



ANNUAL MEETING

Biophysical Society

LOS ANGELES, CALIFORNIA • FEBRUARY 27 – MARCH 2, 2016

Program

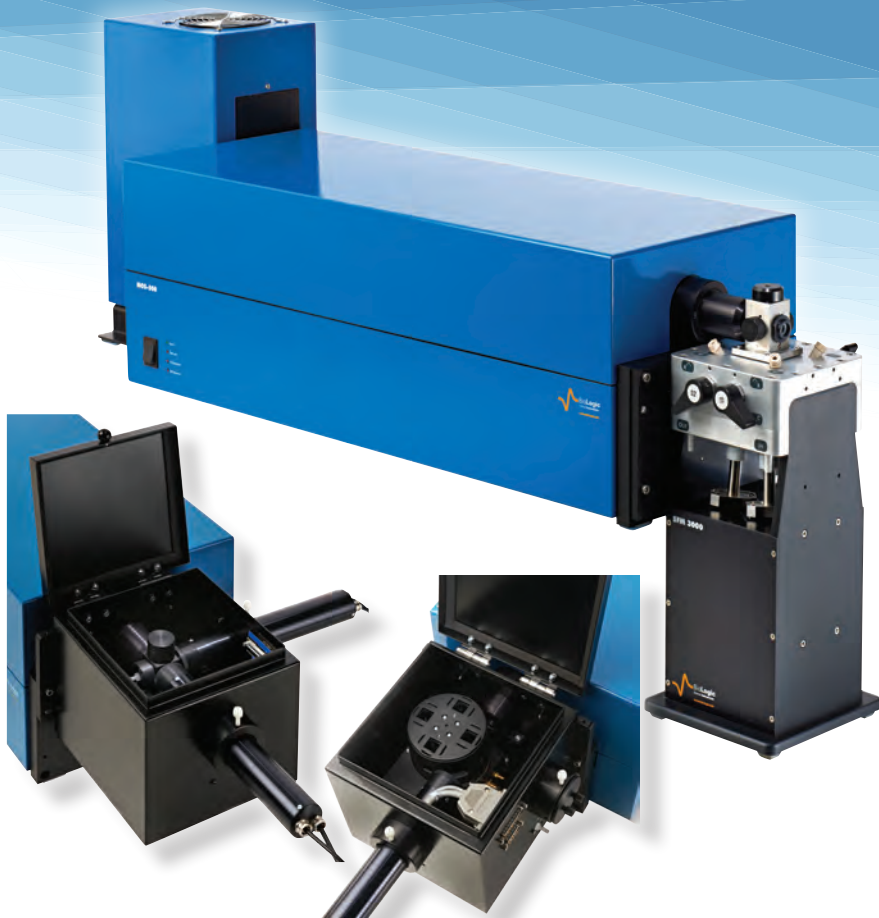
Biophysical Society



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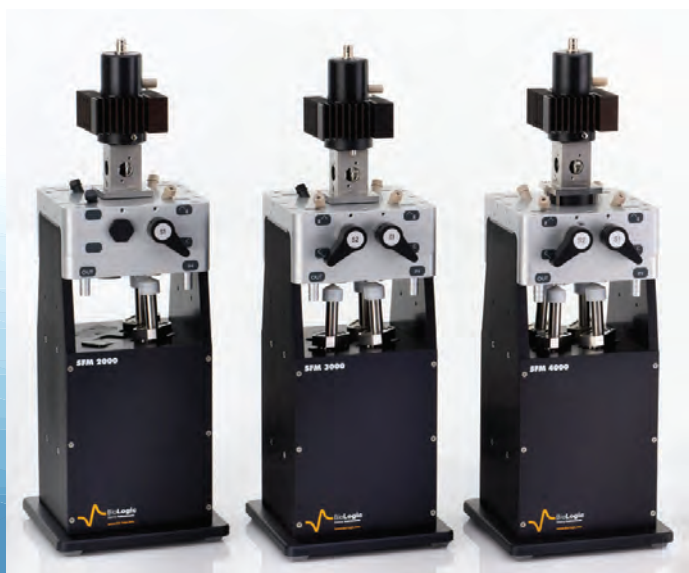
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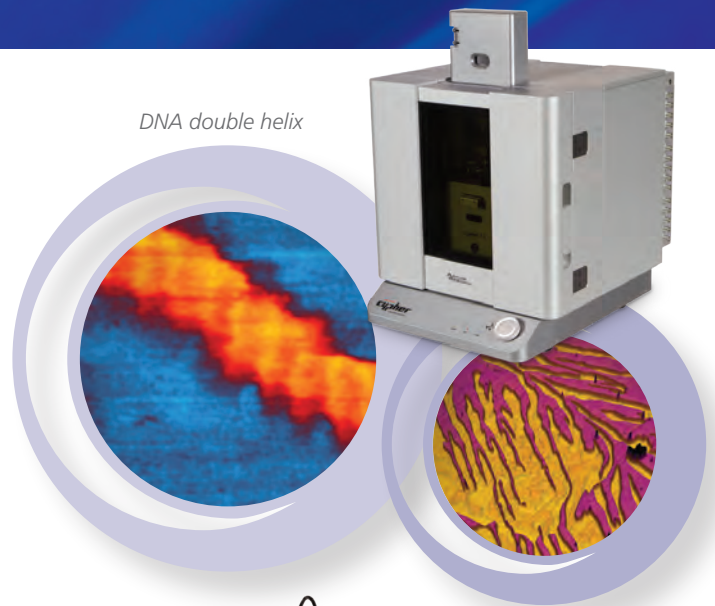
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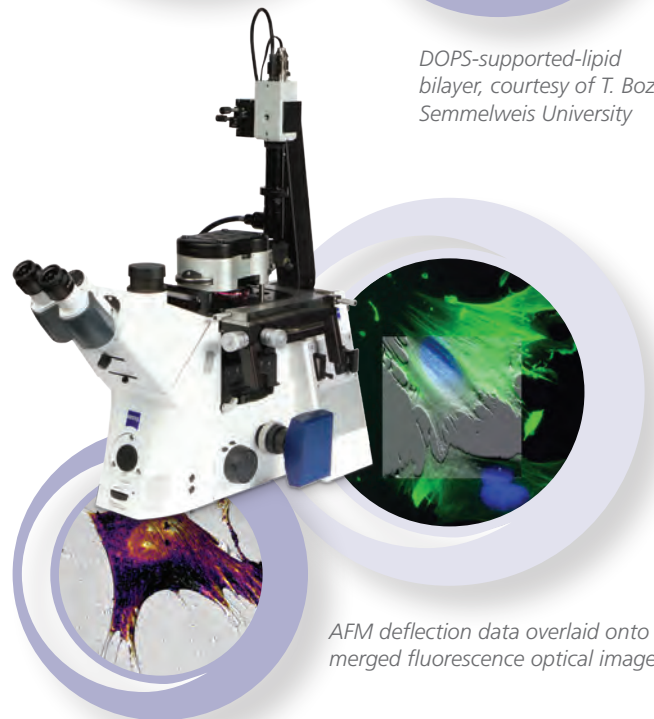
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DOPS-supported-lipid bilayer, courtesy of T. Bozó, Semmelweis University

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AFM deflection data overlaid onto merged fluorescence optical image

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Room 505, Monday, 11:30-1:00
"Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM"

Thematic Meetings 2016

Engineering Approaches to Biomolecular Motors:

From in vitro to in vivo

Vancouver, Canada

June 14-17, 2016



Liposomes, Exosomes, and Virosomes: From Modeling Complex Membrane Processes to Medical Diagnostics and Drug Delivery

Ascona, Switzerland


September 11-16, 2016



Mechanobiology of Disease

Singapore

September 27-30, 2016



Biophysics Week

March 7–11, 2016

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.

Mark your calendars!

Join your peers in celebrating this special week. There will be daily activities, news, publications, blogs, fun facts, and more! Below you will find the current list of special events, but keep an eye out for new upcoming events during this unique week dedicated to you and the field of biophysics.

- The Biophysics Bunch Google Hangout
- Article Series “The State of Biophysics”
- Briefing/Luncheon on Capitol Hill
- Cryo-EM Webinar
- Female and Minority Biophysicist Articles
- Educational and Career Materials
- Biophysics Bobbi/y Around the Globe

Create a Bobbi/y

Biophysics Bobbi/y is a way to engage with other scientists as well as non-scientists to increase visibility for the field of Biophysics, highlight those who conduct research in the field, and point out the many locations across the globe where Biophysics research is conducted.



Create your Bobbi/y Online at biophysics.org/BiophysicsWeek.

Be a part of #BiophysicsWeek.

Celebrate this week with others around the globe!

Visit biophysics.org/BiophysicsWeek
for more information.

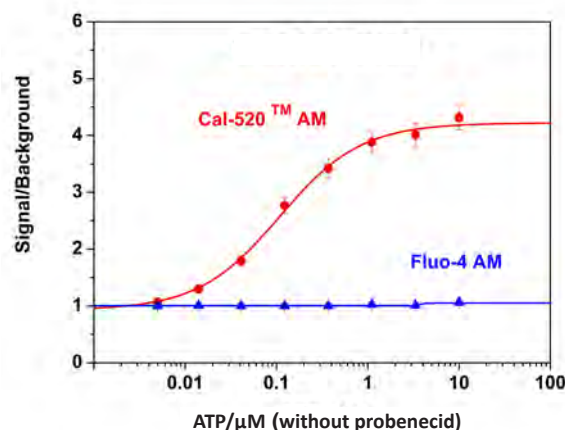
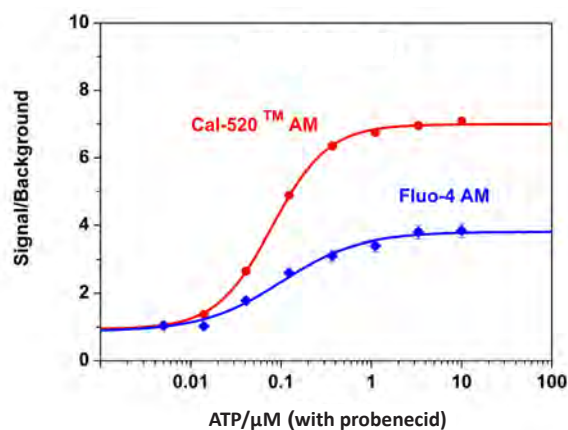
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[†]Prices are based on the websites of Sigma-Aldrich and Invitrogen as of December 2015 respectively, which may vary for different customers.

[‡]Special 50% introductory discount applied (Discount Code: DC50, valid until 12/31/2016).



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20512	Cal-590™ AM	1 mg	573	588	561
20532	Cal-630™ AM	1 mg	608	626	792
20550	Fluo-4 AM	1 mg	494	516	345
21080	Fluo-8® AM	1 mg	494	517	389

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National Lecturer

David E. Shaw

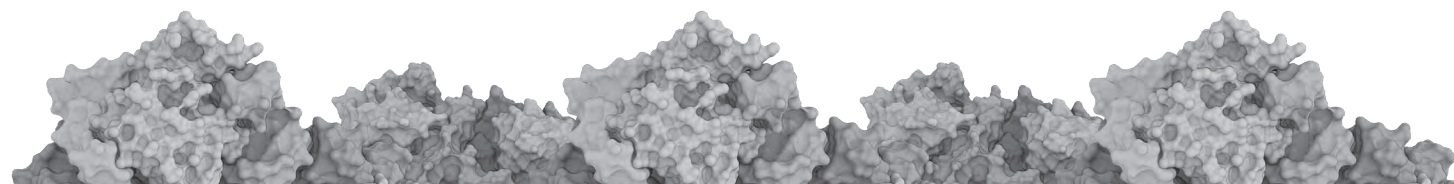
D.E. Shaw Research

Molecular Movies: Feature-Length Simulations of Protein Dynamics

Monday, February 29, 2016, 8:00 PM, Los Angeles Convention Center

About the Molecule

The image used on the cover and throughout the meeting depicts active and inactive structures of the epidermal growth factor receptor (EGFR) within its membrane environment. EGFR plays a central role in regulating cell growth and survival, and in the development of many forms of cancer.



List of Advertisers in the 2016 Annual Meeting Program:

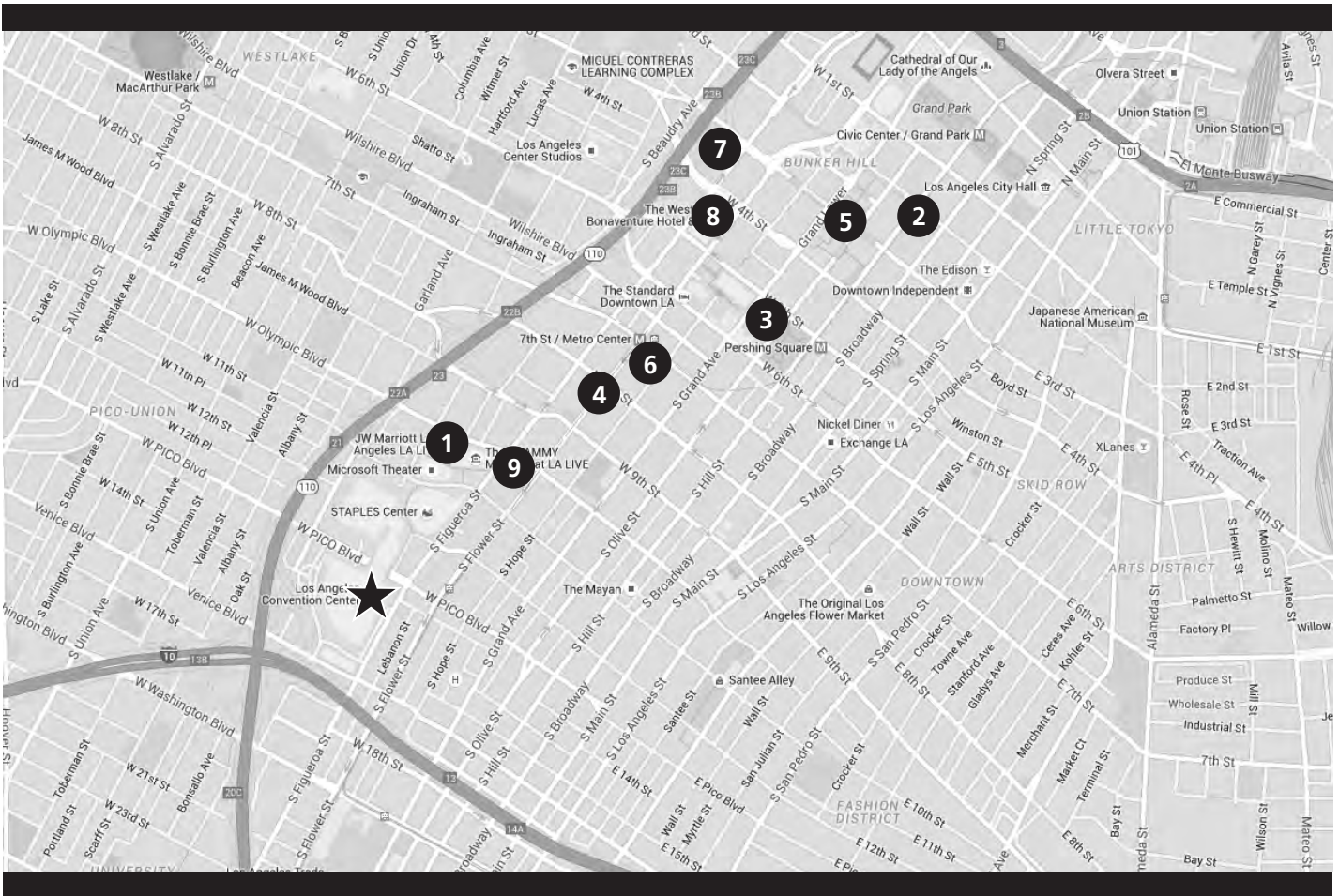
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The Biophysical Society would like to thank the following companies for their generous support of the Annual Meeting:

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As of January 19, 2016

Hotel Map



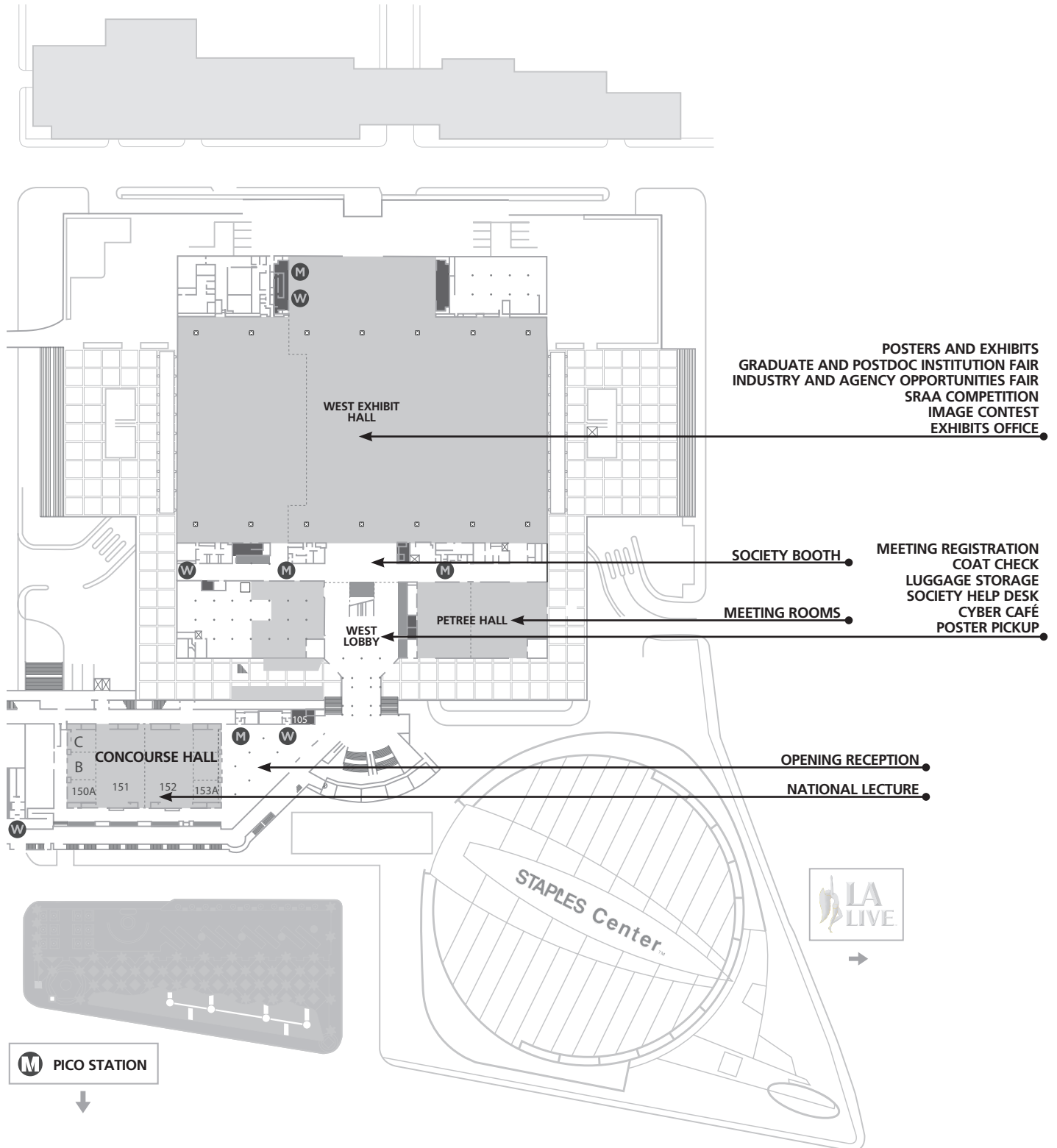
★ LOS ANGELES CONVENTION CENTER

HEADQUARTERS HOTEL

- | | | | |
|---|--|---|-----------------------------------|
| 1 | JW MARRIOTT HOTEL LOS ANGELES AT LA LIVE | 6 | SHERATON LOS ANGELES DOWNTOWN |
| 2 | KAWADA HOTEL | 7 | THE LA HOTEL DOWNTOWN |
| 3 | MILLENNIUM BILTMORE HOTEL | 8 | WESTIN BONAVENTURE HOTEL & SUITES |
| 4 | O HOTEL | 9 | LUXE HOTEL |
| 5 | OMNI LOS ANGELES HOTEL AT CALIFORNIA PLAZA | | |

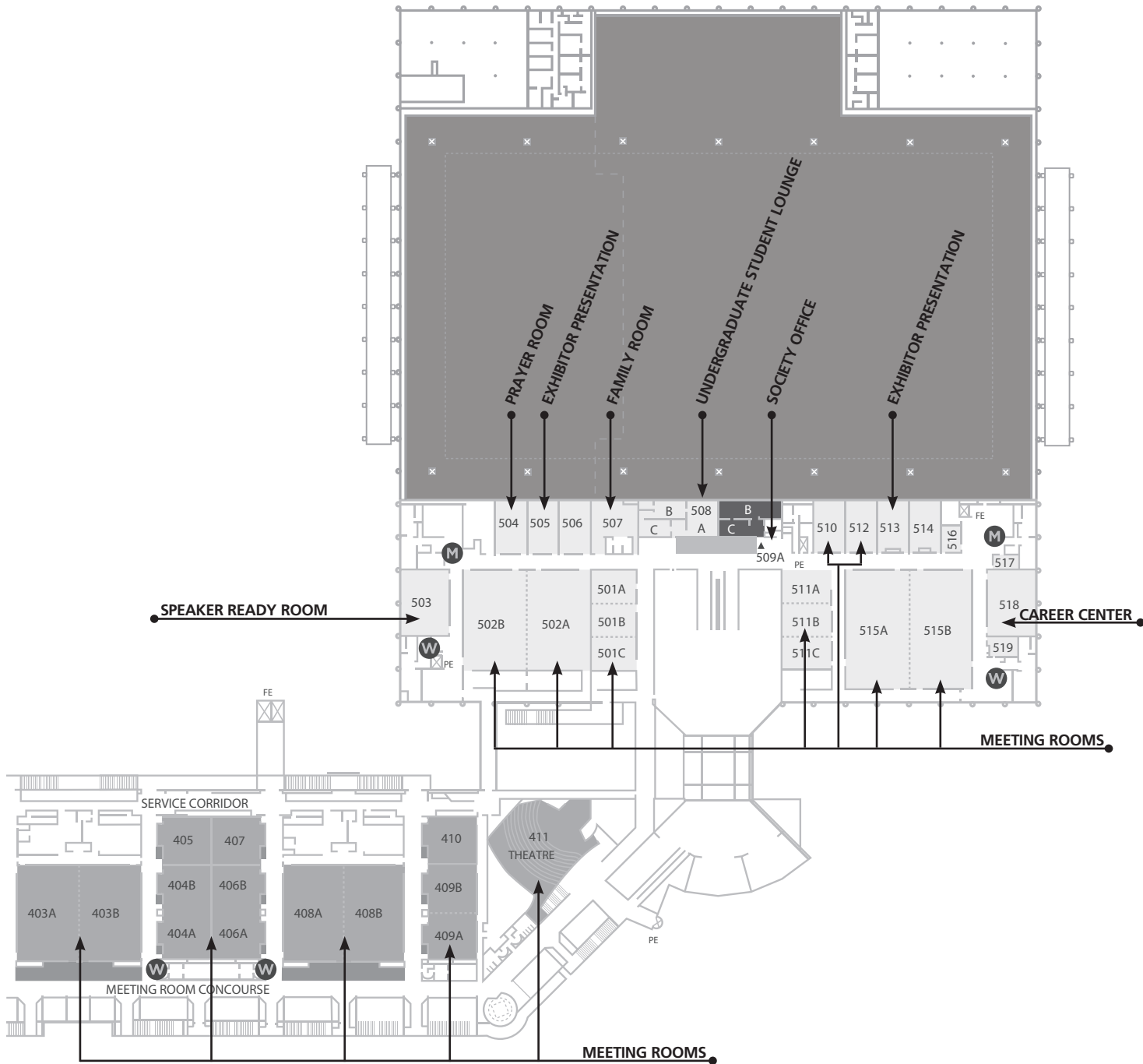
Los Angeles Convention Center Facilities

Level 1



Los Angeles Convention Center Facilities

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.

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Term Ending 2018

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General Information

All functions will be held in the *Los Angeles 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 the West Lobby. 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 First Republic Bank, 888 S. Figueroa Street #100, Los Angeles, CA 90017.

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

ATM is open 24 hours.

ATMs are also available in the Los Angeles Convention Center in the Concourse Corridor as well as in West Hall.

Business Center, Concourse Hall

The Los Angeles Convention Center provides a full service business center for the convenience of attendees and exhibitors. Services include photocopying, faxing, computer work stations, and printing services. Shipping is provided through UPS. The business center is located in the Concourse Hall, which joins the West Hall and South Hall. To contact the business center, call (626) 744-1333 or email rkyle@iqcopy.com.

Saturday – Wednesday	8:30 AM–5:00 PM
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Career Center, Room 518

Services are available for both those seeking a position and employers with positions to fill. Please note, the career center is the only place to post job openings. Unauthorized notices placed elsewhere in the Los Angeles 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 509A, or at the Society Help Desk located at registration in the West Lobby.

Code of Conduct

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

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

Coat Check/Luggage Storage, West Lobby

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 Los Angeles? 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, West Hall

The Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of January 15, 2016 can be found beginning on page 165. Please see Addendum for those registered after January 15, 2016.

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 company's products and services.

Family Room, Room 507

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, Outside Petree Hall

In case of medical emergency, dial x5133 from any house phone or 213-765-4605 from a cell phone. The First Aid Room is located outside of Petree Hall. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.

Saturday, February 27	8:00 AM–6:30 PM
Sunday, February 28	7:30 AM–6:30 PM
Monday, February 29	7:30 AM–9:00 PM
Tuesday, March 1	7:30 AM–6:30 PM
Wednesday, March 2	7:30 AM–9:00 PM

Hotel Telephone Numbers

JW Marriott.....	213-765-8600
Kawada Hotel	213-621-4455
Luxe Hotel.....	213-743-7658
Millennium Biltmore	213-624-1011
O Hotel.....	213-623-9904
Omni Los Angeles.....	213-617-3300
Sheraton Los Angeles.....	213-488-3500
The L.A. Hotel Downtown.....	213-617-1133
Westin Bonaventure Hotel & Suites.....	213-624-1000

Individuals Requiring Assistance

Attendees requiring special assistance during the meeting should visit the Society Meeting Office in room 509A of the Los Angeles Convention Center, or call 213-741-1151. 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 Los Angeles Convention Center.

In addition, the Biophysical Society Cyber Cafe is located in the West Lobby 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	8:00 AM–12:30 PM

Mobile App and Desktop Planner

The Biophysical Society's mobile application is available for download in the "App Store," "Google Play," and as an HTML 5 application for all other devices. You can view/create schedules, view abstracts, and interact virtually with other attendees when using the app and sync it with the desktop planner.

Parking

The Los Angeles Convention Center includes a parking facility for up to 5,600 vehicles. There are garages at the West and South Halls, as well as parking on Bond Street. The Convention Center also offers parking lot C that is off of L.A. Live Way.

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. Recordings of any kind (audio taping, videotaping, camera or cell phones) in the session rooms, Exhibit Hall, and poster areas are strictly prohibited, unless accompanied by a member of the Society staff. 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 Los Angeles Convention Center in the West Lobby near the Exhibit Hall during the following hours:

Saturday	3:00 PM–7:00 PM
Sunday–Tuesday	8:00 AM–4:00 PM
Wednesday	7:00 AM–9:00 AM

Poster Sessions, West Exhibit Hall

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 1:45–2:45 PM (10:30–11:30 AM on Wednesday); even-numbered posters should present from 2:45–3:45 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 1, 2015, are scheduled each day, Sunday-Wednesday, during the regular poster sessions. These board assignments will begin with "LB."

Posters are to be removed by 5:00 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.

Prayer Room, Room 504

A room will be available for worship or other personal 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 27, through Tuesday, March 1, to collect tickets. The more booths you visit, the more chances to win. Drop the raffle tickets at the Society Booth, in the West Lobby, by 3:00 PM Tuesday, March 1. 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, West Lobby

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

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 #bps16
Facebook: www.facebook.com/biophysicalsociety
Blog: biophysicalsociety.wordpress.com
Instagram: biophysicalsociety

Society Meeting Office, Room 509A

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 503

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 audio/visual 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. Audio-visual 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 Los Angeles 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

Taxis will be available from the West Lobby at the Los Angeles Convention Center.

United Taxi.....	323-934-6700
LA Yellow Cab	310-424-2222
Beverly Hills Cab Co.....	310-205-0252
LA Taxi.....	310-598-0665

Undergraduate Student Lounge, Room 508ABC

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

Biophysical Society

2016 Thematic Meetings

Engineering Approaches to Biomolecular Motors:

From in vitro to in vivo

Vancouver, Canada

June 14–17

Liposomes, Exosomes, and Virosomes:

From Modeling Complex Membrane Processes to Medical Diagnostics and Drug Delivery

Ascona, Switzerland

September 11–16

Mechanobiology of Disease

Singapore

September 27–30

Mark Your Calendars!

Future BPS Annual Meetings

61st Annual Meeting

February 11–15, 2017
New Orleans, Louisiana

62nd Annual Meeting

February 17–21, 2018
San Francisco, California

63rd Annual Meeting

March 2–6, 2019
Baltimore, Maryland

Committee Meetings

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

Friday, February 26

3:00 PM–4:30 PM

New Council Orientation

J.W. Marriott, Plaza III

5:00 PM–9:00 PM

Joint Council Reception, Dinner, and Meeting

J.W. Marriott, Plaza I & II

Saturday, February 27

8:30 AM–11:00 AM

Joint Council Meeting (continued)

J.W. Marriott, Plaza I & II

Sunday, February 28

8:30 AM–10:30 AM

CID Committee Meeting

Room 506

10:30 AM–12:00 PM

International Relations Committee Meeting

Room 410

12:15 PM–2:15 PM

Public Affairs Committee Meeting

Room 506

3:30 PM–5:00 PM

Early Careers Committee Meeting

Room 506

6:00 PM–10:00 PM

Biophysical Journal Editorial Board Dinner

LA City Club

Monday, February 29

8:30 AM–10:30 AM

CPOW Committee Meeting

Room 506

3:00 PM–5:00 PM

Membership Committee Meeting

Room 506

Tuesday, March 1

8:00 AM–9:00 AM

Biophysical Society Business Meeting

Room 404AB

9:00 AM–10:30 AM

Subgroup Chairs Meeting

Room 510

3:00 PM–5:00 PM

Education Committee Meeting

Room 506

6:00 PM–10:00 PM

Publications Committee Meeting

J.W. Marriott, Olympic II

Wednesday, March 2

8:00 AM–11:00 AM

New Council Meeting

Room 510

The Biophysical Society would like to thank Society members who serve on Council or Committee 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 28, to Wednesday, March 2, in Room 508ABC.

Sessions in italics will be held in Career Center, Room 518.

Saturday, February 27, 2016

3:00 PM–4:00 PM *Networking: Optimizing Your Time at BPS 2016*
 4:00 PM–5:00 PM Undergraduate Mixer and Poster Fest

One-on-One Resume and Career Counseling*

1:00 PM–2:40 PM • 4:30 PM–5:30 PM

Sunday, February 28, 2016

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 *Leveraging Social Media for Networking and Career Advancement*
 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 *Creating and Using an Effective CV/Résumé*
 1:00 PM–2:30 PM The World Outside the Lab: Many Ways to Use Your PhD Skills in Industry
 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 *Networking for Nerds*
 2:30 PM–4:00 PM Transparency, Reproducibility, and the Progress of Science
 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

One-on-One Resume and Career Counseling*

8:30 AM–1:00 PM • 2:30 PM–6:00 PM

Monday, February 29, 2016

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 *Leveraging Social Media for Networking and Career Advancement*
 1:00 PM–3:00 PM NSF Grant Writing Workshop
 1:30 PM–3:00 PM Biophysics 101: Forster Resonance Energy Transfer
 1:30 PM–3:00 PM Industry Panel
 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 *Selling Yourself to the Life Sciences Industry*
 2:30 PM–4:00 PM Hiring, Firing, and Beyond: How to be an Effective Supervisor
 2:30 PM–4:00 PM The Science of Hollywood
 4:00 PM–5:00 PM *Successfully Navigating the International Job Search*

One-on-One Resume and Career Counseling*

8:30 AM–10:00 AM • 11:30 AM–12:30 PM • 2:00 PM–5:20 PM

Tuesday, March 1, 2016

8:00 AM – 8:30 AM *Career Q&A with Joe Tringali*
 9:30 AM – 10:30 AM *Career Planning and Job Searching for Science Professionals: Academic Opportunities*
 12:00 NOON–1:30 PM Research Programs at PUIs: Finding, Establishing, and Maintaining a Program
 12:00 NOON–2:00 PM Postdoc to Faculty Q&A: Transitions Forum and Luncheon**
 1:00 PM–3:00 PM Industry and Agency Opportunities Fair
 1:00 PM–3:00 PM GMOs, Severe Weather, and Public Opinion
 2:30 PM–3:30 PM *Creating and Using an Effective CV/Résumé*
 2:30 PM–4:00 PM Postdoc to Faculty: Setting Up a Lab
 3:00 PM–4:00 PM The Committee for Inclusion and Diversity Networking Event: Resources and Opportunities

One-on-One Resume and Career Counseling*

8:00 AM–9:00 AM • 11:00 AM–1:00 PM • 4:00 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 27, in the Career Center, Room 518. 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 Center Information

Room 518

Alaina G. Levine is an award-winning entrepreneur, science journalist, STEM careers consultant, professional speaker and corporate comedian. Her book, *Networking for Nerds*, was published by Wiley in 2015. As President of Quantum Success Solutions, she has been advising scientists and engineers about their careers for over 15 years. She has given over 600 workshops for clients in the US, Europe, Canada, & Mexico, and is the author of over 250 articles in publications like Science, Nature, World Economic Forum, Smithsonian, Scientific American & IEEE Spectrum. As a science careers journalist, Levine researches employment trends in STEM fields and delivers up-to-date information about career issues from interviews with hiring managers, decision-makers, and recruiters in myriad industries. Levine has also served as a Contributor to National Geographic and currently pens career columns for *Physics Today* and *APS News*.

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 highly ethical and successful contingency recruiting firm that serves the Boston biotechnology community. He works with several clients to help them fill difficult staffing needs in the area 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 for the attending scientific community.

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 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

Travel Grant Awardees

EDUCATION

Sunday

Shawn M. Costello, Johns Hopkins University
305-Pos, B85
A COMPUTATIONAL MODEL FOR MEMBRANE PROTEIN FLUX ACROSS THE BACTERIAL PERIPLASM.

Benjamin Drum, University of Washington
653-Pos, B433
OXIDATIVE STRESS IN MYOCARDIAL INFARCTION DISRUPTS MICROTUBULE TRAFFICKING, REDUCING TRANSIENT OUTWARD CURRENT DENSITY.

Xiao Fu, National Institute of Biomedical Imaging and Bioengineering, NIH
854-Pos, B634
BIO-AFM OF CANCER CELLS AND MULTIFUNCTIONAL THERANOSTICS.

Margaret Hauser, University of California, Berkeley
778-Pos, B558
GRAPHENE-ENABLED ELECTRON MICROSCOPY AND CORRELATED SUPER-RESOLUTION MICROSCOPY OF WET CELLS.

Marilyn E. Holt, Vanderbilt University
117-Plat
CRACKING OPEN A MOLECULAR CALCULATOR: DNA CHARGE TRANSPORT AND PRIMASE.

Zachary I. Imam, University of Texas, Austin
368-Pos, B148
STERIC PRESSURE AMONG MEMBRANE-BOUND POLYMERS OPPOSES LIPID PHASE SEPARATION.

Zeinab Jahed, University of California, Berkeley
133-Plat
MOLECULAR MECHANISMS OF MECHANOTRANSDUCTION THROUGH LINC COMPLEXES.

Agnieszka A. Kendrick, University of Colorado, Denver
737-Pos, B517
CD147 REGULATES CELL METABOLISM IN PANCREATIC CANCER VIA TARGETING OF MULTIPLE SMALL MOLECULE TRANSPORTERS TO THE CELL MEMBRANE.

Iga Kucharska, University of Virginia School of Medicine
315-Pos, B95
NMR SOLUTION STRUCTURE AND EXTRACELLULAR LOOP DYNAMICS OF THE OUTER MEMBRANE PROTEIN OPRG OF PSEUDOMONAS AERUGINOSA EXPLAIN TRANSPORT OF SMALL AMINO ACIDS.

Xubo Lin, University of Texas Medical School, Houston
370-Pos, B150
ORDER DIFFERENCES BETWEEN COEXISTING LIQUID PHASES DRIVEN BY LIPID UNSATURATION DETERMINE PHASE SEPARATION IN BIOMIMETIC MEMBRANES.

Drew Marquardt, University of Graz, Austria
96-Plat
A DEMONSTRATION OF LIPID FLIP-FLIP IN FREE-FLOATING LIPOSOMES.

Aiden M. McKenzie, James Madison University
102-Plat
ULTRAFAST LIMITS OF PHOTO-INDUCED ELECTRON TRANSFER RATES IN PPCA, A MULTI-HEME C-TYPE CYTOCHROME.

Eshan Mitra, Cornell University
449-Pos, B229
INVESTIGATING MOLECULAR MECHANISMS OF IGE-MEDIATED SIGNALING AT SUPER RESOLUTION.

Kelly O'Conner, The College of New Jersey
739-Pos, B519
MAPPING NEURONAL CONNECTIVITY USING LASER PHOTOSTIMULATION AND CALCIUM IMAGING.

Mohan R. Pradhan, Bioinformatics Institute, A*STAR, Singapore
288-Pos, B68
DYNAMICS OF AGGREGATING MUTANTS OF THE P53 DNA BINDING DOMAIN REVEAL A NOVEL "DRUGGABLE" POCKET.

Scott Rayermann, University of Washington
386-Pos, B166
INVESTIGATING LARGE SCALE LIQUID-LIQUID PHASE SEPARATION IN A BIOLOGICAL MEMBRANE.

Hannah H. Tuson, University of Michigan
832-Pos, B612
SINGLE-MOLECULE FLUORESCENCE IMAGING REVEALS THE DYNAMICS OF STARCH CATABOLISM PROTEINS IN THE HUMAN MICROBIOME BACTERIUM BACTEROIDES THETAIOAOMICRON.

Michael P. Vigers, Montana State University
859-Pos, B639
CHARACTERIZING BIOFILM EXTRACELLULAR MATRICES WITH MECHANICAL MEASUREMENT TECHNIQUES.

Monday

David W. Baggett, University of Washington
1589-Pos, B566
RATIONAL METHODS TO PHARMACOLOGICALLY TARGET IDPS: DEVELOPING MODULATORS OF TAU AGGREGATION.

Mohammad Bonakdar, Virginia Tech
1640-Pos, B617
MONITORING LESION DEVELOPMENT DURING IRREVERSIBLE ELECTROPORATION TREATMENT USING ELECTRICAL IMPEDANCE SPECTROSCOPY.

Divya Duggal, University of North Texas Health Science Center
1457-Pos, B434
CONTRACTILE DIFFERENCES IN LEFT AND RIGHT VENTRICLES OF HEALTHY HUMAN HEARTS.

Andrew M. Fuchs, University of Wisconsin, Madison
1168-Pos, B145
NASCENT PROTEINS INTERACT WITH KEY REGIONS OF THE OUTER SURFACE OF THE RIBOSOME.

Leland B. Gee, University of California, Davis
1592-Pos, B569
A GATED SUBSTRATE CHANNEL REVEALED IN NITROGENASE THROUGH A COMBINED IR AND MOLECULAR DYNAMICS STUDY.

Bence Hegyi, University of California, Davis
1347-Pos, B324
CAMKII INHIBITOR KN-93 DIRECTLY BLOCKS IKR IN CARDIAC MYOCYTES.

Stephanie Irwin, University of Alberta
1143-Pos, B120
INFLUENCE OF FAMILIAL PARKINSON'S DISEASE MUTATIONS ON MITOCHONDRIAL LOCALIZATION AND SECONDARY STRUCTURE OF PINK1.

Pei-I Ku, University of Utah
1072-Pos, B49
REGULATION OF ALIX DURING EXOCYTIC VESICLE RELEASE AND ASSEMBLY OF ESCRT PROTEINS ON THE PLASMA MEMBRANE.

Jayson V. Lingan, University of Rochester Medical Center
1518-Pos, B495
PERMEABILITY TRANSITION PORE CLOSURE INCREASES MITOCHONDRIAL MATURATION AND MYOCYTE DIFFERENTIATION IN THE NEONATAL HEART.

William Marsiglia, New York University
1097-Pos, B74
NMR EXPERIMENTS ON WILD-TYPE AND MUTANT FIBROBLAST GROWTH FACTOR RECEPTOR KINASES REVEAL CONFORMATIONAL DYNAMICS ASSOCIATED WITH ENZYME ACTIVATION.

Favinn A. Maynard, University of Colorado, Denver
1258-Pos, B235
MECHANISM OF STRONG MEMBRANE BINDING BY SYNAPTOTAGMIN 7 C2A DOMAIN: INSIGHT FROM MUTATION AND LIPID COMPOSITION DEPENDENCE.

Joshua Mayourian, Icahn School of Medicine at Mount Sinai
1340-Pos, B317
MODELING ELECTROPHYSIOLOGICAL INTERACTIONS BETWEEN MESENCHYMAL STEM CELLS AND CARDIOMYOCYTES FOR IMPROVED CELL DELIVERY CARDIOTHERAPEUTICS.

Keith J. Mickolajczyk, Pennsylvania State University
961-Plat
KINETICS OF NUCLEOTIDE-DEPENDENT STRUCTURAL TRANSITIONS IN THE KINESIN-1 HYDROLYSIS CYCLE.

Rami Musharrafieh, University of Arizona
1279-Pos, B256
COMPUTATIONAL AND EXPERIMENTAL STUDIES OF LIPID-PROTEIN INTERACTIONS IN BIOMEMBRANE FUNCTION.

Premila Samuel, Rice University
1043-Pos, B20
AN IN VITRO INVESTIGATION OF GLOBIN FOLDING AND EXPRESSION.

Caitlin E. Scott, University of Kentucky
1039-Pos, B16
MOLECULAR DYNAMICS STUDY OF DIVALENT ION COORDINATION IN EF HAND PROTEINS.

M. de la Encarnacion Solesio Torregrosa, New York University College of Dentistry
1524-Pos, B501
CONTRIBUTION OF INORGANIC POLYPHOSPHATE TOWARDS REGULATION OF MITOCHONDRIAL FREE CALCIUM.

Cholpon Tilegenova, Texas Tech University Health Sciences Center
1370-Pos, B347
ELUCIDATION OF MOLECULAR MECHANISM UNDERLYING KCSA'S HYSTERETIC GATING BEHAVIOR.

Yan Yan, Emory University
1173-Pos, B150
HU PROTEIN AND DNA SUPERCOILING DRAMATICALLY ENHANCE LAC-REPRESSOR-MEDIATED DNA LOOPING.

Fabio C. Zegarra, University of Houston
1051-Pos, B28
THE COMBINED EFFECT OF MACROMOLECULAR CROWDING AND CHEMICAL INTERFERENCE ON THE DYNAMICS OF APOAZURIN FOLDING.

Qiangjun Zhou, Stanford University
1561-Pos, B538
MOLECULAR MECHANISM OF THE SYNAPTOTAGMIN-SNARE COMPLEX THAT IS ESSENTIAL FOR SYNCHRONOUS SYNAPTIC NEUROTRANSMITTER RELEASE.

Tuesday

Sinan Can, University of California, Berkeley
2259-Pos, B403
KINESIN'S FRONT HEAD IS GATED BY THE BACKWARD ORIENTATION OF ITS NECK LINKER.

Irem Celen, University of Delaware
1727-Plat
MULTI-SCALE SPATIO-TEMPORAL DYNAMICS OF HISTONE MODIFICATIONS.

Robert E. del Carlo, University of Nevada School of Medicine
2161-Pos, B305
POINT-MUTATIONS IN SKELETAL MUSCLE VOLTAGE-GATED SODIUM CHANNELS CONFER RESISTANCE TO TETRODOTOXIN: BUT AT A COST?

Jeevan B. Gc, Florida International University
1862-Pos, B6
INTERDOMAIN INTERACTIONS AND THE MECHANISM OF STRUCTURAL TRANSFORMATION IN RFAH.

Nnanya U. Kalu, The Catholic University of America
2094-Pos, B238
DOES LIPID COMPOSITION REGULATE ANTHRAX TOXIN UPTAKE?

Minmin Luo, Louisiana State University School of Medicine and Health Sciences Center
2266-Pos, B410
TRAPPING THE TRANSITION STATE OF KINESIN-5 PRODUCES A DIFFERENT MULTIMOTOR FORCE OUTCOME THAN INHIBITING PRODUCT RELEASE.

Bhavik Nathwani, Dana-Farber Cancer Institute
2470-Pos, B614
MULTIPLEXED MECHANOCHEMISTRY ASSAY - A TOOL FOR
MULTIPLEXED SINGLE MOLECULE BOND RUPTURE FORCE STUDIES.

Piere Rodriguez-Aliaga, University of California, Berkeley
1928-Pos, B72
KEY ROLES OF TRANSLOCATING LOOPS IN THE MECHANOCHEMICAL
COUPLING AND POWER PRODUCTION OF A AAA⁺ PROTEASE
MACHINE.

Zackary N. Scholl, Duke University
1940-Pos, B84
DIRECT OBSERVATION OF MULTIMER STABILIZATION IN THE
MECHANICAL UNFOLDING PATHWAY OF A PROTEIN UNDERGOING
OLIGOMERIZATION.

Agila Somasundaram, NIH
2127-Pos, B271
INVESTIGATING PROTEIN DYNAMICS AT SITES OF EXOCYTOSIS IN LIVE
CELLS.

Stefford Todolli, Rutgers University
2000-Pos, B144
LINKER HISTONES AND THE DYNAMIC CHROMATIN FIBER.

Benjamin C. Walker, Indiana University
2272-Pos, B416
CHROMOKINESINS NOD AND KID USE ALTERNATIVE NUCLEOTIDE
MECHANISMS AND ONE-DIMENSIONAL DIFFUSION TO TARGET
MICROTUBULE PLUS ENDS.

Osman N Yogurtcu, Johns Hopkins University
1710-Plat
GOVERNING PRINCIPLES OF MULTIPROTEIN COMPLEX FORMATION
ON THE CELL MEMBRANES: AN INVESTIGATION USING SINGLE-
MOLECULE RESOLUTION SPATIO-TEMPORAL STOCHASTIC COMPUTER
SIMULATIONS AND ANALYTICAL CALCULATIONS.

Wednesday

Martina Audagnotto, École Polytechnique Fédérale de Lausanne
2700-Pos, B77
NEW INSIGHT INTO THE CATALYTIC AND INHIBITION MECHANISM OF
THE HUMAN ACYL PROTEIN THIOESTERASE.

Emily Bilyk, Saint Joseph's University
2870-Pos, B247
DETERMINING THE CQC-MEDIATED INTERACTIONS IN THE MUCIN 1
HOMODIMER.

Shelby E. Chastain, University of South Carolina
2721-Pos, B98
MULTI-TARGET THERAPEUTIC POTENTIAL OF GREEN TEA CATECHINS
AND BLACK TEA THEAFLAVINS TOWARD A β -INDUCED SIGNAL
PATHWAYS INVOLVED IN ALZHEIMER'S DISEASE.

Maryam Hashemi Shabestari, VU University, Amsterdam
2699-Pos, B76
THE ROLE OF PHOSPHORYLATION AND ACETYLATION OF TFAM IN DNA
BINDING REGULATION USING SINGLE-MOLECULE MANIPULATION AND
FLUORESCENCE MICROSCOPY.

Krishna Kanti Dey, Pennsylvania State University
2694-Pos, B71
IMPULSIVE ENZYMES: A NEW FORCE IN MECHANOBIOLOGY.

Ji Hoon Kim, Johns Hopkins University
2522-Plat
MECHANOBIOLOGY IN CELL-CELL FUSION: ROLES OF MYOSIN II AND
SPECTRIN IN MECHANOSENSING AND FORCE GENERATION DURING
CELL-CELL FUSION.

Agata K. Krenc, University of Chicago
3043-Pos, B420
FLUORESCENCE INTERFERENCE CONTRAST MICROSCOPY (FLIC) - A
NEW TOOL TO STUDY THE COLLECTIVE MOTOR DYNAMICS.

Yilai Li, University of Michigan
3192-Pos, B569
SUPER-RESOLUTION IMAGING OF DNA REPLICASOME DYNAMICS IN LIVE
BACILLUS SUBTILIS.

Yen-Liang Liu, University of Texas, Austin
3149-Pos, B526
DYNAMICS OF EGFR TRAFFICKING FROM MEMBRANE INTO DEEP
CYTOPLASM REVEALED BY A SPATIOTEMPORALLY MULTIPLEXED 3D
TRACKING MICROSCOPE.

Katarina Mackova, Slovak Academy of Sciences, Slovakia
2898-Pos, B275
POSTNATAL DEVELOPMENT OF CALCIUM SIGNALING IN RAT
CARDIOMYOCYTES.

Abhishek Mandal, University of Pittsburgh
2853-Pos, B230
TO UNFOLD OR NOT TO UNFOLD? STRUCTURAL INSIGHTS OF
PEROXIDASE-ACTIVE CARDIOLIPIN-BOUND CYTOCHROME C BY SOLID-
STATE NMR.

Sachin R. Natesh, University of Chicago
2729-Pos, B106
A β FIBRILS ACT AS AQUEOUS PORES: A MOLECULAR DYNAMICS
STUDY.

Kelly Njine Mouapi, University of Louisville
2706-Pos, B83
TRANSGLUTAMINASE FACTOR XIII CROSS-LINKS REACTIVE
GLUTAMINES IN DISORDERED REGIONS OF FIBRINOGEN α C.

Jyotsana J. Parmar, Indian Institute of Technology, Bombay
2772-Pos, B149
NUCLEOSOME KINETICS REGULATES THE BINDING TIMESCALES OF
NON-HISTONE PROTEINS TO DNA SITES.

Manmeet H. Raval, Pennsylvania State University College of Medicine
3038-Pos, B415
CHARACTERIZATION OF A UNIQUE MYOSIN IIIA DEAFNESS MUTATION
WHICH ENHANCES ACTIN-SLIDING VELOCITY BUT ABOLISHES
FILOPODIA TIP LOCALIZATION.

Sean L. Seyler, Arizona State University
2578-Plat
QUANTIFYING MACROMOLECULAR TRANSITION PATHS WITH PATH
SIMILARITY ANALYSIS.

Orrin Shindell, University of Texas, Austin
2813-Pos, B190
DYNAMICS AND STATICS IN PHASE SEPARATING, ADHERING LIPID MEMBRANES.

Wilton T Snead, University of Texas, Austin
2835-Pos, B212
MEMBRANE FISSION BY PROTEIN CROWDING.

Matthew B. Stone, University of Michigan
2866-Pos, B243
DIRECT OBSERVATION OF ORDERED AND DISORDERED MEMBRANE DOMAINS IN B CELL PLASMA MEMBRANES USING MULTI-COLOR SUPER-RESOLUTION FLUORESCENCE MICROSCOPY AND APPLICATION TO B CELL RECEPTOR SIGNALING.

Gül H. Zerze, Lehigh University
2748-Pos, B125
DYNAMICS OF CONTACT FORMATION IN DISORDERED POLYPEPTIDES.

INCLUSION AND DIVERSITY

Sunday

Crystal R. Archer, University of Texas Health Science Center, San Antonio
526-Pos, B306
BIOCHEMICAL ANALYSIS OF THE REGULATION OF KV7 CHANNELS BY PIP2 AND CALMODULIN.

Patrick C. McCarter, University of North Carolina, Chapel Hill
734-Pos, B514
TOWARD A COMPREHENSIVE MODEL OF FEEDBACK REGULATION IN A YEAST STRESS RESPONSE PATHWAY.

Hengameh Shams, University of California, Berkeley
636-Pos, B416
MOLECULAR MECHANISM OF α -ACTININ BINDING TO F-ACTIN: EFFECT OF K255E MUTATION.

Monday

Cheavar A. Blair, University of Kentucky
1456-Pos, B433
MYOCARDIUM FROM THE LEFT AND RIGHT VENTRICLES OF HUMAN HEARTS HAVE SIMILAR MECHANICAL PROPERTIES.

Theanne N. Griffith, Northwestern University
1428-Pos, B405
IDENTIFICATION OF FUNCTIONAL DETERMINANTS OF KAINATE RECEPTOR MODULATION BY AUXILIARY PROTEIN NETO2.

Vanessa P. Nguyen, University of Tennessee, Knoxville
1256-Pos, B233
A NOVEL SOLUBLE PEPTIDE WITH PH-RESPONSIVE MEMBRANE INSERTION.

Tuesday

Syed R. Ali, University of Texas Medical Branch
2169-Pos, B313
DEFINING THE PROTEIN: PROTEIN INTERACTION INTERFACE OF FGF14:NAV1.6 COMPLEX.

Kayla M. Bell, Indiana University
2267-Pos, B411
NON-CANONICAL MICROTUBULE INTERACTION BY YEAST KINESIN-5, CIN8.

Jenny V. Le, Ohio State University
2473-Pos, B617
CHARACTERIZATION OF NUCLEOSOMES USING DNA ORIGAMI.

Melanie P. Muller, University of Illinois, Urbana Champaign
2102-Pos, B246
MOLECULAR BASIS FOR LIPID SPECIFICITY OF THE COAGULATION FACTOR X MEMBRANE-BINDING DOMAIN.

Keon Reid, Emory University
2103-Pos, B247
EXPLORING THE INSERTION MECHANISM OF SVS-1 β -HAIRPIN PEPTIDE INTO AN ANIONIC LIPID BILAYER.

Wednesday

Christina M. Chisholm, University of Massachusetts Amherst
3010-Pos, B387
ELUCIDATING THE PH DEPENDENT MECHANISM OF OMPG GATING.

Christina Garza, University of Colorado, Denver
3093-Pos, B470
COMBINED QM/MM DYNAMICS SIMULATIONS OF PROTON TRANSFER IN E. COLI CLC CHLORIDE/PROTON ANTIporter.

Shahidul M. Islam, Sultan Qaboos University
3178-Pos, B555
STRUCTURAL-FUNCTION STUDY OF MEMBRANE PROTEINS WITH RESTRAINED-ENSEMBLE AND DUMMY SPIN-LABEL MOLECULAR DYNAMICS SIMULATIONS.

INTERNATIONAL RELATIONS

Sunday

Silvia Acosta-Gutierrez, Cagliari University, Italy
590-Pos, B370
WATER-BASED SCREENING OF ANTIBIOTICS PERMEABILITY.

Navid Bavi, Victor Chang Cardiac Research Institute, Australia
592-Pos, B372
THE N-TERMINAL HELIX ACTS AS A DYNAMIC MEMBRANE COUPLER IN THE GATING CYCLE OF THE MECHANOSENSITIVE CHANNEL MSC1.

Iván Coto Hernández, Institute for Molecular Sciences of Orsay, France
809-Pos, B589
ADVANCES IN GATED CW STED MICROSCOPY: TOWARD A VERSATILE IMPLEMENTATION.

Zeineb Es-Salah-Lamoureux, INSERM U1087/CNRS U6291
529-Pos, B309
A MOLECULAR SUBSTRATE FOR LONG QT IN HIV PATIENTS: TAT PROTEIN REDUCES IKR IN HUMAN INDUCED PLURIPOTENT STEM CELLS-DERIVED CARDIOMYOCYTES.

Barbara Geier, University of Graz, Austria
194-Plat
STRUCTURAL CHARACTERIZATION ON ASYMMETRIC LIPID VESICLES AT SUBNANOMETER RESOLUTION.

Shiraz Haron-Khun, Sackler Medical School, Tel Aviv University, Israel
162-Plat
SK4 K⁺ CHANNELS REGULATE SINOATRIAL PACEMAKER AND THEIR
BLOCKADE AMELIORATE ARRHYTHMIAS IN CPVT2 PATIENT-DERIVED
IPSC AND IN VIVO IN CASQ2 KNOCK-IN AND KNOCK-OUT MICE.

Dong-Hwee Kim, Korea University
496-Pos, B276
MECHANICAL REGULATION OF NUCLEAR SHAPE AND VOLUME.

Helen L. Miller, University of York, United Kingdom
818-Pos, B598
DEVELOPING A SINGLE-MOLECULE FLUORESCENCE TOOL TO QUANTIFY
DNA DAMAGE.

Yoshitaka Nakayama, Victor Chang Cardiac Research Institute, Australia
477-Pos, B257
THE ROLE OF THE C-TERMINAL DOMAIN ON THE GATING PROPERTIES
OF CORYNEBACTERIUM GLUTAMICUM MECHANOSENSITIVE CHANNEL
MSCCG.

Ruth Norman, University of Leeds, United Kingdom
460-Pos, B240
METOPROLOL REVERSES β -ADRENERGIC REMODELING IN THE FAILING
RIGHT VENTRICLE OF PULMONARY ARTERY HYPERTENSIVE (PAH) RATS.

Luca Ponzoni, International School for Advanced Studies, Italy
282-Pos, B62
SPECTRUS: A DIMENSIONALITY REDUCTION APPROACH FOR
IDENTIFYING DYNAMICAL DOMAINS IN PROTEIN COMPLEXES FROM
LIMITED STRUCTURAL DATASETS.

Monday

Florent Delhommel, Pasteur Institute, France
1566-Pos, B543
STRUCTURAL STUDY OF WHIRLIN, A CRUCIAL PDZ CONTAINING
PROTEIN INVOLVED IN THE MECHANOTRANSDUCTION OF AUDITORY
HAIR CELLS.

Peter S. Hasenhuettl, Medical University of Vienna, Austria
896-Plat
DISSECTING THE CATALYTIC CYCLE OF THE SEROTONIN TRANSPORTER.

Barbora Hoffmannova, Comenius University, Slovakia
1306-Pos, B283
LOCAL CHARACTER OF RELEASE-DEPENDENT INACTIVATION OF L-TYPE
CALCIUM CURRENT.

Georg Krainer, Dresden University of Technology, Germany
972-Plat
farFRET: EXTENDING THE RANGE IN SINGLE-MOLECULE FRET
EXPERIMENTS BEYOND 10 NM.

Luca Lanzano, Italian Institute of Technology, Genoa
974-Plat
APPLICATION OF THE SPLIT-FLCS METHOD TO THE DETECTION OF
NANOSCALE DIFFUSION IN 3D IN LIVE CELLS.

Bernhard Lehofer, Medical University of Graz, Austria
1271-Pos, B248
STRUCTURAL EFFECTS OF HIGH HYDROSTATIC PRESSURE ON HUMAN
LOW DENSITY LIPOPROTEIN REVEALED BY SMALL ANGLE X-RAY AND
NEUTRON SCATTERING.

Hélène Lyrmann, Saarland University, Germany
1511-Pos, B488
MODELING IMMUNE CELL MIGRATION.

Yufuku Matsushita, University of Tokyo, Japan
1109-Pos, B86
X-RAY OBSERVATION OF NOVEL NUCLEATION FACTOR IN PROTEIN
SUPERSATURATED SOLUTION.

Rashmi Panigrahi, University of Alberta, Canada
1142-Pos, B119
UNDERSTANDING STRUCTURAL AND FUNCTIONAL STABILITY OF TWO
RHOMBOID PROTEASES: HIGLPG AND PSAARA.

Anam Qudrat, University of Toronto, Canada
1121-Pos, B98
MODULAR ASSEMBLY OF SYNTHETIC PROTEINS THAT SPAN THE
PLASMA MEMBRANE IN MAMMALIAN CELLS.

Patrice Rassam, University of Oxford, United Kingdom
1222-Pos, B199
UNRAVELING THE OUTER MEMBRANE TRANSLOCATION MECHANISM
OF A PROTEIN ANTIBIOTIC USING SINGLE-MOLECULE MICROBIOLOGY
AND COMPUTATIONAL BIOPHYSICS.

Masihuz Zaman, Aligarh Muslim University, India
1095-Pos, B72
BIOPHYSICAL INSIGHT OF DNA INDUCED AGGREGATION OF STEM
BROMELAIN.

Tuesday

Sabareesan Ambadi Thody, Tata Institute of Fundamental Research,
India
2199-Pos, B343
THE PATHOGENIC A116V MUTATION ENHANCES THE SELECTIVE ION-
CHANNEL ACTIVITY AND TOXICITY OF THE PRION PROTEIN IN LIVING
CELLS.

Shruti Arya, Indian Institute of Science Education and Research, Mohali
1966-Pos, B110
WATER IN AMYLOIDOGENIC INTRINSICALLY DISORDERED PROTEINS:
INTERPLAY OF CONFORMATIONAL PREFERENCE AND AMYLOID
AGGREGATION.

Chaitanya A. Athale, Indian Institute of Science Education and
Research, Pune
2297-Pos, B441
COLLECTIVE EFFECTS OF MOTORS AND MICROTUBULES GEOMETRY IN
GLIDING ASSAYS.

Ivan Haralampiev, Humboldt University of Berlin, Germany
2396-Pos, B540
TRACKING THE SWITCH OF INFLUENZA RNA GENESIS BY A NOVEL
MULTIPLEXED FISH METHOD IN SINGLE CELLS.

Vikash Kumar, York University, Canada
2482-Pos, B626
MAGNETIC FOCUSING AND HYDRODYNAMIC DEFLECTION OF MICRO-
PARTICLES IN A MICRODEVICE.

Reinier Oropesa-Nuñez, Italian Institute of Technology, Genoa
2456-Pos, B600
SELECTIVE INTERACTION BETWEEN TOXIC AMYLOID OLIGOMERS AND
THE CELL MEMBRANE REVEALED BY INNOVATIVE AFM APPLICATIONS.

Caterina Ricci, Marche Polytechnic University, Italy
1813-Plat
STRUCTURE AND STABILITY OF HSP60 AND GROEL IN SOLUTION.

Zhaokun Zhou, University of York, United Kingdom
2460-Pos, B604
COMBINED MAGNETO-OPTICAL TWEEZERS AND SUPER-RESOLUTION FLUORESCENCE IMAGING FOR PROBING DYNAMIC SINGLE-MOLECULE TOPOLOGY OF DNA, AND PROTEIN MACHINES THAT MANIPULATE DNA TOPOLOGY.

Wednesday

Matteo Aldeghi, University of Oxford, United Kingdom
2687-Pos, B64
PREDICTING LIGAND SELECTIVITY ACROSS BROMODOMAIN FAMILIES.

Annemie Biesemans, KU Leuven, Belgium
2553-Plat
CONTROLLING THE NANOSCOPIC CONFINEMENT OF ENZYMES INSIDE CLYA NANOPORES FOR SINGLE-PROTEIN STUDIES.

Marco Castello, Italian Institute of Technology, Genoa
3199-Pos, B576
BOOST YOUR MICROSCOPE BY EXPLORING NEW DIMENSIONS.

Tao-Hsin Chang, University of Oxford, United Kingdom
2912-Pos, B289
STRUCTURAL AND FUNCTIONAL INSIGHTS OF NORRIN MIMICS WNT FOR SIGNALLING.

Pilar Cossio, Max Planck Institute of Biophysics, Germany
3126-Pos, B503
ON ARTIFACTS IN SINGLE-MOLECULE FORCE SPECTROSCOPY.

Wei Ding, Queen Mary University of London, United Kingdom
2826-Pos, B203
ATOMISTIC AND COARSE-GRAINED MOLECULAR SIMULATIONS OF MIXED LAMELLAR/NONLAMELLAR LIPID MEMBRANES.

Bárbara Gomes, Institute of Molecular Medicine, University of Lisbon, Portugal
2566-Plat
THE MECHANISM OF HIV ENTRY INHIBITION BY 25-HYDROXYCHOLESTEROL.

Deepak K. Hansda, Indian Institute of Technology, Bombay
3046-Pos, B423
EFFECT OF BRANCHING ON FORCE-VELOCITY CURVES AND LENGTH FLUCTUATIONS OF ACTIN NETWORKS.

Rikke Holm, Aarhus University, Denmark
3101-Pos, B478
RESCUE OF NA⁺ AFFINITY IN ASPARTATE-928 MUTANTS OF NA⁺,K⁺-ATPASE BY SECONDARY MUTATION OF GLUTAMATE-314.

Ishutesh Jain, Indian Institute of Technology, Bombay
3045-Pos, B422
DYNAMIC INSTABILITY EMERGES FROM MICROMECHANICS AND CHEMICAL KINETICS OF MICROTUBULE PROTOFILAMENTS.

Yadira Medina Guevara, University of Sao Paulo, Brazil
2664-Pos, B41
MODELING PROTEIN- DNA INTERACTION ON GROUNDS OF QUANTUM ENTANGLEMENT.

Yury A. Nikolaev, Victor Chang Cardiac Research Institute, Australia
3015-Pos, B392
MECHANOSENSITIVITY OF TRPC6 ION CHANNEL RECONSTITUTED IN THE LIPOSOMES.

Michele Oneto, Italian Institute of Technology, Genoa
3198-Pos, B575
3D MULTICOLOR STED NANOSCOPE A SUPER-RESOLUTION APPROACH TO MAMMALIAN PHOTORECEPTOR.

SS Soumya, Indian Institute of Technology, Bombay
3082-Pos, B459
COHERENT MOTION OF MONOLAYER SHEETS UNDER ACTIVE AND PASSIVE CONFINEMENT: FROM BUILD-UP TO CONSEQUENCE.

PROFESSIONAL OPPORTUNITIES FOR WOMEN

Sunday

Jana Broecker, University of Toronto, Canada
208-Plat
ADVANCES IN IN SITU X-RAY CRYSTALLOGRAPHY OF MEMBRANE PROTEINS.

Ana M. Melo, University of Pennsylvania
197-Plat
DETERMINING A TOPOLOGICAL MODEL FOR TAU BOUND TO TUBULIN HETERODIMERS.

Rebecca J. Moen, Minnesota State University, Mankato
763-Pos, B543
DETECTING STRUCTURAL CHANGES IN MYOSIN USING BIFUNCTIONAL SPIN LABELS.

Sonia Troeira Henriques, University of Queensland, Australia
399-Pos, B179
STRUCTURE-ACTIVITY RELATIONSHIP STUDIES REVEAL THAT THE SPIDER TOXIN PROTX-II HAS UNUSUAL MEMBRANE-BINDING PROPERTIES AND INHIBITS NAV1.7 CHANNEL AT THE MEMBRANE SURFACE.

Monday

Nabanita Das, University of Colorado, Boulder
1084-Pos, B61
ACTIVATION OF TOLL-LIKE RECEPTOR 5 IMMUNE SIGNALING BY HMGB1.

Sherry S.W. Leung, Simon Fraser University, Canada
1228-Pos, B205
DEVELOPMENT OF LIPID-BASED DRUG DELIVERY SYSTEMS FOR GENE THERAPY: PHYSICO-CHEMICAL CHARACTERIZATION OF CHARGED LIPID INTERACTIONS.

Sabine Lotteau, University of Leeds, United Kingdom
1319-Pos, B296
SIMVASTATIN HAS PROFOUND EFFECTS ON SARCOPLASMIC RETICULUM CA²⁺ LEAK IN SKELETAL BUT NOT CARDIAC MUSCLE: A MECHANISM FOR MYOPATHY.

Gaelle Robin, University of California, Davis
1568-Pos, B545
FRAGILE X~ASSOCIATED TREMOR~ATAXIA SYNDROME: LINKING CA²⁺ DYSREGULATION AND DNA DAMAGE RESPONSES.

Adelene Sim, Bioinformatics Institute, A*Star, Singapore
1198-Pos, B175
MODELING PROTEIN-RNA COMPLEXES.

Jinfeng Teng, University of Texas Southwestern Medical Center
1413-Pos, B390
A LIPID-EXPOSED RESIDUE AT THE START OF S4-S5 LINKER CONTROLS TRPV4 GATING.

Xiaohua Zhang, Cardiac Signaling Center of University of South Carolina, Medical University of South Carolina, and Clemson University
1291-Pos, B268
NEW TARGETED CA²⁺ PROBES REVEAL MITOCHONDRIAL CA²⁺ SIGNALING PLAYS A CRITICAL ROLE IN RAT SINOATRIAL (SA) NODAL PACING.

Tuesday

Jemma L. Gatliff, Royal Veterinary College, United Kingdom
2330-Pos, B474
REGULATION OF MITOCHONDRIAL SIGNALING AND QUALITY CONTROL BY THE 18KDA TRANSLOCATOR PROTEIN (TSPO).

Whasil Lee, Duke University
1721-Plat
INFLAMMATORY CYTOKINE IL-1 α UP-REGULATES PIEZO1 AND HYPER-SENSITIZES CHONDROCYTES TO COMPRESSION.

Eri Nakatani-Webster, University of Washington
1967-Pos, B111
ILL-POSED? NOT A PROBLEM: INFERRING MECHANISMS OF ACTION FROM AMYLOID FORMATION KINETICS USING APPROXIMATE BAYESIAN COMPUTATION.

Wednesday

Sonya M. Hanson, Memorial Sloan Kettering Cancer Center
2690-Pos, B67
DISSECTING THE CONTRIBUTION OF KINASE CONFORMATIONAL REORGANIZATION ENERGIES TO INHIBITOR SELECTIVITY.

Verena Ruprecht, Institute of Science and Technology, Austria
3075-Pos, B452
ACTOMYOSIN NETWORK CONTRACTILITY TRIGGERS A STOCHASTIC TRANSFORMATION INTO HIGHLY MOTILE AMOEBOID CELLS.

Monica Sala-Rabanal, Washington University School of Medicine
2991-Pos, B368
SECRETED HUMAN CLCA1 ACTIVATES CALCIUM-DEPENDENT CHLORIDE CURRENTS THROUGH DIRECT BINDING OF ITS VWA DOMAIN WITH AN EXTRACELLULAR LOOP OF TMEM16A/ANOCTAMIN 1.

Ancillary Meetings

Society of General Physiologists Council Meeting

Saturday, February 27, 10:00 AM–1:00 PM
Room 510

Korean Biophysicists Meeting

Sunday, February 28, 5:00 PM–6:00 PM
Room 403B

Biophysics Austria Mixer

Sunday, February 28, 6:00 PM–7:00 PM
Room 404AB

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

Tuesday, March 1, 8:00 PM–10:00 PM
Room 409AB

How to Navigate the BPS Annual Meeting

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.

