OXIDATIVE STRESS RESTRICTS THE CELLULAR MICROTUBULE CYTOSKELETON VIA REPAIR-MEDIATED RESCUE EVENTS. Rebecca R. Goldblum, Kyle White, Mark McClellan, Joseph M. Metzger, Melissa K. Gardner

779-Plat
9:45 AM
TAU’S PROLINE RICH REGION DOMINATES TUBULIN BINDING. Kristen McKibben, Elizabeth Rhoades

780-Plat
10:00 AM
MECHANISMS OF BIDIRECTIONAL TRANSPORT OF MISALIGNED CHROMOSOMES IN MITOSIS. Saad Ansari, Zachary Gergely, Christopher Edelmaier, Nicolas Santander, Patrick Flynn, Adam Lamson, Matthew A. Glaser, J. Richard McIntosh, Meredith D. Betterton
ADVANCES IN DYE DEVELOPMENT AND MICROSCOPY FOR LIVE CELL SUPER-RESOLUTION MICROSCOPY WITH THE VUTARA 352
Expanding the frontier of super-resolution imaging requires advances in both microscopy hardware and fluorescent labels. Here we describe a cooperative effort to improve both technological fronts with the ultimate goal of live-cell super-resolution microscopy. Bruker’s Vutara 352 super-resolution microscope has been designed for live-cell super-resolution with both high spatial and temporal resolution capabilities. The patented biplane module allows simultaneous two-color imaging in 3D while the scMOS detector enables fast imaging of biological phenomena. Although this microscope system is capable of live-cell super-resolution imaging, it has been stymied by limitations in the current generation of live-cell-compatible fluorophores. Extant live-cell probes are either fluorescent proteins with low photon counts—and therefore low localization precision—or organic dyes, which require high laser power resulting in phototoxicity in living samples. To remedy this problem, we developed spontaneously blinking (SB) versions of the Janelia Fluor and Alexa Fluor dyes, which blink under physiological conditions at low laser power while still providing high photon counts. In particular, the spontaneously blinking Janelia Fluor 549 (SB-JF549) and red-shifted SB-JF646 are cell-permeable and are easily conjugated to HaloTag or SNAP-tag ligands, making them ready to use in live cell multi-color superresolution experiments. The SB dyes, in combination with the Vutara 352, provide a powerful methodology for simultaneous imaging, localization and visualization of live-cell single-molecule localization data, while offering numerous statistical tools to quantify the data into publishable results.

Speaker
Robert Hobson, Applications Scientist, Bruker Corporation
Career Development Center Workshop
Demystifying the Academic Job Search II:
Preparing your Written Application Materials:
CV, Cover Letter, and Research Statement
10:00 AM - 11:00 AM, EXHIBIT HALL A

Over 90% of the cuts in a typical academic job search are made on the basis of your written application materials. Given the large number of candidates in a typical applicant pool, your documents must convey the most important information about you in the most clear and efficient manner. Learn about how your materials should differ based on the type of institution and/or program, and how to create “glanceable” documents to speak most effectively on your behalf.

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

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

New Member Welcome Coffee
10:15 AM - 11:15 AM, ROOM 321/322/323

Calling all new BPS members! Come and mingle with BPS Staff, Society Council, and program members as you learn about the Society’s activities. Current members are welcome to come and meet with new members.

Exhibitor Presentation
Bruker Corporation
10:30 AM - 12:00 PM, ROOM 301

USING NMR (NUCLEAR MAGNETIC RESONANCE) AND EPR (ELECTRON PARAMAGNETIC RESONANCE) IN BIOPHYSICS
Magnetic resonance offers many insights into how biological systems function. The two techniques shed light on the identity of species, dynamics, and structures of proteins, peptides, nucleotides, and lipids. The speakers will present an overview of these techniques and applications for people who may be new to the field and wish to incorporate them in their studies.

NMR is a valuable tool for the study of structures and dynamic processes of proteins, peptides and nucleotides. NMR is also well suited to study the interaction of such molecules. Various NMR methods exist to study the interaction of proteins with small molecules in drug discovery, interactions of proteins with each other or with peptides and nucleotides.

In drug discovery fragment based screening by NMR is a well-established technique. A brief presentation of these methods will be included.

The investigation of interaction between larger molecules is facilitated by several NMR methods and by the use of isotopic labeling. Interactions such as protein oligomerization, protein-protein and protein-nucleotide interaction in solutions can be investigated. An overview of these techniques and applications will be included.

In contrast to NMR, EPR detects unpaired electrons in free radicals and transition metal ions. One electron transfer reactions result in unpaired electrons. Examples of paramagnetic species encountered in biology are:

- ROS (Reactive Oxygen Species), RNS (Reactive Nitrogen Species)
- Amino acid radicals such as tyrosine and tryptophan radicals
- Paramagnetic intermediates in photosynthesis
- Metalloenzymes

In addition to these naturally occurring paramagnetic species, spin labels can be incorporated into a number of biomolecules via SDSL (Site Directed Spin Labeling). Applications and techniques are:

- Motional dynamics of proteins, peptides, and nucleotides via line shape analysis
- Accessibility studies in membrane proteins or peptides via saturation measurements
- Distance measurements (2-8 nm) via DEER (Double Electron-Electron Resonance) to complement other structural methods such as X-ray, NMR, CryoEM and FRET

An introduction to the techniques and applications will be presented.

Speakers
Ralph Weber, Senior Application Scientist, Bruker Corporation
Clemens Anklin, Vice President Applications, Bruker Corporation

Symposium
Phase Separations in the Cell
10:45 AM - 12:45 PM, BALLROOM I

Chair
Geeta Narlikar, University of California, San Francisco

797-SYMP 10:45 AM
PHASE SEPARATION: PREDICTION AND ROLE IN BIOLOGICAL REGULATION. Robert M. Vernon, Brian Tsang, Tae Hun Kim, Andrew Chong, Julie D. Forman-Kay

798-SYMP 11:15 AM

799-SYMP 11:45 AM
MAKING AND BREAKING THE SYMMETRY BETWEEN SEQUENCE-SPECIFIC CONFORMATIONAL AND PHASE BEHAVIORS OF DISORDERED PROTEINS. Rohit V. Pappu

800-SYMP 12:15 PM
THE ROLE OF PHASE-SEPARATION IN HETEROCROMATIN. Geeta Narlikar, Serena Sanulli, John D. Gross, Patrick Griffin, Mike Trnka

Symposium
Regulation of Cardiomyocyte Beating
10:45 AM - 12:45 PM, BALLROOM II

Chair
Beth L. Pruitt, University of California, Santa Barbara

801-SYMP 10:45 AM
MULTIMERIC PROTEIN COMPLEXES IN REGULATION OF CARDIOMYOCYTE CALCIUM CYCLING AND SURVIVAL. Litsa Kranias

802-SYMP 11:15 AM
SLOW AND FAST TIME SCALES IN CARDIOMYOCYTE BEATING. Ohad Cohen, Samuel Safran

803-SYMP 11:45 AM
WHY AND WHEN YOUR NEXT HEARTBEAT WILL OCCUR. Edward G. Lakatta

804-SYMP 12:15 PM
INVITED SPEAKER: MECHANOBIOLOGY OF ENGINEERED HIPSC CARDIOMYOCYTES. Beth L. Pruitt

BPS19
BALTIMORE, MARYLAND
MARCH 2–6, 2019
63rd ANNUAL MEETING OF THE BIOPHYSICAL SOCIETY

59
Symposium
Future of Biophysics
10:45 AM - 12:45 PM, BALLROOM III

Co-Chairs
Susan Marqusee, University of California, Berkeley
Andrej Sali, University of California, San Francisco

NO ABSTRACT
10:45 AM
LIVE CELL IMAGING OF RNA DYNAMICS IN MAMMALIAN CELLS USING RIBOGLOW, A RIBOSWITCH-BASED FLUORESCENCE TAGGING PLATFORM.
Esther Braselmann

11:15 AM
SCULPTING EMBRYOS VIA CONTROLLED FLUID-TO-SOLID TISSUE TRANSITIONS. Otger Campas

11:45 AM
OPTICAL DISSECTION OF CLASS C GPCR ASSEMBLY, ACTIVATION, AND SIGNALING MECHANISMS. Joshua Levitz

12:15 PM
MESOSCALE ARCHITECTURE OF B-CELLS UPON STIMULATION WITH GLUCOSE AND EX-4. Kate L. White

Platform
Protein Dynamics and Allostery I
10:45 AM - 12:45 PM, BALLROOM IV

Co-Chairs
Jose Caro, University of Pennsylvania
Joseph Rehfus, Johns Hopkins University

805-Plat 10:45 AM
TARGETING CONFORMATIONAL ENTROPY TO MODULATE BINDING AFFINITY. José A. Caro, Shannen Cravens, Kathleen G. Valentine, A. Joshua Wand

806-Plat 11:00 AM
E. COLI ADENYLATE KINASE EXHIBITS INTER-DOMAIN COUPLING. Joseph E. Rehfus, Vincent J. Hilser

807-Plat 11:15 AM
TRAVEL Awardee
A THERMODYNAMIC VIEW OF DYNAMIC ALLOSTERY IN A PDZ DOMAIN PROTEIN. Amit Kumawat, Suman Chakrabarty

808-Plat 11:30 AM
STRUCTURAL FLUCTUATIONS ARE KEY TO ALLOSTERIC STIMULATION OF NDV HEMAGGLUTININ-NEURAMINIDASE. Navil D. Duro, Sameer Varma

809-Plat 11:45 AM
SINGLE-MOLECULE FLUORESCENCE MEASUREMENTS OF TRANSIENT PROTEIN COMPLEXES DETERMINED VIA DIFFUSION-INDEPENDENT MICROFLUIDIC MIXING. Johann Thurn, Bjorn Hellenkamp, Thorsten Hugel

810-Plat 12:00 PM
STRUCTURAL DYNAMICS COUPLE SUBSTRATE-INDUCED ALLOSTERIC RESPONSES WITH DOMAIN COMMUNICATION IN NONRIBOSOMAL PEPTIDE SYNTHETASES. Subrata H. Mishra, Aswani K. Kancherla, Kenneth Marincin, Santrupti Nerli, Nikolaos Sgourakis, Daniel Dowling, Dominique P. Frueh

811-Plat 12:15 PM
MARKOV STATE MODEL OF INFLUENZA HEMAGGLUTININ REVEALS STRUCTURAL BASIS FOR GROUP 1 INFLUENZA INHIBITION BY ARBIDOL. Sarah E. Kochanek, Rommie E. Amaro

812-Plat 12:30 PM
A GENERAL METHOD TO DESIGN ALLOSTERIC CONFORMATIONAL SWITCHES. Ronald L. Koder, Peter J. Schnatz, Joseph Brisendine, Craig Liang, Bernard H. Everson, Cooper French

Platform
Membrane Structure
10:45 AM - 12:45 PM, ROOM 307/308

Co-Chairs
Sarah Shelby, University of Michigan
Ingela Parrant, University of Gothenburg, Sweden

813-Plat 10:45 AM
LIPID BILAYER STRUCTURE REFINEMENT WITH SAXS/SANS BASED RESTRAIN Ensemble MOLECULAR DYNAMICS. Yevhen K. Cherniavskyi, D. Peter Tieleman

814-Plat 11:00 AM
DISTRIBUTION OF MECHANICAL STRESS IN THE ESCHERICHIA COLI CELL ENVELOPE. Sunny Hwang, Nicolo Paracini, Jerry M. Parks, Jeremy H. Lakey, James C. Gumbart

815-Plat 11:15 AM
MICRODOMAIN STRUCTURE AND MECHANICAL PROPERTIES OF LIPID MONOLAYERS MIMICKING RED BLOOD CELL MEMBRANES UNDER OXIDATIVE STRESS. Bob-Dan Lechner, Paul Smith, Peter C. Winlove, Chris D. Lorenz, Peter G. Petrov

816-Plat 11:30 AM
PHASE PARTITIONING OF PEPTIDE ANCHORS IN PLASMA MEMBRANE VESICLES PREDICTS THEIR RECRUITMENT TO B CELL RECEPTOR CLUSTERS IN LIVE CELLS. Sarah A. Shelby, Ivan C. Serrano, Kandice R. Levental, Ilya Levental, Sarah L. Veatch

817-Plat 11:45 AM
MEMBRANE TOPOGRAPHY CREATES THE APPEARANCE OF ANOMALOUS DIFFUSION. Ingela Parmryd, Jeremy Adler, Ida-Maria Sintorn, Robin Strand

818-Plat 12:00 PM
INTERACTION OF LIPIDS WITH VOLTAGE-GATED ION CHANNEL PROTEINS. Nidhin Thomas, Kranti Kiran Mandadapu, Ashutosh Agrawal

819-Plat 12:15 PM
TRAVEL Awardee
THE IMPORTANCE OF GLYCOLIPID CROSSLINKING IN ALTERING THE MEMBRANE CURVATURE. Abir Kabbani, Krishnan Raghunathan, Anne Kenworthy, Wayne Lencer, Christopher V. Kelly

820-Plat 12:30 PM
TRAVEL Awardee
DYSLIPIDEMIA INDUCED ENDOTHELIAL STIFFENING IS ACCOMPANIED BY INCREASED MEMBRANE TENSION. Manuela A. Ayee, Irena Levitan

Platform
Computational Methods and Bioinformatics
10:45 AM - 12:45 PM, ROOM 309/310

Co-Chairs
Swagata Pahari, Clemson University
Zhaleh Ghaemi, University of Illinois at Urbana–Champaign

821-Plat 10:45 AM

822-Plat 11:00 AM

823-Plat 11:15 AM
DYNAMIC COMBINATORIAL ANALYSIS OF LOCAL CONFIGURATIONS IN MOLECULAR DYNAMICS SIMULATIONS: FREQUENT ITEMSET MINING AND HIERARCHICAL HIDDEN MARKOV MODEL. Ka Chun Ho, Donald Hamelberg
824-Plat 11:30 AM
SURFACE-FREE PROTOCOL FOR COMPUTING PKA’S (DELPHIPKA): APPLICATIONS TO PROTEIN-PROTEIN INTERACTIONS. Swagata Pahari, Lexuan Sun, Emil Alexov

825-Plat 11:45 AM
TRAVEL AWARDEE
STRUCTURAL TOPOLOGY OF GLYCOPROTEIN SURFACE NETWORKS USING HIGH THROUGHPUT ATOMIC MODELING AND GRAPH THEORY. Srirupa Chakraborty, Zachary Berndsen, Cesar Lopez, Andrew Ward, Bette Korber, Nicolas Hengartner, S. Gnanakaran

826-Plat 12:00 PM
A COMPUTATIONAL HUMAN WHOLE-CELL MODEL REVEALS THE EFFECTS OF SPATIAL ORGANIZATION ON RNA SPlicing. Zhaaleh Ghaemi, Zaida Luthey-Schulten

827-Plat 12:15 PM
THE ROLE OF CELLULAR REPLICATIVE LIFESPAN AND STEM CELL DYNAMICS ON CORNEAL EPITHELIUM HOMEOSTASIS AND PATTERN FORMATION. Lior Strinkovsky, Evgeni Havkin, Yonatan Savir

828-Plat 12:30 PM
4D CELL BIOLOGY: BIG DATA IMAGE ANALYTICS AND LATTICE LIGHT-SHEET IMAGING REVEAL DYNAMICS OF CLATHRIN-MEDIATED ENDOCYTOSIS IN STEM CELL-DERIVED INTESTINAL ORGANOIDS. Johannes Schöneberg, Daphné Dambournet, Tsung-Li Liu, Ryan Forster, Dirk Hockemeyer, Eric Betzig, David G. Drubin

Platform
Protein Structure and Conformation II
10:45 AM - 12:45 PM, ROOM 314/315
Co-Chair Andrea Soranno, Washington University in St. Louis

832-Plat 11:15 AM
FIBRIL STRUCTURE OF ABETA40 VISUALIZED BY CRYO-ELECTRON MICROSCOPY AND SOLID-STATE NMR. Ujjayini Ghosh, Robert Tycko

833-Plat 11:45 AM
HYDROGEN EXCHANGE MASS SPECTROMETRY GUIDED DOCKING GENERATES ATOMIC RESOLUTION EPITOPES FOR SINGLE-CHAIN CAMELID ANTIBODY-ANTIGEN COMPLEXES. Jing Zhou, Jeliazko Jeliazkov, Yuqi Shi, David Weis, Jeff Gray

834-Plat 12:00 PM
REVEALING MULTIPLE CONFORMATIONS OF PROTEINS AT LONG DISTANCES BY USING SINGULAR VALUE DECOMPOSITION METHOD IN PULSED DIPOLAR ESR SPECTROSCOPY. Madhur Srivastava, Jack H. Freed

835-Plat 12:15 PM
COEVOLUTIONARY LANDSCAPES OF KINASE FAMILY PROTEINS. Allan Haldane, Peng He, William F. Flynn, Ronald M. Levy

836-Plat 12:30 PM
STRUCTURE BASED SEARCH FOR MULTIPLE BINDING SITES OF SOS1 PR DOMAIN RECOGNIZES AN UNCOVERED MOTIF FAVORING GRB2-SOS1 ASSOCIATION. Tsung-Jen Liao, Hyunbong Jang, Ruth Nussinov, David Fushman

Annual Meeting of the Student Chapters
11:00 AM - 12:30 PM, ROOM 324/325/326
BPS Student Chapter members are invited to attend the Student Chapter Meeting! At the event, Student Chapters from around the world will exchange best practices (and share challenges!) in marketing their chapters and recruiting members, performing community outreach in science, and hosting chapter events. This event is open only to students currently in a BPS Student Chapter.

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

**Exhibitor Presentation**
**Asylum Research**
11:30 AM - 1:00 PM, ROOM 303

**CAPTURING BIOCHEMICAL REACTIONS WITH VIDEO-RATE AFM**
Oxford Instruments Asylum Research will present the latest data acquired with its Cypher VRS, the world’s first and only full-featured video-rate AFM. The Cypher VRS Atomic Force Microscope sets a new standard with easy operation—enabling high resolution imaging of dynamic events at high speeds, up to 625 lines/second which corresponds to about 10 frames per second. This speed is about 300x faster than typical AFMs and 10x faster than current “fast scanning” AFMs.

One of the strengths of traditional AFMs is its capability to monitor dynamic events in near-native conditions (i.e. in liquid at biologically relevant temperatures). However, capturing biological processes in real-time has been challenging until now. Video rate AFMs provide that temporal resolution, allowing researchers to observe the progression of these reactions and capture kinetics. Video rate AFMs have allowed researchers to conduct a new set of experiments including biochemical reactions, membrane dynamics, conformational changes, self-assembly and degradation. In most cases, the spatial resolution is not compromised enabling researchers to locate the target or active site while tracking the progression of the reaction. They can observe structural dynamics of biomolecules and then correlate it to their function.

We will present a set of data to illustrate the potential of this new capability. Examples include DNA digestion and cleavage, DNA origami conformation changes, protein fiber assembly, membrane dynamics including molecular structure and rearrangement in the bacteriorhodopsin membrane, lipid bilayer growth, assembly of Type I collagen into fibrils and dynamic motion of CTAB hemi-micelles at the solid (HOPG) – liquid (aqueous buffer) interface.

**Speaker**
Sophia Hohlbauch, Applications Scientist, Asylum Research

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**Exhibitor Presentation**
**Nanion Technologies**
12:30 PM - 2:00 PM, ROOM 301

**ION CHANNELS AND TRANSPORTERS IN THE SPOTLIGHT**
Nanion Technologies is the leading solution provider for electrophysiologists since 2002. If you are studying ion channels and electronegenic transporters, our chip- and plate-based devices are well suited to advance your research and screening projects. In our portfolio, you will find instrumentation for automated patch clamp, bilayer recordings, SSM-based electrophysiology, impedance and extracellular field recordings, covering the needs for low, medium and high throughput assays. Our workshop will start with an introduction by Dr. Niels Fertig (CEO, Nanion) and Dr. Andrea Brüggemann (CSO, Nanion), as a guide through the overall capabilities of Nanion’s technology portfolio. In continuation, we will welcome our speakers, Dr. Jean-François Rolland (Axxam) and Prof. Dr. Randy Stockbridge (University of Michigan), among others.

As a part of our workshop, Dr. Rolland will focus on his recent work on assay development in ion channel drug discovery, using the high throughput automated patch clamp screening platform, the SyncroPatch 384/768PE. Application areas of this powerful system, recording from up to 768 cells simultaneously, range from high throughput screening (HTS), cardiac safety assessment and efficacy screening, to the analysis of ion channel mutations. The SyncroPatch 384/768PE supports voltage- and current clamp recordings, temperature control, and minimal cell usage. In addition to the use of stably transfected cell lines, more challenging cell assays including stem cell-derived cells, transiently transfected cells or primary cells can be used successfully. In this presentation Dr. Rolland will also discuss the highly promising approach of using optogenetics combined with automated patch clamp technology in HTS. This method, using light to modulate molecular events in a targeted manner in living cells, could lead to cheaper, faster and highly reliable assays, suitable for running the early steps of ion channels’ drug discovery programs, especially when combined to automated electrophysiology. Among others, data obtained from Axxam’s bPAC-HCN2 cell line that was successfully assayed on SyncroPatch 384PE, will be presented.

In continuation, Dr. Stockbridge will be focused on electronegenic transporter assay technology, the SURFE2R. The SURFE2R N1 (single channel) and SURFE2R 96SE (96 channels) technologies enable label-free real time measurements of electronegenic transporter protein activity. Employing SSM (solid supported membrane)-based electrophysiology, the SURFE2R instruments compensate for the low turnover rate of these proteins by measurement of up to 109 transporters in parallel. Dr. Stockbridge, as an expert in measuring membrane transport function, will present her recent data obtained on the SURFE2R N1 instrument. She has undertaken a comparative mechanistic analysis to understand how drug export function evolved in the SMR (small multidrug resistance) exporters family. This involved screening panels of potential substrates (drugs and other compounds) to understand how substrate specificity differs among the drug exporters, guanidinium exporters, and various evolutionary intermediates.

The Nanion team is excited to meet you at our workshop. Join us to learn more about how our “smart tools for electrophysiologists” can help take your research to the next level!

**Speakers**
Andrea Brüggemann, CSO, Nanion Technologies
Niels Fertig, CEO, Nanion Technologies
Jean-François Rolland, Head of Electrophysiology, Axxam
Randy Stockbridge, Assistant Professor, University of Michigan
INVESTIGATING DYNAMIC BIOLOGICAL PROCESSES WITH HIGH-SPEED, HIGH-RESOLUTION CORRELATIVE AFM-LIGHT MICROSCOPY

The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biological molecules and complexes with nanometer resolution and under near-physiological conditions remains unmatched by other imaging techniques. However, when this budget deal expires in 2019, Congress will face a potential funding cliff. How will the National Institutes of Health (NIH), the National Science Foundation (NSF), and other science-related agencies do under the next budget deal? Will Congress even pass a new budget deal? Which agencies fund scientific research and how does Congress negotiate their funding levels? Join our panel of government and industry insiders as we explore how the Congressional budget is developed, historical trends in science funding, and what the future may hold!

Panelist
Tiffany Kaszuba, Deputy Director, Coalition for Health Funding

Biophysics 101
Gene Editing
1:30 PM - 3:00 PM, ROOM 307/308

Gene editing refers to the modification of genetic material in living organisms by introducing insertions, deletions or base-pair changes. These modifications have been greatly facilitated by the discovery of the CRISPR/Cas9 system in bacteria and subsequent adaptations for higher organisms. The speakers in this session will focus on new methods being developed for gene editing using CRISPR/Cas9 and related CRISPR systems, including RNA editing, tissue-specific gene editing, therapeutic applications, and applications to plant breeding and crop development.

Moderator
Sharyn Endow, Duke University
Presenters
Patrick Hsu, Salk Institute
Greg Gocal, Caltech

Exhibitor Presentation
Bruker Corporation
1:30 PM - 3:00 PM, ROOM 303

INVESTIGATING DYNAMIC BIOLOGICAL PROCESSES WITH HIGH-SPEED, HIGH-RESOLUTION CORRELATIVE AFM-LIGHT MICROSCOPY

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Moderator
Sharyn Endow, Duke University
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Patrick Hsu, Salk Institute
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Exhibitor Presentation
Bruker Corporation
1:30 PM - 3:00 PM, ROOM 303

INVESTIGATING DYNAMIC BIOLOGICAL PROCESSES WITH HIGH-SPEED, HIGH-RESOLUTION CORRELATIVE AFM-LIGHT MICROSCOPY

The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biological molecules and complexes with nanometer resolution and under near-physiological conditions remains unmatched by other imaging techniques. However, the typically longer image acquisition times required to obtain a single high-resolution image is unmatched by other imaging techniques. However, the typically longer image acquisition times required to obtain a single high-resolution image (~minutes) has limited the advancement of AFM for investigating dynamic biological processes. While recent years have shown significant progress in the development of high-speed AFM (HS-AFM), the ability to scan faster has typically been achieved at the cost of decreased scanner range and restricted sample size. As such, these HS-AFM systems have mainly been focused on studying single molecule dynamics and have been very limited in their ability to conduct live cell imaging.

The novel NanoWizard® ULTRA Speed A AFM not only enables high-speed studies of time-resolved dynamics associated with cellular processes, it’s latest scanner technologies and compact design also allow full integration of AFM into advanced commercially available light microscopy techniques. Thus, fast AFM imaging of several frames per second can be seamlessly combined with methods such as epifluorescence, confocal, TIRF, STED microscopy, and many more.

Please join us for this informative seminar where we will present how the latest advances in the ULTRA Speed A AFM are being applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues. We will also describe how this unique system is enabling new research opportunities with high-speed, highresolution correlative AFM-light microscopy.

Speaker
Andrea Slade, BioAFM Product Manager, JPK BioAFM Center, Bruker Nano Surfaces

Virtual Biophysics
Virtual and Augmented Reality Meets Biophysics
2:15 PM - 3:45 PM, ROOM 324/325/326

As virtual reality has become cheaper and more accessible, the research and educational applications of this technology have grown. Virtual, augmented, and mixed reality (VR, AR, and MR) technologies offer immersive experiences by exposing human senses to computer-generated sounds, images, and haptic stimulations. This session will showcase to researchers, educators, and students how these technologies are being applied in biophysics research and education and offer participants a chance to test out these new tools and experience the power and prospects of VR and AR in the classroom and the research lab.

Career Development Center Workshop
The Strategic Postdoc: How to Find & Leverage your Postdoc Experience
2:30 PM - 3:30 PM, EXHIBIT HALL A

Many PhDs just kind of fall in to a postdoc, rather than thinking about it from a strategic perspective. Your postdoc is never an end in itself; rather it’s a means to another end whether that goal is a faculty position at a research university, a small college, or perhaps a job in industry or government. Learn how to find postdoc opportunities that will best prepare you for that next step, and how to use your postdoc experience to facilitate the transition to your next position.

Speed Networking
2:30 PM - 4:00 PM, MEZZANINE LEVEL

Career development and networking are important in science, but can be a big time commitment. In this session we offer the chance to speed network, an exciting way to connect with a large number of biophysicists (including Biophysical Society committee members) in a short amount of time. Mid-career and more experienced scientists could learn how to get more involved in the Society or network for open positions in their labs. Early career scientists could discuss career goals and challenges, get advice on tenure or grant writing, or find out how to gain recognition for their work. Graduate students and postdocs could make contacts to find out these new tools and experience the power and prospects of VR and AR in the classroom and the research lab.

Please join us for this informative seminar where we will present how the latest advances in the ULTRA Speed A AFM are being applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues. We will also describe how this unique system is enabling new research opportunities with high-speed, highresolution correlative AFM-light microscopy.

Speaker
Andrea Slade, BioAFM Product Manager, JPK BioAFM Center, Bruker Nano Surfaces

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

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

Virtual Biophysics
Virtual and Augmented Reality Meets Biophysics
2:15 PM - 3:45 PM, ROOM 324/325/326

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Space is limited for this event and pre-registration was recommended to ensure a spot.
Designing and Implementing Strategies to Prevent and Recover from Burnout
2:30 PM - 4:00 PM, ROOM 321/322/323

The demands of research can lead to academic burnout at any career stage, significantly harming both our personal and professional lives. Given the challenges facing scientists in the lab, office, and at home, feelings of dissatisfaction, anxiety, exhaustion, and unproductivity can be difficult to avoid. Exiting and recovering from the burnout cycle can be even more challenging. In this interactive workshop, we will discuss concrete strategies to recognize, prevent, and counteract burnout. The goals of these strategies are to manage stress, promote a sense of well-being, improve efficiency, and to help participants revive their genuine enthusiasm for science.

Panelists
Vasanthi Jayaraman, University of Texas Health Science Center
Kenton Swartz, NINDS, NIH
Eleonora Zakharian, University of Illinois

Exhibitor Presentation
Alvéole
2:30 PM - 4:00 PM, ROOM 301

BIOENGINEERING RELEVANT CELLULAR MICROENVIRONMENTS WITH PRIMO®

In vivo, the cellular microenvironment has a crucial impact on the regulation of cell behavior and functions, such as cellular differentiation, proliferation and migration. One of the challenges confronting cell biologists is to mimic this microenvironment in vitro in order to more efficiently study living cells and model diseases. To this end, we present the PRIMO device developed by ALVEOLE. This contactless and maskless UV projection system based on the LIMAP technology allows to control the biochemical and mechanical properties of in vitro microenvironments. We will first show that PRIMO is a suitable tool to print biomolecules on substrates (including glass, plastic, soft/stiff substrates, textured surfaces, etc.) with an exquisite control over protein densities (micropatterning). Then, we will also present how the projected UV light can be used in order to structure photosensitive resists (such as SU8) and create molds onto which elastomeric solutions can be polymerized (microfabrication).

Finally, one of our users will share his research conducted with PRIMO. He used this technology in order to structure and functionalize hydrogels (microstructure combined with micropatterning) paving the way for 3D cell culture onto controlled, reproducible soft/hard substrates. Visit www.alveolelab.com for more information.

Speakers
Aurélien Pasturel, University of Bordeaux, CNRS, Alvéole
Pierre-Olivier Strale, Senior Scientist, Alvéole

Exhibitor Presentation
NanoSurface Biomedical
3:30 PM - 5:00 PM, ROOM 303

BIOMIMETIC CELL CULTURE PLATFORMS FOR ENHANCING CELL BIOLOGY STUDIES

Cells use structural and mechanical cues from the extracellular matrix (ECM) to regulate a broad spectrum of processes such as cell signaling, electrophysiology, differentiation, division, and even life and death. Over the past few decades, the literature has demonstrated that many cell types cultured in conventional flat, rigid, and static culture conditions lack both structural and functional phenotypes seen in the body, and that the lack of extracellular cues contributes significantly to the disconnect between in vitro experimental results and in vivo observation. We will demonstrate that ECM-inspired substrate nanotopography drastically improves the structural and functional development of a variety of cell types. Specifically, we show how NanoSurface Cultureware and the NanoSurface Cytostretcher can be utilized to study the effects of cell-nanotopography interactions on adhesion, signaling, polarity, migration, physiology, and differentiation across many cell types and model systems including cancer biology, human epithelia, and cardiovascular function. Further, we will describe how the differentiation of induced pluripotent stem cells can be accelerated and enhanced by providing a more biometric culture environment. We will also illustrate how the combination of nanotopography and mechanical stretch can enhance the in vitro phenotypes of cells in culture.

Speaker
Nicholas Geisse, Chief Science Officer, NanoSurface Biomedical

Membership Committee Meeting
3:30 PM - 5:30 PM, ROOM 333

Career Development Center Workshop
Developing Your 30-Second Value Statement (aka Your Elevator Pitch)
4:00 PM - 5:00 PM, EXHIBIT HALL A

I have a brand and you have a brand. A brand is simply a promise of value and every successful professional and company is successful in part because they know how to articulate their brand. The ability to communicate your promise of value is vitally important for not only crafting your own career path, but also for finding out about hidden opportunities and jobs. In this workshop, we will learn the fundamentals of branding as it relates to career development and planning strategy. We will work together to develop your own 30-second brand statement which you can use in networking, and informational and job interviews. We will discuss the connection between brand, attitude and reputation, and why every interaction with someone affects how people perceive your brand. You will leave this presentation with the ability to elucidate your own brand to whomever you meet, giving you a critical competitive edge in your career and the job market.

Symposium
Chromatin Organization and Regulation: From Physical Principles to Biological Phenomena
4:00 PM - 6:00 PM, BALLROOM I

Chair
Karolin Luger, University of Colorado Boulder

845-SYMP
4:00 PM
DNA SHAPE SHIFING AS A GENE THERAPY TOOL. Jonathan M. Fogg, Qian Wang, Allison Judge, Erik Stricker, B. Montgomery Pettitt, Lynn Zechiedrich

846-SYMP
4:30 PM
CHROMOSOME ORGANIZATION BY LOOP EXTRUSION AND PHASE SEPARATION. Leonid Mirny

847-SYMP
5:00 PM
HOW TO READ AND WRITE MECHANICAL INFORMATION IN DNA MOLECULES. Helmut Siesssell

NO ABSTRACT
5:30 PM
OFF TO THE RACES - QUANTITATING THE RECRUITMENT OF PROTEINS
**Symposium**

**Synthetic Biology**

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

**Chair**

*Luis Serrano, Centre for Genomic Regulation, Spain*

*No Abstract*

**SYNTHETIC BIOLOGY APPROACHES TO BIO-ORTHOGONAL CHEMISTRY.**

Michelle Chang

**848-Symp**

4:30 PM

**SYNTHETIC ELECTROPHYSIOLOGY.**

Harry McNamara, Adam Cohen

**849-Symp**

5:00 PM

**MECHANISMS, DIVERSITY AND OPTOGENETIC APPLICATIONS OF CHANNELRHODOPSINS FROM CRYPTOPHYTE ALGAE.**

Elena G. Goverunova, John Spudich

*No Abstract*

**ENGINEERING OF MYCOPLASMA PNEUMONIAE AS A THERAPEUTIC VEHICLE TO TREAT LUNG DISEASES.**

Luis Serrano

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**Platform**

**Ion Channels, Pharmacology and Disease**

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

**Co-Chairs**

Paola Vergani, University College London, United Kingdom

Nurunisa Akyuz, Harvard Medical School

**850-Plat**

4:00 PM

**TMC1 FORMS THE PORE OF THE MECHANOSENSITIVE TRANSDUCTION CHANNELS IN INNER EAR HAIR CELLS.**

Nurunisa Akyuz, David P. Corey

**851-Plat**

4:15 PM

**INHIBITION OF TMEM16A BY DOCOSAHEXAENOIC ACID PLAYS A CRUCIAL ROLE IN BLOOD VESSEL RELAXATION.**

Kathryn E. Acheson, Paolo Tammaro

**852-Plat**

4:30 PM

**FENESTRATIONS CONTROL THE RESTING STATE BLOCK OF A VOLTAGE GATED SODIUM CHANNEL.**

Tamer M. Gamal El-Din, Michael J. Lenaeus, Ning Zheng, William A. Catterall

**853-Plat**

4:45 PM

**DOES DISRUPTION OF THE E873-R933 SALT BRIDGE IN CFTR AND ALTERATION OF THE MEMBRANE BILAYER AROUND IT PLAY A BIOLOGICAL ROLE?**

Emily Langron, Valentina Corradi, Peter D. Tieleman, Paola Vergani

**854-Plat**

5:00 PM

**GENERATING POTENT AND SELECTIVE INHIBITORS OF KV1.3 ION CHANNEL BY FUSING KNOTTINS (VENOM DERIVED MINI PROTEINS) INTO PERIPHERAL CDR LOOPS OF ANTIBODIES.**

Anesh Karatt-Vellatt, Damian C. Bell, Sachin B. Surade, Tim Luetteken, Ed W. Masters, Alice M. Luther, Naja Møller M. Sørensen, Neil J. Butt, John McCafferty

**855-Plat**

5:15 PM

**IS THE HYDROPHOBIC GASKET A SECONDARY SELECTIVITY FILTER IN THE HUMAN VOLTAGE GATED PROTON CHANNEL HH1?**

Richard Banh, Kethika Kulleperuma, Vladimir V. Cherry, Deri Morgan, Boris Musset, Sarah Thomas, Susan M.E. Smith, Régis Pomès, Thomas E. DeCoursey

**856-Plat**

5:30 PM

**TRAVEL Awardee**


Eleonora Di Zanni, Alessandra Picollo

**857-Plat**

5:45 PM

**INHIBITION OF HCN CHANNELS BY BETA-BLOCKER CARVEDILOL.**

Pingzheng Zhou, Ying Cao

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**Platform**

**Optical Microscopy and Superresolution Imaging II**

*4:00 PM - 6:00 PM, BALLROOM IV*

**Co-Chairs**

Janet Sheung, Vassar College

Paul Wiggins, University of Washington

**858-Plat**

4:00 PM

**SINGLE PARTICLE TRAJECTORIES REVEAL ACTIVE ENDOPLASMIC RETICULUM LUMINAL FLOW.**

Pierre Parutto, Joseph E. Chambers, Marcus Fantham, Laurence Young, Stefan Marciniak, Clemens F. Kaminski, David Ron, David Holcman, Edward Avezov

**859-Plat**

4:15 PM

**CHROMATIN NANOSCALE ORGANIZATION INVESTIGATED BY FLIM-FRET AND STED SUPERRESOLUTION MICROSCOPY.**

Simone Pellicci, Michele Oneto, Melody Di Bona, Isotta Cainero, Paola Barboro, Alberto Diaspro, Luca Lanzano'

**860-Plat**

4:30 PM

**SINGLE NITROGEN-VACANCY IMAGING IN NANODIAMONDS FOR MULTIMODAL SENSING.**

Maabur Sow, Horst Steuer, Barak Gilboa, Laia Gines, Soumen Mandal, Sanmi Adekanye, Jason M. Smith, Oliver A. Williams, Achillefs N. Kapanidis

**861-Plat**

4:45 PM

**ACTIVE FEEDBACK TRACKING OF SINGLE VIRUSES AND FLUOROPHORES IN SOLUTION.**

Kevin D. Welsher

**862-Plat**

5:00 PM

**SUPER-RESOLUTION MICROSCOPY AS A TOOL FOR COUNTING PROTEINS IN A SUB-CELLULAR ENVIRONMENT.**

Francesca Cella Zanacchi, Raffaella Magrassi, Carlo Manzo, Nathan Derr, Alberto Diaspro

**863-Plat**

5:15 PM

**MOLECULAR COUNTING WITH DNA ORIGAMI - VERIFICATION AND VALIDATION TOWARDS BIOLOGICAL APPLICATIONS.**

Daniel F. Nino, Daniel Djarkassana, Anton Zilman, Joshua Milstein

**864-Plat**

5:30 PM

**STRUCTURAL CONTRIBUTIONS TO HYDRODYNAMIC SIZE OF QUANTUM DOTS FOR IN-VIVO SINGLE MOLECULE TRACKING.**

Janet Y. Sheung, Pinghua Ge, Sung Jun Lim, Sang Hak Lee, Andrew Smith, Paul R. Selvin

**865-Plat**

5:45 PM

**THE OBSERVATION PROTEIN POSITION AND ORIENTATION DYNAMICS USING AN UNBLEACHABLE PROBE.**

Paul A. Wiggins

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**Platform**

**Membrane Receptors and Signal Transduction**

*4:00 PM - 6:00 PM, ROOM 307/308*

**Co-Chairs**

Jinan Wang, University of Kansas

Michael Brown, University of Arizona

**866-Plat**

4:00 PM

**ACTIVATION AND CROSS-INTERACTION OF RECEPTOR TYROSINE KINASES STUDIED BY SINGLE-PARTICLE TRACKING.**

Marie-Lena I. E. Harwardt, Sebastian Strauss, Ralf Jungmann, Marina S. Dietz, Mike Heilemann

**867-Plat**

4:15 PM

**A THERMODYNAMIC FRAMEWORK FOR UNDERSTANDING RTK INTERACTION NETWORKS.**

Michael D. Paul, Kalina Hristova
Platform
Intrinsically Disordered Proteins (IDP) and Aggregates II
4:00 PM - 6:00 PM, ROOM 314/315

Co-Chairs
Franziska Zosel, Novo Nordisk, Denmark
Sarah Bondos, Texas A&M University

884-Plat 4:00 PM
CONFORMATIONAL EFFECTS OF A DISEASE-ASSOCIATED HYDROPHOBIC-TO-HYDROPHOBIC SUBSTITUTION AND HISTIDINE PROTONATION STATE LOCATED AT THE MIDPOINT OF THE INTRINSICALLY DISORDERED REGION OF PROBDNF. Ruchi Lohia, Grace Brannigan

885-Plat 4:45 PM
A PROLINE SWITCH explains KINETIC HETEROGENEITY IN A COUPLED FOLDING AND BINDING REACTION. Franziska Zosel, Davide Mercadante, Daniel Nettels, Benjamin Schuler

886-Plat 5:00 PM
SEQUENCE-BASED FINGERPRINTING OF INTRINSICALLY DISORDERED REGIONS. Garrett M. Ginell, Megan C. Cohan, Alex S. Holehouse

887-Plat 5:15 PM
FUNCTIONAL ADAPTATION MUTATIONS ALTER PROPENSITY FOR ALPHA-HELICAL CONFORMATION IN THE INTRINSICALLY DISORDERED GLUCOCORTICOID RECEPTOR TAU1CORE ACTIVATION DOMAIN. Lennart Nilsson, Anthony Wright, Kyou-Hoon Han

888-Plat 5:30 PM
THE DISORDERED PROTEIN BUGZ CONSERVES MITOTIC FUNCTION AND LIQUID-LIQUID PHASE SEPARATION ACROSS 1.6 BILLION YEARS OF EVOLUTION. Alexander F. Chin, Vincent J. Hilser, Yixian Zheng

889-Plat 5:45 PM
PROBING SPECIFICITY IN DISORDERED PROTEIN INTERACTIONS WITH SMALL MOLECULES USING INTEGRATIVE METHODS. Gabriella T. Heller, Francesco A. Aprile, Massimiliano Bonomi, Carlo Camilloni, Alfonso De Simone, Michele Vendruscolo

880-Plat 5:30 PM
TRAVEL Awardee
NOVEL TALES ABOUT THE MYOSIN VI TAIL. Natalia Fili, Alexander Cook, Yukti Hari Gupta, Christopher P. Toseland

881-Plat 5:15 PM
TRAVEL Awardee
FUNCTIONAL IMPLICATIONS OF DCM END-TO-END BOND MUTATION IN ATROPOMYOSIN. Alice Ward Racca, Nicholas LaFave, Stephanie Jones, Michael J. Rynkiewicz, William Lehman, Jeffrey R. Moore
Macromolecular Interactions and Effects on Membranes
4:00 PM - 6:00 PM, ROOM 316/317

Co-Chairs
Amanda Ward, University of Virginia
Syma Khalid, University of Southampton, United Kingdom

890-PLAT
4:00 PM
THE STRUCTURAL BASIS OF A MEMBRANE-BOUND ESCRT-III HELICAL ASSEMBLY. Henry C. Nguyen, Nathaniel Talledge, John McCullough, Wesley I. Sundquist, Adam Frost

891-PLAT
4:15 PM
CATCHING HIV IN THE ACT OF FUSION: INSIGHT FROM CRYO-ET INTERMEDIATES OF HIV MEMBRANE FUSION. Amanda E. Ward, Kelly A. Dryden, Lukas K. Tamm, Barbie K. Ganser-Pornillos

892-PLAT
4:30 PM
PROBING MEMBRANE FUSION INTERMEDIATES USING BILAYER COATED NANO PARTICLES. Ana Villamil, Peter Kasson

893-PLAT
4:45 PM
BACTERIAL OUTER MEMBRANE VESICLE INTERACTION WITH PLASMA MEMBRANES: INSIGHTS FROM MOLECULAR SIMULATIONS. Damien F. Jefferies, Anna L. Duncan, Syma Khalid

894-PLAT
5:00 PM
LIPID SPONGE-PHASE NANO PARTICLES AS ENZYME CARRIERS - STRUCTURE AND INTERMOLECULAR INTERACTION CONTROLLING THE ENZYME INCLUSION. Maria Valdeperas, Najet Mahmoudi, Susana C. M. Teixeira, Martynas Talaks, Ieva Matulaitien, Gediminas Niaura, Justas Barauskas, Tommy Nylander

895-PLAT
5:15 PM
PREPARING ENDOSEME-DERIVED SUPPORTED MEMBRANES TO STUDY EBOLA VIRUS GP-MEDIATED MEMBRANE BINDING AND FUSION. Laura Odongo

896-PLAT
5:30 PM
DETECTING AND CONTROLLING DYE AND ILLUMINATION EFFECTS IN SINGLE-VIRUS FUSION EXPERIMENTS. Robert J. Rawle, Steven G. Boxer, Peter M. Kasson

897-PLAT
5:45 PM
THE SARS-COV FUSION PEPTIDE FORMS AN EXTENDED BIPARTITE FUSION PLATFORM THAT PERTURBS MEMBRANE ORDER IN A CALCIUM-DEPENDENT MANNER. Alex L. Lai, Jean K. Miller, Susan Daniel, Gary R. Whittaker, Jack H. Freed

Exhibitor Presentation
Molecular Devices
4:30 PM - 6:00 PM, ROOM 301

SUPERCHARGE YOUR PATCH-CLAMP DATA ACQUISITION AND ANALYSIS WITH THE NEW AXON pCLAMP 11 SOFTWARE.
The patch-clamp technique remains the best method for examining ion channel physiology and membrane biophysics. Axon Instruments and pCLAMP software continue to push the envelope with new innovations with best-in-class systems and software. In this user meeting we learn about new features of pCLAMP 11 software and methods to optimize your workflow and simplify experiments.

Speaker
Jeffrey Tang, Senior Global Axon Electrophysiological Application Scientist, Molecular Devices

Exhibitor Presentation
LUMICKS
5:30 PM - 7:00 PM, ROOM 303

A VERSATILE PLATFORM FOR HIGH-RESOLUTION SINGLE-MOLECULE RESEARCH: EXPANDING CAPABILITIES AND EXPLORING NEW POSSIBILITIES
Proteins interact with nucleic acids and the cytoskeleton to perform biological processes that are key to cell metabolism and life. The direct observation of such interactions in real time and at the single-molecule level enable scientists to make new discoveries and to test current biological models. Single-molecule studies of cytoskeleton filaments and their interaction to associated proteins are often developed in surface-based assays where the glass surface is used as a substrate to rigidly anchor the biological molecules of interest. To capture the dynamics of the system and its interactions, the samples are typically labeled with fluorescent dyes and are imaged with fluorescence methods. However, despite the versatility of fluorescent methods, label-free imaging methods are desirable to better mimic the native biological conditions and to reduce photo-damage due to fluorescence excitation during long experiments.

Here, we present our recent developments to further enable discoveries in the field of biology and biophysics with a special focus in surface-based assays. We present a novel instrument arrangement that includes optical tweezers in combination with Interference Reflection Microscopy (IRM) and Total Internal Reflection Fluorescence (TIRF) Microscopy. IRM is a recently introduced imaging method that allows visualization of biological structures in 3D without the need for fluorescence labeling and with sensitivity exceeding that of Differential Interference Contrast (DIC) microscopy.

In addition, we show the latest applications of these technologies and how they enhance our understanding of several fields of biology, including molecular motors and cytoskeleton filaments, DNA/RNA-protein interactions, protein folding/unfolding, cell membranes, and genome structure and organization. These applications show that the technological advances in hybrid single-molecule methods for imaging and manipulation can be turned into easy-to-use and stable instruments with the ability to open up new venues in many research areas.

Speakers
Andrea Candelli, Application Scientist, LUMICKS
Sara Tafoya, Application Scientist, LUMICKS
Trey Simpson, Application Scientist, LUMICKS

Dinner Meet-Ups
6:00 PM - 6:30 PM, SOCIETY BOOTH/CHARLES STREET LOBBY
Interested in making new acquaintances and experiencing the cuisine of Baltimore? Meet at the Society Booth each evening, Sunday through Tuesday, at 6:00 pm where a BPS member will coordinate dinner at a local restaurant.

Awards and 2019 Biophysical Society Lecture
8:00 PM - 9:00 PM, BALLROOMS I-IV

Reception and Dance
9:30 PM - 12:00 AM, HILTON, KEYS BALLROOM

Reception and Quiet Room
9:30 PM - 12:00 AM, HILTON, PEALE C/A
MONDAY POSTER SESSIONS
1:45 PM–3:45 PM, EXHIBIT HALL C

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

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

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

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<th>Board Numbers</th>
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<td>B1–B35</td>
<td>Protein Structure and Conformation II</td>
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<td>B36–B60</td>
<td>Protein Stability, Folding, and Chaperones I</td>
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<td>B61–B76</td>
<td>Protein Assemblies II</td>
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<td>B77–B108</td>
<td>Intrinsically Disordered Proteins (IDP) and Aggregates I</td>
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<td>B343–B357</td>
<td>Cytoskeletal Assemblies &amp; Dynamics</td>
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<td>B358–B380</td>
<td>Microtubules, Structure, Dynamics, and Associated Proteins</td>
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<td>B381–B391</td>
<td>Myosins and Smooth Muscle Mechanics, Structure, and Regulation</td>
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<td>B392–B415</td>
<td>Cardiac Muscle Mechanics and Structure</td>
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<td>B416–B443</td>
<td>Mitochondria in Cell Life and Death</td>
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<td>B444–B453</td>
<td>Emerging Techniques and Synthetic Biology</td>
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<td>B454–B461</td>
<td>Neuroscience: Experimental Approaches and Tools</td>
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<td>B462–B475</td>
<td>Single-Molecule Spectroscopy II</td>
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<td>B476–B502</td>
<td>Optical Microscopy and Superresolution Imaging II</td>
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<td>B503–B512</td>
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<td>B513–B541</td>
<td>Computational Methods and Bioinformatics I</td>
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<td>B542–B556</td>
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<tr>
<td>B557–B565</td>
<td>Biomaterials</td>
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</tbody>
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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 - B35)

899-Pos  Board B1  MOLECULAR BASIS OF THE MARBURG VIRUS PROTEIN VP24 INTERACTIONS WITH HUMAN KEAP1. Nisha Bhattacharai, Prem P. Chapagain, Bernard Gerstman

900-Pos  Board B2  SOLUTION NMR STRUCTURE OF THE GTPASE ACTIVATING (GAP) DOMAIN OF VOPE, A VIBRIO CHOLEREA T3SS EFFECTOR PROTEIN. Kyle P. Smith, Woonghee Lee, Marco Tonelli, Priscilla S-W Yeung

901-Pos  Board B3  CHARACTERIZATION AND IRON BINDING DYNAMICS OF HAEMOPHILUS INFLUENZAE FERRIC BINDING PROTEIN. Goksin Liu, Ezgi Altun, S. Mert Unal, Canan Atligan, Zehra Sayers

902-Pos  Board B4  DESIGNING SUPERHYDROPHILIC, DISORDERED PEPTIDES TO IMPROVE THE STABILITY AND EFFICACY OF PROTEIN THERAPEUTICS. Joshua Smith, Patrick McMullen, Zhefan Yuan, Shaoyi Jiang, Jim Pfandtner

903-Pos  Board B5  SYSTEMATIC ANALYSIS OF INTERNAL HYDRATION IN A PROTEIN. Anne M. Rice, Jaime L. Schlessman, Bertrand Garcia-Moreno

904-Pos  Board B6  MARKOV MODELS OF FUNCTIONAL DYNAMICS OF HISTONE LYSINE METHYLTRANSFERASES BY MILISECOND-TIMESCALE MOLECULAR SIMULATION AND CHEMICAL PROBING. Rafał P. Wiewiora, Shi Chen, Minkui Luo, John D. Chodera

905-Pos  Board B7  STRUCTURAL MODULATION OF RYR1 BY MGATP AND FREE MG²⁺ IN LIPID MEMBRANE USING CRYOEM. Ashok R. Nayak, Alex H. Will, Joshua Lobo, Pablo C. Hartmann, Montserrat Samso

906-Pos  Board B8  CLASSIFYING OF ARRHYTHMOGENIC CARDIOMYOPATHY-LINKED DESMOPRINANS THROUGH MOLECULAR MECHANISMS OF PATHOGENICITY. Tyler L. Stevens, Heather Manring, Taylor Albertelli, Ronald Ng, Nathan T. Wright, Stuart Campbell, Maegen Ackermann

907-Pos  Board B9  CHARACTERIZATION OF PREDICTED SMALL PROTEINS. Allison White, Christina Cleveland, Jeffre Allen, Irwin Jungreis, John Rinn, Loren Hough

908-Pos  Board B10  TRAVEL AWARDEE SIMULATION GUIDED DESIGN OF SPECTROSCOPY EXPERIMENTS VIA MAXIMIZING KINETIC INFORMATION GAIN. Shriya Mittal, Diwakar Shukla

909-Pos  Board B11  STRUCTURAL BASIS UNDERLYING AUTOINDUCER ACTIVATION OF THE VIBRIO CHOLEREA VQM A QUORUM-SENSING RECEPTOR. Jon Paczkowski

910-Pos  Board B12  REINFORCEMENT LEARNING OF PROTEIN CONFORMATIONAL ENSEMBLE. Jiayuan Feng

911-Pos  Board B13  BIOINFORMATICS OF NEW SELECTIVE INSECTICIDE TARGET IN INSECT SPECIES. Hassan M. Younis

912-Pos  Board B14  DISASSEMBLING AND REASSEMBLING COMPLEX STRUCTURE OF GLUTAMATE DEHYDROGENASE 1 (DGH-1), MONITORED BY TRYPTOPHAN AND 1-ANILINONAPHTHALENE-8-SULFONATE (ANS) FLUORIMETRY. Bogumil Zelent, David F. Wilson, Franz M. Matschinsky

913-Pos  Board B15  IN-CELL FAST PHOTOCHENICAL OXIDATION OF PROTEINS FOR PROTEOMIC WIDE STRUCTURAL BIOLOGY. Emily E. Chea, Lisa M. Jones

914-Pos  Board B16  EXPLORE THE BINDING OF HEPATITIS B VIRUS CORE PROTEIN PEPTIDES WITH HLA-A2.1 BY MOLECULAR MODELING METHODS. Lianhua Piao, Zhou Chen, Shan Chang, Jian Li, Ren Kong

915-Pos  Board B17  DIVULGING CHARACTERISTIC FEATURES OF THE NOVEL A-SYNUCLEIN OLIGOMERS AUGMENTING PARKINSON'S DISEASE. Animesh Mondal, Nakul Chandra Maiti

916-Pos  Board B18  ATOMISTIC MECHANISMS UNDERLYING THE ACTIVATION OF G PROTEIN-COUPLED SWEET RECEPTOR HETERODIMER MEDIATED BY SUGAR ALCOHOL RECOGNITION. Thanyada Rungrotmongkol

917-Pos  Board B19  INVESTIGATING THE RESPONSE OF TYPE IV PILINS AND TYPE IV PILUS FILAMENTS TO APPLIED FORCE USING ALL-ATOM STEERED MOLECULAR DYNAMICS SIMULATIONS. Maria N. Fairfield, Stephen J. Jones, Nicolas Biais, Joseph L. Baker

918-Pos  Board B20  PROBING THE POLYMORPHIC TRANSITION OF TYPE IV PILUS FILAMENT UNDER FORCE USING COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. Bryan A. Bogin, Christopher A. Lovenduski, Nicolas Biais, Joseph L. Baker

919-Pos  Board B21  MOLECULAR DYNAMICS INVESTIGATIONS OF ENZYME CONFORMATIONAL CHANGES. Prabir Baral, Nisha Bhattacharai, Rudramani Pokhrel, Bernard Gerstman, Prem P. Chapagain

920-Pos  Board B22  HIGH YIELD PRODUCTION OF FUNCTIONAL HIF PROLYL HYDROXYLASE DOMAIN PROTEINS FROM INCLUSION BODY EXPRESSION IN E. COI. Nakoa K. Webber, Thomas J. Fasano, Jacob T. Zangaro, Pamela N. Gallo, Kayla A. Schardien, Michelle M. Currie, Nathaniel V. Nucci

921-Pos  Board B23  STUDYING THE DYNAMIC MOTIONS OF WATER SURROUNDING THE ICE-BINDING FACE OF M1.1 ANTIFREEZE PROTEIN. Joseph C. Iovine, Pamela N. Gallo, Kayla A. Callaway, Peter L. Davies, Nathaniel V. Nucci

922-Pos  Board B24  SINGLE-MOLECULE FORCE SPECTROSCOPY OF M-VALUE MUTANTS OF STAPHYLOCOCCAL NUCLEASE INDICATES COMPLEX PROTEIN FOLDING LANDSCAPE. James Rives, Joseph Rehfus, Vincent J. Hilser

923-Pos  Board B25  COMPUTATIONAL AND SPECTROSCOPIC INVESTIGATION OF COMMUNICATION MECHANISMS USED BY ACYL CARRIER PROTEINS. Terra Sztain-Pedone, Michael D. Burkart, James A. McCammon

924-Pos  Board B26  DISSECTING THE ALLOSTERIC EFFECTS OF PVHL G123F MUTATION IN TYPE 2A PVHL DISEASE. Hongsheng Qian, Yu Zou, Qingwen Zhang

925-Pos  Board B27  ION PAIRS BURIED IN HYDROPHOBIC ENVIRONMENTS WITHIN PROTEINS: ELECTROSTATIC CROSSTALK BETWEEN BURIED GROUPS. Aaron Robinson, Andrea Theodoru, Jamie L. Schlessman, Bertrand Garcia-Moreno

926-Pos  Board B28  POLYMORPHISMS MODULATE SHEEP PRION PROTEIN SUSCEPTIBILITY TO MISFOLDING BY ALTERING THE RESIDUE NETWORK OF INTERACTIONS. India Claffin, Noah Yoshida, Patricia Soto
927-Pos  BOARD B29
TOWARDS THE INHIBITION OF CALPAIN-DEPENDENT DESMOPLAKIN CLEAVAGE IN ARRHYTHMOGENIC CARDIOMYOPATHIES. Taylor Albertelli, Kendall Ott, Heather R. Manring, Stuart G. Campbell, Maegen Borzok, Nathan T. Wright

928-Pos  BOARD B30
CRYO-EM STRUCTURAL ANALYSIS OF NEURONAL NITRIC OXIDE SYNTHASE. Thomas H. Pospiech, Yoshihiro Morishima, Yoichi Osawa, Daniel R. Southworth

929-Pos  BOARD B31
USING 4-CYANOPHENYLALANINE TO PROBE THE DEGREE OF WATER EXPOSURE IN A PEPTIDE HYDROGEL. Benjamin F. Frost, William E. Fox, Fiona Berry, Katherine Chung, Karin Akerfeldt

930-Pos  BOARD B32
EVALUATION OF THE HIV GENOME TO PROMOTE GAG HEXAMERIZATION. Noel Getachew

931-Pos  BOARD B33
OBSCURIN ACTS AS A SEMI-FLEXIBLE CHAIN IN SOLUTION. Jake Whitley, Aidan Ex-Willey, Daniel Marzolf, Oleksandr Kokhan, Maegen Ackermann, Anthony Tengen, Nathan T. Wright

932-Pos  BOARD B34
LARGE-SCALE ALL-ATOM SIMULATIONS OF T4P FILAMENT REVEAL CRITICAL INTERACTIONS FOR T4P STABILITY. Rebecca B. Goncalves, Nicolas Biais, Joseph L. Baker

933-Pos  BOARD B35
EFFECTS OF LOCAL AND GLOBAL DYNAMICS ON THE SUPER TERTIARY ORGANIZATION OF POSTSYNAPTIC DENSITY PROTEIN 95. George L. Hamilton, Jakub Kubiat, Claus A.M. Seidel, Hugo Sanabria

Protein Stability, Folding, and Chaperones I (Boards B36 - B60)

934-Pos  BOARD B36
UV PEROXIDATION REDUCES POLOXAMINE T1107 CAPABILITY TO DISAGGREGATE LYSOZYME. Michelle X. Ling, Colin A. Mcfaul, Raphael C. Lee

935-Pos  BOARD B37
NEW APPROACH TO EVALUATING THE STABILITY OF ANTIBODIES USING CIRCULAR DICHRISMO SPECTROSCOPY SCREENING. Satoko Suzuki, Yasuo Horiguchi, Leah Pandiscia, Koushi Nagamori, Hiroshi Nakayama, Kouhei Tsumoto

936-Pos  BOARD B38
PROBING (UN)FOLDING TRANSITION PATHS OF FAST-FOLDING PROTEINS BY SINGLE-MOLECULE FLUORESCENCE: EXPLORING THE ROLE OF SECONDARY STRUCTURE, FOLD TOPOLOGY AND SEQUENCE. Niniv Mothi, Mourad Sadqi, Victor Munoz

937-Pos  BOARD B39
MONITORING DYNAMICS OF PROTEIN NASCENT CHAIN ON THE RIBOSOME USING PET-FCS. Marija Liutkute, Ekaterina Samatova, Manisankar Mait, Wolf H. Holtkamp, Jörg Endlerlein, Marina V. Rodnina

938-Pos  BOARD B40
ENHANCED PH DEPENDENT MODULATION OF ALPHA CRYSTALLIN CHAPERONE FUNCTION AND SUBUNIT EXCHANGE IN AN N-TERMINAL PHOSPHORYLATION MIMIC. Kashmeera Baboolall, Belelot Birhanu, Natalie Braun, Yusrah Kaudeer, Patricia B. O’Hara

939-Pos  BOARD B41
H20Y MUTATION STABILIZES STRUCTURE OF THE PRIMARY DNA RECOGNITION DOMAIN OF THE SLEEPING BEAUTY TRANSPOSASE. Chenbo Yan, Gage O. Leighton, Janna Lustig, Zoltán Ivics, Irina V. Nesmelova

940-Pos  BOARD B42
A STRUCTURAL, DYNAMIC, AND THERMODYNAMIC EXPLANATION OF THERMOSTABILITY IN A DE NOVO DESIGNED THREE-Helix BUNDLE. Natali Gonzalez, Emily Hamlin, Parwana Khazi, Catrina Nguyen, Jennifer Young, Michelle E. McCully

941-Pos  BOARD B43
LONG-RANGE PROTEIN-GLYCAN INTERACTIONS STABILIZE VON WILLEBRAND FACTOR A2 DOMAIN FROM MECHANICAL UNFOLDING. Chuijiao Dong, Jumin Lee, Seonghoon Kim, Whitney Lai, Edmund B. Webb, Alparslan Oztekin, Xiaohui Zhang, Wonpil Im

942-Pos  BOARD B44
STUDYING THE FOLDING BEHAVIOR OF A 3D LATTICE PROTEIN UNDER OSCILLATORY CONDITIONS. Qizhang Jia, Xuanye Zhu, Austin Cheng, Cory J. Kim, Amy Y. Wang, Kati H. DuBay

943-Pos  BOARD B45
A COMPREHENSIVE INVESTIGATION OF THE STABILIZATION OF MONOMERIC HFG1 BY HEPARIN HEXASACCHARIDE USING MICROSECOND-LEVEL MD SIMULATIONS AND ENHANCED SAMPLING TECHNIQUES. Vivek Govind Kumar, Shilpi Agrawal, T.K.S. Kumar, Mahmoud Moradi

944-Pos  BOARD B46
IDENTIFYING INTERMEDIATE STATES IN PRION PROTEIN FOLDING PATHWAY: A POSSIBLE PRECURSOR TO THE MISFOLDED STATE? Balaka Mondal

945-Pos  BOARD B47
DISULFIDE BONDS MODULATE LYSOZYME FOLDING PATHWAYS. Aswathy Muttathukattil Narayanan

946-Pos  BOARD B48
PROBING THE CHAPERONE ACTIVITY OF ERYTHROID SPECTRIN. Dipayan Bose, Abhijit Chakrabarti

947-Pos  BOARD B49
MOLENPROT: A HIGH-THROUGHPUT ANALYSIS PLATFORM TO ASSESS THERMODYNAMIC STABILITY OF MEMBRANE PROTEINS AND COMPLEXES. Vadim Kotov, Oliver Vesper, Maria Garcia Alai, Christian Loew, Thomas C. Marlovits

948-Pos  BOARD B50
STRUCTURAL DYNAMICS OF C-MYB DNA-BINDING DOMAIN REVEALED BY DXT AND THERMAL ANALYSIS. Satomi Inaba, Yuhi Hosoe, Yuji C. Sasaki, Hiroshi Sekiguchi, Masayuki Oda

949-Pos  BOARD B51
THE EARLIEST STAGES OF A PROTEIN’S LIFE INFLUENCES ITS LONG-TERM SOLUBILITY AND STRUCTURAL ACCURACY. Matthew D. Dalphin, Angela Varela, Andrew Stangl, Robert Kirchdoerfer, Rayna Addabbo, Yoo Jin Song, Yue Liu, Silvia Cavagnero

950-Pos  BOARD B52
N-HXMS: A METHOD TO DIRECTLY MEASURE PROTEIN FOLDING AND STABILITY UNDER NATIVE CONDITIONS. Nejc Nagelj, Minjee Kim, Kaeli Mathias, Sheila Jaswal

951-Pos  BOARD B53
INVESTIGATING THE EFFECTS OF MISSENSE MUTATIONS IN MSH2 GENE ASSOCIATED WITH LYNCH SYNDROME. Bohua Wu, Yunhui Peng, Julia A. Eggert, Emil Alexov

952-Pos  BOARD B54
UNSUPERVISED LEARNING FOR DECOY SELECTION IN PROTEIN STRUCTURE PREDICTION. Nasrin Akhter, Gopinath Chennupati, Hristo Djdjiev, Amarda Shehu

953-Pos  BOARD B55
BIOPHYSICAL CHARACTERIZATION OF DIFFERENCES IN DOMAIN-DOMAIN INTERACTIONS BETWEEN THE APOLIPOPROTEIN E4 AND E3. Subhrarajyoti Dolai, Kanchan Garai
Using computational modeling to understand the binding mechanism of designed cyclic B-hairpin to MDM2. Yunhui Ge, Vincent Voelz

Single-molecule force spectroscopy shows that the anti-prion compound pentosan polysulfate binds heterogeneously to folded and unfolded prion protein. Rafael Petrosyan, Patra Shuhadeep, Negar Rezaajoeei, Craig Garen, Michael T. Woodside

Site-specific characterization of intermediates in folding-tetramerization of melittin by the rapid mix/freeze method and magic angle spinning dynamic nuclear polarization (MAS-DNP) NMR at low temperature (25K). Jaekyun Jeon, Kent Thurber, Waiming Yau, Robert Tycko

Radioligand thermostability assessment of agonist-bound human type 2 cannabinoid receptor. Ryan L. Beckner, Klaus Gawrisch, Alexei Yeliseev

Protein Assemblies II (Boards B61 - B76)

Towards understanding amyloid formation mechanism of beta2-microglobulin induced by copper ions. Chungwen Liang


Non-classical nucleation of tumor suppressor P53 fibrils hosted by mesoscopic protein-rich clusters. Peter G. Vekilov

Correlating amino acid sequence and solvation to disordered protein collapse transitions and phase separation. Erik W. Martin, Alex S. Holehouse, Ivan Peran, Anne Bremer, Rohit V. Pappu, Tanja Mittag

Multi-step 2D protein crystallization via structural changes within an ordered lattice. Jonathan Herrmann, Colin J. Comerci, Fatemeh Jabbarpour, Lucy Shapiro, William E. Moerner, Soichi Wakatsuki

Modeling the assembly order of multimeric heteroprotein complexes. Lenna Peterson, Yoichiro Togawa, Juan Esquivel-Rodriguez, Genki Terashi, Charles Christoffer, Amitava Roy, Woong-Hee Shin, Daisuke Kihara

Variable binding of thioflavin T to amyloid fibrils. Hiroaki Komatsu, Claire Meurice, Paul H. Axelsen


Intrinsically Disordered Proteins (IDP) and Aggregates I (Boards B77 - B108)

The intrinsic folding mechanism affects the coupled folding-binding process of unfolded proteins. Meng Gao, Zhengding Su, Yongqi Huang

Recognition mechanism of the intrinsically disordered dsRNA binding domain DCL1-A with its substrate from molecular dynamics simulations. Yuwen Chen, Meng Gao, Yongqi Huang

Mechanism of coupled folding of disordered colicin E3 RNase domain upon binding with IM3. Xingyu Chen, Yongqi Huang, Zhengding Su, Meng Gao

The rational discovery and design of disordered protein ligands. David W. Baggett, Abhinav Nath

Polymer theory for sequence-specific phase separation behaviors of charged intrinsically disordered proteins. Yi-Hsuan Lin, Julie D. Forman-Kay, Hue Sun Chan
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980-Pos  Board B82  The coupled folding-binding mechanisms of intrinsically disordered proteins with different folded structures. Jing Yang, Meng Gao, Zhengding Su, Yongji Huang

981-Pos  Board B83  Travel Awardee  Characterizing time-of-day conformational changes in the IDP frequency at the heart of the circadian clock in N. Crassa using the crafty protocol. Jacqueline Peiham, Alexander E. Mosier, Jennifer M. Hurley

982-Pos  Board B84  Study of potential kinetic advantages of intrinsically disordered regions for protein association. Mikita Misliura, Anatoly B. Kolomeisky

983-Pos  Board B85  Biophysical characterization of the translational isoforms of the human glucocorticoid receptor. Emily M. Grasso, Ananya Majumdar, Dominique P. Frueh, Vincent J. Hilser

984-Pos  Board B86  Coarse-grained simulations of disordered proteins: Effect of interaction potentials and charge pattern parameters. Suman Das

985-Pos  Board B87  Modeling the effects of ligand binding on the phase behavior of aggregation-prone proteins. Kiersten M. Ruff, Ammon E. Posey, Rohit V. Pappu

