

Biophysics in the Big Easy

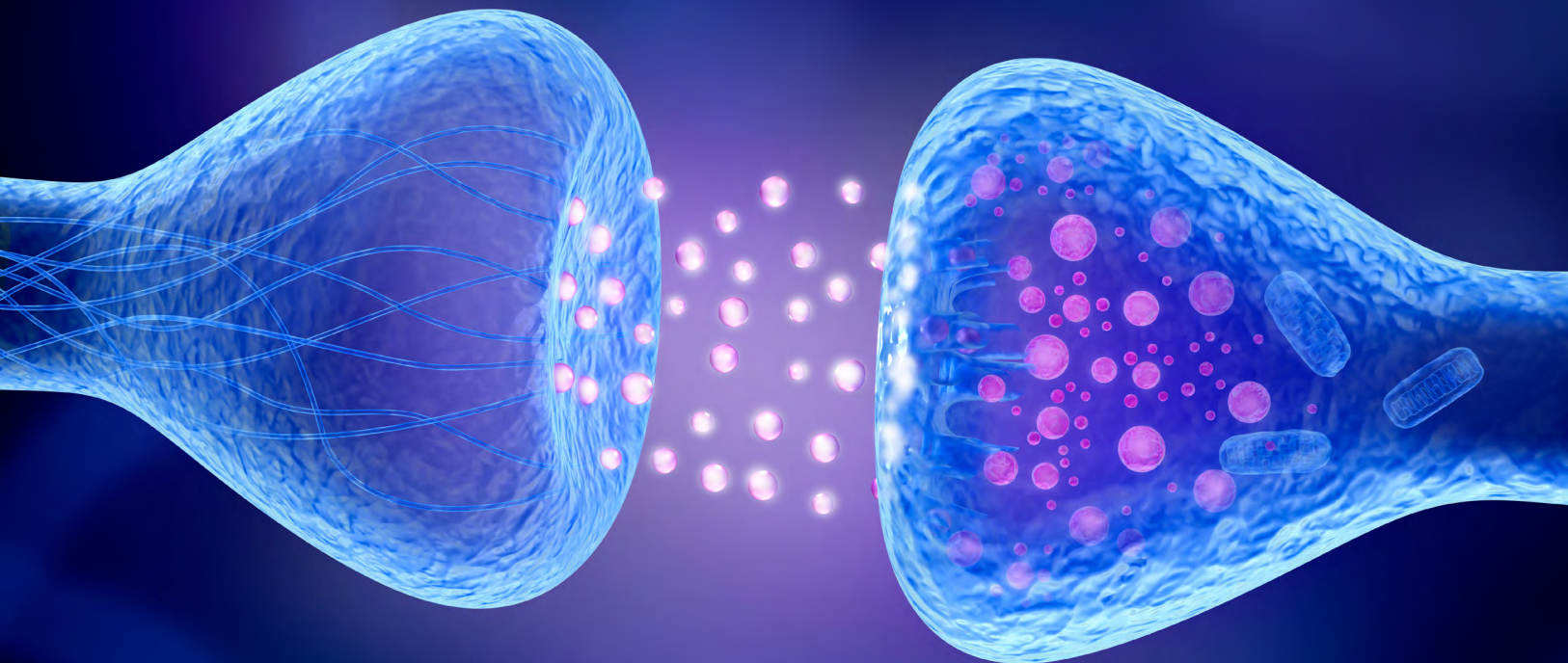
Biophysical Society 61ST Annual Meeting

February 11–15, 2017 • New Orleans, Louisiana

Program

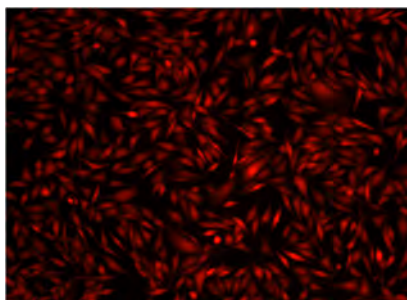
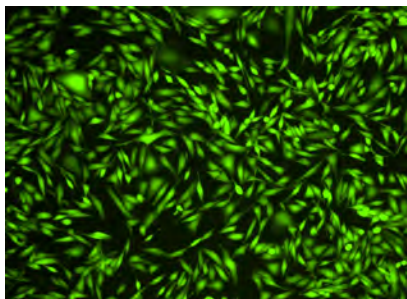


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Figure 1. ATP-stimulated calcium response of endogenous P2Y receptor in CHO-K1 cells measured with Cal-520® (top) and Cal-630™ (bottom).

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Free Lunch & Learn. Monday, 11:30am, Rm #218

Thematic Meetings 2017



Single-Cell Biophysics: Measurement, Modulation, and Modeling

Taipei, Taiwan

June 17-20, 2017

Abstract Submission Deadline: March 1

Early Registration Deadline: March 24



Conformational Ensembles from Experimental Data and Computer Simulations

Berlin, Germany

August 25-29, 2017

Abstract Submission Deadline: April 3

Early Registration Deadline: May 1





Emerging Concepts in Ion Channel Biophysics

Mexico City, Mexico

October 10-13, 2017

Abstract Submission Deadline: May 26

Early Registration Deadline: June 23



Biophysics Week

March 6–10, 2017

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 6

Part 1: How to Write a Biophysics Article Worthy of Publication

Tuesday, March 7

Capitol Hill Briefing: Nobel Laureate Peter Agre on Aquaporin Water Channels
– From Basic Biophysics to Clinical Medicine

Wednesday, March 8

Helping Hands: Finding and Maintaining Mentorships within the Biophysical
Community Webinar

Part 2: How to Write a Biophysics Article Worthy of Publication

Thursday, March 9

Webinar: Next Gen PhD: Where PhDs Land and What the Data Say

Friday, March 10

Part 3 and a Q&A Webinar: How to Write a Biophysics Article Worthy of Publication

Be a part of #BiophysicsWeek.

Celebrate this week with others around the globe!

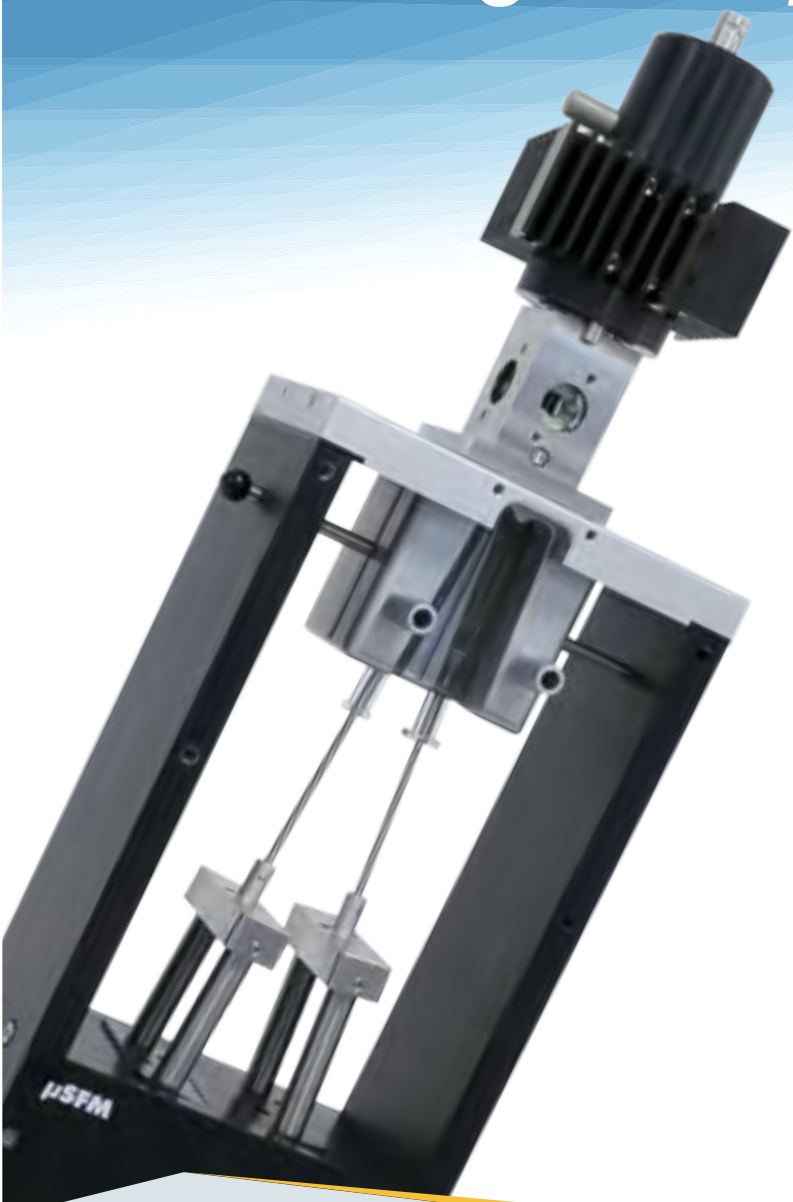
Visit biophysics.org/BiophysicsWeek
for more information.

See it at
Booth 421!

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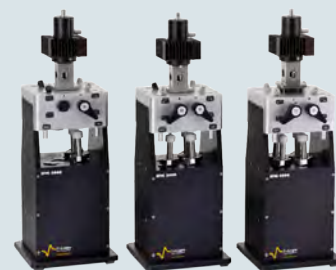
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Biophysical Society 61ST Annual Meeting

February 11–15, 2017 • New Orleans, Louisiana

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National Lecturer

Eric Betzig

Howard Hughes Medical Institute

Imaging Cellular Structure and Dynamics from Molecules to Organisms

Monday, February 13, 2017, 8:00 PM, Ernest N. Morial Convention Center

About the Molecule

The 2017 image featured on the cover shows a sparse subset of neurons in the brain of a developing zebrafish embryo. It was acquired with a scanning two-photon fluorescence excitation microscope that uses adaptive optics to recover diffraction-limited resolution deep through the aberrating tissue of the brain. Image credit: Kai Wang and Eric Betzig, Janelia Research Campus.

List of Advertisers in the 2017 Annual Meeting Program

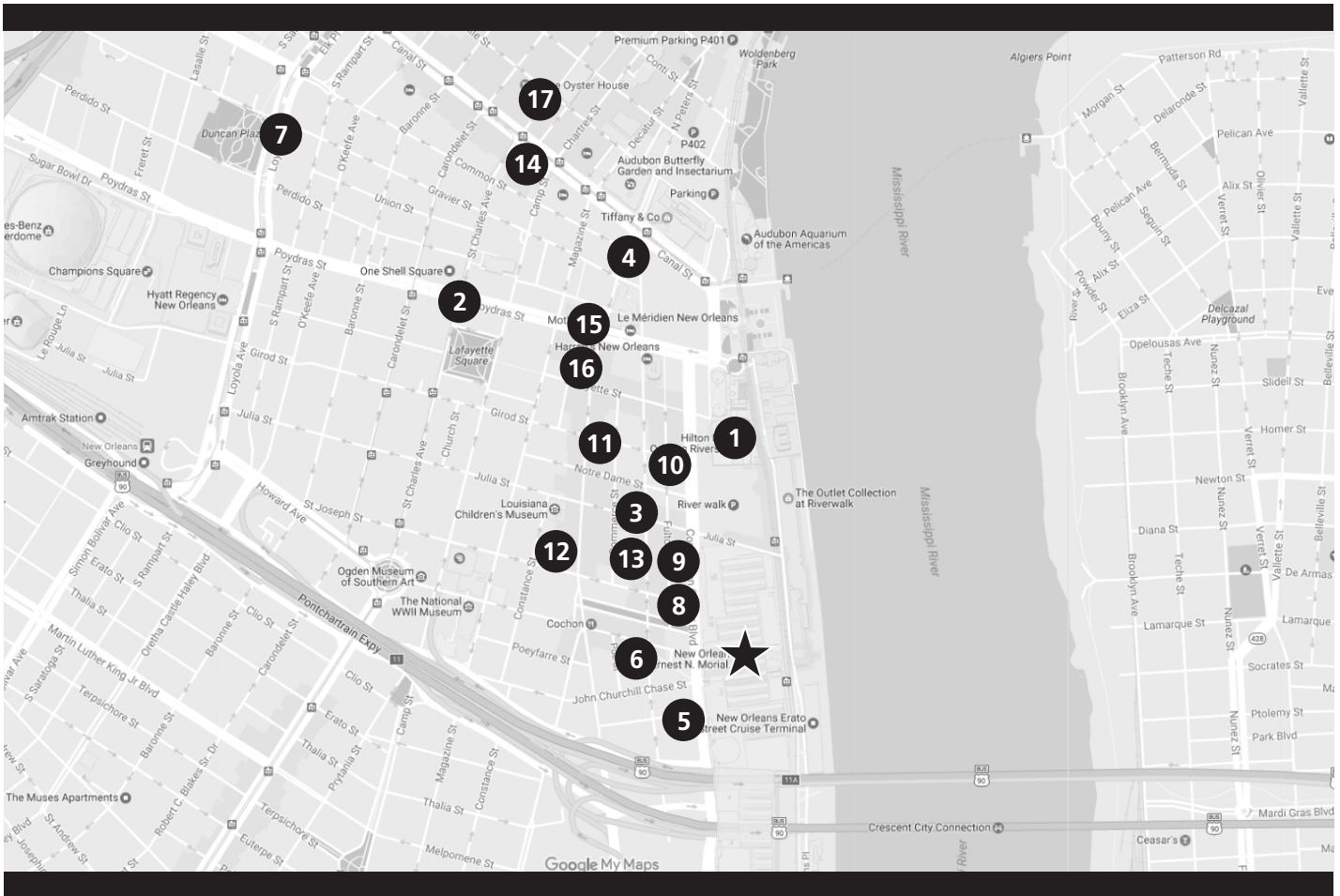
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The Rockefeller University Press
Wiley

As of January 9, 2017

Hotel Map



ERNEST N. MORIAL CONVENTION CENTER

1

HILTON NEW ORLEANS RIVERSIDE
HEADQUARTERS HOTEL

2

BLAKE HOTEL

3

COURTYARD NEW ORLEANS DOWNTOWN/
CONVENTION CENTER

4

DOUBLETREE BY HILTON HOTEL NEW ORLEANS

5

HAMPTON INN & SUITES CONVENTION CENTER

6

HILTON GARDEN INN NEW ORLEANS
CONVENTION CENTER

7

HOLIDAY INN NEW ORLEANS – DOWNTOWN
SUPERDOME

8

HYATT PLACE NEW ORLEANS – CONVENTION CENTER

9

NEW ORLEANS DOWNTOWN MARRIOTT
– CONVENTION CENTER

10

OMNI RIVERFRONT NEW ORLEANS

11

RENAISSANCE NEW ORLEANS ARTS HOTEL

12

RESIDENCE INN NEW ORLEANS DOWNTOWN HOTEL

13

SPRINGHILL SUITES BY MARRIOTT

14

ST. JAMES HOTEL

15

STAYBRIDGE SUITES HOTELS

16

THE OLD NO.77 HOTEL & CHANDLERY

17

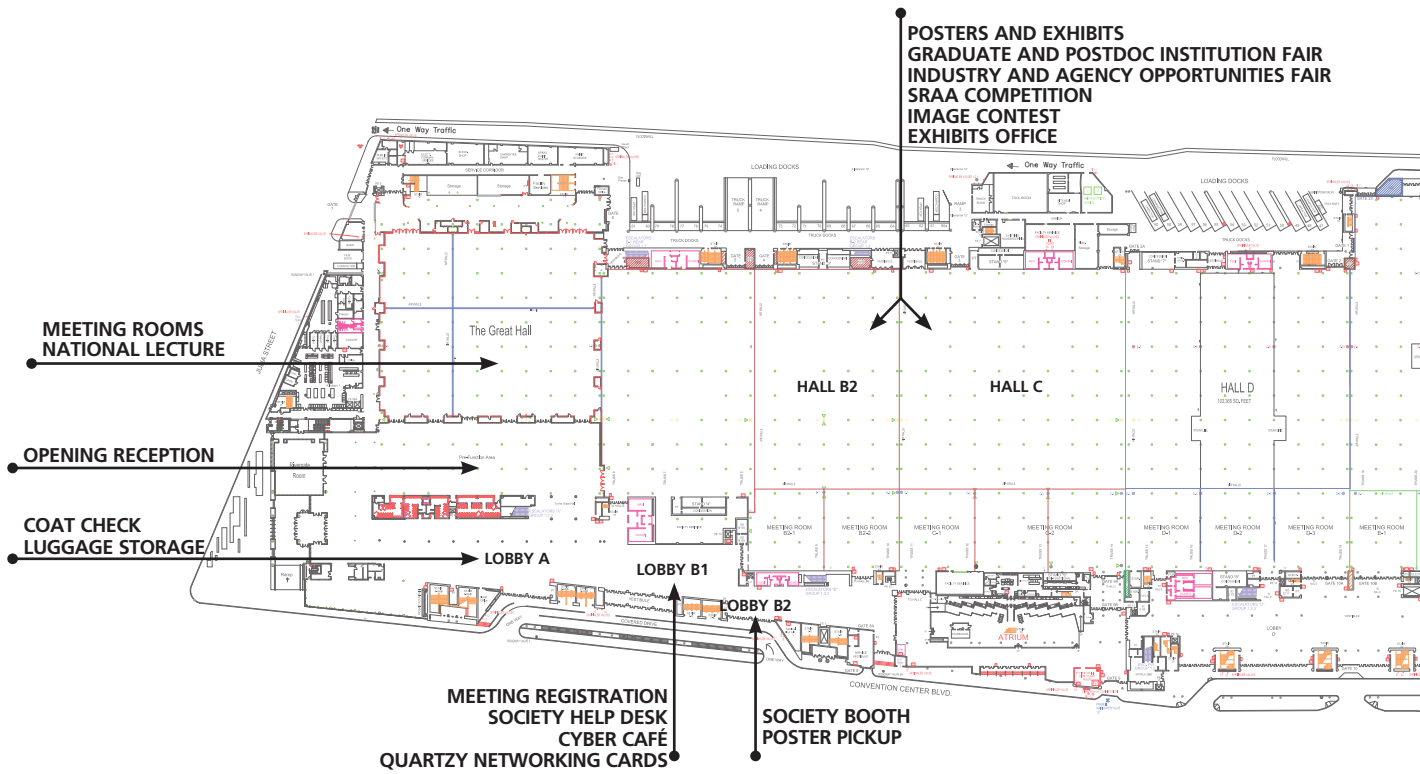
WYNDHAM NEW ORLEANS FRENCH QUARTER

61ST Annual Meeting

February 11–15, 2017 • New Orleans, Louisiana

New Orleans Ernest N. Morial Convention Center

Level 1



New Orleans Ernest N. Morial Convention Center

Level 2



Biophysical Society Code of Conduct, Anti-Harassment Policy

Adopted by BPS Council November 2015

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

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

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

Definition of Harassment

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

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

Investigative Process

Anyone who feels harassed is encouraged to immediately inform the alleged harasser that the behavior is unwelcome. In many instances, the person is unaware that their conduct is offensive and when so advised can easily and willingly correct the conduct so that it does not reoccur. Anyone who feels harassed IS NOT required to address the person believed guilty of inappropriate treatment. If the informal discussion with the alleged harasser is unsuccessful in remedying the problem or if complainant does not feel comfortable with such an approach, he/she

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

Investigative Procedure

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.

2017 Program Committee

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Arthur Palmer
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Umi Zhou, Meetings Associate

General Information

All functions will be held in the *New Orleans Ernest N. Morial Convention Center*, unless otherwise noted.

Badges

Badges are required for admission to all scientific sessions, including Saturday subgroup symposia, poster areas, exhibits, and social functions. A guest badge for non-scientific guests can be purchased for \$65 at the on-site Registration Counter located in Lobby B. Guest registration includes admittance to the Opening Mixer on Saturday night and Reception on Monday night. It does not include admission to scientific sessions, posters, or exhibits.

Banking and Currency Exchange

Foreign currency exchange and other bank transactions can be done during regular bank business hours at the Whitney Bank-Morgan State, 430 Chartres St, New Orleans, LA 70130.

Monday–Thursday	9:00 AM–4:30 PM
Friday	9:00 AM–6:00 PM
Saturday–Sunday	Closed

ATM is open 24 hours.

ATMs are also available in the New Orleans Ernest N. Morial Convention Center in Lobby B2.

Business Center, The UPS Store

The Ernest N. Morial 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 at 900 Convention Center Blvd, New Orleans, LA 70130. To contact the business center, call (504) 670-8941 or email store6216@theupsstore.com.

Saturday	9:00 AM–1:00 PM
Sunday	9:00 AM–3:00 PM
Monday–Friday	9:00 AM–5:30 PM

Career Development Center, Room 212/213

Services are available for both those seeking a position and employers with positions to fill. Please note, the career development center is the only place to post job openings. Unauthorized notices placed elsewhere in the Ernest N. Morial Convention Center will be removed.

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

Certificates of Attendance

Certificates of Attendance may be obtained in person in the Society Meeting Office, in Room 201/202, or at the Society Help Desk located at registration in Lobby B.

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 (page VI) that all meeting participants must follow.

Coat Check/Luggage Storage, Lobby A

The cost is \$3.00 per checked item. Please do not bring luggage to meeting rooms. If you are planning to check items, please plan to arrive early to ensure that you are not late for sessions due to long lines.

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

Daily Meet-up

Interested in making new acquaintances and experiencing the cuisine of New Orleans? Meet at the Society Booth each evening, Sunday through Tuesday, at 5:30 PM where a BPS member will coordinate dinner at a local restaurant.

Exhibits, Hall B-2 and C

The Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of January 9, 2017 can be found beginning on page 157. Please see Addendum for those registered after January 2, 2017.

Sunday	10:00 AM–5:00 PM
Monday	10:00 AM–5:00 PM
Tuesday	10:00 AM–4:30 PM

Exhibitor Coupons

Pick up the Exhibitor Coupons at the on-site registration counters and inside the Exhibit Hall next to the push pin stations. The coupons are valid for special offers and discounts on exhibiting companies products and services.

Family Room, Room 216

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

Friday	2:00 PM–5:00 PM
Saturday	8:00 AM–7:00 PM
Sunday–Tuesday	7:30 AM–10:00 PM
Wednesday	8:00 AM–3:30 PM

First Aid, Lobby B

In case of medical emergency, dial 504-528-3040 for the MCC Public Safety 24-Hour Base Station. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.

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

Hotel Telephone Numbers

Blake Hotel.....	504-522-9000
Courtyard New Orleans Downtown/Convention Center ..	504-598-9898
Doubletree by Hilton Hotel New Orleans	504-581-1300
Hampton Inn & Suites Convention Center.....	504-566-9990
Hilton Garden Inn New Orleans Convention Center	504-525-0044
*Hilton New Orleans Riverside	504-561-0500
Holiday Inn New Orleans - Downtown Superdome.....	504-581-1600
Hyatt Place New Orleans - Convention Center	504-524-1881
New Orleans Downtown Marriott - Convention Center ...	504-613-2888
Omni Riverfront New Orleans	504-524-8200
Renaissance New Orleans Arts Hotel	504-613-2330
Residence Inn New Orleans Downtown Hotel.....	504-522-1300
Springhill Suites by Marriott	504-522-3100
St. James Hotel	504-304-4000
Staybridge Suites Hotels.....	504-571-1818
The Old No.77 Hotel & Chandlery	504-527-5271
Wyndham New Orleans French Quarter.....	504-529-7211
*Headquarter Hotel	

Individuals Requiring Assistance

Attendees requiring special assistance during the meeting should visit the Society Meeting Office in Room 201/202 of the Ernest N. Morial Convention Center. 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 Cafe areas of the Ernest N. Morial Convention Center.

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

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

Mobile App and Desktop Planner

The Biophysical Society's Official Mobile App is available for download in App Store and Google Play Store. iOS and Android Users can search for "bps events" to download the App. We do not support native apps for Windows Mobile and Blackberry at this time; however, we have a HTML 5 Mobile Site available for all other platforms. Please visit <http://app.core-apps.com/bpsam2017> to access the Mobile Site. Using the Mobile App and Mobile Site, 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.

Networking Cards for Poster and Platform Presenters

Are you speaking in a platform session or presenting a poster? If so, you already have 25 pre-printed Networking Cards waiting for you. Networking Cards are like business cards, but designed just for scientists. They provide your contact information, title of your abstract, your presentation date/time and abstract content. Hand them out to other researchers before, during, or after your poster presentation. Networking Cards are available for pick up in Lobby B.

Sponsored by Quartzly.com, the world's leading free online lab management platform.

Parking

Ample parking is available at the Convention Center for a daily fee.

Photography

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

Poster Pickup

Posters ordered in advance through Tray Printing will be available for pick up at the Ernest N. Morial Convention Center in the Lobby B2 near the Exhibit Hall 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
Wednesday	8:00 AM–9:00 AM

Poster Sessions, Hall B-2 and C

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 from 1:45 PM–2:45 PM (10:30 AM–11:30 AM on Wednesday); even-numbered posters should present from 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 notepaper so that visitors may request an appointment. Abstracts submitted after October 3, 2016, 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 4:30 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 SO B211 and SO B212

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 a Samsung Galaxy Tablet? Earn raffle entries by visiting with exhibitors Sunday, February 12, through Tuesday, February 14, to collect tickets. The more booths you visit, the more chances to win. Drop the raffle tickets at the Society Booth, in Lobby B, by 2:30 PM Tuesday, February 14. The winner will be announced in the Exhibit Hall at 3:00 PM Tuesday afternoon. 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! Drop your ticket in the ballot box in the Exhibit Hall. Winner will be announced at 12:30 PM on Wednesday in the Exhibit Hall. You must be present in the Exhibit Hall to win.

Registration Hours, Lobby B2

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

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 #bps17
Facebook:	www.facebook.com/biophysicalsociety
Instagram:	@biophysicalsociety
Blog:	biophysicalsociety.wordpress.com

Society Meeting Office, Room 201/202

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 217

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. Audiovisual technicians will be available during the hours listed below to answer questions.

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

Transportation

Taxis will be available from Lobby B1 at the Ernest N. Morial Convention Center.

Checker Cab	504-207-7777
Liberty Bell	504-821-8222
Nawlins Cab	504-522-9059
United Taxi	504-522-9771
White Fleet	504-822-3800
Yellow Cab	504-207-7777

Undergraduate Student Lounge, Room 224

Sponsored by the Education Committee, 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.

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

Mark Your Calendars!

Future BPS Annual Meetings

62nd Annual Meeting

February 17–21, 2018
San Francisco, California

63rd Annual Meeting

March 2–6, 2019
Baltimore, Maryland

64th Annual Meeting

February 15–19, 2020
San Diego, California

Committee Meetings

All rooms are located in the *New Orleans Ernest N. Morial Convention Center* unless noted otherwise.

Friday, February 10

3:00 PM–4:30 PM

New Council Orientation

Hilton, Port Room

5:00 PM–9:00 PM

Joint Council Reception, Dinner, and Meeting

Hilton, Compass Room

Saturday, February 11

8:30 AM–11:00 AM

Joint Council Meeting (continued)

Hilton, Compass Room

Sunday, February 12

8:30 AM–10:30 AM

CPOW Committee Meeting

Room 203

10:30 AM–12:00 NOON

International Relations Committee Meeting

Room 204

12:15 PM–2:15 PM

Public Affairs Committee Meeting

Room 203

3:30 PM–5:00 PM

Early Careers Committee Meeting

Room 203

6:00 PM–10:00 PM

Biophysical Journal Editorial Board Dinner

Latrobe's on Royal

Monday, February 13

8:30 AM–10:30 AM

Committee for Inclusion and Diversity Meeting

Room 203

3:00 PM–5:00 PM

Membership Committee Meeting

Room 203

Tuesday, February 14

8:00 AM–9:00 AM

Biophysical Society Business Meeting

Room 205

9:00 AM–10:30 AM

Subgroup Chairs Meeting

Room 222

3:00 PM–5:00 PM

Education Committee Meeting

Room 203

6:00 PM–10:00 PM

Publications Committee Meeting

Hilton, Bridge Room

Wednesday, February 15

8:00 AM–11:00 AM

New Council Meeting

Room 222

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 several professional development activities to take place during the Annual Meeting. Below is a schedule of all of those activities. Detailed descriptions of the sessions can be found in the daily program. In addition, a student lounge for undergraduates will be available Sunday, February 12, to Wednesday, February 15, in Room 224.

Sessions in italics will be held in Career Development Center Room 212/213.

Saturday, February 11, 2017

3:00 PM–4:00 PM *Networking: Optimizing Your Time at BPS 2017*
 4:00 PM–5:00 PM Undergraduate Mixer and Poster Fest
 7:30 PM–8:30 PM All-In Networking Hour

One-on-One Resume and Career Counseling*

12:40 PM–1:40 PM and 2:00 PM–5:30 PM

Sunday, February 12, 2017

7:30 AM–8:30 AM Postdoctoral Breakfast
 8:00 AM–8:30 AM *Career Q&A with Joe Tringali*
 9:00 AM–10:00 AM *Selling Yourself to the Life Sciences Industry*
 10:30 AM–11:30 AM *Looking Beyond Academia: Identifying Your Career Options Using MyIDP, LinkedIn & More*
 11:30 AM–1:00 PM Undergraduate Student Pizza "Breakfast"
 11:30 AM–5:00 PM Colleges in the Community Day
 12:00 NOON–1:00 PM *Networking: Optimizing Your Time at BPS 2017*
 1:00 PM–2:30 PM The World Outside the Lab: Many Ways to Use Your PhD Skills
 1:00 PM–3:00 PM Graduate & Postdoc Institution Fair
 2:00 PM–3:30 PM Teaching Science Like We Do Science
 2:30 PM–3:30 PM *Demystifying the Academic Job Search I: Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements*
 2:30 PM–4:00 PM CRISPR from a Policy Perspective
 4:00 PM–5:00 PM *Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*
 5:00 PM–7:00 PM PI to PI, a Wine & Cheese Mixer
 7:00 PM–9:00 PM Setting Standards for Data Sharing: Community by Community

One-on-One Resume and Career Counseling*

8:30 AM–1:00 PM and 2:30 PM–6:00 PM

Monday, February 13, 2017

7:30 AM–8:30 AM Graduate Student Breakfast
 8:00 AM–8:30 AM *Career Q&A with Joe Tringali*

10:00 AM–11:00 AM *Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*
 11:30 AM–12:30 PM *Demystifying the Academic Job Search II: Preparing Your Written Application Materials: CV, Cover Letter, and Research Statement*
 1:30 PM–3:00 PM Biophysics 101: Cryo-electron Microscopy
 1:30 PM–3:00 PM Industry Panel: Breaking Into Industry
 2:15 PM–3:45 PM How to Get Your Scientific Paper Published
 2:30 PM–3:30 PM Speed Networking
 2:30 PM–3:30 PM *Beyond the Bench: Preparing for Your Career Transition in the Life Sciences*
 2:30 PM–4:00 PM A Driving Force for the Middle of the Journey: Funding Opportunities for Mid-career Researchers
 4:00 PM–5:00 PM *The Strategic Postdoc: How to Find & Leverage Your Postdoc Experience*

One-on-One Resume and Career Counseling*

8:30 AM–12:00 NOON and 2:00 PM–5:20 PM

Tuesday, February 14, 2017

8:00 AM – 8:30 AM *Career Q&A with Joe Tringali*
 9:30 AM – 10:30 AM *Demystifying the Academic Job Search II: Preparing Your Written Application Materials: CV, Cover Letter, and Research Statement*
 11:30 AM–12:30 PM *Selling Yourself to the Life Sciences Industry*
 12:00 NOON–1:30 PM Career Opportunities at PUIs: Finding a Job and Finding Success
 12:00 NOON–2:00 PM Postdoc to Faculty Q&A: Transitions Forum and Luncheon**
 1:00 PM–2:15 PM Bringing Mentees and Mentors Together in a National Network
 1:00 PM–3:00 PM Industry and Agency Opportunities Fair
 1:00 PM–3:00 PM NIH Grant Writing Workshop
 2:30 PM–3:30 PM *Looking Beyond Academia: Identifying Your Career Options Using MyIDP, LinkedIn & More*
 2:30 PM–4:00 PM Networking and Personal Branding: The Workshop

One-on-One Resume and Career Counseling*

8:00 AM–12:00 NOON and 1:30 PM–5:00 PM

* Slots for the One-on-One Resume and Career Counseling Sessions are available on a first-come, first-served basis and fill up quickly. You may sign up for a slot beginning at 12:00 NOON on Saturday, February 11, in the Career Development Center, Room 212/213. Please come prepared with resumes, CVs, and other appropriate materials.

** This event requires pre-registration. If space is available, individuals who have not pre-registered may attend. Please stop by the event at the beginning of the session to see if space is available.

Career Development Center Information

Room 212/213

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*.

Joe Tringali is a seasoned contract recruiter who has developed overall recruitment strategies for his clients and subsequently worked with internal hiring organizations to meet their staffing requirements for more than two decades. He has provided onsite service to numerous biotechnology clients, including Biogen Idec, Millennium Pharmaceuticals, Ariad Pharmaceuticals, Creative Biomolecules/Stryker, TKY/Shire and Genetics Institute/Wyeth/Pfizer. He also operates a successful contingency recruiting firm that serves the Boston biotechnology community. He works with several clients to help them fill difficult staffing needs in the areas of Research/Development, Clinical Development, and Regulatory Affairs. In addition, Tringali is an invited speaker at several annual scientific conferences and research institutes where he conducts career workshops.

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

61ST Annual Meeting

February 11–15, 2017 • New Orleans, Louisiana

Travel Grant Awardees

Student Travel Awards partially supported by *Biochemistry*, Institute for Biological Recognition and Catalysis Inc, PLOS, and The Rockefeller University Press

EDUCATION COMMITTEE

Sunday

Mouhanad Babi, McMaster University, Canada

708-Pos, B473
THE CHARACTERIZATION OF CELLULOSE NANOSTRUCTURE USING SUPER-RESOLUTION FLUORESCENCE MICROSCOPY.

Paola Bisignano, University of California, San Francisco

634-Pos, B399
STRUCTURAL INSIGHTS INTO SODIUM-DEPENDENT SUGAR TRANSPORTERS AND THEIR INHIBITION MECHANISM.

Tsung-Han Chou, Iowa State University

114-Plat
CRYSTAL STRUCTURE OF A LOW CO₂-INDUCIBLE PROTEIN, LCI1 IN CHLAMYDOMONAS REINHARDTII.

Yavuz S. Dagdas, University of California, Berkeley

365-Pos, B130
CONFORMATIONAL DYNAMICS OF CAS9 DURING DNA BINDING.

Peter Dahl, University of Michigan

463-Pos, B228
A SUPPORTED TUBULATED BILAYER SYSTEM SHOWS EFFECTS OF SYNAPTOTAGMIN-7 ON MEMBRANE CURVATURE.

Andrew Dittmore, National Institutes of Health

361-Pos, B126
ENERGETIC CONTRIBUTIONS OF PLECTONEME TIPS AND TAILS.

Wolfgang Gross, University of Bayreuth, Germany

620-Pos, B385
MACROPHAGES ARE SENSITIVE TO SUBSTRATE ELASTICITY DURING PHAGOCYTOSIS.

Shubhasis Haldar, Columbia University

209-Plat
TRIGGER FACTOR BOOSTS THE WORK DONE BY PROTEIN FOLDING UNDER FORCE.

Kalli Kappel, Stanford University

370-Pos, B135
BLIND PREDICTIONS OF RNA/PROTEIN RELATIVE BINDING AFFINITIES.

Ying Lai, Stanford University

461-Pos, B226
MUNC13 AND MUNC18 COOPERATE TO PROPERLY ASSEMBLE SNARES FOR FAST NEUROTRANSMITTER RELEASE.

Soohyun K. Lee, University of Arizona

393-Pos, B158
HYDRATION-MEDIATED ELASTIC DEFORMATIONS IN BIOLOGICAL MEMBRANES.

Maureen Leninger, New York University

118-Plat
INVESTIGATING THE STRUCTURE OF THE DRUG TRANSPORTER EMRE.

Alyssa A. Lombardi, Temple University School of Medicine

487-Pos, B252
GENETIC ABLATION OF FIBROBLAST MITOCHONDRIAL CALCIUM UPTAKE INCREASES MYOFIBROBLAST TRANSDIFFERENTIATION AND EXACERBATES FIBROSIS IN MYOCARDIAL INFARCTION.

Mohammad Mehdi Maneshi, University at Buffalo

390-Pos, B155
SHEAR STRESS STIMULATED MSC ACTIVITIES: DIRECT CHANGES OF MEMBRANE TENSION OR CYTOSKELETAL STRESS?

Medeea C. Popescu, Wellesley College

544-Pos, B309
EXAMINING THE ROLE OF PHOSPHORYLATION ON INTERACTIONS BETWEEN THE CARDIAC POTASSIUM CHANNEL ALPHA-SUBUNITS HERG AND KVLQT1.

Dana N. Reinemann, Vanderbilt University

226-Plat
SINGLE MOLECULE CHARACTERIZATION OF MITOTIC KIF15 REVEALS CAPABILITY TO GENERATE FORCE IN ANTI-PARALLEL MICROTUBULES.

Kristin I. Schimert, University of Michigan

223-Plat
INTRACELLULAR CARGO TRANSPORT BY SINGLE-HEADED KINESIN MONOMERS.

Sienna Wong, Wayne State University

658-Pos, B423
ENGINEERING OF CHIMERIC PROTEINS TO ENHANCE IMMUNOGENICITY FOR THE PRODUCTION OF HIGH-AFFINITY SPECIFIC MONOCLONAL ANTIBODIES.

Fan Yang, University of California, Davis

566-Pos, B331
RATIONAL DESIGN AND VALIDATION OF A VANILLOID-SENSITIVE TRPV2 ION CHANNEL.

Monday

Breane G. Budaitis, University of Michigan

1288-Pos, B356
THE ROLE OF THE COVER-NECK BUNDLE IN MULTI-MOTOR TRANSPORT AGAINST LOAD IN CELLS.

Shirley Chen, University of Michigan

1290-Pos, B358
ENGINEERING INHIBITABLE KINESIN-3 MOTORS BY A NOVEL CHEMICAL-GENETIC APPROACH.

Alexander E. Chu, California Institute of Technology

932-Plat
TOWARDS A UNIVERSAL CHARACTERIZATION OF THE MEMBRANE PROTEIN EXPRESSION LANDSCAPE.

Melody Di Bona, Italian Institute of Technology

1071-Pos, B139
CHROMATIN ACCESSIBILITY STUDIED BY SLOW SCAN FCS IN THE EUKARYOTIC NUCLEUS.

Matthew Dragovich, Lehigh University

1325-Pos, B393

INVESTIGATION OF THE RELIABILITY OF AFM NANOINDENTATION-DERIVED MEASUREMENTS OF CELL MECHANICS.

Cristian A. Escobar, Florida State University

1019-Pos, B87

CONFORMATION PLASTICITY AND PEPTIDOGLYCAN CLEAVAGE BY THE N-TERMINAL INTRINSICALLY DISORDERED DOMAIN OF CHIZ.

Abir Kabbani, Wayne State University

1092-Pos, B160

NANOSCALE MEMBRANE BUDS INDUCED BY CTXB-GM1 IN ONE COMPONENT BILAYER DETECTED BY POLARIZED LOCALIZATION MICROSCOPY (PLM).

Christopher Lee, University of California, San Diego

1438-Pos, B506

INVESTIGATING TRANSPORT PROPERTIES WITH MULTI-SCALE COMPUTABLE MESH MODELS FROM HETEROGENEOUS STRUCTURAL DATASETS.

Alexander E. Marras, Ohio State University

1478-Pos, B546

FABRICATING AND ACTUATING DNA ORIGAMI MECHANISMS.

Dipak Maskey, Wayne State University

973-Pos, B41

DEGRADATION OF CALPONIN 2 IS REQUIRED FOR CYTOKINESIS.

Mahmoud L. Nasr, Harvard Medical School

1497-Pos, B565

COVALENTLY CIRCULARIZED NANODISCS: EM AND NMR APPLICATIONS.

Devon Richtsmeier, Boise State University

1124-Pos, B192

Cu^{2+} IONS MODULATE THE CONDUCTANCE HYSTERESIS OF LYSENIN CHANNELS.

Talant A. Ruzmetov, Kent State University

1026-Pos, B94

EXPLORING THE ROLE OF FLEXIBILITY IN BINDING KINETICS AND AFFINITY OF PKID-KIX THROUGH COARSE GRAINED SIMULATIONS.

Kyle P. Smith, Northwestern University

876-Plat

THE TWO GTPASE DOMAINS OF THE OUTER MITOCHONDRIAL MEMBRANE PROTEIN MIRO HAVE NOVEL ACTIVE SITE CONFORMATIONS AND DISTINCT BIOCHEMICAL PROPERTIES.

Coleman Swaim, James Madison University

1504-Pos, B572

BIOLOGICAL SEMICONDUCTORS: STRUCTURAL CONTROL OF HEME REDOX POTENTIALS IN PPCA, A 3-HEME CYTOCHROME.

Rebecca J. Zaubrecher, University of Washington

811-Plat

GENETICALLY ENGINEERED HUMAN STEM CELL-DERIVED CARDIOMYOCYTES TO STUDY THE FUNCTIONALITY OF CRONOS TITIN.

Tuesday

Mihai L. Azoitei, University of North Carolina, Chapel Hill

2268-Pos, B588

NOVEL BIOSENSOR DESIGN REVEALS THE ROLE AND REGULATION OF GEF-H1 IN CELL MIGRATION.

Curtis Balusek, Georgia Institute of Technology

1762-Pos, B82

CONSTRUCTING AN IN SILICO MODEL OF THE GRAM-NEGATIVE CELLULAR ENVELOPE.

Saikat Chowdhury, The Scripps Research Institute

1640-Plat

USING CRYOEM TO UNDERSTAND HOW PHAGES EVADE BACTERIAL CRISPR DEFENSE SYSTEM.

Caitlin E. Cornell, University of Washington

1851-Pos, B171

DIRECT IMAGING OF LIQUID DOMAINS BY CRYOTEM IN SUBMICRON VESICLES.

Natasha Dudzinski, Yale University

1960-Pos, B280

EFFECTS OF MEMBRANE TENSION ON SNARE-MEDIATED SINGLE FUSION PORES.

Paige Engen, Hamline University

1917-Pos, B237

STRUCTURAL ANALYSIS OF TAU PEPTIDE INTERACTIONS WITH LIPID MEMBRANES USING FOURIER TRANSFORM INFRARED SPECTROSCOPY.

Emmet A. Francis, University of California, Davis

1974-Pos, B294

SINGLE-CELL INVESTIGATION OF THE ROLE OF CALCIUM BURSTS IN HUMAN IMMUNE CELLS.

Naoto Hori, University of Texas

1821-Pos, B141

MULTISTEP FOLDING KINETICS OF GROUP I INTRON RNA STUDIED BY Mg^{2+} -CONCENTRATION JUMP SIMULATIONS.

Jesse Howe, California State University, San Marcos

2278-Pos, B598

EXPANDING THE SCOPE OF SINGLE MOLECULE FRET SPECTROSCOPY TOWARDS PRIMARILY UNDERGRADUATE INSTITUTIONS.

Shachi Katira, University of California, Berkeley

1860-Pos, B180

PRE-TRANSITION EFFECTS MEDIATE FORCES OF ASSEMBLY BETWEEN TRANSMEMBRANE PROTEINS: RECENT RESULTS ON THE ORDERPHOBIC EFFECT.

Anna K. Koster, Stanford University

1662-Plat

DEVELOPING A NOVEL CLASS OF CLC CHLORIDE-CHANNEL INHIBITORS.

Isha D. Mehta, Texas Woman's University

1692-Pos, B12

PROTEIN ENERGY NETWORK MODELS TO CLASSIFY AND PREDICT FUNCTIONALLY LINKED INTERFACES OF PROTEINS FROM FUNCTIONALLY UNCORRELATED INTERFACES.

Paula Morales, University of North Carolina, Greensboro
1757-Pos, B77
CONSTRUCTION OF A GPR3 HOMOLOG Y MODEL USING
CONFORMATIONAL MEMORIES.

Kevin A. White, University of Central Florida
2269-Pos, B589
MULTIFUNCTIONAL HIGH-THROUGHPUT SINGLE-CELL ANALYSIS USING
RECONFIGURABLE AMPLIFIER ARRAY.

Wednesday

Miranda Collier, University of Oxford, United Kingdom
2415-Pos, B22
EVIDENCE FOR CHAPERONE FUNCTION IN MECHANOSENSATION.

Roberto Covino, Max-Planck-Institute of Biophysics, Germany
2505-Pos, B112
A EUKARYOTIC SENSOR FOR MEMBRANE LIPID SATURATION.

Russell B. Davidson, Colorado State University
2446-Pos, B53
MOLECULAR ALLOSTERY IN DENGUE NS3 HELICASE ALONG THE ATP
HYDROLYSIS CYCLE.

Gozde Eskici, University of Pennsylvania
2608-Pos, B215
MICROSECOND SIMULATIONS OF AMYLOID BETA FIBRIL NUCLEATION IN
REVERSE MICELLES.

Ahmed Fuwad, Inha University, South Korea
2899-Pos, B506
AQUAPORIN BIOMIMETIC MEMBRANE FOR ENERGY CONSERVATIVE
WATER DESALINATION.

Alice L. Herneisen, Swarthmore College
2461-Pos, B68
SITE-DIRECTED SPIN LABELING EPR SPECTROSCOPY OF THE
CYTOPLASMIC TAIL OF INFLUENZA A M2.

Hema Chandra Kotamarthi, Massachusetts Institute of Technology
2314-Plat
SINGLE-MOLECULE DISSECTION OF THE ROLE OF DIRECTIONALITY IN
PROTEIN DEGRADATION BY Clp PROTEOLYTIC MACHINES.

Sudipta Lahiri, Wesleyan University
2534-Pos, B141
ELUCIDATION OF THE STRUCTURE-FUNCTION RELATIONSHIP OF S.
CEREVISIAE MUTS HOMOLOG MSH4 AND MSH5 WITH THE HOLLIDAY
JUNCTION.

Victor Pui-Yan Ma, Emory University
2916-Pos, B523
RATIOMETRIC TENSION PROBES FOR MAPPING RECEPTOR FORCES AND
CLUSTERING AT INTERMEMBRANE JUNCTIONS.

Amar D. Parvate, Purdue University
2824-Pos, B431
CRYOTOMOGRAPHY OF PLEOMORPHIC VIRUSES.

Samantha Piskiewicz, University of North Carolina, Chapel Hill
2520-Pos, B127
TARDIGRADE INTRINSICALLY DISORDERED PROTEINS AS POTENTIAL
EXCIPIENTS FOR BIOLOGICS.

Serzhan Sakipov, Carnegie Mellon University
2291-Plat
ION PERMEATION MECHANISM IN TRPV6 CA²⁺ CHANNEL.

Digvijay Singh, Johns Hopkins University School of Medicine
2321-Plat
INVESTIGATION OF DNA BINDING, NUCLEOLYSIS AND PRODUCT
RELEASE SPECIFICITY OF RNA GUIDED ENDONUCLEASE CRISPR-CPF1
FAMILY REVEALS IMPORTANT DIFFERENCES FROM CAS9-RNA.

Tzu-Wei Tsao, University of Wisconsin, Madison
2736-Pos, B343
STRUCTURAL ELEMENTS GOVERNING GABA-A RECEPTOR CHANNEL
ACTIVATION AND DRUG MODULATION.

Kevin Votaw, Colorado State University
2539-Pos, B146
INSIGHTS INTO DAMAGED BASE DETECTION BY DNA GLYCOSYLASES: A
COMPUTATIONAL STUDY OF ALKD.

Andrew P. Wescott, University of Maryland Baltimore
2647-Pos, B254
CALCIUM REGULATION OF CARDIAC BIOENERGETICS.

Riley J. Workman, Duquesne University
2311-Plat
CHARACTERIZATION OF THE CONFORMATIONAL ENSEMBLE OF
POLYGLUTAMINE PEPTIDES VIA METADYNAMICS MD SIMULATIONS
AND UV RESONANCE RAMAN SPECTROSCOPY.

Goli Yamini, The Catholic University of America
2580-Pos, B187
IMPACT OF DENDRIMER SURFACE CHEMISTRY ON ANTHRAX TOXIN
CHANNEL BLOCKAGE: A SINGLE MOLECULE STUDY.

Chen-Ching Yuan, University of Miami
2748-Pos, B355
DISTINCT LATTICE STRUCTURE ALTERNATIONS IN DCM AND HCM MOUSE
MODELS ASSOCIATED WITH MUTATIONS IN MYOSIN REGULATORY
LIGHT CHAIN.

Zhenfu Zhang, University of Toronto, Canada
2510-Pos, B117
INTERPLAY AMONG BINDING, PHOSPHORYLATION AND DENATURATION
IN DISORDERED 4E-BP2 AS PROBED BY SINGLE MOLECULE
FLUORESCENCE.

Haiqing Zhao, University of Maryland
2416-Pos, B23
PROMISCUOUS HISTONE MIS-ASSEMBLY IS ACTIVELY PREVENTED BY
CHAPERONES.

Yue Zhang, Mississippi State University
2366-Plat
MODELING THE EARLY STAGES OF AGGREGATION IN DISORDERED
ELASTIN-LIKE PROTEINS.

Chi Zhao, University of Texas, Austin
2911-Pos, B518
PLASMA MEMBRANE VESICLES WITH ENGINEERED TRANSMEMBRANE
PROTEIN LIGANDS FOR HIGH-AFFINITY CELL TARGETING.

COMMITTEE FOR INCLUSION AND DIVERSITY

Sunday

Matthew L. Ferguson, Boise State University
739-Pos, B504
IN VITRO BINDING OF 6S RNA MANGO TO RNA POLYMERASE BY TWO PHOTON FLUORESCENCE CROSS CORRELATION SPECTROSCOPY.

Joshua Francois, University of California, San Diego
618-Pos, B383
UNDERSTANDING THE MECHANICS OF NEUTROPHIL MIGRATION IN THREE- DIMENSIONAL EXTRACELLULAR MATRICES.

Sebastian Hendrickx-Rodriguez, New Mexico Institute of Mining and Technology
462-Pos, B227
EFFECTS OF OPSONIN DENSITY AND TYPE ON THE PHAGOCYTOSIS OF BEADS.

O'Jay Stewart, City University of New York, John Jay College
371-Pos, B136
BIOPHYSICAL STUDIES OF LIPOSOME ENCAPSULATED POKEWEED ANTIVIRAL PROTEIN AND ITS USE AS A HIV THERAPEUTIC.

Jessica R. Thomas, University of Iowa
536-Pos, B301
UNMASKING THE MOLECULAR DETERMINANTS IMPORTANT FOR Ca^{2+} -DEPENDENT REGULATION OF CAV2.2.

Juan M. Vanegas, University of Vermont
681-Pos, B446
BEYOND LATERAL PRESSURE PROFILES: LOCAL STRESS AND THE TRACTION VECTOR IN MD SIMULATIONS.

Brittany Williams, University of Iowa
537-Pos, B302
C-TERMINAL SPLICE VARIATION REVEALS NEW INSIGHTS INTO CALMODULIN REGULATION OF Cav1.4 CHANNELS.

Wade Zeno, University of Texas at Austin
213-Plat
INDUCED MIXING OF PHASE-SEPARATED LIPID BILAYERS BY STERIC PRESSURE BETWEEN ADSORBED PROTEINS.

Monday

T.M. Ayodele Adesanya, The Ohio State University
1095-Pos, B163
MG53-MEDIATED PROTECTION IN HEART VALVE BIOLOGY.

Manal Ahmidouch, Wake Forest University
1052-Pos, B120
MD SIMULATIONS AND CD SPECTROSCOPIES OF (BENZ)ACRIDINE: RDNA G-QUADRUPLEX COMPLEXES.

David A. Price, Southern Illinois University
1065-Pos, B133
PREFERENTIAL LENGTH FOR G-QUADRUPLEX FORMATION REVEALED BY IR SPECTROSCOPY.

Lucero Sanchez, Indiana University
1489-Pos B557
HALF PEGYLATED PARTICLES EVADE MACROPHAGES AS EFFECTIVELY AS FULLY PEGYLATED ONES

Tuesday

George A. Cortina, University of Virginia
1557-Plat
PREDICTING RESIDUES THAT INCREASE ANTIBIOTIC RESISTANCE OF CTX-M9 ENZYMES USING MOLECULAR SIMULATION AND STATISTICAL LEARNING.

Dania M. Figueroa, Wellesley College
1875-Pos, B195
DEVELOPMENT OF CELL-WALL DEFICIENT BACTERIA FOR THE CHARACTERIZATION OF HISTONE-DERIVED ANTIMICROBIAL PEPTIDES THROUGH CONFOCAL MICROSCOPY.

Carla Perez, Wellesley College
2552-Pos, B159
INVESTIGATING BUFORIN II INTERACTIONS WITH NUCLEIC ACIDS UNDER CROWDED CONDITIONS

Nancy Wells, Case Western Reserve University
1810-Pos, B130
STRUCTURAL INSIGHTS TO THE 3' UTR OF GAIT ELEMENTS.

INTERNATIONAL RELATIONS

Sunday

Anais M. E. Cassaignau, University College London, United Kingdom
206-Plat
STRUCTURAL INVESTIGATION OF AN IMMUNOGLOBULIN DOMAIN ON THE RIBOSOME USING NMR SPECTROSCOPY.

Adam Cawte, Imperial College London, United Kingdom
353-Pos, B118
LIVE CELL IMAGING OF GENOMIC LOCI USING FLUORESCENT RNA APTAMERS.

Assaf Elazar, Weizmann Institute of Science, Israel
434-Pos, B199
DECIPHERING MEMBRANE PROTEIN ENERGETICS USING DEEP SEQUENCING; TOWARDS ROBUST DESIGN AND STRUCTURE PREDICTION OF MEMBRANE PROTEINS.

Manuela Gabriel, University of Buenos Aires, Argentina
722-Pos, B487
3D ORBITAL TRACKING OF SINGLE GOLD NANOPARTICLES: A NEW APPROACH TO STUDY VESICLE TRAFFICKING IN CHROMAFFIN CELLS.

Giulia Paci, European Molecular Biology Laboratory, Germany
107-Plat
FOLLOWING A GIANT'S FOOTSTEPS: SINGLE-PARTICLE AND SUPER-RESOLUTION APPROACHES TO DECIPHER THE NUCLEAR TRANSPORT OF HEPATITIS B VIRUS CAPSIDS.

Mohammed Mostafizur Rahman, Institute for Stem Cell Biology and Regenerative Medicine, India
665-Pos, B430
STRESS-INDUCED DIFFERENTIAL REGULATION LEADS TO DECOUPLING OF THE ACTIVITY BETWEEN MPFC AND AMYGDALA.

Li-av Segev-Zarko, Weizmann Institute of Science, Israel
121-Plat
CHARACTERIZATION OF ANTI-BIOFILM PEPTIDE ACTIVITY: A BIOPHYSICAL APPROACH.

Xin Shi, East China University of Science and Technology
357-Pos, B122
DIRECT OBSERVATION OF SINGLE BIOPOLYMER FOLDING AND UNFOLDING PROCESS BY SOLID-STATE NANOPORE.

Monday

Alvaro Alonso-Caballero, CIC NanoGune, Spain
1474-Pos, B542
A LEGO TOOLBOX FOR ENGINEERING PROTEINS FOR SINGLE MOLECULE FORCE SPECTROSCOPY.

Corey Butler, Interdisciplinary Institute for Neuroscience, France
1453-Pos, B521
MULTICOLOR 3D SINGLE PARTICLE TRACKING USING SPECTRALLY DISPLACED LOCALIZATION.

Felipe de Souza Leite, McGill University, Canada
898-Plat
SARCOMERE AND INTER-SARCOMERE DYNAMICS WITHIN SKELETAL MUSCLE MYOFIBRILS.

Ana F. Guedes, Institute of Molecular Medicine, Portugal
1490-Pos, B558
ATOMIC FORCE MICROSCOPY AS A TOOL TO EVALUATE THE RISK OF CARDIOVASCULAR DISEASES IN PATIENTS.

Farah Haque, National Centre for Biological Sciences, India
1294-Pos, B362
A NEW HUMANIZED MOUSE MODEL FOR STUDYING INHERITED CARDIOMYOPATHIC MUTATIONS IN THE MYH7 GENE.

Ivan Kadurin, University College London, United Kingdom
1201-Pos, B269
INVESTIGATION OF THE PROTEOLYTIC CLEAVAGE OF $\alpha 2\delta$ SUBUNITS: A MECHANISTIC SWITCH FROM INHIBITION TO ACTIVATION OF VOLTAGE-GATED CALCIUM CHANNELS?

Ilona Marszalek, Adamed Group, Poland
940-Pos, B8
BIOPHYSICAL STUDIES OF TRAIL-BASED ANTICANCER FUSION PROTEIN AD O51.4.

Elvis Pandzic, University of New South Wales, Australia
1455-Pos, B523
VELOCITY LANDSCAPES RESOLVE MULTIPLE DYNAMICAL POPULATIONS FROM FLUORESCENCE IMAGE TIME SERIES.

Marcin Wolny, University of Leeds, United Kingdom
935-Pos, B3
DESIGN AND CHARACTERIZATION OF LONG AND STABLE DE NOVO SINGLE α -HELIX DOMAINS.

Tuesday

Matthew Batchelor, University of Leeds, United Kingdom
1691-Pos, B11
STRUCTURAL DYNAMICS IN THE MYOSIN 7A SINGLE α -HELIX DOMAIN.

Swapna Bera, Bose Institute, India
1916-Pos, B236
BIOPHYSICAL INSIGHTS INTO THE MEMBRANE INTERACTION OF THE CORE AMYLOID-FORMING A β 40 FRAGMENT K16-K28 AND ITS ROLE IN THE PATHOGENESIS OF ALZHEIMER'S DISEASE.

Chan Cao, East China University of Science and Technology
2261-Pos, B581
DIRECT IDENTIFICATION OF ADENINE, THYMINE, CYTOSINE AND GUANINE USING AEROLYSIN NANOPORE.

Bappaditya Chandra, Tata Institute of Fundamental Research, India
1782-Pos, B102
SECONDARY STRUCTURE FLIPPING CONNECTED TO SALT-BRIDGE FORMATION CONVERTS TOXIC AMYLOID- β 40 OLIGOMERS TO FIBRILS.

Venkata Reddy Chirasani, Indian Institute of Technology Madras
1910-Pos, B230
LIPID TRANSFER MECHANISM OF CETP BETWEEN HDL AND LDL: A COARSE-GRAINED SIMULATION STUDY.

Claudia Crocini, LENS, Italy
2085-Pos, B405
OPTOGENETICS DESIGN OF MECHANISTICALLY-BASED STIMULATION PATTERNS FOR CARDIAC DEFIBRILLATION.

Shane E. Gordon, La Trobe Institute for Molecular Science, Australia
1726-Pos, B46
SHARK-DERIVED SINGLE DOMAIN ANTIBODIES TARGETING APOLIPOPROTEIN E.

Daniel Havelka, Czech Academy of Sciences
2246-Pos, B566
MICROVOLUME DIELECTRIC SPECTROSCOPY AND MOLECULAR DYNAMICS OF AMINO ACIDS.

Linlin Ma, University of Queensland, Australia
1630-Plat
NOVEL HUMAN EAG CHANNEL ANTAGONISTS FROM SPIDER VENOMS.

Olfat A. Malak, University of Nantes, France
1998-Pos, B318
HIV-TAT INDUCES A DECREASE IN IKR AND IKS VIA REDUCTION IN PHOSPHATIDYLINOSITOL-(4,5)-BISPHOSPHATE AVAILABILITY.

Ivana Malvacio, University of Cagliari, Italy
1649-Plat
MOLECULAR INSIGHTS ON THE RECOGNITION OF SUBSTRATES BY THE PROMISCUOUS EFFLUX PUMP ACRB.

Samsuzzoha Mondal, Tata Institute of Fundamental Research, India
2273-Pos, B593
OPTICAL PROBES FOR IMAGING SIGNAL MEDIATING PHOSPHOLIPIDS.

Gayathri Narasimhan, Cinvestav, Mexico
2087-Pos, B407
ANTIHYPERTROPHIC EFFECTS OF DIAZOXIDE INVOLVES CHANGES IN MIR-132 EXPRESSION IN ADULT RAT CARDIOMYOCYTES.

Sabrina Sharmin, Shizuoka University, Japan
1873-Pos, B193
EFFECTS OF LIPID COMPOSITIONS ON THE ENTRY OF CELL PENETRATING PEPTIDE OLIGOARGININE INTO SINGLE VESICLES.

Bizhan R. Sharopov, National Academy of Sciences of Ukraine
2016-Pos, B336
DISSECTING LOCAL AND SYSTEMIC EFFECTS OF TRPV1 ON BLADDER CONTRACTILITY IN DIABETES.

Sven Warhaut, Goethe University Frankfurt, Germany
1811-Pos, B131
LIGAND-DIRECTED CONFORMATIONAL DYNAMICS OF THE ADENINE-SENSING RIBOSWITCH THERMOSTAT.

Wednesday

Omar Alijevic, University of Lausanne, Switzerland
2346-Plat
ANALYSIS OF GATING OF ACID-SENSING ION CHANNELS (ASICs) UNDER RAPID AND SLOW PH CHANGES.

Raquel Arroyo, University Complutense Madrid, Spain
2478-Pos, B85
STRUCTURAL CHARACTERIZATION OF HUMAN PULMONARY SURFACTANT PROTEIN SP-D BY ATOMIC FORCE MICROSCOPY.

Karishma Bhasne, Indian Institute of Science Education and Research (IISER) Mohali
2363-Plat
A TALE OF TWO AMYLOIDOGENIC INTRINSICALLY DISORDERED PROTEINS: INTERPLAY OF TAU AND α -SYNUCLEIN.

Pablo Chacon, Spanish National Research Council
2827-Pos, B434
TOWARDS A MULTICOMPONENT CRYO-EM DENSITY FLEXIBLE FITTING TOOL.

Stephanie A. Heusser, Stockholm University, Switzerland
2730-Pos, B337
STRUCTURAL AND FUNCTIONAL EVIDENCE FOR MULTI-SITE ALLOSTERY MEDIATED BY GENERAL ANESTHETICS IN A MODEL LIGAND-GATED ION CHANNEL.

Amir H. Irani, Massey University, New Zealand
2913-Pos, B520
HOMOGALACTURONANS ILLUMINATE THE ROLE OF COUNTERION CONDENSATION IN POLYELECTROLYTE TRANSPORT.

Cristina Moreno Vadillo, Cardiovascular Research Institute Maastricht, Netherlands
2693-Pos, B300
RESTORING DEFECTIVE CAMP-DEPENDENT UPREGULATION IN LONG-QT SYNDROME TYPE-1 THROUGH INTERVENTIONS THAT PROMOTE IKs CHANNEL OPENING.

Melanie Paillard, Claude Bernard University Lyon 1, France
2651-Pos, B258
TISSUE-SPECIFIC MITOCHONDRIAL DECODING OF CYTOPLASMIC CA²⁺ SIGNALS IS CONTROLLED BY THE STOICHIOMETRY OF MICU1/2 AND MCU.

Pradeep Sathyanarayana, Indian Institute of Science
2583-Pos, B190
STUDYING BINDING, CONFORMATIONAL TRANSITION AND ASSEMBLY OF E.COLI CYTOLYSIN A PORE FORMING TOXIN BY SINGLE MOLECULE FLUORESCENCE.

Luke Springall, University of Kent, United Kingdom
2540-Pos, B147
DIRECT SINGLE MOLECULE IMAGING REVEALS HETEROGENEITY IN NUCLEOTIDE EXCISION REPAIR.

Antonio Suma, SISSA, Italy
2334-Plat
PORE TRANSLOCATION OF DNA CHAINS WITH PHYSICAL KNOTS.

Chao Sun, East China Normal University
2811-Pos, B418
FUNCTION OF BACTERIORUBERIN IN ARCHAERHODOPSIN 4, FROM EXPRESSION TO CHARACTERIZATION.

PROFESSIONAL OPPORTUNITIES FOR WOMEN

Sunday

Sabina M. Maté, INIBIOLP-CONICET-UNLP, Argentina
421-Pos, B186
ORIENTATIONAL PROPERTIES OF DOPC/SM/CHOLESTEROL MIXTURES: A PM-IRRAS STUDY.

Hagit Peretz Soroka, University of Manitoba, Canada
619-Pos, B384
NOVEL MECHANISM FOR DRIVING AMOEBOID-LIKE MOTILITY OF HUMAN NEUTROPHILS UNDER AN ELECTRIC FIELD, BASED ON INTRACELLULAR PROTON CURRENTS AND CYTOPLASM STREAMING.

Monday

Teresa K. Aman, University of Washington
1227-Pos, B295
HCN CHANNEL GATING STUDIED WITH TMFRET AND A FLUORESCENT NONCANONICAL AMINO ACID.

Lusine Demirkhanyan, University of Illinois at Chicago
1230-Pos, B298
ASSESSMENT OF ENDOGENOUS AND EXOGENOUS MODULATORS OF THE TRPM7 CHANNEL IN PLANAR LIPID BILAYERS.

Shelli L. Frey, Gettysburg College
1137-Pos, B205
THE ROLE OF SPHINGOMYELIN AND GANGLIOSIDE GM1 IN THE INTERACTION OF POLYGLUTAMINE PEPTIDES WITH LIPID MEMBRANES.

Elsa Ronzier, University of Rochester
1245-Pos, B313
STATIN THERAPY IN LONG QT SYNDROME TYPE II.

Sarah L. Rouse, Imperial College London, United Kingdom
929-Plat
STRUCTURAL AND MECHANISTIC INSIGHTS INTO TRANSPORT OF FUNCTIONAL AMYLOID SUBUNITS ACROSS THE PSEUDOMONAS OUTER MEMBRANE.

Tuesday

Pooja Jadiya, Temple University
2186-Pos, B506
GENETIC RESCUE OF MITOCHONDRIAL CALCIUM EFFLUX IN ALZHEIMER'S DISEASE PRESERVES MITOCHONDRIAL FUNCTION AND PROTECTS AGAINST NEURONAL CELL DEATH.

Marthe Ludtmann, University College London, United Kingdom
2165-Pos, B485
DIRECT MODULATION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE BY OLIGOMERIC ALPHA-SYNUCLEIN CAUSES TOXICITY IN PD.

Siobhan Toal, University of Pennsylvania
1798-Pos, B118
DETERMINING THE ROLE OF N-TERMINAL ACETYLATION ON
 α -SYNUCLEIN FUNCTION.

Wednesday

Anna C. Blice-Baum, Sam Houston State University
2753-Pos, B360
CARDIAC-SPECIFIC EXPRESSION OF VCP/TER94 RNAI OR DISEASE ALLELES
DISRUPTS DROSOPHILA HEART STRUCTURE AND IMPAIRS FUNCTION.

Maria Hoernke, Albert Ludwig University of Freiburg, Germany
2600-Pos, B207
GUV AND LUV LEAKAGE: HOW ALL-OR-NONE AND GRADED LEAKAGE
SCALE WITH VESICLE SIZE.

Rebecca J. Howard, Stockholm University, Sweden
2728-Pos, B335
TRANSMEMBRANE STRUCTURAL DETERMINANTS OF ALCOHOL BINDING
AND MODULATION IN A MODEL LIGAND-GATED ION CHANNEL.

Ekaterina M. Nestorovich, The Catholic University of America
2324-Plat
LIPID DYNAMICS AND THE ANTHRAX TOXIN INTRACELLULAR JOURNEY.

Yoo Jin Oh, Johannes Kepler University Linz, Austria
2894-Pos, B501
CURLI MEDIATE BACTERIAL ADHESION TO FIBRONECTIN VIA A TENSILE
COLLECTIVE BINDING NETWORK.

Laura Orellana, Science for Life Laboratory, Sweden
2386-Plat
TRAPPING ON-PATHWAY INTERMEDIATES FOR LARGE SCALE
CONFORMATIONAL CHANGES WITH COARSE-GRAINED SIMULATIONS.

Ancillary Meetings

Society of General Physiologists Council Meeting

Saturday, February 11, 9:00 AM–1:00 PM
Room 222

Korean Biophysicists Meeting

Sunday, February 12, 5:00 PM–6:00 PM
Room 210

Biophysics Austria Mixer

Sunday, February 12, 6:00 PM–7:00 PM
Rivergate Room, Lobby Level

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

Tuesday, February 14, 8:00 PM–10:00 PM
Room 214

How to Navigate the BPS Annual Meeting

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 younger 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

Posters

- Most interactive and well attended scientific sessions of the meeting
- Poster presentations held Sunday–Wednesday, with no competing scientific programming
- Late abstracts are scheduled each day during the same time as abstracts submitted by the regular deadline

Subgroup Programs

- Scientific sessions held on the Saturday before the start of the Meeting
- Feature speakers presenting the latest research in biophysics subfields

National Lecture

- One-hour presentation by a world-renowned biophysicist

About the 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.

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 Center

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

Breakfasts

For students and postdocs to network and learn about available resources

Panel Discussions

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

Workshops

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

Exhibits

Over 200 displays of new equipment, publications, and products

Exhibitor Presentations

Hands-on demonstrations conducted by exhibiting companies of scientific products and their use

Social and Networking Events

Opening Reception

- Hors d'oeuvres and cash bar
- First-Time Attendee Drop-By for help in navigating the meeting

Daily Meet-Ups

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

Monday Evening Reception

- The place to meet, drink, eat, dance, and socialize with other meeting attendees
- Photo Booth to capture memories
- Lounge with soft music for those who prefer a more quiet atmosphere

New Member Welcome

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



Notes

Friday, February 10, 2017

Daily Program Summary

All rooms are located in the *Ernest N. Morial Convention Center* unless noted otherwise.

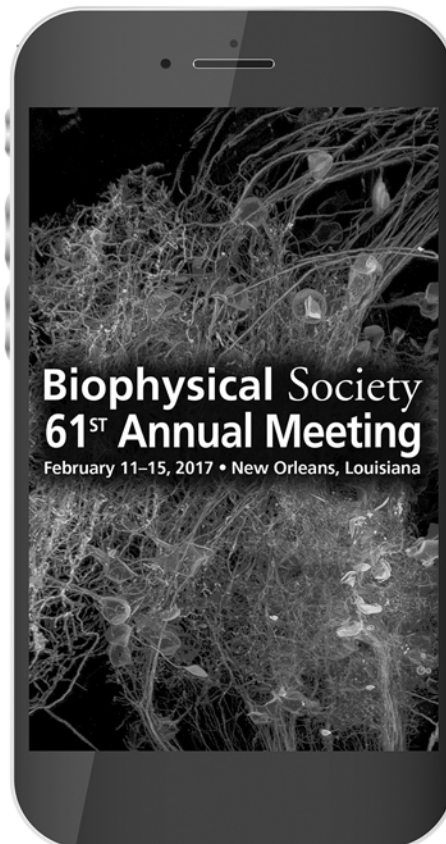
8:00 AM–5:00 PM	Exhibitor Registration	Lobby B
8:00 AM–5:00 PM	Drug Discovery Satellite Meeting	Room 210
3:00 PM–4:30 PM	New Council Orientation	Hilton, Port Room
3:00 PM–5:00 PM	Registration	Lobby B
5:00 PM–9:00 PM	Joint Council Reception, Dinner, and Meeting	Hilton, Compass Room

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Navigate the Meeting

Meeting Mobile App:

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



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

61ST Annual Meeting

February 11–15, 2017 • New Orleans, Louisiana

Friday, February 10

Exhibitor Registration

8:00 AM–5:00 PM, LOBBY B

Drug Discovery Satellite Meeting

8:00 AM–5:00 PM, ROOM 210

Sponsored by Sophion together with Biolin Scientific, Charles River, Icagen Inc, Molecular Devices LLC, Nanion Technologies GmbH

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. But the advent of automated electrophysiological systems with higher throughput has begun to revolutionize ion channel drug discovery. This symposium focuses on the emerging technology of automated electrophysiology and how it is changing the face of ion channel drug discovery. Speakers from industry and academia will discuss the development and potential of these new technologies, present experimental results obtained using these systems and discuss the impact these technologies are having on ion channel drug discovery.

Co-Chairs

*Richard Kondo, Sophion – Biolin Scientific
Andrew Baxter, Charles River
Chris Mathes, Icagen Inc
Jeff Webber, Molecular Devices LLC
Niels Fertig, Nanion Technologies GmbH*

7:30 AM REGISTRATION

8:30 AM WELCOME AND OPENING REMARKS
Chris Mathes

8:45 AM NEW INSIGHTS INTO K2P POTASSIUM CHANNEL BIOPHYSICS.
Keynote Speaker: Stephen Tucker

SESSION I: ANION CHANNELS
Chair, Chris Mathes

9:30 AM STRATEGIES FOR DEVELOPING ISOFORM-SPECIFIC CLC CHLORIDE-CHANNEL INHIBITORS. **Merritt Maduke**

10:00 AM STRUCTURAL AND FUNCTIONAL STUDIES OF ANION CHANNELS.
Tsung-Yu Chen

10:30 BREAK
SESSION II: NA CHANNELS & PAIN
Chair, Andrew Baxter

11:00 AM OVERCOMING CHALLENGES OF TARGETING NAV1.9 FOR DEVELOPMENT OF NEW PAIN THERAPIES. **Neil Castle**

11:30 AM DISCOVERY OF NOVEL NAV1.7 SCAFFOLDS. **Jun Chen**

12:00 PM SELECTIVE INHIBITORS OF NAV1.7: FROM BINDING SITE TO IN-VIVO EFFICACY. **David Hackos**

12:30 PM LUNCH (PROVIDED)

SESSION III: ION CHANNELS AND DISEASE
Chair, Richard Kondo

1:30 PM HIGH THROUGHPUT ELECTROPHYSIOLOGY TO ANNOTATE CHANNEL FUNCTIONS IN THE CONTEXT OF DISEASE GENETICS. **Jen Pan**

2:00 PM DRUG DISCOVERY FOR CANCER THERAPY: A COMBINATION OF HIGH THROUGHPUT ELECTROPHYSIOLOGY AND LIVE CELL AND CALCIUM IMAGING. **Aamir Ahmed**

2:30 PM GENERATING ION CHANNEL BLOCKING ANTIBODIES BY FUSING CYSTEINE-KNOT MINIPROTEINS INTO ANTIBODY CDR LOOPS. **John McCafferty**

3:00 PM BREAK

SESSION IV: REGULATION OF ION CHANNELS
Chair, Jeff Webber

3:30 PM ALLOSTERIC MODULATORS OF CHANNEL-PIP2 INTERACTIONS.
Diomedes Logothetis

4:00 PM ANTIDROMIC-RECTIFYING GAP JUNCTIONS AMPLIFY CHEMICAL TRANSMISSION FROM PREMOTOR INTERNEURONS TO MOTONEURONS.
Zhao-Wen Wang

4:30 PM TMEM16A: HIGH-THROUGHPUT FUNCTIONAL SCREENING APPROACHES TO A NOVEL THERAPEUTIC TARGET. **Sarah Lilley**

5:00 PM CLOSING REMARKS
Niels Fertig

New Council Orientation

3:00 PM - 4:30 PM, HILTON, PORT ROOM

Registration

3:00 PM–5:00 PM, LOBBY B

Joint Council Reception, Dinner, and Meeting

5:00 PM–9:00 PM, HILTON, COMPASS ROOM

Saturday, February 11, 2017

Daily Program Summary

All rooms are located in the *Ernest N. Morial Convention Center* unless noted otherwise.

8:00 AM–6:30 PM	Registration/Exhibitor Registration	Lobby B
8:30 AM–11:00 AM	Joint Council Meeting	Hilton, Compass Room
9:00 AM–12:30 PM	Bioengineering Subgroup	Room 220
9:00 AM–1:00 PM	Society of General Physiologists Council Meeting	Room 222
9:00 AM–6:30 PM	Mechanobiology Subgroup	Room R08/09
9:00 AM–7:00 PM	Bioenergetics Subgroup	Room R01
10:00 AM–6:15 PM	Biopolymers in Vivo Subgroup	Room 218
10:30 AM–3:00 PM	Molecular Biophysics Subgroup	Great Hall B
12:30 PM–6:00 PM	Nanoscale Biophysics Subgroup	Room 208/209
1:00 PM–5:00 PM	Biological Fluorescence Subgroup	Room 214
1:00 PM–5:30 PM	Membrane Biophysics Subgroup	Room R02/03
1:00 PM–6:00 PM	Membrane Structure and Assembly Subgroup	Room R06/07
1:00 PM–6:00 PM	Motility and Cytoskeleton Subgroup	Room R04/05
1:00 PM–6:30 PM	Exocytosis & Endocytosis Subgroup	Room 210
1:00 PM–7:00 PM	Intrinsically Disordered Proteins Subgroup	Room 206/207
1:30 PM–4:50 PM	Permeation & Transport Subgroup	Room 219
3:00 PM–4:00 PM	Career Center Workshop Networking: Optimizing Your Time at BPS 2017	Room 212/213
4:00 PM–5:00 PM	Undergraduate Mixer and Poster Fest	Lobby A
5:00 PM–7:00 PM	Opening Mixer	Great Hall Pre-Function Area
5:00 PM–7:00 PM	First-Time Attendee Drop By	Mosaic Lounge, Lobby A
6:00 PM–10:00 PM	Poster Viewing	Hall B-2 & C
6:30 PM–7:30 PM	CID/Education/CPOW Travel Awardee Reception	Rivergate Room, Lobby Level
7:00 PM–10:00 PM	Cryo-EM Subgroup	Room 208/209
7:30 PM–8:30 PM	All-In Networking Hour	Rivergate Room, Lobby Level

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Saturday, February 11

Registration/Exhibitor Registration

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

Joint Council Meeting

8:30 AM - 11:00 AM, HILTON, COMPASS ROOM

Bioengineering Subgroup

9:00 AM - 12:30 PM, ROOM 220

Subgroup Chairs

Isaac T.S. Li, University of British Columbia, Canada
Amir Farnoud, Ohio University

1-SUBG 9:00 AM

MAPPING CELL SURFACE ADHESION BY ROTATION TRACKING AND ADHESION FOOTPRINTING. **Isaac T.S. Li**,

2-SUBG 9:30 AM

INTERACTIONS OF ENGINEERED NANOMATERIALS WITH LIPID INTERFACES. **Amir Farnoud**

3-SUBG 10:00 AM

BIOMEMBRANE INSPIRED ENGINEERING. **Marjorie Longo**

10:30 AM BREAK

4-SUBG 10:40 AM

PHYSICAL ENGINEERING OF BEHAVIOUR AND FUNCTION AT THE CELL AND TISSUE LEVELS. **Andrew Pelling**

5-SUBG 11:10 AM

OPTICAL IMAGING OF PROTEIN AGGREGATION REACTIONS IN VITRO AND IN CELLS. **Clemens Kaminski**

NO ABSTRACT 11:40 AM

MECHANICS AND FLOW IN MICROBIAL BIOFILMS. **James N. Wilking**

12:10 PM CLOSING REMARKS

Society of General Physiologists Council Meeting

9:00 AM - 1:00 PM, ROOM 222

Mechanobiology Subgroup

9:00 AM - 6:30 PM, ROOM R08/09

Subgroup Chair

Ewa Paluch, University College London, United Kingdom

9:10 AM INTRODUCTION

6-SUBG 9:15 AM

MECHANICAL ASPECTS OF MITOCHONDRIAL ALTERATIONS IN APOPTOSIS. **Ana J. Garcia-Saez**

9:45 AM SHORT TALK

10:00 AM SHORT TALK

7-SUBG 10:15 AM

NON-EQUILIBRIUM PHASE TRANSITIONS IN ACTOMYOSIN CORTICES. **Nikta Fakhri**

10:45 AM COFFEE BREAK

11:15 AM SHORT TALK

8-SUBG 11:30 AM

MECHANICAL SIGNALING IN STEM CELLS: SELF-RENEWAL AND AGEING. **Kevin Chalut**

9-SUBG 12:00 PM

THE MECHANICAL CONTROL OF NERVOUS SYSTEM DEVELOPMENT. **Kristian Franze**

12:30 PM LUNCH

2:00 PM SHORT TALK

2:15 PM SHORT TALK

2:30 PM SHORT TALK

10-SUBG 2:45 PM

HOW DO SINGLE-CELL PROPERTIES INFLUENCE THE COLLECTIVE MECHANICAL BEHAVIOR OF CONFLUENT TISSUES? **Lisa Manning**

3:15 PM COFFEE BREAK

NO ABSTRACT 3:45 PM

MECHANICAL CONTROL OF TISSUE MORPHOGENESIS. **Otger Campas**

11-SUBG 4:15 PM

MECHANICAL STRETCH TRIGGERS RAPID EPITHELIAL CELL DIVISION THROUGH THE STRETCH-ACTIVATED CHANNEL PIEZO1. **Jody Rosenblatt**

4:45 PM SHORT TALK

5:00 PM SHORT TALK

5:15 PM BUSINESS MEETING

6:30 PM SPEAKER DINNER

Bioenergetics Subgroup

9:00 AM - 7:00 PM, ROOM R01

Subgroup Chairs

Elizabeth Jonas, Yale University
George A. Porter, Jr., University of Rochester Medical Center

9:00 AM INTRODUCTION

HIGH RESOLUTION STRUCTURE, FUNCTION, AND DYNAMICS OF MITOCHONDRIAL PROTEINS

12-SUBG 9:10 AM

NEAR-NEIGHBOR RELATIONSHIPS OF THE ATYPICAL SUBUNITS THAT FORM THE PERIPHERAL STALK OF THE MITOCHONDRIAL ATP SYNTHASE IN CHLOROPHYCEAN ALGAE. **Diego Gonzalez-Halphen**

13-SUBG 9:40 AM

THE MECHANISM OF PROTON PUMPING BY RESPIRATORY COMPLEX I. **Ulrich Brandt**

14-SUBG 10:10 AM

MITOCHONDRIAL METABOLISM DETERMINES THE SPATIO-TEMPORAL ORGANIZATION OF SINGLE F_1F_0 ATP SYNTHASE IN LIVE HUMAN CELLS. **Karin Busch**

10:40 AM COFFEE BREAK

15-SUBG 11:00 AM

THREE-DIMENSIONAL ANALYSIS OF HUMAN MITOCHONDRIAL REPLICATIVE HELICASE TWINKLE. **Maria Sola**

16-SUBG 11:30 AM

PROBING THE REGULATORY AND TRANSPORT MECHANISM OF MITOCHONDRIAL CARRIERS WITH THERMOSTABILITY SHIFT ASSAYS. **Edmund Kunji**

17-SUBG **12:00 PM**
PORE ARCHITECTURE AND ION SELECTIVITY FILTER OF THE MITOCHONDRIAL CALCIUM UNIPORTER. **James J. Chou**

12:30 PM **LUNCH BREAK**

2:15 PM **PRESENTATION OF THE YOUNG BIOENERGETICS AWARD WINNER**

MITOCHONDRIAL REDOX REGULATION IN HEALTH AN DISEASE

18-SUBG **2:30 PM**
REVERSING ELECTRON TRANSPORT IN ISCHEMIA AND BEYOND. **Paul Brookes**

NO ABSTRACT **3:00 PM**
SIGNALING BY CARDIOLIPINS: RE-LOCATION AND RE-DOXING IN MITOCHONDRIA. **Valerian E. Kagan**

3:30 PM **COFFEE BREAK**

19-SUBG **3:50 PM**
REDOX REGULATION OF CYTOCHROME C OXIDASE ASSEMBLY. **Antoni Barrientos**

20-SUBG **4:20 PM**
MITOCHONDRIAL PRODUCTION OF ROS: DEVIATIONS FROM THE "STANDARD MODEL." **Anatoly Starkov**

5:00 PM **GENERAL DISCUSSION**

6:00 PM **BUSINESS MEETING**

7:00 PM **SUBGROUP DINNER**

Biopolymers in Vivo Subgroup

10:00 AM - 6:15 PM, ROOM 218

Subgroup Chair
Gary Pielak, University of North Carolina, Chapel Hill

10:00 AM **BUSINESS MEETING**

11:30 AM **BREAK**

21-SUBG **1:00 PM**
ORGANIZATION OF NUCLEIC ACIDS AND PROTEINS BY LIPID MEMBRANES. **Sarah L. Keller**

22-SUBG **1:45 PM**
FOLDING IN THE CELL - IONS, CROWDERS, OSMOLYTES. **Simon Ebbinghaus**

23-SUBG **2:15 PM**
RNA-BASED CONTROL OF CELLULAR PHASE TRANSITIONS. **Amy S. Gladfelter**

2:45 PM **STUDENT SPEAKER**

24-SUBG **3:00 PM**
VISUALIZING STRUCTURAL DETAILS OF DISORDERED DOMAIN PHASE SEPARATION ASSOCIATED WITH ALS AND CANCERS. **Nicolas Fawzi**

3:30 PM **BREAK**

NO ABSTRACT **4:00 PM**
PROTEINS- FOREVER AGING? **Jeremy Smith**

4:30 PM **POSTDOC SPEAKER**

25-SUBG **4:45 PM**
HOW EVOLUTION TUNES STRESS-TRIGGERED PROTEIN PHASE SEPARATION TO PROMOTE CELL FITNESS DURING STRESS. **D. Allan Drummond**

26-SUBG **5:15 PM**
PHASE BEHAVIOR AND SELF-ASSEMBLY OF A NEW FAMILY OF STIMULUS RESPONSIVE PEPTIDE POLYMERS. **Ashutosh Chilkoti**

6:00 PM **CLOSING REMARKS**

Molecular Biophysics Subgroup

10:30 AM - 3:00 PM, GREAT HALL B

Subgroup Chair
Yann Chemla, University of Illinois at Urbana-Champaign

10:30 AM **OPENING REMARKS**

27-SUBG **10:40 AM**
CONTROLLABLE MOLECULAR MOTORS ENGINEERED FROM MYOSIN AND RNA. **Zev Bryant**

28-SUBG **11:10 AM**
DYNEIN'S DIRECTION-DEPENDENT MICROTUBULE-BINDING STRENGTH IS CONTROLLED VIA A TENSION-INDUCED SLIDING OF DYNEIN'S STALK HELICES MEDIATED BY THE COILED-COIL STRUT. **Lu Rao**

29-SUBG **11:35 AM**
SINGLE-MOLECULE SORTING OF HUMAN DNA REPAIR ENZYMES. **Maria Spies**

12:05 PM **COFFEE BREAK AND BUSINESS MEETING**

30-SUBG **12:35 PM**
HIGH THROUGHPUT SIMULATIONS REVEAL HOW SEQUENCE AND METHYLATION CONTROL DNA LOOPING AND SELF-ASSOCIATION. **Jejoong Yoo**

31-SUBG **1:00 PM**
SINGLE MOLECULES IN FOCUS: FROM RNA SPLICING TO SILENCING. **Nils G. Walter**

32-SUBG **1:30 PM**
RNA REMODELING ACTIVITY REVEALS RNP ASSEMBLY MECHANISM. **Sua Myong**

NO ABSTRACT **2:00 PM**
QUANTITATIVE CHARACTERIZATION OF THE BUILDING BLOCKS OF RNA TERTIARY STRUCTURE. **William J. Greenleaf**

2:30 PM **CLOSING REMARKS**

Nanoscale Biophysics Subgroup

12:30 PM - 6:00 PM, ROOM 208/209

Subgroup Chair
Julie Biteen, University of Michigan

33-SUBG **12:30 PM**
SPECTRALLY RESOLVED SUPER-RESOLUTION MICROSCOPY. **Ke Xu**

34-SUBG **1:00 PM**
SUPERTEMPORAL-RESOLVED MICROSCOPY (STREM) FOR MEASURING FAST INTERFACIAL DYNAMICS. **Christy F. Landes**

35-SUBG **1:30 PM**
BRIGHT AND STABLE EXTERNAL FLUOROPHORES IN UNTRANSFORMED LIVING CELLS. **Ozgur Sahin**

36-SUBG **2:00 PM**
SINGLE-MOLECULE STUDIES OF DNA REPLICATION: THE PLASTICITY OF MULTI-PROTEIN COMPLEXES. **Antoine M. van Oijen**

37-SUBG **2:30 PM**
SINGLE MOLECULE FLUORESCENCE AND ATOMIC FORCE MICROSCOPY STUDIES OF DNA REPAIR. **Dorothy Erie**

3:00 PM BREAK

3:30 PM STUDENT/ POSTDOC TALKS

38-SUBG 4:15 PM
DEVELOPING FLUORESCENT NANODIAMONDS FOR *IN VITRO* AND *IN VIVO* BIOLOGICAL IMAGING. **Keir C. Neuman**

39-SUBG 4:45 PM
SPATIALLY RESOLVED MAPPING OF ENDOGENOUS PROTEINS AND RNA IN LIVING CELLS. **Alice Yen Ping Ting**

5:15 PM BUSINESS MEETING

6:00 PM SUBGROUP DINNER

Biological Fluorescence Subgroup

1:00 PM - 5:00 PM, ROOM 214

Subgroup Chair

G. Ulrich Nienhaus, Karlsruhe Institute of Technology (KIT), Germany

NO ABSTRACT 1:00 PM
HIGH THROUGHPUT, HIGH CONTENT NEUROBIOLOGICAL IMAGING.
Peter T.C. So

NO ABSTRACT 1:30 PM
OBSERVING PROTEIN ASSOCIATION WITH CYTOPLASMIC VESICLES IN THE LIVING CELL. **Yan Chen**

40-SUBG 2:00 PM
RESOLFT OPTICAL NANOSCOPY FOR THE LIFE SCIENCES. **Ilaria Testa**

41-SUBG 2:30 PM
BRIGHT AND STABLE EXTERNAL FLUOROPHORES IN UNTRANSFORMED LIVING CELLS. **Paul R. Selvin**

3:00 PM BREAK

3:10 PM BUSINESS MEETING

42-SUBG 3:20 PM
THE PHOTOPHYSICS OF PIPE AND OTHER PHOTOPHYSICAL PROCESS THAT AFFECT SINGLE-MOLECULE DYES. **Marcia Levitus**

43-SUBG 3:50 PM
MULTI-PARAMETER FLUORESCENCE SPECTROSCOPY AND IMAGING FOR QUANTITATIVE FRET MEASUREMENTS. **Claus A.M. Seidel**

4:20 PM YOUNG FLUORESCENCE INVESTIGATOR AWARD & LECTURE

4:40 PM GREGORIO WEBER AWARD & LECTURE

5:00 PM ADJOURNMENT

Membrane Biophysics Subgroup

1:00 PM - 5:30 PM, ROOM R02/03

Subgroup Chair

Teresa Giraldez, La Laguna University, Spain

1:00 PM OPENING REMARKS

NO ABSTRACT 1:05 PM
BIOPHYSICS OF INHIBITORY RHODOPSINS. **Peter Hegemann**

44-SUBG 1:35 PM
PIEZO1 CHANNELS ARE INHERENTLY MECHANOSENSITIVE. **Ruhma Syeda**

45-SUBG 2:05 PM
INTRA-MOLECULAR CONNECTIVITY IN SENSORY RECEPTORS OF THE TRP FAMILY. **Sebastian E. Brauchi**

46-SUBG 2:35 PM
BK CHANNELS: SENSORS THAT SWITCH MEMBRANES BETWEEN DAY AND NIGHT STATES IN THE CIRCADIAN CLOCK. **Andrea Meredith**

3:05 PM BUSINESS MEETING

3:15 PM COFFEE BREAK

47-SUBG 3:40 PM
STRUCTURAL MECHANISMS OF MECHANOSENSITIVITY IN THE TREK-2 K2P POTASSIUM CHANNEL. **Stephen J. Tucker**

48-SUBG 4:10 PM
MEMBRANE MECHANOSENSORS RESPONSIBLE FOR TOUCH AND OTHER SENSES. **Miriam B. Goodman**

49-SUBG 4:40 PM
VISUALIZING THE COMPETITION BETWEEN GS AND GISIGNALING AT THE MEMBRANE. **Thomas Hughes**

5:10 PM CLOSING REMARKS

Membrane Structure and Assembly Subgroup

1:00 PM - 6:00 PM, ROOM R06/07

Subgroup Chair

Rumiana Dimova, Max Planck Institute of Colloids and Interfaces, Germany

NO ABSTRACT 1:00 PM
INVITED SATURDAY SUBGROUP SPEAKER. **Harvey McMahon**

NO ABSTRACT 1:35 PM
MEMBRANE CURVATURE, A NON-STOCHASTIC REGULATOR OF PROTEIN LOCALIZATION, STRUCTURE AND FUNCTION. **Dimitrios Stamou**

50-SUBG 2:10 PM
PHASES AND FLUCTUATIONS IN BIOLOGICAL MEMBRANES. **Sarah Veatch**

2:45 PM BREAK

51-SUBG 3:10 PM
THE ROLE OF CHOLESTEROL IN VIRAL SPIKE GLYCOPROTEIN-MEDIATED MEMBRANE FUSION. **Lukas K. Tamm**

52-SUBG 3:45 PM
SELF-ORGANIZATION AND DYNAMICS OF THE ACTIN CORTEX-MEMBRANE INTERFACE. **Gijsje Koenderink**

NO ABSTRACT 4:20 PM
INCREASING COMPLEXITY IN COMPUTER SIMULATIONS OF MEMBRANES.
D. Peter Tieleman

5:00 PM BUSINESS MEETING

Motility and Cytoskeleton Subgroup

1:00 PM - 6:00 PM, ROOM R04/05

Subgroup Chairs

Erika Holzbaur, University of Pennsylvania
Joseph Muretta, University of Minnesota

1:00 PM OPENING REMARKS

NO ABSTRACT 1:05 PM
MYTH4-FERM MYOSINS IN THE ASSEMBLY AND MAINTENANCE OF ACTIN-BASED PROTRUSIONS. **Matthew Tyska**

53-SUBG 1:30 PM
SEQUENCE AND FUNCTIONAL DIVERSITY ACROSS THE KINESIN SUPER-FAMILY. **Kristen Verhey**

1:55 PM STUDENT TALK

2:10 PM STUDENT TALK

2:25 PM BREAK

54-SUBG 2:45 PM
READOUT OF THE TUBULIN CODE BY CELLULAR EFFECTORS: GRADED CONTROL OF MICROTUBULE SEVERING BY TUBULIN GLUTAMYLATION. **Antonina Roll-Mecak**

55-SUBG 3:10 PM
DISSECTION OF MICROTUBULE MEDIATED MECHANICAL FORCES IN MITOSIS. **Melissa K. Gardner**

56-SUBG 3:35 PM
THE ROLE OF THE THICK FILAMENTS IN THE REGULATION OF MUSCLE CONTRACTION. **Malcolm Irving**

57-SUBG 3:55 PM
SINGLE MOLECULE IMAGING REVEALS THE MECHANISM OF ACTIN-TN.TM ACTIVATION AND DEACTIVATION. **Neil M. Kad**

4:25 PM BUSINESS MEETING

58-SUBG 5:00 PM
MOLECULAR CHARACTERIZATION OF A MEMBRANE-ASSOCIATED CYTOSKELETAL MOTOR FAMILY. **E. Michael Ostap**

Exocytosis & Endocytosis Subgroup

1:00 PM - 6:30 PM, ROOM 210

Subgroup Chair
Brian M. Salzberg, University of Pennsylvania School of Medicine

1:10 PM STUDENT TALK

1:15 PM STUDENT TALK

1:30 PM STUDENT TALK

NO ABSTRACT 1:45 PM
CELLULAR DYNAMICS IMAGED IN REAL TIME AND IN 3D USING A LATTICE LIGHT SHEET MICROSCOPE. **Tomas Kirchhausen**

2:15 PM COFFEE BREAK

NO ABSTRACT 2:30 PM
SUPERPRIMING: A SLOW PROCESS, WHICH ENHANCES THE RATE OF EXOCYTOSIS AND MAY MEDIATE SYNAPTIC AUGMENTATION AND POSTTETANIC POTENTIATION. **Erwin Neher**

59-SUBG 3:00 PM
HOW VOLTAGE-GATED CAV1 L-TYPE CA²⁺ CHANNELS MEET THE NEEDS OF THE RIBBON SYNAPSE. **Amy Lee**

60-SUBG 3:30 PM
PRESYNAPTIC MEMBRANE TURNOVER AND TRANSMITTER RELEASE AT THE CALYX OF HELD. **Xuelin Lou**

4:00 PM COFFEE BREAK

61-SUBG 4:15 PM
THE LONG ROAD TO MICRO-DYNAMIC PRESYNAPTIC FRET MEASUREMENTS. **Robert Zucker**

5:30 PM BUSINESS MEETING

6:30 PM SUBGROUP DINNER

Intrinsically Disordered Proteins Subgroup

1:00 PM - 7:00 PM, ROOM 206/207

Subgroup Chair
Garagin Papoian, University of Maryland

1:00 PM OPENING REMARKS

1:05 PM INTRODUCTION

62-SUBG 1:05 PM
PKA: DYNAMIC ASSEMBLY AND REGULATION OF MACROMOLECULAR SIGNALING COMPLEXES. **Susan S. Taylor**

63-SUBG 1:50 PM
DISORDERED CDK SUBSTRATES ACT AS MULTI-INPUT SIGNAL PROCESSORS TO CONTROL THE KEY DECISION POINTS IN THE CELL CYCLE. **Mart Loog**

64-SUBG 2:20 PM
EXPLORATION OF PROTEIN REGIONS INVOLVED IN MAP KINASE MEDIATED SIGNALING. **Attila Remenyi**

2:50 PM POSTDOC TALK

65-SUBG 3:10 PM
CHOREOGRAPHY BY STRUCTURAL DISORDER IN MEMBRANE PROTEINS. **Birthe B. Kragelund**

3:40 PM COFFEE BREAK

66-SUBG 4:00 PM
INTRINSIC DISORDER IN THE HIGHLY-ORDERED CIRCADIAN CLOCK. **Jennifer M. Hurley**

67-SUBG 4:30 PM
ENTROPIC CLOCKS IN THE SERVICE OF ELECTRICAL SIGNALING. **Ofer Yifrach**

5:00 PM POSTDOC TALK

68-SUBG 5:20 PM
INVITED SATURDAY SUBGROUP SPEAKER. **Andrew Baldwin**

69-SUBG 5:50 PM
TWO DECADES OF IDPS; WHAT HAVE WE LEARNED? **Richard Kriwacki**

6:35 PM CLOSING REMARKS

Permeation & Transport Subgroup

1:30 PM - 4:50 PM, ROOM 219

Subgroup Chair
Olga Boudker, Weill Cornell Medical College

70-SUBG 1:30 PM
NOVEL MOLECULAR MECHANISM OF EXCITATORY NEUROTRANSMITTER TRANSPORT INHIBITION. **Nicolas Reyes**

71-SUBG 2:00 PM
INS AND OUTS OF THE NA,K-ATPASE. **Hanne Poulsen**

72-SUBG 2:30 PM
ATOMIC INSIGHTS INTO THE PH-INDUCED ACTIVATION OF CHANNELS AND TRANSPORTERS. **Jana Shen**

3:00 PM STUDENT TALK

3:20 PM BREAK

73-SUBG 3:30 PM
DYNAMICS OF GLUTAMATE RECEPTOR STUDIED WITH SINGLE MOLECULE FRET. **Vasanthi Jayaraman**

74-SUBG 4:00 PM
UNCONVENTIONAL ION-PERMEATION PATHWAYS IN NAVAB AND CAVAB CHANNELS FROM MOLECULAR SIMULATIONS WITH POLARIZABLE FORCE-FIELDS. **Sergei Noskov**

4:30 PM STUDENT TALK

Career Center Workshop Networking: Optimizing Your Time at BPS 2017

3:00 PM - 4:00 PM, ROOM 212/213

You surely have heard that networking is a key component of the successful job search. The term itself often conjures up negative thoughts and reactions to the uninitiated, sometimes to the point of paralysis. Professional conferences (such as BPS 2017) provide endless networking opportunities. If, however, your perception of networking means tackling someone at the coffee station while thrusting your CV in his/her hands, you may want to stop in on this session. The practice of networking has become so much easier with the advent of the internet. We will discuss what you hope to get out of your presence at the meeting, how to set objectives beforehand, and how to meet those objectives once you arrive (while minimizing anxiety).

Undergraduate Mixer and Poster Fest

4:00 PM - 5:00 PM, LOBBY A

Support contributed by APL Bioengineering

Opening Mixer

5:00 PM - 7:00 PM, GREAT HALL PRE-FUNCTION AREA

All registered attendees are welcome to attend this cash bar and light refreshments reception.

First-Time Attendee Drop By

5:00 PM - 7:00 PM, MOSAIC LOUNGE, LOBBY A

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 2017 New Orleans meeting.

Poster Viewing

6:00 PM - 10:00 PM, HALL B-2 & C

CID/Education/CPOW Travel Awardee Reception

6:30 PM - 7:30 PM, RIVERGATE ROOM, LOBBY LEVEL

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

Cryo-EM Subgroup

7:00 PM - 10:00 PM, ROOM 208/209

Subgroup Chair

David L. Stokes, New York University School of Medicine

75-SUBG 7:00 PM

ARCHITECTURES OF LIPID TRANSPORT SYSTEMS FOR THE BACTERIAL OUTER MEMBRANE. **Gira Bhabha**

76-SUBG 7:25 PM

KINASE REGULATION THROUGH DRAMATIC UNFOLDING, AS TOLD BY HSP90:CDK37:CDK4 ATOMIC CRYO-EM STRUCTURE. **Kliment A. Verba**

NO ABSTRACT 7:50 PM

COMPLETE GATING MECHANISM OF THE GLYCINE RECEPTOR ELUCIDATED BY CRYO-EM. **Eric Gouaux**

8:15 PM BUSINESS MEETING

77-SUBG 8:30 PM

MOLECULAR MECHANISMS EXPLAINED BY SINGLE PARTICLE CRYO-EM. **Stefan Raunser**

78-SUBG 8:55 PM

THE CRYO-EM METHOD MICROED STRUCTURE DETERMINATION OF TYPE II DIABETES-RELATED PROTEIN SEGMENTS. **Pascal Krotee**

79-SUBG 9:20 PM

LIGAND-DEPENDENT STRUCTURAL STATES OF A K⁺ CHANNEL ANALYZED BY CRYO-EM. **Roderick MacKinnon**

All-In Networking Hour

7:30 PM - 8:30 PM, RIVERGATE ROOM, LOBBY LEVEL

This networking event is open to students and scientists at all stages of their careers. Participants will have an opportunity to meet Biophysical Society Committee members, representatives from industry and government, and peers, to engage in fun and relaxed discussions over light refreshments. Ice breakers will be used to help spark conversation, providing participants with the chance to seek academic and career advice, or discover various resources and opportunities they may not know about.

Sunday, February 12, 2017

Daily Program Summary

All rooms are located in the *Ernest N. Morial Convention Center* unless noted otherwise.

7:00 AM–9:00 AM	Editorial Board Orientation	Room 222
7:30 AM–8:30 AM	Postdoctoral Breakfast	Rivergate Room, Lobby Level
7:30 AM–5:00 PM	Registration/Exhibitor Registration	Lobby B
8:00 AM–8:30 AM	Career Center Workshop Career Q&A with Joe Tringali	Room 212/213
8:00 AM–10:00 PM	Poster Viewing	Hall B-2 & C
8:15 AM–10:15 AM	Symposium: Proteins in Vivo: From the Ribosome Through the Chaperone to the Native State <i>Chair: Silvia Cavagnero, University of Wisconsin-Madison</i> CHANNELING NASCENT PROTEINS TOWARDS THE NATIVE STATE: ROLE OF THE RIBOSOME AND MOLECULAR CHAPERONES. <i>Silvia Cavagnero</i> RIBOSOMES IN MOTION: THE DYNAMICS OF NATURE'S PROTEIN SYNTHESIS MACHINERY. <i>Ruben L. Gonzalez, Jr.</i> PROTEIN AND RNA CHAPERONES OPTIMIZE THE RATE OF NATIVE STATE PRODUCTION BY AN ITERATIVE ANNEALING MECHANISM. <i>Dave Thirumalai</i> FROM NATIVE TO AMYLOID IN THE TEST TUBE AND IN CELLS: A JOURNEY OF MISBEHAVING ANTIBODIES. <i>Marina Ramirez-Alvarado</i>	Great Hall A
8:15 AM–10:15 AM	Symposium: Biophysics of the Cytoskeletal-Membrane Interface <i>Chair: Michael M. Kozlov, Tel Aviv University, Israel</i> MODELING MEMBRANE TUBULES WITH LIPID DROPLETS AND MIGRASOMES. <i>Michael M. Kozlov</i> MULTISCALE SIMULATION OF PROTEINS AT THE MEMBRANE-CYTOSKELETON INTERFACE. <i>Gregory A. Voth</i> HOW ACTIN CYTOSKELETON DYNAMICS INDUCE MEMBRANE TUBULATIONS. <i>Cécile Sykes</i> REDEFINING THE ROLE OF THE ARP2/3 COMPLEX: REGULATION OF MORPHOLOGY AT THE LEADING EDGE. <i>Dorit Hanein</i>	Great Hall B
8:15 AM–10:15 AM	Platform: Membrane Pumps, Transporters, and Exchangers I	Room R02/03
8:15 AM–10:15 AM	Platform: Voltage-gated Na Channels	Room R04/05
8:15 AM–10:15 AM	Platform: Optical Microscopy and Super-Resolution Imaging: Novel Approaches and Analysis I	Room R06/07
8:15 AM–10:15 AM	Platform: Membrane Protein Structures I	Room R08/09
8:15 AM–10:15 AM	Platform: Membrane Active Peptides and Toxins I	Room 206/207
8:15 AM–10:15 AM	Platform: Micro- and Nanotechnology	Room 208/209
8:30 AM–10:30 AM	CPOW Committee Meeting	Room 203
9:00 AM–10:00 AM	Career Center Workshop Selling Yourself to the Life Sciences Industry	Room 212/213
10:00 AM–5:00 PM	Exhibits	Hall B-2 & C
10:15 AM–11:00 AM	Coffee Break	Hall B-2 & C
10:30 AM–11:30 AM	Career Center Workshop Looking Beyond Academia: Identifying Your Career Options Using MyIDP, LinkedIn, and More	Room 212/213
10:30 AM–12:00 PM	Exhibitor Presentation: Carl Zeiss Microscopy LLC ZEISS Live Cell Imaging Tools Allow New Levels of Throughput and Image Quality	Room 221
10:30 AM–12:00 PM	International Relations Committee Meeting	Room 204

10:45 AM–12:45 PM	<p>Symposium: New and Notable Co-Chairs: <i>David W. Piston, Washington University and Catherine A. Royer, Rensselaer Polytechnic Institute</i></p> <p>DNA LOOPING MEDIATES NUCLEOSOME TRANSFER. <i>Lucy Brennan</i> ATOMIC STRUCTURE OF THE CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR. <i>Jue Chen</i> CONNECTING ATOMISTIC TO CELLULAR SCALES IN COMPUTER SIMULATIONS OF A BACTERIAL CYTOPLASM. <i>Michael Feig</i> SINGLE MOLECULE INSIGHTS INTO THE ASSEMBLY AND CATALYTIC ACTIVATION OF SPLICEOSOMES. <i>Aaron Hoskins</i> RESOLVING THE STRUCTURAL MECHANICS OF NUCLEAR INTERMEDIATE FILAMENTS IN SITU USING A CORRELATIVE AFM AND CRYO-EM APPROACH. <i>Tanuj Sapra</i> A NEWLY-IDENTIFIED INTERACTION MOTIF ASSOCIATED WITH GATING IN VOLTAGE-GATED SODIUM CHANNELS. <i>Bonnie Wallace</i></p>	
10:45 AM–12:45 PM	<p>Symposium: RNA Structures and Dynamics Chair: <i>Sarah Woodson, Johns Hopkins University</i></p> <p>CLEAVING FAST AND SLOW: STRATEGIES FOR SELF-ASSEMBLY OF CATALYTIC RNA. <i>Sarah A. Woodson</i> RNA TERTIARY STRUCTURE AND THE REGULATION OF GENE EXPRESSION. <i>Anna Pyle</i> ADVENTURES WITH RNA GRAPHS. <i>Tamar Schlick</i> THE STRUCTURAL AND MECHANISTIC ORIGINS OF CATALYSIS IN NUCLEOLYTIC RIBOZYMES. <i>David M. Lilley</i></p>	Great Hall B
10:45 AM–12:45 PM	Platform: Membrane Receptors and Signal Transduction I	Room R02/03
10:45 AM–12:45 PM	Platform: Cell Mechanics, Mechanosensing, and Motility I	Room R04/05
10:45 AM–12:45 PM	Platform: Protein Structure and Conformation I	Room R06/07
10:45 AM–12:45 PM	Platform: Protein Dynamics and Allostery I	Room R08/09
10:45 AM–12:45 PM	Platform: General Protein-Lipid Interactions I	Room 206/207
10:45 AM–12:45 PM	Platform: Cardiac, Smooth, and Skeletal Muscle Electrophysiology	Room 208/209
11:30 AM–1:00 PM	Undergraduate Student Pizza “Breakfast”	Room 205
11:30 AM–5:00 PM	Colleges in the Community Day	Room 205
12:00 PM–1:00 PM	International Travel Awardee Luncheon	Rivergate Room, Lobby Level
12:00 PM–1:00 PM	Career Center Workshop Networking: Optimizing Your Time at BPS 2017	Room 212/213
12:15 PM–2:15 PM	Public Affairs Committee Meeting	Room 203
12:30 PM–2:00 PM	Exhibitor Presentation: Bruker Corporation Super-Resolution Microscopy: Performing Quantitative Analysis at the Molecular Level	Room 221
1:00 PM–2:30 PM	The World Outside the Lab: Many Ways to Use Your PhD Skills	Room R01
1:00 PM–3:00 PM	Graduate & Postdoc Institution Fair	Hall B-2 & C
1:45 PM–3:00 PM	Snack Break	Hall B-2 & C
1:45 PM–3:45 PM	Poster Presentations and Late Posters	Hall B-2 & C
2:00 PM–3:30 PM	Teaching Science Like We Do Science	Rivergate Room, Lobby Level
2:30 PM–3:30 PM	Career Center Workshop Demystifying the Academic Job Search I: Understanding the Search Process from the Perspective of Search Committees and Decoding Job Announcements	Room 212/213
2:30 PM–4:00 PM	CRISPR from a Policy Perspective	Room 210
3:30 PM–5:00 PM	Early Careers Committee Meeting	Room 203
4:00 PM–5:00 PM	Career Center Workshop Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)	Room 212/213

4:00 PM–6:00 PM	Symposium: Single-Molecule Membrane Protein Dynamics Chair: Hugo Sanabria, Clemson University SUBMILLISECOND DYNAMICS OF THE NMDA RECEPTOR. <i>Hugo Sanabria</i> MEASURING THE FREE ENERGY OF CLC-EC1 DIMERIZATION IN MEMBRANES USING SINGLE MOLECULE PHOTOBLEACHING ANALYSIS. <i>Janice L. Robertson</i> SINGLE MOLECULE DYNAMICS OF METABOTROPIC GLUTAMATERECEPTORS. <i>Ehud Isacoff</i> T CELL RECEPTOR CLUSTERING - A MECHANISM OF SIGNAL TRANSDUCTION. <i>Katharina Gaus</i>	Great Hall A
4:00 PM–6:00 PM	Symposium: Mechanotransduction to Physiology Chair: Jorg Grandl, Duke University THE MECHANISM OF ACTIVATION OF PIEZO ION CHANNELS. <i>Jorg Grandl</i> MECHANOSENSING AT THE SURFACE. <i>Ellen Lumpkin</i> ROLE OF PIEZO ION CHANNELS IN MECHANOSENSATION. <i>Ardem Patapoutian</i> MSCS-LIKE MECHANOSENSITIVE ION CHANNELS: MODULAR SENSORS AND REPORTERS OF MEMBRANE TENSION. <i>Elizabeth Haswell</i>	Great Hall B
4:00 PM–6:00 PM	Symposium: Cancer Cell Biophysics Chair: Alissa Weaver, Vanderbilt University AUTOCRINE ROLE OF EXOSOMES IN CELLULAR ADHESION, MIGRATION, AND INVASION. <i>Alissa Weaver</i> QUANTITATIVE SYSTEMS BIOLOGY STUDIES REVEAL A NESTED RELAY MECHANISM FOR TGF-BETA SIGNALING. <i>Jianhua Xing</i> MODELS FOR CANCER CELL MOTILITY: REGULATION AND SIGNALING. <i>Leah Edelstein-Keshet</i> PHYSICAL INTERACTIONS IN DUCTAL MICROINVASIONS: INTEGRATING HISTOLOGY WITH COMPUTATIONAL MODELING. <i>Katarzyna A. Rejniak</i>	Room R02/03
4:00 PM–6:00 PM	Platform: Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I	Room R04/05
4:00 PM–6:00 PM	Platform: Protein Stability, Folding, and Chaperones I	Room R06/07
4:00 PM–6:00 PM	Platform: Membrane Physical Chemistry I	Room R08/09
4:00 PM–6:00 PM	Platform: Kinesins and Dyneins	Room 206/207
4:00 PM–6:00 PM	Platform: Computational Methods and Bioinformatics	Room 208/209
4:30 PM–6:00 PM	Exhibitor Presentation: Oxford Nanoimaging Ltd Meet the Nanoimager: The Next Generation of Super-Resolution Microscope	Room 221
5:00 PM–6:00 PM	Korean Biophysicists Meeting	Room 210
5:00 PM–7:00 PM	PI to PI: A Wine & Cheese Mixer	Room 205
6:00 PM–7:00 PM	Biophysics Austria Mixer	Rivergate Room, Lobby Level
6:00 PM–9:00 PM	Student Research Achievement Award (SRAA) Poster Competition	Hall B-2 & C
6:00 PM–10:00 PM	Biophysical Journal Editorial Board Dinner	Latrobe's on Royal
6:30 PM–8:00 PM	Exhibitor Presentation: Molecular Devices LLC Getting the Most Out of Your Experiments with pCLAMP and HumSilencer Technology	Room 221
7:00 PM–9:00 PM	Setting Standards for Data Sharing: Community by Community	Room 214

Sunday, February 12

Editorial Board Orientation

7:00 AM - 9:00 AM, ROOM 222

Postdoctoral Breakfast

7:30 AM - 8:30 AM, RIVERGATE ROOM, LOBBY LEVEL

Support contributed by the Burroughs Wellcome Fund

This breakfast presents an opportunity for postdoctoral Annual Meeting attendees to meet and discuss the issues they face in their current career stage. This year the breakfast features a panel focused on international relations and navigating scientific career paths outside one's country of origin. Limited to the first 100 attendees.

Speakers

Marina Ramirez-Alvarado, Mayo Clinic
Khalid Salaita, Emory University

Registration/Exhibitor Registration

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

Career Center Workshop Career Q&A with Joe Tringali

8:00 AM - 8:30 AM, ROOM 212/213

Do you have a pressing question about your career in science? Attend this informal discussion with veteran career consultant Joe Tringali and get the answers you are looking for.

Poster Viewing

8:00 AM - 10:00 PM, HALL B-2 & C

Symposium

Proteins in Vivo: From the Ribosome Through the Chaperone to the Native State

8:15 AM - 10:15 AM, GREAT HALL A

Chair

Silvia Cavagnero, University of Wisconsin-Madison

80-Symp 8:15 AM

CHANNELING NASCENT PROTEINS TOWARDS THE NATIVE STATE: ROLE OF THE RIBOSOME AND MOLECULAR CHAPERONES. **Silvia Cavagnero**, Rayna M. Addabbo, Matthew D. Dalphin, Yue Liu, Miranda F. Mecha

81-Symp 8:45 AM

RIBOSOMES IN MOTION: THE DYNAMICS OF NATURE'S PROTEIN SYNTHESIS MACHINERY. **Ruben L. Gonzalez, Jr.**

No Abstract 9:15 AM

PROTEIN AND RNA CHAPERONES OPTIMIZE THE RATE OF NATIVE STATE PRODUCTION BY AN ITERATIVE ANNEALING MECHANISM.

Dave Thirumalai

82-Symp 9:45 AM

FROM NATIVE TO AMYLOID IN THE TEST TUBE AND IN CELLS: A JOURNEY OF MISBEHAVING ANTIBODIES. **Marina Ramirez-Alvarado**, Marta Marin-Argany, Christopher J. Dick, Luis M. Blancas-Mejia, Pinaki Misra, Yi Lin, Angela Williams, Jonathan S. Wall

Symposium Biophysics of the Cytoskeletal-Membrane Interface

8:15 AM - 10:15 AM, GREAT HALL B

Chair

Michael M. Kozlov, Tel Aviv University, Israel

83-Symp 8:15 AM

MODELING MEMBRANE TUBULES WITH LIPID DROPLETS AND MIGRASOMES. **Michael M. Kozlov**

84-Symp 8:45 AM

MULTISCALE SIMULATION OF PROTEINS AT THE MEMBRANE-CYTOSKELETON INTERFACE. **Gregory A. Voth**

85-Symp 9:15 AM

HOW ACTIN CYTOSKELETON DYNAMICS INDUCE MEMBRANE TUBULATIONS. **Cécile Sykes**

86-Symp 9:45 AM

REDEFINING THE ROLE OF THE ARP2/3 COMPLEX: REGULATION OF MORPHOLOGY AT THE LEADING EDGE. Karen L. Anderson, Christopher Page, Mark F. Swift, Praveen Suraneni, Mandy EW Janssen, Thomas D. Pollard, Rong Li, Niels Volkman, **Dorit Hanein**

Platform

Membrane Pumps, Transporters, and Exchangers I

8:15 AM - 10:15 AM, ROOM R02/03

Co-Chairs

Joseph M. Autry, University of Minnesota

Balaji Selvam, University of Illinois

87-Plat 8:15 AM

PSEUDOMONAS AERUGINOSA CDF TRANSPORTERS CZCD AND YIIP ARE INVOLVED IN Zn^{2+} EFFLUX, OUTER MEMBRANE PERMEABILITY AND ANTIBIOTIC RESISTANCE. Agostina Salusso, **Daniel Raimunda**

88-Plat 8:30 AM

FUNCTIONAL CHARACTERIZATION OF THE UREA TRANSPORTER UREI FROM *HELICOBACTER PYLORI*. **Andreas Horner**, Christine Siligan, Johannes Preiner, Sergey A. Akimov, Peter Pohl

89-Plat 8:45 AM

UNDERSTANDING THE CONFORMATIONAL DIVERSITY OF PROTON-COUPLED OLIGOPEPTIDE TRANSPORTER (POT) FAMILY. **Balaji Selvam**, Diwakar Shukla

90-Plat 9:00 AM

INSIGHTS INTO THE CATION SELECTIVITY AND COOPERATIVITY WITH SUGAR IN *SALMONELLA TYPHIMURIUM* MELIBIOSE PERMEASE. **Hariharan Parameswaran**, Lan Guan

91-Plat 9:15 AM

MODULATION OF ENERGY CONVERSION THROUGH MANIPULATION OF THE RETINAL THERMAL EQUILIBRIUM BY AN AROMATIC RESIDUE IN THE SEVEN-TRANSMEMBRANE RECEPTOR BACTERIORHODOPSIN. Xiaoyan Ding, Yujiao Gao, Chao Sun, Haolin Cui, Juan Wang, Yanan Yang, Dinu Iuga, Fang Tian, Anthony Watts, **Xin Zhao**

92-Plat 9:30 AM

DETERMINATION OF ION CHANNEL AND PUMP FLUXES FOR CHINESE HAMSTER OVARY CELLS USING RUBIDIUM UPTAKE MEASUREMENT. **Azita Fazelkhan**

93-Plat 9:45 AM
FUNCTIONAL EFFECT OF HUMAN FXD2, FXD4, FXD6, AND FXD7 ON HUMAN ALPHA 1 BETA 1 SODIUM-POTASSIUM ATPASE. **Sharan Bijlani**, Natalia Armas Capote, Grace Shim, Dylan Meyer, Pablo Artigas

94-Plat 10:00 AM
THE ENERGY-TRANSDUCTION DOMAIN OF THE SERCA CALCIUM PUMP IS A PRIME THERAPEUTIC TARGET IN HEART FAILURE AND OBESITY. **Joseph M. Autry**, Michel Espinoza-Fonseca, Bengt Svensson, Christine B. Karim, Stephanie J. Valberg, John K. Lee, David D. Thomas

Platform
Voltage-gated Na Channels
8:15 AM - 10:15 AM, ROOM R04/05

Co-Chairs

Shana L. Geffney, Utah State University
Jesse B. Yoder, Johns Hopkins University

95-Plat 8:15 AM
TETRODOTOXIN RESISTANCE: NATURAL EXPERIMENTS TO UNDERSTAND VOLTAGE-GATED SODIUM CHANNEL STRUCTURE AND FUNCTION. **Shana L. Geffney**, Gabriela Toledo, Charles T. Hanifin

96-Plat 8:30 AM
USING SPECIFIC BLOCKERS TO IDENTIFY TTX-S Na_v CHANNELS SUBTYPES IN RAT MUSCLE AFFERENT NEURONS. **Renuka Ramachandra**, Keith S. Elmslie

97-Plat 8:45 AM
MULTIPLE MECHANISMS OF PROPOFOL INHIBITION OF THE VOLTAGE-GATED SODIUM CHANNEL NACHBAC: A ^{19}F NMR INVESTIGATION. **Yali Wang**, Marta M. Wells, William Dailey, Roderic Eckenhoff, Pei Tang, Yan Xu

98-Plat 9:00 AM
THE COMPLETE CRYSTAL STRUCTURE OF AN OPEN ACTIVATED SODIUM CHANNEL. **Jennifer Booker**, Altin Sula, Claire E. Naylor, B.A. Wallace

99-Plat 9:15 AM
THE CARDIAC CHANNEL $Na_v1.5$ INACTIVATION IS MODULATED BY ITS C-TERMINAL EF-HAND DOMAIN. **Bernd R. Gardill**, Ching-Chieh Tung, Ricardo E. Rivera-Acevedo, Filip Van Petegem

100-Plat 9:30 AM
TRANSGENIC APPROACH TO EXPLORATION OF CALMODULIN'S ROLE ON SODIUM CHANNEL FUNCTION WITHIN CARDIOMYOCYTES. **Jeffrey Abrams**, Alexander Katchman, Lin Yang, Steven Marx

101-Plat 9:45 AM
INVESTIGATING Ca^{2+} -DEPENDENT REGULATION OF SODIUM CHANNELS VIA THERMODYNAMIC AND STRUCTURAL ANALYSIS OF NAV1.4 AND NAV1.5 CARBOXY TAIL INTERACTIONS WITH CALMODULIN. **Jesse B. Yoder**, Sandra B. Gabelli, L. Mario Amzel

102-Plat 10:00 AM
TARGETING THE CARDIAC SODIUM CHANNEL TO INCREASE EXCITABILITY OF STEM-CELL DERIVED CARDIOMYOCYTES. **Valentin Sottas**, Cristian Mihnea Trache, Nina D. Ullrich

Platform
Optical Microscopy and Super-Resolution Imaging: Novel Approaches and Analysis I
8:15 AM - 10:15 AM, ROOM R06/07

Co-Chairs

Gerhard Schuetz, Vienna University of Technology, Austria
Elizabeth Hinde, University of New South Wales, Australia

103-Plat 8:15 AM
SUPER-RESOLUTION IMAGING OF UNLABELED PROTEINS ON DNA. **Anna EC Meijering**, Andreas S. Biebricher, Erwin JG Peterman, Gijls JL Wuite, Iddo Heller

104-Plat 8:30 AM
VARYING LABEL DENSITY TO PROBE MEMBRANE PROTEIN NANOCLUSTERS IN STORM/PALM. Florian Baumgart, Andreas Arnold, Konrad Leskovar, Kaj Staszek, Martin Foelser, Julian Weghuber, Hannes Stockinger, **Gerhard J. Schuetz**

105-Plat 8:45 AM
TRACKING OLIGOMERIC TRANSCRIPTION FACTOR DYNAMICS BY PAIR CORRELATION OF MOLECULAR BRIGHTNESS (PCOMB). **Elizabeth Hinde**, Elvis Pandzic, Zhengmin Yang, Ivan Ng, Marie Bogoyevitch, David Jans, Enrico Gratton, Katharina Gaus

106-Plat 9:00 AM
RECONSTRUCTING SPATIAL FEATURES OF NUCLEOCYTOPLASMIC TRANSPORT USING PROJECTED CARGO LOCALIZATIONS. Li-Chun Tu, **Maximiliaan Huisman**, Yu-Chieh Chung, Carlas Smith, David Grunwald

107-Plat 9:15 AM INTERNATIONAL TRAVEL AWARDEE
FOLLOWING A GIANT'S FOOTSTEPS: SINGLE-PARTICLE AND SUPER-RESOLUTION APPROACHES TO DECIPHER THE NUCLEAR TRANSPORT OF HEPATITIS B VIRUS CAPSIDS. **Giulia Paci**, Niccolò Banterle, Christine Koehler, Edward A. Lemke

108-Plat 9:30 AM
DEVELOPMENT OF A SIMULTANEOUS SIX-COLOR FLUORESCENCE MICROSCOPE WITH SINGLE-MOLECULE SENSITIVITY. **Jingyu Wang**, Jamie Barnett, Luke Springall, Neil M. Kad

109-Plat 9:45 AM
INTRACELLULAR DELIVERY OF MEMBRANE IMPERMEABLE PHOTOSTABLE FLUORESCENT PROBES INTO LIVING CELLS FOR SUPER-RESOLUTION MICROSCOPY. **Yuji Ishitsuka**, Kai Wen Teng, Pin Ren, Yeoan Youn, Xiang Deng, Pinghua Ge, Andrew Belmont, Paul R. Selvin

110-Plat 10:00 AM
BRIGHT AND PHOTOSTABLE FLUOROPHORES FOR ADVANCED FLUORESCENCE MICROSCOPY. **Qinsi Zheng**, Jonathan B. Grimm, Anand K. Muthusamy, Robert H. Singer, Luke D. Lavis

Platform
Membrane Protein Structures I
8:15 AM - 10:15 AM, ROOM R08/09

Co-Chairs

Robert Stroud, University of California, San Francisco
Nathaniel Traaseth, New York University

111-Plat 8:15 AM
STRUCTURE INHIBITION AND REGULATION OF A TWO-PORE CHANNEL TPC1. **Alexander F. Kintzer**, Robert M. Stroud

112-Plat 8:30 AM
NOVEL MECHANISM OF GATING IN THE TRKH-TRKA COMPLEX. **Hanzhi Zhang**, Zhao Wang, Mingqiang Rong, Yaping Pan, Wah Chiu, Ming Zhou

113-Plat 8:45 AM
STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF A CALCIUM-ACTIVATED CATION CHANNEL FROM *TSUKAMURELLA PAUROMETABOLA*. Bala Dhakshnamoorthy, **Ahmed Rohaim**, Huan Rui, Lydia Blachowicz, Benoit Roux

114-Plat 9:00 AM EDUCATION TRAVEL AWARDEE
CRYSTAL STRUCTURE OF A LOW CO_2 -INDUCIBLE PROTEIN, LCI1 IN *CHLAMYDOMONAS REINHARDTII*. **Tsung-Han Chou**

115-Plat 9:15 AM
STRUCTURAL ROLE OF ABCG5/ABCG8 IN STEROL TRANSPORT. **Jyh-Yeuan (Eric) Lee**, Daniel Rosenbaum, Helen Hobbs

116-Plat 9:30 AM
STRUCTURAL AND MECHANISTIC BASIS OF PROTON-COUPLED METAL ION TRANSPORT IN THE SLC11/NRAMP FAMILY. **Cristina Manatschal**, Ines A. Ehrnstorfer, Raimund Dutzler

117-Plat 9:45 AM
STRUCTURAL BASIS OF CONCENTRATIVE NUCLEOSIDE TRANSPORT. **Marsha M. Hirschi**, Zachary L. Johnson, Seok-Yong Lee

118-Plat 10:00 AM EDUCATION TRAVEL AWARDEE
INVESTIGATING THE STRUCTURE OF THE DRUG TRANSPORTER EMRE. **Maureen Leninger**, James R. Banigan, Geliana Abramov, Nathaniel J. Traaseth

Platform Membrane Active Peptides and Toxins I 8:15 AM - 10:15 AM, ROOM 206/207

Co-Chairs
Maria Hoernke, Albert-Ludwigs-Universität Freiburg, Germany
Bradley S. Perrin, NHLBI/NIH

119-Plat 8:15 AM
AN IN-CELL SOLID-STATE NMR PORTRAYAL OF THE ACTION MECHANISM OF ANTIMICROBIAL PEPTIDES WITH INTACT BACTERIA. **Marwa Laadhari**, Alexandre A. Arnold, Andrée E. Gravel, Frances Separovic, **Isabelle Marcotte**

120-Plat 8:30 AM
ACTION OF ANTIMICROBIAL PEPTIDES ON BACTERIAL AND LIPID MEMBRANES: A DIRECT COMPARISON. **Joseph E. Faust**, Pei-Yin Yang, Huey W. Huang

121-Plat 8:45 AM INTERNATIONAL TRAVEL AWARDEE
CHARACTERIZATION OF ANTI-BIOFILM PEPTIDE ACTIVITY: A BIOPHYSICAL APPROACH. **Li-av T. Segev-Zarko**, Ron Saar-Dover, Vlad Brumfeld, Maria Luisa Mangoni, Yechiel Shai

122-Plat 9:00 AM
EFFECTS OF LIPID COMPOSITION, PEPTIDE CHARGE, AND MOLECULARITY ON THE STRUCTURE OF ANTIMICROBIAL PEPTIDE TRANSMEMBRANE PORES. **Almudena Pino Angeles**, Themis Lazaridis

123-Plat 9:15 AM
SPONTANEOUS FORMATION OF AN ENSEMBLE OF STRUCTURALLY DIVERSE MEMBRANE CHANNEL ARCHITECTURES FROM A SINGLE ANTIMICROBIAL PEPTIDE MACULATIN. **Yukun Wang**, Charles Chen, Dan Hu, Jakob Ulmschneider, Martin Ulmschneider

124-Plat 9:30 AM
AN EXACT MODEL OF DAPTOMYCIN BINDING TO LIPID BILAYERS. **Antje Pokorny**, Tala O. Khatib

125-Plat 9:45 AM
THE METALLOPEPTIDES PISCIDIN 1 AND PISCIDIN 3 EMPLOY MEMBRANE AND NUCLEASE ACTIVITY TO ERADICATE PLANKTONIC, BIOFILM, AND PERSISTENT CELLS. **Myriam L. Cotten**, M. Daben J. Libardo, Ali Adem Bahar, Riqiang Fu, Vitalii I. Silin, Dacheng Ren, Mihaela Mihalescu, Alfredo Angeles-Boza

126-Plat 10:00 AM
20+ YEARS AND NO END IN SIGHT: HISTIDINE-RICH DESIGNER PEPTIDES WITH PH-DEPENDENT MEMBRANE TOPOLOGY AND WITH MULTIFACET BIOMEDICAL POTENTIAL. **Christopher Aisenbrey**, Philippe Bertani, David Fenard, Anne Galy, Elise Glattard, Martin Gotthardt, Antoine Kichler, Nan Liu, Arnaud Marquette, Regine Süß, Louic Vermeer, Dennis Wilkins-Juhl, Justine Wolf, **Burkhard Bechinger**

Platform Micro- and Nanotechnology 8:15 AM - 10:15 AM, ROOM 208/209

Co-Chairs
Michael Mayer, University of Michigan
Marta d'Amora, Istituto Italiano di Tecnologia, Italy

127-Plat 8:15 AM
IMPROVING THE TEMPORAL RESOLUTION OF NANOPORE RECORDINGS. **Siddharth Shekar**, Chen-Chi Chien, David Niedzwiecki, Marija Drndić, Kenneth Shepard

128-Plat 8:30 AM
IDENTIFICATION OF SINGLE NUCLEOTIDES IN SIN NANOPORE. **Haojie Yang**, Zhongwu Li, Yunfei Chen, Wei Si

129-Plat 8:45 AM
FORMATION OF SYNTHETIC NANOPORES WITH DIAMETERS FROM 20-50 NM BY LASER-ASSISTED DIELECTRIC BREAKDOWN. **Cuifeng Ying**, Jared Houghtaling, Bodo Wilts, Michael Mayer

130-Plat 9:00 AM
SALT REJECTION USING CONICALLY SHAPED PORES WITH PATTERNED SURFACE CHARGES. **Crystal Yang**, James Boyd, Yinghua Qiu, Zuzanna S. Siwy

131-Plat 9:15 AM
GENETICALLY ENCODED DNA-PROTEIN HYBRID ORIGAMI. **Florian Praetorius**, Hendrik Dietz

132-Plat 9:30 AM
DNA NANOPARTICLES PROGRAMMED FROM THE TOP DOWN WITH VARIABLE DESIGN MOTIFS. **Sakul Ratanalert**, Remi Veneziano, Mark Bathe

133-Plat 9:45 AM
PH-RESPONSIVE REVERSIBLE REGULATION OF ENZYME ACTIVITY BY DNA-BASED NANOSTRUCTURE. **Seong Ho Kim**, So Yeon Kim

134-Plat 10:00 AM
ECO-FRIENDLY PROCESSING FOR ENGINEERING BIO-SAFE QUANTUM DOTS AND THEIR INTERACTION WITH BIOLOGICAL SYSTEMS. **Marta d'Amora**, Marina Rodio, Alberto Diaspro, Romuald Intartaglia

CPOW Committee Meeting 8:30 AM - 10:30 AM, ROOM 203

Career Center Workshop Selling Yourself to the Life Sciences Industry 9:00 AM - 10:00 AM, ROOM 212/213

The industrial employer is looking for a different set of skills and attitudes than either the academic or government employer. Learn what the pharmaceutical/biotechnology industries want to hear from potential employees and why. Learn how to develop and best position your marketing message in order to improve the chances of a successful industrial job search.

Exhibits

10:00 AM - 5:00 PM, HALL B-2 & C

Coffee Break

10:15 AM - 11:00 AM, HALL B-2 & C

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

10:30 AM - 11:30 AM, ROOM 212/213

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 Carl Zeiss Microscopy LLC

10:30 AM - 12:00 PM, ROOM 221

ZEISS Live Cell Imaging Tools Allow New Levels of Throughput and Image Quality

Imaging live cell samples offers unique insights into cellular function and gives the freedom to explore dynamic changes in cell behavior. Successful live cell imaging relies on maintenance of an appropriate cellular environment and an effort to minimize cellular damage. Keeping up with dynamic events inside a cell requires an optical design that produces gentle high signal to noise images. The optical design and configuration of the imaging platform plays a crucial role in the success of an imaging experiment.

ZEISS has introduced a completely automated inverted platform, the Celldiscoverer 7, which simplifies every aspect of experimental setup and gives every live cell experiment the best chance for success. At the heart of the Celldiscoverer 7 is a completely unique optical concept with record setting optical resolution and light throughput. Paired with gentle LED illumination and image detectors designed for low magnification the Celldiscoverer 7 achieves new levels of imaging throughput. Complicated tasks of microscope configuration and optimization are completely automated and designed to make the most of any sample type. Automated control of cellular environment allows imaging stability to be maintained over long time course experiments. The system can be expanded with a robotic plate loading system to allow high throughput imaging from plate and slide based samples.

The ZEISS LSM 880 confocal with Airyscan and FAST technology offers a unique optical design that counters the typical loss of sample light experienced when using a confocal pinhole. The Airyscan detector allows higher resolution and lower laser illumination while acquiring with higher SNR than typically possible. The result is superresolution imaging and the needed speed to follow live cells and record fast live cell events.

Join this workshop and learn how the ZEISS Celldiscoverer 7 and the LSM 880 confocal with Airyscan FAST can help your imaging experiments in completely new ways.