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

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



Friday, February 26, 2016

Daily Program Summary

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

8:00 AM–5:00 PM	Exhibitor Registration	West Lobby
8:00 AM–5:00 PM	Drug Discovery Satellite Meeting	Room 411
3:00 PM–4:30 PM	New Council Orientation	J.W. Marriott - Plaza III
3:00 PM–5:00 PM	Registration Open	West Lobby
5:00 PM–9:00 PM	Joint Council Reception, Dinner, and Meeting	J.W. Marriott - Plaza I & II

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Friday, February 26

Exhibitor Registration

8:00 AM–5:00 PM, WEST LOBBY

Drug Discovery Satellite Meeting XVI

8:00 AM–5:00 PM, ROOM 411

Sponsored by Axiogenesis, Sophion together with Biolin Scientific, Cellular Dynamics International, Charles River, Maxcyte 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

Niels Fertig, Nanion Technologies GmbH

Jeff Webber, Molecular Devices LLC

Eugenia Jones, Cellular Dynamics International

Richard Kondos, Sophion – Biolin Scientific

7:30 AM REGISTRATION

8:00 AM INTRODUCTION

SESSION I

Chair, Niels Fertig

8:30 AM
WETWARE IN THE LOOP: REALTIME MODELLING USING DYNAMIC CLAMP FOR SAFETY AND DRUG DISCOVERY. **Steve Petrou**

9:00 AM
GIGASEAL AUTOMATED PATCH-CLAMP RECORDINGS OF ION CHANNEL ACTIVITY EXPRESSED IN CELL LINES AND NATIVE CELLS. **Arturo Picones**

9:30 AM
NEXT GENERATION ELECTROPHYSIOLOGY: COMPARISON OF PLATFORMS TO PROGRESS EFFICACY AND LIABILITY CAPABILITY AT ASTRAZENECA.
Matthew Bridgland-Taylor

10:00 AM BREAK

SESSION II

Chair, Jeff Webber

10:30 AM
OPTICAL METHODS FOR EXAMINING EXCITATION-CONTRACTION COUPLING IN IPS-DERIVED CARDIOMYOCYTES AND THEIR APPLICATION TO MEDIUM/HIGH THROUGH-PUT ASSAYS. **Godfrey Smith**

11:00 AM
IDENTIFICATION AND CHARACTERIZATION OF NOVEL NMDA RECEPTOR POSITIVE ALLOSTERIC MODULATORS (PAMS). **David Hackos**

11:30 AM
AUTOMATED ELECTROPHYSIOLOGY FOR TRANSLATIONAL CARDIAC MUSCLE. **Liudmila Polonchuk and Ken Wang**

12:00 PM LUNCH (PROVIDED)

SESSION III

Chair, Eugenia Jones

1:00 PM
THE COMBINED USE OF ION CHANNEL STUDIES AND HUMAN IPS-DERIVED CARDIAC MYOCYTES IN PRECLINICAL SAFETY ASSESSMENT.
Alison Easter

1:30 PM
INVESTIGATION OF POTASSIUM CHANNEL FUNCTION UTILIZING HUMAN iPSC-DERIVED NEURONS. **Matthew Fuller**

2:00 PM
AUTOMATED PATCH CLAMP ASSAYS FOR STATES DEPENDENT ION CHANNEL MODULATORS. **Rok Cerne**

2:30 PM
AUTOMATED ELECTROPHYSIOLOGY AS A PLATFORM FOR BIOPHYSICAL CHARACTERIZATION AND ION CHANNEL DRUG DISCOVERY. **Sophia Lin**

3:00 PM BREAK

SESSION IV

Chair, Richard Kondo

3:30 PM
HUMAN IPS CELL-DERIVED CARDIOMYOCYTES AS A MODEL FOR CHARACTERIZATION OF NEW LQT SYNDROM MUTATION. **Roselle Gélinas**

4:00 PM
COUPLING HIGH CAPACITY ELECTROPORATION WITH AUTOMATED PATCHY CLAMP RECORDING FOR FUNCTIONAL ANNOTATION OF HUMAN ION CHANNEL VARIANTS. **Alfred George**

4:30 PM
Speaker to be announced

5:00 PM
CLOSING REMARKS
Richard Kondo

New Council Orientation

3:00 PM - 4:30 PM, J.W. MARRIOTT - PLAZA III

Registration Open

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

Joint Council Reception, Dinner, and Meeting

5:00 PM - 9:00 PM, J.W. MARRIOTT - PLAZA I & II

Saturday, February 27, 2016

Daily Program Summary

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

8:00 AM–6:30 PM	Registration/Exhibitor Registration	West Lobby
8:30 AM–11:00 AM	Joint Council Meeting	J.W. Marriott - Plaza I & II
9:00 AM–7:00 PM	Mechanobiology Subgroup	Room 403B
9:00 AM–7:00 PM	Bioenergetics Subgroup	Room 403A
9:15 AM–1:45 PM	Molecular Biophysics Subgroup	Room 502A
10:00 AM–1:00 PM	Society of General Physiologists Council Meeting	Room 510
10:00 AM–6:30 PM	Intrinsically Disordered Proteins Subgroup	Room 515A
10:45 AM–6:45 PM	Biopolymers in vivo Subgroup	Room 501ABC
12:00 PM–6:00 PM	Nanoscale Biophysics Subgroup	Room 515B
1:00 PM–5:00 PM	Membrane Structure and Assembly Subgroup	Petree Hall D
1:00 PM–5:00 PM	Biological Fluorescence Subgroup	Room 502B
1:00 PM–6:00 PM	Membrane Biophysics Subgroup	Petree Hall C
1:00 PM–6:15 PM	Motility Subgroup	Room 408A
1:00 PM–6:30 PM	Exocytosis & Endocytosis Subgroup	Room 511ABC
1:30 PM–4:45 PM	Permeation & Transport Subgroup	Room 408B
3:00 PM–4:00 PM	Career Center Workshop Networking: Optimizing Your Time at BPS 2016	Room 518
3:00 PM–5:00 PM	Bioengineering Subgroup	Room 409AB
4:00 PM–5:00 PM	Undergraduate Mixer and Poster Fest	West Lobby Entrance
5:00 PM–7:00 PM	Opening Mixer	Concourse Foyer
5:00 PM–7:00 PM	First-Time Attendee Drop By	West Lobby Entrance
6:00 PM–10:00 PM	Poster Viewing	West Hall
6:30 PM–7:30 PM	CID/CPOW/Education Travel Awardee Reception	Room 404AB
7:00 PM–9:00 PM	Cryo-EM Subgroup	Room 411

Saturday, February 27

Registration/Exhibitor Registration Open

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

Joint Council Meeting

8:30 AM - 11:00 AM, J.W. MARRIOTT - PLAZA I & II

Mechanobiology Subgroup

9:00 AM - 7:00 PM, ROOM 403B

Subgroup Chair

G.V. Shivashankar, MBI, National University of Singapore

1-SUBG 9:00 AM

MECHANICAL ACTION OF BAR-DOMAIN PROTEINS ON FLUID MEMBRANES. **Patricia Bassereau**, Coline Prévost, Mijo Simunovic, Andrew Callan-Jones

2-SUBG 9:30 AM

ACTOMYOSIN DEPENDENT CLUSTERING AND SEGREGATION OF CELL SURFACE MOLECULES AT MULTIPLE SCALES. **Madan Rao**

10:00 AM INVITED SHORT TALK

CYTOSKELETAL DYNAMICS AND MECHANOSENSING IN IMMUNE CELLS. **Arpita Upadhyaya**

10:15 AM STUDENT TALK CHOSEN FROM POSTER ABSTRACT

10:30 AM COFFEE BREAK

3-SUBG 11:00 AM

REGULATION OF ACTOMYOSIN CONTRACTILITY IN NON-MUSCLE CELLS. Zhenhuan Guo, Wei Yung Ding, **Ronen Zaidel-Bar**

4-SUBG 11:30 AM

JUNCTIONAL TENSION, MECHANOSENSING AND EPITHELIAL HOMEOSTASIS. **Alpha Yap**, Rashmi Priya, Magdalene Michael, Guillermo Gomez

12:00 PM INVITED SHORT TALK

12:15 PM STUDENT TALK CHOSEN FROM POSTER ABSTRACT

12:30 PM LUNCH

5-SUBG 2:00 PM

CHROMOSOMES AS MECHANICAL OBJECTS: COMMONALITIES FROM BACTERIA TO MAMMALIAN CELLS. **Nancy E. Kleckner**

6-SUBG 2:30 PM

MECHANICS OF GENOME INTEGRITY. **Marco Foiani**

3:00 PM POSTDOC TALK CHOSEN FROM POSTER ABSTRACTS

RESOLVING AND TARGETING THE MECHANOBIOLOGICAL PANCREATIC DUCTAL ADENOCARCINOMA. **Alexandra Surcel**, Qingfeng Zhu, Eric Schifffhauer, Robert Anders, Douglas Robinson

3:30 PM POSTDOC TALK CHOSEN FROM POSTER ABSTRACTS

3:45 PM COFFEE BREAK

7-SUBG 4:15 PM

TISSUE MECHANICS AND DISEASE MODELS. **Valerie Weaver**

8-SUBG 4:45 PM

HOW MECHANICAL FORCES REGULATE THE STRUCTURAL POLARIZATION OF THE NUCLEAR LAMINA. **Viola Vogel**

5:15 PM POSTDOC TALK CHOSEN FROM POSTER ABSTRACTS

5:30 PM INVITED SHORT TALK

5:45 PM GENERAL DISCUSSION

7:00 PM SUBGROUP DINNER

Bioenergetics Subgroup

9:00 AM - 7:00 PM, ROOM 403A

Subgroup Chairs

György Hajnóczky, Thomas Jefferson University

Jan Hoek, Thomas Jefferson University

MORNING SYMPOSIUM: MAMMALIAN MITOCHONDRIA: ONTOGENY AND PHYLOGENY

9:00 AM INTRODUCTIONS

NO ABSTRACT 9:10 AM

INVITED SATURDAY SUBGROUP SPEAKER. **Douglas Wallace**

NO ABSTRACT 9:40 AM

CONTROL OF MITOCHONDRIAL BIOGENESIS AND METABOLISM. **Richard Scarpulla**

NO ABSTRACT 10:10 AM

MITOCHONDRIAL FUNCTION AND REGULATION DURING STEM CELL DIFFERENTIATION. **Michael Teitell**

10:40 AM COFFEE BREAK

9-SUBG 11:00 AM

MITOCHONDRIAL FUNCTION DURING AND REGULATION OF CARDIAC DEVELOPMENT. **George A. Porter, Jr.**

NO ABSTRACT 11:30 AM

ABROGATION OF PARKIN-MEDIATED MITOPHAGY DISRUPTS PERINATAL MITOCHONDRIAL MATURATION. **Moshi Song**

AFTERNOON SYMPOSIUM: SUB-DIFFRACTION RESOLUTION OF MITOCHONDRIAL STRUCTURE AND MOLECULAR LANDSCAPE

1:45 PM PRESENTATION OF YOUNG BIOENERGETICIST AWARD AND INTRODUCTIONS

NO ABSTRACT 2:10 PM

SUPER-RESOLUTION MICROSCOPY OF MITOCHONDRIA. **Stefan Jakobs**

NO ABSTRACT 2:40 PM

MUSCLE MITOCHONDRIA DISTRIBUTION IN THE ANIMAL KINGDOM. **Clara Franzini-Armstrong**

NO ABSTRACT 3:10 PM

THE MITOCHONDRIAL RETICULUM IN SKELETAL AND CARDIAC MUSCLE. **Robert S. Balaban**

3:40 PM COFFEE BREAK

NO ABSTRACT 4:00 PM

TRANS-MITOCHONDRIAL COORDINATION OF CRISTAE AT REGULATED MEMBRANE JUNCTIONS. **Martin Picard**

NO ABSTRACT 4:30 PM

STRUCTURE AND MECHANISM OF THE MITOCHONDRIAL ATP SYNTHASE BY ELECTRON CRYO-MICROSCOPY. **Werner Kuhlbrandt**

5:00 PM GENERAL DISCUSSION & BUSINESS MEETING

7:00 PM SUBGROUP DINNER

Molecular Biophysics Subgroup

9:15 AM - 1:45 PM, ROOM 502A

Subgroup Chair

Justin Benesch, University of Oxford, United Kingdom

NEW METHODS FOR STUDYING THE STRUCTURAL DYNAMICS OF MACROMOLECULES

9:15 AM

OPENING REMARKS

NO ABSTRACT

9:20 AM

STRUCTURE, DYNAMICS, AND FREE ENERGY LANDSCAPES BY NMR. **Dorothee Kern**

NO ABSTRACT

10:05 AM

TIME-RESOLVED X-RAY CRYSTALLOGRAPHY. **Arwen Pearson**

NO ABSTRACT

10:35 AM

HIGH-SPEED SCATTERING FOR VISUALIZING NANOMETRIC PROTEIN COMPLEXES. **Philipp Kukura**

NO ABSTRACT

11:05 AM

ASSEMBLING MACROMOLECULAR COMPLEXES WITH EVOLUTIONARY-BASED INTEGRATIVE MODELING. **Matteo Dal Peraro**

11:35 AM

COFFEE BREAK AND SUBGROUP BUSINESS MEETING

10-SUBG

12:05 PM

CHARTING CELLULAR LANDSCAPES IN MOLECULAR DETAIL BY IN SITU CRYO-ELECTRON TOMOGRAPHY. **Jürgen Plitzko**, Julia Mahamid, Benjamin D. Engel, Sahradha Albert, Miroslava Schaffer, Jan Arnold, Yoshiyuki Fukuda, Radostin Danev, Wolfgang Baumeister

NO ABSTRACT

12:35 AM

NEW MICROFLUIDIC APPROACHES FOR STUDYING THE SELF-ASSEMBLY AND MISASSEMBLY OF PROTEINS. **Tuomas Knowles**

NO ABSTRACT

1:05 PM

DYNAMICS OF VIRAL STRUCTURES - FROM MASS SPECTROMETRY TO X-RAY FREE-ELECTRON LASERS. **Charlotte Uetrecht**

1:35 PM

CLOSE

Society of General Physiologists Council Meeting

10:00 AM - 1:00 PM, ROOM 510

Intrinsically Disordered Proteins Subgroup

10:00 AM - 6:30 PM, ROOM 515A

Subgroup Chair

Elizabeth Rhoades, Yale University

10:00 AM

BUSINESS MEETING

12:30 PM

OPENING REMARKS AND INTRODUCTION OF KEYNOTE SPEAKER 1

11-SUBG

12:35 PM

INTRINSICALLY DISORDERED PROTEINS IN NEURODEGENERATION. **Markus Zweckstetter**

12-SUBG

1:20 PM

BALANCING ORDER AND DISORDER IN NEURODEGENERATION AND NEUROTRANSMISSION. **David Eliezer**

13-SUBG

1:45 PM

ATOMIC-RESOLUTION IN-CELL NMR ANALYSIS OF ALPHA-SYNUCLEIN IN MAMMALIAN CELLS REVEALS DISORDERED MONOMER. **Phil Selenko**

2:10 PM

SHORT TALKS BY POSTDOCTORAL AWARDEES

PHASE SEPERATION OF DISORDERED PROTEINS INTO LIQUID DROPLETS WITH TUNABLE PROPERTIES. **Shana Elbaum-Garfinkle**.

A GOLDILOCKS PREDICAMENT FOR VON WILLEBRAND FACTOR MEDIATED PLATELET ADHESION. **Alexander Tischer (SEE LATE ABSTRACTS)**

14-SUBG

2:40 PM

STRUCTURE AND DYNAMICS OF INTRINSICALLY DISORDERED PROTEINS FROM A PHYSICS-BASED MODEL. **Jeetain Mittal**

15-SUBG

3:05 PM

DISCOVERY AND CHARACTERISATION OF NOVEL FUNCTIONAL MODULES IN INTRINSICALLY DISORDERED REGIONS. **Norman Davey**

3:30 PM

COFFEE BREAK

16-SUBG

3:50 PM

SIMULTANEOUS TUNING OF ACTIVATION AND REPRESSION IN INTRINSIC DISORDER-MEDIATED ALLOSTERY. **Vincent J. Hilser**

17-SUBG

4:15 PM

DISORDERED CDK SUBSTRATES ACT AS MULTI-INPUT SIGNAL PROCESSORS TO CONTROL THE KEY DECISION POINTS IN THE CELL CYCLE. **Mart Loog**

18-SUBG

4:40 PM

SLOW INTERNAL DYNAMICS AND STRUCTURAL PROPERTIES OF IDPS OF THE CT FAMILY: COMPARING AMYLOID AND NON-AMYLOID VARIANTS. **Sara M. Vaiana**

19-SUBG

5:05 PM

STRUCTURAL AND FUNCTIONAL ANALYSES OF IDPS BY HIGH-SPEED AFM IMAGING. **Toshio Ando**, Noriyuki Kodera

5:30 PM

INTRODUCTION OF KEYNOTE SPEAKER 2

20-SUBG

5:35 PM

SEQUENCE CONSTRAINTS ON FOLDING AND BINDING. **Susan Marqusee**

6:20 PM

CLOSING REMARKS

Biopolymers in vivo Subgroup

10:45 AM - 6:45 PM, ROOM 501ABC

Subgroup Chair

Martin Gruebele, University of Illinois at Urbana Champaign

TRANSLATION DYNAMICS AND NASCENT PROTEOME BEHAVIOR

10:45 AM

BUSINESS MEETING

11:45 AM

LUNCH BREAK

1:15 PM

INTRODUCTION BY THE PROGRAM CO-CHAIRS, CHRISTIAN KAISER AND ED O'BRIEN

21-SUBG

1:20 PM

MONITORING TRANSLATION IN SPACE AND TIME WITH RIBOSOME PROFILING. **Jonathan Weissman**

NO ABSTRACT

1:50 PM

PROBING DIMENSIONALITY BEYOND THE LINEAR SEQUENCE OF MRNA. **Zoya Ignatova**

22-SUBG

2:20 PM

LOW ENERGY BARRIERS AND A DYNAMIC CONTACT NETWORK BETWEEN RIBOSOMAL SUBUNITS ENABLE RAPID TRNA TRANSLOCATION. **Lars V. Bock**, Christian Blau, Andrea C. Vaiana, **Helmut Grubmuller**

NO ABSTRACT

2:50 PM

DYNAMICS OF TRANSLATION. **Joseph Puglisi**



3:20 PM COFFEE BREAK

3:50 PM NO ABSTRACT
ACCURATE DECISION MAKING AT THE RIBOSOME DURING PROTEIN BIOGENESIS. **Shu-ou Shan**

23-SUBG 4:20 PM
REGULATION OF SEC-FACILITATED PROTEIN TRANSLOCATION AND MEMBRANE INTEGRATION. **Thomas Miller**

24-SUBG 4:50 PM
COTRANSLATIONAL PROTEIN FOLDING. **Gunnar von Heijne**

5:20 PM TALK CHOSEN FROM SUBMITTED POSTER ABSTRACTS
CHAPERONE-MEDIATED MECHANICAL PROTEIN FOLDING AT THE SINGLE MOLECULE LEVEL. **Judit Perales-Calvo**

25-SUBG 5:35 PM
SOME CELL BEHAVIOR IS ENCODED IN PROTEOME PHYSICS. **Ken Dill**

6:05 PM CONCLUDING REMARKS

6:45 PM DINNER

Nanoscale Biophysics Subgroup

12:00 PM - 6:00 PM, ROOM 515B

Subgroup Chair

Bianxiao Cui, Stanford University

26-SUBG 12:00 PM
NANOSCOPE STUDY OF CHROMATIN STRUCTURE AND PROCESS IN MAMMALIAN CELLS. **Yujie Sun**

NO ABSTRACT 12:30 PM
IN SITU RNA PROFILING IN SINGLE CELLS BY FISH SCALYS. **Long Cai**

NO ABSTRACT 1:00 PM
ILLUMINATING BIOLOGY AT THE NANOSCALE WITH SINGLE-MOLECULE AND SUPER-RESOLUTION MICROSCOPY. **Xiaowei Zhuang**

NO ABSTRACT 1:30 PM
3D MULTI-RESOLUTION IMAGING OF NANOSCALE DYNAMICS IN CELLULAR MILIEU. **Haw Yang**

27-SUBG 2:00 PM
CAPTURING THE DYNAMIC, HETEROGENEOUS RESPONSE OF MICROBES TO THEIR ENVIRONMENT IN THE HUMAN MICROBIOME. **Julie Biteen**

2:30 PM BREAK

3:00 PM STUDENT/POSTDOC SHORT TALKS

28-SUBG 4:00 PM
CONVERGING AND CORRELATIVE TECHNOLOGIES FOR OPTICAL NANOSCOPY. **Alberto Diaspro**, Paolo Bianchini, Claudio Canale, Francesca Cella Zanacchi, Marta Duocastella, Luca Lanzanò, Nirmal Mazumder, Colin Sheppard, Giuseppe Vicidomini

29-SUBG 4:30 PM
SEEING SINGLE MOLECULES, FROM EARLY SPECTROSCOPY IN SOLIDS, TO SUPER-RESOLUTION MICROSCOPY, TO 3D DYNAMICS OF BIOMOLECULES IN CELLS. **W.E. Moerner**

5:00 PM SUBGROUP BUSINESS MEETING

6:00 PM SUBGROUP DINNER

Membrane Structure and Assembly Subgroup

1:00 PM - 5:00 PM, PETREE HALL D

Subgroup Chair

Anne Kenworthy, Vanderbilt University

TRANSLATION DYNAMICS AND NASCENT PROTEOME BEHAVIOR

30-SUBG 1:00 PM
MEMBRANE DOMAINS ON THE SUB-NANOMETER SCALE. **Georg Pabst**

31-SUBG 1:35 PM
USING GLYCOSPHINGOLIPIDS TO BUILD ENDOCYTIC PITS IN CLATHRIN-INDEPENDENT ENDOCYTOSIS. **Ludger Johannes**

NO ABSTRACT 2:10 PM
MEMBRANE CURVATURE REGULATION BY PERIPHERAL PROTEINS. **Tobias Baumgart**

2:45 PM BREAK

32-SUBG 3:10 PM
STRUCTURE AND MECHANISMS OF ACTIONS OF CURVATURE-INDUCING VIRAL MEMBRANE PROTEINS FROM SOLID-STATE NMR. **Mei Hong**

NO ABSTRACT 3:45 PM
TRANSLOCON-GUIDED INSERTION OF TRANSMEMBRANE HELICES: CARTOONS VS. REALITY. **Stephen H. White**

33-SUBG 4:20 PM THOMPSON AWARD LECTURE
THE VERSATILE BETA-BARREL GIVES UP SECRETS OF THE MEMBRANE. **Karen G. Fleming**

5:00 PM BUSINESS MEETING

Biological Fluorescence Subgroup

1:00 PM - 5:00 PM, ROOM 502B

Subgroup Chair

Marcia Levitus, Arizona State University

34-SUBG 1:00 PM
SINGLE-MOLECULE FLUORESCENCE STUDIES OF NUCLEIC-ACID TRANSACTIONS IN LIVING BACTERIA. **Achilles Kapanidis**

35-SUBG 1:30 PM
SPATIO-TEMPORAL DYNAMICS AND METABOLIC ALTERATIONS OF P53 UPON DNA DAMAGE. **Michelle A. Digman**, Swathi Baglithaya

36-SUBG 2:00 PM
IMAGING THE EARLY EVENTS IN MEMBRANE RECEPTOR SIGNALING. **Diane S. Lidke**

37-SUBG 2:30 PM
FROM SINGLE-MOLECULE SPECTROSCOPY TO SUPER-RESOLUTION MICROSCOPY: SUPER-RESOLUTION OPTICAL FLUCTUATION IMAGING AND METAL-INDUCED ENERGY TRANSFER. **Joerg Enderlein**

3:00 PM BREAK & BUSINESS MEETING

38-SUBG 3:20 PM
NEW ISOMORPHIC FLUORESCENT NUCLEOSIDES AND NUCLEOTIDES AS BIOPHYSICAL TOOLS. **Yitzhak Tor**

39-SUBG 3:50 PM
PROBING SINGLE-MOLECULE ION CHANNEL CONFORMATIONAL DYNAMICS IN LIVING CELLS. **H. Peter Lu**

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 - 6:00 PM, PETREE HALL C

Subgroup Chair

Alessio Accardi, Weill Cornell Medical College

UNUSUAL MECHANISMS IN MEMBRANE TRANSPORT

1:00 PM

OPENING REMARKS

NO ABSTRACT

1:05 PM

TMEM16/ANOCTAMINS FLIRTING WITH LIPIDS. **H C. Hartzell**

40-SUBG

1:35 PM

ENGINEERING OF A LIGHT-GATED POTASSIUM CHANNEL. **Anna Moroni**, Laura Alberio, Edoardo Romano, Solei Cermentati, Monica Beltrame, Gerhard Thiel

41-SUBG

2:05 PM

REGULATION OF GATING OF TRPM2 CHANNELS BY NUCLEOTIDES, CA²⁺, AND PHOSPHOLIPIDS. **László Csanády**, Balázs Tóth, Iordan Iordanov, Beáta Töröcsik

NO ABSTRACT

2:35 PM

MASS SPECTROMETRY OF MEMBRANE PROTEINS - THE LIPID CONNECTION. **Kallol Gupta**

3:05 PM

SUBGROUP BUSINESS MEETING AND COFFEE BREAK

NO ABSTRACT

3:40 PM

STRUCTURE AND INSIGHTS INTO THE FUNCTION OF THE BESTROPHIN CALCIUM-ACTIVATED CHLORIDE CHANNEL. **Stephen B. Long**

42-SUBG

4:10 PM

CRYSTAL STRUCTURES OF A DOUBLE-BARRELLED FLUORIDE CHANNEL. **Randy Stockbridge**, Ludmila Kolmakova-Partensky, Tania Shane, Akiko Koide, Shohei Koide, Christopher Miller, Simon Newstead

43-SUBG

4:40 PM

HOW TO FILL A SYNAPTIC VESICLE WITH NEUROTRANSMITTERS? TRANSPORT MECHANISMS AND ION BALANCE. **Reinhard Jahn**

5:10 PM

CONCLUSION

6:00 PM

COLE AWARD TALK AND DINNER:
AWARDEE RODERICK MACKINNON

Motility Subgroup

1:00 PM - 6:15 PM, ROOM 408A

Subgroup Chairs

Arne Gennerich, Albert Einstein College of Medicine
Charles Sindelar, Yale University

1:00 PM

OPENING REMARKS

44-SUBG

1:05 PM

SINGLE-MOLECULE INSIGHT INTO THE ACTIVATION OF HUMAN DYNEIN BY ADAPTER PROTEINS. **Vladislav Belyy**, Max A. Schlager, Armando E. Reimer, Andrew P. Carter, Ahmet Yildiz

45-SUBG

1:20 PM

MECHANO-CHEMICAL MODEL FOR THE MECHANISM OF DIRECTED PROGRESSIVE MOTILITY OF CYTOPLASMIC DYNEIN. **Andreja Šarlah**, Andrej Vilfan

46-SUBG

1:35 PM

MODELING COORDINATED KINETICS IN LARGE GROUPS OF MUSCLE MYOSIN MOTORS. **Lennart Hilbert**

47-SUBG

1:50 PM

HIGH-SPEED NANOMETRIC TRACKING OF MYOSIN 5 WITH INTERFEROMETRIC SCATTERING MICROSCOPY. **Joanna Andrecka**

2:05 PM

BREAK

NO ABSTRACT

2:20 PM

TRANSPORT BY MEMBRANE-ANCHORED KINESIN MOTORS. **Stefan Diez**

48-SUBG

2:45 PM

MAPS AND MOTORS COOPERATE TO FORM THE PARAXIAL MICROTUBULE CYTOSKELETON IN DIFFERENTIATING MUSCLE CELLS. **Anne Straube**

49-SUBG

3:10 PM

SYNTHETIC MANIPULATION AND ANALYSES OF TRANSPORT AND CYTOSKELETAL REGULATORY SYSTEMS. **Michael Diehl**

3:35 PM

BUSINESS MEETING AND BREAK

50-SUBG

4:05 PM

STRUCTURAL AND FUNCTIONAL ADAPTATIONS IN KINESIN MOTORS. **Hernando Sosa**, Chandrima Chatterjee, Mathieu Benoit, Juan Daniel Diaz Valencia, Vania DePaoli, Ana B. Asenjo

51-SUBG

4:30 PM

CRYO-EM REVEALS HOW DYNEIN BINDS DYNAMACTIN AND CARGO. **Andrew P. Carter**, Linas Urnavicius, Kai Zhang, Helen Foster

4:55 PM

BREAK

52-SUBG

5:20 PM

ON THE MOLECULAR BASIS OF MONOGENIC HUMAN HYPERTROPHIC AND DILATED CARDIOMYOPATHIES. **James Spudich**, Suman Nag, Shirley Sutton, Saswata Sarkar, Rebecca Taylor, Darshan Trivedi, Chao Liu, Arjun Adhikari, Kathleen Ruppel

6:15 PM

CLOSING REMARKS

Exocytosis & Endocytosis Subgroup

1:00 PM - 6:30 PM, ROOM 511ABC

Subgroup Chair

Jürgen Klingauf, Institute of Medical Physics and Biophysics, Germany

1:00 PM

STUDENT TALKS SELECTED FROM POSTERS

NO ABSTRACT

1:55 PM

IMAGING THE NANOMETER-SCALE STRUCTURE OF ENDOCYTOSIS. **Justin Taraska**

2:25 PM

COFFEE BREAK

NO ABSTRACT

2:40 PM

CAPTURING THE SEQUENTIAL STEPS OF DYNAMIN-MEDIATED FISSION BY CRYO-EM. **Jenny Hinshaw**

NO ABSTRACT

3:20 PM

NEW INSIGHTS INTO CA²⁺ SENSOR FUNCTION AND FUSION PORE STRUCTURE. **Edwin R. Chapman**

4:00 PM

COFFEE BREAK

53-SUBG

4:15 PM

AN ELEGANT FISSION MACHINE. **Sandra L. Schmid** **KATZ AWARD LECTURE**

5:30 PM

BUSINESS MEETING

6:30 PM

RECEPTION AND SUBGROUP DINNER

Permeation & Transport Subgroup

1:30 PM - 4:45 PM, ROOM 408B

Subgroup Chair

Emad Tajkhorshid, University of Illinois at Urbana-Champaign

54-SUBG

1:30 PM

MECHANISMS OF GATING AND MODULATION IN PENTAMERIC LIGAND GATED CHANNELS. **Sudha Chakrapani**



55-SUBG 2:00 PM

THE MOLECULAR DYNAMICS OF ION CHANNEL PERMEATION, SELECTIVITY AND GATING. **Bert L. de Groot.**, David Koepfer, Chen Song, Tim Gruene, George M. Sheldrick, Ulrich Zachariae

56-SUBG 2:30 PM

STRUCTURAL INTERPRETATION OF THE ALTERNATING ACCESS MECHANISM OF GLUCOSE TRANSPORTERS GLUTS. **Nieng Yan**

3:00 PM BREAK**57-SUBG 3:15 PM**

SMOLUCHOWSKI EQUATION APPROACH IN CHANNEL-FACILITATED TRANSPORT PROBLEMS: COUNTER-INTUITIVE ANALYTICAL RESULTS AND SUPPORTING EXPERIMENTS. **Sergey M. Bezrukov**

58-SUBG 3:45 PM

NANOPHARMACOLOGICAL FORCE SENSING REVEALS TWO LIGAND BINDING SITES IN MONOAMINE TRANSPORTERS. Rong Zhu, Alexander Heiling, Amy H. Newman, Michael Freissmuth, Harald H. Sitte, **Peter Hinterdorfer**

4:15 PM BUSINESS MEETING

Career Center Workshop

Networking: Optimizing Your Time at BPS 2016

3:00 PM - 4:00 PM, ROOM 518

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 2016) 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).

Bioengineering Subgroup

3:00 PM - 5:00 PM, ROOM 409AB

Program Chairs

Jonathan Rocheleau, University of Toronto
Chris Yip, University of Toronto

NO ABSTRACT 3:00 PM

THE STATE OF BIOENGINEERING RESEARCH AND LINKAGES WITH BIOPHYSICS. **Christopher M. Yip**

3:30 PM STATESMEN TALK**4:00 PM BREAK****4:15 PM TRAINEE TALK****4:30 PM TRAINEE TALK****4:45 PM BUSINESS MEETING**

Undergraduate Mixer and Poster Fest

4:00 PM - 5:00 PM, WEST LOBBY ENTRANCE

A social and scientific mixer for all undergraduate students attending the meeting. Meet other undergraduates and learn about their research projects. Pre-registered undergraduates listed as coauthors on posters are welcome to practice their poster presentation in a less formal setting, even if they are not listed as the presenting author. For undergrads who will be presenting during the standard scientific sessions, this mixer provides an additional opportunity to hone presentation skills. Organized by the Education Committee.

Opening Mixer

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

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, WEST LOBBY ENTRANCE

Is this your first time attending a Biophysical Society Annual Meeting? Wondering what to do first? Feeling overwhelmed? Wondering how to get the most out of your time? Drop by the First-Time Attendee event on Saturday evening during the Opening Mixer to learn how to navigate the meeting. Society staff and Committee Members will be on hand to answer your questions about the meeting and help you gain the most from your time.

Poster Viewing

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

CID/CPOW/Education Travel Awardee Reception

6:30 PM - 7:30 PM, ROOM 404AB

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

Cryo-EM Subgroup

7:00 PM - 9:00 PM, ROOM 411

Program Chairs

Edward Egelman, University of Virginia
Da-Neng Wang, New York University
Bridget Carragher, New York Structural Biology Center
Yifan Cheng, University of California, San Francisco
Irina Serysheva, University of Texas Medical School
David Stokes, New York University

59-SUBG 7:00 PM

MICROED: THREE DIMENSIONAL ELECTRON DIFFRACTION OF MICROSCOPIC CRYSTALS. **Tamir Gonen**

60-SUBG 7:20 PM

1D SELF-ASSEMBLY OF PEPTIDES AND LIPIDS INTO RIBBONS AND NANOTUBES. **Dganit Danino, Luba Kolik**

61-SUBG 7:40 PM

STRUCTURE OF THE ACRABZ-TOLC MULTIDRUG EFFLUX PUMP IN A DRUG-BOUND STATE. **Zhao Wang, Dijun Du, Guizhen Fan, Irina I. Serysheva, Ben F. Luisi, Wah Chiu**

62-SUBG 8:00 PM

SINGLE-PARTICLE CRYO-EM STUDIES OF A 200-KDA MAGNESIUM ION CHANNEL REVEAL LARGE STRUCTURAL CHANGES UPON GATING. **Doreen Matthies, Olivier Dalmas, Mario J. Borgnia, Pawel K. Dominik, Alan Merk, Prashant Rao, Bharat G. Reddy, Shahidul Islam, Alberto Bartesaghi, Eduardo Perozo, Sriram Subramaniam**

63-SUBG 8:20 PM

IF GEL AND MASS SPEC DON'T HELP, USE CRYO-EM TO CHARACTERISE YOUR SPECIMEN. **Alexey Amunts**

64-SUBG 8:40 PM

HIGH-RESOLUTION CRYO-EM STRUCTURES OF TRPV1 REVEAL STRUCTURAL BASIS OF LIGAND BINDING AND CHANNEL GATING. **Yuan Gao, Erhu Cao, David Julius, Yifan Cheng**

9:00 PM BUSINESS MEETING

Sunday, February 28, 2016

Daily Program Summary

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

7:30 AM–8:30 AM	Postdoctoral Breakfast	Room 404AB
7:30 AM–5:00 PM	Registration/Exhibitor Registration	West Lobby
8:00 AM–10:00 PM	Poster Viewing	West Hall
8:15 AM–10:15 AM	<p>Symposium: Synthetic Biology Chair: <i>Pamela Silver, Harvard University</i></p> <p>TRIGGER WAVES IN MITOSIS AND APOPTOSIS. <i>James Ferrell</i> FEEDBACK CONTROL OF MAMMALIAN CELL DIFFERENTIATION. <i>Mary N. Teruel</i> COMMUNICATION AND COLLABORATION IN SYNTHETIC MICROBIAL CONSORTIA. <i>Cynthia H. Collins</i> DESIGNING WITH BIOLOGY. <i>Pamela Silver</i></p>	Petree Hall C
8:15 AM–10:15 AM	<p>Symposium: Pentameric Ligand-gated Ion Channels Chair: <i>Cynthia Czajkowski, University of Wisconsin-Madison</i></p> <p>PROBING CHANNEL STRUCTURE, DYNAMICS, AND FUNCTION. <i>Pei Tang</i> CHARGE SELECTIVITY IN PLGICS: AN ASPECT OF CHANNEL FUNCTION THAT REMAINS ELUSIVE EVEN WHEN MULTIPLE STRUCTURES ARE KNOWN. <i>Claudio Grosman</i> INSIGHTS INTO INTRACELLULAR DOMAINS OF PENTAMERIC LIGAND-GATED ION CHANNELS. <i>Michaela Jansen</i> DETECTING LIGAND-INDUCED MOTIONS IN PENTAMERIC LIGAND-GATED ION CHANNELS. <i>Cynthia Czajkowski</i></p>	Petree Hall D
8:15 AM–10:15 AM	Platform: Alternative Protein Conformations and Function	Room 502A
8:15 AM–10:15 AM	Platform: Skeletal Muscle Mechanics, Structure, and Regulation	Room 502B
8:15 AM–10:15 AM	Platform: Optical Microscopy and Super-Resolution Imaging I	Room 515A
8:15 AM–10:15 AM	Platform: Membrane Physical Chemistry I	Room 515B
8:15 AM–10:15 AM	Platform: Bioenergetics and Mitochondrial Signaling	Room 501ABC
8:15 AM–10:15 AM	Platform: DNA Replication and Transcription	Room 511ABC
8:30 AM–10:30 AM	CID Committee Meeting	Room 506
9:00 AM–10:00 AM	<p>Career Center Workshop Selling Yourself to the Life Sciences Industry</p>	Room 518
10:00 AM–5:00 PM	Exhibits	West Hall
10:15 AM–11:00 AM	Coffee Break	West Hall
10:30 AM–11:30 AM	<p>Career Center Workshop Leveraging Social Media for Networking and Career Advancement</p>	Room 518
10:30 AM–12:00 PM	<p>Exhibitor Presentation: Carl Zeiss Microscopy LLC Technology Innovations: ZEISS LSM 880 Confocal with Airyscan and ZEISS Lightsheet Z.1</p>	Room 513
10:30 AM–12:00 PM	International Relations Committee Meeting	Room 410

	<p>Symposium: New and Notable Petree Hall C Co-Chairs: <i>Vasanthi Jayaraman, University of Texas Health Science Center, and E. Michael Ostap, University of Pennsylvania</i></p> <p>STRUCTURE OF A TRPV2 ION CHANNEL, <i>Seok-Yong Lee</i> CRYO-EM STRUCTURE OF A MICRONUTRIENT TRANSPORTER WITH UNUSUAL ARCHITECTURE. <i>Filippo Mancina</i></p> <p>10:45 AM–12:45 PM STRUCTURAL DYNAMICS OF K CHANNEL GATING REVEALED BY SINGLE MOLECULE FRET. <i>Colin Nichols</i> THE MOTIONS AND INTERACTIONS IN MISMATCH REPAIR TARGET SEARCH DYNAMICS ARE REVEALED BY LIVE-CELL SINGLE-MOLECULE MICROSCOPY. <i>Julie Biteen</i> INTEGRATIVE STRUCTURAL BIOLOGY OF TETRAHYMENA TELOMERASE. <i>Juli Feigon</i> INTRINSICALLY DISORDERED PROTEINS AS PHYSICAL DRIVERS OF MEMBRANE TRAFFIC. <i>Jeanne C. Stachowiak</i> FLOPPY BUT NOT SLOPPY: DECODING PLASTICITY IN THE DARK PROTEOME OF THE NUCLEAR TRANSPORT MACHINERY. <i>Edward Lemke</i></p>
	<p>Symposium: Computational and Experimental Approaches to Protein Design Petree Hall D Chair: <i>Rama Ranganathan, University of Texas, Southwestern</i></p> <p>10:45 AM–12:45 PM MAPPING CONSTRAINTS ON PROTEIN EVOLUTION. <i>Jesse Bloom</i> UNCOVERING AND REPROGRAMMING G PROTEIN COUPLED RECEPTOR SIGNALING. <i>Patrick Barth</i> DESIGNING PEPTIDE INHIBITORS OF ANTI-APOPTOTIC BCL-2 FAMILY PROTEINS. <i>Amy E. Keating</i> PROTEIN MECHANICS: THE LINK BETWEEN STRUCTURE AND FUNCTION. <i>Rama Ranganathan</i></p>
10:45 AM–12:45 PM	Platform: Cryo-Electron Microscopy Room 502A
10:45 AM–12:45 PM	Platform: Cell Mechanics, Mechanosensing, and Motility I Room 502B
10:45 AM–12:45 PM	Platform: TRP Channels Room 515A
10:45 AM–12:45 PM	Platform: Protein Assembly and Function Room 515B
10:45 AM–12:45 PM	Platform: Membrane Active Peptides and Toxins Room 501ABC
10:45 AM–12:45 PM	Platform: Cardiac Smooth and Skeletal Muscle Electrophysiology Room 511ABC
11:30 AM–1:00 PM	Undergraduate Student Pizza "Breakfast" Room 406AB
11:30 AM–5:00 PM	Colleges in the Community Day Room 406AB
12:00 PM–1:00 PM	International Travel Awardee Luncheon Room 404AB
12:00 PM–1:00 PM	Career Center Workshop Creating and Using an Effective CV/Résumé Room 518
12:15 PM–2:15 PM	Public Affairs Committee Meeting Room 506
1:00 PM–2:30 PM	The World Outside the Lab: Many Ways to Use Your PhD Skills in Industry Room 403A
1:00 PM–3:00 PM	Graduate & Postdoc Institution Fair West Hall
1:45 PM–3:00 PM	Snack Break West Hall
1:45 PM–3:45 PM	Poster Presentations and Late Posters West Hall
2:00 PM–3:30 PM	Teaching Science Like We Do Science Room 408A
2:30 PM–3:30 PM	Career Center Workshop Networking for Nerds Room 518
2:30 PM–4:00 PM	Transparency, Reproducibility, and the Progress of Science Room 411
3:30 PM–5:00 PM	Early Careers Committee Meeting Room 506
4:00 PM–5:00 PM	Career Center Workshop Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses) Room 518
	<p>Symposium: Signaling Complexes and Dynamics Petree Hall C Chair: <i>Hao Wu, Harvard Medical School</i></p> <p>4:00 PM–6:00 PM STRUCTURAL ELUCIDATION OF INNATE IMMUNITY. <i>Hao Wu</i> MECHANISM OF JAK2 ACTIVATION BY THE ARCHETYPE CLASS I CYTOKINE RECEPTOR, THE GROWTH HORMONE RECEPTOR. <i>Andrew J. Brooks</i> MECHANISM AND FUNCTIONS OF PLATELET MECHANOSENSING. <i>Renhao Li</i> CONFORMATIONAL PLASTICITY AND DRUGGABILITY OF MEMBRANE-BOUND K-RAS. <i>Alemayehu A. Gorfe</i></p>

4:00 PM–6:00 PM	Symposium: Structure and Motion of Cilia and Flagella Chair: <i>Jonathan Howard, Yale University</i> CRYO-ELECTRON TOMOGRAPHY PROVIDES A NEW WINDOW INTO CILIARY STRUCTURE AND FUNCTION. <i>Daniela Nicastro</i> STRUCTURAL GENETICS OF CILIA/FLAGELLA. <i>Masahide Kikkawa</i> MOTOR COORDINATION UNDERLYING THE FLAGELLAR BEAT IN CHLAMYDOMONAS. <i>Jonathon Howard</i> SYNCHRONIZATION OF EUKARYOTIC FLAGELLA. <i>Raymond E. Goldstein</i>	Petree Hall D
4:00 PM–6:00 PM	Symposium: DNA Nanostructures for Biophysics Chair: <i>William Shih, Harvard University</i> DNA NANOSTRUCTURES AS BUILDING BLOCKS FOR MOLECULAR BIOPHYSICS AND FUTURE THERAPEUTICS. <i>William Shih</i> CREATING PROGRAMMABLE DISORDER IN DNA ORIGAMI ARRAYS WITH COMBINATORIAL PATTERNS. <i>Lulu Qian</i> DNA ORIGAMI FOR NANOPORES: DESIGN, DEVELOPMENTS, AND CHALLENGES. <i>Ulrich F. Keyser</i> NANOSCALE CONSTRUCTION AND IMAGING WITH DNA. <i>Peng Yin</i>	Room 502A
4:00 PM–6:00 PM	Platform: Voltage-gated Channels (Na and Ca)	Room 502B
4:00 PM–6:00 PM	Platform: Membrane Structure	Room 515A
4:00 PM–6:00 PM	Platform: Intrinsically Disordered Proteins (IDP) and Aggregates I	Room 515B
4:00 PM–6:00 PM	Platform: Membrane Protein Structure and Folding I	Room 501ABC
4:00 PM–6:00 PM	Platform: Biomaterials and Biosurfaces	Room 511ABC
5:00 PM–6:00 PM	Korean Biophysicists Meeting	Room 403B
5:00 PM–7:00 PM	PI to PI, a Wine & Cheese Mixer	Room 406AB
5:30 PM–7:00 PM	Exhibitor Presentation: HEKA Elektronik + Multi Channel Systems PATCHMASTER and PatchServer: Solutions for Patch Clamp	Room 505
6:00 PM–7:00 PM	Biophysics Austria Mixer	Room 404AB
6:00 PM–9:00 PM	Student Research Achievement Award (SRAA) Poster Competition	West Hall

Sunday, February 28

Postdoctoral Breakfast

7:30 AM - 8:30 AM, ROOM 404AB

Supported by the Burroughs Wellcome Fund

This breakfast presents an opportunity for postdoctoral members of the Society to meet and discuss the issues they face in their current career stage. Members of the Early Careers Committee will be available to answer questions about how the Committee serves postdocs in the biophysical community. Limited to the first 100 attendees.

Registration/Exhibitor Registration

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

Poster Viewing

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

Symposium Synthetic Biology

8:15 AM - 10:15 AM, PETREE HALL C

Chair

Pamela Silver, Harvard University

NO ABSTRACT 8:15 AM

TRIGGER WAVES IN MITOSIS AND APOPTOSIS. **James Ferrell**

65-SYMP 8:45 AM

FEEDBACK CONTROL OF MAMMALIAN CELL DIFFERENTIATION.

Mary N. Teruel

66-SYMP 9:15 AM

COMMUNICATION AND COLLABORATION IN SYNTHETIC MICROBIAL CONSORTIA. **Cynthia H. Collins**

NO ABSTRACT 9:45 AM

DESIGNING WITH BIOLOGY. **Pamela Silver**

Symposium Pentameric Ligand-gated Ion Channels

8:15 AM - 10:15 AM, PETREE HALL D

Chair

Cynthia Czajkowski, University of Wisconsin-Madison

NO ABSTRACT 8:15 AM

PROBING CHANNEL STRUCTURE, DYNAMICS, AND FUNCTION. **Pei Tang**

67-SYMP 8:45 AM

CHARGE SELECTIVITY IN PLGICS: AN ASPECT OF CHANNEL FUNCTION THAT REMAINS ELUSIVE EVEN WHEN MULTIPLE STRUCTURES ARE KNOWN. **Claudio Grosman**

68-SYMP 9:15 AM

INSIGHTS INTO INTRACELLULAR DOMAINS OF PENTAMERIC LIGAND-GATED ION CHANNELS. **Michaela Jansen**

69-SYMP 9:45 AM

DETECTING LIGAND-INDUCED MOTIONS IN PENTAMERIC LIGAND-GATED ION CHANNELS. **Cynthia Czajkowski**

Platform Alternative Protein Conformations and Function

8:15 AM - 10:15 AM, ROOM 502A

Co-Chairs

Albert Lau, Johns Hopkins University

Nagarajan Vaidehi, Beckman Research Institute of City of Hope

70-PLAT 8:15 AM

SEEING THE UNSEEN: SAMPLING THE EXCITED STATE OF T4 LYSOZYME L99A WITH SIMULATIONS ON THE ANTON SUPERCOMPUTER. **Jamie Schiffer**, Roxana Sida, Dariana Arciniega, Robert Malmstrom, Victoria Feher, Rommie Amaro

71-PLAT 8:30 AM

COMPUTATIONAL AND EXPERIMENTAL STUDIES OF A PROKARYOTIC GLUTAMATE RECEPTOR. **John Belcher**, Albert Lau

72-PLAT 8:45 AM

SIMULATING THE FUNCTION OF SODIUM/PROTON ANTIPORTERS. **Raphael Alhadeff**, Arieh Warshel

73-PLAT 9:00 AM

MODULATING CONFORMATIONAL STATES IN THE GLUTAMATE TRANSPORTER HOMOLOGUE GLTPH USING PROTECTIVE OSMOLYTES. **Sara Blankenship**, Jessica Sarver, David Cafiso

74-PLAT 9:15 AM

ATOMIC LEVEL INSIGHTS INTO THE ACTIVATION MECHANISM OF NEURONAL ROTENSIN RECEPTOR 1. **Supriyo Bhattacharya**, Reinhard Grisshammer, Nagarajan Vaidehi

75-PLAT 9:30 AM

DYNAMIC SAMPLING OF MULTIPLE CONFORMATIONS IN FIMH MODULES BACTERIAL ADHESION. **Vasilios Kalas**, Jerome S. Pinkner, Alex S. Holehouse, Hao Zhang, Michael L. Gross, Rohit V. Pappu, Scott J. Hultgren

76-PLAT 9:45 AM

INVESTIGATION OF THE PH INDUCED CONFORMATIONAL REARRANGEMENT OF INFLUENZA HEMAGGLUTININ. **Xingcheng Lin**, Jeffrey K. Noel, Nathaniel R. Eddy, Jianpeng Ma, José N. Onuchic

77-PLAT 10:00 AM

ATOMIC STRUCTURE OF A NON-ENVELOPED DSRNA VIRUS REVEALS PH SENSING FOR CELL ENTRY. **Xing Zhang**

Platform Skeletal Muscle Mechanics, Structure, and Regulation

8:15 AM - 10:15 AM, ROOM 502B

Co-Chairs

Sanford Bernstein, San Diego State University

Raul Perez-Jimenez, CIC nanoGUNE, Spain

78-PLAT 8:15 AM

THE FORCE PRODUCING ADP STATE OF MYOSIN BOUND TO ACTIN. **Rasmus R. Schroeder**, Sarah F. Wulf, Virginie Ropars, Setsuko Fujita-Becker, Marco Oster, Goetz Hofhaus, Leonardo G. Trabuco, Olena Pylypenko, H. Lee Sweeney, Anne Houdusse

79-PLAT 8:30 AM

RIBBONS, NOT SUBFILAMENTS. **Michael K. Reedy**, Robert J. Perz-Edwards

80-PLAT 8:45 AM
STRESS-SENSING MOBILIZES MYOSIN MOTORS IN THE THICK FILAMENTS OF RESTING MUSCLE. Massimo Reconditi, Elisabetta Brunello, Marco Caremani, Luca Fusi, Marco Linari, Theyencheri Narayanan, Gabriella Piazzesi, Malcom Irving, **Vincenzo Lombardi**

81-PLAT 9:00 AM
SKELETAL MUSCLE DEFICIENCIES IN HOMOZYGOUS FAST-SKELETAL MYOSIN BINDING PROTEIN-C MUTANT MICE. **Brian L. Lin**, Suresh Govindan, Sakthivel Sadayappan

82-PLAT 9:15 AM
MECHANOCHEMICAL EVOLUTION OF THE GIANT MUSCLE PROTEIN TITIN AS INFERRED FROM ANCIENT PROTEINS. **Raul Perez-Jimenez**, Aitor Manteca, David De Sancho, Elías Herrero-Galán, Jorge Alegre Cebollada

83-PLAT 9:30 AM
THE MUSCLE MECHANICAL BASIS OF FREEMAN-SHELDON SYNDROME. **Kaylyn M. Bell**, William A. Kronert, Yiming Guo, Deepti Rao, Alice Huang, Sanford I. Bernstein, Douglas M. Swank

84-PLAT 9:45 AM
STRUCTURAL AND FUNCTIONAL IMPACTS OF NOVEL MUTATIONS IN SLOW SKELETAL MUSCLE TROPONIN T FOUND IN NON-AMISH TNNT1 NEMALINE MYOPATHIES. **Chinthaka K. Amarasinghe**, Jian-Ping Jin

85-PLAT 10:00 AM
MOLECULAR MECHANISM OF NOVEL DELETIONS IN TPM3 THAT CAUSE A HYPERCONTRACTILE PHENOTYPE WITH CONGENITAL MUSCLE STIFFNESS. **Steven Marston**, Maria Papadaki, Massimiliano Memo, Andrew Messer, Sandra Donkervoort, Carsten Bonneman, Kristen Nowak, Royston Ong, Elyshia McNamara

Platform

Optical Microscopy and Super-Resolution Imaging I

8:15 AM - 10:15 AM, ROOM 515A

Co-Chairs

Jingyi Fei, University of Chicago

Enrico Gratton, University of California, Irvine

86-PLAT 8:15 AM
CONNECTIVITY MAP OF THE CELL INTERIOR. **Enrico Gratton**, Carmine Di Rienzo, Francesco Cardarelli, Per Niklas Hedde

87-PLAT 8:30 AM
SIMULTANEOUS HIGH-SPEED TRACKING OF MULTIPLE SINGLE-MOLECULES REVEALS FUNCTIONAL INTERACTIONS IN LIVING CELLS. **Brian P. English**, Robert H. Singer

88-PLAT 8:45 AM
INVESTIGATING MOLECULAR CROWDING WITHIN NUCLEAR PORES USING POLARIZATION PALM (P-PALM). Guo Fu, Anton Zilman, **Siegfried Musser**

89-PLAT 9:00 AM
UNRAVELLING 3D CARGO TRANSPORT DYNAMICS AT THE MICROTUBULE NETWORK. **Ione Verdeny Vilanova**, Fabian Wehnekamp, Nitin Mohan, Ángel Sandoval Álvarez, Joe Borbely, Jason Otterstrom, Don Lamb, Melike Lakadamyali

90-PLAT 9:15 AM
NON-RANDOM COMPOSITIONAL ORGANIZATION OF NUCLEAR SPECKLES. **Jingyi Fei**, Mahdieh Jadaliha, Isaac Li, Boyang Hua, Kannanganattu V. Prasanth, Taekjip Ha

91-PLAT 9:30 AM
ACCURATE HIGH SPEED IMAGING OF SINGLE PROTEIN DIFFUSION WITHIN THE LIVE CELL MEMBRANE. **Richard W. Taylor**, Vahid Sandoghdar

92-PLAT 9:45 AM
FLUORESCENCE DENSITY MAPPING: EXTENDING THE POSSIBILITIES OF TIRFM TO STUDY PM-ER JUNCTIONS. **Michael Poteser**, Elisabeth Pritz, Gerd Leitinger, Klaus Groschner

93-PLAT 10:00 AM
NONCONTACT MAPPING OF INTRACELLULAR ELASTICITY VIA BRILLOUIN MICROSCOPY. **Giuliano Scarcelli**

Platform

Membrane Physical Chemistry I

8:15 AM - 10:15 AM, ROOM 515B

Co-Chairs

Aurelia Honerkamp-Smith, University of Cambridge, United Kingdom

Drew Marquardt, University of Graz, Austria

94-PLAT 8:15 AM
KINETICS OF REGISTRATION, ANTIREGISTRATION, AND FLIP-FLOP IN PHASE-SEPARATING BILAYERS. John J. Williamson, **Peter Olmsted**

95-PLAT 8:30 AM
ATOMIC RECOMBINATION IN NANOSIMS AS A METHOD TO MEASURE NANOMETER-SCALE INTERMOLECULAR DISTANCES IN LIPID BILAYERS. **Frank R. Moss**, Steven G. Boxer

96-PLAT 8:45 AM EDUCATION TRAVEL AWARDEE
A DEMONSTRATION OF LIPID FLIP-FLIP IN FREE-FLOATING LIPOSOMES. **Drew Marquardt**, Barbara Geier, Frederick A. Heberle, Milka Doktorova, John Katsaras, Georg Pabst

97-PLAT 9:00 AM
HOW THE STRUCTURAL ASPECTS OF CHOLESTEROL MEDIATE LIPID FLIP-FLOP. **John S. Allhusen**, Dylan R. Kimball, John C. Conboy

98-PLAT 9:15 AM
CONFIGURABLE LIPID MEMBRANE GRADIENTS QUANTIFY DIFFUSION, PHASE SEPARATIONS AND BINDING DENSITIES. **Katherine N. Liu**, Chen-Min S. Hung, Michael A. Swift, Kristen A. Muñoz, Jose L. Cortez, Babak Sanii

99-PLAT 9:30 AM
A MICROFLUIDIC PLATFORM TO PRODUCE AND MANIPULATE LIPOSOMES - TOWARDS SYNTHETIC CELLS ON CHIP. **Siddharth Deshpande**, Yaron Caspi, Anthony Birnie, Cees Dekker

100-PLAT 9:45 AM
FLUID FLOW AS A STRATEGY FOR SORTING AND LOCALIZATION OF MEMBRANE PROTEINS. **Aurelia R. Honerkamp-Smith**, Rita E. Monson, Ross F. Waller, Raymond E. Goldstein

101-PLAT 10:00 AM
REMODELING OF GAMETE MEMBRANE DURING MAMMALIAN FERTILIZATION. **Benjamin Ravaux**, Christine Gourier

Platform

Bioenergetics and Mitochondrial Signaling

8:15 AM - 10:15 AM, ROOM 501ABC

Co-Chairs

Peter Adams, University of Leeds, United Kingdom

Tatiana Rostovtseva, NIH

102-PLAT 8:15 AM EDUCATION TRAVEL AWARDEE
ULTRAFast LIMITS OF PHOTO-INDUCED ELECTRON TRANSFER RATES IN PPCA, A MULTI-HEME C-TYPE CYTOCHROME. **Aidan M. McKenzie**

103-PLAT 8:30 AM

INFRARED SPECTROSCOPIC AND ELECTROCHEMICAL APPROACHES FOR THE STUDY OF THE REACTION MECHANISM OF IMMOBILIZED MEMBRANE PROTEINS FROM THE RESPIRATORY CHAIN. Melin Frederic, Sebastien Kriegel, Thomas Meyer, **Petra Hellwig**

104-PLAT 8:45 AM

THEORETICAL INVESTIGATION INTO THE COLOR-TUNING MECHANISM OF PROTEORHODOPSIN. **Choongkeun Lee**, Blake Mertz

105-PLAT 9:00 AM

REDESIGNING PHOTOSYNTHETIC MEMBRANES: DEVELOPMENT OF BIO-INSPIRED PHOTONIC NANOMATERIALS. **Peter G. Adams**, Cvetelin Vasilev, Aaron M. Collins, Gabriel A. Montaño, C. Neil Hunter, Matthew P. Johnson

106-PLAT 9:15 AM

ENGINEERED AAA+ PROTEASES REVEAL MECHANISMS OF DEGRADATION AT THE MITOCHONDRIAL INNER MEMBRANE. Hui Shi, Anthony J. Rampello, Bojian Ding, **Steven E. Glynn**

107-PLAT 9:30 AM

ER CALCIUM RELEASE IS TUNED BY MITOCHONDRIAL REDOX NANODOMAINS. **David M. Booth**, Balázs Enyedi, Miklós Geiszt, Péter Várnai, György Hajnóczky

108-PLAT 9:45 AM

UNEXPECTED MODIFICATIONS OF CYSTEINES IN VDAC3: INDICATION THAT VDAC3 MAY SIGNAL THE MITOCHONDRIAL INTERMEMBRANE REDOX STATE. Simona Reina, Vanessa Checchetto, Rosaria Saletti, Ankit Gupta, Deepti Chaturvedi, Carlo Guardiani, Francesca Guarino, Mariano Andrea Scorciapino, Andrea Magri, Salvatore Foti, Matteo Ceccarelli, Angela A. Messina, Radhakrishnan Mahalakshmi, Ildiko Szabo, **Vito De Pinto**

109-PLAT 10:00 AM

MEMBRANE LIPID COMPOSITION REGULATES ALPHA-SYNUCLEIN BLOCKAGE OF AND TRANSLOCATION THROUGH THE MITOCHONDRIAL VOLTAGE-DEPENDENT ANION CHANNEL. Daniel Jacobs, David P. Hoogerheide, Amandine Rovini, Philip A. Gurnev, Sergey M. Bezrukov, **Tatiana K. Rostovtseva**

Platform**DNA Replication and Transcription****8:15 AM - 10:15 AM, ROOM 511ABC****Co-Chairs***Juli Feigon, University of California, Los Angeles**Kenneth Johnson, University of Texas at Austin***110-PLAT 8:15 AM**

RATE-LIMITING PYROPHOSPHATE RELEASE BY HIV REVERSE TRANSCRIPTASE AND ITS EFFECT ON ENZYME SPECIFICITY. **An Li**, Kenneth Johnson

111-PLAT 8:30 AM

A HYBRID METHODS APPROACH TO DETERMINE THE STRUCTURE OF TETRAHYMENA TELOMERASE. **Juli Feigon**

112-PLAT 8:45 AM

TWO-STAGE SYNOPSIS OF DNA ENDS DURING NON-HOMOLOGOUS END JOINING. **Thomas G.W. Graham**, Johannes C. Walter, Joseph J. Loparo

113-PLAT 9:00 AM

REAL-TIME OBSERVATION OF THE INITIATION OF RNA POLYMERASE II TRANSCRIPTION. **Furqan M. Fazal**, Cong A. Meng, Kenji Murakami, Roger D. Kornberg, Steven M. Block

114-PLAT 9:15 AM

SINGLE-MOLECULE IMAGING OF TRANSCRIPTION, CHROMOSOME ORGANIZATION, AND DNA REPAIR IN LIVE BACTERIA. **Mathew Stracy**, Christian Lesterlin, Stephan Uphoff, Pawel Zawadzki, Achillefs N. Kapanidis

115-PLAT 9:30 AM

E. COLI RNA POLYMERASE PAUSES DURING INITIAL TRANSCRIPTION. **David LV Bauer**, Diego Duchi, Achillefs N. Kapanidis

116-PLAT 9:45 AM

SINGLE-PROBE FLUORESCENCE IN SITU HYBRIDIZATION (FISH) IN BUD-DING YEAST. **Gable M. Wadsworth**, Harold Kim

117-PLAT 10:00 AM

EDUCATION TRAVEL AWARDEE
CRACKING OPEN A MOLECULAR CALCULATOR: DNA CHARGE TRANSPORT AND PRIMASE. **Marilyn E. Holt**, Elizabeth O'Brien, Lauren Salay, Matthew Thompson, Aaron Ehlinger, Jacqueline Barton, Walter Chazin

CID Committee Meeting**8:30 AM - 10:30 AM, ROOM 506****Career Center Workshop****Selling Yourself to the Life Sciences Industry****9:00 AM - 10:00 AM, ROOM 518**

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, WEST HALL****Coffee Break****10:15 AM - 11:00 AM, WEST HALL****Career Center Workshop****Leveraging Social Media for Networking and Career Advancement****10:30 AM - 11:30 AM, ROOM 518**

More and more recruiters, job decision-makers and hiring managers are using the web to find and research potential candidates. How can you make sure that you are not only found, but are ahead of the pack? In this session, we will discuss how decision-makers use LinkedIn and Facebook, and how you can use LinkedIn to establish yourself as a leader in your field, enhance your research reputation, and seek out and take advantage of innovative opportunities. We will demonstrate how to create a winning LinkedIn profile, and how to use its multitude of features (such as joining and commenting in groups) to generate solid leads for your career.

Exhibitor Presentation**Carl Zeiss Microscopy LLC****10:30 AM - 12:00 PM, ROOM 513****Technology Innovations: ZEISS LSM 880 Confocal with Airyscan and ZEISS Lightsheet Z.1**

These microscopes from ZEISS address both ends of the spectrum of samples, live high speed imaging with superresolution and high speed imaging of large live and fixed tissues. Learn how ZEISS LSM 880 with Airyscan maintains the mantra that each photon of emission light is precious, while expanding the triangle of sensitivity, resolution and speed of acquisition.

ZEISS LSM 880 with Airyscan allows you to use multicolor samples with any label and get image quality like you have never seen before. With Airyscan you are always able to select the optimal acquisition strategy for your sample: Simply decide whether you want to gain 1.7x higher

resolution in all three dimensions – resulting in a 5x smaller confocal volume. Or push the sensitivity beyond the limits of all conventional confocal microscopes; or use the increase in signal-to-noise ratio to speed up your image acquisition.

Traditionally, deeply imaging into intact tissue typically requires multiphoton excitation to penetrate deeper than near the surface of a tissue. Using a “clearing” method to remove the light obstructing opaque molecules from a tissue has been another technique for deep imaging. Techniques such as SCALE, CLARITY, ClearT, SeeDB, CUBIC and others have allowed researchers to image deeper than a millimeter into cleared animal model brains and organs.

ZEISS Lightsheet Z.1 features high speed image acquisition and greatly reduced photo damage making imaging of live developmental samples and fixed and cleared tissues easier than ever before. Come learn about using the innovative ZEISS Lightsheet Z.1 microscope for imaging of fixed and cleared tissues.