986-Pos  Board B88  Redox of cysteines and protein folding of Snap-25. Aidan H. Mourik, Matt Pettitt, Robert E. Coffman, Graham M. Pingree, Chandler B. McSpadden, Dixon J. Woodbury

987-Pos  Board B89  Theoretical SAXS signatures of conformational heterogeneity and homogeneity of disordered protein ensembles. Jianhui Song, Hue Sun Chan

988-Pos  Board B90  Investigating the role of charge-altering post-translational modifications on Tau peptide conformational ensembles using polarizable molecular dynamics simulations. Darcy S. Davidson, Justin A. Lemkul

989-Pos  Board B91  Protein unfolded states are characterized by the duality of sequence-specific conformational preferences and ensemble-averaged features of canonical random coils. Alex S. Holehouse, Ivan Peran, Natalie E. Stenzoski, Junjie Zou, Andrea Piserchio, Ranaajet Ghose, Isaac S. Carrico, Osman Bilsel, Daniel P. Raleigh, Rohit V. Pappu

990-Pos  Board B92  A high throughput method for exploring the sequence space of polypeptides that exhibit thermoresponsive phase behavior. Xiangze Zeng, Martin J. Fossat, Nicholas Tang, Ashutosh Chilkoti, Rohit V. Pappu

991-Pos  Board B93  Computational simulations of the Nterm-XD complex from the NIPAH virus for constructing experimentally-validated structural ensemble. ChuHui Fu, Casey H. Londergan, Rosalind J. Xu

992-Pos  Board B94  Measures adapted from information theory and energy landscape theory for quantifying sequence-to-conformation relationships of intrinsically disordered regions. Megan Cohan, Alex S. Holehouse, Rohit V. Pappu

993-Pos  Board B95  Characteristics of the binding interaction between PDX1 and SPOP. Grace A. Usher, Roman Rohac, Amie K. Boal, Scott A. Showalter

994-Pos  Board B96  Travel Awardee  Dynamic interactions between an intrinsically disordered protein and its binding partners probed by multiparameter single-molecule fluorescence. Taehyung Chris Lee, Gregory-Neal Gomes, John Darvy M. Castroverde, Claudiu C. Gradinaru

995-Pos  Board B97  The importance of sequence order versus composition in the cryoprotective function of an intrinsically disordered protein. Steffen P. Graether, Sharall Palmer, Ray De Villa, Andrew Harris, Leonid S. Brown

996-Pos  Board B98  A membrane-bound selenoprotein regulates its activity by autophosphorylation. Rujin Cheng, Marina Grossi, Jun Liu, Peter R. Hoffmann, Sharon Rozovsky

997-Pos  Board B99  Local chain dynamics of intrinsically disordered Sic1 protein inferred from fluorescence anisotropy decay measurements. John Darvy M. Castroverde, Gregory-Neal W. Gomes, Taehyung C. Lee, Julie Forman-Kay, Claudiu C. Gradinaru

998-Pos  Board B100  Exploring the structural properties of synaptotagmin’s intrinsically disordered region. Michael E. Fealey, Anne Hinderliter, David D. Thomas


1000-Pos  Board B102  Solvent effects on the self-assembly and mechanical properties of elastin-like peptides. Ananya Srivastava, Zhuhi Xue, Lisa D. Muznieks, Fred W. Keeley, Regis Pomes

1001-Pos  Board B103  Experimental and computational characterization of the conformational ensemble and interaction motifs of CHIZ N-terminal intrinsically disordered region. Alan Hicks, Cristian Escobar, Timothy A. Cross, Huan-Xiang Zhou

1002-Pos  Board B104  Extracting sequence-dependent intra-protein interaction parameters from photo-induced electron transfer measurements of IDPs. Felicia Gibson, Andrea Soranno, Wenwei Zheng, Sara M. Vaiana

1003-Pos  Board B105  The amino acid sequence features of the fg nucleoporins affect the movement of cargo complex inside the NPC. Mohaddeseh Peyro, Mohammad Mofrad

1004-Pos  Board B106  Sensitivity-enhanced DNP NMR for in situ structural biology. Kendra K. Frederick

1005-Pos  Board B107  The functional significance of intrinsically disordered protein regions encoded by the diabetes gene CLEC16A. Morgan Gingerich, Xueying Liu, Michael Vincent, Bioxian Chai, Tracy Vazheiko, Gemma Pearson, Daniel Klionsky, Santiago Schenll, Soleimanpour Scott
**Molecular Mechanisms of the Interaction Between the RNA-Binding Protein NAB2 and the Nuclear Basket Protein MLP1 in MRNA Quality Control. Mohammad Soheilypour, Mohaddeseh Peyro, Hengameh Shams, Stephanie Rider, Ali R. Kazempur-Mofrad, Mohammad Mofrad**

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**Spatial Confinement Effects on Lipid Kinase and Phosphatase Reactions on Membrane Surfaces. Albert A. Lee**

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**Molecular Simulations Give Insights into the NDM-1/MEM-Binder Activation Mechanism Alteration of Receptor Tyrosine Kinase Mutants. Soyeon Kim, Zhenhfang Du, Christine Lovly, Adam W. Smith**

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**Investigating the Activation Mechanism Alteration of Receptor Tyrosine Kinase Mutants. Soyeon Kim, Zhenhfang Du, Christine Lovly, Adam W. Smith**

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**The Open State of the Bam Complex Is Stabilized by Its Accessory Proteins. Zijian Zhang, David Ryo, Karl Lundquist, James Gumbart**

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**Retinal Flipping During Rhodopsin Activation Revealed by Solid State 1H NMR and QM/MM Simulations. Andrey V. Struts, Mikhail N. Ryazantsev, Xiaolin Xu, Trivikram R. Molugu, Suchithranga M.D.C. Perera, Charitha Guruge, Samira Faylough, Carolina Nascimento, Nasri Nesnas, Michael F. Brown**

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**Ubiquitination of MHC II Changes Dynamics of Its Recognition Structure. Haruo Kozono, Takashi Kawamoto, Yuko Kozono, masahiro kuramochi, Yuji C. Sasaki**

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**Study of Ultra-Fast Rhodopsin Activation Dynamics with Molecular Dynamics Simulations. Letty Salas, Derek Mendez, José Domingo Meza-Aguilar, Suchithranga M. D. C. Perera, Abhishek Singharoy, Andrey V. Struts, Nadia A. Zatsepin, Richard A. Kirian, Thomas D. Grant, Petra Fromme, Michael F. Brown, Alan Grossfield**

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**Molecular Dynamics of the Interaction Between the RNA-Binding Protein NAB2 and the Nuclear Basket Protein MLP1 in MRNA Quality Control. Mohammad Soheilypour, Mohaddeseh Peyro, Hengameh Shams, Stephanie Rider, Ali R. Kazempur-Mofrad, Mohammad Mofrad**

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**Rhodopsin Activation Mediated by Internal Dynamic Actin Mediated Nanoclustering of CD44 Regulates Its Membrane Properties. Sangeeta Nath, Nicolas Mateos, Takahiro Fujiwara, Maria F. Garcia-Parajo, Akhiro Kusumi, Satyajit Mayor**

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**Dynamics and Energies of Gating Mechanism in Mechanosensitive Channel of Large Conductance (MSCL). Rajitha R. Tatikonda, Juan M. Vanegas**

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**Selective and Substrate Translocation Mechanism in Eukaryotic Sweet Proteins: Bioinformatics and Molecular Dynamics Studies. Ankita Gupta, Ramasubbu Sankaramakrishnan**

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**Topographic Modulation of Acetylcholine Receptors Diffusion Dynamics on Live Cell Membrane. Yusheng Shen, Chengjie Luo, Penger Tong**

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**Electromigration of Cell Surface Macromolecules During Galvanotaxis. Anyesha Sarkar, Brian M. Kobylkevich, David M. Graham, Mark A. Messerli**

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**Analysis of Ion Channel Dynamics by Single Molecule Tracking in Live Cells. Yeonki Hong, Jiseong Park, Daeha Seo**

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**Gating Mechanism of a Potassium Channel, Experimental and Theoretical Studies. Charline Fagnen, Ludovic Bannwarth, Iman Oubella, Yasmina Mhoumadi, Aline De Araujo, Eric Forest, David Parahia, Catherine Vénien-Bryan**
1031-Pos | BOARD B133
DYNAMIC COUPLING OF THE AROMATIC ROTAMER CONFORMATION WITH THE BACTERIOPHODOPSIN PHOTOCYCLE AS REVEALED BY THE CHEMICAL SHIFT ASSISTED QM/MM CALCULATIONS. Sijin Chen, Xiaoyan Ding, Chao Sun, Haolin Cui, Anthony Watts, Xiao He, Xin Zhao

1032-Pos | BOARD B134
EXPLORING THE HYDROPHOBIC BARRIER OF HUMAN K2P CHANNEL TWIK1 WITH STEERED MD SIMULATIONS. Bharat Poudel, Rajitha R. Tatikonda, Juan M. Vanegas

**Transcription (Boards B135 - B146)**

1033-Pos | BOARD B135
NUCLEAR MYOSIN VI STABILIZES RNA POLYMERASE II IN TRANSCRIPTION FACTORIES. Yukti Hari Gupta, Natalia Fili, Alia dos Santos, Teng-Leong Chew, Jesse Aaron, Lin Wang, Christopher P. Toseland

1034-Pos | BOARD B136
NUCLEAR MYOSIN VI REGULATES ESTROGEN RECEPTOR DRIVEN GENE EXPRESSION. Yukti Hari Gupta, Natalia Fili, Alia dos Santos, Teng-Leong Chew, Jesse Aaron, Lin Wang, Christopher P. Toseland

1035-Pos | BOARD B137

1036-Pos | BOARD B138
RNA ISOFORM IDENTIFICATION VIA SEQUENTIAL HYBRIDIZATION AND STRAND DISPLACEMENT BASED AMPLIFICATION IN THE CAENORHABDITIS ELEGANS GERMLINE. Gable M. Wadsworth, Harold D. Kim

1037-Pos | BOARD B139
G-QUADRUPLEX FORMING SEQUENCE MODULATED TRANSCRIPTION. Chun-Ying Lee, Christina McNerney, Kevin Ma, Su Myong

1038-Pos | BOARD B140
TRANSCRIPTION MACHINE STUDIED IN A NUTSHELL ON T7 RNA POLYMERASE MECHANOCHEMISTRY, FIDELITY CONTROL, AND BURSTING ACTIVITY. Jin Yu

1039-Pos | BOARD B141
TFIIH GENERATES A SIX-BASE-PAIR OPEN COMPLEX DURING EUKARYOTIC TRANSCRIPTION INITIATION. Eric A. Galburt, Eric J. Tomko, James Fishburn, Steven Hahn

1040-Pos | BOARD B142
NUCLEAR NDP52 - A PUTATIVE TRANSCRIPTION REGULATOR. Alia dos Santos, Lin Wang, Christopher P. Toseland

1041-Pos | BOARD B143
TRAVEL AWARD: CHARACTERIZING TRANSIENT INTERMEDIATES IN PRODUCTIVE RNAS PROCESSING GENE. Claire E. Evensen, Kate Henderson, M. Thomas Record

1042-Pos | BOARD B144
EFFECTS OF DISCRIMINATOR CHANGES ON OPEN COMPLEX FORMATION, STABILIZATION, AND TRANSCRIPTION INITIATION. Hao-Che Wang

1043-Pos | BOARD B145
TRAVEL AWARD: REGULATION OF MYCOBACTERIAL RNA POLYMERASE PROMOTER ESCAPE KINETICS BY TRANSCRIPTION FACTORS CARD AND RBPA. Drake Jensen, Ana Ruiz Manzano, Christina L. Stallings, Eric A. Galburt

1044-Pos | BOARD B146
TRANSCRIPTION FACTOR REGULATION OF RNA POLYMERASE’S TORQUE GENERATION CAPACITY. Jie Ma, Chuang Tan, Xiang Gao, Robert M. Fulbright, Jeffrey W. Roberts, Michelle D. Wang

**Protein-Nucleic Acid Interactions I (Boards B147 - B171)**

1045-Pos | BOARD B147
PREDICTING DIFFUSION COEFFICIENTS OF DNA-PROTEIN COMPLEXES BY CONVEX HULL MODELLING. Miles Lee, Quan Wang

1046-Pos | BOARD B148
LOOPS ENHANCE TRANSCRIPTIONAL ROADBLOCKS. Wenxuan Xu, Yan Yan, David D. Dunlap, Laura Finzi

1047-Pos | BOARD B149
DNA BINDING/UNBINDING RATES REVEALED FOR NONSPECIFIC ARCHEOLOGICAL DNA-BINDING PROTEIN YNHP6A. Viktoriya Zvoda, Manas K. Sarangi, Molly Nelson Holte, Nicole A. Becker, Justin P. Peters, Louis J. Maher, Ill, Anjum Ansari

1048-Pos | BOARD B150
DIRECT OBSERVATION OF DNA TARGET SEARCHING AND CLEAVAGE BY CRISPR-CAS12A. Yongmoon Jeon, You Hee Choi, Yunsu Jang, Jiyoun Gu, Cheryhyun Jeong, Sanghwa Lee, Sangsu Bae

1049-Pos | BOARD B151
ELECTRIC-FIELD-DRIVEN TRANSLLOCATION OF SSDNA THROUGH HYDROPHOBIC NANOPORES. Taylor Haynes, Iain P. S. Smith, Jayne Wallace, Jemma Trick, Mark S. Sansom, Syma Khalid

1050-Pos | BOARD B152
TIN2 IS AN ARCHITECTURAL PROTEIN STABILIZING TRF1 AT TELOMERE. Hai Pan, Saroj Dangi, Parimirde Kaur, Pengyu Hao, Keith Weninger, Robert Riehn, Patricia Opresko, Hong Wang

1051-Pos | BOARD B153
SOLUTION DYNAMICS IN HISTONE-BASED ARCHAEAL CHROMATIN. Samuel Bowerman, Karolin Lugter, Jeff Weserzczynski

1052-Pos | BOARD B154

1053-Pos | BOARD B155
BRIDGE HELIX OF CA9 IMPACTS TARGET DNA CLEAVAGE. Rakhi Rajan

1054-Pos | BOARD B156
MOLECULAR DYNAMICS SIMULATIONS OF RNA-RECOGNITION MOTIF COMPLEXED WITH CAC-CONTAINING RNA. Shan Chang, Hang Shi, Ren Kong

1055-Pos | BOARD B157
INVESTIGATING THE EFFECT OF VARIOUS FMRF ISOFORMS ON MICRORNA BIOGENESIS. Joshua A. Imperatore, John Roth, Mihaela Rita Mihailescu

1056-Pos | BOARD B158
MISMATCH RECOGNITION BY MSH2-MSH6: ROLE OF STRUCTURE AND DYNAMICS. Zane Lombardo, Yan Li, Meera Joshi, Manju M. Hingorani, Ishita Mukerji

1057-Pos | BOARD B159
MOLECULAR SIMULATIONS DISCERN THE COOPERATIVE BINDING OF HUMAN BRAHMA-RELATED GENE 1 BROMODOMAIN AND AT-HOOK REGIONS IN DNA BINDING. Stefania Evoli, Jeffery M. Wereszczynski

1058-Pos | BOARD B160
STUDYING NUCLEOSOME ASSEMBLY VIA FRET. Caitlin Aguirre, Loisel Gonzalez Baex, Elizabeth Jamieson, Megan E. Nunes

1059-Pos | BOARD B161
WILD-TYPE FUS RESCUES ALTERED RNA BINDING OF ALS-LINKED FUS MUTANT. Kevin Rhine, Jaya Sarkar, Amirhossein Ghanbari Niaki, Xinyi Cai, Gabby Vidaurre, Su Myong
0106-Pos  Board B162
Characterizing the Binding of the HIV-1 NC Protein to Hairpins Formed by CAG Repeats. Melanie Dillon, Yustinah Ndambakuwa, Henrietta Ehirim, Catherine B. Volle

0101-Pos  Board B163
DNA Sequence and Histone Core Composition Control the Unwrapping of DNA from Nucleosome Core Particles. Alex Mauney, Joshua Tokuda, Yuejie Chen, Lois Pollack

0102-Pos  Board B164
Observation of Allosteric Signaling Through DNA with Single-Molecule FRET and Cryo-EM. Gabriel Rosenblum, Nadav Elad, Felix Wiggers, Hofmann

0103-Pos  Board B165
Structural and Functional Insights into CRISPR/Cas9 Catalytic Activation and Specificity Enhancement. Zhicheng Zuo, Jin Liu

0104-Pos  Board B166
A Versatile Method to Quantify DNA-Protein Interactions on Negatively Supercycled DNA. Graeme A. King, Federica Burla, Erwin J.G Peterman, Gijs J.L Wuite

0105-Pos  Board B167
Atomic-Level Characterization of an Allosteric Gene Regulatory System. Michael V. LeVine, Stefano Piana, Maxwell Tucker, Jesus Izaguirre, David E. Shaw

0106-Pos  Board B168
Regulation of REP Helicase Unwinding by an Auto-Inhibitory Subdomain. Monika A. Makurat, Kevin D. Whitley, Binh Nguyen, Timothy M. Lohman, Yann R. Chemla

0107-Pos  Board B169
Specific at One Side While Unspecific at the Other: The Interaction of a Blood Protein with Extracellular DNA. Angelica Sandoval-Perez, Camilo A. Aponte-Santamaría

0108-Pos  Board B170
Expanding RNA-DNA Hybrid Affinity by Multimerization of a Conserved Fold. Alex Stopar, Rhonda Nicholson, Matteo Castronovo, Allen W. Nicholson

0109-Pos  Board B171
Elucidating the Molecular Binding Mechanism of the TATA-Binding Protein Using Pie-Pife. Evelyn Ploetz, Anders Barth, Lena Voith von Voithenberg, Ganesh Agam, Don C. Lamb

Membrane Dynamics I (Boards B172 - B189)

0170-Pos  Board B172
Travel Awardee
Active Transport of Membrane Components by Dynamic Min Protein Waves. Yu-Ling Shih, Ling-Ting Huang, Yu-Ming Tu, Bo-Fan Lee, Yu-Chiuian Bau, Chia Yee Hong, Hsiao-Iin Lee, Yan-Ping Shih, Min-Feng Hsu, Jui-Szu Chen, Zheng-Xin Lu, Ling Chao

0171-Pos  Board B173
Dynamic Effects of Calcium on Membranes Containing Phosphatidylserine. Mason L. Valentine, Alfredo E. Cardenas, Ron Elber, Carlos R. Baiz

0172-Pos  Board B174
Optical Dyes to Monitor Tension and Growth in Model Membranes. Margrethe Boyd

0173-Pos  Board B175
Spatial Relationship and Functional Relevance of Three Lipid Domain Populations at the Erythrocyte Surface. Louise Conrad, Amaury Stommen, Hélène Pollet, Donatienne Tyteca

0174-Pos  Board B176

0175-Pos  Board B177

0176-Pos  Board B178
Emergent Shape Sensing of Dynamic Membranes. Brian A. Camley

0177-Pos  Board B179
Tuning of Membrane Spingolipid Content Influences the Links of Outer-Leaflet Membrane Lipid Dynamics to Cholesterol and Cytoskeleton. Anjali Gupta, Federico Torta, Markus Wenk, Thorsten Wohland

0178-Pos  Board B180
Calculating Ethanol Permeability of Membranes Through Molecular Dynamic Simulations. Mahdi Ghorbani, Eric Wang, Jeffery B. Klauda

0179-Pos  Board B181
Travel Awardee
Effect of Chitosan on Mechanical Properties of Lipid Bilayers Using Micropipette Aspiration. Honey Priya James, Sameer R. Jadhav

0180-Pos  Board B182
 Destruction of Nematode Ova in Wastewater Using Electro-poration. Michael Dryzer, Caitlin Niven, Scott Wolter, Christopher Arena, Edgard Ngaboyamahina, Charles Parker, Brian Stoner

0181-Pos  Board B183
Lipid Nanotubes: A Possible Route to Protocell Formation and Growth. Elif S. Koksal, Susanne Liese, Ilayda Kantarci, Ragni Olsson, Andreas Carlson, Irep Gozen

0182-Pos  Board B184
Malaria Parasites Break and Degrade Two Membranes to Egress from Human Erythrocyte. Svetlana E. Glushakova, Jos Beck, Matthias Garten, Brad Busse, Armiyaw S. Nasamu, Tatyania Tenko-Heuser, John E. Heuser, Daniel E. Goldberg, Joshua Zimmerman

0183-Pos  Board B185

0184-Pos  Board B186
A New Computational Method for Membrane Compressibility: Bilayer Mechanical Thickness Revisited. Milka Doktorova, Michael V. LeVine, George Khelashvili, Harel Weinstein

0185-Pos  Board B187
Differential Actin Binding Affinity Leads to Protein Sorting in a Reconstituted Active Composite Layer. Abrar A. Bhat, Amit Das, Kabir Husain, Madan Rao, Darius Koester, Satyajit Mayor

0186-Pos  Board B188
Pathways and Molecular Mechanisms of Microdomain-Dependent Membrane Trafficking. Barbara Diaz-Rohrer, Joseph Lorent, Ivan Castello-Serrano, Kandice Levental, Ilya Levental

0187-Pos  Board B189
Hopanoids, the Big ‘Small Things’ in Oligomerization of Proteorhodopsin. Eric Sefah, Blake Mertz
Protein-Lipid Interactions: Channels (Boards B190 - B211)

1088-Pos  BOARD B190
STRUCTURE-BASED ESTIMATE OF CONNEXIN 26 CONDUCTANCE. Nathan H. Zimmerberg, Satyan Sharma, Manfred Lindau

1089-Pos  BOARD B191
INTERFACIAL EFFECTS OF ION CHANNELS IN LIPID MEMBRANES: MEAN-FIELD COMPUTATION FROM 3D ATOMIC STRUCTURES VERSUS ANALYTICAL ESTIMATES. Marcel Aguilera-Arzo, Antonio Alcaraz, Maria Lidon Lopez-Peris, Maria Queralt-Martín, Vicente M. Aguilera

1090-Pos  BOARD B192
PROBING THE MECHANOSENSING FEATURES OF MAMMALIAN PIEZO CHANNELS AND PLANT OSCA CHANNELS VIA MOLECULAR DYNAMICS SIMULATIONS. Che Chun (Alex) Tsui, Kei Saotome, Sebastian Jojoa Cruz, Andrew B. Ward, Mark S. P. Sansom

1091-Pos  BOARD B193
DRUG REGULATION OF ION CHANNEL FUNCTION INVOLVES BOTH DIRECT AND BILAYER-MEDITATED MECHANISMS. Radda Rusinova, Olaf Andersen

1092-Pos  BOARD B194
PREDICTING THE PROMISCUOUS EFFECT OF AMPHIPATHIC DRUGS ON GRAMICIDIN CHANNEL STABILITY WITH SIMULATIONS AND EXPERIMENTS. Delin Sun Sun

1093-Pos  BOARD B195
PROTEIN-LIPID INTERFACES DRIVE DKTX-MEDIATED TRPV1 CHANNEL ACTIVATION. Debayan Sarkar, Yashaswi Singh, Jeet Kalia

1094-Pos  BOARD B196
EFFECTS OF MEMBRANE PROTEIN NACHRS ON PHASE SEPARATED MODEL MEMBRANES. Jigesh Patel

1095-Pos  BOARD B197
BOUNDARY LIPIDS OF THE NICOTINIC ACETYLCHOLINE RECEPTOR IN QUASI-NATIVE MEMBRANES. Liam M. Sharp, Reza Salari, Grace Branigan

1096-Pos  BOARD B198
EFFECT OF LATE ENDOosomal DOBMP LIPID AND TRADITIONAL MODEL LIPIDS OF ELECTROPHYSIOLOGY ON THE ANTHRAX TOXIN CHANNEL ACTIVITY. Ninanya Kalu, Yoav Atsmon-Raz, Sanaz Momben Abolfath, Laura Lucas, Clare Kenney, Stephen H. Leppila, D. Peter Tieleman, Ekaterina M. Nestorovich

1097-Pos  BOARD B199
NOISE PROPERTIES OF ION CHANNELS FORMED BY PESTIVIRUS VIROPORIN P7. Antonio Alcaraz, Vicente M. Aguilera, Eneko Largo, Jose L. Nieva

1098-Pos  BOARD B200
REGULATION OF KC5A BY ANIONIC PHOSPHOLIPIDS. Carmen Domene, Victoria Oakes, Simone Furini

1099-Pos  BOARD B201
ELUCIDATING CONFORMATIONAL CHANGES UNDERLYING THE CONVERSION OF TMEM16A MUTANTS FROM ANION CHANNELS TO SCRAMBLASES. Archit K. Vasan, Tao Jiang, H Criss Hartzell, Emad Tajkhorshid

1100-Pos  BOARD B202
INDUCING CHEMICAL CONCENTRATION GRADIENTS TO INVESTIGATE GAS PERMEABILITY OF RH-PROTEIN CONTAINING MEMBRANES. Eric Shinn, Emad Tajkhorshid

1101-Pos  BOARD B203
ION TRANSPORT THROUGH LARGE-DIAMETER DNA ORIGAMI NANOTUBE CHANNELS ACROSS SYNTHETIC MEMBRANES. Naresh N. Dhanasekar, Rebecca B. Schulman

1102-Pos  BOARD B204
EFFECTS OF LIPID AND DETERGENT ENVIRONMENTS ON CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR (CFTR) FUNCTION AND STRUCTURE. Kerry M. Strickland, Brandon B. Stauffer, Yusuf M. Uddin, Barry R. Imhoff, Ingeborg Schmidt-Krey, Nael A. McCarty

1103-Pos  BOARD B205
ALLOSTERIC MODULATION OF CA2+-ACTIVATED CL CHANNELS TMEM16A BY PIP, AND CAMKII. Woool Ko, Seung-Ryoung Jung, Cheon-Gyu Park, Joo Hyun Nam, Bertil Hille, Byung C. Suh

1104-Pos  BOARD B206
TRAVEL AWARDEE PIP, POTENTIATES THE CA2+-ACTIVATED CL CHANNEL TMEM16A IN XENOPUS LAEVIS OOCYTES. Maiwase Tembo, Rachel E. Bainbridge, Anne E. Carlson

1105-Pos  BOARD B207
DETERMINING THE MECHANISM OF SMASE-MEDIATED INHIBITION OF CFTR CURRENT IN PRIMARY BRONCHIAL EPITHELIAL CELLS. Kirsten A. Cottrill, Brandon B. Stauffer, Nael A. McCarty

1106-Pos  BOARD B208
TRAVEL AWARDEE IMPLICATION OF CHOLESTEROL IN REGULATING THE MEMBRANE-INTERACTION MECHANISM OF VIBRIO CHOLERAE CYTOLYSIN, A BETA-BARREL PORE-FORMING TOXIN. Reema Kathuria, Kausik Chattopadhyay

1107-Pos  BOARD B209
DIFFERENTIAL STATE-DEPENDENT CROSSLINKING OF AZI-CHOLESTEROL WITH HUMAN A1 GLYCINE RECEPTOR USING MASS SPECTROMETRY. Nicholas A. Ferraro, Michael Cacio

1108-Pos  BOARD B210
HIGH CHOLESTEROL DIET UP-REGULATES ATRIAL AND NEURONAL GIRK CHANNEL ACTIVITY. Anna N. Bukiya, Avia Rosenhouse-Dantsker

1109-Pos  BOARD B211
PHOSPHOLIPID SCRAMBLING ACTIVITY BY TMEM16E/ANO5: OPPOSITE EFFECTS OF MUTATIONS CAUSING BONE DYSPLASIA AND MUSCULAR DYSTROPHY. Eleonora Di Zanni, Antonella Gradogna, Cristiana Picco, Joachim Scholz-Starke, Anna Boccaccio

Membrane Structure II (Boards B212 - B232)

1110-Pos  BOARD B212
TRAVEL AWARDEE SINGLE-LIPID SORTING AND DYNAMICS AT MEMBRANE CURVATURE SITES: THE EFFECTS OF FLUORESCENCE LABELING, COMPOSITION, PHASE, AND TEMPERATURE. Xinxin Woodward, Christopher V. Kelly

1111-Pos  BOARD B213
PREDICTING SPECTRAL PROPERTIES OF POLARITY SENSITIVE DYES WITH QM/MM SIMULATION. Swapnil Baral, Lars Gundlach, Bjorn Baumeier, Edward R. Lyman

1112-Pos  BOARD B214
MODELING THE INTERPLAY BETWEEN CURVATURE-INDUCING PROTEINS AND MEMBRANE GEOMETRY IN ORGANELLE STRUCTURES: CATENOID-LIKE NECKS AND HELICOIDAL RAMPS. Morgan Chabanon, Padmini Rangamani

1113-Pos  BOARD B215
MECHANISTIC STUDIES OF MEMBRANE REMODELING IN RECEPTOR MEDIATED ENDOCYTOSIS. Samsuzzoha Mondal, Sankalp Shukla, Tobias Baumgart

1114-Pos  BOARD B216
DRIVING SPONTANEOUS MEMBRANE CURVATURE BY TUNING CARDIOLIPIN CONCENTRATION AND SPATIAL DISTRIBUTION IN MODEL MITOCHONDRIAL MEMBRANES. Moeen Meigooni, Emad Tajkhorshid
A NOVEL NITRONE-TROLOX CONJUGATE INHIBITS MEMBRANE LIPID OXIDATION THROUGH SYNERGISTIC ANTIOXIDANT EFFECTS. Larissa Socrier, Marie Rosselin, Ana Milena Gomez Giraldo, Benjamin Chantemargue, Florent Di Meo, Patrick Trouillas, Grégory Durand, Sandrine Morandat

ANOMALOUS DIFFUSION OF ENDOPLASMIC RETICULUM CONSTITUENTS. Konstantin Speckner, Lorenz Studler, Matthias Weiss

TRANSPORT MODES OF VIRAL NUCLEOPROTEINS IN LIVE CELLS. George M. Holzwarth, Lucas Tommervik, Arnav Bhandari, David Ornelles, Douglas Lyles

THE ROLE OF GLYCOCEN SYNTHASE KINASE 3 (GSK3) IN REGULATING INTRACELLULAR TRANSPORT. Ibtsismet Nabi, George T. Shubeita

INVESTIGATING THE INTERPLAY BETWEEN PIKFYVE/PI(3,5)P2 AND CLC-7 IN LYPOSOMAL ACIDIFICATION AND TRAFFIC. Xavier Leray, Anowarul Amin, Mary Weston, Joseph A. Mindell

THE ROLE OF THE CHLORIDE TRANSPORTER CLC-7 IN ACIDIFICATION IN MOUSE LIVER LYPOSOMES. Anowarul Amin, Joseph A. Mindell

SNARE PRIMING INHIBITION VIA PHOSPHATIC ACID INDUCED SEC18 CONFORMATIONAL CHANGES AND COMPETITIVE SMALL MOLECULE BINDING TO SEC18. Andreas S. Arango, Robert P. Sparks, Matthew L. Starr, Zhiyu Zhao, Muyun Lihan, Rutilio Fratti, Emad Tajkhorshid

EVIDENCE FOR ATP INTERACTION WITH PHOSPHATIDYLCHOLINE BILAYERS. Alvaro Garcia, Ronald J. Clarke

COUPLING OF CALCIUM- AND MEMBRANE CLOCKS IGGNITES DE NOVO SPONTANEOUS ACTION POTENTIAL IN DORMANT GUINEA PIG SINOATRIAL NODAL CELLS VIA CAMP-PKA SIGNALING. Kenta Tsutsui, Oliver Monfredi, Mary Kim, Ashley Wirth, Cristina Florio, Annie Yang, Dongmei Yang, Bruce Ziman, Victor A. Maltsev, Edward G. Lakatta

ADENOSINE DECREASES SINOATRIAL NODE CELL FIRING RATE BY UNCOUPLING ITS MEMBRANE AND CALCIUM CLOCKS. Ashley Wirth

MECHANISM FOR CAMP OVERSHEAT IN VENTRICULAR MYOCYTES FOLLOWING B1-ADREnergIC STIMULATION. Emily E. Meyer, Timothy J. Lewis, Colleen E. Clancy

RHYTHM AND RATE OF ACTION POTENTIAL FIRING OF SINGLE CARDIAC PACEMAKER CELLS EMERGE FROM CONCORDANT BEAT TO BEAT VARIABILITY OF COUPLED CALCIUM AND MEMBRANE POTENTIAL FUNCTIONS. Dongmei Yang, Alexey E. Lyashkov, Christopher H. Morrell, Ihor Zahanich, Yael Yaniv, Tatiana M. Vinogradova, Bruce D. Ziman, Edward G. Lakatta

THE PERIODICITY OF A Ca2+ CLOCK INTRINSIC TO INDIVIDUAL CARDIAC SINOATRIAL NODE PACEMAKER CELLS UNIVERSALLY SCALES TO BODY MASS FROM MICE TO HUMANS. Syevda Tagirova, Kenta Tsutsui, Dongmei Yang, Bruce Ziman, Yael Yaniv, Edward G. Lakatta

A ROLE FOR LIPID-LIPID INTERACTIONS IN VITAMIN E’S FUNCTION AS A MEMBRANE ANTIOXIDANT. Samuel W. Canner, Fangqiang Zhu, Scott E. Feller, Stephen R. Wassall

Cardiac Smooth and Skeletal Muscle Electrophysiology II (Boards B240 - B252)

COUPLING OF CALCIUM- AND MEMBRANE CLOCKS IGGNITES DE NOVO SPONTANEOUS ACTION POTENTIAL IN DORMANT GUINEA PIG SINOATRIAL NODAL CELLS VIA CAMP-PKA SIGNALING. Kenta Tsutsui, Oliver Monfredi, Mary Kim, Ashley Wirth, Cristina Florio, Annie Yang, Dongmei Yang, Bruce Ziman, Victor A. Maltsev, Edward G. Lakatta

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Disruption of caveolar microdomains creates “hot spots” for pathomechanism of sudden cardiac death in hemodialysis sinus bradycardia due to electrolyte changes as a potential pathomechanism of sudden cardiac death in hemodialysis patients. Axel Loewe, Yannick Lutz, Alan Fabbri, Stefano Severi

Effects of varying transverse and axial tubules in a threedimensional model of calcium signaling in the human atrial myocyte. Xianwei Zhang, Haibo Ni, Stefano Morotti, Daisuke Sato, Eleonora Grandi

Disruption of caveolar microdomains creates “hot spots” for atrial ectopy and arrhythmogenesis in heart failure mice. Di Lang, Leonid Tyan, Aleah Warden, Zachary D. Piro, Rylie Lim, Ashley Irwin, Alexey V. Glukhov

Mechanism of EPHA2 dimerization in response to monomeric ligands. Elmer A. Zapata-Mercado, Randall Rainwater, Elena B. Pasquale, Kalina Hristova

Investigating the role of the transmembrane helix of EPHA2 in signal transduction across the plasma membrane. Daniel Wirth, Kalina Hristova, Elena Pasquale

Thermodynamics and kinetics of the divalent-monovalent cation competition for binding sites at the µ-opioid receptor. Xiaohu Hu, Davide Provasi, Marta Filizola

Detecting intramolecular dynamics of GPCR, using difffracted X-ray blinking technique. Kazuhiro Mio, Masaki Ishihara, Shoko Fujimura, Masahiro Kuramochi, Yuji C. Sasaki

A comparative analysis of parameter estimation strategies for mathematical modeling of ion channel gating. Chiara Campana, Eric A. Sobie

Response of FGFR1 to different ligands. Kelly Karl

Modulation of mu-opioid receptor signaling by cannabinoi CB1 receptor through heteromerization, a novel analgesic target. Guoqing Xiang, Lia Baki, Takeharu Kawano, Diomedes Logothetis


The interplay of structural and cellular biophysics controls the clustering of multivalent signaling molecules: the Nephrin-NCK-NWASP system. Aniruddha Chattaraj, Leslie M. Loew

Allostery in oligomeric receptor models: cycle bases of reduced graph powers provide a theoretical framework for conformational coupling. Greg Conradi Smith

Quantification of surface receptor-actin cortex interplay via two-color high resolution imaging. Aparajita Dasgupta, Deryl Tschoerner, Bruno Da Rocha-Azevedo, Khouloud Jaqaman

Membrane Receptors and Signal Transduction I (Boards B253 - B269)

Combining systems pharmacology modeling with machine learning to identify sub-populations at risk of arrhythmia. Meera Varsheyna, Xueyan Mei, Eric A. Sobie

Three-week-old rabbit cardiomyocytes (3WRBCM): A novel cellular model for studying cardiac excitation. Anatoli Y. Kabakov, Karni Moshal, YiChun Lu, Karim Roder, Turan Nilufer, Weiyan Li, Kevin Murphy, Dmitry Terentyev, Gideon Koren

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The effects of frequency of voluntary exercise on cardiac function in dilated cardiomyopathy model mice. Masami Sugihara, Ryo Kikgi, Takashi Murayama, Takashi Miida, Takashi Sakurai, Sachio Morimoto, Nagomi Kurebayashi

High resolution imaging and histopathological characterization of myocardial infarction. Peter Lin, Jared Westreich, Mengyuan Li, Adam Gribble, Susan Newbigging, Alex Vitkin, Mihaela Pop

Sinus bradycardia due to electrolyte changes as a potential pathomechanism of sudden cardiac death in hemodialysis patients. Axel Loewe, Yannick Lutz, Alan Fabbri, Stefano Severi

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Inter-domain interactions and allosteric modulation of metabotropic glutamate receptors. Vanessa Gutzeit, Jordana Thibado, Josh T. Levitz

Conformational free energies of metabotropic glutamate receptor ligand-binding domains. Tyler J. Wied

Mechanisms of G protein-selectivity in muscarinic acetylcholine receptor family. Luis Santiago, Ravinder Abrol

The role of protein phosphatase 2A in the re-sensitization of melanosin during continued light stimulation. Juan C. Valdez-Lopez, Mehrzet Gebreeziabher, Jair Flores, Olanike Awotunde, Thomas Burnett, Adam Byerly, Phyllis R. Robinson

Modulation of mu-opioid receptor signaling by cannabinoid CB1 receptor through heteromerization, a novel analgesic target. Guoqing Xiang, Lia Baki, Takeharu Kawano, Diomedes Logothetis


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Quantification of surface receptor-actin cortex interplay via two-color high resolution imaging. Aparajita Dasgupta, Deryl Tschoerner, Bruno Da Rocha-Azevedo, Khouloud Jaqaman
Calcium Signaling (Boards B270 - B294)

1168-Pos  Board B270
THE ROLE OF PHOSPHOFRUCTOKINASE-M (PFKM) IN OSCILLATORY GLYCOLYSIS AND INSULIN SECRETION IN PANCREATIC BETA CELLS. Vishal S. Parekh, Jurin Lim, Leslie S. Satin

1169-Pos  Board B271
BIPHASIC Ca2+ REGULATION OF SK CHANNELS IN VENTRICULAR CARDIOMYOCYTES MAXIMIZES THEIR CONDUCTANCE DURING A LATE PHASE OF THE ACTION POTENTIAL. Peter Bronk, Iulia Polina, Radmila Terentyeva, Shanna Hamilton, Dmitry Terentyev

1170-Pos  Board B272
COMPUTATIONAL MODELING OF PURINERGIC RECEPTOR ACTIVATION IN MICROGLIA. Peter M. Keckes-Huskey, Byeeong Chun, Darin Vaughan

1171-Pos  Board B273
TRAVEL AWARDEE
THE ROLE OF DOPAMINE IN PANCREATIC A-CELLS CALCIUM HETEROGENEITY AND SYNCHRONIZATION MEASURED BY LIGHT-SHEET MICROCOPY. Zeno Lavagnino, David W. Piston

1172-Pos  Board B274
CARDIAC STORE OPERATED CALCIUM ENTRY (SOCE) IS COMPARTMENTALIZED AT INTERCALATED DISKS AND LINKED TO CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA (CPVT). Ingrid M. Bonilla Mercado, Andriy Belevych, Stephen Baine, Bodnar, Bin Liu, Przemyslaw Radewski, Rengasayee Veeraraghavan, Pompeo Volpe, Silvia Priori, Noah Weisleder, Sandor Gyorke

1173-Pos  Board B275
DIURNAL PROPERTIES OF VOLTAGE-GATED CALCIUM CURRENTS IN SCN. Beth McNally, Andrea Meredith

1174-Pos  Board B276
ROLE OF ORAI1 AND STORE OPERATED CALCIUM ENTRY (SOCE) IN LIVER: EFFECTS ON HORMONE-INDUCED CALCIUM SIGNALING AND GLUCOSE METABOLISM. Gary S. Bird, Diane D’Agostin, Pooja Desai, James W. Putney Jr.

1175-Pos  Board B277
FUNCTIONAL CONNECTOME OF THE MECHANICALLY LOADED CARDIOMYOCYTE I: IDENTIFYING INVOLVED SUBSYSTEMS. Zana A. Coulibaly, Leighton Izu, Yu Chen-Izu, Zhong Jian, Rafael Shimkunas

1176-Pos  Board B278
CRISPR/CAS9 ENCODED Q3925E-RYR2 MUTATION IN HUMAN INDUCED PLURIPOTENT STEM CELLS IMPAIRS CA2+ RELEASE. Xiaohua Zhang, Hua Wei, Naohiro Yamaguchi, Martin Morad

1177-Pos  Board B279
MYOCARDIAL RAD DELETION MODULATES L-TYPE CALCIUM CHANNEL CURRENT. Brooke Ahern, Mihir Shah, Andrea Sebastian, Douglas A. Andres, Jonathan Satin

1178-Pos  Board B280
MODELING THE IMPACT OF SPINE APPARATUS ON SIGNALING AND REGULATION IN REALISTIC DENDRITIC SPINE GEOMETRIES. Justin G. Laughlin, Christopher T. Lee, J. Andrew McCammon, Rommie E. Amaro, Michael Holst, Padmini Ramgani

1179-Pos  Board B281
THE ROLE OF S-ACYLATION IN STORE OPERATED CALCIUM ENTRY. Savannah J. West, Qiaochu Wang, Michael X. Zhu, Askar M. Akimzhanov, Darren Boehning

1180-Pos  Board B282
INHIBITION OF CA2+ INFLUX BY SARAF AND PANCREATITIS. Aran Son, Shmuel Mualem, Malini Ahuja

1181-Pos  Board B283
CA2+ DIFFUSION IN THE LARGE PEPTIDERGIC NERVE TERMINALS OF THE POSTERIOR PITUITARY. Shane M. Mcmahon, Meyer B. Jackson

1182-Pos  Board B284
MITOCHONDRIAL CALCIUM SIGNALING IN HEART. Andrew P. Wescott, Joseph P. Kao, W. Jonathan Lederer, Liron Boyman

1183-Pos  Board B285
IDENTIFICATION AND CHARACTERIZATION OF AN NAADP RECEPTOR ESSENTIAL FOR NAADP-EVOKED CALCIUM RELEASE FROM ENDOLYSOSOMAL ORGANELLES. Jiuyan Zhang, Xin Guan, Jiusheng Yan

1184-Pos  Board B286
NULL-SARCOLIPIN EQUINE MUSCLE SHOWS ENHANCED SERCA CALCIUM TRANSPORT WHICH MAY POTENTIATE THE PREVALENCE OF EXERTIONAL RHABDOMYOLYSIS. Joseph M. Autry, Bengt Svensson, Christine B. Karim, Sudeep Perumbakkam, Zhenhui Chen, Carrie J. Finno, David D. Thomas, Stephanie J. Valberg

1185-Pos  Board B287
MIR-200C EXHIBITS AN AGE-DEPENDENT INCREASE IN THE RAT HEART AND MODULATES CARDIOMYOCYTE FUNCTION. Cristina Florio, Alessandra Magenta, Rodislav Byshkov, Kenta Tsutsui, Bruce Zimmerman, Edward G. Lakatta, Maurizio C. Capogrossi

1186-Pos  Board B288
POTENTIAL NEUROPROTECTIVE DRUG EVP4593 REDUCES EXCESSIVE EXPRESSION OF HUNTINGTIN IN IPSC-BASED JUVENILE MODEL OF HUNTINGTON’S DISEASE. Dmitry Grekhnyov, Vladimir Vigont, Elena Kaznacheeva

1187-Pos  Board B289
A COMPUTATIONAL FRAMEWORK TO STUDY THE KINETICS AND EVOLUTION OF CA2+-PERMEABLE AMYLOID PORES ASSOCIATED WITH ALZHEIMER’S DISEASE. Syed Ismailuddin Shah, Ian Parker, Angelo Demuro, Ghanim Ullah

1188-Pos  Board B290
PROBING THE MECHANISMS BY WHICH SEPTINS REGULATE ORAI1 FUNCTION. Zachary Katz, Chen Zhang, Ariel Quintana, Bjorn Lillemeyer, Patrick G. Hogan

1189-Pos  Board B291
PADE APPROXIMATION OF SINGLE-CHANNEL CALCIUM NANODOMAINS IN THE PRESENCE OF COOPERATIVE CALCIUM BUFFERS. Yinbo Chen, Victor Matveev

1190-Pos  Board B292
NEW RED FLUORESCENT CALCIUM INDICATORS FOR FUNCTIONAL ANALYSIS OF GPCRS AND CA2+ CHANNEL TARGETS. Qin Zhao, Haitao Guo, Peng Ruogu, Liu Jixiang, Jinfang Liao, Zhenjun Diwu

1191-Pos  Board B293

1192-Pos  Board B294
CALCIUM CHANNELS CONTRIBUTING TO ACTION POTENTIAL FIRING AND RHYTHMS IN THE CIRCADIAN CLOCK. Amber E. Plante, Andrea L. Meredith
Other Channels (Boards B295 - B310)

1193-Pos BOARD B295
FUNCTIONALLY IDENTIFYING MEMBERS OF THE MSCS SUPERFAMILY OF ION CHANNELS IN PARABURKHOLDERIA MEMBRANES. Hannah M. Dickinson, Brittni L. Miller, Hannah R. Malcolm

1194-Pos BOARD B296
TRAVEL Awardee
MOLECULAR DYNAMICS SIMULATIONS OF TMC1 HOMOLOGY MODELS. Sanket Walujkar, Lahiri N. Wimalasena, Jeffrey Lotthammer, Marcos Sotomayor

1195-Pos BOARD B297
FUNCTIONAL ANNOTATION OF ION CHANNEL STRUCTURES: PREDICTING PORE SOLVATION STATES BASED ON LOCAL RADIUS AND HYDROPHOBICITY. Shanlin Rao, Gianni Klesse, Phillip J. Stansfeld, Stephen J. Tucker, Mark S. P. Sansom

1196-Pos BOARD B298
HETEROTYPIC DOCKING COMPATIBILITY OF HUMAN CX37 WITH OTHER VASCULAR CONNEXINS. Nicholas K. Kim, Artur Santos-Miranda, Hong-hong Chen, Hiroshi Aoyama, Donglin Bai

1197-Pos BOARD B299
CHARGED RESIDUES AT THE PORE MOUTH AFFECT SINGLE-FILE WATER FLOW. Andreas Horner, Christof Hannenschläger, Florian Zocher, Pohl Peter

1198-Pos BOARD B300
PARTIAL CHARACTERIZATION OF THE INACTIVATION PROCESS OF THE HUMAN ERYTHROCYTE MECHANO-ACTIVATED K+ CHANNEL (HEMICA): EFFECT OF MEMBRANE POTENTIAL, CA2+ AND RB+. Diana Istrizur, Alejandro Mata, Jesus G. Romero

1199-Pos BOARD B301
A SKELETAL MUSCLE CONDITIONAL KCNJ2 KNock-OUT MOUSE MODEL FOR PERIODIC PARALYSIS IN ANDERSEN-TAWIL SYNDROME. Nathaniel Elia, Ekaterina Mokhonova, Marbella Quinonez, Stephen Cannon

1200-Pos BOARD B302
CHARACTERIZATION OF GATING OF THE VOLTAGE-GATED PROTON CHANNEL (H+/2) DURING ACTIVATION USING NON-CANONICAL AMINO ACIDS. Esteban Suarez Delgado, Gisela E. Rangel-Yescas, Leon D. Islas

1201-Pos BOARD B303
GAP JUNCTION MEDIATED CELLULAR DELIVERY OF MIRNA MODULATES PACEMAKER ACTIVITY. Virgis Vallunas, Chris Clausen, Ira S. Cohen, Peter R. Brink

1202-Pos BOARD B304
CALCIUM-DEPENDENT REARRANGEMENTS OF THE N-TERMINAL DOMAIN IN CX26 HEMICANtHES. Juan M. Valdez Capuccino, Luyu Liu, Andrew L. Harris, Jorge E. Contreras

1203-Pos BOARD B305
SYNTHESIS OF ROMK1/2 PROTEIN IN E.COLI. Milena Krajewska, Piotr Koprowski, Adam Szewczyk

1204-Pos BOARD B306
A METHOD TO QUANTIFY TRANSPORT NUMBERS OF CHARGED MOLECULES ACROSS BIOLOGICAL CHANNELS. Jayesh Arun Bafna, Mathias Winterhalter

1205-Pos BOARD B307
TRAVEL Awardee
HAEMATOLOGICAL CHARACTERISATION OF MICE WITH PIEZO1 GAIN-OF-FUNCTION MUTATION. Elizabeth L. Evans, Jian shi, Melanie Bettale, Laeticia Lichtenstein, David J. Beech

1206-Pos BOARD B308
OPTICAL SENSING OF ION FLUX THROUGH BIOMIMETIC CARBON NANO-TUBE CHANNELS. Pengyu Zheng, Aleksandr Noy, Meni Wanunu, Yun-Ciao Yao

1207-Pos BOARD B309
REGULATION OF PANNEXIN-1 CHANNEL GATING BY NITRIC OXIDE AND CAMP SIGNALING. Pablo S. Gaete, Mauricio A. Lillo, Nelson P. Barrera, Xavier F. Figueroa, Jorge E. Contreras

1208-Pos BOARD B310
THE ORIGIN OF THE VOLTAGE CLAMP FLUOROMETRY SIGNAL IN CI-HV1 PROTON CHANNEL. Zoltan Petho, Adrienn Bagosi, Zoltan Varga, Gyorgy Panyi, Ferenc Papp

Ion Channels, Pharmacology, and Disease (Boards B311 - B342)

1209-Pos BOARD B311
UNCOUPLING NMDA RECEPTOR MECHANISM OF KETAMINE BLOCK AND PROTON INHIBITION. Jamie A. Abbott

1210-Pos BOARD B312
A MUTANT SK CHANNEL RESCUES LOCOMOTION DEFECTS INC. EL-EGANsALS MODEL. Young Woo Nam, Saba Baskoylu, Hannah Vu, Rachel Lee, Pammie Wong, Anne Hart, Miao Zhang

1211-Pos BOARD B313

1212-Pos BOARD B314
TUBULAR RENAL EPITHELIAL CELLS ARE ACTIVE MECHANOBIOLOGICAL WATER PUMPS. Mohammad Iklab Choudhury, Yizeng Li, Panagiotis Mistriotis, Eryn Dixon, Debonil Maity, Rebecca Walker, Morgan Benson, Leigha Martin, Fatima Koroma, Feng Qian, Konstantinos Konstantopoulos, Owen Woodward, Sean Sun

1213-Pos BOARD B315
A NOVEL GAIN OF FUNCTION MUTATION OF PIEZO-1 IS INVESTIGATED IN RED BLOOD CELLS BY HIGH-THROUGHPUT PATCH CLAMP. Andrea Bruggemann, Giustina M. Rotordam, Nadine Becker, Niels Fertig, Paola Bianchi, Markus Rapedius, Lars Kaestner

1214-Pos BOARD B316

1215-Pos BOARD B317
DYNAMIC REGULATION OF SODIUM HOMEOSTASIS IN ATRIAL MYOCYTES. Libet Garber, Humberto C. Joca, George S.B. Williams, Christopher W. Ward, W. J. Lederer, Maura Greiser

1216-Pos BOARD B318
A KINETIC MECHANISM UNDERLYING HERG FACILITATION BY A BLOCKER. Kazuharu Furutani, Steffen Docken, Igor V. Vorobyov, Colleen E. Clancy, Timothy J. Lewis, Jon T. Sack

1217-Pos BOARD B319
ALLOSTERIC MODULATION VIA TRANSMEMBRANE INTERFACES IN A PENTAMERIC LIGAND-GATED ION CHANNEL. Rebecca J. Howard, Yuxuan Zhuang, Shinjiro Nakamura, Marie Lycksell, Helen Kiik, Urška Rovšnik, Cathrine Bergh, Stephanie A. Heusser, Laura Orellana, Erik Lindahl
1218-Pos  Board B320  
REPURPOSING THE KCA3.1 BLOCKER SENICAPOC AS A MICROGLIA-TARGETED THERAPEUTIC FOR ALZHEIMER’S DISEASE. Heike Wulf, Jacopo Di Lucente, Hai M. Nguyen, Vikrant Singh, Lee-Way Jin, Izumi Maezawa

1219-Pos  Board B321  
PRODUCTION OF NATIVE-LIKE REFOLDED NA,1.7 VOLTAGE SENSING DOMAIN AS SHOWN BY TOXIN BINDING ACTIVITY. Ryan V. Schroder, Ping Wang, Sebastien F. Poget

1220-Pos  Board B322  
ALL OPTICAL INTERROGATION OF VOLTAGE GATED SODIUM CHANNELS USING NEXT GENERATION FAST VOLTAGE SENSITIVE DYES IN A SYSTEM SUITABLE FOR HIGH THROUGHPUT SCREENING. Stephen S. Smith, Andrew Blatz, Thomas Lila, James Limberis, Jay Trautman

1221-Pos  Board B323  
MECHANICAL STRETCH INCREASES KV1.5 POTASSIUM CHANNEL ACTIVITY THROUGH A SIGNALING CASCADE INVOLVING N-TERMINUS OF THE CHANNEL. Alexandria O. Milton

1222-Pos  Board B324  
MODELING TRAPPING BLOCK OF HERG FOR CIPA: DOES THE BASAL HERG MODE MATTER? Brandon Franks, Mark Nowak, Brian Panama, Randall Rasmusson, Glennna Bett

1223-Pos  Board B325  
SMOOTH MUSCLE KV1.1 CHANNEL EXPRESSION IS INCREASED IN PULMONARY HYPERTENSION. Natalia V. Shults, Vladiyslava Rybka, Yuichiro J. Suzuki, Tinatin I. Brelidze

1224-Pos  Board B326  
A DE NOVO MUTATION ASSOCIATED WITH EPILEPSY ENHANCES K,1.2 VOLTAGE DEPENDENCE, SUPPRESSING NEURONAL EXCITABILITY. Antonios Pantazis, Maki Kaneko, Annie M. Westerlund, Lucie Delemotte, Sulagna Saitha, Riccardo Olcese

1225-Pos  Board B327  
ATOMISTIC COMPUTATIONAL MODELS TO PREDICT DRUG-MEDIATED CARDIOTOXICITY. Khaled H. Barakat

1226-Pos  Board B328  
VOLTAGE- AND STATE-DEPENDENT BLOCKADE OF HERG POTASSIUM CHANNELS BY FENTANYL. Jared Tschirhart, Wentao Li, Jun Guo, Shetuan Zhang

1227-Pos  Board B329  
PHOTODYNAMIC MODIFICATION OF NATIVE HCN CHANNELS IN THALAMOCORTICAL NEURONS. Fusheng Wei, Qiang Wang, Ankush Gupta, Qinglian Liu, Leizhou

1228-Pos  Board B330  
A NOVEL HIGH-THROUGHPUT SCREENING ASSAY FOR STATE-DEPENDENT AND SUBUNIT-DEPENDENT BK CHANNEL MODULATORS. Frank T. Horrigan, Lorie A. Gonzalez, Liang Sun, Michael Bloch, Shengwei Zou

1229-Pos  Board B331  
IDENTIFYING NOVEL KCN4 CHANNEL LIGANDS WITH SURFACE PLASMON RESONANCE METHOD. Purushottam Tiwari, Aykut Uren, Tinatin I. Brelidze

1230-Pos  Board B332  
IPSC-DERIVED MOTOR NEURONS ON THE AUTOMATED PATCH CLAMP PLATFORMS QUBE AND QPATCH. Kadla R. Rosholm, Melanie Schupp

1231-Pos  Board B333  
INSIGHTS INTO SELECTIVITY FILTER GATING OF K2P CHANNELS FROM SINGLE-CHANNEL RECORDINGS. Linus J. Conrad, Stephen J. Tucker

1232-Pos  Board B334  
INITIAL CHARACTERIZATION OF THE INDOLE-3-CARBOXAMIDE BIC-154 AS A FAST ONSET AND REVERSIBLE ORAI CHANNEL BLOCKER. Tetyana Zhelaz, Kalina Szteyn, Elisa Liardo, Jae Eun Cheong, Steffi Koerner, Anil Ekkati, Lijun Sun, J. Ashot Kozak

1233-Pos  Board B335  
HUMAN CFTR CHANNEL FUNCTION IS REGULATED BY CHOLESTEROL. Guiying Cui, Kirsten A. Cottrill, Kerry A. McGill, Barry Imhoff, Nael A. McCarty

1234-Pos  Board B336  
ACTIVATION OF POTASSIUM CHANNEL AS A NEW STRATEGY TO BOOST ANTITUMOUR IMMUNE RESPONSE. Seow Theng Ong, Aik Seng Ng, Xuan Rui Ng, Lindsay Kua, Fiona YX Lee, Siqi Tan, Heesung Shim, Praseetha Prasannan, Ramanuj DasGupta, Iain BH Tan, Heike Wulf, K George Chandy, Navin K. Verma

1235-Pos  Board B337  
NOVEL INHIBITORS OF THE CALCULIUM-ACTIVATED K+ CHANNEL K,3.1 TO TREAT NON-ALCOHOLIC FATTY LIVER DISEASE AND LIVER FIBROSIS. Seow Theng Ong, Gemma Thomas, Srinivasaraghavan Kannan, Zhisheng Her, Xuan Rui Ng, Xinying Chew, Hai M. Nguyen, Heike Wulf, Chandra Verma, Qingfeng Chen, Mahmoon Ahmed, K George Chandy

1236-Pos  Board B338  
STRUCTURAL MODELING OF DRUG INTERACTIONS WITH HERG CHANNEL IN OPEN AND CLOSED STATES. Aliya M. Emigh, Kevin R. DeMarco, Kazuharu Futurani, Jon T. Sack, Colleen E. Clancy, Igor V. Vorobyov, Vladimir Yarov-Yarovoy

1237-Pos  Board B339  
BENEFICIAL EFFECT OF MITOCHONDRIAL CALCIUM UNIPORTER OVER-EXPRESSON IN A GUINEA PIG HEART FAILURE AND SUDDEN CARDIAC DEATH MODEL. Ting Liu, Brian O’Rourke

1238-Pos  Board B340  
TRAVEL Awardee  
IRTUINS POSITIVELY REGULATE K,1.2 CHANNELS, WHICH CONTRIBUTE TO THEIR CARDIOPROTECTIVE ROLE. Erkan Tuncay, Hua-Qian Yang, Ivan Gando, Belma Turan, Ravichandran Ramasamy, William A. Coeteeze

1239-Pos  Board B341  
TRAVEL Awardee  
PROBING KV1.3 INTERACTOME WITH PROXIMITY-DEPENDENT BIOTINYLATION. Vanessa Checcheto, Elena Prosdocimi, Roberta Peruzzo, JESUSA CAPERA ARAGONES, Luigi Leanza, Antonio Felipe, Ildikó Szabò

1240-Pos  Board B342  
INHIBITION OF CONNEXION HEMICHANNELS BY NEW AMINOGLYCO-SIDES WITHOUT ANTIBIOTIC ACTIVITY. Abbey Kjellgren, Mariana C. Fiori, Madher N. Alfindey, Yapja P. Subedi, Srinivasan Krishnan, Cheng-Wei T. Chang, Guillermo A. Altenberg

Cytoskeletal Assemblies & Dynamics  
(Boards B343 - B357)

1241-Pos  Board B343  
STRUCTURAL MODEL FOR PREFERENTIAL MICROTUBULE MINUS END BINDING BY CAMSAP CKK DOMAINS. Joseph Atherton, Yanzhang Luo, Shengqi Xiang, Chao Yang, Annapurna Vemula, Marcel Stangier, Alexander Cook, Shana Wang, Kai Jiang, Michel Steinmetz, Antonina Roll-Mecak, Anna Akhmanova, Marc Baldus, Carolyn A. Moores

1242-Pos  Board B344  
TRAVEL Awardee  
A DYNAMIC TIME STEP METHOD IN CYTOSKELETAL SIMULATIONS. Joseph Tibbs, A. Pasha Tabatabai, Daniel S. Seara, Alex Tabei, Michael P. Murrell

1243-Pos  Board B345  
RAPID TREADMILLING AND MYOSIN MOTORS SYNERGISTICALLY INDUCE FORMATION OF RING-LIKE ACTOMYOSIN ARCHITECTURES AND CORTEX-ES. Qin Ni, Arpita Upadhayaya, Garegin A. Papoian
1244-Pos BOARD B346 SIMULATING EMERGENT SPATIOTEMPORAL ACTOMYOSIN DYNAMICS TO UNDERSTAND SPATIAL REGULATION OF NON-MUSCLE MYOSIN II. Callie J. Miller, Paul LaFosse, Sreeja Asokan, Jason Haugh, James E. Bear, Timothy C. Elston

1245-Pos BOARD B347 THE PHYSICAL BASES OF FORMING A SMOOTH BOUNDARY BETWEEN AN EXPANDING ARP 2/3 ACTIN NETWORK AND A CONTRACTILE ACTOMYOSIN NETWORK. Medha Sharma, Tony Harris

1246-Pos BOARD B348 SEPTIN HIERARCHICAL ASSEMBLY REVEALED BY HIGH-SPEED ATOMIC FORCE MICROSCOPY (HS-AFM). Fang Jiao, Kevin Cannon, Amy Gladfelter, Simon Scheuring

1247-Pos BOARD B349 METAPHASE KINETOCHORE MOVEMENTS ARE REGULATED BY KINESIN-8 MOTORS AND MICROTUBULE DYNAMIC INSTABILITY. Agneza Boslj, Anna Klemm, Iva Tolić, Nenad Pavin

1248-Pos BOARD B350 FORCE REGULATION OF CAPPING AND ARP2/3 NUCLEATION OF BRANCHED ACTIN NETWORKS. Tai-De Li, Peter Bieling, Dyche Mullins, Daniel Fletcher

1249-Pos BOARD B351 SPATIOTEMPORAL ORGANIZATION OF MICROTUBULES IN BRANCHED NETWORKS. Akanksha Thawani, Howard A. Stone, Joshua W. Shaevitz, Sabine Petry

1250-Pos BOARD B352 TRAVEL Awardee PIVOTING OF MICROTUBULES DRIVEN BY MINUS END DIRECTED MOTORS LEADS TO THEIR ALIGNMENT TO FORM AN INTERPOLAR BUNDLE. Ivana Ban, Marcel Prelogovic, Lora Winters, Iva Tolić, Nenad Pavin

1251-Pos BOARD B353 NCKIPSD COORDINATES ARP2/3 AND FORMIN NUCLEATION OF ACTIN FILAMENTS IN THE CELL CORTEX. LuYan Cao, Amina Yongis, Mali Vagheha, Priyamvada Chugh, Pierre Bohec, Matt Smith, Genevieve Lavoie, Ewa K. Paluch, Philippe Roux, Antoine G. Jegou, Guillaume Charras, Guillaume Romet-Lebrone

1252-Pos BOARD B354 DYNAMIC HAND-IN-HAND INTERACTION BETWEEN ACTIN AND SPECTRIN DURING MAMMALIAN CELL MECHANOADAPTATION. Andrea Ghisleni, Camilla Galli, Qingseng Li, Pascale Monzo, Paolo Maiuri, Nils Gauthier

1253-Pos BOARD B355 COORDINATE ROLE OF VINCULIN AND META-VINCULIN IN ACTIN ORGANIZATION. Sharon Campbell, Muzaddid Sarker, Hyunna T. Lee, Laura Kim, Santiago Espinosa de los Reyes, Lin Mei, Andrey Krokhkin, Laura Constantini, Gregory M. Alushin, Nikolay V. Dokholyan, Jack D. Griffith

1254-Pos BOARD B356 STRUCTURE OF THE TPM3.1 N-TERMINUS: A NEW TARGET FOR ANTICANCER TREATMENT. Anita Ghosh, Miro Jancio, Till Böcking, Peter W. Gunning, William Lehman, Michael J. Rynkiewicz

1255-Pos BOARD B357 QUANTIFYING DISSIPATION IN ACTOMYOSIN NETWORKS. Carlos Floyd, Christopher Jarzynski, Garegin A. Papoian

1256-Pos BOARD B358 EXPLORING THE UNFOLDASE MECHANISM OF MICROTUBULE SEVERING BY COARSE-GRAINED SIMULATIONS. Rohith Anand Varikoti, Jennifer L. Ross, Ruxandra I. Dima

Microtubules, Structure, Dynamics, and Associated Proteins (Boards B358 - B380)

1257-Pos BOARD B359 KATANIN SPIRAL AND RING STRUCTURES SHED LIGHT ON POWER STROKE FOR MICROTUBULE SEVERING. Elena A. Zehr, Agnieszka Syzk, Grzegorz Piszczek, Ewa Szczesna, Xiaobing Zuo, Antonina Roll-Mecak

1258-Pos BOARD B360 LENGTH-DEPENDENT PERSISTENCE LENGTH FOR MICROTUBULES SHORTER THAN 3 MICROMETERS. Gretchen Niederriter, Douglas S. Martin

1259-Pos BOARD B361 STRUCTURAL TRANSFORMATION OF MICROTUBULES IN THE PRESENCE OF CATIONIC POLYMERS. Juncheol Lee, Chaeyon Song, Jimin Lee, Herb P. Miller, Leslie Wilson, Cyrus R. Safinya, Myung Chul Choi

1260-Pos BOARD B362 CONDENSATION OF DIVALENT METAL IONS BY MAP-TAU REMODELS TAU-MICROTUBULE BUNDLE ARCHITECTURE. Breton Fletcher, Chaeyon Song, Philip Kohl, Peter J. Chung, Herbert Miller, Youli Li, Myung Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

1261-Pos BOARD B363 HIGHER ORDER ASSEMBLY STRUCTURES OF HUMAN TAU AND MICROTUBULES REGULATED BY IONIC STRENGTH. Hasaee Cho, Jimin Lee, Juncheol Lee, Herbert P. Miller, Keong Sik Jin, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya, Myung Chul Choi

1262-Pos BOARD B364 THE EFFECT OF SITE-SPECIFIC ACETYLATION BASED TAU MUTATIONS ON TAU-MICROTUBULE ASSOCIATIONS. Christine Tchounouw, Breton Fletcher, Chaeyeon Song, Phillip A. Kohl, Peter J. Chung, Herb P. Miller, Youli Li, Myung-Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

1263-Pos BOARD B365 PROBING STRUCTURAL FEATURES OF TAU BINDING TO TUBULIN AND MICROTUBULES. Ho Yee Joyce Fung, Elizabeth Rhoades

1264-Pos BOARD B366 IMPACT OF AC ELECTRIC FIELDS ON MICROTUBULE DYNAMICS IN VITRO. Joseph M. Cleary

1265-Pos BOARD B367 MICROTUBULE NUCLEATION AND STABILIZATION BY DOUBLECORBIN. Szymon W. Manka, Carolyn A. Moores

1266-Pos BOARD B368 STRUCTURE AND FUNCTION OF SURFACE-BOUND TAU. Zachary J. Donhauser

1267-Pos BOARD B369 A FIRST-APPROXIMATION ESTIMATE OF FORCES REQUIRED FOR MICROTUBULE BREAKAGE. Sharyn A. Endow, Piotr E. Marszalek

1268-Pos BOARD B370 LONG-RANGE MECHANICAL COUPLING IN THE MICROTUBULE LATTICE. Maxim Igaev, Helmut Grubmuller

1269-Pos BOARD B371 MULTI-SCALE COMPUTATIONAL MODELING OF TUBULIN-TUBULIN INTERACTIONS IN MICROTUBULE SELF-ASSEMBLY FROM ATOMS TO CELLS. Mahya Hemmat, Brian T. Castle, David J. Odde

1270-Pos BOARD B372 TUBULIN POLYMERIZATION-PROMOTING PROTEIN FAMILY MEMBER 3 (TPP3) FACILITATES MICROTUBULE BUNDLING AND NETWORK FORMATION VIA ITS WEAK INTERACTION WITH MICROTUBULES. Takayuki Torisawa, Shuji Ishihara, Kazuhiro Oiwa

1271-Pos BOARD B373 KINETOCHORE-MEDIATED MULTIVALENCE OF NDC80 COMPLEX CONTROLS MICROTUBULE END DYNAMICS AND FORCE-GENERATION. Vladimir A. Volkov, Pim J. Huis in ’t Veld, Andrea Musacchio, Marileen Dogterom
INHIBITION OF NOTCH SIGNALING PATHWAY BY TRANSMISSION ELECTRON MICROSCOPY. Ishara Ratnayake, Steve Smith, Indra Chandrasekar, Kameswaran Surendran, Phil Ahrenkiel

THE ROLE OF NON-MUSCLE MYOSIN 2A AND 2B IN THE REGULATION OF MYOSIN X ON ACTIN BUNDLES. Xianan Qin, Harry Chun Man Cheng, Jing Li, Hanna Yoo, Xiaoyan Liu, Tianming Lin, H. Lee Sweeney, Hyokeun Park