Speaker

Scott Olenych, Academia Business Development Manager, Carl Zeiss Microscopy, LLC

International Relations Committee Meeting

10:30 AM - 12:00 PM, ROOM 204

Symposium New and Notable

10:45 AM - 12:45 PM, GREAT HALL A

Co-Chairs

David W. Piston, Washington University and
Catherine A. Royer, Rensselaer Polytechnic Institute

NO ABSTRACT 10:45 AM

DNA LOOPING MEDIATES NUCLEOSOME TRANSFER. **Lucy Brennan**

NO ABSTRACT 11:05 AM

ATOMIC STRUCTURE OF THE CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR. **Jue Chen**

NO ABSTRACT 11:25 AM

CONNECTING ATOMISTIC TO CELLULAR SCALES IN COMPUTER SIMULATIONS OF A BACTERIAL CYTOPLASM. **Michael Feig**

NO ABSTRACT 11:45 AM

SINGLE MOLECULE INSIGHTS INTO THE ASSEMBLY AND CATALYTIC ACTIVATION OF SPLICEOSOMES. **Aaron Hoskins**

NO ABSTRACT 12:05 PM

RESOLVING THE STRUCTURAL MECHANICS OF NUCLEAR INTERMEDIATE FILAMENTS IN SITU USING A CORRELATIVE AFM AND CRYO-EM APPROACH. **Tanuj Sapra**

NO ABSTRACT 12:25 PM

A NEWLY-IDENTIFIED INTERACTION MOTIF ASSOCIATED WITH GATING IN VOLTAGE-GATED SODIUM CHANNELS. **Bonnie Wallace**

Symposium RNA Structures and Dynamics

10:45 AM - 12:45 PM, GREAT HALL B

Chair

Sarah Woodson, Johns Hopkins University

135-Symp 10:45 AM

CLEAVING FAST AND SLOW: STRATEGIES FOR SELF-ASSEMBLY OF CATALYTIC RNA. **Sarah A. Woodson**, Subrata Panja, Boyang Hua, Krishnarjun Sarkar, Taekjip Ha

No Abstract 11:15 AM

RNA TERTIARY STRUCTURE AND THE REGULATION OF GENE EXPRESSION. **Anna Pyle**

136-Symp 11:45 AM

ADVENTURES WITH RNA GRAPHS. **Tamar Schlick**

137-Symp 12:15 PM

THE STRUCTURAL AND MECHANISTIC ORIGINS OF CATALYSIS IN NUCLEOLYTIC RIBOZYMES. **David M. Lilley**, Timothy J. Wilson, Yijin Liu

Platform Membrane Receptors and Signal Transduction I

10:45 AM - 12:45 PM, ROOM R02/03

Co-Chairs

Sarah A. Shelby, Cornell University
Davide Provasi, Mount Sinai School of Medicine

138-Plat 10:45 AM

OLIGOMERIZATION OF THE EPIDERMAL GROWTH FACTOR RECEPTOR ORGANIZES KINASE-ACTIVE DIMERS INTO COMPETENT SIGNALING PLATFORMS. **Sarah R. Needham**, Laura C. Zanetti-Domigues, Anton Arkhipov, Venkatesh P. Mysore, Dimitrios Korovesis, Selene K. Roberts, Christopher J. Tynan, Daniel J. Rolfe, Michael Hirsch, Alireza Lajevardipour, Andrew H.A Clayton, Peter J. Parker, Yibing Shan, David E. Shaw, Marisa L. Martin-Fernandez

139-Plat 11:00 AM
KINETICS OF G PROTEIN-COUPLED RECEPTOR DIMERIZATION FROM MARKOV STATE MODEL ANALYSIS OF COARSE-GRAINED SIMULATIONS. **Diego Prada-Gracia**, Kristen Marino, Davide Provasi, Marta Filizola

140-Plat 11:15 AM
DNA NANOTECHNOLOGY FOR UNDERSTANDING EPHRIN RECEPTOR CLUSTERING. **Alessandro Bosco**, Erik Benson, Björn Högberg, Ana Teixeira

141-Plat 11:30 AM
SAM DOMAIN INHIBITS OLIGOMERIZATION AND AUTO-ACTIVATION OF EPHA2 KINASE. **Xiaojun Shi**, Deanna M. Bowman, Vera M. Hapiak, Ryan W. Lingerak, Ji Zheng, Matthias Buck, Bingcheng Wang, Adam W. Smith

142-Plat 11:45 AM
SINGLE-MOLECULE ANALYSIS OF THE SUPRAMOLECULAR ORGANIZATION OF THE M2 MUSCARINIC RECEPTOR AND THE GAI1 PROTEIN. **Claudiu Gradinaru**, Dennis D. Fernandes, Rabindra Shivnaraine, James Wells

143-Plat 12:00 PM
LIVE CELL SUPER-RESOLUTION MICROSCOPY MEASURES MEMBRANE-DRIVEN SORTING OF B CELL RECEPTOR SIGNALING PARTNERS. **Sarah A. Shelby**, Sarah L. Veatch, Matthew B. Stone

144-Plat 12:15 PM
MECHANISM OF CD36 SIGNAL TRANSDUCTION BY F-ACTIN AND LIPID NANODOMAINS. **Swai Mon Khaing**, Nicolas Touret

145-Plat 12:30 PM
PLASMA MEMBRANE DIFFUSION MODES OF FCER1 RECEPTOR FOR IMMUNOGLOBULIN E MEASURED WITH IMAGING FLUORESCENCE CORRELATION SPECTROSCOPY. **Nirmalya Bag**, David Holowka, Barbara Baird

Platform

Cell Mechanics, Mechanosensing, and Motility I

10:45 AM - 12:45 PM, ROOM R04/05

Co-Chairs

Miriam Goodman, Stanford University
Rishita Chhangede, Mechanobiology Institute, Singapore

146-Plat 10:45 AM
INTEGRIN CATCH BOND KINETICS MEDIATE MECHANOSENSING DURING CELL SPREADING. **Tamara C. Bidone**, Patrick W. Oakes, Yvonne Beckham, Margaret L. Gardel, Gregory A. Voth

147-Plat 11:00 AM
MOLECULAR TENSION SENSORS REVEAL A MINIMALLY TENSIONED INTEGRIN STATE IN LIVING CELLS. **Steven J. Tan**, Chang C. Alice, Armen H. Mekhdjian, Alexander R. Dunn

148-Plat 11:15 AM
NASCENT ADHESIONS THAT FORM ON ALL SUBSTRATES BY RECRUITING UNLIGANDED INTEGRINS AND ARE IMPORTANT FOR MECHANOTRANSDUCTION. **Rishita Chhangede**, Haogang Cai, Michael P. Sheetz

149-Plat 11:30 AM
HIGH-RESOLUTION INTEGRIN MOLECULAR TENSION DYNAMICS DURING PLATELET ADHESION AND ACTIVATION. **Xuefeng Wang**, Yongliang Wang, Dana N. LeVine

150-Plat 11:45 AM
RECEPTOR NUCLEATION AND CLUSTERING IN CELLULAR ADHESION AND MECHANICAL SIGNAL TRANSDUCTION. **Kabir H. Biswas**, Kevin L. Hartman, Ronen Zaidel-Bar, Jay T. Groves

151-Plat 12:00 PM
TAU LIKE PROTEINS REDUCE TORQUE GENERATION IN MICROTUBULE BUNDLES. **Michael Krieg**, Jan Stuehmer, Juan G. Cueva, Richard Fetter, Kerri Spilker, Daniel Cremers, Kang Shen, Alex R. Dunn, Miriam B. Goodman

152-Plat 12:15 PM
TORQUE GENERATION IN THE BACTERIAL FLAGELLAR MOTOR. **Jasmine A. Nirody**, Richard M. Berry, George Oster

153-Plat 12:30 PM
FISSION YEAST CONTRACTILE RING TENSION INCREASES ~2-FOLD THROUGHOUT CONSTRICTION AND REGULATES SEPTUM CLOSURE BUT DOES NOT SET THE CONSTRICTION RATE. **Sathish Thiyagarajan**, Harvey Chin, Erdem Karatekin, Thomas D. Pollard, Ben O'Shaughnessy

Platform

Protein Structure and Conformation I

10:45 AM - 12:45 PM, ROOM R06/07

Co-Chairs

Jagannath Mondal, Columbia University
Marc Ruff, Institut Genetique Biologie Moleculaire Cellulaire, France

154-Plat 10:45 AM
THE HIV-1 PRE-INTEGRATION COMPLEXES: STRUCTURES, FUNCTIONS AND DYNAMICS. Nicolas Levy, Karine Pradeau-aubretton, Sylvia Eiler, Julien Batisse, Oyindamola Oladosu, Benoit Maillot, **Marc Ruff**

155-Plat 11:00 AM
MECHANISMS OF SEQUENCE DEPENDENT TRANSLATIONAL STALLING. Lars V. Bock, Paul PH Huter, Stefan Arenz, Michael Graf, Helmut Grubmüller, Daniel Wilson, **Andrea C. Vaiana**

156-Plat 11:15 AM
QUANTITATIVE ANALYSIS AND MODELING OF TRANSLATION USING RIBOSOME PROFILING DATA: HOW BIOPHYSICAL PROPERTIES OF THE RIBOSOME EXIT TUNNEL AND THE NASCENT POLYPEPTIDE MODULATE THE ELONGATION RATE. **Khanh Dao Duc**, Zain H. Saleem, Yun S. Song

157-Plat 11:30 AM
IS PROTEIN SINGLE MOLECULE DYNAMICS UNDER FORCE DESCRIBED BY TWO OR MORE STATES? **Jagannath Mondal**, Ronen Berkovich, Bruce Berne

Flash Talks 11:45 AM

158-Plat 12:00 PM
FINDING PROTEIN FOLDING FUNNELS IN RANDOM NETWORKS. **Macoto Kikuchi**

159-Plat 12:15 PM
MECHANISTIC INSIGHTS INTO NSF MEDIATED SNARE COMPLEX DISASSEMBLY. **Minglei Zhao**, Ucheor Choi, Axel Brunger

160-Plat 12:30 PM
CELL-FREE SYNTHESIS OF SITE-SPECIFICALLY DOUBLE-LABELED PROTEINS FOR MORE ACCURATE SINGLE-MOLECULE FRET STUDIES. **Mayuri Sadoine**, Michele Cerminara, Noemie Kempf, Alexandros Katranidis, Jörg Fitter

Platform Protein Dynamics and Allostery I

10:45 AM - 12:45 PM, ROOM R08/09

Co-Chairs

Magnus Wolf-Watz, University of Umeå, Sweden
Sonya M. Hanson, Memorial Sloan Kettering Cancer Center

161-Plat 10:45 AM

MOLECULAR SIMULATIONS TO UNRAVEL THE ALLOSTERIC INTERPLAY BETWEEN THE SH2 DOMAIN AND A-LOOP PLASTICITY IN PROTEIN KINASES.

Giuseppina La Sala, Laura Riccardi, Roberto Gaspari, Andrea Cavalli, Oliver Hantschel, Matteo Dal Peraro, Marco De Vivo

162-Plat 11:00 AM

SUBUNIT EXCHANGE AND ACTIVATION OF HUMAN CAMKII VARIANTS.

Ana P. Torres Ocampo, Brendan Page, **Margaret Stratton**

163-Plat 11:15 AM

CAN WE AUTOMATICALLY DETECT BIOLOGICALLY RELEVANT ORDER PARAMETERS IN MOLECULAR SIMULATION? COMPARING LONG TIMESCALE SIMULATIONS OF MULTIPLE KINASES.

Sonya M. Hanson, Joshua H. Fass, John D. Chodera

164-Plat 11:30 AM

EVOLUTION OF REGULATORY DIVERSITY IN THE KINASE SUPERFAMILY. Jai Pandey, Orna Resnekov, David Pincus, **Kimberly A. Reynolds**

165-Plat 11:45 AM

THE G41S VARIANT OF HUMAN CYTOCHROME C ENHANCES APOPTOSIS VIA INCREASED DYNAMICS. Andreas Ioannis Karsisiotis, Oliver M.

Deacon, Michael T. Wilson, Colin Macdonald, **Tharin M. A. Blumenschein**, Geoffrey R. Moore, Jonathan A. R. Worrall

166-Plat 12:00 PM

GLOBAL DISORDERING IN STEREO-SPECIFIC PROTEIN ASSOCIATION. Arun Gupta, Ines Reinartz, Alessandro Spilotros, Venkateswara R. Jonna,

Anders Hofer, Dmitri I. Svergun, Alexander Schug, **Magnus Wolf-Watz**

167-Plat 12:15 PM

ROLE OF CONFORMATIONAL ENTROPY IN EXTREMELY HIGH AFFINITY PROTEIN INTERACTIONS. **Jose A. Caro**

168-Plat 12:30 PM

PRESSURE EFFECTS ON DISSOCIATION OF CHEY-FLIM COMPLEX STUDIED BY MOLECULAR DYNAMICS SIMULATIONS. **Hiroaki Hata**, Yasutaka Nishihara, Masayoshi Nishiyama, Ikuro Kawagishi, Akio Kitao

Platform General Protein-Lipid Interactions I

10:45 AM - 12:45 PM, ROOM 206/207

Co-Chairs

Katya Heldwein, Tufts University School of Medicine
Edward R. Lyman, University of Delaware

169-Plat 10:45 AM

PREDICTING CHOLESTEROL INTERACTION SITES ON GPCRS BY MOLECULAR SIMULATION. **Edward R. Lyman**, Clement Arnarez, Eric Rouviere

170-Plat 11:00 AM

MEMBRANE CHOLESTEROL AND THE ADENOSINE A_{2A} RECEPTOR.

Claire McGraw, Anne S. Robinson

171-Plat 11:15 AM

PROBING CHOLESTEROL-DEPENDENCE OF INTEGRIN-UROKINASE RECEPTOR COMPLEX FORMATION USING CONFOCAL DUAL-COLOR FLUORESCENCE INTENSITY ANALYSIS. Yifan Ge, Jiayun Gao,

Rainer Jordan, **Christoph A. Naumann**

172-Plat 11:30 AM

PARTITIONING OF F-SECRETASE AND ITS SUBSTRATES IN LIPID MICRODOMAINS. **Marilia Barros**, William Houlihan, Lane Gilchrist, Yueming Li

173-Plat 11:45 AM

LIPID/POLYDIACETYLENE

VESICLE COMPOSITION ALTERS MUTANT BETA-AMYLOID PEPTIDE

INTERACTION. **Elizabeth A. Yates**, Michael P. Dorsey, Brice M. Nguelifack

174-Plat 12:00 PM

SYNAPTOTAGMIN INTERACTIONS WITH MEMBRANES: MEASURING THE FORCE OF CALCIUM TRIGGERING OF NEUROTRANSMISSION.

Clemence Gruget, Jeff Coleman, Shyam Krishankumar, James E. Rothman, Frédéric Pincet, Stephen Donaldson

175-Plat 12:15 PM

STUDY OF INSERTION OF DENGUE E INTO LIPID BILAYERS BY NEUTRON REFLECTIVITY AND MOLECULAR DYNAMICS SIMULATIONS. Juan M.

Vanegas, Frank Heinrich, David M. Rogers, Bryan D. Carson, Sadie La Bauve, Brianna C. Vernon, Bulent Akgun, Sushil Satija, Aihua Zheng, Margaret Kielian¹⁰, Susan B. Rempe, **Michael S. Kent**

176-Plat 12:30 PM

THE GREAT NUCLEAR ESCAPE: STRUCTURE-BASED MECHANISM

OF MEMBRANE BUDDING DURING NUCLEAR EGRESS OF HERPESVIRUSES. **Ekaterina E. Heldwein**, Janna M. Bigalke

Platform Cardiac, Smooth, and Skeletal Muscle Electrophysiology

10:45 AM - 12:45 PM, ROOM 208/209

Co-Chairs

Guiling Zhao, University of Maryland School of Medicine
Bernard Attali, Tel Aviv University, Israel

177-Plat 10:45 AM

ACTION POTENTIAL HETEROGENEITY IN MURINE SINOATRIAL NODE MYOCYTES. **Christian Rickert**, Catherine Proenza

178-Plat 11:00 AM

SK4 CA²⁺-ACTIVATED K⁺ CHANNELS REGULATE SINOATRIAL NODE FIRING RATE AND CARDIAC PACING *IN VIVO*. **Bernard Attali**, David Weisbrod,

Hanna Bueno, Joachim Behar, Shiraz Haron-Khun, Dor Yadin, Asher Peretz, Michael Arad, Yael Yaniv

179-Plat 11:15 AM

CHARACTERISTICS OF IVABRADINE-SENSITIVE CURRENTS IN MOUSE SINOATRIAL NODE MYOCYTES. **Emily J. Sharpe**, Stephanie C. Gantz,

Pin Liu, Bruce P. Bean, Catherine Proenza

180-Plat 11:30 AM

CALCIUM ACTIVATED CHLORIDE CURRENT IN MAMMALIAN VENTRICULAR MYOCYTES. **Janos Magyar**, Balázs Horváth, Krisztina Váczi, Bence

Hegy, Mónika Gönczi, Beatrix Dienes, Kornél Kistamás, Tamás Bányász, István Baczkó, András Varró, György Seprényi, László Csernoch, Péter P. Nánási, Norbert Szentandrassy

181-Plat 11:45 AM

PROPERTIES OF NEW VOLTAGE SENSITIVE DYES IN CARDIAC FIELD.

Ndeye Rokhaya Faye, Sushmitha RAJA, Richard Walton, Phillipe Pasdois, Fabien Brette, Alan Urban, Alexandre Hentz, Gihad Dargazanli, Olivier Bernus

182-Plat 12:00 PM

DYNAMIC BLOOD FLOW CONTROL IN HEART. **Guiling Zhao**, Humberto Joca, W. Jonathan Lederer

183-Plat 12:15 PM

KCHIP2 SERVES MULTIPLE FUNCTIONS IN CARDIAC MYOCYTES IN SPLICE ISOFORM-DEPENDENT MANNER. Randolph Bettinger, Rostam Panjshiri, Drew M. Nassal, Isabelle Deschenes, Min Jiang, **Gea-Ny Tseng**

184-Plat 12:30 PM

EFFECT OF DRUGS ON REPOLARIZATION OF IPSCD-CARDIOMYOCYTES. Mark Nowak, Aidan Coon, Sanjot Singh, Shimin Wang, Randall Rasmusson, **G. Bett**

Undergraduate Student Pizza “Breakfast”**11:30 AM - 1:00 PM, ROOM 205**

This “breakfast” for undergraduate students offers a valuable networking and social opportunity to meet other students, Biophysical Society Committee members, and other scientists to discuss academic goals and questions, and to develop a biophysics career path. A brief talk will be given followed by an audience Q&A session featuring a panel of biophysicists representing all levels of the field. In addition to registered undergraduate attendees, local undergraduates attending as part of the Colleges in the Community Day are invited to attend this event. Space for this session is limited to the first 100 attendees.

Colleges in the Community Day**11:30 AM - 5:00 PM, ROOM 205**

This full day of activities for local college students and their instructors kicks off with an Undergraduate Student Pizza “Breakfast” where participants will have an opportunity to network with their peers and members of the Biophysical Society’s Education Committee in a fun and relaxed environment. The Breakfast will include a panel discussion on academic and career paths in biophysics, with 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. Next, students will have a chance to attend the Graduate & Postdoc Institution Fair to meet with representatives of, and learn about, programs from all over the country. Finally, students will have access to an exclusive tour of the exhibit hall where they will view special demonstrations featuring cutting edge instrumentation producing breakthroughs in structural biology and other areas.

International Travel Awardee Luncheon**12:00 PM - 1:00 PM, RIVERGATE ROOM, LOBBY LEVEL**

A number of international students, postdocs, and scientists are recognized during this luncheon for their outstanding achievements in biophysics research. This event is hosted by the International Relations Committee.

Career Center Workshop**Networking: Optimizing Your Time at BPS 2017****12:00 PM - 1:00 PM, ROOM 212/213**

You surely have heard that networking is a key component of the successful job search. The term itself often conjures up negative thoughts and reactions to the uninitiated, sometimes to the point of paralysis. Professional conferences (such as BPS 2017) provide endless networking opportunities. If, however, your perception of networking means tackling someone at the coffee station while thrusting your CV in his/her hands, you may want to stop in on this session. The practice of networking has become so much easier with the advent of the internet. We will discuss what you hope to get out of your presence at the meeting, how to set objectives beforehand, and how to meet those objective once you arrive (while minimizing anxiety).

Public Affairs Committee Meeting**12:15 PM - 2:15 PM, ROOM 203****Exhibitor Presentation****Bruker Corporation****12:30 PM – 2:00 PM, ROOM 221****Super-Resolution Microscopy: Performing Quantitative Analysis at the Molecular Level**

Super-resolution (SML) microscopy optically resolves spatial features within the cellular environment an order of magnitude below the classical diffraction limit. Using the quantitative analysis functions on the Vutara 352 system questions can be answered in a data driven fashion. Its software offers numerous statistical analysis features to quantify the localization data into meaningful biological interpretations. These statistical features include spatial distribution tools, such as Ripley’s K and pair correlation calculations, cluster, co-localization and resolution analysis, as well as live-cell tools, such as mean-squared displacement calculations and particle tracking.

In our exhibitor presentation, we will discuss SML super resolution, its combination with quantitative analysis, and how it offers new questions and analytics at the molecular level.

Furthermore, due to the nature of the method, localization microscopy is often lacking in the contextual information of the overall cellular environment. Utilizing optical correlation microscopy of the Vutara 352, it is possible to relate the large-scale cellular environment, obtained via swept-field confocal imaging, with more refined super-resolution localization data.

Speakers

Carl G. Ebeling, Worldwide Applications Scientist, Fluorescence Microscopy Unit, Bruker Corporation
Manasa V. Gudheti, Sales Applications Scientist, Fluorescence Microscopy Unit, Bruker Corporation

**The World Outside the Lab
Many Ways to Use Your PhD Skills****1:00 PM - 2:30 PM, ROOM R01**

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

Lesley Anson, Anson Scientific
Engin Serpersu, NSF
Stephanie DeLuca, 2016-2017 BPS Congressional Fellow

Graduate & Postdoc Institution Fair**1:00 PM - 3:00 PM, HALL B-2 & C**

Learn about the different leading biophysics programs. This fair will give you the opportunity to speak to representatives from different institutions about their biophysics programs. All students and postdocs are encouraged to attend.

Snack Break**1:45 PM - 3:00 PM, HALL B-2 & C****Teaching Science Like We Do Science****2:00 PM - 3:30 PM, RIVERGATE ROOM, LOBBY LEVEL**

This interactive workshop will provide participants with practical tools, tips, and Discipline-Based Education Research (DBER) recommendations for bringing biophysics topics in the lab and in the classroom to life for undergraduate and graduate students. Through collaborative group dis-

cussions attendees will design an interdisciplinary-focused classroom plan and receive feedback on implementation and assessment. Opportunities to share attendees' own classroom practices are encouraged.

Speakers

Linda Columbus, University of Virginia
Leslie Satin, University of Michigan
Sharyn Endow, Duke University & National University of Singapore
Vincent J. LiCata, Louisiana State University
Jurgen Bosch, Case Western Reserve University
Jef Wagner, Lawrence University

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

2:30 PM - 3:30 PM, ROOM 212/213

What do search committees look for? Are postdocs always essential? What is really going on behind that curtain, and how does it impact my candidacy? Answers to these and other questions presented by Andrew Green, a veteran of the academic job search and numerous search committees.

CRISPR from a Policy Perspective

2:30 PM - 4:00 PM, ROOM 210

As scientists interested in public outreach and policy, we must step back from the scientific discovery for a moment and think about possibilities raised by the ability to easily edit genes. The panelists will be discussing the ethical and policy issues raised by CRISPR-Cas9, what the role of government (national and international) should be in regulating the research, and if/how public opinion is part of the decision-making process.

Speakers

Henry Greely, Center for Law and Biosciences, Stanford University
Jessica Tucker, Office of the Director, NIH
Debra Mathews, Berman Institute of Bioethics, Johns Hopkins University

Early Careers Committee Meeting

3:30 PM - 5:00 PM, ROOM 203

Career Center Workshop Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)

4:00 PM - 5:00 PM, ROOM 212/213

You've been invited to interview with that drug development company that you've always wanted to work for. You've soaked up the details of the position description. You are confident in your ability to do the job, as well as answer any/all technical questions during the interview process. The day is yours...until...that first question catches you by surprise and your confidence begins to wilt. Be prepared for those non-technical questions that you will almost certainly hear at some point, know why they are asked, and learn what a good (if not great) response to each question might be by attending this workshop.

Symposium Single-Molecule Membrane Protein Dynamics

4:00 PM - 6:00 PM, GREAT HALL A

Chair

Hugo Sanabria, Clemson University

185-Symp 4:00 PM

SUBMILLISECOND DYNAMICS OF THE NMDA RECEPTOR. Hugo Sanabria

186-Symp 4:30 PM

MEASURING THE FREE ENERGY OF CLC-EC1 DIMERIZATION IN MEMBRANES USING SINGLE MOLECULE PHOTOBLEACHING ANALYSIS. Janice L. Robertson

No Abstract 5:00 PM

SINGLE MOLECULE DYNAMICS OF METABOTROPIC GLUTAMATERECEPTORS. Ehud Isacoff

187-Symp 5:30 PM

T CELL RECEPTOR CLUSTERING - A MECHANISM OF SIGNAL TRANSDUCTION. Katharina Gaus

Symposium Mechanotransduction to Physiology

4:00 PM - 6:00 PM, GREAT HALL B

Chair

Jorg Grandl, Duke University

188-Symp 4:00 PM

THE MECHANISM OF ACTIVATION OF PIEZO ION CHANNELS. Jorg Grandl

189-Symp 4:30 PM

MECHANOSENSING AT THE SURFACE. Ellen Lumpkin

190-Symp 5:00 PM

ROLE OF PIEZO ION CHANNELS IN MECHANOSENSATION. Ardem Patapoutian

191-Symp 5:30 PM

MCS-LIKE MECHANOSENSITIVE ION CHANNELS: MODULAR SENSORS AND REPORTERS OF MEMBRANE TENSION. Elizabeth Haswell, Debarati Basu, Eric S. Hamilton, Grigory Makshev, Matthew Mixdorf, Ivan Radin, Ryan Richardson, Angela M. Schlegel, Eric Schultz, Yanbing Wang

Symposium Cancer Cell Biophysics

4:00 PM - 6:00 PM, ROOM R02/03

Chair

Alissa Weaver, Vanderbilt University

192-Symp 4:00 PM

AUTOCRINE ROLE OF EXOSOMES IN CELLULAR ADHESION, MIGRATION, AND INVASION. Alissa Weaver

193-Symp 4:30 PM

QUANTITATIVE SYSTEMS BIOLOGY STUDIES REVEAL A NESTED RELAY MECHANISM FOR TGF-BETA SIGNALING. Jianhua Xing

194-Symp 5:00 PM

MODELS FOR CANCER CELL MOTILITY: REGULATION AND SIGNALING. Leah Edelstein-Keshet

195-Symp 5:30 PM

PHYSICAL INTERACTIONS IN DUCTAL MICROINVASIONS: INTEGRATING HISTOLOGY WITH COMPUTATIONAL MODELING. Katarzyna A. Rejniak

Platform

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I

4:00 PM - 6:00 PM, ROOM R04/05

Co-Chairs

Tinatin Brelidze, Georgetown University School of Medicine
Teresa Aman, University of Washington

196-Plat 4:00 PM

PROBING THE MOVEMENT OF THE BALL AND CHAIN DURING N-TYPE INACTIVATION IN KV CHANNELS. **Tanja Kalstrup**, Roshan Pandey, Rikard Blunck

197-Plat 4:15 PM

MOLECULAR MECHANISMS OF THE VOLTAGE-DEPENDENT POTENTIALIZATION OF KCNH POTASSIUM CHANNELS. **Gucan Dai**, William Zagotta

198-Plat 4:30 PM

BK CHANNEL GATING-RING VOLTAGE DEPENDENCE MOTIONS. **Pablo Miranda**, Teresa Giraldez, Miguel Holmgren

199-Plat 4:45 PM

INHIBITION OF BK CHANNELS BY STRONG EXTRACELLULAR ACIDIFICATION. **Yu Zhou**, Xiaoming Xia, Christopher J. Lingle

200-Plat 5:00 PM

SINGLE-MOLECULE FLUORESCENCE IMAGING OF LOW AFFINITY BINDING INTERACTIONS IN PACEMAKER ION CHANNELS.

Marcel P. Goldschen-Ohm, David S. White, Vadim A. Klenchin, Randall H. Goldsmith, Baron Chanda

201-Plat 5:15 PM

INVESTIGATING LIGAND BINDING TO HCN CHANNELS BY SURFACE PLASMON RESONANCE. Purushottam Tiwari, Aykut Üren, **Tinatin I. Brelidze**

202-Plat 5:30 PM

DRUG INTERACTION AT THE LIPID BILAYER-POTASSIUM CHANNEL INTERFACE. **Nina Ottosson**, Malin Silverå Ejneby, Xiongyu Wu, Samira Yazdi, Peter Konradsson, Erik Lindahl, Fredrik Elinder

203-Plat 5:45 PM

SPECTROSCOPIC STUDIES OF A BACTERIAL CYCLIC NUCLEOTIDE-GATED ION CHANNEL. **Zachary M. James**, Eric G. Evans, William N. Zagotta

Platform

Protein Stability, Folding, and Chaperones I

4:00 PM - 6:00 PM, ROOM R06/07

Co-Chairs

Patricia L. Clark, University of Notre Dame
Wolfgang A. Linke, Ruhr University Bochum, Germany

204-Plat 4:00 PM

INTEGRATED *IN VIVO* AND *IN SILICO* STUDIES OF COTRANSLATIONAL PROTEIN FOLDING AS A FUNCTION OF TRANSLATION RATE. Ian M. Walsh, Shuxiang Li, Adrian H. Elcock, **Patricia L. Clark**

205-Plat 4:15 PM

THE RIBOSOME ALTERS THE FOLDING OF A MULTIDOMAIN NASCENT PROTEIN. **Lisa Alexander**, Daniel Goldman, Ignacio Tinoco, Carlos J. Bustamante

206-Plat 4:30 PM INTERNATIONAL TRAVEL AWARDEE

STRUCTURAL INVESTIGATION OF AN IMMUNOGLOBULIN DOMAIN ON THE RIBOSOME USING NMR SPECTROSCOPY. **Anais M. E. Cassaignau**, H el ene M M Launay, Christopher A. Waudby, Tomasz Wlodarski, Maria-Evangelia Karyadi, Amy L. Robertson, Xiaolin Wang, Carlo Camilloni, Michele Vendruscolo, Cheryl A. Woolhead, Lisa Cabrita, John Christodoulou

207-Plat 4:45 PM

ACCURATE PREDICTION OF CELLULAR CO-TRANSLATIONAL FOLDING INDICATES PROTEINS CAN SWITCH FROM POST- TO CO-TRANSLATIONAL FOLDING. **Daniel A. Nissley**

208-Plat 5:00 PM

PROTEIN SCULPTING: PROBING THE INTERPLAY BETWEEN THE RIBOSOME AND MOLECULAR CHAPERONES IN PROTEIN FOLDING IN THE CELL. **Rayna M. Addabbo**, Matthew D. Dalphin, Yue Liu, Miranda F. Mecha, Silvia Cavagnero

209-Plat 5:15 PM

EDUCATION TRAVEL AWARDEE
 TRIGGER FACTOR BOOSTS THE WORK DONE BY PROTEIN FOLDING UNDER FORCE. **Shubhasis Haldar**, Rafael Tapia-Rojo, Julio M. Fernandez

210-Plat 5:30 PM

RESOLUTION OF THE TIME SEQUENCE OF FAST FOLDING TRANSITION BY THE "TRANSFER-QUENCH" METHOD. Gil Rahamim, Dan Amir, **Elisha Haas**

211-Plat 5:45 PM

MECHANICALLY UNFOLDED TITIN IMMUNOGLOBULIN DOMAINS REFOLD FASTER AND MORE ACCURATELY IN PRESENCE OF CHAPERONE ALPHA-B-CRYSTALLIN. Yong Li, **Wolfgang A. Linke**

Platform

Membrane Physical Chemistry I

4:00 PM - 6:00 PM, ROOM R08/09

Co-Chairs

Paulo F. Almeida, University North Carolina, Wilmington
Rumiana Dimova, Max Planck Institute of Colloids and Interfaces, Germany

212-Plat 4:00 PM

GM1 SOFTENS THE MEMBRANE, INDUCES DOMAINS AND CAUSES SPONTANEOUS TUBULATION IN GIANT VESICLES. **Rumiana Dimova**, Tripta Bhatia, Raktim Dasgupta, Nico Fricke, Jaime Agudo-Canalejo, Reinhard Lipowsky

213-Plat 4:15 PM

CID TRAVEL AWARDEE
 INDUCED MIXING OF PHASE-SEPARATED LIPID BILAYERS BY STERIC PRESSURE BETWEEN ADSORBED PROTEINS. **Wade Zeno**, Kaitlin E. Johnson, Darryl Y. Sasaki, Marjorie L. Longo

214-Plat 4:30 PM

UNIQUE MODIFICATION OF MEMBRANE STRUCTURE BY LITHIUM: A MOLECULAR DYNAMICS STUDY. James Kruczek, See-Wing Chiu, **Eric Jakobsson**, Sagar A. Pandit

215-Plat 4:45 PM

MEASURING LIPID MEMBRANE PROPERTIES USING A MECHANOSENSITIVE FLUORESCENCE PROBE. **Adai Colom Diego**, Marta Dal Molin, Saeideh Soleimanpour, Emmanuel Derivery, Marcos Gonzalez Gaitan, Stefan Matile, Aur elien Roux

216-Plat 5:00 PM

DPPC/CHOLESTEROL REVISITED: INTERACTION MODELS TO EXPLAIN THE EXCESS HEAT CAPACITY IN UNILAMELLAR VESICLES. **Paulo F. Almeida**, Emmanuel Tejada, Faith Carter, Antje Pokorny

217-Plat 5:15 PM

CHARACTERIZATION OF THE PHYSIOCHEMICAL INTERACTIONS BETWEEN LNPS AND THE ENDOSOMAL LIPIDS: A RATIONAL DESIGN OF GENE DELIVERY SYSTEMS. **Nandhitha Subramanian**, Yoav Atsmon-Raz, Peter D. Tieleman

218-Plat 5:30 PM
TUNING MEMBRANE ASYMMETRY: CONTROLLED UPTAKE OF NEGATIVELY CHARGED LIPIDS INTO THE OUTER LEAFLET OF LIPOSOMES. Marie Markones, Carina Zorzin, Louma Kalie, **Sebastian Fiedler**, Heiko Heerklotz

219-Plat 5:45 PM
INVESTIGATING THE EFFECTS OF THE MEMBRANE DIPOLE FIELD ON THE STRUCTURE AND FUNCTION OF A MODEL MEMBRANE PROTEIN.
Cari M. Anderson, Lauren J. Webb

Platform Kinesins and Dyneins

4:00 PM - 6:00 PM, ROOM 206/207

Co-Chairs

Scott Forth, Rockefeller University

Ryota Iino, Institute for Molecular Science, Japan

220-Plat 4:00 PM
LIS1 HAS TWO DISTINCT MODES OF REGULATING DYNEIN'S MECHANOCHEMICAL CYCLE. **Michael A. Cianfrocco**, Morgan E. DeSantis, Zaw M. Htet, Phuoc T. Tran, Andres E. Leschziner, Samara L. Reck-Peterson

221-Plat 4:15 PM
THE STRUCTURE OF COMPLETE HUMAN DYNEIN-1 AND ITS MECHANISM OF ACTIVATION. **Kai Zhang**, Helen Foster, Andrew Carter

222-Plat 4:30 PM
THE POWER STROKE DISTANCE OF HUMAN CYTOPLASMIC DYNEIN.
Yoshimi Kinoshita, Taketoshi Kambara, Kaori Nishikawa, Motoshi Kaya, Hideo Higuchi

223-Plat 4:45 PM EDUCATION TRAVEL AWARDEE
INTRACELLULAR CARGO TRANSPORT BY SINGLE-HEADED KINESIN MONOMERS. **Kristin I. Schimert**, Breane G. Budaitis, Kristen J. Verhey

224-Plat 5:00 PM
KINESIN-1 CARGO TRANSPORT THROUGH DENSE MICROTUBULE NETWORKS. **Joelle A. Labastide**, Reilly K. Curtin, Jennifer L. Ross

225-Plat 5:15 PM
AN ALLOSTERIC GEAR SHIFT MECHANISM IN EG5 ENHANCES MECHANOCHEMICAL COUPLING AND SHIFTS THE FORCE-VELOCITY LANDSCAPE. **Joseph Muretta**, Babu J N Reddy, Guido Scarabelli, David D. Thomas, Barry Grant, Steven Gross, Steven Rosenfeld

226-Plat 5:30 PM EDUCATION TRAVEL AWARDEE
SINGLE MOLECULE CHARACTERIZATION OF MITOTIC KIF15 REVEALS CAPABILITY TO GENERATE FORCE IN ANTI-PARALLEL MICROTUBULES.
Dana N. Reinemann, Emma G. Sturgill, Dibyendu Kumar Das, Ryoma Ohi, Matthew J. Lang

227-Plat 5:45 PM
MEASURING FORCES GENERATED BY ENSEMBLES OF KINESIN-5 CROSSLINKING TWO MICROTUBULES. **Scott Forth**, Yuta Shimamoto, Tarun Kapoor

Platform Computational Methods and Bioinformatics

4:00 PM - 6:00 PM, ROOM 208/209

Co-Chairs

Antoniya A. Aleksandrova, NINDS, NIH

Aleksandra Karolak, University of South Florida

228-Plat 4:00 PM
ELUCIDATING THE ROLE OF TUMOR MICROENVIRONMENTAL HETEROGENEITY WITH A COMPUTATIONAL MODEL OF 3D BREAST SPHEROIDS.
Aleksandra Karolak, Branton Huffstutler, Dmitry A. Markov, Lisa J. McCawley, Katarzyna A. Rejniak

229-Plat 4:15 PM
SPOTON: A MACHINE-LEARNING APPROACH FOR HOT-SPOT DETERMINATION. **Irina S. Moreira**, Panos Koukos, Rita Melo, Jose G. Almeida, Antonio J. Preto, Jorg Schaarschmidt, Mikael Trellet, Zeynep H. Gumus, Joaquim Costa, Alexandre M.J.J. Bonvin

230-Plat 4:30 PM
MORPHODYNAMIC PROFILING OF CELL PROTRUSION BASED ON SPATIOTEMPORAL SPECTRUM DECOMPOSITION AND UNSUPERVISED CLUSTERING. **Xiao Ma**, Onur Dagliyan, Klaus Hahn, Gaudenz Danuser

231-Plat 4:45 PM
MECHSTIFF: A NEW TOOL FOR EVALUATING STRESS-INDUCED DYNAMICS AND APPLICATION TO CELL ADHESION PROTEINS.
Karolina Mikulska-Ruminska, Andrzej J. Kulik, Cihan Kaya, Carine BenAdiba, Giovanni Dietler, Wieslaw Nowak, Ivet Bahar

232-Plat 5:00 PM
OPTIMAL TEMPERATURE SET FOR REPLICA EXCHANGE SAMPLING.
Dominik Gront

233-Plat 5:15 PM
MOLECULAR DESIGN OF A NANOPARTICLE-POLYMER CONJUGATED DRUG DELIVERY SYSTEM FOR PD-166793 IN CARDIOVASCULAR REPAIR.
Merina Jahan, Stephen K. Roberts, Andrew B. Greytak, Mark J. Uline

234-Plat 5:30 PM
SYSTEMATIC ANALYSIS OF SYMMETRY IN MEMBRANE PROTEINS.
Antoniya A. Aleksandrova

235-Plat 5:45 PM
MEMBRANE RECRUITMENT CAN INCREASE THE NUMBER OF PROTEIN ASSEMBLIES BY MANY FOLDS: INSIGHTS FROM THEORY AND REACTION-DIFFUSION SIMULATION. **Osman N. Yagurtcu**, Margaret E. Johnson

Exhibitor Presentation Oxford Nanoimaging Ltd

4:30 PM – 6:00 PM, ROOM 221

Meet the Nanoimager: The Next Generation of Super-Resolution Microscope

Oxford Nanoimaging (ONI) have reinvented the single-molecule microscope to meet the needs of cutting edge research in the 21st century. The Nanoimager is a high-throughput, robust, single-molecule localisation based microscope that does not go out of alignment. A compact dSTORM, PALM and single-molecule FRET solution with a footprint smaller than an A4 piece of paper, the system offers the most stable platform on the market and can be run from a standard laboratory bench. High power 1W lasers and the most efficient light path of any commercial solution gives the Nanoimager excellent performance and sets a new standard in super-resolution imaging. The Nanoimager is a small microscope with a big personality: expert capabilities and top performance for both novice and experienced users. ONI have made single-molecule experiments easier, and have made instrument costs accessible to the majority. Come and learn more about the next generation of super-resolution microscopes: this presentation will not only introduce the newly released Nanoimager but will show the latest achievable data and the technical ability of this ground-breaking instrument. The Nanoimager needs to be seen to be believed. No alignment. No optical table. No compromise.

Speaker

Raphael Jorand, Applications Specialist, Oxford Nanoimaging Ltd

Korean Biophysicists Meeting

5:00 PM - 6:00 PM, ROOM 210

PI to PI**A Wine & Cheese Mixer**

5:00 PM - 7:00 PM, ROOM 205

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 are provided, with cash bar.

Biophysics Austria Mixer

6:00 PM - 7:00 PM, RIVERGATE ROOM, LOBBY LEVEL

Student Research Achievement Award (SRAA) Poster Competition

6:00 PM - 9:00 PM, HALL B2 & C

Support contributed by the Journal of Physical Chemistry

This session features students who are presenting posters at the Meeting and have pre-registered for the competition. During the SRAA competition, students will give a five-to-seven minute oral presentation of their poster to one or more judges. Winners will be recognized on Monday evening prior to the National Lecture.

Biophysical Journal Editorial Board Dinner

6:00 PM - 10:00 PM, LATROBE'S ON ROYAL

**Exhibitor Presentation
Molecular Devices LLC**

6:30 PM - 8:00 PM, ROOM 221

Getting the Most Out of Your Experiments with pCLAMP and HumSilencer Technology

The patch-clamp technique remains the best method for evaluating ion channel physiology, and since 1983 Axon Instruments has been the gold standard in patch-clamp equipment. Axon Instruments continues to push the envelope with new innovations with best-in-class systems and software.

Join this workshop to learn about our latest breakthrough, HumSilencer technology, built into the Digidata 1550B Data Acquisition System. HumSilencer is a new and easy way to eliminate 50 or 60 Hz line synchronous noise and associated high frequency harmonics WITHOUT the use of a filter.

In addition to HumSilencer, pCLAMP remains the industry standard software package for electrophysiology because of its power, flexibility and ease of use. Are you getting the most out of your pCLAMP software? Join this workshop to learn more about how you can maximize what you can do with pCLAMP and learn something you may not know.

Speaker

Jeffrey Webber, Product Manager, Electrophysiology, Molecular Devices LLC

**Setting Standards for Data Sharing
Community by Community**

7:00 PM - 9:00 PM, ROOM 214

Data management. Data sharing. Repositories. Sound familiar? There is growing demand to make the data used in research available to other scientists to accelerate the pace of discovery and allow for reproducibility. This sounds simple enough, but what data should be shared and how? This will vary depending on the particular field of research. To support research communities in developing and adopting data sharing guidelines that work for that them, the Society is hosting this workshop to bring together communities that are at various stages of that process so that they can share information and learn from each other. During this inaugural workshop, attendees will be discussing data sharing standards for modeling, small angle scattering, NMR, and EM.

Moderator

Helen Berman, Rutgers University

Panelists

Nigel Kirby, Australian Synchrotron
Cathy Lawson, Rutgers University
Guy Montelione, Rutgers University
Torsten Schwede, University of Basel

SUNDAY POSTER SESSIONS

1:45 PM–3:45 PM, HALL B-2 & C

Below is the list of poster presentations of abstracts submitted by October 3.

The list of abstracts submitted after October 3 and scheduled for Sunday is available in the Program Addendum; those posters can be viewed on boards beginning with L. All abstracts are available through the desktop planner and mobile app.

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 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 1:45 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:45 PM

Board Numbers	Category
B1 – B28	Protein Structure and Conformation I
B29 – B46	Protein Structure, Prediction, and Design I
B47 – B63	Protein Stability
B64 – B76	Folding Pathways
B77 – B90	Protein Dynamics and Allostery I
B91 – B107	Enzyme Function, Cofactors, and Post-translational Modifications
B108 – B110	Ribosomes and Translation
B111 – B127	Nucleic Acid Structure and Dynamics I
B128 – B139	RNA Binding
B140 – B158	Membrane Dynamics I
B159 – B180	Membrane Fusion and Non-Bilayer Structures
B181 – B196	Membrane Structure I
B197 – B209	General Protein-Lipid Interactions I
B210 – B224	Membrane Receptors and Signal Transduction I
B225 – B241	Exocytosis and Endocytosis I
B242 – B255	Calcium Signaling I
B256 – B278	Excitation-Contraction Coupling
B279 – B298	Voltage-gated Na Channels I
B299 – B308	Voltage-gated Ca Channels I
B309 – B324	Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I
B325 – B336	TRP Channels I
B337 – B354	Skeletal Muscle Mechanics, Structure, and Regulation
B355 – B369	Cardiac Muscle Mechanics and Structure I
B370 – B391	Cell Mechanics, Mechanosensing, and Motility I
B392 – B405	Transporters and Exchangers I
B406 – B420	Mitochondria in Cell Life and Death I
B421 – B428	Emerging Techniques and Synthetic Biology
B429 – B441	Neuroscience: General, Computational, and Experimental Approaches and Tools I
B442 – B454	Molecular Dynamics I
B455 – B478	Optical Microscopy and Super-Resolution Imaging: Novel Approaches and Analysis I
B479 – B501	Optical Microscopy and Super-Resolution Imaging: Applications to Cellular Molecules
B502 – B512	Single-Molecule Spectroscopy I
B513 – B541	Micro- and Nanotechnology I

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

Protein Structure and Conformation I (Boards B1–B28)

- 236-Pos BOARD B1**
A DISCRETE LOOP OF THE SERCA N-DOMAIN INTERACTS WITH PHOSPHOLAMBAN AND STABILIZES A COMPACT CONFORMATION OF THE SERCA CYTOSOLIC HEADPIECE. **Olga N. Raguimova**, Nikolai Smolin, Daniel Blackwell, Elisa Bovo, Aleksey Zima, Seth Robia
- 237-Pos BOARD B2**
PREPARATION OF A OREXIN PRECURSOR PROTEIN BY CHEMICAL DIGESTION. **Natsumi Mitsuoka**, Shigeru Shimamoto, Yuji Hidaka
- 238-Pos BOARD B3**
A SIMULATION BASED ANALYSIS OF THE OLIGOMERIC PLASTICITY OF SM PROTEIN ASSEMBLIES. **Charles E. McAnany**, Berk Ekmecki, Peter Randolph, Cameron Mura
- 239-Pos BOARD B4**
AN NMR STUDY OF PIN1- HISTONE H1 INTERACTIONS. **Dinusha S. Jinasena**, Hawa Gyamfi, Nicholas C. Fitzkee
- 240-Pos BOARD B5**
NANOMECHANICAL PROPERTIES OF POLYMORPHIC HUMAN ISLET AMYLOID POLYPEPTIDE PROTOFIBRILS IN THE MULTIPLE PHYSIOLOGICAL AND MECHANICAL CONDITIONS. **Myeongsang Lee**
- 241-Pos BOARD B6**
PROTEIN STRUCTURE DETERMINATION BY HIGH-PRECISION FRET AND MOLECULAR MODELING. **Mykola Dimura**, Thomas Peulen, Holger Gohlke, Claus A. M. Seidel
- 242-Pos BOARD B7**
APO- AND ANTAGONIST-BINDING STRUCTURES OF VITAMIN D RECEPTOR LIGAND-BINDING DOMAIN REVEALED BY A COMBINATION ANALYSIS OF MD SIMULATIONS AND SAXS EXPERIMENTS. Yasuaki Anami, Nobutaka Shimizu, **Toru Ekimoto**, Daichi Egawa, Toshimasa Itoh, Mitsunori Ikeguchi, Keiko Yamamoto
- 243-Pos BOARD B8**
CONFORMATIONAL FLUCTUATIONS AS AN INTRINSIC MECHANISM OF ACTION: THE LIPASE-SPECIFIC FOLDASE OF *PSEUDOMONAS AERUGINOSA* STUDIED BY HYBRID FLUORESCENCE SPECTROSCOPY AND MD SIMULATIONS. **Jakub Kubiak**, Neha Verma, Peter Dollinger, Filip Kovacic, Karl-Erich Jaeger, Holger Gohlke, Claus A.M. Seidel
- 244-Pos BOARD B9**
DOES CAS9-CATALYZED DNA CLEAVAGE GENERATE BLUNT ENDS OR STAGGERED ENDS? INSIGHT FROM MOLECULAR DYNAMIC SIMULATIONS. **Zhicheng Z. Zuo**, Jin Liu
- 245-Pos BOARD B10**
METHIONINE SULFOXIDE FORMATION BY CIGARETTE SMOKE IS ASSOCIATED WITH THE DEGRADATION OF PLASMA PROTEINS. **Abdullah Qassab**, Rohana Liyanage, Wesley Stites
- 246-Pos BOARD B11**
DYNAMICS AND ENERGETICS OF ELONGATION FACTOR SELB IN THE TERNARY COMPLEX AND THE RIBOSOME. **Lars V. Bock**, Niels Fischer, Holger Stark, Holger Stark, Helmut Grubmüller
- 247-Pos BOARD B12**
POLYETHYLENE GLYCOL CONJUGATION ENHANCES MOSQUITO-LARVICIDAL ACTIVITY OF *LYSINIBACILLUS SPHAERICUS* BINA PROTEIN. **Mahima Sharma**, Ramesh S. Hire, Ashok B. Hadapad, Gagan Deep Gupta, Vinay Kumar
- 248-Pos BOARD B13**
A NOVEL ELECTROSTATIC REGULATORY MECHANISM IN A CALCIUM BINDING PROTEIN, L-PLASTIN. Jonn Keenan Fanning, **Van A. Ngo**, Hiroaki Ishida, Hans Vogel, Sergei Yu. Noskov
- 249-Pos BOARD B14**
STRUCTURAL DESTABILIZATION OF TROPOMYOSIN INDUCED BY A CARDIOMYOPATHY-LINKED MUTATION. **Thu N. Ly**, Inna Krieger, Young-Ho Yoon, Dmitri Tolkathev, Fadel A. Samatey, Alla S. Kostyukova
- 250-Pos BOARD B15**
PROBING CONFORMATIONAL AND FUNCTIONAL SUBSTATES OF CALMODULIN BY HIGH-PRESSURE FTIR. **Nelli Erwin**, Satyajit Patra, Roland Winter
- 251-Pos BOARD B16**
OBSCURIN ACTS AS A VARIABLE FORCE RESISTOR. **Nathan T. Wright**, Aidan M. Willey
- 252-Pos BOARD B17**
STRUCTURAL AND FUNCTIONAL INSIGHT INTO RECOMBINANT LUNG SURFACTANT PROTEIN B (RSP-B). **Tadiwos G. Asrat**, Valerie Booth
- 253-Pos BOARD B18**
REGULATION OF FOLDING OF *DE NOVO* DESIGNED PEPTIDES BY A-HELIX FORMATION. **Saya Nishihara**, Kosuke Toyama, Shigeru Shimamoto, Yuji Hidaka
- 254-Pos BOARD B19**
CHARACTERIZATION OF PROTEIN KINASE A FREE ENERGY LANDSCAPE BY NMR-RESTRAINED METADYNAMICS. **Yingjie Wang**, Carlo Camilloni, Jong-gul Kim, Michele Vendruscolo, Jiali Gao, Gianluigi Veglia
- 255-Pos BOARD B20**
THERMAL RESPONSE OF INNER AND OUTER TRANSMEMBRANE SEGMENTS OF CORA PROTEIN BY A COARSE-GRAIN MONTE CARLO SIMULATION. **Ras Pandey**, Sunan Kitjaruwankul, Channarong Khрутто, Pornthep Sompornpisut, Barry Farmer
- 256-Pos BOARD B21**
THE COMPETITION BETWEEN ELECTROSTATIC-STEERING AND CONFORMATIONAL DYNAMICS IN THE DIFFUSION-LIMITED ASSOCIATION OF CALCINEURIN AND CALMODULIN. **Peter M. Kekenus-Huskey**, Bin Sun, Eric C. Cook, Trevor P. Creamer
- 257-Pos BOARD B22**
EQUILIBRIUM MOLECULAR DYNAMICS OF THE MONOMER AND DIMER UNITS OF *STREPTOCOCCUS PNEUMONAE* AND *CORYNEBACTERIUM DIPHTHERIAE* PILI. **Emmanuel Naziga**, Jeff Wereszczynski
- 258-Pos BOARD B23**
BIOPHYSICAL AND STRUCTURAL CHARACTERIZATION OF ANTIBODY RESPONSES TO MALARIA ANTIGENS. Stephen Scally, Alexander Bosch, Brandon McLeod, Gianna Triller, Katharina Imkeller, Rajagopal Murugan, Sebastian Rämisch, Rick King, William Schief, Hedda Wardemann, **Jean-Philippe Julien**
- 259-Pos BOARD B24**
STRUCTURAL ANALYSIS OF THE PRECURSOR PROTEIN OF ATRIAL NATRIURETIC PEPTIDE. **Sumika Futori**, Satomi Higashigawa, Shigeru Shimamoto, Yuji Hidaka
- 260-Pos BOARD B25**
INHIBITION OF AGGREGATION IN B-SHEET MODEL PEPTIDE BY PPII HELIX CAPPING. **Heng Chi**, Min Zhou, Timothy A. Keiderling
- 261-Pos BOARD B26**
PROTEIN FOLDING AS A RESONANCE PHENOMENON, WITH FOLDING FREE ENERGIES DETERMINED BY PROTEIN-HYDRATION SHELL INTERACTIONS. **Sungchul Ji**
- 262-Pos BOARD B27**
RECONSTRUCTION OF PRIMORDIAL PLOOP NTPASE PRECURSORS. **Maria Luisa Romero-Romero**

263-Pos BOARD B28
 PROBING PROTEIN FOLDING AND INTERACTION IN LIVE CELLS USING OSMOTIC PERTURBATIONS. **Shahar Sukenik**, Martin Gruebele

Protein Structure, Prediction, and Design I (Boards B29–B46)

264-Pos BOARD B29
 UNDERSTANDING THE ROLE OF CHAIN FLEXIBILITY IN AMYLOID PROTEIN AGGREGATION THROUGH RATIONALLY DESIGNED PROTEIN SEQUENCES. **Steven Z. Vance**, Xavier Redmon, Rachel Hall, Colman Moore, Gram Booth, Christa Hestekin, Melissa Moss

265-Pos BOARD B30
 PROBING INTERACTIONS BETWEEN THE CURLI ACCESSORY PROTEIN CSGE AND HUMAN ISLET AMYLOID POLYPEPTIDE. **Tanya J. Espino**, Sharon Patray, Isamar Aranda, Karen Guerrero, Sajith Jayasinghe

266-Pos BOARD B31
 NON-STANDARD PROTEIN ENGINEERING AT THE BOUNDARY OF MOLECULAR MECHANICS AND QUANTUM CHEMISTRY: HALOGEN-BASED DESIGN OF INSULIN ANALOGS. **Michael A. Weiss**, Nelson F. Phillips, Faramarz Ismail-Beigi, Vijay Pandeyarajan, Yanwu Yang, Yen-Shan Chen, Nalinda Wickramasinghe, Brian Smith, John G. Menting, Michael C. Lawrence, Krystel El-Hage, Markus Meuwly

267-Pos BOARD B32
 SWEETER AND STRONGER: STRUCTURAL-DRIVEN MOLECULAR DESIGN TO ENHANCE SWEETNESS AND STABILITY OF THE SINGLE CHAIN MONEL-LIN MNEI. Serena Leone, Andrea Pica, Federica Donnarumma, Alessandro Emendato, Rocco Di Girolamo, Roberta Spadaccini, Piero A. Temussi, **Delia Picone**

268-Pos BOARD B33
 MOLECULAR DETERMINANTS OF SPECIFICITY IN THE DPR-DIP INTERACTION NETWORK. **Aiman Sherani**, John M. Jumper, Engin Ozkan, Tobin R. Sosnick, Benoit Roux

269-Pos BOARD B34
 PREDICTION OF PROTEIN AND RNA STRUCTURES BY CO-EVOLUTION: GOING BEYOND ANECDOTAL CASES TOWARDS LARGE-SCALE. Guido Uguzzoni, Shalini John Lovis, Francesco Oteri, Hendrik Szurmant, Weigt Martin, **Alexander Schug**

270-Pos BOARD B35
 PROTEIN-PROTEIN COMPLEX STRUCTURE PREDICTION USING THE SOLUTION THEORY IN THE ENERGY REPRESENTATION. **Kazuhiro Takemura**, Akio Kitao, Nobuyuki Matubayasi

271-Pos BOARD B36
 REFINEMENT OF PROTEIN DOCKING WITH ATOM-ATOM CONTACT POTENTIALS, BACKBONE FLEXIBILITY AND SIDE-CHAIN REPACKING. **Taras Dazhenka**, Ivan Anishchenko, Petras J. Kundrotas, Ilya A. Vakser

272-Pos BOARD B37
 PROTEIN FOLDING UPON BINDING REVEALED BY MOLECULAR DYNAMICS SIMULATION. **Chris Neale**, Régis Pomès, Rachel Sterne-Marr, Angel García

273-Pos BOARD B38
 USING MOLECULAR DYNAMICS SIMULATIONS TO UNDERSTAND PATTERN FORMATION IN POLYMERS. **Anna Vernon**, Paul Fenimore, Charlie Strauss, Chang-Shung Tung, Daan Frenkel, Eugene Terentjev

274-Pos BOARD B39
 MOLECULAR INTERACTIONS OF CANNABINOID RECEPTOR INTERACTING PROTEIN 1 A AND B WITH CANNABINOID RECEPTOR 1. Pratishtha Singh, Anjali Ganjiwale, Allyn C. Howlett, **Sudha M. Cowsik**

275-Pos BOARD B40
 POLARIZABLE AMOEBA FORCE FIELD METADYNAMICS WITH MINIMIZATION PREDICTS MISSING PROTEIN LOOPS. Armin Avdic, Mallory R. Tollefson, Nicole Tatro, Stephen D. LuCore, Jacob M. Litman, Timothy D. Fenn, **Michael J. Schnieders**

276-Pos BOARD B41
 IMPROVING 3D STRUCTURE PREDICTION OF BETA-BARREL MEMBRANE PROTEINS. **Wei Tian**, Hammad Naveed, Jie Liang

277-Pos BOARD B42
 DE NOVO PROTEIN STRUCTURE PREDICTION BY BIG DATA AND DEEP LEARNING. Sheng Wang, **Jinbo Xu**

278-Pos BOARD B43
 NEXT GENERATION EVOLUTIONARY SAMPLING AND ENERGY FUNCTION GUIDED AB INITIO PROTEIN STRUCTURE PREDICTION. **Avdesh Mishra**, Md Tamjidul Hoque

279-Pos BOARD B44
 A PREDICTED STRUCTURE OF THE ANGIOMOTIN LIPID BINDING DOMAIN. **Ann C. Kimble-Hill**, Cameron J. Peck, Piiamaria S. Virtanen

280-Pos BOARD B45
 SELF-ASSOCIATION AND CONFORMATIONAL STABILITY OF NAMPT PROTEIN. **Trivikram R. Molugu**, Udeep Chawla, Annie Huang, Radu C. Oita, Ting Wang, Michael F. Brown, Joe G. N. Garcia

281-Pos BOARD B46
 THE INTERVAL BRANCH-AND-PRUNE ALGORITHM FOR THE PROTEIN STRUCTURE DETERMINATION. **Thérèse E. Malliavin**, Bradley Worley, Benjamin Bardiaux, Guillaume Bouvier, Mohamed Machat, Andrea Cassioli, Carlile Lavor, Leo Liberti, Michael Nilges

Protein Stability (Boards B47–B63)

282-Pos BOARD B47
 BIOLOGICAL ROLES OF PROTEIN HYPERSTABILITY: IMPLICATIONS FOR BIOTECHNOLOGY. **Wilfredo Colón**, Ke Xia, Jennifer Church, Jayeeta Sen, Jane Thibeault, Hannah S. Trasatti

283-Pos BOARD B48
 VOLUMETRICALLY DERIVED THERMODYNAMIC PROFILE OF INTERACTIONS OF UREA WITH A NATIVE PROTEIN. **Iksae Son**, Tigran Chalikian

284-Pos BOARD B49
 SUB-STATE CONFORMATIONS OF THE MESOPHILIC AND PSYCHROPHILIC LACTATE DEHYDROGENASES PRECEDING IRREVERSIBLE THERMAL INACTIVATION. **Sergei Khrapunov**, Eric Chang, Robert Callender

285-Pos BOARD B50
 DENATURED STATE LOOP FORMATION THERMODYNAMICS OF A HYBRID POLYPEPTIDE. **Moses Leavens**, Bruce E. Bowler

286-Pos BOARD B51
 REGULATION OF PROTEIN FOLDING USING ORGANIC SOLVENTS AND IONIC LIQUIDS. **Yuji Hidaka**, Ryosuke Nishimura, Shigeru Shimamoto

287-Pos BOARD B52
 GLYCINE BETAINE REVERSES OSMOTIC SHOCK INDUCED PROTEIN DESTABILIZATION IN LIVING CELLS. **Samantha S. Stadmiller**, Gary J. Pielak

288-Pos BOARD B53
 FLUORESCENCE EVIDENCES FOR NON-HOMOGENEITY AND RESIDUAL STRUCTURE OF DENATURED STATES. **Katherina Hemmen**, Dmitro Rodnin, Igor Markovic, Thomas Otavio Peulen, Suren Felekyan, Ralf Kuehnemuth, Hugo Sanabria, Claus A M Seidel

289-Pos BOARD B54
SELECTION MAINTAINING PROTEIN STABILITY AT EQUILIBRIUM. **Sanzo Miyazawa**

290-Pos BOARD B55
EFFECTS OF FLANKING DISORDER ON THE BEHAVIOUR OF ORDERED DOMAINS. **Katie R. Kemplen**, Petur O. Heidarsson, Lasse Staby, Charlotte O'Shea, Karen Skriver, Birthe B. Kragelund

291-Pos BOARD B56
THE EFFECT OF POLYDISPERSE CROWDING ON PROTEIN STABILITY. **Alan van Giessen**, Anastasia Osti

292-Pos BOARD B57
PAPS-SYNTASE: DISSECTING FOLDING OF A LARGE AND NATURALLY FRAGILE PROTEIN *IN VITRO* AND *IN CELLULO*. **Oliver Brylski**, Jonathan Wolf Mueller, Simon Ebbinghaus

293-Pos BOARD B58
EFFECTS OF SALT OR COSOLVENT ADDITION ON THERMAL STABILITY OF A PROTEIN: RELEVANCE TO THOSE ON SOLUBILITY OF A HYDROPHOBIC SOLUTE IN WATER. Shota Murakami, **Tomohiko Hayashi**, Masahiro Kinoshita

294-Pos BOARD B59
RESIDUAL STRUCTURE IN THE DENATURED STATE OF A THREE-HELIX BUNDLE PROTEIN. **Dustin Becht**, Klara Briknarova, Bruce Bowler

295-Pos BOARD B60
PHOSPHORYLATION INDUCED GLOBAL STRUCTURAL DESTABILIZATION OF A SMALL PROTEIN DOMAIN. **Ashleigh Bachman**, Radwan Ebna Noor, Dimitra Keramisanou, Ioannis Gelis

296-Pos BOARD B61
PROMISCUOUS CONTACTS AND HEIGHTENED DYNAMICS INCREASE THERMOSTABILITY IN AN ENGINEERED VARIANT OF THE ENGRAILED HOMEODOMAIN. **Michelle E. McCully**, Valerie Daggett

297-Pos BOARD B62
RATIONAL DESIGN OF A SYNTHETIC PEG-LIKE POLYMER FOR PROTEIN STABILIZATION. **Christopher DelRe**, Brian Panganiban, Tim Li, Charley Huang, Monica Olvera de la Cruz, Patrick Dennis, Ting Xu

298-Pos BOARD B63
STABILITY OF HSP60 FROM *HELICOBACTER PYLORI*: EFFECT OF GTP BINDING. **Karina Guadalupe**, Jose Mendoza

Folding Pathways (Boards B64–B76)

299-Pos BOARD B64
IN VITRO STUDIES OF THE FOLDING AND ASSEMBLY MECHANISM OF HEMOGLOBIN. **Premila P. Samuel**, William Ou, George N. Phillips, John S. Olson

300-Pos BOARD B65
AN EVOLUTIONARY TREND TOWARDS KINETIC STABILITY IN THE FOLDING TRAJECTORY OF RNASES H. **Shion An Lim**, Kathryn M. Hart, Michael J. Harms, Susan Marqusee

301-Pos BOARD B66
INTERPRETING PHI-VALUES USING PROTEIN FOLDING TRANSITION PATHS. **Robert Best**, Gerhard Hummer

302-Pos BOARD B67
RECONSTRUCTING THE FOLDING OF LUCIFERASE TO ELUCIDATE THE VECTORIAL FOLDING PATHWAYS OF LARGE, MULTIDOMAIN PROTEINS. **Zackary N. Scholl**, Weitao Yang, Piotr Marszalek

303-Pos BOARD B68
USING SINGLE MOLECULE FORCE SPECTROSCOPY TO DETECT HIGH-ENERGY INTERMEDIATES ON PROTEIN FOLDING PATHWAY. **Ha H. Truong**, Emily J. Guinn, Susan Marqusee

304-Pos BOARD B69
FOLDING PATHWAYS OF EVOLUTIONARILY RELATED PROTEINS PROBED BY HYDROGEN EXCHANGE MASS SPECTROMETRY. **Eric Bolin**, Shion An, Susan Marqusee

305-Pos BOARD B70
HOW HYDRODYNAMIC INTERACTIONS AFFECT THE FOLDING RATE OF PROTEINS. **Fabio C. Zegarra**, Dirar Homouz, Margaret S. Cheung

306-Pos BOARD B71
FOLDING MECHANISMS OF SMALL PROTEINS GB1 AND LB1. **Qianyi Cheng**, Insuk Joung, Keehyoung Joo, Kunihiro Kuwajima, Jooyoung Lee

307-Pos BOARD B72
A NOVEL TRP CAGE CONFORMER REVEALED BY COMBINING HIGH PRESSURE NMR AND MD SIMULATIONS. **Martin J. Fossat**, Soichiro Kitazawa, Scott McCallum, Angel Garcia, Catherine Royer

308-Pos BOARD B73
MICROFLUIDIC TURBULENT MIXERS, TIME RESOLVED SAXS AND FOLDING INTERMEDIATES OF CHEY. **Sagar V. Kathuria**, Osman Bilsel, Srinivas Chakravarthy, C. Robert Matthews

309-Pos BOARD B74
THERMAL AND CHEMICAL UNFOLDING OF CYTOCHROME C IN THE PRESENCE OF HOFMEISTER IONS. **Eric S. Peterson**, Collin A. O'Leary, Sean J. Steinke, Mikayla J. Freese

310-Pos BOARD B75
UNCOVERING CONFORMATIONAL SUBSTATES AND KINETIC CONSTANTS BY PRESSURE MODULATION. **Roland Winter**

311-Pos BOARD B76
INVESTIGATING COTRANSLATIONAL FOLDING IN MEMBRANE PROTEINS USING FRAGMENT-BASED STRUCTURE PREDICTION. **Eleanor C. Law**, Saulo H. P. de Oliveira, Sebastian Kelm, Jiye Shi, Charlotte M. Deane

Protein Dynamics and Allostery I (Boards B77–B90)

312-Pos BOARD B77
MOLECULAR DYNAMICS SIMULATIONS FOR UNDERSTANDING IR SPECTRA AND THE DISTRIBUTION OF ENVIRONMENTS AROUND THE PHOSPHOPANTETHEINE ARM OF ACYL CARRIER PROTEINS. **Michael R. Jordan**, Louise K. Charkoudian, Casey H. Londergan

313-Pos BOARD B78
CAUGHT IN THE ACT: TRAPPING AN ACYL CARRIER PROTEIN INTERACTING WITH A KETOSYNTASE. **Grace A. Thiele**

314-Pos BOARD B79
ALLOSTERIC MODULATION OF A SERINE PROTEASE BY CONFORMATIONALLY SELECTIVE NANOBODIES. **Tobias Kromann-Hansen**

315-Pos BOARD B80
ALLOSTERIC TRANSMISSION ALONG A LOOSELY STRUCTURED BACKBONE ALLOWS A CARDIAC TROPONIN C MUTANT TO FUNCTION WITH ONLY ONE Ca^{2+} ION. **Mayra A. Marques**, José R. Pinto, Adolfo H. Moraes, Anwar Iqbal, Mariana T. Q. de Magalhães, Jamila Monteiro, Murilo M. Pedrote, Martha M. Sorenson, Jerson L. Silva, Guilherme A. P. de Oliveira

316-Pos BOARD B81
DYNAMICS AND ASSEMBLY OF ASB-CONTAINING E3 UBIQUITIN LIGASES. **Ryan Lumpkin**, Alla Ahmad, Melinda Chan, Elizabeth Komives

317-Pos BOARD B82
NFKB AND IKBA ENGAGE IN AN '1 FOLD YOU, YOU FOLD ME' INTERACTION EXCLUDING DNA. **Kristen M. Ramsey**, Holly E. Dembinski, Yi Chen, Elizabeth A. Komives

318-Pos BOARD B83
HDXMS REVEALS DYNAMIC CHANGES IN THE ANTICOAGULANT W215A MUTANT OF THROMBIN. **Riley Peacock**, Jessie Davis, Sofia Zaragoza, Elizabeth Komives

319-Pos BOARD B84
INSIGHTS INTO DYNAMICS OF THROMBIN W215 MUTANTS USING SYNAPT G2SI WITH ION MOBILITY SEPARATION. **Jessie R. Davis**, Riley Peacock, Elizabeth Komives

320-Pos BOARD B85
THE EFFECTS OF PROTEIN DYNAMICS ON IMMUNE SYSTEM SIGNALING PATHWAYS. **Helen T. Hobbs**, Susan Marqusee, John Kuriyan

321-Pos BOARD B86
IMATINIB BINDING TO HUMAN C-SRC IS COUPLED TO INTER-DOMAIN ALLOSTERY AND SUGGEST A NOVEL KINASE INHIBITION STRATEGY. **Yuko Tsutsui**, Daniel Deredge, Patrick L. Wintrode, Franklin A. Hays

322-Pos BOARD B87
A PHOSPHO-INDUCED THEFT OF A SALT BRIDGE IN RKIP LINKS MAP KINASE AND G PROTEIN-MEDIATED SIGNALING. **Tobin R. Sosnick**, John J. Skinner, Sheng Wang, Jiyoung Lee, Ruth Sommese, Sivaraj Sivaramakrishnan, Wolfgang Kölmel, Maria Hirschbeck, Hermann Schindelin, Caroline Kisker, Kristina Lorenz, Marsha R. Rosner

323-Pos BOARD B88
CHARACTERIZATION OF DISEASE CAUSING MUTATIONS ASSOCIATED WITH FGF RECEPTOR TYROSINE KINASES USING NMR SPECTROSCOPY. **William M. Marsiglia**, Huaibin Chen, Min-kyu Cho, Moosa` Mohammedi, Nathaniel J. Traaseth

324-Pos BOARD B89
CONFORMATIONAL FLEXIBILITY OF HIV VIF IN COMPLEX WITH HOST PROTEINS. **K. Aurelia Ball**, John D. Gross, Matt P. Jacobson

325-Pos BOARD B90
BINDING-INTERFACE DYNAMICS BETWEEN CALMODULIN AND ITS TARGETS REVEALED USING NONPERTURBATIVE INFRARED PROBE GROUPS. **Casey H. Londergan**, Kristen L. Kelly

Enzyme Function, Cofactors, and Post-translational Modifications (Boards B91–B107)

326-Pos BOARD B91
NEDD4-2 IS A FUNCTIONAL OLIGOMER EXHIBITING COOPERATIVE ALLOSTERIC KINETICS. **Dustin R. Todaro**, Allison C. Augustus-Wallace, Jennifer M. Klein, Arthur L. Haas

327-Pos BOARD B92
UBIQUITINATION OF SUBSTRATES BY E6AP/UBE3A LIGASE. **Virginia Ronchi**, Arthur Haas

328-Pos BOARD B93
MECHANISTIC INSIGHTS INTO UBC13-CATALYZED UBIQUITINATION. **Isaiah Sumner**, R. Hunter Wilson, Walker M. Jones, Aaron G. Davis, Serban Zamfir

329-Pos BOARD B94
CHARACTERIZATION OF THE ESSENTIAL RESIDUES OF CYCLOOXYGENASE-1 AND -2 RESPONSIBLE FOR THEIR INTER-SUBUNIT COMMUNICATIONS UPON THEIR BINDING TO THE CORRESPONDING SUBSTRATES AND INHIBITORS. **Inseok Song**

330-Pos BOARD B95
A COMPUTATIONAL INVESTIGATION INTO THE MECHANISM OF THE HISTONE ACETYLTRANSFERASE, GCN5. **R. Hunter Wilson**, Isaiah Sumner

331-Pos BOARD B96
MOLECULAR SIMULATIONS OF BACTERIAL LIPOPROTEIN BIOGENESIS. **Phillip J. Stansfeld**

332-Pos BOARD B97
HEME TRAFFICKING BY THE CYTOCHROME C BIOGENESIS PATHWAYS. **Molly C. Sutherland**, Joel A. Rankin, Robert G. Kranz

333-Pos BOARD B98
DESIGNED ENZYMES AND THE DRIVING FORCES BEHIND INTERDOMAIN ELECTRON TRANSFER. **Mia C. Brown**, Kelly Greenland, Lei Zhang, Ronald L. Koder

334-Pos BOARD B99
FACTORS GOVERNING AUTOOXIDATION OF HUMAN HEMOGLOBIN. **Andres S. Benitez Cardenas**, John S. Olson

335-Pos BOARD B100
ASSESSING THE SPECTROSCOPIC PROPERTIES AND ENZYME ACTIVITY OF FLUORESCENT CASPASE SUBSTRATES. Gena Lenti, Nicholas Tassone, Srirajkumar Ranganathan, Caitlin Karver, **Cathrine A. Southern**

336-Pos BOARD B101
SINGLE MOLECULE ENZYMOLOGY WITH OUTER MEMBRANE PROTEIN G. **Bach G. Pham**

337-Pos BOARD B102
PROTEIN SEMI-SYNTHESIS TO CHARACTERIZE PHOSPHO-REGULATION OF HUMAN UNG2. **Brian P. Weiser**, James T. Stivers, Philip A. Cole

338-Pos BOARD B103
VOLTAGE DEPENDENT PHOSPHATASE ACTIVITY IS ENHANCED BY INTRACELLULAR ACIDIFICATION. Angeliki Mavrantoni, Kirstin Hobiger, Dominik Oliver, **Christian R. Halaszovich**

339-Pos BOARD B104
ELECTRIC FIELD EFFECTS IN THE ACTIVE SITE OF A THERMOPHILIC ENZYME AS OBSERVED BY FTIR AND 2DIR SPECTROSCOPY. **Taylor D. Hill**, Hannah H. Lepird, David A. Price, Sean D. Moran

340-Pos BOARD B105
INFRARED STRUCTURAL BIOLOGY: HOW TO DETECT PROTONATION STATES OF HISTIDINE SIDE CHAINS IN PROTEINS. **Aihua Xie**, Charle Liu, Matthew Cavener

341-Pos BOARD B106
ORIGIN OF CHAIN LENGTH SPECIFICITIES OF STARCH BRANCHING ENZYME. **Hadi Nayebi Gavgani**, Remie Fawaz, Zahra Assar, Alireza Ghanbarpour, David Walls, Sarah McGovern, James H. Geiger

342-Pos BOARD B107
MODIFICATIONS OF ALPHA AND BETA CARBOXY-TERMINAL TAILS REGULATE MICROTUBULE SEVERING BY KATANIN. **Madison Tyler**, Corey Reed, Dan Sackett, Jennifer Ross

Ribosomes and Translation (Boards B108–B110)

343-Pos BOARD B108
PROTEIN SYNTHESIS TIMES SCALE WITH GENE LENGTH BECAUSE THE DETERMINANTS OF TRANSLATION SPEED ARE RANDOMLY DISTRIBUTED ACROSS GENES. **Edward P. O'Brien**, Ajeet Sharma

344-Pos BOARD B109
THE ROLE OF L11 STALK FLUCTUATIONS IN AA-TRNA ACCOMMODATION. **Huan Yang**, Paul Charles Whitford

345-Pos BOARD B110
SIMULATING MOVEMENT OF THE RIBOSOME HEAD DURING TRANSLATION. **Karissa Y. Sanbonmatsu**, Wataru Nishima

Nucleic Acid Structure and Dynamics I (Boards B111–B127)

346-Pos BOARD B111
EFFECTS OF 5-HYDROXYMETHYLCYTOSINE EPIGENETIC MODIFICATIONS WITHIN THE VEGF PROMOTER REGION ON G-QUADRUPLEX AND I-MOTIF DNA STRUCTURE AND STABILITY. **Michael M. Molnar**, Rhianna K. Morgan, Tracy A. Brooks, Randy M. Wadkins

347-Pos BOARD B112
TEMPERATURE DEPENDENCE OF L-PROLINE RNA DUPLEX DESTABILIZATION. **Jeffrey J. Schwinefus**, Kalpit Modi, Nadia Baka

348-Pos BOARD B113
ENGINEERING DNA LOOPING IN *E. COLI*. **Nicole A. Becker**, Tanya L. Schwab, Karl J. Clark, L. James Maher III

349-Pos BOARD B114
INVESTIGATING THE STABILITY OF DNA DUPLEX HAIRPINS USING OPTICAL TWEEZERS. **Leah Furman**, Micah McCauley, Catherine A. Dietrich, Mark C. Williams, Megan E. Nunez

350-Pos BOARD B115
UNTWISTING OF DOUBLE-STRANDED DNA AND RNA INVESTIGATED BY MOLECULAR DYNAMICS SIMULATIONS. **Korbinian Liebl**

351-Pos BOARD B116
TRANSLLOCATION OF STRUCTURALLY DEFINED BRANCHED DNA THROUGH NANOPORES. **Philipp Karau**, Kyle Briggs, Vincent Tabard-Cossa

352-Pos BOARD B117
THERMODYNAMIC LINKAGE ANALYSIS OF PH-INDUCED FOLDING AND UNFOLDING TRANSITIONS OF I-MOTIFS. **Byul Kim**, Tigran Chalikian

353-Pos BOARD B118 INTERNATIONAL TRAVEL AWARDEE
LIVE CELL IMAGING OF GENOMIC LOCI USING FLUORESCENT RNA AP-TAMERS. **Adam Cawte**, Sunny Jeng, Peter Unrau, David Rueda

354-Pos BOARD B119
ELUCIDATING THE ROLE OF TRANSCRIPTION IN SHAPING THE 3D STRUCTURE OF THE BACTERIAL GENOME. **Hugo Brandao**, Xindan Wang, David Rudner, Leonid Mirny

355-Pos BOARD B120
INVESTIGATION OF THE MELTING THERMODYNAMICS OF A DNA 4-WAY JUNCTION: ONE BASE AT A TIME. Rachel E. Savage, Wujie Wang, Francis W. Starr, **Ishita Mukerji**

356-Pos BOARD B121
ROLE OF WATSON-CRICK-LIKE MISMATCHES IN DNA REPLICATION FIDELITY. **Eric S. Szymanski**, Isaac J. Kimsey, Hashim M. Al-Hashimi

357-Pos BOARD B122 INTERNATIONAL TRAVEL AWARDEE
DIRECT OBSERVATION OF SINGLE BIOPOLYMER FOLDING AND UNFOLDING PROCESS BY SOLID-STATE NANOPORE. **Xin Shi**, Rui Gao, Shao-Chuang Liu, Qiao Li, Yi-Tao Long

358-Pos BOARD B123
TUNING UP TETHERED PARTICLE MOTION. **Daniel T. Kovari**, Eric Weeks, David Dunlap, Laura Finzi

359-Pos BOARD B124
SMALL MOLECULE APTAMERS FOR BIOSENSING. **Gregory Wiedman**, Yunan Zhao, David Perlin

360-Pos BOARD B125
IMPROVED SAMPLING IN MOLECULAR DYNAMICS STUDIES OF DNA AND THE B TO Z[WC] TO Z-DNA TRANSITION. **Lam T. Nguyen**, Ashutosh Rai, Micaela E. Bush, Alma Gracic, Ahsan A. Khoja, Jinhee Kim, Sunil Pun, Alexander K. Seewald, Benjamin L. Yee, Michael G. Lerner

361-Pos BOARD B126 EDUCATION TRAVEL AWARDEE
ENERGETIC CONTRIBUTIONS OF PLECTONEME TIPS AND TAILS. **Andrew Dittmore**, Keir C. Neuman

362-Pos BOARD B127
MULTI-SCALE STRUCTURE AND CONFORMATIONAL DYNAMICS OF SCAFFOLDED DNA ORIGAMI NANOPARTICLES. **William Bricker**, Keyao Pan, Mark Bathe

RNA Binding (Boards B128–B139)

363-Pos BOARD B128
SHEDDING LIGHT ON CAS9 TARGET SEARCH. **Viktorija Globyte**, Seung Hwan Lee, Luuk Loeff, Jin Soo Kim, Chirlmin Joo

364-Pos BOARD B129
TO CLEAVE OR NOT TO CLEAVE: PREDICTING THE TARGET SPECIFICITY OF CRISPR-CAS SYSTEMS THROUGH THEORETICAL MODELING. **Misha Klein**, Martin Depken

365-Pos BOARD B130 EDUCATION TRAVEL AWARDEE
CONFORMATIONAL DYNAMICS OF CAS9 DURING DNA BINDING. **Yavuz S. Dagdas**, Janice S. Chen, Samuel H. Sternberg, Jennifer A. Doudna, Ahmet Yildiz

366-Pos BOARD B131
REPETITIVE LOOP FORMATION BY THE CRISPR-CAS3 HELICASE. **Luuk Loeff**, Stan Brouns, Chirlmin Joo

367-Pos BOARD B132
THE IMPACT OF DNA TOPOLOGY ON TARGET SELECTION BY A CYTOSINE-SPECIFIC CAS9. **Tsz Kin Martin Tsui**, Travis H. Hand, Hong Li

368-Pos BOARD B133
CRISPR-CAS9: COMPUTATIONAL INSIGHTS TOWARD IMPROVED GENOME EDITING. **Giulia Palermo**, Yinglong Miao, Ross C. Walker, Martin Jinek, J. Andrew McCammon

369-Pos BOARD B134
STRUCTURAL INSIGHTS INTO G-TRACT RECOGNITION BY THE HNRNP H RNA RECOGNITION MOTIF. **Srinivasa R. Penumutthu**

370-Pos BOARD B135 EDUCATION TRAVEL AWARDEE
BLIND PREDICTIONS OF RNA/PROTEIN RELATIVE BINDING AFFINITIES. **Kalli Kappel**, Inga Jarmoskaite, Pavan P. Vaidyanathan, William J. Greenleaf, Daniel Herschlag, Rhiju Das

371-Pos BOARD B136 CID TRAVEL AWARDEE
BIOPHYSICAL STUDIES OF LIPOSOME ENCAPSULATED POKEWEED ANTIVIRAL PROTEIN AND ITS USE AS A HIV THERAPEUTIC. **O'Jay Stewart**, Artem Domashevskiy

372-Pos BOARD B137
A DEAD-BOX PROTEIN ACTS THROUGH RNA TO PROMOTE HIV-1 REV-RRE ASSEMBLY. **Rajan Lamichhane**, John A. Hammond, Raymond F. Pauszek, Ingemar Pedron, Edwin van der Schans, James R. Williamson, David P. Millar

373-Pos BOARD B138
DECIPHERING THE ACTION MECHANISM OF DDX3: AN RNA HELICASE IMPLICATED IN CANCER PROPAGATION AND PATHOGENIC VIRAL INFECTION. **Anthony F. Moore**, Aliana Lopez de Victoria, Eda Koculi

374-Pos BOARD B139
INTERACTION OF PKR WITH SINGLE STRANDED RNA. Christopher B. Mayo, **James L. Cole**

Membrane Dynamics I (Boards B140–B158)

375-Pos BOARD B140
SURFACTANT MICELLE SELF-ASSEMBLY WITH COARSE-GRAINED MARTINI STANDARD WATER AND POLARIZABLE WATER. **Eric Sefah**, Blake Mertz

376-Pos BOARD B141
SIMULATIONS OF GLYCEROL AND ITS EFFECT ON THE PHASE AND BEHAVIOUR OF DPPC MONOLAYERS. **Jemma L. Trick**, Wachirun Terakosolphan, Ben Forbes, Christian D. Lorenz

377-Pos BOARD B142
PROTOCOL AND VALIDATION OF CHARMM-GUI HEX PHASE BUILDER. **Andrew H. Beaven**, Alexander J. Sodt, Richard W. Pastor, Wonpil Im

378-Pos BOARD B143
REPRODUCTION OF A THREE-COMPONENT (DPPC/DOPC/CHOLESTEROL) PHASE DIAGRAM USING COARSE GRAINED MOLECULAR DYNAMICS. Cameron Montour, **Timothy S. Carpenter**, Felice C. Lightstone

379-Pos BOARD B144
MOLECULAR DYNAMICS SIMULATIONS OF 38 TYPES OF GANGLIOSIDE IN HOMOGENEOUS MEMBRANE BILAYERS. **Steve Kim**, Wonpil Im

380-Pos BOARD B145
VITAMIN E DOES NOT PREFERENTIALLY BIND TO POLYUNSATURATED LIPIDS AS REVEALED BY UMBRELLA SAMPLING MD SIMULATIONS. **Xiaoling Leng**, Andres Cavazos, Bruce Ray, Mikel Ghelfi, Jeffrey Atkinson, Fangqiang Zhu, Stephen Wassall

381-Pos BOARD B146
RBL-2H3 PROLIFERATION IS MODULATED BY TREATMENTS THAT SHIFT TRANSITION TEMPERATURES IN ISOLATED PLASMA MEMBRANE VESICLES. **Rohan P. Desai**, Sarah Veatch

382-Pos BOARD B147
LIPID LATERAL ORDERING DEFINED BY HIGH-FIELD EPR. **Zahra Hayati**, Pavanjeet Kaur, Likai Song

383-Pos BOARD B148
AZOBENZENE-CHOLESTEROL AS A PHOTOACTIVATOR IN BIOMIMETIC MEMBRANES: 1. LIPID DYNAMICS. **Chen Shen**, Jacques Ollivier, Judith Peters, Jörg Pieper, Beate Klösgen

384-Pos BOARD B149
ANOMALOUS BEHAVIOR IN LIPID BILAYER MEMBRANES. **Matthew R. Cheetham**, Helena L. E. Coker, Mark I. Wallace

385-Pos BOARD B150
ALL-ATOM MOLECULAR DYNAMICS SIMULATION OF STEALTH LIPOSOMES. **Sayed Hamid Tabari**, Jeevapani Hettige, Mahmoud Moradi

386-Pos BOARD B151
LIPID DIFFUSION IN MEMBRANE JUNCTIONS MEASURED BY SINGLE-MOLECULE TRACKING. **Vivek Ramakrishna**, Mark I. Wallace

387-Pos BOARD B152
INFLUENZA BINDING AVIDITY GOVERNED BY STEROL-DEPENDENT GANGLIOSIDE DYNAMICS. **Isabel Goronzy**, Robert Rawle, Peter Kasson, Steven Boxer

388-Pos BOARD B153
SECRETS OF THE ENIGMATIC LIPID II REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Syma Khalid**, Firdaus Samsudin, Timothy S. Carpenter, Sarah Witzke

389-Pos BOARD B154
EVALUATING BILAYER MECHANICAL PROPERTIES IN PROTEIN RECONSTITUTED GUVS. **Nestor Lopez Mora**, Heather Findlay, Paula Booth

390-Pos BOARD B155 EDUCATION TRAVEL AWARDEE
SHEAR STRESS STIMULATED MSC ACTIVITIES: DIRECT CHANGES OF MEMBRANE TENSION OR CYTOSKELETAL STRESS? **Mohammad Mehdi Maneshi**, Frederick Sachs, Susan Zonglu Hua

391-Pos BOARD B156
STRESS PROPAGATION THROUGH BIOLOGICAL LIPID-BILAYERS REVEALED BY ATOMISTIC AND COARSE-GRAINED SIMULATIONS. **Camilo Aponte-Santamaria**, Frauke Gräter

392-Pos BOARD B157
INTERDEPENDENCE BETWEEN COLLECTIVE THERMAL FLUCTUATIONS AND ELASTIC AND VISCOUS PROPERTIES IN MODEL LIPID BILAYERS. **Michihiro Nagao**, Elizabeth G. Kelley, Rana Ashkar, Robert Bradbury, Paul D. Butler

393-Pos BOARD B158 EDUCATION TRAVEL AWARDEE
HYDRATION-MEDIATED ELASTIC DEFORMATIONS IN BIOLOGICAL MEMBRANES. Trivikram R. Molugu, **Soohyun K. Lee**, Xiaolin Xu, Rami Musharrafieh, K. J. Mallikarjunaiah, Constantin Job, Michael Brown

Membrane Fusion and Non-Bilayer Structures (Boards B159–B180)

394-Pos BOARD B159
INTERACTIONS OF CARBON NANOTUBES STABILIZED BY SELECTED GEMINI SURFACTANTS WITH MODEL BIOMEMBRANES. **Michalina Skupin**, Justyna Izykowska, Weronika Andrzejewska, Maria Dobies, Stefan Jurga, Maciej Kozak

395-Pos BOARD B160
THE BILAT: A FREE STANDING LIPID BILAYER MICROARRAY PLATFORM FOR MEMBRANE FUSION. **Sathish K. Ramakrishnan**, Andrea Gohlke, Paul Heo, James Rothman, Frederic Pincet

396-Pos BOARD B161
PHASE SPECIFIC MEMBRANE FUSION WITH SNARE MIMETICS. **Bastian Kubsch**, Tom Robinson, Torben-Tobias Kliesch, Andreas Janshoff, Reinhard Lipowsky, Rumiana Dimova

397-Pos BOARD B162
THE INFLUENCE OF NANOPARTICLES ON SNARE-MEDIATED MEMBRANE FUSION. **Michael J. Crowe**, Jiajie Diao

398-Pos BOARD B163
CALCIUM SENSITIVE RING-LIKE OLIGOMERS OF SYNAPTOTAGMIN 1: IMPLICATIONS FOR NEUROTRANSMITTER RELEASE. **Shyam Krishnakumar**

399-Pos BOARD B164
TOWARDS UNDERSTANDING THE MOLECULAR MECHANISM OF SYNCHRONOUS NEUROTRANSMITTER RELEASE. **Qiangjun Zhou**, Thomas Christian Südhof, Axel Thomas Brunger

400-Pos BOARD B165
A-SYNUCLEIN: A FUNCTIONAL ROLE AS A REGULATOR OF SNARE-MEDIATED FUSION. Siobhan Toal, **Elizabeth Rhoades**

401-Pos BOARD B166
MITOCHONDRIAL FUSION PROTEINS: A TALE OF TWO MEMBRANES. **Andrew D. Kehr**, Marisa A. Rubio, Jenny Hinshaw

402-Pos BOARD B167
STRUCTURE OF THE EBOLA VIRUS ENVELOPE PROTEIN MPER/TM DOMAIN AND ITS INTERACTION WITH THE FUSION LOOP EXPLAINS THEIR FUSION ACTIVITY. **Jinwoo Lee**, David A. Nyenhuis, Elizabeth A. Nelson, David S. Cafiso, Judith M. White, Lukas K. Tamm

403-Pos BOARD B168

LEAKAGE INDUCED BY THE INFLUENZA VIRUS HAEMAGGLUTININ DEPENDS ON TARGET MEMBRANE SPONTANEOUS CURVATURE. **Sourav Haldar**, Elena Mekhedov, Jane Farrington, Petr Chlanda, Paul S. Blank, Joshua Zimmerberg

404-Pos BOARD B169

VIRAL FUSION EFFICACY OF INFLUENZA VIRUS H3N2 REASSORTMENT COMBINATION TO THE SUPPOSED LIPID LAYER. **Hunglun Hsu**, Jean Millet, Deirdre Costello, Gary Whittaker, Susan Daniel

405-Pos BOARD B170

SERINC5 INHIBITS HIV FUSION THROUGH INACTIVATION OF ENV GLYCOPROTEINS AND INTERFERENCE WITH PRODUCTIVE REFOLDING OF ENV. Chetan Sood, Mariana Marin, Ajit Chande, Alexa L. Mattheyses, Khalid Salaita, Massimo Pizzato, **Gregory Melikian**

406-Pos BOARD B171

SERINC INHIBITS HIV-1 ENV INDUCED MEMBRANE FUSION AND SLOWS FUSION PORE ENLARGEMENT. **Ruben M. Markosyan**, Shan-Lu Liu, Fred S. Cohen

407-Pos BOARD B172

PROBING INDUCED STRUCTURAL CHANGES IN BIOMIMETIC BACTERIAL CELL MEMBRANE INTERACTIONS WITH DIVALENT CATIONS. **Allison Whited**, Alexander Johs, John Katsaras, Robert Standaert, Aaron Jubb

408-Pos BOARD B173

ROLE OF *TRANS* TO *CIS* TRANSITION IN VIRAL FUSION PORE DILATION. **Brett E. Alcott**, Zhenyong Wu, Josie Bircher, Erdem Karatekin, Ben O'Shaughnessy

409-Pos BOARD B174

THE INFLUENCE OF MEMBRANE COMPOSITION ON THE KINETICS OF INFLUENZA VIRUS FUSION MEASURED USING A SINGLE PARTICLE APPROACH. **Guus van der Borg**, Scarlett Braddock, Jelle S. Blijleven, Antoine M. van Oijen, Wouter H. Roos

410-Pos BOARD B175

REVISIT THE CORRELATION BETWEEN THE ELASTIC MECHANICS AND FUSION OF LIPID MEMBRANES. Zih-An Fan, Kuan-Yu Tsang, Si-Han Chen, **Yi-Fan Chen**

411-Pos BOARD B176

HEMAGGLUTININ PALMITOYLATION CONTRIBUTES TO MEMBRANE CURVATURE IN INFLUENZA A VIRUS ASSEMBLY AND MEMBRANE FUSION. Petr Chlanda, Elena Mekhedov, Hang Waters, Alexander Sodt, Paul S. Blank, **Joshua Zimmerberg**

412-Pos BOARD B177

HIV ENTRY: RECEPTORS COOPERATE WITH MEMBRANE DOMAIN BOUNDARIES TO FORM ENTRY SITES IN HOST CELLS. **Sung-Tae Yang**, Volker Kiessling, Lukas K. Tamm

413-Pos BOARD B178

SINGLE-VIRUS OBSERVATION OF PH-TRIGGERED ZIKA FUSION IN THE ABSENCE OF A CELLULAR RECEPTOR. **Robert J. Rawle**, Elizabeth Webster, Isabel Goronzy, Steven Boxer, Peter Kasson

414-Pos BOARD B179

MOLECULAR ATLAS IMAGING AND OSTEOCLAST FORMATION: MULTI-SCALE STUDY OF CELL-CELL FUSION MECHANISMS. **Jesse L. Silverberg**, Pei Ying Ng, Roland Baron, Peng Yin

415-Pos BOARD B180

OPTIMIZING EXCITATION POLARIZATION TO PROBE FUSION PORE DYNAMICS USING TIRF MICROSCOPY. **Kasey Hancock**, Joerg Nikolaus, Erdem Karatekin, David Baddeley

**Membrane Structure I
(Boards B181–B196)****416-Pos BOARD B181**

ANALYSIS OF LIPID DOMAINS IN BILAYER SIMULATIONS USING OBSERVABLES FOR LIPID PACKING. **Soohyung Park**, Wonpil Im

417-Pos BOARD B182

SOFTWARE FOR DIRECT COMPARISON OF MEMBRANE SCATTERING EXPERIMENTS DATA TO MOLECULAR DYNAMICS SIMULATIONS. **Yevhen Cherniavskiy**, Svetlana Baoukina, Bryan W. Holland, Norbert Kučerka, Peter Tieleman

418-Pos BOARD B183

MODELING ETHERS WITH MOLECULAR DYNAMICS: UPDATED CHARMM FORCE FIELD PARAMETERS FOR ETHERS IN MODEL COMPOUNDS AND LIPID MEMBRANES. **Alison M. Leonard**

419-Pos BOARD B184

SIMULATION OF LINOLEOYL-CONTAINING PURE LIPID BILAYER AND SOYBEAN PLASMA MEMBRANES. Xiaohong Zhuang, Anna Ou, **Jeffery B. Klauda**

420-Pos BOARD B185

LATERAL HETEROGENEITY OF CHOLESTEROL ON BINARY LIPID MIXTURES OF POPC/CHOL IMAGED WITH AFM. **Arturo Galván-Hernández**, Fernando Favela-Rosales, Jorge Hernández-Cobos, Iván Ortega-Blake

421-Pos BOARD B186 CPOW TRAVEL AWARDEE

ORIENTATIONAL PROPERTIES OF DOPC/SM/CHOLESTEROL MIXTURES: A PM-IRRAS STUDY. **Sabina M. Maté**, Romina Vazquez, Felipe J. Pavinatto, M. Antonieta Daza-Millone, Vanesa Herlax, Laura Bakas, Osvaldo N. Oliveira Jr., María E. Vela

422-Pos BOARD B187

INVESTIGATING LIPID DOMAIN FORMATION IN ASYMMETRIC LARGE UNILAMELLAR VESICLES USING FÖRSTER RESONANCE ENERGY TRANSFER (FRET). **Johnna R. St Clair**, Qing Wang, Erwin London

423-Pos BOARD B188

LIPID MIXING IN MODEL MEMBRANES. **Ruo-Xu Gu**, Svetlana Baoukina, D. Peter Tieleman

424-Pos BOARD B189

GLYCOLIPID CROSSLINKING IS REQUIRED FOR CHOLERA TOXIN TO PARTITION INTO AND STABILIZE ORDERED DOMAINS. **Krishnan Raghunathan**, Tiffany Wong, Daniel J. Chinnapen, Wayne I. Lencer, Michael G. Jobling, Anne K. Kenworthy

425-Pos BOARD B190

MODEL FOR LIPID DROPLETS WITHIN ENDOPLASMIC RETICULUM. **Gonen Golani**, Michael M. Kozlov

426-Pos BOARD B191

FUNCTIONAL AND STRUCTURAL CHARACTERIZATION OF PULMONARY SURFACTANT FRACTIONS OBTAINED FROM BRONCHOALVEOLAR LAVAGES. José Carlos Castillo-Sánchez, Alejandro Cerrada, Mikel Conde, Jesús Pérez-Gil, **Antonio Cruz**

427-Pos BOARD B192

SIMULATIONS PROVIDE INSIGHT INTO IMPROVING THE TOLERANCE OF THE *E. COLI* MEMBRANE. **Pouyan Khakbaz**, Jeffery Klauda

428-Pos BOARD B193

INTERMEMBRANE CROSSTALK IN *E. COLI*. **Patrice Rassam**, Colin Kleanthous

429-Pos BOARD B194
LOW-ENTHALPY PHASE TRANSITIONS YIELD ENTROPY-DRIVEN LATERAL REORGANIZATION AND PHASE SEPARATION IN SYNTHETIC AND NATURAL MULTI-COMPONENT DIB MEMBRANES. **Graham Taylor**, Frederick A. Heberle, Jason Seinfeld, John Katsaras, C. Patrick Collier, Stephen A. Sarles

430-Pos BOARD B195
UTILIZING ASYMMETRIC GUVS TO INSPECT PLASMA MEMBRANE PHASE BEHAVIOR AND BINDING OF POLYBASIC PROTEINS. **Josephine Gonzales**, Milka Doktorova, Gerald Feigenzon

431-Pos BOARD B196
THE L-GAMMA PHASE OF PULMONARY SURFACTANT. Kamlesh Kumar, Mariya Chavarha, Ryan W. Loney, Maayan P. Dagan, Thomas M. Weiss, Shankar B. Rananavare, **Stephen B. Hall**

General Protein-Lipid Interactions I (Boards B197–B209)

432-Pos BOARD B197
LIPID-PROTEIN INTERACTIONS ARE UNIQUE FINGERPRINTS FOR MEMBRANE PROTEINS. Valentina Corradi, Eduardo Mendez-Villuendas, Helgi Ingolfsson, Siewert-Jan Marrink, **D. Peter Tieleman**

433-Pos BOARD B198
LIPID-DEPENDENCE OF THE MEMBRANE INTERACTIONS OF THE TIM23 CHANNEL SUBUNIT OF THE MITOCHONDRIAL PROTEIN IMPORT MACHINERY. **Melissa K. Skoryk**, Kevin J. Boyd, Eric R. May, Nathan N. Alder

434-Pos BOARD B199 INTERNATIONAL TRAVEL AWARDEE
DECIPHERING MEMBRANE PROTEIN ENERGETICS USING DEEP SEQUENCING; TOWARDS ROBUST DESIGN AND STRUCTURE PREDICTION OF MEMBRANE PROTEINS. **Assaf Elazar**, Jonathan Weinstein, Sarel Fleishman

435-Pos BOARD B200
GOVERNING MECHANISM OF PHOSPHOLIPIDS PEROXIDATION VIA 15-LIPOXYGENASE, A KEY PLAYER IN FERROPTOSIS CELL DEATH PATHWAY. **Dariusz Mohammadyani**, Judith Klein-Seetharaman, Valerian E. Kagan

436-Pos BOARD B201
INVESTIGATION OF ACYL PROTEIN THIOESTERASE ACTIVITY AT THE MEMBRANE. **Kathrin Estel**, Patricia Stege, Ingrid Vetter

437-Pos BOARD B202
MG56, A MEMBRANE BOUND O-ACYLTRANSFERASE PROTEIN, REGULATES LIPID COMPOSITION AND MEMBRANE VESICLE SIZE IN SKELETAL MUSCLE. **Matthew Sermersheim**, Arpad Somogyi, Jordi Torrelles, Miyuki Nishi, Hiroshi Takeshima, Pei-Hui Lin, Jianjie Ma

438-Pos BOARD B203
THE ROLE OF PACKING DEFECTS IN THE STABILITY AND FUNCTION OF THE INTRAMEMBRANE PROTEASE GLPG. **Ruiqiong Guo**, Zixuan Cang, Deans Erin, Guowei Wei, Heedeok Hong

439-Pos BOARD B204
DISSECTING THE SIDE CHAIN INTERACTION ENERGIES OF THE ACTIVE SITE HYDROGEN BOND NETWORK IN A RHOMBOID PROTEASE GLPG. **Kristen A. Gaffney**, Jeff Cho, Heedeok Hong

440-Pos BOARD B205
RECONSTITUTION OF FTSH-MEDIATED MEMBRANE PROTEIN DEGRADATION IN BICELLES. **Yiqing Yang**, Miyeon Kim, Ruiqiong Guo, Kristen Gaffney, Heedeok Hong

441-Pos BOARD B206
IMPACT OF PLASMA PROTEIN BINDING ON CARGO RELEASE BY THERMOSENSITIVE LIPOSOMES STUDIED BY FLUORESCENCE CORRELATION SPECTROSCOPY. **Judith J. Mittag**, Barbara Kneidl, Tobias Preiß, Martin Hossann, Gerhard Winter, Stefan Wuttke, Hanna Engelke, Joachim O. Rädler

442-Pos BOARD B207
A MASS-SPECTROMETRY BASED METHODOLOGY TO UNRAVEL THE MOLECULAR MECHANISMS OF SUGAR TRANSPORT. **Chloe Martens**, Antoni Borysik, Paula Booth, Argyris Politis

443-Pos BOARD B208
VECTORIAL CHOLESTEROL TRANSPORT BY STARD4 IS MEDIATED BY SPECIFIC PIP₂ MEMBRANE COMPOSITION. **Derek M. Shore**, David B. laea, Radda Rusinova, George Khelashvili, Michel A. Cuendet, Olaf S. Andersen, Frederick R. Maxfield, Harel Weinstein

444-Pos BOARD B209
CHIMERA OF APOLIPOPHORIN III AND C-TERMINAL DOMAIN OF APOLIPOPROTEIN E TO STUDY APOLIPOPROTEIN STRUCTURE FUNCTION. **Paul M. Weers**, Leesa M. Kakutani, James V. Horn, Vasanthi Narayanaswami

Membrane Receptors and Signal Transduction I (Boards B210–B224)

445-Pos BOARD B210
COMPUTATIONAL MODEL OF INTEGRIN CLUSTERING IN RESPONSE TO ACTIN TURNOVER. **Tamara C. Bidone**, Aravind R. Rammohan, Matt Mckenzie, Gregory A. Voth

446-Pos BOARD B211
THE M2 MUSCARINIC RECEPTOR SIGNALING COMPLEX RESOLVED BY SINGLE MOLECULE TRACKING IN LIVE CELLS. **Yuchong Li**, Rabindra V. Shivnaraine, Huiqiao Ji, Fei Huang, Kevin Braeckmans, James W. Wells, Claudiu C. Gradinaru

447-Pos BOARD B212
QUANTITATIVE FLUORESCENCE MICROSCOPY REVEALS HIGHER ORDER OLIGOMERIZATION OF FGFR5. Romario Regeenes, Pamuditha Silva, Dawn M. Kilkenny, **Jonathan V. Rocheleau**

448-Pos BOARD B213
INVESTIGATING THE HETERO-INTERACTIONS OF RECEPTOR TYROSINE KINASES IN LIVE CELLS. **Michael Paul**, Fozia Ahmed, Kalina Hristova

449-Pos BOARD B214
DECODING THE SIGNALING THROUGH HOMOMERIC AND HETEROMERIC CANNABINOID CB1 RECEPTORS. **Guoqing Xiang**, Takeharu Kawano, Apostolia Baki, Diomedes Logothetis

450-Pos BOARD B215
EXAMINING THE EFFECTS OF NEUROTROPHIN 3 AND NERVE GROWTH FACTOR ON THE INTERACTION OF TROPOMYOSIN RECEPTOR KINASE A AND C. **Fozia Ahmed**, Kalina Hristova

451-Pos BOARD B216
HIGH CONTENT ANALYSIS OF INTRACELLULAR HETEROGENEITY TO STUDY GPCR OLIGOMERIZATION. **Artu' Breuer**, Samuel Mcewen Walsh, Anna Mantsiou, Dimitrios Stamou

452-Pos BOARD B217
INTERACTIONS BETWEEN G PROTEINS AND NON-STIMULATED GPCRS REVEALED BY TWO-PHOTON POLARIZATION MICROSCOPY. **Alexey Bondar**, Josef Lazar

453-Pos BOARD B218
INVESTIGATING MUC1 TRANSMEMBRANE DIMER STRUCTURE USING REPLICA EXCHANGE MOLECULAR DYNAMICS. **Christina M. Freeman**, Alexander J. Sodt

454-Pos BOARD B219
ELECTROSTATICS FACILITATES THE TRIMER-OF-DIMERS FORMATION OF THE CHEMORECEPTOR SIGNALING DOMAIN. **Marharyta Petukh**, Davi Ortega, Igor B. Zhulin

455-Pos BOARD B220
INVESTIGATING INITIAL EVENTS OF IGE RECEPTOR SIGNALING WITH SUPER-RESOLUTION MICROSCOPY AND MONTE CARLO SIMULATIONS. **Eshan Mitra**, James P. Sethna, David Holowka, Barbara Baird

456-Pos BOARD B221
FLUORESCENCE FLUCTUATION SPECTROSCOPY OF DOPAMINERGIC SIGNALING IN PANCREATIC BETA CELLS. **Daniel JP Foust**, Alessandro Ustione, David W. Piston

457-Pos BOARD B222
DYNAMICS OF VARIOUS PHOSPHOLIPASE C-B COMPLEXES. **Ashima Singla**, Suzanne Scarlata

458-Pos BOARD B223
OPTICAL CONTROL OF CGMP SIGNALING. **Ulrike Scheib**, Katja Stehfest, Christine E. Gee, Heinz G. Körschen, Shatanik Mukherjee, Thomas G. Oertner, Peter Hegemann

459-Pos BOARD B224
PHOTO REGULATION OF SMALL G-PROTEIN RAS USING PHOTOCROMIC PEPTIDE. **Masahiro Kuboyama**, Kaori Masuhara, Shinsaku Maruta, Kazunori Kondo, Kazuo Fujiwara

Exocytosis and Endocytosis I (Boards B225–B241)

460-Pos BOARD B225
DYNAMIN INDEPENDENT ENDOCYTOTIC PATHWAY OPERATES IN A NEGATIVE FEEDBACK LOOP TO SENSE AND REGULATE THE RESTING MEMBRANE TENSION. **Joseph J. Thottacherry**

461-Pos BOARD B226 EDUCATION TRAVEL AWARDEE
MUNC13 AND MUNC18 COOPERATE TO PROPERLY ASSEMBLE SNARES FOR FAST NEUROTRANSMITTER RELEASE. **Ying Lai**

462-Pos BOARD B227 CID TRAVEL AWARDEE
EFFECTS OF OPSONIN DENSITY AND TYPE ON THE PHAGOCYTOSIS OF BEADS. **Sebastian Hendrickx-Rodriguez**, Michael R. Falvo, E. Timothy O'Brien III, Richard Superfine

463-Pos BOARD B228 EDUCATION TRAVEL AWARDEE
A SUPPORTED TUBULATED BILAYER SYSTEM SHOWS EFFECTS OF SYNAPTOTAGMIN-7 ON MEMBRANE CURVATURE. **Peter Dahl**, Joseph Vasquez, Hai Tran, Jeff Knight, Arun Anantharam

464-Pos BOARD B229
EXOSOMES FRACTIONATION BY BIOPHYSICAL PROPERTIES. **Soheyl Tadjiki**, Robert Reed, Samer Al-Hakami, Mikhail Skliar

465-Pos BOARD B230
MEMBRANE RECRUITMENT ENABLES WEAK BINDING ENDOCYTOTIC PROTEINS TO FORM STABLE COMPLEXES. **Osman Yogurtcu**, **Margaret E. Johnson**

466-Pos BOARD B231
MECHANOREGULATION OF CLATHRIN-MEDIATED ENDOCYTOSIS IN ISOLATED CELLS AND DEVELOPING TISSUES. **Comert Kural**

467-Pos BOARD B232
REGULATION OF LYSOSOMAL EXOCYTOSIS BY OXIDATIVE STRESS AND CALCIUM IONS. **Sreeram Ravi**, Andrew P. VanDemark, **Kirill Kiselyov**

468-Pos BOARD B233
LOCAL TURGOR PRESSURE REDUCTION VIA CHANNEL CLUSTERING. **Jonah K. Scher-Zagier**

469-Pos BOARD B234
EFFECTS OF STEROL SUBSTITUTION IN PLASMA MEMBRANE OF HOST CELL UPON INTERNALIZATION OF *YERSINIA PSEUDOTUBERCULOSIS*. **JiHyun Kim**, Hana S. Fukuto, James B. Bliska, Erwin London

470-Pos BOARD B235
RECOVERY OF ESCRT-III FILAMENTS SUBJECTED TO FORCE: AN 'INVASIVE MODE' HS-AFM STUDY. **Nebojsa Jukic**, Lorena Redondo-Morata, Aurélien Roux, Simon Scheuring

471-Pos BOARD B236
STRUCTURAL DYNAMICS OF ENDOCYTOSIS BY HIGH-SPEED ATOMIC FORCE MICROSCOPY. **Grigory Tagiltsev**, Frederic Eghiaian, Simon Scheuring

472-Pos BOARD B237
DILATION OF FUSION PORES BY SNARE PROTEIN CROWDING. **Zhenyong Wu**, Oscar D. Bello, Sathish Thiyagarajan, Sarah M. Auclair, Wensi Venekate, Shyam S. Krishnakumar, Ben O'Shaughnessy, Erdem Karatekin

473-Pos BOARD B238
IMAGING REGULATORY LIPIDS AND PROTEIN KINASE C AT SITES OF EXOCYTOSIS. **Adam J. Trexler**, Justin W. Taraska

474-Pos BOARD B239
A CMOS BASED SENSOR ARRAY PLATFORM FOR ANALYSIS OF EXOCYTOSIS EVENTS. **Meng Huang**, John C. Ruelas, Shailendra S. Rathore, Joannaly B. Delacruz, Manfred Lindau

475-Pos BOARD B240
MIZ-2, A NEW CATECHOLAMINE-SELECTIVE FLUORESCENT SENSOR FOR VISUALIZING NOREPINEPHRINE. **Xin A. Liu**, Le Zhang, Kevin D. Gillis, Timothy E. Glass

476-Pos BOARD B241
SNARE PROTEIN STRUCTURE ALTERED IN RESPONSE TO PH. **Kara L. Woodbury**, Sam K. Zenger, Peter Weitzel, Curtis D. Nelson, Sterling M. Jones, Trey S. Winter, Wade J. Whitt, Ani C. Henriksen, Dixon J. Woodbury

Calcium Signaling I (Boards B242–B255)

477-Pos BOARD B242
OPTOGENETIC DISSECTION OF STIM1 CONFORMATIONAL SWITCH AND OLIGOMERIZATION. **Guolin Ma**, Lian He, Qian Zhang, **Yubin Zhou**

478-Pos BOARD B243
STRUCTURAL DIFFERENCES BETWEEN CARDIAC AND SKELETAL RYANODINE RECEPTORS. **Sonali Dhindwal**, Joshua Lobo, **Montserrat Samso**

479-Pos BOARD B244
INCREASED DENSITY OF SERCA PUMPS AT THE PERIPHERY OF CARDIAC PURKINJE CELLS AFTER MYOCARDIAL INFARCTION. **Bruno Stuyvers**, Penelope Boyden, Henk EDJ ter Keurs, Yunbo Guo, Wen Dun, Kazi Haq, Meleze Hocini, Michel Haissaguerre, Olivier Bernus, Sebastien Chaigne, Sabine Charron, Caroline Cros, Fabien Brette

480-Pos BOARD B245
FUNCTIONAL EFFECTS OF THE RYR₂^{R420Q} CATECHOLAMINERGIC VENTRICULAR POLYMORPHIC TACHYCARDIA IN MOUSE CARDIOMYOCYTES. **Riccardo Rizzetto**, Miguel Fernandez-Tenorio, Alexandra Zahradnikova Jr, Simona Boncompani, Elena Marqués-Sulé, Yue Yi Wang, Jean-Pierre Benitah, Esther Zorio, Feliciano Protasi, Ernst Niggli, **Ana M. Gomez**

481-Pos BOARD B246
SUPPRESSION OF ARRHYTHMIA BY ENHANCING MITOCHONDRIAL CALCIUM UPTAKE IN EXPERIMENTAL MODELS OF CATECHOLAMINERGIC VENTRICULAR TACHYCARDIA. **Maria K. Schweitzer**, Fabiola Wilting, Simon Sedej, Lisa Dreizehnter, Nathan J. Dupper, Alessandra Moretti, Ohyun Kwon, Silvia G. Priori, Karl-Ludwig Laugwitz, Michael Mederos y Schnitzler, Thomas Gudermann, **Johann Schredelseker**

482-Pos BOARD B247
ANTIDEPRESSANT DRUGS CITALOPRAM AND ESCITALOPRAM BUT NOT PAROXETINE INDUCE ARRHYTHMOGENIC SARCOPLASMIC RETICULUM CALCIUM RELEASE. **Daniel Blackwell**, Björn Knollmann

483-Pos BOARD B248
THE INTERPLAY BETWEEN LENGTH-DEPENDENT CALCIUM AFFINITY OF TROPONIN AND X-RS SIGNALING ON MYOPLASMIC CALCIUM LEVELS IN HEART. Sarita Limbu, Benjamin L. Prosser, W. Jonathan Lederer, **M. Saleet Jafri**

484-Pos BOARD B249
MITOCHONDRIAL Ca^{2+} UPTAKE AND SUPEROXIDE GENERATION REGULATES ANGIOTENSIN II-INDUCED PROLIFERATION IN NEONATAL CARDIAC FIBROBLASTS. **Jin O-Uchi**, Deming Fu, Jyotsna Mishra, Bong Sook Jhun, Shey-Shing Sheu

485-Pos BOARD B250
TRPV4 ENHANCES CARDIOMYOCYTE CALCIUM TRANSIENTS AND CARDIAC CONTRACTILITY FOLLOWING HYPOOSMOTIC STRESS AND ISCHEMIA-REPERFUSION. John L. Jones, Deborah Peana, Michelle D. Lambert, **Timothy L. Domeier**

486-Pos BOARD B251
CHARACTERIZATION OF INTRACELLULAR SODIUM HOMEOSTASIS IN MURINE ATRIAL MYOCYTES. **Libet Garber**, W. Jonathan Lederer, Maura Greiser

487-Pos BOARD B252 EDUCATION TRAVEL AWARDEE
GENETIC ABLATION OF FIBROBLAST MITOCHONDRIAL CALCIUM UPTAKE INCREASES MYOFIBROBLAST TRANSDIFFERENTIATION AND EXACERBATES FIBROSIS IN MYOCARDIAL INFARCTION. **Alyssa A. Lombardi**, Ehtesham Arif, Timothy S. Luongo, John W. Elrod

488-Pos BOARD B253
GAIN-OF-FUNCTION MUTATION IN RYANODINE RECEPTOR TYPE 1 MODULATES MURINE THYMOCYTE CALCIUM SIGNALING AND AUTOIMMUNE RESPONSE IN MICE. Lukun Yang, Athena Soulika, Lillian Cruz-Orengo, Paul D. Allen, **Alla F. Fomina**

489-Pos BOARD B254
REGULATION OF CARDIAC PACEMAKER ACTIVITY BY PDE4 ISOMERFORMS. **Delphine Mika**, Ana Maria Gomez, Marco Conti, Rodolphe Fischmeister, Grégoire Vandecasteele

490-Pos BOARD B255
FUNCTIONAL ROLE OF TRPC1 CHANNELS IN NEONATAL CARDIOMYOCYTES. Ahmad A. Azmi, Chris Hunter, Hu Qinghua, **Frank B. Sachse**

Excitation-Contraction Coupling (Boards B256–B278)

491-Pos BOARD B256
PROBING THE INTER-SUBUNIT/SUBDOMAIN INTERACTIONS RELEVANT TO DISEASE MUTATIONS IN THE N-TERMINAL DOMAIN OF RYANODINE RECEPTORS BY MOLECULAR DYNAMICS SIMULATION. **Wenjun Zheng**

492-Pos BOARD B257
GENOTYPE-PHENOTYPE CORRELATIONS OF THE CENTRAL CORE DISEASE MUTATIONS IN THE C-TERMINAL REGION OF THE RYR1 CHANNEL. **Takashi Murayama**, Nagomi Kurebayashi, Haruo Ogawa, Toshiko Yamazawa, Takashi Sakurai

493-Pos BOARD B258
THE ROLE OF TRIC CHANNELS IN SR COUNTERCURRENT DURING SR Ca^{2+} RELEASE AND SERCA RE-UPTAKE. Vilmos Zsolnay, Claudio Berti, Michael Fill, **Dirk Gillespie**

494-Pos BOARD B259
A METHOD FOR VALIDATING MUTATIONS ASSOCIATED WITH MALIGNANT HYPERTHERMIA USING CRISPR/CAS9 AND DUAL INTEGRASE CAS9-SETTE EXCHANGE. **Kevin J. De Leon**, Shane Antrobus, Paul Denney Allen, Isabelle Marty, David Segal

495-Pos BOARD B260
ROLE OF STIM1 AND ORAI1 IN THE FORMATION OF TUBULAR AGGREGATES IN AGEING SKELETAL MUSCLE FIBERS. Claudia Pecorai, Antonio Michelucci, Laura Pietrangelo, Feliciano Protasi, **Simona Boncompagni**

496-Pos BOARD B261
MITSUGUMIN 53 REGULATES EXTRACELLULAR Ca^{2+} ENTRY AND INTRACELLULAR Ca^{2+} RELEASE VIA ORAI1 AND RYR1 IN SKELETAL MUSCLE. **Mi Kyoung Ahn**, Keon Jin Lee, Chuanxi Cai, Mei Huang, Chung-Hyun Cho, Jianjie Ma, Eun Hui Lee

497-Pos BOARD B262
LOCALIZATION OF JUNCTOPHILIN-1 AT THE JUNCTIONAL SARCOPLASMIC RETICULUM REQUIRES A SEQUENCE IN THE TRANSMEMBRANE DOMAIN. **Daniela Rossi**, Angela Maria Scarcella, Stefania Lorenzini, Enea Liguori, Mirko Messa, Pietro De Camilli, Vincenzo Sorrentino

498-Pos BOARD B263
INTERACTION OF JUNCTOPHILINS AND THE C-TERMINUS OF CAV1.1 SUBUNITS REGULATES LOCALIZATION AND FUNCTION OF L-TYPE CALCIUM CHANNELS IN SKELETAL MUSCLE. **Tsutomu Nakada**, Toshihide Kashiwara, Mitsuhiko Yamada

499-Pos BOARD B264
DYNAMICS OF TRIAD ORGANIZATION. Muriel Sébastien, Perrine Teyssier, Julie Brocard, Eric Denarier, **Isabelle Marty**, Julien Fauré

500-Pos BOARD B265
ASSESSMENT OF Ca^{2+} SENSITIVITY OF SK CHANNELS IN RAT VENTRICULAR CARDIOMYOCYTES USING INTRINSIC Ca^{2+} CYCLING MACHINERY. **Luliia Polina**, Radmila Terentyeva, Karim Roder, Gideon Koren, Jin O-Uchi, Dmitry Terentyev

501-Pos BOARD B266
MODIFIED CALCIUM HOMEOSTASIS IN AGED MOUSE SKELETAL MUSCLE. **László Csernoch**, János Fodor, Dána Al-Gaadi, Tamás Czirájk, Tamás Oláh, Beatrix Dienes, Péter Szentesi

502-Pos BOARD B267
SHEAR STRESS INDUCES TRANSVERSE Ca^{2+} WAVES VIA AUTOCRINE ACTIVATION OF P2X PURINOCEPTORS IN RAT ATRIAL MYOCYTES. Joon-Chul Kim, **Sun-Hee Woo**

503-Pos BOARD B268
OPTICAL MAPPING IN RAT MODELS OF ATRIAL DILATION. **Samantha Cannazzaro**, Claudia Crocini, Marina Scardigli, Raffaele Coppini, Ping Yan, Leslie M. Loew, Chiara Tesi, Elisabetta Cerbai, Francesco S. Pavone, Corrado Poggesi, Leonardo Sacconi, Cecilia Ferrantini

504-Pos BOARD B269
EPAC2-RAP1 SIGNALING INFLUENCES REACTIVE OXYGEN SPECIES PRODUCTION AND SUSCEPTIBILITY TO CARDIAC ARRHYTHMIAS. Zhaokang Yang, **Hannah M. Kirton**, Moza Al-Owais, Chris Peers, Derek S. Steele

505-Pos BOARD B270
GENERATION AND CHARACTERIZATION OF A HUMAN IPSC CARDIOMYOCYTE MODEL OF TROPONIN T I79N LINKED HYPERTROPHIC CARDIOMYOPATHY. **Lili Wang**, Dmytro Oleksandrovych Kryshstal, Kyungsoo Kim, Shan Parikh, Kevin Richard Bersell, Jose R. Pinto, Huan He, Bjorn Christian Knollmann

506-Pos BOARD B271
CARDIAC ELECTROMECHANICAL COUPLING MODEL OF MYOCARDIAL CONTRACTILE FUNCTION UNDER ISCHEMIC CONDITIONS. **Yasser Aboelkassem**, Natalia Trayanova

507-Pos BOARD B272

CARDIOMYOCYTE FUNCTIONAL KINETIC RESERVE IS LOST IN AN OS-SABAW SWINE MODEL OF HEART FAILURE WITH PRESERVED EJECTION FRACTION. **Adam B. Veteto**, John L. Jones, Joel C. Robinett, T. Dylan Olver, Jenna C. Edwards, Michelle D. Lambert, Pamela K. Thorne, Maike Krenz, Kerry S. McDonald, Jaume Padilla, David A. Ford, Christopher Baines, R. Scott Rector, Craig A. Emter, Timothy L. Domeier

508-Pos BOARD B273

HEART FAILURE RE-DISTRIBUTES PHOSPHOLAMBAN BETWEEN NUCLEAR MEMBRANES AND SARCOPLASMIC RETICULUM IN CARDIOMYOCYTES. Zhipeng Tian, Yan Li, Peng-Sheng Chen, Steven Cala, **Zhenhui Chen**

509-Pos BOARD B274

THE EFFECT OF OVARECTOMY ON CALCIUM (Ca^{2+}) HANDLING IN GUINEA PIG CARDIOMYOCYTES. **Hsiang-Yu Yang**, Anita Alvarez-Laviada, Jahn M. Firth, Alice J. Francis, Kenneth T. MacLeod

510-Pos BOARD B275

BIOCHEMICAL AND MECHANICAL PROPERTIES OF MURINE EXTRAOCULAR MUSCLES. Jan Eckhardt, Marijana Sekulic-Jablanovic, Susan Treves, **Francesco Zorzato**

511-Pos BOARD B276

THE MAINTENANCE ABILITY AND Ca^{2+} AVAILABILITY OF SKELETAL MUSCLE ARE ENHANCED BY SILDENAFIL. **Mei Huang**, Keon Jin Lee, Kyung-Jin Kim, Mi Kyoung Ahn, Chung-Hyun Cho, Do Han Kim, Eun Hui Lee

512-Pos BOARD B277

DANTROLENE SHIFTS THE AFFINITY OF THE RYANODINE RECEPTOR FOR Mg^{2+} . Rocky H. Choi, F. Xaver Konig, Tanya R. Cully, **Bradley S. Launikonis**

513-Pos BOARD B278

MG53 INTERACTS WITH CARDIOLIPIN TO PROTECT MITOCHONDRIA FROM ISCHEMIA-REPERFUSION INDUCED OXIDATIVE STRESS. Hanley Ma, Xinyu Zhou, Xinxin Wang, Junwei Wu, Kristyn Gumpfer, Tao Tan, Timothy Ayodele Adesanya, Chunlin Yang, Yongqiu Zheng, Heather Chandler, Jingsong Zhou, Jianjie Ma, **Hua Zhu**

Voltage-gated Na Channels I (Boards B279–B298)

514-Pos BOARD B279

DOMAIN SPECIFIC ROLE OF S4 FOR STEPPING INTO AND RECOVERING FROM THE INACTIVATED STATE AS OBTAINED FROM OMEGA- AND R4H MUTANTS IN NAV1.2. **Nikolaus Guenter Greeff**, Hansjakob Heldstab, Claudia Lehmann

515-Pos BOARD B280

DIVERGENCE IN DOMAIN IV OF AN ELECTRIC FISH Na_v CHANNEL TUNES ITS FAST INACTIVATION TO SUPPORT RAPID FIRING RATES BY ELECTRO-MOTORNEURONS. **Daniel Thomas Infield**, Ammon Thompson, Troy Smith, Harold H. Zakon, Christopher A. Ahern

516-Pos BOARD B281

ROLE FOR FAST INACTIVATION IN DOMAIN I OF VOLTAGE GATED SODIUM CHANNELS. **James R. Groome**, Ryann Camp

517-Pos BOARD B282

EFFECTS OF CYSTEINE SUBSTITUTIONS IN D1-S6 ON FAST AND SLOW INACTIVATION IN NAV1.4. **John O'Reilly**, Penny Shockett

518-Pos BOARD B283

MOLECULAR MECHANISMS OF CARDIAC VOLTAGE-GATED Na^+ CHANNEL REGULATION BY ACIDIC PH. **Bicong Li**, Wandu Zhu, Jon Silva

519-Pos BOARD B284

OMEGA MUTATIONS ALONG S4 IN NAV1.2 CHANNELS GIVE INSIGHT INTO DOMAIN SPECIFIC CONTRIBUTION TO ACTIVATION AND STEADY STATE INACTIVATION. **Claudia Lehmann**, Hansjakob Heldstab, Nikolaus Guenter Greeff

520-Pos BOARD B285

CHARACTERIZATION OF A $Na_v1.5$ GAIN-OF-FUNCTION MUTATION (G213D) CAUSING MULTIFOCAL ATRIAL AND VENTRICULAR PREMATURE ECTOPIES AND AN INCREASED RISK OF DILATED CARDIOMYOPATHY. **Kirstine Calloe**, Anders K. Broendberg, Alex H. Christensen, Lisbeth N. Pedersen, Morten S. Olesen, Maria A. Tejada, Soren Friis, Morten B. Thomsen, Henning Bundgaard, Henrik K. Jensen

521-Pos BOARD B286

VOLTAGE-GATED SODIUM CHANNEL MUTATIONS CAN EXERT DOMINANT-NEGATIVE SUPPRESSION BY COUPLED GATING. **Jerome Clatot**, Aurore Girardeau, Celine Marionneau, Isabelle Deschenes

522-Pos BOARD B287

OPEN AND CLOSED STATES OF THE $Na_v\beta$ ACTIVATION GATE. **Michael Lenaeus**, Tamer M. Gamal El-Din, Karthik Ramanadane, Ning Zheng, William A. Catterall

523-Pos BOARD B288

IN VITRO SINGLE-MOLECULE STUDY OF NACHBAC USING PLANAR LIPID BILAYER DEVICE. **Hiofan Hoi**, Andrew Jo, Manisha Gupta, Carlo D. Montemagno

524-Pos BOARD B289

CONTROL OF SLOW, USE DEPENDENT INACTIVATION OF $Na_v\beta$ BY ITS C TERMINAL TAIL. **Tamer M. Gamal El-Din**, Michael J. Lenaeus, Karthik Ramanadane, Ning Zheng, William A. Catterall

525-Pos BOARD B290

ROLE OF CHANNEL FLUCTUATIONS IN ION TRANSPORT AND SELECTIVITY IN BACTERIAL SODIUM CHANNEL NAVAB. **Christopher Ing**, Nilmadhab Chakrabarti, Ning Zheng, William A. Catterall, Régis Pomès

526-Pos BOARD B291

AN OPEN STATE MODEL OF THE NAVAB CHANNEL EXPLORED BY ROSETTA AND MOLECULAR DYNAMICS SIMULATION. **Puong T. Nguyen**, Kevin R. DeMarco, Igor Vorobyov, Coleen E. Clancy, Toby W. Allen, Vladimir Yarov-Yarovoy

527-Pos BOARD B292

SIMULATING THE ACCESS AND BINDING OF SUBTYPE SELECTIVE SODIUM CHANNEL INHIBITORS. **Ben Corry**

528-Pos BOARD B293

PROPOFOL IS A POTENT GATING MODIFIER OF VOLTAGE-GATED SODIUM CHANNELS. **Elaine Yang**, Daniele Granata, Roderic Eckenhoff, Vincenzo Carnevale, Manuel Covarrubias

529-Pos BOARD B294

THE SODIUM ION BINDING REGION AT THE FOCUS OF P1 HELICES ATTRACTS BOTH CHARGED AND ELECTRONEUTRAL LIGANDS OF SODIUM CHANNELS. Denis B. Tikhonov, **Boris S. Zhorov**

530-Pos BOARD B295

COMPARISON OF ION SELECTIVITY MECHANISMS IN BACTERIAL AND MAMMALIAN SODIUM CHANNELS. **Emelie Flood**, Céline Boiteux, Toby W. Allen

531-Pos BOARD B296

HOW C-TERMINAL DOMAIN STABILIZE THE GATE OF VOLTAGE-GATED SODIUM CHANNELS. **Song Ke**, Bonnie Ann Wallace, Jakob Ulmschneider, Martin Ulmschneider

532-Pos BOARD B297

MOLECULAR MODELING OF MAMMALIAN NAV1.4 CHANNEL. **Ali O. Acar**, Esra Korpe, Murat Cavus, Serdar Kuyucak, Turgut Bastug

533-Pos BOARD B298

MECHANISM AND ENERGETICS OF ION AND TETRODOTOXIN BINDING TO NAVMS CHANNEL. **Esra Korpe**, Ali Osman Acar, Murat Cavus, Serdar Kuyucak, Turgut Bastug

Voltage-gated Ca Channels I (Boards B299–B308)

- 534-Pos** **BOARD B299**
MODELING THE EFFECTS OF VOLATILE ANESTHETICS ON L-TYPE Ca^{2+} CHANNELS AND Ca^{2+} INDUCED Ca^{2+} RELEASE IN CARDIOMYOCYTES. **Neeraj Manhas**
- 535-Pos** **BOARD B300**
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF T-TYPE CALCIUM CHANNELS IN CENTRAL MEDIAL NUCLEUS OF THE RAT THALAMUS. **Tamara Timic Stamenic**, Slobodan M. Todorovic
- 536-Pos** **BOARD B301** **CID TRAVEL AWARDEE**
UNMASKING THE MOLECULAR DETERMINANTS IMPORTANT FOR Ca^{2+} -DEPENDENT REGULATION OF $Ca_v2.2$. **Jessica R. Thomas**, Jussara Hagen, Amy Lee
- 537-Pos** **BOARD B302** **CID TRAVEL AWARDEE**
C-TERMINAL SPLICE VARIATION REVEALS NEW INSIGHTS INTO CALMODULIN REGULATION OF $Ca_v1.4$ CHANNELS. **Brittany Williams**, Vasily Kerov, Daniel Soh, Amy Lee
- 538-Pos** **BOARD B303**
STRUCTURAL CHARACTERIZATION OF CALMODULIN DISEASE MUTATIONS. **Kaiqian Wang**, Jocelyn Lu, Kamilla T. Larsen, Michael T. Overgaard, Filip Van Petegem
- 539-Pos** **BOARD B304**
STRONTIUM AND BARIUM IN AQUEOUS SOLUTION AND AN ION CHANNEL BLOCKING SITE. **Mangesh Chaudhari**, Susan Rempe
- 540-Pos** **BOARD B305**
THE CALCIUM CHANNEL A2D SUBUNIT INCREASES THE GATING CHARGES OF $Ca_v1.2$ CHANNELS. **Gustavo F. Contreras**, Nicoletta Savalli, Antonios Pantazis, Carlos Gonzalez, Riccardo Olcese, Alan Neely
- 541-Pos** **BOARD B306**
CALMODULIN AND STAC3 ENHANCE FUNCTIONAL EXPRESSION OF $Ca_v1.1$. **Jacqueline Niu**, Manu Ben Johny, David T. Yue, Takanari Inoue
- 542-Pos** **BOARD B307**
 $Ca_v1.3$ (*CACNA1D*) GAIN-OF-FUNCTION *DE NOVO* MISSENSE MUTATIONS ARE ASSOCIATED WITH CNS DISORDERS. **Alexandra Pinggera**, Luisa Mackenroth, Jörg Striessnig
- 543-Pos** **BOARD B308**
DUAL EFFECT OF PALMITATE ON VOLTAGE-GATED CALCIUM CHANNELS AND INSULIN SECRETION IN PANCREATIC BETA CELLS OF RATS. **Neivys García-Delgado**, Myrian Velasco-Torres, Carmen Sanchez-Soto, Marcia Hiriart

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I (Boards B309–B324)

- 544-Pos** **BOARD B309** **EDUCATION TRAVEL AWARDEE**
EXAMINING THE ROLE OF PHOSPHORYLATION ON INTERACTIONS BETWEEN THE CARDIAC POTASSIUM CHANNEL ALPHA-SUBUNITS HERG AND K_vLQT1 . **Medeea C. Popescu**, Louise E.O. Darling
- 545-Pos** **BOARD B310**
MONITORING STRUCTURAL REORGANIZATION OF CALMODULIN IN COMPLEX WITH THE C-TERMINUS OF KCNQ CHANNELS. **Carolina Gomis-Perez**, Eider Nunez-Viadero, Ganeko Bernardo-Seisdedos, Covadonga Malo, Pilar Areso, Alvaro Villarreal

- 546-Pos** **BOARD B311**
NOVEL INSIGHTS FROM STRUCTURAL ANALYSIS OF INTERACTIONS OF KCNQ K^+ CHANNELS WITH CALMODULIN. **Crystal R. Archer**, Akash Bhat-tacharya, Benjamin T. Enslow, Alex B. Taylor, Dmitri N. Ivanov, Mark S. Shapiro
- 547-Pos** **BOARD B312**
KCNE1 AND KCNE3 MODULATE KCNQ1 CHANNELS BY AFFECTING DIFFERENT GATING TRANSITIONS. **Rene Barro-Soria**, Rosamary Ramentol, Sara I. Liin, Marta E. Perez, Robert S. Kass, H Peter Larsson
- 548-Pos** **BOARD B313**
CP1 OPENS I_{Ks} CHANNELS BY SUBSTITUTING PIP_2 . **Moawiah M. Naffaa**, Xianjin Xu, Hongwu Liang, Guohui Zhang, Hong Zhan Wang, Junyuan Goa, Ira S. Cohen, Xiaoqin Zou, Jianmin Cui
- 549-Pos** **BOARD B314**
 $PI(4,5)P_2$ MODULATES HYSTERESIS AND PHARMACOLOGY OF K_v7 CHANNELS. **Carlos A. Villalba-Galea**
- 550-Pos** **BOARD B315**
MOLECULAR MECHANISM OF THE $KV7.1$ -CHANNEL ACTIVATOR N-ARACHIDONOYL TAURINE. **Sara I. Liin**, Rene Barro-Soria, H Peter Larsson
- 551-Pos** **BOARD B316**
 $ML277$ OPENS KCNQ1 CHANNELS BY SELECTIVELY ENHANCING THE AO STATE. **Panpan Hou**, Ling Zhong, Powei Kang, Zachary Beller, Kelli McFarland, Jingyi Shi, Jianmin Cui
- 552-Pos** **BOARD B317**
COMPREHENSIVE ASSESSMENT OF DISEASE MUTANT FORMS OF THE HUMAN KCNQ1 POTASSIUM CHANNEL. **Hui Huang**, Keenan Taylor, Charles Sanders
- 553-Pos** **BOARD B318**
A VOLTAGE- TO LIGAND- GATED SWITCH IN VOLTAGE-GATED POTASSIUM CHANNELS. **Xiaoping Pi**, Qiang Ding, Zhaobing Gao
- 554-Pos** **BOARD B319**
VOLTAGE AND Ca^{2+} SENSOR COUPLING MODULATION BY B SUBUNITS IN THE BK CHANNEL. **Yenisleidy Lorenzo**, Karen Castillo, Gustavo Contreras, Willy Carrasquel-Ursulaez, Carlos Gonzalez, Ramon Latorre
- 555-Pos** **BOARD B320**
ALPHA-B HELIX OF RCK1 IS A MAJOR TRANSDUCTION PATHWAY FOR Ca^{2+} ACTIVATION OF BK CHANNELS. **Yanyan Geng**, Zengqin Deng, Gonzalo Budelli, Alice Butler Butler, Jianmin Cui, Peng Yuan, Lawrence Salkoff, Karl Magleby
- 556-Pos** **BOARD B321**
CARBON MONOXIDE MAY REGULATE BK SLO1 CHANNEL ACTIVITY BY PARTIALLY DISRUPTING HEME COORDINATION. **Taleh Yusifov**, Nicoletta Savalli, Antonios Pantazis, Stefan H. Heinemann, Toshinori Hoshi, Riccardo Olcese
- 557-Pos** **BOARD B322**
ROLE OF THE SLO1 CRAC4 MOTIF IN BK CHANNEL'S ETHANOL SENSITIVITY. **Maria N. Simakova**, Dasha Zaytseva, Shivantika Bisen, Alex M. Dopico, Anna N. Bukiya
- 558-Pos** **BOARD B323**
DIFFERENTIAL EXPRESSION OF BK CHANNEL BETA1 SUBUNITS IN RAT MESENTERIC, CORONARY AND CEREBRAL ARTERIES. **Guruprasad Kuntamallappanavar**, Shivantika Bisen, Anna Bukiya, Alex Dopico
- 559-Pos** **BOARD B324**
FUNCTIONAL COUPLING OF BK CHANNELS TO NMDA RECEPTORS IN HIPPOCAMPAL DENTATE GYRUS. **Xin Guan**, Jiyuan Zhang, Qin Li, Hui-Lin Pan, Jiusheng Yan

TRP Channels I (Boards B325–B336)