Speakers

Joseph Huff, Product Marketing Manager, Laser Scanning and Superresolution Microscopy, Carl Zeiss Microscopy LLC

Scott Olenych, Product Marketing Manager, Imaging Products, Carl Zeiss Microscopy LLC

International Relations Committee Meeting

10:30 AM - 12:00 PM, ROOM 410

Symposium New and Notable

10:45 AM - 12:45 PM, PETREE HALL C

Co-Chairs

Vasanthi Jayaraman, University of Texas Health Science Center, and E. Michael Ostap, University of Pennsylvania

NO ABSTRACT 10:45 AM

STRUCTURE OF A TRPV2 ION CHANNEL, **Seok-Yong Lee**

NO ABSTRACT 11:02 AM

CRYO-EM STRUCTURE OF A MICRONUTRIENT TRANSPORTER WITH UNUSUAL ARCHITECTURE. **Filippo Mancina**

NO ABSTRACT 11:19 AM

STRUCTURAL DYNAMICS OF K CHANNEL GATING REVEALED BY SINGLE MOLECULE FRET. **Colin Nichols**

NO ABSTRACT 11:36 AM

THE MOTIONS AND INTERACTIONS IN MISMATCH REPAIR TARGET SEARCH DYNAMICS ARE REVEALED BY LIVE-CELL SINGLE-MOLECULE MICROSCOPY. **Julie Biteen**

NO ABSTRACT 11:53 AM

INTEGRATIVE STRUCTURAL BIOLOGY OF TETRAHYMENA TELOMERASE. **Juli Feigon**

NO ABSTRACT 12:10 AM

INTRINSICALLY DISORDERED PROTEINS AS PHYSICAL DRIVERS OF MEMBRANE TRAFFIC. **Jeanne C. Stachowiak**

NO ABSTRACT 12:27 PM

FLOPPY BUT NOT SLOPPY: DECODING PLASTICITY IN THE DARK PROTEOME OF THE NUCLEAR TRANSPORT MACHINERY. **Edward Lemke**

Symposium Computational and Experimental Approaches to Protein Design

10:45 AM - 12:45 PM, PETREE HALL D

Chair

Rama Ranganathan, University of Texas, Southwestern

118-SYMP 10:45 AM

MAPPING CONSTRAINTS ON PROTEIN EVOLUTION. **Jesse Bloom**

119-SYMP 11:15 AM

UNCOVERING AND REPROGRAMMING G PROTEIN COUPLED RECEPTOR SIGNALING. **Patrick Barth**

120-SYMP 11:45 AM

DESIGNING PEPTIDE INHIBITORS OF ANTI-APOPTOTIC BCL-2 FAMILY PROTEINS. **Amy E. Keating**

NO ABSTRACT 12:15 PM

PROTEIN MECHANICS: THE LINK BETWEEN STRUCTURE AND FUNCTION. **Rama Ranganathan**

Platform Cryo-Electron Microscopy

10:45 AM - 12:45 PM, ROOM 502A

Co-Chairs

Gunnar Schroeder, Forschungszentrum Juelich, Germany
Sharon Wolf, Weizmann Institute of Science, Israel

121-PLAT 10:45 AM

HIGH-RESOLUTION STRUCTURAL INSIGHT INTO THE MYOSIN VI-F-ACTIN INTERFACE. **Laura Y. Kim, Pinar S. Gurel, Tosan Omabegho, Zev Bryant, Gregory M. Alushin**

122-PLAT 11:00 AM

USING CRYO-EM TO UNTANGLE THE CONFORMATIONAL LANDSCAPE OF A SMALL ALLOSTERICALLY-REGULATED COMPLEX. **Mario J. Borgnia, Soojay Banerjee, Alberto Bartesaghi, Doreen Matthies, Prashant Rao, Alan Merk, Jason Pierson, Jacqueline L. Milne, Sriram Subramaniam**

123-PLAT 11:15 AM

THE STRUCTURE OF THE METHANOSPIRILLUM HUNGATEI FLAGELLUM AS DETERMINED BY CRYO ELECTRON MICROSCOPY. **Nicole Poweleit**

124-PLAT 11:30 AM

IN SILICO REDUCTION OF CONFORMATIONAL VARIANCE IN CRYO-EM IMAGING. **Gunnar F. Schröder, Michaela Spiegel, Amudha Kumari Duraisamy**

125-PLAT 11:45 AM

COLLAPSE OF INDIVIDUAL DNA CHAINS CONFINED IN BACTERIOPHAGE CAPSIDS. **Françoise Livolant, Amélie Leforestier, Marta De Frutos, Dominique Durand**

126-PLAT 12:00 PM

STRUCTURAL REMODELING OF BACTERIOPHAGE Φ 29 DURING INFECTION OF GRAM-POSITIVE BACTERIUM. **Madeline M. Farley, Jiagang Tu, Ian Molineux, Jun Liu**

127-PLAT 12:15 PM

CRYO-STEM TOMOGRAPHY PROVIDES MORPHOLOGICAL AND CHEMICAL CHARACTERIZATION OF PRECIPITATED CALCIUM-PHOSPHATE CLUSTERS SEQUESTERED IN MITOCHONDRIA OF INTACT VITRIFIED FIBROBLASTS. **Sharon G. Wolf, Yael Mutsafi, Ben Horowitz, Michael Elbaum, Deborah Fass**

128-PLAT 12:30 PM

ELECTRON CRYO-TOMOGRAPHY OF NANOWIRES IN SHEWANELLA ONEIDENSIS MR-1. **Poorna Subramanian, Sahand Pirbadian, Mohamed Y. El-Nagggar, Grant J. Jensen**

Platform

Cell Mechanics, Mechanosensing, and Motility I

10:45 AM - 12:45 PM, ROOM 502B

Co-Chairs

Melissa Knothe Tate, University of New South Wales, Australia
Mohammad Mofrad, University of California, Berkeley

129-PLAT 10:45 AM

MECHANO-SENSITIVE INTERACTION BETWEEN TALIN AND FULL-LENGTH VINCULIN. **Yinan Wang**, Benjamin T. Goult, Mingxi Yao, Jie Yan

130-PLAT 11:00 AM

DISSIPATION OF STRESS IN THE CYTOSKELETON VIA ALPHA-ACTININ DYNAMIC CROSSLINKING. **Hossein Khadivi Heris**, Adele Khavari, Adam Hendricks, Allen Ehrlicher

131-PLAT 11:15 AM

MECHANOTRANSDUCTION OF THE ENDOTHELIAL GLYCOCALYX MEDIATES NITRIC OXIDE PRODUCTION THROUGH ACTIVATION OF TRP CHANNELS. **Matthew Dragovich**, Daniel Chester, X. Frank Zhang

132-PLAT 11:30 AM

A LAMIN A CHIMERIC PROTEIN CONTAINING A FRET BASED STRESS SENSORS REPORTS SPATIO-TEMPORAL FORCES IN THE NUCLEAR LAMINA. **Thomas M. Suchyna**, Fanji Meng, Frederick Sachs, Wilma Hofmann

133-PLAT 11:45 AM

EDUCATION TRAVEL AWARDEE

MOLECULAR MECHANISMS OF MECHANOTRANSDUCTION THROUGH LINC COMPLEXES. **Zeinab Jahed**, Hengameh Shams, Mohammad Mofrad

134-PLAT 12:00 PM

CELL INVASION THROUGH STIFF CONSTRICTIONS CAUSES MUTATIONS WHILE DAMAGING THE NUCLEUS. **Jerome Irianto**, Charlotte R. Pfeifer, Avathamsa Athirasala, Irena L. Ivanovska, Roger E. Greenberg, Dennis E. Discher

135-PLAT 12:15 PM

VISUALIZING DIRECT INTERACTIONS IN THE MECHANOBIOOME. **Priyanka Kothari**, Vasudha Srivastava, Irina Tchernyshyov, Jennifer Van Eyk, Douglas N. Robinson

136-PLAT 12:30 PM

MAPPING THE MECHANOME: NEW EXPERIMENTAL AND COMPUTATIONAL APPROACHES TO ELUCIDATE STEM CELL MECHANOADAPTATION AND LINEAGE COMMITMENT. **Melissa L. Knothe Tate**, Iman Jalilian, Min Jae Song, Sara McBride

Platform
TRP Channels

10:45 AM - 12:45 PM, ROOM 515A

Co-Chairs

Avi Priel, The Hebrew University of Jerusalem, Israel
Theodore Wensel, Baylor College of Medicine

137-PLAT 10:45 AM

THE STOICHIOMETRY AND ACTIVATION MECHANISM OF TRPV1 BY VANILLOIDS. **Rakesh Kumar**, Adina Hazan, Henry Matzner, **Avi Priel**

138-PLAT 11:00 AM

ION-ION INTERACTION AT THE MULTI-ION TRPV1 PORE. **Bo Hyun Lee**, Jie Zheng

139-PLAT 11:15 AM

A COMBINED COARSE-GRAINED AND ALL-ATOM MOLECULAR SIMULATION OF THE TRPV1 CHANNEL. **Wenjun Zheng**

140-PLAT 11:30 AM

N-HMME UPREGULATES LIPOLYTIC PROTEINS IN THE LIVER TO COUNTER NAFLD. **Padmamalini Baskaran**, Ross Cook, Sara Cisneros, Steven McAllisted, Baskaran Thyagarajan

141-PLAT 11:45 AM

STRUCTURE OF THE FULL-LENGTH TRPV2 CHANNEL BY CRYOEM. **Kevin Huynh**

142-PLAT 12:00 PM

STRUCTURAL BASIS OF TRPV2 CHANNEL GATING INVESTIGATED WITH CRYO-EM. **Timothy L. Dosey**, Zhao Wang, Fan Guizhen, Irina I. Serysheva, Wah Chiu, Theodore G. Wensel

143-PLAT 12:15 PM

STRUCTURE OF THE TRPA1 ION CHANNEL SUGGESTS REGULATORY MECHANISMS. **Candice E. Paulsen**, Jean-Paul Armache, Yuan Gao, Yifan Cheng, David Julius

144-PLAT 12:30 PM

THE ROLE OF LIPID RAFTS IN THE LOCALIZATION AND FUNCTION OF THE CHEMOSENSORY TRPA1 CHANNEL. **Justyna B. Startek**, Debapriya Ghosh, Yerandy A. Alpizar, Alejandro López-Requena, Nele Van Ranst, Thomas Voets, Karel Talavera

Platform
Protein Assembly and Function

10:45 AM - 12:45 PM, ROOM 515B

Co-Chairs

Jennifer Boatz, University of Pittsburgh
Jochen Mueller, Ludwig Maximilian University of Munich, Germany

145-PLAT 10:45 AM

STRUCTURAL STUDIES OF THE OLIGOMERIZATION PROCESS OF HUMAN CYSTATIN C VARIANTS. **Zuzanna Pietralik**, Magdalena Murawska, Aneta Szymanska, Janet R. Kumita, Christopher M. Dobson, **Maciej Kozak**

146-PLAT 11:00 AM

THE STRUCTURAL BASIS OF ENZYME REGULATION BY CTP SYNTHASE METABOLIC FILAMENTS. **Eric Lynch**, **Justin Kollman**

147-PLAT 11:15 AM

TUBULIN MONOMER-MONOMER ASSOCIATION IS LESS INFLUENCED BY THE SOLVENT THAN DIMER-DIMER ASSOCIATION: STRUCTURE AND FUNCTION OF TUBULIN INTERACTION INTERFACES. **Felipe Montecinos-Franjola**, Peter Schuck, Dan L. Sackett

148-PLAT 11:30 AM

STRUCTURAL STUDIES OF PLANT CESA SUPPORT EIGHTEEN CESAS IN THE PLANT CSC. **Venu G. Vandavasi**, Daniel K. Putnam, Qiu Zhang, Loukas Petridis, William T. Heller, B. Tracy Nixon, Candace H. Haigler, Udaya Kalluri, Leighton Coates, Paul Langan, Jeremy C. Smith, Jens Meiler, Hugh O'Neill

149-PLAT 11:45 AM

STRUCTURAL INSIGHTS INTO TC TOXIN ACTION. **Stefan Raunser**

150-PLAT 12:00 PM

AN INVESTIGATION OF THE ATOMIC STRUCTURE OF CATARACT-FORMING MUTANT GAMMA-D-CRYSTALLIN AGGREGATES FORMED UNDER DISTINCT ENVIRONMENTAL CONDITIONS. **Jennifer C. Boatz**, Matthew J. Whitley, Cody L. Hoop, Xuemei Zeng, Nathan Yates, Angela M. Gronenborn, Patrick C A van der Wel

151-PLAT 12:15 PM

THE GIANT CYTOSKELETAL PROTEIN OBSCURIN ACTS AS A VARIABLE FORCE RESISTOR. **Nathan T. Wright**, Tracy A. Caldwell, Logan C. Meyer

152-PLAT 12:30 PM
FORCE SENSING BY THE VASCULAR PROTEIN VON WILLEBRAND FACTOR IS TUNED BY A STRONG INTERMONOMER INTERACTION. **Jochen P. Mueller**, Salomé Mielke, Achim Löff, Tobias Obser, Christof Beer, Diana A. Pippig, Willem Vanderlinden, Reinhard Schneppenheim, Martin Benoit

Platform Membrane Active Peptides and Toxins

10:45 AM - 12:45 PM, ROOM 501ABC

Co-Chairs

Estefania Mulvihill, Eidgenössische Technische Hochschule Zürich, Switzerland

Marc-Antoine Sani, University of Melbourne, Australia

153-PLAT 10:45 AM
A PORE MODEL OR THE CARPET MODEL? THE MODE OF ACTION OF AMPS ON E. COLI SPHEROPLASTS. Yen Sun, Tzu-Lin Sun, **Huey W. Huang**

154-PLAT 11:00 AM
PROBING THE ANTIMICROBIAL ACTION OF POLYMYXIN B1 AND MELITTIN VIA COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Damien F. Jefferies**, Pin-Chia Hsu, Syma Khalid

155-PLAT 11:15 AM
THE DISRUPTIVE STATE OF THE MEMBRANE ACTIVE ANTIMICROBIAL PEPTIDE PISCIDIN 1 INVESTIGATED BY MULTI- μ S ALL-ATOM SIMULATIONS AND SOLID-STATE NMR: SURFACE DEFECTS ARE FAVORED OVER STABLE PORES. **B. Scott Perrin Jr**, Riqiang Fu, Myriam Cotten, Richard W. Pastor

156-PLAT 11:30 AM
DIRECTLY OBSERVING THE LIPID-DEPENDENT SELF-ASSEMBLY AND PORE FORMING MECHANISM OF THE CYTOLYTIC TOXIN LISTERIOLISYN O. **Estefania S. Mulvihill**, Katharina van Pee, Stefania Mari, Daniel J. Mueller, Özkan Yildiz

157-PLAT 11:45 AM
LIPID-PROTEIN PARTNERING DURING PORE FORMATION OF FRAGACEA-TOXIN C. **Koldo Morante**, Jose M. M. Caaveiro, Kouhei Tsumoto

158-PLAT 12:00 PM
INHIBITION OF RTX TOXIN ACTIVITY BY THE NUCLEAR STAIN, DRAQ5. **Angela C. Brown**, Joshua Webb

159-PLAT 12:15 PM
MEMBRANE-BINDING PROPERTIES OF GATING-MODIFIER AND PORE BLOCKING TOXINS: MEMBRANE INTERACTION IS NOT A PREREQUISITE FOR MODIFICATION OF CHANNEL GATING. **Evelyne Deplazes**, Sónia Troeira Henriques, Glenn F. King, David J. Craik, Alan E. Mark, Christina I. Schroeder

160-PLAT 12:30 PM
STRUCTURAL CHANGES IN LIPID MODEL MEMBRANES INDUCED BY THE FUNGAL PEPTIDE TOXIN ECE1-III. **Julia Wernecke**, Laura Paulowski, Bernhard Hube, Oliver H. Seeck, Thomas Gutschmann

Platform Cardiac Smooth and Skeletal Muscle Electrophysiology

10:45 AM - 12:45 PM, ROOM 511ABC

Co-Chairs

Edward Lakatta, NIH

Eric Sobie, University of Maryland Biotechnology Institute

161-PLAT 10:45 AM
SUBSTANTIAL CELL-TO-CELL HETEROGENEITY OF ION CURRENTS IS AN ESSENTIAL CHARACTERISTIC OF THE SINOATRIAL NODE. **Oliver J. Monfredi**, Bruce Ziman, Mark Boyett, Edward Lakatta, Victor A. Maltsev

162-PLAT 11:00 AM INTERNATIONAL TRAVEL AWARDEE
SK4 K⁺ CHANNELS REGULATE SINOATRIAL PACEMAKER AND THEIR BLOCKADE AMELIORATE ARRHYTHMIAS IN CPVT2 PATIENT-DERIVED IPSC AND IN VIVO IN CASQ2 KNOCK-IN AND KNOCK-OUT MICE. **Shiraz Haron-Khun**, David Weisbrod, Dor Yadin, Asher Peretz, Michael Eldar, Michael Arad, Bernard Attali

163-PLAT 11:15 AM
ACTION POTENTIAL MORPHOLOGY MEASUREMENT OF CARDIAC CELL CHAMBER SPECIFIC CELL TYPES OF STEM CELL-DERIVED CARDIAC MYOCYTES. Aaron D. Kaplan, Glenna CL Bett, **Randall L. Rasmusson**

164-PLAT 11:30 AM
FLUORESCENCE LOCAL FIELD OPTICAL MAPPING (FLOM) OF CA²⁺ ALTERNANCES TEMPERATURE DEPENDENCY IN INTACT PERFUSED MOUSE HEARTS. **Yuriana Aguilar-Sanchez**, Moris A. Saravia, Jose Millet, Ariel L. Escobar

165-PLAT 11:45 AM
SUDDEN INFANT DEATH AND MODULATION OF LATE SODIUM CURRENT BY HYPOXIA, INVESTIGATED IN INDUCED PLURIPOTENT STEM CELLS. **Stefan A. Mann**, Jamie I. Vandenberg, Adam P. Hill

166-PLAT 12:00 PM
INCREASED SUSCEPTIBILITY OF SPONTANEOUSLY HYPERTENSIVE RATS TO VENTRICULAR TACHYARRHYTHMIAS DURING THE EARLY STAGES OF HYPERTENSION. **Christopher Y. Ko**, Thao P. Nguyen, Ali A. Sovari, Arash Pezhouman, Shankar Iyer, Hong Cao, Aneesh Bapat, Nooshin Vahdani, Mostafa Ghanim, Michael C. Fishbein, James N. Weiss, Hrayr S. Karagueuzian

167-PLAT 12:15 PM
EXTRACELLULAR SODIUM DEPENDENCE OF THE CONDUCTION VELOCITY-CALCIUM RELATIONSHIP: EVIDENCE OF EPHAPTIC SELF-ATTENUATION. **Sharon George**, Mohammad Bonakdar, Michael Zeitz, Rafael Davalos, James Smyth, Steven Poelzing

168-PLAT 12:30 PM
EVIDENCE FOR PHOSPHORYLATION-DEPENDENT MODULATION OF BK CHANNEL ACTIVITY IN VASCULAR SMOOTH MUSCLE (VSM) MYOCYTES AND RESISTANCE ARTERIES. Barry D. Kyle, Ramesh C. Mishra, **Andrew P. Braun**

Undergraduate Student Pizza "Breakfast"

11:30 AM - 1:00 PM, ROOM 406AB

The Education Committee hosts this "breakfast" for undergraduate students. This session provides a valuable networking and social opportunity to meet other students and Committee members, to discuss academic goals and questions, and to develop a biophysics career path. Space is limited to the first 100 registrants. Meeting attendees do not need to pre-register for this event.

Colleges in the Community Day

11:30 AM - 5:00 PM, ROOM 406AB

This full day of activities for local college students and their instructors kicks off with an Undergraduate Student Pizza "Breakfast" where participants have an opportunity to socialize and network with their peers and members of the Biophysical Society's Education Committee in a fun and relaxed environment. Next, students have a chance to win prizes during a scavenger hunt designed to promote learning and interaction with researchers. Undergraduates also have a unique opportunity to ask graduate students, postdocs, and leading biophysicists about training and career opportunities in biophysics and related fields during this interactive Q & A session. Come prepared to find out about the course of study that biophysicists undertake, what it means to be a biophysicist, and how biophysicists make important discoveries. Finally, students 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, ROOM 404AB

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

Career Center Workshop Creating and Using an Effective CV/Résumé

12:00 PM - 1:00 PM, ROOM 518

The CV and Résumé are critical components of any effective job search, regardless of function, level, or industry. In this workshop, we will look at what constitutes a good résumé or CV, what makes the two documents different, as well as what makes them similar. We will examine sample documents (both good and bad) and discuss which document to use, when to use it, and how to most effectively use it when conducting your job search.

Public Affairs Committee Meeting

12:15 PM - 2:15 PM, ROOM 506

The World Outside the Lab: Many Ways to Use Your PhD Skills in Industry

1:00 PM - 2:30 PM, ROOM 403A

Have you ever wondered how you can apply the skills learned while working on your PhD in a career away from the bench? The Early Careers Committee is sponsoring a panel to discuss the plethora of career options that exist beyond the bench, such as publishing, science writing, patent law, policy, marketing, etc. Panelist involved in a wide variety of careers will share their personal experiences.

Speakers

Anna Amcheslavsky, Illumina
Ragan Robertson, University of California, Los Angeles
Jeanne Small, Quantum Northwest

Graduate & Postdoc Institution Fair

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

This fair will introduce students and postdoctoral candidates to colleges and universities with leading programs in biophysics. Registration is not needed to participate as a student.

Snack Break

1:45 PM - 3:00 PM, WEST HALL

Poster Presentations and Late Posters

1:45 PM - 3:45 PM, WEST HALL

Teaching Science Like We Do Science

2:00 PM - 3:30 PM, ROOM 408A

This interactive workshop provides participants with practical tools, tips and open educational resources for bringing biophysics topics in the lab and in the classroom to life for undergraduate and graduate students. Small group discussions guided by Discipline-Based Education Research (DBER) recommendations provide opportunities to apply the teaching tools presented to participants' educational practice.

Speakers

Gundala Bosch, Johns Hopkins Bloomberg School of Public Health
Scott Gould, Claremont College
Patricia Soto, Creighton University

Career Center Workshop Networking for Nerds

2:30 PM - 3:30 PM, ROOM 518

It's elementary—networking is an absolute necessity in any career, and especially in science and engineering, and math. In fact, networking is not only critical to advancing your own career, but also to advancing scholarship itself. But what exactly is “networking”? It's more than just saying hello at a conference! Learn how to appropriately promote yourself and build a network. Discover how to “work a room,” start conversations with people you have never met before, and obtain information that can set you on a path to career victory. The importance and use of social networks will be emphasized.

Transparency, Reproducibility, and the Progress of Science

2:30 PM - 4:00 PM, ROOM 411

At this panel discussion sponsored by the Public Affairs Committee and the Publications Committee, the panelists will examine the complex issues relating to reproducibility in science, how it can be improved by greater transparency, and how it affects how we communicate science. Speakers will address reproducibility as it pertains to researchers, publishers, and government, and explore why this is a hot topic in the popular press.

Panelists

Helen Berman, Protein Data Bank
Emilie Marcus, Cell/Cell Press
Keith Yamamoto, University of California, San Francisco

Early Careers Committee Meeting

3:30 PM - 5:00 PM, ROOM 506

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

4:00 PM - 5:00 PM, ROOM 518

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

Signaling Complexes and Dynamics

4:00 PM - 6:00 PM, PETREE HALL C

Chair

Hao Wu, Harvard Medical School

169-SYMP

4:00 PM

STRUCTURAL ELUCIDATION OF INNATE IMMUNITY. Hao Wu

170-SYMP

4:30 PM

MECHANISM OF JAK2 ACTIVATION BY THE ARCHETYPE CLASS I CYTOKINE RECEPTOR, THE GROWTH HORMONE RECEPTOR. Andrew J. Brooks, Megan L. O'Mara, Wei Dai, Daniel Abankwa, Yash Chhabra, Kathryn A. Tunny, Michael W. Parker, Emma Sierrecki, Yann Gambin, Guillermo A. Gomez, Gitte W. Haxholm, Louise F. Nikolajsen, Manolis Doxastakis, Alan E. Mark, Michael J. Waters

171-SYMP 5:00 PM
MECHANISM AND FUNCTIONS OF PLATELET MECHANOSENSING.
Renhao Li

172-SYMP 5:30 PM
CONFORMATIONAL PLASTICITY AND DRUGGABILITY OF MEMBRANE-BOUND K-RAS. **Alemayehu A. Gorfe**

Symposium Structure and Motion of Cilia and Flagella

4:00 PM - 6:00 PM, PETREE HALL D

Chair
Jonathan Howard, Yale University

173-SYMP 4:00 PM
CRYO-ELECTRON TOMOGRAPHY PROVIDES A NEW WINDOW INTO CILIARY STRUCTURE AND FUNCTION. **Daniela Nicastro**

174-SYMP 4:30 PM
STRUCTURAL GENETICS OF CILIA/FLAGELLA. **Masahide Kikkawa**

175-SYMP 5:00 PM
MOTOR COORDINATION UNDERLYING THE FLAGELLAR BEAT IN CHLAMYDOMONAS. **Jonathon Howard**

176-SYMP 5:30 PM
SYNCHRONIZATION OF EUKARYOTIC FLAGELLA. **Raymond E. Goldstein**

Symposium DNA Nanostructures for Biophysics

4:00 PM - 6:00 PM, ROOM 502A

Chair
William Shih, Harvard University

177-SYMP 4:00 PM
DNA NANOSTRUCTURES AS BUILDING BLOCKS FOR MOLECULAR BIOPHYSICS AND FUTURE THERAPEUTICS. **William Shih**

178-SYMP 4:30 PM
CREATING PROGRAMMABLE DISORDER IN DNA ORIGAMI ARRAYS WITH COMBINATORIAL PATTERNS. **Lulu Qian, Grigory Tikhomirov, Philip Petersen**

179-SYMP 5:00 PM
DNA ORIGAMI FOR NANOPORES: DESIGN, DEVELOPMENTS AND CHALLENGES. **Ulrich F. Keyser**

180-SYMP 5:30 PM
NANOSCALE CONSTRUCTION AND IMAGING WITH DNA. **Peng Yin**

Platform Voltage-gated Channels (Na and Ca)

4:00 PM - 6:00 PM, ROOM 502B

Co-Chairs
Christopher Ahern, University of Iowa
Coeli Lopes, University of Rochester

181-PLAT 4:00 PM
RATIONAL DESIGN AND SYNTHESIS OF A NOVEL MEMBRANE BINDING NAV1.8 SELECTIVE INHIBITOR WITH IN VIVO ACTIVITY IN PAIN MODELS. **Christina I. Schroeder, Jennifer Deuis, Sonia Troeria Henriques, Zoltan Dekan, Marco Inserra, Mehdi Mobli, Irina Vetter**

182-PLAT 4:15 PM
SODIUM CHANNEL/LIGAND COMPLEX STRUCTURES AS A GUIDE FOR RATIONAL DRUG DESIGN. **Altin Sula, Paul DeCaen, Claire Naylor, Geancarlo Zanatta, Claire Bagneris, David E. Clapham, David Pryde, B.A. Wallace**

183-PLAT 4:30 PM
STRUCTURAL BASIS OF NAV1.7 INHIBITION BY AN ISOFORM-SELECTIVE SMALL MOLECULE ANTAGONIST. **David H. Hackos, Shivani Ahuja, Susmith Mukund, Lunbin Deng, Kuldip Khakh, Elaine Chang, Clint Young, Sophia Lin, J.P. Johnson Jr., Daniel F. Ortwine, Brian S. Safina, Daniel P. Sutherlin, Charles J. Cohen, Christopher M. Koth, Jian Payandeh**

184-PLAT 4:45 PM
MUTATION-SPECIFIC CARDIAC RISK ASSESSMENT IN LQT3. **Elsa Ronzier, Alessandra Matavel, Yitschak Biton, Niels Otani, Wojciech Zareba, Arthur J. Moss, Coeli Lopes**

185-PLAT 5:00 PM
GENETICALLY ENCODING SINGLE-MOLECULE FLUOROPHORES INTO ION CHANNELS IN LIVING CELLS. **Lilia Leisle, Rahul Chadda, Jason D. Galpin, Janice L. Robertson, Christopher A. Ahern**

186-PLAT 5:15 PM
GABAPENTINOLIDS SUPPRESS EARLY AFTERDEPOLARIZATIONS BY UNCOUPLING $\alpha_2\delta$ -1 SUBUNITS FROM $CA_{v1.2}$ CHANNELS: IMPLICATIONS FOR CA_{v} CHANNEL GATING-MODIFIERS AS A NEW CLASS OF ANTIARRHYTHMICS. **Nicoletta Savalli, Marina Angelini, James N. Weiss, Riccardo Olcese**

187-PLAT 5:30 PM
BIOPHYSICAL CHARACTERIZATION OF THE HONEYBEE'S DSC1 ORTHOLOG HIGHLIGHTS A NEW VOLTAGE DEPENDANT CALCIUM CHANNEL SUBFAMILY. **Pascal Gosselin-Badaroudine, Adrien Moreau, Louis Simard, Thierry Cens, Matthieu Rousset, Pierre Charnet, Mohamed Chahine**

188-PLAT 5:45 PM
REGULATION OF MEMBRANE LOCALIZATION OF TYPE TWO VOLTAGE GATED CALCIUM CHANNELS. **Mallory B. Scott, Paul J. Kammermeier**

Platform Membrane Structure 4:00 PM - 6:00 PM, ROOM 515A

Co-Chairs
Lisa Della Ripa, University of Illinois at Urbana-Champaign
Tyler Reddy, University of Oxford, United Kingdom

189-PLAT 4:00 PM
THE COMPLEX, ASYMMETRIC, ESCHERICHIA COLI ENVELOPE STUDIED BY NEUTRON SCATTERING. **Luke A. Clifton, Stephen A. Holt, Nico Paracini, Arwel V. Hughes, Syma Khalid, Damien Jefferies, Jeremy H. Lakey**

190-PLAT 4:15 PM
A COARSE GRAINED FORCE FIELD FOR PSEUDOMONAS AERUGINOSA PAO1 LIPOPOLYSACCHARIDE. **Brad J. Van Oosten, Thad A. Harroun**

191-PLAT 4:30 PM
MOLECULAR INSIGHTS INTO THE LOW PERMEABILITY BARRIER OF GRAM-NEGATIVE PATHOGENS. **Cesar A. Lopez Bautista, S. Gnanakaran, Helen Zgurskaya**

192-PLAT 4:45 PM
COMPARTMENTAL VOLUME REGULATION OF E. COLI UNDER VARIOUS GROWTH CONDITIONS. **Jonas van den Berg, Bert Poolman**

193-PLAT 5:00 PM
ATOMIC RESOLUTION STUDIES OF STEROL INTERACTIONS BY SOLID-STATE NMR SPECTROSCOPY. **Lisa A. Della Ripa, Alexander G. Cioffi, Samantha Phinney, Xiangyan Shi, Taras V. Pogorelov, Martin D. Burke, Chad M. Rienstra**

194-PLAT 5:15 PM INTERNATIONAL TRAVEL AWARDEE
STRUCTURAL CHARACTERIZATION ON ASYMMETRIC LIPID VESICLES AT SUBNANOMETER RESOLUTION. **Barbara Geier, Drew Marquardt, Frederick Heberle, Milka Doktorova, John Katsaras, Georg Pabst**

195-PLAT 5:30 PM
STIRRING A LOW REYNOLDS NUMBER MARTINI. **Edward R. Lyman**

196-PLAT 5:45 PM
VENI, VIDI, VORONOI: ATTACKING VIRUSES WITH SPHERICAL VORONOI DIAGRAMS. **Tyler Reddy**, Ross Hemsley, Edd Edmondson, Nikolai Nowaczyk, Joe Pitt-Francis, Mark S.P. Sansom

Platform Intrinsically Disordered Proteins (IDP) and Aggregates I

4:00 PM - 6:00 PM, ROOM 515B

Co-Chairs

Claudiu Gradinaru, University of Toronto, Canada
Ana Melo, University of Pennsylvania

197-PLAT 4:00 PM CPOW TRAVEL AWARDEE
DETERMINING A TOPOLOGICAL MODEL FOR TAU BOUND TO TUBULIN HETERODIMERS. **Ana M. Melo**, Garrett Cobb, Juliana Coraor, Shana Elbaum-Garfinkle, Elizabeth Rhoades

198-PLAT 4:15 PM
A NEW APPROACH TO INFER SIZE AND SHAPE OF DISORDERED CONFORMATIONS OF PROTEINS FROM SM-FRET DATA. Gregory-Neal Gomes, Jianhui Song, Hue-Sun Chan, **Claudiu C. Gradinaru**

199-PLAT 4:30 PM
FTIR STUDY REVEAL INTRINSICALLY DISORDERED NATURE OF HEAT SHOCK PROTEIN 90. **Aihua Xie**, Maurie Balch, David Neto, Oliver Causey, Johnny Hendriks, Junpeng Deng, Robert Matts

200-PLAT 4:45 PM
PHYSICAL PRINCIPLES THAT GOVERN THE SEQUENCE-ENCODED PHASE BEHAVIOR OF INTRINSICALLY DISORDERED BLOCK-COPOLYMERIC PROTEINS. **Alex S. Holehouse**, Tyler S. Harmon, Rohit V. Pappu

201-PLAT 5:00 PM
CYTOTOXICITY OF PRION PROTEIN-DERIVED CELL PENETRATING PEPTIDES IS INDEPENDENT OF AMYLOID FORMATION. Vineeth Mukundan, Christy Maksoudian, Maria Vogel, **Mazin Magzoub**

202-PLAT 5:15 PM
INTRINSICALLY DISORDERED PROTEINS DRIVE MEMBRANE CURVATURE. **David J. Busch**, Justin R. Houser, Carl C. Hayden, Michael B. Sherman, Eileen M. Lafer, Jeanne C. Stachowiak

203-PLAT 5:30 PM
KINETICS OF AMYLOID FIBRIL SELF-ASSEMBLY BY DIRECT OBSERVATION OF ELONGATION. **Laurence J. Young**, Clemens F. Kaminski

204-PLAT 5:45 PM
FROM PHYSIOLOGICAL FLUIDS TO PATHOLOGICAL GELS: DISORDERED PROTEINS AT THE NEXUS OF LIQUID PHASE SEPARATION AND NEURODEGENERATIVE DISEASE. Shana Elbaum-Garfinkle, **Nicole Taylor**, Clifford P. Brangwynne

Platform

Membrane Protein Structure and Folding I

4:00 PM - 6:00 PM, ROOM 501ABC

Co-Chairs

Vadim Cherezov, University of Southern California
Syma Khalid, University of Southampton, United Kingdom

205-PLAT 4:00 PM
ARNT: STRUCTURE AND MECHANISM OF THE AMINOARABINOSYL TRANSFERASE RESPONSIBLE FOR RESISTANCE TO POLYMYXIN-CLASS ANTIBIOTICS. **Vasileios I. Petrou**, Carmen M. Herrera, Kathryn M. Schultz, Oliver B. Clarke, Jeremie Vendome, David Tomasek, Surajit Banerjee, Kanagalaghatta R. Rajashankar, Brian Kloss, Edda Kloppmann, Burkhard Rost, Candice S. Klug, M. Stephen Trent, Lawrence Shapiro, Filippo Mancia

206-PLAT 4:15 PM
STRUCTURAL STUDIES OF THE HUMAN KAPPA OPIOID RECEPTOR ACTIVE STATE CONFORMATIONS. **Ming-Yue Lee**, Nilkanth Patel, Vsevolod Katritch, Raymond C. Stevens, Vadim Cherezov

207-PLAT 4:30 PM
CRYSTAL STRUCTURE OF THE CALCIUM ATPASE SERCA IN COMPLEX TO A NOVEL ANTI-CANCER AGENT THAT TARGETS MULTIDRUG-RESISTANT LEUKEMIA. **John K. Lee**, Joseph M. Autry, Razvan Cornea, Nicholas Bleeker, Denise Casemore, Chengguo Xing, David D. Thomas

208-PLAT 4:45 PM CPOW TRAVEL AWARDEE
ADVANCES IN IN SITU X-RAY CRYSTALLOGRAPHY OF MEMBRANE PROTEINS. **Jana Broecker**, Viviane Klingel, Bryan T. Eger, Oliver P. Ernst

209-PLAT 5:00 PM
A MACHINE LEARNING APPROACH TO HETEROLOGOUS MEMBRANE PROTEIN OVEREXPRESSION. **Shyam M. Saladi**, Nauman Javed, Axel Müller, William M. Clemons

210-PLAT 5:15 PM
LINKING THE OUTER MEMBRANE OF E.COLI TO THE CELL WALL VIA OMPA & BRAUN'S LIPOPROTEIN: TOWARDS A MOLECULAR MODEL OF A VIRTUAL BACTERIAL CELL ENVELOPE. **Syma Khalid**, Maite Ortiz-Suarez, Peter J. Bond, Thomas Piggot

211-PLAT 5:30 PM
SYSTEMATIC EVALUATION OF THE CS-ROSETTA DE NOVO STRUCTURE PREDICTION METHOD FOR MEMBRANE PROTEINS. **Katrin Reichel**, Olivier Fiset, Tatjana Braun, Gerhard Hummer, Oliver Lange, Lars Schäfer

212-PLAT 5:45 PM
INSIGHTS INTO HOW MUTATIONS THERMOSTABILIZE G-PROTEIN-COUPLED RECEPTORS. **Nagarajan Vaidehi**, Sangbae Lee, Supriyo Bhattacharya, Manbir Sandhu, Reinhard Grisshammer, Christopher G. Tate

Platform Biomaterials and Biosurfaces

4:00 PM - 6:00 PM, ROOM 511ABC

Co-Chairs

Ehud Landau, University of Zurich, Switzerland

Birgit Plochberger, Vienna University of Technology, Austria

213-PLAT 4:00 PM

CONFINEMENT OF LIPID MEMBRANES BY NANOSTRUCTURED POLYMER PATTERNS FOR CELL TO CELL MIMICKING. **Birgit Plochberger**, Richard Wollhofen, Jaroslav Jacak, Markus Axmann, Viktoria Motsch, Gerhard J. Schütz, Thomas Klar

214-PLAT 4:15 PM

RATIONALLY DESIGNED DYNAMIC PROTEIN HYDROGELS WITH REVERSIBLY TUNABLE MECHANICAL PROPERTIES. Na Kong, **Hongbin Li**

215-PLAT 4:30 PM

THE MUSSEL ATTACHMENT PLAQUE: A LOAD BEARING PROTEIN SCAFFOLD. **Emmanouela Filippidi**, Daniel G. DeMartini, Paula Malo de Molina, Eric W. Danner, Juntae Kim, Matthew E. Helgeson, J. Herbert Waite, Megan T. Valentine

216-PLAT 4:45 PM

LIPID PHASE BEHAVIOR AND PROTEIN-LIPID INTERACTIONS WITHIN NANOLIPOPROTEIN PARTICLES UPON SOL-GEL DERIVED ENCAPSULATION. **Wade F. Zeno**, Silvia L. Hilt, Subhash H. Risbud, John C. Voss, Marjorie L. Longo

217-PLAT 5:00 PM

DESIGNED FUNCTIONAL LIPIDIC BIOMATERIALS: APPLICATIONS IN MOLECULAR RECOGNITION, DRUG DELIVERY AND MEMBRANE PROTEIN CRYSTALLIZATION. Yazmin M. Osornio, Livia Salvati Manni, Simone Aleandri, **Ehud Landau**

218-PLAT 5:15 PM

OPTIMIZATION OF PEPTIDE-TAGGED CATIONIC LIPID NANOPARTICLES FOR TARGETED GENE DELIVERY. **Emily Wonder**, Ramsey Majzoub, Kai K. Ewert, V. Ramana Kotamraju, Erkki Ruoslahti, Tambet Teesalu, Cyrus R. Safinya

219-PLAT 5:30 PM

THE MICROMECHANICS OF CELLULARIZED EXTRACELLULAR MATRIX. **Bo Sun**, Christopher AR Jones, Matthew Cibula, David H. McIntyre

220-PLAT 5:45 PM

ELECTROPHYSIOLOGY OF PATTERNED NEURONAL NETWORKS ON MONOLAYER GRAPHENE. **Sandeep Keshavan**, Shovan Naskar, Alberto Diaspro, Laura Cancedda, Silvia Dante

Korean Biophysicists Meeting

5:00 PM - 6:00 PM, ROOM 403B

PI to PI, a Wine & Cheese Mixer

5:00 PM - 7:00 PM, ROOM 406AB

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

Exhibitor Presentation HEKA Elektronik + Multi Channel Systems

5:30 PM - 7:00 PM, ROOM 505

PATCHMASTER and PatchServer: Solutions for Patch Clamp

Presentation 1: Combined Patch Clamp and Imaging with PATCHMASTER and SmartLUX

SmartLUX is the new imaging extension for PATCHMASTER software synchronizing image acquisition and patch clamp data recordings. Image based data such as fluorescence intensities form ROIs that are stored as traces together with current and voltage traces in the PATCHMASTER data file. A link between data points of the trace and the images enables convenient automatic display of the corresponding images when replaying the patch clamp data.

Presentation 2: Multi-Patch Experiments with EPC 10 Quadro and PATCHMASTER

PATCHMASTER software allows the user to control up to 8 patch clamp amplifiers (2 x EPC 10 USB Quadro) in parallel, making it an ideal platform for either conventional multi-patch experiments or automated patch clamping. The Multi-Cell extension of PATCHMASTER allows easy setup and execution of acquisition sequences and analysis methods for operating all amplifiers in parallel. Conventional patch clamping with multiple electrodes can be facilitated by automating processes using the Protocol Editor.

Presentation 3: PatchServer: A Pipette-Based Automatic Patch Clamp System

PatchServer is Multi Channel Systems' new automated patch-clamp system that adds on to a manual patch-clamp setup. It is able to establish single-channel and whole-cell recording configurations using standard glass electrodes. The automation includes sealing on suspended cells, establishing recording configurations, and moving to application bays for solution exchange – all under visual control. PatchServer comes in a one channel version for performing single experiments, as well as a four channel version for recording from four cells in parallel using the EPC 10 Quadro from HEKA. A piezo-driven ultra-fast solution exchanger (UFA tool) is available as an option and can be easily integrated.

Speakers

Christian Heinemann, Head of Engineering at HEKA Elektronik
Juergen Rettinger, Product Manager – Ion Channel Product Line at Multi Channel Systems

Biophysics Austria Mixer

6:00 PM - 7:00 PM, ROOM 404AB

Student Research Achievement Award (SRAA) Poster Competition

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

See page 47 for list of participants.

Supported 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 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.

SUNDAY POSTER SESSIONS

1:45 PM–3:45 PM, WEST HALL

Below is the list of poster presentations of abstracts submitted by October 1.

The list of late abstracts scheduled for Sunday 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 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 – B29	Protein Structure and Conformation I
B30 – B48	Protein-Small Molecule Interactions I
B49 – B71	Protein Dynamics and Allostery I
B72 – B102	Membrane Protein Structure and Folding I
B103 – B121	DNA Replication, Recombination, and Repair
B122 – B144	Chromatin and the Nucleoid
B145 – B173	Membrane Physical Chemistry I
B174 – B196	Membrane-active Peptides and Toxins I
B197 – B226	Membrane Structure I
B227 – B248	Membrane Receptors and Signal Transduction I
B249 – B278	Mechanosensation
B279 – B301	Excitation-Contraction Coupling I
B302 – B331	Voltage-gated K Channels, Mechanisms of Voltage Sensing and Gating I
B332 – B361	Voltage-gated Na Channels I
B362 – B390	Other Channels
B391 – B413	Cardiac Muscle Regulation
B414 – B429	Actin Structure, Dynamics, and Associated Proteins
B430 – B445	Microtubules, Structure, Dynamics, and Associated Proteins
B446 – B464	Cell Mechanics, Mechanosensing, and Motility I
B465 – B490	Membrane Pumps, Transporters, and Exchangers I
B491 – B517	Cellular Signaling and Metabolic Networks
B518 – B533	Neuroscience: Experimental Approaches and Tools
B534 – B555	Magnetic Resonance Spectroscopy: NMR and EPR
B556 – B578	Electron Microscopy
B579 – B583	Diffraction and Scattering Techniques
B584 – B613	Optical Microscopy and Super-Resolution Imaging I
B614 – B639	Bioengineering
B640 – B647	Biophysics Education

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

Protein Structure and Conformation I (Boards B1 - B29)

221-Pos BOARD B1

STRUCTURAL AND MECHANISTIC INSIGHTS DERIVED FROM SATURATION MUTAGENESIS OF CCDB. **Pankaj C. Jain**, Siddharth Patel, Prasanth Kumar, Raghavan Varadarajan

222-Pos BOARD B2

STRUCTURAL AND FUNCTIONAL STUDY ON THE INTERACTION OF HUMAN PLASMINOGEN AND PROTEIN H FROM HAEMOPHILUS INFLUENZAE TYPE F. **Tamim Al-Jubair**, Birendra Singh, Yu Ching Su, Susanna Törnroth Horsefield, Kristian Riesbeck

223-Pos BOARD B3

WHMD PROMOTES THE ASSEMBLY OF MYCOBACTERIUM SMEGMATIS FTSZ: A POSSIBLE ROLE OF WHMD IN BACTERIAL CELL DIVISION. **Dipanwita Bhattacharya**, Ashutosh Kumar, Dulal Panda

224-Pos BOARD B4

ASSOCIATION MECHANISM OF LEISHMANIA MAJOR PEROXIDASE AND CYTOCHROME C REVEALED THROUGH BROWNIAN AND MOLECULAR DYNAMICS. **Scott A. Hollingsworth**, James B. Fields, Georges Chreifi, Matthias Heyden, Anton P. Arce, Hugo I. Magaña-Garcia, Douglas J. Tobias, Thomas L. Poulos

225-Pos BOARD B5

STRUCTURAL AND BIOCHEMICAL CHARACTERIZATION OF CASK PDZ INTERACTION WITH PROTEIN AND LIPID BINDING PARTNERS. **Young Joo Sun**, Titus Hou, Xu Liu, Lokesh Gakhar, Ernesto Fuentes

226-Pos BOARD B6

NOVEL BIVALENT INTERACTION BETWEEN VASP-EVH1 AND ZYXIN IS CRITICAL FOR BINDING ORIENTATION. **Lucila A. Acevedo**, Alex I. Greenwood, Eric B. Gibbs, Scott Showalter, Linda Nicholson

227-Pos BOARD B7

CHARACTERIZING PROTEIN-PROTEIN NONSPECIFIC INTERACTIONS BY STATIC LIGHT SCATTERING. **Di Wu**, Huan-Xiang Zhou

228-Pos BOARD B8

STRUCTURAL STUDIES ON THE MITOCHONDRIAL FISSION PROTEIN FIS1 SUGGEST A MECHANISM OF TPR PROTEIN SELF-ASSOCIATION. **Amber Bakkum**, John Egner, Megan Cleland Harwig, Doug Bierer, R. Blake Hill

229-Pos BOARD B9

INTRINSICALLY-DISORDERED REGION OF HUMAN SMALL HEAT SHOCK PROTEIN HSPB1 AFFECTS STRUCTURE AND FUNCTION. **Amanda F. Clouser**, Ponni Rajagopal, Rachel E. Klevit

230-Pos BOARD B10

INTERPLAY BETWEEN IONIC STRENGTH, ASSOCIATION RATES AND ELECTROSTATIC INTERACTION IN THE C3D:CR2 COMPLEX. **Rohith R. Mohan**, Gary L. Huber, J. Andrew McCammon, Dimitrios Morikis

231-Pos BOARD B11

CONFORMATIONAL CHANGES IN COMPLEMENT COMPONENT 3 UPON ACTIVATION OR THROMBOMODULIN BINDING. Daniel DeHelian, Gavin Palowitch, Nathan Fritzing, Caroline Gambone, Thomas Holt, Shelby Marchese, **Julia R. Koeppel**

232-Pos BOARD B12

SYNERGY OF PUTATIVE BINDING MODES IN THE FACTOR H (CCP 19-20) AND C3D COMPLEX. **Reed E S Harrison**, Ronald D. Gorham, Dimitrios Morikis

233-Pos BOARD B13

THERMAL DENATURATION AND DOMAIN STABILITY OF NAMPT PROTEIN. **Trivikram R. Molugu**, Udeep Chawla, Radu C. Oita, Ting Wang, Michael F. Brown, Joe G. N. Garcia

234-Pos BOARD B14

STRUCTURE AND FUNCTION OF THE ASB-CONTAINING E3 LIGASES. **Ryan Lumpkin**

235-Pos BOARD B15

STRUCTURAL BASIS FOR CONFORMATIONAL SPACE OF LINEAR POLYUBIQUITIN BY CRYSTALLOGRAPHY AND SOLUTION SCATTERING. Trung Thanh Thach, Donghyuk Shin, Seungsu Han, **Sangho Lee**

236-Pos BOARD B16

A HYBRID METHODS APPROACH TO THE STRUCTURAL DETERMINATION OF PHOTOACTIVATION IN THE ORANGE CAROTENOID PROTEIN. **Corie Ralston**, Sayan Gupta

237-Pos BOARD B17

STRUCTURAL FRAMEWORK FOR PYRIDOXAL 5'-PHOSPHATE BINDING TO THE HUMAN GLUTAMATE-OXALOACETATE TRANSAMINASE VARIANTS. Jesi Lee, Peter Ngoi, Trevor Gokey, Xiao Chang, Ten-Yang Yen, Yanping Tan, Hongyun Tong, Zheng-Hui He, **Anton Guliaev**

238-Pos BOARD B18

CONFORMATIONAL DIFFERENCES BETWEEN ERK2 AND JNK3 α 1. **Ji Young Park**, Ka Young Chung

239-Pos BOARD B19

COMPARISON OF THE CONFORMATIONAL DYNAMICS BETWEEN DIFFERENT ACTIVE STATES OF β -ARRESTIN1 ANALYZED BY HYDROGEN/DEUTERIUM EXCHANGE MASS SPECTROMETRY. **Hee Ryung Kim**, Ka Young Chung

240-Pos BOARD B20

STRUCTURE-DYNAMIC DETERMINANTS GOVERNING A MODE OF REGULATORY RESPONSE AND PROPAGATION OF ALLOSTERIC SIGNAL IN SPLICE VARIANTS OF NA⁺/CA²⁺ EXCHANGE (NCX) PROTEINS. **Su Youn Lee**, Ka Young Chung, Daniel Khanashvili, Moshe Giladi

241-Pos BOARD B21

THE E.COLI SEC PATHWAY UNDER A SINGLE-MOLECULE LOUPE. Niels Vandenberg, Spiridoula (Lily) Karamanou, Anastassios (Tassos) Economou, Johan Hofkens, **Jelle Hendrix**

242-Pos BOARD B22

SYMMETRY-CONSTRAINED NORMAL MODE ANALYSIS OF THE BACTERIAL FLAGELLAR MOTOR. **Moon Ki Choi**, Soojin Jo, Moon Ki Kim

243-Pos BOARD B23

RESOLVING CONFORMATIONAL SWITCHES IN THE PROTEASE FTSH USING SINGLE-MOLECULE FRET. **Martine Ruer**, Philip Gröger, Krainer Georg, Michael Schlierf

244-Pos BOARD B24

STRUCTURAL CHANGES IN THE SNARE PROTEIN SNAP-25 BY PH AND IONIC STRENGTH. **Kyle S. Clawson**, David Hallan, Timothy T. Harris, Katrina J. Welker, Kara L. Woodbury, Dixon J. Woodbury

245-Pos BOARD B25

MECHANISM OF COORDINATION OF THE BACTERIOPHAGE T4 DNA PACKAGING MOTOR ANALYZED BY REAL-TIME SINGLE MOLECULE FLUORESCENCE ASSAY. **Li Dai**, Digvijay Singh, Reza Vafabakhsh, Marthandan Mahalingam, Vishal Kottadiel, Yann Chemla, Taekjip Ha, Venigalla B. Rao

246-Pos BOARD B26

LID CONFORMATIONAL DYNAMICS AND SUBSTRATE SPECIFICITY OF THE PILI CONSTRUCTING SORTASE C ENZYMES. **Emmanuel Naziga**, Jeff Wereszczynski

247-Pos BOARD B27

A NOVEL SIGNAL TRANSDUCTION MECHANISM IN LOV DOMAIN PROTEINS. **Estella F. Yee**, Anand T. Vaidya, Peter P. Borbat, Jack H. Freed, Brian R. Crane

248-Pos BOARD B28
NMR STRUCTURAL/FUNCTIONAL CHARACTERIZATION OF AN ONCOGENIC MUTANT OF CAMP-DEPENDENT PROTEIN KINASE A: PRKACA-DNA-JB1. **Adak N. Karamafrooz**, Jonggul Kim, Geoffrey Li, Sanford M. Simon, Susan S. Taylor, Gianluigi Veglia

249-Pos BOARD B29
STUDY ON THE CONFORMATIONAL CHANGE OF C-SRC TYROSINE KINASE: TARGETED MOLECULAR DYNAMICS SIMULATION. **Sangwook Wu**

Protein-Small Molecule Interactions I (Boards B30 - B48)

250-Pos BOARD B30
BIOPHYSICAL STUDIES ON THE INTERACTION OF THIONINE GOLD NANOCONJUGATE TO SERUM ALBUMIN. **Puja Paul**, G. SURESH KUMAR, S. Chandra Bhattacharyya

251-Pos BOARD B31
COMPUTATIONAL ASSESSMENT OF TRIMETHOPRIM RESISTANCE IN DI-HYDROFOLATE REDUCTASE. Haleh Abdizadeh, Omer Acar, Tandac Furkan Guclu, Yusuf Talha Tamer, Tugce Altinusak Batur, Erdal Toprak, Ali Rana Atilgan, **Canan Atilgan**

252-Pos BOARD B32
INTERACTIONS BETWEEN A CLASSICAL ALLOSTERIC PROTEIN AND A STRONG EFFECTOR REVISITED. Shunsuke Sakurai, Daiki Sawada, Takashi Yonetani, **Antonio Tsuneshige**

253-Pos BOARD B33
HUMAN SERUM ALBUMIN-[RU(PHEN)₃]²⁺ COMPLEX FORMATION STUDIED BY OPTICAL SPECTROSCOPIES. **Zuzana Jurasekova**, Veronika Huntosova, Dominik Belej, Pavol Miskovsky, Daniel Jancura

254-Pos BOARD B34
MULTIMERIZATION OF SOLUTION-STATE PROTEINS BY WATER SOLUBLE PORPHYRINS. **Daniel R. Marzolf**, Aidan M. McKenzie, Alexander C. Hudson, Oleksandr Kokhan

255-Pos BOARD B35
NANOSCALE MEASUREMENTS OF BIOCHEMICAL INTERACTIONS AT THE SURFACE OF OPTICALLY TRAPPED PARTICLES. **Wooten D. Simpson III**, Volkmar Heinrich

256-Pos BOARD B36
CHARACTERIZATION OF THE INFLUENCE OF A SMALL MOLECULE ON A RAS-RELATED PROTEIN-PROTEIN INTERACTION. Djamali Muhoza, **Paul D. Adams**

257-Pos BOARD B37
CATION-SPECIFIC INFLUENCES ON THE SOLVATION AND SOLVENT ACCESSIBILITY OF ALANINE-RICH PEPTIDES. **Taylor P. Light**, Gina MacDonald

258-Pos BOARD B38
BIOPHYSICAL AND MOLECULAR INVESTIGATION OF THE INTERACTION BETWEEN ENTEROLACTONE AND HUMAN SERUM ALBUMIN. Bahareh Bigdeli, Behdad Delavari, Samaneh Samaei Daryan, Ali Akbar Saboury, **Bahram Goliaei**

259-Pos BOARD B39
POLYSACCHARIDE CROWDER SHOWS OPTIMAL AFFINITY FOR SEMI-OPEN STATE OF MALTOSE BINDING PROTEIN. **Archishman Ghosh**, Huan X. Zhou

260-Pos BOARD B40
EFFECT OF A COSOLVENT IN BINDING EVENTS OF HYDROPHOBIC MOLECULES. AN EXPERIMENTAL AND NUMERICAL STUDY. Caroline Senac, Patrick Fuchs, Wladimir Urbach, **Nicolas Taulier**

261-Pos BOARD B41
ATOMIC MECHANISMS OF STABILIZING AND DESTABILIZING CO-SOLVENTS ON PROTEIN STABILITY. **Cristiano L. Dias**, Zhaoqian Su

262-Pos BOARD B42
FCS ON PROTEINS IN CROWDED ENVIRONMENTS. **Alyazan Albarghash**, Daryan Kempe, Niklas Ole Junker, Birgit Simone Hillebrecht, Friedemann Melchior Landmesser, Jörg Fitter

263-Pos BOARD B43
MODELING MACROMOLECULAR CROWDING THROUGH TRANSLATIONAL AND ROTATIONAL DIFFUSION OF SMALL MOLECULAR PROBES. **Megan Currie**, Brenden Berry, Taylor Ward, Erin D. Sheets, Ahmed A. Heikal

264-Pos BOARD B44
EFFECT OF CO-SOLUTES ON MODEL REACTION EQUILIBRIA: MIGHT CHANGES IN THE FREE ENERGY OF BULK WATER BE THE UNDERLYING CAUSE? **Daryl K. Eggers**

265-Pos BOARD B45
EXPLORATION OF WEAK INTERACTIONS BETWEEN FOLATE AND GLYCINE-BETAINE. **Purva P. Bhojane**, Michael R. Duff, Elizabeth E. Howell

266-Pos BOARD B46
QUANTIFYING INTERACTIONS BETWEEN BIOCHEMICAL FUNCTIONAL GROUPS AND WITH HOFMEISTER SALT IONS IN WATER. **Xian Cheng**, Lixue Cheng, Irina Shkel, Ben Knowles, Kevin Connor, Evan Buechel, Cristen Molzahn, Andrew Mcclyman, David Lambert, Hunter Cochran, Thomas Jr. Record

267-Pos BOARD B47
A PROTEIN EXPRESSION SYSTEM FOR EVALUATING CATION-PI AND PI-PI INTERACTION IN PROTEINS. Jinfeng Shao, Andy-Mark W.H. Thunnissen, **Jaap Broos**

268-Pos BOARD B48
STRUCTURAL AND FUNCTIONAL INSIGHTS INTO THREE UNDERCHARACTERIZED FIMBRIAL ADHESINS. **Roger D. Klein**, Kevin O. Tamadonfar, Jerome S. Pinkner, Karen W. Dodson, Scott J. Hultgren

Protein Dynamics and Allostery I (Boards B49 - B71)

269-Pos BOARD B49
THE STRUCTURAL AND DYNAMIC EFFECTS OF INHIBITOR BINDING TO PROTEIN KINASE C β II. **Shashank Jariwala**, Sivaraj Sivaramakrishnan, Barry J. Grant

270-Pos BOARD B50
MOLECULAR DYNAMICS SIMULATION AND MARKOV STATE MODEL REVEAL IRREGULAR METASTABLE CONFORMATION AND ALLOSTERY IN DNAJB-PKAC. **Yingjie Wang**, Alessandro Cembran, Jiali Gao, Gianluigi Veglia, Susan S. Taylor, Sanford M. Simon

271-Pos BOARD B51
A SYSTEMS APPROACH TO UNDERSTANDING THE ALLOSTERIC MECHANISM OF PYRUVATE KINASE M2. **Jamie A. Macpherson**

272-Pos BOARD B52
ROLE OF THE CENTRAL STALK IN THE ROTARY-CHEMICAL COUPLING AND TORQUE GENERATION OF F1-ATPASE. **Shayantani Mukherjee**, Arie H. Warshel

273-Pos BOARD B53
PROTEIN-LIGAND INTERACTIONS THROUGH THE COMPUTATIONAL MICROSCOPE: ALLOSTERY IN A CANONICAL SIGNALING DOMAIN. **Robert D. Malmstrom**, Alexandr P. Kornev, Susan S. Taylor, Rommie E. Amaro

274-Pos BOARD B54
MAPPING ALLOSTERY IN THE TWO DOMAIN CONSTRUCTS OF PDZ3 AND SH3 WITH ARTIFICIAL DOMAINS. **Kirubakaran Palani**, Lucie Pfeiferová, Jiří Vondrášek

275-Pos BOARD B55
SIALIC ACID INDUCED CONFORMATIONAL ENSEMBLE SHIFTS IN THE HEMAGGLUTININ-NEURAMINIDASE PROTEIN OF THE NEWCASTLE DISEASE VIRUS. **Nalvi D. Duro**, Priyanka Dutta, Sameer Varma

276-Pos BOARD B56
MOLECULAR INSIGHTS FOR THE ROLE OF KEY RESIDUES OF CALRETICULIN IN ITS BINDING ACTIVITIES. Hongyi Yang, Joanne E. Murphy-Ullrich, **Yuhua Song**

277-Pos BOARD B57
UNIQUE FLEXIBILITY PATTERNS OF PDB ENTRIES. **Monique M. Tirion**

278-Pos BOARD B58
LOSS IN ALLOSTERIC REGULATIONS THROUGH STRUCTURAL DYNAMICS LEAD TO DISEASE. **Avishek Kumar**, Tyler J. Glembo, Banu Ozkan

279-Pos BOARD B59
UNIVERSALITY OF VIBRATIONAL SPECTRA OF GLOBULAR PROTEINS. Hyuntae Na, Guang Song, **Daniel ben-Avraham**

280-Pos BOARD B60
THE DEGENERACY OF PROTEIN NORMAL MODES. **Hyuntae Na**, Guang Song

281-Pos BOARD B61
STATISTICAL PHYSICS OF THE CAUSALITY AND ENERGETICS IN ALLOSTERIC COMMUNICATION. **Enrico Guarnera**, Igor N. Berezovsky

282-Pos BOARD B62 INTERNATIONAL TRAVEL AWARDEE
SPECTRUS: A DIMENSIONALITY REDUCTION APPROACH FOR IDENTIFYING DYNAMICAL DOMAINS IN PROTEIN COMPLEXES FROM LIMITED STRUCTURAL DATASETS. **Luca Ponzoni**, Guido Polles, Vincenzo Carnevale, Cristian Micheletti

283-Pos BOARD B63
MODE LOCALIZATION IN THE COOPERATIVE DYNAMICS OF PROTEIN RECOGNITION. **Jeremy T. Copperman**, Marina G. Guenza

284-Pos BOARD B64
TUNING ALLOSTERY IN RANDOM SPRING NETWORKS. **Jason W. Rocks**, Nidhi Pashine, Irmgard Bischofberger, Carl P. Goodruch, Sidney R. Nagel, Andrea J. Liu

285-Pos BOARD B65
REVEALING THE MECHANISM FOR CONFORMATIONAL CHANGES FROM STRUCTURALLY RICH ENSEMBLES. **Laura Orellana**, Ozge Yoluk, Modesto Orozco, Erik Lindahl

286-Pos BOARD B66
FOLDING RATE AND TRANSITION PATH TIME OF A SINGLE-MOLECULE PROTEIN. **Amar Nath Gupta**

287-Pos BOARD B67
FASTER BINDING FREE-ENERGY LANDSCAPE CALCULATION BY VIRTUAL-STATE COUPLED ADAPTIVE UMBRELLA SAMPLING. **Bhaskar Dasgupta**, Higo Junichi, Haruki Nakamura

288-Pos BOARD B68 EDUCATION TRAVEL AWARDEE
DYNAMICS OF AGGREGATING MUTANTS OF THE P53 DNA BINDING DOMAIN REVEAL A NOVEL "DRUGGABLE" POCKET. **Mohan R. Pradhan**, Zahra Ouray, Srinivasaraghavan Kannan, David P. Lane, Chandra S. Verma

289-Pos BOARD B69
CALCULATING MULTI-BODY COOPERATIVITY PARAMETERS FOR CALCIUM BINDING TO CALMODULIN THROUGH COARSE-GRAINED SIMULATIONS. **Prithviraj Nandigrami**, John J. Portman

290-Pos BOARD B70
UNDERSTANDING CONFORMATIONAL CHANGES IN PERIPLASMIC BINDING PROTEINS. Nahren M. Mascarenhas, **Shachi Gosavi**

291-Pos BOARD B71
GENERALIZED ALLOSTERY IN THROMBIN. **Jiajie Xiao**, Freddie R. Salisbury Jr

Membrane Protein Structure and Folding I (Boards B72 - B102)

292-Pos BOARD B72
THE MODEL STRUCTURES OF C5A RECEPTOR (C5AR): INSIGHTS INTO AGONISM, INVERSE AGONISM AND ANTAGONISM. **Soumendra Rana**

293-Pos BOARD B73
DESIGN PRINCIPLES OF MEMBRANE PROTEIN STRUCTURES. Diane Nguyen, **Vladimir Yarov-Yarovoy**

294-Pos BOARD B74
DUAL TOPOLOGY GENERATION OF EMRE. **Nicholas Woodall**, Ying Yin, James Bowie

295-Pos BOARD B75
OPENING ION-TRANSFER PATHS OF CHANNELRHODOPSIN. **Christian Spakowski**, Joachim Heberle, Ana-Nicoleta Bondar

296-Pos BOARD B76
IMPROVED 3D STRUCTURE PREDICTION OF BETA-BARREL MEMBRANE PROTEINS BY USING EVOLUTIONARY COUPLING CONSTRAINTS, REDUCED STATE SPACE AND AN EMPIRICAL POTENTIAL FUNCTION. Wei Tian, Jie Liang, **Hammad Naveed**

297-Pos BOARD B77
COARSE-GRAINED MODELING OF MEMBRANE PROTEIN INTEGRATION VIA THE SEC TRANSLOCON. **Michiel J.M. Niesen**, Connie Y. Wang, Thomas F. Miller III

298-Pos BOARD B78
DETERMINANTS OF MULTISPANNING MEMBRANE PROTEIN INTEGRATION MEDIATED BY THE SEC TRANSLOCON. **Reid C. Van Lehn**, Bin Zhang, Thomas F. Miller III

299-Pos BOARD B79
HETEROGENEITY OF THE HYDROPHOBIC CORE OF A MEMBRANE PROTEIN COMPLEX. **Satarupa Bhaduri**, Stanislav D. Zakharov, S Saif Hasan, Valentyn Stadnytskyi, Łukasz Bujnowicz, Marcin Sarewicz, Artur Osyczka

300-Pos BOARD B80
PROBING CONFORMATIONAL EQUILIBRIA IN FLEXIBLE RECOGNITION BY MOLECULAR DYNAMICS AND EPR. **Jennifer M. Hays**, Marissa Kieber, Tsega Solomon, Linda Columbus, Peter M. Kasson

301-Pos BOARD B81
COMPUTATIONAL STUDY OF ANTHRACYCLINE INTERACTIONS WITH MEMBRANE-EMBEDDED P-GLYCOPROTEIN. **Eric K. Wong**, J. Alfredo Freitas, Douglas J. Tobias

302-Pos BOARD B82
NMR RESTRAINED PROTEIN STRUCTURE CALCULATIONS IN IMPLICIT WATER/MEMBRANE ENVIRONMENTS. **Ye Tian**, Charles Schwieters, Stanley Opella, Francesca Marassi

303-Pos BOARD B83
PREDICTING THE ROLE OF A SINGLE AMINO ACIDS IN THE DIMERIZATION OF TRANSMEMBRANE HELICES. **Yao Xiao**, Mark Teese, Dieter Langosch

304-Pos BOARD B84
INCLUDING H-BONDING IN DEPTH-DEPENDENT MEMBRANE BURIAL POTENTIALS FOR IMPROVING FOLDING SIMULATIONS. **Zongan Wang**, John M. Jumper, Karl F. Freed, Tobin R. Sosnick

305-Pos BOARD B85 EDUCATION TRAVEL AWARDEE
A COMPUTATIONAL MODEL FOR MEMBRANE PROTEIN FLUX ACROSS THE BACTERIAL PERIPLASM. **Shawn M. Costello**, Ashlee M. Plummer, Patrick J. Fleming, Karen G. Fleming

306-Pos BOARD B86
COMPUTATIONAL MODELS OF INTERACTING LOOP REGIONS IN PH-DEPENDENT GATING OF OMPG. **Alan Perez-Rathke**, Christina Chisholm, Min Chen, Jie Liang

307-Pos BOARD B87
ALL-ATOM STRUCTURAL MODELS OF THE TRANSMEMBRANE DOMAINS OF INSULIN RECEPTOR AND TYPE-1 INSULIN-LIKE GROWTH FACTOR RECEPTOR. Harish Vashisth, **Hossein Mohammadiarani**

308-Pos BOARD B88
MAPPING THE MEMBRANE PROTEOME OF ANAEROBIC GUT FUNGI USING RNA-SEQ. **Susanna Seppala**, Kevin S. Solomon, Sean P. Gilmore, John K. Henske, Monica D. Rieth, Michelle A. O'Malley

309-Pos BOARD B89
PREPARATION AND DELIVERY OF MICROCRYSTALS IN LIPIDIC CUBIC PHASE FOR SERIAL FEMTOSECOND CRYSTALLOGRAPHY. **Andrii Ishchenko**, Vadim Cherezov, Wei Liu

310-Pos BOARD B90
IMPACT OF MUTATIONS ON THE STRUCTURE OF THE HUMAN POTASSIUM CHANNEL KCNQ1. **Hui Huang**, Keenan C. Taylor, Brett M. Kroncke, Alfred L. George, Charles R. Sanders

311-Pos BOARD B91
CHARACTERIZING THE STRUCTURAL BASIS FOR USHER ACTIVATION. **Natalie S. Omattage**, Zengqin Deng, Peng Yuan, Scott J. Hultgren

312-Pos BOARD B92
PROTOCOL TO AVOID POSSIBLE ARTIFACTS IN ATOMISTIC SIMULATION OF GPCR PROTEINS WHOSE CRYSTAL STRUCTURE IS HEAVILY ENGINEERED. **Moutusi Manna**, Waldemar Kulig, Matti Javanainen, Joonas Tynkkynen, Ulf Hensen, Daniel J. Müller, Tomasz Rog, Ilpo Vattulainen

313-Pos BOARD B93
DYNAMICAL AND STRUCTURAL ALTERATIONS WITHIN LIPID-PROTEIN ASSEMBLIES CONTROL APOPTOTIC PORE FORMATION - A SOLID STATE NMR STUDY. **Artur PG Dingeldein**, Martin Lidman, Tobias Sparrman, Gerhard Gröbner

314-Pos BOARD B94
IDENTIFICATION OF CONFORMATION SPECIFIC BINDER FOR THE NA⁺/ GALACTOSE TRANSPORTER. **Jay P. Kumar**

315-Pos BOARD B95 EDUCATION TRAVEL AWARDEE
NMR SOLUTION STRUCTURE AND EXTRACELLULAR LOOP DYNAMICS OF THE OUTER MEMBRANE PROTEIN OPRG OF PSEUDOMONAS AERUGINOSA EXPLAIN TRANSPORT OF SMALL AMINO ACIDS. **Iga Kucharska**, Patrick Seelheim, Thomas Edrington, Binyong Liang, Lukas K. Tamm

316-Pos BOARD B96
MOLECULAR BASIS FOR THE INTERACTION OF LIPOPOLYSACCHARIDE WITH OUTER MEMBRANE PROTEIN OPRH FROM PSEUDOMONAS AERUGINOSA. **Iga Kucharska**, Binyong Liang, Lukas K. Tamm

317-Pos BOARD B97
SYMMETRY AND SIZE OF MEMBRANE PROTEIN POLYHEDRAL NANOPARTICLES. **Di Li**, Osman Kahraman, Christoph A. Haselwandter

318-Pos BOARD B98
STRUCTURAL BASIS FOR PHOSPHATIDYLINOSITOL-PHOSPHATE BIOSYNTHESIS. **Meagan L. Belcher Dufrisne**, Oliver B. Clarke, David Tomasek, Carla D. Jorge, Minah Kim, Surajit Banerjee, Kanagalaghatta R. Rajashankar, Lawrence Shapiro, Wayne A. Hendrickson, Helena Santos, Filippo Mancia

319-Pos BOARD B99
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320-Pos BOARD B100
STATISTICAL LEARNING AND DOCKING RECOVER THE REACTION COORDINATES OF A GPCR. **Evan Feinberg**, Vijay Pande

321-Pos BOARD B101
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322-Pos BOARD B102
CONFORMATION OF THE MEMBRANE-INTEGRATED FUNCTIONAL STATE OF ANTI-APOPTOTIC BCL-XL. **Yong Yao**, Danielle Nisan, Lynn Fujimoto, Francesca Marassi

DNA Replication, Recombination, and Repair (Boards B103 - B121)

323-Pos BOARD B103
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324-Pos BOARD B104
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325-Pos BOARD B105
BACTERIAL CELL CYCLE CONTROL BY MODIFIED CRISPR BINDING. **Jakub Wiktor**, Christian Lesterlin, David Sherratt, Cees Dekker

326-Pos BOARD B106
LONG-RANGE ALLOSTERIC COMMUNICATION IN MUTS AND HOMOLOGS VIA MOLECULAR DYNAMICS SIMULATIONS. **Michael Feig**, Beibei Wang, Joshua Francis

327-Pos BOARD B107
THE ROLE OF THE EXCLUDED STRAND IN HEXAMERIC HELICASE UNWINDING. **Sean M. Carney**, Sanford H. Leuba, Michael A. Trakselis

328-Pos BOARD B108
DNA-MEDIATED REDOX SIGNALING IN BACTERIAL NUCLEOTIDE EXCISION REPAIR BY UVRC. **Rebekah M.B. Silva**, Andy Zhou, Michael A. Grodick, Jacqueline K. Barton

329-Pos BOARD B109
PROGRESSIVE DNA UNWINDING BY RECBCD HELICASE IN THE ABSENCE OF CANONICAL MOTOR TRANSLOCATION. Michael Simon, Joshua E. Sokoloski, Linxuan Hao, Elizabeth Weiland, **Timothy M. Lohman**

330-Pos BOARD B110
ON THE ORIGIN OF SUGAR SELECTIVITY BY DNA POLYMERASES. **Hanwool Yoon**

331-Pos BOARD B111
DNA TRANSLOCATIONS IN REAL-TIME: INSIGHTS IN NON-HOMOLOGOUS END JOINING. Ineke Brouwer, Gerrit Sitters, Andrea Candelli, Mauro Modesti, Erwin Peterman, **Gijs J. Wuite**

332-Pos BOARD B112
DISSECTION OF E.COLI DNA REPLICATION IN HIGH RESOLUTION WITH TEMPERATURE-CONTROLLED MAGNETIC TWEEZERS. **Bojk A. Berghuis**, Jordi P.A. Wassenburg, Jurjen M. Wilschut, Theo van Laar, Nicholas E. Dixon, Martin Depken, Nynke H. Dekker

333-Pos BOARD B113
SINGLE-MOLECULE STUDIES ON EXOI EXCISION DURING DNA MISMATCH REPAIR. Yongmoon Jeon, Daehyung Kim, Juana Martín-López, Ryanggeun Lee, Jungsic Oh, Jeunghill Hanne, Richard Fishel, **Jong-Bong Lee**

334-Pos BOARD B114
GLOBAL DEFORMATION OF DNA FACILITATES RECOGNITION AND NUCLEOTIDE FLIPPING OF DAMAGED SITES: A MOLECULAR DYNAMICS SIMULATION STUDY. **Martin Zacharias**, Alexander Knips, Giuseppe La Rosa

335-Pos BOARD B115
ENZYME SELECTIVITY OF HIV REVERSE TRANSCRIPTASE: CONFORMATIONS, LIGANDS AND FREE ENERGY PARTITIONS. **Serdal Kirmizialtin**, Kenneth A. Johnson, Ron Elber

336-Pos BOARD B116
BROAD VELOCITY DISTRIBUTIONS IN SFIV HELICASES ARE A CONSEQUENCE OF HETEROGENEITY. **Huong T. Vu**, Shaon Chakrabarti, Michael Hinczewski, D. Thirumalai

337-Pos BOARD B117
DIFFERENTIAL EFFECTS OF IONS, MOLECULAR CROWDING, AND SOLUTION DNA DENSITY ON THE DAMAGE SEARCH MECHANISMS OF HOGG1 AND HUNG. **Shannen L. Cravens**, James T. Stivers

338-Pos BOARD B118
DNA CONFORMATIONAL DISTRIBUTION AND DYNAMICS DURING SEARCH AND RECOGNITION OF DAMAGED SITES BY DNA REPAIR PROTEIN RAD4/XPC. **Sagnik Chakraborty**, Xuejing Chen, Phillip Slogoff-Sevilla, Yogambigai Velmurugu, Peter J. Steinbach, Jung-Hyun Min, Anjum Ansari

339-Pos BOARD B119
FLUORESCENCE LIFETIME MAPPING OF NADH REVEALS DNA REPAIR ACTIVITY IN LIVE CELLS. **Michael Murata**, Xiangduo Kong, Kyoko Yokomori, Michelle Digman

340-Pos BOARD B120
VISUALIZING TRANSLATION SYNTHESIS BY POL IV IN LIVE E. COLI CELLS AT SINGLE-MOLECULE RESOLUTION. James E. Kath, **Elizabeth S. Thrall**, Joseph J. Loparo

341-Pos BOARD B121
VISUALIZING THE FIRST STEPS OF HUMAN DOUBLE-STRAND BREAK REPAIR ON A CROWDED DNA TRACK. Logan Myler, Ignacio Gallardo, Yoori Kim, Tanya T. Paull, **Ilya J. Finkelstein**

Chromatin and the Nucleoid (Boards B122 - B144)

342-Pos BOARD B122
MOLECULAR MECHANISM FOR GENOME ORGANIZATION IN THE EUKARYOTIC NUCLEUS. **Yuval Garini**

343-Pos BOARD B123
CHROMATIN DYNAMICS ARE CONTROLLED BY NUCLEAR LAMIN A: LIGHT SHEET MICROSCOPY - FCS STUDIES. Giulia Marcarini, Jan W. Krieger, Giuseppe Chirico, **Jörg Langowski**