ACTOMYOSIN DISSOCIATION AND ADP RELEASE. Erminia Colombo, Paul V. Ruijgrok, Rajashri P. Ghosh, Mike Woodward, Romi Castillo, Matthew Whithers, Valerie Daggett, Edward Debold, Michael Regnier

IN VITRO AND IN LIVING CELLS. Paul V. Ruijgrok, Rajashri P. Ghosh, Muneki Nakamura, Sasha Zemsky, Robert Chen, Vipul Vachharajani, Jan T. Liphardt, Zev Bryant

THE S217A MUTANT SLOWS THE POWER STROKE AND PHOSPHATE RELEASE IN MYOSIN V. Laura J. Gunther, Wanjian Tang, Christopher M. Yengo

ABROOJ ASLAM, Chen, Emil Prodan, Camelia Prodan


IN VITRO AND IN LIVING CELLS. Xianan Qin, Harry Chun Man Cheng, Jing Li, Hanna Yoo, Xiaoyan Liu, Tianming Lin, H. Lee Sweeney, Hyokeun Park

THE MECHANISTIC ROLE OF TROPOMYOSIN OVERLAP DYSREGULATION IN EARLY CARDIOMYOPATHIC DISEASE PROGRESSION. Melissa L. Lynn, Teryn A. Holeman, Lauren Tal-Grinspan, Andrea Deranek, Jil C. Tardiff


STATE DEPENDENT DYNAMIC COUPLING IN MYO1B DURING THE FORCE SENSITIVE TRANSITION AND MGADP RELEASE. Ahmet Mentes, Henry Shuman, E. Michael Ostap

THE 5217A MUTANT SLOWS THE POWER STROKE AND PHOSPHATE RELEASE IN MYOSIN V. Laura J. Gunther, Wanjian Tang, Christopher M. Yengo

IN VITRO AND IN LIVING CELLS. Xianan Qin, Harry Chun Man Cheng, Jing Li, Hanna Yoo, Xiaoyan Liu, Tianming Lin, H. Lee Sweeney, Hyokeun Park

AGING ALTERS FUNCTIONAL PROPERTIES OF CELL-MATRIX ADHESIONS IN VASCULAR SMOOTH MUSCLE CELLS. Harini Sreenivasappa, Briana Bywaters, Samuel Padgham, Song Yi Shin, Jerome P. Trzeciakowski, Christopher R. Woodman, Andreea Traché

TRAVEL AWARDEE. Arooj Aslam

COMPUTATIONAL STUDY OF ABL PATHWAY BASED AXONAL GUIDANCE. Aravind Chandrasekaran, Garegin A. Papoian, Edward Giniger

Myosins and Smooth Muscle Mechanics, Structure, and Regulation (Boards B381 - B391)

ATOMIICALLY DETAILED SIMULATION OF THE POWERSTROKE IN MYOSIN II BY MILESTONING. Katelyn Poole, Ron Elber

OPTICAL CONTROL OF FAST AND PROCESSIVE ENGINEERED MYOSINS IN VITRO AND IN LIVING CELLS. Paul V. Ruijgrok, Rajashri P. Ghosh, Muneki Nakamura, Sasha Zemsky, Robert Chen, Vipul Vachharajani, Jan T. Liphardt, Zev Bryant

TRACKING OF LABELED MOTOR DOMAINS OF SINGLE FULL-LENGTH MYOSIN X ON ACTIN BUNDLES. Xianan Qin, Harry Chun Man Cheng, Jing Li, Hanna Yoo, Xiaoyan Liu, Tianming Lin, H. Lee Sweeney, Hyokeun Park

THE ROLE OF NON-MUSCLE MYOSIN 2A AND 2B IN THE REGULATION OF MYOSIN X ON ACTIN BUNDLES. Xianan Qin, Harry Chun Man Cheng, Jing Li, Hanna Yoo, Xiaoyan Liu, Tianming Lin, H. Lee Sweeney, Hyokeun Park

Cardiac Muscle Mechanics and Structure (Boards B392 - B415)

MYOSIN BINDING PROTEIN H-LIKE REGULATES MYOFILAMENT CONCENTRATION IN ATRIAL AND A SUBSET OF VENTRICULAR CONDUCTION SYSTEM CARDIOMYOCYTES. David Y. Barefield, Sheema Rahmanseresht, Thomas O’Leary, Jordan J. Sell, Megan J. Puckelwartz, Lisa D. Wilsbacher, Michael J. Previs, Elizabeth M. McNally

DATP REDuces THE DEPRESSive EFFECT OF ACIDOSIS ON CARDIAC AND SLOW TWITCH SKELETAL MUSCLE. Saffie Mohran, Mike Woodward, Romi Castillo, Matthew Whithers, Valerie Daggett, Edward Debold, Michael Regnier

THE MECHANISTIC ROLE OF TROPOMYOSIN OVERLAP DYSREGULATION IN EARLY CARDIOMYOPATHIC DISEASE PROGRESSION. Melissa L. Lynn, Teryn A. Holeman, Lauren Tal-Grinspan, Andrea Deranek, Jil C. Tardiff

MYOSIN AND MYBP-C-MUTATIONS IN HYPERTROPHIC CARDIOMYOPATHY: VARIABLE EFFECTS ON CALCIUM SENSITIVITY AND CONTRACTILE IMBALANCE FROM CELL TO CELL. Mirza Makul, Ante Radocaj, Pia Ernstberger, Judith Montag, Kathrin Kowalski, Britta Keyser, Andreas Perrot, Cris G. dos Remedios, Bernhard Brenner, Theresa Kraft

POWER-LOAD CHARACTERISTICS OF HUMAN-DERIVED ENGINEERED HEART TISSUE IN RESPONSE TO CARDIOMYOPATHY MUTATIONS AND MYOSIN-TARGETED DRUGS. Lorenzo R. Sewanan, Stuart G. Campbell
Mitochondria in Cell Life and Death (Boards B416 - B443)

1295-Pos  BOARD B397  MYofilament length dependent activation in porcine cardiac muscle. Wei Kang Ma, Robert Anderson, Marcus Henze, Henry Gong, Fiona Wong, Carlos del Rio, Thomas Irving

1296-Pos  BOARD B398  Annulment of cardiac muscle length-dependent force activation in transgenic mice bearing the HCTN1-79N mutation. Maicon Landim Vieira, Bjorn Knollmann, Hyun S. Hwang, J. Renato Pinto, P. Bryant Chase

1297-Pos  BOARD B399  Development of an atomistic structure of myosin bound cardiac thin filament and free energy determination of the close to open transition. Anthony Baldo, Steven D. Schwartz

1308-Pos  BOARD B410  The role of GSK3β mislocalization in arrhythmogenic cardiomyopathy. Ronald Ng, Stuart Campbell

1309-Pos  BOARD B411  Isometric and isotonic twitch dynamics in omecamtiv mer- carbil treated intact rat cardiac trabecula. Brianna M. Schick, Alexandra R. Matus, Charles S. Chung

1310-Pos  BOARD B412  Multi-timepoint RNA-sequencing reveals differential gene expression of transgenic mouse models of hypertrophic and dilated cardiomyopathies. Shivani H. Desai, Jil C. Tardiff, Melissa L. Lynn, Amanda M. Richards

1311-Pos  BOARD B413  Human cardiac myosin-binding protein C N-terminal domains cooperatively impact actin structural dynamics. Rhye-Samuel Kanasatage, Thomas A. Bunch, Victoria C. Lepak, Brett A. Colson

1312-Pos  BOARD B414  The HCM-causing Y235S CMYBPC mutation accelerates contractile function by altering C1 domain structure. Chang Yoon Doh, Jiayang Li, Ranganath Mamidi, Julian E. Stelzer


1307-Pos  BOARD B409  Computational and experimental investigation of cardiac troponin T R173Q, R173W and Δ160E mutation specific correlates to disease. Andrea E. Deranek, Anthony Baldo, Steven Schwartz, Jil C. Tardiff

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EPR and NMR: Spectroscopy and Imaging (Boards B503 - B512)

1401-Pos BOARD B503 CONFIDENCE ANALYSIS OF DEER DATA AND ITS STRUCTURAL INTERPRETATION WITH ENSEMBLE-BASED METADYNAMICS. Eric J. Hustedt, Fabrizio Marinelli, Richard A. Stein, José D. Faraldo-Gómez, Hassane Mchaourab

1402-Pos BOARD B504 TRAVEL AWARDSEE ELECTRON PARAMAGNETIC RESONANCE ELUCIDATES THE STRUCTURAL MECHANISM BY WHICH SERCA IS ACTIVATED BY DWORF. Mark D. Rustad, Peter D. Martin, Daniel R. Stroik, Christine B. Karim

1403-Pos BOARD B505 SITE-DIRECTED SPIN LABELING EPR STUDIES ON THE CATALYTIC ASPARTATE LOOP OF EXOU UPON INTERACTION WITH UBQUITIN AND MEMBRANES. Samantha Kohn, Jimmy B. Feix

1404-Pos BOARD B506 WATER PROTON FLOW-NMR—A NOVEL TOOL FOR REAL-TIME IN-LINE PROCESS MONITORING IN BIOMANUFACTURING. Marc B. Taraban, Katharine T. Briggs, Yihua Bruce Yu

1405-Pos BOARD B507 LOW-FIELD NMR IN NONDESTRUCTIVE QUANTITATIVE INSPECTION OF DRUG PRODUCTS. Katharine T. Briggs, Marc B. Taraban, Yihua B. Yu

1407-Pos BOARD B509 HIGHLY SENSITIVE RESONATORS FOR EPR SPECTROSCOPY OF SUBMICROLITER/SUBMICROMOLAR BIOMACROMOLECULAR SAMPLES. Nandita Abhyankar, Amit Agrawal, Robert McMichael, Szalai Veronika

1408-Pos BOARD B510 AORTIC Atherosclerosis WITH CONSIDERATION OF THE ANISOTROPIC PROPERTIES OF LIPIDS IN MRI. Erik N. Taylor, Nasi Huang, Matthew Diamant, Farzad Mortazavi, Markus Bachschmid, James A. Hamilton

1409-Pos BOARD B511 ORTHOGONAL 19F-LABELLING FOR SIMULTANEOUS RECEPTOR AND LIGAND TRACKING IN TITRATIONS. Jeff Simmons, Alexandre Murza, Éric Marsault, Jan K. Rainey

1410-Pos BOARD B512 ACCURATE MEASUREMENT AND PREDICTION OF 15N AND 13C CHEMICAL SHIFT TENSORS IN PROTEINS. Matthew Fritz, Caitlin M. Quinn, Mingzhang Wang, Guangjin Hou, Xingyu Lu, Leo Koharudin, Jochem Struppe, David A. Case, Angela M. Gronenborn

1411-Pos BOARD B513 INTRODUCING A NOVEL MULTI-LEVEL METHOD FOR SIMULATING THE PH DEPENDENCE OF CHARGE STATE FLUCTUATIONS AND CONFORMATIONAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS. Martin J. Fossat, Ammon E. Posey, Rohit V. Pappu

1412-Pos BOARD B514 TRAVEL AWARDSEE ION-HYDROXYL INTERACTIONS: FROM HIGH-LEVEL QUANTUM BENCHMARKS TO TRANSFERABLE POLARIZABLE FORCE FIELDS. Vered Wineman-Fisher, Yasmine Al-Hamdani, Iqbal Adduo, Alexandre Tkatchenko, Sameer Varma

1413-Pos BOARD B515 TRAVEL AWARDSEE INCORPORATING PROTEINS INTO GEOMETRICALLY COMPLEX, CELL-SCALE MEMBRANE MODELS FOR MOLECULAR DYNAMICS SIMULATIONS. Noah Trebesch, Emad Tajkhorshid

1414-Pos BOARD B516 PYTHEAS: A SOFTWARE TO MAP RNA MODIFICATIONS VIA TANDEM MASS SPECTROMETRY. Luigi D’Ascanzo, Anna Popova, James R. Williamson

1415-Pos BOARD B517 MAINMAST-MELD-MDF: DENovoSTRUCTURE-DETERMINATION WITH DATA-GUIDED MOLECULAR DYNAMICS. Alberto Perez, Mrinal Shekhar, Genki Terashi, Daisuke Kihara, Ken A. Dill, Emad Tajkhorshid, Abhishek Singharoy

1416-Pos BOARD B518 TRANSFER LEARNING FOR EFFICIENT SEGMENTATION OF SUBCELLULAR STRUCTURES IN 3-D ELECTRON MICROSCOPY. Matthew D. Guay, Zeyad A. Emam, Adam B. Anderson, Richard D. Leapman

1417-Pos BOARD B519 HIGH-THROUGHPUT REFINEMENT OF CRYOEM-BASED STRUCTURES. Chaoyi Xu, Alexander J. Bryer, Juan R. Perilla

1418-Pos BOARD B520 FROM FRET MEASUREMENTS TO DATABASE DEPOSITION OF INTEGRATIVE STRUCTURAL MODELS. Christian A. Hanke, Hayk Vardanyan, Mykola Dimura, Claus A.M. Seidel

1419-Pos BOARD B521 FISIK: FRAMEWORK FOR THE INFERENCE OF IN SITU INTERACTION KINETICS FROM SINGLE-MOLECULE IMAGING DATA. Luciana R. de Oliveira, Robel Yirdaw, Khuloud Jaqaman

1420-Pos BOARD B522 CAN HYDROGEN-DEUTERIUM EXCHANGE RATES AT SINGLE RESIDUE LEVEL BE OBTAINED FROM HDX-MS DATA? Emanuelle Paci, Roman Tuma, Simon Skinner, Jeanine J. Houwing-Duistermaat

1421-Pos BOARD B523 CHARMm-GUI NMR STRUCTURE CALCULATOR: A WEB-BASED TOOL FOR CALCULATING BIOMOLECULAR NMR STRUCTURES. Jumin Lee, Yuanpeng J. Huang, Gaetano T. Montelione, Wonpil Im

1422-Pos BOARD B524 A NEW WEB SERVER FOR THE IDENTIFICATION OF NOVEL NUCLEIC ACID STRUCTURAL MOTIFS AND THEIR INTERACTIONS WITH PROTEINS. Shuxiang Li, Xiang-Jun Lu, Wilma K. Olson

1423-Pos BOARD B525 GDASH: A GENOMICS DASHBOARD INTEGRATING MODELING AND INFORMATICS. Zilong Li, Ran Sun, Thomas Connor Bishop
1424-Pos
ON THE USE OF SHORT RESEEDING TRAJECTORIES TO SAMPLE MARKOV STATE MODELS. *Hongbin Wan*, Vincent Voelz

1425-Pos
AUTOMATIC ASSIGNMENT OF BONDED FORCE FIELD PARAMETERS FOR SMALL MOLECULES USING MACHINE LEARNING. *Praveer Narwelkar*, Hui Sun Lee, Sihong Xie, Wonpil Im

1426-Pos
DEFINING CONFORMATIONAL STATES OF PROTEINS USING DIMENSIONALITY REDUCTION AND CLUSTERING ALGORITHMS. *Eugene Klyshko*, Sarah Rauscher

1427-Pos
AN EFFICIENT ALGORITHM TO CALCULATE THE COMMON SOLVENT ACCESSIBLE VOLUME. *In Jung Kim*

1428-Pos
CHARMM-GUI MULTICOMPONENT ASSEMBLER FOR MODELING AND SIMULATION OF COMPLEX HETEROGENEOUS BIOMOLECULAR SYSTEMS. *Nathan R. Kern*

1429-Pos
A STOCHASTIC SPATIAL SIMULATION METHOD FOR SELF-ASSEMBLY REACTIONS. *Marcus Thomas*, Russell S. Schwartz

1430-Pos
ELECTROSTATIC FORCE DRIVEN MOLECULAR DYNAMICS SIMULATIONS. *Yunhui Peng*, Mahesh Koirala, Emil Alexov

1431-Pos
A NEW OPEN SOURCE TOOLKIT FOR SEGMENTING 3D INTRACELLULAR STRUCTURES IN MICROSCOPE IMAGES. *Matheus Palhares Viana*, Susanne Rafelski

1432-Pos
A SYSTEMATIC APPROACH TO UNDERSTANDING MACROMOLECULAR CROWDING EFFECTS ON BIOMOLECULAR INTERACTIONS THROUGH COMPUTATIONAL “TOY” MODELS. *Rachel Kim*, Mala L. Radhakrishnan

1433-Pos
CALCULATION OF PROTEIN-PROTEIN BINDING FREE ENERGIES USING UMBRELLA SAMPLING WITH DUAL RESOLUTION WATER MODELS. *Jagdish Suresh Patel*, F. Marty Ytreberg

1434-Pos
CHARMM-GUI LIGAND BINDER FOR RELATIVE BINDING FREE ENERGY CALCULATIONS. *Seonghoon Kim*, Wonpil Im

1435-Pos
ONE NANOMETER PRECISION BY BAYESIAN GROUPING OF LOCALIZATIONS. *Mohamadreza Fazel*, Bernd Rieger, Ralf Jungmann, Keith A. Lidke

1436-Pos
IMPLICIT SOLVENT CALCULATIONS AT LARGE SCALE VIRUS-LEVEL POISSON-BOLTZMANN AND MULTISCALE SIMULATIONS FOR ELECTROSTATICS. *Matias Martinez*, Horacio Vargas-Guzman, Christopher D. Cooper

1437-Pos
UNSUPERVISED LEARNING OF CONFORMATIONAL STATES PRESENT IN MOLECULAR DYNAMICS SIMULATION DATA FOR SUMMARIZATION OF EQUILIBRIUM CONFORMATIONAL DYNAMICS. *Kazi Lutful Kabir*, Nasrin Akhter, Amarda Shehu

1438-Pos
GENETIC MUTATION CLASSIFICATION USING MACHINE LEARNING. *Hammad Farooq*, Naeem Rehmat, Sanjay Kumar, Hammad Naveed

1439-Pos
CHARACTERIZATION OF SPECTRAL FEATURE UPON CELLULAR MORPHODYNAMICS AND ITS APPLICATION. *Xiao Ma*, Ellen O’Shaughnessy, Klaus M. Hahn, Gaudenz Danuser

1440-Pos
SOFTWARE PROGRAMMING THROUGH THE SPATIOTEMPORAL RELEASE OF OLIGONUCLEOTIDES. *Moshe Rubanov*, Phillip Dorsey, Dominic Scalise, Wenlu Wang, Rebecca Schulman

1441-Pos
DETECTION AND MAPPING OF DSDNA BREAKS USING GRAPHENE NANOPORE TRANSISTOR. *Nagendra Athreya*, Olgica Milenkovic, Jean-Pierre Leburton

1442-Pos
AUTOCHEMPHORETIC DNA MOTORS GENERATE 100+ PICONEWTON FORCES. *Aaron Blanchard*, Khalid Salaita

1443-Pos
OPTICALLY ASSISTED LOCALIZATION OF SOLID-STATE NANOPORE DURING CONTROLLED BREAKDOWN FABRICATION. *Kamyar Akbari Roshan*, Weihua Guan

1444-Pos
NONFLUIDIC CHIPS FOR DNA AND NANOPIRICLES DETECTION AND MANIPULATION. *Denise Pezzuoli*, Elena Angeli, Diego Repetto, Giuseppe Firpo, Patrizia Guida, Roberto Lo Savio, Luca Repetto, Ugo Valbusa

1445-Pos
BIOMIMETIC, VOLTAGE-SENSITIVE NANOPORES WITH LOCAL CONTROL OVER POSE POSITION, SIZE AND SURFACE CHEMISTRY. *Cody Combs*, Nick Teslich, Elif T. Acar, Francesco Formasiero, Zuzanna S. Siwy, Steven F. Buchsbaum

1446-Pos
A ROBUST MECHANISM TO RENDER ARTIFICIAL NANOPORES POTASSIUM ION SELECTIVE. Elif T. Acar, Steven Buchsbaum, Cody Combs, Francesco Formasiero, Zuzanna S. Siwy

1447-Pos
COMPARING UBQUITIN AND INSULIN TRANSLOCATION DYNAMICS THROUGH A NANOPORE IN AN ELECTRICALLY BIASED SOLID-STATE MEMBRANE. *Craig C. Wells*, Dmitriy V. Melnikov, Maria E. Gracheva

1448-Pos
BROWNIAN DYNAMICS WITH SELF-CONSISTENT FORCE CALCULATIONS FOR A NEUTRAL NANOPIRICLE TRANSLATING THROUGH A NANOPORE. Zachery K. Hulings, Dmitriy V. Melnikov, Maria E. Gracheva

1449-Pos
UNIVERSAL EXTREMAL CONTROLLED BREAKDOWN FABRICATION. *Aaron Blanchard*, Khalid Salaita

1450-Pos
PHOTOTHERMALLY-ASSISTED LIPID BILAYER COATING ON A SINI NANOPORE FOR HIGH-THROUGHPUT PROTEIN CHANNEL FORMATION. *Hirohito Yamazaki*, Yinghua Qiu, Xinqi Kang, Meni Wanunu

1451-Pos
HIGHLY-STABLE BIO-INSPIRED PEPTIDE/MOS2 MEMBRANES FOR EFFICIENT WATER DESALINATION. *Bedanga Sapkota*, Laxmi Pandey, Abdelkrim Benabbas, Meni Wanunu
ARRAY OF FREESTANDING PLANAR LIPID BILAYERS FOR PARALLEL OPTICAL AND ELECTRICAL RECORDINGS. Gerhard Baaken, Ekaterina Zaitseva, Soenke Petersen, Taras Sych, Kubick Stefan, Jan C. Behrends

PH RESPONSIVE MORPHOLOGICAL CHANGE IN POLYMER NANOSTRUCTURES. Ryan L. Hamblin, Stacy M. Copp, Gabriel A. Montaño


SOLVENT-FREE CRYOSTORAGE OF MICROORGANISMS USING ICE GROWTH INHIBITING POLYMERS. Muhammad Hasan, Alice Fayter, Matthew I. Gibson

AN ALGORITHM TO CONSTRUCT BIOLOGICALLY RELEVANT CHONDROITIN SULFATE BIOPOLYMER MODELS AT ATOMIC RESOLUTION. Elizabeth K. Whitmore, Gabriel Vesenka, Hanna Sihler, Olgun Guvench

LIGNIN-CELLULOSE BINDING AFFINITY DEPENDENCE ON CELLULOSE FACE AND LIGNIN COMPOSITION. Josh V. Vermaas, Gregg T. Beckham, Michael F. Crowley

FLOW IMAGING MICROSCOPY OF A SELF-ASSEMBLING PROTEIN POLYMER MATERIAL. Eva Rose M. Balog

INVESTIGATIONS INTO THE MECHANISM OF FIBRIL FORMATION IN A PEPTIDE HYDROGEL. Gabriel A. Braun, Sara S. Linse, Karin Akerfeldt Akerfeldt

SELF-HEALING DNA-BASED REACTION-DIFFUSION PATTERNS. Phillip J. Dorsey, Rebecca Schulman

CARBON NANOTUBE PORINS IN BLOCK COPOLYMERS AS FULLY SYNTHETIC MIMICS OF BIOLOGICAL MEMBRANES. Aleksandr Noy

LOCATION-LOCATION-LOCATION: DESIGNING CATIONIC CHARGE PLACEMENT ON LIPID VESICLES DETERMINES THEIR INTERACTIONS WITH LIVING CELLS. Aprameya Ganesh Prasad, Dominick Salerno, Alaina K. Howe, Omkar Mandar Bhatavdekar, Stavroula Sofou

EFFECTS OF AGING ON THE VISCOELASTIC PROPERTIES OF TISSUES AND CANCER CELL BEHAVIOR. Seungman Park, Jiaxiang Tao, Li Sun, Chen-Ming Fan, Yun Chen
Tuesday, March 5, 2019
Daily Program Summary

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

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<tr>
<td>8:00 AM–9:00 AM</td>
<td>Biophysical Society Business Meeting</td>
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<td>8:15 AM–10:15 AM</td>
<td>Symposium: Proteins: Dynamics and Allostery</td>
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<td>8:15 AM–10:15 AM</td>
<td>Symposium: Function and Signaling at the Membrane</td>
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<td>Career Development Center Workshop: Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn &amp; More</td>
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<td>Exhibitor Presentation: Sophion Bioscience A/S</td>
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<tr>
<td>10:45 AM–12:45 PM</td>
<td>Symposium: Awards</td>
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<td>10:45 AM–12:45 PM</td>
<td>MODELING THE DYNAMICS OF CDC42 OSCILLATION IN FISSION YEAST. Bin Xu</td>
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<td>10:45 AM–12:45 PM</td>
<td>TECHNOLOGY DEVELOPMENT TOWARDS THE UNDERSTANDING OF G-PROTEIN COUPLED RECEPTOR STRUCTURE FUNCTION. Raymond C. Stevens</td>
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<td>10:45 AM–12:45 PM</td>
<td>FINDING ORDER IN DISORDER: FUNCTIONAL STUDIES OF DYSFUNCTIONAL PROTEINS. Elizabeth Rhoades</td>
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<td>10:45 AM–12:45 PM</td>
<td>MANY SINGLE MOLECULES. Jeff Gelles</td>
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<tr>
<td>10:45 AM–12:45 PM</td>
<td>FUNCTIONAL PROTEIN FIBRILS AS ANTIBACTERIAL AGENTS AND TARGETS. Meytal Landau</td>
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<td>10:45 AM–12:45 PM</td>
<td>LAURDAN GP FOR THE QUANTITATION OF LIPID PHASES. Enrico Gratton</td>
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<td>10:45 AM–12:45 PM</td>
<td>SURFACE PROGRAMMING OF PROTEIN HYDRATION WATER DYNAMICS REVEALED BY OVERHAUSER DYNAMIC NUCLEAR POLARIZATION. Song-I Han</td>
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<td>EXPLORING THE RIBOSOME WITH FRIENDS: MYSTERIES OF THE MOTHER SHIP. Harry Noller</td>
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<td>10:45 AM–12:45 PM</td>
<td>A (SCIENTIFIC) LIFETIME AFFAIR WITH NUCLEIC ACIDS. Juli Feigon</td>
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<td>Time</td>
<td>Platform: Systems Biology and Genetic Regulatory Networks</td>
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<td>Career Development Center Workshop: The Industry Interview: What you need to do before, during, and after to get the job</td>
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<td>Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions</td>
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<td>1:30 PM–3:00 PM</td>
<td>The Nuts and Bolts of Preparing Your NIH Grant</td>
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<td>Poster Presentations and Late Posters</td>
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<tr>
<td>2:30 PM–3:30 PM</td>
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### Symposium: Determining Molecular Networks
**Chair:** Edward Marcotte, University of Texas at Austin

**Ballroom I**

4:00 PM–6:00 PM  
**Finding and Interpreting Genetic Interactions Using PERTURB-SEQ Single Cell RNA-Seq CRISPR Screens.** Jonathan Weissman

**Decoding the Human Genome With Machine Learning Approaches.** Olga Troyanskaya

**The Proteotype Model.** Rudolf Aebersold

**A Mass Spectrometry-Based Map of Core Eukaryotic Protein Complexes.** Edward Marcotte

### Symposium: Transporters and Channels
**Chair:** Diana Bautista, University of California, Berkeley

**Ballroom II**

4:00 PM–6:00 PM  
**Cryo-EM Structures and Mechanism of Human Multidrug ABC Transporters.** Kaspar Locher

**Mitochondrial Potassium Channels as Determinants of Cell Fate.** Ildiko Szabo

**Structural Investigation of Voltage-Gated Sodium Channels.** Nieng Yan

**Shingosine-1-Phosphate Receptor 3 (S1PR3) Signaling Mediates Mechanical Pain.** Diana Bautista

### Platform: Protein-Nucleic Acid Interactions/Chromatin and the Nucleoid I

**Ballroom III**

4:00 PM–6:00 PM  

### Platform: Protein Structure, Prediction, Design, and Misfolding

**Ballroom IV**

4:00 PM–6:00 PM  

### Platform: Member Organized Session: Multiscale Modeling of Biophysical Systems

**Room 307/308**

4:00 PM–6:00 PM  

### Platform: Bacterial Mechanics, Cytoskeleton, and Motility

**Room 309/310**

4:00 PM–6:00 PM  

### Platform: Force Spectroscopy and Scanning Probe Microscopy

**Room 314/315**

4:00 PM–6:00 PM  

### Platform: Membrane Dynamics and Curvature

**Room 316/317**

6:00 PM–6:30 PM  
**Dinner Meet-Ups**  
**Society Booth/Charles Street Lobby**

6:00 PM–10:00 PM  
**Publications Committee Meeting**  
**Hilton, Calloway**
7:30 PM–9:30 PM  
**Workshop: The Role of Data Resources in Biophysics**  
Chair: Helen Berman, Rutgers University  
Room 307/308

- RCSB PROTEIN DATA BANK: SUSTAINING A LIVING DIGITAL DATA RESOURCE THAT ENABLES BREAKTHROUGHS IN SCIENTIFIC RESEARCH AND BIOMEDICAL EDUCATION. Stephen K. Burley
- REACTOME - PATHWAY CONTEXT AND VISUALISATION FOR OMICS DATA. Henning Hermjakob
- UNIPROT THE UNIVERSAL PROTEIN KNOWLEDGEBASE IN THE GIGAPROTEIN ERA. Alex Bateman
- NCBI DATABASES IN SUPPORT OF BIOPHYSICS RESEARCH. David Landsman
- ARCHIVING OF INTEGRATIVE/HYBRID STRUCTURAL MODELS. Helen Berman

7:30 PM–9:30 PM  
**Workshop: Methods for Integrative Structure Modeling of Biomolecular Systems**  
Chair: Jens Meiler, Vanderbilt University  
Room 309/310

- HIGH-RESOLUTION, INTEGRATIVE MODELLING OF BIOMOLECULAR COMPLEXES. Alexandre M.J.J. Bonvin
- ROSETTA TOOLS FOR CRYOEM MODELING. Frank DiMaio
- PROTOTYPING MULTISCALE CELLULAR VISUALIZATION & MODELING TECHNIQUES FOR HYPOTHESIS GENERATION, COMMUNICATION & LEARNING. Graham Johnson
- MODELING PROTEIN MONOMERS AND COMPLEXES USING RESTRAINTS FROM CROSSLINKING MASS SPECTROMETRY. Maya Topf
- INTEGRATED STRUCTURAL BIOLOGY FOR ALPHA-HELICAL MEMBRANE PROTEIN STRUCTURE DETERMINATION. Jens Meiler

7:30 PM–9:30 PM  
**Workshop: Squeezing the Most Out of Your Data - Bayesian Statistical Inference for Biophysics**  
Chair: Michael Nilges, Pasteur Institute, France  
Room 314/315

- BAYESIAN STRUCTURAL MODELING OF LARGE BIOMOLECULAR SYSTEMS. Michael Habeck
- SIMULTANEOUS DETERMINATION OF PROTEIN STRUCTURE AND DYNAMICS USING CRYO-ELECTRON MICROSCOPY. Massimiliano Bonomi
- MACHINE LEARNING METHODS TO PUSH ALL-ATOM MD BEYOND THE SECONDS TIMESCALE AND SIMULATE PROTEIN-PROTEIN ASSOCIATION AND DISSOCIATION. Frank Noé
- CLOSING THE LOOP IN AUTOMATED DESIGN AND MEASUREMENT: SCALABLE BAYESIAN INFERENCE FOR BIOPHYSICAL EXPERIMENTS. John Chodera
- BAYESIAN MODELLING IN INTEGRATIVE STRUCTURAL BIOLOGY. Michael Nilges

7:30 PM–9:30 PM  
**Workshop: Methods for X-Ray Tomography and Electron Microscopy**  
Chair: Carolyn Larabell, Lawrence Berkely National Laboratory  
Room 316/317

- ELECTRON CRYOMICROSCOPY OF ROTARY ATPASES. John Rubinstein
- TOWARDS NEAR-ATOMIC RESOLUTION FOR IN SITU STRUCTURES BY CRYO-ELECTRON TOMOGRAPHY. Peijun Zhang
- BISPECTRAL INVARIANTS FOR IMAGE CLASSIFICATION AND ALIGNMENT IN CRYOEM. Steven J. Ludtke
- HYBRID MODELING APPROACHES TO STUDY STRUCTURES AND DYNAMICS OF BIOLOGICAL SYSTEMS. Florence Tama
- CT SCANS OF SINGLE CELLS WITH SOFT X-RAY TOMOGRAPHY. Carolyn A. Larabell

7:30 PM–9:30 PM  
**Workshop: Single-Molecule Methods**  
Chair: Bo Huang, University of California, San Francisco  
Room 318/319/320

- MOLECULAR HIGHWAYS - TORSIONAL CONSEQUENCES OF DNA MOTOR PROTEINS. Michelle Wang
- PROVIDING 3D FOR SUPER-RESOLUTION MICROSCOPY AND SINGLE-PARTICLE TRACKING IN CELLS WITH SINGLE MOLECULES. William Moerner
- REVEALING THE INNER WORKING OF MOLECULAR MACHINERIES USING IN-VIVO SINGLE MOLECULE IMAGING. Jie Xiao
- MAPPING THE INNER WORLD OF CELLS. Bo Huang

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

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

Biophysical Society Business Meeting
8:00 AM - 9:00 AM, ROOM 324/325/326

Poster Viewing
8:00 AM - 4:00 PM, EXHIBIT HALL

Symposium
Proteins: Dynamics and Allostery
8:15 AM - 10:15 AM, BALLROOM I

Chair
Rommie Amaro, University of California, San Diego

1464-SYMP 8:15 AM
NMR WHY BOTHER. Lewis Kay

1465-SYMP 8:45 AM
COLD ADAPTATION IN AN ENZYME CAN BE DRIVEN BY DYNAMIC ALLOSTERY. Vincent Hilser

1466-SYMP 9:15 AM
CAVITIES IN CONTEXT: DISTINCT CONSEQUENCES OF PACKING DEFECTS IN A REPEAT PROTEIN FOLDING LANDSCAPE. Catherine A. Royer

1467-SYMP 9:45 AM
PROTEIN DYNAMICS IN CELLULAR ENVIRONMENTS. Rommie E. Amaro

Symposium
Function and Signaling at the Membrane
8:15 AM - 10:15 AM, BALLROOM II

Chair
Mark McLean, University of Illinois at Urbana-Champaign

1468-SYMP 8:15 AM
MEMBRANE PERMEABILIZATION IN CELL DEATH SIGNALING. A SINGLE MOLECULE APPROACH. Ana García-Sáez

1469-SYMP 8:45 AM
MITOCHONDRIAL BEHAVIOR. Jodi Nunnari

1470-SYMP 9:15 AM
THE HEAT, STEROIDS AND PROTONS AS DRIVERS OF FLAGELLAR MOTILITY. Polina V. Lishko, Nadja Mannowitz, Nadine Mundt, Melissa Miller, Samuel Kenny, Ke Xu, Ida T. Bjoerkgren

1471-SYMP 9:45 AM
UNDERSTANDING THE ROLE OF ANIONIC LIPIDS IN THE INTERACTION OF KRAS4B WITH THE MEMBRANE SURFACE. Mark A. McLean, Michael C. Gregory, Tyler Camp, Stephen G. Sligar

Platform
Functional Dynamics in Transcription and Translation
8:15 AM - 10:15 AM, BALLROOM III

Co-Chairs
Zeliha Kilic, Arizona State University
Robert Shelansky, University of California, Santa Cruz

1472-PLAT 8:15 AM
MIMICKING COTRANSCRIPTIONAL RIBOSWITCH FOLDING VIA A SUPERHELICASE UNWINDING ASSAY. Boyang Hua, Christopher P. Jones, P.J. Murray, Rebecca Rosenthal, Adrian Ferré-D’Amare, Taekjip Ha

1473-PLAT 8:30 AM
TRANSCRIPTIONAL BURSTING, SPECIFICITY, AND THE DYNAMIC NUCLEOSOME. Robert I. Shelansky, Heta Patel, Tineke Lenstra, Sara Abrahamsson, Hinrich Boeger

1474-PLAT 8:45 AM
MONITORING STRUCTURAL TRANSITIONS IN RNA POLYMERICASE USING SINGLE MOLECULE FRET. Abhishek Mazumder

1475-PLAT 9:00 AM
TRANSCRIPTIONAL ACTIVATION BY GLUCOCORTICOID RECEPTOR STUDIED BY 3D ORBITAL TRACKING FLUORESCENCE CROSS CORRELATION SPECTROSCOPY. Julianna A. Goelzer, Diana A. Stavreva, Gordon L. Hager, Matthew L. Ferguson

1476-PLAT 9:15 AM
PRE-MRNA SPLICING: THE GENE MATURATION SYMPHONY OF THE INTRON LARIAT SPliceSOME REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. Lorenzo Casalino, Giulia Palermo, Angelo Spinello, Ursula Roethlisberger, Alessandra Magistrato

1477-PLAT 9:30 AM
BAYESIAN NONPARAMETRIC ANALYSIS OF TRANSCRIPTIONAL PROCESSES. Zeliha Kilic, Steve Pressé

1478-PLAT 9:45 AM
PROTEIN SYNTHESIS KINETICS IN LIVE CELLS APPROACHED BY SINGLE-MOLECULE TRACKING MICROSCOPY. Ivan L. Volkov, Martin Lindén, Ka-Weng Leong, Mikhail Metelev, Kalle Kipper, Johan Elf, Magnus Johansson

1479-PLAT 10:00 AM
SINGLE MOLECULE IMAGING OF C9orf72 RNA AND REPEAT ASSOCIATED NON-ATG TRANSLATION IN LIVE CELLS. Malgorzata J. Latallo, Shaopeng Wang, Nathan Livingston, Shuying Sun, Bin Wu

Platform
Membrane Proteins II
8:15 AM - 10:15 AM, BALLROOM IV

Co-Chairs
Parmryd Ingela, University of Gothenburg, Sweden
Maria Kurnikova, Carnegie Mellon University

1480-PLAT 8:15 AM
MOLECULAR MECHANISM OF TRPM2 GATING. Tianmin Fu

1481-PLAT 8:30 AM
SURFACE-BASED BIOCHEMICAL ACTIVITY ASSAYS COMPLEMENT ATOMIC FORCE MICROSCOPY OF THE E. COli TRANSLOCAS. Kanokporn Chattarakun, Chunfeng Mao, Priya Bariya, Gavin King

1482-PLAT 8:45 AM
MECHANISM OF CHOLESTEROL SENSING IN THE NIEMANN PICK PROTEIN (NPC1) USING MOLECULAR DYNAMICS SIMULATIONS. Vikas Dubey, Behruz Bozorg, Daniel Wüstner, Himanshu Khandelia
1483-Plat 9:00 AM TRAVEL Awardee
CLC ANTIPORTER DIMERIZATION DYNAMICS REVEALED BY NOVEL DEVELOPMENTS IN HIGH-SPEED AFM. George R. Heath, Janice L. Robertson, Simon Scheuring

1484-Plat 9:15 AM
A MULTI-STATE COARSE-GRAINED SIMULATION MODEL CAPTURES CONFORMATIONAL CYCLING IN P-TYPE ATPASES. Yong Wang, Nourelidin Saleh, Xiaokun Chu, Kresten Lindorff-Larsen

1485-Plat 9:30 AM

1486-Plat 9:45 AM
CONTROLLING THE FOLDING AND MISFOLDING OF POTASSIUM CHANNELS. Kevin C. Song, Younghoon Koh, Eduardo Perozo, Benoit Roux, Tobin R. Sosnick

1487-Plat 10:00 AM
CHIMERIC HCN CHANNELS FOR STUDYING CAMP-INDUCED CONFORMATIONAL CHANGES IN THE C-LINKER. Bianca Introni, Andrea Saponaro, Alessio Bonucci, Oliver Rauh, Francesca Cantini, Lucia Banci, Gerhard Thiel, Anna Moroni

Platform
Ion Channel Regulatory Mechanisms
8:15 AM - 10:15 AM, ROOM 307/308

Co-Chairs
Anna Moroni, University of Milan, Italy
Panpan Hou, Washington University in St. Louis

1488-Plat 8:15 AM
STRUCTURAL RESPONSE OF THE PIEZO CHANNEL UPON APPLICATION OF FORCE. Yi-Chih Lin, Yusong R. Guo, Atsushi Miyagi, Jesper Levring, Roderick MacKinnon, Simon Scheuring

1489-Plat 8:30 AM
CHARACTERIZATION OF TEMPERATURE-DEPENDENT GATING IN ARCHAEABACTERIAL CALCIUM ACTIVATED POTASSIUM CHANNEL. Yihao Jiang, Baron Chanda

1490-Plat 8:45 AM

1491-Plat 9:00 AM
PH DEPENDENCE OF A MONOMERIC NON-CONDUCTING VOLTAGE-GATED PROTON CHANNEL (H, 1). Emerson M. Carmona, Osvaldo Alvarez, Alan Neely, Ramon Latorre, Carlos Gonzalez

1492-Plat 9:15 AM
STRUCTURES REVEAL OPENING OF THE STORE-OPERATED CALCIUM CHANNEL ORAI. Xiaowei Hou, Shana R. Burstein, Stephen B. Long

1493-Plat 9:30 AM
DEVELOPING SYNTHETIC PEPTIDES TO REGULATE NATIVE HCN CHANNELS. Andrea Saponaro, Francesca Cantini, Alessandro Porro, Annalisa Bucchi, Dario DiFrancesco, Vincenzo Maione, Michal Laskowski, Pietro Mesirca, Matteo Mangoni, Gerhard Thiel, Lucia Banci, Bina Santoro, Anna Moroni

1494-Plat 9:45 AM
MATRIX CA²⁺ MODULATES MITOCHONDRIAL UNIPORTER (MCU) ACTIVITY BY FLUX-THROUGH EFFECTS. Horia Vais, Riley Payne, Don-On Daniel Mak, Kevin J. Foskett

1495-Plat 10:00 AM
A NON-CANONICAL VSD-PORE COUPLING IN KCNQ CHANNELS. Panpan Hou, Jingyi Shi, Jianmin Cui

Platform
Molecular Dynamics II
8:15 AM - 10:15 AM, ROOM 309/310

Co-Chairs
Lucie Delemotte, KTH Royal Institute of Technology, Sweden
Joseph Rudzinski, Max Planck Institute, Germany

1496-Plat 8:15 AM
FINDING MULTIPLE REACTION PATHWAYS VIA GLOBAL OPTIMIZATION OF ACTION. Juyong Lee, In Ho Lee, Insuk Joung, Jooyoung Lee, Bernard R. Brooks

1497-Plat 8:30 AM
ROBUST ESTIMATION OF FREE ENERGY LANDSCAPES FROM GAUSSIAN MIXTURE MODELS WITH CROSS-VALIDATION. Lucie Delemotte, Annie M. Westerlund, Christian Blau

1498-Plat 8:45 AM
IMPROVED PHYSICAL MODELS ENABLE THE INVESTIGATION OF MOLECULAR RECOGNITION IN INTRINSICALLY DISORDERED PROTEINS AT ATOMIC Resolution. Paul Robustelli, Stefano Piana-Agostinetti, Alain Ibáñez de Opakua, Fabrizio Giordanetto, Cecily K. Campbell-Bezat, Stefan Becker, Albert C. Pan, Markus Zwickstetter, David E. Shaw

1499-Plat 9:00 AM
ACCURATE ESTIMATION OF PROTEIN-BINDING KINETICS USING MARKOV STATE MODELS. Youngchan Kim, Tiara A. Maula, Jeetain Mittal

1500-Plat 9:15 AM
BROWNIAN DYNAMICS STUDY OF CAMP DEGRADATION IN PHOSPHODIESTERASE AND ENZYME METABOLON IN THE TCA CYCLE. Yu-ming Mindy Huang, Gary Huber, James McCammon

1501-Plat 9:30 AM
CONFORMATIONALLY-DEPENDENT SURFACE HOPPING FOR REPRODUCING STRUCTURAL CROSS-CORRELATIONS WITH COARSE-GRAINED MODELS. Tristan Bereau, Joseph F. Rudzinski

1502-Plat 9:45 AM
MULTISCALE MODELING FOR PEPTIDE SELF-ASSEMBLY. Xiaochuan Zhao, Chenyi Liao, Jianing Li

1503-Plat 10:00 AM
BRIDGING THE SCALES: A MACHINE LEARNING DIRECTED MACRO TO MICRO SCALE SIMULATION TO MODEL RAS INITIATION OF CANCER. Helgi I. Ingolfsson, Dwight V. Nissley, Fred Streitz

Platform
Biophysics and Neuroscience
8:15 AM - 10:15 AM, ROOM 314/315

Co-Chairs
Padmini Rangamani, University of California, San Diego
Ann-Sofie Cans, Chalmers University of Technology, Sweden

1504-Plat 8:15 AM
DENDRITIC SPINE GEOMETRY AND ULTRASTRUCTURE DICTATE THE SPATIOTEMPORAL DYNAMICS OF SECOND MESSENGERS. Padmini Rangamani, Miriam Bell, Andrea Cugno, Donya Ohadi, Thomas M. Bartol, Ravi Iyengar, Terrence J. Sejnowski
1505-Plat 8:30 AM
SUPER-RESOLUTION IMAGING OF THE BRAIN EXTRACELLULAR SPACE DEEP WITHIN INTACT LIVE TISSUE USING CARBON NANOTUBES. Antoine G. Godin, Noémie Danné, Juan A. Varelta, Gao Zhenghong, Brahim Louinis, Laurent Groc, Laurent Cognet

1506-Plat 8:45 AM
ULTRA-FAST GLUTAMATE BIOSENSOR RECORDINGS IN BRAIN SLICE DISPLAY COMPLEX SINGLE EXOCYTOSIS TRANSIENTS. Ann-Sofie U. Cans, Yuanmo Wang, Devesh Mishra, Jenny Bergman, Jacqueline Keighron, Karolina Skibicka

1507-Plat 9:00 AM
PIEZO2 UNDERLIES SLOWLY-INACTIVATING MECHANO-CURRENT IN SENSORY NEURONS FROM TACTILE SPECIALIST BIRDS. Slav N. Bagrantsev, Eve R. Schneider, Evan O. Anderson

1508-Plat 9:15 AM
DYNAMIC REGULATION OF AMPA RECEPTOR AND STARGAZIN CONCENTRATION IN THE SPINE IN THE TIME SCALE OF 0.1 S TO SEVERAL 100 S; UNRAVELING BY SINGLE-MOLECULE TRACKING. Yuri L. Nemoto, Kazuma Naito, Hiroko Hijikata, Taka A. Tsunoyama, Nao Hiramoto-Yamaki, Rinshi S. Kasai, Yuki M. Shirai, Manami S. Miyahara, Takahiro K. Fujiwara, Akira Kusumi

1509-Plat 9:30 AM
SINGLE-MOLECULE MECHANICS OF THE MOLECULAR SPRING THAT UNDERLIES HEARING. Tobias F. Bartsch, Felicitas E.Engel, Aaron Oswald, Gilman Dionne, Iris V. Chipendo, Simranjit Mangat, Muhammad El Shatani, Ulrich Mueller, Lawrence Shapiro, A. J. Hudspeth

1510-Plat 9:45 AM
TRAVEL AWARDEE
THE NEURONAL TAU PROTEIN BLOCKS IN VITRO FIBRILLATION OF THE AMYLOID-B (AB) PEPTIDE. Cecilia Wallin, Yoshikata Hiruma, Sebastian Warmlander, Isabelle Huvent, Jüri Jarvet, Jan Pieter Abrahams, Astrid Graslund, G Litpens, Jinghui Luo

1511-Plat 10:00 AM
ACTIVATION OF SLACK POTASSIUM CHANNELS (KCNT1) TRIGERS AN INCREASE IN MRNA TRANSLATION. Taylor J. Malone, Pawel Licznerski, Elizabeth A. Jonas, Leonard K. Kaczmarek

Career Development Center Workshop
Looking Beyond Academia: Identifying Your Career Options using MyIDP, LinkedIn & More
9:30 AM - 10:30 AM, EXHIBIT HALL A
Not sure where your professional future lies or how to approach the process in an organized and strategic manner? This presentation provides a framework and resources for moving forward with confidence towards the next step in your professional future. In addition, it will provide specific examples of how to build out your knowledge of a new potential career field and forge valuable connections that can facilitate a successful transition.

Exhibitor Presentation
Sophion Bioscience A/S
9:30 AM - 11:00 AM, ROOM 303
ELECTROPHYSIOLOGICAL CHARACTERIZATION USING AUTOMATED PATCH CLAMP (QPATCH AND QUBE) OF hPSC-DERIVED NEUROLOGICAL DISEASE MODELS, NEW AUTOMATED PATCH CLAMP ION CHANNEL ASSAYS FOR CiPA CARDIAC SAFETY TESTING (DYNAMIC hERG and LQT3 LATE NAV1.5) AND NAV1.7 DRUG DISCOVERY
Successful ion channel drug discovery requires the integration of multiple technologies and workflows. Sophion Bioscience is a leader in automated patch clamp technology, providing medium to high throughput, automated patch clamp to the pharmaceutical industry and universities. The QPatch and Qube are fully automated patch clamp systems, executing simultaneous 8, 16, 48 or 384 parallel patch clamp recordings in conjunction with computer controlled liquid handling and on-board cell handling. Sophion partners with other biotech companies to create robust, ion channel and electrophysiological workflows for drug development for ion channel targets. During this workshop, three industry speakers will provide insight into the drug discovery process. Dr Kadla Roska Rosholm will present how hiPSCderived neurological disease models have been characterized by use of high throughput electrophysiology at Sophion Bioscience. Next, Dr Marc Rogers from Metrion Biosciences will present their development of new automated patch clamp ion channel assays for CI/P cardiac safety testing: dynamic hERG and LQT late Nav1.5. Finally, Dr Brian Moyer will present on Amgen’s Nav1.7 drug discovery program.

Exhibits
10:00 AM - 4:00 PM, EXHIBIT HALL
Coffee Break
10:15 AM - 11:00 AM, EXHIBIT HALL
Symposium Awards
10:45 AM - 12:45 PM, BALLROOM I
Chair
Angela Gronenborn, University of Pittsburgh and BPS President

Exhibits
10:00 AM - 4:00 PM, EXHIBIT HALL
Coffee Break
10:15 AM - 11:00 AM, EXHIBIT HALL
Symposium Awards
10:45 AM - 12:45 PM, BALLROOM I
Chair
Angela Gronenborn, University of Pittsburgh and BPS President

No Abstract
10:45 AM
MODELING THE DYNAMICS OF CDC42 OSCILLATION IN FISSION YEAST. Bin Xu

No Abstract
10:58 AM
TECHNOLOGY DEVELOPMENT TOWARDS THE UNDERSTANDING OF G-PROTEIN COUPLED RECEPTOR STRUCTURE FUNCTION. Raymond C. Stevens

No Abstract
11:11 AM
FINDING ORDER IN DISORDER: FUNCTIONAL STUDIES OF DYSFUNCTIONAL PROTEINS. Elizabeth Rhoades

No Abstract
11:24 AM
MANY SINGLE MOLECULES. Jeff Gelles

No Abstract
11:37 AM
FUNCTIONAL PROTEIN FIBRILS AS ANTIBACTERIAL AGENTS AND TARGETS. Meytal Landau

No Abstract
11:50 AM
LAURDAN GP FOR THE QUANTITATION OF LIPID PHASES. Enrico Gratton

No Abstract
12:03 PM
SURFACE PROGRAMMING OF PROTEIN HYDRATION WATER DYNAMICS REVEALED BY OVERHAUSER DYNAMIC NUCLEAR POLARIZATION. Song-I Han
Platform
Systems Biology and Genetic Regulatory Networks
10:45 AM - 12:45 PM, BALLROOM II

Co-Chairs
Amelia Palermo, The Scripps Research Institute
Samuel Schaffter, Johns Hopkins University

1512-PLAT 10:45 AM
SYNTHETIC INTEGRATED IN VITRO TRANSCRIPTIONAL REGULATORY NETWORKS. Samuel Schaffter, Rebecca Schulman

1513-PLAT 11:00 AM
A LIVING, SINGLE CELL VIEW OF MYC’S EFFECTS ON TRANSCRIPTION. Simona Patange, Michelle Girvan, David Levens, Daniel R. Larson

1514-PLAT 11:15 AM
QUANTITATIVE ANALYSIS OF A TRANSIENT DYNAMICS OF A GENETIC REGULATORY NETWORK. Julian Lee, JeJun Lee

1515-PLAT 11:30 AM
THE IMPACT OF ALLELIC IMBALANCE ON SIGNAL TRANSMISSION STRONGLY DEPENDS ON NETWORK MOTIF PROPERTIES. Shibin Mathew, Alexander Gimelbrant, Francesco Cardarelli

1516-PLAT 11:45 AM
CAPTURING METABOLISM-DEPENDENT SOLVENT POLARITY FLUCTUATIONS IN A TRAFFICKING LYOSOME. Filippo Begarani, Francesca D’Autilia, Giovanni Signore, Enrico Gratton, Fabio Beltram, Francesco Cardarelli

1517-PLAT 12:00 PM

1518-PLAT 12:15 PM
4D CHARACTERIZATION OF SPATIOFUNCTIONAL ENZYME DROPLETS IN LIVING CELLS. Minjoung Kyoung

1519-PLAT 12:30 PM
TRAVEL Awardee

Platform
Microtubule-based Motors
10:45 AM - 12:45 PM, BALLROOM III

Co-Chairs
Carolyn Moores, Birbeck College, London, United Kingdom
Andrea Serra-Marques, University of California, San Francisco

1520-PLAT 10:45 AM

1521-PLAT 11:00 AM
HOW KINESIN-2 MOTORS WORK TOGETHER? Punam Sonar, Willi L. Stepp, Zeynep Ökten

1522-PLAT 11:15 AM
THE CRYO-EM STRUCTURE AND ACTIVITY OF KINESIN-5 FROM PLASMODIUM FALCIPARUM: MECHANISTIC LESSONS FROM A PARASITE KINESIN. Alex D. Cook, Anthony J. Roberts, Maya Topf, Carolyn A. Moores

1523-PLAT 11:30 AM
TAU DIFFERENTIALLY REGULATES KINESIN-1, KINESIN-2, AND KINESIN-3. Dominique V. Lessard, Christopher L. Berger

1524-PLAT 11:45 AM
INVESTIGATION OF COLLISIONS OF MICROTUBULES DRIVEN BY NANO-PATTERNED KINESINS. Tamanna Ishrat Farhana, Taikopaul Kaneko, Ryuji Yokokawa

1525-PLAT 12:00 PM
MECHANISMS OF ASTRAL MICROTUBULE REGULATION BY KINESIN MOTOR PROTEINS. Toni McHugh, Agata A. Gluszek, Julie P.I. Welburn

1526-PLAT 12:15 PM
KINESINS 1 AND 3 COOPERATE ON THE SAME VESICLE TO TRANSPORT EXOCYTOTIC CARRIERS. Andrea Serra-Marques, Maud Martin, Eugene Katrukha, Ilya Grigoriev, Qingyang Liu, Lotte Pedersen, Lukas Kapitein, Anna Akhmanova

1527-PLAT 12:30 PM
DYNEIN’S DIRECTIONALITY IS CONTROLLED BY THE ANGLE AND LENGTH OF ITS STALK. Sinan Can, Samuel Lacey, Mert Gur, Andrew Carter, Ahmet Yildiz

Platform
Protein Structure and Conformation III
10:45 AM - 12:45 PM, BALLROOM IV

Co-Chairs
Justin MacCallum, University of Calgary, Canada
Lauren Porter, Howard Hughes Medical Institute

1528-PLAT 10:45 AM
DETERMINING PROTEIN STRUCTURES BY ITERATING BETWEEN COMPUTATION AND EXPERIMENT. Justin L. MacCallum, Kari Gaalswyk

1529-PLAT 11:00 AM
EXPOSING THE NUCLEATION SITE OF ALPHA HELIX FOLDING: A JOINT EXPERIMENTAL AND SIMULATION STUDY. Arusha Acharyya, Yunhui Ge, Haifan Wu, William DeGrado, Vincent Voelz, Feng Gai

1530-PLAT 11:15 AM
MOLECULAR DYNAMICS SIMULATIONS OF THE CIRCADIAN CLOCK PROTEIN KAIC REVEAL STRUCTURAL INSIGHTS INTO THE NUCLEOTIDE RELEASE AND CIRCADIAN TIMING MECHANISMS. Lu Hong, Bodhi P. Vani, Erik H. Thiede, Michael J. Rust, Aaron R. Dinner

1531-PLAT 11:30 AM
CHARACTERIZATION OF PROTEIN STRUCTURAL CHANGES USING A NOVEL NONLINEAR OPTICAL TECHNIQUE. Bason Clancy, Ben Moree, Joshua Salafsky

1532-PLAT 11:45 AM
TOWARDS ATOMIC-RESOLUTION STRUCTURE DETERMINATION OF HIV-1 CAPSID ASSEMBLIES USING MAGIC ANGLE SPINNING NMR. Manman Lu, Mingzhang Wang, Jochem Struppe, Werner Maas, Angela Gronenborn, Tatyan Polenova

1533-PLAT 12:00 PM
KINDLIN DIMER STRENGTHENS FOCAL ADHESIONS UNDER FORCE BY RELIEVING AND MEDIATING INTRACELLULAR CROSSTALK AMONG INTERGRINS. Zeinab Jahed, Zainab Haydari, Akshay Rathish, Mohammad R. K. Mofrad
1534-PLAT  12:15 PM  DYNAMIC INTERACTIONS BETWEEN A DISORDERED PROTEIN AND ITS TARGET AT THE SINGLE-MOLECULE LEVEL.  Spencer Smyth, Gregory-Neal Gomes, Claudiu C. Gradinaru, Julie D. Forman-Kay

1535-PLAT  12:30 PM  SURVEYING THE SEQUENCE SPACE LANDSCAPE OF FOLD-SWITCHING PROTEINS.  Lauren L. Porter, Loren L. Looger

Platform
Voltage-gated Na and Ca Channels
10:45 AM - 12:45 PM, ROOM 307/308

Co-Chairs
Hui Xu, Genentech
Manu Ben-Johny, Columbia University

1536-PLAT  10:45 AM  STRUCTURAL BASIS OF NAV1.7 INHIBITION BY THE TARANTULA TOXIN PROTOXIN-II.  Hui Xu, Tianbo Li, Alexis Rohou, Christopher Arthur, Foteini Tzakoniatii, Evera Wong, Alberto Estevez, Christine Kugel, Yvonne Franke, Jun Chen, Claudio Ciferri, David Hackos, Christopher Koth, Jian Payandeh

1537-PLAT  11:00 AM  FENESTRATION DIFFERENCES IN OPEN AND CLOSED GATE SODIUM CHANNELS: A MOLECULAR BASIS FOR STATE-DEPENDENT DRUG DESIGN.  Altin Sula, Giulia Montini, Jennifer Booker, Bonnie A. Wallace


1539-PLAT  11:30 AM  BIOCHEMICAL AND FUNCTIONAL EVIDENCE FOR HOMODIMERIZATION OF VOLTAGE-GATED SODIUM CHANNELS (NAs).  Silvia Deto-Dassen, Nikolay Bebrivenski, Annika Rühlmann, Angelika Lampert

1540-PLAT  11:45 AM  TIMOTHY SYNDROME-ASSOCIATED MUTATIONS AFFECT STATE-DEPENDENT CONTACTS IN L-TYPE CALCIUM CHANNEL.  Vyacheslav S. Korkosh, Artem M. Kisilev, Eugeni N. Mikhaylov, Anna A. Kostareva, Boris S. Zhorov

1541-PLAT  12:00 PM  CHARACTERIZATION OF ARRHYTHMIA MUTATIONS IN CALMODULIN AND THEIR INTERACTIONS WITH THE VOLTAGE-GATED CALCIUM CHANNEL.  Kaiqian Wang, Christian Holt, Jocelyn Lu, Malene Brohus, Kamilla T. Larsen, Michael T. Overgaard, Reinhard Wimmer, Filip Van Petegem

1542-PLAT  12:15 PM  CA_1.3 REJECTS SIGNALING FROM A SECOND CAM IN ELICITING CA^{2+} DEPENDENT FEEDBACK REGULATION.  Nourdine Chakouri, Johanna Diaz, Manu Ben-Johny

1543-PLAT  12:30 PM  INACTIVATION REGULATES RGK-MEDIATED INHIBITION OF VOLTAGE-GATED CALCIUM CHANNELS.  Zafir Buraei, Rose Levenson-Palmer, Scott Dobbins, Zuleen Chia Chang, Sukhjinder Kaur, Salma Allam, Bryan Cernuda, Gabrielle Suppa, Jian Yang

Platform
Exocytosis & Endocytosis
10:45 AM - 12:45 PM, ROOM 309/310

Co-Chairs
Jonas Ries, EMBL, Germany
Zachary McDargh, Columbia University

1544-PLAT  10:45 AM  HIGH-THROUGHPUT SUPERRESOLUTION MICROSCOPY OF ENDOCYTOSIS - LINKING MOLECULAR ARCHITECTURE AND MECHANICS OF A PROTEIN MACHINERY.  Markus Mund, Johannes van der Beek, Joran Deschamps, Philipp Hoess, Serge Dmitrieff, Francois Nedelec, Marko Kaksonen, Jonas Ries

1545-PLAT  11:00 AM  SELF-ORGANIZATION AND FORCE PRODUCTION BY THE BRANCHED ACTIN CYTOSKELETON DURING MAMMALIAN CLATHRIN-MEDIATED ENDOCYTOSIS.  Matthew Akamatsu, Ritvik Vasan, David G. Drubin, Daniel Serwass, Padmini Rangamani

1546-PLAT  11:15 AM  ROLE OF MEMBRANE REMODELING PROTEINS IN ULTRAFAST ENDOCYTOSIS.  Sumana Raychaudhuri, Eduardo Sandoval, Shigeki Watanabe

1547-PLAT  11:30 AM  INVESTIGATING MEMBRANE TENSION DYNAMICS IN THE NEURONAL PRESYNAPTIC TERMINAL.  Natasha Dudzinski, David Zenisek, Erdem Karatekin

1548-PLAT  11:45 AM  OSMOTIC SQUEEZING AND MEMBRANE TENSION DRIVE VESICLE EVOLUTION DURING EXOCYTOSIS.  Rui Su, Sathish Thiyagarajan, Wonchul Shin, Ling-Gang Wu, Ben O'Shaughnessy

1549-PLAT  12:00 PM  TWO POPULATIONS OF INSULIN GRANULES WITH DISTINCT FUSION PROPERTIES ARE MAINTAINED BY ABC TRANSPORTERS ABCG1 AND ABCA1.  Noah A. Schenk, Alex J.B. Kreutzberger, Megan T. Harris, Catherine A. Doyle, Patrick Seelheim, Binyong Liang, Volker Kiessling, Arun Anantharam, Lukas K. Tamm, J. David Castle

1550-PLAT  12:15 PM  FUSION PORE REGULATION BY EPAC2/CAMP CONTROLS CARGO RELEASE DURING INSULIN EXOCYTOSIS.  Alenka Gucek, Nikhil R. Gandasi, Muhammad Omar-Hmeadi, Marit Bakke, Stein Doskeland, Anders Tengholm, Sebastian Barg

1551-PLAT  12:30 PM  SNARE-MEDIATED MEMBRANE FUSION IS A TWO-STAGE PROCESS DRIVEN BY ENTROPIC FORCES.  Zachary A. McDargh, Anirban Polley, Ben O'Shaughnessy

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

Co-Chairs
Bohdana Discher, University of Pennsylvania
Sonja Schmid, Delft University of Technology, The Netherlands

1552-PLAT  10:45 AM  A MOLECULAR SENSOR REVEALS DIFFERENCES IN MACROMOLECULAR CROWDING BETWEEN THE CYTOPLASM AND NUCLEOPLASM.  Chandrashekhar Murade, George T. Shubeita
1553-Plat 11:00 AM TAILORING BIOMOLECULAR INTERACTIONS OF HYBRID NANOSTRUCTURES FOR THEIR DIAGNOSTIC AND THERAPEUTIC APPLICATIONS IN NEURODEGENERATIVE DISEASES. Anup Kumar Srivastava, Mohammed Nadim Sardoiwala, Babita Kaundal, Subhasree Roy Choudhury, Surajit Karmakar

1554-Plat 11:15 AM DE NOVO DESIGN OF REDOX PROTEINS FOR FLUORESCENCE READ-OUT OF CELLULAR POTENTIALS. Sohini Mukherjee, Martin J. Iwanicki, Christopher C. Moser, Bohdana M. Discher

1555-Plat 11:30 AM WIRELESS NANOPORE ELECTRODE FOR ELECTRON TRANSFER IMAGING IN LIVE CELLS. Yilun Ying, Yongxu Hu, Rui Gao, Ling-Fei Cui, Yi-Tao Long

1556-Plat 11:45 AM SINGLE MOLECULE SNAPSHOTS OF RIBOSWITCH CONFORMATIONAL CHANGE AND RNA SWITCH BASED BIOSENSING ON A NANOPORE MAGLET DEVICE. Xinyue Zhang, Yingzhen Wang, Samuel Hawkins, Andrew Burcke, Shi-Jie Chen, Li-Qun Gu

1557-Plat 12:00 PM SINGLE-MOLECULE PROTEIN FINGERPRINTING USING NANOPORES. Sonja Schmid, Laura Restrepo, Gang Huang, Chirilmin Joo, Giovanni Maglia, Cees Dekker

1558-Plat 12:15 PM DIRECT SEQUENCING OF XENO-NUCLEIC ACIDS USING NANOPORE. Shuanghong Yan, Shuo Huang

1559-Plat 12:30 PM HIGHLY SELECTIVE BIONANOSENSOR FOR QUICK DETECTION OF BACTERIAL PATHOGENS IN FOOD. Negin Farzad, Samuel Opper, Kevin Taisma, Ewa S. Kirkor, Ali Senejani, Saion K. Sinha

Platform Membrane Physical Chemistry II
10:45 AM - 12:45 PM, ROOM 316/317

Co-Chairs
Aurelia Honerkamp-Smith, Lehigh University
James Lee, Old Dominion University

1560-Plat 10:45 AM DISCRETE SUPPORTED BILAYER PATCHES TO INTERROGATE MEMBRANE PROTEIN ADVECTION, PHASE SEPARATION, AND BILAYER-SURFACE COUPLING. Aurelia R. Honerkamp-Smith, Larissa K. Socrier, Amanda Ratajczak, Xaymara Rivera

1561-Plat 11:00 AM ASYMMETRIC PROTEOLIPOSOMES - STRIKING A NEW PATH IN THE WORLD OF MODEL MEMBRANES. Marie Markones, Anika Fippel, Michael Kaiser, Carina Drechsler, Carola Hunte, Heiko H. Heerklotz

1562-Plat 11:15 AM A LIPID NANOTUBE-MEDIATED PATH TO PROTOCELL FORMATION AND GROWTH. Elif S. Koksal, Susanne Liese, Ilayda Kantarci, Ragni Olsson, Andreas Carlson, Irep Gozen

1563-Plat 11:30 AM PHOSPHOIPID HEADGROUPS GOVERN EMERGENT BENDING ENERGY OF MEMBRANES WITH IMPLICATIONS FOR LIPID-PROTEIN INTERACTIONS. K.J. Mallikarjuniah, Trivikram R. Molugu, Horia I. Petraceh, Michael F. Brown

1564-Plat 11:45 AM BURIED WATER IN A LIPID Membrane MEASURED WITH SITE-SPECIFIC IR SPECTROSCOPY OF TRANSMEMBRANE PEPTIDES. Jennifer C. Flanagan, Carlos R. Baiz

1565-Plat 12:00 PM PHYSICAL CHEMISTRY OF LIVING SYSTEMS: ISOTHERMAL UTILIZATION OF LATENT HEAT BY ELECTROSTATICALLY LOCALIZED PROTONS AT LIQUID-MEMBRANE INTERFACE. James W. Lee

1566-Plat 12:15 PM HOW OSMOLYTES MODULATE LIPID INTERACTIONS. Shahar Sukenik, Shaked Dunsky, Christoph Allocco, Avishai Barnoy, Ilan Shumilin, Daniel Harries

1567-Plat 12:30 PM INVESTIGATING DRUG-MEMBRANE PERMEABILITY ACROSS CHEMICAL COMPOUND SPACE USING HIGH-THROUGHPUT COARSE-GRAINED SIMULATIONS. Roberto Menichetti, Kiran H. Kanekal, Tristan Bereau

Career Development Center Workshop
The Industry Interview: What you need to do before, during, and after to get the job
11:30 AM - 12:30 PM, EXHIBIT HALL A

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

Founding, Establishing, and Maintaining a Research Laboratory at Primarily Undergraduate Institutions
12:00 PM - 1:30 PM, ROOM 318/319/320

This session, sponsored by the Education Committee, provides guidance on founding, establishing, and maintaining a research laboratory at primarily Undergraduate Institutions. Panelists are faculty members at PUI’s who have been successful in their positions.