- 560-Pos BOARD B325**
BINDING OF EXTRACELLULAR Ca^{2+} TO THE SPECIFIC AMINO ACIDS IS REQUIRED FOR HEAT-EVOKED ACTIVATION OF TRPA1. **Erkin Kurganov**, Shigeru Saito, Claire T. Saito, Makoto Tominaga
- 561-Pos BOARD B326**
OLIGOMERIC AND THERMAL STABILITY OF TRPA1 COILED-COIL DOMAIN BY POLYPHOSPHATES. **Gilbert Q. Martinez**, Luke D. Cody, Sharona E. Gordon
- 562-Pos BOARD B327**
TOWARD ELUCIDATING THE HEAT ACTIVATION MECHANISM OF THE TRPV1 CHANNEL GATING BY MOLECULAR DYNAMICS SIMULATION. Han Wen, Feng Qin, **Wenjun Zheng**
- 563-Pos BOARD B328**
THE EMERGING ROLE OF HUMAN TRPV1 S1 S4 SENSING DOMAIN IN CHANNEL GATING. **Minjoo Kim**, Nicholas Sisco, Jacob Hilton, Wade Van Horn
- 564-Pos BOARD B329**
INACTIVATION IN TRPV1 ION CHANNELS. **Leon D. Islas**, Ana Sanchez-Moreno, Gisela Rangel-Yescas, Ernesto Ladron de Guevara, Tamara Rosenbaum
- 565-Pos BOARD B330**
KINETIC ANALYSIS OF VANILLOID-INDUCED ACTIVATION IN TRPV1 CHANNEL. **Simon Vu**, Bo Hyun Lee, Jie Zheng
- 566-Pos BOARD B331 EDUCATION TRAVEL AWARDEE**
RATIONAL DESIGN AND VALIDATION OF A VANILLOID-SENSITIVE TRPV2 ION CHANNEL. **Fan Yang**, Simon Vu, Vladimir Yarov-Yarovoy, Jie Zheng
- 567-Pos BOARD B332**
LOCALIZATION OF THE TEMPERATURE SENSORS TO THE PORE DOMAIN OF THE TRPV1 CHANNEL. **Feng Zhang**, Sonya Hanson, Andres Andres Jara-Oseguera¹, Kenton Swartz
- 568-Pos BOARD B333**
TRANSFER OF TRPV1 SODIUM BINDING SITE INTO TRPV2. **Katherine E. Huffer**, Andrés Jara-Oseguera, Kenton J. Swartz
- 569-Pos BOARD B334**
INVESTIGATING THE PUTATIVE ACTIVATION GATE IN THE SELECTIVITY FILTER OF THE TRPV1 CHANNEL. **Andres Jara-Oseguera**, Kenton J. Swartz
- 570-Pos BOARD B335**
THE MECHANISM OF REGULATION OF TRPV6 CHANNELS BY $PI(4,5)P_2$. Marina Kasimova, Aysenur Yazici, Chike Cao, Phanindra Velisetty, Vincenzo Carnevale, **Tibor Rohacs**
- 571-Pos BOARD B336**
THE ROLE OF THE SENSING DOMAIN (S1-S4) IN TRPM8 TEMPERATURE AND MENTHOL DEPENDENT GATING. **Parthasarathi Rath**

Skeletal Muscle Mechanics, Structure, and Regulation (Boards B337–B354)

- 572-Pos BOARD B337**
MODULATION OF FAST TRANSIENTS BY COMPLIANCE OF CROSSBRIDGES AND MYOFILAMENTS. **Srboljub M. Mijailovich**, Djordje Nedic, Boban Stojanovic, Thomas C. Irving, Michael A. Geeves
- 573-Pos BOARD B338**
INCREASED NON-UNIFORMITY IN *IN VIVO* SARCOMERE LENGTH DURING A TETANIC CONTRACTION. **Eng Kuan Moo**, Timothy R. Leonard, Walter Herzog

- 574-Pos BOARD B339**
MYOFIBRILLAR REGULATORY MECHANISMS OF STRETCH ACTIVATION IN MAMMALIAN STRIATED MUSCLE. **Joel C. Robinett**, Laurin M. Hanft, Kerry S. McDonald
- 575-Pos BOARD B340**
EFFECT OF CALCIUM ON MYOSIN BINDING TO A REGULATED THIN FILAMENT FROM SINGLE MOLECULE TO ENSEMBLE. Thomas Longyear, **Sam Walcott**, Edward P. Debold
- 576-Pos BOARD B341**
COORDINATED VARIATIONS IN MYOSIN LIGHT CHAIN AND TROPONIN T ISOFORMS AND IN MAXIMAL SHORTENING VELOCITY IN HUMAN SLOW SKELETAL MUSCLE FIBERS. **Peter J. Reiser**
- 577-Pos BOARD B342**
COMPUTATIONAL SIMULATIONS OF LOAD-DEPENDENT MYOSIN KINETICS DURING MUSCLE SHORTENING AND LENGTHENING. **Axel J. Fenwick**, Bertrand C.W. Tanner
- 578-Pos BOARD B343**
CLEAVAGE OF SKELETAL MUSCLE MYOSIN LOOPS 1 AND 2 LEADS TO A DECREASED FUNCTION. **Yu-Shu Cheng**, Oleg Matusovskiy, Dilson Rassier
- 579-Pos BOARD B344**
FORCE AND POWER OF A SYNTHETIC MYOSIN II-BASED MACHINE. **Pasquale Bianco**, Irene Pertici, Luca Melli, Giulia Falorsi, Danut-Adrian Cojoc, Tamás Bozó, Miklos Kellermayer, Vincenzo Lombardi
- 580-Pos BOARD B345**
DISSECTING ACTOMYOSIN MECHANOCHEMISTRY USING BLEBBISTATIN AS A PHARMACOLOGICAL TOOL. **Mohammad A. Rahman**, Dilson Rassier, Alf Månsson
- 581-Pos BOARD B346**
DEVELOPMENT AND PHENOTYPE STUDIES OF A SLOW SKELETAL TROPONIN T E180 NONSENSE MUTATION KNOCK-IN MOUSE LINE. **Han-Zhong Feng**, J.-P. Jin
- 582-Pos BOARD B347**
SKELETAL MYOSIN-BINDING PROTEIN C MODULATES ACTOMYOSIN CONTRACTILITY IN AN ISOFORM-DEPENDENT MANNER. **Amy Li**, Shane Nelson, Kyoungwhan Lee, Samantha Previs, Karen Brack, Michael Previs, Suresh Govindan, Sakthivel Sadayappan, Roger Craig, David Warshaw
- 583-Pos BOARD B348**
EXPRESSION OF MYOSIN STORAGE MYOPATHY MUTATIONS IN *DROSOPHILA* DISRUPTS MUSCLE FUNCTION, MYOFIBRILLAR STRUCTURE AND CAUSES DEFECTS IN THICK FILAMENT ASSEMBLY. **Meera C. Viswanathan**, Rick Tham, William A. Kronert, William Schmidt, Floyd Sarsoza, Adrianna S. Trujillo, Sanford I. Bernstein, Anthony Cammarato
- 584-Pos BOARD B349**
A SIMPLIFIED FLEXIBLE CHAIN MODEL OF CALCIUM REGULATED MYOSIN-ACTIN INTERACTION. **Leonard P. Heinz**, Rainer H. A. Fink
- 585-Pos BOARD B350**
RECONSTRUCTION OF FUNCTIONAL INSECT FLIGHT MUSCLE FIBERS WITH RABBIT SKELETAL MUSCLE ACTIN. **Hiroyuki Iwamoto**
- 586-Pos BOARD B351**
THE SKELETAL MUSCLE MOLECULAR CLOCK REGULATES TITIN ISOFORM EXPRESSION. **Lance A. Riley**, Xiping Zhang, Karyn A. Esser
- 587-Pos BOARD B352**
CALCIUM-INDUCED SR CALCIUM LEAK IN DYSFERLIN-NULLED MURINE MUSCLE FIBERS. **Valeriy Lukyanenko**, Joaquin Muriel, Robert J. Bloch

588-Pos BOARD B353
MG29 INTERACTS WITH BIN1 FOR MAINTAINING T-TUBULE STRUCTURE IN SKELETAL MUSCLE PHYSIOLOGY AND REGENERATION. **Xinyu Zhou**, Kristyn Gumpfer, Xinxin Wang, Junwei Wu, Tao Tan, Miyuki Nishi, Hiroshi Takeshima, Jianjie Ma, Hua Zhu

589-Pos BOARD B354
PHOSPHORYLATION OF MYOSIN INCREASES THE ATPASE ACTIVITY OF RELAXED SKELETAL MUSCLE FIBERS. Nariman Naber, **Roger Cooke**

Cardiac Muscle Mechanics and Structure I (Boards B355–B369)

590-Pos BOARD B355
IMPACT OF PARA-NITROBLEBBISTATIN ON HUMAN BETA-CARDIAC MYOSIN AT THE MOLECULAR AND TISSUE LEVELS. Wanjian Tang, Cheavar Blair, Kenneth S. Campbell, **Christopher M. Yengo**

591-Pos BOARD B356
MODULATION OF CARDIAC MYOSIN BY A SMALL MOLECULE AGENT THAT TARGETS THE REGULATORY LIGHT CHAIN. **Anu R. Anto**, Raja Kawas, Robert Anderson, Marcus Henze, Hector Rodriguez, Danielle Aubele, Jacques Mauger

592-Pos BOARD B357
CARDIAC MYOSIN STRUCTURAL KINETICS MODULATED BY SMALL MOLECULES. **John A. Rohde**, Hyun Cho, Lien Phung, David D. Thomas, Joseph M. Muretta

593-Pos BOARD B358
FORCE-DEPENDENT RECRUITMENT OF CROSS-BRIDGES FROM THE MYOSIN OFF-STATE CAN CONTRIBUTE TO LENGTH-DEPENDENT ACTIVATION. **Kenneth S. Campbell**, Paul Janssen, Stuart G. Campbell

594-Pos BOARD B359
DIFFERENCES IN ACTOMYOSIN FUNCTION IN THE LEFT AND RIGHT VENTRICLES OF HUMAN HEARTS. **Sebastian Requena**

595-Pos BOARD B360
THE FRANK-STARLING MECHANISM IS ATTENUATED BY A DILATED CARDIOMYOPATHY-ASSOCIATED TROPOMYOSIN MUTATION. **Joseph D. Powers**, Farid Moussavi-Harami, Maria Razumova, Jil Tardiff, Michael Regnier

596-Pos BOARD B361
CARDIOMYOPATHY MUTATIONS IN THE CONVERTER DOMAIN OF HUMAN BETA-CARDIAC MYOSIN IMPAIRS MECHANOCHEMISTRY IN THE PRESENCE AND ABSENCE OF LOAD. **Wanjian Tang**, Shane D. Walton, William C. Unrath, Christopher M. Yengo

597-Pos BOARD B362
MAXIMAL FORCE INCREASES AT PHYSIOLOGICAL TEMPERATURE IN MYOCARDIAL STRIPS FROM NON-FAILING AND FAILING HUMAN HEARTS. Peter O. Awinda, Cheavar A. Blair, Maya E. Guglin, Kenneth S. Campbell, **Bertrand C.W. Tanner**

598-Pos BOARD B363
STRUCTURE AND NANOMANIPULATION OF THE TITIN M-LINE COMPLEX. **Zsolt Martonfalvi**, Dominik Sziklai, Marton Kovacs, Zsombor Papp, Miklos S. Kellermayer

599-Pos BOARD B364
PRE-ACTIVATION OF CARDIOMYOCYTES DETERMINES SPEED OF CONTRACTION: ROLE OF TITIN. **Michiel Helmes**, Aref Najafi, Martijn van der Locht, Maike Schuldt, Ilse AE Bollen, Max Goebel, Coen Ottenheijm, Jolanda van der Velden, Diederik WD Kuster

600-Pos BOARD B365
A NOVEL APPROACH TO IDENTIFY THE ROLE OF SINGLE MOLECULE TITIN MECHANICS IN HUMAN HEART FAILURE. **Mei-pian Chen**, Nancy S. Saad, Benjamin D. Canan, Ahmet Kilic, Peter J. Mohler, Paul M.L. Janssen

601-Pos BOARD B366
MODELING AND EXPERIMENT TO DETERMINE THE ROLE OF PASSIVE STIFFNESS ON MECHANICAL (STRAIN RATE) CONTROL OF RELAXATION. **Charles S. Chung**

602-Pos BOARD B367
DIRECT OBSERVATION OF STRAIN TRANSMISSION THROUGH THE MICROTUBULE NETWORK OF CARDIOMYOCYTES. **Matthew A. Caporizzo**, Brandon Kao, Patrick Robison, Alexey I. Bogush, Benjamin L. Prosser

603-Pos BOARD B368
NOVEL ROLES FOR OBSCURIN PROTEINS IN CARDIAC MUSCLE. **Patrick F. Desmond**, Stephanie Myers, Anush Velmurugan, Matthew Klos, Yusu Gu, Nancy Dalton, Eric Devaney, Kirk Peterson, Ju Chen, Stephan Lange

604-Pos BOARD B369
DIFFUSION IN THE TRANSVERSE-AXIAL TUBULE SYSTEM OF CARDIAC MYOCYTES. **Cherrie Ht Kong**, Eva A. Rog-Zielinska, Clive H. Orchard, Peter Kohl, Mark B. Cannell

Cell Mechanics, Mechanosensing, and Motility I (Boards B370–B391)

605-Pos BOARD B370
FROM ELASTICITY TO INELASTICITY IN CANCER CELL MECHANICS: A LOSS OF SCALE INVARIANCE. **Francoise Argoul**

606-Pos BOARD B371
MIGRATION BEHAVIOR OF NORMAL AND METASTATIC HUMAN MAMMARY CELLS. **Josiah Low**, Keith Bonin, Hyunsu Lee, Amanda Smelser, Martin Guthold

607-Pos BOARD B372
ADHESION-CONTROLLED PROLIFERATION REVEALING ANTI-CANCER DRUG RESISTANCE OF BREAST CANCER CELLS. **Soyeun Park**

608-Pos BOARD B373
DIVISION INDUCED DYNAMICS IN NON-INVASIVE AND INVASIVE BREAST CANCER. **Ann-Katrine Vranso West**, Lena Wullkopf, Amalie Christensen, Natascha Leijnse, Jens Magelund Tarp, Joachim Mathiesen, Janine Terra Erler, Lene Broeng Oddershede

609-Pos BOARD B374
INHIBITION OF A DNA REPAIR KINASE ATM LEADS TO CELL DEATH IN 3D MIGRATION INDEPENDENT OF DNA DAMAGE. **Yuntao Xia**, Jerome Irianto, Charlotte Pfeifer, Roger Greenberg, Dennis Discher

610-Pos BOARD B375
GENOMIC VARIATION IN AN OSTEOSARCOMA CELL LINE CAUSED BY PORE MIGRATION. **Jerome Irianto**, Yuntao Xia, Charlotte R. Pfeifer, Avathamsa Athirasala, Jiazheng Ji, Cory A. Alvey, Manu Tewari, Rachel R. Bennett, Shane M. Harding, Andrea J. Liu, Roger A. Greenberg, Dennis E. Discher

611-Pos BOARD B376
DIFFUSIVE BEHAVIOR OF MISMATCH REPAIR PROTEIN MSH2 IN CELLS AT DIFFERENT STAGES OF CANCER. **Keith D. Bonin**, Justin Sigley, John Jarzen, Karin Scarpinato, Martin Guthold, Tracey Pu, Daniel Nelli, Josiah Low

612-Pos BOARD B377
CHEMOTHERAPY IMPEDES *IN VITRO* MICROCIRCULATION AND PROMOTES MIGRATION OF LEUKEMIC CELLS WITH IMPACT ON METASTASIS. **Sruti V. Prathivadhi-Bhayankaram**, Jianhao Ning, Michael Mimlitz, Carolyn Taylor, Erin Gross, Michael Nichols, Jochen Guck, Andrew E. Ekpenyong

- 613-Pos BOARD B378**
THE HERG1/BETA1 INTERACTION COMPROMISES THE MECHANO-RECIPROCIITY OF PANCREATIC CANCER. **Stefano Coppola**, Annarosa Arcangeli, Thomas Schmidt
- 614-Pos BOARD B379**
MECHANICAL PROPERTIES OF NORMAL BREAST CELLS AND METASTATIC CANCER CELLS IN CO-CULTURE. **Hyunsu Lee**, Amanda Smelser, Josiah Low, Martin Guthold, Keith Bonin
- 615-Pos BOARD B380**
KAPPA-ACTIN ALTERS HEPATOCELLULAR CARCINOMA PHYSIOLOGY IN CIRRHOTIC MICROENVIRONMENT. **Chi-Shuo Chen**, Cheng-Yi Lin, Chi-Hung Ho, Wei-Chi Wu
- 616-Pos BOARD B381**
IS SHAPE OF CANCER CELL CORRELATED WITH ITS INVASIVENESS? **Elaheh Alizadeh**, Samantha M. Lyons, Jordan M. Castle, Jacqueline Irene Foss, Ashok Prasad
- 617-Pos BOARD B382**
STABILITY ON THE EDGE: PROBING THE BIOPHYSICAL MECHANISMS OF POLARITY MAINTENANCE AT THE LEADING EDGE OF MOTILE NEUTROPHIL-LIKE HL-60 CELLS. **Rikki M. Garner**, Elena Koslover, Julie Theriot
- 618-Pos BOARD B383 CID TRAVEL AWARDEE**
UNDERSTANDING THE MECHANICS OF NEUTROPHIL MIGRATION IN THREE- DIMENSIONAL EXTRACELLULAR MATRICES. **Joshua Francois**, Ruedi Meili, Juan Carlos del Alamo, Richard Firtel, Juan C. Lasheras
- 619-Pos BOARD B384 CPOW TRAVEL AWARDEE**
NOVEL MECHANISM FOR DRIVING AMOEBOID-LIKE MOTILITY OF HUMAN NEUTROPHILS UNDER AN ELECTRIC FIELD, BASED ON INTRACELLULAR PROTON CURRENTS AND CYTOPLASM STREAMING. **Hagit Peretz Soroka**, Reuven Tirosh, Murray Alexander, Jolly Hipolito, Francis Lin
- 620-Pos BOARD B385 EDUCATION TRAVEL AWARDEE**
MACROPHAGES ARE SENSITIVE TO SUBSTRATE ELASTICITY DURING PHAGOCYTOSIS. **Wolfgang Gross**, Franziska Zecherle, Kathrin Weidner-Hertrampf, Holger Kress
- 621-Pos BOARD B386**
INVESTIGATING ACTIN MECHANICS DURING PHAGOCYTTIC UPTAKE AND TRANSPORT. **Konrad Berghoff**, Steve Keller, Holger Kress
- 622-Pos BOARD B387**
B CELL ANTIGEN EXTRACTION IS REGULATED BY PHYSICAL PROPERTIES OF ANTIGEN PRESENTING CELLS. **Katelyn M. Spillane**, Pavel Tolar
- 623-Pos BOARD B388**
REVEALING THE MECHANICAL BASIS OF T CELL SIGNALING. **Khalid Salaita**
- 624-Pos BOARD B389**
MECHANICS OF BLOOD CELLS WITH MARGINAL BAND : COMPETITION BETWEEN CORTICAL TENSION AND RIGIDITY. **Serge A. Dmitrieff**, Adolfo Alsina, Mathur Aastha, Nédélec François
- 625-Pos BOARD B390**
MULTISCALE MODELING OF RED BLOOD CELLS SQUEEZING THROUGH SUBMICRON SLITS. **Huijie Lu**, Zhangli N. Peng
- 626-Pos BOARD B391**
ROLLING ADHESION OF MALARIA-INFECTED RED BLOOD CELLS. **Anil Kumar Dasanna**

Transporters and Exchangers I (Boards B392 –B405)

- 627-Pos BOARD B392**
MARKOV STATE-BASED QUANTITATIVE KINETIC MODEL OF SODIUM RELEASE FROM THE DOPAMINE TRANSPORTER. **Asghar Razavi**, George Khelashvil, Harel Weinstein
- 628-Pos BOARD B393**
OLIGOMERIZATION OF HUMAN DOPAMINE TRANSPORTER (HDAT). **Kumaresan Jayaraman**, Harald H. Sitte, Thomas Stockner
- 629-Pos BOARD B394**
TWO MECHANISMS IN ONE FAMILY: PACKAGING OF GLUTAMATE INTO SYNAPTIC VESICLES AGAINST A PROTON GRADIENT, A TRANSPORTER DRIVEN BY MEMBRANE POTENTIAL, VERSUS A HOMOLOG DRIVEN DOWNHILL WITH PROTON GRADIENTS. **Robert M. Stroud**
- 630-Pos BOARD B395**
SUBSTRATE BINDING TO SEROTONIN TRANSPORTERS REDUCES MEMBRANE CAPACITANCE. **Verena Burtscher**, Matej Hotka, Walter Sandtner
- 631-Pos BOARD B396**
EXPLORING LIGAND-BINDING KINETICS IN THE S2 SITE OF MHST BY ATOMISTIC SIMULATIONS AND MARKOV MODELS. **Ara M. Abramyan**, Cathy Xue, Lei Shi
- 632-Pos BOARD B397**
COMPUTATIONAL INVESTIGATION OF THE SEROTONIN TRANSPORTER CONFORMATION AND RESET MECHANISM. **Emily M. Benner**, Jeffery D. Madura
- 633-Pos BOARD B398**
CHARACTERIZING OUTWARD- TO INWARD-FACING TRANSITION PATHWAY OF DOPAMINE TRANSPORTER. **Zhiyu Zhao**, Emad Tajkhorshid
- 634-Pos BOARD B399 EDUCATION TRAVEL AWARDEE**
STRUCTURAL INSIGHTS INTO SODIUM-DEPENDENT SUGAR TRANSPORTERS AND THEIR INHIBITION MECHANISM. **Paola Bisignano**, Chakrapani Kalyanaraman, Chiara Ghezzi, Ernest M. Wright, Jeff Abramson, Aviv Paz, Matthew P. Jacobson, Rosmarie Friemann, Michael Grabe
- 635-Pos BOARD B400**
UPTAKE DYNAMICS IN THE LACY MEMBRANE PROTEIN TRANSPORTER. Dari Kimanius, Stephen White, Erik Lindahl, Ronald Kaback, **Magnus Andersson**
- 636-Pos BOARD B401**
ELEVATOR-LIKE MECHANISM OF TRANSPORT IN THE EIIC GLUCOSE SUPERFAMILY OF TRANSPORTERS. **Zhenning Ren**, Yin Nian, Jumin Lee, Jason McCoy, Wonpil Im, Ming Zhou
- 637-Pos BOARD B402**
SUBSTRATE-INDUCED CONFORMATIONAL CHANGE IN LEUT. Yuan-Wei Zhang, Lucy R. Forrest, **Gary Rudnick**
- 638-Pos BOARD B403**
MEMBRANE REMODELING BY GLT_{PH} IN THE INWARD- AND OUTWARD-FACING CONFORMATIONS EXPLAINS LACK OF PROTOMER COOPERATIVITY. **Wenchang Zhou**, Claudio Anselmi, Horacio Poblete, Ali Karimi, Lucy Forrest, Jose Faraldo-Gomez
- 639-Pos BOARD B404**
PROTEIN-PROTEIN INTERACTION BETWEEN SODIUM-COUPLED MONOCARBOXYLATE TRANSPORTER 1 (SMCT1) AND PDZ DOMAIN-CONTAINING RING FINGER DOMAIN 3 (PDZRN3). **Yusuke Otsuka**

640-Pos BOARD B405

IT RUNS IN THE FAMILY: DETERMINING THE TRANSPORT MECHANISM OF SODIUM/DICARBOXYLATE SYMPORTER HNADC3. **Alissa J. Becerril**, Cristina Fenollar-Ferrer, Lucy R. Forrest, Joseph A. Mindell

Mitochondria in Cell Life and Death I (Boards B406–B420)

641-Pos BOARD B406

CYCLOPHILIN D ACETYLATION REGULATES CARDIAC MYOCYTE DIFFERENTIATION. **George A. Porter, Jr.**, Morgan L. Albert, Kathia R. Fantauzzi-Nieves, Gisela Beutner

642-Pos BOARD B407

THE ROLE OF MICU1 IN NEURONAL MITOCHONDRIAL CALCIUM HOMEOSTASIS AND FUNCTION. **Adam Bartok**, Melanie Paillard, Valentina Debatisti, David Weaver, Ashley Tyburski, Lianteng Zhi, Hui Zhang, Melanie Elliott, György Hajnóczky

643-Pos BOARD B408

IP₃ RECEPTOR ISOFORM DEPENDENCE OF THE ER-MITOCHONDRIAL CA²⁺-TRANSFER IN MAMMALIAN CELLS. **Mate Katona**, Kamil Alzayady, David I. Yule, György Hajnóczky

644-Pos BOARD B409

MITOCHONDRIAL CALCIUM UPTAKE AND MATRIX CALCIUM BUFFERING IN SKELETAL MUSCLE. **Valentina Debattisti**, György Csordas, Erin Seifert, György Hajnóczky

645-Pos BOARD B410

MITOCHONDRIAL CALCIUM FLUX CONTRIBUTES TO ARRHYTHMIA IN MOUSE HEART DURING ACUTE MYOCARDIAL INFARCTION. **An Xie**, Hong Liu, Anyu Zhou, Guangbin Shi, Samuel C. Dudley, Jr

646-Pos BOARD B411

REGULATION OF CARBON SUBSTRATE UTILIZATION BY CARDIAC MITOCHONDRIA. **Santosh K. Dasika**, Sunil M. Kandel, Daniel A. Beard

647-Pos BOARD B412

A THEORETICAL STUDY ON THE ROLES OF CA²⁺ IN THE ENERGY METABOLITE STABILITY DURING CARDIAC WORKLOAD TRANSITION. **Ayako Takeuchi**, Ryuta Saito, Yukiko Himeno, Satoshi Matsuoka

648-Pos BOARD B413

RECIPROCAL POLARIZATION OF THE MITOCHONDRIAL CA²⁺ UNIporter AND NA⁺-CA²⁺ EXCHANGER IN CARDIAC MUSCLE. **Sergio De la Fuente**, Shey-Shing Sheu, György Csordas

649-Pos BOARD B414

EFFECT OF ARSENIC ON INTRACELLULAR CALCIUM & REDOX HOMEOSTASIS. **Rafaela Bagur Quetglas**, Péter Várnai, György Csordás, György Hajnóczky

650-Pos BOARD B415

EFFECT OF RUTIN ON MITOCHONDRIAL RESPIRATION AND CELLULAR ENERGY STATUS. Jeong-Soo Park, **Icksoo Lee**

651-Pos BOARD B416

DETECTION OF A BITHIONOL SENSITIVE POTASSIUM CHANNEL IN CARDIAC MITOCHONDRIA ABSENT IN SLO2.1 KNOCKOUTS. **Charles O. Smith**

652-Pos BOARD B417

MITOCHONDRIAL RESPIRATION AND ROS EMISSION FROM B-OXIDATION IN THE HEART: AN EXPERIMENTAL COMPUTATIONAL STUDY. **Miguel A. Aon**, Steven J. Sollott, Sonia Cortassa

653-Pos BOARD B418

DETECTION OF REACTIVE OXYGEN SPECIES IN LIVE CELL MITOCHONDRIA. **Zhen Luo**, Jixiang Liu, Qin Zhao, Yunting Xi, Ruogu Peng, Jinfang Liao, Zhenjun Diwu

654-Pos BOARD B419

A STANDARDIZED METHOD TO QUANTIFY ER-MITOCHONDRIAL INTERFACES IN ELECTRON MICROGRAPHS. **David Weaver**, Adam Bartok, György Csordas, György Hajnóczky

655-Pos BOARD B420

CONTROL OF MITOCHONDRIAL STRUCTURE AND ANTIOXIDANT RESPONSE BY THE ATPase INHIBITORY FACTOR 1 DEFINE A NOVEL POTENTIAL ONCOGENIC MECHANISM. **Danilo Faccenda**, Junji Nakamura, Gurtej K. Dhoot, Mauro Piacentini, Masasuke Yoshida, Michelangelo Campanella

Emerging Techniques and Synthetic Biology (Boards B421–B428)

656-Pos BOARD B421

SITE SATURATION MUTANT VIRUSES EVOLVE NEUTRALIZING ANTIBODY RESISTANCE IN A MICROFLUIDIC CELL CULTURE SYSTEM. Jared D. Evans, Audrey E. Fischer, Susan Wu, Peter M. Thielen, Thomas S. Mehoke, Ashok Sivakumar, **Joshua T. Wolfe**

657-Pos BOARD B422

CHIRAL VORTEX DYNAMICS ON MEMBRANES IS AN INTRINSIC PROPERTY OF FTSZ DRIVEN BY GTP HYDROLYSIS. **Diego A Ramirez-Diaz**, Daniela Garcia-Soriano, Ana Raso, Mario Feingold, Germán Rivas, Petra Schwillie

658-Pos BOARD B423 EDUCATION TRAVEL AWARDEE

ENGINEERING OF CHIMERIC PROTEINS TO ENHANCE IMMUNOGENICITY FOR THE PRODUCTION OF HIGH-AFFINITY SPECIFIC MONOCLONAL ANTIBODIES. **Sienna Wong**, M. Moazzem Hossain, Rong Liu, J.-P. Jin

659-Pos BOARD B424

A MULTISCALAR FRAMEWORK DESCRIBES FLUORESCENCE AND FRET OF FLUCTUATING MOLECULAR SPECIES AND RESOLVES KINETIC NETWORKS. **Thomas-Otavio Peulen**, Oleg Opanasyuk, Suren Felekyan, Stanislav Kalinin, Hugo Sanabria, Claus A.M. Seidel

660-Pos BOARD B425

SUB-MICROSECOND-SCALE DYNAMICS IN THE TYPE-1 RYANODINE RECEPTOR OBSERVED WITH CMOS-INTEGRATED ELECTROPHYSIOLOGY. **Andreas J. W. Hartel**, Peiji Ong, Indra Schroeder, Oliver Clarke, Siddharth Shekar, Hunter M. Giese, Andrew R. Marks, Wayne A. Hendrickson, Ken L. Shepard

661-Pos BOARD B426

DROPLET INTERFACE BILAYERS AS A PLATFORM FOR A SPATIALLY SEGREGATED NANOREACTOR. **Maxwell P. Allen-Benton**

662-Pos BOARD B427

CELL LINE PHENOTYPIC ENRICHMENT BASED ON MIGRATION AND MORPHOLOGY. **Joannie Roy**, Loïc Binan, Javier Mazzaferri, Camille Lehuède, Sébastien Tabariès, Giuseppina Ursini-Siegel, Peter Siegel, Claudia Kleinman, Santiago Costantino

663-Pos BOARD B428

ZLOCK, A BROADLY APPLICABLE OPTOGENETIC METHOD, CONTROLS COFILIN IN LIVING CELLS. **Orrin J. Stone**, Neha Kaul, Hui Wang, Ved P. Sharma, Robert J. Eddy, John S. Condeelis, Klaus M. Hahn

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664-Pos BOARD B429

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665-Pos BOARD B430 INTERNATIONAL TRAVEL AWARDEE
STRESS-INDUCED DIFFERENTIAL REGULATION LEADS TO DECOUPLING OF THE ACTIVITY BETWEEN MPFC AND AMYGDALA. **Mohammed Mostafizur Rahman**, Sumantra Chattarji

666-Pos BOARD B431
TEMPERATURE SENSATION AND INTEGRATION IN THE *DROSOPHILA* CIRCADIAN CLOCK. **Chang Jiang**, Swathi Yadlapalli, Andrew Bahle, Pramod Reddy, Edgar Meyhofer, Orië Shafer

667-Pos BOARD B432
TRP CHANNEL FUNCTION IN IPSC-DERIVED SENSORY NEURONS. **Laura Vangeel**

668-Pos BOARD B433
EFFECT OF SPATIAL COMPLEXITY ON DOPAMINERGIC SIGNALING REVEALED FROM MULTISCALE SIMULATIONS. **Cihan Kaya**, Mary H. Cheng, Ethan R. Block, Alexander Sorokin, James R. Faeder, Ivet Bahar

669-Pos BOARD B434
SENSITIVITY AND ROBUSTNESS IN AN AXON GUIDANCE SIGNALING SYSTEM. **Brendan A. Bicknell**, Peter Dayan, Geoffrey J. Goodhill

670-Pos BOARD B435
MATHEMATICAL MODELING AND ANALYSES OF INTERSPIKE-INTERVALS OF SPONTANEOUS ACTIVITY IN AFFERENT NEURONS OF THE ZEBRAFISH LATERAL-LINE. **Sangmin Song**, Ji Ah Lee, Ilya Kiselev, Varun Iyengar, Josef G. Trapani, Nesity Tania

671-Pos BOARD B436
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672-Pos BOARD B437
ANALYZING AND MODELING THE DYSFUNCTION OF INHIBITORY NEURONS IN ALZHEIMER'S DISEASE. **Carlos M. Perez**, Ghanim Ullah, Jokubas Ziburkus

673-Pos BOARD B438
DENIED ACCESS OF IONS AND MOLECULES TO AXONS IN THE DEVELOPMENT OF ALZHEIMER'S DISEASE. **Wade Dauberman**, Samuel Breit, Shaohua Xu

674-Pos BOARD B439
BIODISTRIBUTION OF INSULIN-NANOGELS IN MOUSE: A PRELIMINARY STUDY FOR THE TREATMENT OF ALZHEIMER'S DISEASE. **Daniela Giacomazza**, Pasquale Picone, Laura Ditta, M. Antonietta Sabatino, Valeria Militello, P. Luigi San Biagio, Laura Cristaldi, Domenico Nuzzo, Antonella Amato, Flavia Mule', Clelia Dispenza, Marta Di Carlo

675-Pos BOARD B440
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676-Pos BOARD B441
ULTRASOUND-ENHANCED MOLECULAR THERAPY FOR AXON NEUROGENESIS. **Asis Lopez**, Damir Khismatullin

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677-Pos BOARD B442
ASYMMETRIC MEMBRANE MODELS FOR THE PM AND TGN OF YEAST, AN ALL-ATOM MOLECULAR DYNAMICS STUDY. **Viviana Monje-Galvan**, Jeffery B. Klauda

678-Pos BOARD B443
PI(4,5)P₂ BINDS TO PHOSPHOLIPASE C DELTA 1 IN A CHOLESTEROL CONCENTRATION DEPENDENT MANNER: PERSPECTIVE ON IMPLICATIONS TO PI(4,5)P₂-BINDING PROTEINS. **Sami Rissanen**, Lauri Salmela, Ilpo Vattulainen, Tomasz Róg

679-Pos BOARD B444
STRD MARTINI: SIMULATING QUASI-2D HYDRODYNAMICS WITH CHEMICALLY DETAILED LIPID MODELS. **Andrew Zgorski**, Edward Lyman

680-Pos BOARD B445
MOLECULAR VIEWS OF A EUKARYOTIC PLASMA MEMBRANE MODEL. **Karelia H. Delgado-Magnero**, Gurpreet Singh, Valentina Corradi, D. Peter Tieleman

681-Pos BOARD B446 CID TRAVEL AWARDEE
BEYOND LATERAL PRESSURE PROFILES: LOCAL STRESS AND THE TRACTION VECTOR IN MD SIMULATIONS. **Juan M. Vanegas**, Alejandro Torres-Sanchez, Marino Arroyo

682-Pos BOARD B447
MOLECULAR DYNAMICS STUDY ON LIPID WRAPPED CARBON NANOTUBE AS AN ARTIFICIAL MEMBRANE CHANNEL. **Moon-Ki Choi**, Hyunki Kim, Youngjin Kim, Kyunghoon Kim, Moonki Kim

683-Pos BOARD B448
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684-Pos BOARD B449
MOLECULAR BASIS OF GLUT4 IN GLUCOSE TRANSPORT: ATOMISTIC MOLECULAR DYNAMICS STUDY. **Chetan S. Poojari**, Job Roodhuizen, Fabio Lolicato, Tomasz Róg, Ilpo Vattulainen

685-Pos BOARD B450
IONS IN ACTION - STUDYING ION CHANNELS BY COMPUTATIONAL ELECTROPHYSIOLOGY IN GROMACS. **Carsten Kutzner**, R. Thomas Ullmann, Bert L. de Groot, Ulrich Zachariae, Helmut Grubmueller

686-Pos BOARD B451
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687-Pos BOARD B452
CHARACTERIZATION OF APOLIPOPROTEIN MIMETIC PEPTIDES ON NASCENT HIGH DENSITY LIPOPROTEINS. **Mohsen Pourmousa**, Rafique Islam, Denis Sviridov, Scott Gordon, B. Scott Perrin Jr., John Stonik, Alan T. Remaley, Richard W. Pastor

688-Pos BOARD B453
COMPUTATIONAL AND EXPERIMENTAL STUDIES OF GOLD NANOPARTICLE TEMPLATED HDL-LIKE NANOPARTICLES FOR CHOLESTEROL METABOLISM. **Cheng-Tsung Lai**, Wangqiang Sun, Rohun U. Palekar, C. Shad Thaxton, George C. Schatz

689-Pos BOARD B454
HIGH-THROUGHPUT THERMODYNAMICS OF DRUG-MEMBRANE INTERACTIONS FROM MULTISCALE SIMULATIONS. **Roberto Menichetti**, Kiran Kanekal, Kurt Kremer, **Tristan Bureau**

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690-Pos BOARD B455
COMBINING EXPANSION MICROSCOPY AND STED NANOSCOPY FOR THE STUDY OF CELLULAR ORGANIZATION. **Isotta Cainero**, Michele Oneto, Luca Pesce, Giulia Zanini, Luca Lanzanò, Alberto Diaspro, Paolo Bianchini

691-Pos BOARD B456
QUANTITATIVE MICROSTRUCTURE ANALYSIS OF CASEIN NETWORK DYNAMICS USING STED MICROSCOPY WITH RELATION TO MACROSCOPIC GEL PROPERTIES. **Zachary J. Glover**, Adam Cohen Simonsen, Jonathan Brewer, Jonathan Brewer

692-Pos BOARD B457

A NOVEL STED MICROSCOPE WITH NANOMETER AXIAL SECTIONING. **Iván Coto Hernández**, Siddharth Sivankutty, Nicolas Bourg, Sandrine Lécart, Guillaume Dupuis, Sandrine Lévêque-Fort1

693-Pos BOARD B458

WELL-CHARACTERISED TIME-GATED DETECTOR PHOTON FLUX RESOLVES THE ULTRASTRUCTURE OF DNA-DAMAGE NUCLEAR BODIES WITH G-STED NANOSCOPY. Kok-Lung Chan, Esther Garcia Gonzalez, Sergi Padilla-Parra, **Jorge Bernardino de la Serna**

694-Pos BOARD B459

LOCALIZATION MICROSCOPY THEORY AND PRACTICE FOR DATA ANALYSIS ON SPARSELY LABELED SAMPLES. **Brian T. DeVree**, Sarah L. Veatch

695-Pos BOARD B460

SUPER-RESOLUTION IMAGING OF ORGANELLE MEMBRANE CONTACT SITES VIA FAR-RED HYPERSPECTRAL LOCALIZATION MICROSCOPY. **Adriano Vissa**, Maximiliano Giuliani, Peter K. Kim, Christopher M. Yip

696-Pos BOARD B461

TOWARDS QUANTITATIVE HIGH-THROUGHPUT 3D LOCALIZATION MICROSCOPY. **Joran Deschamps**, Markus Mund, Jonas Ries

697-Pos BOARD B462

VERSATILE SUPER-RESOLUTION CALIBRATION STANDARD FOR QUANTIFYING PROTEIN COPY NUMBER. **Francesca Cella Zancchi**, Carlo Manzo, Angel Sandoval Alvarez, Nathan D. Derr, Maria Garcia Parajo, Melike Lakadamyali

698-Pos BOARD B463

HETEROGENEITY OF THE NUCLEAR ENVIRONMENT INVESTIGATED BY SUPERRESOLUTION MICROSCOPY AND FLUORESCENCE CORRELATION SPECTROSCOPY. **Luca Lanzano**, Melody Di Bona, Lorenzo Scipioni, Maria J. Sarmento, Enrico Gratton, Giuseppe Vicidomini, Alberto Diaspro

699-Pos BOARD B464

ANALYSIS OF FIBROUS SPATIAL POINT PATTERNS FROM SINGLE-MOLECULE SUPER-RESOLUTION MICROSCOPY DATA. **Ruby Peters**, Dylan Owen, Juliette Griffie

700-Pos BOARD B465

EXPANDING THE SPECTRAL RESOLUTION OF SINGLE-MOLECULE LOCALIZATION MICROSCOPY WITH BODIPY-BASED PHOTOSWITCHABLE FLUOROPHORES. **Amy M. Bittel**, Ashley Davis, Tao Huang, Xiaolin Nan, Summer L. Gibbs

701-Pos BOARD B466

DNA-PAINT IMAGING OF DNA-ORIGAMI RINGS MIMICKING BIOLOGICALLY RELEVANT STRUCTURES. **Arunima Chaudhuri**, Yang Yang, Kenny Kwok Hin Chung, Zhao Zhang, Fredric Pincet, Shyam Krishnakumar, Chenxiang Lin, James E Rothman, David Baddeley

702-Pos BOARD B467

CHARACTERIZATION OF PS-CFP2 FOR RELIABLE SUPER-RESOLUTION MICROSCOPY. **Benedikt Rossboth**, Rene Platzer, Johannes Huppa, Gerhard Schütz, Mario Brameshuber

703-Pos BOARD B468

A QUANTITATIVE PLATFORM FOR SUPER-RESOLUTION MICROSCOPY IMAGING. Ottavia Golfetto, Devin L. Wakefield, Elidedonna E. Cacao, Kendra N. Avery, Raphael Jorand, Steven J. Tobin, Ronald M. Clinton, Jennifer Gutierrez, Yuelong Ma, Daniel Ganjali, Athanasios Sideris, David A. Horne, John C. Williams, **Tijana Jovanovic-Talisman**

704-Pos BOARD B469

ESTIMATING THE PSF FROM SINGLE MOLECULE DATA. **Kenny KH Chung**, David Baddeley

705-Pos BOARD B470

ROBUST NONPARAMETRIC DESCRIPTORS FOR CLUSTERING QUANTIFICATION IN SINGLE-MOLECULE LOCALIZATION MICROSCOPY. Shenghang Jiang, Sai Divya Challapalli, **Yong Wang**

706-Pos BOARD B471

PERTURBATION UPON OBSERVATION: USER DEFINED, NANOSCALE LABELING OF SUPER-RESOLUTION IMAGES. **Ninning Liu**, Mingjie Dai, Peng Yin

707-Pos BOARD B472

METHODS TO ELIMINATE LOCALIZATION BIAS AND REDUCE LOCALIZATION ERROR IN LOCALIZATION MICROSCOPY DATASETS WITH NON-UNIFORM BACKGROUND FLUORESCENCE. **Thomas Shaw**, Sarah L. Veatch

708-Pos BOARD B473 EDUCATION TRAVEL AWARDEE

THE CHARACTERIZATION OF CELLULOSE NANOSTRUCTURE USING SUPER-RESOLUTION FLUORESCENCE MICROSCOPY. **Mouhanad Babi**

709-Pos BOARD B474

QUANTITATIVE ANALYSIS OF MEMBRANE PROTEIN CLUSTERING FROM LIVE-CELL, SINGLE-MOLECULE SUPER-RESOLUTION MICROSCOPY DATA. **Juliette Griffie**, Dylan Owen, Patrick Rubin-Delanchy, Garth Burn

710-Pos BOARD B475

SELECTIVE PLANE ILLUMINATION MICROSCOPY IN THE CONVENTIONAL INVERTED MICROSCOPE GEOMETRY. **Per Niklas Hedde**, Leonel Malacrida, Enrico Gratton

711-Pos BOARD B476

LIGHT-SHEET MICROSCOPY USING ATTENUATION-COMPENSATING AIRY BEAM. **Cong Liu**, Yen-Liang Liu, Tim Yeh

712-Pos BOARD B477

LIGHT SHEET MICROSCOPY BY DUAL LINE SCANNING OF TWO BESSEL BEAMS. **James Werner**, Pengfei Zhang, Elizabeth Phipps, Peter Goodwin

713-Pos BOARD B478

SINGLE MOLECULE FLUORESCENCE APPROACHES TO PLASMA MEMBRANE BIOPHYSICS. **Philip R. Nicovich**

Optical Microscopy and Super-Resolution Imaging: Applications to Cellular Molecules (Boards B479–B501)

714-Pos BOARD B479

A FAST AND RELIABLE ONLINE-SYSTEM FOR PLATELET VIABILITY STUDIES. **Michael D. Brodesser**, Sandra Mayr, Fabian Hauser, Johannes Breuss, Michael Aspetsberger, Andreas Hangler, Lukas Bindreiter, Daniela Borgmann, Stephan Winkler, Christian Gabriel, Eleni Priglinger, Jaroslaw Jacak, Birgit Plochberger

715-Pos BOARD B480

VISUALIZING SIGNALING COMPLEXES IN FILAMENTOUS FUNGI. **Alexander WAF Reismann**, Lea Atanasova, Alexander Lichius, Sabine G. Gruber, Susanne Zeilinger, Gerhard J. Schuetz

716-Pos BOARD B481

FLIM-FRET IMAGING OF PLITIDEPSIN-EEF1A2 COMPLEXES IN LIVE CANCER CELLS USING THE PHASOR APPROACH. Carolina Garcia, Alejandro Losada, Miguel A. Sacristan, Jose M. Molina-Guijarro, Juan F. Martinez-Leal, Carlos M. Galmarini, **M Pilar Lillo**

717-Pos BOARD B482

IMAGE CORRELATION SPECTROSCOPY BASED ASSAY TO INVESTIGATE G-PROTEIN COUPLED RECEPTORS. **Nader Danaf**

- 718-Pos BOARD B483**
SINGLE MOLECULE IMAGING REVEALS DYSFERLIN-MEDIATED RECRUITMENT OF PHOSPHATIDYLSERINE IN CELL MEMBRANE REPAIR. Lu Zhou, Volker Middel, Uwe Strähle, **G. Ulrich Nienhaus**
- 719-Pos BOARD B484**
ROTATION OF SINGLE CELL SURFACE MOLECULES EXAMINED VIA POLARIZED FCS MEASUREMENTS USING QUANTUM DOT PROBES. Domgmei Zhang, Peter W. Winter, Deborah A. Roess, **B. George Barisas**
- 720-Pos BOARD B485**
SUPER-RESOLUTION IMAGING REVEALS PROTEIN-TEMPLATED PATTERNS FOR BIOSILICA FORMATION. **Philip Gröger**, Nicole Poulsen, Jennifer Klemm, Nils Kröger, Michael Schlierf
- 721-Pos BOARD B486**
QUANTITATIVE SUPER-RESOLUTION MICROSCOPY DETECTS HER2 REORGANIZATION FOLLOWING MEDITOPE-ANTIBODY TREATMENT. **Devin Wakefield**, Raphael Jorand, Cindy Zer, John Williams, Tijana Jovanovic-Talisman
- 722-Pos BOARD B487 INTERNATIONAL TRAVEL AWARDEE**
3D ORBITAL TRACKING OF SINGLE GOLD NANOPARTICLES: A NEW APPROACH TO STUDY VESICLE TRAFFICKING IN CHROMAFFIN CELLS. **Manuela Gabriel**, Jose Moya-Diaz, Fernando D. Marengo, Laura C. Estrada
- 723-Pos BOARD B488**
SUPER-RESOLUTION IMAGING OF DNA REPLISOME DYNAMICS IN LIVE *BACILLUS SUBTILIS*. **Yilai Li**, Jeremy W. Schroeder, Yi Liao, Lyle A. Simmons, Julie S. Biteen
- 724-Pos BOARD B489**
SINGLE-MOLECULE TRACKING REVEALS ALTERED DYNAMICS OF A TRANSCRIPTION REGULATOR EXPRESSED AT SIMILAR LEVELS FROM DIFFERENT GENE EXPRESSION SYSTEMS. **Chanrith Siv**, David J. Rowland, Victor J. DiRita, Julie S. Biteen
- 725-Pos BOARD B490**
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- 726-Pos BOARD B491**
ASSOCIATION OF ENDOPHILIN B1 WITH CYTOPLASMIC VESICLES. Jinhui Li, Barbara Barylko, Joachim D. Mueller, Joseph Albanesi, **Yan Chen**
- 727-Pos BOARD B492**
CHARACTERIZATION OF IRE1 INTERACTIONS AND DYNAMICS WITH QUANTITATIVE SUPER-RESOLUTION MICROSCOPY. **Elizabeth M. Smith**, Ragnar Stefansson, Maria Paz Ramirez Lopez, Elias M. Puchner
- 728-Pos BOARD B493**
DIFFUSION OF DNA-BINDING SPECIES IN THE NUCLEUS: A TRANSIENT ANOMALOUS SUBDIFFUSION MODEL. **Michael J. Saxton**
- 729-Pos BOARD B494**
SPATIAL DYNAMICS OF SIRT1 RELATES TO METABOLIC TRANSITIONS IN THE CELL NUCLEUS. **Suman Ranjit**, Lorena Aguilar-Arnal, Chiara Stringari, Paolo Sassone-Corsi, Enrico Gratton
- 730-Pos BOARD B495**
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- 731-Pos BOARD B496**
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732-Pos BOARD B497
MOLECULAR TATTOO: SUBCELLULAR CONFINEMENT OF DRUG EFFECTS IN VIVO WITH TWO-PHOTON MICROSCOPY. Boglárka Várkuti, Miklós Képiró, Anna Á. Rauscher, László Végner, Áron Zsigmond, Vanda Imrich, Szilvia Ráti, Ádám I. Horváth, Máté Varga, Miklós S. Kellermayer, **Malnasi-Csizmadia Andras**

733-Pos BOARD B498
HUMAN SUBCUTANEOUS ADIPOSE TISSUE ADIPOCYTES DEMONSTRATE TWO PHYSIOLOGICAL STATES: INSULIN RESPONSIVE OR INSULIN REFRACTORY. **Chad D. McCormick**, Hang Waters, Ludmila Bezrukov, Brad Busse, Andrew Demidowich, Paul S. Blank, Jack A. Yanovski, Joshua J. Zimmerberg

734-Pos BOARD B499
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735-Pos BOARD B500
AN IMPROVED SINGLE MOLECULE IMAGING VIVO METHOD FOR IN VIVO STOICHIOMETRIC AND FUNCTIONAL ANALYSIS OF PROTEIN COMPLEXES. **Warren R. Zipfel**, Avtar Singh, Maria Sirenko, Alexander Song, Paul Kammermeier

736-Pos BOARD B501
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737-Pos BOARD B502
SINGLE-MOLECULE COUNTING APPLIED TO IMMUNOASSAYS. **Patrick J. Macdonald**, Qiaoqiao Ruan, Kerry M. Swift, Sergey Y. Tetin

738-Pos BOARD B503
COMPARING ANTIBODY-ANTIGEN BINDING IN SERUM VERSUS BUFFER WITH FLUORESCENCE CORRELATION SPECTROSCOPY. **David Ortiz**, Isabel Yannatos, Abhinav Nath

739-Pos BOARD B504 CID TRAVEL AWARDEE
IN VITRO BINDING OF 6S RNA MANGO TO RNA POLYMERASE BY TWO PHOTON FLUORESCENCE CROSS CORRELATION SPECTROSCOPY. S. Shyam Sundar Panchapakesan, Eric J. Hayden, Peter Unrau, **Matthew L. Ferguson**

740-Pos BOARD B505
SINGLE-MOLECULE FLUORESCENCE STUDY OF RNA RECOGNITION BY VIRAL RNAI SUPPRESSORS. Mohamed Fareh, Jasper van Lopik, **Iason Katechis**, Ronald van Rij, Chirlmin Joo

741-Pos BOARD B506
DUAL ROLE OF MUNC13 IN REGULATING SNARE ASSEMBLY FOR FAST NEUROTRANSMITTER RELEASE. **Ucheor Brandon Choi**

742-Pos BOARD B507
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743-Pos BOARD B508
ENGINEERING CLPXP FOR SINGLE-MOLECULE PROTEIN SEQUENCING. **Mike Filius**, Jetty van Ginkel, Chirlmin Joo

744-Pos BOARD B509
INVESTIGATING THE MECHANISM OF ULTRA-FAST ENERGY TRANSFER BETWEEN VENUS OLIGOMERS USING TIME-RESOLVED ANISOTROPY, FLUORESCENCE CORRELATION SPECTROSCOPY, AND PHOTON ANTI-BUNCHING. **Youngchan Kim**, Grace H. Taumoeolau, Tuan A. Nguyen, Henry L. Puhl, Paul S. Blank, Steven S. Vogel

745-Pos BOARD B510
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746-Pos BOARD B511
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747-Pos BOARD B512
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748-Pos BOARD B513
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749-Pos BOARD B514
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750-Pos BOARD B515
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751-Pos BOARD B516
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752-Pos BOARD B517
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753-Pos BOARD B518
IDENTIFYING PEPTIDE-PEPTIDE INTERACTIONS WITH LYSENIN NANOPORES. **Christopher A. Thomas**, Nisha Shrestha, Juliette Tinker, Devon Richtsmeier, Sheenah Bryant, Xinzhu Pu, Daniel Fologea

754-Pos BOARD B519
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755-Pos BOARD B520
SOLID STATE NANOPORE KIT FOR REAL-TIME ANALYSIS OF DNA AND OTHER ANALYTES. **Federico Thei**, Michele Rossi, James Yates, Marco Bennati

756-Pos BOARD B521
IONIC TRANSPORT PROPERTY UNDER AN EXTREMELY HIGH ELECTRICAL FIELD IN A THIN PORE. **Pinyao He**, Kun Li, Kabin Lin, Zhongwu Li, Haojie Yang, Yunfei Chen

757-Pos BOARD B522
DEFECT-GUIDED TRANSPORT OF BIOMACROMOLECULES. **Manish Shankla**, Aleksei Aksimentiev

758-Pos BOARD B523
ANOMALOUS IONIC CONDUCTANCE IN CARBON NANOTUBE NANOCHANNELS. **Steven F. Buchsbaum**, Shirui Guo, Eric Meshot, Preston Hinkle, Anh Pham, Zuzanna Siwy, Francesco Fornasiero

759-Pos BOARD B524
ROLE OF SOLID STATE NANOPORE SIZE AND CHARGE ON MOLECULAR TRANSPORT KINETICS. **Meni Wanunu**

760-Pos BOARD B525
STRUCTURAL CHARACTERIZATION OF VASCULAR ENDOTHELIAL GROWTH FACTOR BY SOLID-STATE NANOPORES. **Nitinun Varongchayakul**, Mark Grinstaff, Amit Meller

761-Pos BOARD B526
SOLID-STATE NANOPORE DETECTION OF HYDROPHOBIC PROTEINS. **Adam R. Hall**, Dhruva Jyoti Basu Roy

762-Pos BOARD B527
THE NANOMETRIC GOLDEN RATIO: THE RELATION BETWEEN GOLD VOLUME AND NANOPORE DIAMETER. **Lennart J. de Vreede**

763-Pos BOARD B528
MULTIPLE -NANOPORES FABRICATION BASED ON DIELECTRIC BREAK-DOWN. **Yunlong Wang**, Cuifeng Ying, Wenyuan Zhou, Zhibo Liu, Jianguo Tian

764-Pos BOARD B529
ARTIFICIAL DNA-BASED CHANNELS FOR CONTROLLED MEMBRANE TRANSPORT. Jonathan R. Burns, Astrid Seifert, Niels Fertig, **Stefan Howorka**

765-Pos BOARD B530
SLOWING DOWN DNA TRANSLLOCATION USING INTEGRATED NANOPORE AND NANOPILLARS PRECISELY DEPOSITED BY HELIUM ION BEAM. **Yunsheng Deng**, Qimeng Huang, Daming Zhou, Shuo Zhou, Shuo Zhou, Liyuan Liang, Shaoxi Fang, Wanyi Xie, Shixuan He, Peng Tang, Deqiang Wang

766-Pos BOARD B531
SINGLE-CHANNEL MEASUREMENTS OF CONDUCTANCE THROUGH SUB-NANOMETER CARBON NANOTUBE PORINS. **Yun-Chiao Yao**, Robert Henley, Ramya Tunuguntla, Meni Wanunu, Aleksandr Noy

767-Pos BOARD B532
TUNABLE ION SELECTIVITY IN SUB-NANOMETER DIAMETER CARBON NANOTUBE PORINS. **Robert Y. Henley**, Yun-Chiao Yao, Ramya Tunuguntla, Pradeep Waduge, Meni Wanunu, Aleksandr Noy

768-Pos BOARD B533
SUB-1-NM CARBON NANOTUBE PORINS: WATER TRANSPORT AND ION SELECTIVITY IN A SINGLE-FILE WATER MEMBRANE NANOPORE. **Aleksandr Noy**

769-Pos BOARD B534
CARBON NANOSTRUCTURES OF DIFFERENT SPATIAL GEOMETRY: THEIR DISPERSION AND INFLUENCE ON MODEL BIOLOGICAL SYSTEMS. **Justyna Izykowska**, Michalina Skupin, Weronika Andrzejewska, Maria Dobies, Stefan Jurga, Maciej Kozak

770-Pos BOARD B535
THE INFLUENCE OF SURFACTANT STRUCTURE AND GEOMETRY ON NANOTOXICITY AND DISPERSION OF CARBON NANOTUBES. **Jakub Zareba**, Justyna Izykowska, Michalina Skupin, Augustyn Moliński, Maria Dobies, Stefan Jurga, Maciej Kozak

771-Pos BOARD B536
DESIGNER PEPTIDES SELF-ASSEMBLE ON GRAPHENE TO CREATE REMARKABLY STABLE, PRECISELY ORGANIZED SUBSTRATES. **Gina-Mirela Mustata**, Meni Wanunu, Gevorg Gregoryan, Yong Ho Kim, Jian Zhang, William F. DeGrado

772-Pos BOARD B537

MODULATION OF GRAPHENE OXIDE PROBIOTIC AND ANTIBIOTIC ACTIVITY BY CRITICAL COAGULATION CONCENTRATION. **Massimiliano Papi**, Valentina Palmieri, Francesca Bugli, Maria Carmela Lauriola, Margherita Cacaci, Claudio Conti, Maurizio Sanguinetti, Marco De Spirito

773-Pos BOARD B538

REAL-TIME FLOW DEFORMABILITY CYTOMETRY VIA RESISTIVE PULSE SENSING. **Preston Hinkle**

774-Pos BOARD B539

QUANTIFYING EXTRACELLULAR ROS LEVELS IN INDIVIDUAL PANCREATIC ISLETS USING AN OPTICAL SENSOR AND MICROFLUIDIC DEVICE. **Romario Regeenes**, Jonathan V. Rocheleau

775-Pos BOARD B540

MICROCANTILEVER INVESTIGATION OF NANOCONFINEMENT EFFECTS ON WATER TRANSPORT. **Michael DeLay**

776-Pos BOARD B541

SUB-DIFFRACTION STED LITHOGRAPHY USING ORTHOGONALLY FUNCTIONALIZED RESINS. **Thomas A. Klar**, Richard Wollhofen, Johannes Kreutzer, Bianca Buchegger, Christine Eder, Jaroslaw Jacak

Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, February 12, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S101, 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

Board S1

PORPHYRIN INDUCED MULTIMERIZATION OF SOLUTION-STATE PROTEINS.

Daniel R. Marzolf (2427-Pos, B34)

Board S2

MIMICKING NATURAL PHOTOSYNTHESIS: ULTRAFAST CHARGE TRANSFER IN PPCA RU(BPY)₃ COMPLEXES.

Matthew O'Malley (2171-Pos, B491)

Board S3

MITOCHONDRIAL PROTEIN ABF2P INTERCALATES, BENDS, LOOPS, AND COMPACTS DNA.

Divakaran Murugesapillai (1832-Pos, B152)

Bioengineering

Board S4

POLYETHYLENE GLYCOL CONJUGATION ENHANCES MOSQUITO-LARVICIDAL ACTIVITY OF LYSINIBACILLUS SPHAERICUS BINA PROTEIN.

Mahima Sharma (247-Pos, B6)

Board S5

BIOLOGICAL SEMICONDUCTORS: STRUCTURAL CONTROL OF HEME REDOX POTENTIALS IN PPCA, A 3-HEME CYTOCHROME.

Coleman Swaim (1504-Pos, B572)

Board S6

THE FRANK-STARLING MECHANISM IS ATTENUATED BY A DILATED CARDIOMYOPATHY-ASSOCIATED TROPOMYOSIN MUTATION.

Joseph D. Powers (595-Pos, B360)

Biological Fluorescence

Board S7

PROTEIN STRUCTURE DETERMINATION BY HIGH-PRECISION FRET AND MOLECULAR MODELING.

Mykola Dimura (241-Pos, B6)

Board S8

ACCURATE DETERMINATION OF THE RNA THREE-WAY JUNCTIONS VIA SINGLE-MOLECULE HIGH-PRECISION FRET MEASUREMENTS.

Olga Doroshenko (1806-Pos, B126)

Board S9

OPTICAL PROBES FOR IMAGING SIGNAL MEDIATING PHOSPHOLIPIDS.

Samsuzzoha Mondal (2279-Pos, B593)

Board S10

CELL LINE PHENOTYPIC ENRICHMENT BASED ON MIGRATION AND MORPHOLOGY.

Joannie Roy (662-Pos, B427)

Board S11

CARDIOMYOCYTE FUNCTIONAL KINETIC RESERVE IS LOST IN AN OSSABAW SWINE MODEL OF HEART FAILURE WITH PRESERVED EJECTION FRACTION.

Adam Veteto (507-Pos, B272)

Biopolymers in vivo

Board S12

GLYCINE BETAINE REVERSES OSMOTIC SHOCK INDUCED PROTEIN DESTABILIZATION IN LIVING CELLS.

Samantha Stadtmiller (287-Pos, B52)

Board S13

ELUCIDATING THE ROLE OF TRANSCRIPTION IN SHAPING THE 3D STRUCTURE OF THE BACTERIAL GENOME.

Hugo Brandao (354-Pos, B119)

Exocytosis & Endocytosis

Board S14

CALCIUM-MEDIATED DOCKING AND FUSION OF PURIFIED DENSE CORE VESICLES WITH RECONSTITUTED MEMBRANES.

Alex Kreutzberger (1954-Pos, B274)

Board S15

DEVELOPMENT OF BIOPHYSICAL MARKERS THAT QUANTIFY METASTATIC POTENTIALS OF PROSTATE CANCER CELLS USING TSUNAMI MICROSCOPE.

Yen-Liang Liu (1958-Pos, B278)

Board S16

SNARE PROTEIN STRUCTURE ALTERED IN RESPONSE TO pH.

Kara Woodbury (476-Pos, B24)

Intrinsically Disordered Proteins

Board S17

A STUDY OF DISORDER-TO-ORDER TRANSITION BY CHARACTERIZING THE BINDING PARTNERS USING A STATISTICAL POTENTIAL.

Iqbal Sumaiya (1032-Pos, B100)

Board S18

UNDERSTANDING THE ROLE OF CHAIN FLEXIBILITY IN AMYLOID PROTEIN AGGREGATION THROUGH RATIONALLY DESIGNED PROTEIN SEQUENCES.

Steven Vance (264-Pos, B29)

Board S19

MICROSECOND SIMULATIONS OF AMYLOID BETA FIBRIL NUCLEATION IN REVERSE MICELLES.

Gozde Eskici (2608-Pos, B215)

Board S20

SECONDARY STRUCTURE FLIPPING CONNECTED TO SALT-BRIDGE FORMATION CONVERTS TOXIC AMYLOID- β_{40} OLIGOMERS TO FIBRILS.

Bappaditya Chandra (1782-Pos, B102)

Board S21

LIPID HEADGROUPS MODULATE CONFORMATIONAL SWITCHING DURING MEMBRANE INSERTION OF CANCER-TARGETING PHILIP PEPTIDES.

Victor Vasquez-Montes (2602-Pos, B209)

Board S22

TARDIGRADE INTRINSICALLY DISORDERED PROTEINS AS POTENTIAL EXCIPIENTS FOR BIOLOGICS.

Samantha Piszkiwicz (2520-Pos, B127)

Board S23

SURFACE SOLVATION TUNES MOLECULAR-RECOGNITION PLASTICITY IN IDPS.

Aritra Chowdhury (1018-Pos, B86)

Board S24

A MODEL FOR HYSTERESIS OBSERVED IN PHASE TRANSITIONS OF THERMALLY RESPONSIVE INTRINSICALLY DISORDERED PROTEIN POLYMERS.

Tyler Harmon (1022-Pos, B90)

Board S25

MECHANISM UNDERLYING CONFORMATIONAL EFFECTS OF A DISEASE-ASSOCIATED HYDROPHOBIC-TO-HYDROPHOBIC SUBSTITUTION ON AN INTRINSICALLY DISORDERED REGION.

Ruchi Lohia (1024-Pos, B92)

Mechanobiology

Board S26

TEMPERATURE-DEPENDENT PROTEIN MALLEABILITY PROBED BY SINGLE-MOLECULE FORCE SPECTROSCOPY AND FLUORESCENCE SPECTROSCOPY.

Shrabasti Bhattacharya (1472-Pos, B540)

Board S27

CELL POPULATION AND ELECTROPHYSIOLOGY APPROACHES TO OSMOTIC FITNESS OF PSEUDOMONAS AERUGINOSA.

Ugur Cetiner (2789-Pos, B396)

Board S28

TOWARDS ROLLING-CIRCLE REPLICATION AT THE SINGLE-MOLECULE LEVEL.

Cesar Pastrana (1833-Pos, B153)

Board S29

HUMAN PIEZO1 MEMBRANE LOCALIZATION AND GATING KINETICS ARE MODULATED BY CHOLESTEROL LEVELS.

Pietro Ridone (2630-Pos, B237)

Board S30

SUBSTRATE CHEMISTRY AND MORPHOLOGY INFLUENCE THE VALVULAR INTERSTITIAL CELLS MECHANOBIOLOGY.

Luisa Ulloa Severino (2146-Pos, B466)

Board S31

MULTIGENERATIONAL STUDY OF SPACEFLIGHT-RESPONSIVE GENE NETWORKS.

Irem Celen (2815-Pos, B422)

Board S32

INEQUALITY OF THE CLONES: LIFE-LONG TRACKING OF SINGLE ANIMALS REVEALS DISCORDANT TRAITS IN *C. ELEGANS*.

Andrew Moore (1386-Pos, B454)

Membrane Biophysics

Board S33

PHOSPHORYLATION IN AMPA RECEPTOR CARBOXY-TERMINUS: STRUCTURE, FUNCTION, AND LIPID REGULATION.

Caitlin Nurik (2056-Pos, B376)

Board S34

CHEMICAL GRADIENTS TRIGGER AND GUIDE MOVEMENT OF GIANT LIPID VESICLES.

Baharan Ali Doosti (1853-Pos, B173)

Board S35

MULTISCALE DYNAMICS OF LIPID MEMBRANES FROM FEMTOSECONDS TO MILLISECONDS: INSIGHTS FROM TIME-RESOLVED INFRARED SPECTROSCOPY.

Paul Stevenson (1087-Pos, B155)

Board S36

HOW DO PEPTIDES AND NANOPARTICLES INTERACT WITH THE MEMBRANES OF *E. COLI*? INSIGHTS FROM MOLECULAR DYNAMICS.

Pin-Chia Hsu (2592-Pos, B199)

Board S37

INFLUENZA BINDING AVIDITY GOVERNED BY STEROL-DEPENDENT GANGLIOSIDE DYNAMICS.

Isabel Goronzy (387-Pos, B152)

Board S38

TRP CHANNEL FUNCTION IN iPSC-DERIVED SENSORY NEURONS.

Laura Vangeel (667-Pos, B432)

Board S39

INTERACTIONS OF CARBON NANOTUBES STABILIZED BY SELECTED GEMINI SURFACTANTS WITH MODEL BIOMEMBRANES.

Michalina Skupin (394-Pos, B159)

Board S40

TRANSFER OF TRPV1 SODIUM BINDING SITE INTO TRPV2.

Katherine Huffer (568-Pos, B333)

Board S41

AZOBENZENE-CHOLESTEROL AS A PHOTOACTIVATOR IN BIOMIMETIC MEMBRANES: 1. LIPID DYNAMICS.

Chen Shen (383-Pos, B148)

Board S42

STERIC PRESSURE FROM PERIPHERAL PROTEIN CONFORMATIONAL CHANGES DRIVES MEMBRANE CURVATURE.

Helen Hew Ming Siaw (1132-Pos, B200)

Board S43

AUTOMATED IDENTIFICATION OF CHOLESTEROL INTERACTION SITES ON G-PROTEIN COUPLED RECEPTORS BY COARSE-GRAINED SIMULATION.

Eric Rouviere (1936-Pos, B256)

Board S44

PROPOFOL IS A POTENT GATING MODIFIER OF VOLTAGE-GATED SODIUM CHANNELS.

Elaine Yang (528-Pos, B293)

Board S45

LIPID COMPOSITION AND ENDOSOMAL PH REGULATES ANTHRAX LETHAL TOXIN UPTAKE AND PA₆₃ CHANNEL BEHAVIOR.

Nnanya Kalu (1117-Pos, B185)

Board S46

PERTURBATION OF BILAYER SURFACE TENSION DIFFERENTIALLY MODULATES MECHANOSENSITIVE ION CHANNELS.

Navid Bavi (2049-Pos, B369)

Board S47

PHOTOACOUSTICS AS A NEW MODALITY FOR RECORDING MEMBRANE POTENTIAL CHANGES.

Haichong Zhang (1399-Pos, B467)

Board S48

REDUCED STRUCTURAL DYNAMICS IN KAINATE RECEPTORS THROUGH AUXILIARY PROTEIN MODULATION.

Douglas Litwin (2061-Pos, B381)

Membrane Structure & Assembly

Board S49

DIRECT IMAGING OF LIQUID DOMAINS BY CRYOTEM IN SUBMICRON VESICLES.

Caitlin Cornell (1851-Pos, B171)

Board S50

MEMBRANE BOUND STRUCTURES OF PERIPHERAL MEMBRANE BINDING PROTEINS TIM3 AND TIM1 PRODUCED BY MOLECULAR DYNAMICS INFORMED ANALYSIS OF X-RAY SCATTERING EXPERIMENTS.

Daniel Kerr (1931-Pos, B251)

Board S51

SOFTWARE FOR DIRECT COMPARISON OF MEMBRANE SCATTERING EXPERIMENTS DATA TO MOLECULAR DYNAMICS SIMULATIONS.

Yevhen Cherniavskiy (417-Pos, B182)

Board S52

PERMEABILITY OF PULMONARY SURFACTANT MEMBRANES IS MODULATED BY PROTEINS SP-B AND SP-C.

Marta Martínez-Calle (2479-Pos, B86)

Board S53

STRUCTURAL CHARACTERIZATION OF HUMAN PULMONARY SURFACTANT PROTEIN SP-D BY ATOMIC FORCE MICROSCOPY.

Raquel Arroyo (2478-Pos, B85)

Molecular Biophysics

Board S54

INTRAMOLECULAR FRIEDEL-CRAFTS ACYLATION PROMOTED BY HEXAFLUOROISOPROPANOL.

Alexander Li (1353-Pos, B421)

Board S55

MOLECULAR RATIONALE BEHIND THE DIFFERENTIAL SUBSTRATE SPECIFICITY OF RND TRANSPORTERS ACRB AND ACRD.

Venkata Krishnan Ramaswamy (1339-Pos, B407)

Board S56

NEXT GENERATION EVOLUTIONARY SAMPLING AND ENERGY FUNCTION GUIDED AB INITIO PROTEIN STRUCTURE PREDICTION.

Avdesh Mishra (278-Pos, B43)

Board S57

HEXAMERIC E5 PROTEIN OF HUMAN PAPILLOMAVIRUS TYPE 16 FORMS A LOW SELECTIVE ION CHANNEL - A COMPUTATIONAL ANALYSIS.

Dhani Mahato (2484-Pos, B91)

Board S58

MOLECULAR MODELING OF LIQUID CRYSTAL/PHOSPHOLIPID INTERFACE AS A LABEL-FREE BIOSENSOR.

Donya Ohadi (2912-Pos, B519)

Board S59

CONSTRUCTING THE DYNAMIC COMPLEXITY AT A PLAUSIBLE IKK2-NEMO INTERFACE.

Jamie Schiffer (1731-Pos, B51)

Board S60

NEAR-ATOMIC STRUCTURAL MODEL FOR BACTERIAL DNA REPLICATION INITIATION COMPLEX AND ITS FUNCTIONAL INSIGHTS.

Masahiro Shimizu (2523-Pos, B130)

Board S61

BIOPHYSICAL INSIGHT INTO THE ANTI AMYLOIDOGENIC BEHAVIOR OF CYSTEINE.

Masihuz Zaman (1794-Pos, B114)

Board S62

MODULATION OF PROTEIN FLEXIBILITY WITH CHANGES IN SEQUENCE AND COMPLEXATION STATE OF UBIQUITIN FAMILY PROTEINS.

Sanjoy Paul (1406-Pos, B474)

Board S63

BLIND PREDICTIONS OF RNA/PROTEIN RELATIVE BINDING AFFINITIES.

Kalli Kappel (370-Pos, B135)

Board S64

EXPANDING THE SCOPE OF SINGLE MOLECULE FRET SPECTROSCOPY TOWARDS PRIMARILY UNDERGRADUATE INSTITUTIONS.

Jesse Howe (2278-Pos, B598)

Board S65

EXAMINING THE ROLE OF PHOSPHORYLATION ON INTERACTIONS BETWEEN THE CARDIAC POTASSIUM CHANNEL ALPHA-SUBUNITS HERG AND K_vLQT1 .

Medeea Popescu (544-Pos, B309)

Board S66

STRUCTURAL INVESTIGATIONS OF SUPERCONTRACTED SPIDER DRAGLINE SILK.

Justine Dionne (2905-Pos, B512)

Board S67

INVESTIGATING TRANSIENT EVENTS IN NUCLEOTIDE EXCISION REPAIR USING SINGLE-MOLECULE DARK FIELD IMAGING.

Jamie Barnett (2543-Pos, B150)

Board S68

PROBING THE NUCLEIC ACID BINDING PROPERTIES OF THE SINGLE-STRANDED DNA BINDING PROTEIN OF BACTERIOPHAGE T4 REPLICATION COMPLEX AT SINGLE NUCLEOTIDE RESOLUTION.

Benjamin Camel (2526-Pos, B133)

Board S69

AGGREGATION INDUCED CONFORMATION CHANGES DETERMINE AMY-LIN MEMBRANE AFFINITY.

Barun Maity (1776-Pos, B96)

Board S70

UNDERSTANDING THE MECHANISMS OF HUMAN RNA POLYMERASE II TRANSCRIPTION USING SINGLE MOLECULE FLUORESCENCE COLOCALIZATION.

Abigail Horn (1045-Pos, B113)

Board S71

STRUCTURAL, THERMODYNAMIC AND PHOSPHATIDYLINOSITOL 3-PHOSPHATE BINDING PROPERTIES OF PHAFIN2.

Tuo-Xian Tang (2435-Pos, B42)

Board S72

DICATIONIC AND TRICATIONIC SURFACTANTS AS TRANSGENE CARRIERS - COMPARISON OF THEIR ABILITY TO DSDNA AND SIRNA BINDING.

Weronika Andrzejewska (1060-Pos, B128)

Board S73

PROTEIN ENERGY NETWORK MODELS TO CLASSIFY AND PREDICT FUNCTIONALLY LINKED INTERFACES OF PROTEINS FROM FUNCTIONALLY UNCORRELATED INTERFACES.

Isha Mehta (1692-Pos, B12)

Board S74

CHARACTERIZING OUTWARD- TO INWARD-FACING TRANSITION PATHWAY OF DOPAMINE TRANSPORTER.

Zhiyu Zhao (633-Pos, B398)

Board S75

SYMMETRY MATCH IN DESIGN OF MULTIVALENT INHIBITORS OF ANTHRAX TOXIN.

Sanaz Momben Abolfath (2079-Pos, B399)

Board S76

RELATIVE AFFINITIES OF GENERAL ANESTHETICS FOR PSEUDO-SYMMETRIC INTERSUBUNIT BINDING SITES OF HETEROMERIC GABA(A) RECEPTORS.

Sruthi Murlidaran (2734-Pos, B341)

Board S77

TOXIC METAL IONS PROMOTE SELF-ASSOCIATION AND REPLACE STRUCTURAL ZINC IONS IN THE REGULATORY REGION OF PROTEIN KINASE C.

Taylor Cole (2408-Pos, B15)

Motility**Board S78**

ACTIVATION OF TRPM3 IN PERIVASCULAR SENSORY NERVES INDUCES DILATION OF MOUSE RESISTANCE ARTERIES.

Lucia Alonso-Carbajo (1992-Pos, B312)

Board S79

DISSECTING ACTOMYOSIN MECHANOCHEMISTRY USING BLEBBISTATIN AS A PHARMACOLOGICAL TOOL.

Mohammad Rahman (580-Pos, B345)

Board S80

MYOVA VESICLE TRANSPORT THROUGH BIOMIMETIC ACTIN NETWORKS VISUALIZED BY 3D STORM MICROSCOPY.

Andrew Lombardo (1335-Pos, B403)

Nanoscale Biophysics**Board S81**

MOLECULAR DYNAMICS STUDY ON LIPID WRAPPED CARBON NANOTUBE AS AN ARTIFICIAL MEMBRANE CHANNEL.

Board S82

CARBON NANOSTRUCTURES OF DIFFERENT SPATIAL GEOMETRY: THEIR DISPERSION AND INFLUENCE ON MODEL BIOLOGICAL SYSTEMS.

Board S83

C60 FULLERENES AS CONTRAST AGENTS - STRUCTURAL, SPECTROSCOPIC AND NANOTOXICITY STUDIES.

Augustyn Molinski (2918-Pos, B525)

Board S84

THE INFLUENCE OF SURFACTANT STRUCTURE AND GEOMETRY ON NANOTOXICITY AND DISPERSION OF CARBON NANOTUBES.

Jakub Zaręba (770-Pos, B535)

Board S85

LIGHT-INDUCED CONFORMATIONAL CHANGES OF *S. AURANTIACA* BACTERIOPHYTOCHROMES AS REVEALED BY ATOMIC FORCE MICROSCOPY.

Rima Rebiai (943-Pos, B1)

Board S86

IMPACT OF DENDRIMER SURFACE CHEMISTRY ON ANTHRAX TOXIN CHANNEL BLOCKAGE: A SINGLE MOLECULE STUDY.

Goli Yamini (2580-Pos, B187)

Permeation & Transport**Board S87**

ROLE OF INDIVIDUAL CAMP BINDING SITES ON RELIEVING THE AUTOINHIBITION IN HCN CHANNELS.

Mallikarjuna Sunkara (2075-Pos, B395)

Board S88

OLIGOMERIZATION OF HUMAN DOPAMINE TRANSPORTER (hDAT).

Kumaresan Jayaraman (628-Pos, B393)

Board S89

MEASURING TRANSPORT KINETICS OF LIGHT DRIVEN CHLORIDE PUMP, HALORHODOPSIN.

Hasin Feroz (2810-Pos, B417)

Board S90

IN VIVO NONLINEAR LIGHT SCATTERING PROBE OF DRUG-INDUCED ACTIVATION OF BACTERIAL MECHANOSENSITIVE CHANNELS.

Mohammad Sharifian Gh. (2857-Pos, B464)

Board S91

SILICA NANOPARTICLES INDUCE CALCIUM-PERMEABLE PORES IN PLASMA MEMBRANES.

Alicia Sanchez (2045-Pos, B365)

Board S92

MODULATION BY PHENOLIC COMPOUNDS PROVIDES NOVEL INSIGHT INTO THE MECHANISMS OF TRPA1 ACTIVATION.

Justyna Startek (1232-Pos, B300)

Board S93

FILTERING WITH THE ELECTRIC FIELD: A STORY ON PROTEIN CHANNELS ELECTROSTATICS.

Silvia Acosta-Gutierrez (2052-Pos, B372)

Board S94

REVERSIBLE PERMEABILIZATION OF CELL MEMBRANES VIA LYSENIN CHANNELS.

Nisha Shrestha (2582-Pos, B189)

Board S95

EFFECT OF ELECTROOSMOTIC FLOW ON THE TRANSPORT OF α -CYCLODEXTRIN THROUGH THE CHANNEL CYMA.

Jigneshkumar Prajapati (2710-Pos, B317)

Board S96

STRUCTURAL AND FUNCTIONAL EVIDENCE FOR MULTI-SITE ALLOSTERY MEDIATED BY GENERAL ANESTHETICS IN A MODEL LIGAND-GATED ION CHANNEL.

Stephanie Heusser (2730-Pos, B337)

Board S97

MECHANISM OF ACTION OF PH-TRIGGERED MEMBRANE ACTIVE PEPTIDES.

Sarah Kim (2589-Pos, B196)

Board S98

TRIM FAMILY PROTEINS IN INTRACELLULAR VESICLE TRAFFICKING.

Kristyn Gumpfer (1174-Pos, B242)

Board S99

FREE ENERGY CALCULATION OF MEMBRANE PERMEATION - SIMULATION RESULTS SUGGEST RELAXATION OF HEADGROUP-SOLUTE INTERACTIONS IS THE SLOWEST DEGREE OF FREEDOM.

Nihit Pokhrel (1130-Pos, B198)

Board S100

IDENTIFICATION OF THE ION CONDUCTION PATHWAY IN A TMEM16 SCRAMBLASE.

Tao Jiang (1351-Pos, B419)

Board S101

MODULATING O₂ PERMEABILITY OF THE CENTRAL PORE OF RH50 BY IN SILICO SITE DIRECTED MUTAGENESIS.

Eric Shinn (2078-Pos, B398)

Board S102

A FLUORESCENT AGONIST OF THE MUSCLE NICOTINIC ACETYLCHOLINE RECEPTOR

Abhilasha Ladha (2722-Pos, B329)

Monday, February 13, 2017

Daily Program Summary

All rooms are located in the *Ernest N. Morial Convention Center* unless noted otherwise.

7:30 AM-8:30 AM	Graduate Student Breakfast	Rivergate Room, Lobby Level
7:30 AM-5:00 PM	Registration/Exhibitor Registration	Lobby B
8:00 AM-8:30 AM	Career Center Workshop Career Q&A with Joe Tringali	Room 212/213
8:00 AM-10:00 PM	Poster Viewing	Hall B-2 & C
8:15 AM-10:15 AM	Symposium: Biophysics of lncRNA Chair: <i>Gregor Neuert, Vanderbilt University</i> DYNAMIC TEMPORAL CONTROL OF SIGNALING ACTIVATED GENE REGULATION. <i>Gregor Neuert</i> THE GROUND-STATE OF PROMOTER DIRECTIONALITY REVEALED BY A FUNCTIONAL EVOLUTIONARY APPROACH AND DEEP LEARNING MODELING. <i>Stirling Churchman</i> HOW A LNCRNA SHAPES CHROMATIN STRUCTURE TO CONTROL GENE EXPRESSION. <i>Mitchell Guttman</i> STRUCTURE VS. FUNCTION: A QUANTITATIVE ANALYSIS OF CHROMOSOME ARCHITECTURE. <i>Luca Giorgetti</i>	Great Hall A
8:15 AM-10:15 AM	Symposium: Catalyzed Membrane Fusion and Fission Chair: <i>Phyllis Hanson, Washington University</i> MEMBRANE REMODELING BY ESCRT-III POLYMERS. <i>Phyllis Hanson</i> KNOW WHEN TO HOLD 'EM, KNOW WHEN TO FOLD 'EM; SM PROTEINS AS TEMPLATES FOR SNARE ASSEMBLY. <i>Frederick Hughson</i> CATALYTIC INTERMEDIATES OF MEMBRANE FISSION. <i>Vadim A. Frolov</i> PROTEIN-LIPID INTERACTIONS OF VIRAL CLASS II MEMBRANE FUSION PROTEINS. <i>Félix Rey</i>	Great Hall B
8:15 AM-10:15 AM	Platform: Molecular and Cellular Neuroscience	Room R02/03
8:15 AM-10:15 AM	Platform: Excitation-Contraction Coupling	Room R04/05
8:15 PM-10:15 AM	Platform: Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating II	Room R06/07
8:15 AM-10:15 AM	Platform: Cardiac Muscle Mechanics and Structure	Room R08/09
8:15 AM-10:15 AM	Platform: Force Spectroscopy	Room 206/207
8:15 AM-10:15 AM	Platform: Protein Stability, Folding, and Chaperones II	Room 208/209
8:30 AM-10:00 AM	Exhibitor Presentation: TA Instruments Instrumentation and Experimental Design for Utilization of ITC and IMC Techniques for Characterization of Biopharmaceuticals	Room 221
8:30 AM-10:30 AM	CID Committee Meeting	Room 203
10:00 AM-11:00 AM	Career Center Workshop Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)	Room 212/213
10:00 AM-5:00 PM	Exhibits	Hall B-2 & C
10:15 AM-11:00 AM	Coffee Break	Hall B-2 & C
10:15 AM-11:15 AM	New Member Welcome Coffee	Rivergate Room, Lobby Level
10:30 AM-12:00 PM	Exhibitor Presentation: Beckman Coulter Life Sciences What Goes Around, Comes Around: Unveiling the Optima AUC	Room 221

10:45 AM-12:45 PM	<p>Symposium: Future of Biophysics Co-Chairs: <i>David W. Piston, Washington University and Catherine A. Royer, Rensselaer Polytechnic Institute</i></p> <p>X-RAY VISION INTO THE WORLD OF ENZYMES. <i>Nozomi Ando</i> BACTERIAL TYPE 3 SECRETION SYSTEMS: HIGH-THROUGHPUT 3D SINGLE-MOLECULE TRACKING OF SORTING PLATFORM PROTEINS IN LIVE CELLS. <i>Andreas Gahlmann</i> SCANNING THE ION- AND NONLINEAR OPTICAL MICROSCOPY COMBINED WITH FORCE MEASUREMENTS FOR THE CHARACTERIZATION OF SPIDER SILK. <i>Irina Iachina</i> REPURPOSING MECHANOSENSITIVE CHANNELS TO STUDY CONFINED 3D CELL MIGRATION. <i>Allen Liu</i> PHOSPHORYLATION INDUCES SEQUENCE-SPECIFIC CONFORMATIONAL SWITCHES IN THE RNA POLYMERASE II C-TERMINAL DOMAIN. <i>Scott A. Showalter</i> REAL-TIME QUANTIFICATION OF SINGLE RNA TRANSLATION DYNAMICS IN LIVING CELLS. <i>Timothy J. Stasevich</i></p>	Great Hall A
10:45 AM-12:45 PM	<p>Symposium: TRP Channels Chair: <i>Sharona E. Gordon, University of Washington</i></p> <p>MECHANISMS OF TRPV1 ION CHANNEL GATING. <i>Sharona E. Gordon</i> GLEANING FUNCTIONAL INSIGHTS FROM TRP CHANNEL STRUCTURES. <i>David Julius</i> COMPUTATIONAL APPROACHES TO THE STUDY OF TRPV CHANNEL ACTIVATION AND MODULATION APPROACHES TO THE STUDY OF TRPV CHANNEL ACTIVATION AND MODULATION. <i>Carmen Domene</i> NEW INSIGHTS INTO THE FUNCTION OF TRPV CHANNELS. <i>Vera Moiseenkova Bell</i></p>	Great Hall B
10:45 AM-12:45 PM	Platform: Protein-Nucleic Acid Interactions I	Room R02/03
10:45 AM-12:45 PM	Platform: Membrane Receptors and Signal Transduction II	Room R04/05
10:45 AM-12:45 PM	Platform: Other Channels	Room R06/07
10:45 AM-12:45 PM	Platform: Membrane Physical Chemistry II	Room R08/09
10:45 AM-12:45 PM	Platform: Molecular Dynamics I	Room 206/207
10:45 AM-12:45 PM	Platform: Protein Structure and Conformation II	Room 208/209
11:30 AM-12:30 PM	<p>Career Center Workshop Demystifying the Academic Job Search II: Preparing Your Written Application Materials: CV, Cover Letter, and Research Statement</p>	Room 212/213
11:30 AM-1:00 PM	<p>Exhibitor Presentation: Asylum Research, an Oxford Instruments Company Now Playing: Video-Rate AFM with the New Cypher VRS Atomic Force Microscope</p>	Room 218
12:30 PM-2:00 PM	<p>Exhibitor Presentation: Nanion Technologies GmbH Ion Channel Drug Discovery – Beyond the Bottlenecks and Ready for CiPA</p>	Room 221
1:30 PM-3:00 PM	Industry Panel: Breaking Into Industry	Rivergate Room, Lobby Level
1:30 PM-3:00 PM	<p>Exhibitor Presentation: Malvern Instruments Molecular Interactions of Proteins & Small Molecules</p>	Room 218
1:30 PM-3:00 PM	Biophysics 101: Cryo-electron Microscopy (Cryo-EM)	Room 214
1:45 PM-3:00 PM	Snack Break	Hall B-2 & C
1:45 PM-3:45 PM	Poster Presentations and Late Posters	Hall B-2 & C
2:15 PM-3:45 PM	How to Get Your Scientific Paper Published	Room 220
2:30 PM-3:30 PM	Speed Networking	Mosaic Lounge, Lobby A
2:30 PM-3:30 PM	<p>Career Center Workshop Beyond the Bench: Preparing for Your Career Transition in the Life Sciences</p>	Room 212/213
2:30 PM-4:00 PM	A Driving Force in the Middle of the Journey: Funding Opportunities for Mid-Career Scientists	Room 219
2:30 PM-4:00 PM	<p>Exhibitor Presentation: HORIBA Scientific Experience the New Shape and SPEED of Things to Come in Fluorescence</p>	Room 221
3:00 PM-5:00 PM	Membership Committee Meeting	Room 203
3:30 PM-5:00 PM	<p>Exhibitor Presentation: OriginLab Corporation Origin 2017 Product Demo</p>	Room 218

4:00 PM-5:00 PM	Career Center Workshop The Strategic Postdoc: How to Find and Leverage Your Postdoc Experience	Room 212/213
4:00 PM-6:00 PM	Symposium: Protein Folding Mechanisms Chair: <i>Susan Marqusee, University of California, Berkeley</i> TOURING THE LANDSCAPE: THE VIEW DEPENDS ON HOW AND WHEN YOU LOOK. <i>Susan Marqusee</i> FOLDING OF DISORDERED PROTEINS: SINGLE MOLECULES TO MESOSCALES. <i>Ashok Deniz</i> FOLDING MECHANISMS: DISTINGUISHING SIGNATURES AND FUNCTIONAL ADVANTAGES. <i>Olga Dudko</i> PROTEINS AS PH SENSORS AND SWITCHES. <i>Bertrand Garcia-Moreno</i>	Great Hall A
4:00 PM-6:00 PM	Symposium: Mitochondrial Dynamics and Transport Chair: <i>Robert S. Balaban, NIH</i> THE MUSCLE CELL MITOCHONDRIA RETICULUM. <i>Robert S. Balaban</i> CONTROL OF MITOCHONDRIAL FUNCTION BY FUSION AND FISSION. <i>David Chan</i> STRUCTURE AND IN SITU ORGANIZATION OF ATP SYTHASE AND RESPIRATORY CHAIN COMPLEXES. <i>Karen Davies</i> MITOCHONDRIA AND MEMORY: BIOENERGETICS, SYNAPTIC PLASTICITY AND NEURODEGENERATION. <i>Elizabeth A. Jonas</i>	Great Hall B
4:00 PM-6:00 PM	Symposium: Epigenomic Changes Driven by Biomechanical Load Chair: <i>Andrew D. McCulloch, University of California, San Diego</i> SYSTEMS MECHANOBIOLOGY OF CARDIAC MYOCYTES. <i>Andrew D. McCulloch</i> THE "SELF-STIRRED" GENOME: BULK AND SURFACE DYNAMICS OF THE CHROMATIN GLOBULE. <i>Alexandra Zidovska</i> EPIGENETIC REGULATION OF CHROMATIN DYNAMICS. <i>Michael G. Poirier</i> MULTI-SCALE MODELING OF CHROMOSOMAL DNA IN PROKARYOTIC AND EUKARYOTIC CELLS. <i>Andrew J. Spakowitz</i>	Room R02/03
4:00 PM-6:00 PM	Platform: Skeletal Muscle Mechanics, Structure, and Regulation	Room R04/05
4:00 PM-6:00 PM	Platform: Ion Channel Regulatory Mechanisms	Room R06/07
4:00 PM-6:00 PM	Platform: Membrane Active Peptides and Toxins II	Room R08/09
4:00 PM-6:00 PM	Platform: Optical Microscopy and Super-resolution Imaging: Novel Approaches and Analysis II	Room 206/207
4:00 PM-6:00 PM	Platform: Membrane Protein Structures II	Room 208/209
5:30 PM-7:00 PM	Exhibitor Presentation: Sutter Instrument Scientists Empowering Scientists	Room 218
8:00 PM-9:30 PM	Awards and National Lecture	Great Hall A & B
9:30 PM-12:00 AM	Reception and Dance	Hilton, Grand Ballroom
9:30 PM-12:00 AM	Reception and Quiet Room	Hilton, Versailles Ballroom

Monday, February 13

Graduate Student Breakfast

7:30 AM - 8:30 AM, RIVERGATE ROOM, LOBBY LEVEL

Support contributed by the Burroughs Wellcome Fund

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

Speakers

Hugo Sanabria, Clemson University
Jeanne Small, Quantum Northwest

Registration/Exhibitor Registration

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

Career Center Workshop Career Q&A with Joe Tringali

8:00 AM - 8:30 AM, ROOM 212/213

Do you have a pressing question about your career in science? Attend this informal discussion with veteran career consultant Joe Tringali and get the answers you are looking for.

Poster Viewing

8:00 AM - 10:00 PM, HALL B-2 & C

Symposium Biophysics of lncRNA

8:15 AM - 10:15 AM, GREAT HALL A

Chair

Gregor Neuert, Vanderbilt University

777-Symp 8:15 AM

DYNAMIC TEMPORAL CONTROL OF SIGNALING ACTIVATED GENE REGULATION. **Gregor Neuert**

778-Symp 8:45 AM

THE GROUND-STATE OF PROMOTER DIRECTIONALITY REVEALED BY A FUNCTIONAL EVOLUTIONARY APPROACH AND DEEP LEARNING MODELING. **Stirling Churchman**

779-Symp 9:15 AM

HOW A LNCRNA SHAPES CHROMATIN STRUCTURE TO CONTROL GENE EXPRESSION. **Mitchell Guttman**

780-Symp 9:45 AM

STRUCTURE VS. FUNCTION: A QUANTITATIVE ANALYSIS OF CHROMOSOME ARCHITECTURE. **Luca Giorgetti**

Symposium Catalyzed Membrane Fusion and Fission

8:15 AM - 10:15 AM, GREAT HALL B

Chair

Phyllis Hanson, Washington University

No Abstract 8:15 AM

MEMBRANE REMODELING BY ESCRT-III POLYMERS. **Phyllis Hanson**

781-Symp 8:45 AM

KNOW WHEN TO HOLD 'EM, KNOW WHEN TO FOLD 'EM; SM PROTEINS AS TEMPLATES FOR SNARE ASSEMBLY. **Frederick Hughson**

782-Symp 9:15 AM

CATALYTIC INTERMEDIATES OF MEMBRANE FISSION. **Vadim A. Frolov, Pavel V. Bashkurov, Anna V. Shnyrova**

No Abstract 9:45 AM

PROTEIN-LIPID INTERACTIONS OF VIRAL CLASS II MEMBRANE FUSION PROTEINS. **Félix Rey**

Platform

Molecular and Cellular Neuroscience

8:15 AM - 10:15 AM, ROOM R02/03

Co-Chairs

Ann-Sofie U. Cans, Chalmers University of Technology, Sweden
Astrid Gräslund, Stockholm University, Sweden

783-Plat 8:15 AM

MODULATION OF SYNAPTIC VESICLES CLUSTERING BY AXONAL TENSION. **Anthony Fan, Alireza Tofangchi, Taher Saif**

784-Plat 8:30 AM

LOW-FORCE MECHANICAL PERTURBATIONS ALTERED CALCIUM DYNAMICS IN NETWORKS OF GCAMP6S EXPRESSING CORTICAL NEURONS. **Kimberly Sam, Tom Srnak, Parijat Sengupta**

785-Plat 8:45 AM

OSMOTIC STRESS REDUCES VESICLE SIZE WHILE KEEPING A CONSTANT NEUROTRANSMITTER CONCENTRATION. **Hoda Fathali, Johan Dunevall, Soodabeh Majdi, Jelena Lovric, Ann-Sofie Cans**

786-Plat 9:00 AM

MICROCAVITATION AS A NEURONAL DAMAGE MECHANISM IN AN IN VITRO MODEL OF BLAST TRAUMATIC BRAIN INJURY. **Jonathan B. Estrada, Mark T. Scimone, Harry C. Cramer, Lauren Mancina, Eric Johnsen, Christian Franck**

787-Plat 9:15 AM

EFFECTS OF AMYLOID-BETA EXPRESSION ON NEURONAL SIGNALLING PATHWAYS IN A NOVEL C. ELEGANS MODEL OF ALZHEIMER'S DISEASE. **Tessa Sinnige, Prashanth Ciryam, Christopher M. Dobson, Mario de Bono, Michele Vendruscolo**

788-Plat 9:30 AM

BIOPHYSICAL STUDIES OF THE AMYLOID BETA PEPTIDE INVOLVED IN ALZHEIMER'S DISEASE. **Astrid Gräslund, Ann Tiiman, Jyri Jarvet, Vladana Vukojevic**

789-Plat 9:45 AM

AN ANCIENT ROLE FOR GIANT ANKYRINS IN AXON INITIAL SEGMENT ORGANIZATION. **Timothy Jegla, Michelle M. Nguyen, Chengye Feng, Daniel J. Goetschius, Esteban Luna, Damian B. van Rossum, Bishoy Kamel, Aditya Pisupati, Elliot S. Milner, Melissa M. Rolls**

790-Plat 10:00 AM

STRUCTURAL EVOLUTION OF HUMAN-SPECIFIC SRGAP2 PROTEINS. **Yarden Opatowsky**

Platform

Excitation-Contraction Coupling

8:15 AM - 10:15 AM, ROOM R04/05

Co-Chairs

Julio A. Copello, Southern Illinois University
Susan Treves, Basil University Hospital, Switzerland

791-Plat 8:15 AM

FUNCTION BASED ANALYSIS OF THE CARDIAC ENDOPLASMIC AND SARCOPLASMIC RETICULUM PROTEOME. **Steven E. Cala, Nicholas Caruthers, Joseph Caruso, Paul Stemmer, Xuequn Chen**

792-Plat 8:30 AM
 CELLULAR, BIOCHEMICAL AND MOLECULAR CHANGES IN MUSCLES FROM PATIENTS WITH X-LINKED MYOTUBULAR MYOPATHY DUE TO MTM1 MUTATIONS. **Susan Treves**, Christoph Bachmann, Heinz Jungbluth, Francesco Muntoni, Adnan Y. Manzur, Francesco Zorzato

793-Plat 8:45 AM
 ASSEMBLY OF CALCIUM ENTRY UNITS IMPROVES MUSCLE RESISTANCE TO FATIGUE. **Antonio Michelucci**, Laura Pietrangelo, Claudia Pecorai, Simona Boncompagni, Feliciano Protasi

794-Plat 9:00 AM
 RYR2 TETRAMER DISTRIBUTIONS IN VENTRICULAR MYOCYTES FROM PHOSPHOMUTANT MICE. **Parisa Asghari**, David R.L. Scriven, Yanting Zhao, Roberto Ramos Mondragon, Hector Valdivia, Xander Wehrens, Edwin D.W. Moore

795-Plat 9:15 AM
 MEASURING ELECTRICAL CONDUCTIVITY OF THE CARDIAC T-TUBULAR SYSTEM. Marina Scardigli, Claudia Crocini, Cecilia Ferrantini, Tecla Gabrielli, Ludovico Silvestri, Raffaele Coppini, Chiara Tesi, Elisabetta Cerbai, Corrado Poggesi, Francesco Pavone, **Leonardo Sacconi**

796-Plat 9:30 AM
 DHBP REVERSIBLY INHIBITS CALCIUM RELEASE FROM SARCOPLASMIC RETICULUM (SR) IN SKELETAL MUSCLE AND HEART. Yuriana Aguilar-Sanchez, Marino DiFranco, Yuanzhao L. Darcy, Marbella Quiñonez, Ariel L. Escobar, **Julio A. Copello**

797-Plat 9:45 AM
 OPTICAL STIMULATION OF IPS CARDIOMYOCYTES ALLOWS BRAND NEW INSIGHTS INTO CONTRACTILITY AND ELECTROPHYSIOLOGY CONNECTIONS. Sonja Stoelzle-Feix, Matthias Beckler, Patrick Mumm, Ulrich Thomas, Leo Doerr, Elena Dragicevic, Krisztina Juhasz, **Corina T. Bot**, Michael George, Andrea Brüggemann, Niels Fertig, Jean-Francois Rolland, R. Rizzetto, L. Redaelli, Philipp Sasse

798-Plat 10:00 AM
 HUMAN MESENCHYMAL STEM CELL PARACRINE SIGNALING COUNTERACTS HETEROCELLULAR COUPLING EFFECTS ON CARDIAC CONTRACTILITY AND ARRHYTHMOGENICITY. **Joshua Mayourian**, Timothy J. Cashman, Bryce V. Johnson, David M. Sachs, Deepak A. Kaji, Eric A. Sobie, Kevin D. Costa

Platform
Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating II
8:15 PM - 10:15 AM, ROOM R06/07

Co-Chairs
Karen M. Callahan, University of Chicago
Cui Jianmin, Washington University

799-Plat 8:15 PM
 NON-CANONICAL INTERACTIONS BETWEEN VOLTAGE SENSORS AND PORE DOMAIN IN SHAKER K⁺-CHANNEL. **João Carvalho-de-Souza**, Francisco Bezanilla

800-Plat 8:30 PM
 VOLTAGE SENSING IN HYPERPOLARIZATION ACTIVATED CYCLIC NUCLEOTIDE GATED (HCN) CHANNELS. **Karen M. Callahan**, Nazzareno D'Avanzo

801-Plat 8:45 PM
 THE TARANTULA TOXIN GUANGXITOXIN-1E TRAPS K⁺ CHANNEL VOLTAGE SENSOR IN A FULLY RESTING CONFORMATION. **Drew C. Tilley**, Kenneth S. Eum, Jon T. Sack

802-Plat 9:00 PM
 KCNE1-DEPENDENT SUMOYLATION OF K_v7.1 SUBUNITS DETERMINES THE VOLTAGE-DEPENDENCE OF CARDIAC I_{Ks} CHANNELS. **Dazhi Xiong**, Tian Li, Leigh D. Plant, Steve A.N. Goldstein

803-Plat 9:15 PM
 THE TRANSITIONS BETWEEN TWO OPEN STATES OF THE KCNQ1 POTASSIUM CHANNEL PRODUCE INACTIVATION-LIKE PHENOTYPE. **Panpan Hou**, Mark A. Zaydman, Jingyi Shi, Ling Zhong, Kelli McFarland, Jianmin Cui

804-Plat 9:30 PM
 KV1.2 CHANNELS AT THE INTERFACE OF REDOX AND ELECTRICAL EXCITABILITY. **Victoria A. Baronas**, Runying Yang, Harley T. Kurata

805-Plat 9:45 PM
 MOLECULAR SIMULATIONS OF ION PERMEATION IN POTASSIUM CHANNELS. **Wojciech Kopec**, Bert de Groot

806-Plat 10:00 PM
 DOES PROTON CONDUCTION IN THE VOLTAGE-GATED PROTON CHANNEL HH_v1 INVOLVE GROTTHUS HOPPING VIA ACIDIC RESIDUES? **Lucie Delemotte**, Siri van Keulen, Ursula Roethlisberger, Eleonora Gianti, Vincenzo Carnevale, Michael L. Klein

Platform
Cardiac Muscle Mechanics and Structure
8:15 AM - 10:15 AM, ROOM R08/09

Co-Chairs
Douglas D. Root, University of North Texas
Jorge Alegre-Cebollada, Columbia University

807-Plat 8:15 AM
 INDEPENDENT STOCHASTIC BURST-LIKE TRANSCRIPTION OF MUTANT AND WILDTYPE ALLELES AS MECHANISM FOR CELL-TO-CELL FUNCTIONAL IMBALANCE IN HYPERTROPHIC CARDIOMYOPATHY. **Ante Radocaj**, Kathrin Kowalski, Judith Montag, Theresia Kraft, Bernhard Brenner

808-Plat 8:30 AM
 UNCOVERING THE MOLECULAR INTERACTIONS THAT MAINTAIN THE SEQUESTERED STATE OF MYOSIN AND THEIR IMPLICATION IN HYPERTROPHIC CARDIOMYOPATHY. **Darshan V. Trivedi**, Suman Nag, Saswata S. Sarkar, Arjun S. Adhikari, Shirley Sutton, Kathleen M. Ruppel, James A. Spudich

809-Plat 8:45 AM
 STRUCTURAL AND BIOPHYSICAL ANALYSIS OF HYPERTROPHIC CARDIOMYOPATHY-LINKED TITIN MISSENSE VARIANTS. **Martin Rees**, Franca Fraternali, Perry Elliott, Mathias Gautel

810-Plat 9:00 AM
 NANOMECHANICAL PHENOTYPES IN HYPERTROPHIC CARDIOMYOPATHY CAUSED BY MISSENSE MUTATIONS IN CARDIAC MYOSIN-BINDING PROTEIN C. Carmen Suay-Corredera, Elías Herrero-Galán, Diana Velázquez-Carreras, Íñigo Urrutia-Irazábal, Diego García-Giustiniani, Javier Delgado, Luis Serrano, Pablo García-Pavía, Lorenzo Monserrat, **Jorge Alegre-Cebollada**

811-Plat 9:15 AM **EDUCATION TRAVEL AWARDEE**
 GENETICALLY ENGINEERED HUMAN STEM CELL-DERIVED CARDIOMYOCYTES TO STUDY THE FUNCTIONALITY OF CRONOS TITIN. **Rebecca J. Zaunbrecher**, Kevin Beussman, Andrea Leonard, Lil Pabon, Hans Reinecke, Nathan Sniadecki, Michael Regnier, Charles Murry

812-Plat 9:30 AM
 ENGINEERED TROPONINS MODULATE THE CA²⁺ SENSITIVITY OF THE FAILING HUMAN MYOCARDIUM. **Cheavar A. Blair**, Jonathan Davis, Brandon Biesiadecki, Kenneth Campbell

813-Plat 9:45 AM
RECOVERY OF CALCIUM ACTIVITY AND CONTRACTION IN MODELS OF DILATED CARDIOMYOPATHY. **Sonette Steczina**, Soley Olafsson, Galina Flint, Jill Tardiff, Michael Regnier, Farid Moussavi-Harami

814-Plat 10:00 AM
ACUTE REDUCTION OF DESMIN INTERMEDIATE FILAMENTS ALTERS MYOCYTE MECHANICS AND EXCITATION-CONTRACTION COUPLING. **Julie Heffler**, Matthew A. Capporizzo, Alexey I. Bogush, Patrick Robison, Benjamin L. Prosser

Platform
Force Spectroscopy
8:15 AM - 10:15 AM, ROOM 206/207

Co-Chairs

Peter Hinterdorfer, Johannes Kepler University Linz, Austria
Bhavik Nathwani, Harvard University

815-Plat 8:15 AM
DIRECT OBSERVATION OF TRANSITION-STATE DYNAMICS DURING FOLDING REACTIONS. **Noel Q. Hoffer**, Krishna Neupane, Michael T. Woodside

816-Plat 8:30 AM
MECHANICAL CHARACTERIZATION OF THE HIV-1 RNA HAIRPIN USING AN ATOMIC FORCE MICROSCOPE. **Robert Walder**, William J. Van Patten, Ty W. Miller, Thomas T. Perkins

817-Plat 8:45 AM
UNCOVERING THE FORCES BETWEEN NUCLEOSOMES USING A DNA ORIGAMI FORCE SPECTROMETER. **Jonas J. Funke**, Philip Ketterer, Corinna Lieleg, Sarah Schunter, Philipp Korber, Hendrik Dietz

818-Plat 9:00 AM
EXPLORING NUCLEIC ACID MECHANICS USING MULTIPLEXED MECHANOCHEMISTRY ASSAY (MMA). **Bhavik Nathwani**, Darren Yang, Wesley Wong, William M. Shih

819-Plat 9:15 AM
E-CADHERIN FUNCTIONS AS A DESMOGLEIN TRANSPORTER THAT FACILITATES ASSEMBLY OF NASCENT DESMOSOMES. **Omer M. Shafraz**, Sara N. Stahley, Kannan Sankar, Robert L. Jernigan, Andrew P. Kowalczyk, Sanjeevi Sivasankar

820-Plat 9:30 AM
FORCES AND DYNAMICS IN PROTEIN TRANSLOCATION THROUGH THE BACTERIAL TRANSLOCON. **Anny Fis**, Andreas Karner, Roland Kuttner, Johannes Preiner, Mirjam Zimmermann, Hermann J. Gruber, Peter Pohl, Peter Hinterdorfer

821-Plat 9:45 AM
A MULTI-TOOL MOUSE MODEL TO STUDY THE ELASTICITY OF NATIVE TITIN. **Jaime Andres Rivas-Pardo**, Zsolt Mártonfalvi, Aitor Manteca, Edward C. Eckels, Daniel J. Echelman, Miklós S.Z. Kellermayer, Jorge Alegre-Cebollada, Wolfgang Linke, Julio M. Fernandez

Platform
Protein Stability, Folding, and Chaperones II
8:15 AM - 10:15 AM, ROOM 208/209

Co-Chairs

Cesar Ramirez, Universidad de Chile
Shachi Gosavi, National Centre for Biological Sciences-TIFR, India

822-Plat 8:15 AM
FOLDING IN PIECES. Weiwei Kuo, Upneet Kaur, Daniel Deredge, Cameron J. Kilcoyne, Eugenia M. Clerico, Patrick L. Wintrode, Lila M. Gierasch, **Anne Gershenson**

823-Plat 8:30 AM
STABILIZATION OF VARIABLE DOMAIN DIMERS OF AN IMMUNOGLOBULIN LIGHT CHAIN INHIBITS FORMATION OF AMYLOID FIBRILS. **Shannon R. Esswein**, Boris Brumshtein, David S. Eisenberg

824-Plat 8:45 AM
AN INTERNAL DISULFIDE LOCKS A MISFOLDED AGGREGATION-PRONE INTERMEDIATE IN CATARACT-LINKED MUTANTS OF HUMAN GAMMA-D CRYSTALLIN. **Eugene Serebryany**, Jaie C. Woodard, Bharat V. Adkar, Mohammed Shabab, Jonathan A. King, Eugene I. Shakhnovich

825-Plat 9:00 AM
BIOPHYSICAL AND EVOLUTIONARY ASPECTS OF DOMAIN SWAPPING IN THE FORKHEAD DOMAIN OF HUMAN FOXP PROTEINS. Exequiel Medina, Javiera Reyes, Pablo Villalobos, Elizabeth A. Komives, Jorge Babul, **Cesar A. Ramirez-Sarmiento**

826-Plat 9:15 AM
UNDERSTANDING PROTEIN DOMAIN-SWAPPING IN THE CYSTATIN-MONELLIN FAMILY OF PROTEINS. Nahren Manuel Mascarenhas, **Shachi Gosavi**

827-Plat 9:30 AM
USING HIGH PRESSURE NMR TO STUDY FOLDING COOPERATIVITY AND KINETICS OF PROTEIN L9. **Yi Zhang**, Soichiro Kitazawa, Ivan Peran, Natalie Stenzoski, Scott McCallum, Daniel Raleigh, Catherine Royer

828-Plat 9:45 AM
INTRACELLULAR MODULATION OF PROTEIN FOLDING STABILITY PROBED BY A NOVEL FOLDING REPORTER. **David Gnutt**, Jonas Ahlers, Benedikt König, Simon Ebbinghaus

829-Plat 10:00 AM
MODULATING SOD1 FOLDING LANDSCAPES WITH TARGETED MOLECULAR BINDERS. **David N. Bunck**, Beatriz Atsavaprane, Katrine Museth, James Heath

Exhibitor Presentation
TA Instruments

8:30 AM – 10:00 AM, ROOM 221

Instrumentation and Experimental Design for Utilization of ITC and IMC Techniques for Characterization of Biopharmaceuticals

Eight out of the top ten drugs worldwide in 2016 are biopharmaceuticals. Microcalorimetry is a powerful tool in the characterization of their structure and stability. Isothermal titration calorimetry (ITC) has long been the gold standard technique for exploring the binding of any drug to its target molecule. Recent publications describing the advantages of enthalpy screening utilizing the advances in ITC hardware and software exemplified by the Affinity ITC instruments from TA Instruments have shown that microcalorimetry remains a powerful tool in characterizing biopharmaceuticals. Isothermal Calorimetry (IMC) has the sensitivity and flexibility to fully characterize formulation stability and aggregation kinetics of even the high concentration (200-300 mg/mL) biopharmaceutical formulations. The sensitivity and flexibility of the TAM IV microcalorimetry system has shown the ability to rapidly characterize even the slowest degradation or aggregation reactions taking place in these biopharmaceutical formulations without diluting the sample. Attendees will participate in a wide ranging discussion of these powerful techniques including a full detailed description of the new Affinity ITC and TAM IV hardware along with a Q&A session focused on experimental design considerations for successfully performing enthalpy screening and biopharmaceutical formulation stability testing. Join your colleagues in this in-depth discussion of how ITC and IMC can speed up the candidate selection process and benefit overall lab productivity in any drug discovery or development effort.

Speaker

Dile Holton, Microcalorimetry Product Manager, TA Instruments

CID Committee Meeting

8:30 AM - 10:30 AM, ROOM 203

Career Center Workshop Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)

10:00 AM - 11:00 AM, ROOM 212/213

You've been invited to interview with that drug development company that you've always wanted to work for. You've soaked up the details of the position description. You are confident in your ability to do the job, as well as answer any/all technical questions during the interview process. The day is yours...until...that first question catches you by surprise and your confidence begins to wilt. Be prepared for those non-technical questions that you will almost certainly hear at some point, know why they are asked, and learn what a good (if not great) response to each question might be by attending this workshop.

Exhibits

10:00 AM - 5:00 PM, HALL B-2 & C

Coffee Break

10:15 AM - 11:00 AM, HALL B-2 & C

New Member Welcome Coffee

10:15 AM - 11:15 AM, RIVERGATE ROOM, LOBBY LEVEL

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 Beckman Coulter Life Sciences

10:30 AM - 12:00 PM, ROOM 221

What Goes Around, Comes Around: Unveiling the Optima AUC
For more than 70 years, Analytical Ultracentrifugation (AUC) has played a critical role in laying the foundations for modern molecular biology. AUC allows for the characterization of proteins, oligomers, aggregates, particles, colloids, nanoparticles, extracellular vesicles and other small structures in native conditions and matrix-free conditions. By measuring proteins and other macro-molecules as interacting elements instead of in isolation, AUC more closely approximates true physiological conditions offering unique insight into molecular characterization and processes including molecular weight determination/conformation, stoichiometry, heterogeneity as well as thermodynamic parameters associated with binding.

Following a brief overview of the fundamentals of AUC operation and analysis, the talk will include a brief introduction of the new Optima AUC system. Comparative data from the new Optima AUC versus the ProteomeLab series will be presented, while highlighting applications that are now enabled in the new system due to multi-wavelength analysis and faster scan speeds.

Analytical Ultracentrifugation is a complementary technique to many others; the talk will illuminate advantages of AUC over existing techniques for different applications. Lastly, future research fields enabled by the new Optima AUC will be discussed.

Speaker

Chad Schwartz, AUC Product Manager, Beckman Coulter Life Sciences

Symposium Future of Biophysics

10:45 AM - 12:45 PM, GREAT HALL A

Support contributed by the Burroughs Wellcome Fund

Co-Chairs

*David W. Piston, Washington University
Catherine W. Royer, Rensselaer Polytechnic Institute*

No Abstract 10:45 AM
X-RAY VISION INTO THE WORLD OF ENZYMES. **Nozomi Ando**

No Abstract 11:05 AM
BACTERIAL TYPE 3 SECRETION SYSTEMS: HIGH-THROUGHPUT 3D SINGLE-MOLECULE TRACKING OF SORTING PLATFORM PROTEINS IN LIVE CELLS. **Andreas Gahlmann**

No Abstract 11:25 AM
SCANNING HE ION- AND NONLINEAR OPTICAL MICROSCOPY COMBINED WITH FORCE MEASUREMENTS FOR THE CHARACTERIZATION OF SPIDER SILK. **Irina Iachina**

No Abstract 11:45 AM
REPURPOSING MECHANOSENSITIVE CHANNELS TO STUDY CONFINED 3D CELL MIGRATION. **Allen Liu**

No Abstract 12:05 PM
PHOSPHORYLATION INDUCES SEQUENCE-SPECIFIC CONFORMATIONAL SWITCHES IN THE RNA POLYMERASE II C-TERMINAL DOMAIN. **Scott A. Showalter**

No Abstract 12:25 PM
REAL-TIME QUANTIFICATION OF SINGLE RNA TRANSLATION DYNAMICS IN LIVING CELLS. **Timothy J. Stasevich**

Symposium TRP Channels

10:45 AM - 12:45 PM, GREAT HALL B

Chair

Sharona E. Gordon, University of Washington

830-Symp 10:45 AM
MECHANISMS OF TRPV1 ION CHANNEL GATING. **Sharona E. Gordon**

No Abstract 11:15 AM
GLEANNING FUNCTIONAL INSIGHTS FROM TRP CHANNEL STRUCTURES. **David Julius**

831-Symp 11:45 AM
COMPUTATIONAL APPROACHES TO THE STUDY OF TRPV CHANNEL ACTIVATION AND MODULATION
APPROACHES TO THE STUDY OF TRPV CHANNEL ACTIVATION AND MODULATION. **Carmen Domene**

832-Symp 12:15 PM
NEW INSIGHTS INTO THE FUNCTION OF TRPV CHANNELS. **Vera Moiseenkova Bell**

Platform Protein-Nucleic Acid Interactions I

10:45 AM - 12:45 PM, ROOM R02/03

Co-Chairs

*Dagmar Klostermeier, University of Munster, Germany
Candice Etson, Wesleyan University*

833-Plat 10:45 AM

SINGLE MOLECULE FRET STUDIES ON THE MECHANISM OF ATP-DEPENDENT RNA UNWINDING BY DEAD-BOX HELICASES: AN RNA-INDUCED MOVEMENT OF THE RNA BINDING DOMAIN OF YXIN REGULATES UNWINDING BY THE HELICASE CORE. Brighton Samatanga, Alexandra Z. Andreou, **Dagmar Klostermeier**

834-Plat 11:00 AM

DIRECT SINGLE MOLECULE MEASUREMENT OF ATP HYDROLYSIS SUB-STATES IN HEL308 DNA HELICASE USING NANOPORE TWEEZERS. **Jonathan M. Craig**, Andrew H. Laszlo, Henry D. Brinkerhoff, Ian M. Der- rington, Matt Noakes, Ian C. Nova, Kenji M. Doering, Benjamin I. Tickman, Noah F. De Leeuw, Jens H. Gundlach

835-Plat 11:15 AM

MEASURING THE ORIENTATION OF SINGLE PROTEINS INTERACTING WITH DNA USING FLUORESCENCE POLARIZATION MICROSCOPY. **Emil Marklund**, Elias Amselem, Kalle Kipper, Magnus Johansson, Sebastian Deindl, Johan Elf

836-Plat 11:30 AM

VISUALIZING CTCF MEDIATED DNA LOOPING AT THE SINGLE MOLECULE LEVEL. **Maria Eugenia Fuentes Perez**, Kotryna Bloznelyte, Matthias Merckenschlager, David Rueda

837-Plat 11:45 AM

PROTEIN-MEDIATED LOOPS IN SUPERCOILED DNA CREATE LARGE TOPO- LOGICAL DOMAINS. **Yan Yan**, David D. Dunlap, Fenfei Leng, Laura Finzi

838-Plat 12:00 PM

TOWARD DIRECT OBSERVATION OF THE DNA BINDING DYNAMICS OF MONOMERIC TYPE IIP RESTRICTION ENDONUCLEASES. **Candice M. Etson**

839-Plat 12:15 PM

SINGLE MOLECULE STUDIES ON G-QUADRUPLEX, PROTEIN, AND SMALL MOLECULE INTERACTIONS. **Hamza Balci**, Sujay Ray, Jagat Budhathoki, Parastoo Maleki

840-Plat 12:30 PM

HIGH-RESOLUTION SINGLE MOLECULE ROTATION TRACKING OF RECBCD USING DNA ORIGAMI ROTORS. **Benjamin D. Altheimer**, Pallav Kosuri, Mingjie Dai, Peng Yin, Xiaowei Zhuang

Platform Membrane Receptors and Signal Transduction II

10:45 AM - 12:45 PM, ROOM R04/05

Co-Chairs

Carlos Gasser, Humboldt University Berlin, Germany
David L. Farrens, Oregon Health and Science University

841-Plat 10:45 AM

THE ALLOSTERIC SITE IS REQUIRED FOR VOLTAGE DEPENDENCE OF MUS- CARINIC GPCRS. Anika Hoppe, Moritz Bünemann, **Andreas Rinne**

842-Plat 11:00 AM

PROBE ACTIVATION MECHANISM OF 6TM VARIANTS OF MU-OPIOID RECEPTOR BY A MORPHINE DERIVATIVE (IBNTXA) USING ALL-ATOM MOLECULAR DYNAMICS SIMULATION WITH EXPLICIT MEMBRANE. Safaa Sader, Anant Kumar, **Chun Wu**

843-Plat 11:15 AM

DECAY OF AN ACTIVE GPCR: CONFORMATIONAL DYNAMICS GOVERN AGONIST REBINDING AND PERSISTENCE OF AN ACTIVE, YET EMPTY, RHODOPSIN STATE. Christopher T. Schafer, Jonathan F. Fay, Jay M. Janz, **David L. Farrens**

844-Plat 11:30 AM

ANALYSIS OF RECEPTOR TYROSINE KINASE AND G-PROTEIN COUPLED RECEPTOR SIGNALING DYNAMICS ON MICRO-STRUCTURED SURFACES. Peter Lanzerstorfer, Yosuke Yoneyama, Fumihiko Hakuno, Diana Zindel, Ulrike Müller, Cornelius Krasel, Moritz Bünemann, Otmar Höglinger, Shin- Ichiro Takahashi, **Julian Weghuber**

845-Plat 11:45 AM

CLASS I CYTOKINE RECEPTORS: TOWARDS THE INSIDE. **Helena Steino- cher**, Katrine Bugge, Louise Fletcher Nikolajsen, Kresten Lindorff-Larsen, Andrew Brooks, Birthe Brandt Kragelund

846-Plat 12:00 PM

FORCE GENERATION BY T CELLS MODULATES THE STRENGTH OF ACTIVA- TION. **Kenneth H. Hu**, Manish Butte

847-Plat 12:15 PM

CATCH BONDS AT CELL-CELL INTERFACES: IMPACT OF MEMBRANE FLUC- TUATIONS. **Robert H. Pullen**

848-Plat 12:30 PM

LIGHT-ACTIVATED CYCLIC NUCLEOTIDE PHOSPHODIESTERASES. **Carlos F. Gasser**, Peter Hegemann

Platform Other Channels

10:45 AM - 12:45 PM, ROOM R06/07

Co-Chairs

Christian G. Peters, The University of Toledo Health Science Campus
Nathan Dascal, Tel Aviv University School of Medicine, Israel

849-Plat 10:45 AM

ARTIFICIAL ANION CONDUCTING CHANNELRHODOPSINS WITH TUNED SPECTRA, MODIFIED KINETICS AND ENHANCED LIGHT SENSITIVITY. **Jonas Wietek**, J. Simon Wiegert, Christiane Grimm, Peter Soba, Peter Hege- mann

850-Plat 11:00 AM

MLKL FORM CATION CHANNELS. **Bingqing Xia**, Zhaobing Gao

851-Plat 11:15 AM

IMPROVING TRAFFICKING AND KINETICS OF A SYNTHETIC LIGHT-GATED POTASSIUM CHANNEL. **Laura S. Alberio**, Giordano Defranceschi, Federica Simeoni, Paolo Zuccolini, Gerhard Thiel, Anna Moroni

852-Plat 11:30 AM

IDENTIFICATION OF CRITICAL RESIDUES FOR ANION CONDUCTANCE IN THE TMEM16A CHANNEL. **Christian J. Peters**, Tingxu Chen, Jason Tien, Yuh Nung Jan, Lily Jan

853-Plat 11:45 AM

IDENTIFICATION OF NOVEL AND NATURAL HIGH AFFINITY PEPTIDE IN- HIBITORS OF KCSA BY PHAGE-DISPLAY REVEALS AN UNEXPECTED MECHA- NISM OF PORE BLOCKADE. **Ruiming Zhao**, Hui Dai, Netanel Mendelman, Luis G. Cuello, Jordan H. Chill, Steve A. N. Goldstein

854-Plat 12:00 PM

AN EXPLORATION INTO THE OPTIMAL LIPID COATING FOR NANOPORE- BASED PROTEIN CHARACTERIZATION. **Olivia M. Eggenberger**, Brandon R. Bruhn, Haiyan Liu, Geoffray Leriche, Jerry Yang, Michael Mayer

855-Plat 12:15 PM

THE HUMAN ERYTHROCYTE MECHANO ACTIVATED K⁺ CHANNEL A (HEMK- CA) A PARTIAL CHARACTERIZATION OF CONDUCTANCE, SELECTIVITY AND OPEN PROBABILITY. Luis O. Romero, Daniel Mata, Antonio Gutierrez, **Jesus G. Romero**

856-Plat 12:30 PM
GIRK4 MUTATIONS R52H AND E246K IMPAIR CHANNEL GATING BUT NOT INWARD RECTIFICATION. **Boris Shalomov**, Haritha P. Reddy, Amal Kanti Bera, Nathan Dascal

Platform Membrane Physical Chemistry II

10:45 AM - 12:45 PM, ROOM R08/09

Co-Chairs

Gerald W. Feigenson, Cornell University
Stephanie Tristram-Nagle, Carnegie Mellon University

857-Plat 10:45 AM
ELUCIDATING PI(4,5)P₂ AQUEOUS MICELLE BEHAVIOR AND PI(4,5)P₂ CLUSTER FORMATION IN AN INNER LEAFLET MODEL MEMBRANE. **Yi Wen**, Volker M. Vogt, Gerald W. Feigenson

858-Plat 11:00 AM
HIV-1 MATRIX-31 MEMBRANE BINDING PEPTIDE INTERACTS DIFFERENTLY WITH MEMBRANES CONTAINING PS VS. PI(4,5)P₂. Lauren O'Neil, Kathryn Andenoro, Isabella Pagano, Laura Carroll, Leah Langer, Zachary Dell, Davina Perera, Bradley W. Treece, Frank Heinrich, Mathias Loesche, John Nagle, **Stephanie Tristram-Nagle**

859-Plat 11:15 AM
STABILITY OF CHARGED MEMBRANES: THE ROLE OF PORE EDGE TENSION. Rafael B. Lira, Rumiana Dimova, **Karin A. Riske**

860-Plat 11:30 AM
DETERMINING INTERACTIONS OF CATIONIC MEMBRANE NANOPARTICLES WITH HYDROPHOBIC DRUG CARGO AND THEIR MECHANISMS OF DRUG DELIVERY TO CELLS. **Victoria Steffes**, Meena Murali, Kai K. Ewert, Cyrus R. Safinya

861-Plat 11:45 AM
BILAYER DEFECTS FACILITATE DPPC FLIP-FLOP. **Drew Marquardt**, Frederick A. Heberle, Tatiana Miti, John Katsaras, Georg Pabst

862-Plat 12:00 PM
NANOMETER-SCALE LIPID CLUSTERS IN MODEL MEMBRANES REVEALED BY ATOMIC RECOMBINATION IN NANOSIMS. **Frank R. Moss**, Steven G. Boxer

863-Plat 12:15 PM
EFFECTS OF SILICA SUPPORT ON DYNAMICS OF TRANSMEMBRANE PEPTIDES AND EFFECTIVE PKA OF IONISABLE SIDECHAINS. Erkang Ou, Maxim Voinov, Alex I. Smirnov, **Tatyana I. Smirnova**

864-Plat 12:30 PM
TOTAL REFLECTION X-RAY FLUORESCENCE AT THE AIR WATER INTERFACE USING XERAY. **Zhiliang Gong**, Daniel Kerr, Hyeondo L. Hwang, J. Michael Henderson, Tiffany Suwatthee, Benjamin R. Slaw, Kathleen D. Cao, Binhua Lin, Wei Bu, Ka Yee C. Lee

Platform Molecular Dynamics I

10:45 AM - 12:45 PM, ROOM 206/207

Co-Chairs

Lee Makowski, Northeastern University
Sarah Rauscher, Max Planck Institute for Biophysical Chemistry, Germany

865-Plat 10:45 AM
DEVELOPING FORCE FIELDS FOR THE ACCURATE SIMULATION OF BOTH ORDERED AND DISORDERED PROTEIN STATES. **Paul Robustelli**, Stefano Piana, David E. Shaw

866-Plat 11:00 AM
CHARMM36M: AN IMPROVED FORCE FIELD FOR FOLDED AND INTRINSICALLY DISORDERED PROTEINS. Jing Huang, **Sarah Rauscher**, Grzegorz Nawrocki, Ting Ran, Michael Feig, Bert L. de Groot, Helmut Grubmüller, Alexander D. MacKerell, Jr.

867-Plat 11:15 AM
VERIFYING SELF-CONSISTENCY OF PROTEIN STRUCTURE AND DYNAMICS THROUGH MD SIMULATION AND WAXS. **Hao Zhou**, Hugo Guterres, Carla Mattos, Lee Makowski

868-Plat 11:30 AM
ATOM-RESOLVED VIEW OF A CELL ORGANELLE ON A COMPUTATIONAL MICROSCOPE. **Abhishek Singharoy**, Klaus Schulten

869-Plat 11:45 AM
AS SIMPLE AS POSSIBLE BUT NOT SIMPLER: ON THE RELIABILITY OF PROTEIN COARSE-GRAINED MODELS. **Mona Habibi**, Joerg Rottler, Steven S. Plotkin

870-Plat 12:00 PM
IMPROVED CHARMM ADDITIVE FORCE FIELD PARAMETERS TO ACCURATELY MODEL TYROSINE-CHOLINE CATION- π INTERACTIONS. **Hanif Muhammad Khan**, Cédric Grauffel, Ria Broer, Alexander D. MacKerell Jr., Remco W. A. Havenith, Nathalie Reuter

871-Plat 12:15 PM
GROMEX: ELECTROSTATICS WITH CHEMICAL VARIABILITY FOR REALISTIC MOLECULAR SIMULATIONS ON THE EXASCALE. **R. Thomas Ullmann**, Carsten Kutzner, Andreas Beckmann, Bartosz Kohnke, David Haensel, Ivo Kabadshow, Holger Dachsels, Berk Hess, Helmut Grubmüller

872-Plat 12:30 PM
A HYBRID ALL-ATOM/COARSE-GRAINED APPROACH TO PROBLEMS IN CHEMISTRY AND BIOLOGY. **Samuel Genheden**

Platform Protein Structure and Conformation II

10:45 AM - 12:45 PM, ROOM 208/209

Co-Chairs

Kelly A. Jenkins, Rensselaer Polytechnic Institute
David Sehnal, Central European Institute of Technology, Czech Republic

873-Plat 10:45 AM
USING HYDROGEN BOND SURROGATE TECHNOLOGY TO STABILIZE BETA-HAIRPINS. **Nicholas Sawyer**, Paramjit S. Arora

874-Plat 11:00 AM
SINGLE-MOLECULE FRET DELINEATES ASYMMETRIC TRIMER CONFORMATIONS DURING HIV-1 ENTRY. Xiaochu Ma, **Maolin Lu**, Daniel S. Terry, Jason Gorman, Peter D. Kwong, Scott C. Blanchard, James B. Munro, Walther Mothes

875-Plat 11:15 AM
LIPID REGULATED INTRAMOLECULAR CONFORMATIONAL DYNAMICS OF SNARE-PROTEIN YKT6. Yawei Dai, Markus Seeger, Jingwei Weng, Song Song, Wenning Wang, **Yan-Wen Tan**

876-Plat 11:30 AM **Education Travel Awardee**
THE TWO GTPASE DOMAINS OF THE OUTER MITOCHONDRIAL MEMBRANE PROTEIN MIRO HAVE NOVEL ACTIVE SITE CONFORMATIONS AND DISTINCT BIOCHEMICAL PROPERTIES. **Kyle P. Smith**, Pamela J. Focia, Yongbo Zhang, Julian L. Klosowiak, Douglas M. Freymann, Sarah E. Rice

877-Plat 11:45 AM
CAVITIES AND COOPERATIVITY IN THE FOLDING OF THE LEUCINE RICH REPEAT PROTEIN PP32: A PRESSURE-JUMP FLUORESCENCE AND HIGH PRESSURE NMR STUDY. **Kelly A. Jenkins**, Martin Fossat, Thuy Dao, Yi Zhang, Zackery White, Doug Barrick, Catherine A. Royer

878-Plat 12:00 PM

REAL-TIME INTERACTIVE VISUALISATION OF LARGE MACROMOLECULAR ASSEMBLIES AND MOLECULAR MACHINES AT ATOMIC RESOLUTION.

David Sehna, Mandar Deshpande, Radka Svobodova Varekova, Saquib Mir, Karel Berka, Adam Midlik, Lukas Pravda, Sameer Velankar, Jaroslav Koca

879-Plat 12:15 PM

STRUCTURAL BASIS FOR THE DISSOCIATION OF ALPHA-SYNUCLEIN FIBRILS TRIGGERED BY PRESSURE PERTURBATION OF THE HYDROPHOBIC CORE. **Guilherme A. P. de Oliveira**, Mayra A. Marques, Yraima Cordeiro, Caroline Schuabb, Adolfo H. Moraes, Roland Winter, Hartmut Oschkinat, Debora Foguel, Mônica S. de Freitas, Jerson L. Silva

880-Plat 12:30 PM

CO-TRANSCRIPTIONAL RIBOSOME ASSEMBLY IN REAL-TIME. **Olivier Duss**, Seán O'Leary, Jody Puglisi, James Williamson

Career Center Workshop

Demystifying the Academic Job Search II: Preparing Your Written Application Materials: CV, Cover Letter, and Research Statement

11:30 AM - 12:30 AM, ROOM 212/213

Your written application materials are typically the only information a search committee will have before them as they make the vast majority of cuts. Learn how to craft credentials that speak clearly and powerfully on your behalf, and help committees understand the potential contribution you have to offer.

Exhibitor Presentation

Asylum Research, an Oxford Instruments Company

11:30 AM - 1:00 PM, ROOM 218

Now Playing: Video-Rate AFM with the New Cypher VRS Atomic Force Microscope

Join our free lunch and learn as we introduce the first and only full-featured, video-rate AFM for imaging biological processes—the Cypher VRS Atomic Force Microscope. The Cypher VRS enables high resolution video-rate imaging at 625 lines per second with incredibly easy operation and modularity to support other modes and environmental accessories. The Cypher VRS is capable of imaging samples at 10 frames per second with unprecedented resolution for clearly observing dynamics such as the action of restriction enzymes digesting DNA molecules. Perfusion can also be performed during experiments to observe growth crystal in real time and molecular arrangements of self-assembled monolayers (SAMs). All the ease-of-use features of the industry-leading Cypher ES AFM increase productivity such as automated laser positioning, cantilever calibration, and blueDrive™ photothermal excitation for stable imaging and quantitative measurements. No other AFM can match the combined performance of video-rate speed, high resolution and versatility. Learn all the details about Cypher VRS and be entered in our iPad drawing (must be present to win). See it in action in Booth 608.

Speaker

Irène Revenko, Product Manager, Asylum Research, an Oxford Instruments Company

Exhibitor Presentation Nanon Technologies GmbH

12:30 PM - 2:00 PM, ROOM 221

Ion Channel Drug Discovery - Beyond the Bottlenecks and Ready for CiPA

Nanon Technologies is one of the leading providers of automated patch clamp systems, offering a diverse product portfolio for experiments ranging from single channel recordings to HTS-compatible ion channel drug discovery. During this workshop, we will demonstrate how to push the boundaries of patch clamp-based ion channel high throughput screening projects of various voltage- and ligand gated targets, and how to get ready for CiPA-compliant safety screening beyond hERG.

The CiPA initiative is an ongoing validation program aimed at improving the regulatory requirements for proarrhythmia risk assessment. In accordance with the CiPA-initiative, the panel of cardiac ion channels to consider will drastically expand, consequently requiring increased data throughput for early compound safety prediction.

The SyncroPatch 384/768PE, an automated patch clamp platform recording from up to 768 cells simultaneously, allows the highest data throughput on the market supporting HTS of ion channel active compounds and early safety assessment on cardiac channels. Data of six different cardiac channels recorded in the voltage clamp mode, using one single plate, will be shown. The SyncroPatch 384/768PE also supports automated current clamp recordings, experiments at physiological temperature, and minimal cell usage, making it the ideal partner for safety testing on stem cell-derived cardiomyocytes.

The CardioExcyte 96 is a hybrid system combining impedance and EFP recordings from beating cardiomyocyte networks from 96 wells in parallel. The CardioExcyte 96 has proven a versatile tool for safety and toxicity screening applications serving as a powerful tool complementing APC.

Join our workshop to learn more about new safety screening strategies and how to keep up with the increasing demands on cardiac safety and toxicity screening.

Space is limited so reserve yours by sending an email to info@nanion.de.

Speakers

Andrea Brüggemann, CSO, Nanion Technologies GmbH

Niels Fertig, CEO, Nanion Technologies GmbH

Markus Rapedius, Senior Scientist, Nanion Technologies GmbH

Industry Panel: Breaking Into Industry

1:30 PM - 3:00 PM, RIVERGATE ROOM, LOBBY LEVEL

Are you interested in pursuing a career in industry? Stop by to hear from a panel of experts who work in bio-related industries. Panelists will discuss how to find, select, and apply for industry internships, as well as the skills that industry is looking for in job applicants. This panel will provide attendees with useful tools and resources.