344-Pos BOARD B124
CELLULAR VARIATION IN THE INTERACTIONS BETWEEN CHROMOSOME TERRITORIES. Scott Davidson, Navroop Dhaliwal, Amir Mazouchi, **Joshua Milstein**, Jennifer Mitchell

345-Pos BOARD B125
GENOME-WIDE MAPPING OF CHROMATIN SECONDARY STRUCTURE USING IONIZING RADIATION COUPLED WITH SEQUENCING. Viviana I. Risca, Sarah Denny, Alicia Schep, Aaron Straight, **William J. Greenleaf**

346-Pos BOARD B126
CHARACTERIZING TRANSCRIPTION AND SPLICING KINETICS BY 3D ORBITAL TRACKING. Nathan A. Redman, Eric J. Hayden, **Matthew L. Ferguson**

347-Pos BOARD B127
THE NC-SAC: COMPUTATIONAL PIPELINE FOR PREDICTING STRUCTURES OF 3D CHROMATIN CHAINS FROM EXPERIMENTAL DATA: ORIGIN OF SCALING PROPERTIES, EMERGENCE OF CHROMOSOME TERRITORIES AND DISCOVERY OF NOVEL LOCI INTERACTIONS ASSOCIATED WITH DIFFERENTIAL GENE EXPRESSION. **Gamze Gürsoy**, Yun Xu, Jie Liang

348-Pos BOARD B128
SINGLE-MOLECULE ANALYSIS OF COLOCALIZED EPIGENETIC MODIFICATIONS. **Jen-Chien Chang**, Takashi Umehara, Keisuke Fujita, Yuichi Taniguchi, Toshio Yanagida, Akiko Minoda

349-Pos BOARD B129
PHYSICAL MODELING OF STRESS COMMUNICATION BETWEEN CHROMOSOME LOCI. **Thomas J. Lampo**, Andrew S. Kennard, Andrew J. Spakowitz

350-Pos BOARD B130
EPIGENETICS GOES PHYSICAL. **Christophe Lavelle**

351-Pos BOARD B131
THE ESCHERICHIA COLI IS CAPABLE OF LARGE-SCALE TRANSLOCATION OF ITS CHROMOSOME. Matthew W. Bailey, **Jaán Mannik**

352-Pos BOARD B132
QUANTITATIVE LOCALIZATION MICROSCOPY COMBINED WITH DNA SMFISH REVEALS NEW FEATURES OF THE ORGANIZATION OF HIGH-COPY NUMBER PLASMIDS IN BACTERIA. **Yong Wang**, Paul Penkul, Joshua N. Milstein

353-Pos BOARD B133
COLLISIONS WITH PROTEINS ON DNA REVEAL A SMALL FUNCTIONAL PORE SIZE IN THE COHESIN COMPLEX. **Johannes Stigler**, Gamze Ö. Çamdere, Douglas E. Koshland, Eric C. Greene

354-Pos BOARD B134
SINGLE-MOLECULE MECHANISTIC DISSECTION OF A CHROMATIN REMODELING MOTOR. **Stephanie L. Johnson**, Nathan I. Gamarra, Matthew J. Johnson, Geeta J. Narlikar

355-Pos BOARD B135
FORCE SPECTROSCOPY OF NUCLEOSOMES AT THE PROMOTERS OF THE LH GENES REVEALS TWO DISTINCT STRATEGIES FOR THEIR REGULATION. **Ariel Kaplan**

356-Pos BOARD B136
MAJOR DETERMINANTS OF NUCLEOSOME ORGANIZATION. **Razvan V. Chereji**, Josefina Ocampo, Tara Burke, David J. Clark

357-Pos BOARD B137
UNRAVELLING THE ROLE OF LINKER HISTONE H1 AND THE H4-TAIL IN CHROMATIN (UN-)FOLDING. **Artur Kaczmarczyk**, Kim Vendel, Abdollah Allahverdi, Lars Nordenskiöld, Nynke H. Dekker, John van Noort

358-Pos BOARD B138
MOLECULAR MECHANISM OF CHROMATIN TARGETING BY A POTENT ANTICANCER AGENT ACTING AT THE NUCLEOSOME CORE PARTICLE. **Giulia Palermo**, Zhujun Ma, Ben S. Murray, Paul J. Dyson, Curt A. Davey, Ursula Rothlisberger

359-Pos BOARD B139
UTILIZATION OF NOVEL TECHNIQUES TO MEASURE ION COMPOSITION OF CONDENSED NUCLEOSOME CORE PARTICLES. **Abby Bull**, Kurt Andresen

360-Pos BOARD B140
 MAPPING OF NUCLEOSOMES AND DNA-BOUND PROTEINS IN LIVING CELLS WITH IONIZING RADIATION. **Viviana I. Risca**, Sarah J. K. Denny, Alicia N. Schep, Arwa S. Kathiria, Aaron F. Straight, William J. Greenleaf

361-Pos BOARD B141
 REGULATORS OF CHROMATOSOME DYNAMICS. **Poirier G. Poirier**

362-Pos BOARD B142
 IMPACT OF HISTONE VARIANT AND POST-TRANSLATIONAL MODIFICATION ON NUCLEOSOME. **Hidetoshi Kono**, Jinzen Ikebe, Shun Sakuraba, Hisashi Ishida

363-Pos BOARD B143
 STRUCTURAL DYNAMICS OF TRI-NUCLEOSOME BY COARSE-GRAINED SIMULATIONS: EFFECTS OF HISTONE TAIL ACETYLATION. **Le Chang**, Shoji Takada

364-Pos BOARD B144
 THE HANDEDNESS OF NUCLEOSOMES IS GOVERNED BY THE SUPERCOILING OF DNA. **Sung Hyun Kim**, Rifka Vlijm, Paul de Zwart, Jaco van der Torre, Yamini Dalal, Cees Dekker

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365-Pos BOARD B145
 MIGRATION OF VESICLES AND THEIR DOMAINS IN A THERMAL GRADIENT. **Emma Talbot**, Lucia Parolini, Jurij Kotar, Lorenzo Di Michele, Pietro Cicuta

366-Pos BOARD B146
 ASSESSING ASYMMETRY IN DETERGENT-LIPID INTERACTIONS WITH ISOTHERMAL TITRATION CALORIMETRY. **Helen Y. Fan**, Dew Das, Heiko Heerklotz

367-Pos BOARD B147
 THE EQUILIBRIUM SPREADING TENSION OF PULMONARY SURFACTANT. Maayan P. Dagan, **Stephen B. Hall**

368-Pos BOARD B148 EDUCATION TRAVEL AWARDEE
 STERIC PRESSURE AMONG MEMBRANE-BOUND POLYMERS OPPOSES LIPID PHASE SEPARATION. **Zachary I. Imam**, Laura Kenyon, Jeanne Stachowiak

369-Pos BOARD B149
 THE EFFECT OF NANODISC MSP BELT PROTEINS ON THE INCORPORATED LIPID BILAYER. **Harmen B. B. Steele**, Kristian Stipe, Cynthia Janku, Michelle C. Terwilliger, Bruce E. Bowler, J.B. Alexander Ross

370-Pos BOARD B150 EDUCATION TRAVEL AWARDEE
 ORDER DIFFERENCES BETWEEN COEXISTING LIQUID PHASES DRIVEN BY LIPID UNSATURATION DETERMINE PHASE SEPARATION IN BIOMIMETIC MEMBRANES. **Xubo Lin**, Joseph H. Lorent, Kandice R. Levental, Alemayehu A. Gorfe, Ilya Levental

371-Pos BOARD B151
 PROPERTIES AND ORGANIZATION OF LIPIDS IN MEMBRANES DERIVED FROM THE TOTAL LIPIDS EXTRACTED FROM THE CLEAR HUMAN LENS CORTEX AND NUCLEUS OF DONORS FROM DIFFERENT AGE GROUPS. **Laxman Mainali**, Marija Raguz, William J. O'Brien, Witold Subczynski

372-Pos BOARD B152
 LATERAL PHASE BEHAVIOR OF HUMAN SKIN LIPIDS. Michael J. Counihan, **Shelli L. Frey**

373-Pos BOARD B153
 CHARACTERISTICS OF LIPOSOMES MADE BY PHOSPHATIDYLETHANOLAMINE. **Hayato Akizuki**, Tomoyuki Kaneko

374-Pos BOARD B154
 PARAMETERIZATION OF LAMELLAR REPEAT SPACINGS FOR LIPID BILAYERS IN BINARY SALT MIXTURES. **Simran S. Gurdasani**, Ryan Z. Lybarger, Horia I. Petrache

375-Pos BOARD B155
 BILAYER PROPERTIES OF CERAMIDES: ROLE OF INTERFACIAL HYDROXYLATION, ACYL CHAIN LENGTH, AND CHAIN UNSATURATION. Terhi Maula, **Md. Abdullah Al Sazzad**, Peter Slotte

376-Pos BOARD B156
 THE CHAIN LENGTH OF FREE FATTY ACIDS INFLUENCES THE PHASE BEHAVIOUR OF STRATUM CORNEUM MODEL MEMBRANES: A 2H-NMR AND IR INVESTIGATION. **Adrian Paz Ramos**, Michel Lafleur

377-Pos BOARD B157
 HYPERICIN AGGREGATION IN ARTIFICIAL LIPID MEMBRANES. Jaroslava Joniova, Alena Strejčková, Matúš Rebič, Veronika Huntosova, Jana Staničová, Daniel Jancura, Pavol Miskovsky, **Gregor Bánó**

378-Pos BOARD B158
 PARTITIONING BEHAVIOR OF A PROBE BETWEEN LO AND LD PHASES AT THE NANO- AND MACRO-DOMAIN SCALES. **Thomas Torng**

379-Pos BOARD B159
 MULTIPOLE MOMENTS OF LIPID HEADGROUPS. **Ryan Z. Lybarger**, Horia I. Petrache

380-Pos BOARD B160
 MEMBRANE HETEROGENEITY IN ERYTHROCYTES STUDIED BY LAURDAN GP AND FLIM-PHASOR. **Susana A. Sanchez**, Catalina Sandoval, German Gunther

381-Pos BOARD B161
 UPDATE ON MECHANICAL MODULI AND TILT THEORIES OF LIPID BILAYERS. **John F. Nagle**, Dmitry I. Kopelevich, Stephanie Tristram-Nagle

382-Pos BOARD B162
 FLEXIBLE STRING MODEL ANALYTICAL DESCRIPTION OF MAIN PHASE TRANSITION IN LIPID BILAYERS. **Sergei I. Mukhin**, Boris B. Kheyfets, Timur R. Galimzyanov

383-Pos BOARD B163
 DYNAMICS OF METHYL GROUPS IN MEMBRANE PROTEINS STUDIED BY DIETERIUM SOLID STATE NMR RELAXATION. **Xiaolin Xu**, Andrey V. Struts, Aswini Kumar Giri, Trivikram R. Molugu, Charitha Guruge, Samira Faylough, Carolina L. Nascimento, Nasri Nesnas, Victor J. Hruby, Michael F. Brown

384-Pos BOARD B164
 DETECTION AND MECHANICAL CHARACTERIZATION OF SMALL MULTILAMELLAR VESICLES USING ATOMIC FORCE MICROSCOPY. **Margherita Marchetti**, Daan Vorselen, Wouter Roos, Gijs Wuite

385-Pos BOARD B165
 LINE TENSION AND PHASE SEPARATION OF A FOUR-COMPONENT PHOSPHOLIPID BILAYER. **Wen-Chyan Tsai**, Gerald W. Feigenson

386-Pos BOARD B166 EDUCATION TRAVEL AWARDEE
 INVESTIGATING LARGE SCALE LIQUID-LIQUID PHASE SEPARATION IN A BIOLOGICAL MEMBRANE. **Scott Rayermann**, Sarah Keller

387-Pos BOARD B167
 COMPARISON OF UNSATURATED PHOSPHOLIPIDS EFFECT ON PHASE SEPARATION IN CHOLESTEROL FREE AND CHOLESTEROL CONTAINING BILAYERS. **Oskar Engberg**, Victor Hautala, Anders Kullberg, Thomas K.M Nyholm, J.Peter Slotte

388-Pos BOARD B168
A COMPARISON OF MONOLAYER PHASE BEHAVIOR FOR HYDROXY-CHOLESTEROLS LIPID SYSTEMS. **Joan C. Kunz**, Vision B. Bagonza, Blair E. Stewig, Luis H. Hernandez-Balderrama, Eleni A. Beyene, Benjamin L. Stottrup

389-Pos BOARD B169
CORRELATING STEROL STRUCTURE WITH MEMBRANE SOLUBILITY LIMITS AND PHASE BEHAVIOR IN TERNARY MODEL MEMBRANES. **Ranee C. James**, Jonathan P. Litz, Sarah L. Keller

390-Pos BOARD B170
OXIDATION OF CHOLESTEROL AND FORMATION OF CHOLESTEROL HYDROPEROXIDES DECREASES THE CHOLESTEROL CONCENTRATION AT WHICH FORMATION OF CHOLESTEROL BILAYER DOMAINS AND CHOLESTEROL CRYSTALS IS INITIATED IN PHOSPHOLIPID BILAYERS. **Laxman Mainali**, Mariusz Zareba, Witold Subczynski

391-Pos BOARD B171
PEROXIDATION OF LIPOPROTEIN AND OF CERTAIN LIPOSOMAL LIPIDS DEPEND SIMILARLY ON THE PHYSICO-CHEMICAL PROPERTIES OF THE AGGREGATED LIPIDS. **Dov A. Lichtenberg**

392-Pos BOARD B172
EFFECT OF CYCLODEXTRINS ON MEMBRANE BIOPHYSICAL PROPERTIES. **Andreia G. dos Santos**, Jules Bayiha, Marie-Paule Mingeot-Leclercq

393-Pos BOARD B173
CHARACTERISATION OF THE SELF-ASSEMBLIES PROPERTIES AND INTERACTION WITH MODELS MEMBRANES OF NEW TYPE OF AMPHIPHILIC CYCLODEXTRINS: A DLS AND SS-NMR STUDY. Aurelien Furlan, Sébastien Buchoux, Véronique Bonnet, **Catherine Sarazin**

Membrane-active Peptides and Toxins I (Boards B174 - B196)

394-Pos BOARD B174
MONITORING THE CONSEQUENCES OF RELOCATING THE TRYPTOPHAN ANCHORS ON TRANSMEMBRANE PEPTIDE DYNAMICS AND ALIGNMENT. **Matthew J. McKay**, Ashley N. Martfeld, Denise V. Greathouse, Roger E. Koeppe II

395-Pos BOARD B175
THE ROLE OF THERMODYNAMICS IN THE ACTIVITY AND SELECTIVITY OF ANTIMICROBIAL PEPTIDES. **Lorenzo Stella**, Daniela Roversi, Filippo Savini, Zahra Vaezi, Vincenzo Luca, Sara Bobone, Andrea Farrotti, Alessio Bocedi, Gianfranco Bocchinfuso, Yoonkyung Park, Antonio Palleschi, Maria Luisa Mangoni

396-Pos BOARD B176
INSIGHTS INTO THE MECHANISM OF FENGYCIN, AN ANTIMICROBIAL LIPOPEPTIDE USING MULTISCALE SIMULATIONS. **Sreyoshi Sur**, Alan Grossfield, Tod D. Romo

397-Pos BOARD B177
MEMBRANE INDUCED PEPTIDE FOLDING AND AGGREGATION. Sai Ganesan, **Silvina Matysiak**

398-Pos BOARD B178
INSIGHTS FROM MICROSECOND ATOMISTIC SIMULATIONS OF MELITTIN IN THIN LIPID BILAYERS. **Jakob P. Ulmschneider**, Sanjay K. Upadhyay

399-Pos BOARD B179 CPOW TRAVEL AWARDEE
STRUCTURE-ACTIVITY RELATIONSHIP STUDIES REVEAL THAT THE SPIDER TOXIN PROTX-II HAS UNUSUAL MEMBRANE-BINDING PROPERTIES AND INHIBITS NAV1.7 CHANNEL AT THE MEMBRANE SURFACE. **Sonia Troeira Henriques**, David J. Craik, Christina I. Schroeder

400-Pos BOARD B180
ELECTROPHORESIS AND ELECTROOSMOSIS IN AEROLYSIN AND HEMOLYSIN NANOPORES. **Mordjane Boukhet**, Juan Pelta, Jan C. Behrends, Abdelghani Oukhaled

401-Pos BOARD B181
A HEXOKINASE II DERIVED-CELL PENETRATING PEPTIDE TARGETS THE MITOCHONDRIA AND TRIGGERS APOPTOSIS IN CANCER CELLS. **Abiy D. Woldetsadik**, Mazin Magzoub

402-Pos BOARD B182
ELUCIDATING THE CONNECTION BETWEEN PROTONATION SWITCHES AND BINDING AND FOLDING OF PHLIP. **Chittrak Gupta**, Blake Mertz

403-Pos BOARD B183
VESICLE LEAKAGE REFLECTS TARGET SELECTIVITY OF ANTIMICROBIAL LIPOPEPTIDES FROM BACILLUS SUBTILIS. **Sebastian Fiedler**, Heiko Heerklotz

404-Pos BOARD B184
RED BLOOD CELLS INTERFERE WITH THE ACTIVITY OF ANTIMICROBIAL PEPTIDES. **Charles G. Starr**, Jing He, William C. Wimley

405-Pos BOARD B185
MOLECULAR DYNAMICS SIMULATION OF PASSIVE TRANSPORT OF NEUROTOXICANT ANTIDOTES THROUGH THE BLOOD-BRAIN BARRIER. **Yukun Wang**, Peter C. Searson, Martin Ulmschneider

406-Pos BOARD B186
A COMPARATIVE STUDY ON TECHNIQUES FOR THE DETERMINATION OF PERMEABILIZATION EVENTS ON CHARGED AND UNCHARGED LIPID BILAYERS. **Laura Paulowski**, Nadine Gebauer, Julia Wernecke, Bruce A. Cornell, Thomas Gutschmann

407-Pos BOARD B187
LOCALISATION OF THE ANTIMICROBIAL PEPTIDE MACULATIN 1.1 IN LIPID BILAYERS USING SOLID-STATE NMR. **Marc-Antoine Sani**, Frances Separovic

408-Pos BOARD B188
PA-MAP 1.5 AND 1.9: MECHANISMS OF ACTION OF TWO ANTIMICROBIAL PEPTIDES. **Mário R. Felício**, Octavio L. Franco, Marlon H. Cardoso, Ludovico Migliolo, Nuno C. Santos, Sónia Gonçalves

409-Pos BOARD B189
NANOSTRUCTURE-DEPENDENT ANTIMICROBIAL ACTIVITY AND SELECTIVITY OF SYNTHETIC MEMBRANE-ACTIVE POLYMERS. **Hongjun Liang**, Yunjiang Jiang, Wan Zheng, Hairong Ma

410-Pos BOARD B190
INTERACTIONS OF ANTIBACTERIAL PEPTIDES WITH NANOTUBULAR LIPID BILAYERS: BINDING KINETICS AND DISTORTIONS OF THE BILAYER STRUCTURE. Morteza Jafarabadi, Antonin Marek, Amir Koolivand, Biplav Acharya, Alexander A. Nevzorov, Jacqueline Krim, **Alex I. Smirnov**

411-Pos BOARD B191
FLUORESCENCE INVESTIGATIONS ON THE ATTACK OF CELL-WALL-DEFICIENT BACTERIA BY ANTIMICROBIAL PEPTIDES. **Matthew G. Burton**, Cynthia B. Whitchurch, Lynne Turnbull, Kelly Rogers, Rebecca Orth, Neil O'Brien Simpson, Michelle Gee, Andrew H.A. Clayton, Trevor A. Smith

412-Pos BOARD B192
BIOPHYSICAL INVESTIGATIONS ON THE INTERACTION BETWEEN ANTIMICROBIAL PEPTIDES AND BACTERIA KILLED BY CS-137 IRRADIATION. Wilmar Correa, Lena Heinbockel, Kerstin Stephan, **Thomas Gutschmann**

413-Pos BOARD B193
STREPTOCOCCAL M PROTEIN EPI TOPE 10F5 GENERATES ANTIPHOSPHOLIPID ANTIBODIES. **Marie Kelly-Worden**, Morenci Manning, Robyn Gebhard, Mathew Osborne

414-Pos BOARD B194

A GENERAL MECHANISM FOR DRUG PROMISCUITY: STUDIES WITH AMIODARONE AND OTHER ANTIARRHYTHMICS. **Radda Rusinova**, Roger E. Koeppe II, Olaf S. Andersen

415-Pos BOARD B195

WHAT IS THE FATE-DETERMINING STEP IN PHLIP-MEDIATED CARGO DELIVERY? **Ming An**, Lukas Klees, Anqi Zhang, Joab O. Onyango, Emma A. Gordon, Chee-Huat Eng, Syris Winge-Barnes, Eliezer Lichter, Vladyslav Nazarenko, Meghan M. Bell, Ilana G. Bandler, Anthony K. Awad, Nicolas S. Shu, Wei Qiang, Lan Yao

416-Pos BOARD B196

INVESTIGATING THE INTERACTION OF THE PUTATIVE TRANSMEMBRANE DOMAIN OF HUMAN PHOSPHOLIPID SCRAMBLASE WITH LIPID BILAYERS USING MOLECULAR DYNAMICS SIMULATIONS. **Tom Venken**, Anne-Sophie Schillinger, Edvin Fuglebakk, Nathalie Reuter

Membrane Structure I (Boards B197 - B226)**417-Pos BOARD B197**

DISTRIBUTION OF SOLUTE MOLECULES IN BILAYER STACKS BY MEDIUM ANGLE DIFFRACTION. **Christopher Garvey**, Ben Kent, Thomas Hauß, Robert Georgii, Klaus Seemann, Ricardo Mancera, Gary Bryant

418-Pos BOARD B198

STRUCTURE AND CORRELATION FUNCTIONS OF AN ASYMMETRIC MODEL MEMBRANE OF FIVE COMPONENTS DISPLAY NO RAFTS BUT RATHER THE PROPENSITY TO CREATE THEM. **Michael Schick**, Ha Giang

419-Pos BOARD B199

ENDOTHELIAL MEMBRANE MODULATION BY OXLDL: MOLECULAR-SCALE EFFECTS OF OXIDATION PRODUCTS ON MODEL MEMBRANES. **Manuela A. Ayece**, Elizabeth LeMaster, Belinda S. Akpa, Irena Levitan

420-Pos BOARD B200

LIPID COMPOSITION MODULATES MEMBRANE PROTEIN CLUSTERING. **Anna L. Duncan**, Heidi Koldsø, Tyler Reddy, Jean Helie, Mark S P Sansom

421-Pos BOARD B201

CONTROLLING CELL GROWTH AND MEMBRANE TOPOGRAPHY USING NANOSTRUCTURED THERMORESPONSIVE SCAFFOLDS. **Rana Ashkar**, Mikhael Zhernenkov, Hao Feng, John Ankner, Ryan Toomey, Roger Pynn

422-Pos BOARD B202

INVESTIGATION OF THE MODE OF ACTION OF THE PROTEIN VAPA OF RHODOCOCCLUS EQUI ON PHAGOSOME MEMBRANES. **Christian Nehls**, Albert Haas, Karlo Komorowski, Thomas Gutschmann

423-Pos BOARD B203

MULTILAYERS OF LUNG SURFACTANT AT THE AIR/WATER INTERFACE OBSERVED BY NEUTRON REFLECTOMETRY UNDER COMPRESSION-EXPANSION CYCLES. **Jenny M. Andersson**, Marcus Larsson, Maximilian W.A. Skoda, Tiago M. Ferreira, Tommy Nylander, Emma Sparr

424-Pos BOARD B204

DOES THE INFLUENZA VIRUS BUD FROM CHOLESTEROL- AND SPHINGOLIPID-ENRICHED PLASMA MEMBRANE DOMAINS? **Mary L. Kraft**, Ashley N. Yeager, Peter K. Weber, Joshua Zimmerberg

425-Pos BOARD B205

SOLID-STATE 2H NMR REVEALS THE IMPACT OF DHA ON MOLECULAR ORGANIZATION IN RAFT-LIKE DOMAINS. **Jacob J. Kinnun**, Justin A. Williams, William Stillwell, Robert Bittman, Saame R. Shaikh, Stephen R. Wassall

426-Pos BOARD B206

IN SILICO MODELING OF BIOLOGICALLY COMPLEX MEMBRANES. **Helgi I. Ingolfsson**, Manuel N. Melo, Svetlana Baoukina, Tsjerk A. Wassenaar, Xavier Periole, Alex H. de Vries, D. Peter Tieleman, Siewert J. Marrink

427-Pos BOARD B207

VITAMIN E PROMOTES THE INVERSE HEXAGONAL PHASE VIA A NOVEL MECHANISM: IMPLICATIONS FOR ANTIOXIDANT ROLE. **Paul E. Harper**, Andres T. Cavazos, Jacob J. Kinnun, Horia I. Petrache, Stephen R. Wassall

428-Pos BOARD B208

ANTICANCER DRUG COLCHICINE INCREASES DISORDER AND REDUCES COMPLEXITY IN THE MACROPHAGE MEMBRANE. **Arkady Bitler**, Ron Dover, Yechiel Shai

429-Pos BOARD B209

HYDRATION MEDIATED G-PROTEIN-COUPLED RECEPTOR ACTIVATION. **Udeep Chawla**, Suchithranga M. D. C. Perera, Andrey V. Struts, Michael C. Pitman, Michael F. Brown

430-Pos BOARD B210

DIFFUSION DYNAMICS OF ACHR RECEPTORS ON LIVE MUSCLE CELL MEMBRANE. **Wei He**, Hao Song, Lin Geng, H. Benjamin Peng, Penger Tong

431-Pos BOARD B211

CHOLESTEROL'S ALIPHATIC SIDE CHAIN STRUCTURE MODULATES MEMBRANE PROPERTIES. **Daniel Huster**, Thomas Meyer, Jörg Nikolaus, Dong Jae Baek, Ivan Haralampiev, Robert Bittman, Peter Müller, Andreas Herrmann, Holger A. Scheidt

432-Pos BOARD B212

CONTENT OF PLASMALOGEN LIPIDS MARKEDLY DECREASES IN BARTH SYNDROME. Tomohiro Kimura, Atsuko Kimura, Bob Berno, Mindong Ren, Michael Schlame, **Richard M. Epand**

433-Pos BOARD B213

OXIDATION OF CHOLESTEROL CHANGES THE PHYSICAL PROPERTIES OF LIPID MEMBRANES. **Waldemar Kulig**, Agnieszka Olzyska, Piotr Jurkiewicz, Anu M. Kantola, Moutusi Manna, Mohsen Pourmousa, Mario Vazdar, Lukasz Cwiklik, Tomasz Rog, George Khelashvili, Daniel Harries, Ville-Veikko Telkki, Martin Hof, Ilpo Vattulainen, Pavel Jungwirth

434-Pos BOARD B214

CLUSTERS OF CHOLERA TOXIN B SUBUNIT ON THE OUTER LEAFLET STABILIZE LIPID HETEROGENEITY ON THE INNER LEAFLET OF B CELL MEMBRANES. **Marcos F. Nunez**, Sarah L. Veatch

435-Pos BOARD B215

PARTITION COEFFICIENT OF A TRANSMEMBRANE PEPTIDE, BETWEEN LO AND LD PHASES: DOES THE PEPTIDE DISTINGUISH MACRO FROM NANO DOMAINS? **Thais A. Enoki**, Sarah Kim, Frederick A. Heberle, Gerald W. Feigenson

436-Pos BOARD B216

HOW GOLD NANOPARTICLES AFFECT THE LIPID PACKING IN MODEL MEMBRANES. **Qi Lu**, Anupama Bhat, Lance Edwards, Zaki Harris, Albert Jin

437-Pos BOARD B217

STABLE FATTY ACID VESICLES FORM UNDER LOW-PH CONDITIONS AND INTERACT WITH AMINO ACIDS AND DIPEPTIDES. **Moshe T. Gordon**, Roy A. Black, Caitlin Cornell, James A. Williams, Kelly K. Lee, Sarah L. Keller

438-Pos BOARD B218

TUNING MEMBRANE ASYMMETRY. **Jonathan A. Purdie**, John M. Sanderson

439-Pos BOARD B219

SPONTANEOUSLY FORMED UNILAMELLAR VESICLES OF SILOXANE-PHOSPHOLIPIDS. **Mark Frampton**, Drew Marquardt, Georg Pabst, Paul M. Zelisko

440-Pos BOARD B220
EFFECT OF CHAIN LENGTH OF HYBRID LIPIDS ON LINE TENSION IN PHASE-SEPARATED GIANT UNILAMELLAR VESICLES. **Eda Baykal-Caglar**, Juyang Huang

441-Pos BOARD B221
IMPROVED METHODS FOR PREPARING ASYMMETRIC VESICLES USING METHYL-ALPHA-CYCLODEXTRIN. **Johnna St Clair**, Qing Wang, Erwin London

442-Pos BOARD B222
STUDY OF SELF-ASSOCIATION OF AMPHOTERICIN B AND ITS SYNTHETIC DERIVATIVES USING UV-VIS SPECTROSCOPY. **Rosmarbel Morales-Nava**, Arturo Galván-Hernández, Mario Fernández-Zertuche, Ivan Ortega-Blake

443-Pos BOARD B223
DETERMINING THE PIVOTAL PLANE OF FLUID LIPID MEMBRANES IN SIMULATIONS. **Xin Wang**, Markus Deserno

444-Pos BOARD B224
LO/LD PHASE COEXISTENCE AND INTERACTION IN MODEL MEMBRANES WITH IPC LIPIDS. **Viviana Monje-Galvan**, Jeffery B. Klauda

445-Pos BOARD B225
PROBING THE RIPPLE PHASE OF LIPID BILAYERS USING MOLECULAR SIMULATIONS. **Pouyan Khakbaz**, Jeffery Klauda

446-Pos BOARD B226
VITAMIN E DIFFERENTIALLY DESTABILIZES BILAYER STRUCTURE OF DOCO-SAHEXAENOIC AND OLEIC-ACID CONTAINING MODEL MEMBRANES. **Andres T. Cavazos**, Jacob J. Kinnun, Ryan Z. Lybarger, Justin A. Williams, Bruce D. Ray, Paul E. Harper, Horia I. Petrache, Stephen R. Wassall

Membrane Receptors and Signal Transduction I (Boards B227 - B248)

447-Pos BOARD B227
REAL-TIME PROBING OF THE SPATIOTEMPORAL DISTRIBUTIONS OF INTEGRIN $\alpha\beta3$ IN SINGLE LIVING CELLS USING MICRO-SCALE SURFACE ENHANCED RAMAN SPECTROSCOPY SYSTEM. **Shao-yuan Lo**

448-Pos BOARD B228
FRET ANALYSIS USING SPERM-ACTIVATING PEPTIDES TAGGED WITH FLUORESCENT PROTEINS REVEALS THAT LIGAND-BINDING SITES EXIST AS CLUSTERS. **César Arcos-Hernández**, Francisco Romero, Yoloxochitl Sanchez-Guevara, Carmen Beltran, Takuya Nishigaki

449-Pos BOARD B229 EDUCATION TRAVEL AWARDEE
INVESTIGATING MOLECULAR MECHANISMS OF IGE-MEDIATED SIGNALING AT SUPER RESOLUTION. **Eshan Mitra**, Sarah A. Shelby, David Holowka, Barbara Baird

450-Pos BOARD B230
CHARACTERIZATION OF TROPOMYOSIN RECEPTOR KINASE (TRK-A) IN RESPONSE TO NEUROTROPHINS NERVE GROWTH FACTOR (NGF) AND NEUROTROPHIN -3 (NT-3) IN LIVE CELLS. **Fozia Ahmed**, Deo Singh, Christopher King, Kalina Hristova

451-Pos BOARD B231
MICROGLIA-DERIVED INTERLEUKIN-6 INCREASES RETINAL ENDOTHELIAL CELL PERMEABILITY THROUGH STAT3 ACTIVATION IN DIABETIC RETINOPATHY. Jang-Hyuk Yun, Kyung-Jin Kim, Eun Hui Lee, Sangkyu Ye, **Chung-Hyun Cho**

452-Pos BOARD B232
1H NMR SPECTROSCOPY OF DOPAMINE INTERACTING WITH LIPID VESICLES. **Yashvasi Matam**, Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache

453-Pos BOARD B233
MOLECULAR DETERMINANTS OF NEISSERIAL OPA PROTEIN INTERACTIONS WITH CEACAM RECEPTORS. **Jennifer Martin**, Louise M. Ball, Alison K. Criss, Linda Columbus

454-Pos BOARD B234
PROTEIN ASSEMBLY ON MEMBRANE SURFACE ALTERS THE DYNAMICAL SPECTRUM OF DOWNSTREAM SIGNALING REACTIONS. **William Y. C. Huang**, Qingrong Yan, Wan-Chen Lin, Jean K. Chung, Scott D. Hansen, Sune M. Christensen, Hsiung-Lin Tu, John Kuriyan, Jay T. Groves

455-Pos BOARD B235
RESTRICTED DIFFUSION OF CAMP IS MEDIATED BY MITOCHONDRIAL LOCALIZED PKA BUFFERING IN LIVING CELLS. **Shailesh R. Agarwal**, Colleen E. Clancy, Robert D. Harvey

456-Pos BOARD B236
REAL-TIME PROBING OF INTEGRIN $\alpha\beta3$ SIGNAL PATHWAY INVOLVED IN WOUND HEALING USING BIOFUNCTIONALIZED QUANTUM DOTS. **Mi-Chi Lee**

457-Pos BOARD B237
MONITORING THE ORGANIZATION, DYNAMICS, AND INTERACTIONS OF EARLY B CELL RECEPTOR SIGNALING PROTEINS USING LIVE CELL SUPER-RESOLUTION MICROSCOPY. **Sarah A. Shelby**, Matthew B. Stone, Sarah L. Veatch

458-Pos BOARD B238
EFFECT OF INTERNAL WATER DYNAMICS ON THE ACTIVATION MECHANISM OF $\beta2$ -ADRENERGIC RECEPTORS. **Songmi Kim**, Changbong Hyeon

459-Pos BOARD B239
GLYCOSYLATION AFFECTS THE CONFORMATIONAL BEHAVIOR OF EGFR. Karol Kaszuba, Michal Grzybek, Adam Orłowski, Reinis Danne, Tomasz Rog, Kai Simons, Unal Coskun, **Ilpo Vattulainen**

460-Pos BOARD B240 INTERNATIONAL TRAVEL AWARDEE
METOPROLOL REVERSES β -ADRENERGIC REMODELING IN THE FAILING RIGHT VENTRICLE OF PULMONARY ARTERY HYPERTENSIVE (PAH) RATS. **Ruth Norman**, Ewan Fowler, Ed White, Sarah Calaghan

461-Pos BOARD B241
POSITIVE ALLOSTERIC MODULATORS INDUCED CONFORMATIONAL CHANGES IN THE METABOTROPIC GLUTAMATE RECEPTOR 2 - IN SILICO PREDICTIONS AND EXPERIMENTAL TESTS. **Yu Xu**, Amr Ellaihy, Guoqing Xiang, Manolakou Danai, Balatsoukas Agisilaos, Takeharu Kawano, Meng Cui, Diomedes E. Logothetis

462-Pos BOARD B242
IN VIVO STUDIES OF VEGFR2 INTERACTIONS IN THE PRESENCE AND ABSENCE OF VEGF. **Christopher King**, Kalina Hristova

463-Pos BOARD B243
THE WNT PROTEINS INDUCE Ca^{2+} SIGNALING THROUGH THE ACTIVATION OF THE POLYCYSTIN COMPLEX. **Vasyl Nesin**, Seokho Kim, Hongguang Nie, Leonidas Tsiokas

464-Pos BOARD B244
PREDICTED MODE OF BINDING OF NON-NITROGENOUS μ -OPIOID RECEPTOR LIGANDS BY METADYNAMICS. **Sebastian Schneider**, Davide Provasi, Rachel Saylor, Thomas Prinszano, Marta Filizola

465-Pos BOARD B245
DETERMINISTIC AND STOCHASTIC MATHEMATICAL MODELING OF MELANOPSIN'S LIGHT RESPONSE IN IPRGCS AND HEK CELLS. **Phyllis R. Robinson**, Kathleen Hoffman, Hye-Won Kang

466-Pos BOARD B246
COVALENT RAS DIMERIZATION ON MEMBRANE SURFACES THROUGH PHOTSENSITIZED OXIDATION. **Jean K. Chung**

467-Pos BOARD B247
BIASED SIGNALING OF GPCR REGULATES PANCREATIC BETA CELL SECRETION AND SURVIVAL. **Xiao Yu**, Shanglei Ning, Jin-Peng Sun

468-Pos BOARD B248
THE ENIGMATIC CHLOROPLAST STT7 KINASE: TRANS-MEMBRANE FUNCTION WITH CYTOCHROME B6F COMPLEX IN SITU; KINASE ACTIVITY IN VITRO. Sandeep K. Singh, Whitaker Cohn, Saif S. Hasan, Julian P. Whitelegge, **William A. Cramer**

Mechanosensation (Boards B249 - B278)

469-Pos BOARD B249
MECHANONSENSITIVITY AND SYMMETRY IN K2P CHANNELS. **Julian Tim Brennecke**, Bert L. de Groot

470-Pos BOARD B250
ATP RELEASE VIA GAP JUNCTION HEMICHANNELS IN RAT ATRIAL MYOCYTES UNDER SHEAR STRESS. **Joon-Chul Kim**, Sun-Hee Woo

471-Pos BOARD B251
INVESTIGATING THE ROLE OF NAV1.5 IN SOMATOSENSORY MECHANOSENSATION. **Evan O. Anderson**, Eve R. Schneider, Jon D. Matson, Elena O. Gracheva, Slav N. Bagriantsev

472-Pos BOARD B252
FUNCTIONAL HETEROMERIC PIEZO1 ION CHANNELS. **Philip Gottlieb**, Chilman Bae, Radakrishnan Gnanasambandam, Frederick Sachs

473-Pos BOARD B253
PORE DETERMINANTS OF MECHANONSENSITIVE PIEZO CHANNELS. **Qiancheng Zhao**

474-Pos BOARD B254
CHARACTERIZATION AND PHYSIOLOGICAL ROLE OF A BACTERIAL-LIKE MECHANONSENSITIVE CHANNEL IN TRYPANOSOMA CRUZI OSMOREGULATION. **Noopur Dave**, Christopher Skorka, Heather Lynch, Veronica Jimenez

475-Pos BOARD B255
SYSTEMATIC DISCOVERY OF THE 'FORCE-FROM-LIPID' PRINCIPLES. **Pietro Ridone**, Amrutha Patkunarajah, Andrew Battle, Boris Martinac

476-Pos BOARD B256
EXPRESSION AND BIOPHYSICAL CHARACTERIZATION OF BACTERIAL MECHANO-SENSITIVE ION CHANNEL OF LARGE CONDUCTANCE INTO MAMMALIAN CELLS. **Alessandro Soloperto**, A. Bartolozzi, G. Palazzolo, M. Basso, A. Contestabile, M. Vassalli, F. Difato

477-Pos BOARD B257 INTERNATIONAL TRAVEL AWARDEE
THE ROLE OF THE C-TERMINAL DOMAIN ON THE GATING PROPERTIES OF CORYNEBACTERIUM GLUTAMICUM MECHANONSENSITIVE CHANNEL MSCCG. **Yoshitaka Nakayama**, Michael Becker, Haleh Ebrahimian, Tomoyuki Konishi, Hisashi Kawasaki, Reinhard Kramer, Boris Martinac

478-Pos BOARD B258
FAST OSMOTIC PERMEABILITY RESPONSES IN BACTERIA. Ian Rowe, **Ugur Cetiner**, Anthony Schams, Andriy Anishkin, Sergei Sukharev

479-Pos BOARD B259
CONTINUUM MODELING OF THE GATING MECHANISMS OF A MECHANONSENSITIVE (MS) CHANNEL: BACTERIAL MS VERSUS MAMMALIAN MS CHANNELS. **Yuan-Nan Young**, On Shun Pak, Howard A. Stone

480-Pos BOARD B260
THEORETICAL, COMPUTATIONAL, AND EXPERIMENTAL INVESTIGATIONS ON ACTIVATION OF MECHANONSENSITIVE CHANNELS. **Zhangli Peng**, On Shun Pak, Allen Liu, Yuan-Nan Young

481-Pos BOARD B261
VOLTAGE-MEDIATED CONTROL OF BUNDLE DYNAMICS IN HAIR CELLS. **Sebastian W.F. Meenderink**, Patricia M. Quiñones, Dolores Bozovic

482-Pos BOARD B262
STRUCTURAL DETERMINANTS OF PROTOCADHERIN-15 FUNCTION IN INNER-EAR MECHANOTRANSDUCTION. **Marcos Sotomayor**, Raul Araya-Secchi, Yoshie Narui, Conghui Chen, Carissa Klanseck, Lahiru Wimalasena

483-Pos BOARD B263
DYNAMICS OF SPONTANEOUS OTOACOUSTIC EMISSIONS: THEORY AND EXPERIMENT. **Christopher Bergevin**, Christopher A. Shera

484-Pos BOARD B264
CHAOTIC BEHAVIOR OF OSCILLATORY HAIR CELLS. **Justin Faber**, Dolores Bozovic

485-Pos BOARD B265
VISUALIZATION OF MECHANICAL FORCES WITHIN THE IMMUNOLOGICAL SYNAPSE. **Janett Göhring**, Florian Kellner, Lukas Schrangl, Johannes Huppa, Gerhard Schütz

486-Pos BOARD B266
VINCULIN REMODELING OF THE SARCOMERE LATTICE REGULATES CONTRACTILE FUNCTION. Gaurav Kaushik, Jennifer Van Eyk, Anthony Cammarato, **Adam Engler**

487-Pos BOARD B267
ULTRASENSITIVITY OF CELL ADHESION TO THE DIFFERENTIAL MECHANICAL CUES AND REQUIREMENT OF REVERSIBILITY. **Mehdi Roein-Peikar**, Farhan Chowdhury, Benjamin Leslie, Seongjin Park, Qian Xu, Taekjip Ha

488-Pos BOARD B268
LIVE QUANTIFICATION OF CHANGES TO MEMBRANE CYTOSKELETON DUE TO RESTRICTED ACCESS TO LAMININ OR SUBSTRATE STIFFNESS. Muhammed F. Simsek, Jin Weixiang, **Arnd Pralle**

489-Pos BOARD B269
MATRIX AND SOLUBLE FACTOR PATHWAYS TO LINEAGE SPECIFICATION. **Irena L. Ivanovska**, Joe Swift, Kyle Spinler, Dave Dingal, Dennis E. Discher

490-Pos BOARD B270
TENSION-REGULATED ACTIN SEVERING REVEALED BY SURFACE-FREE SINGLE-MOLECULE FORCE SPECTROSCOPY. **Yan Jiang**, Theodore C. Feldman, Hyeran Kang, Enrique M. De La Cruz, Wesley P. Wong

491-Pos BOARD B271
ACOUSTIC TWEEZING CYTOMETRY (ATC) ON DISSOCIATED HUMAN EMBRYONIC STEM CELLS (HESCS). **Xiaowei Hong**, Xufeng Xue, Tuğba Topal, Jianping Fu, Cheri X. Deng

492-Pos BOARD B272
ELECTROSTATIC AND ALLOSTERIC RESPONSE OF MYOSIN AS A MECHANOSENSOR. **Jun Ohnuki**, Takato Sato, Mitsunori Takano

493-Pos BOARD B273
SCREENING CELL MECHANOTYPE BY PARALLEL MICROFILTRATION. **Navjot Kaur Gill**

494-Pos BOARD B274
THE MECHANISM OF STRESS GRANULE FORMATION INDUCED BY INTRACELLULAR LOCAL THERMOGENESIS. **Beini Shi**, Kohki Okabe, Takashi Funatsu

495-Pos BOARD B275
AS THE BEATING HEART STIFFENS IN DEVELOPMENT, SO DOES THE NUCLEAR LAMINA. **Sangkyun Cho**, Stephanie Majkut, Manorama Tewari, Jerome Irianto, Dennis E. Discher

496-Pos BOARD B276 INTERNATIONAL TRAVEL AWARDEE
MECHANICAL REGULATION OF NUCLEAR SHAPE AND VOLUME. **Dong-Hwee Kim**, Bo Li, Fangwei Si, Jude Phillip, Denis Wirtz, Sean X. Sun

497-Pos BOARD B277
MECHANOSENSING DEFECTS IN NUCLEAR ENVELOPE RELATED DISORDERS. Christine Technau, Martina Fischer, Kamel Mamchaoui, Anne Bigot, Thevy Lok, Claude Verdier, Alain Duperray, Thomas Voit, Susana Quijano-Roy, Gisèle Bonne, **Catherine Coirault**

498-Pos BOARD B278
CYCLIC STRAIN OF PRECISION CUT LUNG SLICES (PCLS) INDUCES PRO-INFLAMMATORY AND PRO-PROLIFERATIVE SIGNALLING. **David Salman**, Charlotte Dean, Mark J. D Griffiths

Excitation-Contraction Coupling I (Boards B279 - B301)

499-Pos BOARD B279
RYANODINE RECEPTOR SENSITIVITY GOVERNS THE STABILITY AND SYNCHRONY OF LOCAL CALCIUM RELEASE DURING CARDIAC EXCITATION-CONTRACTION COUPLING. **Andrew P. Wescott**, M. Saleet Jafri, W. Jonathan Lederer, George S. B. Williams

500-Pos BOARD B280
DANTROLENE INHIBITION OF SKELETAL MUSCLE RYR IN THE PRESENCE OF CAM. **Ye W. Oo**, M.S Imtiaz, D.F. vanHelden, D.R Laver

501-Pos BOARD B281
NOVEL COMPOUNDS INHIBIT CALMODULIN DEFICIENT RYR2 ACTIVITY AND ARRHYTHMIAS IN A CPVT MOUSE MODEL. **Robert C. Klipp**, Na Li, Qiongling Wang, Martha Sibrian-Vazquez, Robert M. Strongin, Xander H.T. Wehrens, Jonathan J. Abramson

502-Pos BOARD B282 INTERNATIONAL TRAVEL AWARDEE
S4-S5 LINKER REGULATES RYR2 CHANNEL GATING THROUGH MULTIPLE INTERACTIONS. **Takashi Murayama**, Nagomi Kurebayashi, Haruo Ogawa, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Takashi Sakurai

503-Pos BOARD B283
SPONTANEOUS AND VOLTAGE-ACTIVATED ELEMENTARY CALCIUM RELEASE EVENTS IN INTACT SKELETAL MUSCLE FIBERS EXPRESSING THE EMBRYONIC CAV1.1 SPLICE VARIANT. **Beatrix Dienes**, János Vincze, Péter Szentesi, Nasreen Sultana, Bernhard E. Flucher, László Csernoch

504-Pos BOARD B284
CHARACTERIZATION OF THE STAC3-CAV1.1 INTERACTION IN SKELETAL MUSCLE EXCITATION-CONTRACTION COUPLING. **Marta Campiglio**, Bernhard E. Flucher

505-Pos BOARD B285
THE TRANSMEMBRANE DOMAIN IS SUFFICIENT TO DIRECT JUNCTIONAL TOPHILIN-1 LOCALIZATION AT THE JUNCTIONAL SR. **Daniela Rossi**, Angela Maria Scarcella, Stefania Lorenzini, Vincenzo Sorrentino

506-Pos BOARD B286
CELLULAR PATHOPHYSIOLOGY OF "MHH", A LARGE GROUP OF PATIENTS WITH EQUIVOCAL DIAGNOSIS OF MALIGNANT HYPERTHERMIA. **Lourdes Figueroa**, Carlo Manno, Natalia Kraeva, Sheila Toro, Eduardo Rios, Sheila Riazzi

507-Pos BOARD B287
THE MALIGNANT HYPERTHERMIA RYR1Y522S MUTATION AFFECTS CALCIUM HOMEOSTASIS IN ARTERIAL SMOOTH MUSCLE CELLS. Ruben Lopez, Susan N. Treves, **Francesco Zorzato**

508-Pos BOARD B288
INACTIVATION OF CAV1.1 CHANNELS IN ADULT SKELETAL MUSCLE: EF-

ECTS OF A C-TERMINAL PRE-IQ MUTATION. **Erick O. Hernández-Ochoa**, Brian R. Cannon, Camilo Vanegas, David J. Weber, Martin F. Schneider

509-Pos BOARD B289
STIM1-DEPENDENT CA²⁺ SIGNALING IN CARDIAC MYOCYTES. Cory Parks, Ryan Sullivan, **Salvatore Mancarella**

510-Pos BOARD B290
MODELING THE ROLE OF NCX IN THE REGULATION OF CARDIOMYOCYTE MICRODOMAIN CA²⁺ DYNAMICS. **Lulu Chu**, Joseph L. Greenstein, Raimond L. Winslow

511-Pos BOARD B291
TRANSMURAL DIFFERENCES IN PRELOAD-DEPENDENCY OF CA²⁺ TRANSIENTS IN ISOLATED CARDIOMYOCYTES. **Anastasia Khokhlova**, Gentaro Iribe, Olga Solovyova

512-Pos BOARD B292
THE TRPV4 ION CHANNEL ALTERS INTRACELLULAR CALCIUM TRANSIENTS IN CARDIOMYOCYTES OF AGED MICE. **John L. Jones**, Michelle D. Lambert, Justin T. Whitfield, Timothy L. Domeier

513-Pos BOARD B293
THE CONCENTRATIONS OF TOTAL CALCIUM IN FAST-TWITCH AND HEART MUSCLES FROM MICE IN AN AGITATED AND ACTIVE STATE IS ALMOST 2-FOLD GREATER THAN THOSE FROM RESTING MICE. Abby F. McDonnell, **Paul C. Pape**

514-Pos BOARD B294
CA²⁺ TIDES IN CARDIOMYOCYTES UNDER MECHANICAL LOADING. **Zhong Jian**, Leighton T Izu, Yi-Je Chen, Brittani Wood, Julie Bossuyt, Kit S Lam, Ye Chen-Izu

515-Pos BOARD B295
DYSSYNCHRONOUS CA REMOVAL IN ATRIAL CARDIAC MYOCYTES. **Felix Hohendanner**, Frank Heinzl, Lothar Blatter

516-Pos BOARD B296
INTERPLAY OF TRIGGER CA²⁺ WAVES AND CA²⁺ TRANSIENT ALTERNANS IN ATRIAL MYOCYTES. **Gary Aistrup**, Yohannes Shiferaw, Rishi Arora, Georg Gussak, Soren Grubb, William Marszalec, J. Andrew Wasserstrom

517-Pos BOARD B297
ACTIVATION OF REVERSE NA/CA EXCHANGER BY SKELETAL NA CHANNEL ISOFORM INCREASES EXCITATION-CONTRACTION COUPLING EFFICIENCY IN RABBIT CARDIOMYOCYTES. **Natalia S. Torres**, John HB Bridge

518-Pos BOARD B298
USING ACTION POTENTIAL CLAMP DATA TO DETERMINE THE CALCIUM FLUXES AND CONTRIBUTIONS IN EXCITATION-CONTRACTION COUPLING IN VIVO IN CARDIOMYOCYTES. **Martin Laasmaa**, Marko Vendelin, Rikke Birkedal

519-Pos BOARD B299
CHARACTERIZATION OF TWO HUMAN SKELETAL CALSEQUESTRIN MUTANTS IMPLICATED IN MALIGNANT HYPERTHERMIA AND VACUOLAR AGGREGATES MYOPATHY. **Eduardo Rios**, Kevin M. Lewis, Leslie A. Ronish, ChulHee Kang

520-Pos BOARD B300
IMAGING STUDIES OF CALSEQUESTRIN STRUCTURE IN SKELETAL MUSCLE. EFFECTS OF CALCIUM RELEASE. **Eduardo Rios**, Carlo Manno, Lourdes Figueroa, Clara Franzini-Armstrong

521-Pos BOARD B301
MECHANICAL ANALYSIS OF SINGLE MYOCYTE CONTRACTION IN A 3D VISCOELASTIC GEL. **John A. Shaw**, Alan Wineman, Rafael Shimkunas, Leighton Izu, Ye Chen-Izu

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I (Boards B302 - B331)

- 522-Pos BOARD B302**
WATER TRANSPORT ACROSS THE VOLTAGE SENSOR OF SHAKER K-CHANNELS DURING ACTIVATION. **Ignacio Diaz-Franulic**, David Naranjo
- 523-Pos BOARD B303**
HYDRATION AND THE ELECTRIC FIELD IN THE VOLTAGE SENSING DOMAIN OF THE KV1.2 CHANNEL: QUANTUM CALCULATIONS SHOW S4 DOESN'T MOVE, BUT WATER AND PROTONS MOVE. Alisher M. Kariev, **Michael E. Green**
- 524-Pos BOARD B304**
WATER AND A PROTON SHIFT BETWEEN A TYROSINE AND A GLUTAMATE ARE TWO KEYS TO GATING IN KV1.2; A HYPOTHESIS BASED ON QUANTUM CALCULATIONS: THE SENSOR IS DYNAMIC, BASED ON HYDROGEN BOND REARRANGEMENTS, PRINCIPALLY IN WATER ROTATIONAL DEGREES OF FREEDOM, PLUS A PROTON PATHWAY. **Alisher M. Kariev**, Michael E. Green
- 525-Pos BOARD B305**
STRUCTURAL INSIGHTS OF THE CALCIUM MEDIATED REORGANIZATION OF THE CALMODULIN/KV7.2 CHANNEL COMPLEX. **Alvaro Villarroel**, Ganeko Bernardo-Seisdedos, Alessandro Alaimo, Carolina Gomis-Perez, Araitz Alberdi, Covadonga Malo, Pilar Areso, Oscar Millet
- 526-Pos BOARD B306 CID TRAVEL AWARDEE**
BIOCHEMICAL ANALYSIS OF THE REGULATION OF KV7 CHANNELS BY PIP2 AND CALMODULIN. **Crystal R. Archer**, Benjamin T. Enslow, Mark S. Shapiro
- 527-Pos BOARD B307**
CENTRIN 4 IS A BINDING PARTNER OF RAT EAG1 K⁺ CHANNELS. Po-Hao Hsu, **Chih-Yung Tang**, Chung-Jiuan Jeng
- 528-Pos BOARD B308**
GATING CURRENT MODELS COMPUTED WITH CONSISTENT INTERACTIONS. Tzyy-Leng Horng, **Robert S. Eisenberg**, Chun Liu, Francisco Bezanilla
- 529-Pos BOARD B309 INTERNATIONAL TRAVEL AWARDEE**
A MOLECULAR SUBSTRATE FOR LONG QT IN HIV PATIENTS: TAT PROTEIN REDUCES IKR IN HUMAN INDUCED PLURIPOTENT STEM CELLS-DERIVED CARDIOMYOCYTES. **Zeineb Es-Salah-Lamoureux**, Mariam Jouni, Nadjet Belbachir, Marine Gandon-Renard, Bruno Beaumelle, Isabelle Baró, Flavien Charpentier, Kazem Zibara, Patricia Lemarchand, Nathalie Gaborit, Gildas Loussouarn
- 530-Pos BOARD B310**
CHARACTERIZATION OF A FAST VOLTAGE-SENSING PROTEIN USING VOLTAGE-CLAMP FLUOROMETRY. **Ferenc Papp**, Jaime Smith, Orsolya Szilagy, Tsg-Hui Chang, Kenton J. Swartz
- 531-Pos BOARD B311**
PATCH-CLAMP FLUOROMETRY BASED DETERMINATION OF RELATIVE ION PERMEABILITY FOR HCN CHANNELS. Khade L. Grant, Chang Liu, **Lei Zhou**
- 532-Pos BOARD B312**
DISTANCE-RESOLVING VOLTAGE CLAMP FLUOROMETRY (DRVCF) QUANTIFIES INTRAMOLECULAR TRANSITIONS IN THE HUMAN BK AND CI-VSP VOLTAGE SENSORS UNDER PHYSIOLOGICALLY-RELEVANT CONDITIONS. **Antonios Pantazis**, Riccardo Olcese
- 533-Pos BOARD B313**
EFFECT OF SMALL-MOLECULES ON S4 MOVEMENT AND GATING OF NORMAL AND MUTATED IKM CHANNELS. **Rene Barro-Soria**
- 534-Pos BOARD B314**
PROBING THE S4-S5 LINKER MOVEMENT DURING ACTIVATION IN KV CHANNELS. **Tanja Kalstrup**, Rikard Blunck
- 535-Pos BOARD B315**
THE EFFECT OF MEMBRANE CHOLESTEROL CONTENT ON THE GATING MECHANISM OF VOLTAGE GATED POTASSIUM CHANNELS. Pal Pap, Zoltan Petho, Gyorgy Panyi, **Zoltan Varga**
- 536-Pos BOARD B316**
THE CONSTRICTED FILTER CONFORMATION: A GENERAL PROPERTY FOR C-TYPE INACTIVATION OF DIFFERENT POTASSIUM CHANNELS? **Jing Li**, Jared Ostmeier, Mikolai Fajer, Benoit Roux
- 537-Pos BOARD B317**
A RECIPROCAL VOLTAGE SENSOR-TO-PORE COUPLING IN C-TYPE INACTIVATION. **Luca Conti**, Jakob Renhorn, Anders Gabrielsson, Fredrik Turesson, Sara Liin, Erik Lindahl, Fredrik Elinder
- 538-Pos BOARD B318**
DYN-MEDIATED INTERNALIZATION OF KCNQ1/KCNE1 CHANNELS UNDER SUSTAINED CPKC ACTIVATION. **Xiaorong Xu Parks**, Elsa Ronzier, Jin O-Uchi, Coeli M. Lopes
- 539-Pos BOARD B319**
TRAFFICKING DEFICIENT KV11.1 (HERG) MUTATIONS LINKED TO LONG QT SYNDROME LOCALIZE TO DIFFERENT ENDOPLASMIC RETICULUM SUB-COMPARTMENTS. Jennifer L. Smith, Corey L. Anderson, Criag T. January, **Brian Delisle**
- 540-Pos BOARD B320**
INTERACTIONS BETWEEN THE C-LINKER AND THE S4-S5 LINKER MEDIATE GATING IN CNGA1 CHANNELS. Manuel Arcangeletti, Monica Mazzolini, Claudio Anselmi, **Debora Grosa**, Sourav Maity, Arin Marchesi, Luisa Napolitano, Vincent Torre
- 541-Pos BOARD B321**
ENGINEERING SUBUNIT AND NONSENSE SUPPRESSION STOICHIOMETRY IN POTASSIUM CHANNELS. **John D. Lueck**, Adam L. Mackey, Jason D. Galpin, Christopher A. Ahern
- 542-Pos BOARD B322**
SLACK CHANNELS NULL MICE EXHIBIT INCREASED SENSITIVITY TO MECHANICAL STIMULI BUT NORMAL RESPONSE TO THERMAL STIMULI. Ran Wang, Ying Song, Jie Xu, Meng-Jiao Tan, Tian-Yu Cao, Shun-Heng Gao, Meng-Han Sun, Fei-Fei Zhang, **Zhe Zhang**
- 543-Pos BOARD B323**
EQUILIBRIUM FLUCTUATION RELATIONS FOR GATING CHARGE IN VOLTAGE SENSITIVE MEMBRANE PROTEINS: A MICROSCOPIC CAPACITOR MODEL APPROACH. **ILSOO KIM**, Arie Warshel
- 544-Pos BOARD B324**
MEMBRANE FORCES REGULATE VOLTAGE SENSOR MOVEMENT. Mehdi Torbati, Vikash Chaurasia, Kranthi Mandadapu, **Ashutosh Agrawal**
- 545-Pos BOARD B325**
GATING CHARGE CALCULATIONS: PROBING VOLTAGE-SENSING PROTEINS THROUGH COMPUTATIONAL ELECTROPHYSIOLOGY. **Jan-Philipp Machtens**, Rodolfo Briones, Bert L. de Groot, Christoph Fahlke
- 546-Pos BOARD B326**
COMPUTATIONAL CHARACTERIZATION OF CONFORMATIONAL TRANSITIONS IN THE VOLTAGE-SENSING DOMAIN OF CI-VSP. **Rong Shen**, Qufei Li, David Medovoy, Yilin Meng, Benoît Roux, Eduardo Perozo
- 547-Pos BOARD B327**
MODELING OF THE SMALL-CONDUCTANCE CALCIUM-ACTIVATED POTASSIUM CHANNEL AND CARDIAC ALTERNANS. **Matthew Kennedy**, Donald M. Bers, Nipavan Chiamvimonvat, Daisuke Sato

548-Pos BOARD B328
WHAT DETERMINES THE CHARYBDOTOXIN SPECIFICITY AMONG KV1 POTASSIUM CHANNELS? **Drew C. Tilley**, Sarel Fleishman, Jon T. Sack, Vladimir Yarov-Yarovoy

549-Pos BOARD B329
THE MOLECULAR MECHANISM OF THE DUAL SPIDER TOXIN EFFECT ON VOLTAGE GATED K⁺ CHANNELS. Sara Liin, Anders Gabrielsson, Fredrik Elinder, **Erik Lindahl**

550-Pos BOARD B330
IN-SILICO ELECTROPHYSIOLOGY: ON THE ACTIVATION OF VOLTAGE-GATED ION CHANNELS USING MOLECULAR DYNAMICS SIMULATIONS. **Mounir Tarek**, Lucie Delemotte, Marina Kasimova, Michael L. Klein, Vincenzo Carnevale

551-Pos BOARD B331
INSERTION OF CROSSLINKABLE AMINO ACIDS INTO THE I_{Ks} CHANNEL COMPLEX DEMONSTRATES A VARIABLE KCNQ1:KCN1 STOICHIOMETRY OF UP TO 4:4. **Maartje F.E. Westhoff**, Christopher I. Murray, Emely Thompson, Robert Emes, Jodene Eldstrom, David Fedida

Voltage-gated Na Channels I (Boards B332 - B361)

552-Pos BOARD B332
MOLECULAR SCALE PREDICTION OF LIDOCAINE INTERACTION WITH THE PORE DOMAIN OF HUMAN NAV1.5. **Kevin DeMarco**, Céline Boiteux, Toby W. Allen, Vladimir Yarov-Yarovoy, Colleen E. Clancy

553-Pos BOARD B333
A COMPUTATIONAL MODELING INVESTIGATION INTO SCN10A LINKED BRUGADA SYNDROME. **Marcus Vincent**, Pei-Chi Yang, Colleen E. Clancy

554-Pos BOARD B334
FACILITATION OF RAPID TEMPORAL PROCESSING BY ION CHANNEL COOPERATIVITY SUGGESTS COORDINATION THROUGH MEMBRANE ELECTRO-MECHANICS. **Mussie K. Araya**, William E. Brownell

555-Pos BOARD B335
COMPUTATIONAL MODELING OF SODIUM CHANNEL INACTIVATION. **Kim Lam**, Zhe Wu, Klaus Schulten

556-Pos BOARD B336
MOLECULAR DYNAMICS SIMULATIONS OF THE OPEN STATE STRUCTURE OF A BACTERIAL VOLTAGE-GATED SODIUM CHANNEL REVEAL THE BINDING MECHANISMS OF CHANNEL BLOCKERS. **Song Ke**, B. Ann Wallace, Jakob P. Ulmschneider, Martin B. Ulmschneider

557-Pos BOARD B337
COMPUTATIONAL STUDY OF BINDING OF μ -CONOTOXIN GI_{IIA} (μ -CTX) TO NAVRH AND NAVAB. **Dharmeshkumar J. Patel**

558-Pos BOARD B338
BINARY ARCHITECTURE OF THE NAV1.2- β 2 SIGNALING COMPLEX. **John M. Gilchrist**, Samir Das, Filip Van Petegem, Frank Bosmans

559-Pos BOARD B339
STRUCTURAL COMPARISONS OF IMMUNOGLOBULIN FOLDS OF HUMAN NAV β SUBUNITS. **Samir Das**, John Gilchrist, Frank Bosmans, Filip Van Petegem

560-Pos BOARD B340
CALMODULIN AND FIBROBLAST GROWTH FACTOR HOMOLOGOUS FACTOR CO-REGULATION OF THE NAV1.5 CHANNEL IN LQT3 MUTATIONS. **Chaojian Wang**, Haidun Yan, Geoffrey S. Pitt

561-Pos BOARD B341
INTRACELLULAR CALCIUM DIFFERENTIALLY AFFECTS SCN5A MIXED SYNDROME MUTATIONS. **Mena Abdelsayed**, Peter C. Ruben

562-Pos BOARD B342
STRUCTURAL DIFFERENCES IN CALMODULIN BOUND TO VOLTAGE-GATED SODIUM CHANNEL IQ MOTIFS. **Ryan Mahling**, C. Andrew Fowler, Liam Hovey, Liping Yu, Lokesh Gakhar, Zesen Lin, Nisha Pandey, Toni Martins, Madeline A. Shea

563-Pos BOARD B343
FUNCTIONAL MODIFICATION OF BACTERIAL VOLTAGE-GATED SODIUM CHANNELS BY BATRACHOTOXIN. **Rocio K. Finol-Urdaneta**, Jeffrey R. McArthur, Rachele Gaudet, Robert J. French

564-Pos BOARD B344
MECHANOSENSITIVITY OF THE BACTERIAL VOLTAGE-GATED SODIUM CHANNEL NACHBAC. **Constanza A. Alcaino**, Peter R. Strege, Cheryl E. Bernard, Gianrico Farrugia, Arthur Beyder

565-Pos BOARD B345
EFFECTS OF LATE SODIUM CURRENT (I_{NaL}) BLOCKADE DURING ACUTE MYOCARDIAL ISCHEMIA. **Carlotta Ronchi**, Marcella Rocchetti, Eleonora Torre, Riccardo Rizzetto, Joyce Bernardi, Gaspare Mostacciolo, Antonio Zaza

566-Pos BOARD B346
NOVEL STORM-BASED QUANTITATIVE ASSESSMENT OF RELATIVE PROTEIN LOCALIZATION REVEALS NEW ROLE FOR SODIUM CHANNEL β 1 SUBUNIT IN CARDIAC CONDUCTION. **Rengasayee Veeraraghavan**, Robert G. Gourdie

567-Pos BOARD B347
BIOPHYSICAL AND PHARMACOLOGICAL CHARACTERIZATION OF MULTIPLE NAV SUBTYPES ON QUBE. **Mads P. Korsgaard**, Anders Lindqvist, Søren Friis, Mette T. Christensen

568-Pos BOARD B348
CYSTEINE RESIDUES C489 AND C1135 OF NAV 1.5 PLAY A CRITICAL ROLE IN PRODUCING LATE SODIUM CURRENT THROUGH NNOS-DEPENDENT S-NITROSYLATION OF NAV 1.5. **Jianding Cheng**, John W. Kyle, Graham S. Adsit, Carmen R. Valdivia, Alyson K. Fisher, Jonathan C. Makielski

569-Pos BOARD B349
MODULATION OF A BACTERIAL VOLTAGE-GATED SODIUM CHANNEL BY THE ANTI-EPILEPTIC DRUG LACOSAMIDE. Celine Boiteux, **Chris French**, Toby W. Allen

570-Pos BOARD B350
PATIENT-SPECIFIC INDUCED PLURIPOTENT STEM CELL CARDIAC MYOCYTES AS PREDICTORS OF SUDEP RISK. **Chad R. Frasier**, Helen Zhang, James Offord, David S. Auerbach, Jack M. Paren, Lori L. Isom

571-Pos BOARD B351
BIOPHYSICAL, MOLECULAR AND PHARMACOLOGICAL CHARACTERIZATION OF NAV CHANNELS FROM INDUCED PLURIPOTENT STEM CELLS DERIVED CARDIOMYOCYTES. **Aurélie Mercier**, Adrien Moreau, Olivier Thériault, Mohamed Chahine

572-Pos BOARD B352
MICE WITH A NULL ALLELE FOR NAV1.4 EXHIBIT PSEUDO-MYASTHENIA, BUT ARE NOT SUSCEPTIBLE TO PERIODIC PARALYSIS. Fenfen Wu, Wentao Mi, Yu Fu, **Steve C. Cannon**

573-Pos BOARD B353
SCN4A PORE MUTATION PATHOGENETICALLY CONTRIBUTES TO AUTOSOMAL DOMINANT ESSENTIAL TREMOR AND MAY INCREASE SUSCEPTIBILITY TO EPILEPSY. Alberto Bergareche, **Marcin J. Bednarz**, Elena Sánchez, Catharine E. Krebs, Javier Ruiz-Martinez, Patricia De la Riva, Vladimir Makarov, Ana Gorostidi, Karin Jurkat-Rott, Jose Felix Marti-Masso, Coro Paisán-Ruiz

574-Pos BOARD B354

MAPPING RECEPTOR SITES FOR SODIUM CHANNEL BLOCKING INSECTICIDES DCJW AND METAFIUMIZONE IN AN INSECT SODIUM CHANNEL. Yuzhe Du, Yongqiang Zhang, Dingxin Jiang, Caitlyn Behnke, Yoshiko Nomura, Ke Dong, **Boris S. Zhorov**

575-Pos BOARD B355

MECHANISM OF SLOW INACTIVATION IN PROKARYOTIC VOLTAGE-GATED SODIUM CHANNEL. **Soumili Chatterjee**

576-Pos BOARD B356

DIFFERENTIAL ACTION OF PYRETHROIDS ON HONEY BEE AND BUMBLE BEE VOLTAGE-GATED SODIUM CHANNELS. **Claude Collet**, Aklesso Kadala, Bernard Vaissière, Matthieu Rousset, Thierry Cens, Yves Le Conte, Mohamed Chahine, Jean-Baptiste Thibaud, Pierre Charnet

577-Pos BOARD B357

IDENTIFICATION OF NOVEL PORE INTERACTIONS FOR SELECTIVE NAV1.8 INHIBITORS. **Matthew D. Fuller**, Sonia Santos, Mark L. Chapman

578-Pos BOARD B358

CHARACTERIZATION OF NAV1.8 ON A HIGHLY PARALLEL AUTOMATED PATCH CLAMP SYSTEM. **Markus Rapedius**, Andrea Bruggemann, Tom Goetze, Claudia Haarmann, Ilka Rinke, Atsushi Ohtsuki, Takayuki Oka, Marius Vogel, Timo Stengel, Johannes Stiehler, Michael George, Nils Fertig

579-Pos BOARD B359

THE EFFECTS OF AMIODARONE AND N-DESETHYLAMIODARONE ON CARDIAC VOLTAGE-GATED SODIUM CHANNELS. **Mohammad-Reza Ghovanloo**, Peter C. Ruben

580-Pos BOARD B360

HIGH AFFINITY NAV CHANNEL BINDER WITH SPECIFIC CONJUGATION SITE DERIVED FROM SCORPION TOXIN WITH ATTENUATED TOXICITY. **Tomoya Kubota**, Bobo Dang, Joao L. Carvalho-de-Souza, Stephen B.H. Kent, Ana M. Correa, Francisco Bezanilla

581-Pos BOARD B361

PROBING VOLTAGE-DEPENDENT STRUCTURAL CHANGES OF THE VSD IN MAMMALIAN NAV WITH LRET. **Tomoya Kubota**, Thomas Durek, Rocio K. Finol-Urdaneta, David J. Craik, Robert J. French, Francisco Bezanilla, Ana M. Correa