Moderators
Paul Urayama, Miami University
Elizabeth Yates, United States Naval Academy

Presenters
Kurt Andresen, Gettysburg College
Kambiz Hamadani, California State University, San Marcos
Jamie Schlessman, United States Naval Academy

Postdoc to Faculty Q&A
12:00 PM - 1:30 PM, ROOM 331/332

This question-and-answer luncheon is designed for postdocs finishing and actively applying for academic faculty positions. Discussion will be led by a panel of new faculty in basic science and/or medical school departments and experienced faculty who have served as department chairs and/or part of faculty search committees. Topics for discussion include how to prepare the curriculum vitae, the interview process, networking, how to negotiate the job offer, and advice for new faculty as they balance research with their department obligations. Pre-registration was required for lunch. If you are interested in attending and did not register in advance, you are welcome to participate in the discussion on a space-available basis.
Nurturing a More Inclusive STEM Enterprise by Understanding our Biases

1:15 pm - 2:45 pm, Room 324/325/326

We are all biased. Google’s PeopleAnalytics suggests that we as people can only consciously process about one millionth of the information that we receive at any moment. Instead, we rely heavily on our unconscious reasoning abilities to make decisions. Even though we scientists are trained to be objective and evidence based, we, too, use cognitive shortcuts in our every day interactions. This means we rely on our expectation biases, e.g. what we think we think about categories of people, things, situations. This behavior leads to unconscious errors in decision making that leads to discrimination in science against people who do not meet the stereotypical description of what a scientist looks like. This session will approach the phenomenon of unconscious bias as a science problem by examining the data in this area and by discussing tools that we can all use to nurture a more inclusive scientific enterprise. Attendees are encouraged to learn about their own biases by completing the Project Implicit Gender-Science IAT, Race IAT and Sexuality IAT tests at https://implicit.harvard.edu/implicit/

Speaker
Karen Fleming, Johns Hopkins University

The Nuts and Bolts of Preparing Your NIH Grant

1:30 pm - 3:00 pm, Room 321/322/323

The National Institutes of Health is the world’s largest funder of fundamental biomedical research. You have likely spent years training and are now ready to apply for a NIH grant. But where do you start? At this session, program directors and officers with expertise in biophysics will be providing details on the NIH grant-making process as it stands in 2019, with a particular emphasis on grant writing and submission for new and early career investigators.

Session Organizer
Peter Preusch, Biophysics Branch Chief in the Division of Biophysics, Biomedical Technology, and Computational Biosciences, NIH.

Industry Panel

1:30 pm - 3:00 pm, Room 327/328/329

Come join us for a Q&A discussion about science in industry. Hear from a panel of scientists about their career in industry. Learn about the different roles and positions and get perspective about how you can tailor your current research experience to align with industry needs.

Speaker
Sonia Gregory, GSK Vaccines – Chair
Wayne Harshbarger, GSK Vaccines
Joanna Swain, Cogen Therapeutics
Adam Zwolak, Janssen BioTherapeutics
Angela Ballesteros Morcillo, National Institute of Neurological Disorders and Stroke (NINDS-NIH)
Jeanne Small, Quantum Northwest, Inc.
Meagan Small, U.S. Army Research Laboratory

Snack Break

1:45 pm - 3:00 pm, EXHIBIT HALL
SUPERCOILING MAKES PROTEIN-MEDIATED LOOPING OF DNA TETHERS

Platform
Member Organized Session: Multiscale Modeling of Biophysical Systems
4:00 PM - 6:00 PM, ROOM 307/308

Co-Chairs
Judy Cannon, University of New Mexico
Denis Tsygankov, Georgia Institute of Technology

1584-Plat 5:00 PM
THERMODYNAMICS OF AMINOLYOSODE-ENZYME COMPLEXES YIELDS CLUES ON DISTINGUISHING THERMOPHILIC VERSUS THERMOSTABLE VARIANTS OF THE AMINOLYOSODE NUCLEOTIDEYLTRANSFERASE 4' (ANT4). Seda Kocaman, Brinda Selvaraj, Matthew Cuneo, Engin H. Serpersu

1585-Plat 5:15 PM
DISULFIDE EXCHANGE AND SELF-CATALYZED AGGREGATION IN CATA-RACT-ASSOCIATED HUMAN GAMMA-D CRYSTALLIN. Eugene Serebryany, Shuhuai Yu, Sunia A. Trauger, Bogdan Budnik, Eugene I. Shakhnovich

1586-Plat 5:30 PM
HYPERSTABLE PROTEINS IN THE GUT MICROBIOTA: AN EXAMINATION OF THE BACTERIUM BACTEROIDES FRAGILIS. Jane Thibeault, Blanca Barquera, Wilfredo Colón

1587-Plat 5:45 PM
KINETIC STABILITY OF LONG-LIVED HUMAN Γ-D AND ΓS LENS CRYSTALS, DERIVED IN PART FROM THEIR DOMAIN INTERFACES, MAY PROTECT AGAINST CATARACT. Ishara Mills Henry, Melissa Kosinski-Collins, Shannon Thol, Eugene Serebryany, Jonathan A. King

Platform
Protein Structure, Prediction, Design, and Misfolding
4:00 PM - 6:00 PM, BALLROOM IV

1572-Plat 4:00 PM
DNA ORIGAMI-PROTEIN INTERACTIONS AND THE ROLE OF STERIC HINDRANCE. Antonio Suma, Alex Stopar, Abimbola Adedeji, Allen W. Nicholson, Matteo Gastronovo, Vincenzo Carnevale

1573-Plat 4:15 PM
TAKING A CLOSER LOOK AT RECO HELICASE WITH NANOPORE TWEEZERS. Jonathan M. Craig, K. Maria Mills, Andrew H. Laslo, Keir C. Neuman, Jens H. Gundlach

1574-Plat 4:30 PM

1575-Plat 4:45 PM
SUPERCOILING MAKES PROTEIN-MEDIATED LOOPING OF DNA TETHERS DETERMINISTIC. Yan Yan, Laura Finzi, David D. Dunlap

1576-Plat 5:00 PM
TIME-RESOLVED CONTRAST VARIATION SAXS FOR STUDYING RNA-PRO-TEIN INTERACTIONS. Suzette A. Pabit, Andrea M. Katz, George D. Calvey, Lois Pollack

1577-Plat 5:15 PM
DETECTIVE RNA INTERACTION DRIVES ABERRANT PHASE SEPARATION OF ALS-LINKED MUTANT FUS. Amirhossein Ghanbari Niaki, Jaya Sarkar, Xinyl Cai, Su Myong

1578-Plat 5:30 PM
ROLE OF MOLECULAR CROWDING IN COMPACTING ESCHERICHIA COLI NUCLEOID. Da Yang, Jaana Mannik, Scott T. Retterer, Jaan Mannik

1579-Plat 5:45 PM
IS THE BACTERIAL CYTOPLASM A POOR SOLVENT FOR THE CHROMO-SOME? Yingjie Xiang, Ivan Surovtsev, Eric Dufresne, Christine Jacobs-Wagner

1580-Plat 4:00 PM
A PHYSICAL MODELING APPROACH TO DETERMINE PROTEIN STRUCTURES FROM PARAMAGNETIC NMR MEASUREMENTS. Kari Gaalswyk, Justin L. MacCallum

1581-Plat 4:15 PM
BIOCHEMICAL AND STRUCTURAL CHARACTERIZATION OF DE NOVO DESIGNED PDZ DOMAINS. Ernesto J. Fuentes, Young Joo Sun, Matthew Sternke, Vaitae Opou, Nicholas Panel, Douglas Barrick, Thomas Simonson

1582-Plat 4:30 PM
FOLDING PATHWAY OF A TWO-DOMAIN PROTEIN STUDIED WITH SINGLE MOLECULE THREE-COLOR FRET. Ganesh N. Agam, Anders Barth, Don C. Lamb

1583-Plat 4:45 PM
STABILITY AND MEMBRANE-BINDING OF SECA IN THE PRESENCE OF POTASSIUM GLUTAMATE, THE PRIMARY CYTOPLASMIC SAL OF ESCHERICHIA COLI. Guillaume Roussel, Eric Lindner, Stephen H. White

1584-Plat 5:00 PM
THERMODYNAMICS OF AMINOLYOSODE-ENZYME COMPLEXES YIELDS CLUES ON DISTINGUISHING THERMOPHILIC VERSUS THERMOSTABLE VARIANTS OF THE AMINOLYOSODE NUCLEOTIDEYLTRANSFERASE 4’ (ANT4). Seda Kocaman, Brinda Selvaraj, Matthew Cuneo, Engin H. Serpersu

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KINETIC STABILITY OF LONG-LIVED HUMAN Γ-D AND ΓS LENS CRYSTALS, DERIVED IN PART FROM THEIR DOMAIN INTERFACES, MAY PROTECT AGAINST CATARACT. Ishara Mills Henry, Melissa Kosinski-Collins, Shannon Thol, Eugene Serebryany, Jonathan A. King
Platform
Bacterial Mechanics, Cytoskeleton, and Motility
4:00 PM - 6:00 PM, ROOM 309/310

Co-Chairs
Ioanna Mela, University of Cambridge, United Kingdom
Benjamin Bratton, Princeton University

1596-PLAT 4:00 PM
WOLBACHIA PIPiens COLONIZES S CEReVIsIAe WITH HIGH YIELDS. EFFECTS ON THE HOST. Natalia Chiqueté Felix, Cristina Uribe-Alvarez, Ulrik Pedroza-Dávila, Isareli Cruz-Cruz, Salvador Uribe-Carvajal

1597-PLAT 4:15 PM
TIME-LAPSE ATOMIC FORCE MICROSCOPY REVEALS NEW END TAKE OFF (NETO) DYNAMICS IN MYCOBACTERIA. Melanie TM Hannebelle, Joelle XY Ven, Haig A. Eskandarian, Chiara Toniolo, Adrian PD Nievergelt, John D. McKinney, Georg E. Fantner

1598-PLAT 4:30 PM
MOLECULAR MOTORS GOVERN LIQUID-LIKE ORDERING AND FUSION DYNAMICS OF BACTERIAL COLONIES. Tom Cronenberg, Anton Welker, Robert Zollner, Claudia Meel, Katja Siewering, Niklas Bender, Marc Hennes, Enno R. Oldewurtel, Berenike Maier

1599-PLAT 4:45 PM
DNA ORIGAMI AS A TOOL IN THE TARGETED DESTRUCTION OF BACTERIA. Ioanna Mela, Masayuki Endo, Hiroshi Sugiyama, Robert M. Henderson, Clemens F. Kaminski

1600-PLAT 5:00 PM
3D FLUORESCENCE MICROSCOPY REVEALS GEOMETRIC LOCALIZATION OF BACTERIAL CELL SHAPE PROTEINS IN STRAIGHT, CURVED AND HELICAL RODS. Benjamin P. Bratton, Zemer Gitai, Joshua W. Sheavitz

1601-PLAT 5:15 PM
DYNAMICS OF BACTERIAL CELL WALL SYNTHESIS PROTEINS DURING CYTOKINESIS. Xinxing Yang, Jie Xiao

1602-PLAT 5:30 PM
SINGLE CELL AND SINGLE-MOLECULE ASSAYS REVEAL BACTERIA REGULATE THEIR RATE OF GROWTH BY ACTIVELY READING OUT THE LEVEL OF CELL WALL PRECURSORS. Yingjie Sun, Ethan Garner

1603-PLAT 5:45 PM
TRANSIENT MEMBRANE ATTACHMENTS OF FTSZ PRECEDE Z-RING FORMATION IN ESChERICHIA COli. Bryant E. Walker, Jaana Mannik, Jaan Mannik

Platform
Membrane Dynamics and Curvature
4:00 PM - 6:00 PM, ROOM 316/317

Co-Chairs
Kandice Levental, UT Health Science Center at Houston
Peter Pohl, Johannes Kepler University, Austria

1610-PLAT 4:30 PM
REGULATION OF SINGLE-STRANDED DNA WRAPPING BY E. COli SSB MEASURED USING FORCE SPECTROSCOPY. M. Nabuan Nauffer, Michael Morse, Ioulia Rouzina, Mark C. Williams

1611-PLAT 4:45 PM
SINGLE MOLECULE STUDY OF TENSION EFFECTS ON CRISPR/CAS9. Suleyman Ucuncuoglu, Kassidy N. Lundy, Ozgur Sahin

1612-PLAT 5:00 PM
INTRINSIC BENDING IN NUCLEIC ACIDS: A COMBINED ATOMIC-FORCE MICROSCOPY AND MOLECULAR DYNAMICS STUDY. Alberto Marin-Gonzalez, J G. Vilhena, Cesar L. Pastrana, Alejandro Martin-Gonzalez, Clara Aicart-Ramos, Ruben Perez, Fernando Moreno-Herrero

1613-PLAT 5:15 PM
ALL-ATOM STEERED MOLECULAR DYNAMICS SIMULATIONS OF LARGE PROTEINS IN A SMALL WATER BOX. David Wang, Piotr E. Marszalek

1614-PLAT 5:30 PM
SCANNING ION CONDUCTANCE MICROSCOPY AND ATOMIC FORCE MICROSCOPY FOR LIVE CELL IMAGING: A COMPARISON. Jan Seifert, Johannes Rheinlaender, Tilman E. Schäffer

1615-PLAT 5:45 PM
CORRELATIVE AFM-FLIM MEASUREMENTS IN LIVING CELLS, TISSUES AND IN SOLAR CELL MATERIALS. Chetan Poudel, Ioanna Mela, Miguel Anaya, Geraud Delport, Samuel D. Stranks, Clemens F. Kaminski

Platform
Force Spectroscopy and Scanning Probe Microscopy
4:00 PM - 6:00 PM, ROOM 314/315

Co-Chairs
David Sivak, Simon Fraser University, Canada
Piotr Marszalek, Duke University

1604-PLAT 4:00 PM
USING EQUILIBRIUM BEHAVIOR TO REDUCE ENERGY DISSIPATION IN NON-EQUILIBRIUM BIOMOLECULAR PROCESSES. Sara Tafoya, Steven J. Large, Shixin Liu, Carlos Bustamante, David A. Sivak

1605-PLAT 4:15 PM
MEASURING THE AVERAGE SHAPE OF TRANSITION PATHS DURING THE FOLDING OF A SINGLE BIOLOGICAL MOLECULE. Noel Q. Hoffer, Krishna Neupane, Michael T. Woodside

1606-PLAT 4:30 PM
REGULATION OF SINGLE-STRANDED DNA WRAPPING BY E. COli SSB MEASURED USING FORCE SPECTROSCOPY. M. Nabuan Nauffer, Michael Morse, Ioulia Rouzina, Mark C. Williams

1607-PLAT 4:45 PM
SINGLE MOLECULE STUDY OF TENSION EFFECTS ON CRISPR/CAS9. Suleyman Ucuncuoglu, Kassidy N. Lundy, Ozgur Sahin

1608-PLAT 5:00 PM
INTRINSIC BENDING IN NUCLEIC ACIDS: A COMBINED ATOMIC-FORCE MICROSCOPY AND MOLECULAR DYNAMICS STUDY. Alberto Marin-Gonzalez, J G. Vilhena, Cesar L. Pastrana, Alejandro Martin-Gonzalez, Clara Aicart-Ramos, Ruben Perez, Fernando Moreno-Herrero

1609-PLAT 5:15 PM
ALL-ATOM STEERED MOLECULAR DYNAMICS SIMULATIONS OF LARGE PROTEINS IN A SMALL WATER BOX. David Wang, Piotr E. Marszalek

1610-PLAT 5:30 PM
SCANNING ION CONDUCTANCE MICROSCOPY AND ATOMIC FORCE MICROSCOPY FOR LIVE CELL IMAGING: A COMPARISON. Jan Seifert, Johannes Rheinlaender, Tilman E. Schäffer

1611-PLAT 5:45 PM
CORRELATIVE AFM-FLIM MEASUREMENTS IN LIVING CELLS, TISSUES AND IN SOLAR CELL MATERIALS. Chetan Poudel, Ioanna Mela, Miguel Anaya, Geraud Delport, Samuel D. Stranks, Clemens F. Kaminski

Biophysical Society
1618-Plat 5:30 PM
CHOLESTEROL AFFECTS THE BENDING RIGIDITY OF DOPC MEMBRANES.
Rana Ashtiar, Milka Doktorova, Frederick A. Heberle, Haden Scott, Elizabeth Kelley, Michihiro Nagao, Rebecca Usery, Francisco N. Barrera, Gerald W. Feigenson, John Katsaras, George Khelashvili

1619-Plat 5:45 PM
BUDDING AND FISSION OF VESICLES BY CONTROL OF MEMBRANE SPONTANEOUS CURVATURE. Jan Steinkühler, Solveig Bartelt, Seraphine Wegner, Roland L. Knorr, Rumiana Dimova, Reinhard Lipowsky

Dinner Meet-Ups
6:00 PM - 6:30 PM, SOCIETY BOOTH/CHARLES STREET LOBBY
Interested in making new acquaintances and experiencing the cuisine of Baltimore? Meet at the Society Booth each evening, Sunday through Tuesday, at 6:00 pm where a BPS member will coordinate dinner at a local restaurant.

Publications Committee Meeting
6:00 PM - 10:00 PM, HILTON, CALLOWAY

Workshop
The Role of Data Resources in Biophysics
7:30 PM - 9:30 PM, ROOM 307/308
Chair
Helen Berman, Rutgers University

Workshop
Methods for Integrative Structure Modeling of Biomolecular Systems
7:30 PM - 9:30 PM, ROOM 309/310
Chair
Jens Meiler, Vanderbilt University

1620-Wkshp 7:30 PM
RCB PROTEIN DATA BANK: SUSTAINING A LIVING DIGITAL DATA RESOURCE THAT ENABLES BREAKTHROUGHS IN SCIENTIFIC RESEARCH AND BIOMEDICAL EDUCATION. Stephen K. Burley

1621-Wkshp 7:54 PM
REACTOME - PATHWAY CONTEXT AND VISUALISATION FOR OMICS DATA. Henning Hermjakob

NO ABSTRACT 8:18 PM
UNIPROT THE UNIVERSAL PROTEIN KNOWLEDGEBASE IN THE GIGAPROTEIN ERA. Alex Bateman

NO ABSTRACT 8:42 PM
NCBI DATABASES IN SUPPORT OF BIOPHYSICS RESEARCH. David Landsman

1622-Wkshp 9:06 PM
ARCHIVING OF INTEGRATIVE/HYBRID STRUCTURAL MODELS. Helen Berman, Brinda Vallat, John Westbrook, Benjamin Webb, Andrej Sali

Workshop
Squeezing the Most Out of Your Data - Bayesian Statistical Inference for Biophysics
7:30 PM - 9:30 PM, ROOM 314/315
Chair
Michael Nilges, Pasteur Institute, France

1623-Wkshp 7:30 PM
HIGH-RESOLUTION, INTEGRATIVE MODELLING OF BIOMOLECULAR COMPLEXES. Alexandre M.J.J. Bonvin

1624-Wkshp 7:54 PM
ROSETTA TOOLS FOR CRYOEM MODELING. Frank DiMaio

1625-Wkshp 8:18 PM
PROTOTYPING MULTISCALE CELLULAR VISUALIZATION & MODELING TECHNIQUES FOR HYPOTHESIS GENERATION, COMMUNICATION & LEARNING. Graham Johnson

1626-Wkshp 8:42 PM
MODELING PROTEIN MONOMERS AND COMPLEXES USING RESTRAINTS FROM CROSSLINKING MASS SPECTROMETRY. Maya Topf

1627-Wkshp 9:06 PM
INTEGRATED STRUCTURAL BIOLOGY FOR ALPHA-HELICAL MEMBRANE PROTEIN STRUCTURE DETERMINATION. Jens Meiler

Workshop
Squeezing the Most Out of Your Data - Bayesian Statistical Inference for Biophysics
7:30 PM - 9:30 PM, ROOM 314/315
Chair
Michael Nilges, Pasteur Institute, France

1628-Wkshp 7:30 PM
BAYESIAN STRUCTURAL MODELING OF LARGE BIOMOLECULAR SYSTEMS. Michael Habeck

1629-Wkshp 7:54 PM
SIMULTANEOUS DETERMINATION OF PROTEIN STRUCTURE AND DYNAMICS USING CRYO-ELECTRON MICROSCOPY. Massimiliano Bonomi

1630-Wkshp 8:18 PM
MACHINE LEARNING METHODS TO PUSH ALL-ATOM MD BEYOND THE SECONDS TIMESCALE AND SIMULATE PROTEIN-PROTEIN ASSOCIATION AND DISSOCIATION. Frank Noé

NO ABSTRACT 8:42 PM
CLOSING THE LOOP IN AUTOMATED DESIGN AND MEASUREMENT: SCALABLE BAYESIAN INFERENCE FOR BIOPHYSICAL EXPERIMENTS. John Chodera

NO ABSTRACT 9:06 PM
BAYESIAN MODELLING IN INTEGRATIVE STRUCTURAL BIOLOGY. Michael Nilges
Workshop
Methods for X-Ray Tomography and Electron Microscopy
7:30 PM - 9:30 PM, ROOM 316/317

Chair
Carolyn Larabell, Lawrence Berkely National Laboratory

NO ABSTRACT
7:30 PM
ELECTRON CRYOMICROSCOPY OF ROTARY ATPASES. John Rubinstein

1631-WKSHP 7:54 PM
TOWARDS NEAR-ATOMIC RESOLUTION FOR IN SITU STRUCTURES BY CRYO-ELECTRON TOMOGRAPHY. Peijun Zhang

1632-WKSHP 8:18 PM
BISPECTRAL INVARIANTS FOR IMAGE CLASSIFICATION AND ALIGNMENT IN CRYOEM. Philip R. Baldwin, Steven J. Ludtke

1633-WKSHP 8:42 PM
HYBRID MODELING APPROACHES TO STUDY STRUCTURES AND DYNAMICS OF BIOLOGICAL SYSTEMS. Florence Tama

1634-WKSHP 9:06 PM
CT SCANS OF SINGLE CELLS WITH SOFT X-RAY TOMOGRAPHY. Carolyn A. Larabell, Jian-Hua Chen, Venera Weinhardt, Axel Ekman, Gerry McDermott, Mark A. Le Gros

Workshop
Single-Molecule Methods
7:30 PM - 9:30 PM, ROOM 318/319/320

Chair
Bo Huang, University of California, San Francisco

1635-WKSHP 7:30 PM
MOLECULAR HIGHWAYS - TORSIONAL CONSEQUENCES OF DNA MOTOR PROTEINS. Michelle Wang

NO ABSTRACT 7:54 PM
FROM SINGLE MOLECULE FLUORESCENCE TO SUPERENZYME ENGINEERING AND BEYOND. Taekjip Ha

1636-WKSHP 8:18 PM
PROVIDING 3D FOR SUPER-RESOLUTION MICROSCOPY AND SINGLE-PARTICLE TRACKING IN CELLS WITH SINGLE MOLECULES. William Moerner

NO ABSTRACT 8:42 PM
REVEALING THE INNER WORKING OF MOLECULAR MACHINERIES USING IN-VIVO SINGLE MOLECULE IMAGING. Jie Xiao

1637-WKSHP 9:06 PM
MAPPING THE INNER WORLD OF CELLS. Bo Huang

SOBLA (The Society for Latinoamerican Biophysicists) Meeting
8:00 PM - 10:00 PM, ROOM 327/328/329
**TUESDAY POSTER SESSIONS**

1:45 pm–3:45 pm, EXHIBIT HALL C

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

Posters should be mounted beginning at 6:00 pm on Monday and MUST be removed by 4:00 pm on Tuesday evening. Posters will be on view until 10:00 pm on Monday, the night before presentation. Poster numbers refer to the program order of abstracts as they appear in the online Abstracts Issue. Board numbers indicate where boards are located in the Exhibit Hall.

On Tuesday, the Exhibit Hall will close completely at 4:30 pm to accommodate the tear down of exhibits. **ALL POSTERS MUST BE REMOVED BY 4:00 PM.** Posters remaining on boards after this time will be discarded. Posters being presented on Wednesday may be mounted beginning at 7:00 AM on Wednesday.

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<td>B1–B16</td>
<td>Protein Structure and Conformation III</td>
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<td>Protein Stability, Folding, and Chaperones II</td>
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EVALUATION OF THERMAL Hysteresis ACTIVITY OF ICE-BINDING PROTEIN USING MOLECULAR DYNAMICS SIMULATION. Hyun Jung Yoon, Hak Jun Kim, Sangwook Wu

1640-Pos BOARD B3
MOLECULAR BASIS OF CALMODULIN-DEPENDENT CALCINEURIN ACTIvation. Bin Sun, Trevor P. Creamer, Jonathan P. Davis, Peter M. Kekenes-Huskey

1641-Pos BOARD B4
BIOPHYSICAL COMPARISON OF FULL LENGTH AND STABILIZED STEM FLU NANO-PARTICLE VACCINE CANDIDATES. Gabriela C. Albright

1642-Pos BOARD B5
STRUCTURAL AND FUNCTIONAL STUDIES OF ANTIVIRAL PROTEIN IF-ITM3. Emma H. Garst, Avital Percher, Hang Hoang, Howard Hang

1643-Pos BOARD B6
TRAVEL AwarDee RATIONAL TARGETING AND TESTING OF MYCOBACTERIAL L-ASPARAGINASE, ESSENTIAL FOR SURVIVAL OF MTB INSIDE HOSTS. Arti Kataria, Bishwajit Kundu

1644-Pos BOARD B7
REVEALING THE DISORDERED INTER-DOMAIN DYNAMICS OF PEPTIDYL-PROLYL CI/TRANS ISOMERASE PIN1 BY SINGLE MOLECULE FRET MEASUREMENTS. Sungho Kim, Seung Won Lee, Hajin Kim

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TRAVEL AwarDee STRUCTURAL CHARACTERIZATION OF FOSM FROM MYCOBACTERIUM ABSCESsUS. Madeline R. Shay, Skye Travis, Matthew K. Thompson

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SELECTIVE ISOPEPTIDE MODIFICATION OF PROTEINS WITH A PILIN POLYMERASE SORTASE FROM CORYNEBACTERIUM DIPHTHERIAE. Scott A. McConnell

1647-Pos BOARD B10
AUTOMATED AND OPTIMALLY FRET-ASSISTED STRUCTURAL MODELING. Mykola Dimura, Thomas Ottavio Peulen, Hugo Sanabria, Dmitro Rodnin, Katherine Hemmen, Claus A. M. Seidel, Holger Gohlke

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EXPLORING THE ROLE OF A SINGLE MUTATION OF THE RRM CSTF-64 ON THE CLEAVAGE AND POLYADENYLATION PROCESS. Elahe Masoumzadeh

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EXPERIMENTAL STRATEGY FOR ENGINEERING PH SWITCH PROTEINS. Jaime L. Sorensen, Jamie L. Schlessman, Peregrine Bell-Upp, Aaron C. Robinson, Bertrand Garcia-Moreno E.

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SOLVING THE STRUCTURE OF INCLUSION MEMBRANE PROTEIN A IN C. TRACHOMATIS. Katherine Ahn, Tracy A. Caldwell, Linda Columbus

Protein Stability, Folding, and Chaperones II
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THE TRANSIENT COLLAPSED ENSEMBLE: T OF THE FOLDING PATHWAY. Elisha Haas, Dan Amir, Gil Rahamim, Osman Bilse

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SECONDARY STRUCTURE PREDICTIONS AND DETERMINATION OF FOLDING PATHWAYS FOR TPP RIBOSWITCH. Subash Godar, Junyan Ma, Hugo Sanabria, Joshua Alper

1751-Pos  BOARD B114
TOWARDS OBTAINING A NANOSCALE STRUCTURE OF TERMINAL REGIONS OF JAPANESE ENcephalitis VIRUS GENOME. Tyler Mrozowich, Vanessa Meier-Stephen, Justin Vigar, Astha, Janusz M. Bujnicki, Hans-Joachim Wieden, Trushar R. Patel

1752-Pos  BOARD B115
SCREENING FOR SMALL MOLECULE BINDERS TO THE ZTP RIBOSWITCH, A BACTERIAL REGULATOR OF FOLATE METABOLISM. Brandon N. Tran, Christopher P. Jones, Colleen Connelly, John S. Schneekloth, Adrian R. Ferre-D’Amare

1753-Pos  BOARD B116
PEPTIDE NUCLEIC ACID INTERACTIONS WITH C9ORF72 (G4C2)N REPEATS. Madeline Tatosian, Shivaji Thadke, Danith Ly, Mihaela-Rita Mihalescu

1754-Pos  BOARD B117
THE IMPORTANCE OF WATER IN RNA FOLDING. Clark Templeton

1755-Pos  BOARD B118
PRESSURE EFFECTS ON FOLDING OF AN RNA G-QUADRUPLEX STRUCTURE. Balasubramanian Harish, Jiqiu Wang, Eric Hayden, Catherine Royer

1756-Pos  BOARD B119
SINGLE-MOLECULE INSIGHTS INTO THE TEMPERATURE DEPENDENT CONFORMATIONAL CHANGES OF A RNA THERMOMETER IN THE PRESENCE OF CROWDERS AND OSMOLYTES. Loana Arns

1757-Pos  BOARD B120
SINGLE MOLECULE UNFOLDING OF RNA HAIRPINS. Jasmine Li, Sarah Plachinski, Micah J. McCauley, Mark C. Williams, Megan E. Nunez

1758-Pos  BOARD B121
FOLLOWING FOLDING PATHWAYS OF COMMON RIBOSWITCH MOTIFS WITH TIME-RESOLVED SINGLE-MOLECULE FRET. Alex Plumridge, Lois Pollack

1759-Pos  BOARD B122
MANIPULATION OF GQ-BASED RNA aptamERS AT THE SINGLE MOLECULE LEVEL USING INTEGRATED FORCE-FLUORESCENCE SPECTROSCOPY. Jaba Mitra, Taekjip Ha

1760-Pos  BOARD B123
SPECIFIC STRUCTURAL ELEMENTS OF THE T-BOX RIBOSWITCH DRIVE THE TWO-STEP BINDING OF THE TRNA LIGAND. Jiachen Zhang, Bhas kar Chetnani, Eric Cormack, Dulce Alonso, Wei Liu, Alfonso Mondragon, Jingyi Fei

1761-Pos  BOARD B124
SOLUTION STRUCTURE OF A C-JUN 5’ UTR STEM-LOOP ASSOCIATED WITH CAP-DEPENDENT EIF3 SPECIALIZED TRANSLATION INITIATION. Matthew Walker

1762-Pos  BOARD B125
SIGNAL ANALYSIS OF NANOPORE RNA SEQUENCING TO INTERROGATE POLY(A) TAILS AND POST-TRANSCRIPTIONAL MODIFICATIONS. Roham Razaghi, Timothy Gilpatrick, Norah Sadowski, Paul Tang, Rachael Workman, Jared Simpson, Winston Timp

1763-Pos  BOARD B126
FUNCTION AND DYNAMICS OF THE LSM2-8 PROTEIN RING DURING SPLICEOSOME ACTIVATION. Harpreet Kaur, Margaret L. Rodgers, Aaron A. Hoskins

1764-Pos  BOARD B127
SELECTIVE ISOPE LABELING TO FACILITATE STRUCTURAL AND DYNAMICS STUDIES OF RNAs BY NMR SPECTROSCOPY. Lukasz T. Oleninski, Owen Becette, Hyeyeon Nam, Kehinde M. Taiwo, Theodore K. Dayie

1765-Pos  BOARD B128
INVESTIGATING THE STRUCTURE AND DYNAMICS OF RNAs THAT DISTINGUISH BETWEEN HUMAN AND CHIMPANZEE BY NMR USING SELECTIVE ISOtopically LABELED RNAs. Kehinde M. Taiwo, Hyeyeon Nam, Oleninski Lukasz, Owen Becette, Kwaku Dayie

1766-Pos  BOARD B129
CHARACTERIZATION OF STRUCTURAL ELEMENTS IN THE HCV GENOME USING ATOMIC FORCE MICROSCOPY. Jamie L. Gilmore, Hideki Aizaki, Takaji Wakita, Kunio Takeyasu

DNA Structure & Dynamics I
(Boards B130 - B150)

1767-Pos  BOARD B130  TRAVEL AWARD EE
THE EFFECT OF INTRASTRAND BASE-STACKING INTERACTIONS ON THE ENERGETICS AND STRUCTURAL DYNAMICS OF DNA INTERNAL LOOPS. Michael P. Leveille, Roman S. Solecki, Brian L. Cannon

1768-Pos  BOARD B131
THE EFFECT OF SMALL MOLECULES ON THE STABILITY OF G-QUADRUPLEXES. Christopher G. Bentsen, Massimiliano Lomberto, Davis Jose

1769-Pos  BOARD B132
WHAT ARE THE DYNAMICS OF DNA NANOCAGES? FROM DESIGN TO APPLICATIONS IN DRUG DELIVERY. Jonathan B. Ferrell, Garrett J. Chan, Marlo L. Zorman, Jianing Li

1770-Pos  BOARD B133
A SPECTROSCOPIC APPROACH TO UNDERSTAND THE STRUCTURAL INTRICACIES OF NON-CANONICAL NUCLEIC ACID CONFORMATIONS USING FLUORESCENT BASE ANALOGUES. Kirsten P. Lawson, Michal M. Kalisz, Christopher G. Bentsen, Davis Jose

1771-Pos  BOARD B134
USE OF CYANO PROBES IN QM/MM SIMULATIONS TO STUDY THE EFFECT OF ION CONCENTRATION AND TEMPERATURE OF THE ENVIRONMENT ON A URACIL NUCLEOTIDE AND DNA. Anmol Kumar, Alexander D. Mackerrell

1772-Pos  BOARD B135
BACTERIAL NUCLEIC ACID QUADRUPLEX FORMATION. Amelia Cecere, Hikari Murayama, Sally Sheppardson-Fungairino, Megan E. Nunez
**Membrane Dynamics II** (Boards B160 - B177)

**1787-Pos**  
**Board B160**  
COARSE-GRAINED SIMULATIONS OF THE PATHWAY TO MEMBRANE LYSIS. Egor Antipov, Sathish Thiyagarajan, Ben O’Shaughnessy

**1798-Pos**  
**Board B161**  
EFFICIENT REPLACEMENT OF OUTER LEAFLET LIPIDS OF PLASMA MEMBRANE USING EXOGENOUS LIPIDS WITH MINIMAL CELL DAMAGE. Guangtao Li, Shinako Kakuda, **Pavana Suresh**, Erwin London

**1799-Pos**  
**Board B162**  
MODELING RELAXATION TIMESCALES OF COUPLED MEMBRANE/PROTEIN SYSTEMS. **Kayla Sapp**, Alexander J. Sodt, Lutz Maibaum

**1800-Pos**  
**Board B163**  
INTERPLAY OF CURVATURE, LIPID SEGREGATION AND STABILITY MODULATION IN COMPLEX LIPID BILAYERS. Kevin J. Boyd, Nathan N. Alder, **Eric R. May**
Membrane Fusion and Non-Bilayer Structures (Boards B178 - B188)

1815-Pos  BOARD B178  TWO-DIMENSIONAL MUTUAL DIFFUSION DYNAMICS IN HETEROGENEOUS LIPID DOMAINS. Hyunwoo Jang, Dae-Woong Jeong, Byung-Chang Oh, Suho Lee, Hasaeam Cho, Chi Won Ahn, Siyoung Choi, Changbong Hyeon, Hye-Seung Lee, Myung Chul Choi

1816-Pos  BOARD B179  MECHANISMS OF ALCOHOL-ALTERED MEMBRANE FUSION. Devin M. Fuller, Miguel A. Ibarra, Robert E. Coffman, Austin L. Zimmerman, Andrew T. Barton, Dixon J. Woodbury

1817-Pos  BOARD B180  ESTABLISHING FORCE SPECTROSCOPY WITH LIPID VESICLE PROBES TOWARDS THE INVESTIGATION OF MEMBRANE FUSION. Ines Lüchtefeld, Tomaso Zambelli, Janos Vörös

1818-Pos  BOARD B181  MEASURING NEUTRALIZATION OF ENVELOPED VIRUSES USING MICROFLUIDICS. Anjali Sengar, Robert J. Rawle, Rebecca R. Pompano, Peter Kasson

1819-Pos  BOARD B182  MORPHOLOGY OF LIPID AGGREGATES ON CLAY MINERALS AND CONNECTIONS TO MACROSCOPIC WETTABILTY. Brenda L. Kessenich, Nihat Pokhrel, Markus Flury, Lutz Maibaum, James J. De Yoreo

1820-Pos  BOARD B183  MYOMAKER AND MYOMERGER WORK INDEPENDENTLY TO CONTROL DISTINCT STEPS OF MEMBRANE REMODELING DURING MYOBLAST FUSION. Evgenia Leikina, Dilani G. Gamage, Vikram Prasad, Leonid Chernomordik, Douglas P. Millay

1821-Pos  BOARD B184  THE EFFECT OF IONS ON MEMBRANE ELASTICITY - IMPLICATIONS FOR VESICLE FUSION. Christoph Alloio, Daniel Harries

1822-Pos  BOARD B185  SYNERGISTIC ROLES OF SYNAPTOTAGMIN AND COMPLEXIN IN CA²⁺-REGULATED EXOCYTOSIS. Shyam S. Krishnakumar

1823-Pos  BOARD B186  ATOMIC-RESOLUTION SIMULATIONS SHOW TWO SEQUENTIAL FUSION PEPTIDE MECHANISMS IN INFLUENZA MEMBRANE FUSION. Anna Pabis, Peter Kasson

1824-Pos  BOARD B187  MOLECULAR DYNAMICS STUDIES OF RHAMNOLIPID SURFACTANTS. Charles Luft, Steven Schwartz

1825-Pos  BOARD B188  MEMBRANE BINDING, BENDING AND REMODELING BY CALCIUM SENSOR PROTEINS. Raya Sorkin, Margherita Marchetti, Emma Logtenberg, Anna Vivi, Dae-Woong Jeong, Byung-Chang Oh, Suho Lee, Hasaeam Cho, Chi Won Ahn, Siyoung Choi, Changbong Hyeon, Hye-Seung Lee, Myung Chul Choi

General Protein-Lipid Interactions (Boards B189 - B221)

1826-Pos  BOARD B189  ACTIVE SITE MUTATION A126G ABROGATES PI(4,5)P2-MEDIATED ALLOSTERIC ACTIVATION OF THE TUMOR SUPPRESSOR PTEN. Caroline Zedler, Sven-Andreas Freibert, Christian R. Halaszovich, Dominik Oliver, Kirstin Hobiger
1827-Pos  Board B190  MOLECULAR MECHANISMS OF THE INTERACTION BETWEEN ARF1 AND ASAP1 PH DOMAIN AT THE MEMBRANE INTERFACE. Olivier Soubias, Frank Heinrich, Yue Zhang, Yifei Li, Jess Li, Vitalii I. Silin, Paul Randazzo, Mathias Losche, Robert A. Byrd


1829-Pos  Board B192  AUTOINHIBITION MECHANISM FOR PHOSPHOINOSITIDE BINDING BY THE ENDOosomal TRAFFICKING PROTEIN TOM1. Daniel G. Capelluto, Wen Xiong, Evan Littleton, Liang Jiang, Anne M. Brown, Carla Finkielstein

1830-Pos  Board B193  INVESTIGATING HOW MEMBRANE LOCALIZATION REGULATES PROTEIN ASSEMBLY DURING CLATHRIN-MEDIATED ENDOCYTOSIS. Sewwandi S. Rathnayake, Kalina Hristova, Margaret E. Johnson

1831-Pos  Board B194  PHOSPHORYLATION OF THE NT17 DOMAIN OF HTT INFLUENCES ITS INTERACTION WITH MODEL LIPID MEMBRANES. Sharon E. Groover, Maryssa Beasley, Justin A. Legleiter

1832-Pos  Board B195  REGULATION OF THE PALMITOYL ACRYLTRANSFERASE DHHC5 BY PHOS- PHORYLATION IN CARDIOMYOCYTES. Autumn N. Marsden, Jie J. Chen, C. Anthony Scott, Askar M. Akimzhanov, Darren Boehning

1833-Pos  Board B196  THE PALMITOYL ACRYLTRANSFERASE DHHC5 MEDIATES BETA-ADRENERGIC SIGNALING IN THE HEART BY TARGETING G ALPHA PROTEINS. Jie Jessica Chen, Autumn N. Marsden, Askar M. Akimzhanov, Darren Boehning

1834-Pos  Board B197  OLIGOMERIZATION STATE OF SP-C INVOLVED IN MEMBRANE FRAGMEN- TATION AND INNATE DEFENSE. Alejandro Barriga, Jesus Perez-Gil, Begoña Garcia-Alvarez

1835-Pos  Board B198  TRAVEL AWARDEE HUMAN PICOBIRNAVIRUS CAPSIDS AS POTENTIAL NANOcARRIERS FOR DRUG DELIVERY WITHIN PULMONARY SURFACTANT CONTEXTS. Cristina Garcia Mouton, Alvaro Ortega-Esteban, Jose R Caston, Antonio Cruz, Jesus Perez-Gil

1836-Pos  Board B199  ACCELERATION OF DRUG RELEASE FROM LIPOSOMES BY THE MACROLI- TINS, A SYNTHETICALLY EVOLVED FAMILY OF PORE-FORMING PEPTIDES. Leisheng Sun, William C. Wimley

1837-Pos  Board B200  INTERACTION OF THERMORESPONSIVE LIPOSOme COMPONENTS WITH HUMAN SERUM ALBUMIN. Johannes Schnur, Daniel Eckhardt, Ulrich Massing, Heiko H. Heerklotz

1838-Pos  Board B201  TWO NEW TYPES OF POLYMER NANODISCS FOR MEMBRANE PROTEIN STUDIES. Mariana C. Fiori, Yunjian Jiang, Wan Zheng, Miguel Anzaldua, Mario J. Borgnia, Guillermo A. Altenberg, Hongjun Liang

1839-Pos  Board B202  ADP-REGULATED MID51-PHOSPHOLIPID INTERACTIONS COUPLE CEL- LULAR BIOENERGETICS TO MITOCHONDRIAL MEMBRANE REMODEL- ING. Nikhil Bhardam, Rajesh Ramachandran

1840-Pos  Board B203  PROBING THE EFFECT OF CARDIOLIPIN ON THE REDOX-PARTNER RECOGNITION BETWEEN CYTOCHROME C, AND CYTOCHROME BC, COMPLEX. Chun Kit Chan, Abhishek Singhary, Emad Tadjkhorshid

1841-Pos  Board B204  IS THE HUMAN DOMAIN SWAPPED DIMER OF CYTOCHROME C THE PER- OXIDASE IN APOPTOSIS? Armen B. Steele, IB Alexander Rosss, Bruce E. Bowler

1842-Pos  Board B205  IMPACT OF LIPID-PROTEIN INTERACTIONS ON ALPHA-HELICAL MEM- BRANE PROTEIN FOLD. Nicole Swope, Linda Columbus

1843-Pos  Board B206  THE BINDING OF TIM PROTEINS TO PHOSPHATIDYLserINE IS HIGHLY SENSITIVE TO THE MEMBRANE CONTEXT. Daniel H. Kerr, Zhiliang Gong, Tiffany Suwatthee, Gregory T. Tietjen, Erin J. Adams, Ka Yee C. Lee

1844-Pos  Board B207  INVESTIGATING MEMBRANE CURVATURE DEPENDENCE OF SNF7 POLYM- ERIZATION USING HIGH-SPEED ATOMIC FORCE MICROSCOPY. Nebojsa Jukic, Aurelien Roux, Simon Scheuring

1845-Pos  Board B208  MOLECULAR MECHANISM OF SELECTIVE CHOLESTEROL UPTAKE IN CLASS B SC句子 incomplete

1846-Pos  Board B209  FREE ENERGY OF SPECIFIC CHOLESTEROL-GPCR INTERACTIONS. Lewen Yang, Edward R. Lyman

1847-Pos  Board B210  MEMBRANE BINDING OF SYNAPTOTAGMIN-LIKE PROTEIN 4: INSIGHT FROM MOLECULAR DYNAMICS SIMULATIONS. Mikias Negussie, Sherleen Tran, Nara L. Chon, Juliana Owiedo, Aml Ainaas, Hai Lin, Jefferson Knight

1848-Pos  Board B211  SUBSTRATE BINDING BY I-SECRETASE: CONFORMATIONAL DYNAMICS OF THE ENZYME ACTIVE SITE AND SUBSTATE RECOGNITION WITH AN EX- AMPLE OF THE AMYLOID PRECURSOR PROTEIN. Lukasz Piotr Nierzwicki, Michal Olewniczak, Pawel Chodnicki, Jacek Czub

1849-Pos  Board B212  STRUCTURAL FACTORS CONTROLLING ORIENTATION OF KRAS G-DOMAIN MEMBRANE BINDING. Anda Trifan, Emad Tadjkhorshid

1850-Pos  Board B213  TRAVEL AWARDEE AN INTERPLAY BETWEEN KMP-11 INDUCED PHASE ALTERATION OF MACROPHAGE MEMBRANE AND IMMUNE SUPPRESSION DEFINES THE MOLECULAR MECHANISM OF LEISHMANIASIS. Achinta Sanngirahi, Sanat Karmakar, Junaid Jawed, Subrata Majumdar, Krishnananda Chattopad- hyay

1851-Pos  Board B214  RECRUITMENT DYNAMICS OF ESCRT-III PROTEINS DURING HIV-1 GAG ASSEMBLY AND PLASMA MEMBRANE SCISSION. Daniel S. Johnson, Marina Bleck, Sanford M. Simon

1852-Pos  Board B215  TRAVEL AWARDEE PROTEIN PARTITIONING TO LIPID DOMAINS IN ALL-ATOM MD SIMULA- TION. George A. Pantelopulos, Asanga Bandara, John E. Straub

1853-Pos  Board B216  ADVancing MULTI-SCALE SIMULATION METHODS FOR BIOLOGICAL MEMBRANE SYSTEMS. Astrid F. Brandner, Stepan Timr, Simone Mel- chionna, Philippe Derreumaux, Marc Baaden, Fabio Sterpone
Mechanosensation (Boards B222 - B244)

1854-Pos  BOARD B217
MOLECULAR SIMULATION AND CONTINUUM MODELING OF N-BAR-INDUCED LIPID MEMBRANE DEFORMATIONS. Andrew H. Beaven, Alexander J. Sodt

1855-Pos  BOARD B218
MOLECULAR AND CONTINUUM MODELING METHODS FOR UNDERSTANDING THE ROLE OF POLYPHOSPHOINOSITIDES IN INDUCING CELLULAR MORPHOLOGY CHANGES. Ryan Bradley, David Slochower, Ololade Fatunmbi, Sreeja Kutti Kandy, Robert Bucki, Paul A. Janmey, Ravi Radhakrishnan

1856-Pos  BOARD B219
A PARTIALLY CLOSED STATE IN NHTMEM16 SCRAMBLASE IS ENABLED BY LIPID TAIL INSERTION INTO THE PROTEIN GROOVE. George Khelashvili, Maria Falzone, Xiaolu Cheng, Alessio Accardi, Harel Weinstein

1857-Pos  BOARD B220
THE OUTER MEMBRANE PROTEINS OMPA, FHUA, OMPF, ESTA, BTUB AND OMPX HAVE UNIQUE LIPOPOLYSACCHARIDE FINGERPRINTS. Jonathan Shearer, Damien F. Jefferies, Syma Khalid

1858-Pos  BOARD B221
A MOLECULAR MECHANISM FOR MEMBRANE GEOMETRY-SPECIFIC PROTEIN LOCALIZATION. Gabriele Kockelkoren

A SYSTEMATIC STUDY OF CELL MECHANICS AND FUNCTION MODULATED BY NANOTOPOGRAPHY. Xiao Li, Lasse Klausen, Wei Zhang, Bianxiao Cui

CELL-CELL ADHESION AND MYOSIN ACTIVITY REGULATE CORTICAL ACTIN ASSEMBLY IN MAMMARY GLAND EPITHELIUM ON CONCAVED SURFACE. Wei-Hung Jung, Khalid Elawad, Sung Hoon Kang, Yun Chen

TRAVEL Awardee

REGION-SPECIFIC STRETCH-INDUCED DISRUPTION OF CAVEOLAE DECREASES EXPRESSION OF MECHANOSENSITIVE CHLORIDE CHANNELS AND STIMULATES FIBROGENESIS PROMOTING ARRHYTHMOGENIC ATRIAL ECTOPY IN FAILING MICE. Zachary D. Piro, Rylie Lodin, Leonid Tyan, Evi Lim, Di Lang, Alexey V. Gudkov

MICROTUBELE MECHANOTRANSDUCTION THROUGH NOX2-ROS INITIATES TRPV4 CALCIUM INFLUX AND PURINERGIC OSCILLATIONS THAT REGULATE OSTEOCYTE MECHANOS-SENSING. Katrina M. Williams, Nicole Gould, Derek Jones, Ramzi Khalairah, Christopher W. Ward, Joseph P. Stains

CLASSIFICATION OF DIFFERENT CANCER CELL TYPES BY SPECIES SPECIFICITY FOR CELL ELASTICITY. Sangwoo Kwon, Se Jik Han, Kyung Sook Kim

THE SWELL1-LRR8C COMPLEX REGULATES ENDOTHELIAL PI3K-AKT2-GRB2-ENOS SIGNALING AND VASCULAR FUNCTION. Ahmad F. Alghamem, Chau Ta, Oluwaseun Adeola, Susheel K. Gunasekar, Urooj Fatima, Elliott Hudson Elliot-Hudson, Yanhui Zhang, Megan Riker, Robert F. Mullins, Litaoy Xie, Rajan Sah

AGE-DEPENDENT PLASTICITY OF SOMATOSENSORY MECHANOSENSATION. Niklas Michel, Pratibha Narayanan, Manuela Schmidt

A FIRST STEP TOWARD UNDERSTANDING OBSCURIN’S MOLECULAR MECHANISM. Charles J. White, Shaston Newman, Daniel Conway, Nathan T. Wright

FORCE-INDUCED UNFOLDING OF A MECHANOSENSORY DOMAIN IN PLATELET GLYCOPROTEIN (GP)IIb-IX UNDER SOLUTION AND ADHERENT CONDITIONS. M. Edward Quach, Dale Combs, Khalid Salaita, Renhao Li

DESMIN IS CRITICAL TO THE NUCLEAR ARCHITECTURE OF CARDIOMYOCYTES. Patrick Robison, Julie Heffler, Rajan Jain, Benjamin Prosser


CHOLESTEROL-DEPENDENT PIEZO1 CLUSTERS ARE ESSENTIAL FOR EFFICIENT CELLULAR MECHANOTRANSDUCTION. Pietro Ridone, Elvis Pandzic, Massimo Vassali, Charles D. Cox, Alex M. Macmillan, Philip A. Gottlieb, Boris Martinac

FORCE-DEPENDENT CONFORMATIONAL CHANGES IN THE MECHANOSENSITIVE PIEZO1 CHANNEL. Alper D. Ozkan, Jerome J. Lacroix

VOLTAGE DEPENDENCE AND MODULATION OF BACTERIAL CHANNEL MScl. Joseph S. Najem, Ian Rowe, Andriy Anishkin, Joseph Maramba, Donald J. Leo, Sergei Sukharev

DELETION OF MSCl IN VIBRIO CHOLERAE (C6706) INCREASES OSMOTIC VIABILITY THROUGH OVEREXPRESSION OF MScl AND SUGGESTS A SPECIAL CROSSTALK MECHANISM IN MECHANOSENSITIVE CHANNEL REGULATION. Madolyn Britt

MECHANICS, STRUCTURE, AND ENERGETICS OF MScl THROUGH LOCAL STRESS CALCULATIONS AND STEERED MD SIMULATIONS. Juan M. Vanegas, Rajitha R. Tatikonda

EVOLUTIONARY SPECIALIZATION OF CORYNEBACTERIUM GLUTAMICUM MSCcG, AN MSCS-LIKE MECHANOSENSITIVE CHANNEL, IN GLUTamate EXPORT. Yoshitaka Nakayama, Kosuke Komazawa, Navid Bavi, Ken-ichi Hashimoto, Hisashi Kawasaki, Boris Martinac

PHYSIOLOGICAL ROLE OF BACTERIAL LIKE MECHANOSENSITIVE CHANNELS IN PROTOZOAN PARASITES. Noopur Dave, Monica Hernandez, Tiffine Pham, Megna Tiwari, Heather Lynch, Joshua Fonbuena, Kristy Nguyen, Veronica Jimenez

THE BACTERIAL MECHANOSENSITIVE CHANNEL MScl AS A NOVEL ANTIBIOTIC TARGET. Irene Iscla, Robin Wray, Paul Blount

ELUCIDATING THE MOLECULAR BASIS OF PH-TRIGGERED ACTIVATION OF AN ENGINEERED MECHANOSENSITIVE CHANNEL. Kalyan Imadisetty, Reid Shelton, Mahmoud Moradi

FORCE LOADING DURING MECHANOSENSITIVE EMERGES FROM NON-MECHANOSENSITIVE ACTIVE DISPLACEMENTS. Lea Feld, Ariel Livne, Yuri Lubomirsky, Abhishek Mukherjee, Eran Bouchbinder, Haguy Wolfenson
Intracellular Calcium Channels and Calcium Sparks and Waves (Boards B245 - B267)

1882-Pos Board B245 Travel Awardee High-throughput screening yields allosteric inhibitors of leaky ryr3 for therapeutic development. Robyn T. Rebeck, Daniel P. Singh, Kenneth S. Ginsburg, Xiaoqiong Dong, David D. Thomas, Donald M. bers, bradley S. launikonis, razvan l. cornea

1883-Pos Board B246 Machine learning and super-resolution microscopy reveal detailed hierarchy of ryanodine receptor distribution in cardiac pacemaker cells. Alexander V. Maltsev, poolla Ajay Warrior, Oliver Monfredi, Magdalena juhaszova, Edward G. lakatta, victor A. maltsev, Michael D. stern

1884-Pos Board B247 The role of cysteine 3602 in ryr2 regulation by calmodulin and oxidative stress. Roman Nikolaienko, Elisa bovo, Robyn T. Rebeck, Donald M. bers, razvan L. cornea, aleksey v. zima

1885-Pos Board B248 Pacemaker organization at the nanoscale: imaging of ryanodine receptors as clusters in single sinoatrial nodal cells. Maura Greiser, Humberto C. Joca, w. Jonathan Lederer

1886-Pos Board B249 Alcohol decreases the activity of native ryanodine receptors from rat heart. Yanping Ye, Logan Stewart, Kelsey North, Lie Wang, Alex M. dopico

1887-Pos Board B250 Impaired ligand regulation of native ryr2 channels in the catecholaminergic polymorphic ventricular tachycardia mutation, ryr2-v2475f(+/-). Abigail D. Wilson, Elisa venturi, Charalampos sigalas, Yuanlong song, Carmen R. Valdivia, Héctor H. Valdivia, Ming lei, Rebecca M. Sitsapesan

1888-Pos Board B251 Effect of ryr2 expression level on activation and termination of spontaneous ca-induced ca release. Roman nikolaienko, Elisa bovo, Aleksey v. zima

1889-Pos Board B252 Travel Awardee Structural dynamics of calmodulin in regulation of ryr calcium release channels. Megan R. McCarthy, Robyn T. Rebeck, razvan L. cornea, David D. thomas

1890-Pos Board B253 Different context for shear signaling in left versus right atrial myocytes: differential roles of p2y1 and p2x7 purinoceptors. Joon-Chul Kim, Min-Jeong Son, qui A. Le, Kyoung-Hee Kim, Sun-Hye Woo

1891-Pos Board B254 The binding interactions that maintain the ec coupling junctions in skeletal muscle. Eduardo Rios, Dirk Gillespie, Clara Franzini-Armstrong

1892-Pos Board B255 Pharmacological modulation of mitochondrial ca^2+ uptake regulates sarcoplasmic reticulum ca^2+ release via oxidation of ryanodine receptor by reactive oxygen species. Shanna Hamilton, Radmila Terentyeva, Tae Yun Kim, Peter Bronk, Jin O-Uchi, Gyorgy Csordas, Bum Rak Choi, Dmitry Terentyev

1893-Pos Board B256 Small ankyrin 1 interacts with phospholamban to regulate muscle serca1. Amanda labuza, Patrick F. Desmond, Allison E. mancini, Joaquin Muriel, Mark A. rizzo, Robert J. bloch

1894-Pos Board B257 Trpv4 contributes to stretch-induced hypercontractility and time-dependent dysfunction in hearts of aged mice. Adam B. Veteto, Michelle D. lambert, kerry S. mcdonald, tim L. domeier

1895-Pos Board B258 Ip3,1-mediated local ca^2+ release events are enhanced in the gain-of-function d2594k mutant channel. Madeleine R. Mascitti, Karyn M. Dinovo, Michael Fill, S.R. Wayne Chen, Josefina Ramos-Franco, Rafael mejia-Alvarez

1896-Pos Board B259 B-adrenergic pathway is enhanced by hormone-induced maturation of human induced pluripotent stem cell-derived cardiomyocytes (ips-cm). David carreras, rebecca martinez-Moreno, Elisabet selga, Ramon brugada, Fabiana S. scornik, guillermo J. perez

1897-Pos Board B260 Early afterdepolarizations and alternans are the underlying mechanism to cause arrhythmogenic disorder in the mutant casequestrin 2 (casq2). Aman ullam, roshan paudel, w. jonathan lederer, m. saleet jafari

1898-Pos Board B261 Travel Awardee Triggered calcium events reveal electrophysiological alterations in a cohort of patients susceptible to malignant hypothermia. Lourdes figueroa, natalia kraeva, carlo manno, eshwar R. tammineni, sheila riazi, eduardo rios

1899-Pos Board B262 Travel Awardee The interplay between naadp and pi(3,5)p2 in the activation of lysosomal two- pore channel 2. Qiaochu wang, Michael X. Zhu

1900-Pos Board B263 Iocbio sparks detection and analysis software. Martin laasmaa, niina Karro, rikke birkedal, marko vendelin

1901-Pos Board B264 Non-ryr calcium leak of the sarcoplasmic reticulum is governed by trpc1 in cardiomyocytes. Azma a. ahmad, Molly E. strieff, Chris hunter, frank B. sachse

1902-Pos Board B265 Activation of endogenous pp1 enhances calcium spark activity in wild type cardiomyocytes. Radoslav Janicek, Duhilo Michele Potenza, Miguel Fernandez-Tenorio, Hector H. Valdivia, ernst niggli

1903-Pos Board B266 Abnormal glucose metabolism and calcium signaling in malignant hypothermia (mhs) patients. Eshwar R. tammineni, Carlos ibarra, lourdes figueroa, carlo manno, natalia kraeva, eduardo rios, sheila riazi

1904-Pos Board B267 The anti-cancer drug vatalanib (ptk787/2k222584) suppresses normal spontaneous firing of rabbit sinoatrial node cells (sanc). Tatiana M. vinogradova, Kirill V. Tarasov, Yelena S. Tarasova, Edward G. lakatta
Muscle Regulation (Boards B268 - B276)

1905-Pos  BOARD B268  CYTOTOXICITY OF TRUNCATED SLOW SKELETAL MUSCLE TROPONIN T IN TNN1 MYOPATHIES. Hanzhong Feng, J.P. Jin

1906-Pos  BOARD B269  LOSS OF THE SLOW SKELETAL MUSCLE ISOFORM OF TROPONIN T IMPAIRS MOTOR COORDINATION IN MICE. Kentaro Oki, Han-Zhong Feng, J.P. Jin

1907-Pos  BOARD B270  MYOSIN BINDING PROTEIN-C SLOW IN HEALTH AND DISEASE. Janelle Geist, Janis Stavusis, Baiba Lace, Nathan T. Wright, Christopher W. Ward, Carsten Bonnemann, Akaterini Kontogianni-Konstantopou

1908-Pos  BOARD B271  EXPRESSION OF MYOSIN STORAGE MYOPATHY MUTATIONS IN DROSOPHILA DISRUPTS SKELETAL AND CARDIAC MUSCLE STRUCTURE AND FUNCTION. Meera C. Viswanathan

1909-Pos  BOARD B272  FLUORESCENTLY LABELLED MYOSIN REGULATORY LIGHT CHAINS AS BIOSENSORS FOR THICK FILAMENT ACTIVATION IN HEART MUSCLE. Priyanka Parijat, Malcolm Irving, Thomas Kampourakis

1910-Pos  BOARD B273  STRAIN-DEPENDENCE OF THE ACTIN-MYOSIN WORKING STEP. Josh E. Baker, Travis J. Stewart, Christine R. Cremo

1911-Pos  BOARD B274  TRAVEL Awardee  EFFECTS OF ACTIN-BINDING COMPOUNDS ON THE ATPASE ACTIVITY OF MYOSIN FROM SKELETAL AND CARDIAC MUSCLE. Ananya Tripathi, Lien A. Phung, Piyali Guhathakurta, David D. Thomas

1912-Pos  BOARD B275  TRAVEL Awardee  THE ROLE OF UBIQUITIN-PROTEASOME SYSTEM (UPS)-ASSOCIATED GENES IN THE PRESERVATION OF CARDIAC AND MUSCLE FUNCTION IN DROSOPHILA MELANOGASTER. Maria L. Khan

1913-Pos  BOARD B276  MODELING THE CYTOTOXIC SWELLING OF DYSTROPHIC MUSCLE FIBERS. Catherine E. Morris, Bela Joos

Voltage-gated Na Channels (Boards B277 - B297)

1914-Pos  BOARD B277  FGF12A COUNTERACTS LONG QT SYNDROME-LINKED INACTIVATION DEFICIENCY. Paweorn Angsutararux

1915-Pos  BOARD B278  AN ATTEMPTED MOLECULAR RESCUE OF AN ARRHYTHMOGENIC CARDIAC DISEASE MUTATION. Sara Nathan, Sophie Shoemaker, Federica Farnelli, Jesse Yoder, L.Mario Amzel, Gordon F. Tomaselli, Sandra B. Gabelli

1916-Pos  BOARD B279  CONSTANT PH STUDY OF A SODIUM CHANNEL. Ana Damjanovic, Ada Y. Chen, Robert L. Rosenberg, Daniel Roe, Bernard R. Brooks

1917-Pos  BOARD B280  PROTX-II INHIBITS NAV1.7 THROUGH AN ELECTROSTATIC GATING MODULATION MECHANISM. Tianbo Li

1918-Pos  BOARD B281  DIFFERENCES BETWEEN TONIC AND USE-DEPENDENT BINDING SITES IN VOLTAGE-GATED SODIUM CHANNELS. Amanda Buyan, Ben Corry

1919-Pos  BOARD B282  SODIUM CHANNELS IMPLEMENT A MOLECULAR LEAKY INTEGRATOR TO SENSE SPIKING FREQUENCY AND REGULATE NEURONAL FIRING. Marco A. Navarro, Jenna Lin, Autoosa Salari, Mirela Mllescu, Lorin S. Milescu

1920-Pos  BOARD B283  MULTISCALE MOLECULAR DYNAMICS TO EXPLORE VOLTAGE-GATED SODIUM CHANNEL OLIGOMERISATION. William Glass, Philip C. Biggin

1921-Pos  BOARD B284  ENUMERATING VIALBE N-STATE MARKOV MODELS OF SODIUM CHANNEL DYNAMICS. Kathryn Mangold, Jonathan Silva

1922-Pos  BOARD B285  BIOPHYSICAL AND PHARMACOLOGICAL PROFILING OF MULTIPLE VOLTAGE-GATED SODIUM CHANNEL SUBTYPES ON QPATCH II. Daniel R. Sauter, Rasmus B. Jacobsen, Goeran Mattsson

1923-Pos  BOARD B286  IN SEARCH OF A MOLECULAR MECHANISM FOR SLOW INACTIVATION IN VOLTAGE-GATED NA CHANNELS USING THE SCAM TECHNIQUE IN D2-S6 OF HNAV1.4. John P. O'Reilly, Kevin Bokum, Jonathan Beard, Penny Shockett

1924-Pos  BOARD B287  INTERACTION OF NA_1.2 IQ MOTIF WITH DISEASE-CAUSING MUTANTS OF CALMODULIN. Ryan W. Mahling, Adina M. Kilpatrick, Holly M. Isbell, Madeline A. Shea

1925-Pos  BOARD B288  PRODUCTION AND APPLICATIONS OF NANOBODIES AGAINST VOLTAGE-GATED SODIUM CHANNEL, NAV1.4. Lakshmi Srinivasan

1926-Pos  BOARD B289  USING SCAM TO INVESTIGATE RECONFIGURATION OF MOLECULAR DETERMINANTS IN D1-S6 DURING SLOW INACTIVATION OF HNAV1.4. Jon M. Beard, Penny Shockett, John P. O'Reilly

1927-Pos  BOARD B290  THE INSECTICIDE FENVALERATE BINDS TO NAVMS SODIUM CHANNELS, MAKING THEM A SUITABLE TEMPLATE FOR MODELLING STRUCTURES OF HOUSEFLY-INSECTICIDE COMPLEXES. Altin Sula, Edina Molnar, Bonnie A. Wallace


1929-Pos  BOARD B292  EXTRACELLULAR ACIDOSIS EXHIBITS DOMAIN-SPECIFIC EFFECTS ON NAV1.5. Emily M. Wagner, Brittany D. Brumback, Taylor L. Voelker, Wandi Zhu, Jonathan R. Silva

1930-Pos  BOARD B293  BIOPHYSICAL AND MOLECULAR CHARACTERIZATION OF CALCIUM PERMEABLE HONEYBEE DSC1 (AMCAV4) CHANNEL EXPRESSED IN MAMMALIAN CELLS. Olivier Thériault, Matthieu Rousset, Collet Claude, Thierry Cens, Pierre Charnet, Mohamed Chaïhine

1931-Pos  BOARD B294  DOMAIN I COUNTERCHARGES LIMIT SLOW INACTIVATION IN HNAV1.4 SODIUM CHANNELS. James R. Groome, Andromeda Wheeler, Ryann Camp

1932-Pos  BOARD B295  TRAVEL Awardee  CARDIAC SODIUM CURRENT IS SEVERELY IMPAIRED IN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES FROM BRUGADA SYNDROME PATIENTS. Rebecca Martinez-Moreno, Elisabet Selga, Georgia Sarquella-Brugada, Ramon Brugada, Guillermo Perez, Fabiana Scornik
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<td>PREDICTING VARIANT PATHOGENICITY IN THE CARDIAC SODIUM CHANNEL USING PARALOGUE ANNOTATION. Svetlana Tarnovskaya, Vyacheslav Korkosh, Boris S. Zhorov, Dmitrij Frishman</td>
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<td>1934-Pos</td>
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<td>CHRONIC EXPOSURE TO TUMOR NECROSIS FACTOR IN VIVO INDUCES HYPERALGESIA, UPREGULATES SODIUM CHANNEL GENE EXPRESSION AND ALTERS THE CELLULAR ELECTROPHYSIOLOGY OF DORSAL ROOT GANGLION NEURONS. Michael E. O’Leary, Andrea Bottaro, Igor Kuzin, Cojen Ho, Brad Fischer</td>
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<td>TRAVEL Awardee LOOP G OF THE GABAAR ORTHOSTERIC BINDING SITE IS INVOLVED BOTH IN BINDING AND GATING PROCESSES. Marek Brodzki, Michal A. Michalowski, Jerzy W. Mozrzymas</td>
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<td>EFFECT OF HYPERGLYCEMIA IN THE ACTIVITY OF GLYCINE RECEPTORS IN INSULIN SECRETING CELLS. Amanda Schukarucha Gomes, Silvana Bordin, Fernando Abdulkader</td>
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<td>TARGETED STATE DEPENDENT CROSSLINKING MASS SPECTROMETRY (CMXS) OF THE HUMAN ALPHA 1 GLYCINE RECEPTOR (GLYR). Kayce A. Tomcho, Hannah E. Gering, Rathna J. Veeramachaneni, David J. Lapinsky, Michael Ciscio</td>
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<td>PHARMACOLOGICAL SELECTIVITY OF A STEROID BINDING SITE AT THE BETA-ALPHA INTERFACE OF ALPHA1BETA3 GABA-A RECEPTORS. Selwyn S. Jayakar, Xiaojuan Zhou, Bo Wu, Keith W. Miller, Karol S. Bruzik, Jonathan B. Cohen</td>
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<td>IN-VIVO AND IN-VITRO STUDIES TO IDENTIFY THE INTERACTION SITE OF THE INTRACELLULAR DOMAIN OF SEROTONIN TYPE 3A (5-HT3A) AND CHAPERON PROTEIN RIC-3. Elham Pirayesh, Antonia G. Stuebler, Michaela Jansen</td>
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<td>1943-Pos</td>
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<td>MICROSECOND-SCALE MOLECULAR DYNAMICS SIMULATIONS REVEAL DESSENSITIZED BEHAVIOR OF SHT3. Nicholas B. Guros, Arvind Balijepalli, Jeffery B. Klauda</td>
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<td>LONG DISTANCE NMR RESTRAINTS FOR THE FLEXIBLE A7NACHR INTRACELLULAR DOMAIN. Vasyl Bondarenko, Marta Wells, Qiang Chen, Tommy Tillman, Yan Xu, Pei Tang</td>
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<td>FUNCTIONAL TOLERANCE OF HUMAN A7 NICOTINIC ACETYLCHOLINE RECEPTOR TO CYSTEINE LABELING. Tommy S. Tillman, Yan Xu, Pei Tang</td>
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<td>ROLE OF THE CYTOPLASMATIC M3-M4 LOOP FOR THE HOMOPENTAMERIC ASSEMBLY OF A CHIMERIC NICOTINIC ALPHA 7 RECEPTOR. Jonas Deppe, Lena Hauswirth, Heike Laucks, Achim Kless, Ralf Hausmann, Guenther Schmalzing</td>
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<td>TRAVEL Awardee STRUCTURE-ACTIVITY RELATIONSHIP OF POTENT PHOTO-SWITCHABLE NEUROMUSCULAR INHIBITORS. Clara Herrera-Arozamena, Martin H. Estrada-Velencia, Carlos A. Villalba-Galea, Maria Isabel Rodriguez-Francisco</td>
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<td>IDENTIFYING STEROID BINDING SITES IN A NICOTINIC ACETYLCHOLINE RECEPTOR (NACHR) WITH A PHOTOREACTIVE ANALOG OF ALPHAXACOLONE. Zhiyi Yu, Pavel Y. Savechenkov, Karol S. Bruzik, Jonathan B. Cohen</td>
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<td>ALLOSTERIC POTENTIATION OF A LIGAND-GATED ION CHANNEL IS MEDIATED BY ACCESS TO A DEEP MEMBRANE-FACING CAVITY. Stephanie Heusser, Marie Lycksell, Xueqing Wang, Sarah McComas, Rebecca J. Howard, Erik Lindahl</td>
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<td>TRAVEL Awardee UNDERSTANDING THE CONFORMATIONAL DYNAMICS OF A PENTAMERIC LIGAND-GATED ION CHANNEL THROUGH MARKOV STATE MODELING. Cathrine C. Bergh, Laura Orellana, Rebecca J. Howard, Erik Lindahl</td>
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<td>STRUCTURAL STUDIES OF THE GATING MECHANISM IN A PENTAMERIC LIGAND-GATED ION CHANNEL CONTAINING TWO ADDITIONAL N-TERMINAL PERIPLASMIC DOMAINS. Marc H. Delarue, Haidai Hu, Rebecca J. Howard, Urska Rovsniok, Srirne Hilou, Erik Lindahl</td>
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ALLOSTERIC TRANSITIONS OF PENTAMERIC LIGAND-GATED ION CHANNELS STUDIED BY FLUORESCENCE QUENCHING TO EXPLORE PATHOLOGICAL MUTATIONS AND PHARMACOLOGICAL EFFECTORS. Solene N. Lefebvre, Anais Menny, Marc Gielen, Pierre-Jean Corringer