Exhibitor Presentation Malvern Instruments

1:30 PM - 3:00 PM, ROOM 218

Molecular Interactions of Proteins & Small Molecules

Factors describing the stability of any protein formulating can generally be classified into two areas, conformational stability and colloidal stability. Conformational stability relates to the intrinsic properties of a protein molecule and can be described by a range of parameters such as melting point, enthalpy, aggregation onset temperature, and composition of aggregate. These parameters can be observed using many traditional techniques such as Differential Scanning Calorimetry (DSC), Dynamic Light Scattering (DLS), and Size Exclusion Chromatography (SEC).

Colloidal stability in contrast, is a property that describes extrinsic behavior of proteins in a bulk solution, and can be a key attribute in ensuring product quality. The most commonly observed properties to quantify colloidal stability include the diffusion interaction parameter (k_D), second virial coefficient (B_{22}), zeta potential (ζ), viscosity (η) and hydrodynamic size (r_h).

The workshop will introduce a newly developed technique called Taylor Dispersion Analysis (TDA), which provides an automated method for analysis of hydrodynamic size and k_D using small volumes of sample (<5 μ L) without the need for serial dilutions. This presentation will compare and contrast the results of Taylor Dispersion Analysis to that of traditional analysis methods to further understand the complimentary nature of these results.

Speaker

Matthew McGann, Product Manager, Innovation Products, Malvern Instruments

Biophysics 101 Cryo-electron Microscopy (Cryo-EM)

1:30 PM - 3:00 PM, ROOM 214

Cryo electron microscopy is booming, with new atomic structures appearing every week and new facilities being installed at research centers across the globe. This unprecedented growth has been stimulated by the availability of new imaging detectors that dramatically increase the acuity of images, but also reflects advances in electron microscopes and image analysis software. These technologies are being employed for two main applications, known as single-particle analysis and tomography, which can be used to produce structures of a wide range of biomolecular assemblies, from isolated molecules to cells and tissues. This year's "Biophysics 101" will discuss both the technologies and the applications to provide insight into why cryo-EM has become such a powerful and essential tool in structural biology.

Session Chair

Erin Schexnaydre, Louisiana State University

Presenters

Esther Bullitt, Boston University School of Medicine
David DeRosier, Brandeis University
David Stokes, New York University School of Medicine

Snack Break

1:45 PM - 3:00 PM, HALL B-2 & C

How to Get Your Scientific Paper Published

2:15 PM - 3:45 PM, ROOM 220

This panel discussion, will focus on the practical issues involved in publishing a scientific paper. The panelists have extensive experience in writing, reviewing, and editing papers, and will provide information on the dos and don'ts of submitting research manuscripts. Discussions will focus on strategies to avoid common pitfalls, how to prevent and fix problems before submission, and how to respond to critiques and even rejection of a paper. Attendees are encouraged to ask questions during the session.

Moderators

Enrique De La Cruz, Yale University
Gail Robertson, University of Wisconsin-Madison

Panelists

Cynthia Czajkowski, University of Wisconsin-Madison
Jane Dyson, Scripps Research Institute
Chris Yip, University of Toronto

Speed Networking

2:30 PM - 3:30 PM, MOSAIC LOUNGE, LOBBY A

Career development and networking is important in science, but can be a big time commitment. Here we offer refreshments and the chance to speed network, an exciting way to connect with a large number of biophysicists in a short amount of time. This is an ideal opportunity for graduate students to meet prospective postdoc mentors and faculty to find a postdoc. Early career scientists could use their new contacts to discuss career goals and challenges, get advice on tenure or grant writing, find out how to gain recognition, or network for your next job. Mid-career and more experienced scientists could learn how to get more involved in the Society or network for possible reviewers for papers. After introductions, each person will have short 3-5 minute meetings with consecutive new contacts. During this time you can exchange information and ask questions. When time is up, you select the next person to talk to. By the end of the event, each participant will have had meaningful interactions with over half a dozen colleagues and the opportunity to meet many more. It's that simple!

Career Center Workshop Beyond the Bench: Preparing for Your Career Transition in the Life Sciences

2:30 PM - 3:30 PM, ROOM 212/213

There are numerous alternative career options for the seasoned bench scientist who may have decided to take his/her talents and apply them in a new direction. This transition can be accomplished without having to matriculate in another graduate program, and this session explores the how's and why's of making such a transition. Be prepared to talk about the role you are thinking about moving into, why you may have chosen this alternative path, and what successes you may have had thus far.

A Driving Force in the Middle of the Journey Funding Opportunities for Mid-Career Scientists

2:30 PM - 4:00 PM, ROOM 219

This session features a discussion of funding opportunities for mid-career researchers – those who fall in between the "new investigator" and "senior researcher" career stages. Panelists will discuss options and offer their points of view on how to maximize and strategize about funding opportunities.

Speakers

Nancy Carrasco, Yale University
German Cavalier, Fordham University
Frances Separovic, University of Melbourne, Australia
Engin Serpersu, NSF

Exhibitor Presentation HORIBA Scientific

2:30 PM – 4:00 PM, ROOM 221

Experience the New Shape and SPEED of Things to Come in Fluorescence

HORIBA Scientific is proud to introduce a revolutionary new fluorescence/UV-Vis spectrometer that advances beyond larger, slower, multi-step scanning fluorometers. The design consists of a harmonious blend of two spectroscopies, Fluorescence AND Absorbance, applied in a unique and patented way.

The system combines a patented two-in-one fluorescence / UV-Vis spectrometer with an ultrafast CCD that acquires fluorescence spectra in the blink of an eye. It features a smaller, more elegant and ergonomic design than current fluorometers with a simple and unique interchangeable sampling arrangement. In addition to traditional fluorescence AND UV-Vis-NIR absorbance spectroscopy modalities, the new system features ultra-fast fluorescence Excitation Emission Matrices (EEMs), simultaneous absorbance allowing for extended linear dynamic range due to automatic inner filter effect corrections, and unique molecular fingerprinting capabilities not available on any other commercial fluorometer.

The new instrument has a standard wavelength range from 200 to 1,100 nm and a scan speed of over 5,000,000 nm/min, allowing the system to go further into the NIR, and acquire data much faster than any competitive mid-market, bench-top spectrofluorometer.

Beyond even all of these unique benefits, this new instrument is also much more sensitive than any other commercial bench-top spectrofluorometer.

Just as the hardware and configuration are all new, so too is the software that runs the instrument. Running on the latest touch screen Windows operating systems, this newest generation of spectroscopy software offers dedicated apps-driven icons that simplify the user experience and the operation of the instrument. Researchers and students will easily be able to perform fluorescence, absorption or simultaneous fluorescence and absorbance measurements and applications without prior software training.

Come see a presentation and demonstration of this exciting new instrument from the leaders in fluorescence!

Speaker

Cary Davies, Global Product Line Manager, Fluorescence Division, HORIBA Scientific

Membership Committee Meeting

3:00 PM - 5:00 PM, ROOM 203

Exhibitor Presentation OriginLab Corporation

3:30 PM – 5:00 PM, ROOM 218

Origin 2017 Product Demo

This workshop will focus on graphing and analysis using our latest version, Origin 2017.

The following topics will be covered: Importing ASCII, Excel and third-party files. Creating and customizing 2D, 3D and specialized graphs. Using graph templates and themes for repeat plotting. Batch plotting. Exporting and publishing. Data processing. Data exploration. Linear and nonlinear regression. Peak analysis. Statistics. Batch analysis and custom reports using templates. Installing Apps from the OriginLab website.

Speaker

Chris Drozdowski, Technical Support, OriginLab Corporation

Career Center Workshop The Strategic Postdoc: How to Find and Leverage Your Postdoc Experience

4:00 PM - 5:00 PM, ROOM 212/213

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.

Symposium Protein Folding Mechanisms

4:00 PM - 6:00 PM, GREAT HALL A

Chair

Susan Marqusee, University of California, Berkeley

881-Symp 4:00 PM

TOURING THE LANDSCAPE: THE VIEW DEPENDS ON HOW AND WHEN YOU LOOK. **Susan Marqusee**

882-Symp 4:30 PM

FOLDING OF DISORDERED PROTEINS: SINGLE MOLECULES TO MESO-SCALES. **Ashok Deniz**

883-Symp 5:00 PM

FOLDING MECHANISMS: DISTINGUISHING SIGNATURES AND FUNCTIONAL ADVANTAGES. **Olga Dudko**

884-Symp 5:30 PM

PROTEINS AS PH SENSORS AND SWITCHES. **Bertrand Garcia-Moreno**

Symposium Mitochondrial Dynamics and Transport

4:00 PM - 6:00 PM, GREAT HALL B

Chair

Robert S. Balaban, NIH

885-Symp 4:00 PM
THE MUSCLE CELL MITOCHONDRIA RETICULUM. **Robert S. Balaban**

886-Symp 4:30 PM
CONTROL OF MITOCHONDRIAL FUNCTION BY FUSION AND FISSION. Hsiuchen Chen, **David Chan**

887-Symp 5:00 PM
STRUCTURE AND IN SITU ORGANIZATION OF ATP SYNTHASE AND RESPIRATORY CHAIN COMPLEXES. **Karen Davies**, Alexander Muehleip, Thorsten Blum, Bertram Daum, Claudio Anselmi, José Faraldo-Gómez, Werner Kühlbrandt

888-Symp 5:30 PM
MITOCHONDRIA AND MEMORY: BIOENERGETICS, SYNAPTIC PLASTICITY AND NEURODEGENERATION. **Elizabeth A. Jonas**, Nelli Mnatsakanyan, Paige Miranda, Han-A Park, Rongmin Chen, Pawel Licznerski, Maria Weinert, Peter J.S. Smith, Andres Chavez, R. Suzanne Zukin, Valentin K. Gribkoff, Kambiz N. Alavian

Symposium Epigenomic Changes Driven by Biomechanical Load

4:00 PM - 6:00 PM, ROOM R02/03

Chair

Andrew D. McCulloch, University of California, San Diego

889-Symp 4:00 PM
SYSTEMS MECHANOBIOLOGY OF CARDIAC MYOCYTES. **Andrew D. McCulloch**

890-Symp 4:30 PM
THE "SELF-STIRRED" GENOME: BULK AND SURFACE DYNAMICS OF THE CHROMATIN GLOBULE. **Alexandra Zidovska**

891-Symp 5:00 PM
EPIGENETIC REGULATION OF CHROMATIN DYNAMICS. **Michael G. Poirier**

892-Symp 5:30 PM
MULTI-SCALE MODELING OF CHROMOSOMAL DNA IN PROKARYOTIC AND EUKARYOTIC CELLS. **Andrew J. Spakowitz**

Platform Skeletal Muscle Mechanics, Structure, and Regulation

4:00 PM - 6:00 PM, ROOM R04/05

Co-Chairs

Luca Fusi, King's College London, United Kingdom
Felipe de Souza Leite, McGill University, Canada

893-Plat 4:00 PM
STRUCTURAL KINETICS OF THE RLC DOMAIN OF MYOSIN DURING ACTIVATION OF SKELETAL MUSCLE FIBERS BY PHOTOLYSIS OF CAGED-CALCIUM. **Luca Fusi**, Elisabetta Brunello, Ziqian Yan, Malcolm Irving

894-Plat 4:15 PM
STRUCTURAL CHANGES IN THE THICK FILAMENTS DURING ACTIVATION OF DEMEMBRANATED SKELETAL MUSCLE FIBERS. Marco Caremani, Luca Fusi, Massimo Reconditi, Gabriella Piazzesi, Theyencheri Narayanan, Malcolm Irving, Vincenzo Lombardi, **Elisabetta Brunello**

895-Plat 4:30 PM
THICK FILAMENT COMPLIANCE IN PASSIVELY STRETCHED SKELETAL MUSCLE. Weikang Ma, Danielle Buck, Joshua Nedrud, **Thomas C. Irving**, Henk Granzier

896-Plat 4:45 PM
EVIDENCE FOR AN I-BAND SPRING THAT IS TUNED TO THE LENGTH OF THE SKELETAL MUSCLE SARCOMERE. **Joseph D. Powers**, Massimo Reconditi, Luca Fusi, Elisabetta Brunello, Vincenzo Lombardi, Gabriella Piazzesi

897-Plat 5:00 PM
ACTIVATED SKELETAL MUSCLE MYOFIBRILS HAVE DIFFERENT PEAK STRESSES AT SIMILAR SARCOMERE LENGTHS WHEN LENGTHENED BEYOND MYOFILAMENT OVERLAP. **Tim R. Leonard**, Walter Herzog

898-Plat 5:15 PM **INTERNATIONAL TRAVEL AWARDEE**
SARCOMERE AND INTER-SARCOMERE DYNAMICS WITHIN SKELETAL MUSCLE MYOFIBRILS. **Felipe de Souza Leite**, Dilson E. Rassier

899-Plat 5:30 PM
THIN FILAMENT POINTED ENDS REDISTRIBUTE IN RESPONSE TO ALTERED THICK FILAMENTS. **Ryan Littlefield**

900-Plat 5:45 PM
ACTA1-RELATED NEMALINE MYOPATHY MUTATIONS ENGENDER A RANGE OF STRUCTURAL AND FUNCTIONAL PHENOTYPES IN *DROSOPHILA* INDIRECT FLIGHT MUSCLES. **Aditi Madan**, Meera C. Viswanathan, Manuela Lavorato, William Schmidt, Julien Ochala, Anthony Cammarato

Platform Ion Channel Regulatory Mechanisms

4:00 PM - 6:00 PM, ROOM R06/07

Co-Chairs

Coeli M. Lopes, University of Rochester
Gaya P. Yadav, University of Texas Southwestern Medical Center

901-Plat 4:00 PM
SMALL MOLECULE MODULATION OF BRAIN GIRK CHANNELS MOLECULE MODULATION OF BRAIN GIRK CHANNELS. **Ian W. Glaaser**, Paul A. Slesinger

902-Plat 4:15 PM
BK CHANNEL α AND β SUBUNITS ASSEMBLE WITH A STOICHIOMETRY OF UP TO 4:4, BUT ONE β IS SUFFICIENT TO PRODUCE THE FULL β -INDUCED GATING SHIFT. **Vivian Gonzalez-Perez**, Manu Ben-Johny, Xiao-Ming Xia, Christopher J. Lingle

903-Plat 4:30 PM
SUMOYLATION OF $Na_v1.2$ CHANNELS MEDIATES THE EARLY RESPONSE TO ACUTE HYPOXIA IN CENTRAL NEURONS. **Leigh D. Plant**, Jeremy D. Marks, Steve A.N. Goldstein

904-Plat 4:45 PM
STOICHIOMETRIES OF HCN-KCNE2 CHANNEL. Yoann Lussier, Lena Möller, Oliver Fürst, Rikard Blunck, **Nazzareno D'Avanzo**

905-Plat 5:00 PM
MOLECULAR INTERACTIONS BETWEEN KV4.3 AND DPP6 - THE BIOCHEMICAL ANATOMY OF IDIOPATHIC VENTRICULAR FIBRILLATION. **Nazlee Sharmin**, Peter Mohler, Rikard Blunck, Stanley Nattel

906-Plat 5:15 PM
CHARACTERIZATION OF THE ORAI-CALMODULIN INTERACTION AS POTENTIAL MEDIATOR OF CALCIUM-DEPENDENT ORAI-CHANNEL INACTIVATION. **Lukas Traxler**, Felix Faschinger, Petr Rathner, Michael Stadlbauer, Tatsiana Charnavets, Christoph Romanin, Norbert Müller, Peter Hinterdorfer, Hermann J. Gruber

907-Plat 5:30 PM

PH-INDUCED OLIGOMERIZATION OF THE VOLTAGE DEPENDENT ANION CHANNEL. **Lucie A. Bergdoll**, Michael T. Lerch, Kendrick Belardo, Christian Altenbach, Paola Bisignano, Michael Grabe, Wayne Hubbell, Jeff Abramson

908-Plat 5:45 PM

CHROMOGRANIN B SERVES THE LONG-SOUGHT-AFTER ANION CONDUCTANCE IN REGULATED SECRETION. **Gaya P. Yadav**, Qing Yang, Qiu-Xing Jiang

Platform**Membrane Active Peptides and Toxins II****4:00 PM - 6:00 PM, ROOM R08/09****Co-Chairs**

John M. Sanderson, Durham University, United Kingdom
Marie Kelly-Worden, Ball State University

909-Plat 4:00 PM

MEMBRANE PERFORATION THERMODYNAMICS OF A PORE-FORMING TOXIN EXPLORED BY MOLECULAR DYNAMICS SIMULATIONS. **Felipe Merino**, Stefan Raunser

910-Plat 4:15 PM

MEMBRANE PERMEATION AND AGGREGATION OF TOXINS VIA ENHANCED FREE ENERGY SAMPLING. **Jessica M.J. Swanson**, Rui Sun

911-Plat 4:30 PM

THE PH-DEPENDENT TRIGGER IN DIPHTHERIA TOXIN T DOMAIN COMES WITH A SAFETY LATCH. Mykola V. Rodnin, Jing Li, Michael L. Gross, **Alexey S. Ladokhin**

912-Plat 4:45 PM

THE DELTA PEPTIDE OF EBOLA VIRUS HAS POTENT VIROPORIN ACTIVITY. **Jing He**, Lilia Melnik, Alexander Komin, Charles G. Starr, Taylor Fuselier, Gregory Wiedman, Cameron F. Morris, Yilin Wang, Kalina Hristova, William Gallaher, Robert F. Garry, William C. Wimley

913-Plat 5:00 PM

IDENTIFICATION OF RECEPTOR-BASED PEPTIDES TO INHIBIT LEUKOTOXIN ACTIVITY. **Eric Krueger**, Shannon Hayes, Angela C. Brown

914-Plat 5:15 PM

FUNCTIONAL RECONSTITUTION OF V-ATPASE PROTEOLIPID RING INTO A PLANAR LIPID MEMBRANE. Sergio Couoh-Cardel, Yi-Ching Hsueh, Stephan Wilkens, **Liviu Movileanu**

915-Plat 5:30 PM

HUMAN LACTOFERRICIN DERIVED PEPTIDES INDUCE APOPTOSIS SPECIFICALLY IN CANCER CELLS THROUGH TARGETING MEMBRANOUS PHOSPHATIDYLSERINE. Sabrina Riedl, Beate Rinner, Helmut Schaidler, Bernadette Liegl-Atzwanger, Christina Wodlej, Karl Lohner, **Dagmar Zweytk**

916-Plat 5:45 PM

POPULATION DYNAMICS OF ANTIMICROBIAL PEPTIDE'S ACTIVITY IS GOVERNED BY THEIR RETENTION IN DEAD BACTERIAL CELLS. Mehdi Snoussi, Paul Talledo, Nathan-Alexander Del Rosario, Lannah Abasi, Federico Prokopczuk, Bae-Yeun Ha, **Sattar Taheri-Araghi**

Platform**Optical Microscopy and Super-Resolution Imaging: Novel Approaches and Analysis II****4:00 PM - 6:00 PM, ROOM 206/207****Co-Chairs**

Chiara Stringari, Laboratory for Optics and Biosciences, France
Keith A. Lidke, University of New Mexico

917-Plat 4:00 PM

ROCS MICROSCOPY: SUPER-RESOLUTION IMAGING OF CELLULAR STRUCTURES AT 100 HZ. **Alexander Rohrbach**, Felix Juenger

918-Plat 4:15 PM

NEW SUPER-OSCILLATORY TECHNOLOGY FOR UNLABELLED SUPER-RESOLUTION CELLULAR IMAGING WITH POLARISATION CONTRAST. **Edward TF Rogers**, Shmma Quraishe, John E. Chad, Tracey A. Newman, Nikolay I. Zheludev, Peter JS Smith

919-Plat 4:30 PM

FLIM PHASOR FINGERPRINT OF BACTERIAL METABOLIC STATE. **Rupsa Datta**, Arunima Bhattacharjee, Allon Hochbaum, Enrico Gratton

920-Plat 4:45 PM

AN EFFICIENT MULTICOLOR TWO-PHOTON IMAGING OF ENDOGENOUS FLUOROPHORES IN LIVING TISSUES BY WAVELENGTH MIXING. **Chiara Stringari**, Lamiae Abdeladim, Guy Malkinson, Willy Supatto, Sébastien Brizion, Jean-Baptiste Galey, Ana-Maria Pena, Renaud Legouis, Emmanuel Beaufepaire

921-Plat 5:00 PM

COORDINATE-TARGETED FLUORESCENCE NANOSCOPY WITH MULTIPLE OFF-STATES. **Johann G. Danzl**, Sven Sidenstein, Carola Gregor, Nicolai Urban, Peter Ilgen, Stefan Jakobs, Stefan Hell

922-Plat 5:15 PM

SINGLE OBJECTIVE LIGHT-SHEET MICROSCOPY FOR HIGH-SPEED WHOLE-CELL 3D SUPER-RESOLUTION. **Marjolein B.M. Meddens**, Sheng Liu, Patrick S. Finnegan, Thayne L. Edwards, Conrad D. James, Keith A. Lidke

923-Plat 5:30 PM

VIEWING CANCER IN A NEW LIGHT: MULTIMODAL LABEL-FREE SPECIFIC CHEMICAL IMAGING TO DISTINGUISH HEALTHY CELL TISSUE FROM INVASIVE CARCINOMA. **Bjarne Thorsted**, Stine R. Larsen, Christian Godballe, Jonathan R. Brewer

924-Plat 5:45 PM

DEVELOPMENT OF STRAIN DURING ZEBRAFISH GASTRULATION. **Jun Zhong**, Dipanjan Bhattacharya, Alexandre J. Kabla, Paul T. Matsudaira

Platform**Membrane Protein Structures II****4:00 PM - 6:00 PM, ROOM 208/209****Co-Chairs**

Sarah Rouse, University of Oxford, United Kingdom
Per A. Pedersen, University of Copenhagen, Denmark

925-Plat 4:00 PM

DECIPHERING THE CONFORMATIONAL EQUILIBRIUM OF INTEGRIN RECEPTORS. Xiao-Ping Xu, Mark Swift, Dorit Hanein, **Niels Volkman**

926-Plat 4:15 PM

CRYO-EM STUDIES OF DYNAMIN MEDIATED MEMBRANE CONSTRICTION. **Leopold Kong**, Huaibin Wang, Shunming Fang, Jenny Hinshaw

927-Plat 4:30 PM

SINGLE PARTICLE KINETIC AND ELECTRON CRYO-MICROSCOPY STUDIES OF FLAVIVIRUS MEMBRANE FUSION. **Luke Chao**

928-Plat 4:45 PM
 FUSION ON A PEDESTAL: THE STRUCTURE OF THE FULL-LENGTH HSV-1 FUSOGEN GB. **Rebecca S. Cooper**, Elka R. Georgieva, Henry B. Rogalin, Peter P. Borbat, Jack H. Freed, Ekaterina E. Heldwein

929-Plat 5:00 PM CPOW Travel Awardee
 STRUCTURAL AND MECHANISTIC INSIGHTS INTO TRANSPORT OF FUNCTIONAL AMYLOID SUBUNITS ACROSS THE *PSEUDOMONAS* OUTER MEMBRANE. **Sarah L. Rouse**, William Hawthorne, Jamie Berry, Stephen Matthews

930-Plat 5:15 PM
 LARGE SCALE PRODUCTION OF MAMMALIAN MEMBRANE PROTEINS TOWARD DETERMINATION OF HIGH-RESOLUTION STRUCTURE. **Haruo Ogawa**, Chikashi Toyoshima

931-Plat 5:30 PM
 A PLATFORM FOR HIGH YIELD PRODUCTION OF HUMAN MEMBRANE PROTEINS. **Per A. Pedersen**, Peter Scharff-Poulsen, Sarah Preisler, Karen Molbæk

932-Plat 5:45 PM Education Travel Awardee
 TOWARDS A UNIVERSAL CHARACTERIZATION OF THE MEMBRANE PROTEIN EXPRESSION LANDSCAPE. **Alexander E. Chu**, Shyam M. Saladi, Nadine Bradbury, William M. Clemons

Exhibitor Presentation Sutter Instrument

5:30 PM - 7:00 PM, ROOM 218

SCIENTISTS EMPOWERING SCIENTISTS

Patch clamp electrophysiology, which started as a highly specialized technique, is now considered a primary tool for biological research. To meet the needs of the research community, Sutter Instrument has introduced a new line of flexible and intuitive patch clamp amplifiers and data acquisition software. The IPA® Amplifier and SutterPatch® Software will allow the researcher to quickly set up and perform routine tasks, but still have the flexibility to meet the demands of the experienced electrophysiologist.

At this presentation, we will demonstrate how the IPA Integrated Patch Amplifier, the new Double IPA® Amplifier and SutterPatch Software can be used for a variety of common experiments, including characterization of ionic current and recording synaptic events in tissue slices. We will also show how the IPA family of amplifiers and SutterPatch software can be used in much more complex acquisition and analysis scenarios.

Data collection in SutterPatch Software was designed to track environmental variables along with the context of each sample within an experiment, so that all data are recorded together for future reference. We focused on creating an intuitive navigational interface to make large data sets more manageable. Controls that are already familiar to you, from electrophysiology software or applications in other fields, make finding a specific section of an experiment very easy. Where appropriate, we used innovative new approaches to make the interface as simple and powerful as possible.

Paradigms and Routines control the experiment in a way that enables a high degree of automation, helping to eliminate operator bias. Real-time decision making and sophisticated control of the experimental flow are made easy with a comprehensive set of sample parameters. Even complex stimulus waveforms can easily be configured using the Waveform Editor or a template created from a recorded or synthesized signal.

Who should attend?

- Electrophysiologists who use amplifiers, micropipettes and micromanipulators for patch clamp, sharp electrode or extracellular recordings.
- Researchers who perform patch clamp recordings in tissue slices, dissociated cells, cell lines or *in vivo* preparations.
- Anybody who is interested in the latest feature-rich hardware and software for electrophysiology applications.

Speakers

Jan Dolzer, Product Manager, Patch Clamp Systems, Sutter Instrument
 Telly Galiatsatos, Tech Support and Product Development, Sutter Instrument

Awards and National Lecture

8:00 PM - 9:30 PM, GREAT HALL A & B

Reception and Dance

9:30 PM - 12:00 AM, HILTON, GRAND BALLROOM

Registrants are invited to attend the reception following the National Lecture. Badges will be required for admittance. Guest badges for this event are available for purchase during registration.

Reception and Quiet Room

9:30 PM - 12:00 AM, HILTON, VERSAILLES BALLROOM

Registrants are invited to attend the reception in a more quiet atmosphere following the National Lecture. Badges will be required for admittance. Guest badges for this event are available for purchase during registration.

MONDAY POSTER SESSIONS

1:45 PM–3:45 PM, HALL B-2 & C

Below is the list of poster presentations of abstracts submitted by October 3.

The list of abstracts submitted after October 3 and scheduled for Monday is available in the Program Addendum; those posters can be viewed on boards beginning with L. All abstracts are available through the desktop planner and mobile app.

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 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 1:45 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:45 PM

Board Numbers	Category
B1 – B22	Protein Structure and Conformation II
B23 – B31	Protein Structure, Prediction, and Design II
B32 – B45	Protein Folding: Dynamics and Novel Methods
B46 – B58	Protein Assemblies I
B59 – B71	Protein Dynamics and Allostery II
B72 – B84	Membrane Protein Folding
B85 – B105	Intrinsically Disordered Proteins (IDP) and Aggregates I
B106 – B119	Transcription
B120 – B136	Nucleic Acid Structure and Dynamics II
B137 – B148	Chromatin and the Nucleoid I
B149 – B163	Membrane Dynamics II
B164 – B179	Membrane Structure II
B180 – B195	Protein-Lipid Interactions: Channels
B196 – B207	General Protein-Lipid Interactions II
B208 – B217	Intercellular Calcium Channels and Calcium Sparks and Waves I
B218 – B230	Cardiac, Smooth, and Skeletal Muscle Electrophysiology I
B231 – B236	Muscle Regulation
B237 – B248	Intracellular Transport
B249 – B264	Voltage-gated Na Channels II
B265 – B275	Voltage-gated Ca Channels II
B276 – B295	Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating II
B296 – B303	TRP Channels II
B304 – B324	Ion Channel Regulatory Mechanisms I
B325 – B342	Cardiac Muscle Regulation I
B343 – B358	Kinesins, Dyneins, and Other Microtubule-based Motors I
B359 – B378	Myosins
B379 – B399	Cell Mechanics, Mechanosensing, and Motility II
B400 – B406	Cytoskeletal-based Intracellular Transport
B407 – B420	Transporters and Exchangers II
B421 – B434	Energy Transducing Complexes and Electron and Proton Transfer
B435 – B460	Cellular Signaling and Systems Biology
B461 – B472	Neuroscience: General Computational and Experimental Approaches and Tools II
B473 – B483	Molecular Dynamics II
B484 – B511	Computational Methods and Bioinformatics I
B512 – B535	Optical Microscopy and Super-Resolution Imaging: Novel Approaches and Analysis II
B536 – B545	Single-Molecule Spectroscopy II
B546 – B558	Micro- and Nanotechnology II
B559 – B579	Bioengineering

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

Protein Structure and Conformation II (Boards B1–B22)

933-Pos BOARD B1
CONFORMATIONAL DYNAMICS OF HISTONE LYSINE METHYLTRANSFERASES BY MILLISECOND-TIMESCALE MOLECULAR DYNAMICS ON FOLDING@HOME. **Rafal P. Wiewiora**, Shi Chen, Kyle Beauchamp, Minkui Luo, John D. Chodera

934-Pos BOARD B2
SUCROSE AND THE LIPID ENVIRONMENT MODULATE CONFORMATIONAL HETEROGENEITY IN THE GLUTAMATE TRANSPORTER HOMOLOGUE GLTPH. **Sara Blankenship**, David Cafiso

935-Pos BOARD B3 INTERNATIONAL TRAVEL AWARDEE
DESIGN AND CHARACTERIZATION OF LONG AND STABLE *DE NOVO* SINGLE A-HELIX DOMAINS. **Marcin Wolny**, Matthew Batchelor, Gail J. Bartlett, Emily G. Baker, Marta Kurzawa, Peter J. Knight, Lorna Dougan, Yasuharu Takagi, Derek N. Woolfson, Emanuele Paci, Michelle Peckham

936-Pos BOARD B4
MOLECULAR DYNAMICS SIMULATIONS OF DNA POL B PHOSPHORYLATION-INDUCED STRUCTURAL CHANGES. **Dirar M. Homouz**, Haitham Idriss

937-Pos BOARD B5
G PROTEIN SIGNALING IN PLANTS: CHARACTERIZATION OF ALPHA AND GAMMA SUBUNITS. **Zehra Sayers**, Bihter Avsar, Ines Karmous, Ersoy Cholak

938-Pos BOARD B6
SPECTROSCOPIC AND SAXS STUDIES OF HUMAN PRION PROTEIN VARIANTS COMPLEXED WITH DIVALENT CATIONS. **Maciej Kozak**, Maciej Gielnik, Michał Taube, Igor Zhukov

939-Pos BOARD B7
ERGODICITY MEASUREMENTS IN NATIVE PROTEIN ENSEMBLES USING SOLID-STATE NANOPORES. **Pradeep Waduge**, Rui Hu, Prasad Bandarkar, Benjamin Cressiot, Paul Whitford, Meni Wanunu

940-Pos BOARD B8 INTERNATIONAL TRAVEL AWARDEE
BIOPHYSICAL STUDIES OF TRAIL-BASED ANTICANCER FUSION PROTEIN AD O51.4. **Ilona Marszalek**, Sebastian D. Pawlak, Adrian Jasiński, Michał Szymanik

941-Pos BOARD B9
ON THE INTERACTION OF ALKYL-FUNCTIONALIZED IONIC LIQUIDS WITH MODEL PROTEINS: A SPECTROSCOPIC AND STRUCTURAL STUDY. Juliana Raw, Luma O. Melo, **Leandro R S Barbosa**

942-Pos BOARD B10
CHARGE TRANSFER TRANSITIONS ORIGINATING FROM CHARGED AMINO ACIDS ACCOUNT FOR 300-800 NM UV-VISIBLE ELECTRONIC ABSORPTION SPECTRA IN PROTEINS. Imon Mandal, Saumya Prasad, Rajaram Swaminathan, **Ravindra Venkatramani**

943-Pos BOARD B11
LIGHT-INDUCED CONFORMATIONAL CHANGES OF *S. AURANTIACA* BACTERIOPHYTOCHROMES AS REVEALED BY ATOMIC FORCE MICROSCOPY. **Rima Rebiai**, Stefan Tsonchev, Kenneth T. Nicholson, Emina A. Stojković

944-Pos BOARD B12
TEMPERATURE DEPENDENT PAIR-WISE AMINO ACID STRUCTURAL PROPENSITY IN CCB AND IMPLICATIONS FOR A TO B SECONDARY STRUCTURAL CONVERSION. **Norma L. Peña-Flores**, Camila Uzcategui, Tim Steckmann, Prem Chapagain, Bernard Gerstman

945-Pos BOARD B13
PROTEIN FOOTPRINTING COUPLED WITH MASS SPECTROMETRY FOR *IN VIVO* PROTEIN STRUCTURAL ANALYSIS IN *C. ELEGANS*. Jessica A. Espino, Lisa M. Jones

946-Pos BOARD B14
COMPUTATIONAL INVESTIGATION INTO THE SOLUTION STRUCTURE OF MONOMERIC LASSA VIRUS NUCLEOPROTEIN AND INSIGHTS INTO ITS RNA BINDING MECHANISM. **Jason G. Pattis**, Michael D. Ward, Eric R. May

947-Pos BOARD B15
CONTRIBUTIONS OF GLYCOSAMINOGLYCANS TO MEMBRANE ADSORPTION AND CONFORMATIONAL CONVERSION OF PEPTIDE HORMONES. **Noé Quittot**

948-Pos BOARD B16
COMPUTATIONAL MODELING OF HUMAN 3'-PHOSPHOADENOSINE 5'-PHOSPHOSULFATE SYNTHASE. **Rudiger H. Ettlich**, Chris Soha, Dhiraj Sinha, Cecilia Rokusek, Kallidaikurichi Venkatachalam

949-Pos BOARD B17
GUIDING DOUBLE ELECTRON ELECTRON RESONANCE EXPERIMENTS USING INFORMATION THEORY AND MOLECULAR DYNAMICS SIMULATIONS. **Jennifer M. Hays**, Marissa Kieber, David Nyenhuis, Linda Columbus, David Cafiso, Peter Kasson

950-Pos BOARD B18
HIGH-RESOLUTION PROBING OF CONFORMATIONAL CHANGES IN PROTEINS THROUGH A TUG-OF-WAR BETWEEN ELECTROKINETIC FORCES AND PRESSURE-DRIVEN FLOW. **Rui Hu**, Pradeep Waduge, Sylvia Ujwary, Qing Zhao, Meni Wanunu

951-Pos BOARD B19
A NEW TEMPORAL DIMENSION FOR MULTISIGNAL SEDIMENTATION VELOCITY AS A TOOL TO ANALYZE MULTICOMPONENT INTERACTIONS. **Sumit K. Chaturvedi**, George Patterson, Huaying Zhao, Peter Schuck

952-Pos BOARD B20
DYNAMIC CHANGES IN COMPLEMENT COMPONENT 3 IN THE PRESENCE OF THE LECTIN-LIKE DOMAIN OF THROMBOMODULIN. Thomas Holt, Daniel DeHelian, Gavin Palowitch, **Julia R. Koeppel**

953-Pos BOARD B21
HEAT-INDUCED DIMERIZATION OF COLICIN A PORE FORMING DOMAIN. **Yan Huang**, Jun-Peng Fan, Jeremy H. Lakey, Yi Liu

954-Pos BOARD B22
EFFECTS OF HUMANIZING MUTATIONS ON THE HEME CREVICE LOOP OF YEAST ISO-1-CYTOCHROME C. **Haotian Lei**, Bruce E. Bowler

Protein Structure, Prediction, and Design II (Boards B23–B31)

955-Pos BOARD B23
ENERGY LANDSCAPE OF A BRIDGE BETWEEN PROTEIN FOLDS. **Pengfei Tian**, Robert B. Best

956-Pos BOARD B24
OPTIMIZING PROTEIN DYNAMICS IN METALLOENZYME DESIGN. **Ronald L. Koder**, Bernard Everson, Lei Zhang, Jonathan Preston, Emma Bjerkefeldt

957-Pos BOARD B25
A STATISTICAL MECHANICAL MODEL FOR COILED-COIL PROTEIN STRUCTURE PREDICTION. Mojtaba Jokar, **Korosh Torabi**

958-Pos BOARD B26
CHARACTERIZATION OF COARSE-GRAINED HELIX-COIL TRANSITION KINETICS USING MARKOV STATE MODELS. **Joseph F. Rudzinski**, Kurt Kremer, Tristan Bereau

959-Pos BOARD B27
NOVEL METHOD FOR THE DESIGN OF A NEW ALPHA-HELICAL FOLD.
Taylor R. Crawford, Shivarni Patel, Danielle MacArt, Hyun Joo, Jerry Tsai

960-Pos BOARD B28
HIGH-THROUGHPUT PROTEIN DESIGN REVEALS QUANTITATIVE PROTEIN STABILITY REQUIREMENTS. **Gabriel J. Rocklin**, Tamuka Chidyausiku, Inna Goresnik, Alex Ford, Scott Houliston, Cheryl Arrowsmith, David Baker

961-Pos BOARD B29
LUTE (LOCAL UNPRUNED TUPLE EXPANSION): ACCURATE CONTINUOUSLY FLEXIBLE PROTEIN DESIGN WITH GENERAL ENERGY FUNCTIONS AND RIGID-ROTAMER-LIKE EFFICIENCY. **Mark A. Hallen**, Jonathan D. Jou, Bruce R. Donald

962-Pos BOARD B30
A DEEP-DIVE INTO THE ROSETTA ENERGY FUNCTION FOR BIOLOGICAL MACROMOLECULES. **Rebecca F. Alford**, Andrew Leaver-Fay, Jeliasko R. Jeliaskov, Michael S. Pacella, Brian Kuhlman, Tanja Kortemme, Jeffrey J. Gray

963-Pos BOARD B31
FRACTAL NATURE OF PROTEIN INTERIOR AND ITS IMPLICATIONS FOR PROTEIN FUNCTION. **Alexandr P. Kornev**, Susan S. Taylor

Protein Folding: Dynamics and Novel Methods (Boards B32–B45)

964-Pos BOARD B32
HOW DO COSOLUTES STABILIZE MACROMOLECULES? FROM BRIDGING TO DEPLETION ATTRACTION. **Liel Sapir**, Daniel Harries

965-Pos BOARD B33
THREE-STRAND B-SHEET PEPTIDE MODELS. IR, VCD AND ECD SPECTRA, T-JUMP DYNAMICS AND NMR STRUCTURES SUPPORT MD AND DFT SIMULATIONS. **Timothy A. Keiderling**, Heng Chi, Dan McElheny, Allen Walker, David Scheerer, Karin Hauser

966-Pos BOARD B34
NANOPORE IONIC CURRENT CAN REPORT ON THE FOLDING STATE OF A PROTEIN. **Wei Si**, Aleksei Aksimentiev

967-Pos BOARD B35
SIMULATING FORCE RESPONSE AT CELLULAR JUNCTIONS: DESMOPLAKIN AS A MOLECULAR FORCE SENSOR? **Csaba Daday**, Frauke Gräter

968-Pos BOARD B36
COMPLEX DYNAMICS IN SINGLE MOLECULE FORCE SPECTROSCOPY FROM SIMPLE SIMULATION MODELS. **David De Sancho**, Robert B. Best

969-Pos BOARD B37
DYNAMIC ESTIMATION OF FRET CORRECTION FACTORS TO STUDY REDOX PROTEIN INTERACTIONS. **Halil Bayraktar**, Selen Manioglu

970-Pos BOARD B38
FAST CALCULATION OF PROTEIN-PROTEIN BINDING FREE ENERGIES USING UMBRELLA SAMPLING WITH A COARSE-GRAINED MODEL. **Jagdish Suresh Patel**, F. Marty Ytreberg

971-Pos BOARD B39
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1073-Pos BOARD B141

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1076-Pos BOARD B144

THE UNIVERSALITY OF NUCLEOSOME POSITIONING: FROM YEAST TO HUMAN. **Razvan V. Chereji**, David J. Clark

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1083-Pos BOARD B151

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QUANTITATIVE SMALL MOLECULE TRANSPORT AFTER NANOSECOND ELECTRIC FIELD EXPOSURES - EXPERIMENTS AND MODELS. **Esin B. Sözer**, C. Florencia Pocetti, Zachary A. Levine, P. Thomas Vernier

1086-Pos BOARD B154

VOLTAGE-DEPENDENT FORMATION OF STABLE, ION CONDUCTIVE PORES IN SUSPENDED LIPID BILAYERS FROM OXIDIZED LIPIDS. André P. Schroder, Ekaterina Zaitseva, Carlos M. Marques, **Jan C. Behrends**

1087-Pos BOARD B155

MULTISCALE DYNAMICS OF LIPID MEMBRANES FROM FEMTOSECONDS TO MILLISECONDS: INSIGHTS FROM TIME-RESOLVED INFRARED SPECTROSCOPY. **Paul Stevenson**, Andrei Tokmakoff

1088-Pos BOARD B156

MACROSCOPIC RESPONSE AND MANIPULATION OF LIPID NANOTUBES WITH CALCIUM ION GRADIENT. **Vladimir Kirejev**, Baharan Ali Doosti, Mehrnaz Shaali, Gavin Jeffries, Tatsiana Lobovkina

1089-Pos BOARD B157

MEMBRANE DEFORMATION INDUCED BY CATION BINDING TO NEGATIVELY CHARGED PHOSPHOLIPIDS. **Zachary Graber**, Zheng Shi, Tobias Baumgart

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ENERGETICS OF MEMBRANE NECKING: ROLE OF FORCES AND PROTEIN INDUCED CURVATURE. **Ritvik Vasan**

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CURVATURE-UNDULATION COUPLING AS A BASIS FOR CURVATURE SENSING AND GENERATION IN BILAYER MEMBRANES. **Ryan Bradley**, Ravi Radhakrishnan

1092-Pos BOARD B160 EDUCATION TRAVEL AWARDEE

NANOSCALE MEMBRANE BUDS INDUCED BY CTXB-GM1 IN ONE COMPONENT BILAYER DETECTED BY POLARIZED LOCALIZATION MICROSCOPY (PLM). **Abir Kabbani**, XinXin Woodward, Christopher V. Kelly

1093-Pos BOARD B161

MOLECULAR DYNAMICS INVESTIGATION INTO THE DISTRIBUTION OF CARDIOLIPIN VARIANTS IN FLAT AND BUCKLED HETEROGENEOUS BILAYERS. **Kevin J. Boyd**, Nathan N. Alder, Eric R. May

1094-Pos BOARD B162
SENSING CURVATURE: LIPID PHASE COEXISTENCE AT PLANAR AND CURVED MONOLAYERS. **Amit K. Sachan**, Joseph A. Zasadzinski

1095-Pos BOARD B163 CID TRAVEL AWARDEE
MG53-MEDIATED PROTECTION IN HEART VALVE BIOLOGY. **T.M. Ayodele Adesanya**, Melanie Russell, Xinyu Zhou, Hua Zhu, Tao Tan, Ki Ho Park, Joy Lincoln, Jianjie Ma

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1096-Pos BOARD B164
INTERACTION OF DAPTOMYCIN AND CALCIUM WITH LIPID BILAYERS. **Nicholas E. Charron**, Yuan-Pang Chang, Ming-Tao Lee, Huey W. Huang

1097-Pos BOARD B165
MEMBRANE STRUCTURAL ANALYSIS BY ENHANCED RAMAN SCATTERING. **Jason H. Hafner**, James R. Matthews, Cyna R. Shirazinejad, Grace A. Isakson, Steven ME Demers

1098-Pos BOARD B166
MECHANICAL PROPERTIES OF GIANT PLASMA MEMBRANE VESICLES. **Jan Steinkühler**, Tripta Bhatia, Reinhard Lipowsky, Rumiana Dimova

1099-Pos BOARD B167
IMAGING THE LIPID LANDSCAPE WITHIN FOCAL ADHESIONS WITH SUPER-RESOLUTION MICROSCOPY. **Julia T. Bourg**, Sarah L. Veatch

1100-Pos BOARD B168
INVESTIGATION OF MACRO- AND NANOSCOPIC LIPID DOMAINS IN FOUR COMPONENT MIXTURES VIA SAXS AND DSC MEASUREMENTS. **Anna Weitzer**, Michal Belička, Drew Marquardt, Peter Heftberger, Georg Pabst

1101-Pos BOARD B169
ROLE OF BINDING FREE ENERGY IN MEMBRANE BENDING BY PROTEIN CROWDING. **Gokul Raghunath**, Brian Dyer

1102-Pos BOARD B170
ANIONIC H-BONDS IN THE CHLOROSULFOLIPID SURFACE BILAYER OF O. DANICA THE STRENGTH OF A BACTERIAL CELL WALL. Robert E. Parrish, **Thomas H. Haines**, Robert G. Hohenstein

1103-Pos BOARD B171
RING AND TAILS: EXPLORING THE INTIMACY OF CYCLODEXTRIN - MEMBRANE INTERACTIONS. **Monika Kluzek**, Fabrice Thalmann, Marc Schmutz, Carlos Marques

1104-Pos BOARD B172
INFLUENCE OF CHOLESTEROL ON LATERAL SEGREGATION IN BILAYERS CONTAINING DIFFERENT SPHINGOMYELINS AND UNSATURATED PHOSPHOLIPIDS. **Oskar Engberg**, Victor Hautala, Thomas K.M Nyholm, J.Peter Slotte

1105-Pos BOARD B173
THE MOLECULAR STRUCTURE OF SPHINGOMYELIN IN FLUID PHASE BILAYERS DETERMINED BY THE JOINT ANALYSIS OF NEUTRON AND X-RAY SCATTERING DATA. **Frederick A. Heberle**, Milka Doktorova, Jianjun Pan, Drew Marquardt, Richard W. Pastor, Richard M. Venable, Norbert Kucerka, John Katsaras

1106-Pos BOARD B174
INVESTIGATION OF TRANSBILAYER COUPLING IN GEL-FLUID ASYMMETRIC LIPID VESICLES. **Barbara Eicher**, Drew Marquardt, John Katsaras, Georg Pabst

1107-Pos BOARD B175
MITOCHONDRIAL MEMBRANE ORGANIZATION IN REGULATION OF APOPTOSIS. Artur Dingeldein, Jörgen Aden, Tobias Sparrman, Radek Sachl, Sarka Pokorna, Martin Hof, **Gerhard Gröbner**

1108-Pos BOARD B176
NEUTRON SCATTERING TO STUDY MEMBRANE SYSTEMS: FROM MODEL MEMBRANES TO LIVING CELLS. **Jonathan D. Nickels**, Sneha Chatterjee, Christopher Stanley, Shuo Qian, Xiaolin Cheng, Dean A. A. Myles, Robert Standaert, James Elkins, John Katsaras

1109-Pos BOARD B177
INVESTIGATION OF DOMAINS IN MIXTURES OF HIGH-MELTING PHOSPHOLIPIDS, POPC, AND CHOLESTEROL. **Matthew H. Raymonda**, Paulo Almeida, Antje Pokorny

1110-Pos BOARD B178
LIPID PHASE HETEROGENEITY AND SIZE DEPENDENCE IN QUARTERNARY LIPID BILAYER SYSTEM: A COARSE-GRAINED MOLECULAR DYNAMICS STUDY. **Shushan He**, Lutz Maibaum

1111-Pos BOARD B179
QUANTIFYING PROTEIN AND LIPID ACCUMULATION AT SITES OF MEMBRANE CURVATURE. **Michelle K. Knowles**, Aml Alnaas, Carrie Moon, Alan Weisgerber

Protein-Lipid Interactions: Channels (Boards B180–B195)

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INTERACTIONS OF NICOTINIC ACETYLCHOLINE RECEPTORS WITH LIQUID-DISORDERED DOMAINS RICH IN N-3 POLYUNSATURATED FATTY ACIDS. **Liam M. Sharp**, Grace Brannigan

1113-Pos BOARD B181
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1114-Pos BOARD B182
A MODEL WHERE ANESTHETIC EFFECTS ON ION CHANNELS ARE MEDIATED BY A CRITICAL MEMBRANE. **Benjamin B. Machta**, Ofer Kimchi, Sarah Veatch

1115-Pos BOARD B183
ROBUST LIGAND BINDING TO THE PROTEIN TRANSLOCATION COMPLEX (SECYEG) REQUIRES A LIPID ENVIRONMENT. Klemens Winkler, Denis G. Knyazev, Andreas Horner, Roland Kuttner, Christine Siligan, **Peter Pohl**

1116-Pos BOARD B184
REGULATION OF KCSA BY BILAYER-MODIFYING MOLECULES. **Radda Rusinova**, Olaf S. Andersen

1117-Pos BOARD B185
LIPID COMPOSITION AND ENDOSOMAL PH REGULATES ANTHRAX LETHAL TOXIN UPTAKE AND PA₆₃ CHANNEL BEHAVIOR. **Nnanya U. Kalu**, Laura Lucas, Clare Kenney, Ekaterina Nestorovich

1118-Pos BOARD B186
BIOPHYSICAL CHARACTERIZATION OF MEMBRANE PORES FORMED BY AMYLOID BETA(25-35). **Nabin Kandel**, Suren A. Tatulian

1119-Pos BOARD B187
LIPID PROTEIN INTERACTION MEDIATES ION TRANSPORT IN P2X RECEPTORS. **Mrinal Shekhar**, Emad Tajkhorshid

1120-Pos BOARD B188
THE IMPORTANCE OF PEPTIDE-MEMBRANE INTERACTIONS IN TOXIN INHIBITIONS OF SODIUM CHANNELS. **Christina I. Schroeder**, Evelyn Deplazes, Nicole Lawrence, Akello Agwa, Sonia T. Henriques

1121-Pos BOARD B189
HYDROGEN SULFIDE (H₂S) REGULATION OF KIR (INWARDLY RECTIFYING K⁺) CHANNELS. **Junghoon Ha**, Yu Xu, Tyler Hendon, Takeharu Kawano, Sumanta Garai, Ganesh Thakur, Andreas Papapetropoulos, Diomedes E. Logothetis

1122-Pos BOARD B190
GENERAL ANESTHETICS MINIMALLY AFFECT LIPID BILAYER PROPERTIES AT CLINICAL CONCENTRATIONS. **Karl Herold**, William Lee, R. L. Sanford, Olaf S. Andersen, Hugh C. Hemmings Jr.

1123-Pos BOARD B191
LIPID PROFILE AND FUNCTIONALITY OF NICOTINIC ACETYLCHOLINE RECEPTOR FROM TORPEDO CALIFORNICA SOLUBILIZED WITH CYCLOFOS DETERGENT FAMILY. **Orestes Quesada**, José O. Colon-Sáez, Carol L. González, Carol L. González, Rafael Maldonado, Irvin Rosado, Alan Espinal, Jesus Acevedo, José A. Lasalde-Dominicci

1124-Pos BOARD B192 EDUCATION TRAVEL AWARDEE
CU²⁺ IONS MODULATE THE CONDUCTANCE HYSTERESIS OF LYSENIN CHANNELS. **Devon Richtsmeier**, Nisha Shrestha, Sheenah Bryant, Christopher A. Thomas, Andy Bogard, Charles Hanna, Daniel Fologea

1125-Pos BOARD B193
MOLECULAR MECHANISM OF TMEM16A CA²⁺-ACTIVATED CHLORIDE CHANNEL DESENSITIZATION. **Son C. Le**

1126-Pos BOARD B194
COMPETITIVE INTERACTIONS OF PI3K AND PI(4,5)P2 MODULATE TRPM8. **Nicholas Sisco**, Parthasarathi Rath, Jacob K. Hilton, Cole V. M. Helsell, Wade D. Van Horn

1127-Pos BOARD B195
IDENTIFICATION OF RESIDUES IMPORTANT FOR ION AND LIPID TRANSPORT IN A TMEM16 SCRAMBLASE. **Byoung-Cheol Lee**, Maria Falzone, Anant Menon, Alessio Accardi

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1128-Pos BOARD B196
HUMAN SP-A1 ENHANCES INTERFACIAL PROPERTIES OF LUNG SURFACTANT AND RESTORES A PROPER BEHAVIOR IN THE PRESENCE OF INHIBITORY AGENTS. **Raquel Arroyo**, Elena Lopez-Rodriguez, Alicia Pascual, Mercedes Echaide, Joanna Floros, Jesus Perez-Gil

1129-Pos BOARD B197
THE RELATIONSHIP OF SEQUENCE AND ACTIVITY IN A SERIES OF SHORT B-SHEET PEPTIDES WITH ANTIMICROBIAL ACTIVITY. **Samantha Kennelly**, Larry Masterson, Jalen Hoehn, Andrew Hexum

1130-Pos BOARD B198
FREE ENERGY CALCULATION OF MEMBRANE PERMEATION - SIMULATION RESULTS SUGGEST RELAXATION OF HEADGROUP-SOLUTE INTERACTIONS IS THE SLOWEST DEGREE OF FREEDOM. **Nihit Pokhrel**

1131-Pos BOARD B199
SPHINGOLIPID TRANSFER BY GLTP-FOLD PROTEINS IS DIFFERENTIALLY REGULATED BY PHOSPHATIDYLINOSITOL DERIVATIVES. **Xiuhong Zhai**, Dharendra K. Simanshu, Ivan A. Boldyrev, Helen M. Pike, John Mundy, Lucy Malinina, Julian G. Molotkovsky, Dinshaw J. Patel, Rhoderick E. Brown

1132-Pos BOARD B200
STERIC PRESSURE FROM PERIPHERAL PROTEIN CONFORMATIONAL CHANGES DRIVES MEMBRANE CURVATURE. **Helen Hew Ming Siaw**, Gokul Raghunath, R. Brian Dyer

1133-Pos BOARD B201
ELECTROSTATIC INTERACTIONS BETWEEN TAU PEPTIDES AND MODEL BIOLOGICAL MEMBRANES: A FOLDING-UPON-BINDING MECHANISM. **Sidney S. Dicke**, Lexus Tatge, Megan Culp, Larry R. Masterson

1134-Pos BOARD B202
PROTEIN-LIPID INTERACTION AT THE HIV MEMBRANE INTERFACE DEFINED BY EPR SPECTROSCOPY. **Likai Song**, Zhen-Yu J. Sun, Mikyung Kim, Pavanjeet Kaur, Zahra Hayati, Mostafa A. ELBahnasawy, Gerhard Wagner, Ellis L. Reinherz

1135-Pos BOARD B203
DETECTION OF HELIX FRAYING IN TRANSMEMBRANE HELICES WITH INTERFACIAL HISTIDINE RESIDUES. **Amanda Paz Herrera**, Fahmida Afrose, Denise Greathouse, Roger Koeppel II

1136-Pos BOARD B204
MODES OF CHOLESTEROL BINDING INFLUENCE THE INTERACTION OF SYRIAN HAMSTER PRP^C WITH THE PLASMA MEMBRANE. **Jesse Woo**, Chad Nieri, Patricia Soto

1137-Pos BOARD B205 CPOW TRAVEL AWARDEE
THE ROLE OF SPHINGOMYELIN AND GANGLIOSIDE GM1 IN THE INTERACTION OF POLYGLUTAMINE PEPTIDES WITH LIPID MEMBRANES. Warren A. Campbell, Maxmore Chaibva, Xiang Gao, Justin Legleiter, **Shelli L. Frey**

1138-Pos BOARD B206
THE EFFECT OF MEMBRANE POLYUNSATURATED FATTY ACIDS ON RECEPTOR PARTITIONING TO ORDERED DOMAINS. **Matti Javanainen**, Giray Enkavi, Ramon Guixa-Gonzalez, Waldemar Kulig, Hector Martinez-Seara, Ilpo Vattulainen

1139-Pos BOARD B207
PROTEIN INDUCED MEMBRANE REMODELING ASSAYED IN VITRO USING LIPID MULTILAYER MICRO- AND NANOSTRUCTURES. Troy W. Lowry, **Steven Lenhert**

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1140-Pos BOARD B208
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1141-Pos BOARD B209
ANALYZING OPTICAL IMAGING OF CA²⁺ SIGNALS VIA TIRF MICROSCOPY: THE LIMITS ON RESOLUTION DUE TO CHEMICAL RATES AND DEPTH OF THE CHANNELS. **Patrick T. Toglia**, Ghanim Ullah

1142-Pos BOARD B210
LOCAL RECOVERY OF CICR PROBED BY ULTRA-EFFECTIVE CALCIUM UNCAGING. **Radoslav Janicek**, Hitesh Agarwal, Graham C. R. Ellis-Davies, Ernst Niggli

1143-Pos BOARD B211
THE ROLE OF RYR2 INTERSUBUNIT CROSS-LINKING IN SR CA MISMATCHING IN FAILING HEART. Elisa Bovo, Stefan R. Mazurek, Roman Nikolaienko, **Aleksey V. Zima**

1144-Pos BOARD B212
ELECTRICAL AND CALCIUM TRANSIENT ALTERNANS IN CELL PAIRS AND INTACT ATRIUM. **Kathrin Banach**, Jaime DeSantiago, Lothar A. Blatter

1145-Pos BOARD B213
THE ROLE OF CALCIUM LEAK IN AGE-DEPENDENT LOSS OF C. *ELEGANS* MUSCLE FUNCTION. **Frances M. Forrester**, Alisa Umanskaya, Wenjun Xie, Steven Reiken, Qi Yuan, Alain Lacampagne, Andrew Marks

1146-Pos BOARD B214
CALMODULIN REGULATION OF RYANODINE RECEPTORS (RYR2) DEPENDS ON RYR2 PHOSPHORYLATION AT RESIDUES S2808 AND S2814. **Nieves Gomez-Hurtado**, Kafa Walweel, Derek Laver, Bjorn C. Knollmann

1147-Pos BOARD B215
NOVEL LUMINAL REGULATION OF INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR CHANNEL GATING. Horia Vais, J. Kevin Foskett, **Don-On Daniel Mak**

1148-Pos BOARD B216
MONITORING CALCIUM ACTIVITY IN INTACT ISLET OF LANGHERANS A-CELLS USING A GENETICALLY ENCODED BIOSENSOR AND LIGHT-SHEET ILLUMINATION MICROSCOPY. **Zeno Lavagnino**, David W. Piston

1149-Pos BOARD B217
ANISOTROPIC DIFFUSION OF PROTEINS IN THE SARCOPLASMIC RETICULUM OF SKELETAL MUSCLE. **Carlo D. Manno**, Lourdes C. Figueroa, Dirk Gillespie, ChulHee Kang, Clara Franzini-Armstrong, Eduardo Rios

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1150-Pos BOARD B218
THE SODIUM CHANNEL AUXILIARY SUBUNIT B1 IS STRUCTURALLY CRITICAL FOR CARDIAC CONDUCTION: EVIDENCE FROM THE SINGLE MOLECULE SCALE TO THE WHOLE ORGAN. **Rengasayee Veeraraghavan**, Gregory S. Hoeker, Steven Poelzing, Robert G. Gourdie

1151-Pos BOARD B219
BIOPHYSICAL AND MOLECULAR COMPARISON OF SODIUM CURRENT IN CELLS ISOLATED FROM CANINE ATRIA AND PULMONARY VEIN. Hector Barajas-Martinez, Robert J. Goodrow, Dan Hu, Payal Patel, Brian K. Panama, Jacqueline A. Treat, **Jonathan M. Cordeiro**

1152-Pos BOARD B220
EFFECTS OF KINETICS AND STATE-DEPENDENT BINDING PROPERTIES OF I_{Kur} TARGETING DRUGS ON ATRIAL ELECTROPHYSIOLOGY. **Nicholas Ellinwood**, Stefano Morotti, Eleonora Grandi

1153-Pos BOARD B221
A DUAL POTASSIUM CHANNEL ACTIVATOR IMPROVES REPOLARIZATION RESERVE AND NORMALIZES VENTRICULAR ACTION POTENTIALS. **Kirstine Calloe**, José M. Di Diego, Rie S. Hansen, Shea Nagle, Jacqueline A. Treat, Jonathan M. Cordeiro

1154-Pos BOARD B222
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1155-Pos BOARD B223
A NEW CLASS OF ANTIARRHYTHMICS FOR LATE I_{CaL} . **Marina Angelini**, Arash Pezhouman, Nicoletta Savalli, Antonios Pantazis, Hrayr S. Karagueuzian, James N. Weiss, Riccardo Olcese

1156-Pos BOARD B224
A RARE SK2 CHANNEL VARIANT CONFERS A GAIN-OF-FUNCTION PHENOTYPE. **Zhuo Wang**, Jum-Suk Ko, Matteo Vatta, Patricia Celestino-Soper, Ty C. Lynnes, Peng-Sheng Chen, Michael Rubart

1157-Pos BOARD B225
ATRIAL FIBRILLATION IN HYPERTENSIVE HEART DISEASE IS ASSOCIATED WITH DISTINCT PATTERNS OF ELECTRICAL REMODELING IN THE LEFT AND RIGHT ATRIA. **Hailey J. Jansen**, Emmanuel E. Egom, Sara A. Rafferty, Robert A. Rose

1158-Pos BOARD B226
ELECTROPHYSIOLOGICAL EFFECTS OF TRIGGERED CALCIUM WAVES ON THE ACTION POTENTIAL IN LEFT ATRIAL MYOCYTES FROM NORMAL AND FAILING DOG HEART. **Georg Gussak**, Gary L. Aistrup, William Marszalec, Yohannes Shiferaw, J. Andrew Wasserstrom

1159-Pos BOARD B227
ELECTRONIC EXPRESSION OF I_{K1} IN HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED CARDIAC MYOCYTES (HIPSCD-CM) ALTERS ACTION POTENTIAL RESPONSE TO CHANNEL BLOCK. Mark Nowak, Sanjot Singh, Aidan Coon, Shimin Wang, Glenna Bett, **Randall L. Rasmusson**

1160-Pos BOARD B228
CHARACTERIZATION OF IPS DERIVED CARDIOMYOCYTES IN VOLTAGE CLAMP AND CURRENT CLAMP BY AUTOMATED PATCH CLAMP. **Andrea Brüggemann**, Claudia Haarmann, Markus Rapedius, Tom Goetze, Ilka Rinke, Michael George, Niels Fertig

1161-Pos BOARD B229
PHARMACOLOGICAL IDENTIFICATION OF AN L-TYPE CALCIUM CHANNEL IMPEDANCE SIGNAL IN HUMAN INDUCED PLURIPOTENT STEM-CELL DERIVED CARDIOMYOCYTES. **Carlos A. Obejero-Paz**, Leslie Ellison, James Kramer, Arthur M. Brown, Andrew Bruening-Wright

1162-Pos BOARD B230
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1164-Pos BOARD B232
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1165-Pos BOARD B233
THE ORIGIN OF THE FORCE INCREASE OBSERVED AFTER ACTIVE STRETCH BEYOND MYOFILAMENT OVERLAP IN SINGLE MUSCLE FIBERS. **Shuyue Liu**, Venus Joumaa, Walter Herzog

1166-Pos BOARD B234
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1167-Pos BOARD B235
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1168-Pos BOARD B236
PROBING ESTRADIOL EFFECTS ON SUPER-RELAXED MYOSIN IN MUSCLE FIBERS WITH FLUORESCENCE. **Lien A. Phung**, Joseph M. Muretta, Karl J. Petersen, John A. Rohde, Tara L. Mader, Dawn A. Lowe, David D. Thomas

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1169-Pos BOARD B237
COMPUTATIONAL ANALYSIS OF WHOLE-CELL SCALE DISTRIBUTIONS AND INTERACTIONS OF INTRACELLULAR ORGANELLE NETWORKS. Qinle Ba, Guruprasad Raghavan, Hao-Chih Lee, **Ge Yang**

1170-Pos BOARD B238

A CONFOCAL SUPER-RESOLUTION APPROACH TO STUDY THE DYNAMICS OF GOLGI APPARATUS IN LUNG CANCER METASTASIS. **Priyam Banerjee**, Xiaochao Tan, Jonathan M. Kurie

1171-Pos BOARD B239

GOLGI MICROTUBULES ARE HYPER-ACETYLATED AND PARTICIPATE IN FAST CARGO TRAFFICKING. **Huiwen Hao**, Qian Su, Shujuan Zhao, Yujie Sun

1172-Pos BOARD B240

KIF5A IS RESPONSIBLE FOR COLLAGEN TRANSPORT OF MYOFIBROBLASTS DURING PLEURAL FIBROSIS. **Yoshikazu Tsukasaki**, Hirotohi Kamata, Julia Wang, Tsuyoshi Sakai, Reiko Ikebe, Ann Jeffers, Boren Jake, Shuzi Owens, Masaaki Higashihara, Steven Idell, Torry Tucker, Mitsuo Ikebe

1173-Pos BOARD B241

CARGO-MEDIATED REGULATION OF COLLECTIVE MYOSIN VI MOTILITY. **Ashim Rai**, Ruth Sommese, Tejas Gupte, Sivaraj Sivaramakrishnan

1174-Pos BOARD B242

TRIM FAMILY PROTEINS IN INTRACELLULAR VESICLE TRAFFICKING. **Kristyn Gumpfer**, Ki Ho Park, Mingzhai Sun, Pei-Hui Lin, Tao Tan, Miyuki Nishi, Hiroshi Takeshima, Jianjie Ma

1175-Pos BOARD B243

MEMBRANE BINDING AND REMODELLING BY THE COPII COAT. Sebastian Daum, Mona Grimmer, Jan Ebenhan, Annette Meister, Jan Auerswald, Daniela Kruger, Stefan Werner, **Kirsten Bacia**

1176-Pos BOARD B244

STRIKING THE BALANCE BETWEEN SELECTIVITY AND EFFICIENCY: AN INTEGRATIVE MODEL OF NUCLEOCYTOPLASMIC TRANSPORT. **Barak Raveh**, Jerome Karp, Samuel Sparks, Benjamin Timney, David Cowburn, Michael P. Rout, Andrej Sali

1177-Pos BOARD B245

BACTERIAL CARBOXYOSOME SHELL PROTEINS ARE SELECTIVELY PERMEABLE TO CARBON FIXATION SUBSTRATES. **Paween Mahinthichaichan**, Dylan Morris, Yi Wang, Grant J. Jensen, Emad Tajkhorshid

1178-Pos BOARD B246

EVIDENCE OF A TRANSITION FROM DIFFUSIVE TO SUPER-DIFFUSIVE MOTION OF CELLULOSE SYNTHASE COMPLEXES IN LIVING PLANTS. **Nina Zehfroosh**, Derui Liu, Brandon Hancock, Tobias I. Baskin, Lori S. Goldner

1179-Pos BOARD B247

PROTEIN CHARGE AND ION CONCENTRATION AFFECT PROTEIN DIFFUSION IN THE PROKARYOTIC CYTOPLASM. **Wojciech M. Smigiel**, Paul E. Schavemaker, Bert Poolman

1180-Pos BOARD B248

EMERGENT SELF-SIMILARITY IN COMPLEX BIOLOGICAL SYSTEMS DUE TO STRONG DISORDER. **Paul A. Wiggins**, Stella Stylianidou

Voltage-gated Na Channels II (Boards B249–B264)

1181-Pos BOARD B249

HIGH-THROUGHPUT SCREENING OF $Na_v1.7$ SODIUM CHANNEL BLOCKERS IN AN AUTOMATED PATCH CLAMP ASSAY. **Tianbo Li**, Gang Lu, Tania Chernov-Rogan, Jun Chen

1182-Pos BOARD B250

POSITIVE MODULATION OF HUMAN NAV CHANNELS BY PYRETHROIDS. Wolf Berger, Kirsty M. Rooney, **Henning J. Draheim**

1183-Pos BOARD B251

TARANTULA TOXIN SGTX-1 ALTERS GATING KINETICS OF HUMAN VOLTAGE-GATED SODIUM CHANNEL NAV1.7. **Ian H. Kimball**, Phuong T. Nguyen, Jenny Yam, Brandon Pressly, Royce York, Jon T. Sack, Vladimir Yarov-Yarovoy

1184-Pos BOARD B252

BIOPHYSICAL, MOLECULAR, AND PHARMACOLOGICAL CHARACTERIZATION OF Na_v CHANNELS FROM INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. Adrien Moreau, Aurélie Mercier, **Mohamed Chahine**

1185-Pos BOARD B253

SODIUM CURRENT ANALYSIS IN MYOCYTES OBTAINED FROM HUMAN INDUCED PLURIPOTENT STEM CELLS AND NATIVE ADULT HEART. Robert J. Goodrow, Suveer Desai, Mayurika Desai, **Jonathan M. Cordeiro**

1186-Pos BOARD B254

MIXED PERIODIC PARALYSIS & MYOTONIA MUTANT IMPARTS PH SENSITIVITY IN NAV1.4. **Mohammad-Reza Ghovanloo**, Peter C. Ruben

1187-Pos BOARD B255

CNV1014802 RESCUES THE PAROXYSMAL EXTREME PAIN DISORDERS $Na_v1.7$ MUTANTS BY RESTORING IMPAIRED INACTIVATION. **Yueming Zheng**, Wanfu Wang, Zhaobing Gao

1188-Pos BOARD B256

ORIENTED CIRCULAR DICHROISM SPECTROSCOPY AS A TOOL FOR STUDYING THE GATING OF SODIUM CHANNELS. **Matthew Colledge**, B.A. Wallace

1189-Pos BOARD B257

EPHAPTIC EFFECTS POTENTIATE THE THRESHOLD BEHAVIOR OF THE CARDIAC SODIUM CURRENT IN A HIGH RESOLUTION MATHEMATICAL MODEL OF A NARROW INTERCELLULAR CLEFT. **Echrah Hichri**, Hugues Abriel, Jan P. Kucera

1190-Pos BOARD B258

BETA-POMPIDOTOXIN ADOPTS A DISTINCT 3D STRUCTURE WHEN BOUND TO NAV1.2 DIVS3-S4 PADDLE MOTIF. **Meero Yeu**, Boris Arshava, Jianqin Zhuang, Sébastien F. Poget

1191-Pos BOARD B259

THE STRUCTURAL CHARACTERIZATION OF THE HUMAN CARDIAC SODIUM CHANNEL VOLTAGE-SENSOR DOMAIN IV PADDLE MOTIF. **Mohammed H. Bhuiyan**, Adel K. Hussein, Boris Arshava, Jianqin Zhuang, James Aramini, Fred Naider, Sébastien F. Poget

1192-Pos BOARD B260

VIRTUAL SCREENING IN SEARCH OF ALLOSTERIC MODULATORS OF NAV1.1 CHANNELS. **Johnathan Wong**, Syed R. Ali, Paul Wadsworth, Aditya K. Singh, Zhiqing Liu, Haiying Chen, Jia Zhou, Fernanda Laezza

1193-Pos BOARD B261

TUNING THE ION SELECTIVITY OF TWO-PORE CHANNELS. **Jiangtao Guo**, Weizhong Zeng, Youxing Jiang

1194-Pos BOARD B262

MAPPING PROTEIN: PROTEIN INTERACTION OF THE FGF14:GSK3B COMPLEX. **Aditya K. Singh**, Paul A. Wadsworth, Fernanda Laezza

1195-Pos BOARD B263

ESTIMATING KINETIC MECHANISMS WITH PRIOR KNOWLEDGE. Autoosa Salari, Zachary F. Elkins, Marco A. Navarro, Benton R. Berigan, Jenna L. Lin, Mirela Milescu, **Lorin S. Milescu**

1196-Pos BOARD B264

ATRIAL-VENTRICULAR DIFFERENCES IN VOLTAGE-GATED Na^+ CURRENTS OF RABBIT CARDIOMYOCYTES. **Rachel E. Caves**, Hongwei Cheng, Stéphanie C. Choisy, Hanne C. Gadeberg, Simon M. Bryant, Jules C. Hancox, Andrew F. James

Voltage-gated Ca Channels II (Boards B265–B275)

- 1197-Pos BOARD B265**
STIMULATION OF AT₁ ANGIOTENSIN RECEPTORS ACTIVATES CA_v1.2 L-TYPE CA²⁺ CHANNELS THROUGH BETA-ARRESTIN2 AND CASEIN KINASE 2 IN IMMATURE CARDIOMYOCYTES. **Toshihide Kashihara**
- 1198-Pos BOARD B266**
MANIPULATING L-TYPE CALCIUM CHANNEL ACTIVITY ALTERS MITOCHONDRIAL FUNCTION AND PREVENTS HYPERTROPHIC CARDIOMYOPATHY IN A TROPONIN I MUTANT MOUSE MODEL. **Helena M. Viola**, Victoria P.A. Johnstone, Christopher Semsarian, Livia C. Hool
- 1199-Pos BOARD B267**
STABLE INTERACTION BETWEEN VOLTAGE-ACTIVATED CA²⁺ CHANNEL A1 AND B SUBUNITS REVEALED BY TRANSLOCATABLE B SYSTEMS. Jun-Hee Yeon, **Byung-Chang Suh**
- 1200-Pos BOARD B268**
DELETION OF A₂Δ-1 CALCIUM CHANNEL SUBUNIT REDUCES CALCIUM INFLUX AND ALTERS THE ELECTRICAL ACTIVITY OF MOUSE CHROMAFFIN CELLS. Matteo M. Ottaviani, Vincenzo Mastrolia, Laura Guarina, Emilio Carbone, **Petronel Tuluc**
- 1201-Pos BOARD B269 INTERNATIONAL TRAVEL AWARDEE**
INVESTIGATION OF THE PROTEOLYTIC CLEAVAGE OF A₂Δ SUBUNITS: A MECHANISTIC SWITCH FROM INHIBITION TO ACTIVATION OF VOLTAGE-GATED CALCIUM CHANNELS? **Ivan Kadurin**, Simon Rothwell, Laurent Ferron, Otto Meyer, Annette Dolphin
- 1202-Pos BOARD B270**
HYDROGEN PEROXIDE INHIBITS WHOLE-CELL I_{CA,L} BUT INCREASES ON-CELL I_{CA,L} AND EBSELEN, AN ORGANOSELENIUM COMPOUND, SUPPRESSES I_{CA,L} IN ARTERIAL SMOOTH MUSCLE CELLS. **Rikuo Ochi**, Sukrutha Chettimada, Sachin A. Gupte
- 1203-Pos BOARD B271**
OPTICALLY PROBING THE MECHANISM OF VOLTAGE-DEPENDENT FACILITATION IN CA_v1.2 CHANNELS. **Antonios Pantazis**, Daniel Sigg, Alan Neely, Riccardo Olcese
- 1204-Pos BOARD B272**
TREATMENT OF ADULT MDX MICE WITH PHOSPHORODIAMIDATE MORPHOLINO OLIGOMER RESTORES CARDIAC MITOCHONDRIAL ENERGETICS AND PREVENTS THE DYSTROPHIC CARDIOMYOPATHY. **Helena M. Viola**, Victoria P. A. Johnstone, Abbie M. Adams, Susan Fletcher, Livia C. Hool
- 1205-Pos BOARD B273**
STAC PROTEINS SUPPRESS CALCIUM DEPENDENT INACTIVATION OF NEURONAL L-TYPE CA²⁺ CHANNELS. **Alexander Polster**, Stefano Perni, Kurt G. Beam
- 1206-Pos BOARD B274**
ANGIOTENSIN II STIMULATES L-TYPE CALCIUM CURRENT IN MOUSE ATRIAL MYOCYTES BY AFFECTING CAVEOLAE-HOUSED CHANNELS. **Marina Balycheva**, Timothy J. Kamp, Alexey Glukhov
- 1207-Pos BOARD B275**
STAC3 FACILITATED EXPRESSION OF CA_v1.1 IN XENOPUS OOCYTES TO ASSESS FUNCTIONAL CONSEQUENCES OF HYPOPP MUTANT CA_v1.1-R528H. Fenfen Wu, **Steve C. Cannon**

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating II (Boards B276–B295)

- 1208-Pos BOARD B276**
USING UNNATURAL AMINO ACIDS TO PROBE THE INTERACTION BETWEEN TARANTULA TOXINS AND VOLTAGE SENSING DOMAINS IN K_v CHANNELS. **Kanchan Gupta**, Kenton J. Swartz
- 1209-Pos BOARD B277**
VOLTAGE DEPENDENCE AND NON-SENSOR RESIDUES. **Joao L. Carvalho-de-Souza**, Francisco Bezanilla
- 1210-Pos BOARD B278**
GENERALIZED INTERACTION ENERGY ANALYSIS OF RESIDUES AT THE VOLTAGE-SENSOR PORE INTERFACE IN THE SHAKER POTASSIUM CHANNEL. **Ana I. Fernández-Mariño**, Kevin Oelstrom, Baron Chanda
- 1211-Pos BOARD B279**
POLARITY OF THE CHEMICAL ENVIRONMENT SURROUNDING POTASSIUM CHANNEL VOLTAGE SENSORS DETECTED BY SOLVATOCHROMIC DYE-TARANTULA TOXIN CONJUGATES. **Sebastian Fletcher-Taylor**, Mark W. Lillya, Parashar Thapa, Bruce E. Cohen, Jon T. Sack
- 1212-Pos BOARD B280**
GRAFTING VOLTAGE SENSING SENSITIVITY AND PHARMACOLOGY IN POTASSIUM CHANNELS. Xi Lan, Chunyan Fan, Wei Ji, Fuyun Tian, Tao Xu, **Zhaobing Gao**
- 1213-Pos BOARD B281**
LIPID BILAYER PERTURBATION BY THE SNAIL TOXIN 6-BROMO-2-MERCAPTOPYPTAMINE DIMER DOES NOT ACCOUNT FOR ITS MODULATION OF VOLTAGE-GATED POTASSIUM CHANNELS. Chris Dockendorff, Disha Gandhi, Ian Kimball, Kenneth S. Eum, Radda Rusinova, Helgi Ingólfsson, Ruchi Kapoor, Thasin Peyear, Stephen F. Martin, Richard W. Aldrich, Olaf S. Andersen, **Jon Sack**
- 1214-Pos BOARD B282**
THE ROLE OF K IONS IN OPENING K CHANNELS. **Clay M. Armstrong**, Toshi Hoshi, Stefan Heinemann
- 1215-Pos BOARD B283**
A STRUCTURAL MODEL OF THE INACTIVATION GATE OF VOLTAGE ACTIVATED POTASSIUM CHANNELS. Ariela Vergara-Jaque, Francisco Palma-Cerda, Horacio Poblete, Adam Lowet, Alexander Sukharev, Jeffrey Comer, **Miguel Holmgren**
- 1216-Pos BOARD B284**
ANALYSIS OF THE STATE-DEPENDENT BLOCK OF SHAKER IR BY BTBUA. Tibor G. Szanto, Jeffrey D. Fineberg, Manuel Covarrubias, Zoltan Varga, **Gyorgy Panyi**
- 1217-Pos BOARD B285**
THE ACTIVATION GATE AND THE SELECTIVITY FILTER OF KCSA ARE TIGHTLY COUPLED. Cholpon Tilegenova, D. Marien Cortes, **Luis G. Cuello**
- 1218-Pos BOARD B286**
STRUCTURAL DYNAMICS OF THE POTASSIUM CHANNEL SELECTIVITY FILTER REVEALED BY SINGLE-MOLECULE FRET. **Shizhen Wang**, Colin G. Nichols
- 1219-Pos BOARD B287**
PROBING THE GATING OF KV10.1 CHANNELS BY MTS REAGENTS. Adam P. Tomczak, Ferenc Papp, Florina Zakany, Pal Pap, Luis A. Pardo, Gyorgy Panyi, **Zoltan Varga**
- 1220-Pos BOARD B288**
THE EAG DOMAIN MEDIATES THE RESPONSE OF HEAG1 K⁺ CHANNELS TO BOTH VOLTAGE AND CA²⁺-CALMODULIN. **Alina Finch**, Éva Lörinczi, Matthew Helliwell, John Mitcheson

1221-Pos BOARD B289
INSIGHTS INTO THE MOLECULAR MECHANISM COUPLING THE S4 VOLTAGE-SENSOR TO THE PORE DOMAIN IN HCN CHANNELS.
Galen E. Flynn, William N. Zagotta

1222-Pos BOARD B290
GATING CURRENTS IN HV1 PROTON CHANNELS REVEAL A VOLTAGE SENSOR MODE SHIFT/RELAXATION. **Victor De la Rosa**, Ian S. Ramsey

1223-Pos BOARD B291
GOT ION ACCUMULATION OR DEPLETION (IN YOUR RECORDING)?
Gilman E.S. Toombes, Mufeng Li, Shai D. Silberberg, Kenton J. Swartz

1224-Pos BOARD B292
SINGLE MOLECULE FRET IMAGING AT MILLIMOLAR CONCENTRATIONS IN ZERO MODE WAVEGUIDES. **David S. White**, Marcel P. Goldschen-Ohm, Vadim A. Klenchin, Randall H. Goldsmith, Baron Chanda

1225-Pos BOARD B293
BIOPHYSICAL CHARACTERIZATION OF ASAP1. **Elizabeth E. L. Lee**, Francisco Bezanilla

1226-Pos BOARD B294
THE ISOLATED VOLTAGE SENSING DOMAIN OF THE SHAKER POTASSIUM CHANNEL FORMS A CATION CHANNEL. **Juan Zhao**, Rikard Blunck

1227-Pos BOARD B295 CPOW TRAVEL AWARDEE
HCN CHANNEL GATING STUDIED WITH TMFRET AND A FLUORESCENT NONCANONICAL AMINO ACID. **Teresa K. Aman**, William N. Zagotta

TRP Channels II (Boards B296–B303)

1228-Pos BOARD B296
A GAIN-OF-FUNCTION TRPP2 ION CHANNEL CREATED BY MUTATING SINGLE AMINO ACID IN THE S5 TRANSMEMBRANE DOMAIN. Mahmud Arif Pavel, Caixia Lv, Courtney Ng, Parul Kashyap, Clarissa Lam, Victoria Valentino, Helen Fung, Thomas Campbell, David Zenisek, Nathalia G. Holtzman, **Yong Yu**

1229-Pos BOARD B297
PRECISE CONTROL OF TEMPERATURE IN ARTIFICIAL PLANAR LIPID BILAYERS TO MODULATE DIFFERENT TRP CHANNELS CONTROL OF TEMPERATURE IN ARTIFICIAL PLANAR LIPID BILAYERS TO MODULATE DIFFERENT TRP CHANNELS. **Conrad Weichbrodt**, Jiajun Wang, Mohamed Kreir, Matthias Beckler, Alison Obergrussberger, Ilka Rinke, Michael George, Sonja Stoelze-Feix, Andrea Brüggemann, Niels Fertig

1230-Pos BOARD B298 CPOW TRAVEL AWARDEE
ASSESSMENT OF ENDOGENOUS AND EXOGENOUS MODULATORS OF THE TRPM7 CHANNEL IN PLANAR LIPID BILAYERS. **Lusine Demirkhanyan**, Tyler Dawson, Thomas Gudermann, Vladimir Chubanov, Eleonora Zakharian

1231-Pos BOARD B299
EFFECTS OF GINGER AND ITS PUNGENT CONSTITUENTS ON TRANSIENT RECEPTOR POTENTIAL CHANNELS. Young-Soo Kim, Chan Sik Hong, Sang Weon Lee, Joo Hyun Nam, **Byung Joo Kim**

1232-Pos BOARD B300
MODULATION BY PHENOLIC COMPOUNDS PROVIDES NOVEL INSIGHT INTO THE MECHANISMS OF TRPA1 ACTIVATION. **Justyna B. Startek**, Andrei Segal, Thomas Voets, Karel Talavera

1233-Pos BOARD B301
REGULATION OF TRPM7 BY CYTOSOLIC Mg^{2+} AND PH: INSIGHTS FROM VSP EXPRESSION. **Pavani Beesetty**, Krystyna Wiczerzak, Tatyana Zhelay, Taku Kaitsuka, Masayuki Matsushita, J. Ashot Kozak

1234-Pos BOARD B302
TEMPERATURE SENSITIVITY OF *DROSOPHILA* GUSTATORY RECEPTOR GR28B. **Autoosa Salari**, Benjamin C. Zars, Aditi Mishra, Benton Berigan, Troy Zars, Lorin S. Milescu, Mirela Milescu

1235-Pos BOARD B303
SIMULATED MICROGRAVITY CONDITIONS MODULATE Ca^{2+} TRANSPORT THROUGH TRPV4 CHANNELS. **Sheenah L. Bryant**, Nisha Shrestha, Julia Oxford, Ken Cornell, Daniel Folegea

Ion Channel Regulatory Mechanisms I (Boards B304–B324)

1236-Pos BOARD B304
THE ROLE OF THE N-TERMINAL AND S1 SEGMENTS IN KV1.5 CHANNEL TRAFFICKING AND MODULATION. **Shawn M. Lamothe**, Aja Hogan-Cann, Jun Guo, Wentao Li, Tonghua Yang, Shetuan Zhang

1237-Pos BOARD B305
ERK1/2 MEDIATES EGF-DEPENDENT KV1.3 ENDOCYTOSIS. **Katarzyna Styrzczevska**, Ramón Martínez-Mármol, Núria Comes, Irene Estadella, Mireia Pérez-Verdaguer, Lluís Pujadas, Eduardo Soriano, Alexander Sorkin, Antonio Felipe

1238-Pos BOARD B306
DECIPHERING THE KV1.3/CAVEOLIN INTERACTION. Mireia Pérez-Verdaguer, Jesusa Capera, Ramón Martínez-Mármol, Marta Camps, Nuria Comes, Michael M. Tamkun, **Antonio Felipe**

1239-Pos BOARD B307
MECHANISMS OF KV1.1 CHANNEL ACTIVITY SUPPRESSION BY BETA AMYLOID 42. **Joseph Farley**, Kristi DeBoeuf, Mohammad F. Islam

1240-Pos BOARD B308
PROTEIN KINASE A-DEPENDENT PHOSPHORYLATION MODULATES THE AFFINITY OF KV7.5 POTASSIUM CHANNELS TO PHOSPHATIDYLINOSITOL 4,5-BISPHOSPHATE TO ENHANCE POTASSIUM CONDUCTANCE. **Kenneth L. Byron**, Lyubov I. Brueggemann, Ahmed Kouta, Leanne L. Cribbs

1241-Pos BOARD B309
THE STREX-INSERT IN A STRETCH-ACTIVATED BK CHANNEL FROM CHICK HEART IS NOT ENOUGH FOR CONFERRING GSMTX-4 INHIBITORY EFFECT ON MSLO1. Zhe Zhang, Mingxi Tang, Xiang-rong Du, Hui Li, Yan-Jun Feng, Shao-Xi Ke, Xiao-Dong Tang, Masahiro Sokabe, **Qiong-Yao Tang**

1242-Pos BOARD B310
ROLE OF AN INTERSUBUNIT Ca^{2+} BRIDGE IN BK CHANNEL GATING. **Alexandre G. Vouga**, Brad Rothberg

1243-Pos BOARD B311
PROBING THE COMPOSITION OF TMEM16A-CONTAINING SIGNALING COMPLEXES IN SENSORY NEURONS. Shihab Shah, Chase M. Carver, Mark S. Shapiro, **Nikita Gamper**

1244-Pos BOARD B312
ENDOTHELIAL CAVEOLAE-TRPV4-SK CHANNEL INTERACTIONS IN SHEAR STRESS-MEDIATED CORONARY ARTERIOLE DILATION. **Hon-Chi Lee**, Tong Lu, Qiang Chai, Xiao-Li Wang

1245-Pos BOARD B313 CPOW TRAVEL AWARDEE
STATIN THERAPY IN LONG QT SYNDROME TYPE II. **Elsa Ronzier**, Xiaorong Xu Parks, Coeli Lopes

1246-Pos BOARD B314
REGULATION OF THE HUMAN ETHER-A-GO-GO-RELATED GENE (HERG) POTASSIUM CHANNEL BY THE UBIQUITIN LIGASE RIFIFYLIN (RFFL). **Karim Roder**, Karni S. Moshal, An Xie, Tae Yun Kim, Kevin R. Murphy, Nilüfer Nermin Turan Dural, Yichun Lu, Bum-Rak Choi, Gideon Koren

1247-Pos BOARD B315
S. AUREUS SPHINGOMYELINASE IS A STATE-DEPENDENT INHIBITOR OF THE CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR (CFTR). **Brandon Stauffer**

1248-Pos BOARD B316
MECHANISM OF ACTION OF A SMALL MOLECULE ACTIVATOR OF PHOSPHOINOSITIDE-DEPENDENT GIRK CHANNELS. **Yu Xu**, Takeharu Kawano, Junghoon Ha, Sumanta Garai, Guoqing Xiang, Ganesh Thakur, Diomedes E. Logothetis

1249-Pos BOARD B317
REGULATION OF A FUNGAL K_p CHANNEL BY PROTEIN KINASES. Ryan Manville, Andrew Corran, **Anthony Lewis**

1250-Pos BOARD B318
SILVER AS A PROBE OF SELECTIVITY FILTER GATING IN TREK-1 K2P CHANNELS. **Marcus Schewe**, Thomas Baukowitz

1251-Pos BOARD B319
THE ORIGIN OF COUPLED CHLORIDE AND PROTON TRANSPORT IN A Cl^-/H^+ ANTIporter. **Sangyun Lee**, Heather B. Mayes, Jessica M. J. Swanson, Gregory A. Voth

1252-Pos BOARD B320
PHYLOGENETIC AND SEQUENCE ANALYSIS OF THE FLUCS, A REMARKABLE FAMILY OF FLUORIDE CHANNELS. **Christian B. Macdonald**, Randy B. Stockbridge

1253-Pos BOARD B321
 Mg^{2+} INHIBITS CARDIAC SR CALCIUM RELEASE AND HAS BIPHASIC EFFECTS ON CALMODULIN BINDING TO RYR2. **Xiaoqiong Dong**, Ivanita Stefanon, Rogerio F. Ribeiro Jr., Mena Said, Robyn T. Rebbeck, Razvan L. Cornea, Donald M. Bers

1254-Pos BOARD B322
INTERACTIONS BETWEEN NEURONAL JUNCTOPHILINS AND VOLTAGE GATED ION CHANNELS. **Stefano Perni**, Kurt G. Beam

1255-Pos BOARD B323
VOLTAGE DEPENDENT INHIBITION OF CX46 HEMICHANNELS BY CALCIUM. **Bernardo I. Pinto**, Amaury Pupo, Isaac Garcia, Karel Mena-Ulecia, Agustin Martinez, Ramon Latorre, Carlos Gonzalez

1256-Pos BOARD B324
DISTRIBUTION OF PHOSPHORYLATED CONNEXIN 43 IN GAP JUNCTIONS: IMPLICATIONS FOR ENDOCYTOSIS. **Rachel A. Margraf**, Rachael M. Kells Andrews, Matthias M. Falk

Cardiac Muscle Regulation I (Boards B325–B342)

1257-Pos BOARD B325
TUNING CARDIOMYOCYTE DYNAMIC TRANSIENT RESPONSES WITH A HETEROGENEOUS POPULATIONS OF CTNC MUTATIONS. Srbojjub Mijailovic, **Djordje Nedic**, Marina Svicevic, Boban Stojanovic, Michael A. Geeves, Michaela Regnier

1258-Pos BOARD B326
DIFFERENTIAL CAMK-II ACTIVATION IN THE PROGRESSION OF HCM IN CTNT MUTATIONS. **Sarah Lehman**, Lauren Grinspan, Mark E. Anderson, Jil C. Tardiff

1259-Pos BOARD B327
CTNT ISOFORM SWITCHING IN THE DEVELOPMENT OF EARLY CHILDHOOD TROPOMYOSIN-LINKED DCM. **Melissa Lynn**, Teryn Holeman, Lauren Grinspan, J.P. Jin, Jil Tardiff

1260-Pos BOARD B328
N-TERMINAL TRUNCATION OF CARDIAC TROPONIN I COMPENSATES FOR DIASTOLIC DYSFUNCTION OF MOUSE HEARTS INDUCED BY ACUTE PRESSURE OVERLOAD. **Li-Fei Liu**, Han-Zhong Feng, J.-P. Jin

1261-Pos BOARD B329
FUNCTIONAL SIGNIFICANCE OF C-TERMINAL MOBILE DOMAIN OF CARDIAC TROPONIN I. **Nazanin Bohlooli Ghashghaee**, Peter O. Awinda, Bertrand C.W. Tanner, Wen-Ji Dong

1262-Pos BOARD B330
IMPACT OF CGMP-PKG PATHWAY MODULATION ON TITIN PHOSPHORYLATION AND TITIN-BASED MYOCARDIAL PASSIVE STIFFNESS. **Nazha Hamdani**, Melissa Herwig, Soraya Hoelper, Marcus Krueger, Doris Koesling, Michaela Kuhn, Wolfgang A. Linke

1263-Pos BOARD B331
SARCOMERE LENGTHDEPENDENT EFFECTS ON THE Ca^{2+} -TROPONIN REGULATION IN SKINNED MYOCARDIAL FIBERFROM TITIN RBM20 DELETION MICE. King-Lun Li, Mei Methawasin, Henk Granzier, Ross John Solaro, Bertrand Tanner, **Wen-Ji Dong**

1264-Pos BOARD B332
ACTIVATION AND INHIBITION OF CARDIAC THIN FILAMENTS BY SINGLE AND MULTIPLE DOMAINS CONSTRUCTS OF HUMAN CARDIAC MYOSIN BINDING PROTEIN-C (CMYBP-C) AT LOW CALCIUM. Betty Virok, Samantha Harris, Vitold E. Galkin, **Howard D. White**

1265-Pos BOARD B333
COMPARISON OF THE REGULATION OF CONTRACTION IN INSECT FLIGHT MUSCLE AND VERTEBRATE CARDIAC MUSCLE. **Belinda Bullard**, Demetris Koutalios, Kate English, Kevin Leonard

1266-Pos BOARD B334
CHARACTERIZATION OF A TRUNCATED CARDIAC MYOSIN-BINDING PROTEIN C MUTATION USING PATIENT-DERIVED ENGINEERED HEART TISSUE AND COMPUTATIONAL MODELING. **Jonas Schwan**, Yongming Ren, Daniel L. Jacoby, Yibing Qyang, Stuart G. Campbell

1267-Pos BOARD B335
TIME-COURSE OF CARDIAC MYOFIBRILLAR CONTRACTILE PROPERTIES DURING THE PROGRESSION OF RAT HYPERTENSIVE HEART FAILURE. **Laurin M. Hanft**, Craig A. Emter, Kerry S. McDonald

1268-Pos BOARD B336
PROTEOMIC AND IMMUNOHISTOLOGICAL CHARACTERIZATION OF CYTOSKELETAL ALTERATIONS DURING THE PROGRESSION OF HUMAN CARDIOMYOPATHY. **Christina Y. Chen**, Alexey Bogush, Kenneth Margulies, Benjamin L. Prosser

1269-Pos BOARD B337
HYPERTROPHIC CARDIOMYOPATHY MUTATIONS DESTABILIZE THE SUPER-RELAXED STATE OF MYOSIN. **Robert L. Anderson**, Roger Cooke, James A. Spudich, Eric M. Green

1270-Pos BOARD B338
INVESTIGATION OF THE MOLECULAR INTERACTIONS REGULATING THE FUNCTION OF HUMAN CARDIAC MYOSIN. **Saswata S. Sarkar**, Darshan Trivedi, Arjun S. Adhikari, Chao Liu, Kathleen M. Ruppel, James A. Spudich

1271-Pos BOARD B339
D292V ACTIN MUTATION STABILIZES TROPOMYOSIN IN THE OFF-STATE OF THE THIN FILAMENT. **Jeffrey R. Moore**, Thavanareth Prum, Patricia M. Fagnant, Kathleen M. Trybus, William Lehman

1272-Pos BOARD B340
STEP-WISE TRUNCATION OF THE C-TERMINAL 14 RESIDUES OF TROPONIN T REDUCES THE B STATE OF REGULATED ACTIN AND ENHANCES THE M STATE. Dylan Johnson, William Angus, **Joseph M. Chalovich**

1273-Pos BOARD B341
TROPOMYOSIN FLUCTUATIONS OVER A MULTI-WELL ENERGY LANDSCAPE: A BROWNIAN RATCHET MODEL OF CARDIAC MUSCLE CONTRACTION. **Yasser Aboelkassem**, Natalia Trayanova

1274-Pos BOARD B342
INVESTIGATING THE PHENOTYPE OF CARDIOMYOPATHY-ASSOCIATED ALPHA-TROPOMYOSIN E192K MUTATION IN PATIENT-DERIVED ENGINEERED HEART TISSUE. **Lorenzo R. Sewanan**, Jinkyu Park, Yongming Ren, Angela Urdaneta, Michael Rynkiewicz, Jeffrey Moore, William Lehman, Daniel L. Jacoby, Yibing Qyang, Stuart G. Campbell

Kinesins, Dyneins, and Other Microtubule-based Motors I (Boards B343–B358)

1275-Pos BOARD B343
RECONSTITUTION OF EUKARYOTIC FLAGELLAR AXONEMES BY THE BOTTOM-UP STRATEGY. Misaki Shiraga, Junya Kirima, Hiroaki Kojima, **Kazuhiro Oiwa**

1276-Pos BOARD B344
THE COORDINATION AND REGULATION OF AXONEMAL DYNEIN. **Joshua Alper**

1277-Pos BOARD B345
REGULATION OF DYNEIN-DRIVEN MOTILITY BY HOOK PROTEINS. **Mara Olenick**, Mariko Tokito, Malgorzata Boczkowska, Roberto Dominguez, Erika Holzbaur

1278-Pos BOARD B346
THREE-DIMENSIONAL SNAPSHOTS OF THE MICROTUBULE-BOUND DYNEIN-DYNACTIN COMPLEX. **Danielle Grotjahn**, Saikat Chowdhury, Yiru Xu, Gabriel Lander

1279-Pos BOARD B347
REGULATING NATIVE CYTOPLASMIC DYNEIN'S PROCESSIVITY. **Vincent Behrens**, Tim Scholz, Bernhard Brenner, Michael A. Geeves, Walter Steffen

1280-Pos BOARD B348
TRACKING DYNEIN STEPPING ALONG MICROTUBULES USING MULTICOLOR HIGH RESOLUTION IMAGING. **Stefan Niekamp**, Nico Stuurman, Nan Zhang, Ronald D. Vale

1281-Pos BOARD B349
A DYNAMIC MODEL FOR THE PROCESSIVE MOTION OF DYNEIN ON MICROTUBULES. **Ya-chang Chou**

1282-Pos BOARD B350
MULTI-SCALE INVESTIGATION ON THE MECHANISMS OF DYNEINS' MOTION ON MICROTUBULE. **Lin Li**, Joshua Alper, Emil Alexov

1283-Pos BOARD B351
TAU DIRECTS TRANSPORT ALONG MICROTUBULES THROUGH DIFFERENTIAL REGULATION OF KINESIN AND DYNEIN. **Abdullah R. Chaudhary**, Adam G. Hendricks

1284-Pos BOARD B352
ENSEMBLE MICROSCOPY REVEALS NANOSCALE PATTERNS OF MOLECULAR MOTORS ON MICROTUBULES. **Louis Reese**, Marian Baclayon, Nürta Taberner Carretero, Maurits Kok, Roland Dries, Esengül Yildirim, Andrea Martorana, Martin Depken, Marileen Dogterom

1285-Pos BOARD B353
MECHANISMS UNDERLYING THE NUCLEATION AND KINESIN-DRIVEN ASSEMBLY OF MICROTUBULE RINGS. **George D. Bachand**, Virginia VanDelinder, Christina Ting, Stephanie Brener

1286-Pos BOARD B354
MAGNETIC CYTOSKELETON AFFINITY (MICA) PURIFICATION FOR FAST PURIFICATION OF CARGO-ATTACHED MOLECULAR MOTORS. **Marco Tjioe**, Hyeon Ryoo, Pinghua Ge, Yuji Ishitsuka, Kevin Teng, Paul Selvin

1287-Pos BOARD B355
TURNING AROUND AT THE TIP: SINGLE-MOLECULE DYNAMICS OF INTRAFLAGELLAR TRANSPORT IN *C. ELEGANS* CHEMOSENSORY CILIA. Jona Mijalkovic, Jaap van Krugten, Felix Oswald, Seyda Acar, **Erwin J. Peterman**

1288-Pos BOARD B356 EDUCATION TRAVEL AWARDEE
THE ROLE OF THE COVER-NECK BUNDLE IN MULTI-MOTOR TRANSPORT AGAINST LOAD IN CELLS. **Breane G. Budaitis**, Kristin I. Schimert, Guido Scarabelli, Barry J. Grant, Kristen J. Verhey

1289-Pos BOARD B357
MODELING CARGO TRANSPORT BY PAIRS OF KINESIN-1 AND -3 MOTORS. **Goker Arpag**, Stephen Norris, Kristen Verhey, William O. Hancock, Erkan Tuzel

1290-Pos BOARD B358 EDUCATION TRAVEL AWARDEE
ENGINEERING INHIBITABLE KINESIN-3 MOTORS BY A NOVEL CHEMICAL-GENETIC APPROACH. **Shirley Chen**, T. Lynne Blasius, Martin F. Engelke, Kristen J. Verhey

Myosins (Boards B359–B378)

1291-Pos BOARD B359
MOLECULAR MECHANISM OF SYNCHRONOUS FORCE GENERATIONS AMONG MYOSIN MOLECULES. Motoshi Kaya, Takumi Washio, **Hideo Higuchi**

1292-Pos BOARD B360
O-MYO! AN O-SHAPED MYOSIN GLIDING ASSAY FOR CHARACTERIZING LONG-TERM ACTIN-MYOSIN BEHAVIORS
. **Rizal F. Hariadi**, Abhinav J. Appukutty, Sivaraj Sivaramakrishnan

1293-Pos BOARD B361
CHANGES IN MYOSIN CROSSBRIDGE CYCLE DURING HUMAN DEVELOPMENT. **Alice Ward Racca**, Samantha Lynn, Michael A. Geeves

1294-Pos BOARD B362 INTERNATIONAL TRAVEL AWARDEE
A NEW HUMANIZED MOUSE MODEL FOR STUDYING INHERITED CARDIOMYOPATHIC MUTATIONS IN THE *MYH7* GENE. **Farah Haque**, Mohsen Sarikhani, Souhrid Mukherjee, N. Ravi Sundaresan, John A. Mercer

1295-Pos BOARD B363
A R146N HYPERTROPHIC CARDIOMYOPATHY MYOSIN MUTATION DISRUPTS MYOSIN FUNCTION, MYOFIBRILLAR STRUCTURE, AND CARDIAC CONTRACTION IN *DROSOPHILA*. **Adriana S. Trujillo**, William A. Kronert, Kaylyn Bell, Meera C. Viswanathan, Girish C. Melkani, Anju Melkani, Anthony Cammarato, Douglas M. Swank, Sanford I. Bernstein

1296-Pos BOARD B364
KINETIC CHARACTERIZATION OF THE MITOCHONDRIAL TRANSPORTER HUMAN MYOSIN XIX. Matt Mcconnell, Laura Jackson, Ailian Xiong, Betty Belknap, Howard White, Omar Quintero, **Eva Forgacs**

1297-Pos BOARD B365
SINGLE MOLECULE CHARACTERISATION OF THE MOLECULAR MOTOR MYOSIN VB. Lucia Gardini, Sarah M. Heissler, Claudia Arbore, James R. Sellers, Francesco S. Pavone, **Marco Capitanio**

1298-Pos BOARD B366
DIRECT SINGLE MOLECULE OBSERVATIONS OF THE UNIQUE MECHANICAL STATE OF HUMAN MYOSIN-6. **Yasuharu Takagi**, Nikolas Hundt, Neil Billington, Joanna Andrecka, Daniel Cole, Adam J. Fineberg, Noriko Katagiri, Jonathan E. Bird, Thomas B. Friedman, Philipp Kukura, James R. Sellers

1299-Pos BOARD B367
KINEMATICS OF THE LEVER ARM SWING IN MYOSIN VI. **Mauro L. Mugnai**, Dave Thirumalai

1300-Pos BOARD B368
MODELING THE ATPASE CYCLE OF HUMAN MYOSIN II ISOFORMS AND THEIR MUTATIONS. Srboľjub Mijailovich, Marina Svıcevic, Djordje Nedic, Boban Stojanovic, Jonathan Walklate, Zoltan Ujfalusi, **Michael Geeves**

1301-Pos BOARD B369
MOLECULAR DYNAMICS AND NORMAL MODE ANALYSIS OF MYO1B AND MYO1B DELETION CONSTRUCTS REVEAL COUPLING BETWEEN THE LEVER ARM HELIX, N-TERMINUS, AND ACTIVE SITE. **Ahmet Mentés**, Henry Shuman, E. Michael Ostap

1302-Pos BOARD B370
X-RAY CRYSTALLOGRAPHY STRUCTURES OF *DROSOPHILA* STRIATED MUSCLE MYOSIN II. **James T. Caldwell**, Tom Huxford, Girish Melkani, Sanford Bernstein

1303-Pos BOARD B371
3D RECONSTRUCTION OF THE FOLDED, INHIBITED FORM OF VERTEBRATE SMOOTH MUSCLE MYOSIN II BY SINGLE PARTICLE ANALYSIS. **Shixin Yang**, Kyoungwan Lee, Osamu Sato, Mitsuo Ikebe, Roger Craig

1304-Pos BOARD B372
MYOSINS ACTIVE SITE CLOSURE VIA SWITCH-1 ALLOSTERICALLY REGULATES THE MOTOR-ACTIN INTERACTION DURING THE ATPASE CYCLE FOR PRODUCTIVE FORCE GENERATION. **Benjamin C. Walker**, Morgan E. Thompson, F Jon Kull, Jared C. Cochran

1305-Pos BOARD B373
ROLE OF METAL CATION IN CONTROL OF PHOSPHATE RELEASE IN MYOSIN ATPASE. Furong Huang, Jinghua Ge, **Yuri E. Nesmelov**

1306-Pos BOARD B374
HIGHLY SOLUBLE, NON-PHOTOTOXIC, NON-FLUORESCENT, PHOTOSTABLE BLEBBISTATIN DERIVATIVES. **Anna Á. Rauscher**, Sharad Kumar, Boglárka H. Várkuti, Miklós Képiró, Ádám I. Horváth, László Végner, György Hegyi, Zsolt Borhegyi, Máté Varga, Zsolt Lenkei, Andras Malnasi-Csizmadia

1307-Pos BOARD B375
INTERACTIONS AND FUNCTIONS OF MYOSIN 16 DOMAINS. Andras Kengyel, Elek Telek, Zoltan Konya, Balint Becsi, Ferenc Erdodi, **Miklos Nyitrai**

1308-Pos BOARD B376
C. ELEGANS THICK FILAMENTS ASSEMBLE WITH A DECAPITATED MYOSIN A. **Hallea Ward**, Ryan Littlefield

1309-Pos BOARD B377
TRIPLE FRET IMAGING OF NON-MUSCLE MYOSIN II LOCALIZATION IN MIGRATING CELLS. **Nicole E. Snell**

1310-Pos BOARD B378
LIVE-CELL SINGLE-MOLECULE IMAGING OF HUMAN MYOSIN IIIA. **Munenori Ishibashi**, Tsuyoshi Sakai, Reiko Ikebe, Mitsuo Ikebe

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TALIN AS A MOLECULAR SHOCK ABSORBER. Mingxi Yao, Benjamine T. Goult, Michael P. Sheetz, **Jie Yan**

1312-Pos BOARD B380
VINCULIN FORMS A CATCH BOND WITH F-ACTIN THAT DEPENDS ON ACTIN FILAMENT ORIENTATION. **Derek Huang**, Nick Bax, Craig Buckley, William Weis, Alexander Dunn

1313-Pos BOARD B381
REGULATION OF ELASTICALLY COUPLED MYOSIN IC MOLECULES. **Florian Berger**, A. J. Hudspeth

1314-Pos BOARD B382
TRAJECTORIES OF GLIDING FILAMENTS ON OPTICALLY PATTERNED MYOSIN SURFACES. **Daniel Todd**, Vikrant Yadav, Paul Ruijgrok, Zev Bryant, Jennifer Ross

1315-Pos BOARD B383
MECHANOACCUMULATIVE ELEMENTS OF THE MAMMALIAN ACTIN CYTOSKELETON. **Eric S. Schiffrhauer**, Tianzhi Luo, Krithika Mohan, Xuyu Qian, Vasudha Srivastava, Pablo Iglesias, Douglas N. Robinson

1316-Pos BOARD B384
STEADY DYNEIN ACTIVITY PRODUCES DYNAMIC INSTABILITY AND WAVELIKE OSCILLATIONS IN A 9-DOUBLET FINITE ELEMENT MODEL OF FLAGELLA. **Tianchen Hu**, Susan K. Dutcher, Philip V. Bayly

1317-Pos BOARD B385
RESURRECTION OF FLAGELLAR BENDING MOVEMENTS IN CHLAMYDOMONAS PARALYZED MUTANTS AT HIGH PRESSURE. **Toshiki Yagi**, Masayoshi Nishiyama

1318-Pos BOARD B386
SURFACE DRAG AND SWARMING BACTERIA. **Katie M. Ford**, Pushkar L. Lele

1319-Pos BOARD B387
QUANTIFICATION OF FLAGELLA-DRIVEN CELLULAR MOTILITY UNDER VARIOUS VISCOUS RESISTANCES. **Kara M. Clark**, Daniel Fijalka, Gang Xu

1320-Pos BOARD B388
APPARENT FLEXURAL RIGIDITY OF SINGLE FLAGELLA DEPENDS ON INTER-DOUBLET SHEAR STIFFNESS. **Gang Xu**, Kate S. Wilson, Ruth J. Okamoto, Jin-Yu Shao, Susan K. Dutcher, Philip V. Bayly

1321-Pos BOARD B389
MECHANICAL PROPERTIES OF TRYPANOSOMA CRUZI FLAGELLUM. **Nancy E. Ruiz Uribe**, John Mario Gonzalez, Antonio Manu Forero Shelton

1322-Pos BOARD B390
COORDINATION OF SEQUENTIAL ACTION IN ASYMMETRICAL HEXAMERIC ATPASE BY ARGININE FINGER. Zhengyi Zhao, **Peixuan Guo**

1323-Pos BOARD B391
PROBING CELLULAR MECHANOSTAT DYNAMICS CELLULAR MECHANOSTAT DYNAMICS. **Tomas Andersen**

1324-Pos BOARD B392
EXPERIMENTAL AND COMPUTATIONAL METHODOLOGIES TO MEASURE INTERCELLULAR FORCES DURING TISSUE DEVELOPMENT. **Ernesto Criado-Hidalgo**, Yi-Ting Yeh, Ricardo Serrano, Juan Carlos del Alamo, Juan Lasheras

1325-Pos BOARD B393 EDUCATION TRAVEL AWARDEE
INVESTIGATION OF THE RELIABILITY OF AFM NANOINDENTATION-DERIVED MEASUREMENTS OF CELL MECHANICS. **Matthew Dragovich**, Jared Feindt, Daniel Altman, Cassandra Christman, Nathan DeRaymond, Ibrahim Hashmi, Adama Shaw, Katie Wu, Serge Ayinou, Felipe Torres, Frank Zhang, Hannah Dailey

1326-Pos BOARD B394
MEASURING CELLULAR REACTIONS UPON PARTICLE APPROACH BY PHOTONIC FORCE MICROSCOPY. **Felix Jünger**, Alexander Rohrbach

1327-Pos BOARD B395
SINGLE-CELL MOTILITY ANALYSIS OF STIMULATED DIATOMS USING A MICROCHAMBER. **Shunsuke Kondo**, Yoshikazu Kumashiro, Shigeki Mayama, Kazuo Umemura

1328-Pos BOARD B396
NANONET FORCE MICROSCOPY. Abinash Padhi, Alex Hall, **Amrinder S. Nain**

1329-Pos BOARD B397
THREE-DIMENSIONAL MONOLAYER STRESS CYTOMETRY. **Ricardo Serrano**, Aereas Aung, Shyni Varghese, Juan Carlos del Alamo

1330-Pos BOARD B398
IMAGING OF CELL MECHANICS UNDER HIGH GRAVITY BY ROTATIONAL MICROSCOPE. **Masatoshi Morimatsu**, Ken Takahashi, Ayano Fujita, Keiji Naruse

1331-Pos BOARD B399
UNDERSTANDING THE INTERACTIONS OF PEPTIDES AND PROTEINS THAT ARE COMMONLY USED IN BIOLOGICAL MEDIA ON POLYSTYRENE SURFACES. **Matt McKenzie**, Aravind Rammohan, Martial Hervy

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PHAGOSOMES OF DIFFERENT SIZE SHOW QUALITATIVELY DIFFERENT TRANSPORT CHARACTERISTICS. **Steve Keller**, Konrad Berghoff, Holger Kress

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REPORTING ROTATIONAL DYNAMICS OF INTRACELLULAR CARGOS WITH JANUS PARTICLES. **Yuan Gao**, Stephen M. Anthony, Yi Yi, Yan Yu

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TARGETING OF MYOSIN TO CELLULAR ORGANELLES RESULTS IN DRAMATIC REORGANIZATION BASED ON CARGO/MOTOR AFFINITY. **Michael Ritt**

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MYOVA VESICLE TRANSPORT THROUGH BIOMIMETIC ACTIN NETWORKS VISUALIZED BY 3D STORM MICROSCOPY. **Andrew T. Lombardo**, Guy G. Kennedy, Shane R. Nelson, Kathleen M. Trybus, David M. Warshaw

1336-Pos BOARD B404
A KINETIC MODEL TO DESCRIBE THE BIDIRECTIONAL MOTILITY OF DIMERIC MOLECULAR MOTORS. **Matthew A. Caporizzo**, Claire E. Fishman, Yale E. Goldman

1337-Pos BOARD B405
COLLECTIVE DYNAMICS OF COOPERATING HOMODIMERIC AND HETEROTRIMERIC KINESIN-2 MOTOR PROTEINS UNRAVELED. **Vandana S. Kushwaha**, Daniel M. Miedema, Dmitry V. Denisov, Seyda Acar, Bernard Nienhuis, Peter Schall, Erwin J.G. Peterman

1338-Pos BOARD B406
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MOLECULAR RATIONALE BEHIND THE DIFFERENTIAL SUBSTRATE SPECIFICITY OF RND TRANSPORTERS ACRB AND ACRD. **Venkata Krishnan Ramaswamy**, Giuliano Mallocci, Attilio Vittorio Vargiu, Paolo Ruggerone

1340-Pos BOARD B408
MOLECULAR INSIGHTS INTO COMPOUND-TRANSPORTER INTERACTIONS: THE CASE OF INHIBITORS OF GRAM-NEGATIVE BACTERIA EFFLUX PUMPS Hanno Sjuets, Attilio V. Vargiu, Steven M. Kwasny, Son T. Nguyen, Hong-Suk Kim, Xiaoyuan Ding, Alina R. Ornik, **Paolo Ruggerone**, Terry L. Bowlin, Hiroshi Nikaido, Klaas M. Pos, Timothy J. Opperman

1341-Pos BOARD B409
COMPUTATIONAL STUDY OF THE INTERACTION BETWEEN ANTIMICROBIAL COMPOUNDS AND EFFLUX SYSTEMS OF GRAM-NEGATIVE BACTERIA. **Alessio Atzori**, Attilio Vittorio Vargiu, Giuliano Mallocci, Paolo Ruggerone

1342-Pos BOARD B410
TRANSPORT MECHANISM IN THE RND TRANSPORTER ACRB OF E.COLI. **Attilio V. Vargiu**, Venkata R. Krishnan, Giuliano Mallocci, Paolo Ruggerone

1343-Pos BOARD B411
MEMBRANE TRANSPORT OF GUANIDIUM ION. **Ali A. Kermani**, Randy Stockbridge

1344-Pos BOARD B412
CHARACTERIZATION OF SODIUM-CALCIUM EXCHANGER NCX_MJ USING FLUORESCENT INDICATORS. **Irina Shlosman**, José Faraldo-Gómez, Joseph Mindell

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PROTON SENSITIVITY OF NCX: MODULATION BY NA, CA AND A DISTINCT PROTON-SENSING DOMAIN. Scott John, Brian Kim, Riccardo Olcese, Joshua I. Goldhaber, **Michela Ottolia**

1346-Pos BOARD B414
STRUCTURE OF A CLC-FAMILY FLUORIDE/PROTON ANTIPTORTER. **Nicholas B. Last**, Randy B. Stockbridge, Ashley E. Brammer, Tania Shane, Ludmila Kolmakova-Partensky, Akiko Koide, Shohei Koide, Christopher Miller

1347-Pos BOARD B415
REPEAT-SWAP HOMOMOLOGY MODELING OF THE ANION EXCHANGER AE1 REVEALS AN ELEVATOR-LIKE ANTIPTORT MECHANISM. **Emel Ficici**, Jose D. Faraldo-Gomez, Lucy R. Forrest, Michael L. Jennings

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FUNCTIONAL CHARACTERIZATION OF THE SLC-TRANSPORTERS PEPT1 AND OCT2 BY ELECTROPHYSIOLOGICAL REAL-TIME MEASUREMENTS USING A HIGH THROUGHPUT SYSTEM. **Maria Barthmes**, Andre Bazzone, Stephan Holzhauser, Maximilian Kellner, Niels Fertig, Michael George, Andrea Brüggemann

1349-Pos BOARD B417
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1350-Pos BOARD B418
ANALYZING THE EFFECTS OF LIPID TYPE ON THE A-HEMOLYSIN NANOPORE AND 5HT3 RECEPTOR STRUCTURE AND GATING USING MOLECULAR DYNAMICS SIMULATIONS. **Nicholas B. Guros**, Jeffery B. Klauda

1351-Pos BOARD B419
IDENTIFICATION OF THE ION CONDUCTION PATHWAY IN A TMEM16 SCRAMBLASE. **Tao Jiang**, Criss Hartzell, Emad Tajkhorshid

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- 1354-Pos** **BOARD B422**
TAUTOMERIC EQUILIBRIA OF CYTOSINE AND ISOCYTOSINE IN GAS PHASE AND IN SOLUTION. Avichai Fagan, **Shuhua Ma**
- 1355-Pos** **BOARD B423**
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- 1356-Pos** **BOARD B424**
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- 1357-Pos** **BOARD B425**
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- 1358-Pos** **BOARD B426**
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- 1359-Pos** **BOARD B427**
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- 1360-Pos** **BOARD B428**
THE ARCHITECTURE OF RESPIRATORY SUPERCOMPLEXES. **James A. Letts**, Karol Fiedorczuk, Leonid A. Sazanov
- 1361-Pos** **BOARD B429**
A FUNCTIONAL DIMER MODEL OF UBIQUINOL CYTOCHROME C OXIDO-REDUCTASE. **Jason Bazil**
- 1362-Pos** **BOARD B430**
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- 1363-Pos** **BOARD B431**
BIOPHYSICAL COMPARISON OF ATP SYNTHESIS MECHANISMS SHOWS A KINETIC ADVANTAGE FOR THE ROTARY PROCESS. **Ramu Anandkrishnan**, Zining Zhang, Rory Donovan-Maiye, Daniel M. Zuckerman
- 1364-Pos** **BOARD B432**
CONFORMATIONAL TRANSITION FROM CATALYTIC DWELL TO ATP-BINDING DWELL IN F_1 -ATPASE. **Kei-ichi Okazaki**, Mitsuhiro Sugawa, Gerhard Hummer
- 1365-Pos** **BOARD B433**
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- 1366-Pos** **BOARD B434**
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- 1367-Pos** **BOARD B435**
QUANTIFICATION OF NUTRIENT DEPENDENCE OF SBF/MBF TRANSCRIPTION FACTORS CONTROLLING START IN BUDDING YEAST. **Savanna B. Dorsey**, Sylvain Tollis, Jing Cheng, Linnea Olofsson, Mike Tyers, Catherine A. Royer
- 1368-Pos** **BOARD B436**
DISRUPTION OF PHOTOCHEMICAL CO₂ METABOLISM DURING FOLIAR PURIFICATION OF FORMALDEHYDE IN *EPIPHEMNUM AUREUM*. **Garrett W. Arosemena Ott**, Taylor L. Mustapich
- 1369-Pos** **BOARD B437**
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- 1370-Pos** **BOARD B438**
AN ENHANCED DELTA-NOTCH LATERAL INHIBITION MODEL INCORPORATING INTRACELLULAR NOTCH HETEROGENITY AND TENSION-DEPENDENT RATE OF DELTA-NOTCH BINDING TO EXPLAIN CELLULAR PATTERNING DURING SPROUTING ANGIOGENESIS. **Yen Ling Koon**, Muhammad Bakhait Rahmat, Cheng Gee Koh, Keng-Hwee Chiam
- 1371-Pos** **BOARD B439**
FLASHING BROWNIAN RATCHET MECHANISM OF COLLECTIVE STATE TRANSITION IN MOUSE EMBRYONIC STEM CELL REVEALED BY USING SINGLE CELL ANALYSIS. Kazuko Okamoto, Hideaki Fujita, Chikara Furuwaka, **Tomonobu M. Watanabe**
- 1372-Pos** **BOARD B440**
PROTECTIVE EFFECTS OF EXTREMELY LOW FREQUENCY MAGNETIC FIELD (50 HZ, 1 MT) AND PTEROSTILBENE TREATMENT ON RENAL ISCHEMIC INJURY. Ozlem Bozkurt Girit, Hatice Keser, Feride Severcan, **Mehmet D. Bilgin**
- 1373-Pos** **BOARD B441**
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- 1374-Pos** **BOARD B442**
DEVELOPMENT OF AGED ERYTHROCYTES SEPARATION DEVICE USING LORENTZ FORCE. **Naoyuki Yokoyama**, Daisuke Sugiyama, Mai Itakura
- 1375-Pos** **BOARD B443**
MODULATION OF EGFR SIGNALING BY ANTIBODY CONJUGATED DNA NANO-FORCEPS. **Hanki Lee**
- 1376-Pos** **BOARD B444**
MODELING ANALYSIS OF RNA GRANULE FORMATION AND SELECTIVITY MEDIATED BY MULTIVALENT INTERACTIONS. **Cibele V. Falkenberg**, John H. Carson, Michael L. Blinov
- 1377-Pos** **BOARD B445**
NUCLEOTIDE AND NUCLEOTIDE EXCHANGE FACTOR BOUND NANO TO MILLISECOND STRUCTURAL-DYNAMICS OF G ALPHA. **Labe A. Black**, J. B. A. Ross, Stephen R. Sprang
- 1378-Pos** **BOARD B446**
MEMBRANE FLUIDITY MODULATES BIOFILM FORMATION IN *E. COLI* VIA THE RCS PHOSPHORELAY. **Julia F. Nepper**, Douglas B. Weibel
- 1379-Pos** **BOARD B447**
MULTIVALENT SIGNALING CLUSTERS HAVE UNIQUE SIZES DETERMINED BY MEMBRANE LOCALIZATION AND EXCLUDED VOLUME: THE NEPHRIN/NCK/N-WASP SYSTEM. Madeleine Youngstrom, **Aniruddha Chattaraj**, Paul J. Michalski, James C. Schaff, Michael L. Blinov, Leslie M. Loew

1380-Pos BOARD B448
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1381-Pos BOARD B449
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1382-Pos BOARD B450
A CONTROLLABLY-SIZED SYNTHETIC CELL SYSTEM TO INVESTIGATE THE GEOMETRIC DEPENDENCE OF INTRACELLULAR SIGNALING. Jessica G. Bermudez, **Matthew C. Good**

1383-Pos BOARD B451
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1384-Pos BOARD B452
DESIGN PRINCIPLES OF PLEIOTROPIC G-PROTEIN SIGNALING THROUGH GUANINE NUCLEOTIDE EXCHANGE MODULATORS (GEMS). **Michael Getz**, Pradipta Ghosh, Padmini Rangamani

1385-Pos BOARD B453
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1386-Pos BOARD B454
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1387-Pos BOARD B455
IN VITRO EVALUATION OF PHOTODYNAMIC THERAPY USING DIFFERENT PHOTOSENSITIZERS ON *LEISHMANIA TROPICA* PROMASTIGOTES. Sercin Ozlem Caliskan, Hatice Ertaaklar, **Mehmet D. Bilgin**, Sema Ertug

1388-Pos BOARD B456
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1389-Pos BOARD B457
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1390-Pos BOARD B458
PERTURBING THE HYPOTHALAMIC-PITUITARY-ADRENAL STRESS RESPONSE SYSTEM: MATHEMATICAL MODELING TO IMPROVE DIAGNOSIS OF POST-TRAUMATIC AND RELATED STRESS DISORDERS. **Lae U. Kim**, Maria R. D'Orsogna, Tom Chou

1391-Pos BOARD B459
HIERARCHICAL TISSUE ORGANIZATION AS A GENERAL MECHANISM TO LIMIT SOMATIC EVOLUTION. **Imre Derenyi**, Gergely J. Szollosi

1392-Pos BOARD B460
REAL TIME STUDY OF TRANSPOSABLE ELEMENT ACTIVITY. **Neil Hyuneil Kim**, Gloria Lee, Nicholas A. Sherer, K. Michael Martini, Nigel Goldenfeld, Thomas E. Kuhlman

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1393-Pos BOARD B461
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1394-Pos BOARD B462
NEW GFP VARIANTS WITH ENHANCED TWO-PHOTON BRIGHTNESS. **Rosana S. Molina**, Robert E. Campbell, Nathan C. Shaner, Thomas E. Hughes, Mikhail Drobizhev

1395-Pos BOARD B463
APPLICATION OF SMALL, SIZE-EQUALIZED FLUORESCENT QUANTUM DOTS (SE-QDS) FOR GLUTAMATE RECEPTOR TRACKING IN LIVE-NEURON IMAGING. Sang Hak Lee, **Yeon Youn**, Phuong Le, Sung Jun Lim, Andrew M. Smith, Paul R. Selvin

1396-Pos BOARD B464
SYNAPTIC PROTEIN DYNAMICS MEASURED BY FLUORESCENCE CORRELATION SPECTROSCOPY. **Francesco Colaci**, Francesca D'autilia, Alberto Diaspro, Paolo Bianchini, Luca Lanzano, Andrea Barberis

1397-Pos BOARD B465
A NEW METHOD TO DETECT INTRA- AND EXTRACELLULAR CONFORMATIONAL CHANGES IN ION CHANNELS WITH HIGH TEMPORAL RESOLUTION. **Matthias Wulf**, Stephan A. Pless

1398-Pos BOARD B466
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1399-Pos BOARD B467
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OPTOCAPACITANCE-MEDIATED RESPONSES OF EXCITABLE CELLS: NEW DEVELOPMENTS. **Joao L. Carvalho-de-Souza**, David R. Pepperberg, Francisco Bezanilla

1401-Pos BOARD B469
BIDIRECTIONAL MAGNETOTHERMAL MODULATION OF NEURONAL ACTIVITY IN BEHAVING MICE. **Rahul Munshi**, Sara Parker, Idoia Castellanos-Rubio, Arnd Pralle

1402-Pos BOARD B470
MAGNETIC-ENTROPY-GATED TRP CHANNELS. **Sruthi Polali**, Guillaume Duret, Erin Anderson, Jacob Robinson

1403-Pos BOARD B471
MAGNETOELECTRIC NEURAL MODULATION. **Amanda Wickens**, Jacob Robinson

1404-Pos BOARD B472
LARGE-SCALE BEHAVIORAL PHENOTYPING REVEALS FAMILY OF PUTATIVELY LIGHT-ACTIVATED COMPOUNDS. **Cole V. Helsell**

Molecular Dynamics II (Boards B473–B483)

- 1405-Pos BOARD B473**
INVESTIGATING THE INFLUENCE OF SEQUENCE ON PROTEIN FOLDING MECHANISM USING A STRUCTURE BASED MODEL. **Elizabeth Gichana**, Charles L. Brooks III
- 1406-Pos BOARD B474**
MODULATION OF PROTEIN FLEXIBILITY WITH CHANGES IN SEQUENCE AND COMPLEXATION STATE OF UBIQUITIN FAMILY PROTEINS. **Sanjoy Paul**
- 1407-Pos BOARD B475**
CHARACTERIZATION OF PROFILIN BINDING KINETICS USING ENSEMBLE MOLECULAR DYNAMICS SIMULATIONS. **Jocelyn Sunseri**, David R. Koes, Partha Roy, David Gau
- 1408-Pos BOARD B476**
EXPLORING MOLECULAR INTERACTIONS BETWEEN *ESCHERICHIA COLI* RNA POLYMERASE AND TOPOISOMERASE I BY MOLECULAR SIMULATIONS. **Purushottam Tiwari**, Prem Chapagain, Srikanth Banda, Yesim Darici, Yuk-Ching Tse-Dinh, Aykut Üren
- 1409-Pos BOARD B477**
COMPUTATIONAL STUDY ON A VARIETY OF PATHWAYS FOR CONFORMATIONAL CHANGES OF A PROTEIN. **Sotaro Fuchigami**
- 1410-Pos BOARD B478**
MOLECULAR DYNAMICS STUDY FOR STREPTAVIDIN MUTANT WITH/ WITHOUT BIOTIN ANALOG. **Keiko Shinoda**, Hideaki Fujitani
- 1411-Pos BOARD B479**
DEPENDENCE OF WATER EXCHANGE KINETICS ON THE SIZE AND CHARGE OF METAL ION. **Yuno Lee**, Devarajan Thirumalai, Changbong Hyeon
- 1412-Pos BOARD B480**
ANISOTROPY IMAGING OF APOLLO-NADP+ IN VIVO TO TRACK NADPH DYNAMICS IN THE PANCREATIC BETA CELLS OF LIVING ZEBRAFISH. **Cindy V. Bui**, Curtis W. Boswell, Christopher M. McFaul, Christopher M. Yip, Brian Ciruna, Jonathan V. Rocheleau
- 1413-Pos BOARD B481**
MONITORING THE INTERCALATION OF ACRIDINE ORANGE (AO) MOLECULES INTO 6-METHYL ISOXANTHOPTERIN (6-MI)-LABELED DNA BY CIRCULAR DICHROISM AND SINGLE-MOLECULE FRET. **Huiying Ji**, Neil P. Johnson, Peter H. von Hippel, Andrew H. Marcus
- 1414-Pos BOARD B482**
RECONSTRUCTION OF THREE-DIMENSIONAL STRUCTURES OF A PROTEIN WITH SOFTWARE ENMA AND EMC ALGORITHM: A SIMULATION FOR XFEL-CXDI EXPERIMENT. **Takashi Yoshidome**, Yuki Sekiguchi, Tomotaka Oroguchi, Masayoshi Nakasako, Mitsunori Ikeguchi
- 1415-Pos BOARD B483**
ELUCIDATING THE MACROMOLECULAR CROWDING EFFECTS ON INTRACELLULAR NADH AND ENZYME BINDING USING TIME-RESOLVED ASSOCIATED ANISOTROPY. **Shane Wilson**, Tylor Franklin, Ryan Leighton, Robert Kajer, Ahmed A. Heikal

Computational Methods and Bioinformatics I (Boards B484–B511)

- 1416-Pos BOARD B484**
CHARMM-GUI LIGAND READER & MODELER. **Seonghoon Kim**, Jumin Lee, Sunhwan Jo, Wonpil Im
- 1417-Pos BOARD B485**
MOLECULAR DYNAMICS SIMULATION WORKFLOW FOR NUCLEOSOME STUDIES. **Ran Sun**, Zilong Li, Thomas C. Bishop

- 1418-Pos BOARD B486**
EVALUATING MOLECULAR MECHANICS FORCE FIELDS WITH A QUANTUM CHEMICAL APPROACH. **David Koes**, John Vries
- 1419-Pos BOARD B487**
ONE CONSTRAINT AT A TIME: USING VIABILITY PRINCIPLES IN INTEGRATIVE MODELING OF MACROMOLECULAR ASSEMBLIES. **Giorgio E. Tamo**, Andrea Maesani, Sylvain Traeger, Matteo Thomas Degiacomi, Dario Floreano, Matteo Dal Peraro
- 1420-Pos BOARD B488**
A BALANCED APPROACH TO ADAPTIVE DENSITY ESTIMATION IN BIOPHYSICAL ANALYTICS. **Julio A. Kovacs**, Willy Wriggers
- 1421-Pos BOARD B489**
MECHANISM BEYOND MARKOV MODELS: HISTORY INFORMATION IS NEEDED FOR UNBIASED PATHWAY RECONSTRUCTION OF PROTEIN FOLDING. **Ernesto Suárez**, Joshua L. Adelman, Daniel M. Zuckerman
- 1422-Pos BOARD B490**
FINDING DOMINANT REACTION PATHWAYS VIA GLOBAL OPTIMIZATION OF ACTION. **Juyong Lee**, In-Ho Lee, InSuk Joung, Jooyong Lee, Bernard R. Brooks
- 1423-Pos BOARD B491**
INTERACTIVE CHROMATIN MODELING WITH GENOME BROWSER. **Zilong Li**, Ran Sun, Thomas C. Bishop
- 1424-Pos BOARD B492**
A NEW METHOD TO PREDICT THE ELECTRONIC CIRCULAR DICHROISM SPECTRA OF PROTEINS. Gabor Nagy, **Gabor Nagy**, Helmut Grubmueller
- 1425-Pos BOARD B493**
IMAGING LOCALIZED FORCE DISTRIBUTIONS IN CELLS AND TISSUES FROM SUBSTRATE DISPLACEMENTS. **Joshua C. Chang**, Tom Chou
- 1426-Pos BOARD B494**
INTERACTION SURFACES OF PROTEINS INVOLVED IN BACTERIAL CHEMOTAXIS WITH RIGID-BODY DOCKING DECOYS. **Nobuyuki Uchikoga**, Yuri Matsuzaki, Masahito Ohue, Yutaka Akiyama
- 1427-Pos BOARD B495**
A PRELIMINARY NORMAL MODE ANALYSIS OF A SUGAR TRANSPORTER VSGLT. **John E. Cabrera**, Claudia A. Blanco, Yuly E. Sánchez
- 1428-Pos BOARD B496**
PREDICTING SMALL MOLECULE-BINDING TO DNA WITH COMPUTATIONAL DOCKING AND EMPIRICAL ENTROPIC CONTRIBUTIONS. **Christos Deligkaris**, GW McElfresh
- 1429-Pos BOARD B497**
TOWARDS IN-SILICA SCREENING OF MOLECULE PERMEATION THROUGH OUTER MEMBRANE CHANNELS IN GRAMM-NEGATIVE BACTERIA. **Igor V. Bodrenko**, Silvia Acosta-Gutierrez, Tommaso D'Agostino, Samuele Salis, Susruta Samanta, Mariano Andrea Scorciapino, Matteo Ceccarelli
- 1430-Pos BOARD B498**
ON THE ROBUSTNESS OF SAC SILENCING IN CLOSED MITOSIS. **Donovan P. Ruth**, Jian Liu
- 1431-Pos BOARD B499**
COMPUTATIONAL ANALYSIS OF THE MECHANISM OF THE UBIQUITIN CONJUGATING ENZYME UBC13. **Walker M. Jones**, Aaron Davis, Isaiiah Sumner, Serban Zamfir
- 1432-Pos BOARD B500**
PHYSICAL BINDING OF A TOBACCO-SPECIFIC CARCINOGEN (NNK) METABOLITE TO THE HUMAN TP53 GENE WITH RAMIFICATIONS FOR DNA DAMAGE AND MUTATIONS. **Breanna S. Stirewalt**, Christos Deligkaris

1433-Pos BOARD B501
TRANSCRIPTION FACTOR-DNA INTERACTION: FROM ENCODE TO BIOPHYSICS USING EVOLUTION AND MOLECULAR DYNAMIC SIMULATIONS. **Jeremy W. Prokop**, Casey Smith, Stephanie M. Bilinovich, David C. Williams Jr, Howard J. Jacob

1434-Pos BOARD B502
MECHANICS OF GLYCOPROTEIN ORGANIZATION IN THE GLYCOCALYX. **Jay G. Gandhi**, Matthew J. Paszek, Donald L. Koch

1435-Pos BOARD B503
TOWARD A MORE ROBUST GENE EXPRESSION SIGNATURE FOR ALZHEIMER'S DISEASE NEURODEGENERATION. **Carol Huseby**, Connor Wagner, Lauren Lin, Jeff Kuret

1436-Pos BOARD B504
PREDICTION OF CANCER-ASSOCIATED HOTSPOT MUTATIONS THAT AFFECT GPCR OLIGOMERIZATION. **Wataru Nemoto**, Vachiranee Limviphuvadh, Sebastian Maurer-Stroh, Shunsuke Fujishiro, Yoshihiro Yamanishi, Yuichi Amemiya, Hiroyuki Toh

1437-Pos BOARD B505
MOLE 2.5 - TOOL FOR DETECTION AND ANALYSIS OF MACROMOLECULAR PORES AND CHANNELS. **Karel Berka**, David Sehnal, Vaclav Bazgier, Lukas Pravda, Radka Svobodova-Varekova, Michal Otyepka, Jaroslav Koca

1438-Pos BOARD B506 EDUCATION TRAVEL AWARDEE
INVESTIGATING TRANSPORT PROPERTIES WITH MULTI-SCALE COMPUTABLE MESH MODELS FROM HETEROGENEOUS STRUCTURAL DATASETS. **Christopher Lee**, John Moody, James Andrew McCammon, Michael Holst, Rommie E. Amaro

1439-Pos BOARD B507
THREE-DIMENSIONAL MODELING OF CIRCULATING CELL SEPARATION IN A Y-JUNCTION MICROCHANNEL. **Scott J. Hymel**, Damir B. Khismatullin

1440-Pos BOARD B508
THE IMPACT OF MACHINE SPECIFICATIONS IN DETECTING BREAST CANCER IN BREAST ULTRASOUND IMAGES. **Farzan Khatib**, Firouzeh Ghafourian Nasab

1441-Pos BOARD B509
IMPLICIT HYDRATION MODELLING IN SMALL-ANGLE X-RAY SCATTERING FOR PROTEIN STRUCTURE DETERMINATION. Dudu Tong, Sichun Yang, **Lanyuan Lu**

1442-Pos BOARD B510
IN SILICO PREDICTION OF HLA-ASSOCIATED DRUG HYPERSENSITIVITY. **Xin-Qiu Yao**, Shashank Jariwala, Barry J. Grant

1443-Pos BOARD B511
COMPUTATIONAL MODELING OF PH SENSITIVITY IN THE CRITICAL HIV GP120-CD4 INTERACTION. **Jonathan Howton**, Joshua L. Phillips

Optical Microscopy and Super-resolution Imaging: Novel Approaches and Analysis II (Boards B512–B535)

1444-Pos BOARD B512
POSITION BASED SINGLE PARTICLE TRACKING (P-SPT) FOR HIGH-RESOLUTION DEFORMATION AND MOTION CAPTURE. **Mohak Patel**, Christian Franck

1445-Pos BOARD B513
COLOCALISATION - THE TALE OF CO-OCCURRENCE AND CORRELATION. **Ingela Parmryd**, Jeremy Adler

1446-Pos BOARD B514
IMAGING OF THREE-DIMENSIONAL SINGLE MOLECULE DYNAMICS IN THEIR CELLULAR CONTEXT. Dongyoung Kim, Sungyong You, E Sally Ward, **Raimund Ober**

1447-Pos BOARD B515
SINGLE CELL FLUORESCENT LABELLING IN 3-DIMENSIONAL ENVIRONMENTS. **Loic Binan**, Ariel Wilson, Sapiha Przemyslaw, Santiago Costantino

1448-Pos BOARD B516
PARTICLE COUNTING BY CONFOCAL MICROSCOPY: INCREASING THE DYNAMIC RANGE VIA MULTIPLE-SLITS FLUORESCENCE DETECTION. **Margaux Bouzin**, Christopher Heylman, Weian Zhao, Enrico Gratton

1449-Pos BOARD B517
REAL-TIME SINGLE PROTEIN TRACKING WITH POLARIZATION READOUT USING A CONFOCAL MICROSCOPE. **Elias Amselem**, Emil Marklund, Kalle Kipper, Magnus Johansson, Sebastian Deindl, Johan Elf

1450-Pos BOARD B518
IMAGING SINGLE MOLECULES VS. SINGLE-MOLECULE IMAGING: COUNTING SINGLE MOLECULES USING DEXTRAN-STREPTAVIDIN-ANTIBODY CLUSTERS (DSA). **Qiaoqiao Ruan**, Richard A. Haack, Zhen Lin, Patrick J. Macdonald, Kerry M. Swift, Sergey Y. Tetin

1451-Pos BOARD B519
POLYMER DOTS FOR MULTIPHOTON FLUORESCENCE VASCULAR IMAGING *IN VIVO*. **Ahmed Hassan**, Steven Wu, Jeremy Jarrett, Evan Perillo, David Miller, Allen Liu, Daniel Chiu, Tim Yeh, Andrew Dunn

1452-Pos BOARD B520
QUANTITATIVE MAPPING OF INTRANUCLEAR DIFFUSION IN LIVING CELLS BY PHASOR ANALYSIS OF LOCAL RICS. **Lorenzo Scipioni**, Melody Di Bona, Maria Joao Sarmiento, Giuseppe Vicidomini, Alberto Diaspro, Luca Lanzano

1453-Pos BOARD B521 INTERNATIONAL TRAVEL AWARDEE
MULTICOLOR 3D SINGLE PARTICLE TRACKING USING SPECTRALLY DISPLACED LOCALIZATION. **Corey Butler**, Rémi Galland, Vincent Studer, Jean-Baptiste Sibarita

1454-Pos BOARD B522
HOW TO CALIBRATE YOUR CCD IN THE DARK? A PRECISE CCD CALIBRATION METHOD. **Urszula P. Golebiewska**, Chiaki Yanagisawa

1455-Pos BOARD B523 INTERNATIONAL TRAVEL AWARDEE
VELOCITY LANDSCAPES RESOLVE MULTIPLE DYNAMICAL POPULATIONS FROM FLUORESCENCE IMAGE TIME SERIES. **Elvis Pandzic**, Asmahan Abu-Arish, Renee M. Whan, John Hanrahan, Paul W. Wiseman

1456-Pos BOARD B524
INTRACELLULAR DYNAMICS OF NANOPARTICLES PROBED BY AN IMAGE-DERIVED MEAN SQUARE DISPLACEMENT APPROACH. **Luca Digiacomo**, Cristina Marchini, Michelle A. Digan, Enrico Gratton, Giulio Caracciolo

1457-Pos BOARD B525
LIVE CELL STRATEGY FOR DETECTION OF CURVATURE DEPENDENT SORTING OF MEMBRANE ASSOCIATED PROTEINS. **Line Lauritsen**, Ivana Vonkova, Elena Bertseva, Dimitrios Stamou

1458-Pos BOARD B526
IDENTIFYING PROTEIN COMPLEXES IN THE NUCLEAR ENVELOPE BY FLUORESCENCE FLUCTUATION MICROSCOPY. **Jared Hennen**, Cosmo Saunders, Siddarth Reddy Karuka, G.W. Gant Luxton, Joachim D. Mueller

1459-Pos BOARD B527
REAL TIME TRACKING OF CAMP GRADIENTS AND CHANGES IN PKA ACTIVITY USING HYPERSPECTRAL IMAGING AND ANALYSIS APPROACHES. **Thomas C. Rich**, Naga S. Annamdevula, Andrea L. Britain, Kenny T. Trinh, Savannah West, Chase Hoffman, John R. Griswold, Silas J. Leavesley

1460-Pos BOARD B528
THE IMPORTANCE OF AXIAL RESOLUTION IN FLUORESCENCE COLOCALIZATION. **Brad Busse**, Ludmila Bezrukov, Paul Blank, Joshua Zimmerberg

1461-Pos BOARD B529
UNRAVELING TERNARY PROTEIN INTERACTIONS IN THE LIVING CELL WITH TRICOLOR FLUORESCENCE MICROSCOPY. **Kwang Ho Hur**, Yan Chen, Joachim D. Mueller

1462-Pos BOARD B530
PHOTOSWITCHING FRET - A NEW APPROACH TO IMAGING ENERGY TRANSFER. **George H. Patterson**, Kristin Rainey

1463-Pos BOARD B531
5 DIMENSIONAL HYPERSPECTRAL FRET IMAGING AND ANALYSIS APPROACHES FOR MEASURING CAMP GRADIENTS HYPERSPECTRAL FRET IMAGING AND ANALYSIS APPROACHES FOR MEASURING CAMP GRADIENTS DIMENSIONAL HYPERSPECTRAL FRET IMAGING AND ANALYSIS APPROACHES FOR MEASURING CAMP GRADIENTS. **Naga S. Annamdevula**, Thomas C. Rich, Rachel Sweat, Andrea Britain, Kenny T. Trinh, Silas J. Leavesley

1464-Pos BOARD B532
A 3D DUAL-PARTICLE TRACKING CO-LOCALIZATION MICROSCOPE FOR THE STUDY OF DNA DYNAMICS IN FREE SOLUTION. **Evan P. Perillo**, Yen-Liang Liu, Phyllis Ang, Andrew K. Dunn, Hsin-Chih Yeh

1465-Pos BOARD B533
RAPID FLIM: THE NEW AND INNOVATIVE METHOD FOR ULTRA-FAST IMAGING OF BIOLOGICAL PROCESSES. **Marcelle Koenig**, Sandra Orthaus-Mueller, Rhys Dowler, Benedikt Kraemer, Astrid Tannert, Olaf Schulz, Tino Roehlicke, Michael Wahl, Hans-Juergen Rahn, Matthias Patting, Felix Koberling, Rainer Erdmann

1466-Pos BOARD B534
METABOLIC IMAGING OF SQUAMOUS CELL CARCINOMA CELLS AND IN VIVO SKIN BY PHASOR FLIM. **Michael G. Nichols**, Rohan Das, Marifel F. Gabriel, Christina R. Miller, Alexis M. Mills, Dominick M. Myers, Dan L. Pham, Inga N. Pociupany, Katie D. Sotelo, Kathleen E. Troup

1467-Pos BOARD B535
PROTEIN ORDER AND ADHESIVE STRENGTH IN DESMOSOMES DETERMINED BY FLUORESCENCE POLARIZATION MICROSCOPY. **Emily I. Bartle**, Tara M. Urner, Siddharth S. Raju, Alexa L. Mattheyses

Single-Molecule Spectroscopy II (Boards B536–B545)

1468-Pos BOARD B536
FLUORBT: A MULTIMODAL METHOD FOR INVESTIGATING SINGLE-MOLECULE DYNAMICS. **Ivan E. Ivanov**, Paul Lebel, Florian C. Oberstrass, Zev Bryant

1469-Pos BOARD B537
TRANSVERSE FLUORESCENCE MICROSCOPY WITH MAGNETIC AND OPTICAL TWEEZERS. **Jack Shepherd**, Zhaokun Zhou, Robert Greenall, Matt Probert, Mark Leake

1470-Pos BOARD B538
QUICKER THAN QUICK: CORRELATIVE OPTICAL TWEEZERS-FLUORESCENCE MICROSCOPY (CTFM) FOR THE STUDY OF SHORT-LIVED METABOLIC PROCESSES. **Jordi Cabanas-Danés**, Rosalie P.C. Driessen, Sara Tafoya, Lisa Alexander, Carlos Bustamante, Gerrit Sitters, Andrea Candelli

1471-Pos BOARD B539
SINGLE MOLECULE STUDIES OF EARLY STAGES OF AMYLOID AGGREGATION AN EFFECT OF PH. **Sibaprasad Maity**, Ekaterina Viazovkina, Alexander Gall, Yuri Lyubchenko

1472-Pos BOARD B540
TEMPERATURE-DEPENDENT PROTEIN MALLEABILITY PROBED BY SINGLE-MOLECULE FORCE SPECTROSCOPY AND FLUORESCENCE SPECTROSCOPY. **Shrabasti Bhattacharya**, Sri Rama Koti Ainavarapu

1473-Pos BOARD B541
A SIMPLE DNA HANDLE ATTACHMENT METHOD FOR SINGLE MOLECULE MECHANICAL MANIPULATION EXPERIMENTS. **Duyoung Min**, Mark A. Arbing, Robert E. Jefferson, James U. Bowie

1474-Pos BOARD B542 INTERNATIONAL TRAVEL AWARDEE
A LEGO TOOLBOX FOR ENGINEERING PROTEINS FOR SINGLE MOLECULE FORCE SPECTROSCOPY. **Alvaro Alonso-Caballero**, Jaime Andres Rivas-Pardo, Carmen L. Badilla, Daniel J. Echelman, Julio M. Fernandez

1475-Pos BOARD B543
BIOCOMPATIBLE AND HIGH STIFFNESS NANOPHOTONIC TRAP ARRAY FOR PRECISE AND VERSATILE MANIPULATION. **Fan Ye**, Ryan P. Badman, James T. Inman, Mohammad Soltani, Jessica L. Killian, Michelle D. Wang

1476-Pos BOARD B544
LIGAND INDUCED CHANGES IN THE ASSEMBLY OF NICOTINIC RECEPTORS. **Faruk H. Moonschi**, Ashley M. Loe, Chris I. Richards

1477-Pos BOARD B545
DNA-ORIGAMI-BASED TETHERED PARTICLE MOTION FOR THE SINGLE-MOLECULE STUDY OF BIMOLECULAR INTERACTIONS. **Matthias Schickinger**, Hendrik Dietz

Micro- and Nanotechnology II (Boards B546–B558)

1478-Pos BOARD B546 EDUCATION TRAVEL AWARDEE
FABRICATING AND ACTUATING DNA ORIGAMI MECHANISMS. **Alexander E. Marras**

1479-Pos BOARD B547
UTILIZING DNA ORIGAMI NANOSTRUCTURES WITH DESIGNED ENTROPIC SPRINGS FOR HIGH THROUGHPUT, SINGLE-MOLECULE FORCE SPECTROSCOPY. **Randy Patton**, Carlos Castro

1480-Pos BOARD B548
DNA ORIGAMI PLATFORM FOR PROTEIN INTERACTION ANALYSIS. **Viktoria Motsch**, Schütz Gerhard, Sevcik Eva

1481-Pos BOARD B549
TRANSFORMATIVE SELF-ASSEMBLY OF HYBRID NANOCOMPOSITE RINGS. **Haneen Martinez**, George D. Bachand

1482-Pos BOARD B550
MODULATING PROTEIN-NANOPARTICLE INTERACTION ENERGETICS USING SITE DIRECTED MUTAGENESIS. **Yasiru R. Perera**, Ailin Wang, Alex Hughes, Nicholas C. Fitzkee

1483-Pos BOARD B551
ELECTROSTATICS OF DNA-WRAPPED CATIONICALLY STABILIZED GOLD NANOSPHERES. **Savannah Miller**, Celina Harris, Lucas B. Thompson, Kurt Andresen

1484-Pos BOARD B552
MODULATION OF FLUORESCENCE EMISSION RATE USING NANO-ANTENNA. **Wenqi Zhao**, Xiaochaoran Tian, Meng Qiu, Yuanbo Zhang, Lei Zhou, Yanwen Tan

1485-Pos BOARD B553
IMPROVING STABILITY AND SENSITIVITY OF SERS-BASED BIOSENSORS. Joseph Smolsky, Zakhar Reveguk, Zachary Sabata, **Alexey Krasnoslobodtsev**

1486-Pos BOARD B554
CONTROLLED BIOMOLECULE RELEASE FROM A LIPOSOMAL NANOCARRIER MODULATED WITH PULSED NIR LIGHT. **Jeongeun Shin**, Maria Olubunmi Ogunyankin, Joseph A. Zasadzinski

1487-Pos BOARD B555
FILOVIRUS MIMICS DELIVER EFFECTIVELY TO IRREVERSIBLY CONTROL CARCINOMA CELL FATE. **Praful R. Nair**, Cory Alvey, Dennis Discher

1488-Pos BOARD B556
IN VIVO NANO-BIO INTERACTIONS IN ZEBRAFISH USING ADVANCED FLUORESCENCE MICROSCOPY. **Marta d'Amora**, Giuseppe Sancataldo, Romuald Intartaglia, Alberto Diaspro

1489-Pos BOARD B557 CID TRAVEL AWARDEE
HALF PEGYLATED PARTICLES EVADE MACROPHAGES AS EFFECTIVELY AS FULLY PEGYLATED ONES. **Lucero Sanchez**, Yi Yi, Yan Yu

1490-Pos BOARD B558 INTERNATIONAL TRAVEL AWARDEE
ATOMIC FORCE MICROSCOPY AS A TOOL TO EVALUATE THE RISK OF CARDIOVASCULAR DISEASES IN PATIENTS. **Ana F. Guedes**, Filomena Carvalho, Nuno Lousada, Luis Sargento, Nuno C. Santos

Bioengineering (BOARDS B559–B579)

1491-Pos BOARD B559
COMPUTATIONAL CELL-BARCODING FOR HIGH-THROUGHPUT ROBOTIC MICROSCOPY. **Mariya Barch**, Gaia Skibinski, Alicia Lee, Steven Finkbeiner

1492-Pos BOARD B560
CYBERNETIC ANALYSIS OF NATURAL INTELLIGENCE. **Charles Walter**

1493-Pos BOARD B561
QUASI-STATIC ACOUSTIC TWEETING THROMBOELASTOMETRY. **Daishen Luo**, R. Glynn Holt, Damir B. Khismatullin

1494-Pos BOARD B562
A DUAL IMAGE SENSOR APPROACH FOR AUTOMATED, HIGH RESOLUTION, REGION-OF-INTEREST IMAGING IN A 96-WELL PLATE. **Aaron Au**, Maximiliano Giuliani, Sean Harrington, Peter Roy, Christopher M. Yip

1495-Pos BOARD B563
ELECTRICAL CIRCUIT MODELLING AND EXPERIMENTAL EVALUATION OF THE BLOOD UNDERGOING THROMBOSIS. **Achyut Sapkota**, Dung Nguyen Huu, Masahiro Takei

1496-Pos BOARD B564
PHYSICAL AND MECHANICAL FORCES THAT SHAPE HEART TUBE IN THE CHICK EMBRYO. **Seyedhadi Hosseini**, Larry A. Taber

1497-Pos BOARD B565 EDUCATION TRAVEL AWARDEE
COVALENTLY CIRCULARIZED NANODISCS: EM AND NMR APPLICATIONS. **Mahmoud L. Nasr**, Julia Simon, Zhao Zhao, Mike Strauss, William Shih, James Hogle, Gerhard Wagner

1498-Pos BOARD B566
MOLECULAR DYNAMICS OF ADENOSINE TRIPHOSPHATE INTERACTING WITH LIPID MEMBRANES. **Abhinav Ramkumar**, Xiaoling Leng, Ryan Z. Lybarger, Horia I. Petrache

1499-Pos BOARD B567
NOVEL PHOTOCROMIC COMPOUND COMPOSED OF AZOBENZENE AND SPIROPYRAN TO CONTROL THE FUNCTION OF KINESIN EG5. **Kentaro Saito**

1500-Pos BOARD B568
MICROWAVE DIELECTRIC PROPERTIES OF CONDUCTIVE LIQUIDS. **Christopher E. Bassey**, Madeson Claiborne, Kaylee Garcia

1501-Pos BOARD B569
ON THE VISCOELASTIC PROPERTIES OF THE BRAIN TISSUE WITH INDENTATION TECHNIQUE. **Aref Samadi-Dooki**, George Z. Voyiadjis, Rhett W. Stout

1502-Pos BOARD B570
THEORETICAL MODELING OF BIOLOGICAL FLUID DEFORMATION DURING DYNAMIC ACOUSTIC TWEETING. **Nithya Kasireddy**, Vahideh Ansari Hosseinzadeh, Daishen Luo, R. Glynn Holt, Damir B. Khismatullin

1503-Pos BOARD B571
NANOSTRUCTURED FUNCTIONAL POLYMERS FOR SELECTIVE PROTEIN BINDING. **Bianca Buchegger**, Sandra Mayr, Johannes Kreuzer, Richard Wollhofen, Jaroslav Jacak, Thomas A. Klar

1504-Pos BOARD B572 EDUCATION TRAVEL AWARDEE
BIOLOGICAL SEMICONDUCTORS: STRUCTURAL CONTROL OF HEME REDOX POTENTIALS IN PPCA, A 3-HEME CYTOCHROME. **Coleman Swaim**, Oleksandr Kokhan

1505-Pos BOARD B573
RATIONAL DESIGN AND DEVELOPMENT OF POLYSIALIC ACID-BINDING PEPTIDES. **Divya G. Shastry**, Flaviyan J. Irudayanathan, Shikha Nangia, Pankaj S. Karande

1506-Pos BOARD B574
AN ENGINEERED TET ENZYME FOR INDUCIBLE EPIGENOMIC REMODELING AND EDITING. Yi Liang, Minjung Lee, **Yubin Zhou**, Yun Huang

1507-Pos BOARD B575
GAP JUNCTION REMODELING IN A NOVEL ENGINEERED HEART TISSUE SYSTEM CULTURED UNDER POINT STIMULATION. **Jeffery A. Clark**, Ronald G. Ng, Stuart G. Campbell

1508-Pos BOARD B576
PHOTO-REGULATION OF SMALL G PROTEIN RHOA SIGNAL CASCADE USED BY PHOTOCROMIC MOLECULES. **Kaori Masuhara**, Masahiro Kuboyama, Nobuyuki Nishibe, Mitsuo Ikebe, Shinsaku Maruta

1509-Pos BOARD B577
CONNECTOSOMES FOR DIRECT MOLECULAR DELIVERY TO THE CELLULAR CYTOPLASM. **Avinash Gadok**, Jeanne Stachowiak

1510-Pos BOARD B578
ENGINEERING THE EXTRACELLULAR LOOPS OF OUTERMEMBRANE PROTEIN G IN CREATING A NANOPORE SENSING PLATFORM. **Monifa A. Fahie**, Min Chen

1511-Pos BOARD B579
ANALYSIS OF CONFORMATIONAL CHANGE WITH THE MULTIMERIZATION OF SMALL GTPASE RAS INDUCED BY CHEMICAL MODIFICATION AT HVR DOMAIN. **Takashi Hashimoto**, Yasunobu Sugimoto, Shinsaku Maruta

Tuesday, February 14, 2017

Daily Program Summary

All rooms are located in the *Ernest N. Morial Convention Center* unless noted otherwise.