Other Channels (Boards B362 - B390)

582-Pos BOARD B362

STRUCTURAL DETERMINANTS FOR SELECTIVITY OF THE POSITIVE KCA CHANNEL GATING MODULATOR, SKA-121. **Brandon M. Brown**, Heesung Shim, Vladimir Yarov-Yarovoy, Heike Wulff

583-Pos BOARD B363

BK-CA²⁺ CHANNEL COUPLING IN THE MOUSE CIRCADIAN CLOCK. Joshua P. Whitt, **Andrea L. Meredith**

584-Pos BOARD B364

LOSS-OF-FUNCTIONAL KIR6.1 KATP CHANNEL MUTATIONS INDUCE CELL APOPTOSIS THROUGH ROS PRODUCTION AND MITOCHONDRIAL DYSFUNCTION. **Bi-Hua Tan**, Shengyi Xie, Tianyu Sun, Sinisa Dovat, Blaise Z. Peterson, Chunhua Song

585-Pos BOARD B365

HUMAN ERYTHROCYTE MECHANO-ACTIVATED K⁺ CHANNEL A (HEM-KCA): EFFECT OF APPLIED PRESSURE ON OPEN PROBABILITY, A KINETIC STUDY. Alejandro Mata, **Jesus G. Romero**

586-Pos BOARD B366

CATSPER HAS A CALCIUM-PERMEABLE VOLTAGE SENSOR DOMAIN. **Hiroki Arima**, Hidekazu Tsutsui, Kohei Takeshita, Atsushi Nakagawa, Ayako Sakamoto, Manabu Yoshida, Yasushi Okamura

587-Pos BOARD B367

CSFV P7 VIROPORIN ION CHANNEL ACTIVITY IN LIPID BILAYERS MIMICKING THE ER MEMBRANE. **Vicente M. Aguilera**, Eneko Largo, Carmina Verdiá-Báguena, José L. Nieva, Antonio Alcaraz

588-Pos BOARD B368

ELECTRO-OSMOTIC DRIVEN KINETICS OF CYCLODEXTRIN THROUGH THE CYMA CHANNEL. **Satya Prathyusha Bhamidimarri**, Jigneshkumar Dahyabhai Prajapati, Bert van den Berg, Ulrich Kleinekathoefer, Mathias Winterhalter

589-Pos BOARD B369

INTERNAL ELECTRIC FIELD OF GRAM- UNSPECIFIC PORINS DIRECTS THE CHOREOGRAPHY OF ANTIBIOTIC TRANSLOCATION. **Mariano A. Scorciapino**, Tommaso D'Agostino, Silvia Acosta-Gutierrez, Igor Bodrenko, Matteo Ceccarelli

590-Pos BOARD B370 INTERNATIONAL TRAVEL AWARDEE
WATER-BASED SCREENING OF ANTIBIOTICS PERMEABILITY. **Silvia Acosta-Gutierrez**, Andrea Mariano Scorciapino, Igor Bodrenko, Matteo Ceccarelli

591-Pos BOARD B371

GSMTX4 MUTAGENESIS REVEALS DYNAMIC MEMBRANE BINDING PROPERTIES THAT CONFER INHIBITION OF PIEZO1. **Radhakrishnan Gnanasambandam**, Chiranjib Ghatak, Anthony Yasmann, Frederick Sachs, Alexey S. Ladokhin, Sergei I. Sukharev, Thomas M. Suchyna

592-Pos BOARD B372 INTERNATIONAL TRAVEL AWARDEE
THE N-TERMINAL HELIX ACTS AS A DYNAMIC MEMBRANE COUPLER IN THE GATING CYCLE OF THE MECHANOSENSITIVE CHANNEL MSCL. **Navid Bavi**, Charles D. Cox, Paul R. Rohde, Adam P. Hill, Ben Corry, Boris Martinac

593-Pos BOARD B373
ASSESSING CLC-2 CHLORIDE CHANNEL VOLTAGE GATING BY PORE OCCUPATION WITH ACETATE. **José J. De Jesús-Pérez**, Jorge Arreola

594-Pos BOARD B374

SPONTANEOUS OPENINGS OF CFTR ARE COUPLED TO DIMER FORMATION OF ITS NUCLEOTIDE BINDING DOMAINS. **Csaba Mihályi**, László Csanády

595-Pos BOARD B375

THE PROSTACYCLIN ANALOG TREPASTINIL INHIBITS ANO1-ENCODED CA²⁺-ACTIVATED CL⁻ CHANNELS AND MOUSE PULMONARY ARTERIAL TONE THROUGH STIMULATION OF CAMP-DEPENDENT SIGNALING PATHWAY. Fiona Cunningham, John Lilly, **Normand Leblanc**

596-Pos BOARD B376

FUNCTIONAL DIVERSITY WITHIN THE FNT SUPERFAMILY OF ANION CHANNELS: PHYLOGENETICS & MOLECULAR DYNAMICS STUDIES. **Mishtu Mukherjee**, Manu Vajpai, Ramasubbu Sankaramakrishnan

597-Pos BOARD B377

BASIS OF NEGATIVE COOPERATIVITY IN TWO-SIDED MONOBODY BLOCK OF FLUC. **Daniel L. Turman**, Jake Nathanson, Randy Stockbridge, Chris Miller

598-Pos BOARD B378

A BACTERIAL HOMOLOG OF CHLORIDE INTRACELLULAR CHANNEL (CLIC) PROTEIN FAMILY, STRINGENT STARVATION PROTEIN A (SSPA), FORMS A NON-SELECTIVE ION CHANNEL. **Harpreet Singh**, Devasena Ponnalagu, Sowmya Sukur, Harkewal Singh, Yan Ning Zhou, Ding J. Jin, Shubha Gururaja Rao

599-Pos BOARD B379

NEAR-IR RESONANCE RAMAN CHARACTERIZATION OF AN ANION CHANNELRHODOPSIN FROM GUILLARDIA THETA. **Adrian Yi**, Natalia Mamaeva, Hai Li, John L. Spudich, Kenneth J. Rothschild

600-Pos BOARD B380
HUMAN CONNEXIN 26 (CX26) N14K MUTANT ALTERS HEMICHANNEL CALCIUM AND VOLTAGE SENSITIVITY. **Juan M. Valdez Capuccino**, William Lopez, Andrew L. Harris, Jorge E. Contreras

601-Pos BOARD B381
NITRIC OXIDE INCREASES ENDOTHELIAL CELL MEMBRANE PERMEABILITY VIA S-NITROSYLATION-MEDIATED OPENING OF CX43 HEMICHANNELS. **Mauricio A. Lillo**, Jorge E. Contreras, Xavier F. Figueroa

602-Pos BOARD B382
A NOVEL E. COLI-BASED ASSAY FOR RAPID SCREENING OF HEMICHANNEL FUNCTION. **Srinivasan Krishnan**, D. Marien Cortés, Guillermo A. Altenberg, Luis G. Cuello

603-Pos BOARD B383
ENGINEERED CX40 VARIANTS SHOWED HETEROTYPIC COLOCALIZATION AND INCREASED GAP JUNCTIONAL COUPLING WITH CX43. Arjewan Jassim, Hiroshi Aoyama, Willy G. Ye, Honghong Chen, **Donglin Bai**

604-Pos BOARD B384
WATER DYNAMICS AND ION INTERACTION AT CHANNEL ENTRANCE OF AQUAPORIN 1. **Eiji Yamamoto**, Takuma Akimoto, Masato Yasui, Kenji Yasuoka

605-Pos BOARD B385
EFFECT OF LIPID LAYER ON THE WATER PERMEABILITY OF AQUAPORIN: A MOLECULAR DYNAMICS STUDY. **Sangjae Seo**, Youngjin Kim, Hyunki Kim, Moon Ki Kim

606-Pos BOARD B386
HIGHLY PERMEABLE ARTIFICIAL WATER CHANNELS THAT SELF-ASSEMBLE INTO TWO-DIMENSIONAL ARRAYS. **Karl Decker**

607-Pos BOARD B387
AN INSECT PROTON CHANNEL. Gustavo Chaves, Christian Derst, Arne Franzen, Ryuichiro Machida, Yuta Mashimo, **Boris Musset**

608-Pos BOARD B388
NOVEL PLAYERS IN THE CONTROL OF MITOCHONDRIAL ION HOMEOSTASIS. **Angela Paggio**, Vanessa Checchetto, Ildikò Szabò, Rosario Rizzuto, Diego De Stefani

609-Pos BOARD B389
MEMBRANE-SPANNING DNA ION CHANNELS: CONDUCTANCE MECHANISM, ELECTRO-OSMOTIC TRANSPORT AND MECHANICAL GATING. Jejoong Yoo, **Chen-Yu Li**, Aleksei Aksimentiev

610-Pos BOARD B390
OLIGOMERIZATION STATES OF LRRC8A AND LRRC8B, ESSENTIAL COMPONENTS OF THE VOLUME-REGULATED ANION CHANNEL VRAC. **Gunther Schmalzing**, Silvia Detro-Dassen, Christoph Fahlke, Fritz Markwardt

Cardiac Muscle Regulation (Boards B391 - B413)

611-Pos BOARD B391
MECHANICAL SIGNALING COORDINATES THE EMBRYONIC HEART-BEAT. **Kevin K. Chiou**, Jason W. Rocks, Sangkyun Cho, Koen E. Merkus, Patrick Robison, Manorama Tewari, Kenneth Vogel, Stephanie F. Majkut, Benjamin L. Prosser, Dennis E. Discher, Andrea J. Liu

612-Pos BOARD B392
SIMULTANEOUS MEASUREMENT OF FORCE AND LATTICE SPACING IN SKINNED CARDIAC FIBERS. David Gonzalez-Martinez, Maicon Landim-Vieira, Olga A. Antipova, **Omar Awan**, P. Bryant Chase, Thomas Irving, Jose R. Pinto

613-Pos BOARD B393
THE LOAD DEPENDENCE OF THE SIZE AND THE SPEED OF THE WORKING STROKE OF CARDIAC MYOSIN IN SITU. Marco Caremani, Francesca Pinzatti, Massimo Reconditi, Gabriella Piazzesi Piazzesi, Vincenzo Lombardi, **Ger J. Stienen**, Marco Linari

614-Pos BOARD B394
EFFECT OF STIMULATION FREQUENCY MODULATION ON CROSS-BRIDGE CYCLING RATE OF EXPLANTED HUMAN MYOCARDIUM WITH NON-ISCHEMIC AND ISCHEMIC CARDIOMYOPATHY. **Jae-Hoon Chung**

615-Pos BOARD B395
ASSESSMENT OF CARDIAC EFFECTS OF PROTEIN KINASE A AND PROTEIN KINASE C INHIBITORS ON MYOFILAMENT-BASED CONTRACTILE ACTIVATION IN FAILING HUMAN MYOCARDIUM. **Nancy S. Saad**

616-Pos BOARD B396
THE BENEFITS OF VOLUNTARY EXERCISE ON CARDIAC FUNCTION IN DCM MODEL MICE. **Masami Sugihara**, Ryo Kakigi, Takashi Murayama, Takashi Sakurai, Takashi Miida, Sachio Morimoto, Nagomi Kurebayashi

617-Pos BOARD B397
DAMP RESTORES THE CONTRACTILE FUNCTION OF CARDIAC MYOFIBRIL FROM ADULT DOGS WITH NATURALLY OCCURRING DILATED CARDIOMYOPATHY. **Yuanhua Cheng**, Kaley A Hogarth, M Lynne O'Sullivan, Michael Regnier, W Glen Pyle

618-Pos BOARD B398
TIME-COURSE OF CARDIAC MYOFIBRILLAR CONTRACTILE PROPERTIES DURING THE PROGRESSION OF RAT HYPERTENSIVE HEART FAILURE. **Laurin M. Hanft**, Craig A. Emter, Kerry S. McDonald

619-Pos BOARD B399
AMP KINASE MODULATES HEART RATE AND HEART RATE VARIABILITY THROUGH AUTONOMIC AND INTRINSIC MECHANISMS. **Jack M. Moen**, Ismayil Ahmet, Arash Yavari, Michael G. Matt, Max G. Beyman, Christopher Ramirez, Houman Ashrafian, Edward G. Lakatta

620-Pos BOARD B400
UNIQUE LOCALIZATION OF PHOSPHOLAMBAN IN PERINUCLEAR MEMBRANES OF CARDIOMYOCYTES FROM SEVERAL SPECIES. Yu-An Chiou, Yen-Ling Sung, Peng-Sheng Chen, Shien-Fong Lin, **Zhenhui Chen**

621-Pos BOARD B401
SPATIAL AND FUNCTIONAL INTERACTIONS BETWEEN SK CHANNELS AND L-TYPE CALCIUM CHANNELS IN CARDIOMYOCYTES. **Xiao-Dong Zhang**, Wei Chun Chen, Jeong-Han Lee, Zhong Jian, Gu Dai, Leighton Izu, Ye Chen-Izu, Nipavan Chiamvimonvat

622-Pos BOARD B402
ZACOPRIDE, A NOVEL IK1 ACTIVATOR, IS A POTENTIAL EFFECTIVE TREATMENT FOR TRIGGERED ARRHYTHMIA IN SUSCEPTIBLE HUMAN HEARTS. **Mohammad T. Elnakish**, Benjamin D. Canan, Robert SD Higgins, Ahmet Kilic, Peter J. Mohler, Paul ML Janssen

623-Pos BOARD B403
COMPUTATIONAL STUDY OF HUMAN-AMYLIN INDUCED CALCIUM DYSREGULATION IN CARDIAC MYOCYTES CHARACTERISTIC OF PRE-DIABETES. Caitlin Scott, Florin Despa, Sanda Despa, **Peter M. Kekenus-Huskey**

624-Pos BOARD B404
SMALL OBSCURINS AT THE INTERCALATED DISC MEDIATE STRUCTURE, CELL SIZE, AND ADHESION. **Maegen Ackermann**, Brendan King, Nicole Perry, Michael Rudloff, Christopher Berndsen, Nathan Wright, Peter Hecker, Aikaterini Kontrogianni-Konstantopoulos

625-Pos BOARD B405
MODELING THE RESPONSE OF CARDIAC TROPONIN C TO CALCIUM ON THE THIN FILAMENT: EFFECTS OF DISEASE-RELATED AND POST-TRANSLATIONAL MODIFICATIONS. **Jalal K. Siddiqui**, Bin Liu, Shane D. Walton, Vikram K. Shettigar, Andrew J. O'Neil, Grace A. Davis, Peeyush Shrivastava, Jianchao Zhang, Brandon Biesiadecki, Jonathan P. Davis

626-Pos BOARD B406

STRUCTURE AND FUNCTION OF THE LEVOSIMENDAN ANALOG 19 COVALENTLY BOUND TO CARDIAC TROPONIN C. **Sandra Elizabeth Pineda-Sanabria**, Ian M. Robertson, Yin-Biao Sun, Malcolm Irving, Brian D. Sykes

627-Pos BOARD B407

PRIMARY EFFECTS OF HCM MUTATIONS IN HUMANS AND CATS. **Andrew E. Messer**, Mary Papadaki, Petr G. Vikhorev, Yousef Sebzali, Mohammed El-Mezgueldi, Alex Daley, David J. Connolly, Steven B. Marston

628-Pos BOARD B408

THERMODYNAMICS OF CALCIUM BINDING TO ZEBRAFISH TROPONIN C (TNC) VISUALIZED THROUGH ISOTHERMAL TITRATION CALORIMETRY (ITC) AND MOLECULAR DYNAMICS (MD). **Kaveh Rayani**, Charles M. Stevens, Bo Liang, Christine E. Genge, Glen F. Tibbits

629-Pos BOARD B409

A8V MUTATION OF CARDIAC TROPONIN C ENHANCES TROPONIN I BINDING. **Javier E. Hasbun**, Henry G. Zot, Clara A. Michel, Maicon Landim-Vieira, Jose R. Pinto

630-Pos BOARD B410

THE REGULATION OF ATP-BINDING, PI RELEASE AND ADP DISSOCIATION FROM MYOSIN II IN NATIVE CARDIAC MYOFIBRILS BY THE N-TERMINAL EXTENSION OF CARDIAC TROPONIN T. **Laura Gunther**, Han-Zhong Feng, Jian-Ping Jin, Takeshi Sakamoto

631-Pos BOARD B411

A NOVEL TRYPTOPHAN ANALOG DESIGNED FOR STUDYING CALCIUM INDUCED CONFORMATIONAL CHANGE OF TROPONIN C. **Alison Y. Li**, Kaveh Rayani, Danielle Wilson, Neil Branda, Glen Tibbits

632-Pos BOARD B412

CARDIOMYOPATHY LINKED MUTATIONS IN ALPHA TROPOMYOSIN INFLUENCE BLOCKED STATE STABILITY BUT NOT MYOSIN STRONG BINDING. **Gerrie P. Farman**, Michael Rynkiewicz, Marek Orzechowski, William Lehman, **Jeffrey Moore**

633-Pos BOARD B413

NOVEL POTENTIAL TREATMENT OF FAMILIAL HYPERTROPHIC CARDIOMYOPATHY WITH ANALOGUES OF THE GREEN TEA POLYPHENOL EPIGALLO-CATECHIN-3-GALLATE. **Paul J. Robinson**, Suketu Patel, Xing Liu, Yin-Hua Zhang, Anuj Khandelwal, Brian Blagg, Barbara Casadei, Hugh Watkins, Charles Redwood

Actin Structure, Dynamics, and Associated Proteins (Boards B414 - B429)

634-Pos BOARD B414

SPECIFIC CATION BINDING STIFFENS ACTIN FILAMENTS BY ADHERING D-LOOPS TO ADJACENT MONOMERS. **Glen M. Hocky**, Joseph L. Baker, Michael J. Bradley, Anton V. Sinitzkiy, Enrique M. De La Cruz, Gregory A. Voth

635-Pos BOARD B415

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637-Pos BOARD B417

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642-Pos BOARD B422

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644-Pos BOARD B424

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645-Pos BOARD B425

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646-Pos BOARD B426

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647-Pos BOARD B427

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- 661-Pos BOARD B441**
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- 662-Pos BOARD B442**
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731-Pos BOARD B511

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732-Pos BOARD B512

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733-Pos BOARD B513
MODELING POLYCYSTIC KIDNEY DISEASE CYSTOGENESIS WITH GENOME-MODIFIED HUMAN PLURIPOTENT STEM CELLS. **Benjamin S. Freedman**, Theodore I. Steinman, Jing Zhou, Joseph V. Bonventre

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746-Pos BOARD B526
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747-Pos BOARD B527
HIGH YIELD SUBCORTICAL PATCH CLAMPING IN VIVO. **William Stoy**, Bo Yang, Thomas Capocasale, Clarissa Whitmire, Yi Liew, Garrett Stanley, Craig Forest

748-Pos BOARD B528
DEVELOPMENT OF AN IN VITRO MODEL OF MILD TRAUMATIC BRAIN INJURY. **Krishna P. Sheth**, Kelly D. O'Connor, Tuan Nguyen

749-Pos BOARD B529
EXPERIMENTAL MULTI-PHYSICS MEASUREMENT OF NEURONAL RESPONSES UNDER TRAUMA. **Majid Malboubi**, Antoine Jerusalem

750-Pos BOARD B530
MEASURING HYDRAULIC CONDUCTANCE AND HYDRATION POTENTIAL OF BRAIN EXTRACELLULAR MATRIX BY OSMOTIC STRESS. **Maria P. McGee**, Michael Morykwas, Louis Argenta

751-Pos BOARD B531
SOLITARY ELECTROMECHANICAL PULSES IN LOBSTER NEURONS. **Rima Budvytyte**, Alfredo Gonzalez-Perez1, Lars D. Mosgaard, Edgar Villagran-Vargas, Andrew D. Jackson, Thomas Heimburg

752-Pos BOARD B532
EFFECT OF ANESTHETICS ON ACTION POTENTIAL PROPAGATION. **Tian Wang**, Henrike Sasse-Middelhoff, Lars Mosgaard, Thomas Heimburg

753-Pos BOARD B533
THE VALUE OF ENCRYPTING BIOPHYSICAL DATA. **Peter S. Pennefather**, West Suhanic

Magnetic Resonance Spectroscopy: NMR and EPR (Boards B534 - B555)

754-Pos BOARD B534
PROBING THE LOCAL SECONDARY STRUCTURE OF AMPHIPATHIC 3-10 HELICAL PEPTIDES USING ELECTRON SPIN ECHO ENVELOPE MODULATION. **Lauren M. Bottorf**, Sophia Rafferty, Indra D. Sahu, Robert M. McCarrick, Gary A. Lorigan

755-Pos BOARD B535
PELDOR/DEER SPECTROSCOPY ON A BACTERIAL MEMBRANE TRANSPORTER IN NATIVE CELLULAR ENVIRONMENTS. **Benesh Joseph**, Arthur Sikora, David Cafiso, Thomas Prinsler

756-Pos BOARD B536
PROBING THE PROTEIN-PROTEIN INTERACTIONS BETWEEN KCNQ1 AND KCNE1 USING ELECTRON PARAMAGNETIC RESONANCE (EPR) SPECTROSCOPY. **Andrew F. Craig**, Indra D. Sahu, Rongfu Zhang, Nick D. Frantz, Robert M. McCarrick, Gary A. Lorigan

757-Pos BOARD B537
INVESTIGATION OF THE BINDING OF THE HUMAN KCNE1 PROTEIN WITH THE VOLTAGE GATED POTASSIUM CHANNEL KCNQ1 USING DEER EPR SPECTROSCOPY. **Indra D. Sahu**, Andrew F. Craig, Zhang Rongfu, Gunjan Dixit, Robert M. McCarrick, Gary A. Lorigan

758-Pos BOARD B538
STRUCTURAL TOPOLOGY OF SERCA-PLB COMPLEX IN ORIENTED LIPID BICELLES DETECTED BY MULTIFREQUENCY EPR. **Jesse E. McCaffrey**, Zachary M. James, Christine B. Karim, Bengt Svensson, Peter D. Martin, David D. Thomas

759-Pos BOARD B539
USING EPR SPECTROSCOPY TO CHARACTERIZE THE STRUCTURE OF LIPID MEMBRANE-POLYMER NANORING COMPLEXES. **Avnika Bali**, Andrew Craig, Indra D. Sahu, Dominik Konkolewicz, Carole Dabney-Smith, Gary A. Lorigan

760-Pos BOARD B540
PROBING THE STRUCTURAL MECHANISM OF CARDIAC CALCIUM PUMP REGULATION BY PHOSPHOLAMBAN WITH SITE-DIRECTED SPIN LABELING. **Peter Martin**, Zach James, Jesse McCaffrey, David Thomas

761-Pos BOARD B541
SITE-DIRECTED SPIN LABELING STUDIES OF NUCLEIC ACID DEPENDENT CONFORMATIONAL CHANGES IN CRISPR-CAS9. **Carolina Vazquez Reyes**, Peter Zhifeng Qin

762-Pos BOARD B542
STRUCTURAL DYNAMICS OF CALMODULIN USING BIFUNCTIONAL SPIN LABELS AND DOUBLE ELECTRON-ELECTRON RESONANCE. **Cheng Her**, Christine B. Karim, David D. Thomas

763-Pos BOARD B543 CPOW TRAVEL AWARDEE
DETECTING STRUCTURAL CHANGES IN MYOSIN USING BIFUNCTIONAL SPIN LABELS. Tatiana Soboleva, Benjamin P. Binder, Andrew R. Thompson, David D. Thomas, **Rebecca J. Moen**

764-Pos BOARD B544
STRUCTURAL TRANSITIONS IN MYOSIN II DETECTED BY CONVENTIONAL AND PULSED EPR OF A BIFUNCTIONAL SPIN LABEL. **Benjamin P. Binder**, Andrew R. Thompson, Sinziana Cornea, David D. Thomas

765-Pos BOARD B545
PREDICTION AND SELECTION OF SPIN LABEL ROTAMERS FOR HIGH-RESOLUTION INSIGHT INTO PROTEIN STRUCTURES BY DEER SPECTROSCOPY. **Aidin R. Balo**, Hannes Feyrer, Oliver P. Ernst

766-Pos BOARD B546
BAYESIAN STATISTICAL METHODS IN THE ANALYSIS OF DEER DATA. **Thomas H. Edwards**, Stefan Stoll

767-Pos BOARD B547
CALCULATION OF EPR SPECTRA OF SAMPLES WITH ANISOTROPIC LINE WIDTH: A NEW EFFICIENT ALGORITHM. **Yaroslav V. Tkachev**

768-Pos BOARD B548
AUTOMATIC PROTEIN STRUCTURE DETERMINATION FROM SPARSE NMR SPECTROSCOPY DATA. **Justin L. MacCallum**, Yuefeng Tang, Y. Janet Huang, Gaetano T. Montelione

769-Pos BOARD B549
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770-Pos BOARD B550
MODELING MATRIX METALLOPROTEINASE INHIBITION WITH CARBONIC ANHYDRASE. **Whitney A. Richert**, Daniel DeGenova, Rahil Patel, Preet Patel, Ania Plonski, Rithvik Venna, Anthony Forchonie, Micah Morris, Zachary Higgins, Garrett Reed, M. Sameer Al-Abdul-Wahid, David Tierney

771-Pos BOARD B551
ACQUISITION OF MULTIDIMENSIONAL NMR DATA ON GST-FUSED PROTEINS. **Beatrice Kachel**, Srinivas Jayanthi, Rory Henderson, TKS Kumar

772-Pos BOARD B552
SOLID STATE NMR STRUCTURAL AND TOPOLOGICAL STUDIES OF ANTIMICROBIAL PEPTIDES LPCIN ANALOGS. **Yongae Kim**, Ji-Ho Jeong, Ji-Sun Kim

773-Pos BOARD B553
DYNAMIC REGULATION OF THE 7TM RECEPTOR BACTERIORHODOPSIN FUNCTION UNDER ALKALINE PH CONDITIONS. Xiaoyan Ding, Haolin Cui, Honglei Wang, Yujiao Gao, Bo Peng, Anthony Watts, Guohui Li, **Xin Zhao**

774-Pos BOARD B554
SITE-SPECIFIC PROTEIN INTERNAL MOTIONS REVEALED BY 2H SOLID-STATE NMR SPECTROSCOPY. **Xiangyan Shi**, Deborah A. Berthold, Chad M. Rienstra

775-Pos BOARD B555
SOLID STATE NITROGEN 14 NMR METHODS FOR THE ANALYSIS OF HYDROGEN BOND NETWORKS IN BIOLOGICAL SYSTEMS. James A. Jarvis, Ibraheem Haies, Michael Jolly, Malcolm Levitt, Ilya Kuprov, Marina Carravetta, **Philip T.F. Williamson**

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776-Pos BOARD B556
3D MICROSTRUCTURAL VISUALIZATION OF THE SIMPLEST OF EUKARYOTIC CELL (CYANIDIOSCHYZON MEROLAE) DURING MITOSIS PROCESS USING SEVERAL NEW MICROSCOPIC TECHNIQUES. **Atsuko H. Iwane**, Keisuke Ohta

777-Pos BOARD B557
THREE DIMENSIONAL IMAGE ANALYSIS APPLYING VARIOUS SERIAL SECTION TECHNIQUES ON STUDY OF MELANIN TRANSFER IN HUMAN SKIN. Bo Ram Kim, Hyo Sun Choi, Il-Hwan Kim, **Ji Young Mun**

778-Pos BOARD B558 EDUCATION TRAVEL AWARDEE
GRAPHENE-ENABLED ELECTRON MICROSCOPY AND CORRELATED SUPER-RESOLUTION MICROSCOPY OF WET CELLS. Michal Wojcik, **Margaret Hauser**, Wan Li, Seonah Moon, Ke Xu

779-Pos BOARD B559
CRYO-ELECTRON TOMOGRAPHY AND NUCLEOCAPSID PROTEIN LABELING BY TOMO-BUBBLEGRAM IMAGING REVEAL A ROLE FOR HIV-1 INTEGRASE IN VIRAL MATURATION. **Juan Fontana**, Kellie A. Jurado, Naiqian Cheng, Alan N. Engelman, Alasdair C. Steven

780-Pos BOARD B560
DETECTION OF ZN ATOMS ON FERRITIN BY ANNULAR DARK-FIELD CRYO-STEM. Nadav Elad, Giuliano Bellapadrona, Lothar Houben, Irit Sagi, **Michael Elbaum**

781-Pos BOARD B561
STRUCTURE OF THE F-ACTIN-TROPOMYOSIN COMPLEX REVEALED BY ELECTRON CRYOMICROSCOPY. **Julian von der Ecken**, Mirco Müller, William Lehman, Dietmar Manstein, Pawel Penczek, Stefan Raunser

782-Pos BOARD B562
USING ELECTRON CRYOTOMOGRAPHY AND COARSE-GRAINED MOLECULAR DYNAMICS TO STUDY CONTRACTILE MECHANISMS OF EUKARYOTIC CELL DIVISION MACHINERY. **Matthew T. Swulius**, Lam Nguyen, Mark Ladinsky, Mithilesh Mishra, Grant Jensen

783-Pos BOARD B563
MITOCHONDRIAL NETWORKS IN BETA CELLS OF PANCREATIC ISLET OF LANGERHANS INVESTIGATED BY SERIAL BLOCK FACE SCANNING ELECTRON MICROSCOPY. Gina N. Calco, Bryan C. Kuo, Jake D. Hoyne, Maria A. Aronova, Guofeng Zhang, **Richard D. Leapman**

784-Pos BOARD B564
FROM CRYO-EM DENSITIES TO ATOM COORDINATES AND ENSEMBLES WITH BAYES APPROACH. **Christian Blau**, Nicolas Lenner, Carsten Kutzner, Helmut Grubmuller, Erik Lindahl

785-Pos BOARD B565
ORDERS OF MAGNITUDE FASTER CRYO-EM REFINEMENT WITH GPUS. **Dari Kimanius**, Bjoern Forsberg, Erik Lindahl

786-Pos BOARD B566
HIGHER RESOLUTION WITH THE SAME DATA - TUNING CRYO-EM REFINEMENT IN RELION. **Björn O. Forsberg**, Dari Kimanius, Erik Lindahl

787-Pos BOARD B567

VISUALIZING THE MOLECULAR SOCIOLOGY AT THE HELA NUCLEUS IN SITU. **Julia Mahamid**

788-Pos BOARD B568

DEFINING MEMBRANE INTERACTIONS THAT DRIVE DYNAMIN RELATED PROTEIN 1 (DRP1) OLIGOMERIZATION USING CRYO-EM. **Christopher A. Francy**, Chris Frohlich, Oliver Daumke, Jason A. Mears

789-Pos BOARD B569

OMOKAGE SEARCH AND GMFIT : SHAPE SIMILARITY SEARCH AND SUPERPOSITION AMONG MODELS AND MAPS. **Takeshi Kawabata**, Hirofumi Suzuki, Haruki Nakamura

790-Pos BOARD B570

ULTRASTABLE GOLD SUBSTRATES IMPROVE THE RESOLUTION OF 3D RECONSTRUCTED DENSITY MAPS FROM ELECTRON MICROGRAPHS AND TOMOGRAMS. **Christopher Russo**

791-Pos BOARD B571

APPLICATION OF DEEP LEARNING TO CRYOEM HETEROGENEITY ANALYSIS. **Muyuan Chen**, Matthew L. Baker, Steven J. Ludtke

792-Pos BOARD B572

2.9-Å RESOLUTION STRUCTURE OF ANTHRAX PROTECTIVE ANTIGEN PORE DETERMINED BY CRYO ELECTRON MICROSCOPY. **Jiansen Jiang**, Bradley L. Pentelute, R. John Collier, Z. Hong Zhou

793-Pos BOARD B573

RESOLUTION AND PROBABILISTIC STRUCTURAL MODELS OF SUBCOMPONENTS DERIVED FROM CRYOEM MAPS OF MATURE P22 BACTERIOPHAGE. **Grigore Pintilie**, Dong-Hua Chen, Jonathan A. King, Wah Chiu

794-Pos BOARD B574

IN SITU STRUCTURES OF THE SEGMENTED GENOME AND RNA POLYMERASE COMPLEX INSIDE A DSRNA VIRUS. Xing Zhang, Ke Ding, Xuekui Yu, Winston Chang, Jingchen Sun, **Z. Hong Zhou**

795-Pos BOARD B575

SERIAL BLOCK FACE SEM OF BIOLOGICAL STRUCTURES AT NEAR ISOTROPIC SPATIAL RESOLUTION USING MULTIPLE BEAM ENERGIES AND MONTE CARLO SIMULATIONS. **Qianping He**, Maria A. Aronova, David C. Joy, Guofeng Zhang, Richard D. Leapman

796-Pos BOARD B576

STRUCTURES OF THE CARBON-PHOSPHORUS LYASE COMPLEX REVEAL THE BINDING MODE OF THE NBD-LIKE PHNK. **Kailu Yang**, Zhongjie Ren, Frank M. Raushel, Junjie Zhang

797-Pos BOARD B577

COMPUTATIONAL TOOLS TO IMPROVE VISUALIZATION BY CRYO-ELECTRON TOMOGRAPHY. **Jesus G. Galaz-Montoya**, Corey W. Hecksel, Jessica Chin, Rui Wang, Cannon W. Lewis, Monika Haemmerle, Michael F. Schmid, Steven J. Ludtke, Anil K. Sood, Wah Chiu

798-Pos BOARD B578

LIVE BACTERIAL PHYSIOLOGY VISUALIZED WITH 5 NM RESOLUTION USING SCANNING TRANSMISSION ELECTRON MICROSCOPY. **Eamonn Kennedy**, Edward M. Nelson, Tetsuya Tanaka, John Damiano, Gregory L. Timp

Diffraction and Scattering Techniques (Boards B579 - B583)

799-Pos BOARD B579

DISTINGUISHING PROTEIN NANOCRYSTALS FROM AMORPHOUS PRECIPITATE BY DEPOLARIZED DYNAMIC LIGHT SCATTERING. **Robin Schubert**, Arne Meyer, Karsten Dierks, Svetlana Kapis, Rudolph Reimer, Markus Perbandt, Christian Betzel

800-Pos BOARD B580

DEVELOPMENT OF MICROFLUIDIC MIXER AT LIX BEAMLINE FOR STUDYING BIOMOLECULAR STRUCTURAL KINETICS. **Shirish N. Chodankar**, Aziz Md Tareque, Lu Ming, Vito Graziano, Jonathan DiFabio, Lin Yang

801-Pos BOARD B581

NEW STRUCTURAL ANALYSIS METHODS FOR HEMOGLOBIN CRYSTALS. TIME-RESOLVED CRYOGENIC X-RAY CRYSTALLOGRAPHY WITH EXTENDED PULSED-LASER PUMPING AND 3D IMAGING BY X-RAY FLUORESCENCE HOLOGRAPHY. **Ayana Sato-Tomita**, Shin-ichi Adachi, Sam-Yong Park, Yuji C. Sasaki, Koichi Hayashi, Naoya Shibayama

802-Pos BOARD B582

NONLINEAR LIGHT SCATTERING AS A GENERALLY APPLICABLE APPROACH FOR STUDYING MOLECULAR TRANSPORT ACROSS BIOLOGICAL MEMBRANES. **Mohammad Sharifian Gh.**, Michael J. Wilhelm, Hai-Lung Dai

803-Pos BOARD B583

CELL MEMBRANE INTEGRITY EXAMINED BY NONLINEAR LIGHT SCATTERING. **Mohammad Sharifian Gh.**, Charles D. Cox, Michael J. Wilhelm, Joel B. Sheffield, Hai-Lung Dai

Optical Microscopy and Super-Resolution Imaging I (Boards B584 - B613)

804-Pos BOARD B584

DEEP AND HIGH-RESOLUTION THREE-DIMENSIONAL TRACKING OF SINGLE PARTICLES USING NONLINEAR AND MULTIPLEXED ILLUMINATION - TSUNAMI. Evan P. Perillo, Yen-Liang Liu, Cong Liu, Andrew K. Dunn, **Tim Yeh**

805-Pos BOARD B585

SUPER-RESOLUTION MOLECULAR IMAGING WITH PHOTOSTABLE NANOPROBES. **Maxim B. Prigozhin**, Peter C. Maurer, Nian Liu, Alexandra M. Courtis, Shaul Aloni, Frank D. Ogletree, Roger M. MacFarlane, Yi Cui, Paul A. Alivisatos, Steven Chu

806-Pos BOARD B586

HYBRID RANDOM WALK-LINEAR DISCRIMINANT ANALYSIS METHOD FOR UNWRAPPING QUANTITATIVE PHASE IMAGES OF BIOLOGICAL SAMPLES. **Diane N.H. Kim**, Michael A. Teitell, Jason Reed, Thomas A. Zangle

807-Pos BOARD B587

SUPERRESOLUTION MICROSCOPY AS A PERCOLATION PROBLEM: MAXIMUM ACHIEVABLE IMAGING DENSITY AND RESOLUTION COST. **Alexander Small**

808-Pos BOARD B588

SINGLE MOLECULE LOCALISATION MICROSCOPY WITH SCMOS CAMERAS. **Ruisheng Lin**, Alex Clowsley, David Baddeley, Isuru Jayasinghe, Christian Soeller

809-Pos BOARD B589 INTERNATIONAL TRAVEL AWARDEE

ADVANCES IN GATED CW STED MICROSCOPY: TOWARD A VERSATILE IMPLEMENTATION. **Iván Coto Hernández**, Marco Castello, Luca Lanzano, Alberto Diaspro, Giuseppe Vicidomini

810-Pos BOARD B590

ADVANCED PULSE PATTERN GENERATION AND FINE TUNING FOR STED MICROSCOPY. **Marcelle Koenig**, Olaf Schulz, Rhys Dowler, Paja Reisch, Alexander Glatz, Sebastian Tannert, Thomas Schönau, Romano Härtel, Tino Röhlicke, Marcus Sackrow, Christian Litwinski, Matthias Patting, Felix Koberling, Rainer Erdmann

811-Pos BOARD B591

FAST VOLUMETRIC IMAGING IN TWO-PHOTON MICROSCOPY AND ENHANCED BACKGROUND REJECTION USING AN ACOUSTIC LENS. **Simonluca Piazza**, Paolo Bianchini, Colin Sheppard, Alberto Diaspro, Marti Duocastella

812-Pos BOARD B592
LOCAL DYNAMIC RANGE COMPRESSION FOR HIGH ORDER SUPER-RESOLUTION OPTICAL FLUCTUATION IMAGING (SOFI). **Xiyu Yi**, Xi Lin, Shimon Weiss

813-Pos BOARD B593
EFFECTIVE PHOTON COUNT ESTIMATION FROM A SINGLE IMAGE ACQUISITION. **Peter K. Relich**, Robert P.J. Nieuwenhuizen, Keith A. Lidke, Rainer Heintzmann, Bernd Rieger

814-Pos BOARD B594
MULTICHANNEL HYPERSPECTRAL IMAGING AND CHARACTERIZATION OF FAR-RED FLUOROPHORES USING A THIN-FILM TUNABLE FILTER. **Adriano Vissa**, Maximilano Giuliani, Christopher M. Yip

815-Pos BOARD B595
ORGANIZATION OF INNER CELLULAR COMPONENTS AS REPORTED BY A VISCOSITY-SENSITIVE FLUORESCENT BODIPY PROBE SUITABLE FOR PHASOR APPROACH TO FLIM. Gianmarco Ferri, Luca Nucara, Tarita Biver, Antonella Battisti, Giovanni Signore, **Ranieri Bizzarri**

816-Pos BOARD B596
MREB SENSES LOCAL GAUSSIAN CURVATURE TO PATTERN ROD-LIKE GROWTH OF THE BACTERIAL CELL WALL. **Benjamin P. Bratton**, Jeffrey P. Nguyen, Nikolay Ouzounov, Randy M. Morgenstein, Zemer Gitai, Joshua W. Shaevitz

817-Pos BOARD B597
THREE-DIMENSIONAL SUPER-RESOLUTION IMAGING OF THE RNA DEGRADATION MACHINERY IN CAULOBACTER CRESCENTUS. **Camille A. Bayas**, Jared M. Schrader, Marissa K. Lee, Lucy Shapiro, W. E. Moerner

818-Pos BOARD B598 INTERNATIONAL TRAVEL AWARDEE
DEVELOPING A SINGLE-MOLECULE FLUORESCENCE TOOL TO QUANTIFY DNA DAMAGE. **Helen L. Miller**, Adam J.M. Wollman, Katherine E. Dunn, Adam M. Hirst, Sonia Antoranz Contera, Steve Johnson, Deborah O'Connell, Peter O'Toole, Andy M. Tyrrell, Mark C. Leake

819-Pos BOARD B599
CONFORMATIONAL CHANGE IN β_{120} AND β_{240} OF F_1 -ATPASE FROM THE ASPECT OF DIFFERENCE OF NUCLEOTIDES BY ADVANCED TIRF MICROSCOPE. **Nagisa Mikami**, Yuko Ito, Kengo Adachi, Mitsunori Ikeguchi, Takayuki Nishizaka

820-Pos BOARD B600
PROBING THE NANOSCALE ARCHITECTURE OF CADHERIN-BASED ADHESIONS BY SUPERRESOLUTION MICROSCOPY. Cristina Bertocchi, Yilin Wang, Andrea Ravasio, Yao Wu, Talgat Sailov, Michelle Baird, Michael W. Davidson, Ronen Zaidel-Bar, Benoit Ladoux, Rene-Marc Mege, **Pakorn Kanchanawong**

821-Pos BOARD B601
THE MOLECULAR ATLAS PROJECT. **Jesse L. Silverberg**, Peng Yin

822-Pos BOARD B602
OPTIMIZED VOLUMETRIC LIVE IMAGING WITH LIGHT FIELD MICROSCOPY AND SELECTIVE VOLUME ILLUMINATION. **Thai Truong**, Daniel B. Holland, Sara Madaan, Andrey Andreev, Scott E. Fraser

823-Pos BOARD B603
AUTOMATIC FIVE-DIMENSIONAL SINGLE PARTICLE TRACKING IN LIVE CELLS. **Ning Fang**

824-Pos BOARD B604
A MULTIFOCAL MULTIPHOTON VOLUMETRIC IMAGING TECHNIQUE FOR HIGH SPEED TIME-RESOLVED FRET IMAGING IN VIVO. Simon P. Poland, James A. Levitt, Nikola Krstajić, Ahmet Erdogan, Richard J. Walker, Viviane Devauges, Tony Ng, Robert K. Henderson, **Simon M. Ameer-Beg**

825-Pos BOARD B605
INTRINSIC BIOMARKER FOR OXIDATIVE STRESS BY FLIM. **Rupsa Datta**, Enrico Gratton

826-Pos BOARD B606
DIFFUSIONAL MOBILITY AND NANOSCALE MOLECULAR ORGANIZATION OF THE MUSCULAR DYSTROPHY RELATED NUCLEAR MEMBRANE PROTEIN EMERIN. **Anthony M. Fernandez**, Fabien F. Pinaud

827-Pos BOARD B607
SUPERRESOLUTION MICROSCOPY REVEALS STAGGERED ARRANGEMENT OF MAMMALIAN DISTAL APPENDAGES. Tony Yang, Weng Man Chong, Won-Jing Wang, Yi-De Chen, Meng-Fu Bryan Tsou, **Jung-Chi Liao**

828-Pos BOARD B608
MULTI-PARAMETRIC MICROFLUIDIC SCREENING AND SORTING FOR SIMULTANEOUS EVOLUTION OF PHOTOPHYSICAL PARAMETERS OF FLUORESCENT PROTEINS. **Felix Vietmeyer**, Premashis Manna, Pia Friis, Amy E. Palmer, Ralph Jimenez

829-Pos BOARD B609
STRETCHED ORIENTED DNA ARRAYS (SODA) AS A TOOL FOR STUDYING PROTEIN-DNA INTERACTIONS. **Eugeniu Ostrofet**, Seungkyu Ha, Richard Janissen, Theo van Laar, Nynke Dekker

830-Pos BOARD B610
USE OF SECOND HARMONIC IMAGING AND FOURIER TRANSFORMATION TO ANALYZE CARTILAGE REPAIR IN MICE INJECTED WITH A NOVEL PEP-TIDE CK2.1. **Hemanth Akkiraju**, Michael T. Moore, Padma P. Srinivasan, Catherin Kirn Safran, Anja Nohe

831-Pos BOARD B611
CHARACTERIZATION OF TERNARY PROTEIN SYSTEMS IN LIVING CELLS WITH TRICOLOR HETEROSPECIES PARTITION ANALYSIS. Kwang-Ho Hur, Yan Chen, **Joachim D. Mueller**

832-Pos BOARD B612 EDUCATION TRAVEL AWARDEE
SINGLE-MOLECULE FLUORESCENCE IMAGING REVEALS THE DYNAMICS OF STARCH CATABOLISM PROTEINS IN THE HUMAN MICROBIOME BACTERIUM BACTEROIDES THETAIOAOMICRON. **Hannah H. Tuson**, Matthew H. Foley, Eric C. Martens, Nicole M. Koropatkin, Julie S. Biteen

833-Pos BOARD B613
METABOLIC PROFILING IN METASTATIC CANCER CELLS USING FREQUENCY DOMAIN FLUORESCENCE LIFETIME MICROSCOPY. **Jenu V. Chacko**, Sailesh Gopalakrishna-Pillai, Michelle A. Digman

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834-Pos BOARD B614
QUANTIFICATION OF MULTI-SCALE MECHANICS AND FAILURE OF HUMAN STRATUM CORNEUM. **Xue Liu**, Guy German

835-Pos BOARD B615
QUANTIFYING CELLULAR ELASTICITY USING QUANTITATIVE PHASE MICROSCOPY MEASUREMENTS OF ELECTROMAGNETICALLY ACTUATED MAGNETIC MICROSPHERE INDENTATION. **Edward R. Polanco**, Thang Nguyen, Michael A. Teitell, Thomas A. Zangle

836-Pos BOARD B616
PLASMA PROTEIN CORONA REDUCES THE HAEMOLYTIC ACTIVITY OF THE GRAPHENE OXIDE NANO AND MICRO FLAKES. **Marco De Spirito**, Massimiliano Papi, Giuseppe Maolucci, Gabriele Ciasca, Valentina Palmieri, Maria Carmela C. Lauriola

837-Pos BOARD B617
THE IRREVERSIBLE ASSEMBLY OF SMALL SYMMETRIC NANOSHELLS. **Jef Wagner**, Roya Zandi

838-Pos BOARD B618
STRUCTURING HUMAN INTESTINAL ORGANIDS. **Barkan Sidar**, Jonathan N. V. Martinson, Jason R. Spence, Seth T. Walk, James N. Wilking

839-Pos BOARD B619
SYNTHESIZING LOVINC, A LIGHT-ACTIVATED DNAE INTEIN, FOR SEVERAL TARGET PROTEINS. Stanley Wong, Abdullah Mosabbir, **Anam Qudrat**, Kevin Truong

840-Pos BOARD B620
QUANTITATIVELY MEASURING THE INTERACTIONS BETWEEN BRIDGING CELLS USING OPTICAL TWEEZERS. **Di Li**, Yue Yuan, Gaolin Liang, Haowei Wang, Yinmei Li

841-Pos BOARD B621
PHOTOCONTROL OF SMALL G-PROTEIN H-RAS MULTIMER FORMATION USING CAGED COMPOUNDS. **Seigo Iwata**, Takashi Hashimoto, Nobuhisa Umeki, Yasunobu Sugimoto, Kazunori Kondo, Shinsaku Maruta

842-Pos BOARD B622
CONTRIBUTION OF DEPLETION EFFECT FOR SIZE-SELECTIVE TARGET CELL ACQUISITION IN CUP-SHAPED MICROSTRUCTURES. **Hyonchol Kim**, Hideyuki Terazono, Hiroyuki Takei, Kenji Yasuda

843-Pos BOARD B623
METHODS FOR QUANTIFYING HETEROGENEITY IN THE FLUID PHASE OF PATIENTS WITH PROSTATE CANCER. **Kevin K. Dizon**, Anders Carlsson, Madelyn Luttgren, Paymaneh Malihi, Erik Gerdtsson, Amado J. Zurita, Christopher J. Logothetis, James Hicks, Peter Kuhn

844-Pos BOARD B624
DEVELOPMENT OF SINGLE CARDIOMYOCYTE MEASUREMENT OF EXTRACELLULAR POTENTIAL. Jyunpei Shimada, **Tomoyuki Kaneko**

845-Pos BOARD B625
MICROCHAMBER ARRAY TECHNOLOGY AND MICRODOSIMETRY FOR NANOSECOND PULSED ELECTRIC FIELDS CELL EXPOSURE. **Delia Arnaud-Cormos**, Rodney P. O'Connor, Philippe Leveque

846-Pos BOARD B626
SYNCHRONIZATION OF LARGE CLUSTERS OF CARDIOMYOCYTES CONNECTED BY FIBROBLASTS. **Shota Miyakoshi**, Toshiyuki Mitsui, Tomoyuki Kaneko

847-Pos BOARD B627
MANIPULATION OF CELL PROLIFERATION AND MIGRATION EMPLOYING SURFACE ACOUSTIC WAVES AND HYDROPHOBIC/HYDROPHILIC STRUCTURED SUBSTRATES. **Melanie E.M. Stamp**, Manuel Brugger, Achim Wixforth, Christoph Westerhausen

848-Pos BOARD B628
FAST TWO DIMENSIONAL SUPERRESOLUTION IMAGE RECONSTRUCTION ALGORITHM FOR ULTRAHIGH EMITTER DENSITY. **Mingzhai Sun**, Jiaqing Huang, Kristyn Gumpfer, Yuejie Chi, Jianjie Ma

849-Pos BOARD B629
MICROWAVE DIELECTRIC PROPERTIES OF STANDARD LIQUIDS: NUMERICAL AND EXPERIMENTAL DATA. **Christopher E. Basse**, Madeson K. Claiborne

850-Pos BOARD B630
RHODOPSIN ENGINEERING THROUGH STRUCTURE-GUIDED RECOMBINATION. **Austin J. Rice**, Claire N. Bedbrook, Kevin K. Yang, Viviana Gradinaru, Frances H. Arnold

851-Pos BOARD B631
HEAT-ON-A-CHIP: A MICROFLUIDIC DEVICE FOR HIGHLY EFFICIENT ADENO VIRAL TRANSDUCTION OF EX VIVO PANCREATIC ISLETS. Pamuditha N. Silva, Romario Regeenes, Zaid Atto, Uilki Tufa, Yih Yang Chen, Allen Volchuk, Dawn M. Kilkenny, **Jonathan V. Rocheleau**

852-Pos BOARD B632
REVEALING THE SELF-ASSEMBLY PATHWAYS AND NANOMECHANICS OF ENZYME-TRIGGERED NANOFIBERS FROM PEPTIDE AMPHIPHILES FOR CANCER THERANOSTICS. **Hsien-Shun Liao**, Peng Huang, Yuan Gao, Edward Cai, Ferenc Horkay, Xiaoyuan Chen, Albert J. Jin

853-Pos BOARD B633
QUANTIFYING NANOSCALE PROPERTIES OF ENGINEERED VIRUS CAPSIDS FOR MALARIA VACCINES. **Albert J. Jin**, David Mertz, Hsien-Shun Liao, Aanchal Johri, Luis Torres, Yimin Wu, David Narum

854-Pos BOARD B634 EDUCATION TRAVEL AWARDEE
BIO-AFM OF CANCER CELLS AND MULTIFUNCTIONAL THERANOSTICS. **Xiao Fu**, Zhe Wang, Ashwin Bhirde, Jenny Zhu, Hsien-Shun Liao, Nicole Carvajal, Gang Niu, Henry Eden, Xiaoyuan Chen, Albert J. Jin

855-Pos BOARD B635
HEALING OF HUMAN INTESTINAL ORGANOID. **Emily A. Berglund**, Jonathan N.V. Martinson, Jason R. Spence, Seth T. Walk, James N. Wilking

856-Pos BOARD B636
DEVELOPING HIGH-SPEED AFM AND NANOMECHANICAL CHARACTERIZATIONS FOR BIOMEDICAL INVESTIGATIONS. Hsien-Shun Liao, Nicole Carvajal, Xiao Fu, Maryam Raftari, **Albert J. Jin**

857-Pos BOARD B637
FLUIDIC-RESISTANCE CONTROL IN ARTERIAL PULSATION SIMULATORS. **Yuma Shiraishi**, Yun Jung Heo, Atsushi Sakuma

858-Pos BOARD B638
RAPID PURIFICATION OF BISPECIFIC MOUSE ANTIBODIES BY DIFFERENTIAL PROTEIN A BINDING. **Adam Zwolak**, Anthony A. Armstrong, Jose R. Pardinias, Susan H. Tam, Dennis R. Goulet, Kerry Brosnan, Eva Emmell, Mark Chiu

859-Pos BOARD B639 EDUCATION TRAVEL AWARDEE
CHARACTERIZING BIOFILM EXTRACELLULAR MATRICES WITH MECHANICAL MEASUREMENT TECHNIQUES. **Michael P. Vigers**, James N. Wilking

Biophysics Education (Boards B640 - B647)

860-Pos BOARD B640
LEARNING PHYSICAL BIOLOGY VIA MODELING AND SIMULATION: A NEW COURSE AND TEXTBOOK FOR SCIENCE AND ENGINEERING UNDERGRADUATES. **Philip Nelson**

861-Pos BOARD B641
INTRODUCTORY PHYSICS FOR THE LIFE SCIENCES (IPLS). **Peter H. Nelson**

862-Pos BOARD B642
DELICIOUS BIOPHYSICS. **Christophe Lavelle**

863-Pos BOARD B643
NADH CONFORMATION ASSESSED USING SPECTRAL PHASOR ANALYSIS: ILLUSTRATING CONCEPTS FROM MOLECULAR FOLDING TO METABOLIC MONITORING. Paul Urayama, **Dylan Palo**, Symeon Stefan, Madhu Gaire, James O'Connor

864-Pos BOARD B644
INTEGRATING DIY AND TRADITIONAL BIOCHEMICAL LABORATORY EXPERIENCES INTO AN UNDERGRADUATE BIOPHYSICS COURSE. **Kayla M. Washenberger**, Benjamin L. Stottrup

865-Pos BOARD B645
AN IMAGING FLOW CYTOMETER FOR INTRODUCTORY PHYSICS. Jason Puchalla, **Angela Li**

866-Pos BOARD B646
OPEN PLANS OF A LOW COST FLUORESCENCE AND IMAGING ELLIPSOMETRY MICROSCOPE FOR TEACHING AND RESEARCH. **Victoria Nguyen**, John Rizzo, Jacquelyn Zehner, Walter Cook, Babak Sanii

867-Pos BOARD B647
THE LUMINESCENT LUNCHBOX: TRANSLATING RESEARCH ON EDIBLE GRAS PROBES INTO AN EDUCATIONAL KIT IN PHOTOPHYSICS. **Alexia Ciarfella**, Maria G. Corradini, Richard D. Ludescher

Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, February 28, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S82, 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 competitor's name is listed. Please refer to the full abstract for all authors.

Bioenergetics

Board S1

TO UNFOLD OR NOT TO UNFOLD? STRUCTURAL INSIGHTS OF PEROXIDASE-ACTIVE CARDIOLIPIN-BOUND CYTOCHROME C BY SOLID-STATE NMR.

Abhishek Mandal (2853-Pos, B230)

Board S2

ASSESSING CLC-2 CHLORIDE CHANNEL VOLTAGE GATING BY PORE OCCUPATION WITH ACETATE.

José De Jesús-Pérez (593-Pos, B373)

Board S3

PROTEOMIC MAPPING AND OPTOGENETIC CONTROL OF ER-PM JUNCTIONS IN LIVING CELLS.

Ji Jing (1282-Pos, B259)

Board S4

USING NETWORK MODELS OF PROTEINS TO PREDICT FUNCTIONALLY LINKED INTERFACES OF PROTEINS (FLIPS) AT THE RESIDUE LEVEL.

Isha Mehta (2440-Pos, B584)

Board S5

CHARACTERIZATIONS OF SUBSTRATE DELIVERY PATHWAYS IN THE NITRIC OXIDE REDUCTASE.

Paween Mahinthichaichan (1541-Pos, B518)

Biological Fluorescence

Board S6

RESOLVING THE HETEROGENEITY OF THE ENSEMBLE OF UNFOLDED STATES BY A COMBINATION OF FLUORESCENCE SPECTROSCOPIC METHODS.

Katherina Hemmen (1927-Pos, B71)

Board S7

SINGLE-POINT FRAP DISTINGUISHES INNER AND OUTER NUCLEAR MEMBRANE PROTEIN DISTRIBUTION.

Krishna Mudumbi (2942-Pos, B319)

Board S8

IMAGING AND TRACING MULTIPLE GENETIC ELEMENTS VIA MULTIPLEXED CRISPR IMAGING.

Narendra Chaudhary (1996-Pos, B140)

Board S9

KINETIC COMPENSATION BETWEEN ESTER-BOND CLEAVAGE, FOLDING AND RELEASE FROM THE RIBOSOME IN PROTEIN BIOGENESIS.

Rayna Addabbo (1936-Pos, B80)

Biopolymers in vivo

Board S10

COARSE-GRAINED MODELING OF MEMBRANE PROTEIN INTEGRATION VIA THE SEC TRANSLOCON.

Michiel Niesen (297-Pos, B77)

Board S11

DIFFUSION AND BIOCHEMICAL REACTIONS IN INHOMOGENEOUS CROWDED FLUIDS.

Olivia Stiehl (3152-Pos, B529)

Board S12

THERMODYNAMIC MECHANISM OF PROTEIN STABILIZATION: CROWDERS VS. OSMOLYTES.

Liel Sapir (1058-Pos, B35)

Board S13

DISULFIDE BRIDGES: BRINGING TOGETHER FRUSTRATED STRUCTURE IN A BIOACTIVE PEPTIDE.

Yi Zhang (1046-Pos, B23)

Exocytosis & Endocytosis

Board S14

ALCOHOL SIGNIFICANTLY ALTERS FUSIGENICITY OF VESICLES IN A MODEL MEMBRANE SYSTEM.

Jason Paxman (1232-Pos, B209)

Board S15

DYNAMICS OF EGFR TRAFFICKING FROM MEMBRANE INTO DEEP CYTOSOL REVEALED BY A SPATIOTEMPORALLY MULTIPLEXED 3D TRACKING MICROSCOPE.

Yen-Liang Liu (3149-Pos, B526)

Intrinsically Disordered Proteins

Board S16

A MINIMALISTIC KINETIC MODEL FOR AMYLOID SELF-ASSEMBLY.

Srivastav Ranganathan (1094-Pos, B71)

Board S17

PROTEIN AGGREGATION AND PORE-FORMATION OF A NEURODEGENERATIVE PROTEIN FRAGMENT.

Charles Chen (1974-Pos, B118)

Board S18

DYNAMICS OF CONTACT FORMATION IN DISORDERED POLYPEPTIDES.

Gül Zerze (2748-Pos, B125)

Board S19

STRUCTURAL BASIS OF MEMBRANE TARGETING BY THE INNATE IMMUNITY ADAPTOR TIRAP.

Xiaolin Zhao (2676-Pos, B53)

Board S20

FIBRILS ACT AS AQUEOUS PORES: A MOLECULAR DYNAMICS STUDY.
Sachin Natesh (2729-Pos, B106)

Board S21

UNIVERSAL METRICS OF INTERSTRUCTURE DISTANCE FOR FLEXIBLE AND INTRINSICALLY DISORDERED PROTEINS.
Timothy Connolly (3177-Pos, B554)

Mechanobiology

Board S22

DYNAMIC INSTABILITY EMERGES FROM MICROMECHANICS AND CHEMICAL KINETICS OF MICROTUBULE PROTOFILAMENTS.
Ishutesh Jain (3045-Pos, B422)

Board S23

SYMMETRY-CONSTRAINED NORMAL MODE ANALYSIS OF THE BACTERIAL FLAGELLAR MOTOR.
Moon Ki Choi (242-Pos, B22)

Board S24

DERIVING MECHANICAL PROPERTIES OF MICROTUBULES FROM MOLECULAR SIMULATIONS.
Soheil Fatehiboroujeni (651-Pos, B431)

Membrane Biophysics

Board S25

A NON-CANONICAL VOLTAGE SENSOR CONTROLS GATING IN K2P K⁺ CHANNELS.
Marcus Schewe (1365-Pos, B342)

Board S26

THE PATHOGENIC A116V MUTATION ENHANCES THE SELECTIVE ION-CHANNEL ACTIVITY AND TOXICITY OF THE PRION PROTEIN IN LIVING CELLS.
Sabareesan Ambadi Thody (2199-Pos, B343)

Board S27

MECHANISM OF TIM1, TIM3, AND TIM4 BINDING TO LIPID MEMBRANES.
Zhiliang Gong (2921-Pos, B298)

Board S28

OXIDATIVE STRESS IN MYOCARDIAL INFARCTION DISRUPTS MICROTUBULE TRAFFICKING, REDUCING TRANSIENT OUTWARD CURRENT DENSITY.
Benjamin Drum (653-Pos, B433)

Board S29

INTRA AND INTERDOMAIN MOTIONS OF THE NMDA RECEPTOR USING SINGLE MOLECULE FRET.
Drew Dolino (1421-Pos, B398)

Board S30

INHIBITION OF A VOLTAGE-GATED SODIUM CHANNEL BY PROPOFOL INVOLVES MODULATION OF SLOW INACTIVATION.
Elaine Yang (2162-Pos, B306)

Board S31

STRUCTURAL EFFECTS OF PHOSPHORYLATION ON C-TERMINAL SEGMENT OF AMPA RECEPTOR.
Caitlin Nurik (1431-Pos, B408)

Board S32

STRUCTURAL AND MECHANISTIC STUDIES OF ANDROPIN, A MEMBRANE-SELECTIVE ANTIMICROBIAL PEPTIDE.
Meghan McCaskey (2052-Pos, B196)

Board S33

1H NMR SPECTROSCOPY OF DOPAMINE INTERACTING WITH LIPID VESICLES.
Yashasvi Matam (452-Pos, B232)

Board S34

SELECTIVE PRESSURE FOR RAPID MEMBRANE INTEGRATION CONSTRAINS THE SEQUENCE OF BACTERIAL OUTER MEMBRANE PROTEINS.
Ashlee Plummer (1949-Pos, B93)

Board S35

FUNCTIONAL RESCUE OF CALMODULINOPATHY IPSC-DERIVED CARDIOMYOCYTES -- A FORAY INTO PERSONALIZED MEDICINE.
Worawan Limpitikul (2173-Pos, B317)

Board S36

RADIAL TILTING OF THE EXTRACELLULAR DOMAIN OF GLIC REVEALED BY EPR SPECTROSCOPY.
Varun Tiwari (2251-Pos, B395)

Membrane Structure & Assembly

Board S37

THE INTERACTION OF PROTEINS WITH ASYMMETRIC LIPID BILAYERS.
Milka Doktorova (2076-Pos, B220)

Board S38

CONTROL OF INFLUENZA VIRUS BINDING BY TARGET MEMBRANE COMPOSITION.
Isabel Goronzy (1236-Pos, B213)

Board S39

INVESTIGATING LARGE SCALE LIQUID-LIQUID PHASE SEPARATION IN A BIOLOGICAL MEMBRANE.
Scott Rayermann (386-Pos, B166)

Board S40

MECHANISTIC INSIGHTS INTO MEMBRANE BENDING BY PROTEIN CROWDING: UNDERSTANDING THE ROLE OF MEMBRANE COMPOSITION, PHASE SEPARATION AND FREE ENERGY OF PROTEIN BINDING.
Gokul Raghunath (2862-Pos, B239)

Board S41

GENERAL ANESTHETICS RAISE THE MISCIBILITY TRANSITION TEMPERATURE OF MODEL MEMBRANES.
Caitlin Cornell (2036-Pos, B180)

Board S42

DESIGN OF PH TRIGGERED, MACROMOLECULAR PORE FORMING PEPTIDES FOR ENDOSOMAL ESCAPE.
Sarah Kim (2054-Pos, B198)

Board S43

HETERODIMERIZATION OF WILD-TYPE AND MUTANT FIBROBLAST GROWTH FACTOR RECEPTORS IN CELL-DERIVED VESICLES.
Nuala Del Piccolo (1118-Pos, B95)

Board S44

THE SIZE OF A REVERSE MICELLE.
Gozde Eskici (2822-Pos, B199)

Board S45

MOLECULAR BASIS FOR LIPID SPECIFICITY OF THE COAGULATION FACTOR X MEMBRANE-BINDING DOMAIN.

Melanie Muller (2102-Pos, B246)

Board S46

DOES LIPID COMPOSITION REGULATE ANTHRAX TOXIN UPTAKE?

Nnanya Kalu (2094-Pos, B238)

Board S47

LIPID-DEPENDENT MODULATION OF MEMBRANE RECRUITMENT AND PROTEIN-PROTEIN INTERACTIONS IN BCL-2 FAMILY OF APOPTOTIC REGULATORS.

Victor Vasquez-Montes (1267-Pos, B244)

Board S48

A COMPUTATIONAL MODEL FOR MEMBRANE PROTEIN FLUX ACROSS THE BACTERIAL PERIPLASM.

Shawn Costello (305-Pos, B85)

Board S49

GPCR HANDSHAKE IN THE SPOTLIGHT: EXPLORING THE DIMERIZATION INTERFACE OF DOPAMINE D2 RECEPTORS BY SIMULATIONS AT MULTIPLE RESOLUTIONS.

Manu Vajpai (2115-Pos, B259)

Molecular Biophysics

Board S50

AN IN VITRO INVESTIGATION OF GLOBIN FOLDING AND EXPRESSION.

Premila Samuel (1043-Pos, B20)

Board S51

EXPLORING THE BINDING OF GABA TO THE INSECT RDL RECEPTOR WITH METADYNAMICS.

Federico Comitani (2239-Pos, B383)

Board S52

ILLUMINATING DYNAMIC PROCESSES IN THE EMBRYOGENESIS OF CAENORHABDITIS ELEGANS WITH LIGHTSHEET MICROSCOPY.

Philipp Struntz (2402-Pos, B546)

Board S53

LOCAL Ca^{2+} NANODOMAINS INITIATE Ca^{2+} /CALMODULIN-DEPENDENT INACTIVATION OF NMDA RECEPTORS.

Gary Iacobucci (1424-Pos, B401)

Board S54

THERMODYNAMIC FINGERPRINTS OF THE HOFMEISTER SERIES - PROTEIN INTERACTIONS WITH IONIC LIQUIDS.

Michael Senske (1057-Pos, B34)

Board S55

A CYTOKINE RECEPTOR REVOLUTION: ACTIVATION OF THE TYPE-I CYTOKINE RECEPTORS VIA PROTOMER ROTATION.

Michael Corbett (2923-Pos, B300)

Board S56

STRUCTURAL EFFECTS OF HIGH HYDROSTATIC PRESSURE ON HUMAN LOW DENSITY LIPOPROTEIN REVEALED BY SMALL ANGLE X-RAY AND NEUTRON SCATTERING.

Bernhard Lehofer (1271-Pos, B248)

Board S57

CHARACTERIZATION OF THE PYRUVATE OXIDASE CIDC FROM S. AUREUS.

Xinyan Zhang (2707-Pos, B84)

Board S58

KINETIC MODEL OF Mg^{2+} INDUCED RNA TERTIARY FOLDING FROM STOPPED FLOW FLUORESCENCE DATA.

Robb Welty (2029-Pos, B173)

Board S59

MULTISCALE MODELING OF DENDRIMERS FOR BIOLOGICAL APPLICATIONS.

Bo Wang (2691-Pos, B68)

Board S60

METHODS FOR QUANTIFYING HETEROGENEITY IN THE FLUID PHASE OF PATIENTS WITH PROSTATE CANCER.

Kevin Dizon (843-Pos, B623)

Board S61

MULTIMERIZATION OF SOLUTION-STATE PROTEINS BY WATER SOLUBLE PORPHYRINS.

Daniel Marzolf (254-Pos, B34)

Board S62

DYNAMICS OF AGGREGATING MUTANTS OF THE P53 DNA BINDING DOMAIN REVEAL A NOVEL "DRUGGABLE" POCKET.

Mohan Pradhan (288-Pos, B68)

Board S63

ELECTROSTATICS OF ACTOMYOSIN INTERFACE AND THE RATE OF RIGOR BINDING.

Jinghua Ge (3036-Pos, B413)

Board S64

PROTONATION AND DEPROTONATION REACTION OF ASPARTIC ACID SIDE CHAIN MODULATED BY THE SURROUNDING DIELECTRIC MEDIUM - AB INITIO QUANTUM CHEMICAL STUDIES ON ASPARTIC ACID IN SIXTEEN DIFFERENT SOLVENTS AND TWO PROTEIN STRUCTURES.

AKSHAY BHATNAGAR (1877-Pos, B21)

Board S65

STRUCTURAL AND MECHANISTIC INSIGHTS DERIVED FROM SATURATION MUTAGENESIS OF CCDB.

Pankaj Jain (221-Pos, B1)

Board S66

SIMULATIONS OF ENDPLATE ACHRS: AGONIST SITE β -SHEET AND M1 π -HELIX.

Srirupa Chakraborty (2980-Pos, B357)

Board S67

INHIBITION OF KIR2.1 BY INTRACELLULAR ACIDIFICATION CONTRIBUTES TO SOUR TASTE TRANSDUCTION.

Wenlei Ye (2104-Pos, B248)

Motility

Board S68

NEW INSIGHT INTO THE CATALYTIC AND INHIBITION MECHANISM OF THE HUMAN ACYL PROTEIN THIOESTERASE.

Martina Audagnotto (2700-Pos, B77)

Board S69

EXPRESSION AND CONTRIBUTIONS OF THE KIR2.1 INWARD-RECTIFIER K^+ CHANNEL TO PROLIFERATION, MIGRATION AND CHEMOTAXIS OF MICROGLIA IN UNSTIMULATED AND ANTI-INFLAMMATORY STATES.

Doris Lam (1564-Pos, B541)

Board S70

MYOSIN VA MOTOR TEAMS NAVIGATE VESICLE CARGOS THROUGH 3D ACTIN FILAMENT INTERSECTIONS.

Andrew Lombardo (2298-Pos, B442)

Nanoscale Biophysics

Board S71

PRECISE CONTROL AND MEASUREMENT OF TEMPERATURE WITH FEMTOSECOND OPTICAL TWEEZERS.

Dipankar Mondal (2466-Pos, B610)

Board S72

ELECTRON-CONFORMATIONAL TRANSFORMATIONS GOVERN THE TEMPERATURE DEPENDENCE OF THE RYR2 GATING.

Bogdan Iaparov (1303-Pos, B280)

Board S73

BIO-AFM OF CANCER CELLS AND MULTIFUNCTIONAL THERANOSTICS.

Xiao Fu (854-Pos, B634)

Board S74

HU PROTEIN AND DNA SUPERCOILING DRAMATICALLY ENHANCE LAC-REPRESSOR-MEDIATED DNA LOOPING.

Yan Yan (1173-Pos, B150)

Permeation & Transport

Board S75

ELUCIDATION OF MOLECULAR MECHANISM UNDERLYING KCSA'S HYSTERETIC GATING BEHAVIOR.