1959-Pos  BOARD B322
ACTIVATION AND INACTIVATION GATING IN BESTROPHIN ION CHANNELS. George Vaisey, Alexandrina N. Miller, Stephen B. Long

1960-Pos  BOARD B323
G<sub>q</sub>-COUPLED MUSCARINIC RECEPTOR ENHANCEMENT OF KCNQ2/3 "M-TYPE" K<sup>+</sup> CHANNELS AND ACTIVATION OF TRPC CATION CHANNELS IN MULTIMODAL CONTROL OF EXCITABILITY IN DENTATE GYRUS GRANULE NEURONS IN HIPPOCAMPUS. Chase M. Carver, Shayne D. Hastings, Mark S. Shapiro

1961-Pos  BOARD B324
INVESTIGATING ION TRANSPORT MECHANISMS VIA STRAIN, CHARGE, AND BIAS IN FUNCTIONALIZED SUB-NANOSCALE PORES. Subin Sahu, Christoph Rohmann, Justin Elensewski, Michael Zwolak

1962-Pos  BOARD B325
THE ROLE OF HCN DOMAIN IN CHANNEL GATING. Anna Moroni, Alessandro Porro, Andrea Saponaro, Matteo Pisoni, Federica Gasparri, Gerardo Abbandonato, Gerhard Thiel, Bina Santoro

1963-Pos  BOARD B326
STIM1 INDUCES ORAI1 ACTIVATION VIA DIRECT BINDING TO ITS C-TERMINAL DOMAIN. Zainab Haydari

1964-Pos  BOARD B327
IMPACT OF CODON USAGE AND PROLYL ISOMERIZATION ON K CHANNEL FUNCTION. Gerhard Thiel, Kerri Kukovetz, Anja Engel, Anna Moroni

1965-Pos  BOARD B328
KCNQ1/KCNE1 MEMBRANE EXPRESSION IS REGULATED BY THE MEMBRANE PHOSPHOINOSITE PI4P: CONSEQUENCES FOR LONG QT1. Chen Braun, Coeli Lopes

1966-Pos  BOARD B329
NEW G<sub>i</sub>-PROTEIN BIASED µ-OPIOID RECEPTOR LIGANDS ACT AS PARTIAL AGONISTS ON ION CHANNEL EFFECTORS OF G<sub>i</sub> SIGNALING. Yevgen Yudin, Tibor Rohacs

1967-Pos  BOARD B330
A PHOSPHOINOSITIDE BINDING MODULE CONTROLS TMEM16A DESENSITIZATION. Son C. Le, Zhiguang Jia, Jianhan Chen, Huanghe Yang

1968-Pos  BOARD B331
STATE-DEPENDENCE OF ION AND ATP TRANSPORT IN VDAC1 PROTEIN INVESTIGATED WITH GC/MC/BD SIMULATIONS. Kazi S. Amin, Tatiana K. Rostovtseva, Sergey M. Bezrukov, Sergei Y. Noskov, Van Ngo

1969-Pos  BOARD B332
KCNE1 SUBUNIT PHOSPHORYLATION LEADS TO IKS INTERNALIZATION IN RESPONSE TO CHRONIC CALCIUM-DEPENDENT PKC ACTIVATION. Elsa Ronzier, Xiaorong Xu Parks, Coeli M Lopes

1970-Pos  BOARD B333
SYSTEMATIC SCANNING MUTAGENESIS OF THE PORE HELICES IN THE TREK-2 K2P CHANNEL. Manuel Arcangeletti, Stephen J. Tucker

1971-Pos  BOARD B334
A COMPUTATIONAL STUDY OF THE ESSENTIAL TRANSMEMBRANE PROTEIN NARK AS NITRATE/NITRITE EXCHANGER. Nara L. Chon, Hongjin Zheng, Hai Lin

1972-Pos  BOARD B335
A NOVEL STOCHASTIC SELF-ASSEMBLY MODEL FOR ION CHANNEL TRAFFICKING AND CLUSTERING IN EXCITABLE CELLS. Gonzalo Hernandez Hernandez, Collin Matsumoto, Claudia M. Moreno, Sendha Tajada, Rose E. Dixon, Manuel F. Navedo, Marc D. Binder, Colleen E. Clancy, L. Fernando Santana, Daijuk Sato

1973-Pos  BOARD B336
IRBIT EXPANDS SIGNALING REPERTOIRE AT THE ER/PM JUNCTIONS. Wooyoung Chung, Seonghee Park, Shmuel Muallem

1974-Pos  BOARD B337
TRAVEL AWARDEE STRUCTURE FUNCTION STUDIES OF A PLANT NON SELECTIVE CATION CHANNEL INVOLVED IN DROUGHT TOLERANCE. Srinivasan Krishnan, Koustav Maiti, Aaron P. McGrath, Leon Kochian, Geoffrey Chang, Miguel Piñeros

1975-Pos  BOARD B338
INTERACTION OF PEGS WITH THE ANTHRAX TOXIN CHANNEL AND THEIR ROLE IN ALTERING THE 1/f CURRENT NOISE. Oluwasegun Akinniyi, Goli Yamini, Ekaterina M. Nestorovich

1976-Pos  BOARD B339
DISSECTING THE STRUCTURE AND FUNCTION OF BESTROPHIN CHANNELS. Alec Kittredge, Changyi Ji, Austin Hopiavuori, Nancy Ward, Shouudeng Chen, Yota Fukuda, Yu Zhang, Tingting Yang

1977-Pos  BOARD B340
THERMODYNAMICS OF THE NMDA RECEPTOR AMINO-TERMINAL DOMAIN. Remy A. Yovanno, Albert Y. Lau

1978-Pos  BOARD B341
SUPPRESSIVE EFFECTS OF BETA AMYLOID PEPTIDES (1-42) AND (25-35) ON KV1.1 CHANNEL ACTIVITY. Joseph Farley, Kristi DeBoeuf, Mohammad F. Islam, Nicholas Thelen

1979-Pos  BOARD B342
PALMITOYLATION OF KIR6.2 AT POSITION C166 PROMOTES K<sub>ATP</sub> CHANNEL OPENING. Hua-Qian Yang, Jongln Hwang, William A. Coetzee

1980-Pos  BOARD B343
INTERACTIONS OF JUNCTOPHILINS AND STIM1 WITH ER CALCIUM-RELEASING CHANNELS. Stefano Perni, Kurt G. Beam

1981-Pos  BOARD B344
MODULATION OF GIRK CHANNELS BY PROTEIN KINASE C. Kirin Gada, Yu Xu, Takeharu Kawano, Leigh D. Plant, Diomedes E. Logothetis

1982-Pos  BOARD B345
MECHANISTIC INSIGHTS INTO VOLTAGE-INDUCED CLOSURE OF BACTERIAL BETA-BARREL CHANNELS. Deborah Aurora Perini, Antonio Alcaraz, Vicente M. Aguilella, Maria Queralt-Martin

1983-Pos  BOARD B346
MECHANISTIC DIFFERENCES BETWEEN CA<sup><2+</sup>SPIKES AND CA<sup><2+</sup>PUFFS REVEALED THROUGH SIMULATIONS OF HETEROGENEOUS POPULATIONS. DeAnalisa C. Jones, Eric A. Sobie

1984-Pos  BOARD B347
HUMAN VOLTAGE-GATED PROTON CHANNELS IN CHORION-DERIVED MESENCHYMAL STEM CELLS. Beata Meszaros, Ferenc Papp, Gabor Tajti, Gyorgy Panyi

Skeletal Muscle Mechanics, Structure, and Regulation (Boards B348 - B373)

1985-Pos  BOARD B348
A DROSOPHILA CARDIAC MYOSIN ISOFORM ENABLES JUMP MUSCLE CYCLICAL POWER PRODUCTION. Kaylyn M. Bell, Douglas M. Swank
1986-Pos  BOARD B349  COOPERATIVITY IN THIN FILAMENT ACTIVATION DEPENDS ON THE FORCE OF THE MYOSIN MOTOR. Marco Caremani, Cristina Gallart, Irene Pertici, Gabriella Piazzesi, Vincenzo Lombardi, Marco Linari

1987-Pos  BOARD B350  MUSCLE MEASUREMENTS SHOW WEAKLY BOUND CROSS-BRIDGES ACT AS A VISCIOUS DRAG. Sam Walcott, Katelyn Jarvis

1988-Pos  BOARD B351  DO CARDIAC MYOFIBRILS EXHIBIT RESIDUAL FORCE ENHANCEMENT PROPERTIES? Seong-won Han, Venus Joumaa, Walter Herzog

1989-Pos  BOARD B352  SPECIFIC CLEAVAGE OF THE TITIN SPRINGS IN SITU UNCOVERS THE ROLE OF TITIN-BASED FORCE IN SARCOMERE STRUCTURE AND MUSCLE CONTRACTION. Yong Li, Andreas Unger, Marion von Frieling-Salewsky, Andres Rivas-Pardo, Jorge Alegre-Cebollada, Julio M. Fernandez, Wolfgang A. Linke

1990-Pos  BOARD B353  SHORTENING DEACTIVATION CHARACTERISTICS OF DROSOPHILA AND LETHOCERUS MUSCLE TYPES. Amy K. Loya, Bernadette M. Glasheen, Douglas M. Swank

1991-Pos  BOARD B354  RESTORING REAL-SPACE IMAGES OF THE STRUCTURE OF MUSCLE AND OTHER BIOLOGICAL SPECIMENS FROM CONVENTIONAL X-RAY DIFFRACTION PATTERNS. Hiroyuki Iwamoto

1992-Pos  BOARD B355  HYDRODYNAMIC AND POLYELECTROLYTE PROPERTIES OF CYTOSKELETON FILAMENTS. Ernesto Alva

1993-Pos  BOARD B356  DOWNSIZING THE GIANT TITIN REVEALS ITS DOMINANT ROLES IN SKELETAL MUSCLE PASSIVE STIFFNESS AND LONGITUDINAL HYPERTROPHY. Ambjorn Brynnel, Zaferen Hernandez, Balazs Kiss, Johan Lindqvist, Maya Adler, Justin Kolb, Robbert Van der Pijl, Jochen Gohlke, Joshua Strom, John E III Smith, Henk L. Granzier

1994-Pos  BOARD B357  X-RAY DIFFRACTION RESOLVES HOW ACTIN-MYOSIN SPACING EXPLAINS THE DIFFERENCES OF TWO MUSCLES WITH IDENTICAL STEADY STATE PROPERTIES. Travis Tune, Thomas Irving, Simon Sponberg

1995-Pos  BOARD B358  TIME-RESOLVED X-RAY DIFFRACTION AND MOLECULAR DYNAMICS STUDIES OF SKELETAL MUSCLE RELAXATION WITH 2 DEOXY-ATP: Weikang Ma, Matthew C. Childers, Jason D. Murray, Henry Gong, Valerie Daggett, Thomas C. Irving, Michael Regnier

1996-Pos  BOARD B359  STRESS RELAXATION IN ACTIVE SARCOMERES AND A HYPOTHESIZED CALCIUM-DEPENDENT GLASS TRANSITION. Khoi D. Nguyen, Madhusudhan Venkadesan

1997-Pos  BOARD B360  STRUCTURE OF THICK FILAMENTS FROM DROSOPHILA INDIRECT FLIGHT MUSCLE BY CRYO-EM. Nadia Daneshparvar, Dianne Taylor, Hamidreza Rahmani, Kenneth A. Taylor

1998-Pos  BOARD B361  TRAVEL Awardee  TIME-RESOLVED X-RAY STUDIES OF SKELETAL MUSCLE FROM A DUCHENNE MUSCULAR DYSTROPHY RAT MODEL. Chen-Ching Yuan, Joseph D. Powers, Jason Murray, Saffie Mohran, Weikang Ma, Shawn M. Luttrell, Thomas C. Irving, Michael Regnier, David L. Mack

1999-Pos  BOARD B362  REGULATION OF MYOFILAMENT FORCE AND LOADED SHORTENING BY SKELETAL MYOSIN BINDING PROTEIN-C. Joel C. Robinett, Laurin M. Hanft, Janelle Geist, Aikaterini Kontrogianni-Konstantopoulou, Kerry S. McDonald, Joseph P. Stains, Chris W. Ward, Iman Mousavi, Keith Mickolajczyk, William Hancock, Erkan Tüzel

2000-Pos  BOARD B363  ZEBRAFISH EMBRYOS ENABLE MULTI-SCALE HIGH-THROUGHPUT MUSCLE MECHANICS. Andrew Mead, Guy Kennedy, Samantha Previs, Bradley Palmer, Alicia Ebert, David Warshaw

2001-Pos  BOARD B364  NOVEL MYBP1 MUTATIONS IN MYOPATHY WITH TREMOR. Aikaterini Kontrogianni-Konstantopoulou, Janelle Geist, Janis Stavusis, Baiba Lace, Christopher W. Ward, Carsten Bonnemann

2002-Pos  BOARD B365  NEW INSIGHTS INTO FORCE AFTER ACTIVE STRETCH IN DAMAGED SKINNED MUSCLE FIBRES. Venus Joumaa, Sadhiq Nazeer, Faruk Ortes, Walter Herzog


2004-Pos  BOARD B367  IMPAIRED REDOX CAPACITY, MUSCLE INJURY, AND MICROTUBULE ALTERATIONS CONSPIRE TO IMPACT SKELETAL MUSCLE FUNCTION. Camilo Vanegas

2005-Pos  BOARD B368  ALTERATION OF T-TUBULAR ARCHITECTURE AND CAPACITANCE CHANGES IN HUNTINGTON’S DISEASE. Sabrina K. Metzger, Shannon H. Romer, Mark M. Rich, Andrew A. Voss

2006-Pos  BOARD B369  LATTICE ARRANGEMENT OF MYOSIN FILAMENTS CORRELATES WITH FIBER TYPE IN RAT SKELETAL MUSCLE. Weikang Ma, Kyoung Hwan Lee, Shixin Yang, Thomas Irving, Roger Craig

2007-Pos  BOARD B370  BIOPHYSICAL EVIDENCE FOR THE SIMPLE HARMONIC MOTION OF TROPOMYOSIN IN THE REGULATION OF MUSCLE CONTRACTION. James J. Earley

2008-Pos  BOARD B371  CRYOEM SINGLE PARTICLE RECONSTRUCTION OF DEPHOSPHORYLATED HMM FROM SMOOTH MUSCLE. Alimohammad Hojjatian


2010-Pos  BOARD B373  TRAVEL Awardee  MYOSIN ORIENTATION IN A MUSCLE FIBER USING BIFUNCTIONAL SPIN LABELS WITH 4 DEGREES ANGULAR RESOLUTION. Yahor Savich, Grant Lewis, Benjamin P. Binder, Peter D. Martin, David D. Thomas

Kinesins, Dyneins, and Other Microtubule-based Motors (Boards B374 - B396)

2011-Pos  BOARD B374  THREE-DIMENSIONAL MODEL OF COOPERATIVE TRANSPORT OF PAIRS OF KINESIN-1 AND -2 MOTORS. Wiphu Youyen, Iman Mousavi, Keith Mickolajczyk, William Hancock, Erkan Tüzel
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<td>Board B375</td>
<td>KINESIN-3 KIF14 EXHIBITS BIMODAL MOTION, EITHER DIFFUSIVE OR SUPERPROCESSIVE. Ili A. Zhernov, Radan Matura, Stefan Diez, Zdenek Lansky, Marcus Braun</td>
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MAKING SWAPS UNTIL ACTIVITY DROPS - LOCALIZING THE DIFFERENT SPECIFIC ACTIVITY OF PRESENILIN HOMOLOGUES TO PROTEIN DOMAINS. Fabian C. Schmidt, Harald Steiner, Dieter Langosch

2097-Pos  Board B460
ACTIONS OF RAB27B-GTPASE ON CENTRAL EXCITATORY SYNAPTIC TRANS- MISSION. Erwin R. Arias-Hervert

2098-Pos  Board B461
CHANGES IN MULTIPLE MEMBRANE CURRENTS UNDERPIN ENHANCED SYMPTOMATIC FIRING RATE IN THE STELLATE GANGLIA OF THE SPONTANEOUSLY HYPERTENSIVE RAT. Harvey Davis, David J. Paterson, Neil Herring

2099-Pos  Board B462
CHANGES IN SECONDARY STRUCTURE OF HUMAN PRION PROTEIN PEPTIDE 30-90 UNDER THE INFLUENCE OF SELECTED DICATIONIC AND ANIONIC SURFACTANTS. Julia Ludwikczak, Maciej Kozak, Kosma Szutkowsi, Igor Zhukov

2100-Pos  Board B463
CONSTRUCTION OF AN OPENSPIR LIGHT-SHEET MICROSCOPE FOR THE STUDY OF NEURAL CREST MIGRATION IN DANIO RERIO. Manuel Rocha, Matt Reyler, Walter Alvarado, Hendrik Glauninger, Megan Hoinville, Kirstey Kroll, Margo MacDonald, Eric Rouviere, Diane Schnitkey, Robert de Ruyter van Steveninck

2101-Pos  Board B464
REVEALING ABNORMAL OLIGOMERIZATION OF PROTEINS IN SINGLE CELLS. Annie Castonguay, Louis-Etienne Lorenzo, Paul W. Wiseman, Alfredo Ribeiro-da-Silva, Yves De Koninck, Antoine G. Godin

2102-Pos  Board B465
TRANAVEL AWARDEE A RECEPTOR-INDEPENDENT LIPID MEMBRANE-MEDIATED PATHWAY FOR SEROTONIN ACTION. Simli Dey, Barun Kumar Maiti, Ankur Gupta, Anirban Das, Dayana Surendran, Gilbert Walker, Sudipta Maiti

2103-Pos  Board B466
PHASE SEPARATION OF SYNAPTIC VESICLES AT THE NERVE TERMINAL. Dragomir Milovanovic, Pietro De Camilli

2104-Pos  Board B467
LIPOSOME NANO-CAPSULE FOR TARGET BRAIN DELIVERY. Tingting Zheng, Yun Chen, Li Liu, Qian Liu

2105-Pos  Board B468
SECONDARY ASSOCIATIVE MEMORY CELLS AND THEIR PLASTICITY IN THE PREFRONTAL CORTEX. Jin-Hui Wang, Jing Feng, Huajuan Xiao, Yang Xu

2106-Pos  Board B469
TRANAVEL AWARDEE CALCIUM FREQUENCY SETS THE LOCATION OF CALMODULIN-DEPENDENT ENZYMES ACTIVATION IN DENDRITIC SPINES. Matthew C. Pharris, Neal M. Patel, Lakmini J. Wilson, Christopher W. Rust, Tamara L. Kirner-Ursem

2107-Pos  Board B470
CHANGES IN LIPID MEMBRANE MAY TRIGGER AMYLOID TOXICITY IN ALZHEIMER’S DISEASE. Elizabeth Drolle, Stephen Turnbull, Nanqin Mei, Carina Filice, Brenda Y. Lee, Morgan Robinson, Evgeny Pavlov, Eric Finot, Zoya Leonenko

2108-Pos  Board B471
STRUCTURE AND IN SILICO ELASTICITY OF A COMPLETE PROTOCAD- HERIN-15 DIMER. Deepanshu Choudhary, Yoshie Narui, Brandon L. Neel, Lahiri N. Wimalasena, Carissa F. Klastek, Conghui Chen, Pedro De-la-Torre, Raul Araya-Secchi, Elakkiya Tamiselvan, Marcos Sotomayor

2109-Pos  Board B472
TRANAVEL AWARDEE BINDING AND TRANSPORT OF AMYLOID-B BY P-GLECTOPROTEIN: A NOVEL THERAPEUTIC TARGET IN ALZHEIMER’S DISEASE. Hope Holt, Elizabeth Moore, Madelene Riese, Michelle Faucett, Francisco Gonzalez, Melissa Moss

2110-Pos  Board B473
PHOTOLYSIS OF A CAGED, FAST-EQUILIBRATING GLUTAMATE RECEPTOR ANTAGONIST, MINI-CAGED-GAMMA-D-Glutamate-Glycine, TO INVESTI- TIGATE TRANSMITTER DYNAMICS AND RECEPTOR PROPERTIES AT GLUTAMATECIRCULAR SYNAPSES. Francesco Palma-Cerda, George Papageorgiou, Boris Barbour, Celine Auger, David Ogden

Force Spectroscopy and Scanning Probe Microscopy (Boards B474 - B490)

2111-Pos  Board B474
USE OF MODIFIED GRAPHITE FOR SINGLE-MOLECULE ATOMIC FORCE MICROSCOPY OF BIOMACROMOLECULES. Dmitry V. Klinov, Anna D. Protopopova, Dmitry S. Andrianov, Rustem I. Litvinov, John W. Weisel

2112-Pos  Board B475
TRANAVEL AWARDEE CALIBRATION-INDEPENDENT ATOMIC FORCE MICROSCOPY. Carmen Suay Corredoura, Carolina Pimenta-Lopes, Diana Veláquez-Carreras, David Sánchez-ortiz, Jorge Alegre-Cebollada

2113-Pos  Board B476
TRANAVEL AWARDEE HOOKING ON VIRAL GLYCOPROTEINS WITH SINGLE MOLECULE FORCE SPECTROSCOPY TO STUDY SINGLE AND MULTIPLE BOND FORMA- TIONS. Daniel Lauster, Valentin Reiter-Scherer, Luis Jose Cuellar Camacho, Sumati Bhatha, Jürgen P. Rabe, Rainer Haag, Andreas Herrmann

2114-Pos  Board B477
MOLECULAR RESOLUTION OF GRAM POSITIVE BACTERIA CELL WALL USING AFM. Laia Pascquina Lemonche, Jonathan Burns, Robert Turner, Simon Foster, Jamie Hobbs

2115-Pos  Board B478
CLUSTERING AND IDENTIFICATION OF FORCE SPECTRA FROM NATIVE MEMBRANES. Nicola Galvanetto, Nina Ilieva, Alessandro Laio, Vincent Torre

2116-Pos  Board B479
UNFOLDING FOCAL ADHESION KINASE: GETTING CELLULAR INSIGHT THROUGH AFM AND MD. Csaba Daday, Magnus Bauer, Pilar Redondo, Hermann E. Gaub, Daniel Lietha, Frauke Gräter

2117-Pos  Board B480
DYNAMIC FORCE-SPECTROSCOPY ON A BUDGET: NEW DESIGNS AND OPEN-SOURCE SOFTWARE FOR BUILDING AN ELECTROMAGNETIC TWEEZ- ERY. Daniel T. Kovari, Joseph Piccolo, David Dunlap, Laura Finzi
Molecular Dynamics II (Boards B494 - B524)

2118-Pos  BOARD B481  TRAVEL AWARDEE
BINDING OF HANTAVIRUS TO ITS HOST CELL - A SINGLE VIRUS FORCE SPECTROSCOPY STUDY. Malte Hilsch, Niklaas Nilson, Daniel Lauster, Andreas Herrmann

2119-Pos  BOARD B482  TRAVEL AWARDEE
INVESTIGATING CELL STIFFNESS IN WILD-TYPE Candida albicans AND ITS MORPHOLOGIES USING CONTACT ATOMIC FORCE MICROSCOPY. Michelle K. Ash, Jeff D. Stephens

2120-Pos  BOARD B483  TRAVEL AWARDEE

2121-Pos  BOARD B484  TRAVEL AWARDEE
CHARACTERIZATION OF CELL MEMBRANE USING ATOMIC FORCE MICROSCOPY. Lin Liu, Yuhui Wei, Kaizhe Wang, Lihua Wang, Jun Hu, Bin Li

2122-Pos  BOARD B485  TRAVEL AWARDEE
DIRECTLY PROBING THE DISSOCIATION EFFECTS OF GRAPHENE OXIDE NANOSHEETS ON HIAPP FIBRILS. Shuige Li, Xiaofeng Hu, Xinju Yang

2123-Pos  BOARD B486  TRAVEL AWARDEE
UTILIZING ATOMIC FORCE MICROSCOPY TO EXPLORE THE BIOPHYSICAL CHEMISTRY OF THE BACTERIAL PREDATOR Bdellovibrio bacteriovorus RUS. Asriel Walker, Cindy Peraza, Catherine B. Volle, Megan A. Ferguson, Eileen M. Spain, Megan E. Nunez

2124-Pos  BOARD B487  TRAVEL AWARDEE
EXPLORING THE SULFATASE 1 CATCH BOND FREE ENERGY LANDSCAPE USING JARZYNSKI’S EQUALITY. Volker Waldhorn, Ann-Kristin Moeller, Christian Bartz, Thomas Diersk, Dario Anselmetti

2125-Pos  BOARD B488  TRAVEL AWARDEE
ADHESION FORCES IN BACTERIAL PREDATOR-PREY AND PREY-PREY SYSTEMS. Dylan Fitzmaurice, Puja Saha, Megan E. Nunez, Eileen M. Spain, Catherine M. Volle, Megan A. Ferguson

2126-Pos  BOARD B489  TRAVEL AWARDEE
HIGH-PERFORMANCE IMAGE-BASED MEASUREMENTS OF BIOLOGICAL FORCES AND INTERACTIONS IN A DUAL OPTICAL TRAP. Jessica L. Killian, James T. Inman, Michelle D. Wang

2127-Pos  BOARD B490  TRAVEL AWARDEE
DETERMINATION OF ELASTIC MODULUS OF WHITE BLOOD CELLS WITH VARYING TEMPERATURES USING OPTICAL TWEEZERS. Jeff Miller, Brooke Hester

Diffraction and Scattering Techniques (Boards B491 - B493)

2128-Pos  BOARD B491  TRAVEL AWARDEE
VIRUS DYNAMICS STUDIED BY TIME-RESOLVED SMALL ANGLE X-RAY SCATTERING. Josue San Emeterio, Lois Pollack

2129-Pos  BOARD B492  TRAVEL AWARDEE
MESOSCALE ARCHITECTURE OF BETA CELLS UPON GLUCOSE AND EX-4 STIMULATION. Kate L. White, Jitin Singla, John Francis, Jian-Hua Chen, Axel Ekman, Carolyn Larabell, Raymond C. Stevens

2130-Pos  BOARD B493  TRAVEL AWARDEE
THE NEUTRON SPIN ECHO SPECTROMETER @ SNS AND ITS BIOPHYSICS APPLICATIONS. Laura R. Stingaciu

2131-Pos  BOARD B494  TRAVEL AWARDEE
EXPLORING THE EFFECTS OF DIRECTED EVOLUTION ON THE DYNAMICS OF ARTIFICIAL RETRO ALDOLASES. Joseph Schafer, Joanna Zo, Steven D. Schwartz

2132-Pos  BOARD B495  TRAVEL AWARDEE
COMPUTATIONAL INSIGHTS ON SMALL MOLECULE BINDING TO THE HV1 PROTON CHANNEL. Victoria T. Lim, Nathan M. Lim, Andrew D. Geragotelis, J. Alfredo Freites, Francesco Tombola, David L. Mobley, Douglas J. Tobias

2133-Pos  BOARD B496
PROTON TRANSPORT IN E. COLI CLC TRANSPORT PROTEIN BY ADAPTIVE QM/MM CALCULATIONS. Baris O. Aydintug, Adam Duster, Christina Garza, Mikias Negussie, Hai Lin

2134-Pos  BOARD B497
MOLECULAR DYNAMICS SIMULATION STUDIES OF THE INTERFERON-INDUCED TRANSMEMBRANE PROTEIN (IFITM3). Hwayoung Lee, Wonpil Im

2135-Pos  BOARD B498
MOLECULAR DYNAMICS SIMULATIONS OF PHOSPHORYLATED INTRINSICALLY DISORDERED PROTEINS. Liam I. Haas-Neill, Sarah Rauscher

2136-Pos  BOARD B499
EXAMINING THE REFOLDING OF PERTURBED PROTEIN STRUCTURE INTERMEDIATES USING VARIOUS MOLECULAR MECHANICS FORCE FIELDS. David Wang, Piotr E. Marszalek

2137-Pos  BOARD B500
ION PERMEATION THROUGH ORAI PROTEINS. Tugba N. Ozturk, Guillaume Lamoureux

2138-Pos  BOARD B501
MODULATING THE CHEMICAL TRANSPORT PROPERTIES OF THE CLC ANTIPORTER VIA ALTERNATIVE ANION FLUX AND MUTATION. Zhi Wang, Jessica M. J. Swanson, Gregory A. Voth

2139-Pos  BOARD B502
COMPUTATIONAL INVESTIGATIONS OF A COMPLEX FORMATION BETWEEN NEUROGLOBIN AND CYTOCHROME C FERRIC HEME PROTEINS. Purushottam Tiwari, Prem Chapagain, Aykut Uren

2140-Pos  BOARD B503  TRAVEL AWARDEE
EXAMINING REACTION MECHANISMS OF CATECHOL O-METHYLTRANSFERASE. Xi Chen, Steven Schwartz

2141-Pos  BOARD B504  TRAVEL AWARDEE
STRUCTURAL INSIGHTS INTO THE ACTIVATION OF BLOOD COAGULATION FACTOR XI ZYMogen BY THROMBIN: A COMPUTATIONAL MOLECULAR DYNAMICS STUDY. Divi Venkateswarlu

2142-Pos  BOARD B505  TRAVEL AWARDEE
COMPARATIVE MOLECULAR DYNAMICS DYNAMICS OF THE BRAF ACTIVATION LOOP REVEALS A BIOPHYSICAL MECHANISM OF CANCER RECURRENCE UNDER DRUG INHIBITION. Gregory A. Babbitt, Andre Hudson, Lily Adams

2143-Pos  BOARD B506  TRAVEL AWARDEE
CAPTURING THE MECHANISM UNDERLYING TOP-BINDING TO THE LARP1 DM15 REGION. Kevin C. Cassidy, Roni M. Lahr, Jesse C. Kaminsky, Andrea J. Berman, Jacob D. Durrant

2144-Pos  BOARD B507  TRAVEL AWARDEE
NICOTINIC ACETYLCHOLINE RECEPTOR CLUSTERING IN DHA-ENRICHED DOMAINS. Kristen N. Woods, Liam M. Sharp, Grace Brannigan

2145-Pos  BOARD B508  TRAVEL AWARDEE
LB3B4 CONFORMATIONS OF THE FLAVIVIRIDAE NS3H PROTEIN. Russell B. Davidson, Martin McCullagh
THEORETICAL MODELING OF THE RNA-ENHANCED NTPASE ACTIVITY OF DENGUE AND ZIKA NS3 HELICASES. Russell B. Davidson, Martin McCullagh

CONFORMATIONAL FLUCTUATIONS AND CHANGES OF SR-Ca2+-ATPASE ON THE E1/E2 TRANSITION. Chigusa Kobayashi, Yasuhiro Matsunaga, Jaewooon Jung, Yuji Sugita

UTILIZING UMBRELLA SAMPLING AND BROWNIAN DYNAMICS TO STUDY THE FUNCTIONAL AND DYNAMIC CHARACTERISTICS OF CARDIAC TROPONIN C. Jacob D. Bowman, Steffen Lindert

VIRTUAL SCREENING FINDS TROPONIN CALCIUM SENSITIZERS AND UMBRELLA SAMPLING SIMULATIONS ELUCIDATE DIFFERENCES IN TROPONIN C ISOFORM AND MUTANT HYDROPHOBIC PATCH EXPOSURE. Jacob Bowman, Melanie Aprahamian, Svetlana Tikunova, Jonathan P. Davis, Steffen Lindert

HOW LIGAND BINDING ALTERS THE DYNAMICS OF TOLL-LIKE RECEPTOR 4 (TLR4) AND ITS CO-RECEPTOR MYELOID DIFFERENTIATION FACTOR 2 (MD-2): A MOLECULAR DYNAMICS SIMULATION. Alireza Tafazzol, Yong Duan

ACTIVATION OF THE VOLTAGE GATED PROTON CHANNEL HV1: A CONSTANT PH MOLECULAR DYNAMICS STUDY. Jack A. Henderson, Jana Shen

EARLY TRANSLOCATION OF ANTHRAX LETHAL FACTOR: KINETICS FROM MOLECULAR DYNAMICS SIMULATIONS AND MILESTONING THEORY. Piao Ma, Alfredo E. Cardenas, Mangesh Chaudhari, Ron Elber, Susan L. Rempe

CENP-A HIJACKS THE HISTONE CHAPERONE NETWORK IN CANCER—COMPUTATIONAL INSIGHTS. Mary Pitman, Yamini Dalal, Garegin A. Papoian

PROTEIN KINASE FREE ENERGY LANDSCAPES: THE ROLE OF THE ACTIVATION LOOP. Shima Arasteh, Peng He, Allan Haldane, Ronald M. Levy

EXPLORATIONS OF DRUG TRANSPORT BY P-GLYCO PROT EIN USING MOLECULAR DYNAMICS ENABLED BY HIGH RESOLUTION CRYSTAL STRUCTURES. Lauren E. Ammerman, Pia D. Vogel, John G. Wise

PEPTIDE BINDING INTERACTION BETWEEN ARKA AND ABP15SH USING MARKOV STATE MODELS. Henry Huang, Gabriella Gerlach

EFFECT OF CAPSID TAIL ON SEMI-FLEXIBLE POLYMER PACKING INTO A CAPSID IN A CROWDED ENVIRONMENT. Nada Ahmed Alnaamani

STRUCTURE AND DYNAMICS OF ALZHEIMER’S ASSOCIATED AMYLOID-BETA PEPTIDE. Thomas Lühr, Kai Kohlhoff, Gabriella Heller, Michele Vendruscolo

INSIGHT INTO AMYLOID INTERACTIONS: MOLECULAR DYNAMICS SIMULATIONS OF MODEL PEPTIDE FRAGMENTS. Nicholas A. Cramer, Grant Kawecki, David R. Bevan, Anne M. Brown

MOLECULAR DYNAMICS INVESTIGATION OF THE PHYSICAL BINDING OF THE NNK DIAZONIUM ION TO EXON 5 OF TP53. David M. Wahl, Christos Deligkaris

MOLECULAR DYNAMICS SIMULATIONS USING ACCURATE CHARGE-CHARGE INTERACTIONS PREDICT UNEXPECTED PHASE BEHAVIORS OF DNA CONTROLLED BY EPIGENETIC MODIFICATIONS. Sunjoo You, Jejoong Yoo

UNDERSTANDING CARDIAC TUBE FORMATION IN DEVELOPING DROSO PHILA EMBRYOS USING LIGHT SHEET MICROSCOPY AND CARDIAC DRUG SCREENING. Christopher Mj McFaul, Rodrigo Fernandez-Gonzalez, Christopher M. Yip

PAIR CORRELATION ANALYSIS OF LOCALIZATION MICROSCOPY DATA WHEN SAMPLING DENSITY IS NOT UNIFORM. Thomas R. Shaw, Sarah A. Shelby, Sarah L. Veatch


DEVELOPMENT AND OPTIMIZATION OF THE Y-FAST:FLUOROSYSTEM SUP ER-RESOLUTION IMAGING. Elizabeth M. Smith, Arnaud Gautier, Elias M. Puchner

A NOVEL VIEWPOINT TO ANALYZE STRUCTURED ILLUMINATION MICROCOPY (SIM) DATA. Isotta Cainero, Simone Pellicci, Melody Di Bona, Alberto Diaspro, Luca Lanzano

SINGLE-CELL CORRELATIONS OF INTRON, MRNA, AND PROTEIN CONTENT IN HUMAN IMMUNE-IMMUNE CELLS. Daniel Kalb, Samantha Adikari, Pulak Nath, Elizabeth Hong-Geller, James Werner

OPTIMIZATION OF SINGLE MOLECULE PALM IMAGING CONDITIONS USING MEOS2. Ragnar Stefansson

IMAGING CANCER CELLS AND THEIR INTERACTIONS WITHIN 3D MICROENVIRONMENT - A QUANTITATIVE STUDY USING CRYO SOFT X-RAY TOMOGRAPHY. Jian-Hua Chen, Axel Ekman, Venera Weinhardt, Gerry McDermott, Mark A. Le Gros, Carolyn A. Larabell

SPATIAL CUMULANT ANALYSIS TO STUDY D2-LIKE DOPAMINE RECEPTOR DYNAMICS ON PLASMA MEMBRANE. Daniel J. Foust, Alessandro Ustione, David W. Piston

LIVE CELL SUPER-RESOLUTION IMAGING WITH RED-SHIFTED STATES OF CONVENTIONAL BODIPY FLUOROPHORES. Santosh Adhikari, Joe Moscatelli, Elias Puchner

OPTIMIZING ASTIGMATISM FOR 3D STOCHASTIC OPTICAL RECONSTRUCTION MICROSCOPY. Alondra Escobar, Christopher M. Yip
Micro- and Nanotechnology II (Boards B564 - B578)


2202-Pos  BOARD B565  KINETIC MODELING OF NANOPARTICLE-CELL ASSOCIATION. Matthew Faria, Ka Noi, Stuart Johnston, Yi Ju, Mattias Björnmalm, Frank Caruso, Edmund J. Crampin

2203-Pos  BOARD B566  FRAMEWORK FOR NUCLEIC ACID CELLULAR DELIVERY USING CARBON NANOTUBES WITHOUT CHEMICAL FUNCTIONALIZATION. Arupananda Sengupta, Michael Blades, Daniel J. Hayes, Slava V. Rotkin

2204-Pos  BOARD B567  COMPARATIVE PHYSICOCHEMICAL CHARACTERIZATION BETWEEN BRAND AND GENERIC INTRAVENOUS SODIUM FERRIC GLUCONATE COMPLEX IN SUCROSE INJECTION. Joel Brandis, Marc Taraban, Kyle Kihn, Heather Neu, Peter Langguth, Alex Confer, David Goldberg, James Polli, Sarah Michel

2205-Pos  BOARD B568  QUANTIFYING ASSOCIATIONS BETWEEN AN ENDOGENOUS PROTEIN MODEL AND MPEG-PCL MICELLAR NANO CARRIERS. Donald P. Mallory, Abegel Freeman, Adam W. Smith, Coleen Pugh

2206-Pos  BOARD B569  INDEX-MATCHED MULTIFLUIDIC CELL ARRAY FOR HIGH THROUGHPUT SINGLE CELL OPTICAL ANALYSIS. Justin J. Griffin, Edward R. Polanco, Thomas A. Zangle

2207-Pos  BOARD B570  MULTIPLEX IN SITU TAGGING TECHNOLOGY FOR HIGHLY MULTIPLEXED SINGLE-CELL ANALYSIS. Jun Wang

2208-Pos  BOARD B571  DESIGN OF ISLET-ON-A-CHIP DEVICES TO DYNAMICALLY MEASURE GLUCOSE-STIMULATED METABOLISM AND INSULIN SECRETION IN INDIVIDUAL PANCREATIC ISLETS. Romario Regeenes, Affia Saleem, Huntley Chang, Hima Gohil, Michael B. Wheeler, Jonathan V. Rocheleau

2209-Pos  BOARD B572  LIGHT-RESPONSIVE POLYMER PARTICLES AS FORCE CLAMPS FOR THE MECHANICAL UNFOLDING OF TARGET MOLECULES. Hanquan Su, Zheng Liu, Yang Liu, Victor Pui-Yan Ma, Jing Zhao, Aaron Blanchard, Kornelia GalliOr, Brian Dyer, Khalid Salaita

2210-Pos  BOARD B573  METAL OXIDE COATING OF SILVER NANOPARTICLES TO IMPROVE THEIR PHYSICOCHEMICAL AND OPTICAL PROPERTIES. Soha Salah AbdelHamied Mohamed, Heba M. Fahmy, Engy Maged Mohamed Shams-Eldin, Ayaat Mahmoud MoslehSelim

2211-Pos  BOARD B574  MAKING THE RAINBOW: A COST-EFFECTIVE, REPRODUCIBLE, AND SCALABLE METHOD FOR QUANTUM DOT FABRICATION. Taylor V. Douglas, Aubrie A. Weyhrmiller, Kayla A. Callaway, Nathaniel V. Nucci

2212-Pos  BOARD B575  SAXS AND SPECTROSCOPIC STUDIES OF SYNTHESIS PROCEDURES OF NANORODS. Karolina Rucinska, Joanna Maksim, Kosma Szutkowski, Augustyn Molinski, Zuzanna Pietralik, Maciej Kozak

2213-Pos  BOARD B576  MORPHOLOGY OF GOLD NANORODS OBTAINED IN THE PRESENCE OF OLIGOMERIC SURFACTANTS. Joanna Maksim, Karolina Rucinska, Augustyn Molinski, Zuzanna Pietralik, Maciej Kozak

2214-Pos  BOARD B577  SIMULATION OF THE MOTION OF ARBITRARILY SHAPED PROTEIN MOLECULES IN NANOPORES USING CLUSTERS OF RIGID SPHERICAL PARTICLES. Shuran Xu, Marco Lattuada, Michael Mayer

2215-Pos  BOARD B578  TRAVEL AWARDEE  THE ADSORPTION KINETICS OF BIOMOLECULES ON TO PEGYLATED GOLD NANOPARTICLES. Yasiro R. Perera, Alex Hughes, Nicholas C. Fitzkee

Biophysics Education (Boards B579 - B592)

2216-Pos  BOARD B579  ESTABLISHING THE FRAMEWORK FOR A SUSTAINABLE SERVICE-LEARNING COURSE FOR ENGINEERING STUDENTS. Patrick Link


2218-Pos  BOARD B581  HANDS-ON MIXED REALITY SCIENCE LABS FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY INSTRUCTION. Kambiz M. Hamadani, Yuanyuan Jiang, Xin Ye, Ali Ahmadinia

2219-Pos  BOARD B582  INTRODUCTION OF A CIGARETTE SMOKING CESSATION STRATEGY: ‘SEMIRE UZUN GOCMEN MODEL’ IN SMOKING QUITTING. Semire Uzun Gocmen

2220-Pos  BOARD B583  CELLULAR BIOPHYSICS AND MODELING: A REQUIRED COURSE IN THE NEUROSCIENCE PROGRAM AT WILLIAM AND MARY. Greg Conradi Smith

2221-Pos  BOARD B584  THE PROPORTIONAL HAZARD MODEL IN RANDOMIZED STUDIES - STATISTICAL INSIGHTS INTO THE WOMEN’S HEALTH INITIATIVE STUDIES (2002-2017) USING REGRESSION ANLYSIS OF MORTALITY. Timothy Bilash

2222-Pos  BOARD B585  DEVELOPING ORAL PRESENTATION SKILLS IN UNDERGRADUATE RESEARCHERS. Julie Gunderson, William Gunderson

2223-Pos  BOARD B586  CALL FOR AN EDUCATIONAL PARADIGM SHIFT. Allen T. Ansevin

2224-Pos  BOARD B587  TEACHING BIOPHYSICS IN AN UNDERGRADUATE CURRICULUM. Christopher E. Bassey
2225-Pos  BOARD B588  
INTEGRATING FUNDAMENTAL BIOPHYSICS RESEARCH IN EMPHASIS COURSES FOR ENGINEERING AND AGRICULTURAL SCIENCES STUDENTS. Katherine Vega, Samuel Ochoa, Jorge A. Herrera, Luis F. Patino, Jorge A. Gomez, Jairo C. Quijano

2226-Pos  BOARD B589  
ADAPTING A COURSE-BASED UNDERGRADUATE RESEARCH EXPERIENCE INTO INDEPENDENT STUDENT RESEARCH PROJECTS AT A SMALL LIBERAL ARTS COLLEGE. Andrea A. Carter, Paul A. Craig

2227-Pos  BOARD B590  
BIOPHYSICS FOR ALL: TOOLS TO INTRODUCE BASIC ELECTROPHYSIOLOGY AND OPTICS TO UNDERGRADUATES. Elizabeth EL Lee

2228-Pos  BOARD B591  
PREDICTING AND TESTING ENZYME FUNCTION IN THE UNDERGRADUATE LAB USING COMPUTATIONAL AND WET LAB TOOLS. Julia R. Koepppe, Webe C. Kadima, Rebecca Roberts, Matthew Gehm, Paul A. Craig

2229-Pos  BOARD B592  
COMPUTATIONAL MODELING: EXPLORING HOW MINI RESEARCH PROJECTS AND CLASSROOM ACTIVITIES IMPACT STUDENT LEARNING. Shelby N. Kranc, Donald E. Elmore, Martin Berryman, Mala L. Radhakrishnan
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<td>New Council Meeting</td>
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<td>8:00 AM-3:00 PM</td>
<td>Poster Viewing</td>
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<td>8:15 AM-10:15 AM</td>
<td>Symposium: Mapping the Cell</td>
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<td><strong>Chair: Raymond Stevens, University of Southern California</strong></td>
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<td>CREATING AN IMAGE-BASED STEM CELL STATE SPACE. <strong>Rick Horwitz</strong></td>
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<td>LINKING SYSTEMS WITH STRUCTURE: DERIVING MECHANISMS FROM LARGE-SCALE DATA SETS. <strong>Nevan Krogan</strong></td>
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<td>SIMULTANEOUS CROSS-EVALUATION OF HETEROGENEOUS E. COLI DATASETS VIA MECHANISTIC SIMULATION. <strong>Markus Covert</strong></td>
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<td>TOWARDS A MODEL OF THE HUMAN PANCREATIC BETA CELL. <strong>Raymond C. Stevens</strong></td>
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<td>Symposium: RNA</td>
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<td><strong>Chair: Joseph D. Puglisi, Stanford University</strong></td>
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<td>CO-TRANSLATIONAL PROTEIN FOLDING AND INSERTION INTO THE MEMBRANE. <strong>Marina Rodnina</strong></td>
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<td>HIGH-RESOLUTION 3D STRUCTURE DETERMINATION OF LARGE AND DYNAMIC MACROMOLECULAR COMPLEXES. <strong>Holger Stark</strong></td>
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<td>UNTANGLING MESSENGER RNA STRUCTURE WITH DEAD-BOX RNA HELICASES. <strong>Elizabeth Tran</strong></td>
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<td>DYNAMICS OF EUKARYOTIC TRANSLATION INITIATION. <strong>Joseph D. Puglisi</strong></td>
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<td>8:15 AM-10:15 AM</td>
<td>Platform: Intrinsically Disordered Proteins (IDP) and Aggregates III</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>Platform: Mechanosensation</td>
<td>Room 316/317</td>
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<td>10:30 AM-12:30 PM</td>
<td>Poster Presentations and Late Posters</td>
<td>Exhibit Hall</td>
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<td>1:00 PM-3:00 PM</td>
<td>Symposium: Membrane Organization and Sculpting by Proteins</td>
<td>Ballroom I</td>
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<td><strong>Chair: Jenny Hinshaw, NIH</strong></td>
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<td>REVERSE TOPOLOGY MEMBRANE SCISSION BY THE ESCRTS. <strong>James H. Hurley</strong></td>
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<td>MEMBRANE CURVATURE AND THE ABC TRANSPORTER BmrA: A YIN &amp; YANG STORY. <strong>Patricia M. Bassereau</strong></td>
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<td>STRUCTURAL DYNAMICS OF POTASSIUM CHANNEL MONOMER IN A MEMBRANE ENVIRONMENT AND TETRAMERIC ASSEMBLY. <strong>Benoît Roux</strong></td>
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<td>CAPTURING SEQUENTIAL STEPS OF DYNAMIN-MEDIATED FISSION BY CRYO-EM. <strong>Jenny E. Hinshaw</strong></td>
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<td>Symposium: Molecular and Transcriptional Regulation of Cardiac E-C Coupling</td>
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<td><strong>Chair: Shi-Qiang Wang, Peking University, China</strong></td>
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<td>1:00 PM-3:00 PM</td>
<td>New and Notable</td>
<td>Ballroom III</td>
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<td><strong>Co-Chairs:</strong> <strong>Susan Morquese, University of California, Berkeley</strong></td>
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<td><strong>Andrei Sali, University of California, San Francisco</strong></td>
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<td>Ballroom IV</td>
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<td>Room 307/308</td>
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<td>Cardiac Muscle Mechanics, Structure, and Regulation II</td>
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<td>1:00 PM-3:00 PM</td>
<td>Member Organized Session: Integrative Structural Modeling</td>
<td>Room 316/317</td>
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Using Information from Spectroscopic Labels
**Wednesday, March 6**

**New Council Meeting**
8:00 AM - 11:00 AM, ROOM 331

**Poster Viewing**
8:00 AM - 3:00 PM, EXHIBIT HALL

**Symposium**
Mapping the Cell
8:15 AM - 10:15 AM, BALLROOM I

**Chair**
Raymond Stevens, University of Southern California

- **No Abstract**
  - 8:15 AM
  - Creating an Image-Based Stem Cell State Space. Rick Horwitz

- **No Abstract**
  - 8:45 AM
  - Linking Systems with Structure: Deriving Mechanisms from Large-Scale Data Sets. Nevan Krogan

**2230-Symp**
Simultaneous Cross-Evaluation of Heterogeneous E. Coli DataSets via Mechanistic Simulation. Markus Covert

**2231-Symp**
Towards a Model of the Human Pancreatic Beta Cell. Raymond C. Stevens

**Symposium**
RNA
8:15 AM - 10:15 AM, BALLROOM II

**Chair**
Joseph D. Puglisi, Stanford University

- **No Abstract**
  - 8:15 AM
  - Co-Translational Protein Folding and Insertion into the Membrane. Marina Rodnina

- **No Abstract**
  - 8:45 AM
  - High-Resolution 3D Structure Determination of Large and Dynamic Macromolecular Complexes. Holger Stark

**2232-Sym**
Untangling Messenger RNA Structure with Dead-Box RNA Helicases. Elizabeth Tran

**2233-Symp**
No Abstract

**2234-Plat**
8:30 AM
Structural Insights into Ligand Modulation of the TRPV2 Channel. Ruth Pumroy, Amrita Samanta, Yuhang Liu, Franklin Pozo, Taylor Hughes, George R. Dubyak, Seungil Han, David T. Lodowski, Vera Moiseenko-Bell

**2235-Plat**
8:45 AM
Multimerization of Human TRPA1 Ion Channel Cytoplasmic Domains. Gilbert Q. Martinez, Sharona E. Gordon

**2236-Plat**
9:00 AM
Approaching to the Molecular Mechanism of the Fast Inactivation of Calcium Selective TRP Channels. Lisandra Flores Aldama, Kattina Zavala, Daniel Bustos, Wendy Gonzalez, Juan Opazo, Sebastian E. Brauchi

**2237-Plat**
9:15 AM
Antagonist-Induced Clockwise Rotation in the TRPV1. Shoko Fujimura, Kazuhiro Mio, Masahiro Kuramochi, Hiroshi Sekiguchi, Muneyo Mio, Tai Kubo, Yuji C. Sasaki

**2238-Plat**
9:30 AM
The Conformational Wave in Capsaicin Activation of Transient Receptor Potential Vanilloid 1 Ion Channel. Fan Yang, Xian Xiao, Bo Hyun Lee, Simon Vu, Wei Yang, Vladimir Yarov-Yarovoy, Jie Zheng

**2239-Plat**
9:45 AM
Gain-of-Function Mutations in TRPM4 Activation Gate Cause Skin Disease PSEK. Huijun Wang, Zhe Xu, Bo Hyun Lee, Simon Vu, Linghan Hu, Mingyang Lee, Dingfang Bu, Xu Cao, Samuel Hwang, Yong Yang, Jie Zheng, Zhiqiao Lin

**2240-Plat**
10:00 AM
TRPM8 Regulates Sexual Reward and Satiety. Yelena Nersesyan, Ekaterina Gribkova, Padmamalini Baskaran, Daniel Llano, Baskaran Thyagarajan, Eleonora Zakharian

**Platform**
Intrinsically Disordered Proteins (IDP) and Aggregates III
8:15 AM - 10:15 AM, BALLROOM IV

**Co-Chairs**
Keren Lasker, Stanford University
Alessandro Borgia, University of Zurich, Switzerland

**2241-Plat**
8:15 AM
TARDIGRADE INTRINSICALLY DISORDERED PROTEINS PROTECT ENZYMES FROM DESICCATION-INDUCED INACTIVATION. Samantha Piszkiewicz, Kathy H. Gunn, Shannon L. Speer, Owen Warmuth, Aakash Mehta, Francis J. Lauzier, Kenny H. Nguyen, Elizabeth Kuhlman, Saskia B. Neher, Gary J. Pielak

**2242-Plat**
8:30 AM
A Novel Molecular Lego Approach to Measure the Marginal Folding Cooperativity of Intrinsically Disordered Proteins. Suhani Nagpal, Thinh Luong, Mourad Sadiqi, Victor Munoz

**2243-Plat**
8:45 AM
Highly Disordered 10:1 Complex of Two Anti-Apoptotic, Chromatin-Remodelling Intrinsically Disordered Proteins. Alessandro Borgia, Madeleine B. Borgia, Alain Scialabba, Robert Best, Benjamin Schuler

**2244-Plat**
9:00 AM
A Bacterial Biomolecular Condensate Sequesters a Signaling Pathway That Drives Spatial Regulation of Gene Expression and Asymmetric Cell Division. Keren Lasker, Alex von Diezmann, W.E. Moerman, Lucy Shapiro
2245-Plat  9:15 AM  
SEQUENCE DETERMINANTS OF PROTEIN PHASE SEPARATION OF THE INTRINSICALLY DISORDERED RGG DOMAIN FROM LAF-1.  
**Benjamin S. Schuster**, Gregory Dignon, Craig Jahnke, Matthew C. Good, Daniel A. Hammer, Jeetain Mittal

2246-Plat  9:30 AM  
THE INS AND OUTS OF PHASE SEPARATION IN NUCLEOLAR BIOLOGY.  

2247-Plat  9:45 AM  
SEQUENCE DETERMINATION OF LIQUID-LIQUID PHASE-SEPARATED ASSEMBLIES OF ENGINEERED DISORDERED PROTEINS IN LIVING CELLS.  
**Ming-Tzo (Steven) Wei**, Clifford P. Brangwynne

2248-Plat  10:00 AM  
UNCOVERING THE ROLE OF SURFACE RESIDUES AND BUFFER COMPOSITION IN LIQUID-LIQUID PHASE SEPARATION OF EYE LENS CRYSTALLINS FROM AN ANTARCTIC TOOTHFISH.  

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**Platform**

**General Protein-Lipid Interactions**  
8:15 AM - 10:15 AM, ROOM 307/308

**Co-Chairs**  
Milica Utjesanovic, University of Missouri, Columbia  
Rajesh Ramachandran, Case Western Reserve University

2249-Plat  8:15 AM  
UNDERSTANDING THE ORGANIZATION AND DYNAMICS OF KRS4B ON A COMPLEX 8-LIPID RECONSTITUTED MODEL MEMBRANE USING MICROSCOPY AND SPECTROSCOPY METHODS.  
**Rebika Shrestha**, Thomas Turbyville

2250-Plat  8:30 AM  
STRUCTURAL AND MECHANISTIC BASES OF DRP1-CARDIOLIPIN INTERACTIONS IN MITOCHONDRIAL FISSION.  
**Bin Lu**, Mukesh Mahajan, Abhishek Mandal, Nikhil Bharambe, Rihua Wang, Patrick van der Wel, Matthias Buck, Xin Qj, **Rajesh Ramachandran**

2251-Plat  8:45 AM  
MULTIPLE STOCHASTIC PATHWAYS IN FORCED PEPTIDE-LIPID MEMBRANE DETACHMENT.  
**Milica Utjesanovic**, Tina R. Matin, Krishna P. Sigdel, Gavin M. King, Ioan Kosztin

2252-Plat  9:00 AM  
THE SMALL HEAT SHOCK PROTEINS, HSPB1 AND HSPB6, HAVE THE ABILITY TO GET INSERTED INTO LIPID MEMBRANES.  
**Antonio De Maio**, David M. Cauvi, Ricardo F. Capone, Nelson Arispe, Wilbert Boelens

2253-Plat  9:15 AM  
MOLECULAR SIMULATIONS REVEAL THE DYNAMICS OF THE BAND 3 ANION TRANSPORTER IN A MODEL NATIVE RED BLOOD CELL MEMBRANE.  
**Dario De Vecchis**, Reinhart A. Reithmeier, Antreas Kalli

2254-Plat  9:30 AM  
HUNTINGTIN AGGREGATION IS MODIFIED IN THE PRESENCE OF A VARIETY OF LIPID MEMBRANES.  
**Maryssa A. Beasley**, Sharon E. Groover, Justin A. Legleiter

2255-Plat  9:45 AM  
CHARACTERIZATION OF PHOSPHATIDYLINOSITOL PHOSPHATE BINDING IN LIQUID BILAYERS BY SOLID-STATE NMR SPECTROSCOPY.  
**Jacqueline R. Perodeau**, Ashley D. Bernstein, Stefany M. Lazieh, Robert D. Palmere, **Andrew J. Nieuwoop**

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**Platform**

**Actin Structure, Dynamics & Associated Proteins**  
8:15 AM - 10:15 AM, ROOM 309/310

**Co-Chairs**  
David Sept, University of Michigan  
**Danielle Holz**, Lehigh University

2257-Plat  8:15 AM  
MOLECULAR DYNAMICS SIMULATIONS OF G- AND F-ACTIN EXPLAIN ASPECTS OF ACTIN POLYMERIZATION.  
**Lauren Jepsen**, David Sept

2258-Plat  8:30 AM  
INVESTIGATIONS INTO THE STRUCTURE AND INTERMOLECULAR INTERFACE OF HUMAN COFILIN-2 ASSEMBLED ON ACTIN FILAMENTS BY MAGIC ANGLE SPINNING NMR.  
**Jodi Kraus**, Jenna Yehl, Elena Kudryashova, Emil Reisler, Dmitri Kudryashov, Tatyana Polenova

2259-Plat  8:45 AM  
MECHANISMS FOR DENDRITIC ACTIN NETWORK FORMATION, DISTRIBUTED TOGETHER, AND STRUCTURAL REMODELING.  
**Danielle Holz**, Aaron Hall, Dimitrios Vavylonis

2260-Plat  9:00 AM  
DIFFERENT FACES (PHASES) OF ACTIN DEPOLYMERIZING FACTORS FROM ENTEOMOBA HISTOLYTICA.  
**Pragyan Parimita Rath**, Nitesh Kumar, Samudrala Gouninath

2261-Plat  9:15 AM  
RECONSTITUTION OF DYNAMIC ACTIN CABLES WITH TUNABLE LENGTHS.  
**Luther W. Pollard**, Salvatore L. Alioto, Mikeal V. Garabedian, Bruce L. Goode

2262-Plat  9:30 AM  
STRUCTURAL, KINETIC, AND THERMODYNAMIC RESPONSE OF WATER TO MECHANICAL UNFOLDING OF SPECTRIN REPEATS.  
Sarah J. Moe, Torvin Rajala, **Alessandro Cambran**

2263-Plat  9:45 AM  
ACETYLATION OF ACTIN K328 CONTRIBUTES TO A LOSS IN TROPOMYOSIN-MEDIATED INHIBITION OF MYOSIN BINDING.  
**William M. Schmidt**, D. Brian Foster, Anthony Cammarato

2264-Plat  10:00 AM  
LEIOMODIN AND TROPOMYOSIN, BINDING AT THE POINTED END OF THE THIN FILAMENTS.  
**Dmitri Tolkatchev**, Garry E. Smith, John R. Cort, Gregory L. Helms, Alla S. Kostyukova

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**Platform**

**Protein Assemblies/Enzyme Function, Cofactors & Post-translational Modifications II**  
8:15 AM - 10:15 AM, ROOM 314/315

**Co-Chairs**  
Erik Martin, St. Jude Children’s Research Hospital  
Alvin Yu, University of Chicago

2265-Plat  8:15 AM  
HYDROXYLATION OF TYPE I COLLAGEN: EFFECTS ON FIBRILLAR STRUCTURE AND MECHANICS.  
**Alekhya A. Kandoor**, Michele Kirchner, Vered Wineman-Fisher, Yujia Xu, Sameer Varma
PREPARING “FORCE FROM LIPIDS” ACTIVATION IN MECHANOSENSITIVE HIGH-RESOLUTION STRUCTURES OF MSCS IN A LIPID BILAYER: REINTERPRETATION OF RESULTANT DIPOLE MOMENT ON MECHANICAL STABILITY OF PROTEIN-PEPTIDE COMPLEXES. Maximou Kouza, Anirban Banerji, Andrzej Kolinski, Irina Buhimschi, Patricia M. Bassereau, Bruce Derfler, Bence György, Walrati Limapichat, Sanket Walujkar, Lahiru Wimalasena, Marcos Sotomayor, David Shapiro, James H. Hurley

Poster Presentations and Late Posters
10:30 am - 12:30 pm, EXHIBIT HALL

Symposium
Molecular and Transcriptional Regulation of Cardiac E-C Coupling
1:00 pm - 3:00 pm, BALLROOM II

Chair
Shi-Qiang Wang, Peking University, China

2278-SYMP 1:00 PM
ACUTE LOSS OF CMYBP-C INDUCES AUTO-OSCILLATORY CONTRACTIONS IN PERMEABILIZED CARDIOMYOCYTES: IMPLICATIONS FOR REVERSE E-C COUPLING? Samantha P. Harris

2286-SYMP 1:30 PM
CBIN1: FROM T-TUBULE FOLDS TO DYAD ORGANIZATION, TO MICROPARTICLES AND CLINICAL USE. Robin Shaw
2287-Symp 2:00 PM REGULATION OF THE RYR2 CALCIUM RELEASE CHANNEL BY SPEG.
Xander H.T. Wehrens

2288-Symp 2:30 PM CONJUNCT UPREGULATION OF JUNCTOPHILIN-2 AND CAVEOLIN-3 TRANSCRIPTION ENHANCED EXCITATION-CONTRACTION COUPLING EFFICIENCY IN HIBERNATING GROUND SQUIRRELS. Rong-Chang Li, Lei Yang, Yi-Chen Li, Bin Xiang, Li-Peng Wang, Xiao-Ting Wang, Jing-Hui Liang, Shi-Qiang Wang

Symposium
New and Notable
1:00 PM - 3:00 PM, BALLROOM III

Co-Chairs
Susan Marqusee, University of California, Berkeley
Andrej Sali, University of California, San Francisco

NO ABSTRACT 1:00 PM ADDING DIMENSIONS TO QUANTITATIVE INTRAVITAL IMAGING. Scott Fraser

NO ABSTRACT 1:30 PM CRYO-EM STRUCTURE OF MICROBIAL NANOWIRES REVEALS STACKED HEMES THAT TRANSPORT ELECTRONS OVER MICRONS. Edward Egelman

NO ABSTRACTS 2:00 PM MOLECULAR MODELS OF BACTERIAL CELL ENVELOPES COME OF AGE: BOTH MEMBRANES AND THE CELL WALL ARE SIMULATED TO REVEAL NEW INSIGHTS. Syma Khalid

NO ABSTRACT 2:30 PM MICROED: CONCEPTION, PRACTICE AND FUTURE OPPORTUNITIES. Tamir Gonen

Platform
Protein Dynamics and Allosteriy II
1:00 PM - 3:00 PM, BALLROOM IV

Co-Chairs
Christos Kougentakis, Johns Hopkins University
Liskin Swint-Kruse, University of Kansas Medical Center

2289-Plat 1:00 PM PH-DRIVEN CONFORMATIONAL REORGANIZATION OF PROTEINS: NMR SPECTROSCOPY STUDY WITH BURIED LYS RESIDUES. Christos M. Kougentakis, Ananya Majumdar, Jamie L. Schlessman, Bertrand Garcia-Moreno

2290-Plat 1:15 PM TRAVEL AWARDEE RHODOPSIN HYDRATION DYNAMICS STUDIED BY SOLID-STATE DEUTERIUM NMR SPECTROSCOPY. Nipuna Weerasinghe, Suchitranga M.D.C. Perera, Trivikram R. Molugu, Andres M. Salinas, Michael F. Brown

2291-Plat 1:30 PM USING HISTONE H1 DERIVED PEPTIDES TO INVESTIGATE BINDING AFFINITY AND INTER-DOMAIN DYNAMICS IN HUMAN PIN1. Dinusha Jinasena, Jerrano Bowleg, Robert Simmons, Yue Zhang, Steven R. Gwaltney, Nicholas C. Fitzkee

2292-Plat 1:45 PM THERMODYNAMIC COUPLING - FREE ENERGY CALCULATIONS OF CORRELATED AMINO ACID MUTATIONS. Martin Werner, Bert L. de Groot

2293-Plat 2:00 PM TOWARDS COMPREHENSIVE CONTROL AND DESIGN OF TARGETED SIGNALLING IN ALLOSTERIC REGULATION OF PROTEIN ACTIVITY. Enrico Guarnera, Wei-Ven Tee, Zhen Wah Tan, Igor N. Berezovsky

2294-Plat 2:15 PM INTEGRATION OF AN ELECTROSTATIC NETWORK AND DISORDER-TO-ORDER TRANSITIONS IN PROTEIN ALLOSTERY. Riya Samanta, Jingheng Wang, Dorothy Beckett, Silvina Matysiak

2295-Plat 2:30 PM GRAPH SPECTRAL PROPERTIES OF THE SIDECHAIN NETWORKS OF PROTEIN STRUCTURES: IMPLICATIONS TO ALLOSTERY AND STRUCTURE COMPARISON. Saraswathi Vishveshwara, Anasuya Dighe, Vasundhara Gadiyaram

2296-Plat 2:45 PM ALLOSTERY IS HIGHLY TUNABLE BY AMINO ACID SUBSTITUTIONS AT LONG-RANGE RHEOSTAT POSITIONS. Liskin Swint-Kruse, Aron W. Fenton

Platform
Engineering and Detecting Cellular (dys) Faction
1:00 PM - 3:00 PM, ROOM 307/308

Co-Chairs
Paolo Arosio, ETH Zurich, Switzerland
Abhigyan Sengupta, University of California, Merced

2297-Plat 1:00 PM HYDROGEL ENGINEERING WITH WIDEFIELD PATTERNED ILLUMINATION. Aurelien Pasturel, Pierre-Olivier Strale, Vincent Studer

2298-Plat 1:15 PM TRAVEL AWARDEE UNDERSTANDING THE BIOPHYSICS OF PROTEIN-SURFACE INTERACTIONS. Gabriel Ortega, Martin Kurnik, Philippe Dauphin Ducharme, Hui Li, Netza-hualcoyotl Arroyo-Curras, Bishal Gautam, Kevin Plaxco

2299-Plat 1:30 PM TIE UP CYTOSKELETON TO INHIBIT OVARIAN CANCER METASTASIS. Ye Zhang

2300-Plat 1:45 PM TRAVEL AWARDEE IMPROVEMENT OF MATURATION STATE OF HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED 3D CARDIAC MICROTISSUES BY DEFINED CHEMICAL FACTORS. Chen Yu Huang, Rebeca Joca, Chin Siang Ong, Ijala Wilson, Roald Teuben, Gordon F. Tomaselli, Daniel H. Reich

2301-Plat 2:00 PM PROTEIN DETECTION IN BLOOD WITH SINGLE-MOLECULE IMAGING. Shih-Chin Wang, Chih-Ping Mao, Yu-Pin Su, TC Wu, Chien-Fu Hung, Jie Xiao

2302-Plat 2:15 PM TRAVEL AWARDEE RECOMBINANT PROTEIN BASED CA++ION SENSOR DESIGNING; AN IN-VITROTEST OF FOLDING COUPLED TO BINDING HYPOTHESIS. Abhigyan Sengupta, Mourad Sadqi, Victor Munoz

2303-Plat 2:30 PM TRAVEL AWARDEE PH SENSITIVE PEPTIDE FUNCTIONALIZED HIGH STABILITY POLYMERIC NANOPARTICLES FOR MITOCHONDRIA TARGETED CANCER DRUG DELIVERY. Palanikumar Loganathan, Mona Kalmouni, Sumaya Al Hosani, Mazin M. Magzoub

2304-Plat 2:45 PM TRAVEL AWARDEE PROTEIN PHASE TRANSITION: FROM BIOLOGY TOWARDS NEW PROTEIN MATERIALS. Miriam Linsenmeier, Andreas Kuffner, Lenka Faltova, Maria Hondele, Karsten Weis, Paolo Arosio
Cardiac Muscle Mechanics, Structure, and Regulation II
1:00 PM - 3:00 PM, Room 309/310

Co-Chairs
Matthew Caporizzo, University of Pennsylvania
Osha Roopnarine, University of Minnesota Medical School

2305-PLAT 1:00 PM
STRETCH-INDUCED ACTIVATION OF THE MYOSIN MOTORS ON THE THICK FILAMENT IN RAT CARDIAC TRABECULA. So-Jin Park-Holohan, Elisabetta Brunello, Thomas Kampourakis, Martin Rees, Malcolm Irving, Luca Fusi

2306-PLAT 1:15 PM
CARDIOMYOPATHY MUTATION AT END-END OVERLAP OF ALPHA-TROPOMYOSIN INFLUENCES COOPERATIVE ACTIVATION AND CALCIUM SENSITIVITY. Sailavanya Sundar, Michael J. Rynkiewicz, William Lehman, Jeffrey R. Moore

2307-PLAT 1:30 PM
ENHANCED CROSSBRIDGE BINDING WITH 2-DEOXY-ATP RESULTS FROM INCREASED ELECTROSTATIC INTERACTIONS BETWEEN MYOSIN AND ACTIN IN CARDIAC MUSCLE. Chen-Ching Yuan, Joseph D. Powers, Kimberly J. McCabe, Jason D. Murray, Andrew D. McCulloch, Thomas C. Irving, Michael Regnier

Protein-Nucleic Acid Interactions/Chromatin and the Nucleoid II
1:00 PM - 3:00 PM, Room 314/315

Co-Chairs
Roberto Galletto, Washington University School of Medicine
Kelsey Bettridge, Johns Hopkins School of Medicine

2313-PLAT 1:00 PM
SHELTERIN COMPONENTS MODULATE THE PHASE-SEPARATION PROPENSITY OF TELOMERES. Andrea Soranno, Jeremias Incicco, Paolo De Bona, Eric Tomko, Eric Gaiburt, Roberto Galletto

2314-PLAT 1:15 PM
RNA BINDING MODE REGULATES PHR Activation. Stephen J. Hesler, Bushra Husain, Matthew Angelidis, James L. Cole

2315-PLAT 1:30 PM
A SINGLE-MOLECULE INTERACTION SPECTRUM FOR NON-COVALENT INTERACTION INSIDE MEMBRANE PROTEIN CHANNEL. Meng-Yin Li, Yi-Lun Ying, Wei Tong, Yong-Jing Wan, Yi-Tao Long

2316-PLAT 1:45 PM
DISORDERED RNA CHAPERONES ENHANCE NUCLEIC ACID FOLDING VIA LOCAL CHARGE SCREENING. Erik D. Holmstrom, Zhaowei Liu, Daniel Netl, Robert B. Best, Benjamin Schuler

Member Organized Session: Integrative Structural Modeling Using Information from Spectroscopic Labels
1:00 PM - 3:00 PM, Room 316/317

Co-Chairs
Hugo Sanabria, Clemson University
Claus Seidel, Heinrich Heine University, Germany

2321-PLAT 1:00 PM
SINGLE MOLECULE FRET - A MULTI-ENVIRONMENT RULER FOR DETERMINING STRUCTURE AND DYNAMICS. Bjorn Hellenkamp

2322-PLAT 1:15 PM
PROBING STRUCTURAL STATES IN FAST EXCHANGING PROTEINS BY FRET AND COMPUTATIONAL METHODS. Hugo Sanabria
2323-PLAT 1:30 PM
INTEGRATIVE DYNAMIC STRUCTURAL BIOLOGY WITH FLUORESCENCE SPECTROSCOPY. Claus A.M. Seidel, Mykola Dimura, Hugo Sanabria, Katherina Hemmen, Thomas-Otavio Peulen, Dmitro Rodnin, Holger Gohlke

2324-PLAT 1:45 PM
PROTEINS’ DYNAMICS, HYDRATION AND CONFORMATIONAL CHANGES STUDIED BY EPR. Enrica Bordignon

2325-PLAT 2:00 PM
AN INTEGRATED SPIN-LABELING/COMPUTATIONAL-MODELING APPROACH FOR MAPPING GLOBAL STRUCTURES OF NUCLEIC ACIDS. Peter Z. Qin

2326-PLAT 2:15 PM
DYNAMIC ENZYME: AN NMR STUDY OF USP7. Irina Bezsonova, Gabrielle Valles, Dmitry M. Korzhnev

2327-PLAT 2:30 PM
SPECIFIC 13CH3 LABELING AND NMR REVEAL THE ROLE OF STRUCTURAL DYNAMICS TO ENZYMATIC FUNCTION. Mioara Larion, Alexandar Hansen, Lei Bruschweiler-Li, Vitali Tugarinov, Rafael Brüschweiler, Brian Miller

2328-PLAT 2:45 PM
DECOMPOSING NMR ENSEMBLE WITH THE ASSISTANCE OF SINGLE MOLECULE FRET. Chun Tang
UNITED STATES POSTER SESSIONS
10:00 am–12:00 pm, Hall B

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

Posters should be mounted beginning between 7:00 am and 8:00 am on Wednesday and removed by 3:00 pm. Poster numbers shown refer to the program order of abstracts as they appear in the online Abstracts Issue. Board numbers indicate where boards are located in the Exhibit Hall.