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7:30 AM-5:00 PM	Registration/Information	Lobby B
8:00 AM-8:30 AM	Career Center Workshop Career Q&A with Joe Tringali	Room 212/213
8:00 AM-9:00 AM	Biophysical Society Business Meeting	Room 205
8:00 AM-4:00 PM	Poster Viewing	Hall B-2 & C
8:15 AM-10:15 AM	Symposium: Transporters Chair: <i>Hassane S. Mchaourab, Vanderbilt University</i> PRINCIPLES OF ENERGY TRANSDUCTION AND ALTERNATING ACCESS OF ABC EXPORTERS. <i>Hassane S. Mchaourab</i> CLC CHLORIDE/PROTON TRANSPORTERS. <i>Merritt Maduke</i> NEW INSIGHTS INTO THE MECHANISM OF IODIDE TRANSPORT BY THE SODIUM/IODIDE SYMPORTER (NIS). <i>Nancy Carrasco</i> RIGOROUS REPRESENTATION OF TRANSPORTERS AS ALLOSTERIC MACHINES ENABLES A QUANTITATIVE UNDERSTANDING OF THEIR FUNCTIONALMECHANISMS. <i>Harel Weinstein</i>	Great Hall A
8:15 AM-10:15 AM	Symposium: Destroying the Cytoskeleton Chair: <i>Jennifer Ross, University of Massachusetts</i> MICROTUBULE SERVERING REGULATED BY TUBULIN TAILS. <i>Jennifer Ross</i> THE RELATIONSHIP BETWEEN MICROTUBULE BIRTH AND DEATH. <i>Gary Brouhard</i> ARCHITECTURE DEPENDENCE OF ACTIN FILAMENT NETWORK DISASSEMBLY. <i>Laurent Blanchoin</i> A HOLISTIC VIEW OF MICROTUBULE ASSEMBLY REGULATION. <i>Linda Wordeman</i>	Great Hall B
8:15 AM-10:15 AM	Platform: Membrane Dynamics	Room R02/03
8:15 AM-10:15 AM	Platform: Mechanosensation	Room R04/05
8:15 AM-10:15 AM	Platform: Optical Microscopy and Super-Resolution Imaging: Applications to Cellular Molecules	Room R06/07
8:15 AM-10:15 AM	Platform: Protein-Nucleic Acid Interactions II	Room R08/09
8:15 AM-10:15 AM	Platform: Intrinsically Disordered Proteins (IDP) and Aggregates I	Room 206/207
8:15 AM-10:15 AM	Platform: Protein Dynamics and Allostery II	Room 208/209
9:00 AM-10:30 AM	Subgroup Chairs Meeting	Room 222
9:30 AM-10:30 AM	Career Center Workshop Demystifying the Academic Job Search III: Preparing Your Written Application Materials: CV, Cover Letter, and Research Statement	Room 212/213
10:00 AM-4:30 PM	Exhibits	Hall B-2 & C
10:15 AM-11:00 AM	Coffee Break	Hall B-2 & C
10:45 AM-12:45 PM	Symposium: Awards Chair: <i>Suzanne Scarlata, BPS President and Worcester Polytechnic Institute</i> UNDERSTANDING MOLECULAR-SCALE BIOPHYSICS IN CELLS WITH SINGLE-MOLECULE IMAGING. <i>Julie Biteen</i> THE MECHANISM OF DYNEIN MOTILITY. <i>Ahmet Yildiz</i> FROM MECHANOBIOLOGY TO HUMAN ORGANS ON CHIPS. <i>Donald Ingber</i> FIFTY YEARS OF DOING RESEARCH WITH KAZUHIKO KINOSITA, JR. <i>Shin'ichi Ishiwata</i> FOLDING COMPLEX MEMBRANE PROTEINS. <i>James U. Bowie</i> THE 2 ND PERIODIC INVAGINATED VESICLE AWARD. <i>Sarah Keller</i> DYNAMICS OF MOUTH OPENING IN HYDRA. <i>EVA-MARIE S. COLLINS</i>	Great Hall A
10:15 AM-12:45 PM	Platform: Membrane Structure I: Cholesterol	Room R02/03

10:45 AM-12:45 PM	Platform: Ligand-gated Channels I	Room R04/05
10:45 AM-12:45 PM	Platform: Molecular Dynamics II	Room R06/07
10:45 AM-12:45 PM	Platform: Mitochondria in Cell Life and Death	Room R08/09
10:45 AM-12:45 PM	Platform: General Protein-Lipid Interactions II	Room 206/207
10:45 AM-12:45 PM	Platform: Membrane Protein Dynamics	Room 208/209
11:30 AM-12:30 PM	Career Center Workshop Selling Yourself to the Life Sciences Industry	Room 212/213
11:30 AM-1:00 PM	Exhibitor Presentation: Bruker Corporation Bioscope Resolve – The Highest Resolution Imaging of Any BioAFM	Room 218
12:00 PM-1:30 PM	Career Opportunities at Primarily Undergraduate Institutions: Finding a Job and Finding Success	Room 219
12:00 PM-2:00 PM	Postdoc to Faculty Q&A: Transitions Forum and Luncheon	Room 222/223
12:30 PM-2:00 PM	Exhibitor Presentation: Nanion Technologies GmbH Measure More Membrane: Cells, Bilayers, and Transporter Activity	Room 221
1:00 PM-2:15 PM	Bringing Mentees and Mentors Together in a National Network	Room 214
1:00 PM-3:00 PM	Industry and Agency Opportunities Fair	Hall B-2 & C
1:00 PM-3:00 PM	NIH Grant Writing Workshop	Room R01
1:30 PM-3:00 PM	Exhibitor Presentation: Semrock Inc Maximizing the Performance of Fluorescence Microscopes by Optical Filters	Room 218
1:45 PM-3:00 PM	Snack Break	Hall B-2 & C
1:45 PM-3:45 PM	Poster Presentations and Late Posters	Hall B-2 & C
2:30 PM-3:30 PM	Career Center Workshop: Looking Beyond Academia: Identifying Your Career Options Using MyIDP, LinkedIn, and More	Room 212/213
2:30 PM-4:00 PM	Networking and Personal Branding: The Workshop	Room 210
3:00 PM-5:00 PM	Education Committee Meeting	Room 203
4:00 PM-6:00 PM	Symposium: Membrane Protein Biogenesis Chair: Charles Sanders, Vanderbilt University THE SCARLET LETTER: CELLULAR RECOGNITION OF MISFOLDING-PRONE MEMBRANE PROTEINS. <i>Charles R. Sanders</i> THE ASSEMBLY OF BETA-BARREL PROTEINS INTO BACTERIAL OUTER MEMBRANES. <i>Trevor Lithgow</i> MECHANISTIC INSIGHTS INTO OUTER MEMBRANE PROTEIN FOLDING. <i>Sheena Radford</i> SOLVING THE MEMBRANE PROTEIN EXPRESSION PROBLEM. <i>Bil Clemons</i>	Great Hall A
4:00 PM-6:00 PM	Symposium: Biophysics of Malaria Parasites Chair: Paula da Fonseca, MRC Laboratory of Molecular Biology, United Kingdom CRYO-EM STRUCTURE OF THE <i>PLASMODIUM</i> PROTEASOME IN THE SEARCH OF NEW ANTIMALARIALS. <i>Paula da Fonseca</i> THE ROLE OF CELL ADHESION IN THE MALARIA LIFE CYCLE: FROM GLIDING SPOOROZOITES TO ROLLING ADHESION OF INFECTED RED BLOOD CELLS. <i>Ulrich S. Schwarz</i> MEASURING AND MODELLING HOST CELL SUBVERSION BY THE MALARIA PARASITE. <i>Leann Tilley</i> MULTISCALE MODELING OF MALARIA. <i>George E. Karniadakis</i>	Great Hall B
4:00 PM-6:00 PM	Platform: Biosensors	Room R02/03
4:00 PM-6:00 PM	Platform: Ion Channels, Pharmacology, and Disease	Room R04/05
4:00 PM-6:00 PM	Platform: Electron Microscopy	Room R06/07
4:00 PM-6:00 PM	Platform: Membrane Pumps, Transporters, and Exchangers II	Room R08/09
4:00 PM-6:00 PM	Platform: Cell Mechanics, Mechanosensing, and Motility II	Room 206/207
4:00 PM-6:00 PM	Platform: Protein-Small Molecule Interactions	Room 208/209
6:00 PM-10:00 PM	Publications Committee Meeting	Hilton, Bridge Room

7:30 PM-9:30 PM	<p>Workshop: Beyond Calcium: Imaging Voltage and Other Ions Chair: <i>William R. Kobertz, University of Massachusetts Medical School</i></p> <p>FLUORESCENT VISUALIZATION OF CELLULAR EFFLUX. <i>William R. Kobertz</i> CRITICAL EVALUATION OF FRET-BASED BIOSENSOR PERFORMANCE: IMPLICATIONS FOR MEASURING ION CONCENTRATIONS. <i>Amy E. Palmer</i> LIGHT UP THE BRAIN WITH GENETICALLY ENCODED SENSORS OF NEURAL ACTIVITY. <i>Lin Tian</i> FUNCTIONAL CORTICAL CONNECTOMICS THROUGH CO-EXPRESSION OF GENETICALLY EXPRESSED VOLTAGE AND CALCIUM INDICATORS. <i>Thomas Knöpfel</i></p>	Room R02/03
7:30 PM-9:30 PM	<p>Workshop: Next Generation Biophysics Enabled by Precision Chemical Biology Tools Chair: <i>Stephen G. Sligar, University of Illinois</i></p> <p>NANODISCS AS A PRECISION TOOL FOR BIOPHYSICS AND CHEMICAL BIOLOGY. <i>Stephen G. Sligar</i> GLYCANS AS CELLULAR IDS. <i>Laura Kiessling</i> TMP-TAG: A CHEMICAL SURROGATE TO THE FLUORESCENT PROTEINS FOR LIVE CELL IMAGING. <i>Virginia Cornish</i> MOLECULAR TOOLS AND NANODEVICES BUILT FROM DNA. <i>Tim Liedl</i></p>	Room R04/05
7:30 PM-9:30 PM	<p>Workshop: Single-Particle CryoEM: A How-To Guide Chair: <i>Bridget Carragher, New York Structural Biology Center</i></p> <p>USING EM TO UNDERSTAND THE STRUCTURE AND FUNCTION OF MOLECULAR MACHINES. <i>Bridget Carragher</i> BEST PRACTICES IN DATA COLLECTION AND DDD MOVIE PROCESSING FOR CRYO-EM. <i>John Rubinstein</i> OPTIMIZATION OF A CRYO-EM STRUCTURAL MODEL REPRESENTATION. <i>Wah Chiu</i> STRUCTURE DETERMINATION OF MULTI-PROTEIN COMPLEXES USING CRYO-EM. <i>Lori A. Passmore</i></p>	Room R06/07
7:30 PM-9:30 PM	<p>Workshop: Biological Networks from Experiment to Modeling and Back Chair: <i>Jennifer Reed, University of Wisconsin-Madison</i></p> <p>USING A GENOME-SCALE MODEL AND GENOMIC LIBRARY TO DISCOVER THE FUNCTIONS OF METABOLIC GENES. <i>Jennifer Reed</i> COORDINATION OF METABOLISM THROUGH METABOLITE-PROTEIN INTERACTIONS. <i>Uwe Sauer</i> DECIPHERING THE STOCHASTIC KINETICS OF GENE REGULATION. <i>Ido Golding</i> MODELING CYTOPLASMIC MECHANICS IN RAPIDLY MOVING CELLS. <i>Julie Theriot</i></p>	Room R08/09
8:00 PM-10:00 PM	<p>SOBLA (The Society for Latinoamerican Biophysicists) Meeting</p>	Room 214

Tuesday, February 14

Registration/Information

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

Career Center Workshop Career Q&A with Joe Tringali

8:00 AM - 8:30 AM, ROOM 212/213

Do you have a pressing question about your career in science? Attend this informal discussion with veteran career consultant Joe Tringali and get the answers you are looking for.

Biophysical Society Business Meeting

8:00 AM - 9:00 AM, ROOM 205

Poster Viewing

8:00 AM - 4:00 PM, HALL B-2 & C

Symposium Transporters

8:15 AM - 10:15 AM, GREAT HALL A

Chair

Hassane S. Mchaourab, Vanderbilt University

1512-Symp 8:15 AM

PRINCIPLES OF ENERGY TRANSDUCTION AND ALTERNATING ACCESS OF ABC EXPORTERS. **Hassane S. Mchaourab**

1513-Symp 8:45 AM

CLC CHLORIDE/PROTON TRANSPORTERS. **Merritt Maduke**

No Abstract 9:15 AM

NEW INSIGHTS INTO THE MECHANISM OF IODIDE TRANSPORT BY THE SODIUM/IODIDE SYMPORTER (NIS). **Nancy Carrasco**

1514-Symp 9:45 AM

RIGOROUS REPRESENTATION OF TRANSPORTERS AS ALLOSTERIC MACHINES ENABLES A QUANTITATIVE UNDERSTANDING OF THEIR FUNCTIONAL MECHANISMS. **Harel Weinstein**, George Khelashvili, Michael V. LeVine, Michel A. Cuendet

Symposium Destroying the Cytoskeleton

8:15 AM - 10:15 AM, GREAT HALL B

Chair

Jennifer Ross, University of Massachusetts

No Abstract 8:15 AM

MICROTUBULE SERVERING REGULATED BY TUBULIN TAILS. **Jennifer Ross**

1515-Symp 8:45 AM

THE RELATIONSHIP BETWEEN MICROTUBULE BIRTH AND DEATH. **Gary Brouhard**

1516-Symp 9:15 AM

ARCHITECTURE DEPENDENCE OF ACTIN FILAMENT NETWORK DISASSEMBLY. **Laurent Blanchoin**

No Abstract 9:45 AM

A HOLISTIC VIEW OF MICROTUBULE ASSEMBLY REGULATION. **Linda Wordeman**

Platform Membrane Dynamics

8:15 AM - 10:15 AM, ROOM R02/03

Co-Chairs

Elizabeth Kelley, NIST

David V. Svintradze, Virginia Commonwealth University

1517-Plat 8:15 AM

THE INTERPLAY OF STRUCTURE AND DYNAMICS IN MIXED LIPID BILAYERS. **Elizabeth Kelley**, Rana Ashkar, Robert Bradbury, Paul Butler, Michihiro Nagao

1518-Plat 8:30 AM

MICROFLUIDIC DEVICE TO STUDY PHOSPHOINOSITIDE GRADIENTS IN MODEL MEMBRANES. **Brittany M. Neumann**, Devin Kenney, Qi Wen, Arne Gericke

1519-Plat 8:45 AM

ADVANCES IN THE THEORETICAL AND COMPUTATIONAL MODELING OF LIPID BILAYER MEMBRANES. **Roger A. Sauer**, Kranthi K. Mandadapu, Thang X. Duong, Amaresh Sahu, Yannick Omar

1520-Plat 9:00 AM

ENGINEERING THE CELL ENVELOPE OF GRAM-NEGATIVE BACTERIA. **Sunny Hwang**, James C. Gumbart

1521-Plat 9:15 AM

GEOMETRIC DIVERSITY OF LIVING ORGANISMS AND VIRUSES. **David V. Svintradze**

1522-Plat 9:30 AM

SIMULATIONS HELP UNRAVEL FLAVIVIRUS ENVELOPE STRUCTURE AND FUNCTION. Jan K. Marzinek, Daniel Holdbrook, Roland G. Huber, Chandra Verma, **Peter J. Bond**

1523-Plat 9:45 AM

MODULATION OF MEMBRANE RIGIDITY BY THE ESCRT-III COMPLEX. **Nicola De Franceschi**, Maryam Alqabandi, Nolwenn Miguët, Christophe Caillat, Winfried Weissenhorn, Patricia Bassereau

1524-Plat 10:00 AM

DESIGN PRINCIPLES FOR ROBUST VESICULATION IN CLATHRIN-MEDIATED ENDOCYTOSIS. **Julian Hassinger**, George Oster, David Drubin, Padmini Rangamani

Platform Mechanosensation

8:15 AM - 10:15 AM, ROOM R04/05

Co-Chairs

Andrew E. Ekpenyong, Creighton University

Bahareh Behkam, Virginia Tech

1525-Plat 8:15 AM

CANDIDA ALBICANS YEAST SEEK TO ADHERE IN ENERGETICALLY OPTIMAL LOCATIONS. Zhou Ye, Amrinder Nain, **Bahareh Behkam**

1526-Plat 8:30 AM

EXPLORING THE PH SENSITIVITY OF *E. COLI* MSCS. Jordyn Veres, **Hannah R. Malcolm**

1527-Plat 8:45 AM

IN SITU MEASUREMENTS OF PROTEIN FORCES AND INTRACELLULAR CA²⁺ UNDER FLUID SHEAR STIMULI. **Susan Z. Hua**, Mohammad Mehdi Maneshi, Frederick Sachs

1528-Plat 9:00 AM
MECHANOSENSITIVE ATP RELEASE INVOLVES A NON-CONDUCTIVE PATHWAY: EVIDENCE FROM LARGE FIELD OF VIEW REAL-TIME IMAGING. **Olga Ponomarchuk**, Francis Boudreault, Sergei N. Orlov, Ryszard Grygorczyk

1529-Plat 9:15 AM
THE SHORT TERM RESPONSE OF PECAM-1 TO MECHANICAL LOADING: CYCLOOXYGENASE-2 AND NITRIC OXIDE PRODUCTION WITH AFM PULLING AND SHEAR STRESS. **Anne Marie T. Weber**, Rick Mathews, Zahin Haq, Limary M. Cancel, John M. Tarbell

1530-Plat 9:30 AM
MECHANICALLY-INDUCED GATING IN PKD2L1 (TRPP2): CALCIUM-INDUCED ACTIVATION MASQUERADING AS FORCE SENSITIVITY? **Charles D. Cox**, Chai Ann Ng, Navid Bavi, Boris Martinac

1531-Plat 9:45 AM
MICROGRAVITY MODULATES DRUG-INDUCED ENHANCEMENT OF CANCER CELL MIGRATION. Devika Prasanth, Sindhuja Suresh, Michael Mimitz, Noah Zetocha, **Andrew E. Ekpenyong**

1532-Plat 10:00 AM
TREK-2 HAS AN ASYMMETRICAL RESPONSE TO FORCE CHANGES IN THE MEMBRANE. **Michael Voldsgaard Clausen**, Viwan Jarerattanachai, Jackie Ang, Liz Carpenter, Stephen Tucker

Platform
Optical Microscopy and Super-Resolution
Imaging: Applications to Cellular Molecules
8:15 AM - 10:15 AM, ROOM R06/07

Co-Chairs
Adam Wollman, University of York, United Kingdom
Linda Kenney, University of Illinois, Chicago

1533-Plat 8:15 AM
ILLUMINATING BACTERIAL ELECTROPHYSIOLOGY. **Giancarlo N. Bruni**, Benjamin Dodd, Joel Kralj

1534-Plat 8:30 AM
UNDERSTANDING THE ASYMMETRIC MIPZ GRADIENT IN *CAULOBACTER CRESCENTUS*. **Matthew D. Stilwell**, Nikolai P. Radzinski, James C. Weishaar, Douglas B. Weibel

1535-Plat 8:45 AM
A NOVEL DNA BINDING MODE OF H-NS DRIVES CHROMOSOME COMPACTION AND GENE SILENCING IN SINGLE BACTERIAL CELLS. **Linda J. Kenney**

1536-Plat 9:00 AM
INVESTIGATING RNAP SEARCH DYNAMICS IN LIVE *E. COLI* CELLS USING SINGLE MOLECULE AND STATISTICAL METHODS. **Kelsey Bettridge**, Chris Bohrer, Jie Xiao

1537-Plat 9:15 AM
COLLECTIVE LIVE-CELL SUPERRESOLVED TRACES REVEAL NONAXONOMAL DYNAMICS OF INTRAFAGELLAR TRANSPORT PARTICLES AT THE CILIARY BASE. **Tony Yang**, Nguyet Thi Minh Tran, Weng Man Chong, Jung-Chi Liao

1538-Plat 9:30 AM
REAL-TIME SUBCELLULAR LOCALIZATION REVEALS HIDDEN INTRAFAGELLAR TRANSPORT MECHANISMS. Anthony Kovacs, Jonathan Kessler, Je-Luen Li, HuaWen Lin, Susan Dutcher, **Yan Mei Wang**

1539-Plat 9:45 AM
SPATIAL ORGANIZATION OF NUCLEAR STRUCTURES BY DUAL COLOUR SUPER-RESOLUTION MICROSCOPY. **Maria J. Sarmento**, Lorenzo Scipioni, Melody Di Bona, Mario Faretta, Laura Furia, Gaetano I. Dellino, Pier G. Pelicci, Paolo Bianchini, Alberto Diaspro, Luca Lanzaò

1540-Plat 10:00 AM
TIME-RESOLVED SINGLE CELL, SUB-CELLULAR COMPARTMENTALIZED PROTEOMICS, COMBINING PRECISE MICROFLUIDICS, DECONVOLUTION AND ULTRASENSITIVE SINGLE-MOLECULE MICROSCOPY. **Adam J. M. Wollman**, Sviatlana Shashkova, Niek Welkenhuysen, Erik G. Hedlund, Stefan Hohmann, Mark C' Leake

Platform
Protein-Nucleic Acid Interactions II
8:15 AM - 10:15 AM, ROOM R08/09

Co-Chairs
Ioulia Rouzina, University of Minnesota
Vladimir Mekler, Rutgers University

1541-Plat 8:15 AM
GENOMIC RNA BINDING PROMOTES RETROVIRAL GAG PROTEIN INTERACTIONS IN AN ASSEMBLY-COMPETENT CONFORMATION LEADING TO SELECTIVE GENOME PACKAGING. **Ioulia Rouzina**, Shuohui Liu, Erik D. Olson, Tiffany Rye-McCurdy, Christiana Binkley, Joshua-Paolo Reyes, Leslie J. Parent, Karin Musier-Forsyth

1542-Plat 8:30 AM
KINETICS OF DCAS9 TARGET SEARCH IN *ESCHERICHIA COLI*. **Daniel Jones**, Cecilia Unoson, Prune Leroy, Vladimir Curic, Johan Elf

1543-Plat 8:45 AM
ARGONAUTE TARGET SEARCH IS FACILITATED BY LONG DISTANCE DIFFUSION. **Tao Ju Cui**, Stanley D Chandradoss, Jorrit Hegge, John van der Oost, Chirlmin Joo

1544-Plat 9:00 AM
HOW CONFORMATIONAL DYNAMICS INFLUENCES THE PROTEIN SEARCH FOR TARGETS ON DNA. **Maria P. Kochugaeva**, Alexey A. Shvets, Anatoly B. Kolomeisky

1545-Plat 9:15 AM
SPLICEOSOMAL U1A PROTEIN-SL2 RNA BINDING AFFINITY DECREASES IN CELLS. **Caitlin Davis**, Irisbel Guzman, David Gnutz, Martin Gruebele

1546-Plat 9:30 AM
VISUALIZING INFECTION INITIATION OF BACTERIOPHAGE P22 BY CRYO-ELECTRON TOMOGRAPHY. **Chunyan Wang**, Jiagang Tu, Bo Hu, Ian Molineux, Jun Liu

1547-Plat 9:45 AM
USING SITE SPECIFIC FLUORESCENT PROBES TO EXAMINE REPLICATION FORK DESTABILIZATION BY REGULATORY PROTEINS OF THE BACTERIOPHAGE T4 DNA REPLICATION COMPLEX. **Davis Jose**, Miya Mary Michael, Wonbae Lee, Thomas H. Steinberg, Andrew H. Marcus, Peter H. von Hippel

1548-Plat 10:00 AM
MECHANISM OF DUPLEX DNA DESTABILIZATION BY RNA-GUIDED CAS9 NUCLEASE DURING DNA INTERROGATION. **Vladimir Mekler**, Leonid Minakhin, Konstantin Severinov

Platform Intrinsically Disordered Proteins (IDP) and Aggregates I

8:15 AM - 10:15 AM, ROOM 206/207

Co-Chairs

Alex Holehouse, Washington University in Saint Louis

Joshua Riback, University of Chicago

1549-Plat 8:15 AM

RESOLVING THE CONTROVERSY BETWEEN SAXS AND FRET MEASUREMENTS ON UNFOLDED PROTEINS. **Wenwei Zheng**, Alessandro Borgia, Alexander Grishaev, Benjamin Schuler, Robert B. Best

1550-Plat 8:30 AM

SIMULATIONS AND EXPERIMENTS PROVIDE A CONVERGENT VIEW OF PROTEIN UNFOLDED STATES UNDER FOLDING CONDITIONS. **Alex S. Holehouse**, Ivan Perana, Isaac S. Carrico, Osman Bilsel, Daniel P. Raleigh, Rohit V. Pappu

1551-Plat 8:45 AM

BIOPHYSICAL STUDIES OF THE INTERACTION BETWEEN OPTIMIZED PEPTIDES AND AMYLOID-BETA ELUCIDATE A COMPLETELY NOVEL BINDING MODE. **Tamar Ziehm**, Antonia Klein, Janine Kutzsche, Dieter Willbold

1552-Plat 9:00 AM

SINGLE MOLECULE FRET INVESTIGATION OF THE DIMENSIONS AND DYNAMICS IN HIGHLY COOPERATIVE SIC1-WD40 BINDING. **Gregory Gomes**, Veronika Csizmok, Jlanhui Song, Hue-Sun Chan, Julie Forman-Kay, Claudiu C. Gradinaru

1553-Plat 9:15 AM

MEASURING THE (GOOD) SOLVENT QUALITY OF WATER FOR DISORDERED PROTEINS FROM A SINGLE SAXS MEASUREMENT. **Joshua A. Riback**, Micayla A. Bowman, Adam Zmyslowski, Catherine R. Knoverek, John Jumper, James Hinshaw, Emily B. Kaye, Karl F. Freed, Patricia L. Clark, Tobin R. Sosnick

1554-Plat 9:30 AM

RIGID SPIN LABELS FOR IMPROVED DISTANCE AND DYNAMICS IN INTRINSICALLY DISORDERED PROTEINS AND PEPTIDES. Enrico Zurlo, Nico J. Meeuwenoord, Dmitri V. Filippov, **Martina Huber**

1555-Plat 9:45 AM

EXAMINATION OF THE OLIGOMERIZATION MECHANISM OF SOD1 IN VITRO AND IN LIVE CELLS. Brian C. Mackness, Noah R. Cohen, C. Robert Matthews, Jill A. Zitzewitz, **Osman Bilsel**

1556-Plat 10:00 AM

EXPLORING THE FUNCTIONAL AND STRUCTURAL IMPACT OF DISEASE-ASSOCIATED MUTANTS OF TAU. **Ana M. Melo**, Elizabeth Rhoades

Platform Protein Dynamics and Allostery II

8:15 AM - 10:15 AM, ROOM 208/209

Co-Chairs

Abel Garcia-Pino, Université Libre de Bruxelles, Belgium

Seyit Kale, NIH

1557-Plat 8:15 AM

CID TRAVEL AWARDEE

PREDICTING RESIDUES THAT INCREASE ANTIBIOTIC RESISTANCE OF CTX-M9 ENZYMES USING MOLECULAR SIMULATION AND STATISTICAL LEARNING. **George A. Cortina**, Malgorzata J. Latallo, Peter M. Kasson

1558-Plat 8:30 AM

MODELING PROTEINS' HIDDEN CONFORMATIONS TO PREDICT ANTIBIOTIC RESISTANCE. **Gregory Bowman**

1559-Plat 8:45 AM

REVEALING THE MECHANISM OF BINDING SELECTIVITY IN UNDECAPRENYL DIPHOSPHATE SYNTHASE. **Fareeha Kanwal**, Donald Jacobs

1560-Plat 9:00 AM

DYNAMIC FLEXIBILITY INDEX SHEDS LIGHT ON PIN1 ALLOSTERY. **Paul Campitelli**, Huan-Xiang Zhou, Giovanna Ghirlanda, S. Banu Ozkan

1561-Plat 9:15 AM

INTRINSIC DISORDERED CONTROLS TRANSCRIPTION OF BACTERIAL TOXIN-ANTITOXIN MODULES. **Abel Garcia-Pino**

1562-Plat 9:30 AM

INTEGRATED VIEW OF INTERNAL FRICTION IN UNFOLDED PROTEINS FROM SINGLE-MOLECULE FRET, CONTACT QUENCHING, THEORY, AND SIMULATIONS. **Andrea Soranno**, Andrea Holla, Fabian Dingfelder, Daniel Nettels, Dmitrii E. Makarov, Benjamin Schuler

1563-Plat 9:45 AM

ESCAPING THE WATER CAGE: PROTEIN INTRAMOLECULAR VIBRATIONS AND THE DYNAMICAL TRANSITION. **Mengyang Xu**, Katherine A. Niessen, Yanqing Deng, Nigel S. Michki, Andrea G. Markelz

1564-Plat 10:00 AM

FACILITATOR MODELS OF WEAK BINDING IN PROTEIN-PROTEIN INTERACTIONS. **Seyit Kale**, Madeleine Strickland, Alan Peterkofsky, Nico Tjandra, Jian Liu

Subgroup Chairs Meeting

9:00 AM - 10:30 AM, ROOM 222

Career Center Workshop

Demystifying the Academic Job Search III: Preparing Your Written Application Materials: CV, Cover Letter, and Research Statement

9:30 AM - 10:30 AM, ROOM 212/213

Your written application materials are typically the only information a search committee will have before them as they make the vast majority of cuts. Learn how to craft credentials that speak clearly and powerfully on your behalf, and help committees understand the potential contribution you have to offer.

Exhibits

10:00 AM - 4:30 PM, HALL B-2 & C

Coffee Break

10:15 AM - 11:00 AM, HALL B-2 & C

Symposium Awards

10:45 AM - 12:45 PM, GREAT HALL A

Chair

Suzanne Scarlata, Worcester Polytechnic Institute

No Abstract 10:45 AM

Margaret Oakley Dayhoff Award
UNDERSTANDING MOLECULAR-SCALE BIOPHYSICS IN CELLS WITH SINGLE-MOLECULE IMAGING. **Julie Biteen**

No Abstract 11:02 AM

Michael and Kate Barany Award
THE MECHANISM OF DYNEIN MOTILITY. **Ahmet Yildiz**

No Abstract 11:19 AM

Founders Award
FROM MECHANOBIOLOGY TO HUMAN ORGANS ON CHIPS.
Donald Ingber

No Abstract 11:36 AM

Kazuhiko Kinoshita Award in Single Molecule Biophysics
FIFTY YEARS OF DOING RESEARCH WITH KAZUHIKO KINOSHITA, JR.
Shin'ichi Ishiwata

No Abstract 11:53 PM

Anatrace Membrane Protein Award
FOLDING COMPLEX MEMBRANE PROTEINS. **James U. Bowie**

No Abstract 12:10 PM

Avanti Award in Lipids
THE 2ND PERIODIC INVAGINATED VESICLE AWARD. **Sarah Keller**

No Abstract 12:27 PM

Biophysical Journal Paper of the Year Award
DYNAMICS OF MOUTH OPENING IN HYDRA. **Eva-Marie S. Collins**

Platform

Membrane Structure I: Cholesterol

10:15 AM - 12:45 PM, ROOM R02/03**Co-Chairs**

Anna L. Duncan, University of Oxford, United Kingdom
Mary L. Kraft, University of Illinois

1565-Plat 10:15 AM

POLYPHENOL ALKYL ESTER INHIBITS MEMBRANE CHOLESTEROL DOMAIN FORMATION THROUGH AN ANTIOXIDANT MECHANISM BASED, IN NONLINEAR FASHION, ON CHAIN LENGTH. **Samuel Sherratt**, Pierre Villedeneuve, Robert Jacob, Erwann Durand, R. Preston Mason

1566-Plat 10:30 AM

IS THE SITE OF INFLUENZA VIRUS ASSEMBLY AND BUDDING ENRICHED WITH CHOLESTEROL AND SPHINGOLIPIDS? **Mary L. Kraft**, Ashley N. Yeager, Peter K. Weber, Joshua Zimmerberg

1567-Plat 10:45 AM

LIPID-PROTEIN INTERACTIONS IN FIBER CELL PLASMA MEMBRANE ISOLATED FROM HUMAN AND PORCINE EYE LENSES. **Marija Raguz**, Laxman Mainali, William J O'Brien, Witold Karol Subczynski

1568-Plat 11:00 AM

RAFT-LIKE DOMAINS ARE DRIVEN TOGETHER BY PUFA. **Jacob J. Kinnun**, Xiaoling Leng, Dylan Johnson, Edward R. Pennington, Andrew J. Meador, Saame Raza Shaikh, Stephen R. Wassall

1569-Plat 11:15 AM

AZOBENZENE-CHOLESTEROL AS A PHOTOACTIVATOR IN BIOMIMETIC MEMBRANES: 2. MEMBRANE STRUCTURE. Chen Shen, Jorge de la Serna, Bernd Struth, **Beate Klösgen**

1570-Plat 11:30 AM

SUBMICROMETRIC LIPID DOMAINS PLAY KEY ROLES IN ERYTHROCYTE DEFORMATION: FROM MEMBRANE BENDING TO SHAPE RESTORATION. **Catherine Leonard**, Marie-Paule Mingeot-Leclercq, Donatienne Tyteca

1571-Plat 11:45 AM

MEMBRANE CROWDING AND COMPLEXITY: INTERPLAY BETWEEN PROTEIN-LIPID INTERACTIONS, CLUSTERING AND DIFFUSION. **Anna L. Duncan**, Heidi Koldsø, Tyler J. Reddy, Jean Hélie, Mark S. P. Sansom

1572-Plat 12:00 PM

THE EFFECT OF PROPOFOL ON PLASMA MEMBRANE ULTRASTRUCTURE IN THE INTACT CELLS. **Weixiang Jin**, Arnd Pralle

Platform

Ligand-gated Channels I

10:45 AM - 12:45 PM, ROOM R04/05**Co-Chairs**

Pei Tang, University of Pittsburgh School of Medicine
Ryan E. Hibbs, University of Texas Southwestern Medical Center

1573-Plat 10:45 AM

STRUCTURE AND MECHANISM OF NEURONAL NICOTINIC ACETYLCHOLINE RECEPTORS. Claudio L. Morales-Perez, Colleen M. Noviello, **Ryan E. Hibbs**

1574-Plat 11:00 AM

PHOTOAFFINITY LABELING OF A4B2 NICOTINIC ACETYLCHOLINE RECEPTOR USING [³H]-LABELED POSITIVE ALLOSTERIC MODULATORS. Gordon Ang, Farah Deba, Akash Pandhare, Michael P. Blanton, Jonathan B. Cohen, **Ayman K. Hamouda**

1575-Plat 11:15 AM

STRUCTURAL MECHANISMS UNDERLYING PUFA MODULATION IN PENTAMERIC LIGAND GATED ION CHANNELS. **Yvonne W. Gicheru**, Sandip Basak, Sudha Chakrapani

1576-Plat 11:30 AM

DIRECT VISUALIZATION OF CONFORMATIONAL CHANGES RELATED TO PENTAMERIC RECEPTOR ION CHANNEL GLIC GATING. Yi Ruan, Pierre-Jean Corringer, **Simon Scheuring**

1577-Plat 11:45 AM

UNCOMMON FEATURES OF A NOVEL Γ -PROTEOBACTERIAL PENTAMERIC LIGAND-GATED ION CHANNEL REVEALED BY ITS CRYSTAL STRUCTURE. HaiDai Hu, Akos Nemezc, Zeineb Fourati, Pierre-Jean Corringer, **Marc Delarue**

1578-Plat 12:00 PM

STRUCTURAL BASIS OF ALCOHOL INHIBITION OF THE PENTAMERIC LIGAND-GATED ION CHANNEL ELIC. **Qiang Chen**, Marta M. Wells, Tommy S. Tillman, Monica N. Kinde, Aina Cohen, Yan Xu, Pei Tang

1579-Plat 12:15 PM

STRUCTURAL REARRANGEMENTS IN GABA_A RECEPTORS REVEALED BY LRET. **Namrta Purwar**, Sana A. Shaikh, Vasantha Jayaraman, Cynthia Czajkowski

1580-Plat 12:30 PM

CROSSLINKING-MASS SPECTROMETRY OF TARGETED SINGLE CYS MUTANTS TO REFINE ALLOSTERY AND MODEL BUILDING IN THE GLYCINE RECEPTOR. **Kayce A. Tomcho**, Rathna J. Veeramachaneni, David J. Lapinsky, Jeffrey Madura, Michael Cascio

Platform

Molecular Dynamics II

10:45 AM - 12:45 PM, ROOM R06/07**Co-Chairs**

Willy Wriggers, Old Dominion University
Steffen Lindert, Ohio State University

1581-Plat 10:45 AM

MOLECULAR EFFECTS OF CARDIAC TROPONIN DCM MUTATIONS ON CALCIUM SENSITIVITY AND MYOFILAMENT ACTIVATION - AN INTEGRATED MULTI-SCALE MODELING STUDY. Sukriti Dewan, Kimberly McCabe, Michael Regnier, Andrew McCulloch, **Steffen Lindert**

1582-Plat 11:00 AM

SPATIAL HEAT MAPS FROM FAST INFORMATION MATCHING OF FAST AND SLOW DEGREES OF FREEDOM IN MOLECULAR DYNAMICS SIMULATIONS. **Willy Wriggers**, Federica Castellani, P. Thomas Vernier, Julio A. Kovacs

1583-Plat 11:15 AM
INSIGHTS INTO THE DYNAMICS OF THE HIV-1 ENV GLYCAN SHIELD.
Thomas Lemmin, Cinque Soto, Peter D. Kwong

1584-Plat 11:30 AM
WE CAN PREDICT THE EFFECTS OF KINASE DOMAIN MUTATIONS USING MOLECULAR DYNAMICS AND MACHINE LEARNING. **E. Joseph Jordan**, Ravi Radhakrishnan

1585-Plat 11:45 AM
LARGE SCALE MOLECULAR DYNAMICS SIMULATIONS OF THREE CLASSICAL CADHERINS INVOLVED IN CELL ADHESION. **Brandon Neel**, Collin Nisler, Raul Araya-Secchi, Marcos Sotomayor

1586-Plat 12:00 PM
TOWARDS A RATIONAL DESIGN OF MACROLIDE ANTIBIOTICS IN ORDER TO COMBAT BACTERIAL RESISTANCE. **Anna Pavlova**, Jerry M. Parks, Adegboyega K. Oyelere, James C. Gumbart

1587-Plat 12:15 PM
FAST FORWARD PROTEIN FOLDING. **Maxwell I. Zimmerman**, Gregory R. Bowman

1588-Plat 12:30 PM
TEMPERATURE DYNAMICS OF SINGLE MOLECULAR ANTIFREEZE PROTEIN. **Rio Okada**, Tatsuya Arai, Daichi Fukami, Yuhuku Matsushita, Jae-won Chang, Hiroshi Sekiguchi, Noboru Ohta, Tadashi Mori, Masaki Nishijima, Keisuke Miyazawa, Takeshi Fukuma, Keigo Ikezaki, Sakae Tsuda, Yuji C. Sasaki

Platform Mitochondria in Cell Life and Death

10:45 AM - 12:45 PM, ROOM R08/09

Co-Chairs

Devasena Ponnalagu, Drexel University College of Medicine
Veronica S. Eisner, University of Chile

1589-Plat 10:45 AM
CHARCOT-MARIE-TOOTH TYPE2A MFN2 DOMAIN-SPECIFIC MUTANTS DIFFERENTIALLY ALTER MITOCHONDRIAL FUSION DYNAMICS AND MOTILITY. **Veronica Eisner**, Diego Troncoso, Pamela Rojas, Josefa Vial, Mauricio Castro, Sergio Henríquez, Rita Horvath

1590-Plat 11:00 AM
YEAST VDAC2 HAS PORE FORMING ACTIVITY: FUNCTIONAL CONSEQUENCES. Maria Carmela Di Rosa, Andrea Magri, Simona Reina, **Vito De Pinto**

1591-Plat 11:15 AM
OXIDATIVE STRESS INDUCED BY VDAC OPENING IN CANCER CELLS DEPENDS ON CYTOSOLIC FREE TUBULIN AND IS BLOCKED BY ROS SCAVENGING AND SUPPRESSION OF SUPEROXIDE FORMATION BY COMPLEX III. Diana Fang, Kareem Heshlop, Morgan Morris, David DeHart, Monika Beck Gooz, John J. Lemasters, **Eduardo N. Maldonado**

1592-Plat 11:30 AM
MANIPULATION OF AMYLOID PRECURSOR PROTEIN PROCESSING IMPACTS BRAIN BIOENERGETICS AND GLUCOSE METABOLISM. **John A. Findlay**, D. Lee Hamilton, Sarmi Sri, Mariana Vargas-Caballero, Michael L J Ashford, Peter J S Smith

1593-Plat 11:45 AM
MITOCHONDRIAL NM23-H4/NDPK-D AND OPA1: PARTNERS IN SHAPING MITOCHONDRIA AND INITIATING MITOPHAGY? **Uwe Schlattner**, Céline Desbournes, Małgorzata Tokarska-Schlattner, Valerian E. Kagan

1594-Plat 12:00 PM
EMERGING ROLE OF THE MITOCHONDRIAL OUTER MEMBRANE TRANSLOCATOR PROTEIN (TSPO) IN HEART FAILURE AND MITOCHONDRIAL QUALITY CONTROL. Phung N. Thai, Daniel Daugherty, Bert J. Frederick, Samuel Galice, Wenbin Deng, Donald M. Bers, Saul Schaefer, **Elena N. Dedkova**

1595-Plat 12:15 PM
DYSREGULATION OF MITOCHONDRIAL PERMEABILITY TRANSITION PORE (MPTP) IS ASSOCIATED WITH ENHANCED ROS PRODUCTION IN SKELETAL MUSCLE OF AN ALS MOUSE MODEL. **Yajuan Xiao**, Jianxun Yi, Chehade Karam, Xuejun Li, Kamal Dhaka, Dosuk Yoon, Jingsong Zhou

1596-Plat 12:30 PM
AN ALTERNATIVE SPLICE VARIANT OF CHLORIDE INTRACELLULAR CHANNEL 5 PROTEIN, (CLIC5B) REGULATES CARDIAC MITOCHONDRIAL LOCALIZATION AND FUNCTION OF CLIC5. **Devasena Ponnalagu**, Ahmed Tafsirul Hussain, Shubha Gururaja Rao, Harpreet Singh

Platform General Protein-Lipid Interactions II

10:45 AM - 12:45 PM, ROOM 206/207

Co-Chairs

Jeanne Stachowiak, University of Texas at Austin
James Sturgis, LISM - CNRS/AMU, France

1597-Plat 10:45 AM
LIPID PERTURBATION BY MEMBRANE PROTEINS AND THE LIPOPHOBIC EFFECT. Jean-Pierre Duneau, Jon Khao, **James N. Sturgis**

1598-Plat 11:00 AM
THE MYRISTOYL MODIFICATION OF C-SRC ALTERS THE LATERAL ORGANIZATION OF HOST HETEROGENOUS RAFT-LIKE MEMBRANES. **Mridula Dwivedi**, Tom Mejuch, Herbert Waldmann, Roland Winter

1599-Plat 11:15 AM
THE USE OF FLUORESCENTLY LABELED LIPIDS TO DETERMINE DYNAMICS OF PROTEIN MEDIATED *IN VITRO* LIPID TRANSFER. **Max Lönnfors**, Aby Grabon, Kaitlyn R. McGrath, Ashutosh Tripathi, Marta G. Lete, Pentti Somerharju, Vytas A. Bankaitis

1600-Plat 11:30 AM
PI(4,5)P₂ CLUSTERING BY THE EBOLA VIRUS MATRIX PROTEIN VP40. **Jeevan B. GC**, Bernard S. Gerstman, Prem P. Chapagain

1601-Plat 11:45 AM
INTERACTION OF PH DOMAINS WITH PHOSPHATIDYLINOSITOL PHOSPHATES: STRUCTURES AND ENERGETICS BY SIMULATION. **Fiona B. Naughton**, Antreas C. Kalli, Mark S P Sansom

1602-Plat 12:00 PM
RUNNING AGAINST TIME - A KINETIC LIMIT FOR ENDOPHILIN ACTION DURING RAPID ENDOCYTOSIS. Kumud Raj Poudel, Hang Yu, Klaus Schulten, **Jihong Bai**

1603-Plat 12:15 PM
OPTOGENETIC CONTROL OF MEMBRANE TETHERING AND INTER-MEMBRANE COMMUNICATIONS. **Ji Jing**, Lian He, Yubin Zhou

1604-Plat 12:30 PM
MEMBRANE FISSION BY PROTEIN CROWDING. Wilton Snead, Carl Hayden, Avinash Gadok, Padmini Rangamani, **Jeanne Stachowiak**

Platform Membrane Protein Dynamics

10:45 AM - 12:45 PM, ROOM 208/209

Co-Chairs

Christopher M. Yip, University of Toronto, Canada

Emmanuel Margeat, Centre de Biochimie Structurale, CNRS, France

1605-Plat 10:45 AM

MODULATED DYNAMICS OF PAM-A7 NACHR FROM X-RAY SINGLE MOLECULAR OBSERVATIONS. **Tomoyuki Baba**, Tai Kubo, Sumiko Ohashi, Keigo Ikezaki, Kazuhiro Mio, Hiroshi Sekiguchi, Yuji C. Sasaki

1606-Plat 11:00 AM

THE ROLE OF G-PROTEIN-COUPLED RECEPTOR ACTIVATION BY CONFORMATIONAL SELECTION AS REVEALED BY SINGLE-MOLECULE FLUORESCENCE. **Dennis D. Fernandes**, Libin Ye, Yuchong Li, Zhenfu Zhang, Gregory-Neal Gomes, R. Scott Prosser, Claudiu C. Gradinaru

1607-Plat 11:15 AM

MINDE MEMBRANE PATCH OSCILLATIONS OBSERVED BY HIGH-SPEED AFM. **Atsushi Miyagi**, Simon Scheuring, Beatrice Ramm, Petra Schwill

1608-Plat 11:30 AM

STRUCTURAL DYNAMICS OF SINGLE METABOTROPIC GLUTAMATE RECEPTORS IN SOLUTION. Anne-MarINETTE Cao, Fataneh Fatemi, Linnea Oloffson, Suren Felekyan, Claus Seidel, Philippe Rondard, Jean-Philippe Pin, **Emmanuel Margeat**

1609-Plat 11:45 AM

OPTIMAL PROBES: AN EFFICIENT METHOD TO SELECT DEER DISTANCE RESTRAINTS USING MACHINE LEARNING. **Shriyaa Mittal**, Diwakar Shukla

1610-Plat 12:00 PM

MULTISCALE DYNAMICS OF FLAVIVIRUS FUSION PEPTIDES - MEMBRANE INTERACTIONS VIA SIMULATION AND EXPERIMENTS. **Jan K. Marzinek**, Nirmalya Bag, Roland G. Huber, Daniel A. Holdbrook, Thorsten Wohland, Chandra Verma, Peter J. Bond

1611-Plat 12:15 PM

ENHANCED SIMULATIONS AND DRUG DISCOVERY OF A MUSCARINIC G-PROTEIN-COUPLED RECEPTOR. **Yinglong Miao**, J. Andrew McCammon

1612-Plat 12:30 PM

MULTISCALE GPCR ACTIVATION IN LIPID MEMBRANES PROBED BY SOLID-STATE NMR AND SCATTERING METHODS. **Xiaolin Xu**, Andrey V. Struts, Trivikram R. Molugu, Suchithranga M.D.C. Perera, Udeep Chawla, Soohyun K. Lee, Rami Musharrafieh, Amanda M. Johnson, Annie Huang, Thomas A. Knowles, Michael F. Brown

Career Center Workshop Selling Yourself to the Life Sciences Industry

11:30 AM - 12:30 PM, ROOM 212/213

The industrial employer is looking for a different set of skills and attitudes than either the academic or government employer. Learn what the pharmaceutical/biotechnology industries want to hear from potential employees and why. Learn how to develop and best position your marketing message in order to improve the chances of a successful industrial job search.

Exhibitor Presentation Bruker Corporation

11:30 AM - 1:00 PM, ROOM 218

BioScope Resolve - The Highest Resolution Imaging of Any BioAFM

The BioScope Resolve™ BioAFM provides the highest resolution imaging, most complete biomechanics capabilities, and fastest scanning of any bioAFM available. Specifically designed for integration onto inverted optical light and confocal microscopes, it enables investigation of a wide range of biological samples, from cells and tissues to molecular and protein structures. Our exhibitor presentation will talk about three aspects of the Bioscope Resolve BioAFM system that are advancing biological research around the world.

1. High Resolution Imaging - The unique mechanical stability and performance of the BioScope Resolve AFM on an optical microscope enables researchers to routinely resolve the major and minor grooves along the backbone of an individual DNA strand. With ScanAsyst®, high-resolution cell imaging has never been easier. This game-changing capability has allowed soft, flexible cell surface structures, such as microvilli, to be resolved for the first time on living cells by AFM.
2. Complete Cell Mechanics Data – Accurate, Repeatable. PeakForce QNM®, has become the preferred mode for nanomechanical mapping. With new algorithms, it delivers highest resolution property maps at pN forces on live cells. Together with “No Touch” tip calibration, PeakForce QNM delivers the fastest quantitative mechanical characterization of live cells, providing a complete force curve for every pixel at actuation rates from 125 Hz to 2 kHz. With our new FASTForce Volume covering rates from sub-Hz to 300 Hz, and PeakForce Tapping extending to 2 kHz, we provide the widest range of ramp rates for single points and imaging while maintaining pN force control. Our new RampScript™ allows the user to build, control and record complex nanomechanical measurements for use in protein pulling, ligand-receptor interaction, cell relaxation and viscoelastic probing.
3. Investigating Cell Dynamics – Without Compromise. Fast Tapping on living cells - Bioscope Resolve is the only BioAFM that enables fast scanning while simultaneously providing the large piezo scanner range necessary for capturing the dynamic behavior of living cells in real time (XYZ = 100µm x 100µm x 15µm). The Fast Tapping capabilities of Resolve are truly a step forward in conducting high-resolution AFM studies at timescales relevant to cellular processes. Together with the integration of advanced optical microscopy and environmental control, live cell studies have never been easier.

BioScope Resolve was designed by biologists who needed a flexible Bio-AFM system that could meet a wide range of biological application needs. From its Advanced Perfusing Incubator for long-term live-cell studies to its full sample-carrier support system, every feature of the BioScope Resolve is designed for maximum experiment flexibility.

Speaker

Ian Armstrong, Applications Scientist, ARM Unit, Bruker Corporation

Career Opportunities at Primarily Undergraduate Institutions Finding a Job and Finding Success

12:00 PM - 1:30 PM, ROOM 219

This session provides graduate students, postdocs, and current faculty with information and resources on career options at PUI's. Panelists are faculty members at PUI's who have been successful in their positions.

Panelists

Paul Urayama, Miami University
Elizabeth Yates, United States Naval Academy
Justin Link, Xavier University
Julio C. de Paula, Lewis and Clark College
Shellie Frey, Gettysburg College

Postdoc to Faculty Q&A Transitions Forum and Luncheon

12:00 PM - 2:00 PM, ROOM 222/223

This question-and-answer luncheon is designed for postdocs finishing and actively applying for academic faculty positions. Discussion will be led by a panel of new faculty in basic science and/or medical school departments and experienced faculty who have served as department chairs and/or part of faculty search committees. Topics for discussion include how to prepare the curriculum vitae, the interview process, networking, how to negotiate the job offer, and advice for new faculty as they balance research with their department obligations. Pre-registration was required for lunch. If you are interested in attending and did not register in advance, you are welcome to participate in the discussion on a space-available basis.

Speakers

Bradley Baker, Korea Institute of Science and Technology
Silvia Cavagnero, University of Wisconsin, Madison
Julio Cordero-Morales, University of Tennessee Health Science Center
Jose Faraldo-Gomez, NHLBI, NIH
Shai Silberberg, NINDS, NIH
Valeria Vasquez, University of Tennessee Health Science Center

Exhibitor Presentation Nanion Technologies GmbH

12:30 PM - 2:00 PM, ROOM 221

Measure More Membrane: Cells, Bilayers, and Transporter Activity

In this workshop we will showcase three versatile technologies: the *Port-a-Patch*, the world's smallest patch clamp rig, the *Orbit* product family, for parallel lipid bilayer recordings of reconstituted ion channels, and the *SURFE²R* product family, for label-free and direct measurements of transporter protein activity.

The *Port-a-Patch* is the smallest patch clamp rig in the world and supports high quality patch clamp recordings; accessible to electrophysiologists and non-electrophysiologists alike. Giga-seal recordings coupled with excellent voltage-clamp of the cellular membrane ensure high quality data. Versatile add-ons, such as internal perfusion, allow unprecedented experimental freedom, above and beyond the possibilities of conventional patch clamp.

The *Orbit 16* supports the parallel formation and recording from up to 16 lipid bilayers containing reconstituted ion channels or nanopores. Using Micro Electrode Cavity Array (MECA, Ionera) recording substrates, the bilayers are automatically formed by remotely actuated painting (Ionera-SPREAD), which will be demonstrated during this session. Based on the same principle, with the added possibility of active cooling and heating, the *Orbit mini* is a minimal footprint, turn-key system and allows 4 parallel lipid bilayer recordings.

SSM (solid supported membrane)-based electrophysiology is a technique whereby proteoliposomes, membrane vesicles, or membrane fragments containing the channel or transporter of interest are adsorbed to a lipid monolayer painted over a functionalized electrode. Automation of the SSM technology is accomplished by the *SURFE²R* product family and allows precise measurements and in-depth analysis of transporter and ion channel functions. Live experiments on the *SURFE²R* will be shown.

Join this workshop for live experiments and information about three outstanding platform families.

Speakers

Andrea Brüggemann, CSO, Nanion Technologies GmbH
Niels Fertig, CEO, Nanion Technologies GmbH
Gerhard Baaken, CEO, Ionera Technologies GmbH
Ekaterina Zaitseva, CSO, Ionera Technologies GmbH
Maria Barthmes, Product Manager, SURFE²R, Nanion Technologies GmbH

Bringing Mentees and Mentors Together in a National Network

1:00 PM - 2:15 PM, ROOM 214

Through an initiative funded by the National Institutes of Health (NIH), the National Research Mentoring Network (NRMN) is a nationwide consortium of science professionals and institutions collaborating to provide students and scientists across all career stages of research in the biomedical, behavioral, clinical, and social sciences with enhanced networking, professional development, research resources and mentorship experiences. NRMN includes a wide range of programs for mentors and mentees. This session will provide information on the resources available for mentees and mentors through NRMN and provide an opportunity to participate in the program.

Presenter

Harlan Jones, University of North Texas Health Science Center

Industry and Agency Opportunities Fair

1:00 PM - 3:00 PM, HALL B-2 & C

This fair will introduce attendees to companies and agencies that have employment and funding opportunities outside of academia. Stop by the fair to learn about the variety of opportunities available to scientists in industry and government and to talk one-on-one with representatives from participating organizations. Don't forget to check out the Career Development Center for current job opportunities available at many of the participating organizations.

NIH Grant Writing Workshop

1:00 PM - 3:00 PM, ROOM R01

Whether you are a first-time applicant or a scientist with long-standing NIH funding, it is important to stay abreast of the latest changes to the NIH extramural grant process. During this session NIGMS staff with expertise in biophysics will be providing details on the NIH grant review process as it stands in 2017, including the recently adopted requirement for rigor, reproducibility, and data management.

Speakers

Jean Chin, NIGMS
Susan Gregorick, NIGMS
Peter Preusch, NIGMS
James Mack, CSR

Exhibitor Presentation Semrock Inc

1:30 PM - 3:00 PM, ROOM 218

Maximizing the Performance of Fluorescence Microscopes by Optical Filters

TIRF, Super-resolution & Multiphoton fluorescence microscopy techniques continue to gain in popularity. This tutorial will discuss ways of maximizing the performance of such imaging systems by utilizing applications specific optical filters.

SearchLight (<https://searchlight.semrock.com/>) is a free, online spectral plotting and analysis tool that allows for evaluation and optimization of microscopy systems. Latest developments with this premium modeling resource will be discussed.

Speaker

Prashant Prabhat, Business Line Leader, Semrock Inc

Snack Break

1:45 PM - 3:00 PM, HALL B-2 & C

Career Center Workshop

Looking Beyond Academia: Identifying Your Career Options Using MyIDP, LinkedIn, and More

2:30 PM - 3:30 PM, ROOM 212/213

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.

Networking and Personal Branding The Workshop

2:30 PM - 4:00 PM, ROOM 210

Navigating the complexities of a career in science is difficult. Making new, important discoveries takes hard work, perseverance, and luck. Along with these skills, career success increasingly hinges on complex social factors including establishing independent collaborations, peer and mentor support networks, and community name recognition. In this interactive workshop we will discuss the essential importance of networking in science careers, and of developing a recognizable personal brand to help promote developing scientists in the ever-competitive and complex job market.

Speakers

Lisa Fauci, Tulane University
Jennifer Ross, University of Massachusetts, Amherst
David Warshaw, University of Vermont

Education Committee Meeting

3:00 PM - 5:00 PM, ROOM 203

Symposium Membrane Protein Biogenesis

4:00 PM - 6:00 PM, GREAT HALL A

Chair

Charles R. Sanders, Vanderbilt University

1613-Symp 4:00 PM

THE SCARLET LETTER: CELLULAR RECOGNITION OF MISFOLDING-PRONE MEMBRANE PROTEINS. **Charles R. Sanders**

1614-Symp 4:30 PM

THE ASSEMBLY OF BETA-BARREL PROTEINS INTO BACTERIAL OUTER MEMBRANES. **Trevor Lithgow**

1615-Symp 5:00 PM

MECHANISTIC INSIGHTS INTO OUTER MEMBRANE PROTEIN FOLDING. **Sheena Radford**

1616-Symp 5:30 PM

SOLVING THE MEMBRANE PROTEIN EXPRESSION PROBLEM. **Bil Clemons**

Symposium Biophysics of Malaria Parasites

4:00 PM - 6:00 PM, GREAT HALL B

Chair

Paula da Fonseca, MRC Laboratory of Molecular Biology, United Kingdom

1617-Symp 4:00 PM

CRYO-EM STRUCTURE OF THE *PLASMODIUM* PROTEASOME IN THE SEARCH OF NEW ANTIMALARIALS. **Paula da Fonseca**

1618-Symp 4:30 PM

THE ROLE OF CELL ADHESION IN THE MALARIA LIFE CYCLE: FROM GLIDING SPOOROZOITES TO ROLLING ADHESION OF INFECTED RED BLOOD CELLS. **Ulrich S. Schwarz**, Friedrich Frischknecht, Michael Lanzer, Anna Battista, Christine Lansche, Anil Kumar Dasanna

1619-Symp 5:00 PM

MEASURING AND MODELLING HOST CELL SUBVERSION BY THE MALARIA PARASITE. **Leann Tilley**, Boyin Liu, Oliver Looker, Emma McHugh, Yao Zhang, Paul McMillan, Eric Hanssen, Sulin Zhang, Matt Dixon

No Abstract 5:30 PM

MULTISCALE MODELING OF MALARIA. **George E. Karniadakis**

Platform Biosensors

4:00 PM - 6:00 PM, ROOM R02/03

Co-Chairs

Vladislav Verkhusha, Albert Einstein College of Medicine
Jenny Yang, Georgia State University

1620-Plat 4:00 PM

SINGLE-MOLECULE PROTEIN FINGERPRINTING WITH NANOPORES. **Laura Restrepo-Perez**, Misha Soskine, Shalini John, Aleksei Aksimentiev, Giovanni Maglia, Chirlmin Joo, Cees Dekker

1621-Plat 4:15 PM

NOVEL LOCAL RYR1 JUNCTIONAL CALCIUM RESPONSES AND DYNAMICS BY IMPROVED CALCIUM SENSOR CATCHER. **Jenny Yang**, Florence Reddish, Cassie Miller, Rakshya Gorkali, Susan Treves, Francesco Zorzato

1622-Plat 4:30 PM

HIGH-THROUGHPUT SPECTRAL AND LIFETIME-BASED FRET SCREENING IN LIVING CELLS TO IDENTIFY SMALL-MOLECULE EFFECTORS OF SERCA. **Tory M. Schaaf**, Kurt C. Peterson, Benjamin D. Grant, Samantha L. Yuen, Prachi Bawaskar, Ji Li, Joesph M. Muretta, Gregory D. Gillispie, David D. Thomas

1623-Plat 4:45 PM
BRIGHT MONOMERIC NEAR-INFRARED FLUORESCENT PROTEINS FOR MULTISCALE IMAGING. Daria Shcherbakova, Mikhail Baloban, **Vladislav Verkhusha**

1624-Plat 5:00 PM
THE INVESTIGATION OF DYNAMIC CHANGES OF THE PARTICLE SURFACE CHARGE WITH RESISTIVE-PULSE TECHNIQUE. **Yinghua Qiu**, Anna Dawid, Preston Hinkle, Yunfei Chen, Zuzanna Siwy

1625-Plat 5:15 PM
ELECTROSTATIC CONTROL OF DNA HYBRIDIZATION KINETICS STUDIED WITH THE SINGLE-MOLECULE FIELD-EFFECT TRANSISTOR. **Sefi Vernick**, Scott M. Trocchia, Steven B. Warren, Erik F. Young, Delphine Bouilly, Ruben L. Gonzalez, Jr, Colin Nuckolls, Kenneth L. Shepard

1626-Plat 5:30 PM
LOCKED NUCLEIC ACID THYMINE MONOMER PROBE IDENTIFIES FOUR SINGLE-NUCLEOTIDE VARIANTS BY MELTING TEMPERATURE. **Judy M. Obliosca**, Sara Y. Cheng, Yu-An Chen, Mariana F. Llanos, Yen-Liang Liu, Darren M. Imphean, David Bell, Jeffrey T. Petty, Pengyu Ren, Tim Yeh

1627-Plat 5:45 PM
DETECTION OF DNA METHYLATION WITH AEROLYSIN NANOPORE. **Jie Yu**, Chan Cao, Jie Yang, Yi-tao Long

Platform Ion Channels, Pharmacology, and Disease

4:00 PM - 6:00 PM, ROOM R04/05

Co-Chairs

Linlin Ma, University of South Australia
Harley Kurata, University of Alberta, Canada

1628-Plat 4:00 PM
DISSECTING KCNQ CHANNEL PHARMACOLOGY USING VOLTAGE CLAMP FLUOROMETRY. **Robin Y. Kim**, Stephan A. Pless, Harley T. Kurata

1629-Plat 4:15 PM
CONFORMATIONAL CHANGES OCCURRING IN THE ACIDIC POCKET DURING ASIC ACTIVITY. **Sabrina Vullo**, Gaetano Bonifacio, Stephan Kellenberger

1630-Plat 4:30 PM International Travel Awardee
NOVEL HUMAN EAG CHANNEL ANTAGONISTS FROM SPIDER VENOMS. **Linlin Ma**, Yanni K. Chin, Zoltan Dekan, Maria Ikononopoulou, Volker Herzig, Chun Y. Chow, Paul Alewood, Glenn F. King

1631-Plat 4:45 PM
A NOVEL MEMBRANE POTENTIAL ASSAY TO IDENTIFY NAV1.7-SELECTIVE BLOCKERS. Tania Chernov-Rogan, Tianbo Li, Henry Verschoof, Kuldip Khakh, Steven Jones, Steve McKerrall, David H. Hackos, Dan Sutherlin, Charles J. Cohen, **Jun Chen**

1632-Plat 5:00 PM
HIGH DIASTOLIC SODIUM INFLUX IN HEART FAILURE HAS DRUG-SENSITIVITIES LIKE LATE SODIUM CURRENT, BUT PRODUCES INWARD CURRENT AT DIASTOLIC POTENTIALS. **Zhandi Liao**, Kenneth S. Ginsburg, Daniel C. Bartos, Yanyan Jiang, Sanda Despa, Donald M. Bers

1633-Plat 5:15 PM
VOLTAGE GATED PROTON CHANNEL EXPRESSION AND FUNCTION IN BREAST CANCER CELLS. Dan Bare, Vladimir V. Cherny, Abde M. Abukhdeir, Thomas E. DeCoursey, **Deri Morgan**

1634-Plat 5:30 PM
BK CHANNEL ACTIVATION IN CHRONIC VASODILATION BY THIAZIDE-LIKE DIURETICS: ROLE OF THE BETA-1 AUXILIARY SUBUNIT. **Pedro Martín**, Agustín Asuaje, Valentina Pastore, Verónica Milesi

1635-Plat 5:45 PM
DIFFERENTIAL K⁺ CHANNELS EXPRESSION IN "CLASSICALLY" AND "ALTERNATIVELY" ACTIVATED MICROGLIA. **Hai M. Nguyen**, Eva M. Grössinger, Makoto Horiuchi, Kyle W. Davis, Lee-Way Jin, Izumi Maezawa, Heike Wulff

Platform Electron Microscopy

4:00 PM - 6:00 PM, ROOM R06/07

Co-Chairs

Courtney Boyd, Imperial College London, United Kingdom
Petr Leiman, University of Texas Medical Branch of Galveston

1636-Plat 4:00 PM
ENERGETICS OF SHEATH CONTRACTION IN CONTRACTILE INJECTION SYSTEMS. Alec D. Fraser, Michel Plattner, **Petr G. Leiman**

1637-Plat 4:15 PM
CRYOEM STRUCTURE OF THE FULL LENGTH DYNAMIN-LIKE MXB AT 4.6 Å RESOLUTION. **Frances Joan D. Alvarez**, Shaoda He, Juan R. Perilla, Sooin Jang, Peter E. Prevelige Jr, Alan Engelman, Klaus Schulten, Sjors Scheres, Peijun Zhang

1638-Plat 4:30 PM
AN ATOMIC MODEL FOR A COMPLETE MYOSIN MOLECULE WITHIN A NATIVE THICK FILAMENT. **Kenneth A. Taylor**, Zhongjun Hu, Dianne Taylor, Michael K. Reedy, Robert J. Edwards

1639-Plat 4:45 PM
THE BACTERIAL FLAGELLAR FILAMENT RE-EXAMINED AT HIGH RESOLUTION. **Fengbin Wang**, Andrew Burrage, Daniel Kearns, Edward H. Egelman

1640-Plat 5:00 PM EDUCATION TRAVEL AWARDEE
USING CRYOEM TO UNDERSTAND HOW PHAGES EVADE BACTERIAL CRISPR DEFENSE SYSTEM. **Saikat Chowdhury**, MaryClare F. Rollins, Joshua Carter, Ryan Jackson, Lyn'Al Nosaka, Blake Wiedenheft, Gabriel C. Lander

1641-Plat 5:15 PM
UNRAVELLING THE MECHANISM OF MEMBRANE ATTACK COMPLEX PORE CLOSURE. **Courtney Boyd**, Marina Serna, Scott Gardner, Agnel Praveen-Joseph, Maya Topf, B. Paul Morgan, Doryen Bubeck

1642-Plat 5:30 PM
FUNCTIONAL STUDY OF THE RYANODINE RECEPTOR TYPE 1 USING CRYO-ELECTRON MICROSCOPY. **Amedee des Georges**, Oliver B. Clarke, Ran Zalk, Qi Yuan, Kendall J. Condon, Robert A. Grassucci, Wayne A. Hendrickson, Andrew R. Marks, Joachim Frank

1643-Plat 5:45 PM
BACTERIOPHAGE T7 DNA TRANSLOCATION DURING INFECTION IS BOLSTERED BY THE HOST ATP SYNTHASE COMPLEX. **Dustin R. Morado**, Chunyan Wang, Bo Hu, Ian Molineux, Jun Liu

Platform Membrane Pumps, Transporters, and Exchangers II

4:00 PM - 6:00 PM, ROOM R08/09

Co-Chairs

Vanessa Leone, NHLBI

Reinhard Seifert, Caesar Research Center, Germany

1644-Plat 4:00 PM

DESCRIBING THE THERMODYNAMICS OF THE SECONDARY TRANSPORTER BETP BY COUPLING SPECTROSCOPIC MEASUREMENTS TO MOLECULAR DYNAMICS SIMULATIONS. **Vanessa Leone**, Izabela Waclawska, Burkhard Endeward, Thomas Prisner, Christine Ziegler, Lucy R. Forrest

1645-Plat 4:15 PM

A Na^+/H^+ EXCHANGER REGULATED BY AN S4 VOLTAGE-SENSING DOMAIN AND A CYCLIC NUCLEOTIDE-BINDING DOMAIN. **Reinhard Seifert**, Florian Windler, Wolfgang Bönigk, Heinz-Gerd Körschen, U. Benjamin Kaupp

1646-Plat 4:30 PM

MOLECULAR MECHANISM OF ELECTROGENIC SODIUM/PROTON ANTI-PORT. **Oliver Beckstein**, David L. Dotson, Mathieu Coincon, Yandong Huang, Chiara Lee, Povilas Uzdavinyas, Emmanuel Nji, Shoko Yashiro, Wei Chen, Alexander D. Cameron, Jana Shen, David Drew

1647-Plat 4:45 PM

MOLECULAR MECHANISM OF Cl^-/H^+ COUPLING IN A CLC ANTI-PORTER. Yanyan Xu, Malvin Vien, Chungwen Liang, Alessio Accardi, **Simon Bernèche**

1648-Plat 5:00 PM

INSIGHTS INTO THE GATING MECHANISM OF EXCITATORY AMINO ACID TRANSPORTERS-ASSOCIATED ANION CHANNEL ANION CHANNEL. **Delany Torres-Salazar**, Horacio Poblete, Aneysis Gonzalez-Suarez, Ariela Vergara-Jaque, Jennie Garcia-Olivares, Jeffrey Comer, Susan G. Amara

1649-Plat 5:15 PM INTERNATIONAL TRAVEL AWARDEE

MOLECULAR INSIGHTS ON THE RECOGNITION OF SUBSTRATES BY THE PROMISCUOUS EFFLUX PUMP ACRB. **Ivana Malvacio**, Rosella Ombrato, Paolo Ruggerone, Attilio V. Vargiu

1650-Plat 5:30 PM

VOLTAGE-GATED CALCIUM CHANNELS AS DETECTING TOOLS OF PSYCHO-ACTIVE DRUGS. Iwona Ruchala, Alan Harris, Louis J. De Felice, **Jose M. Eltit**

1651-Plat 5:45 PM

HOMOLOGY MODELING AND LIGAND OPTIMIZATION FOR THE HUMAN AMINO ACID EXCHANGER LAT-1 (SLC7A5). **Claire Colas**, Avner Schlessinger

Platform Cell Mechanics, Mechanosensing, and Motility II

4:00 PM - 6:00 PM, ROOM 206/207

Co-Chairs

Alexandra Surcel, Johns Hopkins University School of Medicine

Benjamin Prosser, University of Pennsylvania School of Medicine

1652-Plat 4:00 PM

MECHANICAL RESPONSE OF NESPRIN-2G TO CYTOSKELETAL FORCES REGULATES LINC COMPLEX-DEPENDENT MECHANOTRANSDUCTION. **Hengameh Shams**, Gant Luxton, Mohammad R. K. Mofrad

1653-Plat 4:15 PM

NUCLEAR CONSTRICTION SEGREGATES MOBILE NUCLEAR PROTEINS AWAY FROM CHROMATIN. **Charlotte R. Pfeifer**, Jerome Irianto, Rachel R. Bennett, Yuntao Xia, Irena L. Ivanovska, Andrea J. Liu, Roger A. Greenberg, Dennis E. Discher

1654-Plat 4:30 PM

MICRORHEOLOGY OF ASTROCYTES AND GLIOMAS AND CONTRIBUTION OF INTERMEDIATE FILAMENTS TO THEIR MECHANICS. **Alibert Charlotte**, Atef Asnacios, Bruno Goud, Jean-Baptiste Manneville

1655-Plat 4:45 PM

MODELLING THE FLOW OF DYNAMICALLY CROSS-LINKED BIOPOLYMER NETWORKS. **Arjan E. Boerma**, Patrick R. Onck, Erik van der Giessen, Stefanos Papanikolaou

1656-Plat 5:00 PM

DICTYOSTELIUM MECHANICS ACCURATELY IDENTIFIES NEW TARGETABLE DRUG SPACE FOR PANCREATIC CANCER DELINEATED BY MYOSIN IIS, FILAMINS, AND ALPHA-ACTININS, COLLECTIVELY COMPRIMISING THE MECHANOBIOOME. **Alexandra Surcel**, Eric Schiffhauer, Dustin Thomas, Qingfeng Zhu, Robert Anders, Douglas Robinson

1657-Plat 5:15 PM

MYOFIBRIL ORGANIZATION IN CARDIOMYOCYTES IS GUIDED BY THE MAXIMAL TENSILE STRESS DIRECTION. **Hongyan Yuan**, Bahador Marzban

1658-Plat 5:30 PM

MICROTUBULE BUNDLES IN THE ADULT CARDIOMYOCYTE. **Patrick Robison**, Alexey I. Bogush, Benjamin L. Prosser

Platform Protein-Small Molecule Interactions

4:00 PM - 6:00 PM, ROOM 208/209

Co-Chairs

Roman Osman, Mount Sinai School of Medicine

Michelle A. Sahai, Weill Cornell Medical College

1659-Plat 4:00 PM

COMBINED IN VITRO AND IN SILICO APPROACHES TO THE ASSESSMENT OF STIMULANT PROPERTIES OF NOVEL PSYCHOACTIVE SUBSTANCES.

Michelle A. Sahai, Colin Davidson, George Khelashvili, Vincenzo Barrese, Neelakshi Dutta, Harel Weinstein, Jolanta Opacka-Juffry

1660-Plat 4:15 PM

WEIGHTED ENSEMBLE OF PATHWAYS FOR LIGAND UNBINDING FROM T4 LYSOZYME. **Ariane Nunes-Alves**, Daniel M. Zuckerman, Guilherme M. Arantes

1661-Plat 4:30 PM

EXPLORING NEW PHARMACOLOGICAL PERSPECTIVES OF FUSICOCCIN, A STABILIZER OF 14-3-3 - TARGET PROTEIN COMPLEX. **Andrea Saponaro**, Alessandro Porro, Antonio C. Sanjuan, Chiara Donadoni, Marco Nardini, Gerhard Thiel, Anna Moroni

1662-Plat 4:45 PM EDUCATION TRAVEL AWARDEE

DEVELOPING A NOVEL CLASS OF CLC CHLORIDE-CHANNEL INHIBITORS.

Anna K. Koster, Chase Wood, Rhiannon Thomas-Tran, Tanmay S. Chavan, Jonas Almqvist, Kee-Hyun Choi, Justin Du Bois, Merritt Maduke

1663-Plat 5:00 PM

MAPPING CHOLESTEROL BINDING SITES ON THE HUMAN DOPAMINE TRANSPORTER. **Talia Zeppelin**, Xavier Periole, Birgit Schiøtt

1664-Plat 5:15 PM

UNDERSTANDING THE BINDING MECHANISM OF RYANODINE TO THE OPEN- AND CLOSED STATES OF THE RYANODINE RECEPTOR PORE.

Williams E. Miranda, Van A. Ngo, Laura L. Perissinotti, S. R. Wayne Chen, Sergei Y. Noskov**1665-Plat 5:30 PM**

MESOSCOPIC PROPERTIES AND MOLECULAR MECHANISMS OF IAPP AMYLOID INHIBITION AND REMODELING WITH SMALL MOLECULES.

Aleksandr Kakinen, Bo Wang, **Xinwei Ge**, Raffaele Mezzenga, Thomas P. Davis, Feng Ding, Pu Chun Ke**1666-Plat 5:45 PM**CONFORMATIONAL PLASTICITY OF THE MAGE-A3 PROTEIN AS A THERAPEUTIC STRATEGY IN MULTIPLE MYELOMA. **Roman Osman**, Hearn J. Cho, Opher Gileadi**Publications Committee Meeting****6:00 PM - 10:00 PM, HILTON, BRIDGE ROOM****Workshop****Beyond Calcium: Imaging Voltage and Other Ions****7:30 PM - 9:30 PM, ROOM R02/03****Chair***William R. Kobertz, University of Massachusetts Medical School***1667-Wkshp 7:30 PM**FLUORESCENT VISUALIZATION OF CELLULAR EFFLUX. **William R. Kobertz****1668-Wkshp 8:00 PM**CRITICAL EVALUATION OF FRET-BASED BIOSENSOR PERFORMANCE: IMPLICATIONS FOR MEASURING ION CONCENTRATIONS. **Amy E. Palmer****1669-Wkshp 8:30 PM**LIGHT UP THE BRAIN WITH GENETICALLY ENCODED SENSORS OF NEURAL ACTIVITY. **Lin Tian****1670-Wkshp 9:00 PM**FUNCTIONAL CORTICAL CONNECTOMICS THROUGH CO-EXPRESSION OF GENETICALLY EXPRESSED VOLTAGE AND CALCIUM INDICATORS. Sam Barnes, Chenchen Song, **Thomas Knöpfel****Workshop****Next Generation Biophysics Enabled by Precision Chemical Biology Tools****7:30 PM - 9:30 PM, ROOM R04/05****Chair***Stephen G. Sligar, University of Illinois***1671-Wkshp 7:30 PM**NANODISCS AS A PRECISION TOOL FOR BIOPHYSICS AND CHEMICAL BIOLOGY. **Stephen G. Sligar****No Abstract 8:00 PM**GLYCANS AS CELLULAR ID'S. **Laura Kiessling****No Abstract 8:30 PM**TMP-TAG: A CHEMICAL SURROGATE TO THE FLUORESCENT PROTEINS FOR LIVE CELL IMAGING. **Virginia Cornish****1672-Wkshp 9:00 PM**MOLECULAR TOOLS AND NANODEVICES BUILT FROM DNA. **Tim Liedl****Workshop****Single-Particle CryoEM: A How-To Guide****7:30 PM - 9:30 PM, ROOM R06/07****Chair***Bridget Carragher, New York Structural Biology Center***1673-Wkshp 7:30 PM**USING EM TO UNDERSTAND THE STRUCTURE AND FUNCTION OF MOLECULAR MACHINES. **Bridget Carragher****1674-Wkshp 8:00 PM**BEST PRACTICES IN DATA COLLECTION AND DDD MOVIE PROCESSING FOR CRYO-EM. **John Rubinstein****1675-Wkshp 8:30 PM**OPTIMIZATION OF A CRYO-EM STRUCTURAL MODEL REPRESENTATION. **Wah Chiu****1676-Wkshp 9:00 PM**STRUCTURE DETERMINATION OF MULTI-PROTEIN COMPLEXES USING CRYO-EM. **Lori A. Passmore**, Christopher J. Russo**Workshop****Biological Networks from Experiment to Modeling and Back****7:30 PM - 9:30 PM, ROOM R08/09****Chair***Jennifer Reed, University of Wisconsin-Madison***1677-Wkshp 7:30 PM**USING A GENOME-SCALE MODEL AND GENOMIC LIBRARY TO DISCOVER THE FUNCTIONS OF METABOLIC GENES. Shu Pan, Kiel Nikolakakis, Edward Ruby, **Jennifer Reed****1678-Wkshp 8:00 PM**COORDINATION OF METABOLISM THROUGH METABOLITE-PROTEIN INTERACTIONS. **Uwe Sauer****1679-Wkshp 8:30 PM**DECIPHERING THE STOCHASTIC KINETICS OF GENE REGULATION. **Ido Golding****1680-Wkshp 9:00 PM**MODELING CYTOPLASMIC MECHANICS IN RAPIDLY MOVING CELLS. **Julie Theriot****SOBLA (The Society for Latinoamerican Biophysicists) Meeting****8:00 PM - 10:00 PM, ROOM 214**

TUESDAY POSTER SESSIONS

1:45 PM–3:45 PM, B-2 & C

Below is the list of poster presentations of abstracts submitted by October 3.

The list of late abstracts scheduled for Tuesday is available in the Program Addendum and the posters can be viewed on boards beginning with L. All abstracts are available through the desktop planner and mobile app.

Posters should be mounted beginning at 6:00 PM on Monday and must be removed NO LATER THAN 4:30 PM on Tuesday evening. Posters will be on view until 10:00 PM on Monday, before presentation. 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.

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 THIS TIME.** Posters remaining on boards after that time will be discarded. Posters being presented on Wednesday may be mounted beginning at 7:00 AM on Wednesday.

ODD-NUMBERED BOARDS 1:45 PM–2:45 PM | EVEN-NUMBERED BOARDS 2:45 PM–3:45 PM

<u>Board Numbers</u>	<u>Category</u>
B1 – B30	Protein Structure and Conformation III
B31 – B47	Protein-Small Molecule Interactions I
B48 – B63	Protein Dynamics and Allostery III
B64 – B81	Membrane Protein Structures I
B82 – B94	Protein Assemblies II
B95 – B121	Intrinsically Disordered Proteins (IDP) and Aggregates II
B122 – B144	RNA Structures and Dynamics
B145 – B156	Protein: DNA Interactions: Chromatin and Other Structures
B157 – B168	Chromatin and the Nucleoid II
B169 – B188	Membrane Physical Chemistry I
B189 – B208	Membrane Active Peptides and Toxins I
B209 – B224	Membrane Structure III
B225 – B252	Protein-Lipid Interactions: Structures
B253 – B264	General Protein-Lipid Interactions III
B265 – B280	Exocytosis and Endocytosis II
B281 – B297	Calcium Signaling II
B298 – B312	Cardiac, Smooth, and Skeletal Muscle Electrophysiology II
B313 – B322	Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating III
B323 – B338	TRP Channels III
B339 – B357	Ion Channels, Pharmacology, and Disease I
B358 – B374	Other Channels I
B375 – B401	Ligand-gated Channels I
B402 – B413	Cardiac Muscle Regulation II
B414 – B428	Kinesins, Dyneins, and Other Microtubule-based Motors II
B429 – B445	Cytoskeletal Assemblies and Dynamics
B446 – B469	Cell Mechanics, Mechanosensing and Motility III
B470 – B485	Mitochondria in Cell Life and Death II
B486 – B495	Light Energy Harvesting, Trapping, and Transfer
B496 – B508	Molecular and Cellular Neuroscience
B509 – B520	EPR and NMR: Spectroscopy and Imaging
B521 – B536	Molecular Dynamics III
B537 – B543	Computational Methods and Bioinformatics II
B544 – B555	Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence I
B556 – B564	Force Spectroscopy and Scanning Probe Microscopy I
B565 – B593	Biosensors
B594 – B604	Biophysics Education

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

61ST Annual Meeting

February 11–15, 2017 • New Orleans, Louisiana

Protein Structure and Conformation III (Boards B1–B30)

- 1681-Pos BOARD B1**
PROBING SUBSTRATE SEQUESTRATION IN CARRIER PROTEINS USING VIBRATIONAL SPECTROSCOPY LABELS. **Caroline A. McKeon**, Samuel C. Epstein
- 1682-Pos BOARD B2**
IDENTIFICATION OF FLUOXETINE-SEROTONIN TRANSPORTER INTERACTIONS USING CROSSLINKING-MASS SPECTROMETRY (CX-MS). **Elizabeth Castellano**
- 1683-Pos BOARD B3**
INSIGHTS INTO SUBSTRATE UNFOLDING AND ALLOSTERIC REGULATION OF INSULIN DEGRADING ENZYME. **Felicia H. Jiang**, Wei-Jen Tang, Esmael J. Haddadian
- 1684-Pos BOARD B4**
SECA FUNCTIONS *IN VIVO* AS A 1M6N-LIKE DIMER TO PROMOTE PROTEIN TRANSPORT. **Tithi Banerjee**
- 1685-Pos BOARD B5**
COMPARISON OF POLARIZABLE CONTINUUM & QUANTUM MECHANICS/MOLECULAR MECHANICS MODELS WITH SERIES OF TRIPEPTIDES (AXA). Allen Walker, Lillian Zhu, Esmael Jafari Haddadian, **Ahmed Lakhani**
- 1686-Pos BOARD B6**
IDENTIFICATION OF KEY STRUCTURAL FEATURES DETERMINING THE BINDING OF ALPHA GLOBIN AND ENDOTHELIAL NITRIC OXIDE SYNTHASE. **TC Stevenson Keller IV**, Nicole K. Swope, Brant E. Isakson, Linda Columbus
- 1687-Pos BOARD B7**
MOLECULAR LEVEL INSIGHT INTO A UNIQUE SURFACE PROTEIN GLYCOSYLATION PATHWAY: STRUCTURE OF THE *ACTINOMYCES ORIS* LCP ENZYME THAT MEDIATES SURFACE PROTEIN GLYCOSYLATION. **Brendan R. Amer**, Michael R. Sawaya, Brandon Liauw, Janine Fu, Hung Ton-That, Robert T. Clubb
- 1688-Pos BOARD B8**
RATIONAL DEVELOPMENT OF HBV CAPSID INHIBITORS AIDED BY MOLECULAR DYNAMICS. Maksym Korablyov, Anna Pavlova, Christophe Chipot, **James C. Gumbart**
- 1689-Pos BOARD B9**
CHARACTERIZATION OF THE FULL-LENGTH, HUMAN BECLIN-1 PURIFIED FROM *ESCHERICHIA COLI*. **Matthew Ranaghan**, Colin Garvie, Doug Daniels, Beth Levine, Jose Perez
- 1690-Pos BOARD B10**
DIFFERENT COVALENT IMMOBILIZATION STRATEGIES INFLUENCING THE FIBRONECTIN'S CONFORMATION AND BIOACTIVITY. **Stephanie Vanslambrouck**, Pascale Chevallier, Andree-Anne Guay-Begin, Gaetan Laroche
- 1691-Pos BOARD B11 INTERNATIONAL TRAVEL AWARDEE**
STRUCTURAL DYNAMICS IN THE MYOSIN 7A SINGLE A-HELIX DOMAIN. **Matthew Batchelor**, Marcin Wolny, Peter J. Knight, Emanuele Paci, Arnout P. Kalverda, Michelle Peckham
- 1692-Pos BOARD B12 EDUCATION TRAVEL AWARDEE**
PROTEIN ENERGY NETWORK MODELS TO CLASSIFY AND PREDICT FUNCTIONALLY LINKED INTERFACES OF PROTEINS FROM FUNCTIONALLY UNCORRELATED INTERFACES. **Isha D. Mehta**, Brian W. Beck
- 1693-Pos BOARD B13**
ASSEMBLY OF A MULTIMERIC ALLOSTERIC PROTEIN FROM ITS ISOLATED COMPONENTS CHARACTERIZED BY ISOTHERMAL TITRATION CALORIMETRY (ITC). **Antonio Tsuneshige**
- 1694-Pos BOARD B14**
BUILDING A BETTER PHOSPHOLAMBAN: CHARACTERIZING AND OPTIMIZING THE STRUCTURAL DYNAMICS OF DOMAIN IB PLN MUTANTS TO TUNE SERCA FUNCTION. **Kim N. Ha**, Mara Exline, Sarah E. Nelson, Gianluigi Veglia
- 1695-Pos BOARD B15**
CHARGE NEUTRALIZATION, NOT SALT BRIDGES, STABILIZES ALPHA HELICES IN REPEATING BLOCKS OF ACIDIC AND BASIC RESIDUES. **Ammon E. Posey**, Tyler S. Harmon, Rohit V. Pappu
- 1696-Pos BOARD B16**
MULTI-STATE MODELING OF BIOMOLECULES BY SATISFACTION OF SPATIAL RESTRAINTS FROM SINGLE-PARTICLE ELECTRON MICROSCOPY IMAGES. **Ilan E. Chemmama**, Charles H. Greenberg, Andrej Sali
- 1697-Pos BOARD B17**
IDENTIFICATION AND CHARACTERIZATION OF A REPRESSED TROPONIN I-LIKE EPIPOPE STRUCTURE IN THE C-TERMINAL REGION OF TROPONIN T. **Taylor Heilig**, J.-P. Jin
- 1698-Pos BOARD B18**
NMR STUDIES OF CONFORMATIONAL SELECTION OF HNRNP H ON RNA SPLICING. **Liang-Yuan Chiu**, Srinivas Penumutthu, Blanton S. Tolbert
- 1699-Pos BOARD B19**
CHARACTERIZATION OF A NOVEL FRET PROBE IN A CROWDED ENVIRONMENT USING TIME-RESOLVED ANISOTROPY. **Hannah Leopold**, Megan Currie, Jacob Schwarz, Arnold J. Boersma, Erin D. Sheets, Ahmed A. Heikal
- 1700-Pos BOARD B20**
CRYPTOCHROME AND NUCLEAR RECEPTORS - EXPANDING THE ROLE OF A CANONICAL CIRCADIAN REPRESSOR. **Colby Sandate**
- 1701-Pos BOARD B21**
QUO VADIS, BIOMACROMOLECULAR STRUCTURE QUALITY. **Radka Svobodova Varekova**, Vladimir Horsky, David Sehnal, Veronika Bendova, Lukas Pravda, Jaroslav Koca
- 1702-Pos BOARD B22**
ACETYL-GROUP SENSING THROUGH MODULATION OF CONFORMATIONAL DYNAMICS IN AN ARYLALKYLAMINE N-ACETYLTRANSFERASE. **Adam A. Aboalroub**, Ashleigh Bachman, Ioannis Gelis
- 1703-Pos BOARD B23**
INTERDOMAIN CONFORMATIONAL CHANGES IN VISUAL ARRESTIN UPON BINDING TO DIFFERENT FORMS OF RHODOPSIN. **Wei-Lin Ou**, Ned Van Eps, Takefumi Morizumi, Aidin R. Balo, Oliver P. Ernst
- 1704-Pos BOARD B24**
EFFECTS OF G_{AI} MYRISTOYLATION ON RIC-8A GEF ACTIVITY. **Levi J. McClelland**, Stephen R. Sprang
- 1705-Pos BOARD B25**
USING SINGLE MOLECULE FRET TO EXAMINE THE IMPACT OF ENZYMATIC DEGLYCOSYLATION ON THE STRUCTURE OF IMMUNOGLOBULIN G ANTIBODIES. **Alan J. Mlotkowski**, Brandon Roman, Mark S. Piraino, Cathrine A. Southern
- 1706-Pos BOARD B26**
MONITORING MACROMOLECULAR CROWDING VIA FRET USING WAVELENGTH-DEPENDENT FLUORESCENCE LIFETIME MEASUREMENTS. **Jacob Schwarz**, Megan Currie, Hannah Leopold, Arnold J. Boersma, Ahmed A. Heikal, Erin D. Sheets

1707-Pos BOARD B27
THE THERMODYNAMICS OF DIVALENT METALS BINDING TO TAURINE/A-KETOGLUTARATE-DEPENDENT OXYGENASE (TAUD). **Mingjie Li**

1708-Pos BOARD B28
DISCRIMINATING RESIDUE SUBSTITUTIONS BETWEEN TWO, SINGLE PROTEINS WITH A SUB-NANOPORE. **Zhuxin Dong**

1709-Pos BOARD B29
EFFECTIVE ON-DEMAND MINING OF STRUCTURAL DATABASES. **Lukas Pravda**, David Sehnal, Radka Svobodova Varekova, Jaroslav Koca

1710-Pos BOARD B30
INTERCONNECTION BETWEEN PARALLEL ASSEMBLY PATHWAYS IN LARGE RIBOSOME SUBUNIT BIOGENESIS. **Riley C. Gentry**, Eda Koculi

Protein-Small Molecule Interactions I (Boards B31–B47)

1711-Pos BOARD B31
KINETICS AND PATHWAYS OF EXTREMELY LONG LIGAND RELEASE EVENTS REVEALED BY WEXPLORE AND CONFORMATION SPACE NETWORKS. Samuel D. Lotz, **Alex Dickson**

1712-Pos BOARD B32
MACHINE LEARNING GUIDED LIGAND-PROTEIN SIMULATION APPROACH ELUCIDATES THE BINDING MECHANISM OF ABSICISIC ACID. **Saurabh Shukla**, Moeen Meigooni, Chuankai Zhao, Diwakar Shukla

1713-Pos BOARD B33
HYDRATION EFFECTS ON BINDING EQUILIBRIA: ROLE OF DESOLVATION ENERGY. **Daryl K. Eggers**

1714-Pos BOARD B34
A STRUCTURE BASED FRAMEWORK TO IDENTIFY NOVEL TARGETS OF FDA APPROVED KINASE INHIBITORS. **Hammad Naveed**

1715-Pos BOARD B35
A SYNTHETIC PEPTIDE FROM THE N-TERMINAL OF HEXOKINASE I PREVENTS THE INTERACTION BETWEEN VDAC1 AND SOD1 G93A MUTANT RECOVERING THE VIABILITY OF AN ALS CELL MODEL. Andrea Magri, Ramona Belfiore, Loredana Leggio, Francesca Guarino, **Angela Messina**

1716-Pos BOARD B36
MULTI-CONFORMER HIERARCHICAL VIRTUAL SCREENING WORKFLOW TO IDENTIFY POTENTIAL K-RAS INHIBITORS. **Amit K. Gupta**, Priyanka Prakash, John A. Putkey, Alemayehu A. Gorfe

1717-Pos BOARD B37
DATABASE OF CA PROTEIN-LIGAND BINDING GIBBS ENERGIES, ENTHALPIES, ENTROPIES, VOLUMES, AND CRYSTAL STRUCTURES. **Vaida Linkuvienė**, Asta Zubrienė, Vaida Paketurytė, Alexey Smirnov, Vytautas Petrauskas, Daumantas Matulis

1718-Pos BOARD B38
COMPARISON OF THE RGD- AND AGDV-CONTAINING PEPTIDE INTERACTIONS WITH THE PLATELET INTEGRIN ALPHAIIIBETA3. **Rustem I. Litvinov**, Olga Kononova, Dmitry S. Blokhin, Vladimir V. Klochkov, Valeri Barsegov, Joel S. Bennett, John W. Weisel

1719-Pos BOARD B39
BRUSHED POLYETHYLENE GLYCOL AND PHOSPHORYLCHOLINE AS PROMISING GRAFTING AGENTS AGAINST PROTEIN BINDING. **Bo Wang**, Thomas Blin, Aleksandr Käkinen, Xinwei Ge, Emily H. Pilkington, John F. Quinn, Michael R. Whittaker, Thomas P. Davis, Pu Chun Ke, Feng Ding

1720-Pos BOARD B40
INSIGHTS INTO A LOW PROMISCUOUS AMINOGLYCOSIDE MODIFYING ENZYME, AMINOGLYCOSIDE N3 ACETYLTRANSFERASE-VIA. **Fnu Prashasti**

1721-Pos BOARD B41
THE ROLE OF SOLVENT EFFECT ON THE LIGAND BINDING PROPERTIES OF THE THERMOSTABLE VARIANTS OF AMINOGLYCOSIDE NUCLEOTIDYLTRANSFERASE 4` (ANT4). **Seda Kocaman**

1722-Pos BOARD B42
DEVELOPMENT OF AN *IN VITRO* FRET BASED INHIBITORY ASSAY FOR THE COILED-COILED INTERACTION BETWEEN MBD2CC AND P66ACR1. **Victor C. Ekehchiadi**

1723-Pos BOARD B43
THE BINDING OF METHYLENE BLUE TO *PLASMODIUM FALCIPARUM* GLUTATHIONE REDUCTASE. **Judith H. Prieto**

1724-Pos BOARD B44
LIGAND-ADOPTING MECHANISM OF THE P53-BINDING POCKET OF THE ONCOPROTEIN MDMX. **Zheng Su**, Lingyun Qin, Rong Chen, Fei Yang, Jingjing Zhou, Huili Liu

1725-Pos BOARD B45
BIOCHEMICAL AND BIOPHYSICAL CHARACTERIZATION OF A SMALL MOLECULE INTERACTION WITH THE RAS-RELATED PROTEIN CDC42. Djamali Muhoza, Alix Montoya-Beltrand, **Paul D. Adams**

1726-Pos BOARD B46 INTERNATIONAL TRAVEL AWARDEE
SHARK-DERIVED SINGLE DOMAIN ANTIBODIES TARGETING APOLIPOPROTEIN E. **Shane E. Gordon**, Michael Foley, Matthew A. Perugini

1727-Pos BOARD B47
MOLECULAR DYNAMICS AND DOCKING STUDIES ON NEUROTENSIN RECEPTOR. **Rejwan Ali**, Yasmeen Beasley, Tetyana Skazko, Mostafa Sadoqi, Mihaly Mezei

Protein Dynamics and Allostery III (Boards B48–B63)

1728-Pos BOARD B48
A WEB-BASED INTERFACE FOR THE IDENTIFICATION OF ALLOSTERIC LIGAND BINDING SITES. **Nabina Paudyal**, Alemayehu A. Gorfe

1729-Pos BOARD B49
DEFINING AND EXPLORING ALLOSTERIC MUTATIONS. **Igor N. Berezovsky**

1730-Pos BOARD B50
TRANSCRIPTIONAL REGULATION BY LOCKING AND UNLOCKING THE INTRINSIC DISORDER IN NFkB. **Wei Chen**, Clarisse G. Ricci, J. Andrew McCammon, Elizabeth A. Komives

1731-Pos BOARD B51
CONSTRUING THE DYNAMIC COMPLEXITY AT A PLAUSIBLE IKK2-NEMO INTERFACE. **Jamie M. Schiffer**, Thuy Tien Nguyen, Ozlem Demir, Garret Chan, Rommie E. Amaro, Gourisankar Ghosh

1732-Pos BOARD B52
WHAT MAKES ENZYMES WORK? EXPLORING PROTEIN DYNAMICS IN *P-T-X*. Qi Huang, Jocelyn M. Rodgers, Russell J. Hemley, **Toshiko Ichiye**

1733-Pos BOARD B53
EXTREME BIOPHYSICS: ENZYMES UNDER PRESSURE. **Qi Huang**, Jocelyn M. Rodgers, Russell J. Hemley, Toshiko Ichiye

1734-Pos BOARD B54
IMPROVED RELAXATION MODE ANALYSIS OF A HEN EGG-WHITE LYSOZYME PROTEIN. **Naoyuki Karasawa**, Ayori Mitsutake, Hiroshi Takano

1735-Pos BOARD B55
IMPORTANCE OF PROTEIN VIBRATION DIRECTIONALITY ON FUNCTION. **Katherine A. Niessen**, Mengyang Xu, Yanting Deng, Edward H. Snell, Andrea G. Markelz

1736-Pos BOARD B56
CONFORMATIONAL EVOLUTION OF THREE REGULATOR OF G-PROTEIN SIGNALING PROTEINS (RGS4, RGS8, RGS19) IN MICROSECOND-SCALE SIMULATIONS. **Hossein Mohammadiarani**, Harish Vashisth

1737-Pos BOARD B57
COMPARATIVE STRUCTURAL DYNAMIC ANALYSIS OF GTPASES. **Hongyang Li**, Xin-Qiu Yao, Barry Grant

1738-Pos BOARD B58
THE MOLECULAR MECHANISM OF ENTROPIC ALLOSTERY OF HEMOGLOBIN. **Takashi Yonetani**, Kenji Kanaori

1739-Pos BOARD B59
STEERED MOLECULAR DYNAMIC SIMULATIONS REVEAL CRITICAL RESIDUES FOR (UN)BINDING OF SUBSTRATES, INHIBITORS AND A PRODUCT OF THE MALARIAL PFM1AAP. **Daniel S. Moore**, John P. Dalton, Irina G. Tikhonova

1740-Pos BOARD B60
DYNAMIC ALLOSTERY IN REGULATED ENTRY OF NEWCASTLE DISEASE VIRUS INTO HOST CELLS. **Nalvi D. Duro**, Sameer Varma

1741-Pos BOARD B61
THE ALLOSTERY LANDSCAPE: QUANTIFYING THERMODYNAMIC COUPLINGS IN BIOMOLECULAR SYSTEMS. Michel A. Cuendet, Harel Weinstein, **Michael V. LeVine**

1742-Pos BOARD B62
HOW DOES A LIGAND EXPLORE THE DEEP CHANNEL OF NEUROLYSIN? A CONFORMATIONAL DYNAMICS STUDY WITH WEXPLORE AND ELASTIC NETWORK MODELING. **Arzu Uyar**, Vardan Karamyan, Alex Dickson

1743-Pos BOARD B63
VARIABLE DYNAMICS OF IGG4 MONOCLONAL ANTIBODY CONTROLLED BY SINGLE POINT MUTATIONS. **Ettayapuram Ramaprasad Azhagiya Singam**, Shahid Uddin, Jose Casas-Finet, Donald J. Jacobs

Membrane Protein Structures I (Boards B64–B81)

1744-Pos BOARD B64
IMPROVING EXPRESSION IN YEAST OF A1 ADENOSINE RECEPTOR USING CHIMERIC RECEPTORS - DESIGN AND OPTIMIZATION OF THE HOST/PROTEIN PLATFORM FOR THERAPEUTIC DEVELOPMENT. **Abhinav R. Jain**, Anne S. Robinson

1745-Pos BOARD B65
A PRACTICAL METHOD TO PREPARE GLP-1 RECEPTOR. **Zhongping Hu**, Fan Yang, Nian Cheng, Zhengding Su

1746-Pos BOARD B66
PREDICTING MEMBRANE PROTEIN EXPRESSION IN YEAST FROM SEQUENCE-DERIVED FEATURES. **Samuel J. Schulte**, Shyam Saladi, William M. Clemons

1747-Pos BOARD B67
STATISTICAL MODELS ROBUSTLY PREDICT MEMBRANE PROTEIN EXPRESSION IN *E. COLI*. **Shyam Saladi**, Alexander E. Chu, William M. Clemons

1748-Pos BOARD B68
ESTABLISHING *RHODOBACTER SPHAEROIDES* FOR EXPRESSION OF LARGE MITOCHONDRIAL MEMBRANE COMPLEX YME1L FOR CRYO-EM STRUCTURAL STUDIES. **Cristina Puchades**, Luke Rockland Wiseman, Gabriel Lander

1749-Pos BOARD B69
INVESTIGATION OF AFFINITIES AND STRUCTURES OF MEMBRANE PROTEIN-PROTEIN INTERACTIONS USING COMPARABLE SAMPLES. **Jennifer Martin**, Marissa Kieber, Linda Columbus

1750-Pos BOARD B70
SANS STUDIES OF MEMBRANE PROTEIN INCORPORATION AND CRYSTALLIZATION IN THE LIPIDIC CUBIC PHASE. **Thomas E. Cleveland**, Paul Butler

1751-Pos BOARD B71
CRYSTALLOGENESIS OF MEMBRANE PROTEINS MEDIATED BY POLYMER-BOUNDED LIPID NANODISCS. **Jana Broecker**, Bryan T. Eger, Oliver P. Ernst

1752-Pos BOARD B72
STRUCTURE OF THE STRA6 RECEPTOR FOR RETINOL UPTAKE. **Jonathan Kim**

1753-Pos BOARD B73
BIOSYNTHETIC PRODUCTION OF AN ISOTOPICALLY LABELLED RETINAL IN *E. COLI*. **Rachel Munro**, Meaghan Ward, So Young Kim, Keon Ah Lee, Kwang-Hwan Jung, Vladimir Ladizhansky, Leonid Brown

1754-Pos BOARD B74
EXPLORING COMPLEXES OF RHODOPSIN AND BINDING PARTNERS IN VIRTUAL REALITY. **Aidin R. Balo**, Ned Van Eps, Aditya Dhoot, Merry Wang, Oliver P. Ernst

1755-Pos BOARD B75
STRUCTURE OF AN INWARD PROTON TRANSPORTING ANABAENA SENSORY RHODOPSIN MUTANT: MECHANISTIC INSIGHTS. **Hartmut Luecke**, Bamboo Dong, Lisette Sanchez Magraner

1756-Pos BOARD B76
SPECTROSCOPIC INVESTIGATION OF THE PROTONPUMP CSR AND ITS LEAKY DERIVATIVES. **Roman Fudim**, Arend Vogt, Peter Hegemann

1757-Pos BOARD B77 EDUCATION TRAVEL AWARDEE
CONSTRUCTION OF A GPR3 HOMOMOLOGY MODEL USING CONFORMATIONAL MEMORIES. **Paula Morales**, Dow P. Hurst, Patricia H. Reggio

1758-Pos BOARD B78
COMPUTATIONAL ANALYSIS OF OMPG GATING. **Alan Perez-Rathke**, Christina Chisholm, Min Chen, Jie Liang

1759-Pos BOARD B79
PROTEOME-WIDE MODELING OF TRANSMEMBRANE ALPHA-HELICAL HOMODIMERS BY TMDOCK. **Andrei L. Lomize**, Irina D. Pogozheva

1760-Pos BOARD B80
FIRST MEMBRANE-BOUND, ATOMIC LEVEL STRUCTURE OF THE TERNARY EXTRINSIC COAGULATION COMPLEX. **Melanie Muller**, Emad Tajkhorshid

1761-Pos BOARD B81
DETERMINE THE SUBSTRATE-REGULATED TONB-DEPENDENT TRANSPORTER AND TONB INTERACTIONS. **Lishan Liu**, David Cafiso

Protein Assemblies II (Boards B82–B94)

1762-Pos BOARD B82 EDUCATION TRAVEL AWARDEE
CONSTRUCTING AN IN SILICO MODEL OF THE GRAM-NEGATIVE CELLULAR ENVELOPE. **Curtis Balusek**, James C. Gumbart

1763-Pos BOARD B83
EXTENDING *UPSIDE*, A NEAR-ATOMIC LEVEL MODEL FOR FAST PROTEIN FOLDING, FOR PREDICTING PROTEIN-PROTEIN INTERACTIONS. **Nabil F. Faruk**, John Jumper, Benoit Roux, Tobin R. Sosnick

1764-Pos BOARD B84
A STRUCTURAL VIEW OF THE DISSOCIATION OF ESCHERICHIA COLI TRYPTOPHANASE. **Abraham H. Parola**, Keren Green, Nasrin Qasem, Garik Gdalevsky, Anna Kogan, Yehuda Goldgur, Ofra Lotan, Orna Almog

1765-Pos BOARD B85
IMPROVED EPHA2 SAM: SHIP2 SAM DOMAIN ASSOCIATION BY INCREASING THE SOLVATION OF THE PROTEINS IN MOLECULAR DYNAMICS SIMULATION. **Zhenlu Li**, Matthias Buck

1766-Pos BOARD B86
A MOLECULAR SIMULATION METHOD TO PREDICT THE SELF-ASSEMBLY OF HELIX BUNDLES IN BIOLOGICAL MEMBRANES. **Jingjing Huang**, Regis Pomes

1767-Pos BOARD B87
PH RESPONSIVE PEPTIDE SELF-ASSEMBLIES: A MECHANISM AS OLD AS VIRUSES. **Maité Paternostre**, Franck Artzner

1768-Pos BOARD B88
CHARACTERIZATION OF CHMP POLYMERS AT THE MESOSCALE. **Maryam Alqabandi**, Nicola De Franceschi, Nolwenn Miguët, Christophe Caillat, Stephanie Manganot, Winfried Weissenhorn, Patricia Bassereau

1769-Pos BOARD B89
ALL TUBULINS ARE NOT THE SAME: REVERSIBLE DISSOCIATION OF AB-TUBULIN DIMERS DIFFER DEPENDING ON THE SOURCE OF TUBULIN. **Felipe Montecinos-Franjola**, Sumit Chaturvedi, Peter Schuck, Dan L. Sackett

1770-Pos BOARD B90
STRUCTURE FUNCTION STUDIES OF A NOVEL HUMAN TSH BETA VARIANT. **Mihaly Mezei**, Ramkumarie Baliram, Rejwan M. Ali, Terry F. Davies, Rauf Latif

1771-Pos BOARD B91
HIJACKING HIS-TAGS TO MAKE FUNCTIONAL MULTI-PROTEIN COMPLEXES. **Elizabeth R. Haglin**, Ariane Briegel, Lynmarie K. Thompson

1772-Pos BOARD B92
THE TWO FACES OF PEPTIDE SELF-ASSEMBLY. MinJun Lee, Young-Beom Jo, Jeseong Yoon, **Seokmin Shin**

1773-Pos BOARD B93
MOLECULAR DYNAMICS STUDIES OF NON-ENVELOPED VIRUS CELL ENTRY MECHANISMS. Shivangi Nangia, Allyn R. Brice, **Eric R. May**

1774-Pos BOARD B94
ARTIFICIAL PEPTIDE-BASED MEMBRANES AND THEIR INTERACTION WITH LIPID SYSTEMS. Karin Kornmueller, Bernhard Lehofer, Gerd Leitinger, Heinz Amenitsch, **Ruth Prassl**

Intrinsically Disordered Proteins (IDP) and Aggregates II (Boards B95–B121)

1775-Pos BOARD B95
EFFECT OF PEPTIDE CONJUGATES OF CARBOXYLIC ACIDS TO THE AGGREGATION OF AMYLIN. **Jayson Vedad**, Adam A. Profit, Ruel Z. B. Desamero

1776-Pos BOARD B96
AGGREGATION INDUCED CONFORMATION CHANGES DETERMINE AMYLIN MEMBRANE AFFINITY. **Barun K. Maity**, Anoop Rawat, Bappaditya Chandra, Anirban Das, Sudipta Maiti

1777-Pos BOARD B97
ROLES OF SITE-SPECIFIC DEAMIDATION IN ISLET AMYLOID POLYPEPTIDE SELF-ASSEMBLY AND TOXICITY SITE-SPECIFIC DEAMIDATION IN ISLET AMYLOID POLYPEPTIDE SELF-ASSEMBLY AND CYTOTOXICITY. Phuong Trang Nguyen, Ximena Zottig, **Steve Bourgault**

1778-Pos BOARD B98
STRAIN-SPECIFIC PROPAGATION BY AN AMYLOID-BETA DODECAMER. **Dexter N. Dean**, Pradipta K. Das, Pratip Rana, Ryan P. Campbell, Preetam Ghosh, Sarah E. Morgan, Vijay Rangachari

1779-Pos BOARD B99
BUILDING BIGGER: MODELING LARGE-SCALE PROTEIN INTERACTIONS IN AMYLOIDOSIS. **Michael Bergman**

1780-Pos BOARD B100
COMPARISON OF STABILITIES OF FIBRILS OF THE AMYLOID-BETA PEPTIDES. Timir Sil, **Kanchan Garai**

1781-Pos BOARD B101
REGULATION OF BACE1 MRNA EXPRESSION IN ALZHEIMER'S DISEASE BY GREEN TEA CATECHINS AND BLACK TEA THEAFLAVINS. **Ryan J. Geiser**, Shelby E. Chastain, Melissa A. Moss

1782-Pos BOARD B102 INTERNATIONAL TRAVEL AWARDEE
SECONDARY STRUCTURE FLIPPING CONNECTED TO SALT-BRIDGE FORMATION CONVERTS TOXIC AMYLOID-B₄₀ OLIGOMERS TO FIBRILS. **Bappaditya Chandra**, Debanjan Bhowmik, Barun Kumar Maity, Kaustubh R. Mote, Debabrata Dhara, Kallol Bera, Anirban Das, Ravindra Venkatramani, Sudipta Maiti, Perunthiruthy K. Madhu

1783-Pos BOARD B103
EFFECT OF A PARAMAGNETIC SPIN LABEL ON AMYLOID-BETA STRUCTURAL ENSEMBLE. **Sukanya Sasmal**, James Lincoff, Teresa Head-Gordon

1784-Pos BOARD B104
DISORDERED AMYLOID-BETA PROTEIN PROBED BY SINGLE-MOLECULE FRET. **Fanjie Meng**, Jae-Yeol Kim, Hoi Sung Chung

1785-Pos BOARD B105
ALZHEIMER'S PROTECTIVE CROSS-INTERACTION BETWEEN WILD-TYPE AND A2T VARIANTS CHANGES AB₄₂ DIMER STRUCTURE. **Payel Das**, Anita Chacko, Georges Belfort

1786-Pos BOARD B106
SEQUENCE SPECIFIC QUANTITATIVE HYDROXYL RADICAL FOOTPRINTING REVEALS STRUCTURAL DETAILS OF AMYLOID- β (1-42) PEPTIDE OLIGOMERIZATION. Janna Kiselar, Andrew Nix, Anant Paravastu, Rosenberry L. Terrone, **Alexandra L. Klinger**

1787-Pos BOARD B107
MEMBRANE BILAYERS HELP TO STABILIZE AND ARE AFFECTED BY AB-FIBRILS ON THE SURFACE; A MOLECULAR DYNAMICS STUDY. Sachin R. Natesh, Karl F. Freed, **Esmael J. Haddadian**

1788-Pos BOARD B108
PROBING THE MECHANISM OF GLYCOSAMINOGLYCAN-MEDIATED AMYLOID ASSEMBLY WITH A NON-AMYLOIDOGENIC PEPTIDE MOD-EL. **Mathew Sebastiao**, Isabelle Marcotte, Steve Bourgault

1789-Pos BOARD B109
PROBING THE BINDING OF AB PEPTIDES TO LIPID BILAYERS. **Christopher Lockhart**, Dmitri K. Klimov

1790-Pos BOARD B110
BETA-AMYLOID OLIGOMER FORMATION IN PHYSIOLOGICAL SOLUTIONS - A STUDY BY SINGLE-MOLECULE FLUORESCENCE RESONANCE ENERGY TRANSFER. Jun Han, Erwen Mei, Mei-Ping Kung, Hank F. Kung, Jian-Min Yuan, **Hai-Lung Dai**

1791-Pos BOARD B111
STATISTICAL THERMODYNAMIC MODELING OF EARLY AB OLIGOMER FORMATION. **Nicholas P. van der Munnik**, Tao Wei, Melissa A. Moss, Mark J. Uline

1792-Pos BOARD B112
STRAIN SPECIFIC PROPAGATION OF AN AMYLOID BETA OLIGOMER IN ALZHEIMER DISEASE. **Vijay Rangachari**

1793-Pos BOARD B113
AGGREGATION OF AMYLOID PROTEINS AT THE SURFACE-LIQUID INTER-FACE. **Siddhartha Banerjee**, Mohtadin Hashemi, Zhengjian Lv, Sibaprasad Maity, Jean-Christophe Rochet, Yuri Lyubchenko

1794-Pos BOARD B114
BIOPHYSICAL INSIGHT INTO THE ANTI AMYLOIDOGENIC BEHAVIOR OF CYSTEINE. **Masihuz Zaman**, Rizwan Hasan Khan

1795-Pos BOARD B115
AMYLOID BETA AGGREGATION IN THE PRESENCE OF NATURALLY -DERIVED INHIBITORS. **Carol K. Hall**, Yiming Wang, David C. Latshaw II

1796-Pos BOARD B116
CROSS-REACTIVITY OF ALPHA-SYNUCLEIN WITH OTHER CELLULAR COMPONENTS CAN DRAMATICALLY MODULATE AMYLOID FORMATION. **Pernilla Wittung-Stafshede**

1797-Pos BOARD B117
USING THE SCN VIBRATIONAL PROBE GROUP TO DETERMINE THE MEMBRANE-BOUND STRUCTURAL DISTRIBUTION OF N-TERMINALLY ACETYLATED ALPHA-SYNUCLEIN. **Kavita D. Shroff**, Kristen E. Fiore, Casey H. Londergan

1798-Pos BOARD B118 CPOW TRAVEL AWARDEE
DETERMINING THE ROLE OF N-TERMINAL ACETYLATION ON A-SYNUCLEIN FUNCTION. **Siobhan Toal**, Adam Trexler, David DeWitt, Mark Brown, Elizabeth Rhoades

1799-Pos BOARD B119
GENERATING A MODEL FOR CALMODULIN INDUCED FOLDING IN THE DISORDERED REGULATORY DOMAIN OF CALCINEURIN. **Dinesh K. Yadav**

1800-Pos BOARD B120
ROLE OF DISORDERED PROTEIN ENSEMBLES IN PROTEIN-PROTEIN INTERACTIONS: CALCINEURIN AS A MODEL SYSTEM. **Trevor Creamer**

1801-Pos BOARD B121
CHEMICAL SHIFT ASSIGNMENT OF THE REGULATORY DOMAIN OF CALCINEURIN USING NMR SPECTROSCOPY. **John Hunt**

RNA Structures and Dynamics (Boards B122–B144)

1802-Pos BOARD B122
PRESSURE EFFECTS ON SELF-ASSEMBLY OF GMP, GUANOSINE 5'-MONOPHOSPHATE. **Balasubramanian Harish**, Mimi Gao, Roland Winter, Catherine Royer

1803-Pos BOARD B123
PREFERENTIAL INTERACTIONS OF CHARGED AND NEUTRAL COSOLUTES WITH A MODEL RNA HAIRPIN. **Jacob C. Miner**, Angel E. Garcia

1804-Pos BOARD B124
RNA COMPACTION IN THE PRESENCE OF POLYVALENT CATIONS. **Liya F. Oster**, Richard Sportsman, Christian Beren, Hongcheng Yao, Jae-Ho Shin, Charles Knobler, William Gelbart

1805-Pos BOARD B125
HOW COUNTERION IDENTITY IMPACTS THE PATHWAY OF RNA TERTIARY FOLDING. **Robb Welty**, Kathleen B. Hall

1806-Pos BOARD B126
ACCURATE DETERMINATION OF THE RNA THREE-WAY JUNCTIONS VIA SINGLE-MOLECULE HIGH-PRECISION FRET MEASUREMENTS. **Olga Doroshenko**, Hayk Vardanyan, Aiswaria Prakash, Stanislav Kalinin, Simon Sindbert, Oleg Opanasyuk, Christian Hanke, Sabine Müller, Holger Gohlke, Claus A.M. Seidel

1807-Pos BOARD B127
FRET, SAXS AND MOLECULAR SIMULATIONS RESOLVE THE SOLUTION STRUCTURES OF THREE COEXISTING CONFORMERS OF FLEXIBLE RNA FOUR-WAY JUNCTION. **Hayk Vardanyan**, Simon Sindbert, Stanislav Kalinin, Christian A. Hanke, Tomasz Soltynski, Grzegorz Lach, Danilo Springstube, Bettina Apel, Edward Snell, Thomas D. Grant, Jan Lipfert, Sabine Müller, Janusz M. Bujnicki, Holger Gohlke, Claus A.M. Seidel

1808-Pos BOARD B128
SINGLE-MOLECULE ELECTRIC SNAPSHOTS OF RNA TERTIARY PSEUDOKNOT FOLDING PATHWAY. Xinyue Zhang, Ruicheng Shi, Andrew J. Burcke, **Li-Qun Gu**

1809-Pos BOARD B129
FOLDING HETEROGENEITY IN HIV-1 FRAMESHIFTING HAIRPIN. **Dustin B. Ritchie**, Collin Tittle, Negar Rezajooei, Logan Rouleau, Tonia R. Cappellano, William Sikkema, Michael T. Woodside

1810-Pos BOARD B130 CID TRAVEL AWARDEE
STRUCTURAL INSIGHTS TO THE 3' UTR OF GAIT ELEMENTS. **Nancy Wells**, Blanton S. Tolbert