Cholpon Tilegenova (1370-Pos, B347)

Board S76

A NOVEL E. COLI-BASED ASSAY FOR RAPID SCREENING OF HEMICHANNEL FUNCTION.

Srinivasan Krishnan (602-Pos, B382)

Board S77

CATSPER HAS A CALCIUM-PERMEABLE VOLTAGE SENSOR DOMAIN.

Hiroki Arima (586-Pos, B366)

Board S78

THE ROLE OF MULTIVALENCY IN INHIBITION OF BACILLUS ANTHRACIS AND CLOSTRIDIUM BOTULINUM BINARY TOXINS BY CATIONIC PAMAM DENDRIMERS.

Goli Yamini (2072-Pos, B216)

Board S79

ENZYMATIC REQUIREMENTS FOR NON-CANONICAL PROTON IMPORT BY NA/K PUMPS.

Kevin Stanley (3102-Pos, B479)

Board S80

RECEPTOR-LOCALIZED Ca^{2+} SIGNALING ACTIVATES P2X2 RECEPTOR CHANGING CYTOSKELETAL MORPHOLOGY.

Anam Qudrat (1286-Pos, B263)

Board S81

EXPRESSION, PURIFICATION AND FUNCTIONAL CHARACTERIZATION OF HUMAN PROTON-COUPLED FOLATE TRANSPORTER (SLC46A1).

Swapneeta Date (696-Pos, B476)

Board S82

FUNCTIONAL DIVERSITY WITHIN THE FNT SUPERFAMILY OF ANION CHANNELS: PHYLOGENETICS & MOLECULAR DYNAMICS STUDIES.

Mishtu Mukherjee (596-Pos, B376)

Monday, February 29, 2016

Daily Program Summary

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

7:30 AM–8:30 AM	Graduate Student Breakfast	Room 404AB
7:30 AM–5:00 PM	Registration/Exhibitor Registration	West Lobby
8:00 AM–10:00 PM	Poster Viewing	West Hall
8:15 AM–10:15 AM	<p>Symposium: Lipid Flippases Chair: <i>Raimund Dutzler, University of Zurich, Switzerland</i></p> <p>THE STRUCTURE AND FUNCTION OF CALCIUM ACTIVATED TMEM16 CHANNELS AND SCRAMBLASES. <i>Raimund Dutzler</i> MECHANISMS OF ION AND LIPID TRANSPORT BY TMEM16 SCRAMBLASES. <i>Alessio Accardi</i> STRUCTURE AND MECHANISM OF AN ATP-DRIVEN FLIPPASE OF LIPID-LINKED OLIGOSACCHARIDES. <i>Kaspar Locher</i> PHOSPHOLIPID FLIP MEDIATED BY MODEL FLIPPASES. <i>Dieter Langosch</i></p>	Petree Hall C
8:15 AM–10:15 AM	<p>Symposium: Biomimetic Models for Study of Cytoskeletal Organization Chair: <i>Kinneret Keren, Technion, Israel Institute of Technology, Israel</i></p> <p>NON EQUILIBRIUM STEADY STATE DYNAMICS OF CONTRACTILE ACTIN NETWORKS. <i>Keren Kinneret</i> SHAPE REMODELING OF ACTIVE CYTOSKELETAL VESICLES. <i>Andreas R. Bausch</i> TOWARDS THE RECONSTITUTION OF MINIMAL CELL DIVISION. <i>Petra Schwille</i> CARGO TRANSPORT BY MYOSIN VA MOLECULAR MOTORS: WHAT A MESH! <i>David Warshaw</i></p>	Petree Hall D
8:15 AM–10:15 AM	Platform: Optical Microscopy and Super-Resolution Imaging II	Room 502A
8:15 AM–10:15 AM	Platform: Molecular Dynamics I	Room 502B
8:15 AM–10:15 AM	Platform: Membrane Pumps, Transporters, and Exchangers	Room 515A
8:15 AM–10:15 AM	Platform: Protein Stability, Folding, and Chaperones I	Room 515B
8:15 AM–10:15 AM	Platform: Excitation-Contraction Coupling	Room 501ABC
8:15 AM–10:15 AM	Platform: DNA Structure and Dynamics	Room 511ABC
8:30 AM–10:30 AM	CPOW Committee Meeting	Room 506
9:30 AM–11:00 AM	Exhibitor Presentation: Sophion together with Biolin Scientific Pioneering Ion Channels - Expanding the Boundaries of Automated Patch Clamp	Room 505
10:00 AM–11:00 AM	Career Center Workshop Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)	Room 518
10:00 AM–5:00 PM	Exhibits	West Hall
10:15 AM–11:00 AM	Coffee Break	West Hall
10:15 AM–11:15 AM	New Member Welcome Coffee	Room 404AB
10:30 AM–12:00 PM	Exhibitor Presentation: Wyatt Technology Corporation Get it Right the First Time – Enhancing Protein Binding and Structural Studies with the Light-Scattering Toolkit	Room 513
10:45 AM–12:45 PM	<p>Symposium: Mechanosensing and Mechanosignaling in Muscle Chair: <i>Olga Mayans, University of Konstanz, Germany</i></p> <p>MECHANOSENSITIVE STRUCTURAL STATES OF TITIN. <i>Miklós S. Kellermayer</i> TITIN(S): TOWARDS AN ATOMIC UNDERSTANDING OF MECHANOSENSORY EVENTS IN THE ELASTIC SCAFFOLDS OF THE MUSCLE SARCOMERE. <i>Olga Mayans</i> MECHANO-CHEMO-TRANSDUCTION IN CARDIOMYOCYTES DURING BEAT-TO BEAT CONTRACTION UNDER MECHANICAL LOAD. <i>Ye Chen-Izu</i> DETYROSINATED MICROTUBULES BEAR LOAD AND TRANSMIT MECHANICAL FORCE IN CARDIOMYOCYTES. <i>Benjamin Prosser</i></p>	Petree Hall C

	<p>Symposium: Future of Biophysics Petree Hall D Co-Chairs: <i>Vasanthi Jayaraman, University of Texas Health Science Center, and E. Michael Ostap, University of Pennsylvania</i></p> <p>ENGINEERING BIOMIMETIC MATRICES TO UNDERSTAND BRAIN/TUMOR INTERACTIONS DURING METASTASIS. <i>Kimberly Stroka</i> COMBINATORIAL REGULATION OF BAR DOMAIN PROTEINS AT THE INTERFACE BETWEEN THE CYTOSKELETON AND MEMBRANES. <i>David Kast</i> NASCENT AND ANTIMICROBIAL PEPTIDES THAT TARGET THE RIBOSOMAL EXIT TUNNEL TO BLOCK PROTEIN SYNTHESIS IN BACTERIA. <i>Axel Innis</i> MECHANISM OF GATING AND ION SELECTIVITY IN ASIC/ENAC/DEG CHANNELS. <i>Isabelle Baconguis</i></p>	
10:45 AM–12:45 PM	Platform: Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating I	Room 502A
10:45 AM–12:45 PM	Platform: Computational Methods and Bioinformatics	Room 502B
10:45 AM–12:45 PM	Platform: Membrane Physical Chemistry II	Room 515A
10:45 AM–12:45 PM	Platform: Membrane Protein Structure and Folding II	Room 515B
10:45 AM–12:45 PM	Platform: Cytoskeletal Motor Proteins	Room 501ABC
10:45 AM–12:45 PM	Platform: Single-Molecule Spectroscopy	Room 511ABC
11:30 AM–12:30 PM	Career Center Workshop Leveraging Social Media for Networking and Career Advancement	Room 518
11:30 AM–1:00 PM	Exhibitor Presentation: Asylum Research, an Oxford Instrument Company Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM	Room 505
12:30 PM–2:00 PM	Exhibitor Presentation: Nanion Technologies GmbH Ion Channel Drug Discovery - Beyond the Bottlenecks and Ready for CiPA	Room 513
1:00 PM–3:00 PM	NSF Grant Writing Workshop	Room 403B
1:30 PM–3:00 PM	Industry Panel	Room 411
1:30 PM–3:00 PM	Exhibitor Presentation: KinTek Corp Why You Should Fit Kinetic and Equilibrium Binding Data Using KinTeck Explorer Software	Room 505
1:30 PM–3:00 PM	Biophysics 101: Forster Resonance Energy Transfer	Room 409AB
1:45 PM–3:00 PM	Snack Break	West Hall
1:45 PM–3:45 PM	Poster Presentations and Late Posters	West Hall
2:15 PM–3:45 PM	How to Get Your Scientific Paper Published	Room 408B
2:30 PM–3:30 PM	Speed Networking	Room 407
2:30 PM–3:30 PM	Career Center Workshop Selling Yourself to the Life Sciences Industry	Room 518
2:30 PM–4:00 PM	Hiring, Firing, and Beyond: How to Be an Effective Supervisor	Room 408A
2:30 PM–4:00 PM	The Science of Hollywood	Room 403A
2:30 PM–4:00 PM	Exhibitor Presentation: Renishaw Inc Innovative Raman Imaging in the Life Sciences	Room 513
3:00 PM–5:00 PM	Membership Committee Meeting	Room 506
3:30 PM–5:00 PM	Exhibitor Presentation: Bruker Nano Surfaces Advances in Live-Super-Resolution Imaging Using the Vutara 352 Microscope	Room 505
4:00 PM–5:00 PM	Career Center Workshop Successfully Navigating the International Job Search	Room 518

4:00 PM–6:00 PM	<p>Symposium: Molecular Mechanisms of Mechanosensation Chair: <i>Robert Fettiplace, University of Wisconsin-Madison</i></p> <p>GLOBAL AND SPECIFIC INTERACTIONS BETWEEN MECHANOSENSITIVE ION CHANNELS AND THE LIPID BILAYER. <i>Boris Martinac</i> SINGLE MOLECULE FORCE SPECTROSCOPY OF HAIR-CELL TIP-LINK PROTEINS. <i>David P. Corey</i> LOCALIZATION OF ANOMALOUS MECHANO-SENSITIVE ION CHANNELS IN COCHLEAR HAIR CELLS. <i>Robert Fettiplace</i> STRUCTURE AND CHEMICAL BIOLOGY OF MECHANOSENSITIVE K2P CHANNELS. <i>Daniel L. Minor</i></p>	Petree Hall C
4:00 PM–6:00 PM	<p>Symposium: Folding Rates and Routes Chair: <i>Jane Clarke, University of Cambridge, United Kingdom</i></p> <p>ASSESSING AND MANIPULATING PROTEIN FOLDING DYNAMICS. <i>Feng Gai</i> COUPLED PROTEIN FOLDING AND BINDING REACTIONS: MECHANISMS AND SPEED LIMITS. <i>Thomas Kiefhaber</i> IMPACTS OF CHARGE PATTERNING ON INTRINSICALLY DISORDERED PROTEINS AND MECHANISMS OF DISORDER-TO-ORDER TRANSITIONS. <i>Rohit V. Pappu</i> THE ROLE OF DISORDER IN PROTEIN FOLDING. <i>Jane Clarke</i></p>	Petree Hall D
4:00 PM–6:00 PM	<p>Symposium: Expanding Horizons in Biophysics and Medical Physics Chair: <i>Robert Jeraj, University of Wisconsin-Madison</i></p> <p>INTERPLAY BETWEEN MOLECULAR IMAGING AND TUMOR MODELING OF ANTI-ANGIOGENIC THERAPIES. <i>Robert Jeraj</i> CHERENKOV IMAGING OF RADIATION DOSE AND MOLECULAR SIGNALING IN VIVO. <i>Brian Pogue</i> THE ROLE OF PHYSICS IN DRIVING PRECISION IN CANCER MEDICINE. <i>David Jaffray</i> CELL ADHESION STRENGTH IS REDUCED BY THE PRESENCE OF PERICELLULAR MATRIX PATCHES. <i>Jennifer Curtis</i></p>	Room 502A
4:00 PM–6:00 PM	Platform: Cell Mechanics, Cytoskeleton, and Motility	Room 502B
4:00 PM–6:00 PM	Platform: Bioengineering and Biotechnology	Room 515A
4:00 PM–6:00 PM	Platform: Ligand-gated Channels	Room 515B
4:00 PM–6:00 PM	Platform: Protein-Small Molecule Interactions	Room 501ABC
4:00 PM–6:00 PM	Platform: Protein-Lipid Interactions I	Room 511ABC
4:30 PM–6:00 PM	<p>Exhibitor Presentation: Molecular Devices Pushing the Performane Envelope: Evaluation of the NMDA Receptor Using Automated Electrophysiology and Fast Fluidics</p>	Room 513
5:30 PM–7:00 PM	<p>Exhibitor Presentation: Sutter Instrument Scientists Empowering Scientists</p>	Room 505
8:00 PM–9:30 PM	Awards and National Lecture	Concourse Hall
9:30 PM–12:00 AM	Reception and Dance	J.W. Marriott - Diamond Ballroom
9:30 PM–12:00 AM	Reception and Quiet Room	J.W. Marriott - Gold Ballroom

Monday, February 29

Graduate Student Breakfast

7:30 AM - 8:30 AM, ROOM 404AB

Supported by the Burroughs Wellcome Fund

This breakfast presents an opportunity for graduate student members of the Society to meet and discuss the issues they face in their current career stage. Members of the Early Careers Committee will be available to answer questions about how the Committee serves graduate students in the biophysical community. Limited to the first 100 attendees.

Registration/Exhibitor Registration

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

Poster Viewing

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

Symposium Lipid Flippases

8:15 AM - 10:15 AM, PETREE HALL C

Chair

Raimund Dutzler, University of Zurich, Switzerland

868-SYMP 8:15 AM

THE STRUCTURE AND FUNCTION OF CALCIUM ACTIVATED TMEM16 CHANNELS AND SCRAMBLASES. Janine D. Brunner, Novandy K. Lim, Stephan Schenck, **Raimund Dutzler**

869-SYMP 8:45 AM

MECHANISMS OF ION AND LIPID TRANSPORT BY TMEM16 SCRAMBLASES. **Alessio Accardi**

870-SYMP 9:15 AM

STRUCTURE AND MECHANISM OF AN ATP-DRIVEN FLIPPASE OF LIPID-LINKED OLIGOSACCHARIDES. **Kaspar Locher**

871-SYMP 9:45 AM

PHOSPHOLIPID FLIP MEDIATED BY MODEL FLIPPASES. **Dieter Langosch**

Symposium

Biomimetic Models for Study of Cytoskeletal Organization

8:15 AM - 10:15 AM, PETREE HALL D

Chair

Kinneret Keren, Technion, Israel Institute of Technology

872-SYMP 8:15 AM

NON-EQUILIBRIUM STEADY STATE DYNAMICS OF CONTRACTILE ACTIN NETWORKS. **Keren Kinneret**

873-SYMP 8:45 AM

SHAPE REMODELING OF ACTIVE CYTOSKELETAL VESICLES. **Andreas R. Bausch**

874-SYMP 9:15 AM

TOWARDS THE RECONSTITUTION OF MINIMAL CELL DIVISION. **Petra Schwille**

NO ABSTRACT 9:45 AM

CARGO TRANSPORT BY MYOSIN VIA MOLECULAR MOTORS: WHAT A MESH! **David Warshaw**

Platform

Optical Microscopy and Super-Resolution Imaging II

8:15 AM - 10:15 AM, ROOM 502A

Co-Chairs

Viviane Devauges, King's College London, United Kingdom
MinKwan Kim, Korea Advanced Institute of Science and Technology, Korea

875-PLAT 8:15 AM

TOWARDS SINGLE MOLECULE IMAGING OF FLUORESCENCE ANISOTROPY. **Viviane Devauges**, Simon P. Poland, James Monypenny, Anthony H. Keeble, Andrew J. Beavil, Simon M. Ameer-Beg

876-PLAT 8:30 AM

A METHOD FOR ESTIMATING UNKNOWN PARAMETERS FROM PARTICLE TRACKING EXPERIMENTS. Trevor T. Ashley, **Sean B. Andersson**

877-PLAT 8:45 AM

SUPER RESOLUTION MICROSCOPY WITH INDUCED OPTICAL FLUCTUATION. **MinKwan Kim**, Chung-Hyun Park, Yong-Hoon Cho, YongKeun Park

878-PLAT 9:00 AM

ULTRA-HIGH RESOLUTION THREE DIMENSIONAL IMAGING USING 4PI-SMSN THROUGHOUT WHOLE CELLS. **Fang Huang**, George Sirinakis, Edward S. Allgeyer, Lena Schroeder, Whitney C. Duim, Joerg Bewersdorf

879-PLAT 9:15 AM

3D SINGLE-MOLECULE SUPER-RESOLUTION FLUORESCENCE MICROSCOPY WITH THE CORKSCREW POINT SPREAD FUNCTION. **Maurice Lee**, Matthew Lew, Alex von Diezmann, Lucien Weiss, Yoav Shechtman, W. E. Moerner

880-PLAT 9:30 AM

SPECTRALLY RESOLVED SUPER-RESOLUTION MICROSCOPY. **Ke Xu**, Zhengyang Zhang, Samuel Kenny, Margaret Hauser, Wan Li

881-PLAT 9:45 AM

SIMPLE, LOW-COST BAYESIAN SUPER RESOLUTION MICROSCOPY. **Jorge Madrid-Wolff**, Joel I. Klahr, John Mario Gonzalez, Manu Forero-Shelton

882-PLAT 10:00 AM

ARBITRARY-REGION IMAGE CORRELATION SPECTROSCOPY. **Jelle Hendrix**, Tomas Dekens, Don C. Lamb

Platform

Molecular Dynamics I

8:15 AM - 10:15 AM, ROOM 502B

Co-Chairs

Arthur Palmer, Columbia University
Francis Starr, Wesleyan University

883-PLAT 8:15 AM

LIPASE DYNAMICS AND ACTIVATION: THE CASE OF M37. **Nathalie Willemis**, Mickael Lelimosin, Mark S.P. Sansom

884-PLAT 8:30 AM

A COMPREHENSIVE DESCRIPTION OF THE HOMO AND HETERODIMERIZATION MECHANISM OF THE CHEMOKINE RECEPTORS CCR5 AND CXCR4. **Daniele Di Marino**, Vittorio Limongelli

885-PLAT 8:45 AM

SIMULATIONS OF FGFR2 KINASE ACTIVATION LOOP DYNAMICS AND THEIR EFFECTS ON CATALYTIC ACTIVITY. **Jerome M. Karp**, David Cowburn

886-PLAT 9:00 AM

STEERED MOLECULAR DYNAMICS SIMULATIONS OF INNER-EAR CADHERINS USING THE DRUDE POLARIZABLE FORCE FIELD. Yoshie Narui, **Florencia Velez-Cortes**, Zachary Johnson, Marcos Sotomayor

887-PLAT 9:15 AM
 A TRIO OF CATIONS IN GRAMICIDIN A CHANNEL: IMPORTANCE OF QUANTUM EFFECTS TO DESCRIBE ION SELECTIVITY OF K⁺ AND NA⁺, AND PROTON TRANSFER. **Van Ngo**, Sergei Yu Noskov

888-PLAT 9:30 AM
 REDUCING IAPP AGGREGATION WITH MITOCHONDRIAL HUMANIN PEPTIDES; RESULTS FROM SIMULATIONS AND EXPERIMENTS. **Zachary A. Levine**, Alan Okada, Kazuki Teranishi, Ralf Langen, Joan-Emma Shea

889-PLAT 9:45 AM
 RATIONAL DEVELOPMENT OF A NEW TYPE OF HBV CAPSID INHIBITORS BY A COMBINATION OF MICROSECOND-SCALE MOLECULAR DYNAMICS AND DOCKING. Maksym Korablyov, **Anna Pavlova**, James Gumbart

890-PLAT 10:00 AM
 HOLLIDAY JUNCTION THERMODYNAMICS AND STRUCTURE: COMPARISONS OF COARSE-GRAINED SIMULATIONS AND EXPERIMENTS. **Francis W. Starr**, Wujie Wang, Laura M. Nocka, Brienne Z. Wiemann, Daniel M. Hinckley, Ishita Mukerji

Platform
Membrane Pumps, Transporters, and Exchangers
8:15 AM - 10:15 AM, ROOM 515A

Co-Chairs
Merritt Maduke, Stanford University
Pernilla Wittung-Stafshede, Umeå Univeristy, Sweden

891-PLAT 8:15 AM
 AN OUTWARD-FACING OPEN CONFORMATIONAL STATE IN A CLC TRANSPORTER. Sherwin J. Abraham, Tanmay Chavan, Ricky C. Cheng, Cristina Fenollar-Ferrer, Wei Han, Shahidul M. Islam, Tao Jiang, Chandra M. Khantwal, Irimpan I. Mathews, Richard A. Stein, Benoit Roux, Lucy R. Forrest, Hassane S. Mchaourab, Emad Tajkhorshid, **Merritt Maduke**

892-PLAT 8:30 AM
 TRANSPORT MECHANISM OF THE EIIC GLUCOSE SUPERFAMILY OF TRANSPORTERS. **Zhenning Ren**, Jason G. McCoy, Vitali Stanevich, Jumin Lee, Sharmistha Mitra, Elena J. Levin, Sebastien Poget, Matthias Quick, Wonpil Im, Ming Zhou

893-PLAT 8:45 AM
 DIRECT VISUALIZATION OF GLUTAMATE TRANSPORTER TRANSPORT CYCLE. Yi Ruan, Atsushi Miyagi, Xiaoyu Wang, Mohamed Chami, Henning Stahlberg, Olga Boudker, **Simon Scheuring**

894-PLAT 9:00 AM
 RESOLVING ACTIVE ION TRANSPORT AT THE SINGLE MOLECULE LEVEL FOR THE FIRST TIME. **Salome Veshaguri**, Sune M. Christensen, Gerdi C. Kemmer, Mads P. Møller, Garima Ghale, Christina Lohr, Andreas L. Christensen, Bo H. Justesen, Ida L. Jørgensen, Jürgen Schiller, Nikos S. Hatzakis, Michael Grabe, Thomas Günther Pomorski, Dimitrios Stamou

895-PLAT 9:15 AM
 PROTEIN INTERACTIONS THAT ENABLE SAFE AND EFFICIENT COPPER ION TRANSPORT IN THE HUMAN CYTOPLASM. **Pernilla Wittung-Stafshede**

896-PLAT 9:30 AM INTERNATIONAL TRAVEL AWARDEE
 DISSECTING THE CATALYTIC CYCLE OF THE SEROTONIN TRANSPORTER. **Peter S. Hasenhuettl**, Michael Freissmuth, Harald H. Sitte, Klaus Schicker, Yang Li, Walter Sandtner

897-PLAT 9:45 AM
 TRANSLOCASE ACTIVITY AND ASYMMETRIC MODEL MEMBRANES PROBED BY NEUTRON SCATTERING. **Allison M. Whited**, Frederick A. Heberle, Robert F. Standaert, Jonathan David Nickels, Xiaolin Cheng, John Katsaras, Alexander Johs

898-PLAT 10:00 AM
 FUNCTIONAL CHARACTERIZATION OF CALCIUM-ACTIVATED PHOSPHOLIPID SCRAMBLASE ACTIVITY OF NHTMEM16. **Tao Jiang**, Sundar Thangapandian, Emad Tajkhorshid

Platform
Protein Stability, Folding, and Chaperones I
8:15 AM - 10:15 AM, ROOM 515B

Co-Chairs
Susan Marqusee, University of California, Berkeley
Hugo Sanabria, Clemson University

899-PLAT 8:15 AM
 MECHANICAL UNFOLDING OF E. COLI RNASE H REVEALS AN INTERMEDIATE WITH A FORCE-INDUCED SHIFT IN THE RATE-LIMITING BARRIER. **Diane M. Wiener**, Jesse W. Dill, Susan Marqusee

900-PLAT 8:30 AM
 IN-CELL PROTEIN FOLDING - PAPS SYNTHASES. Oliver Brylski, David Gnutt, **Simon Ebbinghaus**

901-PLAT 8:45 AM
 PROVING THE ROLE OF ENTROPIC ELASTICITY IN PROTEIN FOLDING. **Jessica Valle-Orero**, Edward C. Eckels, Ionel Popa, Jaime Andres Rivas-Pardo, Julio M. Fernandez

902-PLAT 9:00 AM
 SUB-MILLISECOND UNFOLDING KINETIC SPECTRA REVEALS INTERMEDIATE TRANSITIONS. **Hugo Sanabria**, Katherina Hemmen, Dmitro Rodnin, Daniel Rohrbeck, Soheila Rezai Adariani, Ralf Kühnemuth, Claus A. M. Seidel

903-PLAT 9:15 AM
 STUDYING THE FUNCTION OF BAP IN THE NUCLEOTIDE CYCLE OF BIP BY SPRET USING MFD-PIE. **Daniela Wengler**, Mathias Rosam, Jelle Hendrix, Johannes Buchner, Don C. Lamb

904-PLAT 9:30 AM
 THE EFFECT OF LOOP INSERTIONS ON THE FOLDING OF TANDEM-REPEAT PROTEINS. **Albert Perez-Riba**, Ewan R. Main, Laura S. Itzhaki

905-PLAT 9:45 AM
 LINKING MECHANOCHEMISTRY TO PROTEIN FOLDING AT THE SINGLE BOND LEVEL. **Amy EM Beedle**, Sergi Garcia-Manyes

906-PLAT 10:00 AM
 FOLDING DYNAMICS OF B1 DOMAIN OF PROTEIN G USING SINGLE MOLECULE FORCE SPECTROSCOPY. **Dena Izadi**

Platform
Excitation-Contraction Coupling
8:15 AM - 10:15 AM, ROOM 501ABC

Co-Chairs
Bradley Launikonis, University of Queensland, Australia
Isabelle Marty, Grenoble Institut des Neurosciences, France

907-PLAT 8:15 AM
 THE MICROTUBULE-ASSOCIATED PROTEIN CLIMP-63 IS A NEW MEMBER OF THE CALCIUM RELEASE COMPLEX. Alexis Osseni, Muriel Sebastien, Julien Fauré, Anne Fourest-Lieuvin, **Isabelle Marty**

908-PLAT 8:30 AM
 STRUCTURAL INSIGHTS INTO RYANODINE RECEPTOR-FKBP12 INTERACTIONS IN WILD-TYPE AND MUTATED STATES. **Zhiguang Yuchi**, Siobhan M Wong King Yuen, Kelvin Lau, Ainsley Underhill, Razvan Cornea, James Fessenden, Filip Van Petegem

909-PLAT 8:45 AM
 CALSEQUESTERIN DEPOLYMERIZES WHEN Ca^{2+} CONCENTRATION DECAYS IN THE SARCOPLASMIC RETICULUM OF SKELETAL MUSCLE. **Carlo Manno**, Lourdes Figueroa, Dirk Gillespie, Eduardo Rios

910-PLAT 9:00 AM
 SHEET-LIKE REMODELING OF THE T-SYSTEM OF VENTRICULAR CARDIOMYOCYTES IN HEART FAILURE. **Thomas Seidel**, Martin Tristani-Firouzi, Craig H. Selzman, Frank B. Sachse

911-PLAT 9:15 AM
 DIFFUSION PROPERTIES OF CARDIAC T-TUBULAR SYSTEM. Marina Scardigli, **Claudia Crocini**, Cecilia Ferrantini, Raffaele Coppini, Chiara Tesi, Elisabetta Cerbai, Corrado Poggesi, Francesco S. Pavone, Leonardo Sacconi

912-PLAT 9:30 AM
 MICROTUBULE-DEPENDENT ALTERATIONS TO MECHANICAL PROPERTIES AND MECHANOTRANSDUCTION IN SKELETAL MUSCLE. **Jaclyn P. Kerr**, Guoli Shi, W Jonathan Lederer, Kelley M. Virgilio, Sylvia S. Blemker, Stuart S. Martin, Roberto Raiteri, Christopher W. Ward

913-PLAT 9:45 AM
 CALCIUM ENTRY UNITS: EXERCISE-DEPENDENT FORMATION OF NEW SR-TT JUNCTIONS CONTAINING STIM1 AND ORAI1 IN MUSCLE. Simona Boncompagni, Antonio Michelucci, Laura Pietrangelo, Robert T. Dirksen, **Feliciano Protasi**

914-PLAT 10:00 AM
 RYANODINE RECEPTOR ACTIVITY REGULATES THE LEVELS OF Ca^{2+} EXTRUSION AND STORE-OPERATED Ca^{2+} ENTRY IN SKELETAL MUSCLE. Tanya R. Cully, Rocky H. Choi, Thomas R. Shannon, **Bradley S. Launikonis**

Platform DNA Structure and Dynamics

8:15 AM - 10:15 AM, ROOM 511ABC

Co-Chairs

Vincent Croquette, LPS-ENS Research University, France
Catherine Tardin, Institute of Pharmacology and Structural Biology, France

915-PLAT 8:15 AM
 REVISITING SEQUENCING BY HYBRIDIZATION AT THE SINGLE MOLECULE LEVEL USING THE UNZIPPING ASSAY. **Vincent Croquette**, Saurabh Raj, Jean-François Allemand, David Bensimon, Jean-Baptiste Boulé

916-PLAT 8:30 AM
 MODELING SECONDARY STRUCTURAL ELEMENTS IN PROGRAMMED DNA ASSEMBLIES. **Keyao Pan**, Mark Bathe

917-PLAT 8:45 AM
 THE OVERSTRETCHING TRANSITION OF DIAMINOPURINE SUBSTITUTED TRIPLY HYDROGEN-BONDED DNA. **Daniel T. Kovari**, Matteo Cristofalo, David Dunlap, Laura Finzi

918-PLAT 9:00 AM
 THREE DIMENSIONAL DYNAMICS AND FLUCTUATIONS OF DNA-NANO-GOLD DIMERS BY INDIVIDUAL-PARTICLE ELECTRON TOMOGRAPHY. **Lei Zhang**, Dongsheng Lei, Jessica M. Smith, Huimin Tong, Xing Zhang, Paul Alivisatos, Gang Ren

919-PLAT 9:15 AM
 BRANCHPOINT STRUCTURE OF DNA THREWAY JUNCTIONS. Anita Toulmin, **Michael J. Morten**, Tara Sabir, Laura E. Baltierra-Jasso, Peter McGlynn, Gunnar F. Schröder, Brian Smith, Steven W. Magennis

920-PLAT 9:30 AM
 DYNAMICS OF HUMAN TELOMERIC G-QUADRUPLEX PROBES BY SINGLE MOLECULE FLUORESCENCE-FORCE SPECTROSCOPY. **Jaba Mitra**, Thuy T.M. Ngo, Taekjip Ha

921-PLAT 9:45 AM
 PROBING A LABEL-FREE LOCAL BEND IN DNA BY SINGLE MOLECULE TETHERED PARTICLE MOTION. Annaël Brunet, Sébastien Chevalier, Nicolas Destainville, Manoel Manghi, Philippe Rousseau, Maya Sahi, Laurence Salome, **Catherine Tardin**

922-PLAT 10:00 AM
 QUANTIFYING THE ION ATMOSPHERE OF UNFOLDED, SINGLE-STRANDED NUCLEIC ACIDS. **David R. Jacobson**, Omar A. Saleh

CPOW Committee Meeting

8:30 AM - 10:30 AM, ROOM 408A

Exhibitor Presentation

Sophion together with Biolin Scientific

9:30 AM - 11:00 AM, ROOM 505

Pioneering Ion Channels - Expanding the Boundaries of Automated Patch Clamp

Recent advances in automated patch clamp for voltage and ligand gated ion channels with emphasis on NMDA, cardiac safety and induced pluripotent stem cells

Speakers

Timm Danker, NMI, Germany
 Automated Patch Clamp on Cardiac Ion Channels and Multiwell MEA Recordings on Human iPSC-derived Cardiomyocytes: a Complementary Approach for Predictable Proarrhythmia Assessments

Caterina Virginio, Aptuit

NMDA Receptors: Meaningful Biophysical and Pharmacological Studies to Redefine Ligands Properties

Denise Franz, University of Rostock, Germany

Electrophysiological Characterization of Human Induced Pluripotent Stem Cell-derived Dopaminergic Neurons on the QPatch

Career Center Workshop

Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)

10:00 AM - 11:00 AM, ROOM 518

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, WEST HALL

Coffee Break

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

New Member Welcome Coffee

10:15 AM - 11:15 AM, ROOM 404AB

All new and prospective Biophysical Society members are invited to participate in an informal gathering to meet members of the Society's council and committees, find out about the Society's activities, get acquainted with other new members, and enjoy refreshments. Current members are encouraged to come meet the new members.

Exhibitor Presentation Wyatt Technology Corporation

10:30 AM - 12:00 PM, ROOM 513

Get it Right the First Time - Enhancing Protein Binding and Structural Studies with the Light-Scattering Toolkit

Biophysical binding studies utilizing surface plasmon resonance (SPR), biolayer interferometry (BLI), isothermal titration calorimetry (ITC), and related techniques are central to the study of protein-protein, protein-DNA and similar biomolecular interactions. Though these are well-established techniques, in a variety of circumstances, binding measurements may be ambiguous or even fail to provide useful data. Wasted measurements can end up being costly in terms of consumables and time.

Small-angle X-ray scattering (SAXS) and small-angle neutron scattering (SANS) are powerful techniques for studying biomolecular structure. SAXS and SANS usually require precious beam time at large facilities, leaving little room for error where the sample preparation is concerned. Poor samples provide poor SAXS/SANS data, but the opportunity to utilize the X-ray or neutron beam may never be recovered.

One thing that SAXS and SANS have in common with SPR, BLI and ITC, is the urgent need to verify sample quality and aggregation state in solution prior to carrying out structural or binding measurements. This seminar discusses a suite of complementary techniques, all based on light scattering, that are useful in assessing and troubleshooting many of the underlying characterization issues. Multi-angle light scattering (MALS) and dynamic light scattering (DLS) can help researchers assess solution quality prior to running binding or structural experiments, qualify aggregation behavior of analytes, and characterize complex interactions that may not be amenable to standard characterization methodology. Judicious use of the biophysical light-scattering toolkit is essential for robust and reliable interaction and structure studies.

Speaker

Sophia Kenrick, Application Scientist, Wyatt Technology Corporation

Symposium Mechanosensing and Mechanosignaling in Muscle

10:45 AM - 12:45 PM, PETREE HALL C

Chair

Olga Mayans, University of Konstanz, Germany

923-SYMP 10:45 AM

MECHANOSENSITIVE STRUCTURAL STATES OF TITIN. Zsolt Mártonfalvi, Pasquale Bianco, Katalin Naftz, Dorina Kószegi, György Ferenczy, **Miklós S. Kellermayer**

924-SYMP 11:15 AM

TITIN(S): TOWARDS AN ATOMIC UNDERSTANDING OF MECHANOSENSORY EVENTS IN THE ELASTIC SCAFFOLDS OF THE MUSCLE SARCOMERE. **Olga Mayans**, Jennifer Fleming, Rhys Williams, Barbara Franke, Hang Lu, Guy Berrian

925-SYMP 11:45 AM

MECHANO-CHEMO-TRANSDUCTION IN CARDIOMYOCYTES DURING BEAT-TO-BEAT CONTRACTION UNDER MECHANICAL LOAD. **Ye Chen-Izu**

926-SYMP 12:15 PM

DETYROSINATED MICROTUBULES BEAR LOAD AND TRANSMIT MECHANICAL FORCE IN CARDIOMYOCYTES. Patrick Robison, Matthew Caporizzo, Alexey Bogush, Kenneth Margulies, **Benjamin Prosser**

Symposium Future of Biophysics

10:45 AM - 12:45 PM, PETREE HALL D

Co-Chairs

*Vasanthi Jayaraman, University of Texas Health Science Center
E. Michael Ostap, University of Pennsylvania*

NO ABSTRACT 10:45 AM

ENGINEERING BIOMIMETIC MATRICES TO UNDERSTAND BRAIN/TUMOR INTERACTIONS DURING METASTASIS. **Kimberly Stroka**

NO ABSTRACT 11:15 AM

COMBINATORIAL REGULATION OF BAR DOMAIN PROTEINS AT THE INTERFACE BETWEEN THE CYTOSKELETON AND MEMBRANES. **David Kast**

NO ABSTRACT 11:45 AM

NASCENT AND ANTIMICROBIAL PEPTIDES THAT TARGET THE RIBOSOMAL EXIT TUNNEL TO BLOCK PROTEIN SYNTHESIS IN BACTERIA. **Axel Innis**

NO ABSTRACT 12:15 PM

MECHANISM OF GATING AND ION SELECTIVITY IN ASIC/ENAC/DEG CHANNELS. **Isabelle Baconguis**

Platform

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

10:45 AM - 12:45 PM, ROOM 502A

Co-Chairs

*Peter Larsson, University of Miami
Gail Robertson, University of Wisconsin-Madison*

927-PLAT 10:45 AM

N-ARACHIDONOYL TAURINE RESCUES DIVERSE LONG QT SYNDROME-ASSOCIATED MUTATIONS IN THE CARDIAC IKS CHANNEL. **Sara I. Liin**, Johan E. Larsson, Rene Barro-Soria, Mark A. Skarsfeldt, Bo H. Bentzen, H Peter Larsson

928-PLAT 11:00 AM

THE F-ACTIN BINDING PROTEIN TRIOBP-1 REGULATES HERG K⁺ CHANNELS. **Ashley A. Johnson**, Dave Jones, Elon C. Roti Roti, Gail Robertson, Matthew Trudeau

929-PLAT 11:15 AM

A NOVEL SITE OF COMPETITIVE PIP2 AND CALMODULIN INTERACTION TO KCNQ1 C-TERMINUS HELIX B IS CRUCIAL FOR IKS CHANNEL ACTIVITY. **William S. Tobelaim**, Meidan Dvir, Guy Lebel, Meng Cui, Tal Buki, Asher Peretz, Diomedes Logothetis, Joel Hirsch, Bernard Attali

930-PLAT 11:30 AM

MOLECULAR DYNAMICS SIMULATIONS OF KIR2.2-CHOLESTEROL INTERACTIONS. **Nicolas Barbera**, Manuela A. Ayee, Belinda S. Akpa, Irena Levitan

931-PLAT 11:45 AM

CRYO-EM STRUCTURE OF THE BK ION CHANNEL IN A LIPID MEMBRANE. **Liguo Wang**, Lige Tonggu, Xi Zhan

932-PLAT 12:00 PM
DELETION OF CYTOPLASMIC GATING RING ALTERS VOLTAGE DEPENDENT ACTIVATION OF BK CHANNELS. **Guohui Zhang**, Yanyan Geng, Jingyi Shi, Kelli McFarland, Karl L. Magleby, Lawrence Salkoff, Jianmin Cui

933-PLAT 12:15 PM
SELECTIVE CATION BINDING TO THE GATING-RING TRIGGERS INDEPENDENT RCK MOTIONS IN THE BK CHANNEL. **Pablo Miranda**, Teresa Giraldez, Miguel Holmgren

934-PLAT 12:30 PM
ROLE OF AN INTERSUBUNIT CA²⁺ BRIDGE IN STRUCTURE AND FUNCTION OF BK CHANNELS. **Alexandre G. Vouga**, Eunan Hendron, Brad S. Rothberg

Platform

Computational Methods and Bioinformatics

10:45 AM - 12:45 PM, ROOM 502B

Co-Chairs

Lanyuan Lu, Nanyang Technological University, Singapore
Liskin Swint-Kruse, University of Kansas

935-PLAT 10:45 AM
PL-PATCHSURFER: A FAST, SURFACE-PATCH-BASED VIRTUAL SCREENING PROGRAM USING THREE-DIMENSIONAL ZERNIKE DESCRIPTORS. **Woong-Hee Shin**, Daisuke Kihara

936-PLAT 11:00 AM
BIASING THE SAMPLING OF LOCAL STATES TO DRIVE THE EXPLORATION OF GLOBAL CONFORMATIONS IN PROTEINS. **Alessandro Pandini**, Arianna Fornili

937-PLAT 11:15 AM
PROTEIN STRUCTURE DETERMINATION BY CONFORMATIONAL SPACE ANNEALING USING NMR GEOMETRIC RESTRAINTS. **Jooyoung Lee**, Keehyoung Joo, InSuk Joung, Jinhyuk Lee, Jinwoo Lee, Weontae Lee, Bernard Brooks, Sung Jong Lee

938-PLAT 11:30 AM
MODELING SOLUTION X-RAY SCATTERING WITH KNOWLEDGE-BASED COARSE-GRAINED FORM FACTORS. **Lanyuan Lu**, Dudu Tong

939-PLAT 11:45 AM
DECODING DYNAMIC DISORDER IN SINGLE MOLECULE DATA. **Wonseok Hwang**, Il-Buem Lee, Seok-Cheol Hong, Changbong Hyeon

940-PLAT 12:00 PM
A NEW PATTERN IN PROTEIN EVOLUTIONARY SEQUENCE INFORMATION ROBUSTLY IDENTIFIES FUNCTIONALLY-IMPORTANT AMINO ACID POSITIONS. **Liskin Swint-Kruse**

941-PLAT 12:15 PM
AUTOMATED IMAGE ANALYSIS REVEALS SPATIALLY-REGULATED CELL DIVISION DYNAMICS DURING DROSOPHILA AXIS ELONGATION. **Michael F.Z. Wang**, Rodrigo Fernandez-Gonzalez

942-PLAT 12:30 PM
AGENT-BASED MODELING OF BIOLOGICAL PATHWAYS - A CASE-STUDY ON MRNA EXPORT AND QUALITY CONTROL MECHANISM. **Mohammad Soheilypour**, Mohammad Mofrad

Platform

Membrane Physical Chemistry II

10:45 AM - 12:45 PM, ROOM 515A

Co-Chairs

Susanne Fenz, Wuerzburg University, Germany
Tommy Nylander, Lund University, Sweden

943-PLAT 10:45 AM
NANOPARTICLES INTERACTING WITH MEMBRANES: FROM ENGULFMENT PATTERNS TO ENDOCYTOSIS. **Jaime Agudo-Canalejo**, Reinhard Lipowsky

944-PLAT 11:00 AM
ON THE FORMATION OF LIPID NANO-SCALE STRUCTURES AT INTERFACES BEYOND PLANAR BILAYERS. Aleksandra Dabkowska, Cassandra Niman, Gaelle Offranc Piret, Henrik Persson, Hanna Wacklin, Heiner Linke, Christelle Prinz, **Tommy Nylander**

945-PLAT 11:15 AM
 α -SYNUCLEIN BOUND TO MITOCHONDRIAL MEMBRANES— CHANGES IN LIPID BILAYER STRUCTURE AND MECHANICS. **Ana West**, Ben Brummel, Jonathan Sachs

946-PLAT 11:30 AM
MEMBRANE FLUCTUATIONS EFFECT PROTEIN DIFFUSION AND INDUCE PROTEIN AGGREGATION. **Kayla Sapp**, Lutz Maibaum

947-PLAT 11:45 AM
MEMBRANE PROTEIN CROWDING AT THE MESOSCALE: INSIGHTS FROM MD SIMULATIONS. **Mathieu G. Chavent**, Anna Duncan, Jean Helie, Patrice Rassam, Tyler Reddy, Joseph Goose, Colin Kleanthous, Mark S P Sansom

948-PLAT 12:00 PM
MEMBRANE MEDIATED COOPERATIVITY FACILITATES CADHERIN CLUSTERING IN MODEL MEMBRANES. **Susanne Fenz**, Timo Bihl, Daniel Schmidt, Rudolf Merkel, Khuya Sengupta, Udo Seifert, Ana-Suncana Smith

949-PLAT 12:15 PM
MEMBRANE HETEROGENEITY AND ITS ROLE IN IMMUNE SIGNALING ELUCIDATED BY SPECTRAL IMAGING. **Erdinc Sezgin**, Christian Eggeling

950-PLAT 12:30 PM
IONIZATION OF PHOSPHATIDYLINOSITOL (3,4,5)-TRISPHOSPHATE IN MIXED LIPID MEMBRANES. **Joseph Thomas**, Zachary Graber, Emily Johnson, Arne Gericke, Edgar E. Kooijman

Platform

Membrane Protein Structure and Folding II

10:45 AM - 12:45 PM, ROOM 515B

Co-Chairs

Timothy Cross, Florida State University
Janice Robertson, University of Iowa

951-PLAT 10:45 AM
MEASURING REVERSIBLE CLC-EC1 DIMERIZATION IN MEMBRANES BY SINGLE MOLECULE PHOTOBLEACHING. **Rahul Chadda**, Larry Friedman, Mike Rigney, Luci-Kolmakova Partensky, Jeff Gelles, Janice L. Robertson

952-PLAT 11:00 AM
MAPPING THE ENERGY LANDSCAPE FOR SECOND STAGE FOLDING OF A SINGLE MEMBRANE PROTEIN. **Duyoung Min**, Robert E. Jefferson, James U. Bowie, Tae-Young Yoon

953-PLAT 11:15 AM
SYNCHROTRON RADIATION CIRCULAR DICHROISM (SRCD) SPECTROSCOPY INVESTIGATIONS OF THE STRUCTURE AND ORIENTATION OF MEMBRANE PROTEINS IN ORIENTED LIPID BILAYERS. **Luke S. Evans**, Rohanah Hussain, Giuliano Siligardi, Philip T. F. Williamson

954-PLAT 11:30 AM
MECHANISMS OF ASSEMBLY AND COVALENT FLAVINYLYATION IN COMPLEX II. **Crystal Starbird**, Elena Maklashina, Sany Rajagukguk, Gary Cecchini, Tina Iverson

955-PLAT 11:45 AM
 PROBING THE STRUCTURE AND BINDING OF KCNE1 TO THE VOLTAGE-GATED POTASSIUM CHANNEL KCNQ1 USING PULSED EPR SPECTROSCOPY. **Gary A. Lorigan**, Indra D. Sahu, Andrew Craig, Rongfu Zhang, Robert M. McCarrick

956-PLAT 12:00 PM
 STRUCTURAL DETERMINANTS AND BINDING PROPERTIES OF THE NEURITE OUTGROWTH INHIBITOR (NOGO). **Melanie J. Cocco**, Ali Alhoshani, Verna Vu, D'Artagnan Greene

957-PLAT 12:15 PM
 STRUCTURE AND DYNAMICS OF COMPLEXES OF INTERLEUKIN-8 AND ITS RECEPTOR CXCR1 IN PHOSPHOLIPID BILAYERS BY SOLID-STATE NMR. **Sang Ho Park**, Anna De Angelis, Jasmina Radoicic, Sabrina Berkamp, Zheng Long, Stanley J. Opella

958-PLAT 12:30 PM
 FUNCTIONAL, DYNAMIC AND STRUCTURAL UNDERSTANDING OF M2 PROTON CHANNEL FROM INFLUENZA A AND ITS INHIBITION. **Timothy A. Cross**, Riqiang Fu, E. Vindana Ekanayake, Yimin Miao, Joana Paulino, Wright Anna, Jian Dai, Huan-Xiang Zhou

Platform Cytoskeletal Motor Proteins 10:45 AM - 12:45 PM, ROOM 501ABC

Co-Chairs
Carolyn Moores, Birkbeck College, United Kingdom
Jing Xu, University of California, Merced

959-PLAT 10:45 AM
 ON THE FORCE-GENERATING CAPACITY OF DISASSEMBLING MICROTUBULES. Jonathan W. Driver, Elisabeth Geyer, Luke M. Rice, **Charles L. Asbury**

960-PLAT 11:00 AM
 A STRUCTURAL MODEL OF THE MITOTIC KINESIN-6 MECHANOCHEMICAL CYCLE. Joseph Atherton, I-Mei Yu, Steven S. Rosenfeld, Anne Houdusse, **Carolyn A. Moores**

961-PLAT 11:15 AM EDUCATION TRAVEL AWARDEE
 KINETICS OF NUCLEOTIDE-DEPENDENT STRUCTURAL TRANSITIONS IN THE KINESIN-1 HYDROLYSIS CYCLE. **Keith J. Mickolajczyk**, Nathan C. Deffenbaugh, Jaime Ortega-Arroyo, Joanna Andrecka, Philipp Kukura, William O. Hancock

962-PLAT 11:30 AM
 DIRECT OBSERVATION OF THE ALLOSTERIC CONFORMATIONAL CHANGE OF KINESIN-1 USING GOLD NANOROD AND ITS IMPLICATION FOR HEAD-HEAD COORDINATION. Yamato Niitani, Sawako Enoki, Hiroyuki Noji, Ryota Iino, **Michio Tomishige**

963-PLAT 11:45 AM
 IMPACTS OF MICROTUBULE STRUCTURAL DEFECTS ON KINESIN-BASED TRANSPORT. Winnie H. Liang, Qiaochu Li, K Faysal, Stephen J. King, Ajay Gopinathan, **Jing Xu**

964-PLAT 12:00 PM
 ENGINEERING NOVEL ACTIN-BASED MOLECULAR MOTORS FROM THE MICROTUBULE-BASED MOTOR DYNEIN. Akane Furuta, Kazuhiro Oiwa, Hiroaki Kojima, **Kenya Furuta**

965-PLAT 12:15 PM
 TWO LEVELS OF MYOSIN-IIA DYNAMICS IN CELLS: TURNOVER OF FILAMENTS AND SELF-ORGANIZATION OF FILAMENT STACKS. **Shiqiong Hu**, Kinjal Dasbiswas, Zhenhuan Guo, Yee-Han Tee, Visalatchi Thiagarajan, Ronen Zaidel-Bar, Pascal Hersen, Samuel Safran, Alexander D. Bershadsky

966-PLAT 12:30 PM

AN OPTOGENETIC METHOD FOR CONTROLLING FULL-LENGTH MYOSIN VI THROUGH ITS CARGO BINDING DOMAIN. **Alexander R. French**, Ronald S. Rock, Tobin R. Sosnick

Platform Single-Molecule Spectroscopy 10:45 AM - 12:45 PM, ROOM 511ABC

Co-Chairs
Victoria Birkedal, Aarhus University, Denmark
Sonja Schmid, University of Freiburg, Germany

967-PLAT 10:45 AM
 TESTING THE PHYSICAL THEORY OF FOLDING AS DIFFUSIVE MOTION OVER AN ENERGY LANDSCAPE USING TRANSITION PATH ANALYSIS OF SINGLE-MOLECULE FOLDING TRAJECTORIES. **Krishna P. Npane**, Ajay P. Manuel, John Lambert, Michael Woodside

968-PLAT 11:00 AM
 3D TRACKING SINGLE MOLECULE FLUORESCENCE ENERGY TRANSFER MEASUREMENTS. Aaron Keller, Matt DeVore, Dung Vu, Tim Causgrove, **James Werner**

969-PLAT 11:15 AM
 QUANTITATIVE PROTEIN KINETICS FROM SM-FRET TIME TRACES. **Sonja Schmid**, Markus Goetz, Thorsten Hugel

970-PLAT 11:30 AM
 INFLUENCE OF THE BACKGROUND IN SINGLE MOLECULE FRET TIRF MICROSCOPY. Søren Preus, Lasse Lava Hildebrandt, **Victoria Birkedal**

971-PLAT 11:45 AM
 A MULTISPOT CONFOCAL PLATFORM FOR HIGH-THROUGHPUT FREELY DIFFUSING SINGLE-MOLECULE FRET STUDIES. Antonino Ingargiola, Eitan Lerner, SangYoon Chung, Angelo Gulinatti, Ivan Rech, Massimo Ghioni, Shimon Weiss, **Xavier Michalet**

972-PLAT 12:00 PM INTERNATIONAL TRAVEL AWARDEE
 FARFRET: EXTENDING THE RANGE IN SINGLE-MOLECULE FRET EXPERIMENTS BEYOND 10 NM. **Georg Krainer**, Andreas Hartmann, Michael Schlierf

973-PLAT 12:15 PM
 COMBINING SINGLE-MOLECULE TECHNIQUES WITH MICROFLUIDICS FOR PROTEIN ANALYSIS. **Christopher Taylor**, Tuomas Knowles, David Klenerman

974-PLAT 12:30 PM INTERNATIONAL TRAVEL AWARDEE
 APPLICATION OF THE SPLIT-FLCS METHOD TO THE DETECTION OF NANOSCALE DIFFUSION IN 3D IN LIVE CELLS. **Luca Lanzano**, Lorenzo Scipioni, Melody Di Bona, Paolo Bianchini, Ranieri Bizzarri, Francesco Cardarelli, Giuseppe Vicidomini, Alberto Diaspro

Career Center Workshop Leveraging Social Media for Networking and Career Advancement

11:30 AM - 12:30 PM, ROOM 518

More and more recruiters, job decision-makers and hiring managers are using the web to find and research potential candidates. How can you make sure that you are not only found, but are ahead of the pack? In this session, we will discuss how decision-makers use LinkedIn and Facebook, and how you can use LinkedIn to establish yourself as a leader in your field, enhance your research reputation, and seek out and take advantage of innovative opportunities. We will demonstrate how to create a winning LinkedIn profile, and how to use its multitude of features (such as joining and commenting in groups) to generate solid leads for your career.

Exhibitor Presentation Asylum Research, an Oxford Instruments Company

11:30 AM - 1:00 PM, ROOM 505

Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM

The atomic force microscope (AFM) has found broad use in the investigation of cell mechanics, with numerous studies of cell stiffness and modulus dating back over a decade. Because AFM can quantitatively measure the mechanical properties of individual live cells, novel insights to cell function and to cell-substrate interactions have been realized. This is pertinent for cell biology, as it has been demonstrated that the geometrical and mechanical properties of the extracellular microenvironment are important in such processes as cancer, cardiovascular disease, muscular dystrophy, and even the control of cell life and death. Indeed, the ability to control and quantify these external geometrical and mechanical parameters now arises as a key issue in the field and AFM seems poised to play a prominent role in building that understanding.

The use of AFM in this field presents unique challenges and opportunities. Some of the most important considerations are because many of the AFM techniques used here have largely been borrowed from those first developed for materials science. This is simultaneously a success of interdisciplinary research and an opportunity to further tailor measurements to cells and biological materials, which have some fundamentally different characteristics compared to polymers. Most dramatically, cells are far “softer” than polymers, usually at least 100× lower in modulus than even soft rubbers and easily 10,000× lower in modulus than some common plastics. Further, cells are usually quite “sticky,” leading to large adhesion to the AFM tip that can complicate measurements. Finally, cells are often strongly viscoelastic, exhibiting not just elastic deformation described by the elastic modulus but also a viscous response that depends on the velocity of the deformation- and this mechanical component can sometimes be lost or ignored in certain experimental setups and techniques. In fact, this viscous response may prove just as enlightening to cell mechanics as the elastic response more commonly measured alone until recently. This talk will discuss these important issues that must be considered when AFM techniques are applied to cells and other biological materials.

Speaker

Sophia Hohlbach, Asylum Research, an Oxford Instruments Company

Exhibitor Presentation Nanion Technologies GmbH

12:30 PM - 2:00 PM, ROOM 513

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 ranging from single channel recordings to HTS-compatible ion channel drug discovery. During this workshop, we will show 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 going well beyond hERG.

Cardiac arrhythmic risk assessment is a hot topic these days calling for new screening strategies. With the CiPA-initiative, the panel of cardiac ion channels to consider have drastically expanded, consequently requiring increased data throughput for early compound safety prediction.

The *SynroPatch 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. Examples will be shown,

where six different cardiac channels were recorded using one single plate, in one single run.

Patchliner, a medium-throughput APC platform, supports automated current clamp recordings, experiments at physiological temperatures, and a minimal cell usage, making it the ideal partner for safety testing on stem cell derived cardiomyocytes. Additionally, the *CardioExcyte 96*, a hybrid system combining impedance-based and EFP recordings from beating cardiomyocyte networks from 96 recording wells in parallel, has proven a versatile tool for safety and toxicity screening applications serving as a powerful tool complementing APC.

The *SURFE2R* technology allows direct and functional measurements electrogenic transporter. Hands-on experiments on the *SURFE2R* will be shown. Also membrane fragments from Chantest, a Charles River company, will be used.

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.

Speakers

Maria Barthmes, Nanion Technologies GmbH
Andrea Brüggemann, Nanion Technologies GmbH
Niels Fertig, Nanion Technologies GmbH
Markus Rapedius, Nanion Technologies GmbH

NSF Grant Writing Workshop

1:00 PM - 3:00 PM, ROOM 403B

Putting your best foot forward in your grant proposal is key to securing funding for research. Program officers past and present from the National Science Foundation will walk attendees through the process and provide tips on how to prepare the best possible proposal during this session, sponsored by the Public Affairs Committee.

Panelists

Gary Pielak, University of North Carolina at Chapel Hill
Kamal Shukla, NSF

Industry Panel

1:30 PM - 3:00 PM, ROOM 411

Are you interested in learning about science in industry? Stop by to hear from a panel of experts who work in bio-related industries. The panel will provide guidance on techniques and skill sets that are sought after in industry and discuss ideas on how to incorporate industry relevant techniques in academic research.

Panel Chair

Anita Niedziela-Majka, Gilead Sciences Inc
Speakers to be announced

Exhibitor Presentation KinTek Corp

1:30 PM - 3:00 PM, ROOM 505

Why You Should Fit Kinetic and Equilibrium Binding Data Using KinTek Explorer Software

KinTek Explorer software offers the fastest, most dynamic and robust method of fitting kinetic or equilibrium binding data. Based on fast numerical integration of rate equations, data are fit without the often-inaccurate approximations needed to derive equations. Rather than fitting data to extract “observed rates” or Eigenvalues, which must be then interpreted in second step, *KinTek Explorer* yield rate and equilibrium constants directly while accounting for both the rate and amplitude of observable reactions. By modeling the experiments exactly as

performed, all details of the experimental setup are included, eliminating errors in interpretation. Moreover, multiple experiments can be fit simultaneously to a single unifying model. Fast dynamic simulation using proprietary methods for numerical integration allows you to explore parameter space and learn kinetics. Don't be fooled by other vendors pretending to do the same. Only *KinTek Explorer* offers such robust and dynamic data fitting.

In this presentation, Professor Johnson will introduce the theory and operation of the software to show you how easy it is to fit data to any model you care to input. Examples of experiments that can be fit include: transient and single turnover stopped-flow kinetics, steady state kinetics, slow onset inhibition, equilibrium titrations, rapid-quench-flow kinetics, temperature dependence, voltage-dependent rate constants. In addition time-resolved absorbance or fluorescence and pH-dependent spectra can be analyzed by singular value decomposition to yield spectra and time- or pH-dependence of each species. In addition to describing *KinTek Explorer's* basic features, Johnson will introduce new features and will be available to help you to fit your own data. Learn about what you are missing in your own data fitting.

Speaker

Kenneth A Johnson, President, KinTek Corporation; Professor of Biochemistry, University of Texas at Austin

Biophysics 101 Forster Resonance Energy Transfer

1:30 PM - 3:00 PM, ROOM 409AB

Forster Resonance Energy Transfer (FRET) is widely used to study protein structure and protein in vitro and in vivo, in molecular ensembles and in single molecules. The utility of FRET comes from its ability to resolve distances that are smaller than the diffraction limit of light, in the 20 to 100 Angstrom range. This year's "Biophysics 101" session will include two lectures on FRET that highlight the power and the limitations of the technique.

Presenters

Kalina Hristova, Johns Hopkins University
Steven Vogel, NIH

Snack Break

1:45 PM - 3:00 PM, WEST HALL

Poster Presentations and Late Posters

1:45 PM - 3:45 PM, WEST HALL

How to Get Your Scientific Paper Published

2:15 PM - 3:45 PM, ROOM 408B

This panel discussion, sponsored by the Publications Committee, 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.

Panelists

William Hancock, Pennsylvania State University
William Kobertz, University of Massachusetts
Elizabeth Komives, University of California, San Diego
Leslie Loew, University of Connecticut

Moderator

Catherine A. Royer, Rensselaer Polytechnic Institute

Speed Networking

2:30 PM - 3:30 PM, ROOM 407

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. Early career scientists can use the opportunity 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 can use the opportunity to find a postdoc, learn how to get more involved in the society, or network for possible reviewers for papers. We will introduce everyone, and then give time for short 3-5 minute meetings with a new contact. During this time you can exchange information and ask questions. Then when time is up, you select the next person to talk to. By the end of the event, each participant will have meaningful interactions with over half a dozen colleagues and the opportunity to meet many more. It's that simple!

Career Center Workshop Selling Yourself to the Life Sciences Industry

2:30 PM - 3:30 PM, ROOM 518

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.

Hiring, Firing, and Beyond How to Be an Effective Supervisor

2:30 PM - 4:00 PM, ROOM 408A

Do you find personnel and conflict management a formidable challenge as a supervisor? Come join us at this session, sponsored by the Committee for Professional Opportunities for Women, where a panel of new and seasoned PIs share their experiences in setting up and running a successful team in academia and industry.

Speakers

Dorothy Beckett, University of Maryland
Kelly Knee, Pfizer
Prithwish Pal, Illumina
Rohit Pappu, Washington University in St. Louis
Rajini Rao, Johns Hopkins University
Joanna Swain, Bristol-Myers Squibb

The Science of Hollywood

2:30 PM - 4:00 PM, ROOM 403A

The portrayal of scientists and science in popular media can play an important role in shaping the public's opinion about scientific issues. Whether a big box office feature like *Jurassic World*, an animated feature like *Inside Out*, or a sitcom like the *Big Bang Theory*, getting the science right requires experts in the pertinent field to weigh in. At this session, sponsored by the Public Affairs Committee, hear panelists discuss the role scientists play in the developing storylines involving scientists for movies and television, why sometimes even the best intentions do not result in an accurate representation, and what scientists can learn about communicating their work from Hollywood.

Moderator

Rick Loverd, Program Director, Science and Entertainment Exchange

Panelists

Amy Berg, Film/TV Writer and Executive Producer
Jessica Cail, Professor of Psychopharmacology, Pepperdine University
Mike Ireland, Senior Vice President, Production, 20th Century Fox
Clifford Johnson, University of Southern California Department of Physics and Astronomy

Exhibitor Presentation Renishaw Inc

2:30 PM - 4:00 PM, ROOM 513

Innovative Raman Imaging in the Life Sciences

When light illuminates a sample, most of it scatters without changing. A tiny fraction of the light however is Raman scattered. The Raman scattered light excites the phonons in the samples and produces a spectrum. This spectrum tells us how the atoms are vibrating, providing a chemical fingerprint which allows identification of the sample. Raman spectroscopy produces chemical and structural information to help us understand more about the material being analyzed. The ability to probe the chemical and molecular structure of biological materials is obtained directly without the need for any dyes or markers. These systems can be utilized to generate chemical images of cells, tissue, bone and bio-compatible materials with very high spatial resolution. It has been employed for cancer diagnosis, stem cell differentiation, skin treatments, protein structure analysis, bio-diagnostics and bacterial identification.

Renishaw's inVia confocal Raman microscope can be integrated with other instruments, such as atomic force microscopy (AFM) and scanning electron microscopy (SEM), to provide Raman analysis from the same point on the sample. This talk will provide an introduction to Raman microscopy with biological materials, the instrumentation required for these techniques and will highlight some applications where Raman microscopy is making the biggest impact with biological materials.

Speakers

Tim Prusnick, USA Sales Manager SPD, Renishaw Inc
Andrew King, Regional Sales Manager - West Coast, Renishaw Inc
Mark Canales, Field Applications Specialist (Life Science) Spectroscopy Products Division, Renishaw Inc

Membership Committee Meeting

3:00 PM - 5:00 PM, ROOM 506

Exhibitor Presentation Bruker Nano Surfaces

3:30 PM - 5:00 PM, ROOM 505

Advances in Live Super-Resolution Imaging Using the Vutara 352 Microscope

Super-resolution microscopy has made a significant impact in the field of biological imaging by enabling a ten-fold improvement in spatial resolution over traditional light microscopy techniques. Most of the imaging has been so far targeted at fixed specimens with a few live cell applications. The Vutara 352 microscope has been engineered towards live-cell imaging by enhancing spatial and temporal resolution in single molecule localization super-resolution. The sCMOS detector in the Vutara 352 enables imaging at 800 fps at full ROI and at video frame rates at reduced ROI. Two color simultaneous imaging can be applied in both super-resolution live cell and 3D particle tracking experiments. The biplane based detection path enables imaging thicker samples such as whole mount *Drosophila* and offers deeper penetration into tissues. The Vutara 352 also includes real time localization along with several statistical and live cell analysis features for processing data. In summary, the Vutara 352 microscope is a powerful super-resolution imaging and analysis tool.

Speaker

Manasa Gudheti, Applications Scientist at Bruker – Fluorescence Microscopy Business

Career Center Workshop Successfully Navigating the International Job Search

4:00 PM - 5:00 PM, ROOM 518

Applying for a job in one country while finishing up your education and training in another can be challenging, but it can be done with success. In this workshop we will discuss specific strategies to finding jobs in another country while one is abroad and how to leverage your networks in-country to access opportunities, especially those that are hidden. Special emphasis will be placed on establishing your reputation as a leader in your field with professionals in the country or region in which you wish to work. Case studies will be shared.