**Odd-Numbered Boards 10:00 am–11:00 am | Even-Numbered Boards 11:00 am–12:00 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 IV (Boards B1 - B35)

2329-Pos Board B1
NEURONAL CALCIUM SENSOR DREAM INTERACTIONS WITH INSULINOTROPIC AGENT REPAeglNIDE. Maria D. Santiago, Maria Daniel Santiago, Jaroslava Miksovska

2330-Pos Board B2
THE EFFECTS OF COMMON DISEASE-CAUSING VARIATIONS ON THE STRUCTURE AND STABILITY OF TREM2: AN IN SILICO EXAMINATION. Hunter B. Dean, Erik D. Roberson, Yuhua Song

2331-Pos Board B3
MUTATION OF RESIDUES IN CD LOOP AND DISTAL POCKET IMPACT PROTEIN STABILITY OF HUMAN NEUROGLOBIN. Ruipeng Lei, David Butcher, Sophie Bernad, Valerine Derrien, Jaroslava Miksovska

2332-Pos Board B4
UNDERSTANDING PROTEIN HD EXCHANGE DATA USING MOLECULAR DYNAMICS SIMULATIONS. Dipak B. Sanap, V. V. Hemanth Giri Rao, Juan R. Perilla, Shachi Gosavi

2333-Pos Board B5
THE MICROPHTHALMIA-ASSOCIATED TRANSCRIPTION FACTOR ASSOCIATES WITH MULTIPLE DOMAINS OF CBP/P300, INCLUDING THE E1A BINDING FACE OF TAZ2. Kathleen Vergunst, Alexandra Brown, Makenzie Branch, David N. Langelaan

2334-Pos Board B6
EVOLUTION OF STABILITY/FLEXIBILITY RELATIONSHIPS IN BETA-LAC-TAMASE. John Patterson, Matthew C. B. Tsilimigras, Dennis R. Livesay, Donald J. Jacobs

2335-Pos Board B7
DYNAMICS OF THE PROTEIN INTERFACES OF THE EBOLA VIRUS VP40 STRUCTURAL MATRIX FILAMENT. Elumalai Pavada, Nisha Bhattarai, Prem P. Chapagain, Bernard S. Gerstman

2336-Pos Board B8
TRAVEL AWARDEE LINKING THE SEQUENCE, ANTI-TUMOR FUNCTION, AND SHARED STRUCTURAL FEATURES OF CLASS IB HYDROPHOBINS. Calem Kenward, David N. Langelaan

2337-Pos Board B9
MEASURING IONIC STRENGTH CHANGES USING FLUORESCENCE LIFETIME AND TIME-RESOLVED ANISOTROPY. Robert Miller, Cody Aplin, Anh Cong, Christin Libal, Rowan Simonet, Emma Kauffman, Margaret Gurumani, Ryan Leighton, Alexander Naughton, Jessica Marshik, Arnold J. Boersma, Ahmed A. Heikal, Erin D. Sheets

2338-Pos Board B10
ADVANCES IN THE STRUCTURAL AND BIOCHEMICAL DETERMINATION OF SEVERAL DYNAMIN-LIKE GTPASES. Andrew D. Kehr, Shuxia Meng, Matthew F. Martin, David Chan, Jenny E. Hinshaw

2339-Pos Board B11
EVOLUTION OF TRANSIENT HELICITY AND DISORDER IN LATE EMBRYOGENESIS ABUNDANT PROTEIN COR11A. Oluwakemi Sowemimo, Wade Borchers, Patrick Knox-Brown, Tobias Rindfleisch, Anja Thalhammer, Gary Daughdrill

2340-Pos Board B12
TRAVEL AWARDEE MOLECULAR DYNAMICS STUDIES OF DYNAMIN Oligomers in Solution. Dalia Hassan, Frank X. Vazquez

2341-Pos Board B13
THE DEVELOPMENT OF INTRINSICALLY FLUORESCENT UNNATURAL AMINO ACIDS FOR IN VIVO INCORPORATION INTO PROTEINS. Chloé M. Jones, Itthipol Sungwienwong, E. James Petersson

2342-Pos Board B14
APPLYING HYDROGEN EXCHANGE MASS SPECTROMETRY COUPLED WITH NUMERICAL SIMULATIONS TO INVESTIGATE TOXIC MISFOLDING OF B2-MICROGLOBULIN. Angelika Hirsch, John Strahan, Amy Wagaman, Sheila Jaswal

2343-Pos Board B15
STUDYING MUTATIONS IN GEOBACILLUS KAUSTOPHILUS TILS TO PROBE CHANGES IN STRUCTURE AND MOBILITY USING MOLECULAR DYNAMIC (MD) SIMULATIONS. Ferdiemar C. Quinto, Rebecca W. Alexander

2344-Pos Board B16
TRAVEL AWARDEE DIFFERENTIATING STRUCTURAL CHANGES OF GLYCOPROTEINS IN SOLUTION USING SMALL ANGLE SCATTERING ANALYSIS. Taylor N. Segally, Luis A. Palacio, Jason Kim, Christopher B. Stanley, Soenke Seifert, Horia I. Petracek

2345-Pos Board B17
STRUCTURAL INVESTIGATIONS INTO THE SERUM ENDONUCLEASE DNASE1L3, AS IT RELATES TO SYSTEMIC LUPUS ERYTHEMATOUS. Jon J. McCoord, Faraz Harsini, Peter Keyel, Roger B. Sutton

2346-Pos Board B18
INTERACTION OF THE CURLI ACCESSORY PROTEINS CSGE AND CSWF WITH THE HUMAN ISLET AMYLOID POLYPEPTIDE. Osmar Meza-Barajas, Isamar Aranda, Ashwag Binmahfooz, Saajith A. Jayasinghe

2347-Pos Board B19
COMPARATIVE INVESTIGATION OF NATIVE-STATE DYNAMICS IN TRYPsin FUNCTIONAL VARIANTS BY HYDROGEN EXCHANGE MASS SPECTROMETRY. Kimberly Burnett, Maxum Paul, Katie Ventre, Abel Samanez, Sheila Jaswal

2348-Pos Board B20
TRAVEL AWARDEE STRUCTURE AND FUNCTION OF HUMAN VITRONECTIN, A KEY MEDIATOR OF HOST-PATHOGEN INTERACTIONS. Kyungsoo Shin, L. Miya Fujimoto, Luz M. Meneghini, Chandan Singh, Yong Yao, Ye Tian, Francesca M. Marassi

2349-Pos Board B21
SINGLE MOLECULE IMAGING OF DNA STRUCTURE: CLIC MICROSCOPY POWERS MECHANISTIC INSIGHTS FOR DRUG DEVELOPMENT. Francis Stabile, Cynthia Shaheen, Shane Scott, Daniel Berard, David Levens, Craig Benham, Sabrina Leslie

2350-Pos Board B22
TEMPERATURE DEPENDENCE OF THE PROTEIN-CHROMOPHORE HYDROGEN BOND DYNAMICS IN THE FAR-RED FLUORESCENT PROTEINS MNPETUNEL, MNPETUNEL2.5 AND MCDARDINAL2. Chandra Dhakal, Prem Chapagain, Xuewen Wang

2351-Pos Board B23
INVESTIGATING RECOMBINANT ACINIFORM SILK NANOPARTICLES AS POTENTIAL DRUG CARRIERS AND AS INTERMEDIATES IN SILK FIBRILLOGENESIS. Stefan A. Warkentin, Jan K. Rainey

2352-Pos Board B24
77SE-NMR PROBES THE PROTEIN ENVIRONMENT OF SELENOMETHIONINE. Shiping Xu, Maggie Chen, Mike Boeri, Sharon Rozovsky

2353-Pos Board B25
INVESTIGATE THE EXISTENCE OF DOMAIN SWAPPED DIMER IN ILPB FAMILY. Nona Ehyaei, Zahra Assar-Nossoni, James H. Geiger, Babak Borhan
2354-Pos  BOARD B26
EXPLORING THE EFFECT OF PREORGANIZATION ON BINDING AFFINITY IN CYCLIZED PEPTIDOMIMETICS. Allison Terry, Vincent Voelz

2355-Pos  BOARD B27
EXPRESSION AND PURIFICATION OF COMPLEMENT PROTEINS FOR PROTEIN INTERACTION STUDIES. Matthew Gehm, Veronica Singh, Julia R. Koepepe

2356-Pos  BOARD B28
PH-DEPENDENT PROPERTIES OF IONIZABLE RESIDUES IN THE HYDROPHOBIC INTERIOR OF A PROTEIN. Ankita Sarkar, Adrian E. Rothberg

2357-Pos  BOARD B29
THIOAMIDE EFFECTS ON PROTEIN STRUCTURE. Kristen E. Fiore, D. Miklos Szantai-Kis, E. James Petersson

2358-Pos  BOARD B30
EXPLORING THE SPACE OF ANTIMICROBIAL PEPTIDES GUIDED BY A DEEP LEARNING MODEL. Manpriya Dua, Amarda Shehu

2359-Pos  BOARD B31
SIMULATING THE FOLDING STATES OF LATTICE PROTEINS WITHIN AN OSCILLATORY ENVIRONMENT. Austin H. Cheng, Cory J. Kim, Amy Y. Wang, Xuanye Zhu, Qi Zhang, Kateri H. DuBay

2360-Pos  BOARD B32
STUDYING COMPLEX BIOMOLECULAR DYNAMICS BY SINGLE-MOLECULE THREE-COLOR FRET. Anders Barth, Claus A. M. Seidel, Don C. Lamb

2361-Pos  BOARD B33
STRUCTURAL STUDIES OF THE Fc REGION OF MURINE IMMUNOGLOBULIN G ANTIBODIES USING SINGLE MOLECULE FRET. Cathrine A. Southern, Jenna Henning, Kirsten Kochan

2362-Pos  BOARD B34
BINDING FREE ENERGY ANALYSIS OF PROGRAMMED CELL DEATH PROTEIN PD1 TO ITS LIGAND PD-L1. Peter C. Pan, Alireza Tafazzoli, Xinwei Zhang, Yong Duan

2363-Pos  BOARD B35
DETERMINING NATIVE-STATE DYNAMICS OF MITOONEET USING HYDROGEN EXCHANGE MASS SPECTROMETRY. Namita Khajanchi, Rebeca Mena, Mary Konkle, Sheila Jaswal

### Protein-Small Molecule Interactions (Boards B36 - B67)

2364-Pos  BOARD B36
THE EFFECTS OF LIGAND STRUCTURE ON PROTEIN-MULTIMODAL LIGAND INTERACTIONS. Camille Blildeau, Edmond Y. Lau, Steve Cramer, Shekhar Garde

2365-Pos  BOARD B37
PEPTIDE ASSISTED SUPRAMOLECULAR POLYMERIZATION OF THE ANIONIC PORPHYRIN MESO-TETRA(4-SULFONATOPHENYL)PORPHINE. Eric Kohn, David Shiry, Christopher H. Fry, Gregory A. Caputo

2366-Pos  BOARD B38
OPTIMIZATION OF THE SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS) AS AN ACCURATE AND RELIABLE TECHNIQUE IN LEAD OPTIMIZATION. Vincent D. Ustach, Sirish Kauhik Lakkaraju, Sunil Kumar, Wenjuan Jiang, Alexander D. MacKerell

2367-Pos  BOARD B39
THE WEAK ENZYMATIC ACTIVITY OF TRUNCATED LECITHIN RETINOL ACYLTRANSFERASE (LRAT) MUTANTS CANNOT BE EXPLAINED BY THEIR AFFINITY FOR ALL-TRANS RETINOL. Sarah Roy, Ana Coutinho, Line Cantin, Marie-Eve Gauthier, Manuel Prieto, Stephane M. Gagne, Christian Salesse

2368-Pos  BOARD B40
INTEGRATION OF TEXT MINING AND BINARY QSAR MODELS FOR NOVEL ANTI-HYPERTENSIVE ANTAGONIST SCAFFOLDS. Serdar Durdagi, Ismail Erol, Berna Dogan, Taha Berkay Sen

2369-Pos  BOARD B41
THE TWO FACES OF BITTER SUGARS: INSIGHTS FROM MULTISCALE SIMULATIONS. Fabrizio Fierro, Alejandro Giorgetti, Paolo Carloni, Wolfgang Meyerhof, Mercedes Alfonso Prieto

2370-Pos  BOARD B42
STRUCTURAL BASES FOR CHEMICAL AND MECHANICAL GATING IN THE PIEZO1 CHANNEL. Wesley M. Botello-Smith, Han Zhang, Alper D. Ozkan, Wenjuan Jiang, Christine N. Pham, Yun Luo, Jerome J. Lacroix

2371-Pos  BOARD B43
MOLECULAR INSIGHT INTO THE AGONIST PROPERTIES OF THE MULTIMODAL ANTIDEPRESSANT VORTOXETINE IN HUMAN 5-HT3A RECEPTORS. Lucy Kate Ladefoged, Lachlan Munro, Anders S. Kristensen, Birgit Schiatt

2372-Pos  BOARD B44
ENERGETICS OF NUCLEOTIDES TRANSLOCATION THROUGH HIV-1 CA HEXAMER. Chaoyi Xu, Robert A. Dick, Marc C. Johnson, Volker M. Vogt, Juan R. Perilla

2373-Pos  BOARD B45
STRUCTURE DYNAMICS GUIDES THE ENHANCEMENT OF LIGAND AFFINITY FOR MDMX. Zhengding Su, Yongqi Huang, Xiyao Cheng

2374-Pos  BOARD B46
CHARACTERIZING THE DIRECT INFLUENCE OF A SMALL MOLECULE ON A RAS-RELATED PROTEIN INTERACTION. Djamali Muhoza, Alix Montoya-Beltran, Emilio Duverna, Paul D. Adams

2375-Pos  BOARD B47
INHIBITION OF ZINC-MEDIATED AMYLOID BETA AGGREGATION AND CYTOTOXICITY BY ALPHA HELIX MIMETICS. Maria C. Vogel, Sunil Kumar, Debabrata Maity, Mazin M. Magzoub, Andrew D. Hamilton

2376-Pos  BOARD B48
MODIFYING ZINC FINGERS: TARGETING THE INFLAMMATORY ZINC FINGER PROTEIN, TRISTRAPROLIN, WITH EXOGENOUS GOLD COMPLEXES AND DETERMINING A ROLE FOR H2S IN MODIFYING TRISTRAPROLIN ENDOGENOUSLY. Kiwon Ok, Wenjing Li, Geoffrey D. Shimberg, Sharon Batelu, Mike Lange, Ivana Ivanovic-Burmacovic, Dr. Timothy Stemmler, Maureen A. Kane, Milos R. Filipovic, Sarah L. Michel

2377-Pos  BOARD B49
BREADTH OF HUMAN MONOCLONAL ANTIBODIES ISOLATED FROM RTS,S/AS01 VACCINEES BINDING TO PLASMODIUM FALCIPARUM CIRCUMSPIEROZOITE PROTEIN ANTIGENS. S. Moses Dennison, Milité Abraha, Richard H.C. Huntwork, Kan Li, Dustin L. Mauldin, S. Munir Alam, Georgia D. Tomaras

2378-Pos  BOARD B50
SYSTEMATIC BIOPHYSICAL INSIGHTS INTO THE INTERACTION OF ANTI-MERS-COV DRUG RIBAVIRIN WITH MAJOR TRANSPORT PROTEIN IN HUMAN SERUM: IN-VITO STUDIES AND IMPLICATIONS IN DIABETES AND UREMIA. Fahad Almutairi, Mohammad Rehan Ajmal

2379-Pos  BOARD B51
PERTURBING LIPOPOLYSACCHARIDE BIOSYNTHESIS THROUGH INHIBITION OF HEPTOSYLTRANSFERASE I. Jozafina Milicaj

2380-Pos  BOARD B52
CONTROL OF PROTEIN SELF-ASSEMBLY WITH WATER-SOLUBLE PORPHYRANS. Tyler J. Brittain, Samuel D. Fontaine, Coleman Swaim, Daniel R. Marzolf, Oleksandr Kokhan

STUDY ON THE MECHANISM OF ANTI C-MET ACTIVITY OF BOC-PROTECT-ED AMINO GROUPS OF BITHIAZOLOPHANES BY USING SILCS.

2383-Pos

EXPLORING THE TOXICITY OF SMALL MOLECULE METABOLITE 3-HYDROXY-3-METHYLGLUTARYL-COENZYME A (HMG-COA) IN THE PATHOGENIC BACTERIUM ENTEROCOCCUS FAEALIS. Gillian M. Barth

2384-Pos

MAPPING THE BINDING TRAJECTORY OF A SUICIDE INHIBITOR IN HUMAN INDOLEAMINE 2,3 DIOXYGENASE 1. Khoa N. Pham, Syun-Ru Yeh

2385-Pos

STRUCTURE-GUIDED DEVELOPMENT OF DUAL INHIBITORS OF EGFR AND JNK TO TREAT GBM AND NSCLC. Haikui Yang, Ying Jiang, Ruohong Yan, Tingting Zhang, Jiajie Zhang

2386-Pos

TIGHT BINDING OF NATURAL POLYPHENOLS TO THE INTRINSICALLY DISORDERED MAMMALIAN HIGH MOBILITY GROUP PROTEIN AT-HOOK 2. Linjia Su, Jeremy Chambers, Fenfei Leng

2387-Pos

IMPROVED MODELING OF HALOGENATED LIGAND-PROTEIN INTERACTIONS USING THE DRUDE POLARIZABLE FORCE FIELD AND ADDITIVE CHARMM36/CHARMM GENERAL FORCE FIELD (CGENFF). Fang-Yu Lin

2388-Pos

MOLECULAR RECOGNITION OF NAPHTHOQUINONE-CONTAINING COMPOUNDS AGAINST HUMAN DNA TOPOISOMERASE II ATPASE DOMAIN: A MOLECULAR MODELING STUDY. Panupong Mahalabputr

2389-Pos

DEVELOPMENT OF SMALL MOLECULE INHIBITORS TARGETING CLOSTRIDUM DIFFICILE BINARY TOXIN AND ADDITIVE CHARMM36/CHARMM GENERAL FORCE FIELD (CGENFF). Ying Jiang, Ruohong Yan, Anh Tran, Patrick Wintrode, Elsa Garcin

2390-Pos

DIFFUSION-INFLUENCED REVERSIBLE LIGAND BINDING TO TWO IN-EQUIVALENT SITES. Irina V. Gopich, Attila Szabo

2391-Pos

EDEMA FACTOR OF BACILLUS ANTHRACIS INTERACTING WITH ITS INHIBITORS. Irène Pitard, Catherine Simenel, Damien Monet, Christophe Thomas, Peggy Suzanne, Arnaud Blondel, Jacques Bellalou, Patrick Dallemagne, Inaki Guijarro, Daniel Ladant, Pierre Goossens, Therese E. Malliavin

2392-Pos

STUDY ON THE MECHANISM OF ANTI C-MET ACTIVITY OF BOC-PROTECT-ED AMINO GROUPS OF BITHIAZOLOPHANES BY USING SILCS. Tatsuya Takimoto, Ozge Yoluk, Sunhwan Jo, Alexander D. MacKerell, Jr., Hideaki Sasaki

2393-Pos

UNVEILING THE ROLE OF SURFACTANTS ON AMYLOID-LIKE PROTEIN SELF-ASSEMBLING. Gustavo Scanavachi, Yanis Ricardo Espinosa, Juan Ruso, Rosangela Itri

2394-Pos

NUCLEAR MAGNETIC RESONANCE AT THE INTERFACE: IDENTIFYING PREFERRED BINDING REGIONS IN MULTIMODAL CATION EXCHANGE CHROMATOGRAPHY USING FUNCTIONALIZED NANOPARTICLES. Ronak B. Gudhka, Camille L. Bildeau, Scott A. McCallum, Mark A. Mccoy, David J. Roush, Steven M. Cramer

2395-Pos

HOW DOES GLYCOSYLATION AFFECT DRUG BINDING ON INFLUENZA? THE ROLES OF ELECTROSTATICS AND STERICS EXAMINED THROUGH BROWNIAN DYNAMICS SIMULATIONS. Christian Seitz, Lorenzo Casalino, Gary Huber, Robert Konecny, Yu-Ming Huang, Rommie Amaro, J. Andrew McCammon

Protein Dynamics and Allosterity II

(Boards B68 - B102)

2396-Pos

MECHANISM OF HSP104 FUNCTION POTENTIATION STUDIED BY HYDROGEN-DEUTERIUM EXCHANGE DETECTED BY MASS SPECTROMETRY (HX-MS). Xiang Ye, Jiabei Lin, Leland C. Mayne, James Shorter, S. Walter Englander

2397-Pos

BINDING INTERFACE OF GAPDH TO THE AU RICH ELEMENTS FROM TNF-ALPHA MRNA REVEALED BY HYDROGEN DEUTERIUM EXCHANGE COUPLED WITH MASS SPECTROMETRY. Daniel J. Deredge, Michael White, Anh Tran, Patrick Wintrode, Elsa Garcin

2398-Pos


2399-Pos

KINETIC AND STRUCTURAL COMPARISON OF HINT ENZYMES: THE ROLE OF DISTANT DYNAMICS ON CATALYSIS. Alex Strom

2400-Pos

CHARACTERIZING HP1-DRIVEN CHROMATIN COMPACTION USING NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY. Bryce E. Ackermann, Galia T. Debelouchina

2401-Pos

DYNAMICS MEDIATE SUBSTRATE RECOGNITION AND REMOTE COMMUNICATION IN A PEPTIDE-BOND FORMING NRPS CYCLIZATION DOMAIN. Subrata H. Mishra, Aswani K. Kancherla, Santrupti Nerli, Nikolaos Gourgakis, Daniel Dowling, Dominique P. Frueh

2402-Pos

MOLECULAR RESPONSES OF MUTAGENESIS IN NONRIBOSOMAL PEPTIDE SYNTHETASE CYCLIZATION DOMAINS. Kenneth Marincin, Aswani Kancherla, Subrata H. Mishra, Daniel Dowling, Dominique P. Frueh

2403-Pos

AN ALLOSTERIC SIGNALING GOVERN THE CRISPR-CAS9 FUNCTION. Giulia Palermo, Clarisse Gravina Ricci, Ivan Rivalta, Victor S. Batista, James A. McCammon

2404-Pos

POSITIVE AND NEGATIVE SUBSTRATE INTERFERENCE SUPPORTED BY COINCIDING ENZYME RESIDUES. Magnus Wolf-Watz, Per Rogne, Elisabet Sauer-Eriksson, Uwe Sauer, Christian Hedberg
MECHANISM FOR CARDIAC MUSCLE REGULATION. LINKER AND N-DOMAIN OF CARDIAC TROPONIN C REVEAL A NOVEL DYNAMIC AND STRUCTURAL ALLOSTERIC EVENTS BETWEEN THE D/E DEUTERATION AND INHIBITOR BINDING DEPENDENCE OF PROTEIN COL- IN COMPLEX WITH F-ACTIN.

Α-CATENIN STRUCTURE AND NANOSCALE DYNAMICS IN SOLUTION AND SOLUTIONAL FLEXIBILITY.
P450 ENZYME. SUBSTRATE DRIVEN ALLOSTERY IN A MITOCHONDRIAL CYTOCHROME P450 ENZYME.

MUTATIONS TO TUNE SERCA FUNCTION. INVESTIGATING THE ROLE OF THE AUXILIARY NUCLEOTIDE BINDING SITES AND NEUTRON SPIN-ECHO SPECTROSCOPY.

FOLDED PROTEINS: INVESTIGATIONS USING SMALL-ANGLE SCATTERING STRUCTURE AND DYNAMICS OF INTRINSICALLY DISORDERED AND UN-CONTROL OF CELLULAR NETWORKS BY STRUCTURAL DISORDER.

BINDING-COUPLED-FOLDING OF INTRINSICALLY DISORDERED PROTEIN ALLOSTERY & DYNAMICS IN NUCLEAR HORMONE RECEPTOR TRANSACTI- IN THE RECBCD DNA HELICASE.

INVESTIGATING THE ROLE OF THE AUXILIARY NUCLEOTIDE BINDING SITES IN THE RECBCD DNA HELICASE. Sivasubramanayam Mangapuram Venkata, Rani Zanarini, Vera Gaydar, Oded Kleifeld, Ariel Kaplan, Arnon Henn

THE EFFECT OF CRYSTAL CONTACT FORCES ON THE PROTEIN GLOBAL MOTIONS. Jeffrey A. Mckinney, Yanting Deng, Deepo George, Andrea Markelz

A LIGAND-BINDING SITE IN THE GLUA3 AMPA RECEPTOR N-TERMINAL DOMAIN OBSERVED IN DRUGGABILITY SIMULATIONS AND X-RAY CRYSTALLOGRAPHY. Ji Young Lee, James Krieger, Beatriz Herguedas, Javier Garcia-Nafria, Anindita Dutta, Saher A. Shaikh, Ingo H. Greger, Ivet Bahar

INVESTIGATION OF CONFORMATIONAL DYNAMICS INVOLVED IN GENOME EDITING EVENTS BY CRISPR-CPF1. INVESTIGATING THE ROLE OF THE AUXILIARY NUCLEOTIDE BINDING SITES IN THE RECBCD DNA HELICASE. Sivasubramanayam Mangapuram Venkata, Rani Zanarini, Vera Gaydar, Oded Kleifeld, Ariel Kaplan, Arnon Henn

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THE EFFECT OF CRYSTAL CONTACT FORCES ON THE PROTEIN GLOBAL MOTIONS. Jeffrey A. Mckinney, Yanting Deng, Deepo George, Andrea Markelz

A LIGAND-BINDING SITE IN THE GLUA3 AMPA RECEPTOR N-TERMINAL DOMAIN OBSERVED IN DRUGGABILITY SIMULATIONS AND X-RAY CRYSTALLOGRAPHY. Ji Young Lee, James Krieger, Beatriz Herguedas, Javier Garcia-Nafria, Anindita Dutta, Saher A. Shaikh, Ingo H. Greger, Ivet Bahar

BINDING-COUPLED-FOLDING OF INTRINSICALLY DISORDERED PROTEIN EXHIBITS A HIERARCHICAL ENERGY LANDSCAPE. Xiakun Chu, Jin Wang

LONG-RANGE INTERACTIONS MEDIATED BY THE DISORDERED NFκB TRANSCRIPTION ACTIVATION DOMAIN. Dominic Narang, Wei Chen, Allen Po, Elizabeth A. Komives

CONTROL OF CELLULAR NETWORKS BY STRUCTURAL DISORDER. Nikolay V. Dokholyan, Onur Dagliyan, Klaus M. Hahn

STRUCTURE AND DYNAMICS OF INTRINSICALLY DISORDERED AND UN- FOLDED PROTEINS: INVESTIGATIONS USING SMALL-ANGLE SCATTERING AND NEUTRON SPIN-ECHO SPECTROSCOPY. Felix Ameseder, Laura R. Stin- gaciu, Aurel Radulescu, Olaf Holderer, Peter Falus, Michael Monkenbusch, Ralf Biehl, Dieter Richter, Andreas M. Stadler

2405-Pos BOARD B77
THE PLACEMENT OF VIBRATIONAL PROBE LABELED SUBSTRATES TO THE PHOSPHOPANTETHINE ARM OF THE E.COLI ACYL CARRIER PROTEIN FOR SITE SPECIFIC VIBRATIONAL SPECTROSCOPY. Joie Ling, Eliana V. von Kruisenstier, Bashkim Kokona, Louise Charkoudian, Casey H. Londergan

2406-Pos BOARD B78
HIGH-SPEED ATOMIC FORCE MICROSCOPY SHOWS CONFORMATIONAL DYNAMICS OF CA2+/CALMODULIN-DEPENDENT PROTEIN KINASE II.

Mikihiro Shibata, Hideji Murakoshi

2407-Pos BOARD B79
PROCESSIVE CHITINASE IS BURNT-BRIDGE BROWNIAN MOTOR OPERATED BY FAST CATALYSIS AFTER PEELING RAIL FROM CRYSTALLINE CHITIN. Aki- hiko Nakamura, Kei-ichi Okazaki, Tadaomi Furuta, Minoru Sakurai, Ryota Iino

2408-Pos BOARD B80
OBSERVING HISTONE H2A.Z EXCHANGE AT THE SINGLE-MOLECULE LEVEL. Matthew F. Poyton, Ashlee Feng, Anand Ranjan, Qin Lei, Sheng Liu, Carl Wu, Taekjip Ha

2409-Pos BOARD B81
BASIS OF SPECIFICITY IN ETS-1 DNA BINDING DOMAIN TO VARIABLE DNA SEQUENCES. Kenneth Huang, Suela Xhani, Amanda V. Albrecht, Gregory M. K. Poon

2410-Pos BOARD B82
ANOMALOUS NON-GAUSSIAN VISCOELASTIC AND AGE-DEPENDENT DYNAMICS OF HISTONE-LIKE H-NS PROTEINS IN LIVE ESCHERICHIA COLI. Asmaa Sadoon, Yong Wang

2411-Pos BOARD B83
INVESTIGATION OF CONFORMATIONAL DYNAMICS INVOLVED IN GENOME EDITING EVENTS BY CRISPR-CPF1. Chun Chan, Xiaolinn Cheng

2412-Pos BOARD B84
DETERMINING THE INTERNAL ALLOSTERIC ARCHITECTURE OF DHFR WITH TOTAL SATURATION MUTAGENESIS. James W. McCormick, Samuel Thompson, Kimberly A. Reynold

2413-Pos BOARD B85
UTILIZING EMPIRICAL DATA AND STRUCTURAL DYNAMICS PREDICTION TO OPTIMIZE RATIONAL DESIGN OF THERAPEUTIC PHOSPHOLAMAN MUTATIONS TO TUNE SERCA FUNCTION. Kim N. Ha, Hannah M. Johnson, Ariana Schneiderhan, Daniel Weber, Joseph Roith, Gianluigi Veglia

2414-Pos BOARD B86
SUBSTRATE DRIVEN ALLOSTERY IN A MITOCHONDRIAL CYTOCHROME P450 ENZYME. Amit Kumar, D. Estrada Fernando

2415-Pos BOARD B87
TRAVEL AWARDEEE SALT BRIDGES IN UBQUITIN DETERMINE THE PROTEIN CONFORMA- TIONAL FLEXIBILITY. Shrabasti Bhattacharya, Nidhi Acharya, Sri Rama Koti Anvarapu

2416-Pos BOARD B88
A-CATENIN STRUCTURE AND NANOSCALE DYNAMICS IN SOLUTION AND IN COMPLEX WITH F-ACTIN. Iain Nicholl, David Callaway, Zimei Bu

2417-Pos BOARD B89
DEUTERATION AND INHIBITOR BINDING DEPENDENCE OF PROTEIN COL-LECTIVE VIBRATIONS. Yanting Deng, Jeffrey Mckinney, Andrea Markelz

2418-Pos BOARD B90

2419-Pos BOARD B91
DYNAMICAL COMPARISON BETWEEN MYOGLOBIN AND HEMOGLOBIN REVEALS THE EFFECT OF THE QUATERNARY STRUCTURE OF HEMOGLO- BIN ON ITS SUBUNITS' DYNAMICS. Rotem Aharoni, Dror Tobi

2420-Pos BOARD B92
MICRO-SECOND X-RAY SINGLE MOLECULE DYNAMICS OF ALLOSTERIC TWISTING MOTIONS IN HEMOGLOBIN. Yuji C. Sasaki, Masahiro Kuramoto- chi, Yuu Okamura, Hiroshi Sekiguchi, Naoki Yamamoto, Naoya Shibayama

2421-Pos BOARD B93
DIFFRACTED X-RAY BLINKING FROM NANOCRYSTAL ON PROTEIN USED AS INTERNAL MOTION PROBE. Hiroshi Sekiguchi, Masahiro Kuramotochi, Yuji C. Sasaki

2422-Pos BOARD B94
THE EFFECT OF CRYSTAL CONTACT FORCES ON THE PROTEIN GLOBAL MOTIONS. Jeffrey A. Mckinney, Yanting Deng, Deepo George, Andrea Markelz

2423-Pos BOARD B95
A LIGAND-BINDING SITE IN THE GLUA3 AMPA RECEPTOR N-TERMINAL DOMAIN OBSERVED IN DRUGGABILITY SIMULATIONS AND X-RAY CRYSTALLOGRAPHY. Ji Young Lee, James Krieger, Beatriz Herguedas, Javier Garcia-Nafria, Anindita Dutta, Saher A. Shaikh, Ingo H. Greger, Ivet Bahar

2424-Pos BOARD B96
TRAVEL AWARDEEE MOLECULAR ANALYSIS OF DENGUE NS3 HELICASE FUNCTION. Kelly E. Du Pont, Russell B. Davidson, Brian J. Geiss, Martin McCullagh

2425-Pos BOARD B97
INVESTIGATING THE ROLE OF THE AUXILIARY NUCLEOTIDE BINDING SITES IN THE RECBCD DNA HELICASE. Sivasubramanayam Mangapuram Venkata, Rani Zanarini, Vera Gaydar, Oded Kleifeld, Ariel Kaplan, Arnon Henn

2426-Pos BOARD B98
ALLOSTERY & DYNAMICS IN NUCLEAR HORMONE RECEPTOR TRANSACTI- VATION. David Lohry, Taylor Stevens, Mark Remec Pavlin, Balananda DK Putcha, Tongye Shen, Elias J. Fernandez

2427-Pos BOARD B99
BINDING-COUPLED-FOLDING OF INTRINSICALLY DISORDERED PROTEIN EXHIBITS A HIERARCHICAL ENERGY LANDSCAPE. Xiakun Chu, Jin Wang

2428-Pos BOARD B100
LONG-RANGE INTERACTIONS MEDIATED BY THE DISORDERED NFκB TRANSCRIPTION ACTIVATION DOMAIN. Dominic Narang, Wei Chen, Allen Po, Elizabeth A. Komives

2429-Pos BOARD B101
CONTROL OF CELLULAR NETWORKS BY STRUCTURAL DISORDER. Nikolay V. Dokholyan, Onur Dagliyan, Klaus M. Hahn

2430-Pos BOARD B102
STRUCTURE AND DYNAMICS OF INTRINSICALLY DISORDERED AND UN- FOLDED PROTEINS: INVESTIGATIONS USING SMALL-ANGLE SCATTERING AND NEUTRON SPIN-ECHO SPECTROSCOPY. Felix Ameseder, Laura R. Stingaciu, Aurel Radulescu, Olaf Holderer, Peter Falus, Michael Monkenbusch, Ralf Biehl, Dieter Richter, Andreas M. Stadler
Intrinsically Disordered Proteins (IDP) and Aggregates III (Boards B103 - B133)

2431-Pos  Board B103
UNDERSTANDING THE KINETIC ROLES OF 14-3-3ZETA DURING TAU FIBRIL FORMATION. Junwen Xiong, Meng Gao, Yongqi Huang

2432-Pos  Board B104
MEMBRANE INTERACTIONS OF IAPP. Mikkel H. Christensen, Birgit Schiött

2433-Pos  Board B105
INHIBITION OF A-SYNUCLEIN AMYLOID FIBRIL ELONGATION BY BLOCKING FIBRIL ENDS. Volodymyr V. Shvadchak, Ksenia Aftitska, Anna Fucikova, Dmytro A. Yushchenko

2434-Pos  Board B106
COMPARING EARLY STAGES OF AMYLOID-BETA AGGREGATION IN DIFFERENT MEMBRANOUS ENVIRONMENTS. Abhilash Sahoo, Hongcheng Xu, Silvina Matysiak

2435-Pos  Board B107
UNDERSTANDING AND PREVENTING AGGREGATION IN ALPHA-SYNUCLEIN. Lisa J. Lapidus

2436-Pos  Board B108
TRAVEL Awardee
TERMINAL CAPPING OF AMYLOIDOGENIC TAU FRAGMENTS MODULATES THEIR FIBRILLATION PROPENSITY. Shruti Arya, Pritam Ganguly, Sarah L. Claud, Andrea Arsiccio, Kristi Lazar Cantrell, Joan Emma Shea, Michael T. Bowers

2437-Pos  Board B109
OBSERVATION OF STRUCTURAL GROWTH OF FIBRILS OF AMYLIN PROTEIN. Suparna Khatun, Shikha Kumari, Agneyo Ganguly, Nisha Pawar, Amar Nath Gupta

2438-Pos  Board B110
TRAVEL Awardee
STRUCTURAL OPTIMIZATION OF A-SYNUCLEIN FIBRIL GROWTH HIBERATORS. Ksenia Aftitska, Volodymyr V. Shvadchak, Dmytro A. Yushchenko

2439-Pos  Board B111
OLIGOMER CROSS-PROPAGATION BETWEEN WILD-TYPE AND MUTANT AMYLOID-B IMPLICATE CONFORMATIONAL STRAINS IN AD PHENOTYPES. Morgan Malone, Dexter N. Dean, Vijay Rangachari

2440-Pos  Board B112
SUMOYLATION OF THE NT17 DOMAIN OF HUNTINGTIN INFLUENCES AGGREGATION AND BINDING TO LIPID MEMBRANES. Faezeh Sedighi, Justin A. Legleiter

2441-Pos  Board B113
THE PRESENCE OF MITOCHONDRIA INFLUENCES HUNTINGTIN AGGREGATION. Adewale Adegbuyiro, Justin A. Legleiter

2442-Pos  Board B114
POST TRANSLATIONAL MODIFICATION OF AB INFLUENCES AGGREGATION IN THE PRESENCE AND ABSENCE OF LIPIDS. Albert W. Pilkington, Justin A. Legleiter

2443-Pos  Board B115
IMPACT OF N-TERMINAL ACETYLATION ON ALPHA-SYNUCLEIN AMYLOID FORMATION. Matthew D. Watson, Jennifer C. Lee

2444-Pos  Board B116
INVESTIGATION OF THE VARIOUS STRUCTURES OF ALPHA-SYNUCLEIN AND THEIR INTERACTIONS WITH SMALL MOLECULES. John Ferrie, Sam G. Giannakoulas, E. James Petersson

2445-Pos  Board B117
INVESTIGATING C99 IN AMYLOID FORMATION USING MOLECULAR DYNAMICS: FROM SIMPLE TO COMPLEX NEURONAL MODELS. Jenny Pin-Chia Hsu, Birgit Schiött

2446-Pos  Board B118
INTERPLAY BETWEEN TWO ISOFORMS OF THE FUNCTIONAL AMYLOID PME17 REPEAT DOMAIN. Dexter N. Dean, Jennifer C. Lee

2447-Pos  Board B119
TRAVEL Awardee
STRUCTURAL EVALUATION OF AROMATIC RESIDUES IN A-SYN AND THEIR ROLE IN GLYCAN BINDING AND CELLULAR UPTAKE. Jonathan M. Musila, Elizabeth Rhoades

2448-Pos  Board B120
B-SYNUCLEIN AMELIORATES A-SYNUCLEIN TOXICITY BY MODULATING FIBRIL SHEDDING AND SEEDING PROCESSES. Xue Yang, Jonathan K. Williams, Jean Baum

2449-Pos  Board B121
ALPHA-SYNUCLEIN MODULATES STIMULATED EXOCYTOSIS AND BINDS TO MITOCHONDRIA. Meraj Ramezani, Marcus Wilkes, Tapojyoti Das, David Holowka, David Elizer, Barbara Baird

2450-Pos  Board B122

2451-Pos  Board B123
ALPHA SYNUCLEIN INCREASES MEMBRANE BINDING WITH RISING LATERAL TENSION. Jaclyn Ann Robustelli, Zheng Shi, Tobias Baumgart

2452-Pos  Board B124
THE EFFECT OF AMYLOID PRECURSOR PROTEIN DIMERIZATION ON ITS CONFORMATION AND CLEAVAGE. Jacob B. Usadi, Karl Freed, Esmael Haddadian

2453-Pos  Board B125
A-SYNUCLEIN BINDS EXTRACELLULAR COMPLEX N-LINKED GLYCANS. Melissa Birol, Sławomir P. Wojciech, Andrew D. Miranker, Elizabeth Rhoades

2454-Pos  Board B126
TARGETING SOLUBLE AMYLOID OLIGOMERS IN ALZHEIMER’S DISEASE THROUGH DISORDERED PRION PEPTIDES. Zachary A. Levine

2455-Pos  Board B127
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TAU AMYLOID AGGREGATES: THE CHOICE OF PATHWAYS MAKES THE DIFFERENCE. Yann Fichou, Songi Han

2456-Pos  Board B128
TRAVEL Awardee
MULTISCALE INVESTIGATION OF MONOMERIC ALPHA-SYNUCLEIN STRUCTURE AND AGGREGATION. Daisy Alvarado, Frank X. Vazquez

2457-Pos  Board B129
BIOPHYSICAL INSIGHTS INTO HOW LIPID MEMBRANES MODULATE HUNTINGTIN AGGREGATION ASSOCIATED WITH HUNTINGTON’S DISEASE. Justin Legleiter

2458-Pos  Board B130
INVESTIGATING THE EFFECTS OF MODEL SURFACES ON SYNTHETIC PRION PEPTIDE AGGREGATION. Elizabeth A. Yates, Catherine M. Yip

2459-Pos  Board B131
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2462-Pos BOARD B134
BILAYER DEPTH DEPENDENCE OF HYDROPHOBIC AMINO ACID TRANSFER FREE ENERGIES. Dagan C. Marx, Karen G. Fleming

2463-Pos BOARD B135
PROBING BAMA'S ROLE IN THE ASSEMBLY OF TRIMERIC AUTOTRANSFER PORTER ADHESINS. David Ryoo, Karl Lundquist, James C. Gumbart

2464-Pos BOARD B136
DEVELOPING A SINGLE-MOLECULE PLATFORM TO UNDERSTAND OUTER MEMBRANE PROTEIN BIOPGENESIS. Megan Mitchell, Marcelo Sousa

2465-Pos BOARD B137
DIMERIC FKPA ACTS AS AN ANTI-AGGREGASE ON A NATIVE UNFOLDED MEMBRANE PROTEIN CLIENT. Michaela A. Roskopf, Dagan C. Marx, Ashlee M. Plummer, Quentin R. Bubb, Karen G. Fleming

2466-Pos BOARD B138
VARIABLE CONSEQUENCES OF MEMBRANE TARGETING MOTIFS FOR GENETICALLY ENCODED VOLTAGE INDICATORS. Sungmoo Lee, Bok Eum Kang, Minyoo Kim, Yoon-Kyu Song, Bradley J. Baker

2467-Pos BOARD B139
FREE AND CHAPERONE BOUND UNFOLDED STATES OF OUTER MEMBRANE PROTEINS. Neharika Chamachi, Georg Krainer, Andreas Hartmann, Michael Schlierf

2468-Pos BOARD B140
LIPID MODULATION OF THE ACTIVATOR-INDEPENDENT MEMBRANE INSERTION AND REFOLDING OF THE APOPTOTIC INHIBITOR BCL-XL. Victor Vazquez Montes, Alexey S. Ladokhin

2469-Pos BOARD B141
ROLE OF DYNAMIC HYDROGEN-BOND NETWORKS IN PROTEIN ALLOSTERY. Konstantina Karathanou, Michalis Lazaratos, Malte Siemers, Ana-Nicoleta Bondar

2470-Pos BOARD B142
TUNING THE STABILITY OF MEMBRANE PROTEIN DIMERIZATION BY CHANGING THE LIPID SOLVENT. Rahul Chadda, Alejandro Gil Ley, Kacie Griffith, Lauren E. Hughes, Ana Castro, Kacey Mersch, Venkatramanan Krishnamani, Elizabeth G. Kelley, Susana Marujo-Teixeira, José Faraldo-Gómez, Janice L. Robertson

DNA Structure and Dynamics II (Boards B143 - B156)

2471-Pos BOARD B143
EVIDENCE FOR CONFORMATIONAL CAPTURE MECHANISM FOR DAMAGE RECOGNITION BY DNA REPAIRPROTEIN RAD4. Sagnik Chakraborty, Saroj Baral, Debamita Paul*, Peter J. Steinbach, Phoebe A. Rice, Jung-Hyun Min*, Anjum Ansari

2472-Pos BOARD B144
KINETICS OF DNA STRAND DISPLACEMENT. Alexander W. Cook, Bo Broadwater, Harold Kim

2473-Pos BOARD B145
INVESTIGATING STRUCTURE AND TOPOLOGY OF PROTEIN-MEDIATED DNA LOOPS VIA COMPUTATIONAL MODELING OF ELASTIC ENERGY. Pamela J. Perez, Wilma K. Olson

2474-Pos BOARD B146
BINDING OF CTAB TO SINGLE STRANDED DNA. Pamela St. John, Tetsuya Kawakita

2475-Pos BOARD B147
LABEL-FREE CHROMATIN-DNA IMAGING BY CIRCULAR POLARIZED LIGHT SCATTERING SCANNING MICROSCOPY. Aymeric Le Gratiet, Riccardo Marongiu, Luca Pesce, Michele Oneto, Paolo Bianchini, Giulia Zanini, Alberto Diaspro

2476-Pos BOARD B148
TO KINK OR NOT TO KINK: SEQUENCE-DEPENDENT DNA FLEXIBILITY UNVEILED IN COMPLEX WITH DNA-BENDING PROTEIN IHF. Mitchell Connolly, Aline Arra, Viktoriya Zvoda, Peter J. Steinbach, Phoebe Rice, Anjum Ansari

2477-Pos BOARD B149
MOLECULAR TRANSPORT THROUGH SELF-ASSEMBLED DNA NANOFILIC IDIC CHANNELS. Yi Li, Rebecca Schulman

2478-Pos BOARD B150
DNA CONFORMATIONAL CHANGES PLAY A FORCE-GENERATING ROLE DURING BACTERIOPHAGE GENOME PACKAGING. Kim A. Sharp, Xiang-Jun Lu, Gino Cingolani, Stephen C. Harvey

2479-Pos BOARD B151
MEASUREMENT OF THE LENGTH DEPENDENCE OF DNA CYCLIZATION USING NEXT GENERATION SEQUENCING. Jason D. Kahn, Jason M. Hustedt

2480-Pos BOARD B152
DYNAMICS OF SUPERCOILED KNOTTED DNA: LARGE SCALE REARRANGE MENTS AND PERSISTENT MULTI STRAND INTERLOCKING. Lucia Coronel, Antonio Suma, Cristian Micheletti

2481-Pos BOARD B153
LONG-RANGE SLIPPERY HAIRPIN RECONFIGURATION AND ITS MECHA NISM IN TRINUCLEOTIDE REPEATS REVEALED BY SINGLE-MOLECULE SPECTROSCOPY. I-Ren Lee, Cheng-Wei Ni, Yu-Jie Wei, Yang-I Shen, Chien Chen

2482-Pos BOARD B154
ENHANCEMENT OF DISSOCIATION KINETICS OF BIOMOLECULES THROUGH THE USE OF ALTERNATING ELECTRIC FIELDS. Sebastian Sensale, Zhangli Peng, H.C. Chang

2483-Pos BOARD B155
AN ALGORITHM FOR RECONSTRUCTING THE DYNAMICS OF SUPER COILED DNA. Todd D. Lillian, Saeed Babamohammadi
Protein-Nucleic Acid Interactions II (Boards B157 - B181)

2484-Pos  BOARD B156
CPG METHYLATION OF THE C9ORF72 NUCLEOTIDE REPEAT EXPANSION ALTERS G-QUADRUPLEX TOPOLOGICAL DISTRIBUTION. Kadir Ozcan, Aaron Haeusler

2485-Pos  BOARD B157
CELLULAR DISTRIBUTION AND DIFFUSIVITY OF HFQ WITH INTERACTING RNAs. Seongjin Park, Karine Prévost, Matt Reyer, Emily Heideman, Wei Liu, Eric Massé, Jingyi Fei

2486-Pos  BOARD B158
STRUCTURAL CHARACTERIZATION OF A PEPTIDE DERIVED FROM A LAB-EVOLVED PROTEIN THAT TARGETS HIV-1 TAR RNA. Sai Shashank Chavalli, Ivan Belashov, Jermaine Jenkins, Joseph Wedekind

2487-Pos  BOARD B159
NUCLEOTIDE-DEPENDENT STABILITY OF NUCLEOSOME-CHD1 COMPLEXES. Saman Ghassabi Kondalaji, Ren Ren, Ilana M. Nodelman, Gregory D. Bowman

2488-Pos  BOARD B160
A HIGH-THROUGHPUT PLATFORM FOR PROBING MECHANISMS OF TRANSCRIPTION FACTOR-DNA BINDING. Arjun Aditham, Polly M. Fordyce

2489-Pos  BOARD B161
CAENORHABDITIS ELEGANS MORC-1 TOPOLOGICALLY TRAPS AND COMPACTS DNA. HyeongJun Kim, Linda Yen, Somsakul Wongpalee, Joseph Loparo, Steve Jacobsen

2490-Pos  BOARD B162
AN EFFECTIVE SCORING FUNCTION WITH ATOMIC AND COARSE-GRAINED HYBRID REPRESENTATION FOR PROTEIN-RNA INTERACTIONS. Jiahua He, Shengyou Huang

2491-Pos  BOARD B163
INVESTIGATING THE DNA BINDING ACTIVITY OF THE POLYBROMO-1 BROMODOMAINS. Saumya M. De Silva, Yangtian Shangguan, Tyler M. Weaver, Brianna E. Lupo, Catherine A. Musselman

2492-Pos  BOARD B164
DETERMINATION OF THE MECHANISM OF RNA REGULATION BY CPSF30 UTILIZING BOTH BIOPHYSICAL AND STRUCTURAL APPROACHES. Jordan D. Pritts, Abdufaleez A. Oluyadi, Daniel Deredge, Patrick L. Wintrode, Sarah L. J. Michel

2493-Pos  BOARD B165

2494-Pos  BOARD B166
DEEP LEARNING MODELS EXPLORE THE STRUCTURAL EFFECTS OF TRANSCRIPTION FACTOR-DNA COMPLEXES ON BINDING SPECIFICITY. Tyler C. Shimko, Polly M. Fordyce

2495-Pos  BOARD B167
RRM2 OF CELF1 PROTEIN FROM PLASMODIUM FALCIPARUM PREFERENTIALLY BINDS TO UG REPEATS RNA. Garima Verma, Neel Sarovar Bhavesh

2496-Pos  BOARD B168
SINGLE-STRANDED DNA BINDING AND CROSSLINKING ACTIVITIES OF THE VIRAL RESTRICTION FACTOR APOBEC3G CHARACTERIZED BY FORCE SPECTROSCOPY. Ioilia F. Rouzina, Michael Morse, Nabuan Naufar, Yuqing Feng, Linda Chelico, Mark C. Williams

2497-Pos  BOARD B169
NMR STUDIES OF CONFORMATIONAL SELECTION OF HRNRP H ON RNA RECOGNITION AND ITS INTERACTION WITH THE HIV EXONIC SPlicing SILENCER ESS2P RNA. Liang-Yuan Chiu, Srinivas Penumutchu, Niyati Jain, Andrew Sugarman, Blanton S. Tolbert

2498-Pos  BOARD B170
USING SINGLE MOLECULE METHODS TO STUDY MECHANISMS OF SITE SPECIFIC DNA CLEAVAGE. Allen C. Price, Stephen D. Parziale, Karissa Mehrtens, Anna D. Ware, Emily K. Matozel, Nathaniel Dale

2499-Pos  BOARD B171
THE ROLE OF INTERFACIAL HYDRATION IN THE TRANSCRIPTION FACTOR PU.1/DNA COMPLEX. Amanda V. Albrecht, Hye Mi Kim, Gregory M. K. Poon

2500-Pos  BOARD B172
CRYO-EM STRUCTURE OF THE P-ELEMENT TRANSPOSASE STRAND-TRANSFER COMPLEX. Elizabeth H. Kellogg, George Ghanim, Eva Nogales, Donald C. Rio

2501-Pos  BOARD B173
FUNCTIONAL IMPLICATIONS OF THE REQC HELICASE - TOPOISOMERASE III - SSB COMPLEX: INSIGHTS FROM SINGLE MOLECULE MEASUREMENTS. K. Maria Mills, Yeonee Seol, Keir C. Neuman

2502-Pos  BOARD B174
ESTABLISHING A SINGLE-MOLECULE FRET SYSTEM FOR STUDYING DNA-PROTEIN INTERACTIONS. Dacheng Zhao, Ishita Mukerji, Candice Etson

2503-Pos  BOARD B175
COHESIN SA2 AND EWSR1 IN R-LOOP REGULATION. Hong Wang, Ashwin Ghatiyaram, Hai Pan, Yanlin Fan, Parminder Kaur, Aparna Gorthi, Robert Riehn, Alexander J.R. Bishop, Yizhi Jane Tao

2504-Pos  BOARD B176
CHARACTERIZATION OF THE INTERACTIONS OF FRAGILE-X MENTAL RETARDATION PROTEIN WITH C9ORF72 REPEAT EXPANDED RNA. Kendy A. Pellegrene, Mihaela Rita Mihalescu,Jeffrey D. Evanseck

2505-Pos  BOARD B177
SINGLE-MOLECULE STUDY OF TRF2 MEDIATED DNA COMPACTION USING PHYSIOLOGICALLY RELEVANT LONG TELOMERIC DNA. Parminder Kaur, Ryan Barnes, Hai Pan, Patricia Opresko, Robert Riehn, Hong Wang

2506-Pos  BOARD B178
STRUCTURAL REARRANGEMENT OF DNA FOR CRISPR-CAS9 NUCLEASE SPECIFICITY REGULATED BY THE REC2 DOMAIN. Keewon Sung, Jinho Park, Younggyu Kim, Nam Ki Lee, Seong Keun Kim

2507-Pos  BOARD B179
ALPHA-SYNUCLEIN BINDS TO DNA AND MODULATES ITS PHYSICAL PROPERTIES. Kai Jiang, Sandra Rocha, Alvina Westling, Srinak KK, Kevin D. Dorfman, Pernilla Wittung-Stafshede, Fredrik Westerlund

2508-Pos  BOARD B180
SIMULATION OF H2A.B CONTAINING HISTONE VARIANT NUCLEOSOME. Havva Khoestani, Jeffery M. Weresczynski

2509-Pos  BOARD B181
QUANTIFYING ANTICANCER DRUG DOXORUBICIN BINDING TO DNA USING OPTICAL TWEEZERS. Zachary Ells, Brian Dolle, Thayaparan Paramanathan
Membrane Physical Chemistry II
(Boards B182 - B207)

2510-Pos  Board B182
INTRINSIC CURVATURES FROM GLOBAL X-RAY SCATTERING DATA ANALYSIS OF INVERTED HEXAGONAL PHASES. Moritz P.K. Frewin, Johannes Kremser, Primoz Zihrel, Georg Pabst

2511-Pos  Board B183
STATISTICAL ANALYSIS OF ACYL CHAIN CONFINEMENT IN LIPID MEMBRANES. Abhinav Ramkumar, Xiaolong Leng, Horia I. Petrache

2512-Pos  Board B184
PARAMETERIZATION OF THE CHARMM FORCE FIELD FOR ETHER LIPIDS AND MODEL LINEAR ETHERS. Alison Leonard, Richard W. Pastor, Jeffery B. Krauda

2513-Pos  Board B185
PROTONATION STATES AND CONFORMATIONS OF INOSITOL AND PHOSPHINOISITOL PHOSPHATES FROM MOLECULAR SIMULATIONS. Brian Radak

2514-Pos  Board B186
LIPID NANOMATERIALS FOR PACLITAXEL DELIVERY IN CANCER THERAPEUTICS: EFFECT OF PEGYLATION AND CHARGE ON THE MORPHOLOGY AND EFFICACY. Victoria Steffes, Zhening Zhang, John Crowe, Scott MacDonald, Kai E. Ewert, Bridget Carragher, Clinton S. Potter, Cyrus R. Safinya

2515-Pos  Board B187
MODELING PSEUDOMONAS AERUGINOSA INNER PLASMA MEMBRANE IN PLANKTONIC AND BIOFILM MODES. Yalun Yu, Jeffery B. Krauda

2516-Pos  Board B188
LIPID CHARGE INCREASES THE BENDING RIGIDITY OF BILAYER MEMBRANES. Hammad Ali Faiiz, Jan Steinrückter, Shelli L. Frey, Rumiana Dimova, Petia M. Vlahovska

2517-Pos  Board B189
CHARGE MELTING OF LIPOSOME COLOIDAL CRYSTALS. Joel Cohen, Andrew Ford

2518-Pos  Board B190
TRAVEL AWARDEE MEASUREMENTS OF LIPID VESICLE CHARGE IN SOLUTIONS OF Zwitterions. Azam Shafeeeneshad, Rania Ousman, Ryan Z. Lybarger, Bruce D. Ray, Horia I. Petrache

2519-Pos  Board B191
MEMBRANE DEFORMATION UNDER ISOTROPIC EXTERNAL STRESS. K. J. Mallikarjunah, Jacob J. Kinnun, Horia I. Petrache, Michael F. Brown

2520-Pos  Board B192
FLUORESCENCE STUDIES OF LIPID DISTRIBUTION IN BILAYERS UNDER OXIDATIVE STRESS. Md Khorsheed Alam, Ivo Vinklárek, Gerhard Gröbner, Lennart B-Å Johansson, Radek Sachl

2521-Pos  Board B193

2522-Pos  Board B194
THE ROLE OF HYDRODYNAMIC FORCES IN NUCLEAR PORES ASSEMBLY. Vasily V. Kuviwickin

2523-Pos  Board B195
MICROSCOPIC INSIGHTS INTO BIOLOGICAL RELEVANCE OF MEMBRANE CHANNELS IN GAS TRANSPORT ACROSS LIPID MEMBRANES. Paween Mahinthichaichan, Emad Tadjhorshid

2524-Pos  Board B196
UNDERSTANDING HOW ALPHA-SYNucleIN MODIFIES STERIC INTERACTIONS OF SILICA SUPPORTED LIPID BILAYERS IN CROWDED ENVIRONMENTS. Hyeondo (Luke) Hwang, Peter J. Chung, Alessandra Leong, Ka Yee C. Lee

2525-Pos  Board B197
PARTITIONING OF VIBrio CHOLeraE AUTOINDUCER CAI1 AND ITS PRECURSORS INTO LIPID MEMBRANES SUGGESTS THE DIRECT RELEASE MECHANISM. Hannah Cetuk

2526-Pos  Board B198
BINDING OF HUMAN BETA DEFENSIN TYPE 3 WITH NEGATIVELY CHARGED LIPID MEMBRANES. Liqun Zhang

2527-Pos  Board B199
AMINO ACIDS BIND TO AND INFLUENCE THE STRUCTURE OF FATTY ACID VESICLES. Zachary R. Cohen, Andrew Ramsay, Caitlin E. Cornell, Roy A. Black, Sarah L. Keller

2528-Pos  Board B200
DOPAMINE INTERACTION WITH MEMBRANE SURFACES. Adhitya Ramkumar, Samuel Canner, Bruce D. Ray, Horia I. Petrache

2529-Pos  Board B201
BINDING AND COMPETITION OF BE2+ AND CA2+ WITH MODEL PHOSPHO-LIPID MEMBRANES. Sergei Sukharev, Curtis W. Meuse

2530-Pos  Board B202
TRAVEL AWARDEE BUDDING AND FISSION OF VESICLES INDUCED BY SMALL SOLUTE MOLECULES. Rikhiya Ghosh, Andrea Grafmueller, Reinhard Lipowsky

2531-Pos  Board B203
INTERFACIAL AND HYDROPHOBICITY SCALES FOR SMALL DRUG-LIKE MOLECULES FROM ATOMIC FREE ENERGY CALCULATIONS. W.F. Drew Bennett, Stewart He, Helgi Ingolfsson

2532-Pos  Board B204
NMR STUDY OF PARTITION AND PERMEATION PROPERTIES OF Ga(III) CHELATES. Maria Rangel, Silvia Vivas, Galya Ivanova, Silvia Lopes, Sofia Ferreira

2533-Pos  Board B205
MEMBRANE LIPIDS ALTER UNCOUPLING EFFECT OF 2,4-DINITROPHTHALON. Olga Jovanovic, Lars Gille, Mario Vazdar, Elena E. Pohl

2534-Pos  Board B206
TRAVEL AWARDEE COMPUTATIONAL MECHANICAL STUDIES OF E. COLI TYPE-1 PIL ADHESION WITH HOMOGENEOUS SURFACES. Jeremy M. G. Leung, Eileen M. Spain

2535-Pos  Board B207
MECHANISMS OF ADHESION OF A BACTERIAL PREDATOR TO SURFACE WITH QUANTITATIVE FORCE MEASUREMENTS. Yuyu Chen, Eileen M. Spain

Membrane Active Peptides and Toxins II
(Boards B208 - B229)

2536-Pos  Board B208
MEMBRANES MATTER: PREDICTING DRUG TOXICITY. R Lea Sanford, Jeanne Chiaravalli-Giganti, Wesley Chao, Anotonia Luz, J. Fraser Glickman, Olaf S. Andersen

2537-Pos  Board B209
BIOPHYSICAL APPROACHES TOWARD UNDERSTANDING THE MOLECULAR MECHANISM OF ACTION OF THE MITOCHONDRIAL THERAPEUTIC SS-31 (ELAMIPRETIDE). Nathan N. Alder, Wayne Mitchell, Emily Ng, Kevin Boyd, Jeffrey Tamucci, Eric May, Nicholas Eddy, Hazel Szeto
Protein-Lipid Interactions: Structures (Boards B230 - B251)

**2538-Pos** Board B210
KINK IN HELICAL PEPTIDES AFFECTS MEMBRANE PORE FORMATION. Alzbeta Turkova, Ivo Kabelka, Tereza Kralova, Lukas Sukenik, Sarka Pokorna, Martin Hof, Robert Vacha

**2539-Pos** Board B211
SPHINGOMYELIN PLAYS A CRITICAL ROLE IN MEMBRANE-RELATED EFFECTS INDUCED BY THE STEROID SAPONIN GINSEONOSIDE RH2. Sandrine L. Verstraeten, Maria Janikowska-Sagan, Emily J. C. Laereboutd, Laurence Lins, Magali Deleu, Donatienne Tyteca, Marie-Paule Mingeot-Leclercq

**2540-Pos** Board B212
NOVEL F13, F15 GRAMICIDIN SUBUNITS PREDICTED TO CROSS BILAYER MEMBRANES AND FORM ION CHANNELS. Matthew Brownd, Matthew J. McKay, Denise V. Greathouse, Olaf S. Andersen, Roger E. Koeppe

**2541-Pos** Board B213
CONFORMATIONAL SAMPLING OF THE PH LOW INSERTION PEPTIDE IS TUNED BY PH. Nicolas C. Frazee, Blake Mertz

**2542-Pos** Board B214
USING PH SENSITIVE PEPTIDES FOR THE ENDOosomal RELEASE OF ANTIBODIES. Eric Wu, Sarah Y. Kim, Kalina Hristova, William C. Wimley

**2543-Pos** Board B215
THE PH SENSITIVE ATRAM PEPTIDE HITCHIKES ON HUMAN SERUM ALBUMIN EN ROUTE TO TARGET DISEASED ACIDIC TISSUES. Vanessa P. Nguyen, Stephen J. Kennel, Jonathan S. Wall, Francisco N. Barrera

**2544-Pos** Board B216
THE PH-SPECIFIC THERMODYNAMIC INTERMEDIATES OF PHILIP MEMBRANE INSERTION. Sarah A. Otnio, Lucas M. Klees, Anqi Zhang, Heather M. Giza, Samuel Z. Hanz, Bianca Chakravorty, Lan Yao, Ming An, Wei Qiang

**2545-Pos** Board B217
PEPTIDE-ENHANCED CARGO TRANSPORT ACROSS 2D AND 3D EPITHELIAL BARRIERS: A STRUCTURE-FUNCTION INVESTIGATION. Alexander Komin, Max I. Bogorad, Ran Lin, Honggang Cui, Peter C. Searson, Kalina Hristova

**2546-Pos** Board B218
TRANSLLOCATION OF CPP-CARGO PROTEIN FUSIONS INTO CANDIDA ALBICANS CELLS AND DESIGNING FOR ENHANCED TRANSLLOCATION WITH SIMULATIONS. Sayane Adhikari, Mahdi Ghorbani, Katherine Dura, Jeffery B. Krauda, Amy J. Karlsson

**2547-Pos** Board B219
ENERGETICS AND KINETICS OF MEMBRANE PROTEIN-DETERGENT INTERACTIONS. Aaron Wolfe, Liviu Movileanu

**2548-Pos** Board B220
DETERMINING THE ESSENTIAL UNFOLDING STEP IN PROTEIN TRANSLLOCATION USING ANTHRAX TOXIN. Koyel J. Ghosal, Bryan A. Krantz

**2549-Pos** Board B221
DETERMINING THE HIGH-RESOLUTION STRUCTURES OF THE ANTHRAX TOXIN PROTECTIVE ANTIGEN PORE BOUND TO ITS LETHAL AND EDEMA FACTORS. Nathan J. Hardenbrook, Shiheng Liu, Kang Zhou, Jiansen Jang, Z. Hong Zhou, Bryan Krantz