1811-Pos BOARD B131 INTERNATIONAL TRAVEL AWARDEE
LIGAND-DIRECTED CONFORMATIONAL DYNAMICS OF THE ADENINE-SENSING RIBOSWITCH THERMOSTAT. **Sven Warhaut**, Klara Rebecca Mertinkus, Philipp Höllthaler, Boris Fürtig, Mike Heilemann, Martin Hengesbach, Harald Schwalbe

1812-Pos BOARD B132
DYNAMIC EQUILIBRIUM OF THE TPP RIBOSWITCH AS OBSERVED BY MFD FRET. **Junyan Ma**, Soheila Rezaei, Feng Ding, Hugo Sanabria

1813-Pos BOARD B133
FOLDING AND CATALYSIS OF THE *GLMS* RIBOZYME RIBOSWITCH STUDIED AT THE SINGLE-MOLECULE LEVEL. **Andrew Savinov**, Steven M. Block

1814-Pos BOARD B134
MECHANISTIC INSIGHTS INTO FUNCTIONAL PROTEIN-RNA INTERACTIONS INVOLVED IN VIRAL REPLICATION. **Blanton S. Tolbert**

1815-Pos BOARD B135
REDOX EDITING OF RNA: A NOVEL ENDOGENOUS MODIFICATION TYPE WITH TRANSITION METAL COFACTOR (COPPER). **Josef H. Wissler**

1816-Pos BOARD B136
DISTINCT CHAIN ORGANIZING PRINCIPLES OF PROTEINS AND RNA. **Lei Liu**, Changbong Hyeon

1817-Pos BOARD B137
3D STRUCTURE PREDICTION OF NONCODING RNA AND SINGLE STRANDED DNA. **Jian Wang**, Yi Xiao

1818-Pos BOARD B138
HOMOLOGY MODELING OF RNA USING HIERARCHICAL NATURAL MOVES. **Xiong An Lee**, Adelene Y.L. Sim

1819-Pos BOARD B139
COARSE-GRAINED MODELING OF RNA FOR BIOLOGY AND NANOTECHNOLOGY. **Petr Sulc**, Flavio Romano, Thomas Ouldridge, Jonathan Doye, Ard Louis

1820-Pos BOARD B140
COARSE-GRAINED MODEL OF RNA CAPTURES EXCESS ION ATMOSPHERE BETWEEN CONFORMATIONAL BASINS. **Udayan Mohanty**

1821-Pos BOARD B141 EDUCATION TRAVEL AWARDEE
MULTISTEP FOLDING KINETICS OF GROUP I INTRON RNA STUDIED BY Mg^{2+} -CONCENTRATION JUMP SIMULATIONS. **Naoto Hori**, Natalia A. Denesyuk, D Thirumalai

1822-Pos BOARD B142
SIMULATING THE MELTING OF THE SALMONELLA 4-U RNA THERMOMETER USING REPLICA EXCHANGE MOLECULAR DYNAMICS TO ASSESS FORCE-FIELD ACCURACY. **Parisa Ebrahimi**, Alan Chen

1823-Pos BOARD B143
SPATIAL MODELING OF CYTOSOLIC DIFFUSION AND DEGRADATION OF INFLUENZA A VIRUS EXPLAINS MEASURED NUCLEAR ENTRY EFFICIENCY. **Andreas Herrmann**, **Edda Klipp**

1824-Pos BOARD B144
NUCLEIC ACIDS ON GRAPHENE NANOPARTICLE SURFACES. **Srivathsan V. Ranganathan**

Protein: DNA Interactions: Chromatin and Other Structures (Boards B145–B156)

1825-Pos BOARD B145
ASYMMETRIC DNA UNWRAPPING DRIVES SEQUENTIAL DIMER RELEASE IN NUCLEOSOMES. **Yujie Chen**, **Joshua Tokuda**, Traci Topping, Steve Meisburger, Suzette Pabit, Lisa Gloss, Lois Pollack

1826-Pos BOARD B146
SEQUENCE DEPENDENCE IN SALT BASED NUCLEOSOME UNWRAPPING USING SAXS. **Alexander Mauney**, Joshua Tokuda, Yujie Chen, Lisa Gloss, Traci Topping, Oscar Gonzalez, Lois Pollack

1827-Pos BOARD B147
INVESTIGATING THE HISTONE REPLACEMENT PATHWAY IN SPERM USING TPM. **Elizabeth D. White**, Adam Smith, Obinna Ukogu, Hilary Bediako, Moumita Dasgupta, Ashley Carter

1828-Pos BOARD B148
THE MOLECULAR MECHANISM OF NUCLEOSOME BREATHING. **David Winogradoff**, Aleksei Aksimentiev

1829-Pos BOARD B149
DNA IN TIGHT SPACES: LINKING STRUCTURE, STABILITY AND PROTECTION IN PROTAMINE PACKAGED DNA. **Jason E. DeRouchey**

1830-Pos BOARD B150
INVESTIGATING THE MECHANICS OF PROTAMINE-INDUCED DNA CONDENSATION IN SPERM. **Hilary Bediako**, Adam D. Smith, Obinna Ukogu, Moumita Dasgupta, Elizabeth White, Ashley R. Carter

1831-Pos BOARD B151
HOLLIDAY JUNCTION STRUCTURE DEVELOPMENT FOR SINGLE-MOLECULE VISUALIZATION. **Mate Gyimesi**, Zoltan Kovacs, Mihaly Kovacs

1832-Pos BOARD B152
MITOCHONDRIAL PROTEIN ABF2P INTERCALATES, BENDS, LOOPS, AND COMPACTS DNA. **Divakaran Murugesapillai**, Arka Chakraborty, Sébastien Lyonnais, Maria Solà, Mark C. Williams

1833-Pos BOARD B153
TOWARDS ROLLING-CIRCLE REPLICATION AT THE SINGLE-MOLECULE LEVEL. **Cesar L. Pastrana**, Carolina Carrasco, Parvez Akthar, Sanford H. Leuba, Saleem A. Khan, Fernando Moreno-Herrero

1834-Pos BOARD B154
SUPERFAMILY 1 HELICASE PIF1 CAN PUSH REPLICATION PROTEIN A ALONG SINGLE STRANDED DNA AND INTO DUPLEX DNA. **Joshua E. Sokoloski**, Roberto Galletto, Timothy M. Lohman

1835-Pos BOARD B155
HOW PROTEIN DEFORMATION AFFECTS DNA LOOP TOPOLOGY AND GEOMETRY. **Pamela J. Perez**, Wilma K. Olson

1836-Pos BOARD B156
TOPOISOMERASE POISON DISTURBS RELAXATION OF MECHANICAL STRESSES DURING GATING MOTION OF DNA-BINDING CORE. **Nan-Lan Huang**, Michael K. Gilson

Chromatin and the Nucleoid II (Boards B157–B168)

1837-Pos BOARD B157
COMPACTION AND SEGREGATION OF SISTER CHROMATIDS BY LOOP-EXTRUDING ENZYMES. **Anton Goloborodko**, Maxim Imakaev, John F. Marko, Leonid Mirny

1838-Pos BOARD B158
POLYMER MODELS INTEGRATE INVERTED NUCLEAR GEOMETRY WITH CONVENTIONAL HI-C COMPARTMENTALIZATION. **Martin J. Falk**, Natalia M. Naumova, Geoffrey Fudenberg, Yana N. Feodorova, Job Dekker, Leonid A. Mirny, Irina Solovei

1839-Pos BOARD B159
DISTINCT ROLES OF H3 AND H2A TAILS IN LINKER DNA DYNAMICS. **Zhenhai Li**, Jinzen Ikebe, Shun Sakuraba, **Hidetoshi Kono**

1840-Pos BOARD B160
EXTENT OF NUCLEOSOME DESTABILIZATION GOVERNS YEAST HMGB CELLULAR FUNCTION. **Micah J. McCauley**, Ran Huo, Nicole Becker, Molly Nelson Holt, Uma Muthurajan, Ioulia Rouzina, Karolin Luger, L. James Maher, Nathan Israeloff, Mark Williams

1841-Pos BOARD B161
AS A NUCLEUS ENTERS A SMALL PORE, CHROMATIN STRETCHES AND MAINTAINS INTEGRITY EVEN WITH DNA BREAKS. **Jerome Irianto**, Yuntao Xia, Charlotte R. Pfeifer, Roger A. Greenberg, Dennis E. Discher

1842-Pos BOARD B162
INTERPHASE CHROMATIN DYNAMICS IN RESPONSE TO LOCAL DNA DAMAGE. **Jonah Eaton**, Alexandra Zidovska

1843-Pos BOARD B163
ANALYZING DNA DOUBLE-STRAND BREAK REPAIR PROCESSES WITH HIGH-RESOLUTION LOCALIZATION MICROSCOPY AND PERSISTENT TOPOLOGY. **Andreas Hofmann**, Matthias Krufczik, Michael Hausmann, Dieter W. Heermann

1844-Pos BOARD B164
AN ACTIVE CHAIN MODEL TO CONSIDER THE CROSSTALK BETWEEN THE STRUCTURE AND FUNCTION OF CHROMATIN: EFFECTS OF HETEROGENEITY. **Yuichi Togashi**

1845-Pos BOARD B165
INVESTIGATING PHYSICAL INTERACTIONS OF THE LIQUID-LIKE NUCLEOLUS WITH INTERPHASE CHROMATIN. **Christina Caragine**, Shannon Haley, Alexandra Zidovska

1846-Pos BOARD B166
INFLUENCE OF LOCAL DNA AND PROTEIN FEATURES ON LARGE-SCALE PROPERTIES OF CHROMATIN. **Stefford Todolli**, Nicolas Clauvelin, Wilma K. Olson

1847-Pos BOARD B167
LINKING THE ACTIVE UNDULATIONS OF NUCLEAR ENVELOPE WITH SURFACE FLUCTUATIONS OF THE CHROMATIN GLOBULE. **Fang-Yi Chu**, Shannon Haley, Alexandra Zidovska

1848-Pos BOARD B168
HOW TO OPEN A NUCLEOSOME. **Katalin Toth**, Yoriko Lill, Kathrin Lehmann, Alexander Gansen, Jörg Langowski

Membrane Physical Chemistry I (Boards B169–B188)

1849-Pos BOARD B169
OXIDATION OF POLYUNSATURATED PHOSPHOLIPID DECREASES THE CHOLESTEROL CONTENT AT WHICH CHOLESTEROL BILAYER DOMAINS START TO FORM IN PHOSPHOLIPID-CHOLESTEROL MEMBRANES. **Laxman Mainali**, Mariusz Zareba, Witold K. Subczynski

1850-Pos BOARD B170
MIXING OF OXIDIZED AND BILAYER PHOSPHOLIPIDS. **Radha Ranganathan**, Jasmeet Singh, Melissa Ghafarian

1851-Pos BOARD B171 EDUCATION TRAVEL AWARDEE
DIRECT IMAGING OF LIQUID DOMAINS BY CRYOTEM IN SUBMICRON VESICLES. **Caitlin E. Cornell**, Long Gui, Kelly K. Lee, Sarah L. Keller

1852-Pos BOARD B172
PROBE PARTITION BETWEEN LIQUID-DISORDERED (LD) AND LIQUID-ORDERED (LO) PHASES AND INVESTIGATION OF NANODOMAIN SIZES. **Thais A. Enoki**, Frederick A. Heberle, Gerald W. Feigenson

1853-Pos BOARD B173
CHEMICAL GRADIENTS TRIGGER AND GUIDE MOVEMENT OF GIANT LIPID VESICLES. **Baharan Ali Doosti**, Tatsiana Lobovkina

1854-Pos BOARD B174
MODELING TISSUE SPECIFIC PLASMA MEMBRANES IN SILICO. **Helgi I. Ingolfsson**, Timothy S. Carpenter, Felice C. Lightstone

1855-Pos BOARD B175
PHOSPHOLIPID HEAD GROUPS PROVIDE DIFFERENTIALLY STABLE MEMBRANE ENVIRONMENTS FOR VITAMIN E. **Andres T. Cavazos**, Michaela E. Bell, Zachary L. Leach, Jacob J. Kinnun, Stephen R. Wassall

1856-Pos BOARD B176
PHYSICAL CHEMICAL PROPERTIES OF SILVER NANOPARTICLES STABILIZED WITH POLYETHER-BLOCK-AMIDE INTERACTING WITH CELLULAR MEMBRANE MODELS AT THE AIR-WATER INTERFACE. **Luciano Caseli**, Gustavo B. Soriano, Roselaine S. Oliveira, Fernanda F. Camilo

1857-Pos BOARD B177
MEMBRANE PERMEATION OF GASOTRANSMITTERS. **Christopher N. Rowley**

1858-Pos BOARD B178
EFFECTS OF ESTER AND ETHER LINKAGE IN PHOSPHOLIPIDS ON $L_o + L_o$ DOMAIN SIZE TRANSITION FOR A FOUR-COMPONENT LIPID BILAYER MIXTURE. **Wen-Chyan Tsai**, Gerald W. Feigenson

1859-Pos BOARD B179
OXIDATION OF CHOLESTEROL CHANGES THE PERMEABILITY OF LIPID MEMBRANES. **Waldemar T. Kulig**, Heikki Mikkolainen, Agnieszka Olzyska, Piotr Jurkiewicz, Lukasz Cwiklik, Tomasz Rog, Martin Hof, Ilpo Vattulainen, Pavel Jungwirth

1860-Pos BOARD B180 EDUCATION TRAVEL AWARDEE
PRE-TRANSITION EFFECTS MEDIATE FORCES OF ASSEMBLY BETWEEN TRANSMEMBRANE PROTEINS: RECENT RESULTS ON THE ORDERPHOBIC EFFECT. **Shachi Katira**, Kranthi K. Mandadapu, David Chandler

1861-Pos BOARD B181
MOLECULAR DYNAMICS SIMULATIONS REVEAL THE IMPACT OF COMPOSITIONAL ASYMMETRY IN LIPID MEMBRANES ON PHASE BEHAVIOR AND LEAFLET INTERACTIONS. **Michael D. Weiner**, Gerald W. Feigenson

1862-Pos BOARD B182
THE MECHANISM OF COPPER-INDUCED PEROXIDATION. **Dov A. Lichtenberg**, Ilya Pinchuk

1863-Pos BOARD B183
 $F^{4,5}$ GWALP PARTITIONING, ORIENTATION, AND EFFECT ON BENDING MODULI IN MODELS OF THE PLASMA MEMBRANE. **Rebecca D. Usery**, Thais A. Enoki, Vanessa P. Nguyen, Barrera N. Francisco, Gerald W. Feigenson

1864-Pos BOARD B184
NON-MONOTONIC EFFECT OF SOLUTES ON MISCIBILITY TRANSITION TEMPERATURES; SIMPLE EXPLANATION OF CLOSED-LOOP PHASE DIAGRAMS. **Michael Schick**, David W. Allender

1865-Pos BOARD B185
PHYSIOCHEMICAL CHARACTERIZATION OF ARCHAEL EXOSOMES. **Alexander P. Bonanno**, Michelle Jiang, Noah Gilly, Parkson L.-G. Chong

1866-Pos BOARD B186
WATER DYNAMICS AT THE BILAYER INTERFACE IS SIMILAR TO THAT WITHIN THE SECY TRANSLOCON. **Venkatramanan Krishnamani**, Sara Capponi, Stephen H. White

1867-Pos BOARD B187
PROGRESS TOWARDS A MEMBRANE-BOUND STRUCTURE OF THE ITK/NEF COMPLEX. **Rebecca Eells**, Kindra Whitlatch, Frank Heinrich, Mathias Lösche, Thomas E. Smithgall

1868-Pos BOARD B188
VISCOELASTIC MEASUREMENTS OF HYDROXYCHOLESTEROL PHOSPHOLIPID MONOLAYERS. **Nikki Hoang**, Lyle H. Nyberg, **Benjamin L. Stottrup**

Membrane Active Peptides and Toxins I (Boards B189–B208)

1869-Pos BOARD B189
INTERACTION OF AUREIN 1.2 AND CHARGED LIPID BILAYERS. **Shuo Qian**, Durgesh Rai

1870-Pos BOARD B190
MOLECULAR BASIS FOR THE ROLE OF CATIONIC RESIDUES IN ANTIMICROBIAL PEPTIDE INTERACTIONS. **Amy Rice**, Jeff Wereszczynski

1871-Pos BOARD B191
DAPTOMYCIN INDUCES TRANSIENT MEMBRANE-PERMEABILIZATION. **Wei-Chin Hung**, **Ming-Tao Lee**, Meng-Hsuan Hsieh, Hsiung Chen, Yu-Yung Chang, Huey W. Huang

1872-Pos BOARD B192
INSERTION PROCESS OF DIFFERENT AMPHIPATHIC α -HELICAL AMPS INTO LIPID BILAYERS OBSERVED IN UNBIASED ATOMIC MOLECULAR DYNAMICS SIMULATIONS. **Tangzhen Zhao**, Yukun Wang, Dan Hu, Jakob Ulmschneider

1873-Pos BOARD B193 INTERNATIONAL TRAVEL AWARDEE
EFFECTS OF LIPID COMPOSITIONS ON THE ENTRY OF CELL PENETRATING PEPTIDE OLIGOARGININE INTO SINGLE VESICLES. **Sabrina Sharmin**, Md Zahidul Islam, Masahito Yamazaki, Hideo Dohra

1874-Pos BOARD B194
MODULATING EFFECT OF HISTIDINE ON SHORT ARGININE- AND TRYPTOPHAN-BASED ANTIMICROBIAL PEPTIDES. **Lorant Janosi**

1875-Pos BOARD B195 CID TRAVEL AWARDEE
DEVELOPMENT OF CELL-WALL DEFICIENT BACTERIA FOR THE CHARACTERIZATION OF HISTONE-DERIVED ANTIMICROBIAL PEPTIDES THROUGH CONFOCAL MICROSCOPY. **Dania M. Figueroa**, Donald E. Elmore

1876-Pos BOARD B196
MEMBRANE ACTIVE PEPTIDES AS A POTENTIAL THERAPEUTIC OPTION FOR ENVELOPED VIRUSES. **Shantanu Guha**

1877-Pos BOARD B197
MEMBRANE BINDING AND ANTIMICROBIAL ACTIVITY OF A CATIONIC, PORPHYRIN-BINDING PEPTIDE. David Shirley, Christina L. Chrom, **Gregory A. Caputo**

1878-Pos BOARD B198
MEMBRANE INSERTION OF A DINUCLEAR RUTHENIUM COMPLEX AND IMPLICATIONS FOR ANTIBACTERIAL ACTIVITY. **Daniel K. Weber**, Marc-Antoine Sani, Matthew T. Downton, J. Grant Collins, Frances Separovic, F. Richard Keene

1879-Pos BOARD B199
²H NMR STUDIES OF BACTERIA: HOW DOES THE PEPTIDOGLYCAN LAYER MODIFY THE INTERACTION BETWEEN ANTIMICROBIAL PEPTIDES AND THE LIPID MEMBRANE. **Nury P. Santisteban**, Michael R. Morrow, Valerie K. Booth

1880-Pos BOARD B200
LIPID CLUSTERING BY ANTIMICROBIAL POLYMERS AND LECTINS. Anja Stulz, Winfried Römer, Karen Lienkamp, Heiko Heerklotz, **Maria Hoernke**

1881-Pos BOARD B201
HOW ANTIMICROBIAL PEPTIDES PERMEABILIZE MEMBRANES WITH AND WITHOUT PORE FORMATION. **Jakob P. Ulmschneider**

1882-Pos BOARD B202
THE SYNERGISTIC EFFECTS OF LIPIDS AND PEPTIDES ON MEMBRANE DYNAMICS. **Elizabeth Kelley**, Andrea Woodka, Paul Butler, Michihiro Nagao

1883-Pos BOARD B203
MODE OF ACTION OF ANTIMICROBIAL PEPTIDES: LONG AND SHORT AMPHIPATHIC ALPHA-HELICES USE DIFFERENT MECHANISMS. **Erik Strandberg**, Ariadna Grau-Campistany, Hector Zamora-Carreras, Marie-Claude Gagnon, Philipp Mühlhäuser, Parvesh Wadhvani, Jochen Bürck, Johannes Reichert, Michele Auger, Jean-Francois Paquin, M. Angeles Jiménez, Marta Bruix, Francesc Rabanal, Anne S. Ulrich

1884-Pos BOARD B204
SIMULATIONS OF MEMBRANE DISRUPTING PEPTIDES PORES VERSUS SURFACE BINDING. **B. Scott Perrin, Jr.**, Riqiang Fu, Myriam L. Cotten, Richard W. Pastor

1885-Pos BOARD B205
SIMULATION AND DATABASE-GUIDED ANTIMICROBIAL PEPTIDE EVOLUTION. **Charles H. Chen**, Charles G. Starr, Gregory Wiedman, William C. Wimley, Jakob P. Ulmschneider, Martin B. Ulmschneider

1886-Pos BOARD B206
DISCOVERING NOVEL ANTIMICROBIAL PEPTIDES USING HIGH-THROUGHPUT SCREENING IN THE PRESENCE OF HUMAN ERYTHROCYTES. **Charles G. Starr**, Jing He, William C. Wimley

1887-Pos BOARD B207
DEVELOPMENT OF REFINED BACTERIAL SPHEROPLAST ANALYSES TO CHARACTERIZE HYBRID ANTIMICROBIAL PEPTIDES. **Heidi M. Wade**, Louise E O Darling, Donald E. Elmore

1888-Pos BOARD B208
REAL-TIME CHARACTERIZATION OF AN ANTIMICROBIAL MECHANISM-OF-ACTION WITH NONLINEAR OPTICAL SCATTERING. **Michael J. Wilhelm**, Bruk Mensa, Mohammad Sharifian Gh., William F. DeGrado, Hai-Lung Dai

Membrane Structure III (Boards B209–B224)

1889-Pos BOARD B209
LIQUID MEMBRANE FLUCTUATIONS DRIVE ORDERED MONOLAYER DOMAIN ALIGNMENT AND RAFT STACKING. **Timur R. Galimzyanov**, Veronika V. Alexandrova, Petr I. Kuzmin, Peter Pohl, Sergey A. Akimov

1890-Pos BOARD B210
MECHANICAL PROPERTIES OF MODEL ERYTHROCYTES MEMBRANES FROM HEALTHY AND HEREDITARY SPHEROCYTOSIS SUBJECTS. **Bruna R. Casadei**, Amanda C. Caritá, Valéria F. Dutra, Eneida de Paula, Rumiana Dimova, Maria S. Figueiredo, Karin A. Riske

1891-Pos BOARD B211
LIPIDS REGULATED THROUGH MEMBRANE TOPOGRAPHY REVEALED BY SINGLE PARTICLE TRACKING. **Xinxin Woodward**, Abir Maarouf Kabbani, Christopher V. Kelly

1892-Pos BOARD B212
ARCHAEOAL-INSPIRED LIPIDS EXHIBIT LOW MEMBRANE PERMEABILITY DUE TO ENTROPIC EFFECTS. Geoffray Leriche, Karthikeyan Diraviyam, Young Hun Kim, Takaaki Koyanagi, Olivia Eggenberger, Thomas B. H. Schroeder, Michael Mayer, Jerry Yang, **David Sept**

1893-Pos BOARD B213
LATERAL HETEROGENEITY OF CHOLESTEROL ON BINARY LIPID MIXTURES OF POPC/CHOL: A MOLECULAR DYNAMICS STUDY. **Fernando Favela-Rosales**, Arturo Galván-Hernández, Jorge Hernández-Cobos, Iván Ortega-Blake

1894-Pos BOARD B214
GIANT VESICLES FABRICATED FROM PAPER. **Anand B. Subramaniam**

1895-Pos BOARD B215
MANIPULATION OF PHASE-LIKE DOMAINS WITHIN INTACT B CELL PLASMA MEMBRANES AND VISUALIZATION OF THEIR COMPOSITION USING SUPER-RESOLUTION MICROSCOPY. **Marcos F. Nunez**, Matthew B. Stone, Sarah L. Veatch

1896-Pos BOARD B216
BENDING MODULUS OF BOLALIPIDS UNDER THE U-SHAPES DIFFUSION. **Sergei I. Mukhin**, Daniyar Gabdullin

1897-Pos BOARD B217
DIFFERENT STATIC AND SIMILAR KINETIC PHASE BEHAVIOR SEEN FOR MONOOLEIN AND A SISTER COMPOUND. Andrew D. Folkerts, **Paul E. Harper**

1898-Pos BOARD B218
HYSTERESIS AND THE CHOLESTEROL-DEPENDENT MELTING TRANSITION OF THE MARTINI MODEL. **Alexis Webb**, Clement Arnarez, Edward Lyman

1899-Pos BOARD B219
ULTRADONUT TOPOLOGY OF THE NUCLEAR ENVELOPE. Mehdi Torbati, Tanmay P. Lele, **Ashutosh Agrawal**

1900-Pos BOARD B220
STABILIZATION OF CELL MEMBRANE STRUCTURES BY CURVATURE-INDUCING PROTEINS. **Morgan Chabanon**, Padmini Rangamani

1901-Pos BOARD B221
SOLUBILIZATION OF LIPID MEMBRANES BY STYRENE-MALEIC ACID COPOLYMERS: IMPORTANCE OF POLYMER COMPOSITION AND PH. **Stefan Scheidelaar**, Juan J. Dominguez, Jonas M. Dorr, Martijn C. Koorengel, Cornelis A. van Walree, J. Antoinette Killian

1902-Pos BOARD B222
NANOSCOPIC LIPID DOMAINS CHARACTERIZED BY ISCAT MICROSCOPY. **Matthew C. Blosser**, Helena L. E. Coker, Mark I. Wallace

1903-Pos BOARD B223
OPTIMIZING CONDITIONS FOR THE ISOLATION OF MEMBRANE PROTEINS BY STYRENE-MALEIC ACID COPOLYMERS: A CASE STUDY ON E. COLI INNER MEMBRANES. **Jonas M. Doerr**, Martijn C. Koorengevel, J. Antoinette Killian

1904-Pos BOARD B224
MEMBRANE PROTEIN EXTRACTION BY STYRENE-MALEIC ACID COPOLYMERS IS INDEPENDENT OF SUBCELLULAR LOCALIZATION BUT IS INFLUENCED BY MEMBRANE ORGANIZATION. **Jonas M. Doerr**, Juan J. Dominguez Pardo, Marleen H. van Coevoorden-Hameete, Casper C. Hoogenraad, J. Antoinette Killian

Protein-Lipid Interactions: Structures (Boards B225–B252)

1905-Pos BOARD B225
COMPUTATIONAL CHARACTERISATION OF THE MODULATION OF MEMBRANE PROTEINS BY LIPIDS. **Carmen Domene**, Javier Iglesias Fernandez, Richard Naftalin, Peter J Quinn

1906-Pos BOARD B226
MOLECULAR DYNAMICS SIMULATIONS OF G-PROTEIN COUPLED RECEPTOR LIPID INTERACTIONS. **George Hedger**, Hsin-Yung Yen, Idlir Liko, Carol V. Robinson, Christian Siebold, Mark S. P. Sansom

1907-Pos BOARD B227
RATIONAL DESIGN OF NEW ANTIMICROBIAL PEPTIDES TARGETING GRAM NEGATIVE BACTERIA. **Loan K. Huynh**, Goutam Gupta

1908-Pos BOARD B228
DIRECT OBSERVATION OF UNIDIRECTIONAL CHOLESTEROL FLIPPING ON THE SURFACE OF P-GLYCOPROTEIN. **Sundar Thangapandian**, Emad Tajkhorshid

1909-Pos BOARD B229
P-GP LIPID UPTAKE PATHWAYS DETERMINED BY COARSE-GRAIN MOLECULAR DYNAMIC SIMULATION. **Estefania Barreto Ojeda**, Valentina Corradi, Ruo-Xu Gu, Peter Tieleman

1910-Pos BOARD B230 INTERNATIONAL TRAVEL AWARDEE
LIPID TRANSFER MECHANISM OF CETP BETWEEN HDL AND LDL: A COARSE-GRAINED SIMULATION STUDY. **Venkata Reddy Chirasani**, Sanjib Senapati

1911-Pos BOARD B231
ROLE OF BOUND PHOSPHOLIPIDS IN STRUCTURAL STABILITY AND FUNCTIONALITY OF CHOLESTERYL ESTER TRANSFER PROTEIN. **Prasanna Diddige Revanasiddappa**, Revathi Shankar, Sanjib Senapati

1912-Pos BOARD B232
OXIDATION STATE AND PH DEPENDENCE OF CYTOCHROME C BINDING TO CARDIOLIPIN-CONTAINING LIPOSOMES. **Bridget Milorey**, Reinhard Schweitzer-Stenner

1913-Pos BOARD B233
ALANINE CHARGE SCREENING DEMONSTRATES CYTOCHROME C UNFOLDING ON CARDIOLIPIN MEMBRANE SURFACES. **Margaret M. Elmer-Dixon**, Bruce E. Bowler

1914-Pos BOARD B234
EXPLORING THE STABILITY AND CARDIOLIPIN AFFINITY OF CYTOCHROME C'S DOMAIN SWAPPED DIMER CONFORMATION. **Harmen B. Steele**, Levi J. McClelland, J.B. Alexander Ross, Bruce E. Bowler

1915-Pos BOARD B235
SELECTIVE PROBING OF NON-NATIVE CARDIOLIPIN-BOUND CONFORMATIONS OF FERRICYTOCHROME C VIA FERROCYANIDE-MEDIATED PHOTO-REDUCTION. **Dmitry Malyshka**, Reinhard Schweitzer-Stenner

1916-Pos BOARD B236 INTERNATIONAL TRAVEL AWARDEE
BIOPHYSICAL INSIGHTS INTO THE MEMBRANE INTERACTION OF THE CORE AMYLOID-FORMING AB40 FRAGMENT K16-K28 AND ITS ROLE IN THE PATHOGENESIS OF ALZHEIMER'S DISEASE. **Swapna Bera**, Kyle Korshavn, Rajiv Kar, Mi Hee Lim, Ayyalusamy Ramamoorthy, Anirban Bhunia

1917-Pos BOARD B237 EDUCATION TRAVEL AWARDEE
STRUCTURAL ANALYSIS OF TAU PEPTIDE INTERACTIONS WITH LIPID MEMBRANES USING FOURIER TRANSFORM INFRARED SPECTROSCOPY. **Paige Engen**, Larry Masterson

1918-Pos BOARD B238
STRUCTURE AND DYNAMICS OF NANOPORE-CONFINED MEMBRANE PROTEINS ARE AFFECTED BY BILAYER LIPID COMPOSITION. Alexander A. Nevzorov, Morteza Jafarabadi, Antonin Marek, **Alex I. Smirnov**

1919-Pos BOARD B239
MEMBRANE TARGETING OF TIRAP IS NEGATIVELY REGULATED BY PHOSPHORYLATION IN ITS PHOSPHOINOSITIDE-BINDING MOTIF. **Daniel G. S. Capelluto**, Wen Xiong, Xiaolin Zhao, Shuyan Xiao, Jeffrey F. Ellena, Geofrey S. Armstrong, Carla V. Finkielstein

1920-Pos BOARD B240
STRUCTURE, DYNAMICS, AND FUNCTION OF THE MEMBRANE ASSOCIATED SRC FAMILY KINASE HCK. **Matthew P. Pond**, Rebecca Eells, Lydia Blachowicz, Frank Heinrich, Francisco Bezanilla, Gianluigi Veglia, Mathias Lösche, Benoît Roux

1921-Pos BOARD B241
HUMAN BETA DEFENSIN TYPE 3 INTERACTION WITH CHEMOKINE RECEPTOR CXCR4. **Liqun Zhang**, Aaron Weinberg, Zhiming Feng

1922-Pos BOARD B242
SPHINGOMYELIN MODULATES STRUCTURE OF APOLIPOPROTEIN A-I IN ALZHEIMER'S DISEASE. Vanshika Singh, Vinit Sansanwal, **Subhabrata Kar**

1923-Pos BOARD B243
KINETIC OFF-RATES OF MEMBRANE ASSOCIATED PROTEINS MEASURED IN UNROOFED CELLS. **Eric N. Senning**, Nicolas Reyes, Sharona E. Gordon

1924-Pos BOARD B244
THE USE OF MEMBRANE FUSION TO UNDERSTAND THE ROLE OF LUNG SURFACTANT PROTEIN B IN LIPID TRAFFICKING. **Kayla Kroning**, Otonye Braide

1925-Pos BOARD B245
DELIVERY OF LUNG SURFACTANT SP-C BASED NANOSTRUCTURES TO RESPIRATORY AIR-LIQUID INTERFACIAL FILMS SURFACTANT SP-C-BASED NANOSTRUCTURES TO RESPIRATORY AIR-LIQUID INTERFACIAL FILMS. Nuria Roldan, Antonio Cruz, Andrea Sanz, Marta Bruix, Jesús Pérez-Gil, **Begoña Garcia-Alvarez**

1926-Pos BOARD B246
LIPID BILAYER ASSOCIATION OF THE ALTERNATIVELY TRANSLATED REGION OF PTEN-LONG. **Anne-Marie Bryant**, Arne Gericke

1927-Pos BOARD B247
PTEN BINDING MECHANISM WITH COMPOSITIONALLY DIVERSE LIPID MODEL MEMBRANES. Brittany M. Neumann, Katrice E. McLoughlin, Vanessa Pinderi, Rakesh Harishchandra, Alonzo Ross, **Arne Gericke**

1928-Pos BOARD B248
STRUCTURE, DYNAMICS, AND INTERACTIONS OF GPI-ANCHORED HUMAN GLYPICAN-1 HAVING N-GLYCANS AND HEPARAN SULFATES IN MEMBRANES. **Hongjing Ma**, Jumin Lee, Wonpil Im

1929-Pos BOARD B249
ASSEMBLY OF MATRIX PROTEIN 1 OF INFLUENZA A VIRUS AND ITS ROLE IN BUDDING PROCESS. Liudmila A. Shilova, Anna S. Lyushnyak, Denis G. Knyazev, Natalia V. Fedorova, Liudmila A. Baratova, **Oleg V. Batishchev**

1930-Pos BOARD B250
TUBULIN ON BIOMIMETIC MITOCHONDRIAL MEMBRANES: STRUCTURAL FEATURES AND LIPID DISCRIMINATION. **David P. Hoogerheide**, Sergei Yu. Noskov, Daniel Jacobs, Hirsh Nanda, Tatiana K. Rostovtseva, Sergey M. Bezrukov

1931-Pos BOARD B251
MEMBRANE BOUND STRUCTURES OF PERIPHERAL MEMBRANE BINDING PROTEINS TIM3 AND TIM1 PRODUCED BY MOLECULAR DYNAMICS INFORMED ANALYSIS OF X-RAY SCATTERING EXPERIMENTS. **Daniel Kerr**, Zhiliang Gong, Greg Tietjen, Javier Baylon, Luke Hwang, J. Michael Henderson, Binhua Lin, Mati Meron, Wei Bu, Mark Schlossman, Emad Tajkhorshid, Erin Adams, Ka Yee Lee¹⁰

1932-Pos BOARD B252
CURVATURE MEDIATED INTERACTIONS IN HIGHLY CURVED MEMBRANES. **Afshin Vahid Belarghou**, Anđela Šarić, Timon Idema

General Protein-Lipid Interactions III (Boards B253–B264)

1933-Pos BOARD B253
MOLECULAR MECHANISM OF LIPID SCRAMBLING BY OPSIN. **George Khelashvili**, Kalpana Pandey, Harel Weinstein, Anant K. Menon

1934-Pos BOARD B254
AN OPSIN MONOMER SCRAMBLES PHOSPHOLIPIDS <. **Kalpana Pandey**, Birgit Ploier, Michael Goren, George Khelashvili, Anant Menon

1935-Pos BOARD B255
ROLE OF SOFT MATTER IN G-PROTEIN-COUPLED RECEPTOR SIGNALING. **Udeep Chawla**, Suchithranga M.D.C Perera, Andrey V. Struts, Michael C. Pitman, Michael F. Brown

1936-Pos BOARD B256
AUTOMATED IDENTIFICATION OF CHOLESTEROL INTERACTION SITES ON G-PROTEIN COUPLED RECEPTORS BY COARSE-GRAINED SIMULATION. **Eric Rouviere**, Cément Arnarez, Edward Lyman

1937-Pos BOARD B257
SINGLE MOLECULE STUDIES OF A MEMBRANE-BOUND, MASTER KINASE CIRCUIT... DETECTING INTERACTIONS OF TWO MASTER KINASE PAIRS ON THE MEMBRANE, PDK1-AKT1 AND PDK1-PKC ALPHA. **Brian P. Ziemba**, Joseph J. Falke

1938-Pos BOARD B258
LIPIDS, NEUROTRANSMITTERS AND THEIR RECEPTORS. Hanna Juhola, Fabio Lolicato, Pekka Postila, Ilpo Vattulainen, **Tomasz Rog**

1939-Pos BOARD B259
ROLE OF HYDROPHILIC GROOVE OF THE TMEM16 PROTEIN IN LIPID SCRAMBLING. **George Khelashvili**, Byoung Cheol Lee, Maria Falzone, Anant K. Menon, Alessio Accardi, Harel Weinstein

1940-Pos BOARD B260
REGULATION OF MEMBRANE BINDING BY THE C2-DOMAIN OF CYTOSOLIC PHOSPHOLIPASE A2 BY CERAMIDE-1-PHOSPHATE AND CALCIUM. Xiuhong Zhai, Yong-Guang Gao, Ivan A. Boldyrev, Lucy Malinina, Dinshaw J. Patel, Julian G. Molotkovsky, Charles A. Chalfant, **Rhoderick E. Brown**

1941-Pos BOARD B261
NON-NATIVE METAL IONS REVEAL THE ROLE OF ELECTROSTATICS IN SYNAPTOTAGMIN 1-MEMBRANE INTERACTION. **Sachin Katti**, Atul Srivastava, Bin Her, Alexander B. Taylor, Tatyana Igumenova

1942-Pos BOARD B262
MOLECULAR DETAILS OF THE PH DOMAIN OF ACAP1 PROTEIN BINDING TO PIP2-CONTAINING MEMBRANES. **Chun Chan**, Lanyuan Lu, Fei Sun, Jun Fan

1943-Pos BOARD B263
ACTIVATION OF PI3K BY RAS: SINGLE MOLECULE STUDIES OF THE ACTIVATION MECHANISM. **Thomas Buckles**, Brian Ziemba, John E. Burke, Glenn Masson, Roger Williams, Joseph J. Falke

1944-Pos BOARD B264
QUANTITATION OF CARDIOLIPIN BINDING TO HUMAN AUTOPHAGY (MITOPHAGY)-RELATED ATG-8 PROTEINS. Zuriñe Antón, Ane Landajuela, Javier H. Hervás, L. Ruth Montes, Sonia Hernández-Tiedra, **Felix M Goni**, Guillermo Velasco, Alicia Alonso

Exocytosis and Endocytosis II (Boards B265–B280)

1945-Pos BOARD B265
MEMBRANE DEFECTS RECRUIT C-TERMINUS OF COMPLEXIN TO SYNAPTIC VESICLES. **Jiajie Diao**

1946-Pos BOARD B266
SOLUBLE BETA-AMYLOID MODIFIES PRESYNAPTIC MEMBRANE CHOLESTEROL AND RIGIDITY. **Qi Zhang**

1947-Pos BOARD B267
CHARACTERIZING THREE COMPONENT HETEROMERIC COMPLEXES MEDIATED BY OTOFERLIN, A MULTIVALENT MEMBRANE FUSION PROTEIN, USING A NOVEL SINGLE-MOLECULE ASSAY. **Colin Johnson**, Nicole Hams

1948-Pos BOARD B268
SNARE PROTEINS ENTROPICALLY EXPAND MEMBRANE FUSION PORES. **Sathish Thiyagarajan**, Zhenyong Wu, Oscar D. Bello, Sarah M. Auclair, Wensi Vennekate, Shyam S. Krishnakumar, Erdem Karatekin, Ben O'Shaughnessy

1949-Pos BOARD B269
EXAMINATION OF ANTIGEN-INDUCED ENDOCYTIC STRUCTURE FORMATION IN B LYMPHOCYTES. **Thaddeus M. Davenport**, Andrea M. Dickey, Kem A. Sochacki, Justin W. Taraska

1950-Pos BOARD B270
BULKY LIGANDS AS ENTROPIC INHIBITORS OF RECEPTOR UPTAKE BY ENDOCYTOSIS. **Andre C.M. DeGroot**, David J. Busch, Carl C. Hayden, Aaron T. Alpar, Jeanne C. Stachowiak

1951-Pos BOARD B271
MOLECULAR MECHANISMS OF V-SNARE FUNCTION IN SECRETORY GRANULE EXOCYTOSIS. **Misty Marshall**, Per-eric Lund, Sebastian Barg

1952-Pos BOARD B272
A C1-C2 MODULE IN MUNC13 INHIBITS CALCIUM-DEPENDENT NEUROTRANSMITTER RELEASE. **Jeremy Dittman**, Francesco Michelassi, Haowen Liu, Zhitao Hu

1953-Pos BOARD B273
HOMOLOGOUS C2A DOMAINS OF MYOFERLIN AND DYSFERLIN HAVE DISTINCT LIPID BINDING SPECIFICITIES. **Faraz Harsini**, Anne Rice, Sukanya Chebrolu, Kerry Fuson, Andrei Turtoi, R. Bryan Sutton

1954-Pos BOARD B274
CALCIUM-MEDIATED DOCKING AND FUSION OF PURIFIED DENSE CORE VESICLES WITH RECONSTITUTED MEMBRANES. **Alex Kreutzberger**, Volker Kiessling, Binyong Liang, Patrick Seelheim, J. David Castle, Lukas K. Tamm

1955-Pos BOARD B275
FUSION PORE SELECTIVITY IN CHROMAFFIN CELLS. **Joannalyn Delacruz**, Meng Huang, Joan Lenz, Manfred Lindau, Shailendra Rathore

1956-Pos BOARD B276
DISSECTING THE BIOMECHANICAL FEEDBACK BETWEEN PLASMA MEMBRANE CURVATURE AND ENDOCYTIC PROTEINS IN MAMMALIAN CELLS USING NANOSTRUCTURED SUBSTRATES. **Jessica R. Marks**, Guiseppa Calafiore, Stefano Cabrini, David Drubinn

1957-Pos BOARD B277
SIMULATION-GUIDED OPTIMIZATION OF ELECTRODE ARRAYS FOR ELECTROCHEMICAL IMAGING OF QUANTAL EXOCYTOSIS. **Seyedmehdi Orouji**, Kevin D. Gillis

1958-Pos BOARD B278
DEVELOPMENT OF BIOPHYSICAL MARKERS THAT QUANTIFY METASTATIC POTENTIALS OF PROSTATE CANCER CELLS USING TSUNAMI MICROSCOPE. **Yen-Liang Liu**, Aaron M. Horning, Evan P. Perillo, Cong Liu, Mirae Kim, Rohan Vasisht, Hannah Horng, Andrew K. Dunn, Chun-Liang Chen, Hsin-Chih Yeh

1959-Pos BOARD B279
INVOLVEMENT OF ACTIN DYNAMICS IN ENDOCYTOTIC PROCESS REVEALED BY FAST-SCANNING ATOMIC FORCE MICROSCOPE. **Aiko Yoshida**, Nobuaki Sakai, Yoshitsugu Uekusa, Yanshu Zhang, Masahiro Kumeta, Shige H. Yoshimura

1960-Pos BOARD B280 EDUCATION TRAVEL AWARDEE
EFFECTS OF MEMBRANE TENSION ON SNARE-MEDIATED SINGLE FUSION PORES. **Natasha Dudzinski**, Erdem Karatekin

Calcium Signaling II (Boards B281–B297)

1961-Pos BOARD B281
STUDYING THE EFFECTS OF GLUCAGON-MODULATORS ON THE ACTIVITY OF SECOND MESSENGERS IN SUBCELLULAR COMPARTMENTS OF PANCREATIC ISLET CELLS. **Alessandro Ustione**, Jing Hughes, Subhadra Gunawardana, David W. Piston

1962-Pos BOARD B282
NOVEL APPROXIMATION OF A STATIONARY SINGLE-CHANNEL Ca^{2+} NANODOMAIN. **Victor Matveev**

1963-Pos BOARD B283
CALCIUM MICRODOMAINS AND MODULATION IN MECHANOSENSORY HAIR CELLS. **Holly A. Holman**

1964-Pos BOARD B284
TARGETED OPTOGENETIC ACTIVATION OF CALCIUM TRANSIENTS IN DEVELOPING SKELETAL MUSCLE CELLS. Stephane Sebillle, Oualid Ayad, Christian Cognard, Patrick Bois, **Aurelien Chatelier**

1965-Pos BOARD B285
PLASMA MEMBRANE ORAI1 AND SEPTIN ORGANIZATION DURING CALCIUM SIGNALLING. Zachary Katz, Chan Zhang, Ariel Quintana, Björn Lillemeier, **Patrick Hogan**

1966-Pos BOARD B286
LEAD TIGHTLY ASSOCIATES TO NEURONAL CALCIUM SENSOR (NCS) PROTEIN DREAM AND PROMOTES STRUCTURAL CHANGES ANALOGOUS TO CALCIUM BOUND DREAM. **Samiol Azam**, Jaroslava Miksovska

1967-Pos BOARD B287
REWIRING CALCIUM SIGNALING FOR GENOME EDITING AND TRANSCRIPTIONAL REPROGRAMMING. **Nhung T. Nguyen**, Lian He, Yi Liang, Yun Huang, Yubin Zhou

1968-Pos BOARD B288
CALMODULIN INTERACTS AND REGULATES ENZYME ACTIVITY OF THE MAMMALIAN SPERM PHOSPHOLIPASE C. Michail Nomikos, Angelos Thanassoulas, Brian L. Calver, Maria Theodoridou, Luke Buntwal, Zili Sideratou, George Nounesis, **F. Anthony Lai**

1969-Pos BOARD B289
AMINO ACID CONTRIBUTIONS TO BINDING ACROSS PAIRED EF-HANDS IN CALMODULIN. **Suzanna Bennett**, Margaux Miller, Thomas Middendorf, Richard Aldrich

1970-Pos BOARD B290
AUTOMATED CHARACTERIZATION OF DYNAMIC PARAMETERS OF INTRACELLULAR CALCIUM SIGNALS. **Laurent MacKay**

1971-Pos BOARD B291
NOVEL APPROACH TO STUDY SERCA FUNCTION *IN SITU*. **Elisa Bovo**, Sidharth Bhayani, Olga Raguimova, Seth L. Robia, Aleksey V. Zima

1972-Pos BOARD B292
STIMULATORY AND INHIBITORY EFFECTS OF PKC ISOZYMES ARE MEDIATED BY SERINE/THREONINE PKC SITES OF THE $CaV2.3A_1$ SUBUNITS. **Ganesan L. Kamatchi**, Senthilkumar Rajagopal, Brittney K. Burton

1973-Pos BOARD B293
DYNAMIC SUBSTRATE GATING IN CAMKII BY AUTOPHOSPHORYLATION. Derrick E. Johnson, Swarna S. Ramaswamy, **Andy Hudmon**

1974-Pos BOARD B294 EDUCATION TRAVEL AWARDEE
SINGLE-CELL INVESTIGATION OF THE ROLE OF CALCIUM BURSTS IN HUMAN IMMUNE CELLS. **Emmet A. Francis**, Volkmar Heinrich

1975-Pos BOARD B295
ATRIAL SPECIFIC PITX2 INSUFFICIENCY INCREASES THE FREQUENCY OF CALCIUM SPARKS, WAVES, AND AFTER-DEPOLARIZATIONS IN MOUSE ATRIAL MYOCYTES. Carmen Tarifa, Adela Herraiz-Martinez, Alexander Vallmitjana, Selma A. Serra, Diego Franco, Raul Benitez, **Leif Hove-Madsen**

1976-Pos BOARD B296
CONTRIBUTION OF MITOCHONDRIAL CALCIUM UPTAKE TO INTRACELLULAR CALCIUM HOMEOSTASIS STUDIED WITH ORGANELLE-TARGETTED PROBES IN SKELETAL MUSCLE FIBERS. **Carlo Reggiani**, Marta Canato, Paola Capitanio, Lina Cancellara, Feliciano Protasi

1977-Pos BOARD B297
NECROPTOSIS EXECUTION IS MEDIATED BY PLASMA MEMBRANE NANOPORES THAT ARE INDEPENDENT OF CALCIUM. **Uris L. Ros Quincoces**, Ana J. Garcia-Saez

Cardiac, Smooth, and Skeletal Muscle Electrophysiology II (Boards B298–B312)

1978-Pos BOARD B298
ATTENUATION OF CONDUCTION SLOWING DURING GLOBAL ISCHEMIA IN GUINEA PIG HEARTS THROUGH INCREASED EXTRACELLULAR CALCIUM. **Gregory S. Hoeker**, Steven Poelzing

1979-Pos BOARD B299
EXTRACELLULAR ATP TRIGGERS ACTION POTENTIALS IN VENTRICULAR CARDIOMYOCYTES. **Kyungsoo Kim**, Frank Raucci, Sabine Huke, Bjorn C. Knollmann

1980-Pos BOARD B300
THE COMPARISON OF VOLUNTARY AND FORCED EXERCISES ON CARDIAC FUNCTION OF DCM MODEL MICE. **Masami Sugihara**, Ryo Kakigi, Takashi Murayama, Takashi Sakurai, Takashi Miida, Sachio Morimoto, Nagomi Kurebayashi

1981-Pos BOARD B301

ALTERATION OF ACTION POTENTIAL DURING EARLY ISCHEMIA IN THE HEART. **Rimantas Treinys**, Regina Mačianskienė, Mante Almanaityte, Jonas Jurevicius

1982-Pos BOARD B302

BETA-ADRENERGIC AND ATP SENSITIVE POTASSIUM CHANNEL EFFECTS ON VENTRICULAR ACTION POTENTIAL DURATION: ALTERATIONS WITH EXERCISE TRAINING. **Xinrui Wang**, Robert H. Fitts

1983-Pos BOARD B303

IONIC CURRENT CHANGES DURING ACTION POTENTIALS IN PORCINE POST-MI HEART FAILURE MODEL. **Bence Hegyi**, Julie Bossuyt, Leigh G. Griffiths, Rafael Shimkunas, Zana Coulibaly, Kenneth S. Ginsburg, Leighton T. Izu, Tamás Bányász, Donald M. Bers, Ye Chen-Izu

1984-Pos BOARD B304

SODIUM HOMEOSTASIS DYNAMICALLY REGULATES SINOATRIAL NODE PACEMAKER ACTIVITY. **Stefano Morotti**, Christian Rickert, Joshua St. Clair, Nicholas Ellinwood, Catherine Proenza, Eleonora Grandi

1985-Pos BOARD B305

LOSS OF CAVEOLIN-3 CAUSES HEART RHYTHM ABNORMALITIES BY AFFECTING Ca^{2+} -VOLTAGE COUPLING IN THE MOUSE SINOATRIAL NODE. **Di Lang**, Aleah Warden, Timothy Kamp, Alexey Glukhov

1986-Pos BOARD B306

ELECTRICALLY DORMANT SINOATRIAL NODAL CELLS (SANC) ARE AWAKENED BY INCREASED CAMP-DEPENDENT PHOSPHORYLATION OF COUPLED-CLOCK PROTEINS. **Kenta Tsutsui**, Mary S. Kim, Ashley N. Wirth, Oliver J. Monfredi, Bruce D. Ziman, Rostislav Byshkov, Alexander A. Maltsev, Victor A. Maltsev, Edward G. Lakatta

1987-Pos BOARD B307

A SEXY APPROACH TO PACEMAKING. **Ursula Doris**, Sunil Logantha, Maria Petkova, Yu Zhang, Sanjay Kharche, Halina Dobrzynski, Joseph Yanni

1988-Pos BOARD B308

A METHODOLOGY TO IMPROVE HUMAN VENTRICULAR MODELS FOR THE INVESTIGATION OF CARDIAC ARRHYTHMIAS. **Jesús Carro**, José F Rodríguez-Matas, Esther Pueyo

1989-Pos BOARD B309

MEMORY AND STABILITY OF THE CARDIAC ACTION POTENTIAL REPOLARIZATION IN THE SPACE OF ITS ALLOWED STATES: A SINGLE CELL SIMULATION STUDY. **Massimiliano Zaniboni**

1990-Pos BOARD B310

AN INTEGRATED MODEL OF HUMAN BETA-ADRENERGIC SIGNALING AND VENTRICULAR ELECTROPHYSIOLOGY REVEALS CONTRIBUTORS TO POSITIVE INOTROPY. **Jingqi Gong**, W. Clayton Thompson, Cynthia J. Musante, Eric A. Sobie

1991-Pos BOARD B311

CAPACITIVE MEMORY SUPPRESSES ALTERNANS AND PROMOTES SPONTANEOUS ACTIVITY IN A FRACTIONAL-ORDER MINIMAL CARDIOMYOCYTE MODEL. Tien Comlekoglu, **Seth H. Weinberg**

1992-Pos BOARD B312

ACTIVATION OF TRPM3 IN PERIVASCULAR SENSORY NERVES INDUCES DILATION OF MOUSE RESISTANCE ARTERIES. **Lucia Alonso-Carbajo**, Yeranddy A. Alpizar, Justyna Startek, Jose Ramón López-López, María Teresa Pérez-García, Karel Talavera

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating III (Boards B313–B322)

1993-Pos BOARD B313

KV2.1/KV6.4 HETEROTETRAMERS ARE FUNCTIONAL IN TWO STOICHIOMETRIC CONFIGURATIONS. Glenn Regnier, **Dirk J. Snyders**

1994-Pos BOARD B314

LIPID-DEPENDENT GATING OF KV CHANNELS AND EXCITABILITY CHANGE OF CEREBELLAR PURKINJE NEURONS IN AN NPC1 MODEL MOUSE. **Qiu-Xing Jiang**, Hui Zheng Zheng, Hong Xing, Gaya Yadav, Yuqing Li

1995-Pos BOARD B315

TRABECTEDIN RE-EDUCATES RESTING PERITONEAL MACROPHAGES INTO M1 SUBTYPE. **Diego A. Peraza**, Marina Mojena, Alicia de la Cruz, Teresa Gonzalez, Lisardo Bosca, Carlos M. Galmarini, Carmen Valenzuela

1996-Pos BOARD B316

SLO3 CHANNEL IS ESSENTIAL FOR FERTILIZED EGG DEVELOPMENT BY CONTROLLING CRITICAL MOLECULES FOR MITOSIS. Qiong-Yao Tang, Ye Liu, Zheng Xu, Fang-Fang Zhang, Fei-Fei Zhang, Yan Li, Jose M. Eltit, Diomedes E. Logothetis, **Zhe Zhang**

1997-Pos BOARD B317

ROLE OF TANK-BINDING KINASE IN NEURODEGENERATION PRODUCED BY SPINOCEREBELLAR ATAXIA TYPE 13. **Yalan Zhang**, Luis Varela, Tamas Horvath, Leonard Kaczmarek

1998-Pos BOARD B318 INTERNATIONAL TRAVEL AWARDEE

HIV-TAT INDUCES A DECREASE IN I_{Kr} AND I_{Ks} VIA REDUCTION IN PHOSPHATIDYLINOSITOL-(4,5)-BISPHOSPHATE AVAILABILITY. Zeineb Es-Salah-Lamoureux, Mariam Jouni, **Olfat A. Malak**, Nadjat Belbachir, Zeina Reda Al Sayed, Marine Gandon-Renard, Guillaume Lamirault, Chantal Gauthier, Isabelle Baró, Flavien Charpentier, Kazem Zibara, Patricia Lemarchand, Bruno Beaumelle, Nathalie Gaborit, Gildas Loussouarn

1999-Pos BOARD B319

FLAVONOIDS AS NATURAL MODULATORS OF MITOCHONDRIAL POTASSIUM CHANNEL. **Piotr Bednarczyk**, Anna Kicinska, Wieslawa Jarmuszkiewicz, Renata Debowska, Adam Szewczyk

2000-Pos BOARD B320

MECHANOSENSITIVITY OF MITOCHONDRIAL POTASSIUM CHANNELS. **Piotr Koprowski**, Agnieszka Kielbasa, Bogusz Kulawiak, Adam Szewczyk

2001-Pos BOARD B321

IDENTIFICATION OF LARGE-CONDUCTANCE CALCIUM-REGULATED K CHANNEL IN HUMAN DERMAL MITOCHONDRIA. **Adam Szewczyk**, Anna Kicinska, Bartłomiej Augustynek, Bogusz Kulawiak, Wieslawa Jarmuszkiewicz, Piotr Bednarczyk

2002-Pos BOARD B322

SINGLE-CHANNEL RECORDINGS OF K^+ CHANNELS EXPRESSED IN *SACCHAROMYCES CEREVISIAE*. **Maria A. Tejada**, Karen Molbaek, Halim Cazimi, Peter Ellekvist, Kirstine Calloe, Claus H. Nielsen, Per Amstrup Pedersen, Dan A. Klaerke

TRP Channels III (Boards B323–B338)

2003-Pos BOARD B323

TRPC5 CHANNELS ARE INHIBITED BY WT PRESENILIN1 BUT NOT THE ALZHEIMER'S DISEASE MUTANT M146V. Sukhjinder Kaur, Zuleen Chia-Chang, Paris Hanson, Laura Yorke, **Zafir Buraei**

2004-Pos BOARD B324

ATYPICAL TRP CHANNEL PHARMACOLOGY IN SCHISTOSOMES. Swarna Bais, Corbett T. Berry, Xiaohong Liu, Bruce D. Freedman, **Robert M. Greenberg**

2005-Pos BOARD B325
PHARMACOLOGY OF DROSOPHILA MELANOGASTER TRPA1 ISO-FORMS. **Brett Boonen**

2006-Pos BOARD B326
NOVEL ROLE OF PUFAS AS ESSENTIAL COFACTORS FOR TRPV4 FUNCTION. **Rebeca C. Caires**, Valeria Vasquez, Julio F. Cordero-Morales

2007-Pos BOARD B327
THE VGLUT3^{CRE};ROSA26^{Al14} MOUSE MODEL AS A TOOL FOR STUDYING TRPM8⁺ SENSORY NEURONS. **Theanne N. Griffith**, Javier E. Marquina-Solis, Adrian C. Thompson, Blair A. Jenkins, Ellen A. Lumpkin

2008-Pos BOARD B328
ANALOG-TO-DIGITAL CONVERSION OF DIFFERENTIAL METABOTROPIC INPUTS TO LATERAL SEPTAL NEURONS BY THE COMBINED ACTION OF TRPC4 AND GIRK. **Michael X. Zhu**, Jin-bin Tian

2009-Pos BOARD B329
CROSSTALK OF PAIN AND PLEASURE: TRPV1 IS A NOVEL OXYTOCIN RECEPTOR. Yelena Nersesyan, Lusine Demirkhanyan, Tyler Dawson, Swapna Asuthkar, Deny Cabezas-Bratesco, Sebastian Brauchi, **Eleonora Zakharian**

2010-Pos BOARD B330
THE ROLE OF TRPC CHANNELS IN ISCHEMIC NEURONAL CELL DEATH. **Jaepyo Jeon**, Guanghua Sun, Jinbin Tian, Sung-Ming Ting, Jaroslaw Aronowski, Michael X. Zhu

2011-Pos BOARD B331
SPECIES DIFFERENCES IN URINARY BLADDER SMOOTH MUSCLE TRPM4 CHANNEL ACTIVITY: COMPARISON BETWEEN RAT, GUINEA PIG, AND MAN. **Georgi V. Petkov**

2012-Pos BOARD B332
TRPV1 ACTIVATION STIMULATES BROWN ADIPOSE TISSUE ACTIVATION AND ENHANCES MITOCHONDRIAL BIOGENESIS TO COUNTERACT DIET-INDUCED OBESITY. **Padmamalini Baskaran**, Zhaojie Zhang, Baskaran Thyagarajan

2013-Pos BOARD B333
TRPV1 EXPRESSION IN ADIPOSE TISSUES DETERMINES METABOLIC ACTIVITY AND ENERGY EXPRESSION TO COUNTER DIET-INDUCED OBESITY. **Baskaran Thyagarajan**, Padmamalini Baskaran

2014-Pos BOARD B334
ANALYSIS OF ROLE OF TRPV1 IN EXERCISE, ENERGY INTAKE AND OBESITY. Baskaran Thyagarajan, Padmamalini Baskaran, **Vivek Krishnan**

2015-Pos BOARD B335
EFFECTS OF AN ACTIVATOR OF TRPM7, NALTRIBEN, ON MAGNESIUM INFLUX OF RAT VENTRICULAR MYOCYTES. **Michiko Tashiro**, Hana Inoue, Masato Konishi

2016-Pos BOARD B336 INTERNATIONAL TRAVEL AWARDEE
DISSECTING LOCAL AND SYSTEMIC EFFECTS OF TRPV1 ON BLADDER CONTRACTILITY IN DIABETES. **Bizhan R. Sharopov**, Kseniya L. Gulak, Igor B. Philyppov, Anna V. Sotkis, Yaroslav M. Shuba

2017-Pos BOARD B337
A PUTATIVE NUCLEAR/NUCLEOLAR SIGNAL SEQUENCE DIRECTS THE LOCALIZATION OF TRPM7 KINASE. **Ceredwyn E. Hill**, Adenike Ogunrinde, Christiane Whetstone, Evalina Williamson

2018-Pos BOARD B338
TRPV1 CONTRIBUTES TO ACROLEIN-INDUCED TOXICITY. **Yeranddy A. Alpizar**, Brett Boonen, Maarten Gees, Pieter Uvin, Thomas Voets, Dirk De Ridder, Wouter Everaerts, Karel Talavera

Ion Channels, Pharmacology, and Disease I (Boards B339–B357)

2019-Pos BOARD B339
STATE- AND USE-DEPENDENT BINDING OF KCNQ CHANNEL OPENERS. **Caroline K. Wang**, Alice W. Wang, Harley Kurata

2020-Pos BOARD B340
FUNCTIONAL ANNOTATION OF KCNQ1 VARIANTS OF UNKNOWN SIGNIFICANCE USING AUTOMATED ELECTROPHYSIOLOGY. **Carlos G. Vanoye**, Reshma R. Desai, Katarina L. Fabre, Jens Meiler, Charles R. Sanders, Alfred L. George

2021-Pos BOARD B341
THE EFFECTS OF EXTRACELLULAR PROTONS ON THE HERG POTASSIUM CHANNEL. **Stacey L. Wilson**, Neil V. Marrion, Jules C. Hancox

2022-Pos BOARD B342
THE ROLES OF SELECTED PORE RESIDUES IN PHARMACOLOGICAL INHIBITION OF THE HERG POTASSIUM CHANNEL BY A MINIMALLY STRUCTURED BLOCKER. **Matthew V. Helliwell**, Jules C. Hancox, Yi H. Zhang, Christopher E. Dempsey

2023-Pos BOARD B343
LAMPREY CFTR, AN EVOLUTIONARY ANCESTOR OF HUMAN CFTR, EXHIBITS NUMEROUS BIOPHYSICAL DISSIMILARITIES FROM HUMAN CFTR. **Guiying Cui**, Brandon B. Stauffer, Barry R. Imhoff, Amit Gaggar, Nael A. McCarty

2024-Pos BOARD B344
SMALL MOLECULE INDUCED CHANGES IN THE TRAFFICKING OF THE CYSTIC FIBROSIS CONDUCTANCE REGULATOR. **Zhihui Zhang**, David Heidary, Chris Richards

2025-Pos BOARD B345
CHARACTERIZATION OF CFTR ACTIVATORS AND INHIBITORS BY THE USE OF A PLANAR PATCH CLAMP SYSTEM. Andrea Brüggemann, Soren Friis, Tim Strassmeier, **Markus Rapedius**, Tom Goetze, Ilka Rinke, Claudia Haarmann, Nina Brinkwirth, Atsushi Ohtsuki, Takayuki Oka, Michael George, Niels Fertig

2026-Pos BOARD B346
DISCOVERY OF NAV1.7 MODULATORS FROM MARKETED DRUGS USING HIGH THROUGHPUT AUTOMATED ELECTROPHYSIOLOGICAL SYSTEM IONWORKS BARRACUDA. **Xueqin Chen**, Sui Fang, Qiang Ding, Zhaobing Gao

2027-Pos BOARD B347
STRUCTURE-BASED DISCOVERY OF POTENTIAL TWO-PORE-DOMAIN POTASSIUM CHANNEL TASK-3 (K_{2p}9.1) MODULATORS. David Ramírez, Julio Caballero, Leandro Zúñiga, Bárbara Arévalo, Aytug Kiper, Susanne Rinne, Niels Decher, **Wendy Gonzalez**

2028-Pos BOARD B348
PHARMACOLOGICAL CHARACTERIZATION OF THE NMDA-B-C IN PARALLEL BY AUTOMATED PATCH CLAMP. **Ilka Rinke**, Søren Friis, Claudia Haarmann, Alison Obergrussberger, Michael George, Andrea Brüggemann, Niels Fertig

2029-Pos BOARD B349
A TRADITIONAL CHINESE MEDICINE DRUG (TMYX) CONTROLS HEART RATE BY MODULATION OF THE PACEMAKER (F) CHANNELS. Manuel Paina, Chiara Piantoni, Luca Carnevali, Anthony Frosio, Annalisa Bucchi, Andrea Barbuti, Liu Sheng, Wang Yanyan, Yi Wang, Dario DiFrancesco, **Mirko Baruscotti**

2030-Pos BOARD B350
COMPUTATIONAL INVESTIGATIONS OF KATP CHANNEL PORE BLOCKERS. **Xingyu Chen**, Eva-Maria Zangerl-Plessl, Anna Stary-Weinzinger

2031-Pos BOARD B351
RATIONAL DESIGN OF KCA2 CHANNEL ACTIVATORS. **Heesung Shim**, Brandon Brown, Hai M. Nguyen, Vladimir Yarov-Yarovoy, Heike Wulff

2032-Pos BOARD B352
INVESTIGATION OF THE ION CHANNELS TMEM16A AND TRPC5 AND THEIR MODULATION BY INTRACELLULAR CALCIUM. Nina Brinkwirth, Søren Friis, Tom Goetze, Markus Rapedius, **James Costantin**, Andrea Brüggemann, Michael George, Niels Fertig

2033-Pos BOARD B353
STRUCTURAL DYNAMICS OF THE MSCL C-TERMINAL DOMAIN. **Adam D. Martinac**, Navid Bavi, Marien D. Cortes, Omid Bavi, Takeshi Nomura, Boris Martinac, Eduardo Perozo

2034-Pos BOARD B354
EXPRESSION AND CHARACTERIZATION OF WILDTYPE AND MUTANT FORMS OF HUMAN CONNEXIN31 USING *XENOPUS* OOCYTES. **Rasheed Bailey**, Husain Bneed, Dawn Fernandez, Shelby Rarick, Shahd Kadhim, Martha Skerrett

2035-Pos BOARD B355
MODULATION OF GABA(A) RECEPTORS BY GENERAL ANESTHETICS : A COMBINATORIC MODEL PREDICTS TWENTY YEARS OF CONCENTRATION-RESPONSE DATA (WITH A FEW INTERESTING EXCEPTIONS). **Grace Brannigan**

2036-Pos BOARD B356
SUBTYPE SELECTIVITY OF TETS ON GABA-A RECEPTORS. **Brandon Pressly**, Hai M. Nguyen, Heike Wulff

2037-Pos BOARD B357
ANALYSIS OF PARTIAL AND COMPLETE BLOCK OF AMANTADINE AND RIMANTADINE IN INFLUENZA A M2 S31N BY ELECTROPHYSIOLOGY AND CURVE FITTING METHODS. **Kelly L. McGuire**, David D. Busath

Other Channels I (Boards B358–B374)

2038-Pos BOARD B358
VOLTAGE- AND CURRENT CLAMP ON INDUCED PLURIPOTENT CARDIOMYOCYTES WITH AUTOMATED PATCH CLAMP. **Mads PG Korsgaard**

2039-Pos BOARD B359
BIOPHYSICAL INSIGHT INTO THE SUBSTRATE PERMEATION THROUGH THE MAJOR OUTER MEMBRANE CHANNELS OF *ACINETOBACTER BAUMANNII*. **Satya Prathyusha Bhamidimarri**, Michael Zahn, Jigneshkumar Dahyabhai Prajapati, Ulrich Kleinekathoefer, Bert van den Berg, Mathias Winterhalter

2040-Pos BOARD B360
THREE-STEP GATING TRIGGERED BY CONFORMATIONAL CHANGES OF THE MOTOR CHANNEL COMMON TO VIRAL DNA PACKAGING MOTOR OF T3, T4, SPP1, AND PHI29. **Zhouxiang Ji**, Shaoying Wang, Farzin Haque, Peixuan Guo

2041-Pos BOARD B361
PROBING THE ION PERMEABILITY OF THE BACTERIAL TRANSLOCON WITH A LOCKED TRANSLOCATION INTERMEDIATE AT THE SINGLE MOLECULE LEVEL. **Denis G. Knyazev**, Roland Kuttner, Mirjam Zimmermann, Christine Siligan, Peter Pohl

2042-Pos BOARD B362
A DESIGNER PEPTIDE TOXIN ISOLATED BY PHAGE DISPLAY THAT INHIBITS THE HUMAN VOLTAGE-GATED PROTON CHANNEL, HHV1. **Kelleigh Kennedy**, Ruiming Zhao, Qufei Li, Eduardo Perozo, Gerardo A. De Blas, Martin A. Pavarotti, Rodolfo Arias, Luis S. Mayorga, Steve A.N. Goldstein

2043-Pos BOARD B363
IDENTIFICATION OF ACTIVATING AND INHIBITING GATING MODIFIER TOXINS THAT TARGET THE S3-S4 LOOP OF THE HUMAN PROTON CHANNEL, HHV1. **Ruiming Zhao**, Kelleigh Kennedy, Qufei Li, Eduardo Perozo, Steve A. N. Goldstein

2044-Pos BOARD B364
HCN3 CHANNEL EXPRESSION IN HUMAN LEUKOCYTES. **Chiara Piantoni**, Angelica Gualdoni, Claudia Bazzini, Raffaella Milanese, Miryam Adelfio, Annalisa Bucchi, Andrea Barbuti, Matteo Pecchiari, Mirko Baruscotti, Dario DiFrancesco

2045-Pos BOARD B365
SILICA NANOPARTICLES INDUCE CALCIUM-PERMEABLE PORES IN PLASMA MEMBRANES. **Alicia Sanchez**, Kateryna Demydenko, Peter Hoet, Karel Talavera

2046-Pos BOARD B366
HOW TO GET LARGE DRUGS THROUGH SMALL PORES? EXPLOITING THE PORINS PATHWAY IN *PSEUDOMONAS AERUGINOSA*. Susruta Samanta, Tommaso D'Agostino, Ishan Ghai, Monisha Pathania, Silvia Acosta Gutierrez, Mariano Andrea Scorciapino, Igor Bodrenko, Richard Wagner, Bert van den Berg, Mathias Winterhalter, **Matteo Ceccarelli**

2047-Pos BOARD B367
MOLECULAR TRANSPORT THROUGH LARGE DIAMETER DNA ORIGAMI CHANNELS. **Swati Krishnan**, Friedrich Simmel

2048-Pos BOARD B368
FINGERPRINTING AND DIFFERENTIATION OF SMALL PROTEINS WITH A LARGE CHANNEL OF BACTERIOPHAGE PHI29 DNA PACKAGING MOTOR. **Zhouxiang Ji**, Shaoying Wang, Zhengyi Zhao, Zhi Zhou, Farzin Haque, Peixuan Guo

2049-Pos BOARD B369
PERTURBATION OF BILAYER SURFACE TENSION DIFFERENTIALLY MODULATES MECHANOSENSITIVE ION CHANNELS. **Navid Bavi**, Charles D. Cox, Omid Bavi, Boris Martinac

2050-Pos BOARD B370
NOVEL PROPERTIES OF LRRC8-MEDIATED VRAC CURRENTS. Antonella Gradogna, Héctor Gaitán-Peñas, Lara Laparra-Cuervo, Carles Solsona, Víctor Fernández-Dueñas, Alejandro Barrallo-Gimeno, Francisco Ciruela, Melike Lakadamyali, Raúl Estévez, **Michael Pusch**

2051-Pos BOARD B371
TRANSPORT OF SMALL AMINO ACIDS BY THE OUTER MEMBRANE PROTEIN OPRG OF *PSEUDOMONAS AERUGINOSA*. **Patrick Seelheim**, Raghavendar Reddy Sanganna Gari, Iga Kucharska, Lukas K. Tamm

2052-Pos BOARD B372
FILTERING WITH THE ELECTRIC FIELD: A STORY ON PROTEIN CHANNELS ELECTROSTATICS. **Silvia Acosta-Gutierrez**, Giuliano Mallico, Igor Bodrenko, Mariano Andrea Scorciapino, Matteo Ceccarelli

2053-Pos BOARD B373
HYDROPHOBIC GATING AND FUNCTIONAL ANNOTATION OF ION CHANNEL STRUCTURES BY MOLECULAR DYNAMICS SIMULATIONS. **Gianni Klesse**, Jemma Trick, Sivapalan Chelvanithilan, Prafulla Aryal, Jayne Wallace, Stephen Tucker, Mark S.P. Sansom

2054-Pos BOARD B374
EVOLUTIONARY ANALYSIS DISCRIMINATES BETWEEN ALTERNATIVE ASIC STRUCTURES. Marina Kasimova, Timothy Lynagh, Daniele Granata, Stephan Pless, **Vincenzo Carnevale**

Ligand-gated Channels I (Boards B375–B401)

- 2055-Pos BOARD B375**
IDENTIFICATION AND CHARACTERIZATION OF THE BINDING POCKET FOR NEGATIVE ALLOSTERIC MODULATORS IN AMPA RECEPTORS. **Charlotte Stenum-Berg**, Sergei C. Abiega, Christine L. Thisted, Anders S. Kristensen
- 2056-Pos BOARD B376**
PHOSPHORYLATION IN AMPA RECEPTOR CARBOXY-TERMINUS: STRUCTURE, FUNCTION, AND LIPID REGULATION. **Caitlin E. Nurik**, Suma Devi, Sana Shaikh, Drew Dolino, Darren Boehning, Vasanthi Jayaraman, James Howe
- 2057-Pos BOARD B377**
MULTIPLE SUBCONDUCTANCE STATES OF TARPED AMPA RECEPTORS REVEALED BY SLOW DISSOCIATION OF ANTAGONIST. Ian Coombs, Andrij Tarasiuk, Lauren Marconi, **Chris Shelley**, Mark Farrant, Stuart G. Cull-Candy
- 2058-Pos BOARD B378**
AMPA RECEPTOR MODULATION BY STARGAZIN. **Sana A. Shaikh**, Drew M. Dolino, Garam Lee, Sudeshna Chatterjee, David M. MacLean, Charlotte Flatebo, Christy F. Landes, Vasanthi Jayaraman
- 2059-Pos BOARD B379**
DESIGN OF A GLUTAMATE-ACTIVATED POTASSIUM CHANNEL UPON FUSION OF THE LIGAND-BINDING DOMAIN OF THE MAMMALIAN AMPA RECEPTOR GLUA1 TO THE CHANNEL PORE OF THE VIRAL ATCV-1 KCV K⁺ CHANNEL. **Michael Schoenrock**, Alina Poci, Gerhard Thiel, Bodo Laube
- 2060-Pos BOARD B380**
CRYO-ELECTRON MICROSCOPY REVEALS STRUCTURAL BASIS OF KAINATE SUBTYPE GLUTAMATE RECEPTOR DESENSITIZATION. **Sagar Chittori**, Joel R. Meyerson, Alan Merk, Prashant Rao, Tae H. Han, Mihaela Serpe, Mark L. Mayer, Sriram Subramaniam
- 2061-Pos BOARD B381**
REDUCED STRUCTURAL DYNAMICS IN KAINATE RECEPTORS THROUGH AUXILIARY PROTEIN MODULATION. **Douglas B. Litwin**, David M. MacLean, Vasanthi Jayaraman
- 2062-Pos BOARD B382**
FUNCTIONAL COUPLING OF BACTERIAL BINDING PROTEIN WITH THE CHANNEL PORE OF AN IONOTROPIC GLUTAMATE RECEPTOR. **Max Bernhard**, Bodo Laube
- 2063-Pos BOARD B383**
PROBING THE CHANNEL GATING OF A GLUTAMATE RECEPTOR WITH PHOTOACTIVE UNNATURAL AMINO ACIDS. Mette Poulsen, Anahita Posh-tiban, Viktoria Klippenstein, Valentina Ghisi, **Andrew Plested**
- 2064-Pos BOARD B384**
INVESTIGATING COUPLING BETWEEN PROTON SENSORS AND CHANNEL MOTIONS IN ACID-SENSING ION CHANNELS. **Maria Musgaard**, David M. MacLean, Douglas B. Litwin, Vasanthi Jayaraman, Philip C. Biggin
- 2065-Pos BOARD B385**
ACID SENSING ION CHANNELS HAVE AGONIST-DEPENDENT DEACTIVATION. **David M. MacLean**, Vasanthi Jayaraman
- 2066-Pos BOARD B386**
MOLECULAR BASIS FOR INHIBITION OF ACID-SENSING ION CHANNELS BY IBUPROFEN. **Timothy Lynagh**, Jose L. Romero-Rojo, Stephan A. Pless
- 2067-Pos BOARD B387**
STOICHIOMETRY OF TOXIN BINDING TO ACID-SENSING ION CHANNELS. **Christian B. Borg**, Timothy Lynagh, Linda M. Haugaard-Kedström, Kristian Strømgaard, Stephan A. Pless
- 2068-Pos BOARD B388**
CHANNEL OPEN PROBABILITY CONTROLS ALLOSTERIC MODULATION OF POTENCY AND EFFICACY. **Riley E. Perszyk**, Kevin K. Ogden, Katie L. Strong, Dennis C. Liotta, Stephen F. Traynelis
- 2069-Pos BOARD B389**
EFFECTS OF LIGAND CONFORMATIONS AND HETERO-LIGANDED STATES ON P2X2 RECEPTORS. **Federica Gasparri**, Jesper Wengel, Thomas Grutter, Stephan Pless
- 2070-Pos BOARD B390**
POINT MUTANTS OF ATP-GATED P2X RECEPTORS CAST DOUBT ON THE INCLUSIVENESS OF THE RESERVOIR THEORY OF APPARENT PORE DILATION. **Laura Janks**
- 2071-Pos BOARD B391**
INTERACTION OF PURINERGIC P2X4 AND P2X7 RECEPTOR SUB-UNITS. **Fritz Markwardt**, Markus Schneider, Kirsten Prudic, Anja Pippel, Manuela Klapperstück, Christa Müller, Michaela Stolz, Michaela Schumacher, Günther Schmalzing
- 2072-Pos BOARD B392**
A NOVEL, SPECTROSCOPIC WINDOW INTO NUCLEOTIDE ACTIVATION OF KATP CHANNELS. **Michael C. Puljung**, Natascia Vedovato, Frances M. Ashcroft
- 2073-Pos BOARD B393**
INDEPENDENT ACTIVATION OF ION CONDUCTION PORES IN THE DOUBLE-BARRELED CA²⁺-ACTIVATED CL⁻ CHANNEL TMEM16A. **Andy K. M. Lam**, Novandy K. Lim, Raimund Dutzler
- 2074-Pos BOARD B394**
MUTAGENESIS STUDY OF THE CA²⁺ SENSITIVITY OF SK2 CHANNELS. **Young Woo Nam**, Benjamin J. Whitmore, Razan S. Orfali, MIAO ZHANG
- 2075-Pos BOARD B395**
ROLE OF INDIVIDUAL CAMP BINDING SITES ON RELIEVING THE AUTO-INHIBITION IN HCN CHANNELS. **Mallikarjuna Rao Sunkara**, Jana Kusch, Klaus Benndorf
- 2076-Pos BOARD B396**
MONITORING THE CONFORMATIONAL CHANGES OF INDIVIDUAL CYCLIC NUCLEOTIDE-GATED ION CHANNELS BY HIGH-SPEED ATOMIC FORCE MICROSCOPY. **Martina Rangl**, Atsushi Miyagi, Julia Kowal, Henning Stahlberg, Crina M. Nimigea, Simon Scheuring
- 2077-Pos BOARD B397**
IDENTIFICATION OF AN ODORANT-BINDING SITE RESIDUE IN AN OLFACTORY RECEPTOR OF THE MALARIA VECTOR MOSQUITO. **Suhaila Rahman**, Charles W. Luetje
- 2078-Pos BOARD B398**
MODULATING O₂ PERMEABILITY OF THE CENTRAL PORE OF RH50 BY IN SILICO SITE DIRECTED MUTAGENESIS. **Eric Shinn**, Emad Tajkhorshid
- 2079-Pos BOARD B399**
SYMMETRY MATCH IN DESIGN OF MULTIVALENT INHIBITORS OF ANTHRAX TOXIN. **Sanaz Momben Abolfath**, Halle Welch, Vladimir A Karginov, Ekaterina Nestorovich
- 2080-Pos BOARD B400**
IDENTIFICATION AND ENERGETIC CHARACTERIZATION OF GAS PERMEATION PATHWAYS THROUGH A PLANT WATER CHANNEL. **Ahmad Raeisi Najafi**, Paween Mahinthichaichan, Emad Tajkhorshid
- 2081-Pos BOARD B401**
MODELING ION SELECTIVITY IN TRANSMEMBRANE DOMAIN OF THE NMDA RECEPTOR. Samaneh Sayede Mesbahi, Jon W. Johnson, **Maria Kurnikova**

Cardiac Muscle Regulation II (Boards B402–B413)

- 2082-Pos** **BOARD B402**
EFFECT OF STIMULATION FREQUENCY MODIFICATION ON KINETIC PARAMETERS OF EXPLANTED HUMAN MYOCARDIUM. **Jae-Hoon Chung**, Nima Milani-Nejad, Tallib Karaze, Ahmet Kilic, Peter Mohler, Paul Janssen
- 2083-Pos** **BOARD B403**
THE EFFECT OF RIBONUCLEOTIDE REDUCTASE OVEREXPRESSION ON CARDIOMYOCYTE METABOLISM. **Jason D. Murray**, Farid Moussavi-Harami, Michael Regnier
- 2084-Pos** **BOARD B404**
CARDIAC FATTY ACID BINDING PROTEIN (FABP3) DEPLETES SR CALCIUM LOAD IN VENTRICULAR MYOCYTES. Wenjie Li, Shaoran Zhang, Siwei Zhou, Lingling Jiang, **Wei Wang**
- 2085-Pos** **BOARD B405** **INTERNATIONAL TRAVEL AWARDEE**
OPTOGENETICS DESIGN OF MECHANISTICALLY-BASED STIMULATION PATTERNS FOR CARDIAC DEFIBRILLATION. **Claudia Crocini**, Cecilia Ferrantini, Raffaele Coppini, Marina Scardigli, Ping Yan, Leslie M. Loew, Godfrey L. Smith, Elisabetta Cerbai, Corrado Poggesi, Francesco S. Pavone, Leonardo Sacconi
- 2086-Pos** **BOARD B406**
OPTOGENETIC MODULATION OF CARDIOMYOCYTE EXCITABILITY. **Ramona Kopton**, Eva Rog-Zielinska, Urszula Siedlecka, Jonas Wietek, Peter Hegemann, Peter Kohl, Franziska Schneider
- 2087-Pos** **BOARD B407** **INTERNATIONAL TRAVEL AWARDEE**
ANTIHYPERTROPHIC EFFECTS OF DIAZOXIDE INVOLVES CHANGES IN MIR-132 EXPRESSION IN ADULT RAT CARDIOMYOCYTES. **Gayathri Narasimhan**, Elba Carrillo, Ascencion Hernández, Maria C. García, Jorge A. Sanchez
- 2088-Pos** **BOARD B408**
DESIGNING CALCIUM BINDING PROTEINS AS THERAPEUTICS AGAINST MUSCLE DISEASES. **Svetlana Tikunova**, Sandor Gyorke, Frank Brozovich, Brandon Biesiadecki, Paul Janssen, Mark Ziolo, Jonathan Davis
- 2089-Pos** **BOARD B409**
EFFECTS OF GHRELIN AND DES-ACYL GHRELIN ON DOXORUBICIN-INDUCED CARDIAC TOXICITY. **Miki Nonaka**, Nagomi Kurebayashi, Takashi Murayama, Masami Sugihara, Seiji Shiraiishi, Kanako Miyano, Hiroshi Hosoda, Shosei Kishida, Kenji Kangawa, Takashi Sakurai, Yasuhito Uezono
- 2090-Pos** **BOARD B410**
HUMAN AC8 OVEREXPRESSION INCREASES THE Ca^{2+} MEDIATED ENSEMBLE AND IMPARTS IMPROVED RHYTHMICITY TO THE SINOATRIAL NODE *IN VIVO* AND *EX VIVO*. **Jack M. Moen**, Michael G. Matt, Syevda G. Sirenko, Kirill V. Tarasov, Ismayil Ahmet, Chris Ramirez, Oliver Monfredi, Kenta Tsutsui, Bruce Ziman, Yael Yaniv, Edward G. Lakatta
- 2091-Pos** **BOARD B411**
ASSESSMENT OF THYROID HORMONE INDUCED HEMODYNAMIC ALTERATIONS AND CARDIAC IRREGULARITIES FOLLOWING ANTITHYROID DRUG TREATMENT AND THYROXIN USAGE RECOVERY. **Nancy S. Saad**, Kyle Floyd, Steven Repas, Paul Janssen, Mohammad Elnakish
- 2092-Pos** **BOARD B412**
FUNCTIONAL REGULATION OF SMALL CONDUCTANCE CALCIUM ACTIVATED POTASSIUM CHANNEL ON ATRIAL MYOCYTES BY HYDROGEN SULFIDE IN DIABETES MELLITUS. **Dai-Min Zhang**, Shao-Liang Chen
- 2093-Pos** **BOARD B413**
TREK-1 HAS A PROTECTIVE ROLE AGAINST GLOBAL ISCHEMIA-REPERFUSION-INDUCED CARDIAC INJURY. Cory Parks, Andreas Schwingshackl, **Salvatore Mancarella**

Kinesins, Dyneins, and Other Microtubule-based Motors II (Boards B414–B428)

- 2094-Pos** **BOARD B414**
COOPERATIVITY OF KINESIN MOTOR PROTEINS UNDER EXTERNAL LOADS. **Qian Wang**, Margaret Cheung, Michael Diehl, José Onuchic, Biman Jana, Anatoly Kolomeisky
- 2095-Pos** **BOARD B415**
CARGO TRANSPORT BY TEAMS OF KINESIN-1 MOTORS IS SLOWED DOWN BY MACROMOLECULAR CROWDING. Guilherme Nettesheim, Gabriel Jaffe, Stephen J. King, **George T. Shubeita**
- 2096-Pos** **BOARD B416**
KINESIN PROCESSIVITY IS DETERMINED BY A KINETIC RACE FROM A VULNERABLE ONE-HEAD-BOUND STATE. **Keith J. Mickolajczyk**, William O. Hancock
- 2097-Pos** **BOARD B417**
HIGH RESOLUTION THREE-DIMENSIONAL TRACKING WITH OPTICAL TWEEZERS REVEALS PROTOFILAMENT SWITCHING OF THE KINESIN-8 KIP3. **Michael Bugiel**, Erik Schaeffer
- 2098-Pos** **BOARD B418**
A COMPARATIVE SINGLE-MOLECULE STUDY BETWEEN THE MECHANICAL STABILITY OF KINESIN KIF16B ATTACHMENT TO LIPID MEMBRANES AND TO MICROTUBULES. **Serapion Pyrpassopoulos**, Henry Shuman, E. Michael Ostap
- 2099-Pos** **BOARD B419**
ALLOSTERY WIRING MAP FOR KINESIN ENERGY TRANSDUCTION AND ITS EVOLUTION. Jessica Richard, Elizabeth D. Kim, Hoang Nguyen, Catherine D. Kim, **Sunyoung Kim**
- 2100-Pos** **BOARD B420**
ALTERED MECHANICAL PROPERTIES OF KINESINS WITH MUTATIONS THAT CAUSE HEREDITARY SPASTIC PARAPLEGIA. Chelsea Kelland, Khari Gilmore, Lauren Thornton, Liautaud Prophete, **Thomas M. Huckaba**
- 2101-Pos** **BOARD B421**
EG5 INHIBITORS HAVE CONTRASTING EFFECTS ON MICROTUBULE STABILITY AND SPINDLE INTEGRITY DEPENDING ON THEIR MODES OF ACTION. **Geng-Yuan Chen**, You-Jung Kang, A. Sophia Gayek, Wiphu Youyen, Erkan Tüzel, Ryoma Ohi, William O. Hancock
- 2102-Pos** **BOARD B422**
REGULATION OF ACTIVITY OF THE KINESIN-5 CIN8. **Larisa Gheber**, Alina Goldstein, Ofer Shapira, Ervin Valk, Mart Loog, Nurit Siegler, Darya Goldman
- 2103-Pos** **BOARD B423**
NONCANONICAL MICROTUBULE INTERACTION OF YEAST KINESIN-5 CIN8. **Kayla Bell**, Hyo Keun Cha, Ardian S. Wibowo, Charles V. Sindelar, Jared C. Cochran
- 2104-Pos** **BOARD B424**
EXPLORING THE MECHANISM OF MICROTUBULE DEPOLYMERIZATION BY THE KINESIN 13 KLP10A AND IT'S PHOSPHOREGULATION. **Mathieu P.m.h. Benoit**, Daniel J. Diaz-Valencia, Ana B. Asenjo, Gary J. Gerfen, David J. Sharp, Hernando J. Sosa
- 2105-Pos** **BOARD B425**
ANALYSIS OF THE MOTILITY PROPERTIES OF THE KINESIN-4 FAMILY MEMBERS KIF7 AND KIF27. **Yang Yue**, T. Lynne Blasius, Stephanie Zhang, Benjamin Walker, Jared C. Cochran, Kristen J. Verhey

2106-Pos BOARD B426
PHOTO REGULATION OF KINESIN MOTOR ACTIVITY UTILIZING PHOTO-CHROMIC DRONPA-LOOP11 FUSION PROTEIN. **Kohei Uchida**, Shinsaku Maruta

2107-Pos BOARD B427
CHARACTERISTIC PROPERTIES OF NOVEL PHOTOCHROMIC INHIBITOR OF KINESIN EG5 COMPOSED OF SPIROPYRAN DERIVATIVE OF NOVEL PHOTOCHROMIC INHIBITOR OF KINESIN EG5 COMPOSED OF SPIROPYRAN DERIVATIVE. **Kei Sadakane**, Mao Takaichi, Ryoma Yamamoto, Shinsaku Maruta

2108-Pos BOARD B428
TIGHT COUPLING BETWEEN THE HEAT DISSIPATION AND MOLECULAR MOTOR'S TRANSPORT PROPERTIES IN NONEQUILIBRIUM STEADY STATE. **Wonseok Hwang**, Changbong Hyeon

Cytoskeletal Assemblies and Dynamics (Boards B429–B445)

2109-Pos BOARD B429
FROM RIBOSOME TO SARCOMERE - TITIN DYNAMICS IN STRIATED MUSCLE CELLS. **Michael Gotthardt**, Franziska Rudolph, Judith Huette-meister, Katharina da Silva Lopes, Lily Yu, Nora Bergmann, Claudia Fink, Eva Wagner, Stephan Lehnart, Carol Gregorio

2110-Pos BOARD B430
MYOSIN II-DEPENDENT SUPPRESSION OF PODOSOMES BY AN ARNO-ARF1 SIGNALING AXIS. **Nisha Mohd Rafiq**, Zi Zhao Lieu, TingTing Jiang, Cheng-han Yu, Paul Matsudaira, Gareth Jones, Alexander Bershadsky

2111-Pos BOARD B431
LOCAL PULSES OF RHOA ACTIVATION ASSEMBLE POLARIZED NETWORK ARCHITECTURES FOR EFFICIENT ACTOMYOSIN CONTRACTILITY. **François B. Robin**, Jonathan M. Michaux, Edwin M. Munro

2112-Pos BOARD B432
LIFETIME OF MEMBRANE-CYTOSKELETON BONDS IS MEDIATED BY RHO-GTPASES IN A CANCER CELL. **Vivek Rajasekharan**, Varun K. A. Sreenivasan, Jeffrey N. Myers, Fred A. Pereira, Brenda Farrell

2113-Pos BOARD B433
SUBCELLULAR SPATIAL CONTROL OF NON-MUSCLE MYOSIN 2 REDISTRIBUTION AND STRESS FIBER STRAIN BY MOLECULAR TATTOO. **Adam I. Horvath**, Boglarka H. Varkuti, Miklos Kepiro, Gyorgy Hegyi, Mihaly Kovacs, Andras Malnasi-Csizmadia

2114-Pos BOARD B434
AN POTOGENETIC TOOLKIT FOR REVERSIBLE LABELING AND REMOTE MANIPULATION OF CYTOSKELETON IN SITU. **Qian Zhang**, Lian He, Guolin Ma, Yubin Zhou

2115-Pos BOARD B435
MECHANICS AND DYNAMICS OF CATION-INDUCED ACTIN BUNDLES. **Nicholas Castaneda**, Tianyu Zheng, Hector Rivera-Jacquez, Qun Huo, Hyeran Kang

2116-Pos BOARD B436
CAMKII CONTROL OF ACTIN CYTOSKELETAL DYNAMICS. **Shahid M. Khan**, Justin E. Molloy

2117-Pos BOARD B437
MODELING THE COOPERATIVITY OF TROPOMYOSIN BINDING TO ACTIN FILAMENTS. **Glen M. Hocky**, Jenna R. Christensen, David R. Kovar, Gregory A. Voth

2118-Pos BOARD B438
COORDINATING ROLE OF IQGAP1 IN THE REGULATION OF MULTIVESICULAR ENDOSOMAL COMPARTMENT DYNAMICS. **Volker Schweikhard**, Edward Samson, David Tsao, Tyler McLaughlin, Michael Diehl

2119-Pos BOARD B439
COMPONENT TURNOVER IN THE CYTOKINETIC RING MAINTAINS ORGANIZATIONAL HOMEOSTASIS AND TENSION PRODUCTION. **Shuyuan Wang**, Sathish Thiyagarajan, Ting G. Chew, Junqi Huang, Saravanan Palani, Anton Kamnev, Ying Gu, Snezhana Olfierenko, Mohan Balasubramanian, Ben O'Shaughnessy

2120-Pos BOARD B440
WHAT SILENCES THE SPINDLE CHECKPOINT? A SINGLE PARTICLE STUDY. Kwaku N. Opoku, Lori Koch, Susan Biggins, **Charles L. Asbury**

2121-Pos BOARD B441
LOCAL LOAD-BEARING BY KINETOCHORE-FIBERS IN THE MAMMALIAN SPINDLE PROVIDES MECHANICAL ISOLATION AND REDUNDANCY. **Mary Williard Elting**, Dylan B. Udy, Manu Prakash, Sophie Dumont

2122-Pos BOARD B442
INTEGRATED MODEL OF CYTOKINETIC RING CONSTRICTION AND SEPTATION IN FISSION YEAST REPRODUCES EXPERIMENTAL VALUES OF RING TENSION. **Shuyuan Wang**, Sathish Thiyagarajan, Ben O'Shaughnessy

2123-Pos BOARD B443
PHYSICAL DETERMINANTS OF BIPOLAR MITOTIC SPINDLE ASSEMBLY AND STABILITY IN FISSION YEAST. Robert Blackwell, Christopher Edelmaier, Oliver Sweezy-Schindler, Adam Lamson, Zachary Gergely, Eileen O'Toole, Ammon Crapo, Loren Hough, Richard McIntosh, Matthew Glaser, **Meredith Betterton**

2124-Pos BOARD B444
FLAGELLAR LENGTH CONTROL CAN BE ACHIEVED THROUGH A SIMPLE DIFFUSION-BASED MECHANISM. **Nathan L. Hendel**, Wallace F. Marshall

2125-Pos BOARD B445
THE FLAGELLA BEAT OF CHLAMYDOMONAS HAS DISTINCTLY REGULATED STATIC AND DYNAMIC COMPONENTS, WHICH ACCORD WITH CURVATURE CONTROLLED DYNEIN ACTIVITY. **Veikko F. Geyer**, Pablo Sartori, Frank Jülicher, Jonathon Howard

Cell Mechanics, Mechanosensing and Motility III (Boards B446–B469)

2126-Pos BOARD B446
AS THE BEATING HEART STIFFENS IN DEVELOPMENT, SO DOES THE NUCLEAR LAMINA. **Sangkyun Cho**, Stephanie Majkut, Amal Abbas, Ken Vogel, Jerome Irianto, Christina Y. Chen, Manorama Tewari, Andrea Liu, Benjamin Prosser, Dennis E. Discher

2127-Pos BOARD B447
UNDERSTANDING THE ROLE OF STIFFNESS IN PATHOLOGICAL CARDIAC FIBROBLAST SIGNALING. **Tova Christensen**, Kristi Anseth, Leslie Leinwand

2128-Pos BOARD B448
MECHANOBIOLOGY OF THE LIGAMENT TO BONE INSERTION. **Aisa Biria**, Shreyas Mandre, Madhusudhan Venkadesan

2129-Pos BOARD B449
ELECTRON MICROSCOPY OF THE COMPLEX FORMED BY HEAVY MERO-MYOSIN AND C-PROTEIN. Charlotte Scarff, Alba Fuentes Balaguer, Donald Winkelmann, **John Trinick**

2130-Pos BOARD B450
MECHANOSENSITIVE ADHESION EXPLAINS STEPPING MOTILITY IN AMOEBOID CELLS. **Calina A. Copos**, Robert D. Guy, Sam Walcott, Juan Carlos del Alamo, Alex Mogilner

2131-Pos BOARD B451
A COMPUTATIONAL FRAMEWORK TO ACCURATELY PREDICT ENTHALPY AND CONFIGURATIONAL ENTROPY LANDSCAPES OF MULTIVALENT INTERACTIONS OF CELL MIMETICS. **Aravind R. Rammohan**, Matthew Mckenzie, Ravi Radhakrishnan, Natesan Ramakrishnan

2132-Pos BOARD B452
IN VITRO RECONSTITUTION OF TISSUE HOMEOSTASIS AND STOCHASTIC CELL FATE CHOICE. **Kyogo Kawaguchi**, Allon M. Klein

2133-Pos BOARD B453
KETAMINE PROMOTES NEURITE GROWTH AND RECOVERS DEXAMETHASONE-INDUCED MOBILITY DECREASE IN CULTURED HIPPOCAMPAL CELLS. **Andreas W. Henkel**, Zoran B. Redzic, Mohammed S. Al-Qallaf

2134-Pos BOARD B454
LEFT-RIGHT SYMMETRY BREAKING DURING EARLY DEVELOPMENT OF C. ELEGANS. **Anagha Datar**, Saroj Nandi, Frank Jülicher, Stephan Grill

2135-Pos BOARD B455
ROBUST EARLY EMBRYOGENESIS OF *CAENORHABDITIS ELEGANS* DUE TO MECHANICAL CUES AND PROPER CELL DIVISION TIMING. **Rolf Fickentscher**, Philipp Struntz, Matthias Weiss

2136-Pos BOARD B456
ASSESSING CELL-SUBSTRATE INTERACTION WITH DISSIPATION MONITORING FUNCTION OF THE QCM-D. **Jennifer Chen**, Lynn Penn, Ning Xi, Jun Xi

2137-Pos BOARD B457
THE ROLE OF GLOBAL AND LOCAL MECHANICAL SIGNALS IN MODULATING CELL SPREADING. **Magdalena Stolarska**, Aravind Rammohan

2138-Pos BOARD B458
FORCE LOCALIZATION AND CELL SHAPE IN EPITHELIAL MONOLAYERS. **Erik Schaumann**, Margaret Gardel

2139-Pos BOARD B459
REAL-TIME IDENTIFICATION OF CELL MECHANICAL PROPERTIES. **Alice Bartolozzi**, Alessandro Soloperto, Gemma Palazzolo, Michele Basso, Francesco Difato, Massimo Vassalli

2140-Pos BOARD B460
THE EXPRESSION AND DEGRADATION OF SM22-ALPHA/TRANGELIN ARE REGULATED BY MECHANICAL TENSION IN THE CYTOSKELETON. **Rong Liu**, M. Moazzem Hossain, J.-p. Jin

2141-Pos BOARD B461
COMPRESSIVE STRESS STALLS GROWTH AND DECREASES CYTOPLASMIC DIFFUSION. **Morgan Delarue**, Greg Brittingham, Oskar Hallatschek, Liam Holt

2142-Pos BOARD B462
CELLULAR DUROTAXIS FROM DIFFERENTIALLY PERSISTENT MOTILITY. Elizaveta A. Novikova, Matthew Raab, Dennis E. Discher, **Cornelis Storm**

2143-Pos BOARD B463
CHARACTERIZATION OF THE FRUSTRATED DIFFERENTIATION OF MESENCHYMAL STEM CELLS INDUCED BY NORMADIC MIGRATION BETWEEN STIFF AND SOFT REGION OF GEL MATRIX. **Satoru Kidoaki**, Hiroyuki Ebata, Rumi Sawada, Kousuke Moriyama, Thasaneeya Kuboki, Yukie Tsuji, Ken Kono, Kazusa Tanaka, Saori Sasaki

2144-Pos BOARD B464
CELLS AS STRAIN-CUED AUTOMATA. **Brian Cox**

2145-Pos BOARD B465
MITOCHONDRIAL FLUCTUATIONS AS A MEASURE OF BIOMECHANICAL PROPERTIES OF MURINE CELLS. **Wenlong Xu**, Elaheh Alizadeh, Jordan Castle, Ashok Prasad

2146-Pos BOARD B466
SUBSTRATE CHEMISTRY AND MORPHOLOGY INFLUENCE THE VALVULAR INTERSTITIAL CELLS MECHANOBIOLOGY. **Luisa Ulloa Severino**, Rosaria Santoro, Maurizio Pesce, Loredana Casalis, Denis Scaini

2147-Pos BOARD B467
HYDRATION CONTROL IN BRAIN EXTRACELLULAR MATRIX: ASTROCYTES, PERICYTES, AND FIBROBLASTS ADJUST THEIR CONTRACTILE RESPONSES TO LOCAL WATER ACTIVITY. **Maria P. McGee**, Mary Kearns, Michael Morikwas, Louis Argenta

2148-Pos BOARD B468
GROWING UP OR GROWING OLD? **Nash D. Rochman**

2149-Pos BOARD B469
FOCAL ADHESION KINASE REGULATORY INTERACTIONS QUANTIFIED BY TIRF-FRET. **Taylor J. Zak**, Allen Samarel, Seth Robia

Mitochondria in Cell Life and Death II (Boards B470–B485)

2150-Pos BOARD B470
POPULATION DYNAMICS OF MITOCHONDRIA IN MAMMALIAN CELLS. Kellianne Kornick, **Moumita Das**

2151-Pos BOARD B471
MGR2 DEPLETION AFFECTS PROTEIN IMPORT AND MITOCHONDRIAL METABOLISM. Kevin Damri, Oygun Mirzalieva, Ruth Hartke, **Pablo M. Peixoto**

2152-Pos BOARD B472
GDAP1 REGULATION BY OXIDATIVE STRESS. Sreeram Ravi, Andrew P. VanDemark, **Kirill Kiselyov**

2153-Pos BOARD B473
INVESTIGATION OF THE INTERACTIONS OF THE SS-31 PEPTIDES WITH CARDIOLIPIN VARIANTS: A POTENTIAL THERAPEUTIC FOR BARTH SYNDROME. Murugappan Sathappa, Wayne Mitchell, Adrian Coscia, Kevin Boyd, Eric May, Hazel H. Szeto, **Nathan N. Alder**

2154-Pos BOARD B474
REGULATION OF CYTOCHROME C BY PHOSPHORYLATION: MITOCHONDRIAL RESPIRATION AND APOPTOSIS. **Maik Hüttemann**, Gargi Mahapatra, Icksoo Lee, Lawrence I. Grossman, Asmita Vaishnav, Carlos T. Moraes, Qinqin Ji, Arthur R. Salomon, Brian FP Edwards

2155-Pos BOARD B475
BCL-2 OR BCL-XL OVEREXPRESSION STIMULATES LACTIC FERMENTATION WITHOUT AFFECTING WHOLE CELL RESPIRATION. **Laurent Dejean**, Nawras Samaan, Ali Abed, Bushra Mahmood, Jessica Wilson, Preet Kaur, Hooi Chong

2156-Pos BOARD B476
WOLBACHIA: INTERACTIONS WITH MITOCHONDRIA INSIDE THE CELL. Cristina Uribe-Alvarez, Natalia Chiquete-Félix, Antonio Peña, **Salvador Uribe-Carvajal**

2157-Pos BOARD B477
QUANTITATIVE MODELING OF PYRUVATE DEHYDROGENASE AND ITS IMPACT IN SUBSTRATE SELECTION, MITOCHONDRIAL RESPIRATION AND REDOX. **Sonia Cortassa**, Steven J. Sollott, Miguel A. Aon

2158-Pos BOARD B478
ALTERNATE PATHWAYS FOR INORGANIC PHOSPHATE UPTAKE INTO MITOCHONDRIA. **Erin Seifert**, Valentina Debattisti, Gyorgy Hajnoczky

2159-Pos BOARD B479 CPOW TRAVEL AWARDEE
DUAL ROLE OF INORGANIC POLYPHOSPHATE (POLYP) IN THE REGULATION OF MITOCHONDRIA-DEPENDENT CELL DEATH. **Maria de la Encarnacion Solesio Torregrosa**, Mitchell Marta-Ariza, Fernando Goni, Evgeny V Pavlov

2160-Pos BOARD B480
THE OUTER MEMBRANE POTENTIAL GENERATION BY THE ELECTROGENIC PHOSPHORYL GROUP TRANSFER IN MITOCHONDRIA. **Victor V. Lemeshko**

2161-Pos BOARD B481
USING ENGINEERED RECOMBINANT TUBULIN SOTYPES TO STUDY VDAC REGULATION. **Philip A. Gurnev**, David P. Hoogerheide, Minhajuddin Sirajuddin, Lucie Bergdoll, Jeff Abramson, Tatiana K. Rostovtseva, Sergey M. Bezrukov

2162-Pos BOARD B482
MITOCHONDRIAL VDAC AS AN ELECTROMECHANICAL PROBE OF LIPID-DEPENDENT MEMBRANE BINDING OF ALPHA-SYNUCLEIN. **Tatiana K. Rostovtseva**, Daniel Jacobs, David P. Hoogerheide, Amandine Rovini, Sergey M. Bezrukov

2163-Pos BOARD B483
NEW INSIGHTS INTO THE MOLECULAR STRUCTURE AND REGULATION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE. **Nelli Mnatsakanyan**, Han-A Park, Jing Wu, Paige Miranda, Elizabeth A. Jonas

2164-Pos BOARD B484
MITOCHONDRIAL PERMEABILITY TRANSITION PORE AND NUMBER OF OPENINGS. **Nasrin Afzal**, W. Jonathan Lederer, M. Saleet Jafri

2165-Pos BOARD B485 CPOW TRAVEL AWARDEE
DIRECT MODULATION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE BY OLIGOMERIC ALPHA-SYNUCLEIN CAUSES TOXICITY IN PD. **Marthe Ludtmann**, Plamena Angelova, Minee-Liane Choi, Mathew Horrocks, Artyom Baev, Daniel Little, Michael Devine, Paul Gissen, Evgeny Pavlov, David Klenerman, Andrey Abramov, Sonia Gandhi

Light Energy Harvesting, Trapping, and Transfer (Boards B486–B495)

2166-Pos BOARD B486
SLOW AND FAST FLUORESCENCE QUENCHING OF LHCI IN *CHLAMYDOMONAS REINHARDTII* CELLS. **Roberta Croce**, Lijin Tian, Emine Dinc, Laura M. Roy

2167-Pos BOARD B487
ALLOPHYCOCYANIN FROM *GRACILARIA CHILENSIS* AND ITS RECOMBINANT. A COMPARATIVE BIOPHYSICAL AND SPECTROSCOPIC STUDY. **Jorge A. Dagnino-Leone**, Marta Bunster, Jose Martinez-Oyanedel, Maria Victoria Hinrichs

2168-Pos BOARD B488
ORANGE CAROTENOID PROTEIN PICOSECOND DYNAMICS CHANGES WITH PHOTO AND CHEMICAL ACTIVATION. **Yanting Deng**, Mengyang Xu, Haijun Liu, Robert E. Blankenship, Andrea G. Markelz

2169-Pos BOARD B489
LIGHT-HARVESTING COMPLEX II IN CONTROLLED ARCHITECTURES: VISUALIZING CHANGES IN FLUORESCENCE LIFETIMES. **Peter G. Adams**, Cvetelin Vasilev, C. Neil Hunter, Matthew P. Johnson

2170-Pos BOARD B490
THE PICOSECOND KINETICS OF NON-PHOTOCHEMICAL QUENCHING IN LEAVES IN THE PRESENCE OF OPEN AND CLOSED REACTION CENTERS. **Herbert van Amerongen**, Shazia Farooq

2171-Pos BOARD B491
MIMICKING NATURAL PHOTOSYNTHESIS: ULTRAFast CHARGE TRANSFER IN PPCA RU(BP)₃ COMPLEXES. **Matthew O'Malley**

2172-Pos BOARD B492
PHOTOINDUCED CHARGE AND ENERGY TRANSFER IN COMPLEXES OF C-TYPE CYTOCHROMES WITH WATER-SOLUBLE PORPHYRINS. **Oleksandr Kokhan**, Daniel R. Marzolf, C. Alexander Hudson, Aidan M. McKenzie

2173-Pos BOARD B493
OPTICAL AND ELECTROCHEMICAL PROPERTIES OF SYNTHETIC CHLOROPHYLL OLIGOMERS CONNECTED WITH AMIDE BOND. **Tomohiro Tatebe**, Hitoshi Tamiaki

2174-Pos BOARD B494
DEPHASING TIMES IN THE PHYCOBILIPROTEIN ANTENNA COMPLEXES PE545 AND PE555. **Maria I. Mallus**, Suryanarayanan Chandrasekaran, **Ulrich Kleinekathöfer**

2175-Pos BOARD B495
USING A LIGHT-DRIVEN PROTON PUMP PROTEIN TO DEVELOP A REDUCTION-OXIDATION REACTION CELL. **U-Ting Chiu**, Ling Chao

Molecular and Cellular Neuroscience (Boards B496–B508)

2176-Pos BOARD B496
MECHANISMS OF FRACTIONAL CALCIUM CURRENTS THROUGH TRPV1 CHANNELS IN PRIMARY SENSORY NEURONS. **Zhuan Zhou**

2177-Pos BOARD B497
A BENEFIT OF RANDOMNESS IN SYNAPTIC VESICLE RELEASE. **Calvin Zhang**, Charles S. Peskin

2178-Pos BOARD B498
GLUCOKINASE MEDIATED GLUCOSENSING IN HYPOTHALAMIC NEURONS. **Jennifer McFarland**, Kendra Seckinger, Mark Rizzo

2179-Pos BOARD B499
RECEPTOR LEVEL DISSECTION OF COMMON VERSUS DISCRETE VESICLE RELEASE PATHWAYS FROM PRIMARY VAGAL AFFERENT TERMINALS. **James H. Peters**

2180-Pos BOARD B500
ASSOCIATIVE MEMORY CELLS ARE RECRUITED TO ENCODE TRIPLE SENSORY SIGNALS VIA SYNAPSE FORMATION. **Jin H. Wang**, Jing Feng, Wei Lu

2181-Pos BOARD B501
BILOBALIDE PROTECTS AGAINST FOCAL CEREBRAL ISCHEMIA REPERFUSION INJURY BY INHIBITING OF CELL DEATH PATHWAYS AND PROMOTING OF ANGIOGENESIS. **Yongqiu Zheng**, Mingjiang Yao, Frank Yi, Bin Yang, Xiaodi Fan, Jianxun Liu, Matthew Orange, Hua Zhu

2182-Pos BOARD B502
USING LIGHT-SHEET MICROSCOPY TO UNDERSTAND EVOKED MOTOR SEQUENCE GENERATION. **Amicia D. Elliott**, Feici Diao, Sarav Shah, Daniel Yasoshima, Yicong Wu, Hari Shroff, Benjamin White

2183-Pos BOARD B503
STRUCTURAL POLYMORPHISM OF AMYLOID FIBRILS IN ALZHEIMER'S DISEASE. **Liu Jiliang**, John Badger, Biel Roig Solvas, **Lee Makowski**

2184-Pos BOARD B504
MODULATION OF AMYLOID PEPTIDE OLIGOMERIZATION AND TOXICITY BY EXTRACELLULAR HSP70. **Antonio De Maio**, Isabel Rivera, David M. Cauvi, Nelson Arispe

2185-Pos BOARD B505
CALCIUM CALMODULIN REGULATES ZINC MEDIATED CHANGES IN THE STRUCTURE, SELF-ASSOCIATION, AND ACTIVITY OF CAMKII. **Laurel Hoffman**, Lin Li, Emil Alexov, M. Neal Waxham, **Hugo Sanabria**

2186-Pos BOARD B506 CPOW Travel Awardee
GENETIC RESCUE OF MITOCHONDRIAL CALCIUM EFFLUX IN ALZHEIMER'S DISEASE PRESERVES MITOCHONDRIAL FUNCTION AND PROTECTS AGAINST NEURONAL CELL DEATH. **Pooja Jadiya**, Alyssa A. Lombardi, Jonathan P Lambert, Timothy S. Luongo, Jin Chu, Domenico Praticò, John W. Elrod

2187-Pos BOARD B507
CHRONIC COCAINE SELF-ADMINISTRATION POTENTIATES THE DOPAMINE-INDUCED HYPEREXCITABILITY GATED BY INHIBITION OF KCNQ/KV7 CHANNELS. **Priyodarshan Goswamee**, Jeffrey Parrilla-Carrero, William Buchta, Peter W. Kalivas, Arthur C. Riegel

2188-Pos BOARD B508
SMALL FLUORESCENT PROBES SHOW IGLURS ARE IN THE SYNAPSES OF TRANSFECTED NEURONS UNDER BASAL CONDITIONS. **Sang Hak Lee**, En Cai, Chaoyi Jin, Pinghua Ge, Yuji Ishitsuka, Kai Wen Teng, Andre A. de Thomaz, Duncan Lee Nall, Murat Baday, Okunola Jeyifous, Daniel Demonthe, Christopher M. Dundas, Sheldon Park, Willian Green, Paul R. Selvin

EPR and NMR: Spectroscopy and Imaging (Boards B509–B520)

2189-Pos BOARD B509
SATURATION-RECOVERY EPR SPIN-LABELING METHOD FOR QUANTIFICATION OF LIPIDS IN DOMAINS OF BIOLOGICAL MEMBRANES. **Laxman Mainali**, Witold Subczynski

2190-Pos BOARD B510
SIMULATING ELECTRON PARAMAGNETIC RESONANCE SPECTRA OF SLOW-MOTION SYSTEMS IN THE TIME DOMAIN. **Peter Martin**, Stefan Stoll, David Thomas

2191-Pos BOARD B511
MOLECULAR BREAKDOWN OF DOUBLE ELECTRON-ELECTRON RESONANCE DATA WITH ATOMISTIC SIMULATIONS. **Fabrizio Marinelli**, Jose' Faraldo-Gomez

2192-Pos BOARD B512
LPS BINDING TO LPTA. Kathryn M. Schultz, Tanner J. Lundquist, Matthew A. Fischer, **Candice S. Klug**

2193-Pos BOARD B513
ANTIFREEZE MECHANISM STUDY OF ICE GROWTH INHIBITION BY SPIN LABELED ICE BINDING PROTEINS. **Adiel Perez**, Antonia Flores, Yong Ba

2194-Pos BOARD B514
ANTIFREEZE MECHANISTIC STUDY OF ICE BINDING PROTEINS (IBPS) THROUGH VT EPR STUDY ON SPIN LABELED IBPS. **Justin Quon**, Antonia Flores, Adiel Perez, Yong Ba

2195-Pos BOARD B515
EPR STRUCTURAL DYNAMICS OF CALMODULIN-RYR PEPTIDE COMPLEX. **Cheng Her**, Jesse E. McCaffrey, Christine B. Karim, David D. Thomas

2196-Pos BOARD B516
HIGH-RESOLUTION STRUCTURAL DYNAMICS OF BIFUNCTIONALLY SPIN-LABELED MYOSIN BY EPR OF ORIENTED MUSCLE FIBERS. **Yahor Savich**, Benjamin P. Binder, Peter D. Martin, Andrew R. Thompson, David D. Thomas

2197-Pos BOARD B517
THE ALPHA-SYNUCLEIN FIBRIL FOLD - COMPARING MODELS FROM ELECTRON PARAMAGNETIC RESONANCE AND NMR. Pravin Kumar, Maryam Hashemi Shabestari, Nathalie Schilderink, Ine M.J. Segers-Nolten, Mireille M.A.E. Claessens, Vinod Subramaniam, **Martina Huber**

2198-Pos BOARD B518
STRUCTURAL DIMERIZATION ANALYSIS OF THE G44V CRGA MUTANT FROM THE M. TUBERCULOSIS DIVISOME. **Joshua A. Taylor**, Haujun Qin, Yisuel Shin, Krishna Sarva, Malini Rajagopalan, Timothy Cross

2199-Pos BOARD B519
MOLECULAR INSIGHTS INTO BIOMOLECULAR STRUCTURE AND DYNAMICS BY ¹⁴N NMR. Maria Concistre, James A. Jarvis, Ibraheem M. Haies, Ilya Kuprov, Marina Carravetta, **Philip T.F. Williamson**

2200-Pos BOARD B520
STRUCTURAL DETERMINATION OF A PEPTIDE RESIDUE OF A PROTEIN OF IMMUNOLOGICAL INTEREST NMR. **Diego M. López**, Adriana J. Bermudez, Yuly E. Sánchez

Molecular Dynamics III (Boards B521–B536)

2201-Pos BOARD B521
INCREASING THE PERFORMANCE AND EXTENSIBILITY OF COLLECTIVE VARIABLE SIMULATIONS. Giacomo Fiorin, **Jérôme Hénin**

2202-Pos BOARD B522
MAKING CLASSICAL AND HYBRID (QM/MM) MOLECULAR DYNAMICS EASY AND FAST WITH QWIKMD. **João V. Ribeiro**, Rafael C. Bernardi, Till Rudack, Klaus Schulten

2203-Pos BOARD B523
A FLEXIBLE, GPU - POWERED FAST MULTIPOLE METHOD FOR REALISTIC BIOMOLECULAR SIMULATIONS IN GROMACSA FLEXIBLE, GPU - POWERED FAST MULTIPOLE METHOD FOR REALISTIC BIOMOLECULAR SIMULATIONS IN GROMACS. **Bartosz Kohnke**, R.Thomas Ullmann, Carsten Kutzner, Andreas Beckmann, David Haensel, Ivo Kabadshow, Holger Dachsels, Berk Hess, Helmut Grubmüller

2204-Pos BOARD B524
TOWARDS DYNAMIC PHARMACOPHORE MODELS BY COARSE GRAIN MOLECULAR DYNAMICS. **Nicholas Michelarakis**, Zara A. Sands, Mark S.P. Sansom, Phillip J. Stansfeld

2205-Pos BOARD B525
COUPLINGS BETWEEN LOCAL AND GLOBAL CONFORMATIONAL CHANGES IN PROTON-COUPLED OLIGOPEPTIDE TRANSPORTERS. **Mahmoud Moradi**, Kalyan C. Immadisetty, Jeevapani Hettige

2206-Pos BOARD B526
SYSTEMATIC PARAMETERIZATION OF LIGNIN FOR THE CHARMM FORCE FIELD. **Josh V. Vermaas**, Loukas Petridis, Gregg T. Beckham, Michael F. Crowley

2207-Pos BOARD B527
SIMULATED FORCED UNBINDING OF CLUSTERED PROTOCADHERINS. **Sanket P. Walujkar**, Raul Araya-Sechhi, Marcos Sotomayor

2208-Pos BOARD B528
EXPLORING REACTION PATHWAYS FOR PEPTIDYLPROLYL-ISOMERASE. **Hiroshi Fujisaki**, Yasushige Yonezawa, Motoyuki Shiga, Luca Maragliano, Shin-ichi Tate

2209-Pos BOARD B529
MECHANICS OF CADHERIN UNBINDING USING COARSE-GRAINED MODELS. **Lahiru N. Wimalasena**

2210-Pos BOARD B530
INFLUENCE OF AN IONIC LIQUID ON TRP-CAGE STRUCTURE AND XAA-PRO DIPEPTIDE CONFORMATIONAL SAMPLING. **Joseph L. Baker**, Alexandra Heyert, Susan Knox, Gerrick E. Lindberg

2211-Pos BOARD B531
EXPLORING THE INTERACTION BETWEEN MLP1 AND NAB2 FOR MRNA QUALITY CONTROL PURPOSES. **Mohammad Soheilypour**, Mohaddeseh Peyro, Hengameh Shams, Mohammad Mofrad

2212-Pos BOARD B532
ALLOSTERIC COUPLING OF NUCLEOTIDE TURNOVER TO BIOMOLECULAR RECOGNITION IN KINESIN MOTORS AND G PROTEIN SWITCHES. **Barry J. Grant**

2213-Pos BOARD B533
TSX AS A NUCLEOSIDE CHANNEL. **Shreyas S. Kaptan**, Bert van den Berg, Ulrich Kleinekathöfer

2214-Pos BOARD B534
GLYCOSAMINOGLYCAN SEQUENCE INFLUENCE ON IDURONATE RING PUCKERING. Bruno DeMaria, Courtney Burkham, Samantha Mansberger, Owen Ganter, **Olgun Guvench**

2215-Pos BOARD B535
MOLECULAR DYNAMICS REVEALS NEW INSIGHTS INTO ACTIVATION OF THE INSULIN-FAMILY PROTEINS AND THEIR BINDING SPECIFICITY TO THE INSULIN RECEPTOR. **Anastasios Papaioannou**, Serdar Kuyucak, Zdenka Kuncic

2216-Pos BOARD B536
EXPLOITING TUMOR ACIDITY IN DESIGNING A NOVEL CANCER TARGETING AGENT. **Chitrak Gupta**, Blake Mertz

Computational Methods and Bioinformatics II (Boards B537–B543)

2217-Pos BOARD B537
EXTENDING RULE-BASED MODELING TO THE SPATIAL DOMAIN WITH VIRTUAL CELL (VCELL). James C. Schaff, Dan Vasilescu, Ion I. Moraru, Leslie M. Loew, **Michael L. Blinov**

2218-Pos BOARD B538
CLOUD COMPUTING FOR ALL-TO-ALL PROTEIN-PROTEIN DOCKING ON AZURE HPC. **Masahito Ohue**, Yuki Yamamoto, Takanori Hayashi, Yuri Matsuzaki, Yutaka Akiyama

2219-Pos BOARD B539
ACCELERATION OF CARDIAC SIMULATIONS FOR CLOUD COMPUTING RESOURCES. **Delvin Huynh**, Yuanfang Xie, Daisuke Sato

2220-Pos BOARD B540
RE-DOCKING BY ANALYZING THE PROFILE OF PROTEIN-PROTEIN INTERACTION. **Yosuke Amano**, Wataru Nemoto, Nobuyuki Uchikoga

2221-Pos BOARD B541
A DOCKING BASED APPROACH TO ANALYZE INTERACTION SURFACES OF VIRUS-HOST PROTEIN-PROTEIN INTERACTIONS. **Yuri Matsuzaki**, Jaak Simm, Nobuyuki Uchikoga, Yutaka Akiyama

2222-Pos BOARD B542
IN SILICO SCREENING FOR CHEMICAL SCAFFOLDS AS SUITABLE NATURAL INHIBITORS OF KINESIN EG5 DIVULGES MORELLOFLAVONE, A BIFLAVONOID, AS POTENTIAL ANTICANCER COMPOUND. **Tomisin Happy Ogunwa**, Takayuki Miyaniishi

2223-Pos BOARD B543
DEVELOPMENT OF POSTPROCESSING METHOD OF PROTEIN-LIGAND DOCKING USING INTERACTION FINGERPRINT. **Nobuaki Yasuo**, Masakazu Sekijima

Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence I (Boards B544–B555)

2224-Pos BOARD B544
NEW THIOL-REACTIVE EU-COMPLEX FOR DISTANCE MEASUREMENTS BY LRET. **Felix Faschinger**, Mirjam Zimmermann, Guenther Knoer, Hermann Gruber

2225-Pos BOARD B545
A NOVEL FRET TECHNIQUE TO CHARACTERIZE THE OLIGOMERIZATION STATE OF PROTEIN-PROTEIN INTERACTIONS. **Philipp J. Heckmeier**, Mark G. Teese, Dieter Langosch

2226-Pos BOARD B546
OPTIMIZING A TIME-RESOLVED SPECTROMETER FOR ALL TIME SCALES. **Christian Litwinski**, Sebastian Tannert, Manoel Veiga, Felix Koberling, Marcus Sackrow, Michael Wahl, Olaf Schulz, Marcelle Koenig, Rainer Erdmann

2227-Pos BOARD B547
HYPERSPETRAL MEASUREMENTS ALLOW SEPARATION OF FRET SIGNALS FROM NON-UNIFORM BACKGROUND FLUORESCENCE. **Savannah J. West**, Chase Hoffman, Naga S. Annamdevula, Kenny T. Trinh, Thomas C. Rich, Silas J. Leavesley

2228-Pos BOARD B548
FLUORESCENT PROTEINS FOR SUPER-RESOLUTION MICROSCOPY. **Karin Nienhaus**, Gerd U. Nienhaus

2229-Pos BOARD B549
WIDE SCALE INVESTIGATION OF PROTEIN INTERACTIONS BY AUTOMATION OF FLUORESCENT POLARIZATION AND FLUCTUATION ANALYSIS. **Tuan A. Nguyen**, Grace H. Taumoefolau, Youngchan Kim, Henry L. Puhl, Steven S. Vogel

2230-Pos BOARD B550
COMPARISON STUDY ON FLUORESCENCE QUENCHING ABILITY OF DNA WRAPPED SINGLE- AND MULTI-WALLED CARBON NANOTUBES. **Shusuke Oura**, Katsuki Izumi, Kazuo Umemura

2231-Pos BOARD B551
USING REAL-TIME QUANTIFICATION OF AUTOFLUORESCENCE SPECTRUM SHAPE TO DISTINGUISH BETWEEN METABOLIC RESPONSES INVOLVING NADH-UTILIZING PATHWAYS. **Paul Urayama**, Symeon Stefan, Dylan Palo, Madhu Gaire, Nazar Al Aayedi

2232-Pos BOARD B552
SPATIALLY-RESOLVED FLUORESCENCE LIFETIME MEASUREMENT FOR OPTICAL INTERROGATION OF ELECTRICALLY DYNAMIC BIOLOGICAL SYSTEMS. Vaughn Spurrier, Wenli Dai, Eric Gauchat, **Devin Harrison**, Evan Kiefl, Andrés Moya-Rodríguez, Amar Risbud, Alan Selewa, Hallie Sussman, Yifan Zhou, Justin Jureller, Adam Hammond

2233-Pos BOARD B553
EDIBLE LUMINESCENT PROBES AS SENSORS OF FOOD QUALITY: IDENTIFICATION AND SELECTION. **Rahul Chib**, Bogumil Zelent, Yan Wang, An Le, Maria G. Corradini, Richard D. Ludescher

2234-Pos BOARD B554
CONFOCAL RAMAN MICROSCOPY TRACKS CUTANEOUS DELIVERY OF FLUFENAMIC ACID USING LIPOPHILIC VERSUS HYDROPHILIC PENETRATION ENHANCERS. **Yelena Pyatski**, Qihong Zhang, Richard Mendelsohn, Carol R. Flach

2235-Pos BOARD B555
INVESTIGATION INTO THE PHYSICO-CHEMICAL AND PHYTOCHEMICAL PROPERTIES OF COLA LEPIDOTA (K. SCHUM) SEED. **Sarah O. Oni**, O A. Oladimeji, R O. Owoade, R E. Obon, A K. Akinlabi

Force Spectroscopy and Scanning Probe Microscopy I (Boards B556–B564)

2236-Pos BOARD B556
APOBEC3G TRANSITIONS FROM A MOBILE TO STATIC BINDING STATE THROUGH DIMERIZATION MEDIATED BY THE N-TERMINAL CYTIDINE DEAMINASE DOMAIN. **Michael Morse**, Ran Huo, Linda Chelico, Ioulia Rouzina, Mark Williams

2237-Pos BOARD B557
BIOPHYSICAL MECHANISMS OF VON WILLEBRAND FACTOR-COLLAGEN INTERACTIONS. **X. Frank Zhang**, Yan Xu, Thomas A.J. McKinnon, Wei Zhang

2238-Pos BOARD B558
A COMPUTATIONALLY DESIGNED PROTEIN-LIGAND INTERACTION IS MECHANICALLY ROBUST. William J. Van Patten, Robert Walder, Ayush Adhikari, Rashmi Ravichandran, Christine E. Tinberg, David Baker, **Thomas T. Perkins**

2239-Pos BOARD B559
HETEROBIFUNCTIONAL POLYPROTEIN FOR EFFICIENT CHARACTERIZATION OF MECHANICALLY LABILE PROTEINS. **Marc-Andre LeBlanc**, Devin T. Edwards, Robert Walder, David Rabuka, Thomas T. Perkins, Marcelo C. Sousa

2240-Pos BOARD B560
INVESTIGATING THE SCALING BEHAVIOR OF MULTIDOMAIN PROTEINS UNDER FORCE USING SINGLE MOLECULE AND ENSEMBLE FORCE-CLAMP SPECTROSCOPY. Kirill Shmilovich, Narayan P. Dahal, Luai R. Khoury, **Ionel Popa**

2241-Pos BOARD B561
DISULFIDE BONDING IN THE CONTRACTILE WORK OF TITIN. **Jaime Andres Rivas Pardo**, Edward Eckels, Jessica Valle-Orero, Julio M. Fernandez

2242-Pos BOARD B562
PROTEINS WITH HIGH STRUCTURAL SIMILARITY CAN HAVE DIFFERENT MECHANICAL UNFOLDING BEHAVIORS. **Chengzhi He**, Chunguang Hu, Xiaodong Hu, Xiaotang Hu, Hongbin Li

2243-Pos BOARD B563
STRUCTURAL AND MECHANISTIC INSIGHTS INTO THE COPPER-MODULATED UNFOLDING PATHWAYS OF AZURIN. Anju Yadav, Sanjoy Paul, Ravindra Venkatramani, **Sri Rama Koti Ainavarapu**

2244-Pos BOARD B564
MECHANICAL MODULATION OF PROTEASE ACTIVITY CAPTURED AT THE SINGLE-MOLECULE LEVEL. **David Giganti**, Ainhoa Lezamiz Herrero, Guillaume Stirnemann

Biosensors (Boards B565–B593)

2245-Pos BOARD B565
HIGH RESOLUTION KETONE MEASURING METHOD USING ENZYME REACTIONS AND ELECTRICAL CHEMICAL ANALYSIS. **Naoyuki Yokoyama**, Takeshi Sugimoto, Satoshi Hashizume, Emi Kagami

2246-Pos BOARD B566 INTERNATIONAL TRAVEL AWARDEE
MICROVOLUME DIELECTRIC SPECTROSCOPY AND MOLECULAR DYNAMICS OF AMINO ACIDS. **Daniel Havelka**, Ondrej Krivosudsky, Jiri Prusa, Michal Cifra

2247-Pos BOARD B567
TUNING POLYMER-PROTEIN INTERACTION WITH SALT. **Monasadat Talarimoghari**, Aleksandra Dylewska, Marcel Hoffmann, Gerhard Baaken, Dalila Chouikhi, Jean-Francois Lutz, Jan C. Behrends

2248-Pos BOARD B568
A NOVEL CAPACITIVE BIOSENSOR FOR THE DETECTION OF SMALL MOLECULE S-NITROSOTHIOLS. Nikki M. Meyer, Spencer Burton, James N. Bates, Benjamin Gaston, Stephen J. Lewis, **James M. Seckler**

2249-Pos BOARD B569
MULTIPARAMETRIC CHARACTERIZATION OF SINGLE, UNLABELED PROTEINS IN SOLUTION. **Jared Houghtaling**, Michael Mayer

2250-Pos BOARD B570
MECHANOTRANSDUCTION AT THE NUCLEAR ENVELOPE. **Théophile Déjardin**, Patricia Davidson, Cynthia Seiler, Philippe Girard, Damien Cuvelier, Cécile Sykes, Edgar Gomes, Cadot Bruno, Nicolas Borghi

2251-Pos BOARD B571
A FLUORESCENT PROTEIN VOLTAGE SENSOR IN THE ENDOPLASMIC RETICULUM. **Masoud Sepehri Rad**, Lawrence B. Cohen, Bradley J. Baker

2252-Pos BOARD B572
A BIOINSPIRED SURFACE CHEMISTRY FOR SOLID-STATE NANOPORES MODIFICATION. **Qimeng Huang**, Yunsheng Deng, Yue Zhao, Lei Zhao, Weihua Hu, Deqiang Wang

2253-Pos BOARD B573
ORGANELLE-TARGETING OF APOLLO-NADP⁺ REQUIRES CAREFUL SELECTION OF FLUORESCENT PROTEINS TO MAINTAIN PH INDEPENDENCE. **William D. Cameron**, Jonathan Rocheleau

2254-Pos BOARD B574
ENERGY LANDSCAPE MODELING OF ESCAPE TIME DISTRIBUTIONS REVEALS THE MOLECULAR MECHANISM OF A-SYNUCLEIN TRANSLOCATION THROUGH A VDAC NANOPORE. **David P. Hoogerheide**, Philip A. Gurnev, Tatiana K. Rostovtseva, Sergey M. Bezrukov

2255-Pos BOARD B575
STRUCTURAL INVESTIGATIONS OF QUIET OUTER MEMBRANE PROTEIN G NANOPORES. **Raghavendar Reddy Sanganna Gari**, Patrick Seelheim, Binyong Liang, Lukas Tamm

2256-Pos BOARD B576
SELECTIVE DETECTION OF PROTEIN HOMOLOGUES BY OUTER MEMBRANE PROTEIN G. **Bib Yang**, Monifa AV Fahie, Hui Wang, Patanachai Limpikirati, Richard Vachet, Sankaran Thayumanavan, Min Chen

2257-Pos BOARD B577
CHARACTERIZATION OF PROTEIN AGGREGATION BY SOLID-STATE NANOPORE. **Mitu C. Acharjee**, Jiali Li

2258-Pos BOARD B578
HYBRID NANOPORE FOR MOLECULAR SENSING APPLICATIONS. **Uppiliappan Rengarajan**, Hiofan Hoi, Manisha Gupta, Carlo Montemagno

2259-Pos BOARD B579
TRANSLOCATION AND BINDING IN THE RECOGNITION OF SHORT OLIGONUCLEOTIDES BY A BIOLOGICAL NANOPORE. **Mordjane A. Boukhet**, Ibrahim Halimeh, Gerhard Baaken, Jan C. Behrends

2260-Pos BOARD B580
COMPARISON OF MULTI-DYES QUENCHING BY SINGLE-WALLED CARBON NANOTUBES DISPERSION WITH SINGLE-STRANDED DNA AND DOUBLE-STRANDED DNA. **Ying Tan**, Katsuki Izumi, Kazuo Umemura

2261-Pos BOARD B581 INTERNATIONAL TRAVEL AWARDEE
DIRECT IDENTIFICATION OF ADENINE, THYMINE, CYTOSINE AND GUANINE USING AEROLYSIN NANOPORE. **Chan Cao**, Matteo Dal Peraro, Yitao Long

2262-Pos BOARD B582
CONTROLLING THE CAPTURE PROCESS OF 50BP DNA BY SOLID-STATE NANOPORES. **Martin Charron**, Aidan Baker-Murray, Vincent Tabard-Cossa

2263-Pos BOARD B583
OBSERVATION OF ADSORPTION PROCESS OF SINGLE STRANDED DNA TO SINGLE-WALLED CARBON NANOTUBES SURFACES BY FLUORESCENCE QUENCHING. **Shizuma Sato**, Gilbert Bustamante, Jing Yong Ye, Kazuo Umemura

2264-Pos BOARD B584
AFM-BASED NANOSENSOR AND SUPER-RESOLUTION IMMUNOFLUORESCENCE STUDIES: A CORRELATIVE APPROACH TO ASSESS THE ROLE OF HER2 CANCER BIOMARKER. **Elena Ambrosetti**, Alessandro Bosco, Loredana Casalis

2265-Pos **BOARD B585**
ELECTRONIC DETECTION OF SINGLE CANCER CELLS WITH GRAPHENE FIELD EFFECT TRANSISTORS. **James Froberg**, Prajakta Kulkarni, Sanku Mallick, Yongki Choi

2266-Pos **BOARD B586**
REGULATION OF GLUCOKINASE IN PANCREATIC BETA CELLS. **Kendra M. Seckinger**

2267-Pos **BOARD B587**
ON-CHIP LIQUID BIOPSY: PROGRESS IN ISOLATION OF EXOSOMES FOR EARLY DIAGNOSIS OF CANCER. **Sung Cheol Kim**, Navneet Dogra, Benjamin H. Wunsch, Joshua T. Smith, Stacey M. Gifford, Gustavo Stolovitzky, Huan Hu, Pablo Meyer

2268-Pos **BOARD B588** **EDUCATION TRAVEL AWARDEE**
NOVEL BIOSENSOR DESIGN REVEALS THE ROLE AND REGULATION OF GEF-H1 IN CELL MIGRATION. **Mihai L. Azoitei**, Jungsik Noh, Maria J. Sandi, Philippe Roudot, Robert Rottapel, Gaudenz Danuser, Klaus M. Hahn

2269-Pos **BOARD B589** **EDUCATION TRAVEL AWARDEE**
MULTIFUNCTIONAL HIGH-THROUGHPUT SINGLE-CELL ANALYSIS USING RECONFIGURABLE AMPLIFIER ARRAY. **Kevin A. White**, Geoffrey Mulberry, Brian N. Kim

2270-Pos **BOARD B590**
3D PRINTED REAL-TIME PCR MACHINE FOR INFECTIOUS DISEASE DIAGNOSTICS. **Geoffrey Mulberry**, Kevin A. White, Brian N. Kim

2271-Pos **BOARD B591**
DEVELOPMENT OF A SURFACE PLASMON RESONANCE AND PLASMON-WAVEGUIDE RESONANCE COMBINED CHIP FOR STUDYING THE TRANSPORT BEHAVIORS OF CELL MEMBRANE TRANSPORTERS. Yu-Ting Lin, **Ling Chao**

2272-Pos **BOARD B592**
BROADLY ACCESSIBLE ASSAYS WITH SIGNAL AMPLIFICATION ACROSS LIPID BILAYERS. **Anirvan Guha**, Thomas B. H. Schroeder, Sarah Grunsfeld, Jerry Yang, Michael Mayer

2273-Pos **BOARD B593** **INTERNATIONAL TRAVEL AWARDEE**
OPTICAL PROBES FOR IMAGING SIGNAL MEDIATING PHOSPHOLIPIDS. **Samsuzzoha Mondal**, Ananya Rakshit, Shafali Gupta, Ravindra Venkatramani, Ankona Datta

Biophysics Education (Boards B594–B604)

2274-Pos **BOARD B594**
RESPONSIVE WEB-BASED MOLECULE VIEWER FOR 3D COMMUNICATION, COLLABORATION, AND VIRTUAL REALITY. **Merry Wang**, Aditya Dhoot, Andrew Kimoto, David Parker, Michael Zyracki, Malte Tinnus, Peter Jones, Drew Hylbert, Dion Amago, Florencio Mazzoldi

2275-Pos **BOARD B595**
A RATIOMETRIC METHOD TO MEASURE VISCOSITY INSIDE MESOPOROUS SILICA PARTICLES USING PROTEIN-BOUND FLUORESCENT PROBE. **Pegah S. Nabavi Zadeh**, Björn Åkerman

2276-Pos **BOARD B596**
MAKING A PUZZLE MICROSCOPE AS A STRATEGY TO RECRUIT HIGH SCHOOL GIRLS AND MINORITIES IN BIOPHYSICS. **Yuly E. Sanchez**

2277-Pos **BOARD B597**
COMBINING MOLECULAR VISUALIZATION WITH BENCH METHODS IN A HYPOTHESIS-DRIVEN UNDERGRADUATE BIOCHEMISTRY LAB COURSE. Thomas Holt, Rebecca Roberts, **Julia R. Koeppe**, Paul A. Craig

2278-Pos **BOARD B598** **EDUCATION TRAVEL AWARDEE**
EXPANDING THE SCOPE OF SINGLE MOLECULE FRET SPECTROSCOPY TOWARDS PRIMARILY UNDERGRADUATE INSTITUTIONS. **Jesse Howe**, Gregory Walters, Kambiz Hamadani

2279-Pos **BOARD B599**
LIGHT, IMAGING, VISION: AN INTERDISCIPLINARY UNDERGRADUATE COURSE. **Philip Nelson**

2280-Pos **BOARD B600**
DEVELOPMENT OF A NON-RADIOACTIVE AMINOACYLATION ASSAY FOR QUALITY CONTROL OF PURIFIED AND RECONSTITUTED IN VITRO TRANSLATION SYSTEMS. **Judith Flores**, Jesse Howe, Lizbeth Reyes, Kambiz M. Hamadani

2281-Pos **BOARD B601**
A HANDS-ON FRESHMAN SEMINAR COURSE IN DNA ORIGAMI. **Ryan Shriver**, Sarah Veatch

2282-Pos **BOARD B602**
STORM-LITE: AN INEXPENSIVE TOOL TO DEMONSTRATE STOCHASTIC SUPER RESOLUTION MICROSCOPY TECHNIQUES IN THE CLASSROOM. **Anthony Wu**, Lark Moreno, Maxim Prigozhin, Sharlene Denos

2283-Pos **BOARD B603**
TEACHING SOME CONCEPTS OF TRANSPORT MECHANISM TO MIDDLE SCHOOL STUDENTS IN VALLEDUPAR COLOMBIA. Eliana M. Ramos, **Claudia A. Blanco**, Yuly E. Sánchez

2284-Pos **BOARD B604**
WHAT'S WRONG WITH THE HODGKIN-HUXLEY MODEL? AN EXERCISE IN CRITICAL THINKING. **H. Richard Leuchtag**

Wednesday, February 15, 2017

Daily Program Summary

All rooms are located in the *Ernest N. Morial Convention Center* unless noted otherwise.