Symposium

Molecular Mechanisms of Mechanosensation

4:00 PM - 6:00 PM, PETREE HALL C

Chair

Robert Fettiplace, University of Wisconsin-Madison

975-SYMP 4:00 PM

GLOBAL AND SPECIFIC INTERACTIONS BETWEEN MECHANOSENSITIVE ION CHANNELS AND THE LIPID BILAYER. **Boris Martinac**

976-SYMP 4:30 PM

SINGLE MOLECULE FORCE SPECTROSCOPY OF HAIR-CELL TIP-LINK PROTEINS. Mounir A. Koussa, Andrew Ward, Marcos Sotomayor, Wesley P. Wong, **David P. Corey**

977-SYMP 5:00 PM

LOCALIZATION OF ANOMALOUS MECHANO-SENSITIVE ION CHANNELS IN COCHLEAR HAIR CELLS. Maryline Beurg, Adam Goldring, **Robert Fettiplace**

NO ABSTRACT 5:30 PM

STRUCTURE AND CHEMICAL BIOLOGY OF MECHANOSENSITIVE K2P CHANNELS. **Daniel L. Minor**

Symposium

Folding Rates and Routes

4:00 PM - 6:00 PM, PETREE HALL D

Chair

Jane Clarke, University of Cambridge, United Kingdom

978-SYMP 4:00 PM

ASSESSING AND MANIPULATING PROTEIN FOLDING DYNAMICS. **Feng Gai**

NO ABSTRACT 4:30 PM

COUPLED PROTEIN FOLDING AND BINDING REACTIONS: MECHANISMS AND SPEED LIMITS. **Thomas Kiefhaber**

979-SYMP 5:00 PM

IMPACTS OF CHARGE PATTERNING ON INTRINSICALLY DISORDERED PROTEINS AND MECHANISMS OF DISORDER-TO-ORDER TRANSITIONS. **Rohit V. Pappu**

980-SYMP 5:30 PM

THE ROLE OF DISORDER IN PROTEIN FOLDING. **Jane Clarke**

Symposium

Expanding Horizons in Biophysics and Medical Physics

4:00 PM - 6:00 PM, ROOM 502A

Chair

Robert Jeraj, University of Wisconsin- Madison

981-SYMP 4:00 PM

INTERPLAY BETWEEN MOLECULAR IMAGING AND TUMOR MODELING OF ANTI-ANGIOGENIC THERAPIES. **Robert Jeraj**

982-SYMP 4:30 PM

CHERENKOV IMAGING OF RADIATION DOSE AND MOLECULAR SIGNALING IN VIVO. **Brian Pogue**

NO ABSTRACT 5:00 PM

THE ROLE OF PHYSICS IN DRIVING PRECISION IN CANCER MEDICINE. **David Jaffray**

983-SYMP 5:30 PM

CELL ADHESION STRENGTH IS REDUCED BY THE PRESENCE OF PERICELLULAR MATRIX PATCHES. **Jennifer Curtis**, Patrick Chang, Louis McLane, Jan Scrimgeour, Michelle Truong, Ruth Fogg, Dennis Zhou, Andres J. Garcia

Platform

Cell Mechanics, Cytoskeleton, and Motility

4:00 PM - 6:00 PM, ROOM 502B

Co-Chairs

Wylie Ahmed, Institut Curie, France

Jennifer Ross, California Pacific Medical Center

984-PLAT 4:00 PM

FORCE SPECTROSCOPY OF EXTENSILE MICROTUBULE BUNDLES. **Feodor Hilitski**, Zvonimir Dogic

985-PLAT 4:15 PM

SINGLE-MOLECULE IMAGING TAU DYNAMICS ON THE MICROTUBULE SURFACE: EFFECTS OF PHOSPHOREGULATION. **Miranda Redmond**, Gregory Hoerprich, Jamie Stern, Lynn Chrin, Christopher L. Berger

986-PLAT 4:30 PM

COMPLEXES MADE BETWEEN MICROTUBULES, MOTOR PROTEINS, AND ANTIPARALLEL CROSSLINKERS PRODUCE DYNAMIC INTERACTIONS. **Kasimira T. Stanhope**, Vikrant Yadav, Jennifer Ross

987-PLAT 4:45 PM

ACTIVE MECHANICS IN LIVING OOCYTES REVEAL MOLECULAR-SCALE FORCE KINETICS. **Wylie Ahmed**, Etienne Fodor, Maria Almonacid, Matthias Bussonnier, Marie-Helene Verlhac, Nir Gov, Paolo Visco, Frederic van Wijland, Timo Betz

988-PLAT 5:00 PM

NANOSCALE ORGANIZATION OF THE ACTOMYOSIN CORTEX DURING THE CELL CYCLE. **Priyamvada Chugh**, Andrew G. Clark, Matthew B. Smith, Davide A. D. Cassani, Guillaume Charras, Guillaume Salbreux, Ewa K. Paluch

989-PLAT 5:15 PM

ROTATIONAL MEASUREMENTS AND MANIPULATIONS OF THE BACTERIAL FLAGELLAR MOTOR. **Ashley L. Nord**, Richard M. Berry, Francesco Pedaci

990-PLAT 5:30 PM

UNITARY STEPS OF SUPERMOLECULAR MOTILITY MACHINERIES IN GLIDING BACTERIA AND SWIMMING ARCAEA. Yoshiaki Kinosita, Nakane Daisuke, Nariya Uchida, Makoto Miyata, **Takayuki Nishizaka**

991-PLAT 5:45 PM

THE FLAGELLAR MOTOR OF CAULOBACTER CRESCENTUS GENERATES MORE TORQUE WHEN A CELL SWIMS BACKWARD. **Pushkar Lele**, Howard Berg

Platform

Bioengineering and Biotechnology

4:00 PM - 6:00 PM, ROOM 515A

Co-Chairs

Danielle France, NIST

Brigitte Papahadjopoulos-Sternberg, NanoAnalytical Laboratory

992-PLAT 4:00 PM

LIGHT-ACTIVATED PHOTO PROTECTION IN AN ARTIFICIAL ANTENNA SYSTEM. **Alessio Andreoni**, Su Lin, Haijun Liu, Hao Yan, Robert E. Blankenship, Neal W. Woodbury

993-PLAT 4:15 PM

STEPS FOR CONSTRUCTING SYNTHETIC MEMBRANE CURVATURE-INDUCING DNA ORIGAMI SCAFFOLDS. **Alena Khmelinskaia**, Henri G. Franquelim, J. Philippe Sobczak, Hendrik Dietz, Petra Schwille

994-PLAT 4:30 PM

DISSECTION OF MELANOMA DRUG RESISTANCE AND HETEROGENEITY USING LIVE CELL INTERFEROMETRY. **Dian Huang**, Thomas A. Zangle, Michael A. Teitell

995-PLAT 4:45 PM

FREEZE-FRACTURE ELECTRON MICROSCOPY ON NANO- AND MICRO-DELIVERY VEHICLES FOR BIOLOGICAL ACTIVE COMPOUNDS. **Brigitte Papahadjopoulos-Sternberg**

996-PLAT 5:00 PM

COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATION OF NOVEL BOLAAMPHIPHILES AS RNA NANOSTRUCTURE DELIVERY AGENTS. **Wojciech K. Kasprzak**, Taejin Kim, Kirill A. Afonin, Kshitij Gupta, Mathias Viard, Anu Puri, Bruce A. Shapiro

997-PLAT 5:15 PM

X-RAY CONTROLLED DRUG RELEASE FROM LIPOSOMES. **Daniel Folegea**, Greg Salamo, Ralph Henry, Michael J. Borrelli, Peter Corry

998-PLAT 5:30 PM

RAPID ANTIMICROBIAL SUSCEPTIBILITY TESTING THROUGH PHASE NOISE MEASUREMENTS OF CELLULAR BIOPHYSICS. **Danielle France**, Ward Johnson, William Cordell, Fred Walls

999-PLAT 5:45 PM

LENGTH- AND SPECIES-SELECTIVE DETECTION OF SHORT OLIGONUCLEOTIDES USING A MICROELECTRODE CAVITY ARRAY OF BIOLOGICAL NANOPORES. Ibrahim Halimeh, Chan Cao, **Gerhard Baaken**, Yi-Tao Long, Jan C. Behrends

Platform

Ligand-gated Channels

4:00 PM - 6:00 PM, ROOM 515B

Co-Chairs

Derek Bowie, McGill University, Canada

Robert Oswald, Cornell University

1000-PLAT 4:00 PM

FUNCTIONAL MECHANISMS OF DESENSITIZATION IN AMPA RECEPTORS. **Hector Salazar**, Andrew J. Plested

1001-PLAT 4:15 PM

INVESTIGATING IGLUR DESENSITISATION WITH STEERED MOLECULAR DYNAMICS SIMULATIONS. **Maria Musgaard**, Philip C. Biggin

1002-PLAT 4:30 PM
MECHANISM OF AMPA RECEPTOR GATING RE-SHAPED BY AUXILIARY PROTEINS. **George B. Dawe**, Derek Bowie

1003-PLAT 4:45 PM
SENSING ALLOSTERIC MODULATOR BINDING TO AMPA RECEPTORS AT THE GLUTAMATE-BINDING SITE. **Christopher P. Ptak**, Ahmed H. Ahmed, Robert E. Oswald

1004-PLAT 5:00 PM
ACID SENSING ION CHANNELS ARE UNIQUELY TUNED TO FOLLOW HIGH FREQUENCY 'SYNAPTIC' STIMULI. **David M. MacLean**, Vasanthi Jayaraman

1005-PLAT 5:15 PM
HUMAN α 1 GLYCINE RECEPTOR ALLOSTERY AS IDENTIFIED BY STATE-DEPENDENT CROSSLINKING STUDIES. **Michael Cascio**, Rathna J. Veeramachaneni, Jeffrey Madura

1006-PLAT 5:30 PM
CRYSTAL STRUCTURE OF HUMAN GLYCINE RECEPTOR- α 3 BOUND TO ANTAGONIST STRYCHNINE. **Xin Huang**

1007-PLAT 5:45 PM
MOLECULAR DETERMINANTS OF PARTIAL AGONIST AFFINITY IN ADULT NEUROMUSCULAR ACETYLCHOLINE RECEPTORS. **Iva Bruhova**, Anthony Auerbach

Platform Protein-Small Molecule Interactions

4:00 PM - 6:00 PM, ROOM 501ABC

Co-Chairs

Alex Dickson, Michigan State University

Giulia Palermo, École Polytechnique Fédérale de Lausanne, Switzerland

1008-PLAT 4:00 PM
2-DEOXY-ATP ENHANCES MULTIPLE KINETIC PARAMETERS TO IMPROVE CARDIAC FUNCTION. **Ivan B. Tomasic**, Marcus Henze, Ferdinand Evangelista, Anu R. Anto, Hector Rodriguez, Sadie R. Bartholomew

1009-PLAT 4:15 PM
EXAMINATION OF CLPB QUATERNARY STRUCTURE AND LINKAGE TO NUCLEOTIDE BINDING. **JiaBei Lin**, Aaron L. Lucius

1010-PLAT 4:30 PM
THUMB SITE 2 INHIBITORS OF HEPATITIS C VIRAL RNA-DEPENDENT RNA POLYMERASE ALLOSTERICALLY BLOCK THE TRANSITION FROM INITIATION TO ELONGATION. **Jiawen Li**, Daniel Deredge, Patrick L. Wintrobe, Kenneth A. Johnson

1011-PLAT 4:45 PM
MOLECULAR SIMULATIONS INTEGRATED WITH EXPERIMENTS UNRAVEL THE KEY FACTORS OF LIPID SELECTION IN FATTY ACID AMIDE HYDROLASE AND SUGGEST A GENERAL MECHANISM OF LIPID-PROCESSING IN THE PARENT ENZYMES. **Giulia Palermo**, Inga Bauer, Pablo Campomanes, Andrea Cavalli, Andrea Armirotti, Stefania Giroto, Marco De Vivo, Ursula Rothlisberger

1012-PLAT 5:00 PM
CURCUMIN-LIKE COMPOUNDS DESIGNED TO MODIFY AMYLOID BETA PEPTIDE AGGREGATION PATTERN. **Maria Grazia Ortore**, Antonella Battisti, Ranieri Bizzarri, Donatella Bulone, Claudio Ferrero, Francesco Ghetti, Valentina Giacalone, Antonino Lauria, Maria Rosalia Mangione, Antonella Marino Gammazza, Caterina Ricci, Antonella Sgarbossa, Francesco Spinazzi, Silvia Vilasi, Antonio Palumbo Piccionello

1013-PLAT 5:15 PM
IN SILICO STUDY ON THE LIGAND-BINDING AND ACTIVATION MECHANISMS OF THE HUMAN DOPAMINE D3 RECEPTOR. **Wei-Hsiang Weng**, Hao-Jen Hsu

1014-PLAT 5:30 PM
MIMICKING PROTEIN FUNCTIONS WITH ENTROPICALLY CONSTRAINED PEPTIDES. **Blake Farrow**, Andrew G. Wang, David N. Bunck, James R. Heath

1015-PLAT 5:45 PM
LIGAND RESIDENCE TIMES AND EXIT PATHWAYS OBTAINED IN SILICO WITHOUT BIASING FORCES. **Alex Dickson**

Platform Protein-Lipid Interactions I

4:00 PM - 6:00 PM, ROOM 511ABC

Co-Chairs

Oliver Soubias, NIH

Stephanie Tristram-Nagle, Carnegie Mellon University

1016-PLAT 4:00 PM
PENETRATION OF HIV-1 TAT47-57 INTO PC/PE BILAYERS ASSESSED BY MD SIMULATION AND X-RAY SCATTERING. Chris Neale, Kun Huang, Angel E. Garcia, **Stephanie Tristram-Nagle**

1017-PLAT 4:15 PM
INVESTIGATING THE INTERACTIONS OF PERIPHERAL MEMBRANE PROTEINS WITH MODEL MEMBRANES USING HIGH THROUGHPUT MOLECULAR DYNAMICS SIMULATIONS. **Antreas C. Kalli**, Eiji Yamamoto, Fiona B. Naughton, Mark S.P. Sansom

1018-PLAT 4:30 PM
ELUCIDATING THE MECHANISM FOR STEROL REGULATION OF CHLORIDE INTRACELLULAR ION CHANNEL PROTEIN INTERACTIONS WITH LIPID MEMBRANES. **Khondker R. Hossain**, Heba Al Khamici, Stephen A. Holt, Stella M. Valenzuela

1019-PLAT 4:45 PM
TRANSIENT EFFECT OF CALCIUM INFLUX ON PIP2 CLUSTERS IN THE INNER PLASMA MEMBRANE LEAFLET OF INTACT CELLS. **Weixiang Jin**, Arnd Pralle

1020-PLAT 5:00 PM
ELUCIDATING GPCR FUNCTIONAL DEPENDENCE ON PLASMA MEMBRANE COMPOSITION USING GIANT UNILAMELLAR PROTEIN-VESICLES. **Mary Gertrude L. Gutierrez**, Kylee Mansfield, Noah Malmstadt

1021-PLAT 5:15 PM
CONTROLLING GPCR RHODOPSIN FUNCTION BY SMALL, PHYSIOLOGICALLY RELEVANT CHANGES IN BILAYER HYDROPHOBIC THICKNESS. **Olivier Soubias**, Alexander J. Sodt, Walter E. Teague, Kirk G. Hines, Klaus Gawrisch

1022-PLAT 5:30 PM
CHARACTERIZATION OF CEACAM1 AND LIPID RAFT NANOCLUSTERING, ASSOCIATION AND STRUCTURE BY DSTORM AND HOMO-FRET IMAGING. **Amine Driouchi**, Maximilano Giuliani, Scott Gray-Owen, Christopher M. Yip

1023-PLAT 5:45 PM
STRUCTURAL DETERMINANTS OF RAFT PARTITIONING FOR SINGLE-PASS TRANSMEMBRANE PROTEINS. **Joseph H. Lorent**, Barbara B. Diaz-Rohrer, Kandice R. Levental, Ilya Levental

Exhibitor Presentation Molecular Devices

4:30 PM - 6:00 PM, ROOM 513

Pushing the Performance Envelope: Evaluation of the NMDA Receptor Using Automated Electrophysiology and Fast Fluidics

Ligand gated ion channels (LGICs) mediate fast synaptic transmission in the nervous system and are highly attractive drug targets due to the pivotal role they play in many physiological functions. The N-Methyl-D-Aspartate (NMDA) receptor is a LGIC that is activated by glutamate, the primary excitatory neurotransmitter in the nervous system. Functional impairment or over-excitation of the NMDA receptor occurs in a variety of disease states, however efficient screening for compounds that target the NMDA receptor remains elusive.

Over the last decade, automated electrophysiology has become an indispensable tool for analyzing ion channel activities. Here data will be presented evaluating the fluidic performance of automated patch clamp and its impact on measurement of NMDA receptor activity. We examine channel biophysics both in the presence and absence of extracellular Mg^{2+} , calculate the EC_{50} of glutamate and the IC_{50} s of antagonists D-AP5 and Ifenprodil, and explore use-dependent blockage by MK801. We also examine differences between competitive and non-competitive inhibition models. Our studies demonstrate the robust fluidics performance of our automated electrophysiology system and its successful application to high-throughput screens and compound profiling assays targeting LGICs.

Speaker

Jeff Webber, Product Manager, Molecular Devices LLC

Exhibitor Presentation Sutter Instrument

5:30 PM - 7:00 PM, ROOM 505

Scientists Empowering Scientists

Patch clamp electrophysiology has matured from a highly specialized scientific technique to a recognized method used to address a variety of experimental questions. Sutter Instrument introduces a highly flexible, intuitive patch clamp instrumentation and software package that enables the experimenter to quickly set up and perform routine tasks, yet remains highly configurable to meet the demands of the experienced electrophysiologist.

We will demonstrate how the IPA™ Integrated Patch Amplifier and SutterPatch™ software can be used for a variety of commonly performed assays, including the characterization of an ionic current and the recording of synaptic events in tissue slices. We will also highlight how the IPA and SutterPatch software provide easy access and flexibility to perform and fine-tune the most challenging acquisition and analysis scenarios.

Building on the basic pipette pulling tutorials presented at the 2015 user meeting and a mid-year webinar, we will further teach advanced techniques that enable the user to create specialized pipette morphologies for unique applications.

There will be plenty of opportunity for discussion with hosts and speakers from the Sutter Instrument Tech Support Team.

Who should attend?

- Electrophysiologists who use amplifiers, micropipettes and micromanipulators for patch clamp, sharp electrode or extracellular recordings.
- Researchers who perform microinjections, including nuclear transfer, sperm injection and application of substances into cell cultures or intact organisms.

Speakers

Jan Dolzer, Tech Support and Product Development, Sutter Instrument
Gregory Hjelmstad, Tech Support and Product Development, Sutter Instrument

Adair Oesterle, Tech Support Micropipette Fabrication and Microinjection, Sutter Instrument

Awards and National Lecture

8:00 PM - 9:30 PM, CONCOURSE HALL

Reception and Dance

9:30 PM - 12:00 AM, J.W. MARRIOTT - DIAMOND 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, J.W. MARRIOTT - GOLD 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.

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MONDAY POSTER SESSIONS

1:45 PM–3:45 PM, WEST HALL

Below is the list of poster presentations of abstracts submitted by October 1.

The list of late abstracts scheduled for Monday 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 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 – B18	Protein Structure and Conformation II
B19 – B47	Protein Stability, Folding, and Chaperones I
B48 – B72	Protein Assemblies I
B73 – B93	Protein Dynamics and Allostery II
B94 – B122	Membrane Protein Structure and Folding II
B123 – B137	Transcription
B138 – B147	Ribosomes and Translation
B148 – B178	Protein-Nucleic Acid Interaction I
B179 – B207	Membrane Physical Chemistry and Membrane Dynamics
B208 – B226	Membrane Fusion and Non-Bilayer Structures
B227 – B257	Protein-Lipid Interactions I
B258 – B292	Calcium Signaling
B293 – B313	Intracellular Calcium Channels and Calcium Sparks and Waves I
B314 – B335	Cardiac Smooth and Skeletal Muscle Electrophysiology I
B336 – B339	Muscle Regulation
B340 – B369	Voltage-gated K Channels, Mechanisms of Voltage Sensing and Gating II
B370 – B392	TRP Channels I
B393 – B416	Ligand-gated Channels I
B417 – B444	Cardiac Muscle Mechanics and Structure I
B445 – B469	Skeletal Muscle Mechanics, Structure, and Regulation
B470 – B494	Cell Mechanics, Mechanosensing, and Motility II
B495 – B508	Mitochondrial Permeability
B509 – B524	Energy and Light Transducing Complexes
B525 – B530	Genetic Regulatory Systems
B531 – B537	Emerging Techniques and Synthetic Biology
B538 – B555	Molecular and Cellular Neuroscience
B556 – B583	Molecular Dynamics I
B584 – B610	Computational Methods and Bioinformatics I
B611 – B640	Biosensors I
B641 – B661	Biomaterials & Biosurfaces

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 - B18)

1024-Pos BOARD B1
REVEALING ACTIVATION MECHANISM OF ALK2 KINASE MUTATIONS IN FIBRODYSPLASIA OSSIFICANS PROGRESSIVA (FOP). Abdelaziz Alsamarah, Jijun Hao, **Yun Luo**

1025-Pos BOARD B2
A COMPARATIVE STUDY OF GAMMA SUBUNITS OF A.THALIANA AND O.SATIVA. **Bihter Avsar**, Ines Karmous, Ersoy Colak, Zehra Sayers

1026-Pos BOARD B3
STRUCTURAL AND FUNCTIONAL BASIS OF ALTERNATIVE ESCRT-0 PROTEIN COMPLEXES. Shuyan Xiao, Xiaolin Zhao, Wen Xiong, Mary K. Brannon, Kristen Fread, Jeffrey Ellena, John Bushweller, Carla V. Finkielstein, Geoffrey Armstrong, **Daniel G. Capelluto**

1027-Pos BOARD B4
INSIGHTS INTO THE AUTOINHIBITION MECHANISM OF THE TIAM1 GUANINE NUCLEOTIDE EXCHANGE FACTOR. **Zhen Xu**, Lokesh Gakhar, Elizabeth Boehm, Todd Washington, Maria Spies, Ernesto J. Fuentes

1028-Pos BOARD B5
STRUCTURES OF HUMAN PHOSPHOFRUCTOKINASE-1 AND ATOMIC BASIS OF CANCER-ASSOCIATED MUTATIONS. **Bradley Webb**, Farhad Forouhar, Fu-En Szu, Jayaraman Seetharaman, Liang Tong, Diane Barber

1029-Pos BOARD B6
COMPARISON OF THE ENERGETICS OF HISTONE PEPTIDE BINDING AMONG HISTONE READERS. **Suvobrata Chakravarty**, Francisca Essel, Tao Lin

1030-Pos BOARD B7
SIMULATING MTOR HYPERACTIVATING MUTATIONS TO UNDERSTAND FUNCTIONALLY SIGNIFICANT STRUCTURAL REARRANGEMENTS. **Steven Albanese**, Jianing Xu, James Hsieh, John D. Chodera

1031-Pos BOARD B8
PROMISCUITY AND POLYREACTIVITY OF ANTIBODIES AND THEIR BINDING MODES DURING B-CELL DIFFERENTIATION. **Franca Fraternali**, Julie Laffy, Deborah Dunn-Walters

1032-Pos BOARD B9
IMPLICATION OF NATURAL POLYMORPHISM IN HINGE REGION OF HIV-1 PROTEASE ON PROTEIN CONFORMATIONS, LOCAL STRUCTURES AND BACKBONE DYNAMICS. **Zhanglong Liu**, Xi Huang, Lingna Hu, Linh Pham, Katy Poole, Yan Tang, Brian P. Mahon, Wenxing Tang, Kunhua Li, Nathan E. Goldfarb, Ben M. Dunn, Robert McKenna, Gail E. Fanucci

1033-Pos BOARD B10
CATCHING EXCITED STATES IN THE ACT: FUNCTIONAL UNFOLDING IN E. COLI ADENYLATE KINASE. **Jeremy A. Anderson**, Ananya Majumdar, Vincent J. Hilser

1034-Pos BOARD B11
STRUCTURAL INVESTIGATION INTO CALMODULIN'S ROLE IN ACTIVATING BORDETELLA PERTUSSIS ADENYLYL CYCLASE TOXIN CYAA. **Tzvia I. Springer**, Christian Johns, Natosha L. Finley

1035-Pos BOARD B12
TROPONIN STRUCTURE AND EFFECTS OF PHOSPHORYLATION AND MUTATIONS STUDIED BY MOLECULAR DYNAMICS SIMULATIONS. **Juan Eiros Zamora**, Alice Sheehan, Maria Papadaki, Andrew E. Messer, Steven B. Marston, Ian R. Gould

1036-Pos BOARD B13
CALCIUM ION SIGNALING CASCADES THROUGH THE MECHANISM OF MODULATED MUTUALLY INDUCED CONFORMATION IN DOWNSTREAM PROTEINS. **Jacob Ezerski**

1037-Pos BOARD B14
CONFORMATIONAL EFFECTS OF THE C-TERMINAL TAIL ON THE HUMAN NEURONAL CALCIUM SENSOR-1 PROTEIN: AN ATOMISTIC SIMULATION STUDY. **Yuzhen Zhu**, Qingwen Zhang

1038-Pos BOARD B15
NMR STRUCTURAL STUDIES OF THE C-DOMAIN OF TCB2, A CALCIUM BINDING PROTEIN FROM TETRAHYMENA THERMOPHILA. **Adina M. Kilpatrick**, C. Andrew Fowler, Theodore Gurrola, Jerry E. Honts

1039-Pos BOARD B16 EDUCATION TRAVEL AWARDEE
MOLECULAR DYNAMICS STUDY OF DIVALENT ION COORDINATION IN EF HAND PROTEINS. **Caitlin E. Scott**, Amir N. Kucharski Jr., Peter M. Kekenes-Huskey

1040-Pos BOARD B17
STRUCTURE AND STABILITY OF TIP LINK CADHERIN-23 FRAGMENTS INVOLVED IN HEARING AND DEAFNESS. **Avinash Jaiganesh**, Deryanur Kilic, Aniket Patel, Domenic Termine, Florencia Velez-Cortes, Omer Irfan Kufrevioglu, Marcos Sotomayor

1041-Pos BOARD B18
INTRACELLULAR/SURFACE MOONLIGHTING PROTEINS. **Constance Jeffery**, Wangfei Wang

Protein Stability, Folding, and Chaperones I (Boards B19 - B47)

1042-Pos BOARD B19
MODELING PEPTIDE VIBRATIONS LOCAL AND PERTURBATIVE CONTRIBUTIONS. **Timothy A. Keiderling**, Ahmed Lakhani, Yue Wei, Frank Vazquez, Jan Kubelka, Petr Bour

1043-Pos BOARD B20 EDUCATION TRAVEL AWARDEE
AN IN VITRO INVESTIGATION OF GLOBIN FOLDING AND EXPRESSION. **Premila P. Samuel**, William Ou, George N. Phillips Jr., John S. Olson

1044-Pos BOARD B21
LOSS OF PROTEIN STABILITY DUE TO FORMATION OF INTERMOLECULAR DISULFIDE BONDS UNDER THE EFFECT OF OXIDATIVE STRESS: CASE STUDY OF THE RRM2 DOMAIN FROM NEUROPATHOLOGICAL PROTEIN TDP-43. **Sevastyan O. Rabdano**, Ivan S. Podkorytov, Sergei A. Izmailov, Yulia V. Pivovarova, Alexander P. Yakimov, Tairan Yuwen, Adam Groves, Nikolai R. Skrynnikov

1045-Pos BOARD B22
DISULFIDE SELECTIVITY UNDER THE CONTROL OF SECONDARY STRUCTURE IN PROTEIN FOLDING. **Kosuke Toyama**, Masaki Okumura, Shigeru Shimamoto, Yuji Hidaka

1046-Pos BOARD B23
DISULFIDE BRIDGES: BRINGING TOGETHER FRUSTRATED STRUCTURE IN A BIOACTIVE PEPTIDE. **Yi Zhang**, Paramjit Bansal, David Wilson, Klaus Schulten, Norelle Daly, Martin Gruebele

1047-Pos BOARD B24
CHEMICAL ACCELERATION OF DISULFIDE-COUPLED PROTEIN FOLDING. **Yuji Hidaka**, Takeyosi Nakanishi, Shigeru Shimamoto

1048-Pos BOARD B25
WHEN ENZYMES AND GREEN SURFACTANTS MEET. **Jens K. Madsen**, Jørn D. Kaspersen, Kell K. Andersen, Jan S. Pedersen, Daniel E. Otzen

1049-Pos BOARD B26
EXPERIMENTAL MEASUREMENT OF THE THERMODYNAMICS UNDERLYING THE SURFACE-INDUCED STRUCTURAL CHANGES OF NUCLEIC ACIDS AND PROTEINS. **Martin Kurnik**, Netzahualcóyotl Arroyo, Hui Li, Di Kang, Kevin W. Plaxco

1050-Pos BOARD B27

THE ROLE OF HYDRODYNAMIC INTERACTIONS IN THE RATE OF PROTEIN FOLDING. **Mohammadmehdi Ezzatabadipour**, Fabio Zagarra, Margaret Cheung

1051-Pos BOARD B28 EDUCATION TRAVEL AWARDEE

THE COMBINED EFFECT OF MACROMOLECULAR CROWDING AND CHEMICAL INTERFERENCE ON THE DYNAMICS OF APOAZURIN FOLDING. **Fabio C. Zagarra**, Mohammadmehdi Ezzatabadipour, Dirar Homouz, Margaret S. Cheung

1052-Pos BOARD B29

THERMAL STABILITY OF HUMAN SERUM ALBUMIN: THE DEPENDENCE ON THE PROTEIN CONCENTRATION, SCAN RATE, AND THE PRESENCE OF FATTY ACIDS AND LOW-WEIGHT MOLECULAR LIGANDS. Dominik Belej, Erik Sedlak, Gabriela Fabriciova, **Daniel Jancura**

1053-Pos BOARD B30

MODULATION OF THE KINETIC STABILITY OF IMMUNOGLOBULIN G BY SOLVENT ADDITIVES. **Erik Sedlak**, Jonas V. Schaefer, Andreas Pluckthun

1054-Pos BOARD B31

GLUCOSE AND TEMPERATURE EFFECT ON HUMAN SERUM ALBUMIN STRUCTURE. **Minoo Shahani**

1055-Pos BOARD B32

PROTECTIVE EFFECT OF PYRUVATE AGAINST RADIATION-INDUCED DAMAGE IN COLLAGENIZED TISSUES. **Yuri V. Griko**, Xiaoli Yan

1056-Pos BOARD B33

THE EFFECT OF HOFMEISTER IONS ON THE FOLDING PATHWAY OF CYTOCHROME C DURING THERMAL OR CHEMICAL DENATURIZATION. **Eric S. Peterson**, Sean J. Steinke, Collin A. O'Leary, Mikayla J. Freese

1057-Pos BOARD B34

THERMODYNAMIC FINGERPRINTS OF THE HOFMEISTER SERIES - PROTEIN INTERACTIONS WITH IONIC LIQUIDS. **Michael Senske**, Diana Constantinescu Aruxandei, Martina Havenith, Hermann Weingärtner, Christian Herrmann, Simon Ebbinghaus

1058-Pos BOARD B35

THERMODYNAMIC MECHANISM OF PROTEIN STABILIZATION: CROWDERS VS. OSMOLYTES. **Liel Sapir**, Daniel Harries

1059-Pos BOARD B36

HIGH MOLECULAR MASS CROWDERS CHANGE THE FOLDING PATHWAY OF D-GLUCOSE/D-GALACTOSE-BINDING PROTEIN. **Alexander V. Fonin**, Serge A. Silonov, Asia K. Sitdikova, Irina M. Kuznetsova, Konstantin K. Turoverov

1060-Pos BOARD B37

PROBING THE THERMAL STABILITY OF LYSOZYME IN CROWDED ENVIRONMENTS: TRACKING LINDEMANN CRITERION. **Marina Katava**, Guillaume Stirnemann, Simone Capaccioli, Alessandro Paciaroni, Fabio Sterpone

1061-Pos BOARD B38

CROWDING AND PROTEIN DIMERIZATION. **Alex J. Guseman**, Stephen T. Lanier, Gary J. Pielak

1062-Pos BOARD B39

PROTEIN-PROTEIN INTERACTIONS AND SECONDARY STRUCTURE AFFECT HELIX STABILITY IN CROWDED ENVIRONMENTS. **Alan van Giessen**, Bryanne Macdonald, Pho Bui

1063-Pos BOARD B40

INVESTIGATION ON STRUCTURAL FEATURES AND ANTIAGGREGATION PROPERTIES OF CHAPERONINS AND CHAPERON LIKE MOLECULES. Maria Rosalia Mangione, Dario Spigolon, Rosa Passantino, Rita Carrotta, Fabio Librizzi, Caterina Ricci, Maria Grazia Ortore, Annalisa Vilasi, Vincenzo Martorana, Claudia Marino, Francesco Cappello, Pier Luigi San Biagio, Donatella Bulone, **Silvia Vilasi**

1064-Pos BOARD B41

THE UNIQUE ROLES OF UNC-45 DOMAINS IN CHAPERONING MYOSIN FOLDING AND MODULATING MYOSIN POWERSTROKE. Paul Nicholls, Paul Bujalowski, **Andres Oberhauser**

1065-Pos BOARD B42

REGULATION AND QUALITY CONTROL OF ADIPONECTIN ASSEMBLY BY ENDOPLASMIC RETICULUM CHAPERONE ERP44. **Lutz Hampe**, Alok Kumar Mitra, Mazdak Radjainia

1066-Pos BOARD B43

SIGNATURE NETWORKS UNDERLYING UNFOLDED INTERMEDIATE OF AN OBLIGATE GROEL SUBSTRATE. **Lipi Thukral**

1067-Pos BOARD B44

STUDIES ON DOMAIN SPECIFIC AGGREGATION BEHAVIOR OF HUNTINGTIN EXON1. **Nitin K. Pandey**, Jose Mario Isas, Ralf Langen

1068-Pos BOARD B45

CONTRASTING ROLES OF ASPARAGINE AND GLUTAMINE IN THE AGGREGATION OF PRION-LIKE PROTEINS. **Yuan Zhang**, Viet Hoang Man, Christopher Roland, Celeste Sagui

1069-Pos BOARD B46

STRUCTURAL DETERMINANTS OF POLYGLUTAMINE PROTOFIBRILS AND CRYSTALLITES. **Viet H. Man**, Christopher Roland, Celeste Sagui

1070-Pos BOARD B47

FOLDING PATHWAYS OF EVOLUTIONARILY RELATED PROTEINS PROBED BY HYDROGEN EXCHANGE MASS SPECTROMETRY. **Eric Bolin**, Susan Marqusee, Shion Lim

Protein Assemblies I (Boards B48 - B72)**1071-Pos BOARD B48**

DETERMINING UNITARY WATER PERMEABILITY OF MEMBRANE PROTEINS RECONSTITUTED INTO GIANT UNILAMELLAR VESICLES. **Danila Boytsov**, Christof Hanneschlaeger, Andreas Horner, Peter Pohl

1072-Pos BOARD B49 EDUCATION TRAVEL AWARDEE

REGULATION OF ALIX DURING EXOCYTIC VESICLE RELEASE AND ASSEMBLY OF ESCRT PROTEINS ON THE PLASMA MEMBRANE. **Pei-I Ku**, Saveez Saffarian

1073-Pos BOARD B50

FUNCTIONAL COOPERATIVITY AMONG THE SUBUNITS OF THE HOMO-TETRAMERIC AQUAGLYCEROPROTEIN GLPF. **Andreas Horner**, Danila Boytsov, Christine Siligan, Johannes Preiner, Peter Pohl

1074-Pos BOARD B51

SINGLE-MOLECULE STUDY OF THE OLIGOMERIC STATES OF THE M2 MUSCARINIC RECEPTOR, THE GI1 PROTEIN AND THE M2-GI1 COMPLEX. **Dennis D. Fernandes**, Rabindra V. Shivnaraine, Yuchong Li, Ji Huiqiao, Zhenfu Zhang, Brendan Kelly, Nellie Han, Fei Huang, Krishana S. Sankar, Jonathon V. Rocheleau, James W. Wells, Claudiu C. Gradinaru

1075-Pos BOARD B52

LIPID MEDIATED OLIGOMERIC ASSEMBLY OF THE SEROTONIN TRANSPORTER AT THE PLASMA MEMBRANE. **Andreas Anderluh**, Tina Hofmaier, Enrico Klotzsch, Oliver Kudlacek, Thomas Stockner, Harald H. Sitte, Gerhard J. Schütz

1076-Pos BOARD B53

PROBING THE INTERMOLECULAR INTERFACES BETWEEN CLAUDIN PROTOMERS. **Jun Zhao**, Evan Krystofiak, Cristina Fenollar Ferrer, Angela Ballesteros Morcillo, Christina van Itallie, Runjia Cui, James Anderson, Lucy Forrest, Bechara Kachar

- 1077-Pos BOARD B54**
MITOCHONDRIAL RECRUITMENT OF DRP1 BY MFF IS OPPOSED BY THE VARIABLE DOMAIN. **Ryan W. Clinton**, Rajesh Ramachandran, Jason A. Mears
- 1078-Pos BOARD B55**
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- 1080-Pos BOARD B57**
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- 1081-Pos BOARD B58**
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- 1082-Pos BOARD B59**
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- 1083-Pos BOARD B60**
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- 1084-Pos BOARD B61 CPOW TRAVEL AWARDEE**
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- 1085-Pos BOARD B62**
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- 1086-Pos BOARD B63**
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- 1087-Pos BOARD B64**
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- 1088-Pos BOARD B65**
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- 1089-Pos BOARD B66**
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- 1090-Pos BOARD B67**
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- 1091-Pos BOARD B68**
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- 1092-Pos BOARD B69**
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- 1093-Pos BOARD B70**
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- 1094-Pos BOARD B71**
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- 1095-Pos BOARD B72 INTERNATIONAL TRAVEL AWARDEE**
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- 1096-Pos BOARD B73**
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- 1097-Pos BOARD B74 EDUCATION TRAVEL AWARDEE**
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- 1098-Pos BOARD B75**
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- 1099-Pos BOARD B76**
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- 1100-Pos BOARD B77**
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- 1101-Pos BOARD B78**
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- 1102-Pos BOARD B79**
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- 1103-Pos BOARD B80**
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1104-Pos BOARD B81

THE EFFECT OF THE PROTEIN DYNAMICAL TRANSITION ON INTRAMOLECULAR VIBRATIONS. **Mengyang Xu**, Katherine A. Niessen, Yanting Deng, Nigel S. Michki, Edward H. Snell, Andrea G. Markelz

1105-Pos BOARD B82

REALTIME SINGLE MOLECULAR MOTION ANALYSIS OF NICOTINIC ACETYLCHOLINE RECEPTOR ALPHA 7 BY DIFFRACTED X-RAY TRACKING METHOD. **Tai Kubo**, Tomoyuki Baba, Keigo Ikezaki, Hiroshi Sekiguchi, Yuri Nishino, Atsuo Miyazawa, Yuji C. Sasaki

1106-Pos BOARD B83

STRUCTURAL DYNAMICS OF HSP90 RESOLVED BY A NOVEL MULTI-PAIR FRET APPROACH. **Bjoern Hellenkamp**, Philipp Wortmann, Florian Kandzia, Martin Zacharias, Thorsten Hugel

1107-Pos BOARD B84

REVEALING A HETERODIMERIC INTERFACE BETWEEN THE MEMBERS OF TWO UNRELATED FLUORESCENT PROTEIN LINEAGES. **Gary CH Mo**, Jin Zhang

1108-Pos BOARD B85

DYNAMIC DNA BINDING LICENSES A EUKARYOTIC REPAIR COMPLEX TO BYPASS PROTEIN ROADBLOCKS IN SEARCH OF DNA LESIONS. **Maxwell W. Brown**, Yoori Kim, Gregory M. Williams, John D. Huck, Jennifer A. Surtees, Ilya J. Finkelstein

1109-Pos BOARD B86 INTERNATIONAL TRAVEL AWARDEE

X-RAY OBSERVATION OF NOVEL NUCLEATION FACTOR IN PROTEIN SUPERSATURATED SOLUTION. **Yufuku Matsushita**, Hiroshi Sekiguchi, Noboru Ohta, Keigo Ikezaki, Yuji Goto, Yuji C. Sasaki

1110-Pos BOARD B87

BRIDGING IN VITRO WITH IN VIVO ENZYMOLOGY. Hasan Tükenmez, Helge M. Magnussen, Per Rogne, Anders Byström, **Magnus Wolf-Watz**

1111-Pos BOARD B88

DETERMINATION OF THERMODYNAMIC AND KINETIC PARAMETERS FOR CO MIGRATION WITHIN BACTERIAL FLAVOHEMOGLOBINS OF RALSTONIA EUTROPHA AND STAPHYLOCOCCUS AUREUS. **David Butcher**, Myriam Moussaoui, Laura Baciou, Jaroslava Mikovska

1112-Pos BOARD B89

EFFECTOR-LINKED HIGH-FREQUENCY THERMAL FLUCTUATIONS OF GLOBIN (CHANGES IN PROTEIN DYNAMICS) REGULATE THE OXYGEN-AFFINITY AND COOPERATIVITY OF HEMOGLOBIN. **Takashi Yonetani**, Kenji Kanaori

1113-Pos BOARD B90

ALLOSTERIC PATHWAYS IN THE MULTI-DOMAIN THYROID HORMONE RECEPTOR. **Vandna Gahlot**, Balananda D. Kumar Putcha, Quentin Johnson, Tongye Shen, Elias Fernandez

1114-Pos BOARD B91

CATALYZING OF IMMUNE PEPTIDE/MHC CLASS II COMPLEX WITH DM MOLECULE OBSERVED BY DIFFRACTED X-RAY TRACKING (DXT). **Toshihiro Miyabe**, Yuhuku Mastushita, Yuko Kozono, Hiroshi Sekiguchi, Keigo Ikezaki, Haruo Kozono, Yuji C. Sasaki

1115-Pos BOARD B92

PEPTIDE AND PROTON DRIVEN ALLOSTERIC CLAMPS CATALYZE ANTHRAX TOXIN TRANSLOCATION ACROSS MEMBRANES. **Debasis Das**

1116-Pos BOARD B93

INVESTIGATION AND COMPARISON OF THE FLEXIBILITY AND DYNAMICS OF TC1/MARINER TRANSPOSASES. **Diana Joy**, Christopher M. Singer, Daniel P. Godfrey, Donald J. Jacobs, Irina V. Nesmelova

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UNCOUPLING PROTEINS OF THE CENTRAL NERVOUS SYSTEM: COMPARATIVE BIOPHYSICAL STUDIES. **Masoud Jelokhani-Niaraki**, Tuan Hoang, Marina V. Ivanova, Matthew D. Smith

1118-Pos BOARD B95

HETERODIMERIZATION OF WILD-TYPE AND MUTANT FIBROBLAST GROWTH FACTOR RECEPTORS IN CELL-DERIVED VESICLES. **Nuala Del Piccolo**, Sarvenaz Sarabipour, Kalina Hristova

1119-Pos BOARD B96

DIMERIC E. COLI YIDC FORMS A TRANSLOCATION PORE IN THE MEMBRANE. **Lukas Winter**, Andreas Vogt, Christine Siligan, Denis Knyazev, Roland Kuttner, Hans-Georg Koch, Peter Pohl

1120-Pos BOARD B97

STRUCTURAL DYNAMICS OF THE LIGAND-RECEPTOR INTERACTION OF THE NEUROPEPTIDE Y RECEPTOR TYPE 2. **Daniel Huster**, Anette Kaiser, Julian Kahr, Tristan Zellmann, Holger A. Scheidt, Rene Meier, Jens Meiler, Annette G. Beck-Sicking, Peter Schmidt

1121-Pos BOARD B98 INTERNATIONAL TRAVEL AWARDEE

MODULAR ASSEMBLY OF SYNTHETIC PROTEINS THAT SPAN THE PLASMA MEMBRANE IN MAMMALIAN CELLS. **Anam Qudrat**, Kevin Truong

1122-Pos BOARD B99

OPRG FACILITATES THE TRANSPORT OF SMALL AMINO ACIDS ACROSS THE OUTER MEMBRANE OF PSEUDOMONAS AERUGINOSA. **Patrick Seelheim**, Iga Kucharska, Lukas K. Tamm

1123-Pos BOARD B100

STRIPPING THE CLC-EC1 DIMERIZATION INTERFACE: AN INVESTIGATION INTO THE ROLE OF VAN DER WAALS INTERACTIONS IN MEMBRANE PROTEIN ASSEMBLY. Kacey Mersch, Venkatramanan Krishnamani, Marley Brimberry, John Tian, **Janice L. Robertson**

1124-Pos BOARD B101

HETERO-OLIGOMERIC COMPLEXES FORMED BY THE HOMO-OLIGOMERIC TRANSMEMBRANE DOMAINS OF HIV-1 VPU AND HUMAN TETHERIN. **Gregory Cole**, Simon Sharpe

1125-Pos BOARD B102

HETERODIMERIZATION OF NEUROFILIN-1 TRANSMEMBRANE HELICES AND PLEXIN SIGNALING. **Susmita Borthakur**, Liqun Zhang, Matthias Buck

1126-Pos BOARD B103

INVERSION OF SIGNAL SEQUENCE TOPOLOGY DURING MEMBRANE INTEGRATION. **Connie Wang**, Shuai Wang, Michiel Niesen, Shu-ou Shan, Thomas F. Miller III

1127-Pos BOARD B104

THE ATLASTIN C-TERMINAL TAIL IS AN AMPHIPATHIC HELIX THAT PERTURBS THE BILAYER STRUCTURE DURING ENDOPLASMIC RETICULUM HOMOTYPIC FUSION. **Joseph E. Faust**, Tanvi Desai, Avani Verma, Idil Ulengin, Tzu-Lin Sun, Tyler J. Moss, Miguel A. Betancourt-Solis, Huey W. Huang, Tina Lee, James A. McNew

1128-Pos BOARD B105

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1129-Pos BOARD B106

CONNECTING PIE-FCCS MEASUREMENTS TO DIMERIZATION AFFINITY TO RESOLVE THE ROLE OF GPCR DIMERIZATION IN LIVE CELLS. **Megan Kaliszewski**

1130-Pos BOARD B107
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1131-Pos BOARD B108
INVESTIGATING THE ROLE OF TRANSMEMBRANE DOMAIN CYSTEINE RESIDUES IN THE ORGANIZATION OF TNF RECEPTORS. **Tiffany L. Senkow**, Andrew K. Lewis, Jonathan N. Sachs

1132-Pos BOARD B109
THE LIPOPROTEIN BAMB FACILITATES FOLDING AND INSERTION OF OUTER MEMBRANE PROTEIN A (OMPA) INTO LIPID MEMBRANES DEPENDING ON BILAYER THICKNESS. Lisa Gerlach, **Jörg H. Kleinschmidt**

1133-Pos BOARD B110
DETERMINATION OF THE INTERACTION OF γ -SECRETASE WITH ITS β CTF SUBSTRATE. **Ayse Julius**

1134-Pos BOARD B111
MEASURING LARGE MEMBRANE PROTEIN DIMERIZATION IN LIPID BILAYERS BY FORSTER RESONANCE ENERGY TRANSFER. **Venkatramanan Krishnamani**, Kacey Mersch, Rahul Chadda, Ankita Chadda, Janice L. Robertson

1135-Pos BOARD B112
PROBING STRUCTURE AND DYNAMICS OF TRANSMEMBRANE ALPHA HELICES OF THE S21 PINHOLIN PROTEIN USING ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY. **Daniel L. Drew**

1136-Pos BOARD B113
COMPLEX FOLDING PATHWAYS OF BACTERIORHODOPSIN REVEALED BY 1- μ S-RESOLUTION FORCE SPECTROSCOPY. **Matthew G. W. Siewny**, Hao Yu, Devin T. Edwards, Aric W. Sanders, Thomas T. Perkins

1137-Pos BOARD B114
NEUTRON SCATTERING REVEALS PROTEIN FLUCTUATIONS IN GPCR ACTIVATION. **Suchithranga M. D. C. Perera**, Utsab Shrestha, Debsindhu Bhowmik, Udeep Chawla, Andrey V. Struts, Xiang-qiang Chu, Michael F. Brown

1138-Pos BOARD B115
CONFORMATIONAL CHANGES OF THE MULTIDRUG TRANSPORTER P-GLYCOPROTEIN IN SOLUTION AND LIPID DISCS. Leo Mok, Maria-Elena Zoghbi, Douglas J. Swartz, Anukriti Singh, Greg Fendley, Guillermo A. Altenberg, **Ina Urbatsch**

1139-Pos BOARD B116
INSIGHTS INTO THE STABILITY OF GPCRS IN DETERGENT MICELLES. **Sangbae Lee**, Supriyo Bhattacharya, Allen Mao, Reinhard Grisshammer, Christopher Tate, Nagarajan Vaidehi

1140-Pos BOARD B117
MONITORING GPCR CONFORMATIONAL CHANGES DURING AGONIST RELEASE IN REAL-TIME: EVIDENCE THAT TRANSMEMBRANE HELIX 6 (TM6) MOVEMENT IN RHODOPSIN LAGS BEHIND RETINAL RELEASE. **Christopher T. Schafer**, David L. Farrens

1141-Pos BOARD B118
RETINAL CHROMOPHORE STRUCTURE IN META-II RHODOPSIN REVEALED BY SOLID-STATE 2 H NMR AND MOLECULAR MODELING. **Andrey V. Struts**, Xiaolin Xu, Trivikram R. Molugu, Michael C. Pitman, Samira Faylough, Charitha Guruge, Carolina Nascimento, Nasri Nesnas, Michael F. Brown

1142-Pos BOARD B119 INTERNATIONAL TRAVEL AWARDEE
UNDERSTANDING STRUCTURAL AND FUNCTIONAL STABILITY OF TWO RHOMBOID PROTEASES: HIGLPG AND PSAARA. **Rashmi Panigrahi**, Elena Arutyunova, Pankaj Panwar, Katharina Gimpl, Sandro Keller, Joanne Lemieux

1143-Pos BOARD B120 EDUCATION TRAVEL AWARDEE
INFLUENCE OF FAMILIAL PARKINSON'S DISEASE MUTATIONS ON MITOCHONDRIAL LOCALIZATION AND SECONDARY STRUCTURE OF PINK1. **Stephanie Irwin**, Rashmi Panigrahi, Elena Arutyunova, Nicolas Touret, M. Joanne Lemieux

1144-Pos BOARD B121
STRUCTURAL BASIS FOR KCNQ1 LONG-QT SYNDROME DISEASE CAUSING MUTATIONS. **Keenan C. Taylor**, Hui Huang, Brett Kroncke, Charles Sanders

1145-Pos BOARD B122
ENERGY COUPLING MECHANISMS AND LIPID-MEDIATED SUBUNIT INTERACTIONS OF THE MITOCHONDRIAL PROTEIN TRANSPORT MACHINERY. **Nathan N. Alder**, Ketan Malhotra, Murugappan Sathappa, Shivangi Nangia, Tyler Daman, Dejana Mokranjac, Eric May

Transcription (Boards B123 - B137)

1146-Pos BOARD B123
PAUSING IN ESCHERICHIA COLI TRANSCRIPTION INITIATION. **Eitan Lerner**, Sangyoon Chung, Benjamin Allen, Wang Shuang, Lee J. Jookyung, Lu Winson Shijia, Grimaud Wilson Logan, Antonino Ingargiola, Yazan Alhadid, Sergei Borukhov, Terence Strick, Dylan J. Taatjes, Shimon Weiss

1147-Pos BOARD B124
WALK AND CHECK ALONG A VIRAL RNA POLYMERASE TRANSCRIPTION ELONGATION PATH. **Jin Yu**

1148-Pos BOARD B125
TRANSCRIPTION FACTOR CLUSTERING IN LIVE YEAST CELLS. **Adam Wollman**, Sviatlana Shashkova, Erik Hedlund, Stefan Hohmann, Mark C. Leake

1149-Pos BOARD B126
E.COLI RNA POLYMERASE ACTIVITY UNDER CROWDING. **SangYoon Chung**, Eitan Lerner, Yan Jin, Yazan Alhadid, Soohong Kim, Charles M. Knobler, William M. Gelbart, Shimon Weiss

1150-Pos BOARD B127
LIVE CELL SINGLE MOLECULE BINDING OF TRANSCRIPTION FACTORS IN LIVING CELLS. CHARACTERIZING P53 LATENCY. Emanuela Jacchetti, Paolo Rainone, Tiziana Daniele, Tacchetti Carlo, **Davide Mazza**

1151-Pos BOARD B128
NANOSCALE PROBING OF THE P53 TUMOR SUPPRESSION TRANSCRIPTION MACHINERY. Robert A. Coleman, Sameer K. Singh, Chunte S. Peng, Michael Cianfrocco, Zhengjian Zhang, William Rice, Edward Eng, **Wei-Li Liu**

1152-Pos BOARD B129
RAPID LONG RANGE SLIDING OF RNA DEPENDENT RNA POLYMERASES ON VIRAL GENOME TEMPLATES VISUALIZED BY PHOTOACTIVATABLE LOCALIZATION MICROSCOPY. **Xiaolin Tang**, Mourad Bendjennat, Saveez Saffarian

1153-Pos BOARD B130
PPI RELEASE FOLLOWED BY DNA TRANSLOCATION STUDIED FROM ATOMISTIC SIMULATIONS OF T7 RNA POLYMERASE TRANSCRIPTION. **Chao E**, Lin-Tai Da, Baogen Duan, Shaogui Wu, Jin Yu

1154-Pos BOARD B131
REGULATION OF THE BDNF MRNA 3' UTR ON THE RNA LEVEL. **Brett A. DeMarco**, Mihaela-Rita Mihailescu, Snezana Stefanovic

1155-Pos BOARD B132
SUBNUCLEAR SPATIAL STRUCTURING OF CHROMATIN AND POLYMERASE II DURING TRANSCRIPTION ACTIVATION OF THE ZEBRAFISH ZYGOTIC GENOME. **Lennart Hilbert**, Vasily Ziburdaev, Nadine Vastenhouw

1156-Pos BOARD B133
KINETICS AND MECHANISM OF FORMATION AND STABILIZATION OF THE RNA POLYMERASE-PROMOTER OPEN COMPLEX. **Munish Chhabra**, Raashi Sreenivasan, Mikaela Poulos, Emily Ruff, Irina Artsimovitch, Tom Record

1157-Pos BOARD B134
LARGE EFFECTS OF DISCRIMINATOR EXCHANGES ON THE RNA POLYMERASE-PROMOTER OPEN COMPLEX STRUCTURE, LIFETIME AND TRANSCRIPTION INITIATION PATTERNS. **Kate Henderson**, Lindsey Felth, Si Wang, Cristen Molzahn, Munish Chhabra, Mikaela Poulos, Emily Ruff, Lauren Bieter, M. Thomas Record Jr

1158-Pos BOARD B135
EFFECT OF PRESSURE AND TEMPERATURE ON TRANSCRIPTION INITIATION IN BACTERIAL CELLS. **Khanh Nguyen**

1159-Pos BOARD B136
MEASURING THE DYNAMICS OF TFIIF ON RNA POLYMERASE II BY SMFRET. **Wei-hau Chang**

1160-Pos BOARD B137
EFFECT OF FIS ON TRANSCRIPTION-COUPLED DNA SUPERCOILING IN E. COLI. **Samantha Dages**, Xiaoduo Zhi, Fenfei Leng

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1162-Pos BOARD B139
SIMULATING MRNA-TRNA TRANSLOCATION THROUGH THE RIBOSOME. **Kien Nguyen**, Paul C. Whitford

1163-Pos BOARD B140
ERMBL TRANSLATION ON THE RIBOSOME IN THE PRESENCE OF ERYTHROMYCIN IS STALLED BY INHIBITION OF PEPTIDE BOND FORMATION. **Lars V. Bock**, Stefan Arenz, Daniel N. Wilson, Helmut Grubmüller, Andrea C. Vaiana

1164-Pos BOARD B141
PROGRAMMED -1 FRAMESHIFT OF A RIBOSOME: NON-MONOTONIC VARIATION OF FRAMESHIFT EFFICIENCY WITH INCREASING STIFFNESS OF MRNA SECONDARY STRUCTURE. Bhavya Mishra, **Debashish Chowdhury**

1165-Pos BOARD B142
CORRELATED MOVEMENT OF TRNA AND THE RIBOSOME DURING ELONGATION. **Huan Yang**, Paul Charles Whitford

1166-Pos BOARD B143
IDENTIFYING EXPERIMENTAL MEASURES OF INTERSUBUNIT ROTATION IN THE RIBOSOME. **Mariana Levi**, Kien Nguyen, Liah Dukaye, Paul Charles Whitford

1167-Pos BOARD B144
COAXING A VIRAL RNA OUT OF ITS SHELL: HOW DOES A VIRAL RNA GENOME INITIATE CONTACT WITH ITS HOST? **Richard Sportsman**, Christian Beren, Benjamin Kartub, Rees Garmann, William M. Gelbart, Charles M. Knobler

1168-Pos BOARD B145 EDUCATION TRAVEL AWARDEE
NASCENT PROTEINS INTERACT WITH KEY REGIONS OF THE OUTER SURFACE OF THE RIBOSOME. **Andrew M. Fuchs**

1169-Pos BOARD B146
UNDERSTANDING THE EFFECT OF POST TRANSCRIPTIONAL MODIFICATIONS IN THE ANTICODON STEM LOOP OF E.COLI TRNA ARGININE. **Sweta Vangaveti**, Srivathsan Ranganathan, Kathryn L. Sarachan, Paul F. Agris, Alan Chen, William Cantara

1170-Pos BOARD B147
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1171-Pos BOARD B148
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1172-Pos BOARD B149
CATALYTIC MECHANISM OF THE INO80 CHROMATIN REMODELER ACTING ON THE NUCLEOSOME. **Marianne Schwarz**, Jens Michaelis, Karl-Peter Hopfner

1173-Pos BOARD B150 EDUCATION TRAVEL AWARDEE
HU PROTEIN AND DNA SUPERCOILING DRAMATICALLY ENHANCE LAC-REPRESSOR-MEDIATED DNA LOOPING. **Yan Yan**, Fenfei Leng, David D. Dunlap, Laura Finzi

1174-Pos BOARD B151
EXPLORING THE MECHANICS AND DYNAMICS OF GENE SILENCING PROTEINS. **Haowei Wang**, William Wiley Navarre, Joshua N. Milstein

1175-Pos BOARD B152
MOLECULAR SELF-TITRATION AS A MECHANISM OF GENE REGULATION. **Gregory M.K. Poon**, Suela Khani, Dominique Curtis Stephens

1176-Pos BOARD B153
DNA-BINDING DYNAMICS OF GLUCOCORTICOID RECEPTOR REVEALED BY PARTICLE IMAGE CORRELATION SPECTROSCOPY. **Veer Keizer**, Rolf Harkes, Thomas Schmidt, Marcel Schaaf

1177-Pos BOARD B154
AUTONOMOUS SENSITIVITY TO EPIGENETICALLY MODIFIED DNA IS ENCODABLE IN A STRUCTURALLY CONSERVED DNA-BINDING DOMAIN. **Dominique C. Stephens**, Gregory M. K. Poon

1178-Pos BOARD B155
INTEGRATIVE MODELING OF THE ISWI CHROMATIN REMODELING ENZYME FROM CROSS-LINKING/MASS SPECTROMETRY AND SAXS DATA. **Christina EM Schindler**, Nadine Harrer, Jan Lipfert, Felix Müller-Planitz, Martin Zacharias

1179-Pos BOARD B156
QUANTITATIVE EXPERIMENTAL ANALYSIS OF THE INFLUENCE OF QUASI-SPECIFIC SITES ON KINETICS OF DNA SCANNING BY THE ZINC-FINGER PROTEIN EGR-1. **Catherine A. Kemme**, Alexandre Esadze, Junji Iwahara

1180-Pos BOARD B157
SPATIAL DYNAMICS OF SIRT1 DICTATE METABOLIC TRANSITIONS IN THE CELL NUCLEUS. **Suman Ranjit**, Lorena Aguilar-Arnal, Chiara Stringari, Paolo Sassone-Corsi, Enrico Gratton

1181-Pos BOARD B158
EXAMINING TALE PROTEIN BINDING KINETICS AND SITE COMPETITION USING SINGLE MOLECULE IMAGING. **Max Kushner**, Alexander Van Slyke, Fabio Rinaldi, Avtar Singh, John Lis, Adam Bogdanove, Warren Zipfel

1182-Pos BOARD B159
A MOLECULE-SCALE VIEW OF THE STRUCTURE AND SPECIFICITY OF THE RNA-GUIDED ENDONUCLEASE CAS9. **Eric A. Josephs**, D. Dewran Kocak, Christopher J. Fitzgibbon, Joshua McMenemy, Charles A. Gersbach, Piotr E. Marszalek

1183-Pos BOARD B160
DNA UNWINDING BY CRISPR-CAS9 STUDIED USING SITE-DIRECTED SPIN LABELING. **Narin S. Tangprasertchai**, Carolina Vazquez Reyes, Xiaojun Zhang, Peter Z. Qin

- 1184-Pos BOARD B161**
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- 1185-Pos BOARD B162**
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- 1186-Pos BOARD B163**
DIRECT OBSERVATION OF DNA OVERWINDING BY REVERSE GYRASE. **Taisaku Ogawa**, Katsunori Yogo, Shou Furuike, Kazuo Sutoh, Akihiko Kikuchi, Kazuhiko Kinosita, Jr.
- 1187-Pos BOARD B164**
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- 1188-Pos BOARD B165**
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- 1189-Pos BOARD B166**
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- 1190-Pos BOARD B167**
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- 1191-Pos BOARD B168**
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- 1192-Pos BOARD B169**
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- 1193-Pos BOARD B170**
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- 1194-Pos BOARD B171**
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- 1195-Pos BOARD B172**
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- 1196-Pos BOARD B173**
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- 1199-Pos BOARD B176**
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- 1200-Pos BOARD B177**
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- 1204-Pos BOARD B181**
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- 1205-Pos BOARD B182**
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- 1206-Pos BOARD B183**
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- 1207-Pos BOARD B184**
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- 1208-Pos BOARD B185**
THE EFFECT OF PROTEINS AND LIPIDS ON MEMBRANE STIFFNESS. Philip W. Fowler, Anna Duncan, Jean Helie, Matthieu Chavent, Heidi Koldsø, **Mark S.P. Sansom**
- 1209-Pos BOARD B186**
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- 1210-Pos BOARD B187**
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- 1211-Pos BOARD B188**
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1212-Pos BOARD B189
DYNAMICS OF MEMBRANE TUBES FORMED BY I-BARS. Younes F. Baroji, Andreas Rørvig-Lund, S. Nader S. Reihani, Szabolcs Semsey, **Poul M. Bendix**

1213-Pos BOARD B190
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1214-Pos BOARD B191
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1215-Pos BOARD B192
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1216-Pos BOARD B193
BIPOLAR NANOSECOND PULSES MITIGATE MEMBRANE NANOPORATION. **Erick K. Moen**, Bennett L. Ibey, Hope T. Beier, Andrea M. Armani

1217-Pos BOARD B194
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1218-Pos BOARD B195
BURIED CHARGES AND THEIR EFFECT ON ION CHANNEL SELECTIVITY. ANALYTICAL SOLUTIONS, NUMERICAL CALCULATIONS AND MD SIMULATIONS. **María Queralt-Martín**, Antonio Alcaraz, Marcel Aguilera-Arzo, Vicente M. Aguilera

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STRUCTURAL DETERMINANTS OF THE IF-OF TRANSITION IN HUMAN GLUCOSE TRANSPORTER GLUT1. **Mrinal Shekhar**, Javier Baylon, Emad Tajkhorshid

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CHOLESTEROL INFLUENCE ON THE INTERACTION OF CELL PENETRATING PEPTIDES (CPPS) WITH MODEL MEMBRANES. **Viviana E. Silva**, Fanny Guzmán, Patricio Sotomayor, Luis F. Aguilar

1222-Pos BOARD B199 INTERNATIONAL TRAVEL AWARDEE
UNRAVELING THE OUTER MEMBRANE TRANSLOCATION MECHANISM OF A PROTEIN ANTIBIOTIC USING SINGLE-MOLECULE MICROBIOLOGY AND COMPUTATIONAL BIOPHYSICS. **Patrice Rassam**, Kathleen R. Long, David J. Williams, Matthieu Chavent, Anna Duncan, Mark Sansom, Colin Kleanthous, Christoph G. Baumann

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ANTIMICROBIAL PEPTIDE IMPACTS THE LATERAL DIFFUSION AND BENDING RIGIDITY OF PHOSPHOLIPID MEMBRANE. **Veerendrak K. Sharma**, E Mamontov, D. B. Anunciado, M. Ohl, H. O'Neill, V. S. Urban

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SOLID STATE NMR INVESTIGATIONS OF LIPID BILAYERS IN INTERACTION WITH AMPHIPHILIC TRIBLOCK COPOLYMERS. **Ruth Bärenwald**, Anja Achilles, Mark Jbeily, Jörg Kressler, Kay Saalwächter

1225-Pos BOARD B202
INTERACTION OF POLOXAMERS WITH LIPID BILAYER: MOLECULAR DYNAMICS SIMULATIONS USING UNITED ATOM AND COARSE-GRAINED FORCE FIELDS. **Upendra Adhikari**, Ardeshir Goliaei, Max L. Berkowitz

1226-Pos BOARD B203
INVESTIGATION OF ENCAPSULATED LIPOSOMAL ANTITUBERCULOTICS AND EFFECTS ON IN VITRO MODEL SYSTEMS. **Nikoletta Kosa**, Barnabas Bocskai-Antal, Kata Horváti, Szilvia Bosze, Levente Herenyi, Istvan Voszka

1227-Pos BOARD B204
A COMPUTATIONAL AND EXPERIMENTAL STUDY OF CATIONIC-ANIONIC LIPID INTERACTIONS: XTC2-DSPTS AS A CASE STUDY. **Mohsen Ramezani-pour**, Linda Wang, Jason Wang, Mohammad Ashtari, Sherry S.W. Leung, Karelia H. Delgado-Magnero, Bashe Bashe, Jenifer Thewalt, D. Peter Tieleman

1228-Pos BOARD B205 CPOW TRAVEL AWARDEE
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PREFERENTIAL DELIVERY OF BPM 31510 INTO TUMORIGENIC CELLS BASED ON BIOPHYSICAL INTERACTIONS. **Sumit Garg**, Vandana Swaminathan, Sirisha Dhavala, Rangaprasad Sarangarajan, Michael Kiebish, Niven Narain

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1238-Pos BOARD B215
FORMATION AND MECHANICAL PROPERTIES OF CALCIUM-STABILIZED MEMBRANE ROLLS. **Tamas Bozo**, Imre Derényi, Richard Breckska, Miklos Kellermayer

1239-Pos BOARD B216
SINGLE-PARTICLE TRACKING OF HIV-1 VIRIONS BEARING AN EXTRA-VIRAL FLUORESCENT PH SENSOR REVEALS VIRAL ENTRY OCCURS AFTER TRAF-FICKING TO AN ACIDIC CELLULAR COMPARTMENT. **Chetan Sood**, Mariana Marin, Caleb S. Mason, Gregory B. Melikyan

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1242-Pos BOARD B219
MEMBRANE FUSION VIA SNARE MIMETICS SPATIALLY CONFINED TO INTRAMEMBRANE DOMAINS. **Tom Robinson**, Bastian Kubsch, Philippe Bastiaens, Reinhard Lipowsky, Rumiana Dimova

1243-Pos BOARD B220
SNARE-MEDIATED TRANSIENT FUSION OF LIPOSOMES TO SUPPORTED BILAYERS PROBED BY TWO-COLOR PTIRFM. **Joerg Nikolaus**, Benjamin S. Stratton, Jason M. Warner, Zhenyong Wu, George Wei, Emma Wagnon, David Baddeley, Ben O'Shaughnessy, Erdem Karatekin

1244-Pos BOARD B221
USING SINGLE-VIRION FUSION ASSAY TO STUDY HEMIFUSION KINETICS OF INFLUENZA A VIRUSES AND INFLUENZA PSEUDOTYPES. **Hung-Lun Hsu**, Jean k. Millet, Costello A. Deirdre, Susan Daniel, Gary R. Whittaker

1245-Pos BOARD B222
USING GIANT PLASMA MEMBRANE VESICLES FROM CELLS TO FORM SUPPORTED LIPID BILAYERS. **PoChieh Chiang**

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STRUCTURAL ANALYSIS OF HEMAGGLUTININ-INDUCED HEMIFUSION BY VOLTA PHASE-PLATE CRYO-ELECTRON TOMOGRAPHY. **Petr Chlanda**, Elena Mekhedov, Hang Waters, Cindi L. Schwartz, Elizabeth R. Fischer, Rolf J. Ryham, Fredric S. Cohen, Paul S. Blank, Joshua Zimmerberg

1247-Pos BOARD B224
ASSEMBLY AND COMPARISON OF PLASMA MEMBRANE SNARE ACCEPTOR COMPLEXES. **Alex J. B. Kreuzberger**, Binyong Liang, Volker Kiessling, Lukas K. Tamm

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DISENTANGLING VIRAL MEMBRANE FUSION FROM RECEPTOR BINDING BY USING SYNTHETIC DNA-LIPID CONJUGATES TO TETHER INFLUENZA VIRUS TO MODEL LIPID MEMBRANES. **Robert Rawle**, Peter Kasson, Steven Boxer

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DRUG DELIVERY VIA CELL MEMBRANE FUSION USING LIPOPEPTIDE MODIFIED LIPOSOMES. **Alexander Kros**

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SOLID-STATE NMR INVESTIGATIONS OF A TRANSMEMBRANE PEPTIDE HAVING INTERFACIAL HISTIDINE RESIDUES. **Fahmida Afrose**, Denise V. Greathouse, Roger E. Koeppe II

1251-Pos BOARD B228
CHOLESTEROL INFLUENCE ON ARGININE-CONTAINING TRANSMEMBRANE PEPTIDES. **Jordana K. Thibado**, Ashley N. Martfeld, Denise V. Greathouse, Roger E. Koeppe II

1252-Pos BOARD B229
USE OF TRANSMEMBRANE PEPTIDES TO UNDERSTAND IONIZATION PROPERTIES OF HISTIDINE RESIDUES IN LIPID BILAYERS. **Ashley N. Martfeld**, Denise V. Greathouse, Roger E. Koeppe II

1253-Pos BOARD B230
VARIED APPROACHES TO THE IONIZATION BEHAVIOR OF SPECIFIC GLU RESIDUES THAT FACE THE LIPIDS IN TRANSMEMBRANE HELICES. **Venkatesan Rajagopalan**, Denise V. Greathouse, Roger E. Koeppe

1254-Pos BOARD B231
EFFECTS OF LIPID MEMBRANE CURVATURES ON BINDING, SECONDARY STRUCTURE, AND AGGREGATION OF AMYLOID-BETA PROTEIN. Yuuki Sugiura, **Keisuke Ikeda**, Minoru Nakano

1255-Pos BOARD B232
LACTOFERRICIN PEPTIDES: THE IMPORTANCE OF METHYL-TRYPTOPHAN AND GLUTAMINE FOR STRUCTURE AND ACTIVITY. **Alexandrea H. Kim**, Denise V. Greathouse

1256-Pos BOARD B233 CID TRAVEL AWARDEE
A NOVEL SOLUBLE PEPTIDE WITH PH-RESPONSIVE MEMBRANE INSERTION. **Vanessa P. Nguyen**, Daiane S. Alves, Haden L. Scott, Forrest L. Davis, Francisco N. Barrera

1257-Pos BOARD B234
LIPID ENVIRONMENT OF AQUAPORIN Z. **Victoria Schmidt**, Marlon Sidore, Frédéric Carrière, Jean-Pierre Duneau, James N. Sturgis

1258-Pos BOARD B235 EDUCATION TRAVEL AWARDEE
MECHANISM OF STRONG MEMBRANE BINDING BY SYNAPTOTAGMIN 7 C2A DOMAIN: INSIGHT FROM MUTATION AND LIPID COMPOSITION DEPENDENCE. **Favinn A. Maynard**, Beatriz Salazar, Jefferson D. Knight

1259-Pos BOARD B236
HELIX FRAYING MAY STABILIZE TRANSMEMBRANE ALPHA HELICES. **Armin Mortazavi**, Venkatesan Rajagopalan, Denise V. Greathouse, Roger E. Koeppe II

1260-Pos BOARD B237
INVESTIGATING POSSIBLE INTERACTIONS BETWEEN IONIZABLE RESIDUES IN MODEL TRANSMEMBRANE PEPTIDES. **Ryan M. Wendt**, Venkatesan Rajagopalan, Denise V. Greathouse, Roger E. Koeppe II

1261-Pos BOARD B238
DIFFERENCES IN MEMBRANE BINDING COOPERATIVITY BETWEEN THE TANDEM C2 DOMAINS OF SYNAPTOTAGMIN 1 AND SYNAPTOTAGMIN 7. **Hai T. Tran**, Daniel T. Giardina, Kan Chantranuvatana, Matthew D. Coffman, Joseph K. Vasquez, Jefferson Knight

1262-Pos BOARD B239
COMPUTER SIMULATIONS ON INTERACTIONS BETWEEN CYTOSKELETON-ANCHORED PEPTIDES AND PLASMA MEMBRANES. **Qing Liang**

1263-Pos BOARD B240
GANGLIOSIDE AND PROTEIN-GANGLIOSIDE INTERACTIONS IN MARTINI AND ATOMISTIC MOLECULAR DYNAMICS SIMULATIONS. **Ruo-Xu Gu**, Helgi I. Ingolfsson, Alex H. de Vries, Siewert J. Marrink, D. Peter Tieleman

1264-Pos BOARD B241
STRUCTURAL ANALYSIS OF TIM PROTEINS AS MODEL PROTEIN-MEMBRANE SYSTEM USING X-RAY SCATTERING. **Daniel Kerr**, Greg T. Tietjen, Simon Kit Sang Chu, Zhiliang Gong, J. Michael Henderson, Charles Heffern, Binhua Lin, Mati Meron, Mark Schlossman, Erin J. Adams, Ka Yee C. Lee

1265-Pos BOARD B242
PMD-MEMBRANE: A TOOL TO DETERMINE ALLOSTERIC BINDING POCKETS IN MEMBRANE-BOUND BIOMOLECULES. **Priyanka Prakash**, Abdallah Sayyed-Ahmad, Alemayehu A. Gorfe

1266-Pos BOARD B243

INFLUENZA M2 TRANSMEMBRANE DOMAIN INTERACTING WITH LIPID MEMBRANES: AN ATOMIC FORCE MICROSCOPY AND FLUORESCENCE MICROSCOPY STUDY. Chian Sing Ho, Nawal K. Khakda, Fengyu She, Jianfeng Cai, **Jianjun Pan**

1267-Pos BOARD B244

LIPID-DEPENDENT MODULATION OF MEMBRANE RECRUITMENT AND PROTEIN-PROTEIN INTERACTIONS IN BCL-2 FAMILY OF APOPTOTIC REGULATORS. **Victor Vasquez-Montes**, Mauricio Vargas-Urube, Mykola V. Rodnin, Alexey Ladokhin

1268-Pos BOARD B245

IONIC INTERACTIONS OF THE C-TERMINAL DOMAIN OF APOLIPOPROTEIN A-I ARE RESPONSIBLE FOR OLIGOMERIZATION. **Lukas A. Fuentes**, Kan Cong, Paul M.M. Weers

1269-Pos BOARD B246

EXAMINING PROPERTIES OF THE C-TERMINAL DOMAIN OF HUMAN APOLIPOPROTEIN A-I UTILIZING A CHIMERIC APOLIPOPROTEIN. **Rachel A. Ellena**, James V. C. Horn, Jesse Tran, Vasanthi Narayanaswami, Paul M. Weers

1270-Pos BOARD B247

CONTRIBUTION OF LOW-AFFINITY SITES TO STRONG MULTIVALENT PROTEIN-MEMBRANE BINDING: DETECTION USING SINGLE-MOLECULE TIRF MICROSCOPY. **Marissa DeLima**, Daniel T. Giardina, Jefferson Knight

1271-Pos BOARD B248 INTERNATIONAL TRAVEL AWARDEE

STRUCTURAL EFFECTS OF HIGH HYDROSTATIC PRESSURE ON HUMAN LOW DENSITY LIPOPROTEIN REVEALED BY SMALL ANGLE X-RAY AND NEUTRON SCATTERING. **Bernhard Lehofer**, Maksym Golub, Karin Kornmueller, Manfred Kriechbaum, Nicolas Martinez, Heinz Amenitsch, Judith Peters, Ruth Prassl

1272-Pos BOARD B249

MD SIMULATIONS AND FREE ENERGY CALCULATION OF SYNTHETIC COILED-COIL PEPTIDES WITH LIPID BILAYERS. **Sun Young Woo**, Hwankyoo Lee

1273-Pos BOARD B250

EFFECT OF RESVERATROL AND DERIVATIVES ON INTERACTIONS BETWEEN ALZHEIMER'S DISEASE ASSOCIATED A β PROTEIN OLIGOMERS AND LIPID MEMBRANES: A QUARTZ CRYSTAL MICROBALANCE ANALYSIS. **Yiyang Wang**, Melissa A. Moss

1274-Pos BOARD B251

INTERACTION OF PKC α -C2 DOMAIN WITH LIPID BILAYER: A MOLECULAR DYNAMICS STUDY. **Mohammad Alwarawrah**, Jeff Wereszczynski