**2550-Pos** Board B222
ELUCIDATING THE EFFECT OF LISTERIOLYSIN O STRUCTURAL INTERMEDIATES ON LIPID DIFFUSIVITY. Ilanila Ilangumaran Ponnimal, Ganapathy Ayappa, Jaydeep Kumar Basu

**2551-Pos** Board B223
RECOMBINANT EXPRESSION AND REFOLDING OF A POTASSIUM CHANNEL-ACTIVATING THREE-FINGER TOXIN. Jamye Moya, Adel K. Hussein, Sebastien F. Poget

**2552-Pos** Board B224
EBOLA VIRUS DELTA-PEPTIDE ACTS AS AN ENTEROTOXIC VIROPORIN IN VIVO. Shantanu Guha, Lilia Melnik, Robert F. Garry, William C. Wimley

**2553-Pos** Board B225
MECHANISM OF CATECHIN-MEDIATED INHIBITION OF RTX TOXIN ACTIVITY. En Hyung Chang, Angela C. Brown

**2554-Pos** Board B226
CHARACTERIZATION OF COMBINED CHOLESTEROL AND INTEGRIN INTERACTIONS FOR RTX TOXIN ACTIVITY. Eric Krueger, Angela C. Brown

**2555-Pos** Board B227
A BILAYER-BASED IN VITRO ASSAY FOR BOTULINUM HOLOTOXIN POTENCY ASSESSMENTS. Runzhi Lai, Eric N. Ervin

**2556-Pos** Board B228
ARTIFICIAL MEMBRANE ATTACK COMPLEX THROUGH DNA-GUIDED SELF-ASSEMBLY OF PORE-FORMING PEPTIDES: BIOLOGICAL NANOPORES WITH PROGRAMMABLE DIAMETER. Aziz Fennouri, Jonathan List, Julie Ducrey, Laura Pascual, Frederick Bertani, Sandra Rodriguez Gonzalez, Simon F. Mayer, Jerry Yang, Michael Mayer

**2557-Pos** Board B229
DISTINCT ROLES OF SNARE-MIMICKING LIPOPEPTIDES DURING INITIAL STEPS OF MEMBRANE FUSION. Alexander Kros

**2558-Pos** Board B230
LIVE ACTION OF ESCRT III MACHINERIES IN MEMBRANE REMODELLING: MEMBRANE DEFORMATION & MEMBRANE SCISSION. Sourav Maity, Christophe Caillat, Nicola De Franceschi, Maryam Alqabandi, Nolwenn Miguet, Patricia M. Bassereau, Winfried Weissenhorn, Wouter H. Roos

**2559-Pos** Board B231
DRIVING FORCES STABILIZING CELLULAR PRION PROTEIN (PRP) MONOMERS AND DIMERS ON THE CELL SURFACE. Frances Tiffany Morden, India Clafin, Patricia Soto

**2560-Pos** Board B232
INFLUENCE OF CHARGED LIPIDS ON GLUTAMIC ACID CONTAINING TRANSMEMBRANE HELICES. Brooke E. Nunn, Matthew J. McKay, Denise V. Greathouse, Roger E. Koeppe

**2561-Pos** Board B233
POSITION DEPENDENT ORIENTATION DIFFERENCE OF TRANSMEMBRANE PEPTIDES FLANKED BY SINGLE OR MULTIPLE HISTIDINE RESIDUES. Fahmida Afrose, Denise V. Greathouse, Roger E. Koeppe

**2562-Pos** Board B234
HELIX FRAYING AND ORIENTATION OF A TRANSMEMBRANE PEPTIDE HAVING A LONG HYDROPHOBIC CORE AND ANCHORED BY INTERFACIAL ARGinine RESIDUES. Sara J. Sustich, Fahmida Afrose, Denise V. Greathouse, Roger E. Koeppe

**2563-Pos** Board B235
INVESTIGATING THE CONFORMATIONAL DYNAMICS OF THE MEMBRANE ENZYME LSPA. Tracy A. Caldwell, Linda Columbus

**2564-Pos** Board B236
CHARACTERIZING THE STRUCTURE OF STYRENE-MALEIC ACID COPOLY-MER-LIPID NANOPARTICLES (SMALPS) USING RAFT POLYMERIZATION FOR MEMBRANE PROTEIN SPECTROSCOPIC STUDIES. Benjamin D. Harding, Gunjan Dixit, Kevin M. Burridge, Indra D. Sahu, Carole Dabney-Smith, Richard Edelmann, Dominik Konkolewicz, Gary A. Lorigan
Excitation-Contraction Coupling II
(Boards B252 - B266)

2572-Pos  BOARD B244  LIPID-LIPID AND LIPID-PROTEIN INTERACTIONS OF THE MATRIX DOMAIN OF HIV-GAG AT THE VIRAL ASSEMBLY SITE. **Viviana Monje-Galvan**, Gregory A. Voth

2573-Pos  BOARD B245  A CARTOGRAPHIC VIEW OF MEMBRANE TARGETING AND ASSOCIATION OF THE C2 DOMAIN FROM PROTEIN KINASE C. **Muyun Lihan**, Emad Tajkhorshid

2574-Pos  BOARD B246  ANNEXIN V IS A SENSOR OF NEGATIVE PLASMA MEMBRANE CURVATURE. **Christoffer Dam Florentsen**, Guillermo S. Moreno Pescador, Alexander K. Sonne, Jesper Nylandsted, Poul Martin Bendix

2575-Pos  BOARD B247  SUBSTRATE INDUCED CONFORMATIONAL CHANGES OF LIPOSOME-BOUND CYTOCHROME C. **Raghad Kurbaj**, Bridge Milorey, Reinhard Schweitzer-Stenner

2576-Pos  BOARD B248  MEMBRANE-BOUND STRUCTURES AND ASSOCIATED ELECTRON TRANSPORT FUNCTIONS OF CYTOCHROME C. **Minh D. Phan**, Keel Yong Lee, Hanyu Wang, James F. Browning, Sushil K. Satija, John F. Ankner

2577-Pos  BOARD B249  PS MEMBRANE ASYMMETRY INFLUENCES THE FOLDING AND INSERTION OF A TRANSMEMBRANE HELIX. **Haden L. Scott**, Frederick A. Heberle, John Katsaras, Francisco N. Barrera

2578-Pos  BOARD B250  CAPTURING DYNAMIC TRANSPORTER-LIPID INTERACTIONS. **Argyris Politis**

2579-Pos  BOARD B251  STRUCTURAL BASIS FOR THE LIPOID-MEDIATED INTERACTION OF TUBULIN WITH VDAC REVEALED BY NEUTRON REFLECTOMETRY. **David P. Hoogerheide**, Sergei Y. Noskov, Philip A. Gurnev, Tatiana K. Rostovtseva, Sergey M. Bezrukov

2580-Pos  BOARD B252  IDENTIFICATION OF NOVEL RYR1 INHIBITORS BY HIGH-THROUGHPUT SCREENING USING ER CA\(^{2+}\) MEASUREMENT. **Hiroyuki Matsukawa**, Takashi Murayama, Takuya Kobayashi, Nagomi Kurebayashi, Mari Ishigami-Yuasa, Shuichi Mori, Hiroyuki Kagechika, Takashi Sakurai

2581-Pos  BOARD B253  DETERMINATION OF HEAT PRODUCTION IN HUMAN SKELETAL MUSCLE FROM MEASUREMENTS OF BASAL CA\(^{2+}\) MOVEMENTS. **Christopher J. Barclay, Bradley S. Launikonis**

2582-Pos  BOARD B254  ENHANCEMENT OF SARCOCOEMMAL CALCIUM INFLUX IN A NOVEL MOUSE MODEL OF MALIGNANT HYPERTHERMIA. **Vikas Kaura**, José R López, Marie-Anne Shaw, Paul D. Allen, Philip M. Hopkins

2583-Pos  BOARD B255  MUTATION ANALYSIS OF THE CALCIUM BINDING SITE OF SKELETAL MUSCLE RYANODINE RECEPTOR CHANNEL. **Nagomi Kurebayashi**, Takashi Murayama, Mai Tamura, Shuichi Mori, Mari Yuasa-Ishigami, Hiroyuki Kagechika, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Sachio Morimoto, Takashi Sakurai

2584-Pos  BOARD B256  MOLECULAR DYNAMICS SIMULATION OF RYANODINE RECEPTOR IN THE PRESENCE AND ABSENCE OF CA\(^{2+}\) BINDING. **Han Wen**, Wenjun Zheng

2585-Pos  BOARD B257  EFFECTS OF NOVEL RYR2 INHIBITORS ON DISEASED HEARTS. **Nagomi Kurebayashi**, Takashi Murayama, Mai Tamura, Shuichi Mori, Mari Yuasa-Ishigami, Hiroyuki Kagechika, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Sachio Morimoto, Takashi Sakurai

2586-Pos  BOARD B258  COOPERATIVE GATING AMONG ION-CHANNEL SPECIES IN FUNCTIONAL SARCOPLASMIC RETICULUM. **Elisa Venturi**, Fiona O'Brien, David Eberhardt, Katja Witschas, Sam El-Ajouz, Tsunaki Iida, Miyuki Takeshima, Hiroshi Takeshima, Rebecca Sitsapesan

2587-Pos  BOARD B259  STRUCTURE DEVELOPMENT OF OXOLINIC ACID, A NOVEL INHIBITOR OF TYPE 1 RYANODINE RECEPTOR (RYR1) CA\(^{2+}\) RELEASE CHANNEL. **Yoshiaki Nishijima**, Takashi Murayama, Shuichi Mori, Hiroto Inouma, Noriaki Manaka, Nagomi Kurebayashi, Mari Ishigami-Yuasa, Hiroyuki Kagechika, Takashi Sakurai

2588-Pos  BOARD B260  INVESTIGATION OF MUTANT RYANODINE RECEPTOR CHANNEL ACTIVITY USING FUNCTIONAL ANALYSIS AND MOLECULAR DYNAMICS. **Toshiko Yamazawa**, Haruo Ogawa, Maki Yamaguchi, Takashi Murayama, Hitoko Oyamada, Junji Suzuki, Nagomi Kurebayashi, Kazunori Kanemaru, Takashi Sakurai, Iino Masamitsu

2589-Pos  BOARD B261  CHARACTERIZATION OF AN ANIMAL MODEL FOR CONGENITAL MYOPATHIES LINKED TO RECESSIVE RYR1 MUTATIONS. **Moran Elbaz, Alexis Ruiz, Jan Eckhardt, Susan Treves, Francesco Zorzato**
Exocytosis and Endocytosis II
(Boards B267 - B294)

2595-Pos  Board B267
TO PINPOINT THE LOCATION AND THE ORIENTATION OF PROTEINS ASSOCIATED WITH DENSE-CORE VESICLES (DCVs) USING CLEM. Bijeta Prasai, Gideon Haber, Kern A. Sochacki, John A. Cierniewski, Justin W. Taraska

2596-Pos  Board B268
RELATION BETWEEN RELEASE OF CATECHOLAMINES AND FFN511 STUDIED WITH ELECTROCHEMICAL DETECTOR ARRAYS. Shailendra Singh Rathore, Meng Huang, Manfred Lindau

2597-Pos  Board B269
NS510, A HIGH AFFINITY FLUORESCENT CATECHOLAMINE SENSOR FOR MONITORING NOREPINEPHRINE EXOCYTOSIS. Xin A. Liu, Le Zhang, Timothy Glass, Kevin D. Gillis

2598-Pos  Board B270
CONDITIONAL KNOCKOUT OF THE SEROTONIN TRANSPORTER (SERT) DEMONSTRATES ITS ROLE IN ACCUMULATING AND MAINTAINING 5-HT HOMEOOSTASIS IN THE SYMPATHOADRENAL SYSTEM. Rebecca L. Brindley, Mary Beth Bauer, L. Anne Walker, Meagan A. Quinlan, Ana MD Carneiro, Le Zhang, Randy D. Blakeley, Kevin PM Currie

2599-Pos  Board B271
THE SEROTONIN TRANSPORTER MODULATES THE QUANTAL SIZE OF VESICULAR RELEASE EVENTS IN ADRENA TOOL CHROMAFFIN CELLS. Rebecca L. Brindley, Kevin P. Currie

2600-Pos  Board B272
HIGH THROUGHPUT DRUG TESTING OF TRANSMITTER RELEASE EVENTS IN CHROMAFFIN CELLS WITH SURFACE MODIFIED CMOS IC. Meng Huang, Shailendra Rathore, Manfred Lindau

2601-Pos  Board B273
CHROMOGRANIN A, THE MAJOR LUMENAL PROTEIN IN CHROMAFFIN GRANULES, CONTROLS FUSION PORE EXPANSION. Prabhodh S. Abinani, Mary A. Bittner, Daniel Axelrod, Ronald W. Holz

2602-Pos  Board B274
ALPHA TO BETA CELLS: A PATHWAY TOWARDS A DIABETES CURE. Michael R. DiGruncio, Dave W. Piston

2603-Pos  Board B275
DETECTING EARLY RISK OF TYPE 2 DIABETES DURING AN ORAL GLUCOSE TOLERANCE TEST. Joon Ha, Arthur Sherman

2604-Pos  Board B276
EXTRACELLULAR ZINC CONTRIBUTES TO THE SLOW POLYSPERM BLOCK. Katherine L. Wozniak, Wesley A. Phelps, Miler T. Lee, Anne E. Carlson

2605-Pos  Board B277

2606-Pos  Board B278
CALCium DEPENDENCE, KINETICS, AND PORE DYNAMICS OF PHYSIOLOGICAL VESICULAR FUSION WITH PLANAR SUPPORTED BILAYERS. Alex J.B. Kreutzberger, Volker Kiesling, Binyong Liang, Patrick Seelheim, Arun Anantharam, J. David Castle, Lukas K. Tamm

2607-Pos  Board B279
SYNAPTOTAGMIN-7 ENDOWS A SUBPOPULATION OF CHROMAFFIN GRANULES WITH DISTINCT CALCIUM SENSING AND FUSION PROPERTIES. Mourin Bendahma, Alina Chapman-Morales, Noah A. Schenk, Zhang Shuang, Paul M. Jenkins, David R. Giovannucci, Arun Anantharam

2608-Pos  Board B280
TRAVEL AWARDEE
PIP2 DRIVES CALCIUM-INDEPENDENT ACTIVATION OF TANDEM C2-DOMAIN CALCIUM SENSORS. Mazdak M. Bradberry, Huan Bao, Xiaochu Lou, Edwin R. Chapman

2609-Pos  Board B281
FUSION PORE DILATION BY SYNAPTOTAGMIN-1. Zhenyong Wu, Nadiq Dharan, Sathish Thiyagarajan, Ben O’Shaughnessy, Erdem Karatekin

2610-Pos  Board B282
DOMAIN STABILITY AND FUNCTIONAL ANALYSIS AT THE AD3 LOCUS OF SYNAPTOTAGMIN 1 C2 DOMAINS. Anthony A. Bui, Faraz M. Harsini, Anne M. Rice, Souivic Karmakar, Kerry Fuson, R. Bryan Sutton

2611-Pos  Board B283
HOW CA2+ AND SYNAPTOTAGMIN TRIGGER SNARE-MEDIATED MEMBRANE FUSION. Volker Kiesling, Alex J.B. Kreutzberger, Binyong Liang, Sarah B. Nyenhuis, Patrick Seelheim, J. David Castle, David S. Cafiso, Lukas K. Tamm

2612-Pos  Board B284
STRUCTURAL CHARACTERIZATION OF FULL-LENGTH SYNAPTOTAGMIN-1 TO CIS OR TRANS MEMBRANES. Sarah B. Nyenhuis, David S. Cafiso

2613-Pos  Board B285
SYNAPtical VESICLE FUSION AND DOCKING DURING THE FIRST 14 MILLISECONDS AFTER AN ACTION POTENTIAL. Grant F. Kusick, Shigeaki Watanabe

2614-Pos  Board B286
SYNAPSIN: A NOVEL INSIGHT FOR PKA PHOSPHO-DOMAINS IN INHIBITING RELEASE PROBABILITY. Agustin Gonzalez-Ruiz, Jose Guzman-Gutierrez, Pedro Feliciano-Ramos, Ramon A. Jorquera

2615-Pos  Board B287
SEQUENTIAL LINK OF KISS-AND-RUN MECHANISM AND CLASSICAL EXOCYTOSIS AT HIPPOCAMPAL SYNPAPSES. Andreas W. Henkel

2616-Pos  Board B288
CALCium CHANNELS GATE CALCIUM-INDEPENDENT BUT VOLTAGE-DEPENDENT SECRETION IN MAMMALIAN CELLS. Zhuan Zhou, Rong Huang, Yuan Wang, Jie Li, Xiaohan Jiang, Yinglin Li, Feipeng Zhu, Changhe Wang, Zuying Chai
MEMBRANE RECEPTORS AND SIGNAL TRANSDUCTION II (Boards B295 - B315)

2623-Pos  BOARD B295
MONOMERS OF AMPA-TYPE GLUTAMATE RECEPTOR SUBUNITS DIFFUSE IN AND OUT OF SPINES: UNRAVELING BY SINGLE-MOLECULAR TRACKING. Jyoji Morise, Kenichi G.N. Suzuki, Ayaka Kitagawa, Yoshihiko Wazono, Kogo Takamiya, Taka A. Tsunoyama, Akihiro Kusumi, Shogo Oka

2624-Pos  BOARD B296
BINDING FREE ENERGY CALCULATIONS OF NMDA GLUTAMATE RECEPTORS. Adithya Polasa, Dylan S. Ogden, Mahmoud Moradi

2625-Pos  BOARD B297
STRUCTURAL CORRELATES OF AGONIST BINDING TO NEUROTRANSMITTER BINDING SITES. Sushree Tripathy, Stephen M. Muehlemann, Wenjun Zheng, Anthony Auerbach

2626-Pos  BOARD B298
ROLE OF B-GLUCAN STRUCTURE IN DECTIN-1 SIGNALING AND MULTI-MERIZATION IN INNATE FUNGAL IMMUNITY. Eduardo U. Anaya, Aaron K. Neumann

2627-Pos  BOARD B299
IMPORTANCE OF ORDERED ENVIRONMENT IN THE EARLY STAGE OF MAST CELL SIGNALING STUDIED BY IMAGING FLUORESCENCE CORRELATION SPECTROSCOPY. Nirmalya Bag, David A. Holowka, Barbara A. Baird

2628-Pos  BOARD B300
NANOSCALE ORGANIZATION AND MOBILITY OF LIGANDS DIRECT T CELL ACTIVATION. Joschka Hellmeier, Viktoria Motsch, Rene Platzer, Andreas Karner, Johannes Preiner, Gerhard J. Schuetz, Johannes B. Huppa, Eva Sevsik

2629-Pos  BOARD B301
LIVE AND SIMULTANEOUS READOUT OF NFAT AND ERK ACTIVATION IN T CELLS REVEALS MULTIPLE DIMENSIONS OF TCR SIGNALING. Jenny J. Y. Lin, Shalini T. Low-Nam, Steven A. Alvarez, Jay T. Groves

2630-Pos  BOARD B302
BEYOND THE TCR, ANTIGEN DISCRIMINATION IN T CELLS CONTINUES IN THE LAT-GRB2:SOS PROTEIN CONDENSATE. Shalini T. Low-Nam, Jenny JY Lin, Darren B. McAfee, Steven A. Alvarez, Scott D. Hansen, Kole T. Roybal, Jay T. Groves

2631-Pos  BOARD B303

2632-Pos  BOARD B304
SINGLE PMHC-TCR BINDING EVENTS PRECIPITATE LAT ASSEMBLIES CAPABLE OF SPATIALLY DECOUPLING FROM THE ORIGINATING LIGAND. Darren B. McAfee, Shalini T. Low-Nam, Jenny JY Lin, Steven A. Alvarez, Scott D. Hansen, Jay T. Groves

2633-Pos  BOARD B305
MECHANICAL RESPONSES OF CANCER CELLS TO DIFFERENT MATRICES MEASURED BY AFM AND FRET. Fang Tian, Tsung-Cheng Lin, Liang Wang, Sidong Chen, Jun Chu, Ching-Hwa Kiang, Hyoheun Park

2634-Pos  BOARD B306
COMPUTATIONAL MODEL OF RGD-CONTAINING COMPUTATIONAL MODEL OF RGD-CONTAINING PEPTIDES AND THEIR EFFECTS ON INTEGRIN BINDING. Tamara C. Bidone, Aravind Rammohan, Matt McKenzie, Gregory A. Voth

2635-Pos  BOARD B307
TOTAL RECONSTRUCTION OF RECEPTOR-MEDIATED RAS ACTIVATION BY SOS IN VITRO REVEALS KINETIC AND CONFORMATIONAL LAYERS OF REGULATION IN MAPK SIGNALING. Steven Alvarez, William Y. C. Huang, Hiu Yue Monatrice Lam, Shalini T. Low-Nam, Young Kwang Lee, Jean K. Chung, Scott D. Hansen, Yasushi Kondo, Kabir H. Biswas, John Kuriyan, Jay T. Groves

2636-Pos  BOARD B308
CANCER CELL HAS LOWERED THRESHOLD OF SIGNALING TRANSDUCTION EXCITABLE NETWORK CONTROLLED BY PIP-RAS INTERACTION. David Huiwoung Zhan

2637-Pos  BOARD B309

2638-Pos  BOARD B310
QUANTIFICATION OF G1-CYCLIN DYNAMICS IN YEAST BY SCANNING NUMBER AND BRIGHTNESS. Savanna Dorsey, Pooja Goswami, Jing Cheng, Yogitha Thattikota, Sylvain Tollis, Catherine A. Royer, Mike Tyers

2639-Pos  BOARD B311
RHOA MEDIATED JUXTACRINE REGULATION OF GLUCAGON SECRE- TION. Yong Hee Chung, David W. Piston

2640-Pos  BOARD B312
PROTEIN KINASE A DYNAMICS ARE ALTERED AT THE OUTER MITOCHON- DRAL MEMBRANE IN CARDIAC SYMPATHETIC NEURONS FROM PREHY- PERTENSIVE RATS. asi S. Hogea, Shihab Shah, Nikita Gamper

2641-Pos  BOARD B313
ROLE OF STORE OPERATED CALCIUM CHANNEL COMPLEX IN THE IN- FLAMMATORY SIGNALING IN PERIPHERAL SENSORY NEURONS. Alexandra S. Hogo, Shihab Shah, Nikita Gamper

2642-Pos  BOARD B314
MECHANISTIC CHARACTERIZATION OF THE E102Q MUTATION IN THE SIGMA 1 RECEPTOR. Hideaki Yano, Ara M. Abramyan, Sett Naing, Leanne Liu, Lei Shi
TRP Channels (Boards B316 - B343)

2643-Pos Board B315
ELUCIDATION OF SIGNALING MECHANISM OF ANP RECEPTOR BY X-RAY CRYSTALLOGRAPHY. Haruo Ogawa, Masami Kodama

2644-Pos Board B316
MOLECULAR MECHANISM OF LIGAND-INDUCED TRPV2 CHANNEL ACTIVATION. Shasha Feng, Huisun Lee, Ruth Anne Pumroy, Amrita Samanta, Vera Moiseenkova-Bell, Wonpil Im

2645-Pos Board B317
SHORT- AND LONG-DISTANCE ALLOSTERIC COUPLING IN CAPSAICIN-INDUCED TRPV1 ACTIVATION. Simon Vu, Bo Hyun Lee, Xian Xiao, Fan Yang, Jie Zheng

2646-Pos Board B318
STRUCTURAL INSIGHTS ON TRPV5 GATING BY ENDOGENOUS MODULATORS. Taylor Hughes, Ruth Pumroy, Ayseun Yazici, Marina Kasimova, Edwin Carl Fluck, Kevin Huyhn, Amrita Samanta, sudheer kumar molugu, Hong Zhou, Vincenzo Carnevale, Tibor Rohacs, Vera Moiseenkova-Bell

2647-Pos Board B319
THE ROLE OF CALMODULIN IN REGULATING CALCIUM-PERMEABLE PKD2L1 CHANNEL ACTIVITY. Eunice Y. Park, Misun Kwak, Youngjoo Baik, Insok So

2648-Pos Board B320
REGULATION OF PKD2L1 BY CALCIUM EFFECTORS. Amitabha Mukhopadhyay, Leo Ng, Thuy Vien, Paul DeCaen

2649-Pos Board B321
CAMKII REGULATES TRPC6 MEDIATED STRESS STIMULATED CONDUCTIVITY IN MUSCULAR DYSTROPHY. Brian L. Lin, Sumita Mishra, Grace E. Kim, Suraj Kanann, Jinying Yang, Chulan Kwon, Mark Anderson, Steven S. Pullen, David A. Kass

2650-Pos Board B322
UNDERSTANDING PROTEIN-LIPID INTERACTIONS OF TRP CHANNELS OF THE POLYCYSTIN FAMILY, THROUGH MD SIMULATIONS AND STRUCTURAL STUDIES. Qinrui Wang, George Hedger, Prafulla Aryal, Mariana Grieben, Ashley C. W. Pike, Jiye Shi, Elisabeth P. Carpenter, Mark S. P. Sansom

2651-Pos Board B323
ESSENTIAL RESIDUES REQUIRED FOR THE OPENING OF A POLYCYSTIN TRP CHANNEL. Leo CT Ng, Thuy N. Vien, Amitabha Mukhopadhyay, Paul G. DeCaen

2652-Pos Board B324
FORCE TRANSDUCTION IN THE NOMPC MECHANOSENSITIVE CHANNEL. Sara Capponi, David Argudo, Neville Bethel, Michael Grabe

2653-Pos Board B325
MECHANISM OF PROTON INHIBITION OF TRPV3. Haiyuan Wang, Qiaochu Wang, Jinde Tian, Michael X. Zhu

2654-Pos Board B326
CONSERVED ALLOSTERIC PATHWAYS FOR ACTIVATION OF TRPV3 REVEALED THROUGH ENGINEERING VANILLOID-SENSITIVITY. Feng Zhang, Kenton Swartz, Andres Jara-Oseguera

2655-Pos Board B327
TRAVEL AWARDSEE SELECTIVITY AND CHARACTERIZATION OF THE PERMEANT ION EFFECT IN THE RAPID TRANSITIONS ON THE PORE OF TRPV1 CHANNEL. Miriam Garcia Avila, Javier Tello Marmolejo, Gisela E. Rangel-Yescas, Leon D. Islas

2656-Pos Board B328
AGONIST-DEPENDENT PLASTICITY IN THE TRPC3 SELECTIVITY FILTER. Oleksandra Tiapko, Sanja Curcic, Gema Guedes de la Cruz, Toma Glasnov, Klaus Groschner

2657-Pos Board B329
TEMPERATURE-DEPENDENT HEAT CAPACITY (ΔCp/T) MODIFICATION OF THE THERMODYNAMIC FRAMEWORK FOR THERMOTRP CHANNELS ELIMINATES PREDICTED DUAL THERMOSENSITIVITY. Frank Yeh, Richard Aldrich

2658-Pos Board B330
TRAVEL AWARDSEE ACTIVATION OF TRPV1 BY LIPIDS: CAN LIPID TAILS BRIDGE THE GAP BETWEEN THE VANILLOID BINDING SITE AND THE PERIPHERAL CAVITIES? Eleonora Gianti, Michael L. Klein, Tibor Rohacs, Vincenzo Carnevale

2659-Pos Board B331
TRAVEL AWARDSEE CONFORMATIONAL ENSEMBLE OF THE HUMAN TRPV3 ION CHANNEL. Leija Zubcevic, Mark A. Herzik Jr., Mengyu Wu, William F. Borschel, Marscha Hirschi, Albert Song, Gabriel C. Lander, Seok-Yong Lee

2660-Pos Board B332
PHOSPHATIDYLINOSITOL INHIBITS TRPV1 VIA ITS VANILLOID BINDING SITE. Ayseun Torun Yazici, Eleonora Gianti, Marina A. Kasimova, Vincenzo Carnevale, Tibor Rohacs

2661-Pos Board B333
AN ANCIENT TRPM2 ORTHOLOG IS A TRUE CHANNEL-ENZYME, BUT ITS CATALYTIC ACTIVITY IS UNCOUPLED FROM PORE GATING. Balazs Toth, Iordan Iordanov, Laszlo Csanady

2662-Pos Board B334
MINING THE DROSOPHILA GUSTATORY RECEPTOR FAMILY FOR NEW THERMOSENSITIVE PROTEINS. Marzie Amirshehvan, Benton R. Bergan, Aditi Mishra, Benjamin C. Zars, Taylor G. Hallman, Troy Zars, Lorin S. Milescu, Mirela Milescu

2663-Pos Board B335
DIFFERENTIAL EFFECTS OF CELL-TO-CELL CONTACT ON TRPC4 CHANNEL ACTIVATION BY ENGLERIN A AND G409 COUPLED RECEPTOR AGONIST. Lin Gao, Qiaochu Wang, Michael X. Zhu

2664-Pos Board B336
RECEPTOR MEDIATED ACTIVATION OF TRPC3 CHANNEL WHEN AT ER PM JUNCTIONS. Haiping Liu

2665-Pos Board B337
INVESTIGATION OF TRPM4 IN PROSTATE CANCER CELLS WITH NOVEL SMALL MOLECULE INHIBITORS. Anna Borgström, Barbara Hauert, Sven Kappel, Clémence Delalande, Jean-Louis Reymond, Christine Peinelt

2666-Pos Board B338
TRPC4 CHANNELS ARE A KEY PLAYER IN HIPPOCAMPAL NEURONAL DEVELOPMENT. Jaepyo Jeon, Michael Xi Zhu

2667-Pos Board B339
TRPV2 IS CRUCIAL FOR THE DEVELOPMENT OF INTERCALATED DISCS IN MOUSE HEARTS. Yuki Katanosaka, Makoto Shibuya, Yoshihiro Ujihara, Satoshi Mohri, Keiji Naruse

2668-Pos Board B340
TRAVEL AWARDSEE BIOPHYSICAL PROPERTIES OF THE ELECTROPERMEABILIZATION-INDUCED MEMBRANE CONDUCTANCE IN PATCH CLAMPED ADRENAL CHROMAFFIN CELLS. Lisha Yang, Sophia Pierce, Gale L. Craviso, Normand Leblanc

2669-Pos Board B341
PHB REGULATES TRAFFICKING OF TRPM8 TO THE PLASMA MEMBRANE. Lusine Demirkhanyan, David Goa, Eleonora Zakharin

2670-Pos Board B342
SPECTROSCOPIC STUDIES OF PURIFIED RAT TRPV1. Gilbert Q. Martinez, Marium M. Raza, Sharona E. Gordon

2671-Pos Board B343
CANNABIDIOL DIRECTLY ACTIVATES TRPV2. Aaron Gochman, Andres Jara-Oseguera, Kenton Swartz
Voltage-gated K Channels II
(Boards B344 - B368)

2672-Pos  BOARD B344
DETERMINING FUNCTIONAL KCNQ1/KCN1E1 SUBUNIT INTERACTIONS IN THE KCNQ1/KCN1E1 CHANNEL. Xiaoan Wu, Marta E. Perez, Kevin J. Sampson, Robert S. Kass, Peter H. Larsson

2673-Pos  BOARD B345
CONFORMATIONAL DYNAMICS OF THE INTRINSIC LIGAND IN THE CNBH3 OF THE VOLTAGE-GATED POTASSIUM CHANNEL HERG. Sara J. Coddin

2674-Pos  BOARD B346
DIFFERENTIAL SENSITIVITY OF CARDIAC ION CHANNELS TO POLYUNSATURATED FATTY ACID ANALOGUES. Briana Bohannon, Sara I. Llin, Peter Larsson

2675-Pos  BOARD B347
RE-EDUCATION OF TUMOR ASSOCIATED MACROPHAGES BY TRABECT-EDIN. Diego A. Peraza, Ana B. Garcia-Redondo, Adrian Povo-Retana, Sara Arias, Ana M. Briones, Lisardo Boscá, Carlos M. Galmarini, Carmen Valenzuela

2676-Pos  BOARD B348
TWO-PRONGED AROMATIC ARGinine-MIMICS AS HV1 PROTON CHANNEL INHIBITORS. Chang Zhao, Liang Hong, Jason D. Galpin, Christopher A. Ahern, Francesco Tombola

2677-Pos  BOARD B349
PHARMACOLOGICAL MODULATION OF KV3 POTASSIUM CURRENTS. Nadia Pilati, Michele Speggiorni, Giuseppe Alvaro, Charles H. Large

2678-Pos  BOARD B350
EPR SPECTROSCOPIC STUDIES OF THE VOLTAGE SENSOR DOMAIN (Q1-VSD) OF HUMAN KCNQ1 POTASSIUM ION CHANNEL IN LIPID BILAY-ERS. Gunjan Dixit

2679-Pos  BOARD B351
EFFECT OF LIPOPHILIC MOLECULES ON EPILEPSY-CAUSING MUTATIONS OF NEURONAL KCNQ CHANNELS. Ludwig Andersson, Marta E. Perez, Sara I. Llin, Fredrik Elinder, Peter H. Larsson, Rene Barro-Soria

2680-Pos  BOARD B352
PKC ACTIVATION DECREASES KV1.5 PROTEIN EXPRESSION THROUGH ACCELERATING ENDOCYTIC CHANNEL DEGRADATION. Tingzhong Wang, Yuan Du, Jun Guo, Wentao Li, Tonghua Yang, Shetuan Zhang

2681-Pos  BOARD B353
IDENTIFYING COMMON STRUCTURAL FEATURES FOR ELECTROME-CHANICAL COUPLING BETWEEN DOMAIN-SWAPPED AND NON-DOMAIN SWAPPED POTASSIUM CHANNELS. Ana I. Fernández-Mariño, Kenton J. Swartz

2682-Pos  BOARD B354
CAVEOLAR KV1.3 TARGETING PARTICIPATES IN THE ADIPOSE PHYSIOL-OGY. Mireia Perez-Verdaguer, Jesusa CCapera Aragones, Maria Ortego-Dominguez, Joanna Bielanska, Núria Comes, Rafael J. Montoro, Marta Cam, Antonio Felipe

2683-Pos  BOARD B355
DEVELOPMENT OF BK CHANNEL AGONISTS AND ANTAGONISTS THAT TARGET A COMMON RECOGNITION AREA IN THE ACCESSORY BETAIN SUBUNIT. Anna N. Bukiya, Guruprasad Kuntamallappanavar, Abby L. Parrill, Alex M. Dopico

2684-Pos  BOARD B356
PROTEOMICS ANALYSIS POINTS AT NOVEL CELLULAR PARTNERS FOR THE KCNMB1 PROTEIN PRODUCT. Kelsey North, David Kakhmishvili, Alex M. Dopico, Anna N. Bukiya

2685-Pos  BOARD B357
USING CLICK CHEMISTRY AND VOLTAGE CLAMP FLUORIMETRY TO STUDY STRUCTURAL DYNAMICS OF MEMBRANE PROTEINS. Kanchan Gupta, Gilman E. S. Toombe, Kenton J. Swartz

2686-Pos  BOARD B358

2687-Pos  BOARD B359
DYNAMICS OF THE PAS DOMAIN AND CYCLIC NUCLEOTIDE-BINDING HOMOLOGY DOMAIN INTERACTION PROBED WITH A FLUORESCENT NONCANONICAL AMINO ACID (L-ANAP) IN HERG POTASSIUM CHAN-NELS. Ashley A. Johnson, Matt C. Trudell

2688-Pos  BOARD B360
CP1 IS A POTENT KV CHANNEL ACTIVATOR WHICH ACTS BY SUBSTITUTE-ING PHOSPHATIDYLINOSITOL 4,5 BISPHOSPHATE. Yongfeng Liu, Xianjin Xu, Moawaih M. Naffaa, Hongwu Liang, Guohui Zhang, Panpan Hou, Hongzhan Wang, Junyuan Gao, Jingyi Shi, Ira Cohen, Xiaoqin Zou, Jianmin Cui

2689-Pos  BOARD B361
SINGLE CHANNEL STUDIES OF THE CATION PERMEATION PATHWAY OF THE SHAKER KV ISOLATED VOLTAGE-SENSING DOMAIN (IVSD). Juan Zhao, Rikard Blunck

2690-Pos  BOARD B362
DECOUPLING BETWEEN VOLTAGE SENSOR MOVEMENT AND PORE OPENING OF KV2.1 CHANNELS. Matthew J. Marquis, Rebecka J. Sepela, Jon T. Sack

2691-Pos  BOARD B363
MECHANISM OF BK CHANNEL INHIBITION BY THE OPIOID AGONIST LOPERAMIDE. Alexandre G. Vouga, Michael E. Rockman, Marlene A. Jacobson, Brad S. Rothberg

2692-Pos  BOARD B364
MODULATION OF KV1.3 BY THE GUT PEPTIDE GLUCAGON-LIKE PEPTIDE 1. Daniel R. Landi Conde, Genevieve A. Bell, Debra A. Fadool

2693-Pos  BOARD B365
CONSERVED RESIDUES AT THE INTERFACE BETWEEN THE S4 AND S5 SEGMENTS ARE CRITICAL FOR NORMAL GATING OF HCN CHANNELS. Rosamary Ramenol, Marta E. Perez, H. Peter Larsson

2694-Pos  BOARD B366
ENDOCANNABINOIDS FACILITATE THE OPENING OF THE M-CHANNEL. Johan E. Larsson, Liin Sara

2695-Pos  BOARD B367
A STRUCTURAL MODEL OF FAST INACTIVATION IN SHAKER _K_ CHANNELS. Miguel Holmgren, Ariela Vergara-Jaque, Horacio Poblete, Francisco Palma, Adam S. Lowet, Angel de la Cruz Ladrau, Alexander Sukharev, Jeffrey Comer

2696-Pos  BOARD B368
ELECTROPHYSIOLOGICAL AND PHARMACOLOGICAL CHARACTERIZATION OF A NOVEL AND POTENT NEURONAL KV7 OPENER SCR2682 FOR ANTI- EPILEPSY. Yani Liu, Fan Zhang, Bo Liang, huangming Chen, Hailin Zhang, KeWei Wang
Bacterial Mechanics, Cytoskeleton, and Motility (Boards B369 - B376)

2697-Pos  Board B369
A COMPREHENSIVE VIEW OF TYPE IV PILUS RETRACTION FORCES ACROSS THE BACTERIAL DOMAIN. Nicolas Biais

2698-Pos  Board B370
MECHANICAL FORCES ARE A REACTIVITY SWITCH FOR AN ADHESIN THIOESTER BOND. Daniel J. Echelman, Alvaro Alonso, Shubhasis Haldar, Rafael Tapia-Rojo, Edward C. Eckels, Julio M. Fernandez

2699-Pos  Board B371
CONSTRUCTIVE FORCE AS THE KEY SYMMETRY-BREAKING FACTOR FOR BACTERIAL CELL DIVISION. Lam T. Nguyen

2700-Pos  Board B372
TRACKING THE MOVEMENT OF A SINGLE PROKARYOTIC CELL IN EXTREME ENVIRONMENTAL CONDITIONS. Masayoshi Nishiyama, Yoshiyuki Arai

2701-Pos  Board B373
INSIGHTS INTO THE MECHANISM OF ARCHAEALLAR MOTOR ROTATION FROM OBSERVATION OF UNEXPECTEDLY HIGH TORQUE. Takayuki Nishizaka

2702-Pos  Board B374
RAPID LIGHT-TRIGGERED SPATIAL REORGANIZATION OF PROTEINS IN LIVING BACTERIA CELLS. Ryan J. McQuillen, Jie Xiao

2703-Pos  Board B375
MINC-MIND COPOLYMERS CAPTURE FTSZ FILAMENTS TO FACILITATE THE REGULATION OF 2-RING LOCALIZATION. Yaodong Chen, Ping Wang, Na Wang, Xueqin Ma, Li Bian

2704-Pos  Board B376
DYNAMICS OF FTS1, AN ESSENTIAL BACTERIAL CELL WALL SYNTHESIS PROTEIN. Joshua McCausland, Jie Xiao

Cell Mechanics, Mechanosensing, and Motility III (Boards B377 - B403)

2705-Pos  Board B377
MODELLING COLLECTIVE GRADIENT SENSING WITH LEADER AND FOLLOWER CELLS. Austin Hopkins, Brian A. Camley

2706-Pos  Board B378
DYNAMIC CROSSLINKING OF THE ACTIN CYTOSKELETON GOVERNS INTRACELLULAR MECHANICS. Loic Chaubet, Hossein K. Heris, Allen J. Ehrlicher, Adam G. Hendricks

2707-Pos  Board B379
CORRELATING BIOCHEMICAL IMPACT OF ENVIRONMENTAL TOXICANTS ON HUMAN NEURAL STEM CELLS TO BIOPHYSICAL CHANGES. Gautam Mahajan, Moo-Yeal Lee, Chandrasekhar R. Kothapalli

2708-Pos  Board B380
TRANSITION BETWEEN SWIMMING AND CRAWLING: A MODEL OF EUKARYOTIC CELL MOTILITY. Melissa H. Mai, Brian A. Camley

2709-Pos  Board B381
CELL RESPONSE TO LIQUID CRYSTAL ORDER. Kirsten D. Endresen, Francesca Serra, Michael A. Lepori

2710-Pos  Board B382
ECM-SUBSTRATE INTERFACIAL FORCES DICTATE CELL COALESCENCE ON VISCOELASTIC SUBSTRATES. Divyanshu Mishra, SU GUO, Paul Matsudaira

2711-Pos  Board B383
IPMK LOSS INHIBITS CELLULAR MOTILITY AND CONTRACTILITY. Abinash Padhi, Becky Tu-Sekine, Matthew Apperson, Sunghee Jin, Amrinder S. Nain, Sangwon F. Kim

2712-Pos  Board B384
UNDER DIABETIC CONDITIONS REACTIVE OXYGEN SPECIES INHIBITS CORNEAL EPITHELIAL CELL MIGRATION AND TIGHT JUNCTION FORMATION VIA AKT SIGNALING. Qiwei Jiang, Denis Kaili, Jonaye Freeman, Bingchuan Geng, Tao Tan, Yanhong Luo, Jianfeng He, Miyuki Takeshima, Hiroshi Takeshima, Heather Chandler, Hua Zhu

2713-Pos  Board B385
THE ROLE OF CLP36 IN PANCREATIC CANCER CELLS DURING MIGRATION AND IN CELL SHAPE MORPHOLOGY. Elena Parajon, Dustin G Thomas, Eric S. Schiffhauer, Douglas N. Robinson

2714-Pos  Board B386
PHYSICAL MODEL FOR CELL MIGRATION GUIDED BY ELASTIC PROPERTIES OF THE SUBSTRATE. Susana Márquez, Rodrigo Soto, Miguel Concha, German Reig

2715-Pos  Board B387
THERMOTAXIS INVOLVES SPONTANEOUS BACKWARD SWIMMING IN CHLAMYDOMONAS. Masaya Sekiguchi, Shigetoshi Kameda, Satoshi Kurosawa, Megumi Yoshida, Kenjiro Yoshimura

2716-Pos  Board B388
4-HYDROXYACETOPHENONE MODULATES THE CYTOSKELETON THROUGH NONMUSCLE MYOSIN-2C TO REDUCE METASTASIS. Darren Bryan, Melinda Stack, Kataryna Krysztofok, Urszula Cichoń, Dustin Thomas, Alexandra Surcel, Eric Schiffhauer, Douglas Robinson, Ronald S. Rock, Ralph Weichselbaum

2717-Pos  Board B389
JUNCTIONAL FORCES MAINTAIN ISOMETRIC TENSION OF THE EPITHELIAL MONOLAYER. Lewis E. Scott, Christopher A. Lemmon, Seth H. Weinberg

2718-Pos  Board B390
NANOMECHANICAL PROPERTIES AS A BIOMARKER TO DIFFERENTIATE STATE OF CELL USING AFM. Jyoti Wala

2719-Pos  Board B391
CELLULAR TRACTION FORCES AND LOCATIONS OF ADHESION SITE REGULATE CELL FUNCTIONS. Jyoti Wala, Soumen Das

2720-Pos  Board B392
CHANGES IN MECHANICAL PROPERTY OF HUMAN DERMAL FIBROBLAST INDUCED BY ELECTRIC FIELD STIMULATION. Se Jik Han, Kyung Sook Kim, Sangwoo Kwon

2721-Pos  Board B393
IN VIVO TENSION SENSORS DELIVER NOVEL INSIGHT INTO MECHANICS OF ZEBRAFISH GASTRULATION. Bernhard Wallmeyer, Arne Hofemeier, Timo Betz

2722-Pos  Board B394
FORCE-DEPENDENT ALLOSTERIC ENHANCEMENT OF AE-CATENIN BINDING TO F-ACTIN BY VINCULIN. Nicolas A. Bax, Derek L. Huang, Sabine Pokutta, Alexander R. Dunn, William I. Weis

2723-Pos  Board B395
BIOMECHANICAL AND STRUCTURAL INVESTIGATION OF PERIPHERAL NERVOUS SYSTEM MICROENVIRONMENT DURING DEVELOPMENT. Gonzalez Rosso, Jochen Guck

2724-Pos  Board B396
REGULATION OF EPITHELIAL MESENCHYMAL TRANSITION UNDER COMPLIANT POLYDIMETHYLISOXANE SUBSTRATE. Mousumi Mandal, Monika Rajput, Anji Anura, Tanmaya Pathak, Jyotirmoy Chatterjee
Membrane Pumps, Transporters, and Exchangers II (Boards B411 - B438)

2739-Pos  BOARD B411
STRUCTURAL DETERMINANTS OF THE HASBET-LIGANDS INTERACTIONS. Gamsjäger Viktoria, Claire Colas, Gerhard F. Ecker

2740-Pos  BOARD B412
SUBSTRATE BINDING AND CONFORMATIONAL CHANGES OF THE BILE ACID SYMPORTER ASBT*. Fiona B. Naughton, Patrick Becker, Deborah Brotherton, Alexander D. Cameron, Oliver Beckstein

2741-Pos  BOARD B413
FUNCTIONAL CHARACTERIZATIONS OF PURIFIED CTR COPPER TRANSPORTER PROTEINS REVEAL A NOVEL MECHANISM OF ION SELECTIVITY AND TRANSPORT. Kehan Chen, Yaping Pan, Ming Zhou

2742-Pos  BOARD B414
STRUCTURAL BASIS OF ION SELECTIVITY AND PERMEATION IN THE HIGH-AFFINITY COPPER TRANSPORTER CTR1. Peng Yuan

2743-Pos  BOARD B415
SPECIES DIFFERENCES IN MONOVALENT ANION SUBSTRATE SELECTIVITY IN THE SODIUM IODIDE SYMPORTER (NIS). Susanna C. Concilio, Kristina Zhekovka, Sergei Noskov, Stephen J. Russell

2744-Pos  BOARD B416

2745-Pos  BOARD B417
ATYPICAL RCK DOMAIN PRESENT IN A TWO COMPONENT K+/H+ ANTIPORTER. Tatiana Cerelja, Joao Pedro Leitao Guerra, Joao H. Morais Cabral

2746-Pos  BOARD B418
QUANTITATIVE SIMULATIONS OF ALTERNATING ACCESS IN SODIUM-SOLUTE SYMPORTERS. Paola Bisignano, Sara Capponi, John M. Rosenberg, Michael Grabe

2747-Pos  BOARD B419
USING PHYLOGENY TO DECIPHER ELECTROGENICITY IN CATION/PROTON ANTIPORTERS. Gal Masrati, Manish Dwivedi, Abraham Rimon, Yael Gluck-Margolin, Amit Kessel, Haim Ashkenazy, Itay Mayrose, Etana Padan, Nir Ben-Tal

2748-Pos  BOARD B420
NA+/CA2+ EXCHANGER IN HUMAN IPSC DERIVED CARDIOMYOCYTES: FUNCTIONAL EVIDENCE AND RELEVANCE FOR BEATING BEHAVIOR. Maria Barthmes, Kristzina Juhasz, Andre Bazzone, Ulrich Thomas, Sonja Stoezl-Feix, Andrea Bruggemann, Michael George, Niels Fertig

2749-Pos  BOARD B421

2750-Pos  BOARD B422
MOLECULAR BASIS FOR ION RECOGNITION AND TRANSPORT IN A NA+/CA2+ EXCHANGER. Fabrizio Marinelli, Emel Ficici, Jose' D. Faraldo-Gomez

2751-Pos  BOARD B423
TRAVEL AWARDEE. Ayush Krishnamoorti, Ricky C. Cheng, Vladimir Berka, Merritt Maduke

2752-Pos  BOARD B424
2753-Pos BOARD B425
DUAL-SUBSTRATE ACCESSING MECHANISM OF AN MFS TRANSPORTER FOR LYSOPHOSPHOLIPID FLIPPING ACROSS THE CELL MEMBRANE. Lei Zheng, Yibin Lin, R. N. V. Krishna Deepak, Hao Fan

2754-Pos BOARD B426
UPTAKE DYNAMICS IN THE LACTOSE PERMEASE (LACY) MEMBRANE PROTEIN TRANSPORTER. Dari Kimanius, Erik R. Lindahl, Magnus Andersson

2755-Pos BOARD B427 TRAVEL AWARDEE
DIRECT PROTEIN-LIPID INTERACTIONS SHAPE THE CONFORMATIONAL LANDSCAPE OF SECONDARY TRANSPORTERS. Chloe Martens, Mrinal Shekhar, Antoni Borysik, Andy Lau, Eamonn Reading, Emad Tajkhorshid, Paula Booth, Argyris Politis

2756-Pos BOARD B428
EXPLORING DYNAMIC TRANSITIONS IN AN ARGININE TRANSPORTER. Zhiyi Wu, Simon Newstead, Philip C. Biggin

2757-Pos BOARD B429
TRANSPORT ACTIVITY AND NOVEL INHIBITORS OF HUMAN GLUT9 CHARACTERIZED BY MOLECULAR MODELING AND ELECTROPHYSIOLOGY. Jinping Zhang, Yanyu Chen, Ting Wu, Qunsheng Lan, Ze-an Zhao, Ying Cao, Pingzheng Zhou, Jianxin Pang

2758-Pos BOARD B430
MODULATION OF ORIENTATIONAL DYNAMICS OF EXCITATORY AMINO ACID TRANSPORTER-1 BY CHOLESTEROL. Shashank Pant, Emad Tajkhorshid

2759-Pos BOARD B431
MECHANISM AND POTENTIAL SITES OF POTASSIUM INTERACTION WITH THE GLUTAMATE TRANSPORTER EAAC1. Jiali Wang, Christof T. Grewer

2760-Pos BOARD B432
VOLTAGE DEPENDENT INHIBITOR BINDING TO PLASMA-MEMBRANE GLUTAMATE TRANSPORTERS. Laura J. Zielewicz, Jiali Wang, Elias Ndaru, Christof T. Grewer

2761-Pos BOARD B433
EVOLUTION OF ION SPECIFICITY IN GLUTAMATE TRANSPORTERS. Krishna Reddy, Olga Boudker

2762-Pos BOARD B434 TRAVEL AWARDEE
MILLISECOND TIME RESOLUTION BY HS-AFM LINE SCANNING OF FAST GLTPH DYNAMICS. Tina R. Matin, George R. Heath, Gerard Huysmans, Olga Boudker, Simon Scheuring

2763-Pos BOARD B435

2764-Pos BOARD B436
IBOGAINE BINDS HUMAN SEROTONIN TRANSPORTER IN MULTIPLE FUNCTIONAL STATES. Zhiyu Zhao, Po-Chao Wen, Jonathan Coleman, Dongxue Yang, Eric Gouaux, Emad Tajkhorshid

2765-Pos BOARD B437
BRIDGING THE GAP BETWEEN FUNCTIONAL AND STRUCTURAL DATA. Verena Burtscher, Matej Hotka, Thomas Stockner, Jan-Philipp Machtens, Walter Sandtnner

2766-Pos BOARD B438
IDENTIFYING STRUCTURAL DETERMINANTS OF HIGH-POTENCY MDPV BINDING AT THE HUMAN DOPAMINE TRANSPORTER S1 BINDING SITE. Tyler WE Steele, Brian Ruiz, Zachary Spires, Jose M. Eltit

2767-Pos BOARD B439 TRAVEL AWARDEE
THE MISSED ROLE OF CYTOSKELETAL FILAMENTS IN INFORMATION PROCESSING. Christian C. Hunley

2768-Pos BOARD B440
GENERATING A 4D ATLAS OF NUCLEAR POSITIONS IN EMBRYONIC CAenorhabditis elegans. Ryan Christensen, Alexandra Bakinsky, Anthony Santella, Mark Moyle, Min Guo, Andrew Lauzierre, Evan Ardiel, Harshad D. Vishwasrao, Brandon Harvey, Michael Levin, Nensi Karaj, William Mohler, Daniel Daniel Colón-Ramos, Zhirong Bao, Hari Shroff

2769-Pos BOARD B441
ANALYSIS OF PHOSPHOINOSITIDE-DEPENDENCE OF ACTION POTENTIAL FIRING IN SYMPATHETIC NEURONS BY ELECTROPHYSIOLOGICAL RECORDINGS AND MATHEMATICAL MODELING. Martin Kruse, Rayne Whitten

2770-Pos BOARD B442
EFFECT OF COLUMNAR NEURAL GROUPING ON NETWORK SYNCHRONIZATION. Joseph S. Tumulty, Luis Cruz

Computational Neuroscience (Boards B439 - B442)

2771-Pos BOARD B443
QM/MM STUDY ON CLEAVAGE MECHANISM CATALYZED BY ZIKA VIRUS NS2B/NS3 SERINE PROTEASE. Bodee Nutho, Adrian Mulholland, Thanyada Rungrotmongkol

2772-Pos BOARD B444
NETWORK-BASED MODELING OF AMYLOID FIBRIL FORMATION. Gianmarc Grazioli, Yue Yu, Megha H. Unhelkar, Rachel W. Martin, Carter T. Butts

2773-Pos BOARD B445
IN SILICO ANALYSIS OF AMINO ACID SUBSTITUTIONS RESULTING FROM SNPS ASSOCIATED WITH INFLAMMATORY BOWEL DISEASE. Constance Jeffery, Chang Chen

2774-Pos BOARD B446
COMPUTATIONAL ANALYSIS OF SPECTROSCOPICAL PROPERTIES AND BINDING AFFINITIES OF OXYLUCIFERIN ANALOGS IN FIREFLY LUCIFERASE PROTEIN. Vardhan Satalkar, Xiaoliang Pan, Enrico Bennasi, Yihan Shao

2775-Pos BOARD B447
IN SILICO EXPERIMENTS AS A METHOD TO COMPARE TRANSPORTER MECHANISM. Yuly E. Sánchez, Julian Aguilar

2776-Pos BOARD B448
COMPARATIVE STUDY OF FLAGELLAR AND CYTOPLASMIC DYEING NS. Nayere Tajiyeloyo, Joshua Alper, Emil Alexov

2777-Pos BOARD B449
COMPUTATIONAL DESIGN OF DRUGLIKE ALLOSTERIC INHIBITORS OF AXL AND MET RECEPTOR TYROSINE KINASES. D. S. Dalafave, K. Sureshkumar

2778-Pos BOARD B450
PREDICTION OF NOVEL HOST-PATHOGEN INTERACTIONS FOR HELICOBACTER PYLORI THROUGH INTERFACE MIMICRY AND THEIR IMPLICATIONS TO GASTRIC CANCER. Emin Guven Maiorov, Chung-Jung Tsai, Buyong Ma, Ruth Nussinov

2779-Pos BOARD B451
COMPUTATIONAL MODELLING OF TRIADIN’S CONTRIBUTION TO SUDDEN CARDIAC DEATH IN CATECHOLAMINERGIC POLYMPHORIC VENTRICULAR TACHYCARDIA-5 (CPVT-5). Laura Coonfield, Aman Ullah, W. Jonathan Lederer, M. Saleet Jafri
Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence (Boards B468 - B494)

2786-Pos
A REVISED COARSE-GRAINED MODEL OF CIRCULAR DICHRÓISM OF PROTEINS. Mauro C. Carabajal-Tinoco, Carmen Giovana Granados-Ramirez

2795-Pos
TCPRO: AN IN-SILICO RISK ASSESSMENT TOOL FOR BIOTHERAPEUTIC PROTEIN IMMUNOGENICITY. Osman N. Yogurtcu, Zuben E. Sauna, Joseph R. McGill, Million A. Tegenge, Hong Yang

2789-Pos
A NOVEL FLUORESCENCE TOOL FOR MEASURING PROTEIN BINDING KINETICS AND ENERGY TRANSFER OVER FULL FLUORESCENCE SPECTRAL RANGES. Karen E. Steege Gall, Alex Siemiarczuk

2801-Pos
TWIN-FRET: A NEW MOLECULAR RULER FOR BIOMOLECULES. Sankar Jana, Marta Diez-Castellnou, Euan R. Kay, Euan R. Kay, Carlos Penedo

2803-Pos
CHARACTERIZATION OF LIPIDS IN LEISHMANIA INFECTED CELLS BY SERS MICROSCOPY. Vesna Zivanovic, Geo Semini, Michael Laue, Daniela Dreischer, Toni Aebischer, Janina Kneipp

2804-Pos
THE FLUORESCENCE LIFETIME OF BOUND NADH: CLUES FROM THE PHA-SOR PLOTS. Suman Ranjit, Leonel S. Malacrida, Enrico Gratton

2805-Pos
INVESTIGATION OF THE STRUCTURAL EFFECTS OF RADIOTHERAPY DOSE RATE ON RAT LUNG TISSUE: AN FTIR IMAGING STUDY. Ipek Ozyurt, Sembem Garip, Fatma Kucuk Baloglu, Faruk Zorlu, Feride Severcan

2806-Pos
THE DISRUPTION OF BETA SHEETS IN AMYLOIDOGENIC SEQUENCES BY GLY-GLY-ALA. Sarah A. Petty, Andrew T. Mullin, Sam A. Michelhaugh, Benjamin R. Fitzgerald

2780-Pos
INTEGRATED COMPUTATIONAL MODEL OF LUNG TISSUE BIOENERGETICS. Xiao Zhang, Ranjan K. Dash, Anne Clough, Duxuan Xie, Elizabeth Jacobs, Said Audi

2781-Pos
THE EFFECT OF THE CELLULAR ENVIRONMENT AND CONFORMATIONAL DYNAMICS ON OPTIMAL ELECTROSTATIC INTERACTIONS WITHIN THE BAPSTAR-BARNASE COMPLEX: A COMPUTATIONAL APPROACH. Alyssa J. Kranc, Mala L. Radhakrishnan

2784-Pos
TRAVEL Awardee

2792-Pos
MEGADOCK-WWEB: AN INTEGRATED DATABASE OF HIGH-THROUGHPUT STRUCTURE-BASED PROTEIN-PROTEIN INTERACTION PREDICTIONS. Masahito Ohue, Takanori Hayashi, Yuri Matsuoka, Keisuke Yanagisawa, Yutaka Akizawa

2795-Pos
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2787-Pos

2786-Pos
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NEW METHOD TO DETERMINE THE EFFECT OF DIMERIZATION ON PROTEIN FLEXIBILITY FROM MOLECULAR DYNAMICS SIMULATION USING STRUCTURAL HIERARCHY. Arghya Chakravorty, Jonathan Higham, Emil Alexov, Richard H. Henchman

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2784-Pos
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2816-Pos  BOARD B488
SPECTRAL PHASOR ANALYSIS ON NANosecond-GATED AUTOFLUORESCENCE REVEALS REAL TIME INFORMATION ON CELLULAR NAD(P)H CONFORMATION DURING CHEMICALLY-INDUCED METABOLIC RESPONSE. Paul K. Urayama, Audrey Short, Martin Heidelman, Max Kreider, Andrew I. Rodriguez, Chong Kai Wong, Nazar Al Aayedi, Zhifan Cai

2815-Pos  BOARD B487
THE FLUORESCENCE STUDY OF THE COMPLEXATION OF NANOEMULSION PROTOPORPHYRINE IX. Maurice O. Iwunze

2814-Pos  BOARD B486
FRET AT THE SINGLE MOLECULE LEVEL USING MOLECULAR BRIGHTNESS AND FLUORESCENCE CORRELATION SPECTROSCOPY. Robert C. Miller, Rowan Simonet, Christin Libal, Cody Aplin, Anh Cong, Margaret Gurumani, Emma Kauffman, Hong Bok Lee, Arnold J. Boersma, Erin D. Sheets, Ahmed A. Heikal

2813-Pos  BOARD B485
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2811-Pos  BOARD B483
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2867-Pos  BOARD B539  PROBING BIOPHYSICOCHEMICAL INTERACTIONS AT NANO-BIO INTERFACE OF PEROVSKITE TANDEM BIO SOLAR CELLS. Subhabrata Das, Teguh Cita Asmara, Zhaoning Song, Andriivo Rusydi, Bernardo Barbiellini, Ponisseril Somasundaran, Venkatesan Renugopalkrishnan

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2869-Pos  BOARD B541  MACROPHAGE CHECKPOINT BLOCKADE AND TUMOR MECHANICS IN A CELL-BASED IMMUNOTHERAPY. Lawrence J. Dooling, Jason C. Andrechak, Charlotte R. Pfeifer, Dennis E. Discher

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2877-Pos  BOARD B549  DOES MEMBRANE ASYMMETRY AFFECT NANOPARTICLE-MEMBRANE INTERACTIONS. Saeed Nazemidashtarjandi, Amir M. Farnoud

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2879-Pos  BOARD B551  ENGINEERING A CYTOCHROME WITH A TUNABLE BAND GAP POTENTIAL. Samuel D. Fontaine, Coleman Swaim, P. Raj Pokkuluri, Oleksandr Kokhan

2880-Pos  BOARD B552  PHOTO-CONTROL OF SMALL GTPASE RAS GDP-GTP EXCHANGE REACTION USING NOVEL PEPTIDE INHIBITOR MODIFIED WITH AZOBENZENE DERIVATIVES. Nobuyuki Nishibe, Masahiro Kuboyama, Kenichi Taiti, Toshio Nagashima, Toshio Yamazaki, Shinsaku Maruta

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Dr. Randy Stockbridge, University of Michigan, USA

Monday March 4, 12:30 – 2:00 P.M.
Room 301, Baltimore Convention Center

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Exhibit Dates and Times

Sunday, March 3 .................................................. 10:00 AM–5:00 PM
Monday, March 4 .................................................. 10:00 AM–5:00 PM
Tuesday, March 5 .................................................. 10:00 AM–4:00 PM

Coffee Served Daily ............................................. 10:15 AM–11:00 AM
Afternoon Snack Served Sunday – Tuesday ............ 1:45 PM–3:00 PM

Exhibit Raffle
To win an Amazon Echo, pick up a Passport Competition booklet inside the entrance of the Exhibit Hall. Visit participating exhibitors, talk to them to find out the answer to their question, get your passport stamped, and drop off your completed passport at the Society Booth before 2:30 PM on Tuesday, March 5. Winner will be announced on Tuesday, March 5, at 3:00 PM in front of the Exhibit Hall. You must be present to win.

Exhibitor Presentations

Exhibitor Presentations will take place in Rooms 301 and 303 on the 3rd floor of the Baltimore Convention Center. See page 162 for detailed descriptions.

Room 301

Sunday, March 3
10:30 AM – 12:00 PM HORIBA Scientific
2:30 PM – 4:00 PM IonOptix

Monday, March 4
10:30 AM – 12:00 PM Bruker Corporation
12:30 PM – 2:00 PM Nanion Technologies
2:30 PM – 4:00 PM Alvéole
4:30 PM – 6:00 PM Molecular Devices

Room 303

Sunday, March 3
9:30 AM – 11:00 AM Mizar Imaging
11:30 AM – 1:00 PM Leica Microsystems
1:30 PM – 3:00 PM Carl Zeiss Microscopy LLC
3:30 PM – 5:00 PM Wyatt Technology Corporation
5:30 PM – 7:00 PM ELEMENTS SRL

Monday, March 4
9:30 AM – 11:00 AM Bruker Corporation
11:30 AM – 1:00 PM Asylum Research
1:30 PM – 3:00 PM Bruker Corporation
3:30 PM – 5:00 PM NanoSurface Biomedical
5:30 PM – 7:00 PM LUMICKS

Tuesday, March 5
9:30 AM – 11:00 AM Sophion Bioscience A/S

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*As of January 18, 2019
A-TEEM Molecular Fingerprinting

Fluorescence is a standard tool for the study of changes on the molecular level, but it is now also becoming an emerging technique for molecular fingerprinting and spectral kinetics. The Duetta™ 2-in-1 fluorescence and absorbance spectrometer from HORIBA Scientific is a unique and powerful benchtop instrument that provides so much more than standard PMT-based scanning benchtop fluorometers. CCD detection technology, and incorporated absorbance measurements, provide more data, with more accuracy, and in less time. In this presentation, HORIBA Scientific will demonstrate two of many methods for which Duetta is uniquely equipped to measure fluorescent samples. First, Duetta can measure protein binding and FRET over the full emission range (250-1100 nm), demonstrating the effects of both donor and acceptor spectra over time with true spectral kinetics. In addition, the method of measuring Absorbance-Transmittance Excitation Emission Matrices (A-TEEMs) gives information about the molecular fingerprint of a mixture for use in component analysis of mixtures. The use of the absorbance detector enables inner-filter effect correction, which can easily be overlooked using standard fluorometers.

Full Spectral Kinetics and FRET

Because Duetta uses a CCD detector for emission detection, kinetics over the entire emission spectrum (250-1100 nm) instead of only at one or two different emission wavelengths. We will demonstrate the binding of a small molecule, 1,8-anilino-naphthalene sulfonate (ANS), to bovine serum albumin protein (BSA) that shows both the decrease in donor emission (BSA) and the increase of the acceptor emission (ANS) as an example of FRET kinetics. The binding of ANS to hydrophobic pockets in BSA is a known phenomenon, but is typically only measured as a kinetic experiment at the ANS emission wavelength of 475 nm. Historically, concentration-dependent experiments where emission spectra are collected over a range of ANS or protein concentrations, or both, are used to show binding kinetics or FRET as well. Duetta easily measures both the donor BSA (tryptophan) emission as well as the acceptor ANS emission during binding and shows that energy transfer occurs over the full spectral range. This is a unique capability for a benchtop fluorometer in the field of biological fluorescence.

A-TEEM Molecular Fingerprinting

The use of fluorescence for molecular fingerprinting is a relatively new concept and just as exciting if not more so than spectral kinetics. In most applications, changes in fluorescence intensity, or wavelength, or both, correlate to changes in physical properties of a sample. A-TEEM is a method of measuring the full fluorescence contour plot of a sample at all excitation wavelengths and all emission wavelengths. The matrix is then corrected for effects of high concentration (inner-filter effect) using the absorbance spectrum. The resulting A-TEEM gives an accurate profile of all emitting species and in turn, gives more information about the content of the sample in question, thus making it a better data set for chemometric and quantitative analysis. Solutions of tryptophan and 2-aminopurine, a fluorescent derivative of adenine, are used to demonstrate 1.) Effects of high absorbance/concentration on the fluorescence profile; and 2.) The A-TEEM profile for detection of multiple components.

Speaker
Karen Gall, Applications Scientist, HORIBA Scientific
**Room 301: Monday, March 4**

**10:30 AM – 12:00 PM**

**Bruker Corporation**

**Using NMR (Nuclear Magnetic Resonance) and EPR (Electron Paramagnetic Resonance) in Biophysics**

Magnetic resonance offers many insights into how biological systems function. The two techniques shed light on the identity of species, dynamics, and structures of proteins, peptides, nucleotides, and lipids. The speakers will present an overview of these techniques and applications for people who may be new to the field and wish to incorporate them in their studies.

NMR is a valuable tool for the study of structures and dynamic processes of proteins, peptides and nucleotides. NMR is also well suited to study the interaction of such molecules. Various NMR methods exist to study the interaction of proteins with small molecules in drug discovery, interactions of proteins with each other or with peptides and nucleotides.

In drug discovery fragment based screening by NMR is a well-established technique. A brief presentation of these methods will be included.

The investigation of interaction between larger molecules is facilitated by several NMR methods and by the use of isotopic labeling. Interactions such as protein oligomerization, protein-protein and protein-nucleotide interaction in solutions can be investigated. An overview of these techniques and applications will be included.

In contrast to NMR, EPR detects unpaired electrons in free radicals and transition metal ions. One electron transfer reactions result in unpaired electrons. Examples of paramagnetic species encountered in biology are:

- ROS (Reactive Oxygen Species), RNS (Reactive Nitrogen Species)
- Amino acid radicals such as tyrosine and tryptophan radicals
- Paramagnetic intermediates in photosynthesis
- Metalloenzymes

In addition to these naturally occurring paramagnetic species, spin labels can be incorporated into a number of biomolecules via SDSL (Site Directed Spin Labeling). Applications and techniques are:

- Motional dynamics of proteins, peptides, and nucleotides via Linse-hape analysis
- Accessibility studies in membrane proteins or peptides via saturation measurements
- Distance measurements (2-8 nm) via DEER (Double Electron-Electron Resonance) to complement other structural methods such as Xray, NMR, CryoEM and FRET

An introduction to the techniques and applications will be presented.