8:00 AM-11:00 AM	New Council Meeting	Room 222
8:00 AM-3:00 PM	Poster Viewing	Hall B-2 & C
8:15 AM-10:15 AM	Symposium: Protein Dynamics and Allostery <i>Chair: Martin Weik, Institut de Biologie Instructionale, France</i>	Great Hall A
	PICOSECOND DYNAMICS OF PHOTOSWITCHABLE FLUORESCENT PROTEINS REVEALED BY TIME-RESOLVED SERIAL FEMTOSECOND CRYSTALLOGRAPHY. <i>Martin Weik</i> COUPLED RESIDUE-RESIDUE DYNAMICS IN PROTEIN ALLOSTERIC MECHANISMS. <i>Donald Hamelberg</i> ENTROPY IN MOLECULAR RECOGNITION BY PROTEINS. <i>Joshua Wand</i> HARNASSING THE AWESOME POWER OF ¹⁹ F NMR. <i>Angela Gronenborn</i>	
8:15 AM-10:15 AM	Symposium: Computational Cardiology <i>Chair: Adam P. Hill, Victor Chang Cardiac Research Institute, Australia</i>	Great Hall B
	USING CLINICAL DATASETS TO OPTIMISE MODELS OF HUMAN VENTRICULAR ELECTROPHYSIOLOGY: IMPLICATIONS FOR IN SILICO DRUG SCREENING. <i>Adam P. Hill</i> TOWARDS IN SILICO DRUG TRIALS USING HUMAN MULTISCALE CARDIAC MODELS. <i>Blanca Rodriguez</i> YOUR PERSONAL VIRTUAL HEART. <i>Natalia Trayanova</i> PREDICTIVE COMPUTATIONAL PHARMACOLOGY: FROM ATOM TO RHYTHM. <i>Colleen E. Clancy</i>	
8:15 AM-10:15 AM	Platform: TRP Channels	Room R02/03
8:15 AM-10:15 AM	Platform: Membrane Structure II: Simulations	Room R04/05
8:15 AM-10:15 AM	Platform: Protein Assemblies	Room R06/07
8:15 AM-10:15 AM	Platform: Single-Molecule Spectroscopy	Room R08/09
8:15 AM-10:15 AM	Platform: Exocytosis and Endocytosis	Room 206/207
8:15 AM-10:15 AM	Platform: Nucleic Acid Structure & Dynamics	Room 208/209
10:30 AM-12:30 PM	Poster Presentations and Late Posters	Hall B-2 & C
1:00 PM-3:00 PM	Symposium: Channel Gating Mechanisms <i>Chair: Catherine Henzler-Wildman, University of Wisconsin</i>	Great Hall A
	DYNAMIC COUPLING BETWEEN THE GATES IN THE NAK CHANNEL. <i>Katherine Henzler-Wildman</i> STRUCTURE OF THE TPC1 CHANNEL FROM <i>ARABIDOPSIS THALIANA</i> . <i>Youxing Jiang</i> GATING PATHWAYS FOR A PENTAMERIC LIGAND-GATED ION CHANNEL SOLVED BY ATOMISTIC STRING METHOD SIMULATIONS. <i>Toby W. Allen</i> FINE TUNING HCN CHANNEL ACTIVITY. <i>Anna Moroni</i>	
1:00 PM-3:00 PM	Symposium: Anomalous Dynamics in Biological Systems <i>Chair: Diego Krapf, Colorado State University</i>	Great Hall B
	ANOMALOUS DIFFUSION AND COMPARTMENTALIZATION ON THE SURFACE OF MAMMALIAN CELLS. <i>Diego Krapf</i> ZOOMING IN ON ANOMALOUS DIFFUSION WITH VARIABLE-LENGTHSCALE FLUORESCENCE CORRELATION SPECTROSCOPY. <i>Cecile Fradin</i> ANOMALOUS DIFFUSION IN MEMBRANES AND THE CYTOPLASM OF BIOLOGICAL CELLS. <i>Ralf Metzler</i> THE GENOME IN THE NUCLEUS: SNAKY, SOFT, AND WELL-ORGANIZED. <i>Yuval Garini</i>	
1:00 PM-3:00 PM	Platform: Ligand-gated Channels II	Room R02/03
1:00 PM-3:00 PM	Platforms: Protein-Lipid Interactions: Structures	Room R04/05
1:00 PM-3:00 PM	Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II	Room R06/07
1:00 PM-3:00 PM	Platform: Cardiac Muscle Regulation	Room R08/09
1:00 PM-3:00 PM	Platform: Calcium Signaling/Intercellular Calcium Channels and Sparks and Waves	Room 206/207
1:00 PM-3:00 PM	Platform: Protein Structure and Conformation III	Room 208/209

Notes

Wednesday, February 15

New Council Meeting
8:00 AM - 11:00 AM, ROOM 222

Poster Viewing
8:00 AM - 3:00 PM, HALL B-2 & C

Symposium
Protein Dynamics and Allostery
8:15 AM - 10:15 AM, GREAT HALL A

Chair

Martin Weik, Institut de Biologie Instructionale, France

NO ABSTRACT 8:15 AM
PICOSECOND DYNAMICS OF PHOTOSWITCHABLE FLUORESCENT PROTEINS REVEALED BY TIME-RESOLVED SERIAL FEMTOSECOND CRYSTALLOGRAPHY. **Martin Weik**

2285-SYMP 8:45 AM
COUPLED RESIDUE-RESIDUE DYNAMICS IN PROTEIN ALLOSTERIC MECHANISMS. **Donald Hamelberg**

2286-SYMP 9:15 AM
ENTROPY IN MOLECULAR RECOGNITION BY PROTEINS. **Joshua Wand**

NO ABSTRACT 9:45 AM
HARNASSING THE AWESOME POWER OF ¹⁹F NMR. **Angela Gronenborn**

Symposium
Computational Cardiology
8:15 AM - 10:15 AM, GREAT HALL B

Chair

Adam P. Hill, Victor Chang Cancer Research Institute, Australia

2287-SYMP 8:15 AM
USING CLINICAL DATASETS TO OPTIMISE MODELS OF HUMAN VENTRICULAR ELECTROPHYSIOLOGY: IMPLICATIONS FOR IN SILICO DRUG SCREENING. **Adam P. Hill**, Stefan A. Mann, Mohammad S. Imtiaz, Matthew D. Perry, Jamie I. Vandenberg

2288-SYMP 8:45 AM
TOWARDS IN SILICO DRUG TRIALS USING HUMAN MULTISCALE CARDIAC MODELS. **Blanca Rodriguez**

NO ABSTRACT 9:15 AM
YOUR PERSONAL VIRTUAL HEART. **Natalia Trayanova**

2289-SYMP 9:45 AM
PREDICTIVE COMPUTATIONAL PHARMACOLOGY: FROM ATOM TO RHYTHM. **Colleen E. Clancy**

Platform
TRP Channels
8:15 AM - 10:15 AM, ROOM R02/03

Co-Chairs

Theanne Griffith, Columbia University

Leon D. Islas, National Autonomous University of Mexico

2290-PLAT 8:15 AM
PERMEATION, GATING, AND MODULATION OF THE TRPA1 CHANNEL IN LONG-TIMESCALE MOLECULAR DYNAMICS SIMULATIONS. **Heidi Koldsø**, Morten Ø. Jensen, Vishwanath Jogini, David E. Shaw

2291-PLAT 8:30 AM EDUCATION TRAVEL AWARDEE
ION PERMEATION MECHANISM IN TRPV6 CA²⁺ CHANNEL. **Serzhan Sakipov**, Alexander I. Sobolevsky, Maria Kurnikova

2292-PLAT 8:45 AM
LOCALIZATION OF AN ALTERNATIVE ION PERMEATION PATHWAY IN TRPM3. **Katharina Held**, Annelies Janssens, Thomas Voets, Joris Vriens

2293-PLAT 9:00 AM
DYNAMIC SOLVATION OF PROTEIN CAVITIES UNDERLIES TRPV1 GATING. **Marina Kasimova**, Aysenur Yazici, Daniele Granata, Tibor Rohacs, Vincenzo Carnevale

2294-PLAT 9:15 AM
EXPLORING FUNCTIONAL ROLES OF TRPV1 INTRACELLULAR DOMAINS WITH UNSTRUCTURED PEPTIDE-INSERTION SCREENING. **Linlin Ma**, **Fan Yang**, Simon Vu, Jie Zheng

2295-PLAT 9:30 AM
STRUCTURAL INSIGHT INTO THE MOLECULAR MECHANISM OF TRPA1 INHIBITION AND ACTIVATION. **Amrita Samanta**, Janna Kiselar, Seungil Han, Vera Moiseenkova Bell

2296-PLAT 9:45 AM
INHIBITION OF TRPM3 ION CHANNELS BY G-PROTEIN BETA-GAMMA SUBUNITS. **Yevgen Yudin**, Doreen Badheka, Istvan Borbiri, Aysenur Yazici, Tooraj Mirshahi, Tibor Rohacs

2297-PLAT 10:00 AM
PHOTOPHARMACOLOGICAL MODULATION OF LIPID-GATED TRPC CHANNELS AS A STRATEGY TO GOVERN NEURONAL EXCITABILITY. **Oleksandra Tiapko**, Gema Guedes de la Cruz, Toma Glasnov, Helmut Kubista, Michaela Lichtenegger, Klaus Groschner

Platform
Membrane Structure II: Simulations
8:15 AM - 10:15 AM, ROOM R04/05

Co-Chairs

Noah Trebesch, University of Illinois at Urbana-Champaign

Kevin J. Hallock, Boston University

2298-PLAT 8:15 AM
CURVATURE-INDUCED LIPID SORTING IN PLASMA MEMBRANE TETHERS. **Svetlana Baoukina**, Helgi I. Ingolfsson, Siewert J. Marrink, D. Peter Tieleman

2299-PLAT 8:30 AM
CALCULATING MEMBRANE AREA COMPRESSIBILITY FROM MD SIMULATIONS: A NOVEL COMPUTATIONAL FRAMEWORK. **Milka Doktorova**, George Khelashvili, Harel Weinstein

2300-PLAT 8:45 AM
CALCIUM-INDUCED SCULPTURING OF THE PLASMA MEMBRANE: LIPID MICROCLUSTERS CAST BY ANIONIC LIPIDS. **Michael J. Hallock**, Alex Greenwood, Yan Wang, James H. Morrissey, Emad Tajkhorshid, Chad Rienstra, **Taras V. Pogorelov**

2301-PLAT 9:00 AM
MICROSCOPIC CHARACTERIZATION OF MEMBRANE INSERTION AND DYNAMICS OF AN ISOPRENOID LIPID. **Po-Chao Wen**, Emad Tajkhorshid

2302-PLAT 9:15 AM
ATOMISTIC MODELING OF ORGANELLE-SCALE MEMBRANE STRUCTURES OF ARBITRARY SIZE, LIPID COMPOSITION, AND GEOMETRIC COMPLEXITY. **Noah Trebesch**, Emad Tajkhorshid

2303-PLAT 9:30 AM
NANOSCALE STRUCTURE OF LIPID BILAYERS REVEALED BY IN-SILICO AND EXPERIMENTAL SMALL ANGLE NEUTRON SCATTERING. **Mitchell Dorrell**, Frederick Heberle, John Katsaras, Edward Lyman

61ST Annual Meeting

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2304-PLAT 9:45 AM
ENERGY LANDSCAPE OF PORE FORMATION IN BILAYER LIPID MEMBRANE. **Sergey A. Akimov**, Pavel E. Volynsky, Timur R. Galimzyanov, Peter I. Kuzmin, Konstantin V. Pavlov, Oleg V. Batishchev

2305-PLAT 10:00 AM
ATOMISTIC SIMULATIONS PROVIDE INSIGHT INTO ELECTRON PARAMAGNETIC RESONANCE PROBE BEHAVIOR. Gary Angles, **Sally C. Pias**

Platform Protein Assemblies

8:15 AM - 10:15 AM, ROOM R06/07

Co-Chairs

Tanuj Sapra, University of Zurich, Switzerland
Nadia Izadi Pruneyre, Institut Pasteur, CNRS, France

2306-PLAT 8:15 AM
IN SITU MECHANICAL INTERROGATION OF SINGLE NUCLEAR LAMINS SUGGESTS THE LAMINA IS A ROBUST FRAMEWORK. **Tanuj Sapra**, Zhao Qin, Markus Buehler, Ohad Medalia

2307-PLAT 8:30 AM
NANO-SPACE VIDEO IMAGING REVEALS STRUCTURAL DYNAMICS OF FIBROUS PROTEIN ASSEMBLY AND RELEVANT ENZYMES. **Takahiro Watanabe-Nakayama**, Noriyuki Kodera, Hiroki Konno, Kenjiro Ono, David B. Teplow, Masahito Yamada, Toshio Ando

2308-PLAT 8:45 AM
HYDROPHOBIC INTERFACES, KEY REGIONS FOR ASSEMBLY OF TRANSMEMBRANE PROTEINS: A STUDY OF *E. COLI* AQUAPORIN Z. **Victoria Schmidt**, James N. Sturgis

2309-PLAT 9:00 AM
HYDROGEN-DEUTERIUM EXCHANGE MASS SPECTROSCOPY TO DETERMINE STRUCTURE AND STRUCTURAL DYNAMICS OF PROTEIN COMPLEXES. **Emanuele Paci**

2310-PLAT 9:15 AM
MOLECULAR COEVOLUTION OF FLI PROTEINS PROVIDES A GUIDE TO ACCURATE MODELS OF FLAGELLAR PROTEIN COMPLEXES AND DYNAMICS. **Faruck Morcos**

2311-PLAT 9:30 AM EDUCATION TRAVEL AWARDEE
CHARACTERIZATION OF THE CONFORMATIONAL ENSEMBLE OF POLY-GLUTAMINE PEPTIDES VIA METADYNAMICS MD SIMULATIONS AND UV RESONANCE RAMAN SPECTROSCOPY. **Riley J. Workman**, David Punihaole, Ryan S. Jakubek, Jeffrey D. Madura

2312-PLAT 9:45 AM
A NEW PAIRWISE SHAPE-BASED SCORING FUNCTION TO CONSIDER LONG-RANGE INTERACTIONS FOR PROTEIN-PROTEIN DOCKING. Yumeng Yan, **Shengyou Huang**

2313-PLAT 10:00 AM
STRUCTURAL BASIS OF THE SIGNALING THROUGH A BACTERIAL MEMBRANE RECEPTOR HASR DECIPHERED BY AN INTEGRATIVE APPROACH. **Nadia Izadi Pruneyre**

Platform Single-Molecule Spectroscopy

8:15 AM - 10:15 AM, ROOM R08/09

Co-Chairs

Allison H. Squires, Boston University
Yongli Zhang, Yale University

2314-PLAT 8:15 AM EDUCATION TRAVEL AWARDEE
SINGLE-MOLECULE DISSECTION OF THE ROLE OF DIRECTIONALITY IN PROTEIN DEGRADATION BY CLP PROTEOLYTIC MACHINES. **Hema Chandra Kotamarthi**, Adrian Olivares, Benjamin Stein, Robert Sauer, Tania Baker

2315-PLAT 8:30 AM
REGULATED SNARE FOLDING AND MEMBRANE FUSION. **Yongli Zhang**

2316-PLAT 8:45 AM
DIRECT MEASUREMENT OF SEQUENCE-DEPENDENT TRANSITION PATH TIMES AND CONFORMATIONAL DIFFUSION IN DNA DUPLEX FORMATION. **Krishna Neupane**, Feng Wang, Michael Woodside

2317-PLAT 9:00 AM
DIRECT SINGLE-MOLECULE MEASUREMENTS OF PHYCOCYANOBILIN PHOTOPHYSICS IN MONOMERIC C-PHYCOCYANIN. **Allison H. Squires**, Quan Wang, W.E. Moerner

2318-PLAT 9:15 AM
SIMULATION OF FRET DYES ALLOWS DIRECT COMPARISON AGAINST EXPERIMENTAL DATA. **Ines Reinartz**, Claude Sinner, Alexander Schug

2319-PLAT 9:30 AM
SINGLE-MOLECULE PEPTIDE FINGERPRINTING. Jetty van Ginkel, Mike Filius, Malwina Szczepaniak, Pawel Tulinski, Anne S. Meyer, **Chirlmin Joo**

2320-PLAT 9:45 AM
AN IN VITRO SAMPLE GENERATION PIPELINE FOR HIGH-THROUGHPUT SINGLE-MOLECULE FRET BASED SCREENING OF PROTEINS. **Kambiz M. Hamadani**, Madeleine Jensen, Wu Peng, Jamie H. D. Cate, Susan Marqusee

2321-PLAT 10:00 AM EDUCATION TRAVEL AWARDEE
INVESTIGATION OF DNA BINDING, NUCLEOLYSIS AND PRODUCT RELEASE SPECIFICITY OF RNA GUIDED ENDONUCLEASE CRISPR-CPF1 FAMILY REVEALS IMPORTANT DIFFERENCES FROM CAS9-RNA. **Digvijay Singh**, John Mallon, Ramreddy Tipanna, Anustup Poddar, Olivia Yang, Scott Bailey, Taekjip Ha

Platform Exocytosis and Endocytosis

8:15 AM - 10:15 AM, ROOM 206/207

Co-Chairs

Misty Marshall, Uppsala University, Sweden
Comert Kural, The Ohio State University

2322-PLAT 8:15 AM
MEASUREMENT OF THE MOBILITY OF LUMENAL AND MEMBRANE PROTEINS OF INDIVIDUAL SECRETORY GRANULES. **Prabhodh S. Abbineni**, Kevin P. Bohannon, Mary A. Bittner, Daniel Axelrod, Ronald W. Holz

2323-PLAT 8:30 AM
DRUNKEN MEMBRANES. LOW DOSES OF SHORT-CHAIN ALCOHOLS INHIBIT EXOCYTOSIS IN A PROTEIN-FREE MODEL SYSTEM. **Dixon J. Woodbury**, Jason Paxman, Brady Hunt, David Hallan, Samuel R. Zarbock

2324-PLAT 8:45 AM CPOW TRAVEL AWARDEE
LIPID DYNAMICS AND THE ANTHRAX TOXIN INTRACELLULAR JOURNEY. Nnanya Kalu, Laura Lucas, Clare Kenney, **Ekaterina M. Nestorovich**

2325-PLAT 9:00 AM
ACTIONS OF RAB27B GTPASE ON CENTRAL EXCITATORY SYNAPTIC TRANSMISSION. Meredith M. Njus, Geoff Murphy, Stephen I. Lentz, Stephen A. Ernst, **Edward L. Stuenkel**

2326-PLAT 9:15 AM
MOLECULAR MECHANISM OF FUSION PORE FORMATION. **Satyan Sharma**, Manfred Lindau

2327-PLAT 9:30 AM
CHROMAFFIN CELL SYNAPTOTAGMIN ISOFORMS FORM FUNCTIONALLY AND SPATIALLY SEPARABLE GRANULE POOLS. Tejeshwar Rao, Alexandra Ranski, Peter Dahl, Julia Bourg, Edwin Chapman, Sarah Veatch, David Giovannucci, **Arun Anantharam**

2328-PLAT 9:45 AM
DISTINCT EFFECTS OF ENDOSOMAL ESCAPE AND ENDOSOMAL TRAF-FICKING ON GENE DELIVERY VIA ELECTROTRANSFECTION. **Lisa D. Cervia**, Chun-Chi Chang, Liangli Wang, Fan Yuan

2329-PLAT 10:00 AM
DYNAMICS OF CLATHRIN-MEDIATED ENDOCYTOSIS WITHIN A DEVELOPING ORGANISM. **Joshua P. Ferguson**, Nathan M. Willy, Spencer P. Heidotting, Scott D. Huber, Matthew J. Webber, Comert Kural

**Platform
Nucleic Acid Structure & Dynamics**

8:15 AM - 10:15 AM, ROOM 208/209

Co-Chairs

Michele Di Pierro, Rice University
Greg Morrison, University of Houston

2330-PLAT 8:15 AM
CONFORMATIONS OF SINGLE-STRANDED NUCLEIC ACIDS IN SOLUTION. **Alex Plumridge**, Steve Meisburger, Lois Pollack

2331-PLAT 8:30 AM
THE CONFORMATIONS OF CONFINED POLYMERS IN AN EXTERNAL POTENTIAL. **Greg Morrison**, Dave Thirumalai

2332-PLAT 8:45 AM
SINGLE MOLECULE VISUALIZATION OF TOPOLOGY-MEDIATED INTERACTIONS IN SUPERCOILED DNA. **Shane Scott**, Zhi Ming Xu, Fedor Kouzine, Daniel Berard, Cynthia Shaheen, Laura Saunders, Barbara Gravel, Catherine Leroux, Christopher Cayen-Cyr, David Levens, Craig Benham, Sabrina Leslie

2333-PLAT 9:00 AM
EXPLORING DNA AND RNA STRUCTURES IN SOLUTION WITH INFRARED SPECTROSCOPY. **Allison L. Stelling**, Hashim Al-Hashimi

2334-PLAT 9:15 AM INTERNATIONAL TRAVEL AWARDEE
PORE TRANSLOCATION OF DNA CHAINS WITH PHYSICAL KNOTS. **Antonio Suma**, Cristian Micheletti

2335-PLAT 9:30 AM
SINGLE MOLECULE FLUORESCENCE STUDIES ON NUCLEOSOME DYNAMICS. **Kathrin Lehmann**, Alenxander Gansen, Katalin Toth, Jörg Langowski

2336-PLAT 9:45 AM
SHAPE-PROGRAMMED HIERARCHICAL SELF-ASSEMBLY OF DESIGNED DNA BUILDING BLOCKS INTO MASSIVE THREE-DIMENSIONAL FINITE-SIZE OBJECTS. **Klaus Franz Wagenbauer**, Christian Sigl, Hendrik Dietz

2337-PLAT 10:00 AM
THE ENERGY LANDSCAPE OF HUMAN CHROMOSOMES. **Michele Di Pierro**

**Symposium
Channel Gating Mechanisms**

1:00 PM - 3:00 PM, GREAT HALL A

Chair

Katherine Henzler-Wildman, University of Wisconsin

2338-SYMP 1:00 PM
DYNAMIC COUPLING BETWEEN THE GATES IN THE NAK CHANNEL. **Katherine Henzler-Wildman**

2339-SYMP 1:30 PM
STRUCTURE OF THE TPC1 CHANNEL FROM *ARABIDOPSIS THALIANA*. Jiangtao Guo, Weizhong Zeng, **Youxing Jiang**

2340-SYMP 2:00 PM
GATING PATHWAYS FOR A PENTAMERIC LIGAND-GATED ION CHANNEL SOLVED BY ATOMISTIC STRING METHOD SIMULATIONS. Bogdan Lev, Samuel Murail, Frédéric Poitevin, Brett A. Cromer, Marc Baaden, Marc Delarue, **Toby W. Allen**

2341-SYMP 2:30 PM
FINE TUNING HCN CHANNEL ACTIVITY. **Anna Moroni**

**Symposium
Anomalous Dynamics in Biological Systems**

1:00 PM - 3:00 PM, GREAT HALL B

Chair

Diego Krapf, Colorado State University

2342-SYMP 1:00 PM
ANOMALOUS DIFFUSION AND COMPARTMENTALIZATION ON THE SURFACE OF MAMMALIAN CELLS. **Diego Krapf**

2343-SYMP 1:30 PM
ZOOMING IN ON ANOMALOUS DIFFUSION WITH VARIABLE-LENGTHS-SCALE FLUORESCENCE CORRELATION SPECTROSCOPY. **Cecile Fradin**

2344-SYMP 2:00 PM
ANOMALOUS DIFFUSION IN MEMBRANES AND THE CYTOPLASM OF BIOLOGICAL CELLS. **Ralf Metzler**

2345-SYMP 2:30 PM
THE GENOME IN THE NUCLEUS: SNAKY, SOFT AND WELL-ORGANIZED. **Yuval Garini**

**Platform
Ligand-gated Channels II**

1:00 PM - 3:00 PM, ROOM R02/03

Co-Chairs

Jelena Baranovic, Leibniz-Institut für Molekulare Pharmakologie (FMP), Germany

James A. Brozik, University of New Mexico

2346-PLAT 1:00 PM INTERNATIONAL TRAVEL AWARDEE
ANALYSIS OF GATING OF ACID-SENSING ION CHANNELS (ASICS) UNDER RAPID AND SLOW PH CHANGES. **Omar Alijevic**, Jan Kucera, Stephan Kellenberger

2347-PLAT 1:15 PM
A SELECTIVITY FILTER AT THE LOWER END OF ASIC1A. **Timothy Lynagh**, Emelie Flood, Celine Boiteux, Matthias Wulf, Janne M. Colding, Vitaly V. Komnatnyy, Toby W. Allen, Stephan A. Pless

2348-PLAT 1:30 PM
SINGLE MOLECULE KINETIC MEASUREMENTS AND HIDDEN MARKOV MODELS FOR P2X1 RECEPTORS. **James A. Brozik**, Adam O. Barden, Ashish Bhattari, Brian N. Webb, Andrew J. Thompson

2349-PLAT 1:45 PM
STRUCTURAL BASIS AND MOLECULAR MECHANISM UNDERLYING P2X7 RECEPTOR ANTAGONISM. **Akira Karasawa**, Toshimitsu Kawate

2350-PLAT 2:00 PM
BLUE NATIVE PAGE EVIDENCE THAT PLASMA MEMBRANE-BOUND HUMAN ENAC CHANNELS SHARE A TRIMERIC ARCHITECTURE WITH FULL-LENGTH HUMAN ASIC1 AND ASIC2. **Anke Dopychai**, Ralf Hausmann, Linda Krüger, Stefan Gründer, Günther Schmalzing

2351-PLAT 2:15 PM
MAPPING THE FLEXIBILITY OF AMPA TYPE IONOTROPIC GLUTAMATE RECEPTORS. **Jelena Baranovic**, Andrew JR Plested

2352-PLAT 2:30 PM
PROBING A MOLECULAR LOCK IN A PRIMITIVE NMDA RECEPTOR. **Alvin Yu**, Robert Alberstein, Alecia Thomas, Richard Grey, Mark L. Mayer, Albert Lau

2353-PLAT 2:45 PM
INVESTIGATING THE SCRAMBLING MECHANISM OF TMEM16 SCRAMBLASES. **Mattia Malvezzi**, Rabia Iqbal, Ashley Brown, Anant Menon, Alessio Accardi

Platforms

Protein-Lipid Interactions: Structures

1:00 PM - 3:00 PM, ROOM R04/05

Co-Chairs

Steven R. Van Doren, University of Missouri
Olivier Soubias, NIH

2354-PLAT 1:00 PM
TRANSIENT INTERACTIONS OF METALLOPROTEINASES WITH BILAYERS, CAPTURED BY PARAMAGNETIC NMR, INCLUDE DUAL MODES OF BINDING, ELECTROSTATIC RECRUITING, AND ALLOSTERY. **Steven R. Van Doren**, Stephen H. Prior, Yan G. Fulcher, Jia Xu, Tara C. Marcink, Rama K. Koppiseti

2355-PLAT 1:15 PM
OXIDIZED LIPIDS: THEIR ROLE IN REGULATION OF MITOCHONDRIAL APOPTOSIS. Artur Dingeldein, Jörgen Aden, Tobias Sparrman, Radek Sachl, Sarka Pokorna, Martin Hof, **Gerhard Gröbner**

2356-PLAT 1:30 PM
SPECTROSCOPIC INVESTIGATION OF A-SYNUCLEIN 71-82, A PEPTIDE DERIVED FROM A PROTEIN INVOLVED IN PARKINSON'S DISEASE. **Benjamin Martial**, Émilie Bruneau, Laurie Bédard, Thierry Lefèvre, Michèle Auger

2357-PLAT 1:45 PM
DETERMINANTS OF LIPID SPECIFICITY FOR THE FVII MEMBRANE BINDING DOMAIN. **Melanie Muller**, Emad Tajkhorshid

2358-PLAT 2:00 PM
STRUCTURE OF THE SAR1 LATTICE AND ITS ROLE IN COPII VESICLE FORMATION AND SCISSION. **Peter Randolph**, Hanaa Hariri, Scott Stagg

2359-PLAT 2:15 PM
ROLE OF PIP2-DEPENDENT MEMBRANE INTERACTIONS IN VINCULIN ACTIVATION, MOTILITY AND FORCE TRANSMISSION. **Sharon L. Campbell**, Peter M. Thompson, Srinivas Ramachandran, Lindsay Case, Nikolay Dokholyan, Caitlin Tolbert, Clare M. Waterman

2360-PLAT 2:30 PM
FLEXIBILITY DICTATES FUNCTION IN AN EXCEPTIONAL CURVATURE SENSING HELIX. **Erin R. Tyndall**, Edward Kim, Kumaran S. Ramamurthi, Fang Tian

2361-PLAT 2:45 PM
RHODOPSIN DIMERIZATION IN MEMBRANE BILAYERS REVEALED BY SMALL ANGLE NEUTRON SCATTERING. **Olivier Soubias**, Jonathan D. Nickels, Walter E. Teague, Kirk G. Hines, Kevin L. Weiss, John Katsaras, Klaus Gawrisch

Platform

Intrinsically Disordered Proteins (IDP) and Aggregates II

1:00 PM - 3:00 PM, ROOM R06/07

Co-Chairs

Lisa Muiznieks, The Hospital For Sick Children, Canada
Sigrid Milles, Institut de Biologie Structurale, France

2362-PLAT 1:00 PM
SINGLE-MOLECULE SPECTROSCOPY REVEALS THE ROLE OF TWO-DIMENSIONAL CROWDING IN DISORDERED PROTEIN FOLDING. **Priya R. Banerjee**, Mahdi Moosa, Ashok Deniz

2363-PLAT 1:15 PM **INTERNATIONAL TRAVEL AWARDEE**
A TALE OF TWO AMYLOIDOGENIC INTRINSICALLY DISORDERED PROTEINS: INTERPLAY OF TAU AND A-SYNUCLEIN. **Karishma Bhasne**, Sanjana Sebastian, Samrat Mukhopadhyay

2364-PLAT 1:30 PM
TARDIGRADE DISORDERED PROTEINS MEDIATE DESICCATION TOLERANCE. **Thomas C. Boothby**, Samantha Piszkiwicz, Aakash Mehta, Alexandra Brozena, Hugo Tapia, Doug Koshland, Alex Holehouse, Rohit Pappu, Bob Goldstein, Gary Pielak

2365-PLAT 1:45 PM
CONTROLLING THE BIOPHYSICAL PROPERTIES AND FUNCTIONALITY OF PHASE-SEPARATED ELASTIN-BASED DROPLETS THROUGH AMINO ACID SEQUENCE MUTATIONS. **Lisa D. Muiznieks**, Fred W. Keeley, Régis Pomès

2366-PLAT 2:00 PM **EDUCATION TRAVEL AWARDEE**
MODELING THE EARLY STAGES OF AGGREGATION IN DISORDERED ELASTIN-LIKE PROTEINS. **Yue Zhang**, Valeria Zai-Rose, Cody J. Price, Gene L. Bidwell III, John J. Correia, Nicholas C. Fitzkee

2367-PLAT 2:15 PM
WHAT ENCODES COUPLED FOLDING AND BINDING REACTIONS: IDPS OR PARTNER PROTEINS? **Michael D. Crabtree**, Carolina A. T. F. Mendonca, Quenton Bubb, Sarah L. Shamma, Jane Clarke

2368-PLAT 2:30 PM
THE MEASLES VIRUS PHOSPHOPROTEIN: AN INTRINSICALLY DISORDERED CHAPERONE THAT REGULATES NUCLEOCAPSID ASSEMBLY. **Sigrid Milles**, Malene Ringkjøbing Jensen, Guillaume Communie, Damien Maurin, Guy Schoehn, Rob WH Ruigrok, Martin Blackledge

2369-PLAT 2:45 PM
RAMACHANDRAN MAP ANALYSIS OF THE MONOMERIC AB1-40 AND AB1-42 PEPTIDES BY SOLUTION NMR. **Julien Roche**

Platform Cardiac Muscle Regulation

1:00 PM - 3:00 PM, ROOM R08/09

Co-Chairs

Paul Janssen, *The Ohio State University*
Gaetano Santulli, *Columbia University*

2370-PLAT 1:00 PM

CARDIAC EXCITABILITY AT THE INTERCALATED DISC IS MAINTAINED VIA A SMALL ISOFORM OF OBSCURIN. **Heather R. Manring**, Maegen A. Ackermann

2371-PLAT 1:15 PM

CONTRACTILE FORCE AND KINETICS IN FAILING VERSUS NON-FAILING HUMAN MYOCARDIUM. Jae-Hoon Chung, Brit Martin, Benjamin Canan, Mohammad Elnakish, Nancy Saad, Ahmet Kilic, Mei-Pian Chen, Nima Milani-Nejad, Peter Mohler, Vadim Fedorov, **Paul Janssen**

2372-PLAT 1:30 PM

ADAPTIVE VENTRICULAR REMODELLING AFTER MYOCARDIAL INFARCTION INVOLVES TITIN-BASED CARDIOMYOCYTE STIFFENING AND ELONGATED TITIN TURNOVER. **Sebastian Kötter**, Malgorzata Kazmierowska, Christian Andresen, Katharina Bottermann, Maria Grandoch, Simone Gorressen, Andre Heinen, Jens M. Moll, Jürgen Scheller, Axel Gödecke, Jens W. Fischer, Joachim P. Schmitt, Martina Krüger

2373-PLAT 1:45 PM

MECHANISTIC ROLE OF TYPE 1 INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR IN THE REGULATION OF VASCULAR TONE IN HEART FAILURE. **Gaetano Santulli**, Jessica Gambardella, Steven Reiken, Qi Yuan, Ryutaro Nakashima, Frances M. Forrester, Alain Lacampagne, Andrew Marks

2374-PLAT 2:00 PM

TROPONIN I TYROSINE PHOSPHORYLATION MODULATES CARDIAC CONTRACTION. Elizabeth A. Brundage, Vikram Shettigar, Hussam E. Salhi, Jonathan P. Davis, Mark T. Ziolo, **Brandon Biesiadecki**

2375-PLAT 2:15 PM

ACETYLATION OF K326 AND K328 ON ACTIN BOOSTS CONTRACTILE PROPERTIES OF MUSCLE *IN VITRO* AND *IN VIVO*. **William Schmidt**, Meera C. Viswanathan, D. Brian Foster, Anthony Cammarato

2376-PLAT 2:30 PM

DIRECT SINGLE MOLECULE VISUALIZATION OF CARDIAC MYBP-C N-TERMINAL FRAGMENT INTERACTIONS WITH SUSPENDED THIN FILAMENTS. **Alessio V. Inchingolo**, Michael J. Previs, Samantha E. Beck Previs, Neil M. Kad, David M. Warshaw

2377-PLAT 2:45 PM

THE ROLE OF METHYLGLYOXAL ON THE CARDIAC MYOFILAMENT. **Maria Papadaki**, Ronald Holewinski, Marisa Stachowski, Jonathan Kirk

Platform Calcium Signaling/Intercellular Calcium Channels and Sparks and Waves

1:00 PM - 3:00 PM, ROOM 206/207

Co-Chairs

Ming-Feng Tsai, *Brandeis University*
David Jacobson, *Vanderbilt University*

2378-PLAT 1:00 PM

HIGH-THROUGHPUT SCREENS TO DISCOVER INHIBITORS OF LEAKY RYANODINE RECEPTOR CALCIUM CHANNELS. Robyn T. Rebbeck, Megan V. Ryan, Gregory D. Gillispie, David D. Thomas, Donald M. Bers, **Razvan L. Cornea**

2379-PLAT 1:15 PM

IMPROVEMENTS OF THE KINETICS OF RED FLUORESCENT CALCIUM INDICATORS. **Silke Kerruth**, Catherine Coates, Katalin Torok

2380-PLAT 1:30 PM

PARTICLE-BASED APPROACHES TO CLEARING CALCIUM: A PROTEIN LANDSCAPE MODEL OF THE SARCO/ENDOPLASMIC RETICULUM CALCIUM-ATPASE (SERCA) PUMP FOR SUB-CELLULAR STOCHASTIC MODELS. **Sophia P. Hidakis**, Thomas M. Bartol, Terrence J. Sejnowski, Rommie E. Amaro

2381-PLAT 1:45 PM

CA²⁺ SIGNALS ORIGINATE FROM IMMOBILE IP₃ RECEPTORS AT ER-PM JUNCTIONS. **Nagendra Babu Thillaiappan**, Alap P. Chavda, Stephen C. Tovey, David L. Prole, Colin W. Taylor

2382-PLAT 2:00 PM

CHARACTERIZATION OF DIFFERENT LOCALIZED CA²⁺ SIGNALS IN SKELETAL MUSCLE FIBERS. **Mikhail Svirin**, Tihomir Georgiev, Enrique Pérez Jaimovich, Rainer H A Fink

2383-PLAT 2:15 PM

ROLE OF ORAI PROTEINS IN ACTIVATION OF ENDOGENOUS TRPC1-COMPOSED CHANNELS. **Alexey Shalygin**, Anton Skopin, Dmitrii Kolesnikov, Lyubov Glushankova, Elena Kaznacheyeva

2384-PLAT 2:30 PM

THE TWO-PORE DOMAIN K⁺ CHANNEL TALK-1 PROVIDES A COUNTERCURRENT THAT FACILITATES ENDOPLASMIC RETICULUM CA²⁺ LEAK. **Nicholas Vierra**, Prasanna Dadi, Sarah Milian, David Jacobson

2385-PLAT 2:45 PM

SAFETY UPGRADES OF THE MITOCHONDRIAL CALCIUM UNIPORTER. **Ming-Feng Tsai**, Christopher Miller

Platform Protein Structure and Conformation III

1:00 PM - 3:00 PM, ROOM 208/209

Co-Chairs

Nathan S. Babcock, *Simon Fraser University, Canada*
Michael Nilges, *Pasteur Institute, France*

2386-PLAT 1:00 PM CPOW TRAVEL AWARDEE

TRAPPING ON-PATHWAY INTERMEDIATES FOR LARGE SCALE CONFORMATIONAL CHANGES WITH COARSE-GRAINED SIMULATIONS. **Laura Orellana**, Özge Yoluk, Oliver Carrillo, Modesto Orozco, Erik Lindahl

2387-PLAT 1:15 PM

STUDYING BIOMOLECULAR INTERACTIONS: A HYBRID APPROACH. Sean A. McKenna, Manuel Koch, Janusz M. Bujnicki, Joerg Stetefeld, **Trushar R. Patel**

2388-PLAT 1:30 PM

THE MOLTEN GLOBULE STATE OF MALTOSE BINDING PROTEIN: STRUCTURAL CHARACTERIZATION BY EPR SPECTROSCOPY. Benjamin Selmeke, Chen Nickolaus, Peter Borbat, Jack H. Freed, **Wolfgang E. Trommer**

2389-PLAT 1:45 PM

MODEL COMPARISON TO IDENTIFY STRUCTURAL HETEROGENEITY IN PROTEIN X-RAY CRYSTALLOGRAPHY. **Nathan S. Babcock**, David A. Sivak, Daniel Keedy, James S. Fraser

2390-PLAT 2:00 PM

SINGLE MOLECULE IDENTIFICATION AGAINST PROTEOMES USING SUB-NANOMETER PORES. **Eamonn Kennedy**, Mikhail Kolmogorov, Zhuxin Dong, Pavel Pevzner, Greg Timp

2391-PLAT 2:15 PM

STRUCTURAL BASIS FOR SUBSTRATE RECOGNITION BY THE ANKYRIN REPEAT DOMAIN OF DHHC17 PALMITOYLTRANSFERASE. **Raffaello Verardi**, Jin-Sik Kim, Anirban Banerjee

2392-PLAT 2:30 PM

INTEGRATIVE STRUCTURAL BIOLOGY OF A TYPE II SECRETION PSEUDOPI-LUS. Benjamin Bardiaux, Aracelys Lopez-Castilla, Xiong Yu, Edward H. Egelman, Nadia Izadi-Pruneyre, Olivera Francetic, **Michael Nilges**

2393-PLAT 2:45 PM

FIRST PROTEIN SCATTERING MEASUREMENTS AT LIX BEAMLINE. **Shirish N. Chodankar**

WEDNESDAY POSTER SESSIONS

10:30 AM–12:30 PM, HALL B-2 & C

Below is the list of poster presentations of abstracts submitted by October 3.

The list of late abstracts scheduled for Wednesday is available in the Program Addendum and the posters can be viewed on boards beginning with L. All abstracts are available through the desktop planner and mobile app.

Posters should be mounted between 7:00 AM and 8:00 AM on Wednesday and removed by 3:00 PM. Poster numbers shown refer to the program order of abstracts as they appear in the online Abstracts Issue. Board numbers indicate where boards are located in the Exhibit Hall.

ODD-NUMBERED BOARDS 10:30 AM–11:30 AM | EVEN-NUMBERED BOARDS 11:30 AM–12:30 PM

<u>Board Numbers</u>	<u>Category</u>
B1 – B15	Protein Structure and Conformation IV
B16 – B30	Aggregates, Chaperones, and Mechanical Forces
B31 – B46	Protein-Small Molecule Interactions II
B47 – B64	Protein Dynamics and Allostery IV
B65 – B87	Membrane Protein Structures II
B88 – B114	Membrane Protein Dynamics
B115 – B129	Intrinsically Disordered Proteins (IDP) and Aggregates III
B130 – B147	DNA Replication, Recombination, and Repair
B148 – B161	Protein: DNA Interactions: Dynamics
B162 – B184	Membrane Physical Chemistry II
B185 – B207	Membrane Active Peptides and Toxins II
B208 – B219	General Protein-Lipid Interactions IV
B220 – B234	Membrane Receptors and Signal Transduction II
B235 – B253	Mechanosensation
B254 – B266	Calcium Signaling III
B267 – B279	Intercellular Calcium Channels and Calcium Sparks and Waves II
B280 – B288	Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating IV
B289 – B296	Ion Channel Regulatory Mechanisms II
B297 – B310	Ion Channels, Pharmacology, and Disease II
B311 – B326	Other Channels II
B327 – B345	Ligand-gated Channels II
B346 – B360	Cardiac Muscle Mechanics and Structure II
B361 – B375	Actin Structure, Dynamics, and Associated Proteins
B376 – B394	Microtubules, Structure, Dynamics and Associated Proteins
B395 – B404	Bacterial Mechanics, Cytoskeleton and Motility
B405 – B418	Membrane Pumps
B419 – B427	Genetic Regulatory Systems
B428 – B454	Electron Microscopy
B455 – B464	Diffraction and Scattering Techniques
B465 – B479	Optical Microscopy and Super Resolution Imaging: Novel Approaches and Analysis III
B480 – B493	Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence II
B494 – B503	Force Spectroscopy and Scanning Probe Microscopy II
B504 – B510	Biosurfaces
B511 – B526	Biomaterials

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

Protein Structure and Conformation IV (Boards B1–B15)

- 2394-Pos BOARD B1**
DEVELOPMENT AND COMPARISON OF ENHANCED SAMPLING METHODS FOR BIOMOLECULAR SIMULATION. **James Lincoff**, Sukanya Sasmal, Teresa Head-Gordon
- 2395-Pos BOARD B2**
STRUCTURAL CHARACTERISTICS OF THE RNASE H DOMAIN IN HIV-1 REVERSE TRANSCRIPTASE. **Ryan L. Slack**, Naima G. Sharaf, Angela M. Gronenborn, Rieko Ishima
- 2396-Pos BOARD B3**
EFFECTS OF ALS MUTATIONS ON STRUCTURE, DYNAMICS, AND FUNCTION OF UBIQUILIN-2. **Carlos A. Castaneda**, Thuy P. Dao
- 2397-Pos BOARD B4**
ENERGY LANDSCAPES OF A MECHANICAL PRION AND THEIR IMPLICATIONS FOR THE MOLECULAR MECHANISMS OF LONG-TERM MEMORY. **Mingchen Chen**
- 2398-Pos BOARD B5**
METHYL-LABELING ASSISTED NMR STRUCTURE DETERMINATION OF A 66 KDA GROWTH FACTOR-RECEPTOR COMPLEX. **Andrew Hinck**, Morkos A. Henen, Christian Zwieb, Ravindra Kodali, Cynthia S. Hinck
- 2399-Pos BOARD B6**
SOLUTION NMR STRUCTURES OF THE C-TERMINAL DOMAIN OF *TETRAHYMENA* CYTOSKELETAL PROTEIN TCB2 REVEAL DISTINCT CALCIUM-INDUCED STRUCTURAL REARRANGEMENTS. **Adina M. Kilpatrick**, Jerry E. Honts, Heidi M. Sleister, C. Andrew Fowler
- 2400-Pos BOARD B7**
UNDERSTANDING EFFECT OF GERANYLATION OF TRNA^{lys} ON RIBOSOME BINDING: A COMPUTATIONAL STUDY. **Sweta Vangaveti**, Phensinee Haruehanroengra, Rui Wang, Srivathsan V. Ranganathan, Jia Sheng
- 2401-Pos BOARD B8**
NANO-MECHANICAL STUDIES OF COLLAGEN: THE INFLUENCE OF IONIC STRENGTH, PH AND COLLAGEN SOURCES ON MOLECULAR FLEXIBILITY. **Naghme Rezaei**, Aaron Lyons, Nancy R. Forde
- 2402-Pos BOARD B9**
STRUCTURAL CHARACTERIZATION OF CWSA IN A LIPID BILAYER WITH SSNMR. **Rongfu Zhang**
- 2403-Pos BOARD B10**
DETERMINATION OF THE SOLUTION STRUCTURE OF ISOLATED HISTONE H2A-H2B HETERODIMER BY USING CS-ROSETTA. **Tsutomu Yamane**, Yoshihito Moriwaki, Hideaki Ohtomo, Mitsunori Ikeguchi, Mitsunori Ikeguchi, Jun-ichi Kurita, Masahiko Sato, Aritaka Nagadoi, Hideaki Shimojo, Yoshifumi Nishimura
- 2404-Pos BOARD B11**
QUANTITATIVE NMR ANALYSIS OF CONCURRENT PHOSPHORYLATION EVENTS AND PHOSPHORYLATION-RELATED STRUCTURAL CHANGES IN UNSTRUCTURED CYTOPLASMIC DOMAIN OF T-CELL RECEPTOR CD3 ϵ SUBUNIT. **Innokentiy Maslennikov**, Christian Klammt, Johan Kufs, Amy Blount, Barbara Varsonofieva, Bjoern Lillemeier
- 2405-Pos BOARD B12**
DIFFERENT APPLICATIONS FOR CAS IN FUNCTIONAL CLASSIFICATION OF PROTEIN INTERFACES. **Cameron J. Jones**, Sanjana Sudarshan, Isha D. Mehta, Brian W. Beck
- 2406-Pos BOARD B13**
FUSION PROTEIN, DNAJB1-PRKACA, AS A CANCER DRIVER. **Tsan-Wen Lu**, Michael Cianfrocco, Ping Zhang, Susan Taylor

2407-Pos BOARD B14
EFFECT OF PHOSPHORYLATION ON SUPERTERTIARY STRUCTURE AND LIGAND BINDING AFFINITY ON SCAFFOLD PROTEINS. **Brié N. Levesque**, Fang Wu, Mark E. Bowen

2408-Pos BOARD B15
TOXIC METAL IONS PROMOTE SELF-ASSOCIATION AND REPLACE STRUCTURAL ZINC IONS IN THE REGULATORY REGION OF PROTEIN KINASE C. **Taylor R. Cole**, Samuel G. Erickson, Min Woo Sung, Andreas Holzenburg, Tatyana I. Igumenova

Aggregates, Chaperones, and Mechanical Forces (Boards B16–B30)

- 2409-Pos BOARD B16**
USING SINGLE MOLECULE CHEMO-MECHANICAL UNFOLDING TO PROBE THE EFFECT OF ENVIRONMENTAL CONDITIONS ON PROTEIN FOLDING. **Emily J. Guinn**, Bharat Jagannathan, Susan Marqusee
- 2410-Pos BOARD B17**
PROTEIN AGING: LOSS OF FOLDING CONTRACTION DUE TO OXIDATION OF CRYPTIC SIDE CHAINS. **Jessica Valle Orero**, Jaime Andres Rivas-Pardo, Rafael Tapia-Rojo, Ionel Popa, Daniel J. Echelman, Julio M. Fernandez
- 2411-Pos BOARD B18**
THERMODYNAMICS AND KINETICS OF GLOBULAR POLYMERS UNDER AN APPLIED FORCE. **Samuel Bell**, Eugene M. Terentjev
- 2412-Pos BOARD B19**
MECHANO-INDUCED UNFOLDING OF VON WILLEBRAND FACTOR: A CLINICAL EXAMPLE OF PROTEIN DESTABILIZATION. **Camilo A. Aponte Santamaria**, Svenja Lippok, Judith J. Mittag, Tobias Obser, Reinhard Schneppenheim, Carsten Baldauf, Frauke Gräter, Ulrich Budde, Joachim Rädler
- 2413-Pos BOARD B20**
MECHANICAL ARCHITECTURE AND GENESIS OF BACTERIAL PILUS DOMAINS REVEALED BY SINGLE-MOLECULE FORCE SPECTROSCOPY. Alvaro Alonso-Caballero, **Raul Perez-Jimenez**
- 2414-Pos BOARD B21**
MULTISCALE MODELING OF PROTEIN UNFOLDING AND TRANSLOCATION BY AAA+ CHAPERONES IN THE DEGRADATION PATHWAY. Andrea N. Kravats, Sam Tondast-Navaei, Abdolreza Javidialesaadi, **George Stan**
- 2415-Pos BOARD B22 EDUCATION TRAVEL AWARDEE**
EVIDENCE FOR CHAPERONE FUNCTION IN MECHANOSENSATION. **Miranda Collier**, Georg Hochberg, Cameron Turtle, Carin De Villiers, Katja Gehmlich, Justin L.P. Benesch
- 2416-Pos BOARD B23 EDUCATION TRAVEL AWARDEE**
PROMISCUOUS HISTONE MIS-ASSEMBLY IS ACTIVELY PREVENTED BY CHAPERONES. **Haiqing Zhao**
- 2417-Pos BOARD B24**
PROTEIN KINASE RECOGNITION AND SORTING BY THE HSP90 KINOME-SPECIFIC COCHAPERONE CDC37. **Ioannis Gelis**, Dimitra Keramisanou, Adam Aboalroub
- 2418-Pos BOARD B25**
TRACKING STRUCTURAL CHANGES IN THE UCS DOMAIN OF THE MYOSIN CHAPERONE UNC-45 BY FLUORESCENCE SPECTROSCOPY. **Andres Oberhauser**, Paul Nicholls
- 2419-Pos BOARD B26**
UNFOLDING EFFICACY OF THE IMMUNOGLOBULIN DOMAIN I27 CONTROLLED BY FORCE DIRECTIONALITY IN PROTEIN REMODELING BY CLP ATPASE CHAPERONES. **Abdolreza Javidialesaadi**, George Stan

2420-Pos BOARD B27

METASTABILITIES IN THE HUMAN PRION PROTEIN N-TERMINAL BETA-SHEET ARE DICTATED BY THE 129 POLYMORPHISM. S. Alexis Paz, Eric Vanden-Eijnden, **Cameron Abrams**

2421-Pos BOARD B28

DEFECTIVE AXONAL TRANSPORT AND ALZHEIMER'S DISEASE CORRELATIONS: A MOLECULAR MOTOR POINT OF VIEW. **Marcelo Nakaema**

2422-Pos BOARD B29

CHARACTERIZATION OF HUMAN IGG1 FC REGION STABILITY AND AGGREGATION PROPENSITY. **Evan A. Wells**, Anne S. Robinson

2423-Pos BOARD B30

UTILISING FLUORESCENCE MICROSCOPY TO VISUALISE THE DYNAMICS AND INTERACTIONS OF MOLECULAR CHAPERONES AND A-SYNUCLEIN. **Quill Bowden**, Alex MacMillan, Tobias Rosenkranz, Till Böcking

Protein-Small Molecule Interactions II (Boards B31–B46)

2424-Pos BOARD B31

BIOMOLECULAR INTERACTION DETERMINATION AND QUANTIFICATION BY MICROSCALE THERMOPHORESIS. **Wyatt Strutz**, Govind Shah

2425-Pos BOARD B32

DOES THE PRESENCE OF A CO-SOLVENT ALTER THE AFFINITY OF A HYDROPHOBIC DRUG TO ITS TARGET? **Caroline Senac**, Patrick Fuchs, Wladimir Urbach, Nicolas Taulier

2426-Pos BOARD B33

CONVENIENT BIOLOGICAL INTERACTION ANALYSIS WITH A REGENERATIVE STREPTAVIDIN CHIP. **Lukas Traxler**, Claudia Knoglinger, Kristyna Posledni, Andreas Zich, Bianca Ruttman, Gloria Friedl, Peter Hinterdorfer, Hermann J. Gruber

2427-Pos BOARD B34

PORPHYRIN INDUCED MULTIMERIZATION OF SOLUTION-STATE PROTEINS. **Daniel R. Marzolf**, Coleman M. Swaim, Aidan M. McKenzie, Christopher A. Hudson, Nathan T. Wright, Oleksandr Kokhan

2428-Pos BOARD B35

IN SILICO DISCOVERY OF A PROTEIN-PROTEIN INTERACTION INHIBITOR FOR INFLUENZA VIRUSES. **Gregory Mohl**, David Busath

2429-Pos BOARD B36

BINDING OF ANTIBIOTICS TO THE MULTIDRUG EFFLUX PUMP ACRB OF E. COLI INVESTIGATED BY MOLECULAR DOCKING. **Giuliano Mallocci**, Giovanni Serra, Andrea Bosin, Attilio Vittorio Vargiu, Paolo Ruggerone

2430-Pos BOARD B37

EXPLORING FOLATE-SMALL MOLECULE INTERACTIONS IN BACTERIAL CELLS. **Deepika K. Nambiar**, Robert Shew, Bryan Schwarz, Michael Duff, Timkhite Kulu-Berhane, Elizabeth Howell

2431-Pos BOARD B38

ATTENUATING THE TOXICITY OF AMYLOID-BETA AGGREGATION WITH SPECIFIC SPECIES. **Ryan Limbocker**, Benedetta Mannini, Michele Perni, Sean Chia, Gabriella Heller, Francesco S. Ruggeri, Johnny Habchi, Georg Meisl, Pavan K. Challa, Michael Zasloff, Tuomas P. J. Knowles, Michele Vendruscolo, Christopher M. Dobson

2432-Pos BOARD B39

DETERMINATION OF LIGAND MIGRATION PATHWAYS IN HUMAN CYTOGLOBIN. **Antonija Tangar**, Michael Goncalves, Sophie Bernad, Valerie Derrien, Pierre Sebban, Jaroslava Miksovska

2433-Pos BOARD B40

MOLECULAR RECOGNITION MECHANISM OF HEMATOPOIETIC PROSTAGLANDIN D SYNTHASE WITH ITS COFACTOR AND SUBSTRATE. **Keisuke Asada**, Shigeru Shimamoto, Tomohiro Oonoki, Takahiro Maruno, Yuji Kobayashi, Kosuke Aritake, Yoshihiro Urade, Yuji Hidaka

2434-Pos BOARD B41

LIPOCALIN-TYPE PROSTAGLANDIN D SYNTHASE POSSESSES TWO BINDING SITES FOR ITS PRODUCT. **Shigeru Shimamoto**, Yusuke Nakagawa, Takahiro Maruno, Yuji Kobayashi, Kosuke Aritake, Urade Yoshihiro, Yuji Hidaka

2435-Pos BOARD B42

STRUCTURAL, THERMODYNAMIC AND PHOSPHATIDYLINOSITOL 3-PHOSPHATE BINDING PROPERTIES OF PHAFIN2. **Tuo-Xian Tang**

2436-Pos BOARD B43

TARGETING MICROTUBULES IN LEISHMANIA USING A COMBINED COMPUTATIONAL & EXPERIMENTAL APPROACH. **Andrew Kalenkiewicz**, Phil Cruz, Michael Dolan, Dan L. Sackett

2437-Pos BOARD B44

EFFECTS OF AZOLE DRUGS ON CONFORMATIONAL DYNAMICS AND ENERGETICS ASSOCIATED WITH DIATOMIC LIGAND PHOTORELEASE AND MIGRATION WITHIN BACTERIAL FLAVOHEMOGLOBINS. **David Butcher**, Myriam Moussaoui, Laura Baciou, Jaroslava Miksovska

2438-Pos BOARD B45

AN EFFICIENT PROTEIN SYSTEM FOR SCREENING SPECIFIC MDMX AND MDM2 INHIBITORS. **Rong Chen**, Jingjing Zhou, Lingyun Qin, Zhengding Su

2439-Pos BOARD B46

LIGAND BINDING STUDIES OF A PLASMID ENCODED DIHYDROFOLATE REDUCTASE BY ¹⁹F NMR BINDING STUDIES OF A PLASMID ENCODED DIHYDROFOLATE REDUCTASE BY ¹⁹F NMR. **Gabriel J. Fuente Gomez**, MICHAEL DUFF, Elizabeth Howell

Protein Dynamics and Allostery IV (Boards B47–B64)

2440-Pos BOARD B47

MECHANISM OF ALLOSTERIC REGULATION OF SUBSTRATE SPECIFICITY IN PROTEIN KINASE C. **Nagarajan Vaidehi**, Hyun Deok Song, Titu Devamani, Ruth Sommese, Sivaraj Sivaramkrishnan

2441-Pos BOARD B48

REGULATION OF PROTEASOMAL CATALYTIC ACTIVITY BY ALTERING ITS PROTEIN-PROTEIN INTERACTIONS. **Pawel A. Osmulski**, Przemyslaw Karpowicz, Matthew B. Giletto, Corey L. Jones, Kristin E. Cano, Dmitri Ivanov, Tim H. Huang, Elzbieta Jankowska, Jetze Tepe, Maria Gaczynska

2442-Pos BOARD B49

INCORPORATION OF MULTI-STATE INFORMATION IMPROVES MOLECULAR MODELLING OF DYNAMIC ALLOSTERY: A CASE STUDY OF PDZ DOMAINS COMPUTATIONAL QUANTITATIVE CHARACTERIZATION OF ENTROPIC SIGNALING PATHWAYS IN PROTEINS: A CASE STUDY ON HUMAN PDZ2 DOMAIN OF PTP1E. **Mohsen Botlani**, Sameer Varma

2443-Pos BOARD B50

DYNAMICAL MECHANISMS OF ALLOSTERIC MODULATIONS BY SMALL MOLECULES ON LEUKOCYTE FUNCTION-ASSOCIATED ANTIGEN-1. **Jung-Hsin Lin**

2444-Pos BOARD B51

THE STRUCTURAL AND DYNAMIC EFFECTS OF INHIBITOR BINDING TO PROTEIN KINASE C BII. **Shashank Jariwala**, Sivaraj Sivaramkrishnan, Barry J. Grant

2445-Pos BOARD B52
STUDYING SOLVATION OF SMALL BIOMOLECULES VIA MOLECULAR DYNAMICS USING A POLARIZABLE FORCE FIELD. **Saurabh Belsare**, Alexander Esser, Dominik Marx, Teresa Head-Gordon

2446-Pos BOARD B53 EDUCATION TRAVEL AWARDEE
MOLECULAR ALLOSTERY IN DENGUE NS3 HELICASE ALONG THE ATP HYDROLYSIS CYCLE. **Russell B. Davidson**, Brian J. Geiss, Martin McCullagh

2447-Pos BOARD B54
HOW THE BARRIERLESS FOLDING HELPS DNA RECOGNITION: THEORETICAL INVESTIGATION ON ULTRAFAST FOLDING PROTEIN ENGINEERED HOMEODOMAIN. **Xiakun Chu**, Victor Muñoz

2448-Pos BOARD B55
THE FOLDING MECHANISM AND KINETICS OF THE DOMAINS OF A-SPECTRIN: RESULTS FROM A VARIATIONAL MODEL. **Daniel Gavazzi**, John J. Portman

2449-Pos BOARD B56
FREE ENERGY LANDSCAPES OF METABOTROPIC GLUTAMATE RECEPTOR LIGAND-BINDING DOMAINS. **Tyler J. Wied**, Albert Y. Lau

2450-Pos BOARD B57
QUANTIFYING ALLOSTERIC COMMUNICATION VIA CORRELATIONS IN STRUCTURE AND DISORDER. **Sukrit Singh**, Gregory R. Bowman

2451-Pos BOARD B58
ALLOSTERIC REGULATION OF VINCULIN ACTIVATION BY ALPHA-ACTININ. **Hengameh Shams**, Mohammad R. k. Mofrad

2452-Pos BOARD B59
CORRELATED MOTIONS IN THE DHFR-NADPH COMPLEX. **Craig J. Earley**, Paul F. Maxson, Arish Murda Rakshasa, Heather A. Carlson, Michael G. Lerner

2453-Pos BOARD B60
STATIC AND DYNAMIC ROLES OF PROTEINS IN PROLINE ISOMERIZATION REACTIONS. **Toshifumi Mori**, Shinji Saito

2454-Pos BOARD B61
MECHANISM OF ALLOSTERIC COMMUNICATION IN GPCR ACTIVATION FROM MICROSECOND SCALE MOLECULAR DYNAMICS SIMULATIONS. **Supriyo Bhattacharya**, Nagarajan Vaidehi

2455-Pos BOARD B62
DECIPHERING GENERAL CHARACTERISTICS OF RESIDUES CONSTITUTING ALLOSTERIC COMMUNICATION PATHS. **Girik Malik**, Anirban Banerji, Andrzej Kloczkowski

2456-Pos BOARD B63
REWEIGHTING THE APO TO THE HOLO ENSEMBLE. **Chen Li**

2457-Pos BOARD B64
OPPOSING INTERMOLECULAR TUNING OF Ca^{2+} AFFINITY FOR CALMODULIN BY TARGET PEPTIDES. **Margaret S. Cheung**, Pengzhi Zhang, Swarnendu Tripathi

Membrane Protein Structures II (Boards B65–B87)

2458-Pos BOARD B65
COMPARING AND CONTRASTING FLUOROTRYPTOPHAN SUBSTITUTIONS FOR ^{19}F MEMBRANE PROTEIN NMR SPECTROSCOPY. **Calem Kenward**, Kyungsoo Shin, Muzaddid Sarker, Carley Bekkers, **Jan K. Rainey**

2459-Pos BOARD B66
IN SITU SOLID-STATE NMR SPECTROSCOPY OF APP TRANSMEMBRANE DOMAIN (TM) STRUCTURE AND DIMERIZATION IN NATIVE *E. COLI* MEMBRANES. **Xiaoyan Ding**, Riqiang Fu, Fang Tian

2460-Pos BOARD B67
STRUCTURAL AND DYNAMICAL BASIS OF PROTEIN KINASE C ALPHA REGULATION BY THE C-TERMINAL TAIL. **Yuan Yang**, Julia A. Callender, Alexandra C. Newton, **Tatyana I. Igumenova**

2461-Pos BOARD B68 EDUCATION TRAVEL AWARDEE
SITE-DIRECTED SPIN LABELING EPR SPECTROSCOPY OF THE CYTOPLASMIC TAIL OF INFLUENZA A M2. **Alice L. Herneisen**, Grace Kim, Kathleen P. Howard

2462-Pos BOARD B69
POLARITY AND CHARGE AS DETERMINANTS FOR TRANSLOCASE REQUIREMENT FOR MEMBRANE PROTEIN INSERTION. **Balesubramani Hariharan**, Raunak Soman, Ross E. Dalbey

2463-Pos BOARD B70
BIP BINDING AFFECTS INTEGRATION OF TRANSMEMBRANE DOMAINS. **Mirjam Zimmermann**, Marco Janoschke, Martin Spiess

2464-Pos BOARD B71
ELUCIDATING THE UNCOUPLING OF ATP HYDROLYSIS AND Ca^{2+} TRANSPORT IN SERCA BY SARCOLIPIN. **Erin Birdsall**, Alysha Dicke, Gianluigi Veglia

2465-Pos BOARD B72
NMR RESOLVES PHOSPHOLAMBAN'S ALLOSTERIC REGULATION OF THE SARCOPLASMIC RETICULUM Ca^{2+} -ATPASE. **Sarah E. D. Nelson**, Vitaly V. Vostrikov, Tata Gopinath, Gianluigi Veglia

2466-Pos BOARD B73
CHARACTERIZING THE COMPLEX OF SARCOLIPIN AND SERCA USING SOLID-STATE NMR SPECTROSCOPY. **Alysha A. Dicke**, Tata Gopinath, Gianluigi Veglia

2467-Pos BOARD B74
UNDERSTANDING THE ROLE OF THE N-TERMINAL CRGA INTERACTIONS WITH FTSZ IN THE *MYCOBACTERIUM TUBERCULOSIS* DIVISOME. **Yiseul Shin**, Riqiang Fu, Huajun Qin, Joshua Taylor, Malini R. Rajagopalan, Timothy A. Cross

2468-Pos BOARD B75
MOLECULAR DYNAMICS SIMULATIONS OF THE PREDICTED *E. COLI* FTSB-FTSL TETRAMERIC COMPLEX. **Gladys Diaz Vazquez**, Samson Condon, Qiang Cui, Alessandro Senes

2469-Pos BOARD B76
CHARACTERIZATION OF THE FTSBL MEMBRANE PROTEIN COMPLEX BY SINGLE MOLECULE TIRF MICROSCOPY. **Claire R. Armstrong**, Ambalika Khadria, Rahul Chadda, Aaron Hoskins, Janice L. Robertson, Alessandro Senes

2470-Pos BOARD B77
ASSESSMENT OF PROTEIN-PROTEIN INTERACTIONS IN THE FTSBLQ COMPLEX USING FLUORESCENCE *IN VITRO*. **Elizabeth Caselle**, Samuel Craven, Alessandro Senes

2471-Pos BOARD B78
CONTRIBUTION OF INDIVIDUAL PORE RESIDUES TO Mg^{2+} PERMEATION AND DIVALENT CATION SELECTIVITY IN CORA. **Nicolaus Schmandt**, Margaret Milewski, Eduardo Perozo

2472-Pos BOARD B79
EFFECT OF GABRA1 CYTOPLASMIC PEPTIDE ON A REGULATORY PROTEIN. **Norbert W. Seidler**

- 2473-Pos BOARD B80**
STRUCTURAL CHARACTERIZATION OF THE HUMAN KCNQ1 VOLTAGE-SENSING DOMAIN BY NMR. **Keenan C. Taylor**, Hui Huang, Charles R. Sanders
- 2474-Pos BOARD B81**
EXPLORING THE MOVEMENT OF S4 BY INTERMOLECULAR FRET OF GENETICALLY-ENCODED VOLTAGE INDICATORS. Lee Min Leong, Bok Eum Kang, **Bradley Baker**
- 2475-Pos BOARD B82**
DYNAMIC STUDIES OF SWEET FAMILY SUGAR TRANSPORTERS THROUGH NMR SPECTROSCOPY. **Ampon Sae Her**, Maureen Leninger, James Banigan
- 2476-Pos BOARD B83**
STRUCTURAL SNAPSHOTS OF EFF-1 MEDIATED MEMBRANE FUSION. **Mariano Dellarole**, Annalisa Meola, Gérard Pehau-Arnaudet, François Bontems, Mario J. Borgia, Thomas Krey, Niels Volkmann, Dorit Hanein, Félix A. Rey
- 2477-Pos BOARD B84**
3D TOPOLOGICAL STRUCTURAL STUDIES OF ANTIMICROBIAL PEPTIDES BY SOLID-STATE NMR SPECTROSCOPY. **Yongae Kim**, Ji-Ho Jeong, Ji-Sun Kim
- 2478-Pos BOARD B85 INTERNATIONAL TRAVEL AWARDEE**
STRUCTURAL CHARACTERIZATION OF HUMAN PULMONARY SURFACTANT PROTEIN SP-D BY ATOMIC FORCE MICROSCOPY. **Raquel Arroyo**, Alejandro Martin-Gonzalez, Mercedes Echaide, Jan Rosenbaum, Fernando Moreno-Herrero, Jesus Perez-Gil
- 2479-Pos BOARD B86**
PERMEABILITY OF PULMONARY SURFACTANT MEMBRANES IS MODULATED BY PROTEINS SP-B AND SP-C. **Marta Martínez-Calle**, Elisa Parra, Bárbara Olmeda, Jesús Pérez-Gil
- 2480-Pos BOARD B87**
TOXIC AND NON-TOXIC FORMS OF MEMBRANE PORATION ARE MEDIATED BY STRUCTURALLY DISTINCT STATES OF ISLET AMYLOID POLYPEPTIDE. **Melissa Birol**, Sunil Kumar, Elizabeth Rhoades, Andrew Miranker

Membrane Protein Dynamics (Boards B88–B114)

- 2481-Pos BOARD B88**
PARAMETERIZATION OF CYSTEINE PALMITOYL, CYSTEINE FARNESYL, CYSTEINE GERANYLGERANYL AND GLYCINE MYRISTOYL FOR THE MARTINI FORCEFIELD. **Yoav Atsmon Raz**, Peter D. Tieleman
- 2482-Pos BOARD B89**
BINDING, FOLDING, AND INSERTION OF A B-HAIRPIN PEPTIDE AT A LIPID BILAYER SURFACE: MOLECULAR DYNAMICS SIMULATIONS. **Keon Reid**, James Kindt
- 2483-Pos BOARD B90**
SIMULATIONS OF BAMA IN A NATIVE OUTER-MEMBRANE MODEL AND ENERGETICS OF LATERAL OPENING. **Karl Lundquist**, James C. Gumbart
- 2484-Pos BOARD B91**
HEXAMERIC E5 PROTEIN OF HUMAN PAPILLOMAVIRUS TYPE 16 FORMS A LOW SELECTIVE ION CHANNEL - A COMPUTATIONAL ANALYSIS. **Dhani R. Mahato**, Wolfgang B. Fischer
- 2485-Pos BOARD B92**
TRANSPORT OF VITAMIN B12 AND ITS CONJUGATE WITH PEPTIDE NUCLEIC ACID THROUGH THE *E. COLI* BTUB OUTER MEMBRANE PROTEIN EXPLORED WITH STEERED MOLECULAR DYNAMICS. **Tomasz Pieńko**, Joanna Trylska
- 2486-Pos BOARD B93**
AUGMENTATION OF INTERACTIONS BETWEEN DIMERS STABILIZES HIGHER ORDER OLIGOMERS OF MEMBRANE-BOUND K-RAS: A SINGLE MOLECULE PERSPECTIVE. **Suparna Sarkar-Banerjee**, Abdallah Sayyed-Ahmad, Priyanka Prakash, Kwang-Jin Cho, M. N. Waxham, John F. Hancock, Alemayehu A. Gorfe
- 2487-Pos BOARD B94**
MOLECULAR MODELING AND SOLUTION NMR STUDIES OF THE STRUCTURE AND DYNAMICS OF K-RAS AT A LIPID MEMBRANE CONTAINING PIP2. **Matthias Buck**, ZhenLu Li, Shufen Cao
- 2488-Pos BOARD B95**
SITE-DIRECTED SPIN-LABEL EPR SPECTROSCOPY OF M2 PROTEIN IN LIPID BILAYERS OF DIFFERENT CURVATURE GENERATION PROPENSITY. **Douglas S. Arbuckle**, Kathleen P. Howard, Tyler Alexander, Catherine Crouch
- 2489-Pos BOARD B96**
PULSED EPR STUDIES OF BIDIRECTIONAL ALLOSTERIC SIGNALING IN THE TONB DEPENDENT TRANSPORTER, BTUB. **Arthur K. Sikora**, Benesh Joseph, Morgan Matson, Jacob Staley, David Cafiso
- 2490-Pos BOARD B97**
OLIGOMERIZATION AND RAFT PARTITIONING INCREASE PLASMA MEMBRANE LOCALIZATION OF TRANSMEMBRANE PROTEINS. **Joseph H. Lorent**, Ilya Levental
- 2491-Pos BOARD B98**
IMPORTANCE OF DIMERIZATION IN FACILITATING THE FUNCTIONAL DYNAMICS OF NEUROTRANSMITTER: SODIUM SYMPORTERS. **Mert Gur**, Mary H. Cheng, Elia Zomot, Ivet Bahar
- 2492-Pos BOARD B99**
MAPPING CEACAM 1-4L'S NANOSCALE SPATIAL DISTRIBUTION, STRUCTURE, DYNAMICS, AND ASSOCIATION WITH LIPID ORDERED DOMAINS BY SUPER-RESOLUTION MICROSCOPY. **Amine Driouchi**, Scott Gray-Owen, Christopher M. Yip
- 2493-Pos BOARD B100**
TEMPERATURE-SENSITIVE GATING OF TRPV1 CHANNEL AS PROBED BY ATOMISTIC SIMULATIONS. Anton O. Chugunov, Pavel E. Volynsky, Nikolay A. Krylov, Dmitry E. Nolde, **Roman G. Efremov**
- 2494-Pos BOARD B101**
MOLECULAR MODELLING OF HEXAMER AND TETRAMER FORMS OF THE ORAI CALCIUM CHANNEL. **Tugba N. Ozturk**, Guillaume Lamoureux
- 2495-Pos BOARD B102**
TIME-RESOLVED WIDE-ANGLE X-RAY SCATTERING REVEALS PROTEIN QUAKE IN RHODOPSIN ACTIVATION. **S. M.D.C. Perera**, X. Xu, A. V. Struts, U. Chawla, S. Boutet, S. Carbajo, M.D. Seaberg, M.S. Hunter, J.M. Martin-Garcia, J.D. Coe, M. O. Wiedorn, G. Nelson, S. Chamberlain¹⁰, D. P. Deponte, R. Fromme, T. D. Grant^{10,11}, R. A. Kirian, P. Fromme, M. F. Brown
- 2496-Pos BOARD B103**
DYNAMIC HYDROGEN-BONDING NETWORKS IN PHOTOSYSTEM II. **Federico Guerra**, Ana-Nicoleta Bondar
- 2497-Pos BOARD B104**
PROTEORHODOPSIN HYDRATION AND DYNAMICS IS GOVERNED BY SURROUNDING ENVIRONMENT. **Sadegh Faramarzi**, Jun Feng, Blake Mertz
- 2498-Pos BOARD B105**
THE BLUE-LIGHT QUENCHING EFFECT OF PROTEORHODOPSIN. **Carl E. Eckert**, Jagdeep Kaur, Clemens Glaubitz, Josef Wachtveitl
- 2499-Pos BOARD B106**
CHARACTERIZATION OF RHODOPSIN'S ACTIVATION MECHANISM USING MULTI-BASIN STRUCTURE-BASED MODELS. **Letty Salas**, Tod D. Romo, Alan Grossfield

2500-Pos BOARD B107
ENERGY LANDSCAPE MODEL AND SPATIAL MOTION MODELS IN RHODOPSIN ACTIVATION. **Suchithranga M.D.C. Perera**, Udeep Chawla, Andrey V. Struts, Michael F. Brown

2501-Pos BOARD B108
ACTIVATION OF GPCR RHODOPSIN INVESTIGATED BY SOLID-STATE NMR SPECTROSCOPY. **Andrey V. Struts**, Xiaolin Xu, Trivikram R. Molugu, Mike C. Pitman, Samira Faylough, Charitha Guruge, Carolina L. Nascimento, Nasri Nesnas, Michael F. Brown

2502-Pos BOARD B109
MANIPULATING THE DIMERIC INTERFACE OF HUMAN CONE OPSINS. **William D. Comar**

2503-Pos BOARD B110
INVESTIGATING THE GATING MECHANISM OF G PROTEIN-ACTIVATED INWARD RECTIFYING POTASSIUM CHANNELS. **Harald Bernsteiner**, Anna Stary-Weinzinger

2504-Pos BOARD B111
SINGLE PROTEIN TRACKING OF P450-REDUCTASE IN AN ENDOPLASMIC RETICULUM BIOMIMETIC REVEALS A NADPH DEPENDENT INTERACTION WITH THE MEMBRANE. **James A. Brozik**, Carlo Barnaba, Adam O. Barden, Linda Agyen, Sean L. Sheridan

2505-Pos BOARD B112 EDUCATION TRAVEL AWARDEE
A EUKARYOTIC SENSOR FOR MEMBRANE LIPID SATURATION. **Roberto Covino**, Stephanie Ballweg, Claudius Stordeur, Jonas B. Michaelis, Kristina Puth, Florian Wernig, Amir Bahrami, Andreas M. Ernst, Gerhard Hummer, Robert Ernst

2506-Pos BOARD B113
ANALYSIS OF THE DYNAMICS OF A MULTI-DRUG EXPORTER ACRB IN THE ABSENCE AND PRESENCE OF SUBSTRATES. **Tomoki Matsuda**, Seiji Yamasaki, Kunihiko Nishino, Takeharu Nagai, Akihito Yamaguchi

2507-Pos BOARD B114
PREPARATION OF NICOTINIC ACETYLCHOLINE RECEPTOR DETERGENT COMPLEXES FOR STRUCTURAL STUDIES: ASSESSMENT OF PURITY, FUNCTIONALITY AND AGGREGATION ANALYSIS. **Bianca N. Valdés Fernández**, Hui Wei, Luis López Cruz, Francis Reilly Andujar, Rafael Cordero Villamil, Bryan Cobo Torres, Orlando Gonzalez Martinez, Jose A. Lasalde Dominicci

Intrinsically Disordered Proteins (IDP) and Aggregates III (Boards B115–B129)

2508-Pos BOARD B115
MULTIPLY-PHOSPHORYLATED INTRINSICALLY DISORDERED SIGNALING MOLECULES CAN EXHIBIT EMERGENT COOPERATIVITY AND SEQUENTIAL BINDING. **Lara Clemens**, Omer Dushek, Jun Allard

2509-Pos BOARD B116
PHOSPHORYLATION INDUCES SEQUENCE-SPECIFIC CONFORMATIONAL SWITCHES IN THE RNA POLYMERASE II C-TERMINAL DOMAIN. **Scott A. Showalter**, Eric B. Gibbs

2510-Pos BOARD B117 EDUCATION TRAVEL AWARDEE
INTERPLAY AMONG BINDING, PHOSPHORYLATION AND DENATURATION IN DISORDERED 4E-BP2 AS PROBED BY SINGLE MOLECULE FLUORESCENCE. **Zhenfu Zhang**, Alaji Bah, Julie D. Forman-Kay, Claudiu C. Gradinaru

2511-Pos BOARD B118
SEQUENCE DETERMINANTS OF THE CONFORMATIONAL PROPERTIES OF AN INTRINSICALLY DISORDERED PROTEIN PRIOR TO AND UPON MULTISITE PHOSPHORYLATION. **Erik W. Martin**, Alex S. Holehouse, Rohit V. Pappu, Tanja Mittag

2512-Pos BOARD B119
DESIGN OF SUPERCHARGED PROTEINS TO IMPART ALLOSTERIC BEHAVIOR AND THEIR USE IN BIOSENSING. **Peter Schnatz**, Joseph Brisendine, Derek Kosciolk, David Crouse, Ronald Koder

2513-Pos BOARD B120
LIKE CHARGE REGIONS (LCRS) ARE ONE OF THE KEY REGULATORS OF NUCLEOCYTOPLASMIC TRANSPORT. **Mohaddeseh Peyro**, Mohammad Soheilypour, Mohammad R. K. Mofrad

2514-Pos BOARD B121
THE INTRINSICALLY DISORDERED TAIL OF FTSZ IMPACTS POLYMERIZATION AND BACTERIAL CELL DIVISION THROUGH SEQUENCE-ENCODED CHARGE PATTERNING. **Megan C. Cohan**, Ammon Posey, Steven Grigsby, Alex S. Holehouse, Anuradha Mittal, Paul J. Buske, Petra Levin, Rohit V. Pappu

2515-Pos BOARD B122
DISSECTING CONFORMATIONAL FEATURES AND BINDING MECHANISMS OF PHENYLALANINE-GLYCINE RICH NUCLEOPORINS. **Piau Siong Tan**, Iker Valle Aramburu, Swati Tyagi, Aritra Chowdhury, Edward A. Lemke

2516-Pos BOARD B123
POLYGLUTAMINE LENGTH DEPENDENT STRUCTURAL PROPERTIES AND PHASE BEHAVIOR OF HUNTINGTIN EXON 1. **Kiersten M. Ruff**, John B. Warner, Ammon E. Posey, Piau Siong Tan, Edward A. Lemke, Rohit V. Pappu, Hilal A. Lashuel

2517-Pos BOARD B124
MOLECULAR DYNAMICS STUDY OF EARLY STAGE KINETICS OF POLYGLUTAMINE AGGREGATION. **Jason Haaga**, C. Nadia Buckles, James D. Gunton

2518-Pos BOARD B125
CROWDING INDUCED COIL-GLOBULE TRANSITIONS OF INTRINSICALLY DISORDERED PROTEINS. **Youngchan Kim**, Jeetain Mittal

2519-Pos BOARD B126
THERMODYNAMIC PROPERTIES OF SYN1-CYS-ELP-DRUG CARRIER AND THE ROLE OF OSMOLYTES. **Valeria Zai-Rose**, John J. Correia

2520-Pos BOARD B127 EDUCATION TRAVEL AWARDEE
TARDIGRADE INTRINSICALLY DISORDERED PROTEINS AS POTENTIAL EXCIPIENTS FOR BIOLOGICS. **Samantha Piszkievicz**, Aakash Mehta, Thomas C. Boothby, William Daniel, Sergei Sheiko, Bob Goldstein, Gary J. Pielak

2521-Pos BOARD B128
EXPLORING THE UNEXPECTED GELATION OF TRIPEPTIDES IN A BINARY MIXTURE OF WATER AND ETHANOL. **David DiGuseppi**, Stefanie Farrell, Nicolas Alvarez, Reinhard Schweitzer-Stenner

2522-Pos BOARD B129
EXPLORING THE EFFECTS ON THE CONFORMATIONAL PROPENSITY OF ALANINE IN THE UNBLOCKED TRIPEPTIDE GLYCYL-ANALYL-GLYCINE IN WATER/ETHANOL MIXTURES. **David DiGuseppi**, Nina Kubatova, Gabrielle Lewis, Harald Schwalbe, Reinhard Schweitzer-Stenner

DNA Replication, Recombination, and Repair (Boards B130–B147)

2523-Pos BOARD B130
NEAR-ATOMIC STRUCTURAL MODEL FOR BACTERIAL DNA REPLICATION INITIATION COMPLEX AND ITS FUNCTIONAL INSIGHTS. **Masahiro Shimizu**, Yasunori Noguchi, Yukari Sakiyama, Hironori Kawakami, Tsutomu Katayama, Shoji Takada

2524-Pos BOARD B131
UPF1-LIKE HELICAES - SAME SUBFAMILY, YET SO DIFFERENT BEHAVIOR. Saurabh Raj, Joanne Kanaan, Hervé Le Hir, **Vincent Croquette**

2525-Pos BOARD B132
INVESTIGATING THE ENHANCEMENT OF XPD HELICASE PROCESSIVITY BY SINGLE-STRANDED BINDING PROTEIN RPA2. **Barbara Stekas**, Masayoshi Honda, Maria Spies, Yann Chermala

2526-Pos BOARD B133
PROBING THE NUCLEIC ACID BINDING PROPERTIES OF THE SINGLE-STRANDED DNA BINDING PROTEIN OF BACTERIOPHAGE T4 REPLICATION COMPLEX AT SINGLE NUCLEOTIDE RESOLUTION. **Benjamin R. Camel**, Katherine Meze, Davis Jose, Peter H. von Hippel

2527-Pos BOARD B134
DNA LOOPING MEDIATES NUCLEOSOME TRANSFER. **Lucy D. Brennan**, Robert A. Forties, Smita S. Patel, Michelle D. Wang

2528-Pos BOARD B135
THE INTERPLAY BETWEEN A BACTERIAL CHROMATIN PROTEIN AND DNA POLYMERASE. **Szu-Ning Lin**, Remus T. Dame, Gijs J. L. Wuite

2529-Pos BOARD B136
REAL-TIME FLUORESCENCE ASSAYS TO MONITOR DNA POLYMERASE ACTIVITIES. **Etienne Henry**, Ghislaine Henneke, Didier Flament

2530-Pos BOARD B137
DYNAMIC PROOFREADING IN THE BACTERIAL DNA POLYMERASE. **Hailey L. Gahlon**, Gengjing Zhao, Rafael Fernandez-Leiro, Meindert H. Lamers, David Rueda

2531-Pos BOARD B138
SINGLE-MOLECULE CHARACTERIZATION OF *E. COLI* POL III CORE CATALYTIC ACTIVITY. **M. Nabuan Nauffer**, David A. Murison, Ioulia Rouzina, Penny J. Beuning, Mark C. Williams

2532-Pos BOARD B139
THE MECHANO-CHEMISTRY OF REVERSE TRANSCRIPTASE. **Omri Malik**, Hadeel Kahamis, Sergei Rudnizky, Ariel Kaplan

2533-Pos BOARD B140
AN ENHANCED, IN VIVO ASSAY FOR DNA MISMATCH REPAIR REVEALS DIFFERENT REPAIR MECHANISMS OF LAGGING STRAND MISMATCHES. **Eric A. Josephs**, Piotr E. Marszalek

2534-Pos BOARD B141 EDUCATION TRAVEL AWARDEE
ELUCIDATION OF THE STRUCTURE-FUNCTION RELATIONSHIP OF *S. CEREVISIAE* MUTS HOMOLOG MSH4 AND MSH5 WITH THE HOLLIDAY JUNCTION. **Sudipta Lahiri**

2535-Pos BOARD B142
MISMATCH REPAIR ON THE GO: EXTENDING THE MECHANICAL MODEL OF DNA MISMATCH REPAIR THROUGH SINGLE MOLECULE STUDY. **Pengyu Hao**, Ruoyi Qiu, Dorothy Erie, Keith Weninger

2536-Pos BOARD B143
DISSECTING THE MECHANISM OF THE HERA NURA DNA BREAK RESECTION COMPLEX USING NATIVE MASS SPECTROMETRY. **Zainab Ahdash**, Robert Byrne, Karl-Peter Hopfner, Argyris Politis

2537-Pos BOARD B144
ESTABLISHING A DNA ORIGAMI PLATFORM FOR SINGLE-MOLECULE FLUORESCENCE STUDIES OF DNA DOUBLE-STRAND BREAK REPAIR. **Kira Bartnik**, Alvaro H. Crevenna, Mauricio Pilo-Pais, Tim Liedl, Don C. Lamb

2538-Pos BOARD B145
GUIDING THE SELF-ASSEMBLY OF *RECA* PROTEIN FILAMENTS ON DNA SCAFFOLDS TO CREATE RATIONALLY DESIGNED NANOSTRUCTURES. **Daniel R. Schiffels**, Veronika Szalai, James A. Liddle

2539-Pos BOARD B146 EDUCATION TRAVEL AWARDEE
INSIGHTS INTO DAMAGED BASE DETECTION BY DNA GLYCOSYLASES: A COMPUTATIONAL STUDY OF ALKD. **Kevin Votaw**, Martin McCullagh

2540-Pos BOARD B147 INTERNATIONAL TRAVEL AWARDEE
DIRECT SINGLE MOLECULE IMAGING REVEALS HETEROGENEITY IN NUCLEOTIDE EXCISION REPAIR. **Luke Springall**, Michelle Simons, Craig D. Hughes, Bennet Van Houten, Neil M. Kad

Protein: DNA Interactions: Dynamics (Boards B148–B161)

2541-Pos BOARD B148
HUMAN SEX DETERMINATION AT THE EDGE OF AMBIGUITY: BIOPHYSICAL STUDIES OF CLINICAL MUTATIONS IN A MASTER TRANSCRIPTION FACTOR. **Michael A. Weiss**, Yen-Shan Chen, Joseph Racca, Nelson B. Phillips

2542-Pos BOARD B149
STRUCTURAL REGULATION OF CAP-INDEPENDENT TRANSLATION IN ENTEROVIRUS 71. **Michele Tolbert**, Christopher E. Morgan, Mei-Ling Li, Blanton S. Tolbert

2543-Pos BOARD B150
INVESTIGATING TRANSIENT EVENTS IN NUCLEOTIDE EXCISION REPAIR USING SINGLE-MOLECULE DARK FIELD IMAGING. **Jamie Barnett**, Jingyu Wang, Neil M. Kad

2544-Pos BOARD B151
EXPLORING MECHANISMS OF SITE SPECIFIC DNA CLEAVAGE WITH SINGLE MOLECULE SENSITIVITY. Raquel M. Ferreira, Sadie C. Piatt, **Allen C. Price**

2545-Pos BOARD B152
DYNAMIC STUDIES OF MUTS-MUTL-DNA COMPLEXES IN MISMATCH REPAIR. **Sharonda LeBlanc**, Jacob Gauer, Pengyu Hao, T'Yasah Walser, Keith Weninger, Dorothy Erie

2546-Pos BOARD B153
RESOLVING STRUCTURAL DYNAMICS AND DNA-BINDING OF APOBEC3G PROTEIN. **Suresh Gorle**, Lela Vukovic

2547-Pos BOARD B154
ROLE OF THREADING MOIETY SIZE AND CHIRALITY IN DETERMINING THE DNA BINDING CHARACTERISTICS OF THREADING INTERCALATORS. **Thayaparan Paramanathan**, Andrew Clark, Nicholas Bryden, Fredrik Westerlund, Per Lincoln, Micah J. McCauley, Ioulia Rouzina, Mark C. Williams

2548-Pos BOARD B155
DESIGN OF NOVEL MAGNETIC TWEEZERS AND ITS USE FOR STUDYING DNA-COMPACTING PROTEINS. **Roberto Jr Fabian**, Tyson Christopher, Anneliese Striz, Pamela L. Tuma, Ian L. Pegg, Abhijit Sarkar

2549-Pos BOARD B156
SINGLE-MOLECULE PICOMETER RESOLUTION NANOPORE TWEEZERS RESOLUTION NANOPORE TWEEZERS. **Jens H. Gundlach**, Ian M. Derrington, Andrew H. Laszlo, Jonathan M. Craig, Ian C. Nova, Henry Brinkerhoff, Mathew T. Noakes, Richard H. Ebright, Abhishek Mazumder

2550-Pos BOARD B157
INTERACTION OF ANTI-DNA ANTIBODY MRL4 WITH DNA STUDIED AT THE SINGLE-MOLECULE LEVEL. **Rustem I. Litvinov**, Tatiana A. Nevzorova, Qingze Zhao, Yakov A. Lomakin, Valerie Tutwiler, Prashant K. Purohit, John W. Weisel

2551-Pos BOARD B158
BEYOND DIFFUSION CONTROLLED KINETICS: HOW A PROTEIN IMPLEMENTS A FAST SEARCHING ON DNA UNTIL GET ITS SPECIFIC BINDING SITE? **Milagros Castellanos**, Victor Muñoz

2552-Pos BOARD B159 CID TRAVEL AWARDEE
INVESTIGATING BUFORIN II INTERACTIONS WITH NUCLEIC ACIDS UNDER CROWDED CONDITIONS. **Carla Perez**, Mala L. Radhakrishnan, Donald E. Elmore

2553-Pos BOARD B160

COMPUTATIONAL INVESTIGATION OF PROTON TRANSFER, PKA SHIFTS AND PH-OPTIMUM OF PROTEIN-DNA AND PROTEIN-RNA COMPLEXES. **Yunhui Peng**, Emil Alexov

2554-Pos BOARD B161

THERMODYNAMIC ADDITIVITY FOR IMPACTS OF BASE-PAIR SUBSTITUTIONS ON ASSOCIATION OF THE EGR-1 ZINC-FINGER PROTEIN WITH DNA. **Abhijnan Chattopadhyay**, Levani Zandarashvili, Ross H. Luu, Junji Iwahara

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2555-Pos BOARD B162

MEMBRANES MATTER: PREDICTING DRUG TOXICITY. **R Lea Sanford**, Wesley Chao, Jeanne Chiaravalli-Giganti, Antonio Luz, J. Fraser Glickman, Olaf S. Andersen

2556-Pos BOARD B163

BIOMOLECULES, WATER AND ROOM-TEMPERATURE IONIC LIQUIDS: CHALLENGES AND OPPORTUNITIES IN BASIC SCIENCE AND APPLICATIONS. **Antonio Benedetto**

2557-Pos BOARD B164

THE PROPENSITY OF CERAMIDES TO SEGREGATE INTO CERAMIDES-RICH PHASE IN FLUID PHOSPHATIDYLCHOLINE BILAYER IS MARKEDLY INFLUENCED BY THEIR LONG-CHAIN SPHINGOID BASE. **Md. Abdullah Al Sazzad**, Tomokazu Yasuda, Michio Murata, J. Peter Slotte

2558-Pos BOARD B165

GRAPHENE OXIDE AND PHOSPHOLIPIDS AT THE AIR-WATER INTERFACE. Kassidy W. Rodriguez, Cain Valtierrez, **Joan C. Kunz**, Benjamin L. Stottrup

2559-Pos BOARD B166

DITHIOTHREITOL RAISES TRANSITION TEMPERATURES IN GIANT PLASMA MEMBRANE VESICLES. **Ruth Gerstle**, Rohan Desai, Sarah Veatch

2560-Pos BOARD B167

PROTONATION OF LONG CHAIN FATTY ACIDS AT THE MEMBRANE-WATER INTERFACE. Alina A. Pashkovskaya, Mario Vazdar, Olga Jovanovic, Peter Pohl, **Elena E. Pohl**

2561-Pos BOARD B168

THE CHANGES OF PHYSICAL PARAMETERS OF LIPID MEMBRANE CAUSED BY LIPID PEROXIDATION-DERIVED ALDEHYDES. **Ksenia Chekashkina**, Olga Jovanovic, Piotr Kuzmin, Elena Pohl, Bashkirov Pavel

2562-Pos BOARD B169

LIPID CONCENTRATION GRADIENT RESULTING FROM SHEAR FLOW ADVECTION OF MEMBRANE-BOUND PROTEINS. **Aurelia R. Honerkamp-Smith**, Raymond E. Goldstein

2563-Pos BOARD B170

ELECTROSTATIC CHARGING OF MEMBRANES BY ADENOSINE TRIPHOSPHATE. **Ryan Z. Lybarger**, Daniel J. Bose, Bruce D. Ray, Horia I. Petrache

2564-Pos BOARD B171

BENDING MODULUS OF MULTICOMPONENT LIPID MEMBRANES. **Pavel Bashkirov**, Ksenia Chekashkina, Piotr Kuzmin, Vadim Frolov

2565-Pos BOARD B172

QUANTIFYING THE RELATIONSHIP BETWEEN MONOVALENT CATION SIZE AND LIPID DOMAIN FORMATION IN ANIONIC-ZWITTERIONIC MIXED LIPID BILAYERS. Sai J. Ganesan, Hongcheng Xu, **Silvina Matysiak**

2566-Pos BOARD B173

EXAMINING THE TRANSLOCATION OF AMPHIPHILES ACROSS LIPID BILAYERS USING A GRAMICIDIN CHANNEL-BASED FLUORESCENT ASSAY. **Thasin Peyear**, Radda Rusinova, Olaf S. Andersen

2567-Pos BOARD B174

CALCIUM ION-MEDIATED PIP₂-CLUSTER FORMATION FROM ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Kyungreem Han**, Richard M. Venable, Richard W. Pastor

2568-Pos BOARD B175

LIPID MEMBRANE STRUCTURAL AND MECHANICAL PROPERTIES MODULATED BY POLYGLUTAMINE AGGREGATES. Nawal K. Khadka, Fengyu She, Jianfeng Cai, **Jianjun Pan**

2569-Pos BOARD B176

CERAMIDE-INDUCED LAMELLAR GEL PHASES IN FLUID CELL LIPID EXTRACTS. **Felix M Goni**, Aritz Garcia-Arribas, Hasna Ahayyauch, Jesus Sot, Pablo L. Lopez-Gonzalez, Alicia Alonso

2570-Pos BOARD B177

EFFECTS OF CAROTENOIDS ON MEMBRANE BENDING RIGIDITY. **Rudy M. Méndez Reina**, Maria I. Pérez López, Chad Leidy, Manu Forero-Shelton

2571-Pos BOARD B178

STEREOCHEMISTRY AND PHASE BEHAVIOR IN HYDROXYCHOLESTEROL/PHOSPHOLIPID MONOLAYERS. **Vision B. Bagonza**, Blair E. Stewig, Caroline Wochnik, Joan C. Kunz, Benjamin L. Stottrup

2572-Pos BOARD B179

SURFACTANT PK_A CALCULATIONS USING MOLECULAR DYNAMICS SIMULATIONS. **W.F. Drew Bennett**, Joan-Emma Shea, Frank L. Brown

2573-Pos BOARD B180

MEMBRANE PERMEABILITY OF ASCORBIC ACID. **Christof Hanneschlaeger**, Peter Pohl

2574-Pos BOARD B181

HALLMARKS OF REVERSIBLE PHASE SEPARATION IN LIVING, UNPERTURBED CELL MEMBRANES. **Scott Rayermann**, Glennis Rayermann, Alex Merz, Sarah Keller

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SMALL-RESERVOIR ELECTROSTATICS. **Joel A. Cohen**

2576-Pos BOARD B183

THE PATHWAY OF SINGLET OXYGEN DIFFUSION THROUGH THE MEMBRANE GOVERNS WHETHER DOUBLE BONDS OR AROMATIC RINGS OF A MOLECULE ARE DAMAGED. **Valery Sokolov**, Oleg Batischev, Sergey Akimov, Anna Gavrilchik, Arsenij Shcherbakov, Vsevolod Tashkin, Denus Knyazev, Peter Oihl

2577-Pos BOARD B184

SPHINGOMYELIN - CEREBROSIDE EXCHANGE IN LIPID MEMBRANE LATERAL DOMAIN SEGREGATION. **Emilio González-Ramírez**, Alicia Alonso, Felix M Goni

Membrane Active Peptides and Toxins II (Boards B185–B207)

2578-Pos BOARD B185

CALCIUM TIGHTLY REGULATES DISORDER-TO-ORDER TRANSITIONS INVOLVED IN THE SECRETION, FOLDING AND FUNCTIONS OF THE CYAA TOXIN OF BORDETELLA PERTUSSIS, THE CAUSATIVE AGENT OF WHOOPING COUGH. Darragh P. O'Brien, Sara E. Cannella, Dominique Durand, Véronique Y. Ntsogo Enguéné, Belen Hernandez, Mahmoud Ghomi, Orso Subrini, Audrey Hessel, Christian Malosse, Véronique Hourdel, Patrice Vachette, Julia Chamot-Rooke, Sébastien Brier, Daniel Ladant, **Alexandre Chenal**

2579-Pos BOARD B186
MONITORING OF BACILLUS THURINGIENSIS CRY3AA TOXIN PORE FORMATION USING ARTIFICIAL BILAYER ARRAY WITH FUSED BRUSH BORDER MEMBRANE VESICLES FROM COLORADO POTATO BEETLE LARVAE. **Ekaterina Zaitseva**, Gerhard Baaken, Victor M. Ruiz-Arroyo, Inmaculada García-Robles, Camila Ochoa-Campuzano, Galo A. Goig, Amparo C. Martínez-Ramírez, Carolina Rausell, Jan Behrends, Dolores Real

2580-Pos BOARD B187 EDUCATION TRAVEL AWARDEE
IMPACT OF DENDRIMER SURFACE CHEMISTRY ON ANTHRAX TOXIN CHANNEL BLOCKAGE: A SINGLE MOLECULE STUDY. **Goli Yamini**, Ekaterina M. Nestorovich

2581-Pos BOARD B188
EFFECTS OF ERYTHROCYTES TREATED WITH ALPHA HEMOLYSIN OF *E. COLI* ON ENDOTHELIAL CELLS. **Vanesa Herlax**, María Florencia Leal Denis, Cora Alvarez, Sophie Denise Lefevre, Nicolás Enrique, Sabina Maté, Verónica Milesi, Mariano Ostuni, Pablo Schwarzbaum

2582-Pos BOARD B189
REVERSIBLE PERMEABILIZATION OF CELL MEMBRANES VIA LYSENIN CHANNELS. **Nisha Shrestha**, Christopher A. Thomas, Devon Richtsmeier, Raquel Brown, Juliette Tinker, Daniel Fologea

2583-Pos BOARD B190 INTERNATIONAL TRAVEL AWARDEE
STUDYING BINDING, CONFORMATIONAL TRANSITION AND ASSEMBLY OF *E. COLI* CYTOLYSIN A PORE FORMING TOXIN BY SINGLE MOLECULE FLUORESCENCE. **Pradeep Sathyanarayana**, Satyaghosh Maurya, Ganapathy Ayappa, Sandhya S. Visweswariah, Rahul Roy

2584-Pos BOARD B191
ROLE OF THE TRYPTOPHAN-RICH MOTIF OF LISTERIOLYSIN O IN MEMBRANE BINDING. **Frances Separovic**, Miriam Kozorog, Marc-Antoine Sani, Gregor Anderluh

2585-Pos BOARD B192
DIMERIZATION, A KEY STEP FOR PORE FORMATION OF FRAGACEA-TOXIN C, AN ACTINOPORIN FROM THE SEA ANEMONE ACTINIA FRAGACEA. **Haydee Mesa Galloso**, Karella H Delgado-Magnero, Uris Ros, Pedro A. Valiente, D. Peter Tieleman

2586-Pos BOARD B193
EVALUATION OF THE HYBRID RESOLUTION PACE MODEL FOR THE STUDY OF FOLDING, INSERTION AND PORE FORMATION OF MEMBRANE ASSOCIATED PEPTIDES. **Michael D. Ward**, Shivangi Nangia, Eric May

2587-Pos BOARD B194
MOLECULAR DYNAMICS SIMULATION OF BIOACTIVE B-CASEIN PEPTIDES IN A POPC LIPID BILAYER. EVALUATION OF THE CASEIN HYDROLYSATES HYDROPHOBICITY AT MEMBRANE INTERFACES. **Eduardo Jardón-Valadez**, Derik Castillo-Guajardo, Judith Jiménez-Guzmán, Mariano García-Garibay

2588-Pos BOARD B195
PREDICTION OF PASSIVE MEMBRANE PERMEABILITY AND TRANSLLOCATION PATHWAYS OF BIOLOGICALLY ACTIVE MOLECULES. Andrei L. Lomize, **Irina D. Pogozeva**

2589-Pos BOARD B196
MECHANISM OF ACTION OF PH-TRIGGERED MEMBRANE ACTIVE PEPTIDES. **Sarah Y. Kim**

2590-Pos BOARD B197
SYNTHETIC VESICLES AS A PREDICTIVE TOOL FOR PERMEABILIZING ACTIVITY OF PEPTIDES IN BIOLOGICAL MEMBRANES. **Cameron Morris**, William C. Wimley

2591-Pos BOARD B198
IDENTIFICATION OF NOVEL PEPTIDE SEQUENCES WITH IMPROVED NUCLEAR DELIVERY OF PEPTIDE NUCLEIC ACID (PNA) SEQUENCES. **William B. Kauffman**, William C. Wimley

2592-Pos BOARD B199
HOW DO PEPTIDES AND NANOPARTICLES INTERACT WITH THE MEMBRANES OF *E. COLI*? INSIGHTS FROM MOLECULAR DYNAMICS. **Pin-Chia Hsu**, Damien Jefferies, Syma Khalid

2593-Pos BOARD B200
STREPTOCOCCAL M PROTEIN EPITOPE 10F5 GENERATES ANTIBODIES THAT REMAIN SIGNIFICANTLY BOUND IN THE HEART VENTRICLES. **Marie Kelly-Worden**, Victoria Cuebas, Morenci Manning, Robin Gebhard, Mathew Osborne

2594-Pos BOARD B201
DRUG LIPIDATION IN MEMBRANES. Hannah M. Britt, Jackie A. Mosely, **John M. Sanderson**

2595-Pos BOARD B202
SELECTIVE DELIVERY OF AURISTATINS TO CANCER CELLS AND TUMORS USING PHLIP. Kelly E. Burns, Harvey Hensley, Matthew K. Robinson, **Damien Thévenin**

2596-Pos BOARD B203
SPONTANEOUS MEMBRANE TRANSLOCATING PEPTIDES: MECHANISMS AND MOTIFS. **Taylor Fuselier**, William C. Wimley

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2598-Pos BOARD B205
CELL PENETRATING PEPTIDE MEDIATED TRANSPORT ACROSS MEMBRANES. **Xin Li**, Matthew Holden, Min Chen

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SYNTHETIC MOLECULAR EVOLUTION OF MEMBRANE-ACTIVE PEPTIDES. **William C. Wimley**

2600-Pos BOARD B207 CPOW TRAVEL AWARDEE
GUV AND LUV LEAKAGE: HOW ALL-OR-NONE AND GRADED LEAKAGE SCALE WITH VESICLE SIZE. Stefan Braun, Šárka Pokorná, Radek Šachl, Martin Hof, Heiko Heerklotz, **Maria Hoernke**

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MEMBRANE LIPID ASYMMETRY, A KEY PROPERTY OF THE MAMMALIAN PLASMA MEMBRANE, ALTERS THE INSERTION OF THE PHLIP PEPTIDE. **Haden Scott**

2602-Pos BOARD B209
LIPID HEADGROUPS MODULATE CONFORMATIONAL SWITCHING DURING MEMBRANE INSERTION OF CANCER-TARGETING PHLIP PEPTIDES. **Victor Vasquez-Montes**, Kelly E. Burns, Damien Thevenin, Alexey S. Ladokhin

2603-Pos BOARD B210
MODEL ASSESSMENT AND SIMULATION OF LIPID-PROTEIN INTERACTIONS. **Ronald D. Hills Jr**, Jacob Fosso-Tande, Cody Black

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SOLID-STATE NMR INVESTIGATIONS OF TRANSMEMBRANE HELIX INTERACTIONS. **Kelsey Knobbe**, Venkatesan Rajagopalan, Ashley Martfeld, Denise Greathouse, Roger Koeppel II

2605-Pos BOARD B212
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2607-Pos BOARD B214
RESPONSE OF GWALP23 TRANSMEMBRANE PEPTIDES TO INCORPORATION OF SPECIFIC PAIRS OF BURIED CHARGED ARGININE RESIDUES. **Karli A. Lipinski**, Ashley N. Martfeld, Denise V. Greathouse, Roger E. Koeppe II

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SELECTIVE CHEMICAL LABELING OF TYPE II CANNABINOID RECEPTOR CB₂ FOR ¹⁹F-NMR AND EPR STUDIES. Alexei Yeliseev, Lioudmila Zoubak, Kirk G. Hines, Walter E. Teague, Jr., **Klaus Gawrisch**

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2617-Pos BOARD B224
CONTRIBUTION OF MUTATIONS AND THE C-TERMINAL TAIL TO ADENOSINE A_{2A} RECEPTOR ACTIVITY AND STABILITY. **Kirsten N. Swonger**, Annie Tir, Anne S. Robinson

2618-Pos BOARD B225
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2620-Pos BOARD B227
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2622-Pos BOARD B229
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2625-Pos BOARD B232
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IN VITRO FORMATION OF A MULTI-PROTEIN COMPLEX INVOLVED IN TCR SIGNALING. **Asit K. Manna**

2627-Pos BOARD B234
THE HIV GP41 CONSERVED POCKET BINDING DOMAIN IS BIFUNCTIONAL, ALTERNATIVELY MEDIATING BOTH IMMUNOSUPPRESSION AND MEMBRANE FUSION. **Gal Kapach**, Yoel A. Klug, Etai Rotem, Benjamin Dubreuil, Yechiel Shai

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2629-Pos BOARD B236
MOLECULAR DYNAMICS ANALYSIS ON THE FORCE TRANSMISSION PATHWAY VIA INTER-SUBUNIT PATHWAY FOR MECHANO-GATING OF BACTERIAL MECHANOSENSITIVE CHANNEL MSCL. **Yasuyuki Sawada**, Takeshi Nomura, Masahiro Sokabe

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2631-Pos BOARD B238
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2632-Pos BOARD B239
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GENERALIZED FLUCTUATION-DISSIPATION THEOREM APPLIED TO ACTIVE HAIR BUNDLES. **Janaki K. Sheth**

2634-Pos BOARD B241
CHAOTIC BEHAVIOR OF OSCILLATORY HAIR CELLS. **Justin Faber**

2635-Pos BOARD B242
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2636-Pos BOARD B243
SPATIOTEMPORAL RELATIONSHIPS FOR THE THREE-STATE MECHANOSENSITIVE CHANNEL MSCS. Ugur Cetiner, **Sergei Sukharev**

2637-Pos BOARD B244
TEMPERATURE SENSITIVE MUTANTS OF THE MSCL MECHANOSENSITIVE CHANNEL PREVENT CELL GROWTH AT HIGH TEMPERATURE. Naoto Owada, Kohei Morita, Megumi Yoshida, **Kenjiro Yoshimura**

2638-Pos BOARD B245
EXPRESSION AND CHARACTERIZATION OF THE PUTATIVE MECHANOSENSITIVE TRANSMEMBRANE CHANNEL-LIKE PROTEIN 1. **Angela Ballesteros Morcillo**, Kenton Swartz

2639-Pos BOARD B246
TOWARDS A COMPLETE STRUCTURAL MODEL FOR THE ESSENTIAL INNER-EAR PROTEIN CADHERIN-23. Avinash Jaiganesh, Aniket Patel, **Pedro De-la-Torre**, Domenic Termine, Florencia Velez-Cortes, Marcos Sotomayor

2640-Pos BOARD B247
CO-MAPPING INTEGRIN MOLECULAR TENSION BOTH INSIDE AND OUTSIDE FOCAL ADHESIONS. **Yongliang Wang**, Xuefeng Wang

2641-Pos BOARD B248
LIGAND-DEPENDENT CONCENTRIC ACTOMYOSIN ARCS REGULATE TCR MECHANO-TRANSDUCTION AT THE IMMUNOLOGICAL SYNAPSE. **Jinsung Hong**, John A. Hammer

2642-Pos BOARD B249
INTRACELLULAR LOCAL THERMOGENESIS INITIATES STRESS GRANULE FORMATION. **Beini Shi**, Kohki Okabe, Takashi Funatsu

2643-Pos BOARD B250
UNDER PRESSURE: MECHANOSENSITIVITY PROPERTIES OF THE BACTERIAL DIVISOME. Marta Dies, **Javier Buceta**

2644-Pos BOARD B251
PROSTATE CANCER CELLS ARE REPROGRAMMED TO NORMAL VIA ULTRASOUND-INDUCED MECHANOTRANSDUCTION. **Hakm Y. Murad**, Heng Yu, Daishen Luo, Gray Halliburton, Damir Khismatullin

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DESOMOSOMES ARE SUBJECT TO MECHANICAL LOAD. Sindora Baddam, Paul Arsenovic, Nicole Duggan, Vani Narayanan, **Daniel E. Conway**

2646-Pos BOARD B253
PATTERNED CELL ALIGNMENT IN RESPONSE TO MACROSCALE CURVATURE. **Nathan D. Bade**, Randall Kamien, Richard Assoian, Kathleen Stebe

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2647-Pos BOARD B254 EDUCATION TRAVEL AWARDEE
CALCIUM REGULATION OF CARDIAC BIOENERGETICS. **Andrew P. Wescott**, Liron Boyman, W. Jonathan Lederer, George S.B. Williams

2648-Pos BOARD B255
FUNCTIONAL BKCA CHANNEL IN HUMAN RESIDENT CARDIAC STEM CELLS EXPRESSING W8B2. Oualid Ayad, Aurelien Chatelier, Christophe Magaud, Jocelyn Bescond, Stephane Sebillle, Christian Cognard, Jean Francois Faivre, **Patrick Bois**

2649-Pos BOARD B256
NOVEL MICROARCHITECTURE INDUCES FUNCTIONAL REMODELING OF THE CALCIUM SIGNALING MECHANISMS IN RESTRUCTURED IPSC-CARDIOMYOCYTES. **Nicole Silbernagel**, Benjamin Richter, Mona Jaggy, Sarah Bertels, Martin Bastmeyer, Nina D. Ullrich

2650-Pos BOARD B257
ROLE OF THE ENDOTHELIAL INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR IN BLOOD PRESSURE REGULATION. **Qi Yuan**

2651-Pos BOARD B258 INTERNATIONAL TRAVEL AWARDEE
TISSUE-SPECIFIC MITOCHONDRIAL DECODING OF CYTOPLASMIC CA²⁺ SIGNALS IS CONTROLLED BY THE STOICHIOMETRY OF MICU1/2 AND MCU. **Melanie Paillard**, György Csordás, Gergő Szanda, Tünde Golenár, Valentina Debattisti, Ádám Bartók, Cynthia Moffat, Erin L. Seifert, András Spät, György Hajnóczky

2652-Pos BOARD B259
INTERACTIONS BETWEEN TRANSMEMBRANE HELICES IN ORAI1 REGULATE CRAC CHANNEL GATING. **Priscilla S.W. Yeung**, Megumi Yamashita, Murali Prakriya

2653-Pos BOARD B260
CONTRIBUTION OF ORAI1 TO SEX-BASED DIFFERENCES IN CARDIAC EXCITATION-CONTRACTION COUPLING. **Fiona Bartoli**, Baptiste Rode, David J. Beech, Ana Maria Gomez, Jean Pierre Benitah, Jessica Sabourin

2654-Pos BOARD B261
ORAI1 MUTATIONS WITH DISTINCT CHANNEL GATING DEFECTS CAUSE TUBULAR AGGREGATE MYOPATHY. **Monica Bulla Didier**, Maud Frieden, Nicolas Demaurex

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THE ROLE OF EHD2 IN ORAI1-STIM1 INTERACTION. **Dora Bodnar**

2656-Pos BOARD B263
ROLE OF ZINC TRANSPORTERS IN MAMMALIAN HEART UNDER PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS. Aysegul Durak, Yusuf Olgar, Erkan Tuncay, Verda C. Bitirim, Evren Ozcinar, Mustafa Bahadır Inan, Kamil Can Akcali, Semir Ozdemir, Ahmet Ruchan Akar, **Belma Turan**

2657-Pos BOARD B264
TONIC ACTIVATION OF EXTRASYNAPTIC NMDA RECEPTORS DECREASES NEURONAL EXCITABILITY IN ALZHEIMER'S DISEASE TONIC ACTIVATION OF EXTRASYNAPTIC NMDA RECEPTORS DECREASES NEURONAL EXCITABILITY IN ALZHEIMER'S DISEASE. **David Gall**, Antonio Lobo-Antunes, Geneviève Dupont

2658-Pos BOARD B265
REGULATION OF AXON GROWTH BY ALPHA 7 NICOTINIC RECEPTOR CALCIUM TRANSIENTS AT THE GROWTH CONE. **E Bak**, J Jedrejewska-Szmek, J King, K Blackwell, N Kabbani

2659-Pos BOARD B266

INORGANIC POLYPHOSPHATE PROTECTS NEURONS AGAINST GLUTAMATE-INDUCED EXCITOTOXICITY. Marta Maiolino, Vincenzo Lariccia, Salvatore Amoroso, Plamena R. Angelova, **Andrey Y. Abramov**

Intercellular Calcium Channels and Calcium Sparks and Waves II (Boards B267–B279)

2660-Pos BOARD B267

ATP RELEASE THROUGH GAP JUNCTION HEMICHANNELS INCREASES Ca^{2+} SPARK OCCURRENCE VIA P2Y PURINOCEPTOR SIGNALING IN RAT VENTRICULAR MYOCYTES UNDER SHEAR STRESS. **Jun Wang**, Joon-Chul Kim, Sun-Hee Woo

2661-Pos BOARD B268

STRUCTURAL DYNAMICS OF CALMODULIN IN REGULATION OF CALCIUM RELEASE IN HEALTH AND DISEASE. **Megan R. McCarthy**, Robyn T. Rebeck, Razvan L. Cornea, David D. Thomas

2662-Pos BOARD B269

EFFECTS OF EXPRESSION LEVELS OF WT AND MUTANT RYR2 ON Ca^{2+} HOMEOSTASIS IN HEK CELLS. **Nagomi Kurebayashi**, Takashi Murayama, Naoyuki Tetsuo, Ryosaku Ohta, Fumiyoshi Yamashita, Takashi Sakurai

2663-Pos BOARD B270

EFFECTIVE SUPPRESSION OF ARRHYTHMOGENIC Ca WAVES BY FLECAINIDE IN VENTRICULAR MYOCYTES FROM CASQ2 $-/-$ MICE DEPENDS ON CAMKII ACTIVITY. **Dmytro Kryshtal**, Nieves Gomez-Hurtado, Bjorn Knollmann

2664-Pos BOARD B271

CARDIAC SPECIFIC IP_3R OVER-EXPRESSION: IP_3ICR CONTRIBUTION IN Ca^{2+} SIGNALING. **Joaquim Blanch i Salvador**, Marcel Wullschleger, Marcel Egger

2665-Pos BOARD B272

DYNAMICAL INTERACTIONS OF EARLY AFTERDEPOLARIZATIONS WITH STRETCH ACTIVATED CHANNELS. **Dexter K. Luu**, Daisuke Sato, Yuanfang Xie

2666-Pos BOARD B273

MODELLING CALCIUM-INDUCED-CALCIUM-RELEASE FROM MEASUREMENTS OF RYR GATING. **Derek R. Laver**, Cherrie H. Kong, Mark B. Cannell

2667-Pos BOARD B274

MODULATION OF Ca^{2+} SIGNALING IN HL-1 CARDIOMYOCYTES BY ARRHYTHMOGENIC RYR2 MUTANTS. **Naoyuki Tetsuo**, Nagomi Kurebayashi, Takashi Murayama, Takashi Sakurai

2668-Pos BOARD B275

HOW DOES CALCIUM OVERLOAD GENERATE CALCIUM WAVES IN HEART? **George S. B. Williams**, Andrew P. Wescott, Stephan E. Lehnart, W. J. Lederer

2669-Pos BOARD B276

MECHANISM OF SINONATRIAL NODE DYSFUNCTION IN A RYR2R420Q MOUSE MODEL OF CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA. **Yue-Yi Wang**, Pietro Mesirca, Elena Marqués-Sulé, Alexandra Zahradnikova Jr, Olivier Villejoubert, Pilar d'Ocon, Cristina Ruiz, Diana Domingo, Esther Zorio, Matteo E. Mangoni, Jean-Pierre Benitah, Ana Maria Gomez

2670-Pos BOARD B277

ABLATION OF THE RYR2-SER2030 PHOSPHORYLATION SITE LIMITS CHANGES IN RYR2 SENSITIVITY DURING β -ADRENERGIC STIMULATION. **Duilio M. Potenza**, Radoslav Janicek, Miguel Fernandez-Tenorio, Hector H. Valdivia, Ernst Niggli

2671-Pos BOARD B278

MOLECULAR CLONING AND EXPRESSION OF CDNA ENCODING THE RYANODINE RECEPTOR TYPE 2 FROM *RATTUS NORVEGICUS* CEREBRAL ARTERY SMOOTH MUSCLE. Jianxi Liu, Guruprasad Kuntamallappanavar, Venkatasushma Kalava, **Alex Dopico**

2672-Pos BOARD B279

MCU AND EMRE BINDING IS MEDIATED THROUGH INTERMEMBRANE HELIX-HELIX INTERACTIONS. **Charles Phillips**

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating IV (Boards B280–B288)

2673-Pos BOARD B280

STATE-DEPENDENT STRUCTURAL MODELING AND ATOMISTIC SIMULATIONS OF THE HERG POTASSIUM CHANNEL. Kevin R. DeMarco, Phuong T. Nguyen, Toby W. Allen, Vladimir Yarov-Yarovoy, Colleen E. Clancy, **Igor Vorobyov**

2674-Pos BOARD B281

EFFECT OF MEMBRANE COMPOSITION ON ION CONDUCTION IN A VOLTAGE-GATED POTASSIUM CHANNEL. **Niklaus B. Johner**, Simon Berneche

2675-Pos BOARD B282

K^+ OCCUPANCY IN THE CAVITY DETERMINES THE ION PERMEATION RATE THROUGH THE KV1.2 CHANNEL. **Takashi Sumikama**, Shigetoshi Oiki

2676-Pos BOARD B283

ON RESOLUTION OF THE SELECTIVITY/CONDUCTIVITY PARADOX FOR THE POTASSIUM ION CHANNEL. **Dmitry G. Luchinsky**, Will A.T. Gibby, Igor Kh Kaufman, Dogan A. Timucin, Peter V.E. McClintock

2677-Pos BOARD B284

WEIGHTED ENSEMBLE APPROACH TO *IN SILICO* MEASURE THE *I-V* RELATIONSHIP IN A K^+ ION CHANNEL. **Sara Capponi**, Joshua Adelman, John Rosenberg, Michael Grabe

2678-Pos BOARD B285

QUANTUM CALCULATIONS OF LARGE SEGMENTS OF A VOLTAGE SENSING DOMAIN OF A VOLTAGE GATED CHANNEL. **Alisher M. Kariev**, Michael E. Green

2679-Pos BOARD B286

QUANTUM CALCULATIONS OF SALT BRIDGES, THEIR IONIZATION STATE IN THE INTERIOR OF VOLTAGE SENSING DOMAINS OF VOLTAGE GATED CHANNELS, AND SOME CONSEQUENCES. Alisher M. Kariev, **Michael E. Green**

2680-Pos BOARD B287

TRUE OR FALSE? "THE ARGININES AND LYSINES OF THE S4 SEGMENT OF A VOLTAGE-SENSITIVE ION CHANNEL REPEL ONE ANOTHER ELECTROSTATICALLY". **H. Richard Leuchtag**

2681-Pos BOARD B288

FINDINGS FROM CONDENSED-STATE PHYSICS ON BRANCHED-CHAIN AMINO ACIDS APPLY TO VOLTAGE-SENSITIVE ION CHANNELS. **H. Richard Leuchtag**

Ion Channel Regulatory Mechanisms II (Boards B289–B296)

2682-Pos BOARD B289

TRANSPORT OF WATER AND IONS THROUGH A GRAPHENE NANOPORE IN AN ELECTRIC FIELD. **Anping Ji**, Zhongwu Li, Haojie Yang, Pinyao He, Yunfei Chen

2683-Pos BOARD B290
ION TRANSPORT AND DEHYDRATION IN SUBNANOSCALE PORES. **Subin Sahu**, Massimiliano Di Ventra, Michael Zwolak

2684-Pos BOARD B291
MOLECULAR DETERMINANTS OF STRUCTURAL COUPLING BETWEEN C-TYPE INACTIVATION AND INNER GATE OPENING IN K⁺ CHANNELS. **Jing Li**, Jared Ostmeier, Eduardo Perozo, Benoit Roux

2685-Pos BOARD B292
INVESTIGATION OF IONIC COULOMB BLOCKADE IN SUB-1 NM NANOPORES WITH MOLECULAR DYNAMICS SIMULATIONS. **Zhongwu Li**, Kun Li, Pinyao He, Haojie Yang, Anping Ji, Yunfei Chen

2686-Pos BOARD B293
GLUTAMATE RECEPTOR ION CHANNEL ACTIVATION MECHANISM REVEALED BY CRYO-EM MAPS. **Xiongwu Wu**, Bernard R. Brooks

2687-Pos BOARD B294
THE C-TERMINAL DOMAIN OF KV1.3 INTERACTS WITH KCNE4 TO FORM OLIGOMERIC CHANNELS. **Sara R. Roig**, Laura Solé, Albert Vallejo-Gracia, Daniel Sastre, Antonio Serrano-Albarrás, Clara Serrano-Novillo, Ramón Martínez-Mármol, Michael M. Tamkun, Antonio Felipe

2688-Pos BOARD B295
STRUCTURAL AND FUNCTIONAL RESPONSE OF A MECHANOSENSITIVE K₂P K⁺ CHANNEL TO ASYMMETRIC MEMBRANE TENSION. **Vivian Jareattanachatt**, Michael V. Clausen, Prafulla Aryal, Elisabeth P. Carpenter, Mark S.P. Sansom, Stephen J. Tucker

2689-Pos BOARD B296
FLUCTUATION-DRIVEN TRANSPORT IN BACTERIAL CHANNELS UNDER ACIDIC STRESS. María L. López, María Queralt-Martín, Vicente M. Aguilera, **Antonio Alcaraz**

Ion Channels, Pharmacology, and Disease II (Boards B297–B310)

2690-Pos BOARD B297
SODIUM VALPROATE REVERSES ELECTRICAL REMODELING OF ATRIAL MYOCYTES ISOLATED FROM CREM-IBΔC-X TRANSGENIC MICE. **C. Florentina Pluteanu**, Beatrix Scholz, Jan S. Schulte, Frank U. Müller

2691-Pos BOARD B298
HEART FAILURE IS ASSOCIATED WITH ACTIVATION OF THE UNFOLDED PROTEIN RESPONSE AND ELECTRICAL REMODELING THAT IS PARTIALLY REVERSED BY A PERK INHIBITOR. **Man Liu**, Guangbin Shi, Hong Liu, Samuel C. Dudley

2692-Pos BOARD B299
A *DE NOVO* LOSS-OF-FUNCTION MUTATION IN *KCNJ6* ASSOCIATED WITH IDIOPATHIC VENTRICULAR TACHYCARDIA. **Franck Potet**, Ruth McGowan, Karen McLeod, Alfred L Jr. George

2693-Pos BOARD B300 INTERNATIONAL TRAVEL AWARDEE
RESTORING DEFECTIVE CAMP-DEPENDENT UPREGULATION IN LONG-QT SYNDROME TYPE-1 THROUGH INTERVENTIONS THAT PROMOTE I_{Ks} CHANNEL OPENING. **Cristina Moreno Vellido**, Roel L.H.M.G. Spätjens, Sandrine Seyen, Gabriele Menini, Jordi Heijman, Paul Volders

2694-Pos BOARD B301
KCA1.1 CHANNEL AUXILIARY BETA SUBUNIT COMPOSITION IN GLIOBLASTOMA MULTIFORME. **Zoltan Denes Petho**, Andras Balajthy, Almos Klekner, Laszlo Bognar, Zoltan Varga, Gyorgy Panyi

2695-Pos BOARD B302
THE UREMIC TOXIN P-CRESOL REDUCES CELL SURFACE EXPRESSION OF HUMAN ETHER-A-GO GO-RELATED GENE (HERG) CHANNELS VIA THE UBIQUITIN LIGASE NEDD4-2. **Ellen G. Avery**, Shawn Lamothe, Shetuan Zhang, Jun Guo, Wentao Li, Tonghua Yang

2696-Pos BOARD B303
IPSC-DERIVED NEURONS HARBORING A KNOWN EPILEPSY MUTATION DISPLAY KNOWN AND NOVEL ELECTROPHYSIOLOGICAL PHENOTYPES. Coby Carlson, Imran Quaraihi, Yalan Zhang, Michael McLachlan, Benjamin Meline, Chris McMahon, Tom Burke, Eugenia Jones, Leonard Kaczmarek, **Kile P. Mangun**

2697-Pos BOARD B304
K_{CA} 3.1 AS MASTER REGULATOR IN INFLAMMATORY OSTEOCLASTOGENESIS. **Eva M. Grossinger**, Mincheol Kang, Laura Bouchareychas, Ritu Sarin, Dominik Haudenschild, Laura Borodinsky, Iannis E. Adamopoulos

2698-Pos BOARD B305
OXIDATION OF K⁺ CHANNELS IN TBI. **Federico Sesti**, Wei Yu, Randika Parakramaweera, Janet Alder, Smita Thakker-Varia, Shavonne Teng

2699-Pos BOARD B306
PROTECTIVE ROLE OF OLESOXIME IN ALPHA-SYNUCLEIN-INDUCED MITOCHONDRIAL DYSFUNCTION. **Amandine Mf Rovini**

2700-Pos BOARD B307
RIP3 MEDIATES NECROPTOTIC CELL DEATH IN RESPONSE TO ACID STIMULATION OF ASIC1A. **Yu Huang**, Qin Hu, Jun-Long Huang, Jaepyo Jeon, Tian-Le Xu, Michael Xi Zhu

2701-Pos BOARD B308
THE FUNCTION AND MECHANISM OF TMEM16A/ANO1 IN PANCREATIC CANCER. **Yonjung Kim**, Hyung Soon Park

2702-Pos BOARD B309
THE ROLE OF BK CHANNEL IN MICROGLIA ACTIVATION. Xiaoying Yang, Wenying Zhao, Li Zhang, Jianmin Cui, **Xiaohui Sun**, Xuechu Zhen

2703-Pos BOARD B310
KV1.3 INHIBITION REDUCES AMYLOID-BETA INDUCED MICROGLIAL NEUROTOXICITY. **Heike Wulff**, Jacopo Di Lucente, Hai M. Nguyen, Vikrant Singh, Lee-Way Jin, Izumi Maezawa

Other Channels II (Boards B311–B326)

2704-Pos BOARD B311
LYSENIN GATING IMPLIES STRONG INTERACTION BETWEEN THE VOLTAGE-GATING SENSOR AND THE BILAYER MEMBRANE: AN IONIC SCREENING STUDY. **Samuel R. Kosydar**, Kaitlyn S. Ware, Sheenah Bryant, Nisha Shrestha, Charles Hanna, Daniel Fologea

2705-Pos BOARD B312
SUBUNITS THAT FORM TRIMERIC DEG/ENAC MECHANO-ELECTRICAL TRANSDUCTION CHANNELS IN TOUCH RECEPTOR NEURONS. **Sylvia Fechner**, Frederic Loizeau, Adam L. Nekimken, Beth L. Pruitt, Miriam B. Goodman

2706-Pos BOARD B313
TRACKING PORE HYDRATION WITHIN THE RED-ACTIVATABLE CHANNELRHODOPSIN REACHR BY SITE-DIRECTED LABELING WITH INFRARED-ACTIVE AZIDO PROBES. **Benjamin S. Krause**, Joel C. D. Kaufmann, Jens Kuhne, Johannes Vierock, Thomas Huber, Thomas P. Sakmar, Klaus Gerwert, Franz J. Bartl, Peter Hegemann

2707-Pos BOARD B314
MECHANISM OF WATER AND SOLUTE COTRANSPORT BY THE SODIUM GLUCOSE COTRANSPORTER SGLT1. **Christine Siligan**, Andreas Horner, Sergey Akimov, Peter Pohl

2708-Pos BOARD B315
CHIMERIC INNEXINS REVEAL COMPLEXITIES OF ELECTRICAL RECTIFICATION. **Jamal B. Williams**, Martha Skerrett

2709-Pos BOARD B316
FIGURING OUT FLUORIDE TRANSPORT. **Benjamin McIlwain**, Randy Stockbridge

- 2710-Pos BOARD B317**
EFFECT OF ELECTROOSMOTIC FLOW ON THE TRANSPORT OF A-CYCLODEXTRIN THROUGH THE CHANNEL CYMA. **Jigneshkumar Dahyabhai Prajapati**, Satya Prathyusha Bhamidimarri, Mathias Winterhalter, Ulrich Kleinekathofer
- 2711-Pos BOARD B318**
MOLECULAR DETERMINANTS OF PHOTOCURRENT KINETICS OF THE RED LIGHT ACTIVABLE CHANNELRHODOPSIN CHRIMSON. **Johannes Vierock**, Noam Nitzan, Peter Hegemann
- 2712-Pos BOARD B319**
SEARCHING FOR A POTENTIAL VOLTAGE SENSOR INTRINSIC TO PANNEIN CHANNELS. **Kevin Michalski**, Toshi Kawate
- 2713-Pos BOARD B320**
CHARACTERIZATION OF STRUCTURAL CHANGES VIA LIPID REGULATION OF KIR2.1 IN A LIPID ENVIRONMENT. **Joshua Brettmann**, Sunjoo Lee, Shizhen Wang, Colin G. Nichols
- 2714-Pos BOARD B321**
ELECTROPHYSIOLOGICAL INVESTIGATION OF THE SODIUM PUMP KR2. **Christiane Grimm**, Arend Vogt, Peter Hegemann
- 2715-Pos BOARD B322**
VOLTAGE AND TIME DEPENDENCE OF AMPHOTERICIN B CHANNEL ACTIVITY IN LIPIDIC MEMBRANES. **Karla S. Récamier**, Iván Ortega-Blake, Punit Parmananda
- 2716-Pos BOARD B323**
EFFECTS OF CYTOPLASMIC TAIL TRUNCATIONS ON CONNEXIN 50 HEMI-CHANNEL FUNCTION. **Justine J. Jacobi**, Derek L. Beahm
- 2717-Pos BOARD B324**
COMPARISON OF SECOND MESSENGER PERMEABILITIES THROUGH GAP JUNCTION CHANNELS FORMED BY CX43 AND CX50. **Virgis Valiunas**, Laima Valiuniene, Peter R. Brink, Thomas W. White
- 2718-Pos BOARD B325**
INVESTIGATION OF SIDEROPHORE-MONOBACTAM ANTIBIOTIC DERIVATIVES: THEIR IRON(III)-COMPLEXES AND BINDING TO RECEPTORS. **Mariano A. Scorciapino**, Giuliano Malloci, Matteo Ceccarelli, Lucile Moynie, James H. Naismith, Eric Desarbre, Malcolm Page
- 2719-Pos BOARD B326**
TMEM16A MEDIATES THE FAST BLOCK TO POLYSPERMY IN *XENOPUS LAEVIS* EGGS. Katherine L. Wozniak, Brianna L. Mayfield, **Anne E. Carlson**

Ligand-gated Channels II (Boards B327–B345)