**Speakers**
Ralph Weber, Senior Application Scientist, Bruker Corporation  
Clemens Anklin, Vice President Applications, Bruker Corporation

**12:30 PM – 2:00 PM**

**Nanion Technologies**

**Ion Channels and Transporters in the Spotlight**

Nanion Technologies is the leading solution provider for electrophysiologists since 2002. If you are studying ion channels and electrogenic transporters, our chip- and plate-based devices are well suited to advance your research and screening projects. In our portfolio, you will find instrumentation for automated patch clamp, bilayer recordings, SSM-based electrophysiology, impedance and extracellular field recordings, covering the needs for low, medium and high throughput assays. Our workshop will start with an introduction by Dr. Niels Fertig (CEO, Nanion) and Dr. Andrea Brüggemann (CSO, Nanion), as a guide through the overall capabilities of Nanion’s technology portfolio. In continuation, we will welcome our speakers, Dr. Jean-Francois Rolland (Axxam) and Prof. Dr. Randy Stockbridge (University of Michigan), among others.

As a part of our workshop, Dr. Rolland will focus on his recent work on assay development in ion channel drug discovery, using the high throughput automated patch clamp screening platform, the SyncroPatch 384/768PE. Application areas of this powerful system, recording from up to 768 cells simultaneously, range from high throughput screening (HTS), cardiac safety assessment and efficacy screening, to the analysis of ion channel mutations. The SyncroPatch 384/768PE supports voltage- and current clamp recordings, temperature control, and minimal cell usage. In addition to the use of stably transfected cell lines, more challenging cell assays including stem cell-derived cells, transiently transfected cells or primary cells can be used successfully. In this presentation Dr. Rolland will also discuss the highly promising approach of using optogenetics combined with automated patch clamp technology in HTS. This method, using light to modulate molecular events in a targeted manner in living cells, could lead to cheaper, faster and highly reliable assays, suitable for running the early steps of ion channels’ drug discovery programs, especially when combined to automated electrophysiology. Among others, data obtained from Axxam’s bPAC-HCN2 cell line that was successfully assayed on SyncroPatch 384PE, will be presented.

In continuation, Dr. Stockbridge will be focused on electrogenic transporter assay technology, the SURFE2 R. The SURFE2 R N1 (single channel) and SURFE2 R 96SE (96 channels) technologies enable label-free real time measurements of electrogenic transporter protein activity. Employing SSM (solid supported membrane)-based electrophysiology, the SURFE2 R instruments compensate for the low turnover rate of these proteins by measurement of up to 109 transporters in parallel. Dr. Stockbridge, as an expert in measuring membrane transport function, will present her recent data obtained on the SURFE2 R N1 instrument. She has undertaken a comparative mechanistic analysis to understand how drug export function evolved in the SMR (small multidrug resistance) exporters family. This involved screening panels of potential substrates (drugs and other compounds) to understand how substrate specificity differs among the drug exporters, guanidinium exporters, and various evolutionary intermediates.

The Nanion team is excited to meet you at our workshop. Join us to learn more about how our “smart tools for electrophysiologists” can help take your research to the next level!

**Speakers**
Andrea Brüggemann, CSO, Nanion Technologies  
Niels Fertig, CEO, Nanion Technologies  
Jean-Francois Rolland, Head of Electrophysiology, Axxam  
Randy Stockbridge, Assistant Professor, University of Michigan
2:30 PM – 4:00 PM

Alvéole

Bioengineering Relevant Cellular Microenvironments with Primo®

In vivo, the cellular microenvironment has a crucial impact on the regulation of cell behavior and functions, such as cellular differentiation, proliferation and migration. One of the challenges confronting cell biologists is to mimic this microenvironment in vitro in order to more efficiently study living cells and model diseases. To this end, we present the PRIMO device developed by ALVEOLE. This contactless and maskless UV projection system based on the LIMAP technology(1) allows to control the biochemical and mechanical properties of in vitro microenvironments. We will first show that PRIMO is a suitable tool to print biomolecules on substrates (including glass, plastic, soft/stiff substrates, textured surfaces, etc.) with an exquisite control over protein densities (micropatterning). Then, we will also present how the projected UV light can be used in order to structure photosensitive resists (such as SU8) and create molds onto which elastomeric solutions can be polymerized (microfabrication).

Finally, one of our users will share his research conducted with PRIMO. He used this technology in order to structure and functionalize hydrogels (microstructuration combined with micropatterning) paving the way for 3D cell culture onto controlled, reproducible soft substrates(2). Visit www.alveolelab.com for more information.

Speakers
Aurélien Pasturel, University of Bordeaux, CNRS, Alvéole
Pierre-Olivier Strale, Senior Scientist, Alvéole

4:30 PM – 6:00 PM

Molecular Devices

Supercharge Your Patch-Clamp Data Acquisition and Analysis with the New Axon pCLAMP 11 Software

The patch-clamp technique remains the best method for examining ion channel physiology and membrane biophysics. Axon Instruments and pCLAMP software continue to push the envelope with new innovations with best-in-class systems and software. In this user meeting we learn about new features of pCLAMP 11 software and methods to optimize your workflow and simplify experiments.

Speaker
Jeffrey Tang, Senior Global Axon Electrophysiological Application Scientist, Molecular Devices

Room 303: Sunday, March 3

9:30 AM – 11:00 AM

Mizar Imaging

Tilt – High-Resolution Light Sheet Imaging

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

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

The key benefit of light sheet imaging is significantly reducing the photobleaching and phototoxicity of your sample. The Tilt is no exception. When imaging with the Tilt, cells can be kept alive for hours and even days. This is aided by an optional incubation chamber for the Tilt, which allows for precise control of temperature (heating and cooling available), CO2 and humidity.

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

Speaker
Chris Baumann, Sales and Product Manager, Mizar Imaging
Leica Microsystems

Leica SP8 FALCON: A New Way to Generate Fluorescence Lifetime Images at Confocal Speed

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

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

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

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

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

Carl Zeiss Microscopy LLC

ZEISS Elyra 7 with Lattice SIM, a New Platform for Fast and Gentle 3D Superresolution Microscopy

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

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

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

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

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

Speaker
Renée Dalrymple, Sales Development Manager, Carl Zeiss Microscopy LLC
Wyatt Technology Corporation

From Proteins to Exosomes: Tools for Essential Biophysical QC, Characterization, and Isolation

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

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

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

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

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

Speaker
Eric Seymour, Senior Application Scientist, Wyatt Technology Corporation

ELEMENTS SRL

Portable and Cost-Effective Low-Noise Amplifiers for Electrophysiology and Nanopore Applications

Ultra-portable and cost-effective amplifier technology is now a reality accessible to any electrophysiology research lab, thanks to Elements microelectronic-based design of custom microchip (ASIC) using standard and low-cost CMOS processes.

Elements provides an integrative solid-state solution to measure currents in the picoampere (10-12 pA) range, with bandwidths up to hundreds of kHz, featuring very low noise recordings, signal digitalization thanks to the internal Analog-to-Digital converter, signal generator, digital data elaboration, and USB powered, all in a tiny form factor (i.e. 42x18x78 mm) or about the size of a point-and-shoot digital camera!

In this presentation, we will be featuring our latest electrophysiology product, the world’s smallest integrated patch clamp amplifier, as well as a portable nanopore kit for protein detection using disposable glass nanopore chips.

During the event will be presented these two use cases:
1. ePatch amplifier was used to record the current of HCN channels transiently expressed in HEK293T cells, with the aim to test the effect of Lamotrigine, a widely used anticonvulsant drug, on the biophysical proprieties of the current. Data courtesy of Dr. A. Moroni - University of Milan - Italy and Dr. Bina Santoro - Columbia University - New York – USA.
2. Portable Nanopore Reader: example of DNA fragment translocations through glass nanopore chips. Data courtesy of Dr. D. Niedzwiecki, Goeppert– USA.

Attend this presentation to learn about:

- The advantages of using a versatile and compact nano-current amplifier technology;
- Portable nanopore solution for protein detection using disposable nanopore chips;
- How the world smallest and cheapest patch clamp amplifier is radically changing voltage-clamp measurements!

Complimentary Italian hors d’oeuvres and drinks will be served! Seating is limited. Be the first to RSVP by emailing info@elements-ic.com to receive a copy of the presentation and be entered in a raffle to receive a free 30-day trial of the ePatch or nanopore Kit amplifier!

Speakers
Federico Thei, CEO, ELEMENTS SRL
Filippo Cona, Software Engineer, ELEMENTS SRL
Alessandro Porro, Application Scientist, ELEMENTS SRL
Serge Kaddoura, NanoscaleLABS
Room 303: Monday, March 4

9:30 AM – 11:00 AM

Bruker Corporation

**Advances in Dye Development and Microscopy for Live Cell Superresolution Microscopy with the Vutara 352**

Expanding the frontier of super-resolution imaging requires advances in both microscopy hardware and fluorescent labels. Here we describe a cooperative effort to improve both technological fronts with the ultimate goal of live-cell super-resolution microscopy. Bruker’s Vutara 352 super-resolution microscope has been designed for live-cell super-resolution microscopy with both high spatial and temporal resolution capabilities. The patented biplane module allows simultaneous two-color imaging in 3D while the sCMOS detector enables fast imaging of biological phenomena. Although this microscope system is capable of live-cell super-resolution imaging, it has been stymied by limitations in the current generation of live-cell-compatible fluorophores. Extant live-cell probes are either fluorescent proteins with low photon counts—and therefore low localization precision—or organic dyes, which require high laser power resulting in phototoxicity in living samples. To remedy this problem, we developed spontaneously blinking (SB) versions of the Janelia Fluor and Alexa Fluor dyes, which blink under physiological conditions at low laser power while still providing high photon counts. In particular, the spontaneously blinking Janelia Fluor 549 (SB-JF549) and red-shifted SB-JF646 are cell-permeable and are easily conjugated to HaloTag or SNAP-tag ligands, making them ready to use in live cell multi-color superresolution experiments. The SB dyes, in combination with the Vutara 352, provide a powerful methodology for simultaneous imaging, localization and visualization of live-cell single-molecule localization data, while offering numerous statistical tools to quantify the data into publishable results.

**Speaker**
Robert Hobson, Applications Scientist, Bruker Corporation

11:30 AM – 1:00 PM

Asylum Research

**Capturing Biochemical Reactions with Video-Rate AFM**

Oxford Instruments Asylum Research will present the latest data acquired with its Cypher VRS, the world’s first and only full-featured video-rate AFM. The Cypher VRS Atomic Force Microscope sets a new standard with easy operation—enabling high resolution imaging of dynamic events at high speeds, up to 625 lines/second which corresponds to about 10 frames per second. This speed is about 300x faster than typical AFMs and 10x faster than current “fast scanning” AFMs.

One of the strengths of traditional AFMs is its capability to monitor dynamic events in near-native conditions (i.e. in liquid at biologically relevant temperatures). However, capturing biological processes in real-time has been challenging up until now. Video rate AFMs provide that temporal resolution, allowing researchers to observe the progression of these reactions and capture kinetics. Video rate AFMs have allowed researchers to conduct a new set of experiments including biochemical reactions, membrane dynamics, conformational changes, self-assembly and degradation. In most cases, the spatial resolution is not compromised enabling researchers to locate the target or active site while tracking the progression of the reaction. They can observe structural dynamics of biomolecules and then correlate it to their function.

We will present a set of data to illustrate the potential of this new capability. Examples include DNA digestion and cleavage, DNA origami conformation changes, protein fiber assembly, membrane dynamics including molecular structure and rearrangement in the bacteriorhodopsin membrane, lipid bilayer growth, assembly of Type I collagen into fibrils and dynamic motion of CTAB hemi-micelles at the solid (HOPG) – liquid (aqueous buffer) interface.

**Speaker**
Sophia Hohlbauch, Applications Scientist, Asylum Research
Bruker Corporation

Investigating Dynamic Biological Processes with High-Speed, High-Resolution Correlative AFM-Light Microscopy

The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biological molecules and complexes with nanometer resolution and under near-physiological conditions remains unmatched by other imaging techniques. However, the typically longer image acquisition times required to obtain a single high-resolution image (~minutes) has limited the advancement of AFM for investigating dynamic biological processes. While recent years have shown significant progress in the development of high-speed AFM (HS-AFM), the ability to scan faster has typically been achieved at the cost of decreased scanner range and restricted sample size. As such, these HS-AFM systems have mainly been focused on studying single molecule dynamics and have been very limited in their ability to conduct live cell imaging.

The novel NanoWizard® ULTRA Speed A AFM not only enables high-speed studies of time-resolved dynamics associated with cellular processes, it’s latest scanner technologies and compact design also allow full integration of AFM into advanced commercially available light microscopy techniques. Thus, fast AFM imaging of several frames per second can be seamlessly combined with methods such as epifluorescence, confocal, TIRF, STED microscopy, and many more. Please join us for this informative seminar where we will present how the latest advances in the ULTRA Speed A AFM are being applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues. We will also describe how this unique system is enabling new research opportunities with high-speed, high-resolution correlative AFM-light microscopy.

Speaker
Andrea Slade, BioAFM Product Manager, JPK BioAFM Center, Bruker Nano Surfaces

NanoSurface Biomedical

Biomimetic Cell Culture Platforms for Enhancing Cell Biology Studies

Cells use structural and mechanical cues from the extracellular matrix (ECM) to regulate a broad spectrum of processes such as cell signaling, electrophysiology, differentiation, division, and even life and death. Over the past few decades, the literature has demonstrated that many cell types cultured in conventional flat, rigid, and static culture conditions lack both structural and functional phenotypes seen in the body, and that the lack of extracellular cues contributes significantly to the disconnect between in vitro experimental results and in vivo observation. We will demonstrate that ECM-inspired substrate nanotopography drastically improves the structural and functional development of a variety of cell types. Specifically, we show how NanoSurface Cultureware and the NanoSurface Cytostretcher can be utilized to study the effects of cell-nanotopography interactions on adhesion, signaling, polarity, migration, physiology, and differentiation across many cell types and model systems including cancer biology, human epithelia, and cardiovascular function. Further, we will describe how the differentiation of induced pluripotent stem cells can be accelerated and enhanced by providing a more biomimetic culture environment. We will also illustrate how the combination of nanotopography and mechanical stretch can enhance the in vitro phenotypes of cells in culture.

Speaker
Nicholas Geisse, Chief Science Officer, NanoSurface Biomedical
A Versatile Platform for High-Resolution Single-Molecule Research: Expanding Capabilities and Exploring New Possibilities

Proteins interact with nucleic acids and the cytoskeleton to perform biological processes that are key to cell metabolism and life. The direct observation of such interactions in real time and at the single-molecule level enables scientists to make new discoveries and to test current biological models. Single-molecule studies of cytoskeleton filaments and their interaction with associated proteins are often developed in surface-based assays where the glass surface is used as a substrate to rigidly anchor the biological molecules of interest. To capture the dynamics of the system and its interactions, the samples are typically labeled with fluorescent dyes and are imaged with fluorescence methods. However, despite the versatility of fluorescent methods, label-free imaging methods are desirable to better mimic the native biological conditions and to reduce photo-damage due to fluorescence excitation during long experiments.

Here, we present our recent developments to further enable discoveries in the field of biology and biophysics with a special focus on surface-based assays. We present a novel instrument arrangement that includes optical tweezers in combination with Interference Reflection Microscopy (IRM) and Total Internal Reflection Fluorescence (TIRF) Microscopy. IRM is a recently introduced imaging method that allows visualization of biological structures in 3D without the need for fluorescence labeling and with sensitivity exceeding that of Differential Interference Contrast (DIC) microscopy. In addition, we show the latest applications of these technologies and how they enhance our understanding of several fields of biology, including molecular motors and cytoskeleton filaments, DNA/RNA-protein interactions, protein folding/unfolding, cell membranes, and genome structure and organization. These applications show that the technological advances in hybrid single-molecule methods for imaging and manipulation can be turned into easy-to-use and stable instruments with the ability to open up new venues in many research areas.

Speakers
Andrea Candelli, Application Scientist, LUMICKS
Sara Tafoya, Application Scientist, LUMICKS
Trey Simpson, Application Scientist, LUMICKS

Sophion Bioscience A/S

Electrophysiological Characterization Using Automated Patch Clamp (QPatch and Qube) of hiPSC-Derived Neurological Disease Models, New Automated Patch Clamp Ion Channel Assays for CiPA Cardiac Safety Testing (Dynamic hERG and LQT3 Late Nav1.5) and Nav1.7 Drug Discovery

Successful ion channel drug discovery requires the integration of multiple technologies and workflows. Sophion Bioscience is a leader in automated patch clamp technology, providing medium to high throughput, automated patch clamp to the pharmaceutical industry and universities. The QPatch and Qube are fully automated patch clamp systems, executing simultaneous 8, 16, 48 or 384 parallel patch clamp recordings in conjunction with computer controlled liquid handling and on-board cell handling. Sophion partners with other biotech companies to create robust, ion channel and electrophysiological workflows for drug development for ion channel targets. During this workshop, three industry speakers will provide insight into the drug discovery process. Dr Kadla Roskva Roshholm will present how hiPSC derived neurological disease models have been characterized by use of high throughput electrophysiology at Sophion Bioscience. Next, Dr Marc Rogers from Metrion Biosciences will present their development of new automated patch clamp ion channel assays for CiPA cardiac safety testing: dynamic hERG and LQT3 late Nav1.5. Finally, Dr Brian Moyer will present on Amgen’s Nav1.7 drug discovery program.

Speakers
Kadla Roskva Roshholm, Application Scientist, Sophion Bioscience A/S
Marc Rogers, Chief Scientific Officer, Metrion Biosciences
Brian Moyer, Scientific Director, Department of Neuroscience, Amgen
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| 20 Winter Sport Lane, Suite 135  
Williston, VT 05495  
www.89north.com |
89 North provides innovative solutions for fluorescence imaging featuring the LDI, a state-of-the-art 7-line laser illuminator with up to 1 watt of power per channel, available with fiber optic output or liquid light guide. Also on display from our international partners are the new X-Light V3 spinning disk confocal from CrestOptics, the new OptoTIRF illuminator from Cairn Research, and the UGA-42 GEO from Rapp Optoelectronic. 89 North offers engineering and manufacturing expertise to customize existing products or to create new solutions for system integration.

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| 520 Mercury Drive  
Sunnyvale, CA 94085  
www.aatbio.com |
AAT Bioquest develops, manufactures, and markets bioanalytical reagents and assay kits for life science research and drug discovery. We specialize in absorption, fluorescence and luminescence-based biological detection technologies. Our products include the outstanding Fluo-8®, Cal-520™, Cal-590™, Cal-630™, Calbryte™-520 and FLIPR calcium assay kits, fluorescent ion indicators, fluorescent labeling reagents, cell and in vivo imaging probes. We also offer a full spectrum of apoptosis probes and assay kits.

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| 6 rue Jean Calvin  
Paris, France 75005  
France  
www.abbelight.com |
Abbelight has developed the first 3D super-resolution microscope (SMLM) with isotropic 15 nm precision over the largest field of view (200x200 micron). The result of 10 years of research in single molecule imaging, abbelight provides cutting-edge instruments, software and expertise to accelerate the imaging workflow of your research project.

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| One Broadway, Cambridge Innovation Center  
Cambridge, MA 02139  
www.abberior-instruments.com |
Abberior Instruments develops and markets STED super resolution microscopes. Founded by Stefan Hell our imaging systems are highly innovative. Further, we provide STED microscopes from low to high budget.

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| 121 Hartwell Avenue  
Lexington, MA 02421  
www.agilent.com |
Agilent Technologies Inc is a global leader in life sciences, diagnostics, and applied chemical markets. With more than 50 years of insight and innovation, Agilent instruments, software, services, solutions, and people provide trusted answers to its customers' most challenging questions. Agilent employs about 13,500 people worldwide.

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| 60 Marine Street  
Farmingdale, NY 11735  
www.alascience.com |
As manufacturers (fluidics, chambers, temperature controllers, etc.) and distributors (npi, Sutter, Narishige, TMC) of instruments for patch/cellular electrophysiology, our scientists/engineers have decades of experience assembling systems and building custom setups. We focus on your equipment needs so you can focus on your research.

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<tr>
<td>Alembic Instruments Inc</td>
<td>432</td>
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</table>
| 3285 Cavendish Boulevard, Suite 570  
Montreal, QC H4B 2L9  
Canada  
www.alembicinst.com |
Alembic Instruments makes patch clamps amplifiers with 100% Rs Compensation! Our patented Rs Compensator™ completely eliminates series resistance errors rapidly, easily, and with full stability. Only the 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! Features: 4 channels with integrated data acquisition, true current-clamp, embedded computer with dedicated FPGA for real-time Dynamic Clamp experiments, and more.
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<tr>
<th>Company Name</th>
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<tbody>
<tr>
<td>Alvéole</td>
<td>705</td>
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</table>
| 68, boulevard de Port-Royal  
Paris, 75005  
France  
www.alveolelab.com |

Specialized in tools for bioengineering custom microenvironments, Alvéole presents PRIMO: contactless and maskless custom photopatterning to create and fine-tune in vitro cell microenvironments. PRIMO allows to control the topography (via microfabrication) and biochemistry (via protein micropatterning) of all standard cell culture substrates (stiff, soft, flat, microstructured) for reliable and reproducible in vitro microenvironments and better cell experiments.

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<th>Company Name</th>
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<tr>
<td>Anatrace</td>
<td>Molecular Dimensions</td>
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| 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.

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<th>Company Name</th>
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<tr>
<td>Andor Technology</td>
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| 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.

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<th>Company Name</th>
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<tr>
<td>Anton Paar</td>
<td>500</td>
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| 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.

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<th>Company Name</th>
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<tr>
<td>Applied Photophysics</td>
<td>509</td>
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| 100 Cumming Center, 440C  
Beverly, MA 01915  
www.photophysics.com |

Applied Photophysics Ltd is the premium supplier of kinetics and Circular Dichroism instrumentation to the life sciences marketplace. We are global leaders in Laser Flash Photolysis and Stopped Flow Spectrometers with over 700 systems worldwide. Our premier range is the Chirascan family of instruments using next generation Circular Dichroism technology, opening up new areas of application interest including clone selection and biopharmaceutical formulations. The latest exciting development with our Chirascan range is the world's first truly automated CD being launched later in 2011.

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<th>Company Name</th>
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<td>Arago Bio - Refeyn</td>
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| 33 George Street  
Oxford, OX 0X1 2AY  
United Kingdom  
www.aragobio.com |

We present mass photometry - weighing molecules with light. Our disruptive technology starts a new era of quantitative biomolecular analysis by enabling the accurate mass-measurement of single molecules directly in native solution. We showcase the first generation of mass photometry systems which deliver intuitive answers to the challenges of analyzing protein purity and homogeneity, or enable the quantification of protein complex assembly and biomolecular interactions.

ASI manufactures hardware for laboratory & microscope automation including: extremely precise closed-loop DC servo motor X Y stages & Z drives, PZ-2000 piezo stages for ultra-precise & fast Z-axis focusing, ultra precise & stable XY stages for super resolution microscopy, LED based (CRISP) feedback systems for maintaining submicron level focusing, FTP-2000 series focusing platforms for fixed stage microscopes, light sheet & single plane illumination microscopy (SPIM), CLARITY objectives & imaging systems, complete custom microscope systems based around the RAMM open frame platform, high-speed filter wheels, microinjectors & micromanipulators, and a wide range of other devices including custom system solutions & complete imaging and photometric systems. We work directly with end users, as well as a wide range of OEM's and imaging partners, to provide anything from individual components to fully automated turnkey systems. ASI's products are backed with a five year warranty & unparalleled customer support.
Asylum Research

Asylum Research AFMs

Asylum Research
6310 Hollister Avenue
Santa Barbara, CA 93117
www.afm.oxinst.com

The technology leader in Atomic Force Microscopy will feature the Cypher VRS, the first and only fully-featured research AFM that enables video rate imaging of dynamic biomolecular processes in air and in liquid. Until now, this capability was only available on AFMs built solely for video rate imaging with limited capabilities such as sample size. The Cypher VRS enables high quality imaging at over 625 lines per second, corresponding to about 10 frames per second. This speed greatly exceeds other “fast scanning” AFMs, by a factor of at least 5-10X. The Cypher VRS also features the full range of modes and accessories supported with its environmental scanner, including heating and cooling. Learn more at our free Lunch and Learn Exhibitor Technical Presentation on Monday, March 4, 11:30am, in Room 303.

Aurora Scientific Inc

Aurora Scientific Inc
25 Industry Street
Aurora, ON L4G 1X6
Canada
www.aurorascientific.com


Avanti Polar Lipids Inc

Avanti Polar Lipids Inc
700 Industrial Park Drive
Alabaster, AL 35007
www.avantilipids.com


Beckman Coulter Life Sciences

Beckman Coulter Life Sciences
5350 Lakeview Parkway South Drive
Indianapolis, IN 46268
www.beckman.com/home

Beckman Coulter Life Sciences develops, manufactures and markets products that simplify, automate and innovate complex biomedical testing. For more than 75 years, our products have been making a difference in people’s lives by improving the productivity of medical professionals and scientists, supplying critical information for improving patient health and delivering trusted solutions for research and discovery. Scientists use our life science research instruments to study complex biological problems including causes of disease and potential new therapies or drugs.

BioCAT

BioCAT
9700 S Cass Avenue, Building 435B
Argonne, IL 60439
www.bio.aps.anl.gov

The Biophysics Collaborative Access Team (BioCAT), supported by NIH, operate a national user facility at the Advanced Photon Source, Argonne National Laboratory, to study the structure and dynamics of biological systems at the molecular level. The primary research techniques supported are 1) static, time resolved, and spatially resolved fiber (muscle, connective tissue, nucleic acids and amyloids) diffraction. 2) static and time-resolved scattering studies of macromolecules in solution for the study of protein/nucleic acid folding, protein/ligand interactions, and the structure of complexes.

BioLogic USA

BioLogic USA
9050 Executive Park Drive, Suite 110C
Knoxville, TN 37923
www.bio-logic.net

BioLogic 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

BioTek Instruments Inc
Highland Park, Box 998
Winooski, VT 05404
www.biotek.com

BioTek is celebrating its 50th year as a worldwide leader in the design, manufacture, and distribution of innovative life science instrumentation including cell imaging systems, microplate readers, washers, dispensers, automated incubators, stackers and pipetting systems. 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.

BMG LABTECH

BMG LABTECH
13000 Weston Parkway, Suite 109
Cary, NC 27513
www.bmglabtech.com

BMG LABTECH is a German-based company that focuses exclusively on microplate readers and our technological innovations have made us a leader in the field. Our instruments are used for a multitude of applications in life science, drug discovery and research.
<table>
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<tr>
<th>Company Name</th>
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<tr>
<td>Bruker Corporation</td>
<td>301</td>
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<tr>
<td>3400 E Britannia Dr, Suite 150</td>
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<tr>
<td>Tucson, AZ 85706</td>
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<td><a href="http://www.bruker.com/nano">www.bruker.com/nano</a></td>
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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 booth 301 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.

<table>
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<tr>
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<tr>
<td>Cambridge University Press</td>
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<tr>
<td>University Printing House, Shaftesbury Road Cambridge, CB2 8BS</td>
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<tr>
<td>United Kingdom</td>
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<td><a href="http://www.cambridge.org">www.cambridge.org</a></td>
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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.

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<th>Company Name</th>
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<td>Carl Zeiss Microscopy LLC</td>
<td>700</td>
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<tr>
<td>One Zeiss Drive</td>
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<tr>
<td>Thornwood, NY 10594</td>
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<tr>
<td><a href="http://www.zeiss.com/microscopy/us">www.zeiss.com/microscopy/us</a></td>
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Throughout the world, ZEISS stands for the highest quality and reliability. Carl Zeiss Microscopy is part of the ZEISS Group, a leading organization of companies operating worldwide in the optical and optoelectronics 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.

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<th>Company Name</th>
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<td>Cedarlane</td>
<td>242</td>
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<tr>
<td>1210 Turrentine Street</td>
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<tr>
<td>Burlington, NC 27215</td>
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<tr>
<td><a href="http://www.cedarlanelabs.com">www.cedarlanelabs.com</a></td>
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CEDARLANE® specializes in providing high-quality reagents from more than 800 global suppliers. Manufactured products include monoclonal and polyclonal antibodies, assay kits, cell lines, cell separation media, reagent complement, stabilized RBCs, and more.

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<th>Company Name</th>
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<tr>
<td>Cell Press</td>
<td>609</td>
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<tr>
<td>50 Hampshire Street, 5th Floor</td>
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<td>Cambridge, MA 02139</td>
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<td><a href="http://www.cell.com">www.cell.com</a></td>
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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.

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<th>Company Name</th>
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<tr>
<td>Cytocybernetics Inc</td>
<td>800</td>
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<tr>
<td>5000 B Tonawanda Creek Road</td>
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<tr>
<td>North Tonawanda, NY 14120</td>
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<tr>
<td><a href="http://www.cytocybernetics.com">www.cytocybernetics.com</a></td>
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Cytocybernetics makes the first truly plug and play dynamic clamp system for single cell voltage clamp. Attaching to any existing voltage clamp system, the Cybercyte is dedicated to simulating voltage gated currents in real-time. Markov and Hodgkin and Huxley type models are supported. The unique analog/digital architecture eliminates the chronic instabilities and high random latency errors associated with general purpose Windows based systems. In addition, the system can also be used to introduce currents from heterologously expressed channels to study the effects of kinetic mutations.

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<tr>
<th>Company Name</th>
<th>Booth Number</th>
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<tr>
<td>DNASTAR Inc</td>
<td>804</td>
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<tr>
<td>3801 Regent Street</td>
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<td>Madison, WI 53705</td>
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<td><a href="http://www.dnastar.com">www.dnastar.com</a></td>
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DNASTAR Inc is a global software company that has been meeting the needs of life scientists for more than 30 years. Our software helps molecular biologists, geneticists, bioinformaticians, structural biologists, clinicians and many other scientists achieve their research objectives. The DNASTAR Structural Biology Suite includes applications for protein sequence analysis, macromolecular visualization, structure prediction, docking simulation, and antibody modeling. We also provide software tools for traditional molecular biology and genomics applications as part of the Lasergene package.
Ecocye Bioscience supports research labs in Europe and USA with freshly prepared Xenopus Oocytes, lab chemicals and standard or customized buffer solutions. As a renowned CRO we are also offering electrophysiological contract research in Xenopus Oocytes (TEVC), brain slices (LTP/LTD, Epilepsy, Drug effects) and heart slices (QT prolongation, signal conduction) Our subsidiary Lohmann Research Equipment develops and distributes high quality products for biomedical research. Our multiple slice electrophysiological system Synchroslice became a standard in brain and heart high throughput screening.

Edinburgh Instruments
2 Bain Square, Kirkton Campus
Livingston, EH547DQ
United Kingdom
www.edinst.com

Edinburgh Instruments has been a global leader in fluorescence spectrometers, transient absorption spectrometers, picosecond laser sources and gas laser systems for over 45 years. Edinburgh Instruments primarily designs and manufactures customized spectroscopic systems for measuring:

- Steady State Fluorescence
- Phosphorescence Lifetimes via Multi-Channel Scanning (MCS)
- Fluorescence Lifetimes via Time Correlated Single Photon Counting (TCSPC)
- Nanosecond Transient Absorption

We excel in providing one-to-one comprehensive customer service, contact us at ussales@edinst.com to learn more.

Electron Microscopy Sciences
1560 Industry Road
Hatfield, PA 19440
www.emsdiasum.com

Electron Microscopy Sciences will have on display their complete line of accessories, chemicals, supplies and equipment for all fields of microscopy, biological research and general laboratory requirements. As well as our full line of tools, tweezers and dissecting equipment.

ELEMENTS SRL
Viale G. Marconi 438
Cesena, 47521
Italy
elements-ic.com

Elements produces miniaturized, affordable and easy to use patch-clamp amplifiers for electrophysiology, lipid bilayer experiments and solid-state nanopore measurements. Elements technology is based on custom ASICs (CMOS silicon microchip) that allows ultra-low noise current measurement, starting from very low ranges (few hundreds of fA, 10-15Ampere), for single and multichannel measurements. 2019 new products: - ePatch: miniaturized and affordable voltage-clamp amplifier for whole cells and single-channel recordings; - eNPR: portable ssNanopore reader for solid state nanopore experiments.

Embi Tec
7738 Arjons Drive
San Diego, CA 92126
www.embitec.com

Embi Tec manufactures and distributes precast gels, DNA electrophoresis systems, illuminators and bench top essentials for your lab. We make adaptable, compact, and affordable products for molecular biology, clinical research and diagnostics, education, and a wide range of applications. We provide sales and product support to laboratories throughout the US and all over the world. Our office and manufacturing facility are located in sunny San Diego, California. Visit www.embitec.com to learn more.

Excilites Technologies
2260 Argentia Road
Mississauga, ON L5N 6H7
Canada
www.excilites.com

Excilites Technologies®, a photonics technology leader focused on delivering innovative, market-driven solutions to meet the high-performance lighting, detection and optical technology needs of today’s global markets, will showcase its innovative X-Cite® fluorescence illumination and measurement solutions. Recognized as the industry standard in fluorescence microscopy, X-Cite fluorescence illuminators include a complete range of lamp and LED light sources offering maximum stability and superior illumination uniformity to optimize imaging and ensure greater data reliability.

Fluicell AB
Arvid Wallgrens Backe 20
Gothenburg, 41346
Sweden
www.fluicell.com

Fluicell is a public company that has commercialized single-cell discovery platforms for life science to study single cells, primarily in the field of drug development. Fluicell’s existing products are the research tools Biopen® and Dynaflow® Resolve, which allow researchers to investigate the effects of drugs on individual cells at a unique level of detail. Fluicell is developing a unique high-resolution bioprinting technology in both 2D and 3D under the name Biopixlar™. With this system, complex tissue-like structures can be created where positioning of individual cells can be controlled.
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<td>Fluorescence Innovations Inc</td>
<td>519</td>
<td>GATTAquant</td>
<td>702</td>
<td>HEKA Electronik</td>
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<tr>
<td>1755 Prior Avenue</td>
<td>NEW 2019</td>
<td>Am Schloßhof 8</td>
<td>NEW 2019</td>
<td>84 October Hill Road</td>
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<td>Falcon Heights, MN 55113</td>
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<td>Holliston, MA 01746</td>
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<td><a href="http://www.fluorescenceinnovations.com">www.fluorescenceinnovations.com</a></td>
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<td>Germany</td>
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<td><a href="http://www.heka.com">www.heka.com</a></td>
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<td>and builds state-of-the-art micro-</td>
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<td>plate readers for biophysical</td>
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<td>and characterization of protein</td>
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<td>Our new line of Personal Plate</td>
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<td>ForteBio</td>
<td>347</td>
<td>Gene Tools LLC</td>
<td>446</td>
<td>Hellma USA</td>
<td>342</td>
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<tr>
<td>47661 Fremont Boulevard</td>
<td></td>
<td>1001 Summerton Way</td>
<td></td>
<td>80 Skyline Drive</td>
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<tr>
<td>Fremont, CA 94538</td>
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<td>Plainview, NY 11803</td>
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<td>ForteBio, a business unit of</td>
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<td>Gene Tools manufactures Morpholino oligos for</td>
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<td>Hellma is the world’s leading</td>
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<td>Molecular Devices LLC, offering</td>
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<td>blocking translation, modifying splicing or</td>
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<td>manufacturer of cells and</td>
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<td>products that span multiple</td>
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<td>inhibiting miRNA activity. Morpholinos</td>
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<td>technology vectors including</td>
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<td>are effective, specific, stable and non-toxic. They</td>
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<td>optical analysis. For 97 years,</td>
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<td>analytical instrumentation and</td>
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<td>are used in cell cultures, embryos or,</td>
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<td>since Hellma GmbH was founded in</td>
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<td>software, clone picking and</td>
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<td>as Vivo-Morpholinos, in adult animals. Gene Tools</td>
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<td>1922 in Müllheim, southern</td>
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<td>imaging, and customized</td>
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<td>also markets products for delivery of</td>
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<td>Germany, our commitment has been</td>
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<td>engineering solutions. We</td>
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<td>Morpholinos into cell cultures, including our</td>
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<td>partner with our customers in</td>
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<td>Endo-Porter endosomal release agent. Dr. Jim</td>
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<td>biologics and other life sciences</td>
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<td>Summerton founded the pioneering antisense</td>
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<td>the most precise analytical</td>
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<td>segments to unlock workflow</td>
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<td>company Antivirals Inc (now AVI BioPharma Inc) in</td>
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<td>results. Welcome to the fine art</td>
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<td>bottlenecks, provide best-in-class</td>
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<td>1980 to develop antisense therapeutics and</td>
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<td>of precision!</td>
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<td>products and first-class service.</td>
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<td>founded Gene Tools LLC in 1997 to supply</td>
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<td>Morpholino oligos to researchers worldwide. Backed</td>
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<td>by PhD-level customer support, Gene Tools designs</td>
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<td>and synthesizes Morpholinos and delivery reagents.</td>
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<td>FUJIFILM Cellular Dynamics</td>
<td>808</td>
<td>Hamamatsu Corporation</td>
<td>246</td>
<td>HORIBA Scientific</td>
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<tr>
<td>603 Science Drive</td>
<td></td>
<td>360 Foothill Road</td>
<td></td>
<td>20 Knightsbridge Road</td>
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<td>Madison, WI 53711</td>
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<td>Bridgewater, NJ 08807</td>
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<td>Piscataway, NJ 08854</td>
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<td>HORIBA Scientific offers the most</td>
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<td>sensitive, flexible, simple,</td>
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<td>affordable steady state &amp; life-</td>
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<td>time fluorometers, modular,</td>
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<td>expandable open architecture,</td>
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<td>tabletop systems &amp; ion ratio</td>
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<td>imaging microscopy solutions,</td>
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<td>software &amp; accessories. Duetta, a</td>
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<td>complete Fluorescence and</td>
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<td>Absorbance Spectrometer from UV</td>
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<td>to NIR (250 - 1,100nm) offers A-TEEM</td>
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<td>Molecular Fingerprinting which</td>
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<td>measures the full fluorescence</td>
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<td>contour plot of a sample at all</td>
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<td>excitation wavelengths and all</td>
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<td>emission wavelengths. The matrix</td>
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<td>is corrected for effects of high</td>
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<td>concentration (inner-filter effect)</td>
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<td>using the absorbance spectrum.</td>
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**Hamamatsu Corporation**

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.
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Booth Number</th>
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<tbody>
<tr>
<td>ID Quantique SA</td>
<td>211</td>
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</table>
| Chemin de la Marbrerie 3  
Carouge / Geneva, 1227  
Switzerland          | www.idquantique.com |
| Ionovation GmbH      | 405          |
| Gewerbepark 9-11  
Bissendorf, 49143  
Germany          | www.ionovation.com |
| IonOptix             | 233          |
| 396 University Avenue  
Westwood, MA 02090  
www.ionoptix.com | |
| Ionovation represents a wealth of experience in microscopy and electrophysiology. Our product line comprises Nobel Prize 2018 awarded technology: adjustment free optical tweezers with unique video based force detection. Fluorescence and Quantitative Phase Contrast microscopy combined with organ on chip technology complete the picture. Another field of Ionovation’s activity is lipid bilayer electrophysiology: We offer automated workstations and advanced versions as add-ons for inverted microscopes. Our mission is to provide state-of-the-art technology and services for your research projects. |
| IOP Publishing       | 601          |
| Temple Circus, Temple Way  
Bristol, BS1 6HG  
United Kingdom | www.ioppublishing.org |
| IOP Publishing provides a range of journals, books, websites, magazines, conference proceedings and services through which leading-edge scientific research is distributed worldwide. Extending to more than 20 journals IOP biosciences is dedicated to providing the essential content covering all areas of medicinal physics, biophysics and biomedical engineering. Visit iopscience.org/biosciences. IOP ebooksTM is an award-winning book programme that brings together innovative digital publishing with leading voices in scientific, technical, engineering and medical (STEM). Visit iopscience.org/books. |
| ISS                  | 238          |
| 1602 Newton Drive  
Champaign, IL 61822 | www.iss.com |
| ISS activities include two product lines: the fluorescence analytical division (time-resolved spectrofluorometers, laser scanning time-resolved confocal microscopes, STED microscope) and the medical division (for the absolute measurement of oxygen saturation in brain and muscle tissues). A variety of modular components complements the instrumentation: laser diodes, LEDs, high pressure cell and fiber optic sensors; data acquisition cards for FCS and FLIM; laser launchers; detector units. Applications include lifetime measurements, single-molecule microscopy, FRET, FLIM, FCS, PCH, STED. |
| Jackson ImmunoResearch Laboratories Inc | 708 |
| 872 W Baltimore Pike  
West Grove, PA 19390  
www.jacksonimmuno.com | |
| Specializing in affinity-purified secondary antibodies (many adsorbed against other species) conjugated with Alexa Fluor®, DyLight™, and Cyanine fluorescent dyes; R-PE; and other detection ligands. Other products include anti-IgG, Light Chain specific for Western blotting after IP, Alexa Fluor® 680 and 790 for highly sensitive Western blots. ISO 9001:2015 registered. |
JASCO will be exhibiting a range of biophysical characterization tools including Circular Dichroism, Fluorescence and FTIR instrumentation. The JASCO J-1000 Series Spectrophotometers provide an optical bench specifically designed for high sensitivity measurements in the far- and near-UV regions. Temperature control systems can be coupled with multi-position cells to run thermal melts. Automated high-throughput CD can obtain measurements on up to 192 samples without user intervention, saving both time and money. Microsampling cells provide measurements on sample volumes as low as 2 microliters.

Jetstream is NSF’s first production cloud facility and is part of the NSF Extreme Digital (XD) program. It is a Infrastructure-as-a-Service platform that supports hundreds of virtual machines (VMs) and data volumes. Jetstream enables on-demand access to interactive, user-configurable computing and analysis capability. It is used by researchers, educators, software developers, and science gateway creators. Jetstream also seeks to democratize access to cloud capabilities and promote sharable, reproducible research.

Journal of General Physiology publish 12 issues per year.

KinTek is the world leader for state-of-the-art kinetic analysis that supersedes anecdotal single molecule studies. We offer premier research instruments supported by first-class service. At the meeting we will show our new Auto-Stopped-Flow with optional robotic sample loader, offering the highest signal using the smallest sample volumes, and our Rapid Chemical/Freeze-Quench-Flow instruments. New advances in KinTek Explorer software for dynamic simulation and fitting of kinetic data will be revealed – available for PC and Mac.

Laboratory for Fluorescence Dynamics is a national research resource center for biomedical fluorescence spectroscopy, supported by the National Institute of Health (NIGMS) and the University of California, Irvine (UCI). Main activities: Services and Resources: state-of-the-art lab for fluorescence measurements, microscopy, spectroscopy. Research and Development: design, test, and implement advances in the technology of hardware, software, biomedical applications. Training and Dissemination: disseminates knowledge of fluorescence spectroscopic principles, instrumentation, applications.

LaCroix Precision Optics has positioned itself as a premier domestic volume and prototype manufacturer of custom precision optics. Capabilities include Spherical, Aspherical, Plano, and custom coated optics. At our facility in Batesville, Arkansas, we use both traditional methods and advanced CNC processing to achieve the highest level of precision and quality demanded by our customers. We are certified to ISO 9001:2015 and is ITAR certified and compliant. We take great pride in producing quality optics made to specification, world-class service, and a fair price.

Larodan makes a comprehensive range of research grade lipids for use as analytical standards and reagents, serving customers all around the world. Our products include all classes of lipids, from simple fatty acids and methyl esters to complex oxylipins, glycerides, and phospholipids. We are headquartered at the Karolinska Institute in Stockholm, Sweden, with US offices in Michigan.

Leica Microsystems 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 microscopes, digital microscopy, confocal laser scanning microscopy, electron microscopy sample preparation, optical coherence tomography, and surgical microscopes.

Linnowave is a startup company based in Erlangen (Germany) developing innovative equipment for state of the art high-resolution microscopy applications. We push today’s technical limits in optical sciences by combining classical and integrated optics with modern nano- and microfabrication techniques, that were formerly only accessible to the semiconductor industry. Over 15 years of combined experience in high-resolution microscopy and spectroscopy in quantum optical as well as biophysical research allow us to come up with unconventional but yet simple solutions.
For 20 years, Mad City Labs has been the trusted name in designing and manufacturing nanopositioning systems and precision microscopy instruments for biophysicists. Our products include Piezo Nanopositioners, Precision Micropositioners, Atomic Force Microscopes (AFM), Near Field Scanning Optical Microscopes (NSOM), and Single Molecule Microscopes. Our nanopositioners feature proprietary PicoQ® sensors with ultra-low noise & high stability performance. PicoQ® sensors combined with our innovative flexure guided stage designs lead to outstanding stability & sub-nanometer precision for super resolution microscopy, atomic force microscopy, optical/magnetic tweezers, and high resolution imaging. When paired with our high precision micropositioning systems they are the ideal building blocks for nanoscopy applications. Mad City Labs AFMs achieve atomic step resolution by leveraging the performance of our closed loop nanopositioners. Affordable and available in a variety of configurations with automated software and calibration. The RM21® MicroMirror TIRF microscope is a unique multi-spectral TIRF microscope. The MicroMirror TIRF spatially segregates the excitation wavelengths leading to improved signal-to-noise ratios and efficient data collection. Ideal for Colocalization single molecule spectroscopy, smFRET, and dark-field TIRF. The entire range of RM21® single molecule microscopes are designed for advanced fluorescence microscopy and are nanopositioner-ready to facilitate nanoscopy methods. Advantages: direct optical pathway access, high stability & precision alignment, flexible configurations, and TIRF module options. Mad City Labs specializes in finding the correct instrument solutions for your biophysics applications. Stop by and visit with our scientists and engineers during the exhibit!
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<thead>
<tr>
<th>Company Name</th>
<th>Booth Number</th>
<th>Address</th>
<th>Website</th>
<th>Description</th>
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<tbody>
<tr>
<td>Micro Photonics</td>
<td>331</td>
<td>1550 Pond Road, Suite 110, Allentown, PA 18104</td>
<td><a href="http://www.microphotonics.com">www.microphotonics.com</a></td>
<td>Micro Photonics presents the 3T Analytik Quartz Crystal Microbalance instruments for label-free research on molecular interactions and electrochemical effects on the basis of quartz crystal microbalances. A full range of QCM-D with up to 4 flow cells, temperature control, and optional automatic liquid handling.</td>
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<tr>
<td>MicroData Instrument Inc</td>
<td>420</td>
<td>1207 Hogan Drive, South Plainfield, NJ 07080</td>
<td><a href="http://www.microdatamdi.com">www.microdatamdi.com</a></td>
<td>MicroData Instrument Inc has more than 25 years history of designing and manufacturing many different advanced research instruments and devices. MDI provides scientists and researchers with a broad selection of advanced drug and bio-reagent deliver systems, including microinjectors, multichannel microperfusion systems and inverted microscope work station platform and manipulators. MDI also produces a new generation of pneumatic and programmable micropipette pullers, quartz micropipette pullers, glass pipette precision Microforge-Grinder Centers and unique automatic multi-pipette pullers.</td>
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<tr>
<td>Mizar Imaging</td>
<td>458</td>
<td>7 MBL Street, Lillie 220, Woods Hole, MA 02543</td>
<td><a href="http://www.mizaringaming.com">www.mizaringaming.com</a></td>
<td>Mizar Imaging brings you the Mizar Tilt: a lightsheet add-on that works even with oil immersion objectives. Sample prep is easy, imaging is easy, and it fits on most scopes. Image live cells in multiple colors with minimal photodamage, now at the resolution you need.</td>
</tr>
<tr>
<td>Molecular Devices</td>
<td>117</td>
<td>3860 N 1st Street, San Jose, CA 95134</td>
<td><a href="http://www.moleculardevices.com">www.moleculardevices.com</a></td>
<td>At Molecular Devices, we enable our customers to unravel the complexity of biological systems. We provide platforms for high-throughput screening, genomic and cellular analysis, colony selection and microplate detection. These leading-edge products empower scientists to improve productivity and effectiveness, ultimately accelerating research and the discovery of new therapeutics.</td>
</tr>
<tr>
<td>Multi Channel Systems</td>
<td>442</td>
<td>Aspenhauserstrasse 21, Reutlingen, 72770 Germany</td>
<td><a href="http://www.multichannelsystems.com">www.multichannelsystems.com</a></td>
<td>Multi Channel Systems provides scientific equipment for electrophysiological research: MEA-Systems for extracellular recordings, automated patch clamp systems, and robots for TEVC in Xenopus oocytes.</td>
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<tr>
<td>Nanion Technologies</td>
<td>217</td>
<td>Ganghoferstr 70A, Munich, 80339, Germany</td>
<td><a href="http://www.nanion.de">www.nanion.de</a></td>
<td>Nanion is a leading provider of automated patch clamp instrumentation with throughput capabilities ranging from 1, 8 and up to 768 cells in parallel. Nanion also provides devices for cardiotoxicity screening, parallel bilayer recordings and membrane transporter protein recordings. We are your one-stop-shop for ion channel research, drug discovery and safety screening.</td>
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<tr>
<td>NanoSurface Biomedical</td>
<td>505</td>
<td>4000 Mason Road, Suite 304, Seattle, WA 98195</td>
<td><a href="http://www.nanosurfacebio.com">www.nanosurfacebio.com</a></td>
<td>NanoSurface Biomedical Inc is a biotechnology company based in Seattle, WA and was founded in 2015. NanoSurface's technologies specialize in nanopatterned surfaces that imitate the native extracellular matrix and structure cultured cells into physiologically relevant tissue models. Flagship products include NanoSurface Cultureware and the NanoSurface Cytostretcher. NanoSurface Biomedical seeks to accelerate discovery to improve human health by providing innovative products and services for drug development, disease modeling, and cell biology research.</td>
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<tr>
<td>NanoTemper Technologies</td>
<td>428</td>
<td>400 Oyster Point Boulevard, Suite 336, South San Francisco, CA 94040</td>
<td><a href="http://www.nanotemper-technologies.com">www.nanotemper-technologies.com</a></td>
<td>NanoTemper Technologies is deeply committed to the best customer experience. Central to this is a strong focus on enabling researchers to easily, efficiently, and accurately perform protein characterization. With a broad offering of systems, software and consumables for evaluating binding affinities and protein stability, scientists in pharmaceutical, biotech or academic labs will find an optimized workflow, quality results and responsive customer support. Work with a deeply experienced and globally operating team, and realize the NanoTemper experience.</td>
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<td>Company Name</td>
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<td>Narishige International</td>
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<td>USA Inc</td>
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<td>usa.narishige-group.com</td>
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<td>NeoBiosystems Inc</td>
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<td>1407 Heckman Way</td>
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<td>Nicoya Lifesciences</td>
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<td>Nikon Instruments Inc</td>
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<td>1300 Walt Whitman Road</td>
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<td>OLIS Inc</td>
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<td>130 Conway Drive</td>
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<td>Olympus America Inc</td>
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<td>logy to make OpenSPR™, the</td>
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<td>and single-molecule FRET.</td>
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<td>The Nanoimager is compact</td>
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<td><a href="http://www.pco-tech.com">www.pco-tech.com</a></td>
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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.

| Peptides International Inc     | 252          |
| 11621 Electron Drive            |              |
| Louisville, KY 40299            |              |
| www.pepnet.com                  |              |

Peptides International manufactures & distributes biochemical products for drug discovery & research at universities, institutes, & pharmaceutical/biotech companies throughout the world. Our Louisville laboratory specializes in peptides of all types, solid phase resins such as CLEAR™, CLEAR-OX™, KLH, amino acid derivatives, & custom peptide synthesis. We are experts in toxins & RGD peptides. Other exceptional products that we offer include: proteins, enzyme inhibitors & substrates, click chemistry items, & combinatorial peptide libraries. We can take you from R & D to cGMP, effortlessly.

| Photometrics                    | 208          |
| 3440 East Britannia Drive #100 |              |
| Tucson, AZ 85706               |              |
| www.photometrics.com            |              |

Founded in 1978, Photometrics is the world’s premier design and manufacturer of high-performance CMOS, EMCCD and CCD cameras for life science research. The original architect of the world’s first scientific-grade microscopy EMCCD camera, Photometrics maintains its leadership role with the release of the Prime 95B, the first Scientific CMOS camera with 95% quantum efficiency. Photometrics also offers comprehensive OEM support, including fully characterized, cost-efficient imaging systems and components. Photometrics is headquartered in Tucson, Arizona.

| PI (Physik Instrumente)         | 308          |
| 16 Albert Street                |              |
| Auburn, MA 01501               |              |
| www.pi-usa.us                   |              |

ISO-9001-Certified, Global Leader in Precision Motion Solutions. Piezo Mechanisms, Air Bearings, Hexapods, Photonics Alignment, Nanopositioning, Micropositioning, Piezo Positioning Systems, Linear Motors & Rotary Stages for OEM & Research. Products: Nanopositioning Systems; 6-Axis Hexapod Alignment Systems, Microscopy Stages; Lens Positioners; Tip/Tilt Mirrors; Piezo Transducers, Piezo Actuators; Piezo Motors, Piezo Drivers & Digital Motion Controllers; Voice Coil Actuators, MicroMotion Robots.

| PicoQuant Photonics North       | 401          |
| 9 Trinity Drive                 |              |
| West Springfield, MA 01089      |              |
| www.picoquant-usa.com           |              |

Product lines include Pulsed Diode Lasers, Time-Correlated Single Photon Counting (TCSPC) electronics and detectors, fluorescence lifetime spectrometers, time-resolved fluorescence microscopes and upgrade kits for Laser Scanning Microscopes. Applications include Single Molecule Spectroscopy, Fluorescence Lifetime Imaging (FLIM), Fluorescence Resonance Energy Transfer (FRET), Fluorescence Correlation Spectroscopy (FCS), super-resolution microscopy.

| Precision Plastics              | 123          |
| 6405 A Ammendale Road           |              |
| Beltsville, MD 20705            |              |
| www.precisionplastics.com       |              |

Precision Plastics is a custom plastic fabrication shop and OEM manufacturer that works closely with scientist to design, engineer and make custom laboratory equipment. We also have an extensive line of microscope enclosures and will make them to fit any microscope and application. We also make animal restraints, insect cages, scent trails, fume hoods, mazes, plethysmographs, manifolds, Beta shields, growth chambers, custom tanks and just about anything else you can think of. Please contact us, we’d love to work with you!

| Pressure BioSciences Inc        | 610          |
| 14 Norfolk Avenue               |              |
| South Easton, MA 02375          |              |
| www.pressurebiosciences.com     |              |

Pressure BioSciences Inc (OTCQB: PBIO) is a leader in the development of pressure-based platform solutions for the life sciences industry. Our products/services are based on three patented, pressure-enhanced platforms: Pressure Cycling Technology (PCT) for use in the design and characterization of biotherapeutic drugs. Pressure Enabled Protein Manufacturing Technology (PreEMT), for use in creation of novel protein therapeutics, and manufacturing of follow-on biologics. Ultra Shear Technology (UST). offers the potential to produce stable nanoemulsions of oil-like products in water.

| Prior Scientific Inc            | 334          |
| 80 Reservoir Park Drive         |              |
| Rockland, MA 02370              |              |
| www.prior.com                   |              |

Prior Scientific manufactures custom and stock precision electro-mechanical & optical components & systems. With a variety of micro- and nano-positioning products, we can customize solutions to meet your exact needs. We make Piezo stages, linear motor stages, laser autofocus systems, filter cube changers, motorized nosepieces, micromanipulators, physiology platforms & microscope stands. Prior Scientific excels in the creation of OEM prototypes, custom-built products & complete system solutions according to individual customer requirements for any optical, focusing or positioning application.
<table>
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<th>Company Name</th>
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<tr>
<td>Quantum Northwest Inc</td>
<td>416</td>
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<tr>
<td>22910 E Appleway Avenue, Suite 4</td>
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<tr>
<td>Liberty Lake, WA 99019</td>
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<td><a href="http://www.qnw.com">www.qnw.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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| Rapp OptoElectronic GmbH           | 503          |
| Gehlenkamp 9a                      |              |
| Hamburg, 22559                     |              |
| Germany                            |              |
| www.rapp-opto.com                 |              |
| We offer products for:             |              |
| • Optogenetics                     |              |
| • Uncaging                         |              |
| • FRAP, Photoswitching             |              |
| • Ablation - Microdissection       |              |
| • Mapping                          |              |
| • Laser T-Jump                     |              |
| • Flash photolysis                 |              |
| • FLIM                             |              |
| • 2-photon microscopy, rapid z-stack imaging | |
| • Systems for digital holography  |              |

| Royal Society Publishing           | 619          |
| 6-9 Carlton House Terrace          |              |
| London, SW1Y 5AG                   |              |
| United Kingdom                     |              |
| royalsociety.org/journals          |              |
| The Royal Society journal Interface, edited by Prof Richard Cogdell FRS, University of Glasgow, publishes research and reviews. Its sister journal Interface Focus, edited by Prof Russell Foster FRS, University of Oxford, publishes themed issues. Our authors benefit from constructive and timely peer review, where both the physical and life sciences are considered equally; open access options; high production standards; high levels of article usage rates; and promotion by a dedicated press office. To find out more, please visit booth 619 and Dr. Tim Holt will be happy to answer your questions. |

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<td>RPMC Lasers Inc</td>
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<tr>
<td>203 Joseph Street</td>
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<td>O’Fallon, MO 63366</td>
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<td><a href="http://www.rpmclasers.com">www.rpmclasers.com</a></td>
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<td>RPMC Lasers Inc (Incorporated in 1996) is the leading laser distributor in North America. We offer diode lasers, laser modules, solid state lasers and amplifiers, and fiber lasers and amplifiers. We also offer custom solid-state lasers and laser diode subsystems. We have over 1500 different laser diodes and solid-state lasers from technology leading manufacturers in the US, Europe, and Asia. Our goal is to provide high quality technical advice with an in-depth knowledge of the products we offer at an attractive value proposition, the best laser at a fair price.</td>
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| SB Drug Discovery                  | 209          |
| West of Scotland Science Park      |              |
| Glasgow, G20 0XA                   |              |
| United Kingdom                     |              |
| www.sbdrugdiscovery.com            |              |
| SB Drug Discovery is a contract research organization specializing in ion channel, GPCR and transporter drug discovery services including recombinant cell line generation, assay development, high throughput screening and selectivity profiling. With over 150 recombinant ion channel cell lines, SB’s ion channel discovery team combines one of the largest commercial sources of ion channel reagents with high throughput electrophysiology to offer a complete resource for drug discovery screening, lead optimization and selectivity. |

| Semrock, a business unit of IDEX Health & Science | 300          |
| 3625 Buffalo Road, Suite 6          |              |
| Rochester, NY 14624                 |              |
| www.semrock.com                     |              |
| Semrock, a business unit of IDEX Health & Science, manufactures optical filters that set the standard for use in biomedical and analytical instrumentation. These include LED bandpass sets, sets for Brilliant dyes, and other high performance fluorescence and Raman spectroscopy filters. These innovative products are built on the latest in optical coating technology for end users or high-volume delivery demands. |

The uM-workstations for electrophysiology, imaging and optogenetics are demonstrating, featuring ZERO DRIFT uMp micromanipulators and uMs microscopes: -Smooth, stable and drift free positioning -Compact, scalable and cost-efficient multiple manipulator systems -20 mm of movement, 5 nm resolution, 100 nm repeatability -Fast piezo thrusts for intracellular recordings -Battery-operated system (rechargeable) -Millisecond synchrony and open source SDK for PC control. |

| Siskiyou Corporation                | 704          |
| 110 SW Booth Street                 |              |
| Grants Pass, OR 97526               |              |
| www.siskiyou.com                    |              |
| Siskiyou Corporation manufactures micromanipulators, motion control devices, tissue slicers, translation stages, probe clamps, construction hardware, adjustable platforms, tilt tables, and other laboratory equipment for microbiological research and general experimenting. Siskiyou Corporation carries a full line of micromanipulators: coarse manual, Huxley style, hydraulic, and motorized. |

<p>| Sophion Bioscience A/S              | 247          |
| Baltorpvej 154                      |              |
| Ballerup, 2750                      |              |
| Denmark                             |              |
| <a href="http://www.sophion.com">www.sophion.com</a>                     |              |
| Sophion was founded almost 20 years ago by a group of passionate electrophysiologists, with the shared purpose of making patch clamping objective and independent of user skills to provide faster, more accurate and objective patch clamping results. With our products QPatch and Qube we cover most throughput needs and provide the user with real whole-cell patch clamp data based on true gigaseals. With our technical, biological and application support we help our partners achieving their targets and ensuring uncompromised data quality in a user-friendly environment from assay setup to data analysis. |</p>
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<td>Springer Nature</td>
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<td>The Company of Biologists</td>
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<td>T&amp;T Scientific Corporation</td>
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<td>The Company of Biologists</td>
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Springer Nature is one of the world’s leading global research, educational and professional publishers, home to an array of respected and trusted brands providing quality content through a range of innovative products and services. Springer Nature is the world’s largest academic book publisher and numbers almost 13,000 staff in over 50 countries. Visit www.springernature.com.

Strex manufactures innovative biological research instruments. Our most popular products are our Cell Stretching Systems for cell culture, uniaxial, and biaxial stretch. These devices mimic mechanical cell strain in cell cultures and create an environment similar to in vivo conditions. The most common cell or tissue types are: endothelial cells, cardiomyocyte, blood vessel tissue, heart tissue, bladder tissue and lung tissue/cells. Microscope mountable options are available as well. We also provide an innovative LN2-free Controlled Rate Freezer for benchtop use. Contact us for more information.

Sutter Instrument is a dual headstage integrated digital patch clamp amplifier with built-in digitizer and comprehensive SutterPatch software. The award winning Lambda OBC Optical Beam Combiner is a patented concept for combining separate light sources with different spectra into a single output beam. The BOB is a flexible open architecture upright microscope that can be configured for your research needs. In addition, the stainless steel TRIO manipulator provides greater stability.

T&T Scientific Corporation produces low-cost, fully assembled, and single-use liposome extrusion devices that simplify the process of preparing liposomes for research laboratories, manufacturing facilities, and clinical settings. T&T Scientific’s NanoSizer TM extruders are provided fully assembled, ready to use, and they do not require any assembly or cleaning which enables a more efficient process. NanoSizer extruders are single-use which means they are clean every time, eliminating the risk of contamination. Automated NanoSizer extrusion equipment is transforming liposome production of a small and large volume of solutions alike, simplifying scale-up from research and development through to final large scale manufacturing.

At TA Instruments we believe in offering solutions through quantitative understanding and multi-parameter analysis. By measuring native systems via their heat production, we enable scientists to address both questions of “how stable” and “how fast”, two tenets of a chemical system. Our Affinity ITC and Nano DSC, both with automated options, are high precision calorimeters for label-free measurements of binding interactions, biomolecular structure and stability. We also offer the ultra-sensitive TAM IV isothermal calorimeter, a configurable platform with applications ranging from shelf-life stability for small molecule and biologics, amorphicity content, microbial activity, and more. Visit us to learn about the very latest in our applications using native assays.

The Company of Biologists is a not for profit publishing organisation dedicated to supporting and inspiring the biological community. The Company publishes five specialist peer-reviewed journals: Development, Journal of Cell Science, Journal of Experimental Biology, Disease Models & Mechanisms and Biology Open. It offers further support to the biological community by facilitating scientific meetings and communities, providing travel grants for researchers and supporting research societies.
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<td><strong>The Journal of Physiology</strong></td>
<td><strong>717</strong></td>
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<tr>
<td>30 Farringdon Lane</td>
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<td>London, EC1R 3AW</td>
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<td>United Kingdom</td>
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<td><a href="http://jp.physoc.org">jp.physoc.org</a></td>
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The Journal of Physiology publishes groundbreaking research that elucidates new physiological principles or mechanisms. It publishes papers in all areas of physiology, with an emphasis on human and mammalian physiology, including work at the molecular level, the level of the cell membrane, single cells, tissues or organs and systems physiology. The Journal is FREE to publish in for all authors, has no page or figure limits, and is compliant with all major public access mandates including NIH. An Open Access option is available. The 2017 Two-Year Impact Factor is 4.540.

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<td><strong>Thorlabs</strong></td>
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<td>56 Sparta Ave</td>
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<td>Newton, NJ 07860-2402</td>
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<td><a href="http://www.thorlabs.com">www.thorlabs.com</a></td>
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Thorlabs has been proud to serve the photonics industry for over 25 years. With increasing use of photonics technologies in the life sciences, we have grown our capabilities to serve the life science and biomedical markets with purpose-built components and systems. Thorlabs offers multiphoton, OCT, and widefield imaging systems, as well as cameras, lasers, optics, fiber, electronics, and mechanical components. Our offices, located in 9 countries, are focused on providing same-day shipping of stocked components, a fast response to customer inquiries, and fast turnaround on custom needs.

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<td><a href="http://www.techmfg.com">www.techmfg.com</a></td>
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TMC designs and manufactures a complete line of floor vibration isolation systems and laboratory tables for biophysics research. Products include the world-renowned CleanBench vibration isolated lab table, and the Everstill active vibration isolation benchtop platform, as well as the brand new CleanBench Aktiv lab table that combines pneumatic and active vibration isolation for unprecedented performance. For large precision instruments like electron microscopes TMC offers the STACIS family of active piezoelectric solutions that help keep these instruments inside their vibration specifications.

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<td>Japan <a href="http://www.tokaihit.com">www.tokaihit.com</a></td>
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Happiness for Cells, Success for Researchers For BPS 2019, we will introduce: - New Microscope Environmental enclosure for temperature control - Media-exchange-system for various applications with TTL operation & high-quality - IonOptics OEM Electrostimulation chamber system Various system and customization are possible with Tokai Hit to support successful cell-culturing. They are unique and only available from Tokai Hit. A fail-proof Incubation/Stress-Free Quality/Intuitive operation Please visit our booth 335 and see our new devices.

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TCI is a leading global manufacturer and supplier of specialty chemicals to the chemical, pharmaceutical, biotech, electronic, and environmental industries. Drawing on over 80 years of synthetic organic chemistry experience, TCI develops new technology that produces rare and novel compounds. Our current catalog lists over 28,000 products for use in research and production. Our manufacturing capabilities include multistep synthesis and continuous production from milligram to ton scale for custom and contract research services. Visit our website [www.TCIchemicals.com](http://www.TCIchemicals.com) today!

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<tr>
<td>2nd Floor, KHE Building, 48 YUuseong-daero</td>
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<tr>
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Tomocube is dedicated to delivering products that can enhance biological and medical research via novel optical solutions that can assist Tomocube in understanding, diagnosing, and treating human diseases. Current optical microscopes only provide users with a 2D view of their sample. To get a 3D view, users must use expensive and invasive electron or confocal microscopes, which require extensive pre-preparation of samples and are not amenable to dynamic samples such as live cells. Our platform enables researchers to measure nanoscale, real-time, dynamic images of individual living cells without the need for sample preparation.

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TOPTICA Photonics
5847 County Road 41
Farmington, NY 14425
www.toptica.com

TOPTICA is a privately held technology driven company, which develops, produces and sells diode and ultrafast fiber lasers for scientific and industrial applications. The company sets its own challenge to regularly present exciting product innovations and world firsts.

TOPTICA Photonics
5847 County Road 41
Farmington, NY 14425
www.toptica.com

Warner Instruments
1125 Dixwell Avenue
Hamden, CT 06514
www.warneronline.com

Warner Instruments manufactures a large selection of products ideal for biophysics and electrophysiology, from microscopy-based manual patch clamp systems to high-throughput ion channel screening platforms. Imaging/recording chambers, perfusion and temperature control systems are our specialties. We also offer an extensive line of intra and extracellular amplifiers and planar lipid bilayer workstations. New in 2019 is our touch screen enabled Valve Control System. The Smart Ephys family of products, encompassing the collective expertise of Warner, HEKA, Multi Channel Systems and TBSI offers complete solutions for all areas of electrophysiology research. Whether you work with oocytes, iPSCs, slices or cardiomyocytes, we have the tools to help you improve and accelerate the pace of discovery.

Wyatt Technology Corporation
6330 Hollister Avenue
Santa Barbara, CA 93117
www.wyatt.com

Wyatt Technology is the recognized leader in light scattering instrumentation and software for determining absolute molar mass, size, charge and interactions of macromolecules and nanoparticles in solution. Wyatt provides in-line multi-angle static light scattering SEC-MALS; field flow fractionation (separation with no stationary phase)- FFF-MALS; composition gradients for interaction analysis - CG-MALS; high-throughput dynamic light scattering-DLS; high-sensitivity electrophoretic mobility-MP-PALS; differential refractometry, and differential viscosity.

Xenocs makes SAXS/WAXS instruments for protein, RNA, lipid, micelles and other nano scale materials. For protein conformation, SAXS can give you the envelope of your protein. For protein folding, the Kratky plot is extremely sensitive. The BioXolver can be used for automated measurements from a 96-well plate using 5 ul of material. The BioXolver can also measure SEC-SAXS for highly monodisperse fractionated protein sample measurements. With a very low Qmin (0.006 A-1), variable detector distance, the BioXolver is a workhorse. Xenocs brings SAXS/WAXS measurements to your lab.
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Multiscale Modeling of Chromatin: Bridging Experiment with Theory
Les Houches, France
March 31–April 5, 2019

Quantitative Aspects of Membrane Fusion and Fission
Padova, Italy
May 6–10, 2019

Revisiting the Central Dogma of Molecular Biology at the Single-Molecule Level
Lima, Peru
July 15–18, 2019
Abstract Submission Deadline: March 8, 2019
Early Registration Deadline: April 5, 2019

Biology and Physics Confront Cell-Cell Adhesion
Aussois, France
October 14–18, 2019
Abstract Submission Deadline: June 14, 2019
Early Registration Deadline: June 14, 2019

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Micropositioners and Microscope Stages

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Atomic Force Microscopes

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Single Molecule Microscopy
AFM & NSOM
Optical Microscopy
Optical & Magnetic Tweezers
Volumetric Imaging & Particle Tracking

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