- 2720-Pos BOARD B327**
FUNCTIONAL CHARACTERIZATION OF A NICOTINIC ACETYLCHOLINE RECEPTOR FROM AN EXTREMOPHILE WORM. Eveline Wijckmans, Florian Delbart, **Chris Ulens**
- 2721-Pos BOARD B328**
ACETYLCHOLINE RECEPTOR GATING: CLICK-TWIST-TILT-RIP-POP. Shaweta Gupta, **Srirupa Chakraborty**, Ridhima Vij, Tapan K. Nayak, Anthony Auerbach
- 2722-Pos BOARD B329**
A FLUORESCENT AGONIST OF THE MUSCLE NICOTINIC ACETYLCHOLINE RECEPTOR. **Abhilasha Ladha**, Vera Martos, Andrew Plested, Jana Kusch
- 2723-Pos BOARD B330**
THE INTRACELLULAR DOMAIN OF PENTAMERIC LIGAND-GATED ION CHANNELS AND ITS EFFECT ON RECEPTOR CONDUCTANCE IN GLIC CHIMERAS. **Antonia Stuebler**, Pablo Artigas, Michaela Jansen
- 2724-Pos BOARD B331**
BARBITURATES BIND IN THE GLIC ION CHANNEL PORE AND CAUSE INHIBITION BY STABILIZING A SHUT STATE. Zeineb Fourati, Reinis R. Ruza, Duncan Laverty, Emmanuelle Drege, Sandrine Delarue-Cochin, Delphine Joseph, Patrice Koehl, Trevor Smart, **Marc Delarue**
- 2725-Pos BOARD B332**
THERMOANALYTICAL CHARACTERIZATION OF PENTAMERIC ELIC BASED ON DETERGENT SIZE. **Ty E. Whisenant**, Benjamin W. Elberson, Doris M. Cortes, Luis G. Cuello
- 2726-Pos BOARD B333**
BIOCHEMICAL AND THERMODYNAMIC CHARACTERIZATION OF THE *ERWINIA CHRYSANTHEMI* LIGAND-GATED ION CHANNEL. **Benjamin W. Elberson**, Ty E. Whisenant, D. Marien Cortes, Luis G. Cuello
- 2727-Pos BOARD B334**
DECIPHERING ANESTHETIC ACTION OF NOBLE GASES THROUGH THEIR MODULATION OF MEMBRANE PROTEIN AND LIPID BILAYER PROPERTIES. **Samuel Murail**, Pluton Pullumbi, Marc Baaden
- 2728-Pos BOARD B335 CPOW TRAVEL AWARDEE**
TRANSMEMBRANE STRUCTURAL DETERMINANTS OF ALCOHOL BINDING AND MODULATION IN A MODEL LIGAND-GATED ION CHANNEL. **Rebecca J. Howard**, Stephanie A. Heusser, Özge Yoluk, Oliver Snow, Göran Klement, Alex R. Mola, Travers MD Ruel, Erik Lindahl
- 2729-Pos BOARD B336**
KETAMINE INHIBITION OF PENTAMERIC LIGAND-GATED ION CHANNELS - INSIGHTS FROM MOLECULAR DYNAMICS SIMULATIONS. **Bogdan F. Ion**, Marta M. Wells, Yan Xu, Pei Tang
- 2730-Pos BOARD B337 INTERNATIONAL TRAVEL AWARDEE**
STRUCTURAL AND FUNCTIONAL EVIDENCE FOR MULTI-SITE ALLOSTERY MEDIATED BY GENERAL ANESTHETICS IN A MODEL LIGAND-GATED ION CHANNEL. **Stephanie A. Heusser**, Rebecca J. Howard, Zeineb Fourati, Marc Delarue, Erik Lindahl
- 2731-Pos BOARD B338**
DETERMINANTS OF 5-HT_{3A} INTRACELLULAR DOMAIN OLIGOMERIZATION AND RIC-3 INTERACTION. **Elham Pirayesh**, Akash Pandhare, Michaela Jansen
- 2732-Pos BOARD B339**
CHARACTERIZING THE INTRINSIC ASSEMBLY BEHAVIOR OF THE 5-HT_{3A} RECEPTOR INTRACELLULAR DOMAIN. **Akash Pandhare**, Michaela Jansen
- 2733-Pos BOARD B340**
DEVELOPMENT OF A PENTAMERIC, NON-CHIMERIC 5-HT_{3A} RECEPTOR INTRACELLULAR DOMAIN CONSTRUCT. **Mina Ahmadi**, Akash Pandhare, Michaela Jansen
- 2734-Pos BOARD B341**
RELATIVE AFFINITIES OF GENERAL ANESTHETICS FOR PSEUDO-SYMMETRIC INTERSUBUNIT BINDING SITES OF HETEROMERIC GABA(A) RECEPTORS. **Sruthi Murlidaran**, Reza Salari, Jerome Héning, Grace Brannigan
- 2735-Pos BOARD B342**
INVESTIGATING STRUCTURAL TRANSITIONS OF GABA-A RECEPTORS USING ACCELERATED MOLECULAR DYNAMICS. **Ole J. Andersen**, Philip C. Biggin
- 2736-Pos BOARD B343 EDUCATION TRAVEL AWARDEE**
STRUCTURAL ELEMENTS GOVERNING GABA-A RECEPTOR CHANNEL ACTIVATION AND DRUG MODULATION. **Tzu-Wei Tsao**, Connor Ford, Chong Lor, Robert Pearce, Cynthia Czajkowski
- 2737-Pos BOARD B344**
BINDING MODES OF FULL AND PARTIAL AGONISTS IN THE ORTHOSTERIC BINDING SITE OF THE GLYCINE RECEPTOR. **Marc A. Dämgen**, Timo Greiner, Remigijus Lape, Lucia G. Sivilotti, Philip C. Biggin

2738-Pos BOARD B345
STRUCTURE-BASED DISCOVERY OF NOVEL GLYCINERGIC MODULATORS. **Marta M. Wells**, Nathan Reinert, Pei Tang, Yan Xu

Cardiac Muscle Mechanics and Structure II (Boards B346–B360)

2739-Pos BOARD B346
ATRIAL REMODELING IN HYPERTROPHIC CARDIOMYOPATHY. **Cecilia Ferrantini**, José Manuel Pioner, Francesca Gentile, Raffaele Coppini, Cristina Morelli, Nicoletta Piroddi, Beatrice Scellini, Elisabetta Cerbai, Jil Tardiff, Chiara Tesi, Iacopo Olivotto, Corrado Poggesi

2740-Pos BOARD B347
MYOSIN ACTIVATOR OMECAMTIV MECARBIL DIFFERENTIALLY IMPACTS THE CONTRACTILE PROPERTIES OF SKINNED MYOCARDIUM FROM FAILING AND DONOR HUMAN HEARTS. **Ranganath Mamidi**, Kenneth S. Gresham, Jiayang Li, Julian E. Stelzer

2741-Pos BOARD B348
BIOCHEMICAL AND MECHANICAL PROPERTIES OF THE S532P AND R712L CARDIOMYOPATHY MYOSIN MUTANTS. **Ailian Xiong**, Yingying Liu, Bipasha Barua, Betty Belknap, Howard White, Donald Winkleman, Eva Forgacs

2742-Pos BOARD B349
PEPTIDES DESIGNED TO DESTABILIZE THE MYOSIN COILED COIL ENHANCE MYOFIBRIL SHORTENING WHILE PEPTIDES THAT STABILIZE THE COILED COIL INHIBIT MYOFIBRIL SHORTENING. Rohit Singh, Motamed Qedan, Negar Aboonashiraz, Dua'a Quedan, Daniel Wang, **Douglas D. Root**

2743-Pos BOARD B350
REDUCED BINDING OF THE M-DOMAIN OF CARDIAC MYOSIN BINDING PROTEIN C TO ACTIN IMPAIRS THE ABILITY OF THE HEART TO RESPOND TO CHRONIC STRESS. **Sabine J. van Dijk**, Joshua Strom, Samantha P. Harris

2744-Pos BOARD B351
STRUCTURAL DYNAMICS OF HUMAN CARDIAC MYOSIN-BINDING PROTEIN C REVEALED BY TIME-RESOLVED FRET. Thomas A. Bunch, Victoria C. Lepak, **Brett A. Colson**

2745-Pos BOARD B352
INCREASED PHOSPHORYLATION OF CARDIAC MYOSIN BINDING PROTEIN C AND INCREASED EXPRESSION OF TROPONIN I IN NORMAL HUMAN AGEING. Lisa Nguyen, James McNamara, **Cris Dos Remedios**, Amy Li, Sean Lal

2746-Pos BOARD B353
PSEUDO-PHOSPHORYLATION MEDIATED RESCUE OF R58Q-LINKED FAMILIAL HYPERTROPHIC CARDIOMYOPATHY PHENOTYPE. **Sunil Yadav**, Katarzyna Kazmierczak, Jingsheng Liang, Danuta Szczesna-Cordary

2747-Pos BOARD B354
MOLECULAR MECHANISMS INVOLVED IN CARDIOSKELETAL DYSFUNCTION CAUSED BY MUTATIONS IN MYOSIN RLC LINKED TO HYPERTROPHIC CARDIOMYOPATHY. **Danuta Szczesna-Cordary**, Chen-Ching Yuan, Katarzyna Kazmierczak, Zhiqun Zhou, Jingsheng Liang, Sunil Yadav, Thomas C. Irving, Jenice X. Cheah, Aldrin V. Gomes

2748-Pos BOARD B355 EDUCATION TRAVEL AWARDEE
DISTINCT LATTICE STRUCTURE ALTERATIONS IN DCM AND HCM MOUSE MODELS ASSOCIATED WITH MUTATIONS IN MYOSIN REGULATORY LIGHT CHAIN. **Chen-Ching Yuan**, Jingsheng Liang, Katarzyna Kazmierczak, Zhiqun Zhou, Rosemeire Kanashiro-Takeuchi, Thomas C. Irving, Danuta Szczesna-Cordary

2749-Pos BOARD B356
ABNORMAL CARDIAC CROSS-BRIDGE KINETICS IN A TROPONIN T IL-1E79ASN TRANSGENIC MOUSE MODEL. David Gonzalez-Martinez, Karissa D. Jones, Maicon Landim-Vieira, Kwangjun Lee, Yeojung Koh, Bjorn C. Knollmann, P. Bryant Chase, Hyun S. Hwang, **Jose R. Pinto**

2750-Pos BOARD B357
A NOVEL DCM-ASSOCIATED MUTATION IN THE N-HELIX OF CARDIAC TROPONIN C EXHIBITS IMPAIRED CONTRACTILE KINETICS AND REDUCED Ca^{2+} -SENSITIVITY *IN VITRO*. **Jamie Johnston**, David Gonzalez-Martinez, Einat Birk, Nili Zucker, Maicon Landim-Vieira, P. Bryant Chase, Yael Wilnai, Jose R. Pinto

2751-Pos BOARD B358
THIN FILAMENT-MEDIATED MODULATION OF MOUSE CARDIAC CROSS-BRIDGE KINETICS BY Ca^{2+} -SENSITIZING MUTATION CTNC-A8V OR BEP-RIDIL. **David Gonzalez-Martinez**, Maicon Landim-Vieira, Jamie Johnston, Weikang Ma, Brittany Griffin, Olga Antipova, Omar Awan, P. Bryant Chase, Thomas Irving, Jose R. Pinto

2752-Pos BOARD B359
THE ACTC A295S HYPERTROPHIC CARDIOMYOPATHY MUTATION PROMOTES THIN FILAMENT DISINHIBITION AND ENHANCES CONTRACTILE ACTIVITY. Meera C. Viswanathan, William Schmidt, Marek Orzechowski, William Lehman, **Anthony Cammarato**

2753-Pos BOARD B360 CPOW TRAVEL AWARDEE
CARDIAC-SPECIFIC EXPRESSION OF VCP/TER94 RNAI OR DISEASE ALLELES DISRUPTS DROSOPHILA HEART STRUCTURE AND IMPAIRS FUNCTION. **Anna C. Blice-Baum**, Meera C. Viswanathan, Tzu-Kang Sang, Anthony Cammarato

Actin Structure, Dynamics, and Associated Proteins (Boards B361–B375)

2754-Pos BOARD B361
COMPARING THE EFFECTS AND REGULATIONS OF COFILIN ON ACTIN BARBED ENDS GENERATION IN LAMELLIPODIA VS. INVADOPODIA USING MATHEMATICAL MODELING. **Nessy Tania**, John Condeelis

2755-Pos BOARD B362
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C0 DOMAIN OF CARDIAC MYOSIN BINDING PROTEIN-C MODULATES INTERACTION OF THE NEIGHBORING C1 DOMAIN WITH TROPOMYOSIN THROUGH THE ALLOSTERIC INTERACTION WITH F-ACTIN. Jamie Eisner, Cristina Risi, Betty Virok, Julio Kovacs, Samantha P. Harris, Willy R. Wriggers, Howard D. White, **Vitold E. Galkin**

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USING PHOTONIC FORCE MICROSCOPY TO INVESTIGATE THE MECHANICS OF FILOPODIA. **Rebecca Michiels**, Alexander Rohrbach

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ACTIN BASED PULLING FORCES IN ENDOCYTOSIS. **Fowad Motahari**, Anders Carlsson

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ACTIVE CARGO POSITIONING FROM ACTIN-POLARITY SENSING BY SMALL MYOSIN ASSEMBLIES CARGO POSITIONING FROM ACTIN-POLARITY SENSING BY SMALL MYOSIN ASSEMBLIES. Mathieu Richard, Hajer Ennomani, Carles Blanch-Mercader, Enrique de la Cruz, Jean-François Joanny, Frank Jülicher, Laurent Blanchoin, **Pascal Martin**

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AN AFM INVESTIGATION OF THE NANOSCALE FORCES THAT GOVERN THE INTERACTIONS BETWEEN ACTIN AND PROTEINS OF TROPOMODULIN FAMILY. Baran Arslan, Mert Colpan, Kevin Gray, Nehal Abu-Lail, **Alla Kostyukova**

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THE EFFECTS OF NUCLEOTIDE AND POLYMERIZATION ON THE STRUCTURE AND DYNAMICS OF ACTIN. **Lauren Jepsen**, David Sept

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SPECTROSCOPIC PROBES OF ACTIN AND ACTIN-BINDING DOMAINS OF DYSTROPHIN AND B-III-SPECTRIN REVEALS DISEASE-RELATED CHANGES IN STRUCTURAL DYNAMICS. **Michael E. Fealey**, Adam W. Avery, Thomas S. Hays, David D. Thomas

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TROPOMYOSIN ISOFORMS SHOW UNEXPECTED DIFFERENTIAL EFFECTS ON ACTIN POLYMERIZATION. **Robin Maytum**, Khadar Dudekula

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2770-Pos BOARD B377

THE ROLE OF THE C-TERMINAL TAILS OF TUBULIN IN MICROTUBULE DYNAMICS. **Kathryn P. Wall**, Maria Pagratis, Geoffrey Armstrong, Jeremy Balsbaugh, Chad Pearson, Loren E. Hough

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AN OPTOGENETIC APPROACH TO CONTROL MICROTUBULE ACETYLATION IN LIVING CELLS. **Neha Kaul**, Hui Wang, Onur Dagliyan, Klaus M. Hahn

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REVISED MODEL, WITH EXPERIMENTAL VERIFICATION, FOR MOTOR DENSITIES IN GLIDING ASSAYS. Anh T. N. Hoang, Augustus J. Lowry, **Douglas S. Martin**

2773-Pos BOARD B380

PROTOFILAMENT BUNDLES CREATED BY MECHANICAL SPLITTING OF MICROTUBULES BY SURFACE-TETHERED KINESIN-1. **Virginia VanDelinder**, Peter Adams, George D. Bachand

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REVERSIBLE MORPHOLOGICAL CONTROL OF TUBULIN-ENCAPSULATING GIANT LIPOSOMES BY HYDROSTATIC PRESSURE. **Masayoshi Nishiyama**, Masahito Hayashi, Kingo Takiguchi, Yoshie Harada

2775-Pos BOARD B382

CELL-FREE RECONSTITUTIONS OF TAU AND TUBULIN MEDIATE COMPLEX MICROTUBULE ARCHITECTURES FOUND IN THE AXON. **Peter J. Chung**, Chaeyeon Song, Joanna Deek, Herbert P. Miller, Youli Li, Myung Chul Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

2776-Pos BOARD B383

REMODELING OF MICROTUBULE-PROTEIN TAU BUNDLES IN THE PRESENCE OF BIOLOGICALLY RELEVANT CATIONS. Chaeyeon Song, Phillip Kohl, Peter Chung, **Bretton Fletcher**, Herbert P. Miller, Youli Li, S.C. Feinstein, Leslie Wilson, Cyrus R. Safinya

2777-Pos BOARD B384

PHYSICAL INTERACTIONS BETWEEN DISEASE-LINKED TAU MUTANTS AND MICROTUBULES. **Megan T. Valentine**, Benjamin J. Lopez, Dezhi Yu, Jamianne C. Wilcox

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MULTI-SCALE MODELING OF THE NANOMECHANICS OF MICROTUBULE FILAMENTS. Nan Jiang, Jennifer Ross, **Ruxandra Dima**

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DIRECT MEASUREMENT OF THE FORCE-GENERATING CAPACITY OF PROTOFILAMENTS CURLING OUTWARD FROM DISASSEMBLING MICROTUBULE TIPS. Jonathan W. Driver, Elisabeth A. Geyer, **Megan E. Bailey**, Luke M. Rice, Charles L. Asbury

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2782-Pos BOARD B389

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MEASUREMENT OF THE PERSISTENCE LENGTH OF CYTOSKELETAL FILAMENTS USING CURVATURE DISTRIBUTIONS. **Pattipong Wisanpitayakorn**, Keith J. Mickolajczyk, William O. Hancock, Luis Vidalí, Erkan Tüzel

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EXPLORING MICROTUBULE BREAKING AND RECOVERING MECHANISMS USING LARGE SCALE MOLECULAR SIMULATIONS. **Nan Jiang**, Ruxandra Dima

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MICROTUBULE MECHANICS IN THE PRESENCE OF TRIMETHYLAMINE N-OXIDE. Adrienne M. Hester, Corina C. Valencia, Tegan L. Marianchuk, Dan L. Sackett, **Taviare L. Hawkins**

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- 2792-Pos** **BOARD B399**
HIGH THROUGHPUT IDENTIFICATION OF BACTERIAL CELL STIFFNESS REGULATORS. **Rishi R. Trivedi**, George Auer, Doug B. Weibel
- 2793-Pos** **BOARD B400**
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- 2794-Pos** **BOARD B401**
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- 2795-Pos** **BOARD B402**
A CARDIOLIPIN-DEFICIENT MUTANT OF RHODOBACTER SPHAEROIDES HAS AN ALTERED CELL SHAPE AND IS IMPAIRED IN BIOFILM FORMATION. **Ti-Yu Lin**, Douglas B. Weibel
- 2796-Pos** **BOARD B403**
CROSS-KYMOGRAPHY REVEALS THE STRUCTURAL AND KINETIC PARAMETERS OF ARCHAEAL LUM. Yoshiaki Kinoshita, **Takayuki Nishizaka**
- 2797-Pos** **BOARD B404**
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- 2798-Pos** **BOARD B405**
PROTONATION DEPENDENT WATER PERMEATION OF ION BINDING POCKET OF Na^+ BOUND Na^+ , K^+ -ATPASE. **Minwoo Han**, Wojciech Kopeć, Ilia A. Solov'yov, Himanshu Khandelia
- 2799-Pos** **BOARD B406**
EXCHANGE OF SODIUM OR POTASSIUM IONS AGAINST PROTONS AT CYTOPLASMIC SIDE OF Na^+ , K^+ -ATPASE. **Vsevolod Tashkin**
- 2800-Pos** **BOARD B407**
A Na^+ / K^+ PUMP WITH ALTERED STOICHIOMETRY CONTRIBUTES TO BRINE SHRIMP ADAPTATION TO HIGH SALINITY. **Dylan J. Meyer**, Jessica Eastman, Huan Rui, Kevin Stanley, Benoit Roux, Craig Gatto, Pablo Artigas

2801-Pos **BOARD B408**
FUNCTIONAL EFFECTS OF SUBSTITUTIONS MODIFYING THE HYDROXYL OR PHENOL RING OF TYROSINE 780 AT ION BINDING SITE-III OF THE Na^+ , K^+ -ATPASE. **Kerri Spontarelli**, Dylan J. Meyer, Daniel T. Infield, Christopher A. Ahern, Pablo Artigas

2802-Pos **BOARD B409**
ION BINDING AND CHARGE MOVEMENTS IN THE FUNCTION OF THE Na^+ / K^+ -PUMP. **Huan Rui**, Jorge Sanchez-Rodriguez, Miguel Holmgren, Francisco Bezanilla, Benoît Roux

2803-Pos **BOARD B410**
TUNING VOLTAGE DEPENDENT TRANSITIONS DURING THE EXTRACELLULAR Na^+ BINDING/RELEASE OF THE Na^+ / K^+ -ATPASE BY EXTERNAL PROTONS. **Jorge E. Sánchez-Rodríguez**, Huan Rui, Benoît Roux, Miguel Holmgren, Francisco Bezanilla

2804-Pos **BOARD B411**
STRUCTURAL AND FUNCTIONAL DIFFERENCES BETWEEN SARCOPLASMIC RETICULUM CALCIUM PUMP (SERCA) AND PLASMA MEMBRANE CALCIUM PUMP (PMCA) REACTION CYCLE INTERMEDIATES. Nicolás Andres Saffioti, Marilina de Sautu, Irene C. Mangialavori, Mariela Ferreira Gomes, Rolando C. Rossi, Joshua R. Berlin, **Juan Pablo F. Rossi**

2805-Pos **BOARD B412**
MOLECULAR DYNAMICS SIMULATIONS SUGGEST MULTIPLE BINDING SITES FOR PHOSPHOLAMBAN ON SERCA. **Nikolai Smolin**, Vidhya Sivakumar, Seth L. Robia

2806-Pos **BOARD B413**
TARGETING THE SERCA-PLB COMPLEX USING FRET IN LIVING CELLS. **Daniel Stroik**, Ang Li, Tory Schaaf, Simon Gruber, Razvan Cornea, Roger Hajjar, David Thomas

2807-Pos **BOARD B414**
X-RAY CRYSTALLOGRAPHY, FLUORESCENCE, AND MOLECULAR SIMULATIONS STUDIES ON REGULATORS OF SERCA. **Bengt Svensson**, Joseph M. Autry, Chengguo Xing, Razvan L. Cornea, John K. Lee, David D. Thomas

2808-Pos **BOARD B415**
THE HLA3 PROTEIN OF *C. REINHARDTII* ENHANCES HCO_3^- TRANSPORT ACTIVITY OF MAMMALIAN CELLS. **Michael A. McCloskey**, Deqiang Duanmu, Nicholas Bengel, Martin H. Spalding

2809-Pos **BOARD B416**
NUCLEOTIDES CONTROL THE CONFORMATION OF THE MOTOR DOMAIN OF ABC TRANSPORTERS. Daniel Szöllösi, Yaprak Doenmez-Cakil, Imran Sohail, Gabor Szaloki, Katalina K. Goda, Gergely Szakacs, Peter Chiba, **Thomas Stockner**

2810-Pos **BOARD B417**
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2811-Pos **BOARD B418** **INTERNATIONAL TRAVEL AWARDEE**
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2816-Pos BOARD B423
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2818-Pos BOARD B425
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2820-Pos BOARD B427
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2822-Pos BOARD B429
STRAIN BETWEEN LEADING AND TRAILING HEADS OF A STEPPING KINESIN DIMER VISUALIZED IN 3D BY CRYO-EM. **Daifei Liu**, Xueqi Liu, Zhiguo Shang, Charles V. Sindelar

2823-Pos BOARD B430
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2831-Pos BOARD B438
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2832-Pos BOARD B439
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2833-Pos BOARD B440
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2834-Pos BOARD B441
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2835-Pos BOARD B442
CHARACTERIZATION OF CRYOEM MOTION CORRECTION ALGORITHMS FOR MOVIE-MODE IMAGING. **James M. Bell**, Isaac Forrester, Joanita Jakana, Steven J. Ludtke

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3D-VISUALIZATION OF THE PRECISE LOCATION OF SYMBIOTIC ORGANELLE CROSSTALK THROUGHOUT MITOSIS IN THE PRIMITIVE UNICELLULAR EUKARYOTIC CELL, *C. MEROLAE*. Takako Ichinose, Keisuke Ohta, **Atsuko H. Iwane**

2837-Pos BOARD B444
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2838-Pos BOARD B445
CRYO-EM TOMOGRAPHIC ANALYSIS OF A UNIVERSAL INFLUENZA VIRUS VACCINE CANDIDATE. **Erin Tran**, Kira Podolsky, Alberto Bartesaghi, Oleg Kuybeda, Giovanna Grandinetti, Teddy John Wohlbold, Gene Tan, Raffael Nachbagauer, Peter Palese, Florian Krammer, Sriram Subramaniam

2839-Pos BOARD B446
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2840-Pos BOARD B447
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2841-Pos BOARD B448
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INCORPORATING SINGLE-PARTICLE BIOPHYSICS INTO CORRELATED CRYO-FLUORESCENCE AND CRYO-ELECTRON MICROSCOPY. **Lauren Ann Metskas**, Giulia Paci, Edward A. Lemke, John A.G. Briggs

2845-Pos BOARD B452
SECRETORY GLANDS IMAGED IN AQUEOUS SOLUTION BY ATMOSPHERIC SCANNING ELECTRON MICROSCOPY. **Toshiko Yamazawa**, Naotoshi Nakamura, Mari Sato, Chikara Sato

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A NEW TECHNIQUE FOR MOLECULAR DYNAMICS OBSERVATION USING LABORATORY X-RAY SOURCE. **Keigo Ikezaki**, Ken Matsubara, Yufuku Matsushita, Chang Jaewon, Hiroshi Sekiguchi, Yuji C. Sasaki

2849-Pos BOARD B456
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2850-Pos BOARD B457
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2851-Pos BOARD B458
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2852-Pos BOARD B459
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2856-Pos BOARD B463
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2857-Pos BOARD B464
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2859-Pos BOARD B466
OF ABSOLUTE CONCENTRATIONS OF NADH IN CELLS USING THE PHASOR FLIM METHOD. **Enrico Gratton**, Ning Ma, Michelle A. Digma, Leonel Malacrida

2860-Pos BOARD B467
MULTIMODAL OPTICAL RESOLUTION PHOTOACOUSTIC AND FLUORESCENCE MICROSCOPY IN THE FREQUENCY DOMAIN. **Bianca Buchegger**, Gregor Langer, Jaroslaw Jacak, Thomas A. Klar, Thomas Berer

2861-Pos BOARD B468
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2862-Pos BOARD B469
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2863-Pos BOARD B470
HOLOGRAPHIC TRACKING OF ARCHAEA AND BACTERIA OVER MILLIMETER LENGTH SCALES. Katie L. Thornton, **Laurence G. Wilson**

2864-Pos BOARD B471
DIFFERENTIAL INTERFERENCE CONTRAST MICROSCOPES WITH SWITCHABLE SHEAR DIRECTION AND QUADRILATERAL SHEAR. **Michael Shribak**, Elena Iourieva

2865-Pos BOARD B472
ONE NANOMETER STEPS IN THE MOTION OF A LINEAR MOLECULAR MOTOR *SERRATIA MARCESCENS* CHITINASE A RESOLVED BY GOLD NANO-PROBE. **Ryota Iino**, Akihiko Nakamura

2866-Pos BOARD B473
MICRO-SPECTROSCOPY OF BIO-ASSEMBLIES AT THE SINGLE CELL LEVEL. Jeslin Kera, Debopam Chakrabarti, **Alfons Schulte**

2867-Pos BOARD B474
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BOUNDARY EFFECTS IN FRAP RECOVERY IN THE CONFINED GEOMETRIES OF ANIMAL, PLANT AND FUNGAL CELLS. James K. Kingsley, Jeffrey P. Bibeau, Cem Unsal, Iman S. Mousavi, Zhilu Chen, Xinming Huang, Luis Vidali, **Erkan Tuzel**

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EFFECTIVE MONITORING OF CELL PROLIFERATION MEDIA COMPONENTS USING SIMULTANEOUS ABSORBANCE AND FLUORESCENCE EXCITATION-EMISSION MATRIX DATA ANALYZED WITH PARALLEL FACTOR ANALYSIS. **Adam M. Gilmore**, Yuichi Kitagawa, Takuyi Moriyama, Daisuki Irikura, Yasushi Nakata

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2883-Pos BOARD B490
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2884-Pos BOARD B491
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PLASMONIC ELECTRICITY: A DIGITAL FORM OF METAL-ENHANCED FLUORESCENCE. **Chris D. Geddes**

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2887-Pos BOARD B494
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2888-Pos BOARD B495
HIGH-SPEED AFM REVEALS ADVANCED DETAILS ON DYNAMIC BEHAVIOR OF ANTIBODY. **Norito Kotani**, Ramanujam Kumaresan, Yoko Kawamoto-Ozaki, Takashi Morii, Takao Okada

2889-Pos BOARD B496
NON-RASTER HIGH-SPEED AFM IMAGING OF BIOPOLYMERS. Brett Hartman, **Sean Andersson**, William Nagel, Kam Leang

2890-Pos BOARD B497
AFM IMAGING OF DNA G-WIRES IN SOLUTION. **Krishnashish Bose**, Anh Tuân Phan

2891-Pos BOARD B498
EXTRACELLULAR MEMBRANE POTENTIAL MEASUREMENT OF SINGLE LIVING CELLS WITH SCANNING ION CONDUCTANCE MICROSCOPY. **Namuna Panday**, Jin He

2892-Pos BOARD B499
AN OPTICAL SETUP FOR THE STUDY OF MECHANOTRANSDUCTION IN LIVING CELLS AT THE SINGLE MOLECULE LEVEL. **Marios Sergides**, Tommaso Galgani, Claudia Arbore, Francesco S. Pavone, Marco Capitanio

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2894-Pos BOARD B501 CPOW TRAVEL AWARDEE
CURLI MEDIATE BACTERIAL ADHESION TO FIBRONECTIN VIA A TENSILE COLLECTIVE BINDING NETWORK. **Yoo Jin Oh**, Michael Hubauer-Brenner, Hermann Gruber, Yidan Cui, Lukas Traxler, Christine Siligan, Sungsu Park, peter Hinterdorfer

2895-Pos BOARD B502
FORCE SPECTROSCOPY OF T4 BACTERIOPHAGE ADHESION DURING INFECTION. **Cesar A. Quintana-Cataño**, Martha J. Vives-Flórez, Manu Forero-Shelton

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HIGH FIBRINOGEN LEVELS PROMOTE ERYTHROCYTE-ERYTHROCYTE ADHESION: A CARDIOVASCULAR RISK FACTOR IN HEART FAILURE AND ARTERIAL HYPERTENSION PATIENTS. Ana Filipa Guedes, Luís Sargento, José Braz-Nogueira, Nuno Lousada, Carlos Moreira, Filomena A. Carvalho, **Nuno C. Santos**

Biosurfaces (Boards B504–B510)

2897-Pos BOARD B504
GRAPHENE-OXIDE GEL AS BIOMIMETIC ANTIMICROBIAL CLOAK. **Valentina Palmieri**, Massimiliano Papi, Francesca Bugli, Maurizio Sangiunetti, Luca Angelani, Marco De Spirito, Claudio Conti

2898-Pos BOARD B505
ICE-BINDING PROTEINS - NOT ONLY FOR ICE GROWTH CONTROL. Maya Bar-Dolev, Shuaiqi Guo, Lotem Haleva, Yeliz Celik, Peter L. Davies, **Ido Braslavsky**

2899-Pos BOARD B506 EDUCATION TRAVEL AWARDEE
AQUAPORIN BIOMIMETIC MEMBRANE FOR ENERGY CONSERVATIVE WATER DESALINATION. **Ahmed Fuwad**, Hyunil Ryu, Tae-Joon Jeon, Sun Min Kim

2900-Pos BOARD B507
ASSEMBLING FUNCTIONAL PROTEINS ON GOLD-GLASS SURFACES. **Timothy Robson**, Deepan Shah, Luke Clifton, Becky Welbourn, Jeremy Lakey

2901-Pos BOARD B508
WETTABILITY AND CARBOXYL FUNCTIONALIZATION OF PLA FILMS ENHANCING BY AN ATMOSPHERIC PRESSURE DIELECTRIC BARRIER DISCHARGE SYSTEM. **Stephanie Vanslambrouck**, Ivan Rodriguez Duran, Pascale Chevallier, Corinne Hoesli, Gaetan Laroche

2902-Pos BOARD B509
EFFECT OF HIGH PRESSURE ON PROTEIN BINDING TO POLY (ACRYLIC ACID) BRUSHES. **Artem Levin**, Claus Czeslik

2903-Pos BOARD B510
DESIGN OF BIORESPONSIVE INTERFACES USING CONFORMATIONAL TRANSITIONS OF CALMODULIN. **Süleyman Cinar**, Claus Czeslik

Biomaterials (Boards B511–B526)

2904-Pos BOARD B511
MULTIFUNCTIONAL DRUG DELIVERY SYSTEM BASED ON POLY-N-VINYL-PYRROLYDONE BLOCK COPOLYMER MICELLES. Camilla L. Andersen, Sven B. Romme, Peter Fojan, Cristian P. Pennisi, Anna L. Luss, Pavel P. Kulikov, Mikhail I. Shtilman, **Leonid Gurevich**

2905-Pos BOARD B512
STRUCTURAL INVESTIGATIONS OF SUPERCONTRACTED SPIDER DRAGLINE SILK. **Justine Dionne**, Thierry Lefèvre, Philippe Bilodeau, Michèle Auger

2906-Pos BOARD B513
EXTRACTING INFORMATION ON MOLECULAR INTERACTIONS USING DATA FROM BINARY MIXTURES. **Simran S. Gurdasani**, Ryan Z. Lybarger, Horia I. Petrache

2907-Pos BOARD B514
PRINCIPLES AND APPLICATIONS OF FUNCTIONAL LIPIDIC BIOMATERIALS IN MOLECULAR RECOGNITION, MEMBRANE PROTEIN CRYSTALLIZATION AND DRUG DELIVERY. Livia Salvati Manni, Simone Aleandri, **Ehud M. Landau**

2908-Pos BOARD B515
ELECTROSPUN BIODEGRADABLE SCAFFOLD MADE OF POLY(HYDROXYBUTYRATE-CO-HYDROXYVALERATE) & BOVINE SERUM ALBUMIN. **Elizaveta Pavlova**, Dmitry Bagrov, Dmitry Shchelokov, Anton Bonartsev, Irina Zharkova, Dmitry Klinov

2909-Pos BOARD B516
ROLE OF CHARGE AND LIGAND-RECEPTOR BINDING IN SPECIFIC TARGETING OF PEPTIDE-TAGGED CATIONIC LIPOSOME NANOPARTICLES FOR GENE DELIVERY. **Emily Wonder**, Lorena Simón-Gracia, Pablo Scodeller, Ramsey Majzoub, Venkata Ramana Kotamraju, Kai K. Ewert, Tambat Teesalu, Cyrus Safinya

2910-Pos BOARD B517
STRUCTURED DNA NANOPARTICLES FOR SPATIALLY CONTROLLED ANTIGEN PRESENTATION. **Rémi Veneziano**, Mark Bathe

2911-Pos BOARD B518 EDUCATION TRAVEL AWARDEE
PLASMA MEMBRANE VESICLES WITH ENGINEERED TRANSMEMBRANE PROTEIN LIGANDS FOR HIGH-AFFINITY CELL TARGETING. **Chi Zhao**, David J. Busch, Conor P. Vershel, Hisham A. Ali, Natalie C. Miroballi, Jeanne C. Stachowiak

2912-Pos BOARD B519
MOLECULAR MODELING OF LIQUID CRYSTAL/PHOSPHOLIPID INTERFACE AS A LABEL-FREE BIOSENSOR. **Donya Ohadi**, Mark J. Uline

2913-Pos BOARD B520 INTERNATIONAL TRAVEL AWARDEE
HOMOGALACTURONANS ILLUMINATE THE ROLE OF COUNTERION CONDENSATION IN POLYELECTROLYTE TRANSPORT. **Amir H. Irani**, Jessie L. Owen, Davide Mercadante, Martin A. K. Williams

2914-Pos BOARD B521
AN ELECTRIC EEL-INSPIRED ORIGAMI-ENABLED BATTERY THAT GENERATES 100 V. **Thomas B. H. Schroeder**, Anirvan J. Guha, Aaron Lamoureux, Jerry Yang, Max Shtein, Michael Mayer

2915-Pos BOARD B522
TOWARDS SIMULATING LARGE-SCALE SELF-ASSEMBLY OF PROTEINS UNDER FLOW. **Ana Maria Herrera**, Anil K. Dasanna, Frauke Gräter

2916-Pos BOARD B523 EDUCATION TRAVEL AWARDEE
RATIOMETRIC TENSION PROBES FOR MAPPING RECEPTOR FORCES AND CLUSTERING AT INTERMEMBRANE JUNCTIONS. **Victor Pui-Yan Ma**, Yang Liu, Lori Blanchfield, Hanquan Su, Brian D. Evavold, Khalid Salaita

2917-Pos BOARD B524
FEW ATOM SILVER CLUSTERS DISPLAY BROAD SPECTRUM ANTIMICROBIAL ACTIVITY. **Danielle Schultz**, Nancy Lin

2918-Pos BOARD B525
C₆₀ FULLERENES AS CONTRAST AGENTS - STRUCTURAL, SPECTROSCOPIC AND NANOTOXICITY STUDIES. **Augustyn Molinski**, Jakub Zareba, Justyna Izykowska, Michalina Skupin, Weronika Andrzejewska, Stefan Jurga, Maciej Kozak

2919-Pos BOARD B526
SCANNING HE ION- AND NONLINEAR OPTICAL MICROSCOPY COMBINED WITH FORCE MEASUREMENTS FOR THE CHARACTERIZATION OF SPIDER SILK. **Irina Iachina**, Jacek Fiutowski, Serguei Chiriaev, Per Lyngs Hansen, Adam Cohen Simonsen, Jonathan R. Brewer

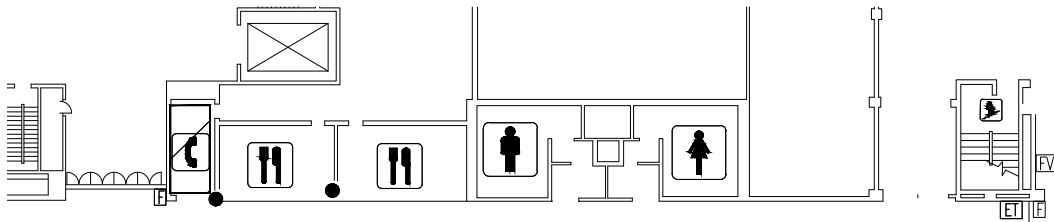
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Exhibitor List and Booth Numbers

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319 AAT Bioquest Inc	525 Hamamatsu Corporation	227 Peptides International
324 Agilent Technologies	544 HEKA Elektronik	419 Photometrics
208 AIP Publishing	541 Hellma USA Inc	204 Physics Today
521 ALA Scientific Instruments	509 Hinds Instruments	702 PI (Physik Instrumente)
713 Alembic Instruments Inc	401 HORIBA Scientific	619 PicoQuant Photonics North America Inc
119 ALVEOLE	444 IonOptix	313 PIEZOCONCEPT NEW 2017
312 Anatrace	302 Ionovation GmbH	113 Postnova Analytics NEW 2017
612 Andor Technology	201 IOP Publishing	532 PreciPoint NEW 2017
808 Anton Paar USA	719 ISS Inc	331 Pressure Biosciences Inc NEW 2017
441 ASI/Applied Scientific Instrumentation	746 JASCO	618 Quantum Northwest Inc
608 Asylum Research, an Oxford Instruments Company	209 Journal of General Physiology	318 Rapp OptoElectronic GmbH
646 Aurora Scientific Inc	430 KinTek Corporation	708 Reichert Technologies - Life Sciences
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310 Aviv Biomedical Inc	520 Larodan	205 Royal Society Publishing
101 Beckman Coulter Life Sciences	824 Leica Microsystems	644 RPMC Lasers Inc
510 Biolin Scientific	802 LUMICKS	533 Sapidyne Instruments Inc
421 BioLogic USA	418 Mad City Labs Inc	631 SB Drug Discovery NEW 2017
810 BioNavis Ltd	609 Malvern Instruments Ltd	710 Scientifica Ltd
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645 Electron Microscopy Sciences	844 Onefive GmbH	712 TOPTICA Photonics Inc
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627 Finger Lakes Instrumentation	705 Oxford Nanoimaging Ltd NEW 2017	445 Warner Instruments
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724 Fluxion Biosciences	605 Pall ForteBio LLC	626 Zurich Instruments NEW 2017
231 Formulatrix NEW 2017	505 Park Systems Inc	



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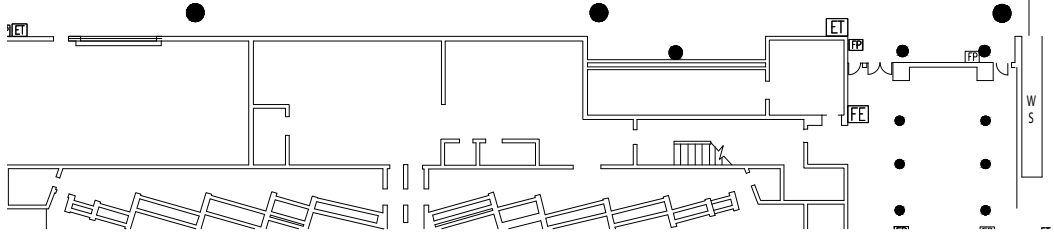
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Product Demonstrations:

Monday February 13
12:30 – 2:00 PM
Room 221
Ernest N. Morial
Convention Center

Ion Channel Drug Discovery:
Beyond the Bottleneck and Ready
for CiPA

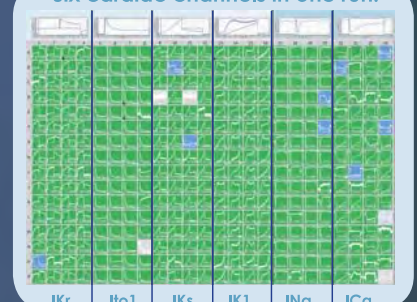


Tuesday February 14
12:30 – 2:00 PM
Room 221
Ernest N. Morial
Convention Center

Measure More Membrane:
Cells and Bilayers on the Port-a-Patch,
SURFE²R, Orbit16 and Orbit mini

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Exhibit Dates and Times

Sunday, February 12	10:00 AM–5:00 PM
Monday, February 13	10:00 AM–5:00 PM
Tuesday, February 14	10:00 AM–4:30 PM
Coffee Served Daily	10:15 AM–11:00 AM
Afternoon Snack Served Sunday – Tuesday	1:45 PM–3:00 PM

Exhibit Raffle

Enter to win a Samsung Galaxy Tablet in the Exhibit Hall. Visit with exhibitors to pick up raffle tickets for your chance to win. The more booths you visit, the greater your chances of winning. Drop off your raffle tickets at the Society Booth, outside the Exhibit Hall by 2:30 PM on Tuesday, February 14. The drawing will take place on Tuesday, February 14 at 3:00 PM in the Exhibit Hall – you must be present at the Meeting to win!

Exhibitor Presentations

Exhibitor Presentations will take place in Rooms 218 and 221 of the Ernest N. Morial Convention Center. See page 158 for detailed descriptions.

Room 218

Monday, February 13

11:30 AM–1:00 PM:	Asylum Research, an Oxford Instruments Company
1:30 PM–3:00 PM:	Malvern Instruments
3:30 PM–5:00 PM:	OriginLab Corporation
5:30 PM–7:00 PM:	Sutter Instrument

Tuesday, February 14

11:30 AM–1:00 PM:	Bruker Corporation
1:30 PM–3:00 PM:	Semrock Inc

Room 221

Sunday, February 12

10:30 AM–12:00 NOON:	Carl Zeiss Microscopy LLC
12:30 PM–2:00 PM:	Bruker Corporation
4:30 PM–6:00 PM:	Oxford Nanoimaging Ltd
6:30 PM–8:00 PM:	Molecular Devices LLC

Monday, February 13

8:30 AM–10:00 AM:	TA Instruments
10:30 AM–12:00 NOON:	Beckman Coulter Life Sciences
12:30 PM–2:00 PM:	Nanon Technologies GmbH
2:30 PM–4:00 PM:	HORIBA Scientific

Tuesday, February 14

12:30 PM–2:00 PM:	Nanon Technologies GmbH
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Annual Meeting Sponsors*

ALVEOLE	Hamamatsu Corporation	<i>BioPhotonics</i> , a Photonics Media publication
American Association for the Advancement of Science (AAAS)	HORIBA Scientific	Physics Today
<i>APL Bioengineering</i>	Institute for Biological Recognition and Catalysis Inc	PLOS
Asylum Research, an Oxford Instruments Company	Mad City Labs Inc	Reichert Technologies – Life Sciences
Beckman Coulter Life Sciences	Malvern Instruments	Semrock Inc
<i>Biochemistry</i>	Molecular Devices LLC	Sutter Instrument
Bruker Corporation	Nanon Technologies GmbH	TA Instruments
Burroughs Wellcome Fund	Nicoya Lifesciences Inc	The Journal of Physical Chemistry
Carl Zeiss Microscopy LLC	OriginLab Corporation	The Rockefeller University Press
Chroma Technology	Oxford Nanoimaging Ltd	Wiley

*As of January 9, 2017

Exhibitor Presentations

Rooms 218, 221, *Ernest N. Morial Convention Center*

Room 218: Monday, February 13

11:30 AM–1:00 PM

Asylum Research, an Oxford Instruments Company

Now Playing: Video-Rate AFM with the New Cypher VRS Atomic Force Microscope

Join our free lunch and learn as we introduce the first and only full-featured, video-rate AFM for imaging biological processes— the Cypher VRS Atomic Force Microscope. The Cypher VRS enables high resolution video-rate imaging at 625 lines per second with incredibly easy operation and modularity to support other modes and environmental accessories. The Cypher VRS is capable of imaging samples at 10 frames per second with unprecedented resolution for clearly observing dynamics such as the action of restriction enzymes digesting DNA molecules. Perfusion can also be performed during experiments to observe growth crystal in real time and molecular arrangements of self-assembled monolayers (SAMs). All the ease-of-use features of the industry-leading Cypher ES AFM increase productivity such as automated laser positioning, cantilever calibration, and blueDrive™ photothermal excitation for stable imaging and quantitative measurements. No other AFM can match the combined performance of video-rate speed, high resolution and versatility. Learn all the details about Cypher VRS and be entered in our iPad drawing (must be present to win). See it in action in Booth 608.

Speaker

Irène Revenko, Product Manager, Asylum Research,
an Oxford Instruments Company

1:30 PM–3:00 PM

Malvern Instruments

Molecular Interactions of Proteins & Small Molecules

Factors describing the stability of any protein formulating can generally be classified into two areas, conformational stability and colloidal stability. Conformational stability relates to the intrinsic properties of a protein molecule and can be described by a range of parameters such as melting point, enthalpy, aggregation onset temperature, and composition of aggregate. These parameters can be observed using many traditional techniques such as Differential Scanning Calorimetry (DSC), Dynamic Light Scattering (DLS), and Size Exclusion Chromatography (SEC).

Colloidal stability in contrast, is a property that describes extrinsic behavior of proteins in a bulk solution, and can be a key attribute in ensuring product quality. The most commonly observed properties to quantify colloidal stability include the diffusion interaction parameter (kD), second virial coefficient (B22), zeta potential (ζ), viscosity (η) and hydrodynamic size (rh).

The workshop will introduce a newly developed technique called Taylor Dispersion Analysis (TDA), which provides an automated method for analysis of hydrodynamic size and kD using small volumes of sample (<5uL) without the need for serial dilutions. This presentation will compare and contrast the results of Taylor Dispersion Analysis to that of traditional analysis methods to further understand the complimentary nature of these results.

Speaker

Matthew McGann, Product Manager, Innovation Products, Malvern Instruments

3:30 PM–5:00 PM

OriginLab Corporation

Origin 2017 Product Demo

This workshop will focus on graphing and analysis using our latest version, Origin 2017.

The following topics will be covered: Importing ASCII, Excel and third-party files. Creating and customizing 2D, 3D and specialized graphs. Using graph templates and themes for repeat plotting. Batch plotting. Exporting and publishing. Data processing. Data exploration. Linear and nonlinear regression. Peak analysis. Statistics. Batch analysis and custom reports using templates. Installing Apps from the OriginLab website.

Speaker

Chris Drozdowski, Technical Support, OriginLab Corporation

5:30 PM–7:00 PM

Sutter Instrument

Scientists Empowering Scientists

Patch clamp electrophysiology, which started as a highly specialized technique, is now considered a primary tool for biological research. To meet the needs of the research community, Sutter Instrument has introduced a new line of flexible and intuitive patch clamp amplifiers and data acquisition software. The IPA® Amplifier and SutterPatch® Software will allow the researcher to quickly set up and perform routine tasks, but still have the flexibility to meet the demands of the experienced electrophysiologist.

At this presentation, we will demonstrate how the IPA Integrated Patch Amplifier, the new Double IPA® Amplifier and SutterPatch Software can be used for a variety of common experiments, including characterization of ionic current and recording synaptic events in tissue slices. We will also show how the IPA family of amplifiers and SutterPatch software can be used in much more complex acquisition and analysis scenarios.

Data collection in SutterPatch Software was designed to track environmental variables along with the context of each sample within an experiment, so that all data are recorded together for future reference. We focused on creating an intuitive navigational interface to make large data sets more manageable. Controls that are already familiar to you, from electrophysiology software or applications in other fields, make finding a specific section of an experiment very easy. Where appropriate, we used innovative new approaches to make the interface as simple and powerful as possible.

Paradigms and Routines control the experiment in a way that enables a high degree of automation, helping to eliminate operator bias. Real-time decision making and sophisticated control of the experimental flow are made easy with a comprehensive set of sample parameters. Even complex stimulus waveforms can easily be configured using the Waveform Editor or a template created from a recorded or synthesized signal.

Who should attend?

- Electrophysiologists who use amplifiers, micropipettes and manipulators for patch clamp, sharp electrode or extracellular recordings.
- Researchers who perform patch clamp recordings in tissue slices, dissociated cells, cell lines or in vivo preparations.
- Anybody who is interested in the latest feature-rich hardware and software for electrophysiology applications.

Speakers

Jan Dolzer, Product Manager, Patch Clamp Systems, Sutter Instrument
Telly Galiatsatos, Tech Support and Product Development,
Sutter Instrument

Room 218: Tuesday, February 14

11:30 AM–1:00 PM

Bruker Corporation

BioScope Resolve - The Highest Resolution Imaging of Any BioAFM

The BioScope Resolve™ BioAFM provides the highest resolution imaging, most complete biomechanics capabilities, and fastest scanning of any bioAFM available. Specifically designed for integration onto inverted optical light and confocal microscopes, it enables investigation of a wide range of biological samples, from cells and tissues to molecular and protein structures. Our exhibitor presentation will talk about three aspects of the Bioscope Resolve BioAFM system that are advancing biological research around the world.

1. High Resolution Imaging - The unique mechanical stability and performance of the BioScope Resolve AFM on an optical microscope enables researchers to routinely resolve the major and minor grooves along the backbone of an individual DNA strand. With ScanAsyst®, high-resolution cell imaging has never been easier. This game-changing capability has allowed soft, flexible cell surface structures, such as microvilli, to be resolved for the first time on living cells by AFM.
2. Complete Cell Mechanics Data – Accurate, Repeatable. PeakForce QNM®, has become the preferred mode for nanomechanical mapping. With new algorithms, it delivers highest resolution property maps at pN forces on live cells. Together with “No Touch” tip calibration, PeakForce QNM delivers the fastest quantitative mechanical characterization of live cells, providing a complete force curve for every pixel at actuation rates from 125 Hz to 2 kHz. With our new FASTForce Volume covering rates from sub-Hz to 300 Hz, and PeakForce Tapping extending to 2 kHz, we provide the widest range of ramp rates for single points and imaging while maintaining pN force control. Our new RampScript™ allows the user to build, control and record complex nanomechanical measurements for use in protein pulling, ligand-receptor interaction, cell relaxation and viscoelastic probing.
3. Investigating Cell Dynamics – Without Compromise. Fast Tapping on living cells - Bioscope Resolve is the only BioAFM that enables fast scanning while simultaneously providing the large piezo scanner range necessary for capturing the dynamic behavior of living cells in real time (XYZ = 100µm x 100µm x 15µm). The Fast Tapping capabilities of Resolve are truly a step forward in conducting high-resolution AFM studies at timescales relevant to cellular processes. Together with the integration of advanced optical microscopy and environmental control, live cell studies have never been easier.

BioScope Resolve was designed by biologists who needed a flexible BioAFM system that could meet a wide range of biological application needs. From its Advanced Perfusing Incubator for long-term live-cell studies to its full sample-carrier support system, every feature of the BioScope Resolve is designed for maximum experiment flexibility.

Speaker

Ian Armstrong, Applications Scientist, ARM Unit, Bruker Corporation

1:30 PM–3:00 PM

Semrock Inc

Maximizing the Performance of Fluorescence Microscopes by Optical Filters

TIRF, Super-resolution & Multiphoton fluorescence microscopy techniques continue to gain in popularity. This tutorial will discuss ways of maximizing the performance of such imaging systems by utilizing applications specific optical filters.

SearchLight (<https://searchlight.semrock.com/>) is a free, online spectral plotting and analysis tool that allows for evaluation and optimization of microscopy systems. Latest developments with this premium modeling resource will be discussed.

Speaker

Prashant Prabhat, Business Line Leader, Semrock Inc

Room 221: Sunday, February 12

10:30 AM–12:00 NOON

Carl Zeiss Microscopy LLC

ZEISS Live Cell Imaging Tools Allow New Levels of Throughput and Image Quality

Imaging live cell samples offers unique insights into cellular function and gives the freedom to explore dynamic changes in cell behavior. Successful live cell imaging relies on maintenance of an appropriate cellular environment and an effort to minimize cellular damage. Keeping up with dynamic events inside a cell requires an optical design that produces gentle high signal to noise images. The optical design and configuration of the imaging platform plays a crucial role in the success of an imaging experiment.

ZEISS has introduced a completely automated inverted platform, the Celldiscoverer 7, which simplifies every aspect of experimental setup and gives every live cell experiment the best chance for success. At the heart of the Celldiscoverer 7 is a completely unique optical concept with record setting optical resolution and light throughput. Paired with gentle LED illumination and image detectors designed for low magnification the Celldiscoverer 7 achieves new levels of imaging throughput. Complicated tasks of microscope configuration and optimization are completely automated and designed to make the most of any sample type. Automated control of cellular environment allows imaging stability to be maintained over long time course experiments. The system can be expanded with a robotic plate loading system to allow high throughput imaging from plate and slide based samples.

The ZEISS LSM 880 confocal with Airyscan and FAST technology offers a unique optical design that counters the typical loss of sample light experienced when using a confocal pinhole. The Airyscan detector allows higher resolution and lower laser illumination while acquiring with higher SNR than typically possible. The result is superresolution imaging and the needed speed to follow live cells and record fast live cell events.

Join this workshop and learn how the ZEISS Celldiscoverer 7 and the LSM 880 confocal with Airyscan FAST can help your imaging experiments in completely new ways.

Speaker

Scott Olenych, Academia Business Development Manager,
Carl Zeiss Microscopy, LLC

12:30 PM–2:00 PM

Bruker Corporation

Super-Resolution Microscopy: Performing Quantitative Analysis at the Molecular Level

Super-resolution (SML) microscopy optically resolves spatial features within the cellular environment an order of magnitude below the classical diffraction limit. Using the quantitative analysis functions on the Vutara 352 system questions can be answered in a data driven fashion. Its software offers numerous statistical analysis features to quantify the localization data into meaningful biological interpretations. These statistical features include spatial distribution tools, such as Ripley's K and pair correlation calculations, cluster, co-localization and resolution analysis, as well as live-cell tools, such as mean-squared displacement calculations and particle tracking.

In our exhibitor presentation, we will discuss SML super resolution, its combination with quantitative analysis, and how it offers new questions and analytics at the molecular level.

Furthermore, due to the nature of the method, localization microscopy is often lacking in the contextual information of the overall cellular environment. Utilizing optical correlation microscopy of the Vutara 352, it is possible to relate the large-scale cellular environment, obtained via swept-field confocal imaging, with more refined super-resolution localization data.

Speakers

Carl G. Ebeling, Worldwide Applications Scientist, Fluorescence
Microscopy Unit, Bruker Corporation
Manasa V. Gudheti, Sales Applications Scientist, Fluorescence
Microscopy Unit, Bruker Corporation

4:30 PM–6:00 PM

Oxford Nanoimaging Ltd

Meet the Nanoimager: The Next Generation of Super-Resolution Microscope

Oxford Nanoimaging (ONI) have reinvented the single-molecule microscope to meet the needs of cutting edge research in the 21st century. The Nanoimager is a high-throughput, robust, single-molecule localisation based microscope that does not go out of alignment. A compact dSTORM, PALM and single-molecule FRET solution with a footprint smaller than an A4 piece of paper, the system offers the most stable platform on the market and can be run from a standard laboratory bench. High power 1W lasers and the most efficient light path of any commercial solution gives the Nanoimager excellent performance and sets a new standard in super-resolution imaging. The Nanoimager is a small microscope with a big personality: expert capabilities and top performance for both novice and experienced users. ONI have made single-molecule experiments easier, and have made instrument costs accessible to the majority. Come and learn more about the next generation of super-resolution microscopes: this presentation will not only introduce the newly released Nanoimager but will show the latest achievable data and the technical ability of this ground-breaking instrument. The Nanoimager needs to be seen to be believed. No alignment. No optical table. No compromise.

Speaker

Raphael Jorand, Applications Specialist, Oxford Nanoimaging Ltd

6:30 PM–8:00 PM

Molecular Devices LLC

Getting the Most Out of Your Experiments with pCLAMP and HumSilencer Technology

The patch-clamp technique remains the best method for evaluating ion channel physiology, and since 1983 Axon Instruments has been the gold standard in patch-clamp equipment. Axon Instruments continues to push the envelope with new innovations with best-in-class systems and software.

Join this workshop to learn about our latest breakthrough, HumSilencer technology, built into the Digidata 1550B Data Acquisition System. HumSilencer is a new and easy way to eliminate 50 or 60 Hz line synchronous noise and associated high frequency harmonics WITHOUT the use of a filter.

In addition to HumSilencer, pCLAMP remains the industry standard software package for electrophysiology because of its power, flexibility and ease of use. Are you getting the most out of your pCLAMP software? Join this workshop to learn more about how you can maximize what you can do with pCLAMP and learn something you may not know.

Speaker

Jeffrey Webber, Product Manager, Electrophysiology, Molecular Devices LLC

Room 221: Monday, February 13

8:30 AM–10:00 AM

TA Instruments

Instrumentation and Experimental Design for Utilization of ITC and IMC Techniques for Characterization of Biopharmaceuticals

Eight out of the top ten drugs worldwide in 2016 are biopharmaceuticals. Microcalorimetry is a powerful tool in the characterization of their structure and stability. Isothermal titration calorimetry (ITC) has long been the gold standard technique for exploring the binding of any drug to its target molecule. Recent publications describing the advantages of enthalpy screening utilizing the advances in ITC hardware and software exemplified by the Affinity ITC instruments from TA Instruments have shown that microcalorimetry remains a powerful tool in characterizing biopharmaceuticals. Isothermal Calorimetry (IMC) has the sensitivity and flexibility to fully characterize formulation stability and aggregation kinetics of even the high concentration (200-300 mg/mL) biopharmaceutical formulations. The sensitivity and flexibility of the TAM IV microcalorimetry system has shown the ability to rapidly characterize even the slowest degradation or aggregation reactions taking place in these biopharmaceutical formulations without diluting the sample. Attendees will participate in a wide ranging discussion of these powerful techniques including a full detailed description of the new Affinity ITC and TAM IV hardware along with a Q&A session focused on experimental design considerations for successfully performing enthalpy screening and biopharmaceutical formulation stability testing. Join your colleagues in this in-depth discussion of how ITC and IMC can speed up the candidate selection process and benefit overall lab productivity in any drug discovery or development effort.

Speaker

Dile Holton, Microcalorimetry Product Manager, TA Instruments

10:30 AM–12:00 NOON

Beckman Coulter Life Sciences

What Goes Around, Comes Around: Unveiling the Optima AUC

For more than 70 years, Analytical Ultracentrifugation (AUC) has played a critical role in laying the foundations for modern molecular biology. AUC allows for the characterization of proteins, oligomers, aggregates, particles, colloids, nanoparticles, extracellular vesicles and other small structures in native conditions and matrix-free conditions. By measuring proteins and other macro-molecules as interacting elements instead of in isolation, AUC more closely approximates true physiological conditions offering unique insight into molecular characterization and processes including molecular weight determination/conformation, stoichiometry, heterogeneity as well as thermodynamic parameters associated with binding.

Following a brief overview of the fundamentals of AUC operation and analysis, the talk will include a brief introduction of the new Optima AUC system. Comparative data from the new Optima AUC versus the ProteomeLab series will be presented, while highlighting applications that are now enabled in the new system due to multi-wavelength analysis and faster scan speeds.

Analytical Ultracentrifugation is a complementary technique to many others; the talk will illuminate advantages of AUC over existing techniques for different applications. Lastly, future research fields enabled by the new Optima AUC will be discussed.

Speaker

Chad Schwartz, AUC Product Manager, Beckman Coulter Life Sciences

12:30 PM–2:00 PM

Nanion Technologies GmbH

Ion Channel Drug Discovery - Beyond the Bottlenecks and Ready for CiPA

Nanion Technologies is one of the leading providers of automated patch clamp systems, offering a diverse product portfolio for experiments ranging from single channel recordings to HTS-compatible ion channel drug discovery. During this workshop, we will demonstrate how to push the boundaries of patch clamp-based ion channel high throughput screening projects of various voltage- and ligand gated targets, and how to get ready for CiPA-compliant safety screening beyond hERG.

The CiPA initiative is an ongoing validation program aimed at improving the regulatory requirements for proarrhythmia risk assessment. In accordance with the CiPA-initiative, the panel of cardiac ion channels to consider will drastically expand, consequently requiring increased data throughput for early compound safety prediction.

The SyncroPatch 384/768PE, an automated patch clamp platform recording from up to 768 cells simultaneously, allows the highest data throughput on the market supporting HTS of ion channel active compounds and early safety assessment on cardiac channels. Data of six different cardiac channels recorded in the voltage clamp mode, using one single plate, will be shown. The SyncroPatch 384/768PE also supports automated current clamp recordings, experiments at physiological temperature, and minimal cell usage, making it the ideal partner for safety testing on stem cell-derived cardiomyocytes.

The CardioExcyte 96 is a hybrid system combining impedance and EFP recordings from beating cardiomyocyte networks from 96 wells in parallel. The CardioExcyte 96 has proven a versatile tool for safety and toxicity screening applications serving as a powerful tool complementing APC.

Join our workshop to learn more about new safety screening strategies and how to keep up with the increasing demands on cardiac safety and toxicity screening.

Space is limited so reserve yours by sending an email to info@nanion.de.

Speakers

Andrea Brüggemann, CSO, Nanion Technologies GmbH

Niels Fertig, CEO, Nanion Technologies GmbH

Markus Rapedius, Senior Scientist, Nanion Technologies GmbH

2:30 PM–4:00 PM

HORIBA Scientific

Experience the New Shape and SPEED of Things to Come in Fluorescence

HORIBA Scientific is proud to introduce a revolutionary new fluorescence/UV-Vis spectrometer that advances beyond larger, slower, multi-step scanning fluorometers. The design consists of a harmonious blend of two spectroscopies, Fluorescence AND Absorbance, applied in a unique and patented way.

The system combines a patented two-in-one fluorescence / UV-Vis spectrometer with an ultrafast CCD that acquires fluorescence spectra in the blink of an eye. It features a smaller, more elegant and ergonomic design than current fluorometers with a simple and unique interchangeable sampling arrangement. In addition to traditional fluorescence AND UV-Vis-NIR absorbance spectroscopy modalities, the new system features ultra-fast fluorescence Excitation Emission Matrices (EEMs), simultaneous absorbance allowing for extended linear dynamic range due to automatic inner filter effect corrections, and unique molecular fingerprinting capabilities not available on any other commercial fluorometer.

The new instrument has a standard wavelength range from 200 to 1,100 nm and a scan speed of over 5,000,000 nm/min, allowing the system to go further into the NIR, and acquire data much faster than any competitive mid-market, bench-top spectrofluorometer.

Beyond even all of these unique benefits, this new instrument is also much more sensitive than any other commercial bench-top spectrofluorometer.

Just as the hardware and configuration are all new, so too is the software that runs the instrument. Running on the latest touch screen Windows operating systems, this newest generation of spectroscopy software offers dedicated apps-driven icons that simplify the user experience and the operation of the instrument. Researchers and students will easily be able to perform fluorescence, absorption or simultaneous fluorescence and absorbance measurements and applications without prior software training.

Come see a presentation and demonstration of this exciting new instrument from the leaders in fluorescence!

Speaker

Cary Davies, Global Product Line Manager, Fluorescence Division, HORIBA Scientific

Room 221: Tuesday, February 14

12:30 PM–2:00 PM

Nanon Technologies GmbH

Measure More Membrane: Cells, Bilayers, and Transporter Activity

In this workshop we will showcase three versatile technologies: the Port-a-Patch, the world's smallest patch clamp rig, the Orbit product family, for parallel lipid bilayer recordings of reconstituted ion channels, and the SURFE2R product family, for label-free and direct measurements of transporter protein activity.

The Port-a-Patch is the smallest patch clamp rig in the world and supports high quality patch clamp recordings; accessible to electrophysiologists and non-electrophysiologists alike. Giga-seal recordings coupled with excellent voltage-clamp of the cellular membrane ensure high quality data. Versatile add-ons, such as internal perfusion, allow unprecedented experimental freedom, above and beyond the possibilities of conventional patch clamp.

The Orbit 16 supports the parallel formation and recording from up to 16 lipid bilayers containing reconstituted ion channels or nanopores. Using Micro Electrode Cavity Array (MECA, Ionera) recording substrates, the bilayers are automatically formed by remotely actuated painting (Ionera- SPREAD), which will be demonstrated during this session. Based on the same principle, with the added possibility of active cooling and heating, the Orbit mini is a minimal footprint, turn-key system and allows 4 parallel lipid bilayer recordings.

SSM (solid supported membrane)-based electrophysiology is a technique whereby proteoliposomes, membrane vesicles, or membrane fragments containing the channel or transporter of interest are adsorbed to a lipid monolayer painted over a functionalized electrode. Automation of the SSM technology is accomplished by the SURFE2R product family and allows precise measurements and in-depth analysis of transporter and ion channel functions. Live experiments on the SURFE2R will be shown.

Join this workshop for live experiments and information about three outstanding platform families. Space is limited, please reserve yours by sending an email to info@nanion.de.

Speakers

Andrea Brüggemann, CSO, Nanion Technologies GmbH
Niels Fertig, CEO, Nanion Technologies GmbH
Gerhard Baaken, CEO, Ionera Technologies GmbH
Ekaterina Zaitseva, CSO, Ionera Technologies GmbH
Maria Barthmes, Product Manager SURFE2R,
Nanon Technologies GmbH

Exhibitor List

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
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89 North
1 Mill Street, Unit 285
Burlington, VT 05401
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. The newly released OptoTIRF illuminator and the L-SPI macro light sheet illuminator will be displayed, as well as emission splitting systems, optogenetics solutions, high speed filter wheels and laser combiners from Cairn Research and confocal imaging systems from CrestOptics. We also offer engineering and manufacturing expertise to customize existing products or to create new solutions for system integration.

AAT Bioquest Inc
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™ 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.

524 Agilent Technologies
2850 Centerville Road
Wilmington, DE 19808
www.agilent.com

Agilent provides world-class solutions for cellular and molecular analysis. Agilent Seahorse XF metabolic analyzers and XF assay kits determine the bioenergetic function of live cells in vitro; and connect genomic and proteomic data to physiologic traits of cells to generate new insights into aging and disease. Agilent's Cary UV-Vis-NIR Spectrophotometers and FTIR systems deliver unparalleled performance in a range of life science applications. These accurate and intuitive systems provide exceptional resolution and linearity. Learn more at: www.agilent.com.

319 AIP Publishing
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Melville, NY 11747
www.journals.aip.org

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521 ALA Scientific Instruments
60 Marine Street
Farmingdale, NY 11735
www.alascience.com

As manufacturers (fluidics, chambers, etc) and distributors (MultiChannel, npI, HEKA, Sutter, Narishige, TMC) of instruments for patch/cellular and multielectrode 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.

324 Alembic Instruments Inc **713**
3285 Cavendish Boulevard, Suite 570
Montreal, Quebec H4B 2L9
Canada
www.alembicinst.com

Alembic Instruments makes patch clamp 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.

ALVEOLE **119**
68, boulevard de Port-Royal
Paris, 75005
France
www.alveolelab.com

Alvéole develops innovative tools for controlling the cell microenvironment, thus allowing biologists to control the development and proliferation of living cells in culture. Alvéole presents PRIMO, the first multi-protein photopatterning solution. PRIMO enables the biologists to design and conduct all the micropatterning experiments they can imagine, in 2D and also 3D, for their cell based-assays that are essential for their research work.

anatrace

Anatrace **312**
434 West Dussel Drive
Maumee, OH 43537
www.anatrace.com

For 30 years, Anatrace has strived to develop and supply the industry's finest products for protein science. Building on our portfolio of detergents and lipids, the addition of Microlytic crystallization tools and screens and our line of protein purification products allow us to fully support the entire structural biology pipeline. With the highest batch-to-batch consistency, we are the most trusted detergent source for extracting, solubilizing, stabilizing, and/or crystallizing macromolecules.

Company Name Booth Number

Andor Technology 612
300 Baker Avenue, Suite 150
Concord, MA 01742
www.andor.com

Andor Technology pioneers and manufactures state-of-the-art high performance scientific imaging cameras, spectroscopy solutions and microscopy systems. Andor is strong market leader in the supply of innovative, deep cooled Electron Multiplying CCD (EMCCD) cameras, a single photon sensitive imaging technology that is extremely well suited to the demands of Single Molecule Detection.

Anton Paar USA 808
10215 Timber Ridge Drive
Ashland, VA 23005
www.anton-paar.com

Anton Paar is a leading supplier of analytical instrumentation focused on the biophysical characterization of proteins, liposomes and other nanoscale analytes. Specific technologies include: Small-angle X-ray Scattering (SAXS) for the nano and sub-nano scale characterization of sample size, shape, inner structure and orientation of proteins, nanoparticles, liposomes and core/shell particles as well as Dynamic Light Scattering (DLS) for the measurement of particle size, zeta potential, molecular mass and transmittance of proteins, liposomes, nanoparticles, emulsions and protein complexes.

Company Name Booth Number



ASI/Applied Scientific Instrumentation 441
29391 West Enid Road
Eugene, OR 97402
United States
www.asiimaging.com

Applied Scientific Instrumentation, Inc. (ASI) manufactures top-of-the-line products for Super-resolution microscopy including DC servomotor stages, stages with integrated piezos that provide high-speed nano meter resolution, LED based focus feedback systems for maintaining focus stability, and our Rapid Automated Modular Microscope (RAMM) system that provides a rock solid, fully configurable microscope platform. Our new Dual Inverted Selective Plane Microscopy system (diSPIM) offers several advantages over confocal & other microscopy systems including:

- Compared to Bessel beam plane illumination approaches, diSPIM offers equivalent (or better) axial resolution (~330 nm), 10-100x faster volumetric imaging rates (0.5-1 s instead of 10-100 s), and the ability to image over ~10x more time points (~1000 instead of ~100), due to the significantly lower illumination dose employed in our experiments and the lack of extraneous illumination outside the focal plane
- Use conventional mounting/glass cover slips
- Generate 3D volumes with isotropic resolution (330 nm in all directions)
- Axial resolution is ~2x better than confocal- or spinning disk systems
- Achieve a ~7-10 fold reduction in photobleaching
- Acquisition rates up to 200 images per second or 2-5 volumes per second

Company Name Booth Number



Asylum Research AFMs

Asylum Research, an Oxford Instruments Company 608
6310 Hollister Avenue
Santa Barbara, CA 93117
www.oxford-instruments.com/afm

The AFM technology leader will feature the Cypher Atomic Force Microscope. There is no other AFM like Cypher™ — offering unmatched performance in any environment including buffers, solvents, inert gases, strong acids and bases with continuous flow through capabilities. It utilizes all standard imaging modes and many advanced modes for the highest resolution imaging of proteins, lipids and nucleic acids, as well as force measurements and nanomechanics. Its many ease-of-use features, including GetStarted™, and blueDrive™ for fluid imaging, make AFM operation faster and easier. . Learn more about all the latest AFM advances at our Lunch and Learn Exhibitor Technical Presentation, Monday 11:30-1:00, Room 218.

Aurora Scientific Inc 646
25 Industry Street, Unit 3
Aurora, Ontario L4G 1X6
Canada
www.aurorascientific.com

Aurora Scientific provides solutions for measuring the dynamic physical properties of muscle and connective tissue. Muscle mechanics systems cover the range from single myocyte to whole large-animal in-situ. Products: Muscle Lever Systems, Force Transducers, High-Current Stimulators, Test Apparatus and Software. New Products: Dynamic Muscle Analysis Software with high throughput module.

Avanti Polar Lipids Inc **408**
 700 Industrial Park Drive
 Alabaster, AL 35007
 www.avantilipids.com

Avanti Polar Lipids Inc has served the Pharmaceutical, Nutraceutical Industries and Lipid Researchers since 1967. Divisions: Research Products-Highest Purity Lipid Reagents cGMP Manufacturing-API & Contract Manufacturing Adjuvants-Immunotherapy & Vaccine Development Analytical Services-Lipid Analysis Lipidomics-MS Standards, Antibodies & Lipid Toolbox Formulations- Liposomes & Nanoparticles Equipment- Liposome Production Tools Custom Services-Synthesis & Beyond.



Aviv Biomedical Inc **310**
 750 Vassar Avenue, Suite 2
 Lakewood, NJ 08701
 www.avivbiomedical.com

Aviv Biomedical, Inc. manufactures scientific and clinical instruments. Products include a fluorescence accessory (AU-FDS) for the Beckman Analytical Ultracentrifuge, Model XLA/XLI. Sales, service and support of Aviv spectrometers, Aviv Spectrophotometers and Aviv Fluorometers.

Beckman Coulter **101**
Life Sciences
 5350 Lakeview Parkway South Drive
 Indianapolis, IN 46268
 www.beckmancoulter.com

Beckman Coulter Life Sciences provides particle characterization solutions that analyze size, charge and concentration of virtually any substance—including in-solution particle characterization that enables testing in native conditions. Whether you work with liquid or dry chemicals or materials, you can always rely on us for the right solution for your particular application. We offer an extensive range of products including: centrifugation, flow cytometry, particle characterization, cell counting, and laboratory automation.

Biolin Scientific **510**
 215 College Road, Suite 300
 Paramus, NJ 07652
 www.biolinscientific.com

Biolin Scientific provides proprietary nanotechnology and advanced measurement systems. From contact angle meters and tensiometers to instrumentation for film fabrication and characterization as well as systems that enable analysis of molecular interactions and surface properties – we are your partner for performing research at the frontiers of science and technology.

BioLogic USA **421**
 9050 Executive Park Drive, Suite 105c
 Knoxville, TN 37923
 www.bio-logic.us

Bio-Logic USA introduces the uSFM system, which delivers up to 10 usable shots from 100uL of sample with near zero dead volume, with asymmetrical mixing ratios from 1:1 up to 1:9l. Visit us in booth 000 to see this addition to the SFM-4000 stopped flow mixing family. The MOS-500 spectro-polarimeter delivers auto-optimized performance from near IR to UV in CD, absorbance, fluorescence, and anisotropy modes. Sample handling options include cuvette, powder, peltier temperature control, and stopped flow mixers. See the uSFM in booth 421.

BioNavis Ltd **810**
 Hermiankatu 6-8 H
 Tampere, 33720
 Finland
 www.bionavis.com

BioNavis - a Finnish manufacturer of MP-SPR Navi™ instruments that allow to:

- Measure in real-time and label-free
- Optimize targeting from small molecules up to antibodies, nanoparticles and viruses
- Evaluate affinity and kinetics
- Quantify drug-target, drug-lipid membranes, drug-receptors interactions
- Prove drug causing signal cascading in living cells, show uptake route
- Characterize simultaneously thickness and density of membranes
- Measure in 100% serum using PureKinetics
- Understand better your molecules with kinetics and dynamic conformation change information from MP-SPR

BiOptix **826**
 1775 38th Street
 Boulder, CO 80301
 www.biopix.com

The BiOptix 404pi Surface Plasmon Resonance (SPR) instrument offers an affordable and powerful solution for drug discovery scientists that require label-free, real-time detection of biomolecular interactions. BiOptix provides an extremely high sensitivity, low noise instrument at a price point of just \$195,000, and offers industry-leading reliability and easy to use software.

- The 404pi is easier to use than any other SPR system, especially for users who are not already experts in SPR
- Protocols are designed with an intuitive drag & drop software interface
- Protocol steps can be queued in advance, allowing walk-away operation
- Experiments can be designed while the system is running an experiment
- Less user maintenance is required, since the fluidic cartridge does not contain the clog-prone elastomeric membrane which many other fluidic cartridges for SPR systems contain
- All members of the BiOptix support team are SPR experts. SPR is BiOptix' only focus, and customers can obtain assistance in unit operation, assay development, and data analysis

Bruker Corporation **600, 601**
 112 Robin Hill Road
 Santa Barbara, CA 93117
 www.bruker.com/nano

Bruker offers world-leading microscopy solutions for biophysical applications, including atomic force microscopes (AFMs) powered by PeakForce Tapping® and super-resolution, swept-field confocal microscopes. Bruker is also a leading supplier of electron paramagnetic resonance (EPR) spectrometer systems for the detection and study of unpaired electrons and free radicals.

Caliber Imaging & Diagnostics Inc **536**
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 Andover, MA 01810
www.caliberid.com

Caliber ID's RS-G4 is a large-format, purpose-built, resonant-scanning confocal microscope providing several laser lines (405/488/561/640/785) for single, simultaneous, or sequential image acquisition of fluorescent labels. One of the main advantages of the RS-G4 is its ability to collect high-quality confocal images of large biological specimens (up to 80 x 120mm), in just a fraction of time taken by traditional confocal microscopes. Applications in Neuroscience, Developmental Biology, Pathology, Plant Pathology, Translational Research and Industry.

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Carl Zeiss Microscopy LLC **800**
 One Zeiss Drive
 Thornwood, NY 10594
www.zeiss.com/us/microscopy

As the world's only manufacturer of light, X-ray and electron/ion microscopes, ZEISS offers tailor-made microscope systems for 3D imaging in biomedical research, life sciences and healthcare. A well-trained sales force, an extensive support infrastructure and a responsive service team enable customers to use their ZEISS microscopes to their full potential.

Cedarlane **700**
 4410 Paletta Court
 Burlington, NC 27215
www.cedarlanelabs.com

Cedarlane is a reagent company offering a myriad of biologicals and biochemicals for global Life Science research and diagnostics. By providing today's researchers and clinicians with the newest products of the highest quality, Cedarlane is a vital resource to the Life Science industry. Acting as a distributor and aggregator/consolidator for many global institutions, Cedarlane's customers can take advantage of access to products from over 1000 top global suppliers. In house product specializations include antibodies, complement, cell separation media, and neuronal cell lines.

Cell Press **200**
 50 Hampshire Street, 5th Floor
 Cambridge, MA 02139
www.cell.com

Cell Press is proud to publish Biophysical Journal, the journal from Biophysical Society. Cell Press is a leading publisher of cutting-edge biomedical research and reviews. Cell Press collaborates with authors and reviewers to publish 23 primary research journals (including 8 on behalf of learned societies) and 15 Trends review journals. 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 biomedical disciplines.

Charles River **625**
 251 Ballardvale Street
 Wilmington, MA 01887
www.criver.com

Charles River is industry-proven in successful development of novel therapies, with 300 patents and 67 candidates delivered in the past 16 years. Backed by more than 650 scientists, our comprehensive, integrated portfolio employs the latest technology and platforms to provide chemistry, biology, and pharmacology services that support clients from the earliest stages of hit identification all the way through to IND. Our client-focused, collaborative approach creates true partnerships that anticipate challenges, overcome obstacles, and move us forward together to get new drugs to market.

Chroma Technology Corporation **425**
 10 Imtec Lane
 Bellows Falls, VT 05101
www.chroma.com

Chroma Technology designs and manufactures optical interference filters using advanced sputtering technologies. Our high performance filters are intended for imaging applications ranging from widefield and confocal fluorescence microscopy, TIRF and super-resolution techniques to flow cytometry, high content screening multi-photon and Raman spectroscopy. Chroma also provides comprehensive technical and applications support.

CRC Press/Taylor & Francis **320, 321**
 6000 Broken Sound Parkway, NW, Suite 300
 Boca Raton, FL 33487
www.crcpress.com

CRC Press/Taylor and Francis is a leading international publisher of professional handbooks, textbooks, and references in Biophysics. Please visit our booth to browse the latest and bestselling books with special convention discounts on all purchases. Review our journal selections and pick up complimentary sample copies. Senior publishing editor Luna Han (luna.han@taylorandfrancis.com) will be available to discuss new project ideas.

Dynamic Biosensors GmbH **323**
 Lochhamer Str. 15
 Martinsried/Planegg, 82152
 Germany
www.dynamic-biosensors.com

Dynamic Biosensors GmbH is a provider of instruments, consumables, and services in the field characterization of biomolecules and molecular interactions. We are located in Martinsried south of Munich, Germany. Our switchSENSE technology is the first biosensor system to allow interaction analysis AND biophysical analyte characterization at the same time.

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
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Ecocyte Bioscience US LLC 630

111 Ramble Lane, Suite 109
Austin, TX 78745
www.ecocyte-us.com

Ecocyte Bioscience is the leading supplier of *Xenopus laevis* oocytes that offers a biweekly delivery service for expression studies. Our oocytes are defolliculated via collagenase treatment and ready to use for mRNA or cDNA injection. In addition, we are able to offer pre-injected oocytes or contract services with Two Electrode Voltage Clamp (TEVC) recordings. Therefore, if you do not have your own setup and wish to perform electrophysiological measurements, we can perform injections, simple expression studies, and even complex concentration effect curves and kinetics for you.

Edinburgh Instruments 701

2 Bain Square, Kirkton Campus
Livingston, EH547DQ
United Kingdom
www.edinst.com

Edinburgh Instruments is a global leader in fluorescence spectrometers (steady-state, phosphorescence & fluorescence lifetime), transient absorption spectrometers and gas lasers.

Electron Microscopy Sciences 645

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 613

Viale G. Marconi 438
Cesena - FC, 47521
Italy
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Elements produces single and multichannel amplifiers for electrophysiology and pico-scale measurements. Our technology is based on custom microchip which enables the design of very low-noise, high bandwidth, miniaturized, easy to use and low-cost instruments. Elements instruments are used for: single channel experiments, lipid bilayer membrane workstations, solid state nanopore, multichannel systems, real-time data analysis. Our new products for 2017 are: - eONE-XV, current amplifier with extended voltage range; - eONE-Patch: low cost amplifier for whole cells and single-channel recordings.

Finger Lakes Instrumentation 627

7287 West Main Street
Lima, NY 14485
www.flicamera.com

FLI began operations in 1998 as a supplier of cooled CCD cameras for astronomical research. Today we operate from three facilities in two locations. Our Binghamton office is dedicated to production of High Speed Filter Wheels, Incite Next Cube Turret as well as software and mechanical engineering. FLI supplies cameras to more than 50 countries for life science imaging, veterinary radiology, astronomy, forensics, transmission electron microscopy, and a wide range of other applications.

Flexcell International Corporation 620

2730 Tucker Street, Suite 200
Burlington, NC 27215
www.flexcellint.com

Flexcell International Corporation specializes in designing and manufacturing products to apply mechanical loads, including tension, compression, and fluid shear, to cells in monolayer and 3D culture. Flexcell has high-throughput culture plates, equipment for making 3D cell-seeded constructs, software for analyzing 3D gel compaction, microscope devices for viewing real-time response to mechanical load. Flexcell is also a distributor AIM Biotech 3D Cell Culture Chips.

Fluxion Biosciences 724

385 Oyster Point Boulevard, #3
South San Francisco, CA 94080
www.fluxionbio.com

Fluxion Biosciences, Inc. develops analytical instruments for functional cellular analyses in life science, drug discovery, and diagnostic applications. It offers IonFlux systems for high throughput automated patch clamping including IonFlux 16, IonFlux HT and the all new IonFlux Mercury. All systems feature a unique in-plate liquid exchange platform, allowing for continuous flow and extensive control over liquid displacement. IonFlux systems are used in academic, pharmaceutical institutions all over the world, and are considered the de-facto systems for ligand-gated ion channel assays.

GenScript USA Inc 720

860 Centennial Avenue
Piscataway, NJ 08854

GenScript is the leading gene, peptide, protein and antibody research partner for fundamental life science research, translational biomedical research, and early stage pharmaceutical development. We have the best-in-class capacity and capability for biological research services encompassing gene synthesis and molecular biology, peptide synthesis, custom antibodies, protein expression, antibody and protein engineering, and in vitro and in vivo pharmacology – all with the goal to Make Research Easy.

Hamamatsu Corporation 525

360 Foothill Road
Bridgewater, NJ 08807
www.hamamatsu.com

Hamamatsu Corporation is the North American subsidiary of Hamamatsu Photonics K.K. (Japan). We offer sCMOS cameras, EM-CCD cameras, and CCD cameras for microscopy.

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
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HEKA Elektronik **544**
 84 October Hill Road
 Holliston, MA 01746
www.heka.com

For decades HEKA provides the finest Patch Clamp Amplifier and acquisition system. Explore our workstations at the booth that combine HEKA patch clamp amplifier and our Warner instruments. The new S-Probe, a small head stage, is shown. Experience what our patch clamp software can do for you. A specialist will demonstrate and provide basic training on PATCHMASTER. Visit us and see our latest updates.

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HORIBA Scientific **401**
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www.horiba.com/scientific

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IonOptix **444**
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www.ionoptix.com

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Ionovation GmbH **302**
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 Osnabrueck, 49084
 Germany
www.ionovation.com

Ionovation represents a wealth of experience in the development and application of modern electrophysiological and fluorescence techniques. Our product line comprises automated benchtop workstations for the electrophysiological and optical single molecule recording, as well as unique optical tweezers for single particle manipulation, force spectroscopy and scanning probe microscopy. The primary mission of our company is to always provide state-of-the-art technology and services for sophisticated research tasks to the scientific as well as industrial markets.

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ISS Inc **719**
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 Champaign, IL 61822
www.iss.com

ISS activities include two product lines: the fluorescence analytical division (spectrofluorometers for time-resolved /steady-state fluorescence measurements) and the medical division (for absolute measurements of oxygen saturation in brain and muscle tissue). A variety of modular components complements the instrumentation: laser diodes, LEDs, high pressure cell and fiber optic sensors amongst an extensive line of accessories; data acquisition cards for FCS and FLIM, laser launchers, galvo-scanning mirrors and detector units. Applications include FRET, FLIM, FCS, FCCS, PCH, STED, NIRS.

JASCO **746**
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 Easton, MD 21601
 www.jascoinc.com

JASCO will be exhibiting a range of biophysical characterization tools including Circular Dichroism, Fluorescence and FTIR instrumentation. The Jasco J-1000 Series Spectrophotometers provide an optical bench specifically designed for high sensitivity measurements in the far- and near-UV regions. Temperature control systems can be coupled with multi-position cells to run thermal melts. Automated high-throughput CD can obtain measurements on up to 192 samples without user intervention, saving both time and money. Microsampling cells provide measurements on sample volumes as low as 2 microliters.

Journal of General Physiology **209**
 950 Third Avenue, Floor 2
 New York, NY 10022
 www.rupress.org

The Journal of General Physiology's mission is to publish mechanistic and quantitative molecular and cellular physiology.

KinTek Corporation **430**
 7604 Sandia Loop
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 www.kintekcorp.com

KinTek is the world leader for the highest quality state-of-the-art kinetic analysis. 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. See our Exhibitor Presentation on KinTek Explorer software.

Laboratory for Fluorescence Dynamics **304**
 3120 National Sciences II
 University of California, Irvine
 Irvine, CA 92697
 www.lfd.uci.edu

The Laboratory for Fluorescence Dynamics (LFD) is a national research resource center for biomedical fluorescence spectroscopy, supported by the National Institute of Health (NIGMS) and the University of California, Irvine (UCI). Main activities: Services and Resources: state-of-the-art lab for fluorescence measurements, microscopy, spectroscopy. Research and Development: design, test, and implementation advances in the technology of hardware, software, biomedical applications. Training and Dissemination: disseminates knowledge of fluorescence spectroscopic principles, instrumentation, applications.



Larodan **520**
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 Solna, 171 65
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 www.larodan.com

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Leica Microsystems **824**
 1700 Leider Lane
 Buffalo Grove, IL 60089
 www.leica-microsystems.com

Leica Microsystems develops and manufactures microscopes and scientific instruments for the analysis of microstructures and nanostructures. The company is one of the market leaders in compound and stereo microscopy, digital microscopy, confocal laser scanning microscopy and optical coherence tomography.

LUMICKS **802**
 De Boelelaan 1085
 Amsterdam
 Netherlands
 www.lumicks.com

LUMICKS brings to market revolutionary single-molecule technologies that enable – for the first time – visualization of molecular interactions and acoustic manipulation of biomolecules. These breakthroughs are allowing scientists to understand life to the smallest detail, which is critical for cancer research and drug development. Our optical tweezers-fluorescence microscopy (C-Trap™), acoustic manipulation (AFS™) and microfluidics system (u-Flux™) instruments are ready-to-use, so that scientists can focus on their experiments and breakthrough science.

Collect tickets from exhibitors in the Hall and then enter to win a Samsung Galaxy Tablet! Drop your tickets off at the Society Booth by 2:30 PM on Tuesday!

Company Name Booth Number



Mad City Labs Inc 418

2524 Todd Drive
Madison, WI 53713
www.madcitylabs.com

For over 15 years, Mad City Labs has been the leader in designing and manufacturing nanopositioning systems and precision microscopy instruments for the biophysics community. We provide piezo nanopositioning systems, single molecule microscopes, atomic force microscopes, and precision micropositioning stages.

Our closed loop nanopositioners feature our proprietary PicoQ® sensors with ultra-low noise and high stability performance. Our exclusive use of the PicoQ sensors combined with our innovative flexure guided stage designs leads to outstanding stability and sub-nanometer precision for super resolution microscopy, atomic force microscopy, interferometry and imaging.

Featured nanopositioners: Nano-MTA beam steering, low profile XY and XYZ nanopositioners for tweezer applications, piezo z-axis and lens nanopositioners.

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Mad City Labs resonant probe atomic force microscopes achieve atomic step resolution by leveraging the performance of our closed loop nanopositioning systems. Available in a variety of configurations with many automated features and ideal for research environments.

Company Name Booth Number

Visit Booth 418 and discover the advantages of Mad City Labs products. Our knowledgeable sales & scientific staff will be available during the meeting to discuss your application. A limited number of longer appointment times with our scientists are available. Please email sales@madcitylabs.com for availability.

Malvern Instruments Ltd 609

117 Flanders Road
Westborough, MA 01581
www.malvern.com

Malvern's materials and biophysical characterization technology and expertise enables scientists and engineers to investigate, understand and control the properties of dispersed systems. Used in research, development and manufacturing, Malvern's instruments provide critical information that helps accelerate research and product development, enhance and maintain product quality and optimize process efficiency.

Matreya LLC 219

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State College, PA 16803
www.matreya.com

Matreya is a manufacturer of high purity lipids for Life Science Research. Matreya offers gangliosides, sphingolipids, glycolipids, ceramides, phospholipids, enzyme inhibitors, fluorescent/isotope/biotin labeled glycolipids, tocopherols, tocotrienols, fatty acids, hydroxy fatty acids, reference mixtures, and custom synthesis. When you require quality and consistency, along with rapid delivery, you may rely on Matreya.

Mightex Systems 624

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www.mightexsystems.com

Mightex is a leading developer of advanced illumination sources and imaging system for bioscience, including targeted and wide-field illumination solutions used in microscopy. Featured is the Polygon400, which enables users to target multiple cells or sub-cellular features with light for applications such as photoactivation, optogenetics, FRAPP, and photoconversion.

Company Name Booth Number

Molecular Devices LLC 501

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www.moleculardevices.com

At Molecular Devices, we enable our customers to unravel the complexity of biological systems. We provide platforms for conventional electrophysiology, high-throughput screening, genomic and cellular analysis, colony selection and microplate detection. These leading-edge products empower scientists to improve productivity and effectiveness, ultimately accelerating research and the discovery of new therapeutics.

Multi Channel Systems 545

Aspenhastrasse 21
Reutlingen, 72770
Germany
www.multichannelsystems.com

Multi Channel Systems provides scientific equipment for electrophysiology for academic and pharmaceutical industry like MEA or automated patch clamp systems.

Nanion Technologies GmbH 405

Gabrielenstrasse 9
Munich, 80636
Germany
www.nanion.de

Nanion Technologies is a leading provider of automated patch clamp systems. The Port-a Patch, Patchliner, and the SyncroPatch 384/768PE cover the entire spectrum from single channel recordings to ion channel HTS, at the same time supporting versatile features including current clamp, temperature control and internal perfusion. Nanion additionally provides platforms for combined impedance and extracellular field potential screening, CardioExcyte 96, parallel bilayer recordings, Orbit 16 and Orbit mini, and transporter protein activity measurements, SURFE2R. We are looking forward to your visit!

Nanonics Imaging Ltd 840

Har Hoztvim H-Tech Park,
19 Hartum Street, Bynet Building
Israel, 97775
Jerusalem
www.nanonics.co.il

Nanonics presents the Hydra Bio AFMTM featuring VISTATM (Vivid Imaging Soft Touch AFM) mode. This breakthrough offers ultrasensitive single pN force mapping with the benefits of super-resolution optical/fluorescent imaging. Imaging of live cells with <100nm optical resolution is now possible with on-line mechanics of fine structures such as microvilli. The Hydra Bio AFMTM, with its single or multi-probe capability, allows versatile dual microscope integration and side illumination. The system enables super-resolution methods like STED, PALM, STORM, and live cell NSOM with any available dye.

NanoTemper Technologies Inc 718

395 Oyster Point, Suite 135
South San Francisco, CA 94080
www.nanotemper-technologies.com

NanoTemper Technologies is a globally operating high-tech company that develops high quality biophysical instrumentation for biomolecular analytics. Our technologies include MicroScale Thermophoresis (MST) for rapid binding affinity characterization, and nanoDSF for precise protein thermostability characterization. Our unique tools help scientists make the greatest impact - with maximum speed, efficiency and precision.

Narishige International USA Inc 812

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www.usa.narishige-group.com

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National Research Mentoring Network 111

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Irvine, CA 92606
www.newport.com

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Nicoya Lifesciences Inc 721

226-283 Duke Street West
Kitchener, Ontario N2H 3X7
Canada
www.nicoyalife.com

Nicoya Lifesciences uses nanotechnology to make OpenSPR™, the world's first benchtop surface plasmon resonance instrument for molecular interaction analysis. It is affordable, easy to use, and compact, providing powerful label-free analysis and high quality data for a fraction of the cost of traditional SPR instruments.

Nikon Instruments Inc 431

1300 Walt Whitman Road
Melville, NY 11747
www.nikoninstruments.com

Nikon Instruments Inc is a world leader in the development and manufacture of optical and digital imaging technology. Now in its 100th year, Nikon provides complete optical imaging systems, offering cutting-edge microscopes with optimal performance and expandability, from basic documentation to confocal, and Super Resolution, powered by NIS-Elements imaging software.

npi electronic GmbH 519

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Tamm, 71732
Germany
www.npielectronic.com

npi electronic develops and produces equipment for research in physiological and pharmacological research sciences including patch and voltage clamp, extracellular and intracellular amplifiers, stimulus isolators, voltammetric-amperometric amplifiers, filters, μm-range drug application systems, temperature controllers and amplifiers for electroporation and transfection. npi electronic is expert in micro-electrode and patch clamp techniques.

Olis Inc 709

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Bogart, GA 30622
www.olisweb.com

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Olympus 300

48 Woerd Avenue
Waltham, MA 02453
www.olympus-lifescience.com

Olympus is dedicated to your work, your vision, your science. Through innovation and service, we seek to inspire you to explore new possibilities. Visit us today at booth 300 to view imaging solutions built with the optical excellence and proven application expertise your research depends on. Let us be your partner in discovery.

Onefive GmbH 844

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Regensdorf, CH-8105
Switzerland
www.onefive.com

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OriginLab Corporation 330

1 Roundhouse Plaza, Suite 303
Northampton, MA 01060
www.originlab.com

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Oxford Nanoimaging Ltd 705

King Charles House, Park End Street
Oxford, OX1 1JD
United Kingdom
www.oxfordni.com



Oxford Nanoimaging (ONI) are a Oxford university spin-out that have released the world's first desktop super resolution microscope-the Nanoimager. The Nanoimager has been designed for optimal single molecule localization performance and offers the first turn-key solution use of dSTORM, PALM and single molecule FRET. The Nanoimager needs no alignment, and can be run from a lab bench. ONI aim to democratise SR microscopy, by not only redesigning and simplifying the traditional microscope but through a new price point open the possibility of single molecule research to a much larger audience.

Pacer Scientific 531

5649 Valley Oak Drive
Los Angeles, CA 90068
www.pacersci.com

Pacer Scientific is a manufacturer's representative company engaged in the sale of research instrumentation and software for the biosciences. Pacer Scientific represents AMP Instruments, NeuroPhase/Brownlee, Molecular Devices/Axon, and Sutter Instrument Co. Our products include Air Tables, Amplifiers, Data Acquisition & Analysis Software, Light Sources, Microscopes & Accessories, Micromanipulators, Micropipette Pullers, Programmable Stimulators, Signal Conditioners, X-Y stages & Translation Systems, and Vibration Isolation Systems.

Pall ForteBio LLC 605

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Menlo Park, CA 94025
www.fortebio.com

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Peptides International manufactures and distributes biochemical products for research at universities, institutes, and pharmaceutical/biotech companies throughout the world. Peptides International is recognized around the world as a trusted source of high purity, quality products ranging from innovative resins to complex custom peptide synthesis.

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204

Physics Today is a monthly magazine read by 120,000 scientists and engineers who had some training in graduate physics; it is not a specialized journal that only 120 people in the world can appreciate. Physics Today provides an authoritative summary of the most important research developments across the physical sciences—usually outside your specialized field. You'll find surprising connections between your field of study and other areas of physics. These interdisciplinary connections are often the source of scientific innovation today. Visit us at booth 204—get a free 1-year subscription!

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PicoQuant Photonics North America Inc

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www.picoquant-usa.com

619

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PIEZOCONCEPT

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PIEZOCONCEPT is the leading provider of nanopositioners dedicated to applications such as Super Resolution Microscopy, Optical Trapping and Atomic Force Microscopy. Our customers include many leading scientists engaged in leading edge research at world class universities and institutes. We developed a range of ultra-stable nanopositioner able to meet a wide range of microscopy applications with significant advantages over the currently available nanopositioners. As one of our biggest advantages, the sensor we use has exceptionally high signal, leading to picometric stability.



Postnova Analytics

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www.postnova.com

Postnova Analytics is the manufacturer of Field Flow Fractionation (FFF) analytical instruments for separation and characterization of proteins, biopolymers, cells, and nanoparticles. Field-Flow Fractionation coupled to Multi-Angle Light Scattering (MALS), Dynamic Light Scattering (DLS) and ICP-MS provides high resolution size and molar mass separation, characterization and elemental quantification. Refractive index and viscometer detectors in-line with FFF-MALS provides information on the size, shape, structure and molecular weight of macromolecules in solution.

313



PreciPoint

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Freising
Germany
www.precipoint.de

PreciPoint stands for exceptional innovations in the field of microscopy & micropositioning systems. Our diverse in-house expertise ranges from optical, mechanical and electrical components, to software. We develop OEM products by supplying custom-made solutions, individual modules, complete devices or innovative operating concepts. The spectrum of the company portfolio includes smart microscopes, x-y-stages, electronic control systems and automated testing systems. We have most recently engineered the M8, a dual digital microscope & scanner that allows you to work on your slides right away.

532



Pressure Biosciences Inc

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Pressure BioSciences Inc (OTCQB: PBIO) develops, manufactures, and sells automated, bench-top, laboratory instrumentation, and consumables for control of high hydrostatic pressure (up to 7 Kilobar). These unique and powerful research instruments enable specific thermodynamic perturbations to macromolecular interactions including phase transitions in proteins and lipid bilayers, decrease in hydrophobic interactions, increase in hydration, as well as modulation of enzymatic activity.

Quantum Northwest Inc 618

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Reichert's surface plasmon resonance (SPR) systems provide the diverse interests of academia and industry with the most cost-effective, sensitive and flexible platforms in today's marketplace. Investigate Protein-Protein, Protein-Antibody and other biomolecular interactions label-free and in real time with the Reichert4SPR 4-channel instrument.

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5277 Trillium Boulevard
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www.renishaw.com

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Royal Society Publishing 205

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www.royalsociety.org/journals

The Royal Society recognises, promotes, and supports excellence in science. Our journals welcome the submission of individual research papers from biophysicists. We offer rigorous, constructive peer review; efficient, rapid processing by active, expert scientists; open access options; promotion by a dedicated press office; wide dissemination to an international audience and 350 years of experience in scientific publishing. Come and find out more by visiting booth 205. Alternatively, visit royalsociety.org/journals for more information.

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Sapidyne Instruments Inc 533

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SB Drug Discovery 631

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Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
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Scientifica Ltd 710

1A Kingfisher Court, Brambleside,
Bellbrook Industrial Estate
Uckfield, EAST SUSSEX TN22 1QQ
United Kingdom
www.scientifica.uk.com

Scientifica manufactures and distributes scientific instruments for university researchers, pharmaceutical companies and research laboratories working in electrophysiology, optogenetics and biological imaging. The company was formed in 1997 in the UK and now exports to more than 30 countries around the world. The company has developed an extensive product range for researchers including micromanipulators, complete microscopy rigs, mounting equipment and accessories. Most new Scientifica products are designed in conjunction with academic research partners at leading universities.



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Society for Neuroscience 539

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The Society for Neuroscience, a non-profit association founded in 1969, is the world's largest organization of scientists and physicians devoted to understanding the brain and nervous system.

Sophion Bioscience 508

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Product Categories

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Scientifica Ltd	710	Anatrace Products LLC	312	Beckman Coulter Life Sciences	101
Tomocube Inc	311	Ecocyte Bioscience US LLC	630	Chromatography	
AFM/NSOM/Confocal Microscopes		SB Drug Discovery	631	Postnova Analytics	113
Mad City Labs Inc	418	Biochemicals		Wyatt Technology Corporation	513
Nanonics Imaging Ltd	840	Larodan	520	Circular Dichroism Spectroscopy	
Park Systems Inc	505	Matreya LLC	219	Aviv Biomedical Inc	310
Amperometry/Voltammetry Instrumentation		Biotechnology		BioLogic USA	421
npi electronic GmbH	519	Anton Paar USA	808	Hinds Instruments	509
Amphiphols		BioNavis Ltd	810	JASCO	746
Anatrace Products LLC	312	Bruker Corporation	601, 600	Olis Inc	709
Amplifiers		Charles River	625	Quantum Northwest Inc	618
Elements SRL	613	Flexcell International Corporation	620	Computational Software	
HEKA Elektronik	544	GenScript USA Inc	720	KinTek Corporation	430
Multi Channel Systems	545	Malvern Instruments Ltd	609	Computers, hardware and software	
npi electronic GmbH	519	Photometrics	419	Aurora Scientific Inc	646
Pacer Scientific	531	Pressure Biosciences Inc	331	OriginLab Corporation	330
Sutter Instrument	436	Sapidyne Instruments	533	Confocal Microscopes	
Warner Instruments	445	Wyatt Technology Corporation	513	89 North	524
Zurich Instruments	626	Books and Journals		Andor Technology	612
Analytical/Testing Services		Cell Press	200	Bruker Corporation	601, 600
Anton Paar USA	808	IOP Publishing	201	Caliber Imaging & Diagnostics Inc	536
Avanti Polar Lipids Inc	408	Springer	211	ISS Inc	719
Park Systems Inc	505	CRC Press/Taylor & Francis	321, 320	Leica Microsystems	824
Peptides International	227	Cameras		LUMICKS	802
Postnova Analytics	113	Andor Technology	612	Nikon Instruments Inc	431
Sapidyne Instruments	533	Carl Zeiss Microscopy LLC	800	Olympus	300
Antibodies		Finger Lakes Instrumentation	627	Oxford Nanoimaging Ltd	705
BioNavis Ltd	810	Hamamatsu Corporation	525	Renishaw Inc	511
Cedarlane	700	Mightex Systems	624	Renishaw Corporation	309
Electron Microscopy Sciences	645	Olympus	300	Thorlabs	301
Matreya LLC	219	PCO-TECH Inc	308	Crystallization Utilities	
Reichert Technologies - Life Sciences	708	Photometrics	419	Anatrace Products LLC	312
Sapidyne Instruments	533	Scientifica Ltd	710	Crystallography	
UVP LLC	604	SciMeasure	437	Anatrace Products LLC	312
Assay Kits		Thorlabs	301	Charles River	625
AAT Bioquest Inc	319	UVP LLC	604	TA Instruments	439
Cedarlane	700	Cell Biology Products		Data Acquisition	
Larodan	520	Agilent Technologies	324	Alembic Instruments, Inc.	713
Molecular Devices LLC	501	ALVEOLE	119	Andor Technology	612
Peptides International	227	Ecocyte Bioscience US LLC	630	Elements SRL	613
Atomic Force Microscopes		Flexcell International Corporation	620	IonOptix	444
Asylum Research, an Oxford Instruments Company	608	GenScript USA Inc	720	ISS Inc	719
Bruker Corporation	601, 600	SB Drug Discovery	631	KinTek Corporation	430
Mad City Labs Inc	418	Strex	538	Laboratory for Fluorescence Dynamics	304
Nanonics Imaging Ltd	840	Tomocube Inc	311	Park Systems Inc	505
Park Systems Inc	505	UVP LLC	604	PicoQuant Photonics North America Inc	619
Cell Culture Products		Cell Culture Products		Renishaw Inc	511
ALVEOLE	119	ALVEOLE	119		
Cedarlane	700	Cedarlane	700		
Flexcell International Corporation	620	Flexcell International Corporation	620		
GenScript USA Inc	720	GenScript USA Inc	720		
Olympus	300	Olympus	300		
Strex	538	Strex	538		
Tokai Hit Co Ltd	537	Tokai Hit Co Ltd	537		

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
Data Analysis		Electrophysiology Equipment		Fluorescence Image Analysis Equipment	
IonOptix	444	Alembic Instruments, Inc.	713	Aurora Scientific Inc	646
KinTek Corporation	430	Aurora Scientific Inc	646	Oxford Nanoimaging Ltd	705
Laboratory for Fluorescence Dynamics	304	Cytocybernetics	540	PCO-TECH Inc	308
PCO-TECH Inc	308	Elements SRL	613		
		Fluxion Biosciences	724		
Data Analysis Software		HEKA Elektronik	544	Fluorescence Lifetime Imaging	
Andor Technology	612	Molecular Devices LLC	501	Edinburgh Instruments	701
Aurora Scientific Inc	646	Multi Channel Systems	545	HORIBA Scientific	401
KinTek Corporation	430	Nanion Technologies	405	ISS Inc	719
Laboratory for Fluorescence Dynamics	304	Narishige International USA, Inc.	812	Laboratory for Fluorescence Dynamics	304
OriginLab Corporation	330	npi electronic GmbH	519	PCO-TECH Inc	308
Reichert Technologies - Life Sciences	708	Olympus	300	PicoQuant Photonics North America Inc	619
		Pacer Scientific	531	Rapp OptoElectronic GmbH	318
Detergents		SB Drug Discovery	631	TOPTICA Photonics Inc	712
Anatrace Products LLC	312	Scientifica Ltd	710		
Avanti Polar Lipids Inc	408	Sensapex OY	846	Fluorescent Filters	
		Sophion Bioscience	508	Chroma Technology	425
Digitizers		Strex	538	Newport Corporation	332
Sutter Instrument	436	Sutter Instrument	436	Semrock Inc	518
Zurich Instruments	626	Thorlabs	301		
		Warner Instruments	445	Fluorescent Probes	
Drug Discovery		Electrophysiology Software		AAT Bioquest Inc	319
AAT Bioquest Inc	319	Cytocybernetics	540		
Beckman Coulter Life Sciences	101	Elements SRL	613	Fluorometers	
BioNavis Ltd	810	Fluxion Biosciences	724	Aviv Biomedical Inc	310
Charles River	625	Molecular Devices LLC	501	Edinburgh Instruments	701
Hinds Instruments	509	Multi Channel Systems	545	HORIBA Scientific	401
Photometrics	419	OriginLab Corporation	330	ISS Inc	719
Reichert Technologies - Life Sciences	708	Sophion Bioscience	508	Olis Inc	709
Sapidyne Instruments	533	Sutter Instrument	436	Quantum Northwest Inc	618
SB Drug Discovery	631				
Wyatt Technology Corporation	513	Environmental Chambers		Glass Capillary Tubing	
		Park Systems Inc	505	Sutter Instrument	436
Electromechanical Instrumentation		Piezoconcept	313	Warner Instruments	445
IonOptix	444	Strex	538		
Strex	538	Filter Wheels		Glassware	
Sutter Instrument	436	Finger Lakes Instrumentation	627	Electron Microscopy Sciences	645
		Sutter Instrument	436		
Electrophoresis Equipment		Flash Lamps		High-Throughput Instrumentation	
UVP LLC	604	89 North	524	Anton Paar USA	808
Wyatt Technology Corporation	513	Rapp OptoElectronic GmbH	318	Finger Lakes Instrumentation	627
		Fluid Flow Chambers		Flexcell International Corporation	620
Electrophysiological Data Acquisition		Flexcell International Corporation	620	Fluxion Biosciences	724
Alembic Instruments, Inc.	713	Warner Instruments	445	JASCO	746
Charles River	625	Fluorescence Anisotropy		LUMICKS	802
Ecocyte Bioscience US LLC	630	Aviv Biomedical Inc	310	Malvern Instruments Ltd	609
Elements SRL	613	BioLogic USA	421	Molecular Devices LLC	501
HEKA Elektronik	544	Edinburgh Instruments	701	Multi Channel Systems	545
Multi Channel Systems	545	HORIBA Scientific	401	Nanion Technologies	405
Nanion Technologies	405	JASCO	746	Reichert Technologies - Life Sciences	708
Sutter Instrument	436	KinTek Corporation	430	Sophion Bioscience	508
		Olis Inc	709	Wyatt Technology Corporation	513
Electrophysiological Instruments		Fluorescence Correlation Spectroscopy		Image Acquisition Systems	
Alembic Instruments, Inc.	713	ISS Inc	719	Aurora Scientific Inc	646
Elements SRL	613	Nanonics Imaging Ltd	840	Caliber Imaging & Diagnostics Inc	536
Fluxion Biosciences	724	TOPTICA Photonics Inc	712	ISS Inc	719
Molecular Devices LLC	501			Mightex Systems	624
Nanion Technologies	405			PCO-TECH Inc	308
Photometrics	419				
Sensapex OY	846				
Sophion Bioscience	508				
Strex	538				
Sutter Instrument	436				

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
Image Analysis		Infrared Spectroscopy		Life Sciences	
Malvern Instruments Ltd	609	ISS Inc	719	Agilent Technologies	324
Park Systems Inc	505	JASCO	746	ALVEOLE	119
Image Analysis Software				Andor Technology	612
Aurora Scientific Inc	646	Interferometers		Beckman Coulter Life Sciences	101
Carl Zeiss Microscopy LLC	800	Wyatt Technology Corporation	513	Chroma Technology	425
Laboratory for Fluorescence Dynamics	304	Ion Channels		Ecocyte Bioscience US LLC	630
Nikon Instruments Inc	431	Charles River	625	GenScript USA Inc	720
OriginLab Corporation	330	Ecocyte Bioscience US LLC	630	Olympus	300
PreciPoint	532	Fluxion Biosciences	724	Oxford Nanoimaging Ltd	705
Tomocube Inc	311	Nanon Technologies	405	Photometrics	419
UVP LLC	604	Peptides International	227	PreciPoint	532
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HORIBA Scientific	401	Peptides International	227	Carl Zeiss Microscopy LLC	800
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Hamamatsu Corporation	525	BioNavis Ltd	810	Mad City Labs Inc	418
Image Stabilization		Electron Microscopy Sciences	645	Photometrics	419
Mad City Labs Inc	418	Flexcell International Corporation	620	SciMeasure	437
Piezoconcept	313	Malvern Instruments Ltd	609	TOPTICA Photonics Inc	712
Imaging Chambers		Park Systems Inc	505	Light Sources	
ALA Scientific Instruments	521	PicoQuant Photonics North America Inc	619	89 North	524
Warner Instruments	445	PreciPoint	532	Chroma Technology	425
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Molecular Devices LLC	501	Biolin Scientific	510	Rapp OptoElectronic GmbH	318
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Scientifica Ltd	710	Newport Corporation	332	TOPTICA Photonics Inc	712
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Thorlabs	301	Rapp OptoElectronic GmbH	318	Anatrace Products LLC	312
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Chroma Technology	425	TOPTICA Photonics Inc	712	Larodan	520
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ALA Scientific Instruments	521	Mad City Labs Inc	418	IonOptix	444
ALVEOLE	119	PI (Physik Instrumente) L.P. Piezo Nano Positioning	702	Leica Microsystems	824
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Malvern Instruments Ltd	609	Sutter Instrument	436	Warner Instruments	445
TA Instruments	439	Warner Instruments	445	Molecular Biology Products	
Microelectrode Holders		Microscope Accessories		Agilent Technologies	324
ALA Scientific Instruments	521	ASI/Applied Scientific Instrumentation	441	GenScript USA Inc	720
Narishige International USA, Inc.	812	Chroma Technology	425	Rockefeller University Press	209
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Microfluidic Chambers		Mightex Systems	624	ASI/Applied Scientific Instrumentation	441
ALA Scientific Instruments	521	Pacer Scientific	531	Mad City Labs Inc	418
Flexcell International Corporation	620	Rapp OptoElectronic GmbH	318	PI (Physik Instrumente) L.P. Piezo Nano Positioning	702
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ALA Scientific Instruments	521	ASI/Applied Scientific Instrumentation	441	Near-Field Scanning Optical Microscopes (NSOM)	
Narishige International USA, Inc.	812	Mad City Labs Inc	418	Mad City Labs Inc	418
Microinjectors		Nikon Instruments Inc	431	Nanonics Imaging Ltd	840
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Narishige International USA, Inc.	812	ASI/Applied Scientific Instrumentation	441	Charles River	625
npi electronic GmbH	519	Leica Microsystems	824	Particle Sizing Products	
Sutter Instrument	436	Mad City Labs Inc	418	Anton Paar USA	808
Warner Instruments	445	PI (Physik Instrumente) L.P. Piezo Nano Positioning	702	Beckman Coulter Life Sciences	101
Micromanipulators		Piezoconcept	313	Malvern Instruments Ltd	609
ASI/Applied Scientific Instrumentation	441	PreciPoint	532	Postnova Analytics	113
Ecocyte Bioscience US LLC	630	Siskiyou Corporation	309	Patch Clamp Instrumentation	
LUMICKS	802	Tokai Hit Co Ltd	537	Alembic Instruments, Inc.	713
Narishige International USA, Inc.	812	Warner Instruments	445	Elements SRL	613
Pacer Scientific	531	Microscopes		Fluxion Biosciences	724
Scientifica Ltd	710	ASI/Applied Scientific Instrumentation	441	HEKA Elektronik	544
Sensapex OY	846	Asylum Research, an Oxford Instruments Company	608	Molecular Devices LLC	501
Siskiyou Corporation	309	Brucker Corporation	601, 600	Multi Channel Systems	545
Sutter Instrument	436	Caliber Imaging & Diagnostics Inc	536	Nanon Technologies	405
Micropipette Pullers		Carl Zeiss Microscopy LLC	800	Narishige International USA, Inc.	812
HEKA Elektronik	544	Electron Microscopy Sciences	645	npi electronic GmbH	519
Narishige International USA, Inc.	812	Leica Microsystems	824	Pacer Scientific	531
Pacer Scientific	531	Mad City Labs Inc	418	Scientifica Ltd	710
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Nanonics Imaging Ltd	840	Oxford Nanoimaging Ltd	705	Sutter Instrument	436
Sutter Instrument	436	PicoQuant Photonics North America Inc	619	Warner Instruments	445
		PreciPoint	532	Peptides	
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		Scientifica Ltd	710	GenScript USA Inc	720
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Sapidyne Instruments	533	Postnova Analytics	113	Sapidyne Instruments	533
Phospholipids		Publications		Software	
Avanti Polar Lipids Inc	408	AIP Publishing, LLC	208	ALVEOLE	119
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ASI/Applied Scientific Instrumentation	441	The Physiological Society	218	Solid State Lasers	
Mad City Labs Inc	418	Quartz Crystal Microbalance		Newport Corporation	332
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Piezoconcept	313	Reagents		Aviv Biomedical Inc	310
Piezo Scanning Stages		ALVEOLE	119	Edinburgh Instruments	701
ASI/Applied Scientific Instrumentation	441	Cedarlane	700	HORIBA Scientific	401
Mad City Labs Inc	418	GenScript USA Inc	720	JASCO	746
PI (Physik Instrumente) L.P. Piezo Nano Positioning	702	Molecular Devices LLC	501	Quantum Northwest Inc	618
Piezoconcept	313	Peptides International	227	Spectrometers	
Piezo Stages		SB Drug Discovery	631	Aviv Biomedical Inc	310
ASI/Applied Scientific Instrumentation	441	Recording Chambers		BioLogic USA	421
Mad City Labs Inc	418	ALA Scientific Instruments	521	Edinburgh Instruments	701
PI (Physik Instrumente) L.P. Piezo Nano Positioning	702	Warner Instruments	445	Hamamatsu Corporation	525
Piezoconcept	313	Rheometers/Viscometers		Newport Corporation	332
Sensapex OY	846	Anton Paar USA	808	PicoQuant Photonics North America Inc	619
Pipettes		Postnova Analytics	113	Quantum Northwest Inc	618
Electron Microscopy Sciences	645	TA Instruments	439	Zurich Instruments	626
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KinTek Corporation	430	Mad City Labs Inc	418	BioLogic USA	421
LUMICKS	802	Nanonics Imaging Ltd	840	Edinburgh Instruments	701
Malvern Instruments Ltd	609	Park Systems Inc	505	JASCO	746
Postnova Analytics	113	Scientific CMOS Cameras		Olis Inc	709
Reichert Technologies - Life Sciences	708	Andor Technology	612	Quantum Northwest Inc	618
Sapidyne Instruments	533	Hamamatsu Corporation	525	Renishaw Inc	511
TA Instruments	439	Oxford Nanoimaging Ltd	705	Spectroscopy Accessories	
Protein Expression		PCO-TECH Inc	308	Agilent Technologies	324
Anatrace Products LLC	312	Photometrics	419	HORIBA Scientific	401
GenScript USA Inc	720	SciMeasure	437	Newport Corporation	332
SB Drug Discovery	631	Screening, High-Throughput		Quantum Northwest Inc	618
Protein Purification Systems		AAT Bioquest Inc	319	Renishaw Inc	511
Anatrace Products LLC	312	Charles River	625	Sphingolipids	
Pressure Biosciences Inc	331	Finger Lakes Instrumentation	627	Avanti Polar Lipids Inc	408
UVP LLC	604	Fluxion Biosciences	724	Larodan	520
		Hinds Instruments	509	Matreya LLC	219
		Multi Channel Systems	545	Stepper Technology	
		Nanon Technologies	405	Siskiyou Corporation	309
		Nikon Instruments Inc	431	Sterols	
		Reichert Technologies - Life Sciences	708	Avanti Polar Lipids Inc	408
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Warner Instruments	445	Nanonics Imaging Ltd	840	Asylum Research, an Oxford Instruments Company	608	
Stimulators		Reichert Technologies - Life Sciences		708	SciMeasure	437
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Pacer Scientific Stimulators	531	Edinburgh Instruments	701	Agilent Technologies	324	
Aurora Scientific Inc	646	HORIBA Scientific	401	BioLogic USA	421	
Warner Instruments	445	PicoQuant Photonics North America Inc	619	Olis Inc	709	
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npi electronic GmbH	519	Aurora Scientific Inc	646	Alembic Instruments, Inc.	713	
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JASCO	746	Warner Instruments	445	Elements SRL	613	
KinTek Corporation	430	Tensiometers		Fluxion Biosciences	724	
Olis Inc	709	Biolin Scientific	510	HEKA Elektronik	544	
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Peptides International	227	Tomocube Inc	311	Nanon Technologies	405	
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89 North	524	Agilent Technologies	324	Sutter Instrument	436	
Andor Technology	612	Aviv Biomedical Inc	310	X-ray Diffraction Equipment		
Bruker Corporation	601, 600	Beckman Coulter Life Sciences	101	Anton Paar USA	808	
Carl Zeiss Microscopy LLC	800	BioLogic USA	421	X-ray Imaging Equipment		
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Laboratory for Fluorescence Dynamics	304	HORIBA Scientific	401	Zeta Potential		
LUMICKS	802	JASCO	746	Anton Paar USA	808	
Mad City Labs Inc	418	Olis Inc	709	Malvern Instruments Ltd	609	
Nikon Instruments Inc	431	Quantum Northwest Inc	618	Postnova Analytics	113	
Oxford Nanoimaging Ltd	705	TOPTICA Photonics Inc	712	Wyatt Technology Corporation	513	
Piezoconcept	313	Vibration Isolation Systems				
SciMeasure	437	Electron Microscopy Sciences	645			
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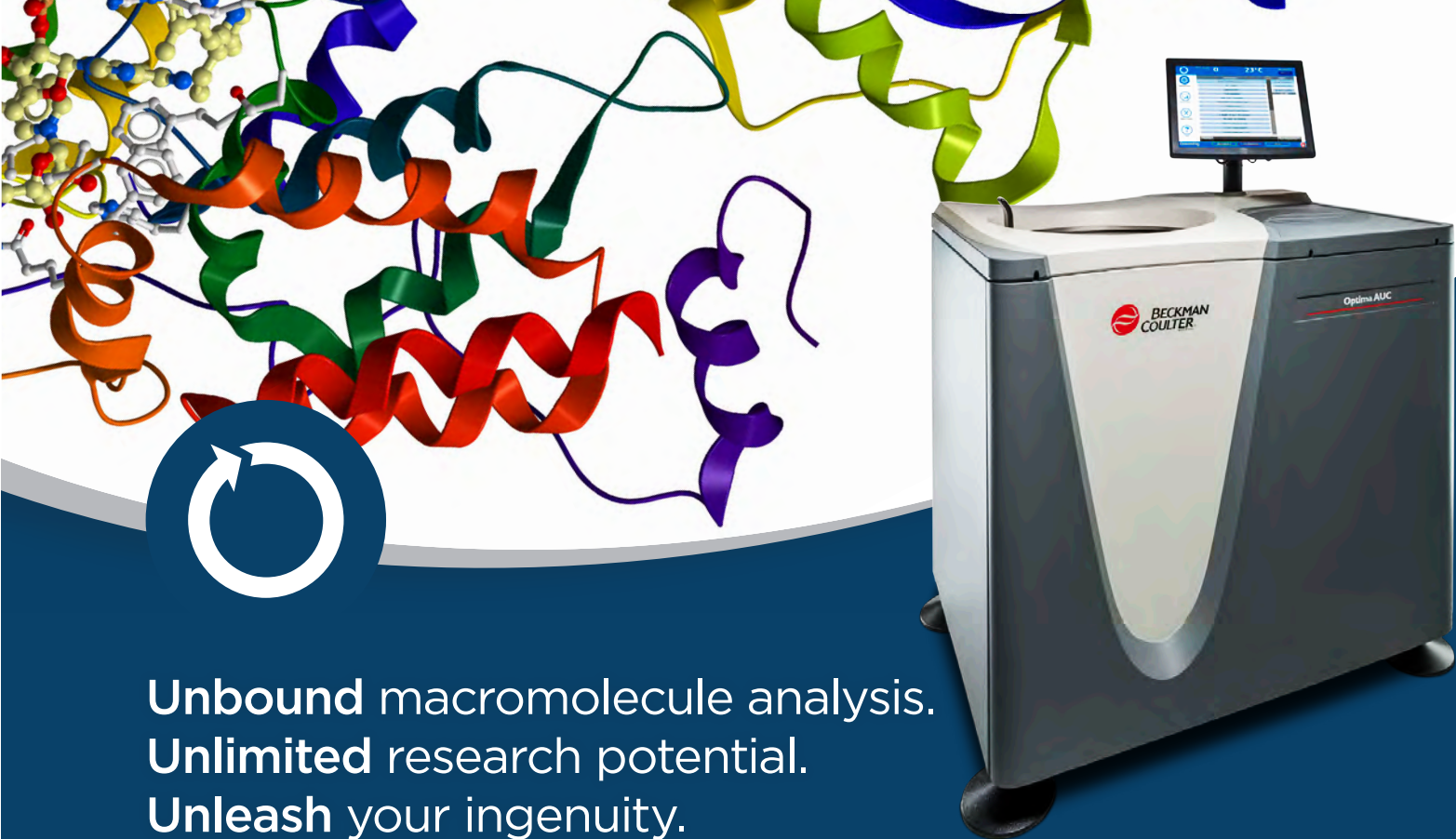
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- Heterogeneity (aggregation)

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Biophysical Society

2017 Summer Research Program in Biophysics

May 9 – July 28, 2017 | University of North Carolina at Chapel Hill

Apply Today!

**Priority Application Deadline:
February 22, 2017**

Interested in interdisciplinary science? Want to work in the fast growing area of biomedical research? Looking to learn new techniques through hands-on lab experience this summer? If so, then check out the Biophysical Society's Summer Research Program in Biophysics, an 11-week scholarship program hosted by the University of North Carolina at Chapel Hill that introduces underrepresented* students to the field of biophysics. The program includes lectures, seminars, lab work, team-building activities and field trips. The Summer Research Program is designed to reflect a graduate-level research program and prepare students for the next step in their careers.

All tuition and fees during the program are covered. Participants also receive travel assistance, and a **stipend totaling \$4,480** for meals and living expenses throughout the summer.

Program includes:

- Lectures with UNC faculty members and seminars with leading scientists representing graduate programs from across the country
- Mentored research experience
- Team-building activities and field trips
- Professional Development
- GRE & MCAT Preparation
- Numerous networking opportunities

Prerequisites:

- Studying a quantitative science: chemistry, physics, biochemistry, engineering, and/or computer science (required)
- 2 semesters of biology (preferred)
- 2 semesters of calculus-level physics (preferred)
- 3.0 cumulative or higher GPA in science courses (preferred)
- US citizen or permanent resident (required)

See what past students have to say about the Summer Course!

"...this has been the most useful and wonderful summer of my college career. Not only have I learned academically, I have built multiple bridges that can only benefit me in the future."

"The BPS summer program was an incredible opportunity that allowed me to grow as a scientist, student, and person. I gained critical thinking skills, mastered new techniques, and developed relationships with peers and professors that have continued to benefit me since the program."

"I learned new lab techniques as well as worked on the project independently. I was able to complete my own experiments and when I had questions or hit a snag, my mentor was available to help."

To apply and for more information visit the program webpage at www.biophysics.org.

For questions, email Daniel McNulty at dmcnulty@biophysics.org, or call 240-290-5611.

*Financially disadvantaged individuals, students with disabilities, and individuals who have been found to be underrepresented in biomedical or behavioral research are eligible to apply. Nationally, these individuals include, but are not limited to: African Americans, Hispanic Americans, Native Americans/Alaska Natives who maintain tribal affiliation or community attachment, Hawaiian Natives and natives of the US Pacific Islands. Individuals with disabilities are defined as those with a physical or mental impairment that substantially limits one or more major life activities.

The Biophysical Society Summer Course in Biophysics: Case Studies in the Physics of Life is funded by The National Institute of General Medical Sciences, National Institutes of Health. [2 T36GM075791]



62nd Biophysical Society Annual Meeting

SAN FRANCISCO, CALIFORNIA • FEBRUARY 17–21, 2018

National Lecturer:
Jennifer Doudna
University of California, Berkeley



biophysics.org/2018meeting

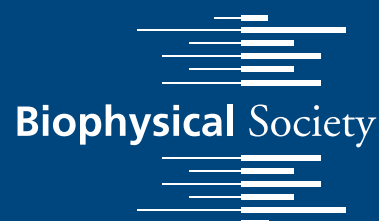
BPS Membership Can Help You Advance Your Career

Not a member yet? Or do you know colleagues who are not BPS members yet? Encourage them to join BPS and be among thousands of biophysicists like yourself who can take advantage of membership benefits that will help with career advancement.

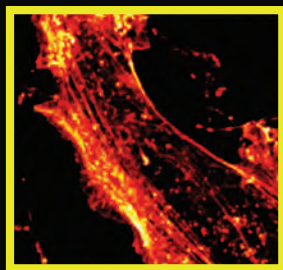
- Keep up with the latest research – with access to *Biophysical Journal* online – the premier journal of quantitative biology
- Get published for less - publish in the *Biophysical Journal* and pay reduced rates for pages and print color and receive free online color
- Save money on meetings – get significant member discounts to the BPS Annual Meeting – the largest meeting of biophysicists in the world
- Increase your career development skills – through webinars on timely and relevant career development topics
- Expand your network – connect with your peers at Society meetings including BPS Annual Meeting, Thematic Meetings, and local networking events
- Get financial assistance – apply for travel awards and bridging funds to attend the BPS Annual Meeting, or apply for funds to help support your local meetings and events
- Stay connected and informed – gain easy access to other members through the members-only directory and monthly newsletter
- Advance your career – through many career development resources, including the BPS Job Board, external career resources, and career expert columnist “Molly Cule”
- Make your voice count – join thousands of biophysicists across the globe speaking in one strong voice advocating for funding basic science in general and for biophysics specifically

Join today! Connect with your peers, stay up-date on the latest research and support the field of biophysics.

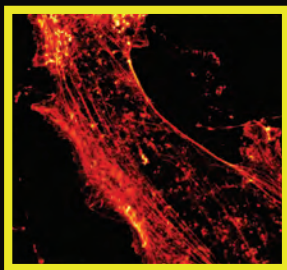
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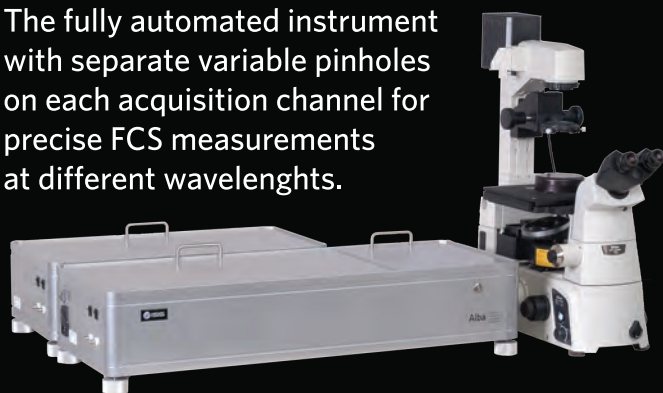


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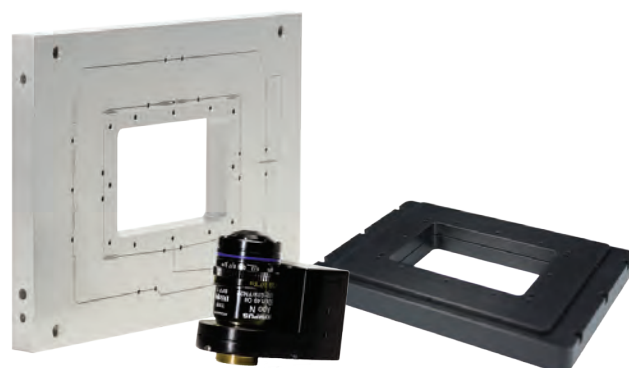


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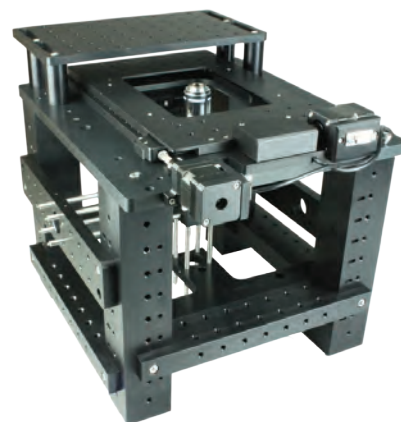
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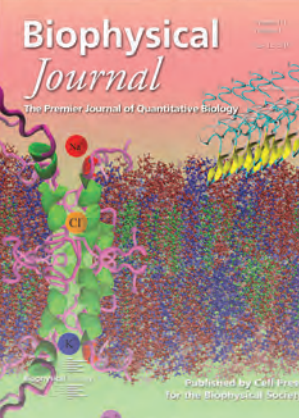
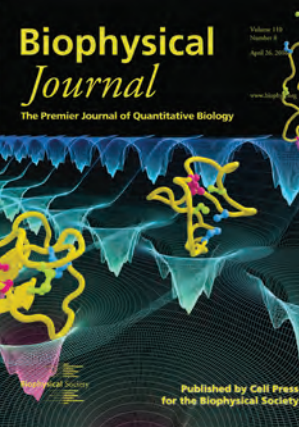
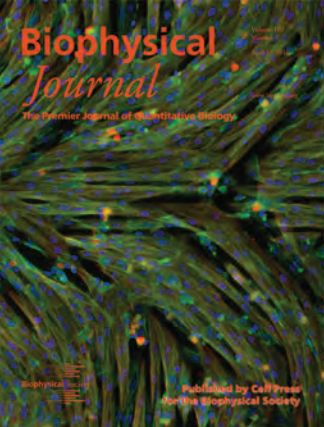
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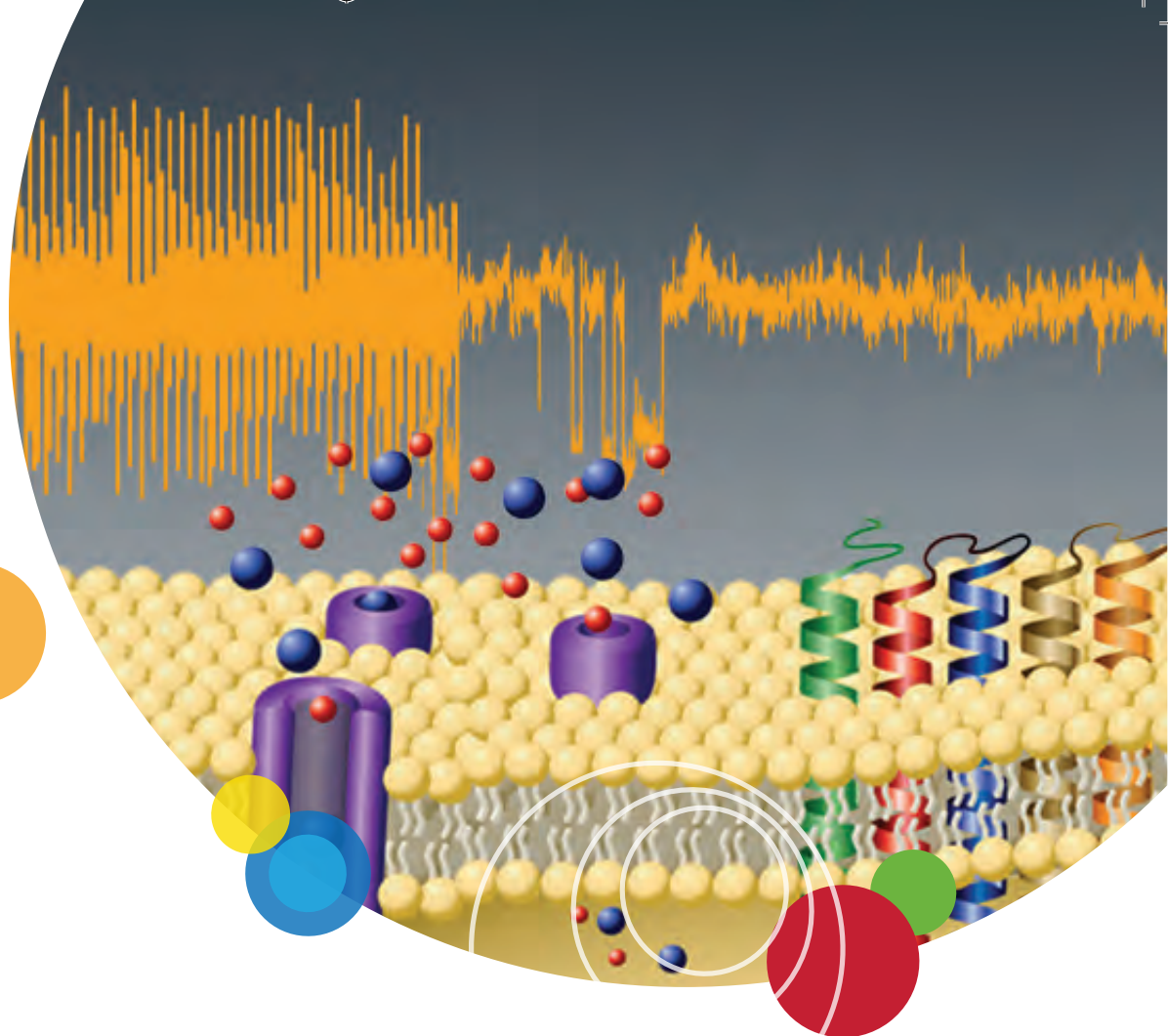


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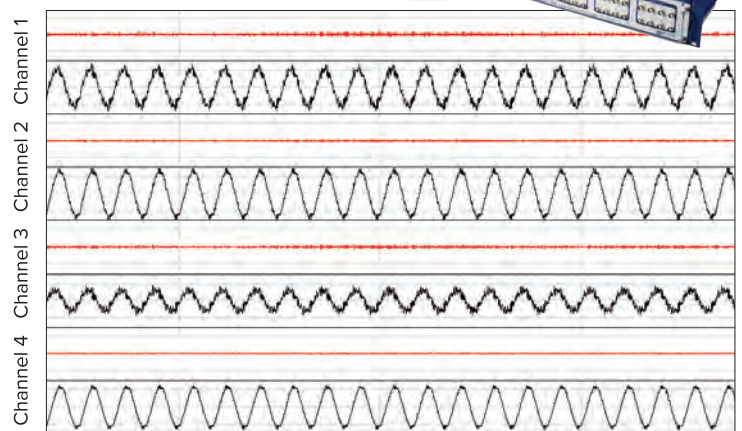




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