1275-Pos BOARD B252

FREE ENERGIES OF INTERACTION OF LIPIDS WITH REGULATORY BINDING SITES ON THE TRANSMEMBRANE DOMAIN OF THE EGF RECEPTOR. **George Hedger**, Heidi Koldsoe, Mark S. P. Sansom

1276-Pos BOARD B253

INTERACTION OF THE LPS-BINDING PROTEIN WITH HOST CELL MEMBRANES: SPECIFICITY AND BIOLOGICAL IMPLICATIONS. Franziska Kopp, Sarah Kupsch, Laura Paulowski, Uwe Mamat, Manfred Rössle, Thomas Gutschmann, **Andra B. Schromm**

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GENERAL STERIC TRAPPING STRATEGY REVEALS AN INTRICATE COOPERATIVITY NETWORK IN THE INTRAMEMBRANE PROTEASE GLPG UNDER NATIVE CONDITIONS. Ruiqiong Guo, Kristen Gaffney, Zhongyu Yang, Miyeon Kim, Suttipun Sungsuwan, Xuefei Huang, Wayne L. Hubbell, **Heedeok Hong**

1278-Pos BOARD B255

IN CELL FOOTPRINTING COUPLED WITH MASS SPECTROMETRY FOR THE STRUCTURAL CHARACTERIZATION OF A MEMBRANE PROTEIN. Emily Hart, Clark Wells, **Lisa M. Jones**

1279-Pos BOARD B256 EDUCATION TRAVEL AWARDEE

COMPUTATIONAL AND EXPERIMENTAL STUDIES OF LIPID-PROTEIN INTERACTIONS IN BIOMEMBRANE FUNCTION. **Rami Musharrafieh**, Udeep Chawla, Wan Zheng, Liangju Kaung, Suchithranga M. D. C. Perera, Thomas Knowles, Annie Huang, Michael C. Pitman, Jun Wang, Hongjun Liang, Michael F. Brown

1280-Pos BOARD B257

ANALYSIS OF UNFOLDING OF APOLIPOPROTEIN E OFFERS INSIGHTS INTO LIPID BINDING MECHANISM. **Alexandra Donovan**, Roy V. Hernandez, Charina Fabilane, Patricia Nguyen, Tuyen N. Tran, Vasanthi Narayanaswami

Calcium Signaling (Boards B258 - B292)**1281-Pos BOARD B258**

BIOELECTRIC SIGNALS AND CALCIUM WAVES COORDINATE SKIN PROGENITOR CELL MOVEMENT PATTERNS DURING THE POLARIZATION OF FEATHER BUDS. **Ang Li**, Jung-Hwa Cho, Brian Reid, Min Zhao, Robert H. Chow, Cheng-Ming Chuong

1282-Pos BOARD B259

PROTEOMIC MAPPING AND OPTOGENETIC CONTROL OF ER-PM JUNCTIONS IN LIVING CELLS. **Ji Jing**, Lian He, Aomin Sun, Ariel Quintana, Yuehe Ding, Guolin Ma, Peng Tan, Liangyi Chen, Shenyuan Zhang, Yun Huang, Meng-Qiu Dong, Cheryl Walker, Patrick Hogan, Youjun Wang, Yubin Zhou

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COLLECTIVE CALCIUM DYNAMICS IN NETWORKS OF COMMUNICATING CELLS. **Tommy A. Byrd**, Garrett D. Potter, Bo Sun, Andrew Mugler

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THE C. ELEGANS SPERMATHECA AS A MODEL SYSTEM FOR CALCIUM SIGNALING IN A CONTRACTILE TUBE. **Jeff Bouffard**, Anand R. Asthagiri, Erin J. Cram

1285-Pos BOARD B262

ER CALCIUM LEVELS HELP REGULATE K(ATP) CHANNEL TRAFFICKING TO THE PLASMA MEMBRANE OF PANCREATIC BETA CELLS. **Suryakiran Vadrevu**, Leslie S. Satin

1286-Pos BOARD B263

RECEPTOR-LOCALIZED CA²⁺ SIGNALING ACTIVATES P2X2 RECEPTOR CHANGING CYTOSKELETAL MORPHOLOGY. **Anam Qudrat**, Kevin Truong

1287-Pos BOARD B264

A NOVEL RATIO-METRIC FLUORESCENCE CALCIUM INDICATOR FOR FUNCTIONAL ANALYSIS OF GPCRS AND CALCIUM CHANNEL TARGETS. **Zhenjun Diwu**, Qin Zhao, Zhen Luo, Qinglin Meng, Jixiang Liu, Jinfang Liao

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CHARACTERIZATION OF MITOCHONDRIAL CALCIUM UPTAKE IN SKELETAL MUSCLE. **Valentina Debattisti**, Melanie Paillard, Gyorgy Csordas, Erin Seifert, Gyorgy Hajnoczky

1289-Pos BOARD B266

INTERPLAY OF MEMBRANE AND CALCIUM OSCILLATORS IN CARDIAC PACEMAKER CELLS. Nikolay Zorin, Alexander Ryvkin, **Alexander Moskvina**, Olga Solovyova

1290-Pos BOARD B267

SPONTANEOUS, LOCAL DIASTOLIC SUBSARCOLEMMA CA²⁺ RELEASES (LCRS) IN SINGLE ISOLATED GUINEA-PIG SINOATRIAL NODAL CELLS (SANC) ARE LINKED TO THEIR SPONTANEOUS AP FIRING. **Syevda Sirenko**, Dongmei Yang, Edward G. Lakatta

1291-Pos BOARD B268 CPOW TRAVEL AWARDEE
NEW TARGETED Ca^{2+} PROBES REVEAL MITOCHONDRIAL Ca^{2+} SIGNALING PLAYS A CRITICAL ROLE IN RAT SINOATRIAL (SA) NODAL PACING. **Xiaohua Zhang**, Christine Couch, Katalin Torok, Martin Morad

1292-Pos BOARD B269
PREVELEGED Ca^{2+} SIGNALING PATHWAY BETWEEN MEMBRANE NCX AND MITOCHONDRIA IN CARDIAC MYOCYTES. **Xiaohua Zhang**, Naohiro Yamaguchi, Lars Cleemann, Martin Morad

1293-Pos BOARD B270
BINDING SITES OF THE CA/NA EXCHANGER NCX ANALYZED WITH POISSON FERMI THEORY. Jinn-Liang Liu, **Robert S. Eisenberg**

1294-Pos BOARD B271
NEURONAL INTRACELLULAR Ca^{2+} AND Na^+ DYSHOMEOSTASIS IN THE MDX MOUSE. **Jose R. Lopez**, Juan Kolster, Jose Adams

1295-Pos BOARD B272
ROLE OF INORGANIC POLYPHOSPHATE (POLYP) IN PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL RESPONSE TO GLUTAMATE IN MAMMALIAN NEURONS. **Plamena R. Angelova**, Andrey Y. Abramov

1296-Pos BOARD B273
CORTEX PHELLODENDRI EXTRACT RELAXES MOUSE AIRWAY SMOOTH MUSCLE. Weiwei Chen, Qui-Ju Jiang, Meng-Fei Yu, **Qing-Hua Liu**

1297-Pos BOARD B274
R-CEPIA1ER AS A NEW TOOL TO DIRECTLY MEASURE $[Ca]$ IN THE SARCOPLASMIC RETICULUM OF VENTRICULAR MYOCYTES. **Elisa Bovo**, Aleksey V. Zima, Jody L. Martin, Pieter P. de Tombe

1298-Pos BOARD B275
SIMULATIONS OF SUBCELLULAR HETEROGENEITY IN CALCIUM BLINK KINETICS. **Elisa Nunez Acosta**, Eva Polakova, Eric A. Sobie

1299-Pos BOARD B276
DYADIC REMODELING AS A CAUSE OF IMPAIRED E-C COUPLING IN EARLY STAGES OF MYOCARDIAL INJURY. **Alexandra jr. Zahradnikova**, Marta Novotova, Katarina Mackova, Ivan Zahradnik, Alexandra Zahradnikova

1300-Pos BOARD B277
VENTRICULAR Na^+ - HCO_3^- COTRANSPORTER ACTIVITY AND INTRACELLULAR H^+ MOBILITY ARE REMODELED IN CARDIAC HYPERTROPHY AND HEART FAILURE. **Kerrie L. Ford**, Carolina D. Garciarena, Yanwen Wang, Yatong Li, Michael Lawless, Ming Lei, Andrew Trafford, Pawel Swietach, Richard D. Vaughan-Jones

1301-Pos BOARD B278
INTRACELLULAR CD38 MEDIATES CARDIAC SYNTHESIS OF NAADP AND CADPR. **Wee Khang Lin**, Emma Bolton, Matylda Maciejewska, Yanwen Wang, Wilian Cortopassi, Fiona O'Brien, Margarida Ruas, Ming Lei, Rebecca Sitsapesan, Antony Galione, Derek Terrar

1302-Pos BOARD B279
THE ROLE OF MITOPHAGY IN CARDIOMYOCYTE ARRHYTHMOGENESIS. **Kevin R. Murphy**, Yichun Lu, Dmitry Terentyev, Gideon Koren

1303-Pos BOARD B280
ELECTRON-CONFORMATIONAL TRANSFORMATIONS GOVERN THE TEMPERATURE DEPENDENCE OF THE RYR2 GATING. **Bogdan Iaparov**, Alexander Moskvina, Alexander Rytkin, Olga Solovyova

1304-Pos BOARD B281
CORRELATION OF MOLECULAR DYNAMICS ANALYSIS AND CALCIUM SIGNALING IN MUTANT RYANODINE RECEPTORS. **Toshiko Yamazawa**, Takashi Murayama, Hideto Oyamada, Junji Suzuki, Nagomi Kurebayashi, Kazunori Kanemaru, Maki Yamaguchi, Chikara Sato, Masamitsu Iino

1305-Pos BOARD B282
HUMAN INDUCED PLURIPOTENT STEM CELLS-DERIVED CARDIOMYOCYTES CARRYING CALM1-F142L MUTATION RECAPITULATE LQTS PHENOTYPE IN VITRO. **Marcella Rocchetti**, Luca Sala, Lisa Dreizehnter, Manuela Mura, Claudia Altomare, Joyce Bernardi, Carlotta Ronchi, Stefano Severi, Alfred L. George, Peter J. Schwartz, Daniel Sinnecker, Massimiliano Gneschi, Lia Crotti, Alessandra Moretti, Antonio Zaza

1306-Pos BOARD B283 INTERNATIONAL TRAVEL AWARDEE
LOCAL CHARACTER OF RELEASE-DEPENDENT INACTIVATION OF L-TYPE CALCIUM CURRENT. **Barbora Hoffmannova**, Eva Polakova, Alexandra jr. Zahradnikova, Alexandra Zahradnikova, Ivan Zahradnik

1307-Pos BOARD B284
SUPPRESSION OF CARDIAC ICA AND Ca^{2+} RELEASE BY ACUTE HYPOXIA AND ACIDIFICATION. **Jose Carlos Fernandez-Morales**, Xiao Hua Zhang, Lars Cleemann, Martin Morad

1308-Pos BOARD B285
STIM-ORAI INTERACTION IN SCHISTOSOMA MANSONI INDICATES THE EXISTENCE OF FUNCTIONAL STORE-OPERATED CALCIUM ENTRY IN THE PARASITE. **Ana Eliza Zeraik**, Marina Gabriel Fontes, Jose Luiz Souza Lopes, Ana Paula Ulian Araujo, Ricardo DeMarco

1309-Pos BOARD B286
INHIBITOR OF STORE-OPERATED CALCIUM ENTRY YM58483 SHOWS SIMILAR PHARMACOLOGICAL PROFILE TO NON-STEROIDAL ANTI-INFLAMMATORY DRUG CELECOXIB. **Alexandra S. Gherghina**, Aurelien Boillat, Shihab Shah, Nikita Gamper

1310-Pos BOARD B287
ZINC INHIBITS ORAI1-MEDIATED CALCIUM SIGNALS IN ESOPHAGEAL CANCER CELLS. Sangyong Choi, Chaochu Cui, Yanhong Luo, Sun Hee Kim, Jae-Kyun Ko, Jianjie Ma, Irina Korichneva, **Zui Pan**

1311-Pos BOARD B288
ORAI1 CONCATEMERS REVEAL A HEXAMERIC ORAI1 CHANNEL ASSEMBLY. **Xiangyu Cai**, Yandong Zhou, Xianming Wang, Natalia Loktionova, Robert Nwokonko, Mohamed Trebak, Donald Gill

1312-Pos BOARD B289
STIM1-INDUCED CLUSTERING OF ORAI1 CHANNELS. **Robert Nwokonko**, Yandong Zhou, Xiangyu Cai, Natalia Loktionova, Xianming Wang, Donald Gill

1313-Pos BOARD B290
ACTIVATION MECHANISM OF THE CALCIUM RELEASE-ACTIVATED CALCIUM CHANNEL REVEALED BY THE GATING COMPETENCE OF CONSTITUTIVELY OPEN ORAI MUTANTS. **Hao Dong**

1314-Pos BOARD B291
MOLECULAR MECHANISMS OF STIM1-MEDIATED ORAI-1 CHANNEL ACTIVATION. **Zainab Haydari**, Hengameh Shams, Mohammad R K Mofrad

1315-Pos BOARD B292
IMPACT OF STIM1 R304W MUTANT ON INTRA- AND INTERMOLECULAR CYTOSOLIC COILED-COIL INTERACTIONS. **Marc Fahrner**, Michael Stadlbauer, Martin Muik, Christoph Romanin

Intracellular Calcium Channels and Calcium Sparks and Waves I (Boards B293 - B313)

1316-Pos BOARD B293
DIFFERENTIAL EFFECTS OF TEMPERATURE AND LIPIDS ON THE GATING OF RYR AND SR K^+ CHANNELS. **Sam El-Ajouz**, Elisa Venturi, Rebecca Sitsapesan

1317-Pos BOARD B294

DAMPENED ACTIVITY OF SINGLE RYANODINE RECEPTOR CHANNELS IN MICE DEVOID OF TRIC-A. **Katja Witschas**, Fiona O'Brien, Elisa Venturi, Sam El-Ajouz, Matthew Beech, David Eberhardt, Tsunaki Iida, Miyuki Nishi, Hiroshi Takeshima, Rebecca Sitsapesan

1318-Pos BOARD B295

SIMVASTATIN ACTIVATES SINGLE SKELETAL RYR1 CHANNELS BUT EXERTS MORE COMPLEX REGULATION OF THE CARDIAC ISOFORM, RYR2. **Elisa Venturi**, Katja Witschas, Sabine J. Lotteau, Emma Steer, Derek S. Steele, Sarah C. Calaghan, Rebecca Sitsapesan

1319-Pos BOARD B296 CPOW TRAVEL AWARDEE

SIMVASTATIN HAS PROFOUND EFFECTS ON SARCOPLASMIC RETICULUM Ca^{2+} LEAK IN SKELETAL BUT NOT CARDIAC MUSCLE: A MECHANISM FOR MYOPATHY. **Sabine Lotteau**, Zhaokang Yang, Elisa Venturi, Emma Steer, Katja Witschas, Rebecca Sitsapesan, Derek Steele, Sarah Calaghan

1320-Pos BOARD B297

AXIAL MEMBRANE TUBULES IN ATRIAL CARDIOMYOCYTES CONFINE ULTRARAPID INTRACELLULAR CALCIUM SIGNALS THROUGH A NEW SUPERHUB MECHANISM. Sören Brandenburg, Tobias Kohl, George S.B. Williams, Konstantin Gusev, Eva Wagner, Elke Hebisch, Christopher W. Ward, W. J. Lederer, **Stephan E. Lehnart**

1321-Pos BOARD B298

CARDIAC PACEMAKER CELL FUNCTION AT A SUPER-RESOLUTION SCALE OF SIM: DISTRIBUTION OF RYRS, CALCIUM DYNAMICS, AND NUMERICAL MODELING. **Victor A. Maltsev**, Alexander V. Maltsev, Magdalena Juhaszova, Syevda Sirenko, Oliver Monfredi, Hari Shroff, Andrew York, Steven J. Sollott, Edward G. Lakatta, Michael D. Stern

1322-Pos BOARD B299

RELATIVE CONTRIBUTION OF LOCAL Ca^{2+} RELEASES (LCRS) AND AP-INDUCED Ca^{2+} TRANSIENT DECAY TO DIASTOLIC DEPOLARIZATION IN RABBIT SA NODE CELLS. **Oliver J. Monfredi**, Alexander Maltsev, Sean Parsons, Bruce Ziman, Edward Lakatta, Michael D. Stern, Victor A. Maltsev

1323-Pos BOARD B300

ENHANCED RYR2 CHANNEL ACTIVITY BUT REDUCED Ca^{2+} SPARK OCCURRENCE IN FAILING MICE CARDIOMYOCYTES. **Linwei Li**, Gema Ruiz-Hurtado, Maria Fernandez-Velasco, Angelica Rueda, Florence Lefebvre, Yue Yi Wang, Philippe Mateo, Cecile Cassan, Barnabas Gellen, Jean Pierre Benitah, Ana M. Gomez

1324-Pos BOARD B301

CHARACTERIZATION OF Ca^{2+} -INDUCED Ca^{2+} RELEASE VIA RYR2 CARRYING ARRHYTHMOGENIC MUTATIONS. **Nagomi Kurebayashi**, Takashi Murayama, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Takashi Sakurai

1325-Pos BOARD B302

INHIBITION OF RYR2 ACTIVITY BY INTRACELLULAR FLECAINIDE EFFECTIVELY SUPPRESSES ARRHYTHMOGENIC Ca WAVES IN INTACT VENTRICULAR MYOCYTES FROM CASQ2 $-/-$ MICE. **Dmytro Kryshtal**, Björn C. Knollmann

1326-Pos BOARD B303

MANIPULATION OF RYANODINE RECEPTOR ACTIVITY MODULATES AUTOIMMUNE RESPONSES IN MICE. Natalia C. Osipchuk, Paul D. Allen, Lillian Cruz-Orengo, Athena Soulika, **Alla Fomina**

1327-Pos BOARD B304

HIGH-THROUGHPUT SCREENS TO DISCOVER INHIBITORS OF LEAKY RYANODINE RECEPTOR CALCIUM CHANNELS. Robyn T. Rebbeck, Florentin R. Nitu, David D. Thomas, Donald M. Bers, **Razvan L. Cornea**

1328-Pos BOARD B305

FLUORESCENCE-LABELLED IMPERACALCIN BINDS TO OPEN RYR2 CHANNELS IN MOUSE VENTRICULAR MYOCYTES. **Liang Xiao**, Yi Yang, Geogina B. Gurrola, Florentin R. Nitu, José Luis Puglisi, Liming Zhang, Razvan L. Cornea, Donald M. Bers, Héctor H. Valdivia

1329-Pos BOARD B306

STRUCTURAL DYNAMICS OF CALMODULIN IN REGULATION OF CARDIAC CALCIUM RELEASE IN HEALTH AND DISEASE. **Megan R. McCarthy**, Robyn T. Rebbeck, Razvan L. Cornea, David D. Thomas

1330-Pos BOARD B307

CARDIAC RYANODINE RECEPTOR CHANNEL GATING IS MODIFIED DURING BLOCKER-INDUCED CHANGES IN ION PERMEATION. **Saptarshi Mukherjee**, Nia L. Thomas, Alan J. Williams

1331-Pos BOARD B308

FRET-BASED MAPPING OF CALMODULIN WITHIN THE RYANODINE RECEPTOR. **Robyn T. Rebbeck**, Bengt Svensson, Florentin R. Nitu, Montserrat Samsó, Donald M. Bers, David D. Thomas, Razvan L. Cornea

1332-Pos BOARD B309

CALMODULIN REGULATION OF RYANODINE RECEPTORS (RYR2) DIFFERS IN FAILING AND NON-FAILING HUMAN HEARTS DUE TO DIFFERENCES IN RYR2 PHOSPHORYLATION. **Derek R. Laver**, Kafa Walweel, Ye Win Oo, Dirk van Helden, Cris dos Remedios, Peter Molenaar

1333-Pos BOARD B310

PROTEIN PHOSPHATASE-1 INCREASES CALCIUM SPARK FREQUENCY IN MURINE CARDIOMYOCYTES VIA MODULATION OF RYR2 PHOSPHORYLATION. **Duilio Michele Potenza**, Miguel Fernandez-Tenorio, Ernst Niggli

1334-Pos BOARD B311

ABLATION OF TWO MAJOR PHOSPHORYLATION SITES IN RYR2 ALTER SARCOPLASMIC RETICULUM CALCIUM HANDLING AND INCREASES THE PROPENSITY TO ATRIAL FIBRILLATION. **Roberto Ramos Mondragon**, Emmanuel M. Camors, Yangyang Bao, Cicero B. Willis, Carmen Valdivia, Lori Isom, Jose Jalife, Hector H. Valdivia

1335-Pos BOARD B312

NITROSYLATION OF RYR2 PREVENTS ACTIVATION OF Ca WAVES INDUCED BY REDOX-MEDIATED INTERSUBUNIT CROSS-LINKING. Elisa Bovo, Stefan R. Mazurek, Jody L. Martin, Pieter P. de Tombe, **Aleksey V. Zima**

1336-Pos BOARD B313

ZINC MODULATES SKELETAL RYANODINE RECEPTOR FUNCTION RESULTING IN ALTERED SARCOPLASMIC RETICULUM CALCIUM RELEASE. **Gavin B. Robertson**, Benedict Reilly-O'Donnell, Craig Balmforth, Samantha J. Pitt

Cardiac Smooth and Skeletal Muscle Electrophysiology I (Boards B314 - B335)

1337-Pos BOARD B314

ELECTROPHYSIOLOGICAL PROPERTIES OF HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES CULTURED ON A FLEXIBLE MATRIGEL SUBSTRATE. **Lili Wang**, Tromondae K. Feaster, Dmytro O. Kryshtal, Charles C. Hong, Bjorn C. Knollmann

1338-Pos BOARD B315

VARIABILITY OF THE FIELD POTENTIAL DURATION OF STEM CELL-DERIVED CARDIOMYOCYTES IS A PROARRHYTHMIC INDICATOR. **Andrew Bruening-Wright**, Carlos A. Obejero-Paz, James Kramer, Arthur M. Brown

1339-Pos BOARD B316

IMPEDANCE AND COMBINED EXTRACELLULAR FIELD POTENTIAL RECORDINGS OF CIPA REFERENCE COMPOUNDS ON IPS CARDIOMYOCYTES. **Corina Bot**, Sonja Stoelzle-Feix, Nadine Becker, Krisztina Juhasz, Ulrich Thomas, Leo Doerr, Rodolfo Haedo, Matthias Beckler, Joerg Oestreich, Michael George, Andrea Brüggemann, Niels Fertig

1340-Pos BOARD B317 EDUCATION TRAVEL AWARDEE

MODELING ELECTROPHYSIOLOGICAL INTERACTIONS BETWEEN MESCENCHYMAL STEM CELLS AND CARDIOMYOCYTES FOR IMPROVED CELL DELIVERY CARDIOTHERAPEUTICS. **Joshua Mayourian**, Ruben M. Savizky, Eric A. Sobie, Kevin D. Costa

1341-Pos BOARD B318
L-TYPE CALCIUM AND NCX CURRENTS DURING ISCHEMIA AND REPERFUSION IN INTACT MOUSE HEARTS. Yuriana Aguilar-Sanchez, Myrian Zavalza, Victoria To, Alicia R. Mattiazzi, **Josefina Ramos-Franco**, Ariel L. Escobar

1342-Pos BOARD B319
DOWN REGULATION OF L-TYPE CALCIUM CURRENT IN RAT ATRIAL MYOCYTES DURING HEART FAILURE. **Andrew F. James**, Richard C. Bond, Simon M. Bryant, Judy J. Watson, Jules C. Hancox, Clive H. Orchard

1343-Pos BOARD B320
ROSCOVITINE AS THE ARCHETYPAL MEMBER OF A NOVEL CLASS OF ANTI-ARRHYTHMICS TARGETING LATE I_{CaL} . **Marina Angelini**, Arash Pezhouman, Nicoletta Savalli, Antonios Pantazis, Araz Melkonian, James N. Weiss, Hrayr S. Karagueuzian, Riccardo Olcese

1344-Pos BOARD B321
TRANSIENT OUTWARD POTASSIUM CURRENT AND ITS ARRHYTHMOGENIC DYNAMICS IN CARDIAC MYOCYTES. **Julian W. Landaw**, Alan Garfinkel, James N. Weiss, Zhilin Qu

1345-Pos BOARD B322
AN INVESTIGATION ON ELECTRICAL ACTIVITY AND SARCOLEMMA K^+ CHANNELS IN CARDIOMYOCYTES FROM INSULIN-RESISTANT RAT HEART. **Aysegul Toy**, YUSUF OLGAR, Sinan Degirmenci, Erkan Tuncay, BELMA TURAN

1346-Pos BOARD B323
BOTH HYPERGLYCEMIA AND HYPERINSULINEMIA INDUCE CHANGES IN VOLTAGE-DEPENDENT K^+ CHANNEL CURRENTS IN H9C2 VENTRICULAR CELLS. **Sinan Degirmenci**, Yusuf Olgar, Aysegul Toy, Belman Turan

1347-Pos BOARD B324 EDUCATION TRAVEL AWARDEE
CAMKII INHIBITOR KN-93 DIRECTLY BLOCKS IKR IN CARDIAC MYOCYTES. **Bence Hegyi**, Ye Chen-Izu, Zhong Jian, Rafael Shimkunias, Leighton T. Izu, Tamas Banyasz

1348-Pos BOARD B325
MODULATION OF HERG 1A TRAFFICKING BY HERG 1B SUBUNITS IN HEART. Kelly A. Aromolaran, Donald D. Chang, R. Suzanne Zukin, Henry M. Colecraft, Mohamed Chahine, Mohamed Boutjdir, **Ademuyiwa Aromolaran**

1349-Pos BOARD B326
BLOCKADE OF CALCIUM/CALMODULIN-DEPENDENT KINASE II (CAMKII) INDUCES HETEROGENEOUS DEPRESSION OF CONDUCTION AND PROMOTES ISCHEMIC VENTRICULAR FIBRILLATION (VF). **Mark Warren**, Katie J. Sciuto, Junko Shibayama, Alexey V. Zaitsev

1350-Pos BOARD B327
CONCURRENT PDE3 AND PDE4 ACTIVATION SUPPRESSES LOCAL Ca^{2+} RELEASES (LCR) TO REGULATE NORMAL SPONTANEOUS FIRING OF SINOATRIAL NODE CELLS (SANC). **Tatiana M. Vinogradova**, Yevgeniya Lukyanenko, Kirill V. Tarasov, Syevda Sirenko, Alexey E. Lyashkov, Yue Li, Edward G. Lakatta

1351-Pos BOARD B328
HETEROGENEITY IN BEATING AND RESPONSE TO BETA ADRENERGIC RECEPTOR STIMULATION IN ISOLATED SINGLE SINOATRIAL NODAL CELLS (SANC). **Kenta Tsutsui**, Oliver J. Monfredi, Ashley N. Wirth, Mary S. Kim, Rostislav Bychkov, Víctor A. Maltsev, Edward G. Lakatta

1352-Pos BOARD B329
SMALL-CONDUCTANCE Ca^{2+} -ACTIVATED K^+ CURRENT IN ATRIAL FIBRILLATION: BOTH FRIEND AND FOE. **Stefano Morotti**, Jussi T. Koivumäki, Mary M. Maleckar, Nipavan Chiamvimonvat, Eleonora Grandi

1353-Pos BOARD B330
ARRHYTHMIA TRIGGERS IN 1D STRANDS OF VENTRICULAR MYOCYTES. **Shankar Iyer**, Minu Madhvani, Brian Nguyen, Nicole Nguyen, Beshoy Iskander, Jie Li, Thao P. Nguyen

1354-Pos BOARD B331
ATRIAL EARLY AFTERDEPOLARIZATION: AN EMERGING PROPERTY OF THE FIBROTIC ATRIA? **Neha Singh**, Binh Nguyen, Himani Madnawat, Mojdeh Dooraghi, Shankar Iyer, Thao P. Nguyen

1355-Pos BOARD B332
DOWN REGULATION OF ATRIAL GAP JUNCTION IN METABOLIC SYNDROME IS ASSOCIATED WITH VLDL-INDUCED O-LINKED GLYCOSYLATION. **Hsiang-Chun Lee**, Hsin-Ting Lin, Yi-Lin Hsiao, Sheng-Hsiung Sheu, Chu-Huang Chen, Wen-Ter Lai, Bin-Nan Wu

1356-Pos BOARD B333
VENTRICULAR MYOCYTES ELECTRICALLY COUPLE WITH NONMYOCYTES IN THE INFARCTED MOUSE HEART. **Michael Rubart**, Wen Tao, Xiao-long Lu, Shien-Fong Lin, Mark Soonpaa

1357-Pos BOARD B334
EPHAPTIC SELF-ATTENUATION CONCEALS EARLY AFTERDEPOLARIZATIONS ASSOCIATED WITH LONG QT-3 SYNDROME. Steven Poelzing, Amara Greer-Short, Donald K. Jessup, **Seth H. Weinberg**

1358-Pos BOARD B335
A NOVEL TARGET FOR ANTIARRHYTHMIC THERAPY: ENHANCEMENT OF CARDIAC CONDUCTION BY IONIC MODULATION OF EPHAPTIC COUPLING. **Sharon George**, Morten Nielsen, Steven Poelzing

Muscle Regulation (Boards B336 - B339)

1359-Pos BOARD B336
MAGNESIUM INFLUX IN PRIMARY CULTURED VENTRICULAR MYOCYTES OF ADULT RATS. **Michiko Tashiro**, Hana Inoue, Shinobu Tai, Masato Konishi

1360-Pos BOARD B337
MICE WITH DOUBLE KNOCKOUT OF CALPONIN 1 AND CALPONIN 2 GENES DEMONSTRATE CONTRACTILITY MODIFICATIONS IN VASCULAR SMOOTH MUSCLE. **Han-Zhong Feng**, Katsuhito Takahashi, Jian-Ping Jing

1361-Pos BOARD B338
BIOCHEMICAL COMPARISON OF RABBIT SKELETAL MUSCLE ALPHA AND BETA TROPOMYOSIN ISOFORMS. **David H. Heeley**, Elke M. Lohmeier-Vogel

1362-Pos BOARD B339
CONSEQUENCES OF REDUCED TROPONIN-C CALCIUM BINDING AFFINITY ON SLOW SKELETAL MUSCLE. **Peter J. Reiser**, Natalya Belevych, Svetlana Tikunova

Voltage-gated K Channels, Mechanisms of Voltage Sensing and Gating II (Boards B340 - B369)

1363-Pos BOARD B340
CHARACTERIZATION OF THE σ -PORE IN MUTANT HKV1.3 POTASSIUM CHANNELS. **Pavel Yurievitch Tyutyayev**, Stephan Grissmer

1364-Pos BOARD B341
A NEAR-IR FLUORESCENT SENSOR FOR DETECTING CELLULAR POTASSIUM EFFLUX. **Dharmika Bandara**, Zhengmao Hua, Steven Pauff, Stephen Miller, Elizabeth Colby Davie, William Kobertz

1365-Pos BOARD B342

A NON-CANONICAL VOLTAGE SENSOR CONTROLS GATING IN K2P K⁺ CHANNELS. **Marcus Schewe**, Ehsan Nematian-Ardestani, Han Sun, Marianne Musinszki, Sönke Cordeiro, Giovanna Bucci, Bert L. de Groot, Stephen J. Tucker, Markus Rapedius, Thomas Baukowitz

1366-Pos BOARD B343

VARIABLE ELECTROSTATIC REPULSION MODEL OF ION-CHANNEL ACTIVATION VS. GATED PORE WITH "NEUTRALIZED" S4 SEGMENTS. **H. Richard Leuchtag**

1367-Pos BOARD B344

IDENTIFICATION OF RESIDUES IMPORTANT FOR THE PUFA SENSITIVITY OF IKS. **Johan E. Larsson**, H Peter Larsson, Sara I. Liin

1368-Pos BOARD B345

RELAXATION OF THE VOLTAGE SENSING MODULES OF EXCITATION-CONTRACTION (EC) COUPLING IN MAMMALIAN SKELETAL MUSCLE. **Juan Ferreira**, German Pequera, Carlo Manno, Eduardo Rios, Gustavo Brum

1369-Pos BOARD B346

EFFECT OF 2-AMINOETHYLMETHANETHIOSULPHONATE (MTSEA) ON THE HKV1.3_L346C AND THE HKV1.3_L346C_L418C MUTANT CHANNELS. **Ann-Kathrin Diesch**, Stephan Grisser

1370-Pos BOARD B347 EDUCATION TRAVEL AWARDEE
ELUCIDATION OF MOLECULAR MECHANISM UNDERLYING KCSA'S HYS-TERETIC GATING BEHAVIOR. **Cholpon Tilegenova**, D. Marien Cortes, Luis G. Cuello

1371-Pos BOARD B348

GINSENOSE R3 ACTIVATES HUMAN EAG FAMILY OF K⁺ CHANNELS VIA ALLOSTERIC MODIFICATION OF GATING. **Wei Wu**, Alison Gardner, Michael Sanguinetti

1372-Pos BOARD B349

HERG S4-S5 ACTS AS A VOLTAGE-DEPENDENT LIGAND BINDING THE ACTIVATION GATE AND LOCKING IT IN A CLOSED STATE. **Olfat Malak**, Gildas Loussouarn, Zeineb Es-Salah-Lamoureux

1373-Pos BOARD B350

7-DEHYDROCHOLESTEROL MODIFIES THE OPERATION OF KV1.3 CHANNELS IN T CELLS ISOLATED FROM SMITH-LEMLI-OPITZ SYNDROME PATIENTS. **Andras Balajthy**, Zoltan Petho, Sandor Somodi, Zoltan Varga, Maria Peter, Laszlo Vigh, Gabriella P. Szabó, Gyorgy Paragh, Gyorgy Panyi, Peter Hajdu

1374-Pos BOARD B351

KV 7.4 CHANNEL ACTIVITY IS DEPENDENT UPON PIP2 AND G β γ SUB-UNITS. **Oleksandr Povstyan**, Jennifer Stott, Vincenzo Barrese, Iain Greenwood

1375-Pos BOARD B352

MOUSE CARDIAC MITO BK_{Ca} ASSOCIATES WITH β 1 SUBUNIT FAVORING CHANNEL EXPRESSION AND ACTIVITY. **Enrique Balderas Angeles**, Riccardo Olcese, Ligia Toro, Enrico Stefani

1376-Pos BOARD B353

BK CHANNEL SUBPROTEOME INCLUDES NOVEL MITOCHONDRIAL PARTNERS: ADP/ATP CARRIER AND TOM 22 IMPORT RECEPTOR. **Jin Zhang**, Zhu Zhang, Ronghui Zhu, Min Li, Rong Lu, Yong Wu, Riccardo Olcese, Enrico Stefani, Ligia Toro

1377-Pos BOARD B354

DIFFERENTIAL EXPRESSION OF BK CHANNEL ALPHA AND BETA1 SUB-UNITS IN RAT CEREBRAL ARTERIES. **Guruprasad Kuntamallappanavar**, Shivantika Bisen, Anna N. Bukiya, Alex M. Dopico

1378-Pos BOARD B355

BK AND CAV1.3 CHANNELS ORGANIZE IN CLUSTERS THAT CONTROL EX-CITABILITY IN NEURONS. **Oscar Vivas**, Claudia M. Moreno, Luis F. Santana, Bertil Hille

1379-Pos BOARD B356

FUNCTIONAL IMPACT OF P320 IN HSLO1 BK CHANNEL GATING. **Guido Gessner**, Toshinori Hoshi, Stefan H. Heinemann

1380-Pos BOARD B357

BK CHANNEL C-LINKER AND AC REGION ARE CRUCIAL FOR AUXILIARY β 2 SUBUNIT REGULATIONS. Zhenzhen Yan, Bin Hu, Xiyang Guo, Anxi Weng, Ling Zhong, Feng Xiao, Jiuping Ding, **Panpan Hou**

1381-Pos BOARD B358

EFFECTS OF SINGLE NUCLEOTIDE POLYMORPHISMS (SNPS) ON BK K⁺ CHANNEL PROPERTIES. **Amber E. Plante**, Michael H. Lai, Andrea L. Meredith

1382-Pos BOARD B359

17 β -ESTRADIOL BINDS AND MODULATES BK CHANNEL THROUGH ITS B1 AUXILIARY SUBUNIT. **Sara T. Granados**, Felipe Bravo, Romina Sepúlveda, Danilo González-Nilo, Janneth Gonzalez, Ramón Latorre, Yolima Torres

1383-Pos BOARD B360

REGULATION OF KV11.1 C-TERMINAL ISOFORM EXPRESSION BY HU PRO-TEINS. Qiuming Gong, Matthew R. Stump, **Zhengfeng Zhou**

1384-Pos BOARD B361

CALCIUM MODULATES HERG FUNCTION BY ACTING AT TWO DISTINCT BINDING SITES. Davindeep Brar, Seth Ching, Kristoffer Chin, Andrew Nguyen, **Alan Miller**

1385-Pos BOARD B362

ENERGETIC CONTRIBUTIONS OF AROMATIC RESIDUES IN HV1 BLOCK BY 2-GUANIDINOIMIDAZOLES AND IN HV1 VOLTAGE-DEPENDENT ACTIVATION. **Liang Hong**, Jason D. Galpin, Christopher A. Ahern, Francesco Tombola

1386-Pos BOARD B363

EXPLORATION OF THE LAST, CHANNEL OPENING TRANSITION OF THE VOLTAGE SENSOR S4 IN A POTASSIUM CHANNEL. **Jakob Renhorn**, Luca Conti, Fredrik Elinder

1387-Pos BOARD B364

LIPOSOME-BASED IN VITRO BIOSYNTHESIS OF TWO-PORE DOMAIN PO-TASSIUM CHANNELS FOR FUNCTIONAL STUDIES. **Marianne A. Musinszki**, Thomas Baukowitz

1388-Pos BOARD B365

A CHARGED RESIDUE IN THE HCN CHANNEL C-LINKER STABILIZES THE OPEN STATE. **Dana A. Page**, Edgar C. Young

1389-Pos BOARD B366

CRYSTAL STRUCTURE OF THE UNLIGANDED FORM OF CYCLIC NUCLEO-TIDE BINDING DOMAIN (CNBD) FROM HCN2 CHANNEL. **Vadim A. Klenschin**, Claudia P. Alvarez-Baron, John Cowgill, Qiang Cui, Baron Chanda

1390-Pos BOARD B367

HYDRATION OF CRITICAL RESIDUES IN THE SHAKER KV CHANNEL GOV-ERNS THE ENERGY LANDSCAPE AND TEMPERATURE DEPENDENCE OF CHANNEL GATING. **Sandipan Chowdhury**, Brian W. Jarecki, Baron Chanda

1391-Pos BOARD B368

THE ROLE OF ION BINDING SITES IN C-TYPE INACTIVATION OF A K CHAN-NEL. Kim Matulef, **Francis Valiyaveetil**

1392-Pos BOARD B369

MULTI-MICROSECOND MOLECULAR DYNAMICS SIMULATIONS OF THE HV1 PROTON CHANNEL. **Andrew Geragotelis**, Mona L. Wood, Hendrik Goeddeke, Saleh Riahi, Scott A. Hollingsworth, J. Alfredo Freitas, Francesco Tombola, Douglas J. Tobias

TRP Channels I (Boards B370 - B392)

1393-Pos BOARD B370
INFLUX-OPERATED CA²⁺ ENTRY VIA PKD2-L1/PKD1-L3 CHANNELS FACILITATES SENSORY RESPONSES TO POLYMODAL TRANSIENT STIMULI. Yuxia Liu, **Xiaodong Liu**

1394-Pos BOARD B371
TEMPERATURE SENSITIVITY OF FRUIT FLY GUSTATORY RECEPTORS. **Kayla Miguel**, Autoosa Salari, Benjamin Zars, Troy Zars, Lorin S. Milesco, Mirela Milesco

1395-Pos BOARD B372
ROLES OF THE N- AND C-TERMINI IN THE FUNCTION OF THE YVC1P SACCHAROMYCES CEREVISIAE TRP CHANNEL. Samantha Ho, **Lise Thomas**

1396-Pos BOARD B373
MODULATION OF THERMO-TRP CHANNELS BY TEMPERATURE IN PLANAR LIPID BILAYERS. **Mohamed Kreir**, Matthias Beckler, Alison Obergrussberger, Ilka Rinke, Sonja Stoelze-Feix, Michael George, Andrea Brüggemann, Niels Fertig

1397-Pos BOARD B374
BROAD SENSITIVITY OF DROSOPHILA MELANOGASTER TRPA1 TO NOXIOUS CHEMICALS. **Brett Boonen**, Yeranddy Alpizar, Alessia Soldano, Alejandro Lopez Requena, Bassem Hassan, Thomas Voets, Karel Talavera

1398-Pos BOARD B375
PUNGENT AND NON-PUNGENT GENERAL ANESTHETICS INTERACT WITH TRPA1 VIA DISTINCT BINDING POCKET IN THE PORE DOMAIN REGION. **Hoai T. Ton**, Jacqueline Smith, Thieu X. Phan, Milton Brown, Gerard P. Ahern

1399-Pos BOARD B376
STRUCTURAL CHARACTERIZATION OF LIGAND-SPECIFIC INTERACTIONS IN TRPV1 CHANNEL: GATING MECHANISM BY CAPSAICIN AND CAPSAZEPINE. **Fernando D. Gonzalez-Nilo**, Javier Caceres-Molina, Felipe Bravo-Moraga, Romina Sepulveda, Ignacio Diaz-Franulic

1400-Pos BOARD B377
EXTRACELLULAR SODIUM IS REQUIRED FOR TEMPERATURE-DEPENDENT GATING IN TRPV1 CHANNELS. **Andres Jara-Oseguera**, Chanhyung Bae, Kenton J. Swartz

1401-Pos BOARD B378
A PAIN-INDUCING CENTIPEDE TOXIN TARGETS THE HEAT ACTIVATION MACHINERY OF NOCICEPTOR TRPV1. Shilong Yang, **Fan Yang**, Ningning Wei, Jing Hong, Bowen Li, Lei Luo, Mingqiang Rong, Vladimir Yarov-Yarovoy, Jie Zheng, KeWei Wang, Ren Lai

1402-Pos BOARD B379
CYSTEINE-FREE MINITRPV1 IS A PLATFORM FOR STRUCTURE-FUNCTION ANALYSIS OF TRPV1. **Mario G. Rosasco**, Gilbert Q. Martinez, Erin M. Williams, Luke D. Cody, Sharona E. Gordon

1403-Pos BOARD B380
INHIBITION OF TRPV1 BY AN UNSATURATED FATTY ACID. **Sara L. Morales-Lázaro**, Itzel Llorente, Félix Sierra, Ana E. López-Romero, León D. Islas, Sidney A. Simon, Tamara Rosenbaum

1404-Pos BOARD B381
LIGHT-CONTROLLED PI3K ACTIVATION MIMICS TRPV1 POTENTIATION BY NGF. **Anastasiia Stratiievska**, Sharona E. Gordon

1405-Pos BOARD B382
SELECTIVE ACTIVATION OF NOCICEPTOR TRPV1 CHANNEL AND REVERSAL OF INFLAMMATORY PAIN IN MICE BY A NOVEL COUMARIN DERIVATIVE MURALATIN L FROM MURRAYA ALATA. **Ningning Wei**, Haining Lv, Yang Wu, Shilong Yang

1406-Pos BOARD B383
STRUCTURE OF A DOUBLE-KNOT TARANTULA TOXIN BOUND TO THE TRPV1 CHANNEL AT THE PROTEIN-LIPID INTERFACE. **Chanhyung Bae**, Claudio Anselmi, Jeet Kalia, Andres Jara-Oseguera, Charles D. Schwieters, Dmitriy Krepkiy, Chul Won Lee, Jae Il Kim, José D. Faraldo-Gómez, Kenton J. Swartz

1407-Pos BOARD B384
CELL UNROOFING ENHANCES TRPV1 MOBILITY IN THE PLASMA MEMBRANE. **Eric N. Senning**, Sharona E. Gordon

1408-Pos BOARD B385
TRPV1 EXPRESSED IN HEK293T/17 CELLS IS NOT REGULATED BY PLASMA MEMBRANE CHOLESTEROL CONTENT. **Sharona E. Gordon**, Marcus D. Collins, Moshe T. Gordon

1409-Pos BOARD B386
SEQUENTIAL EVENTS DURING CAPSAICIN-INDUCED TRPV1 ACTIVATION. **Xian Xiao**, Fan Yang, Jie Zheng

1410-Pos BOARD B387
TOLL-LIKE RECEPTOR 4 ACTIVATION BY LPS STIMULATES TRPV2 CHANNEL ACTIVITY IN MICROGLIA. **Tuoxin Cao**, Ian S. Ramsey

1411-Pos BOARD B388
ENGINEERING VANILLOID-SENSITIVITY INTO THE TRPV2 CHANNEL. **Feng Zhang**, Sonya M. Hanson, Larry Pearce, Dmitriy Krepkiy, Andres Jara-Oseguera, Peter M. Blumberg, Simon Newstead, Kenton J Swartz

1412-Pos BOARD B389
THE ROLE OF INTERACTING PROTEINS IN TRPV4 CHANNELOPATHIES. **Laura Vangeel**, Sam Lievens, Jan Tavernier, Thomas Voets

1413-Pos BOARD B390 CPOW TRAVEL AWARDEE
A LIPID-EXPOSED RESIDUE AT THE START OF S4-S5 LINKER CONTROLS TRPV4 GATING. **Jinfeng Teng**, Stephen H. Loukin, Andriy Anishkin, Paul Blount, Ching Kung

1414-Pos BOARD B391
STUDYING THE EFFECTS OF BIOACTIVE LIPIDS ON TRPV4 ACTIVATION. **Valeria Vasquez**, Phanindra Velisetty, Julio F. Cordero-Morales

1415-Pos BOARD B392
CONVERSION OF THE PIP2 DEPENDENT TRPV6 CHANNEL FROM LOW TO HIGH PHOSPHOINOSITIDE AFFINITY BY A CHARGE REINTRODUCTION MUTATION. Phanindra Velisetty, Istvan Borbiri, Marina Kasimova, Luyu Liu, Vincenzo Carnevale, **Tibor Rohacs**

Ligand-gated Channels I (Boards B393 - B416)

1416-Pos BOARD B393
EXPRESSION LEVEL DEPENDENCE OF THE GATING AND PERMEATION PROPERTIES OF P2X RECEPTOR CHANNELS. **Mufeng Li**, Shai D. Silberberg, Kenton J. Swartz

1417-Pos BOARD B394
MOLECULAR DETERMINANTS FOR LIGAND RECOGNITION IN P2X RECEPTORS. **Federica Gasparri**, Stephan A. Pless

1418-Pos BOARD B395
ROLE OF G338 OF THE SECOND TRANSMEMBRANE DOMAIN IN GATING OF THE HUMAN P2X7 RECEPTOR. Nancy Zipfel, Achim Kless, Anja Pippel, Michaela Stolz, Guenther Schmalzing, **Fritz Markwardt**

1419-Pos BOARD B396
PLANT GLUTAMATE RECEPTORS: ELECTROPHYSIOLOGICAL CHARACTERIZATION AND EVOLUTIONARY PERSPECTIVES. **Erwan Michard**, Michael M. Wudick, Michael A. Lizzio, Carlos Ortiz Ramirez, Cláudia Campos, José A. Feijó

1420-Pos BOARD B397
FUNCTIONAL ROLES OF A CONSERVED TRYPTOPHAN AT SUBUNIT-SUBUNIT INTERFACES IN NMDA RECEPTOR MEMBRANE REGIONS. **Madeleine R. Wilcox**, Nathan G. Glasgow, Jon W. Johnson

1421-Pos BOARD B398
INTRA AND INTERDOMAIN MOTIONS OF THE NMDA RECEPTOR USING SINGLE MOLECULE FRET. **Drew Dolino**, Sudeshna Chatterjee, David Cooper, Henriette Jaurich, Swarna Ramaswamy, Soheila Rezaei Adariani, Hugo Sanabria, Christy Landes, Vasanthi Jayaraman

1422-Pos BOARD B399
MPX-004: A NEW PHARMACOLOGICAL TOOL TO STUDY THE PHYSIOLOGY OF NMDA RECEPTORS CONTAINING THE GLUN2A SUBUNIT. Robert A. Volkmann, **Christopher Fanger**, David R. Anderson, Frank S. Menniti

1423-Pos BOARD B400
STRUCTURAL AND FUNCTIONAL COUPLING BETWEEN BK CHANNELS AND NMDA RECEPTORS. **Jiyuan Zhang**, Qin Li, Xin Guan, Hui-Lin Pan, Jiusheng Yan

1424-Pos BOARD B401
LOCAL Ca^{2+} NANODOMAINS INITIATE Ca^{2+} /CALMODULIN-DEPENDENT INACTIVATION OF NMDA RECEPTORS. **Gary Iacobucci**

1425-Pos BOARD B402
MODULATION OF GLUTAMATE RECEPTORS BY AUXILIARY PROTEINS A STRUCTURAL INVESTIGATION. **Douglas B. Litwin**, Garam Lee, David Maclean, Vasanthi Jayaraman

1426-Pos BOARD B403
FUNCTIONAL AND STRUCTURAL CHARACTERIZATION OF THE GLUK2/GLUKS HETEROTETRAMER GATING MECHANISM. **Teresa Paramo**, Patricia M.G.E. Brown, Mark R. P. Aourousseau, Maria Musgaard, Derek Bowie, Philip C. Biggin

1427-Pos BOARD B404
CONFORMATIONAL DYNAMICS OF THE GLUK2 LIGAND-BINDING DOMAIN. **Tyler J. Wied**, Albert Y. Lau

1428-Pos BOARD B405 CID TRAVEL AWARDEE
IDENTIFICATION OF FUNCTIONAL DETERMINANTS OF KAINATE RECEPTOR MODULATION BY AUXILIARY PROTEIN NETO2. **Theanne N. Griffith**, Geoffrey T. Swanson

1429-Pos BOARD B406
MECHANISMS OF GLUTAMATE CAPTURE BY A CLAMSHELL BINDING DOMAIN. **Alvin Yu**, Héctor Salazar, Andrew J. R. Plested, Albert Y. Lau

1430-Pos BOARD B407
COMPUTATIONAL STUDY OF THE IMPACT OF THE L483Y MUTATION ON THE DESENSITIZATION OF THE AMPA RECEPTOR. **Rémi Cuchillo**, Philip C. Biggin

1431-Pos BOARD B408
STRUCTURAL EFFECTS OF PHOSPHORYLATION ON C-TERMINAL SEGMENT OF AMPA RECEPTOR. **Caitlin E. Nurik**, Sudeshna Chatterjee, Suma Devi, David R. Cooper, Swarna S. Ramaswamy, Christy Landes, James Howe, Vasanthi Jayaraman

1432-Pos BOARD B409
ACTIVATING INDIVIDUAL SUBUNITS OF TMEM16A CALCIUM-ACTIVATED CHLORIDE CHANNELS. Grace Jeng, Muskaan Aggarwal, Wei-Ping Yu, **Tsung-Yu Chen**

1433-Pos BOARD B410
MOLECULAR MECHANISMS OF PERMEATION IN TMEM16B Ca^{2+} -ACTIVATED Cl^{-} CHANNEL. **Simone Pifferi**

1434-Pos BOARD B411
SIZING UP THE LIPID PATHWAY IN A TMEM16 PHOSPHOLIPID SCRAMBLASE. **Mattia Malvezzi**, Rabia Iqbal, Ashley Brown, Anant Menon, Alessio Accardi

1435-Pos BOARD B412
STRUCTURES OF THE Mg^{2+} CHANNEL CORA IN THE OPEN STATE BY CRYO ELECTRON MICROSCOPY. Doreen Matthies, Olivier Dalmas, Mario Borghnia, Pawel Dominik, Alan Merk, Prashant Rao, Bharat Reddy, Shahidul Islam, Alberto Bartesaghi, **Eduardo Perozo**, Sriram Subramaniam

1436-Pos BOARD B413
CRYSTAL STRUCTURE AND ASYMMETRIC CONFORMATION OF A K^{+} CHANNEL RCK DOMAIN. Victor P. Pau, Karin Abarca-Heidemann, Eunan Hendron, Marc Stezzi, Gino Cingolani, **Brad S. Rothberg**

1437-Pos BOARD B414
CONFORMATIONAL DYNAMICS OF THE CLOSED STATE OF KCSA IN LIPID BICELLES. **Dorothy M. Kim**, Igor Dikiy, Vikrant Upadhyay, David Posson, David Eliezer, Crina Nimigeau

1438-Pos BOARD B415
REGULATION OF CNGA1 CHANNEL GATING BY INTERACTIONS WITH THE MEMBRANE. **Teresa K. Aman**, Sharon E. Gordon, William N. Zagotta

1439-Pos BOARD B416
DOES BIMODAL AGONISM IN CYCLIC NUCLEOTIDE-GATED (CNG) CHANNELS PRESERVE THE CLASSICAL BINDING SITE AND PORE STRUCTURE? Robynn Lester, **Edgar C. Young**

Cardiac Muscle Mechanics and Structure I (Boards B417 - B444)

1440-Pos BOARD B417
DEVELOPMENT OF HIGH AFFINITY ANTI-S2 PEPTIDES FOR STABILIZING THE MYOSIN COILED COIL. Negar Aboonarsrshiraz, Ashley Huang, Cynthia Y. Ma, **Douglas D. Root**

1441-Pos BOARD B418
COMPETITIVE BINDING TO MYOSIN S2 BY C-PROTEIN, ANTI-S2 PEPTIDES, AND ANTIBODIES MODULATE MYOSIN COILED COIL STABILITY AND MYOFIBRIL CONTRACTILITY. **Rohit Singh**, Veronica J. Zheng, Cynthia Y. Ma, Douglas D. Root

1442-Pos BOARD B419
THE N-TERMINAL DOMAINS OF MYBPC3 RESTRICT ACTIN DYNAMICS AND INCREASE RESILIENCE IN A PHOSPHORYLATION-DEPENDENT MANNER. Brett A. Colson, **Alfred Gallegos**, Brian Lin, Sakthivel Sadayappan, David D. Thomas

1443-Pos BOARD B420
PHOSPHORYLATION AND CALCIUM ANTAGONISTICALLY TUNE MYOSIN-BINDING PROTEIN C'S MOLECULAR STRUCTURE AND FUNCTION. **Michael J. Previs**, Ji Young Mun, Arthur J. Michalek, Samantha Beck Previs, James Gulick, Jeffrey Robbins, David M. Warshaw, Roger Craig

1444-Pos BOARD B421
STRUCTURAL MEASUREMENTS WITHIN THE M-DOMAIN REVEAL UNIQUE DETAILS OF CARDIAC MYOSIN BINDING PROTEIN-C PHOSPHORYLATION. **Brett A. Colson**, L. Michel Espinoza-Fonseca, David D. Thomas

1445-Pos BOARD B422
REGULATION OF THE SUPER-RELAXED STATE OF MYOSIN BY CARDIAC MYOSIN BINDING PROTEIN-C. **James W. McNamara**, Amy Li, Sean Lal, Johan M. Bos, Michael J. Ackerman, Cristobal G. dos Remedios, Samantha P. Harris, Roger Cooke

1446-Pos BOARD B423
MATURATION TOWARDS PURE β -MYOSIN PROTEIN EXPRESSION AND CORRESPONDING FUNCTIONAL PROPERTIES OF INDIVIDUAL HESC-CARDIOMYOCYTES. **Natalie Weber**, Meike Wendland, Stephan Greten, Kristin Schwanke, Bogdan Iorga, Martin Fischer, Cornelia Geers-Knörr, Jan Hegermann, Christoph Wrede, Ulrich Martin, Bernhard Brenner, Robert Zweigerdt, Theresia Kraft

1447-Pos BOARD B424
A TUNED TENSION REGULATES THE CONTRACTILITY OF CARDIOMYOCYTES DIFFERENTIATED FROM INDUCED PLURIPOTENT STEM CELLS. **Alexandre J. Ribeiro**, Yen-Sin Ang, Robin E. Wilson, Renee N. Rivas, Deepak Srivastava, Beth L. Pruitt

1448-Pos BOARD B425
CONTRACTILE FUNCTION OF PERMEABILIZED HUMAN EMBRYONIC STEM CELL-DERIVED CARDIOMYOCYTES WITH DEFINED MYOSIN PROTEIN ISOFORM EXPRESSION. Bogdan Iorga, Meike Wendland, Natalie Weber, Stephan Greten, Kristin Schwanke, Ulrich Martin, Robert Zweigerdt, Theresia Kraft, **Bernhard Brenner**

1449-Pos BOARD B426
CROSS-BRIDGE KINETICS IN RAT PAPILLARY MUSCLE FIBERS THAT CARRY α -MHC AND β -MHC BY SINUSOIDAL ANALYSIS. Tarek S. Karam, John J. Michael, Chandra Murali, **Masataka Kawai**

1450-Pos BOARD B427
CROSSBRIDGE RECRUITMENT DYNAMICS ARE DIVERGENTLY AFFECTED BY α/β -MYOSIN HEAVY CHAIN ISOFORMS IN CARDIAC MUSCLE FIBERS CONTAINING THE HYPERTROPHIC CARDIOMYOPATHY MUTATION (A30V) AND PROTEIN KINASE C PHOSPHOMIMETIC (T203E) IN MOUSE CARDIAC TROPONIN T. **Alexis Mickelson**, Sampath Gollapudi, Murali Chandra

1451-Pos BOARD B428
INTERPLAY BETWEEN THE EFFECTS OF DILATED CARDIOMYOPATHY MUTATION (R206L) AND THE PROTEIN KINASE C PHOSPHOMIMIC (T204E) OF RAT CARDIAC TROPONIN T ARE DIFFERENTLY MODULATED BY α - AND β -MYOSIN HEAVY CHAIN ISOFORMS. **John J. Michael**, Murali Chandra

1452-Pos BOARD B429
THE EFFECT OF PEDIATRIC SPECIFIC HYPERTROPHIC CARDIOMYOPATHY MUTATIONS ON THE BIOMECHANICS OF BETA CARDIAC MYOSIN. **Arjun S. Adhikari**, Kristina Bezold Kooiker, Shirley Sutton, Daniel Bernstein, Leslie A. Leinwand, Kathleen M. Ruppel, James A. Spudich

1453-Pos BOARD B430
ADP-STIMULATED CONTRACTION: A PREDICTOR OF THIN-FILAMENT ACTIVATION IN CARDIAC DISEASE. **Vasco Sequeira**, Aref Najafi, Paul J. M. Wijnker, Cris dos Remedios, Michelle Michels, Diederik W.D. Kuster, Jolanda van der Velden

1454-Pos BOARD B431
CARDIAC FIBROSIS ALTERS CALCIUM SENSITIVITY AND MYOFILAMENT RELAXATION. **Farid Moussavi-Harami**, Maria V. Razumova, Stephen Farris, Galina V. Flint, Soley Olafsson, Sonette Steczina, Yuanhua Cheng Cheng, Alice W. Racca, April Stempien-Otero, Michael Regnier

1455-Pos BOARD B432
PRELOAD-INDUCED CHANGES IN SYSTOLIC AND DIASTOLIC PERFORMANCE IN THE YOUNG AND AGED MURINE HEART. **Adam B. Veteto**, Kerry S. McDonald, Timothy L. Domeier

1456-Pos BOARD B433 CID TRAVEL AWARDEE
MYOCARDIUM FROM THE LEFT AND RIGHT VENTRICLES OF HUMAN HEARTS HAVE SIMILAR MECHANICAL PROPERTIES. **Cheavar A. Blair**, Maya E. Guglin, Arnold Stromberg, Kenneth S. Campbell

1457-Pos BOARD B434 EDUCATION TRAVEL AWARDEE
CONTRACTILE DIFFERENCES IN LEFT AND RIGHT VENTRICLES OF HEALTHY HUMAN HEARTS. **Divya Duggal**, Janhavi Nagwekar, Sangram Raut, Ryan Rich, Hriday Das, Zygmunt Gryczynski, Ignacy Gryczynski, Julian Borejdo

1458-Pos BOARD B435
STRUCTURAL AND BIOCHEMICAL KINETICS OF CARDIAC MYOSIN AND ITS PERTURBATION BY A KNOWN HEART FAILURE DRUG INVESTIGATED WITH TRANSIENT TIME-RESOLVED FRET. **John A. Rohde**, David D. Thomas, Joseph M. Muretta

1459-Pos BOARD B436
OMECAMTIV MECARBIL ENHANCES ACTIN AFFINITY AND SLOWS FORCE PRODUCTION IN HUMAN β -CARDIAC MYOSIN. Anja M. Swenson, Cheavar Blair, Christopher Fetrow, William C. Unrath, Wanjian Tian, Maya Guglin, Kenneth S. Campbell, **Christopher M. Yengo**

1460-Pos BOARD B437
EFFECT OF RLC N-TERMINAL TAILS ON THE STRUCTURE AND DYNAMICS OF CARDIAC MYOSIN. **Arianna Fornili**, Elena Rostkova, Franca Fraternali, Mark Pfuhl

1461-Pos BOARD B438
CARDIOMYOPATHY MUTATION IN VENTRICULAR ESSENTIAL LIGHT CHAIN OF CARDIAC MYOSIN ALTERS STRUCTURAL AND FUNCTIONAL INTERACTION WITH ACTIN. **Piyali Guhathakurta**, Ewa Prochniewicz, David D. Thomas

1462-Pos BOARD B439
EFFECTS OF MYOSIN LIGHT CHAIN PHOSPHORYLATION ON LENGTH-DEPENDENT MYOSIN KINETICS IN RAT CARDIAC VENTRICLES. **Bertrand CW Tanner**, Hannah C. Pulcastro, Peter O. Awinda, Jason J. Breithaupt

1463-Pos BOARD B440
EFFECTS OF IVS6-1 MUTATION IN MYL2 ASSOCIATED WITH CARDIOSKELETAL MYOPATHY AND EARLY CARDIAC DEATH OF INFANTS. **Zhiqun Zhou**, Wenrui Huang, Jingsheng liang, Danuta Szczesna-Cordary

1464-Pos BOARD B441
RARE CARDIOMYOPATHY PHENOTYPES ASSOCIATED WITH MUTATIONS IN MYOSIN LIGHT CHAINS. **Chen-Ching Yuan**, Jingsheng Liang, Katarzyna Kazmierczak, Zhiqun Zhou, Rosemeire Kanashiro-Takeuch, Joshua M. Hare, Thomas C. Irving, Danuta Szczesna-Cordary

1465-Pos BOARD B442
UPREGULATING COMPLIANT TITIN IN THE HEART ATTENUATES LEFT VENTRICULAR STIFFNESS IN A MOUSE MODEL WITH DIASTOLIC DYSFUNCTION. **Mei Methawasini**, Joshua G. Strom, Vanessa Fernandez, Chandra Saripalli, John E. Smith III, Henk L. Granzier

1466-Pos BOARD B443
EXERCISE MITIGATES INCREASED DIASTOLIC STIFFNESS IN THE TITIN IA KO MOUSE. **Rebecca E. Slater**, Mei Methawasini, Josh Strom, Chandra Saripalli, Henk L. Granzier

1467-Pos BOARD B444
A NOVEL ROLE FOR PP5 IN REGULATING TITIN PHOSPHORYLATION AND FUNCTION IN THE HEART. Judith Krysiak, Andreas Unger, Nazha Hamdani, Peter Boknik, **Wolfgang A. Linke**

Skeletal Muscle Mechanics, Structure, and Regulation (Boards B445 - B469)

1468-Pos BOARD B445
COMPLIANCE ACCELERATES RELAXATION IN STRIATED MUSCLE BY ALLOWING MYOSIN HEADS TO MOVE RELATIVE TO ACTIN. **Kenneth S. Campbell**

1469-Pos BOARD B446
MYOSIN BINDING TO ACTIN IN THE 3D SARCOMERE LATTICE. **Srboljub M. Mijailovich**, Boban Stojanovic, Djordje Nedic, Michael A. Geeves

1470-Pos BOARD B447

DYNAMIC TRANSIENT RESPONSES OF MUSCLE FIBERS WITH A HETEROGENEOUS POPULATIONS OF ISOFORMS AND MUTATION. Srbojjub M. Mijailovich, Djordje Nedic, Marina Svcevic, Boban Stojanovic, Michael Regnier, **Michael A. Geeves**

1471-Pos BOARD B448

DIRECT MEASUREMENTS OF LOCAL COUPLING BETWEEN MYOSIN MOLECULES ARE CONSISTENT WITH A MODEL OF MUSCLE ACTIVATION. **Sam Walcott**, Neil M. Kad

1472-Pos BOARD B449

ASSUMING THAT MYOSIN-BINDING PROTEIN C INTERACTS WITH BOTH MYOSIN AND ACTIN CAN EXPLAIN ITS ROLE IN SKINNED FIBER MECHANICS. **Jonas Schwan**, Clinton Wang, Stuart G. Campbell

1473-Pos BOARD B450

ESSENTIAL ROLES OF WATER IN ACTIN-MYOSIN BINDING. **Hiraku Oshima**, Tomohiko Hayashi, Masahiro Kinoshita

1474-Pos BOARD B451

REGENERATION OF ACTIN FILAMENTS IN ACTIN-EXTRACTED BUMBLEBEE FLIGHT MUSCLE FIBERS AS PROBED BY X-RAY DIFFRACTION. **Hiroyuki Iwamoto**

1475-Pos BOARD B452

THE STRUCTURE OF THE RELAXED THICK FILAMENTS FROM LETHOCERUS ASYNCHRONOUS FLIGHT MUSCLE. **Zhongjun Hu**, Dianne W. Taylor, Michael K. Reedy, Robert J. Perz-Edwards, Kenneth A. Taylor

1476-Pos BOARD B453

THE STRUCTURE OF THE RELAXED THICK FILAMENTS FROM LETHOCERUS ASYNCHRONOUS FLIGHT MUSCLE - IMPLICATIONS FOR STRETCH ACTIVATION. **Kenneth A. Taylor**, Zhongjun Hu, Dianne W. Taylor, Michael K. Reedy, Robert J. Perz-Edwards

1477-Pos BOARD B454

THE AGE ASSOCIATED ALTERATION IN ECCENTRIC CONTRACTION PROPERTIES DURING A STRETCH SHORTENING CYCLE IN FAST AND SLOW TWITCH MOUSE MUSCLES. **Anthony L. Hessel**, Kiisa C. Nishikawa

1478-Pos BOARD B455

EFFECT OF ACTIVE SHORTENING AND STRETCHING ON LATTICE SPACING AND CROSS-BRIDGE BINDING IN SKINNED MUSCLE FIBRES. **Venus Joumaa**, Ian C. Smith, Tim R. Leonard, Olga Antipova, Thomas C. Irving, Walter Herzog

1479-Pos BOARD B456

MYOSIN MGADP RELEASE RATE DECREASES WITH GREATER SARCOMERE LENGTH AND REDUCED THICK-TO-THIN FILAMENT SPACING IN SKINNED SOLEUS MUSCLE FIBERS FROM RATS. **Axel J. Fenwick**, Shelby R. Leighton, Bertrand C.W. Tanner

1480-Pos BOARD B457

SARCOMERE LENGTH AND PASSIVE SARCOMERE LENGTHENING ARE LOCATION-DEPENDENT IN LIVE MOUSE TIBIALIS ANTERIOR MUSCLE. **Eng Kuan Moo**, Rafael Fortuna, Ziad Abusara, Walter Herzog

1481-Pos BOARD B458

DYNAMICS OF TRANSITIONS THROUGH THE MOLTEN-GLOBULE STATE ENHANCE CONTRACTILITY OF TITIN. **Zsolt Martonfalvi**, Pasquale Bianco, Gyorgy Ferenczy, Katalin Naftz, Miklos Kellermayer

1482-Pos BOARD B459

THE PEVK REGION OF TITIN: DECIPHERING THE MOLECULAR INTERACTIONS OF ELASTICITY. **Sudarshi Premawardhana**, Matthew J. Gage

1483-Pos BOARD B460

ASSESSING THE FUNCTIONAL ROLE OF TITIN N2A-PEVK REGION IN ACTIVE MUSCLE CONTRACTION. **Humra Athar**, Matthew J. Gage

1484-Pos BOARD B461

I-BAND TITIN INTERACTION WITH MYOSIN IN THE MUSCLE SARCOMERE DURING ECCENTRIC CONTRACTION: THE TITIN ENTANGLEMENT HYPOTHESIS. **Mike DuVall**, Azim Jinha, Gudrun Schappacher-Tilp, Tim Leonard, Walter Herzog

1485-Pos BOARD B462

USING SINGLE MYOSIN AND SMALL MYOSIN ENSEMBLES TO EXAMINE THIN FILAMENT ACTIVATION IN A LASER TRAP ASSAY. **Thomas Longyear**, Matt Unger, Ling Xin, Sam Walcott, Edward P. Debold

1486-Pos BOARD B463

THE RELATIVE INFLUENCE OF ACTIN-MYOSIN ATTACHMENT AND DETACHMENT KINETICS ON ACTIN SLIDING VELOCITIES IS MODULATED BY MYOSIN DENSITY. **Josh E. Baker**, Travis J. Stewart, Samuel P. Dugan, Christine R. Cremona

1487-Pos BOARD B464

THE ACIDOSIS-INDUCED SLOWING OF REGULATED THIN FILAMENT VELOCITY IN A MOTILITY ASSAY DISAPPEARS AT LOW ATP. **Edward Debold**, Matthew Unger, Thomas Longyear

1488-Pos BOARD B465

DESR349P MUTATION RESULTS IN ULTRASTRUCTURAL DISRUPTIONS AND COMPROMISE OF SKELETAL MUSCLE BIOMECHANICS ALREADY AT PRECLINICAL STAGES IN YOUNG MICE BEFORE THE ONSET OF PROTEIN AGGREGATION. S Diermeier, M. Haug, B. Reischl, A Buttgerit, S Schürmann, M Spörrer, **W H. Goldmann**, B Fabry, F Elhimine, R Stehle, G. Pfitzer, L. Winter, C Clemen, R Schröder, O Friedrich

1489-Pos BOARD B466

NEBULIN DEFICIENCY IN ADULT MUSCLE CAUSES SARCOMERIC DEFECTS AND MUSCLE-TYPE DEPENDENT CHANGES IN TROPHICITY - NOVEL INSIGHTS IN NEMALINE MYOPATHY. **Frank W. Li**

1490-Pos BOARD B467

EFFECTS OF ACE INHIBITORS AND ANTI-MINERALOCORTICOIDS ON KINETIC PARAMETERS OF STRIATED MUSCLE CONTRACTION AND RELAXATION AS WELL AS MEASUREMENTS OF FATIGABILITY IN MURINE MODELS OF DUCHENNE MUSCULAR DYSTROPHY. **Eric Schultz**

1491-Pos BOARD B468

THE SUPER-RELAXED STATE OF MYOSIN IS ALTERED BY ESTRADIOL IN SKELETAL MUSCLE OF AGED FEMALE MICE. Brett A. Colson, Karl J. Petersen, **Thomas A. Bunch**, Brittany C. Collins, David D. Thomas, Dawn A. Lowe

1492-Pos BOARD B469

DESTABILIZING THE SUPER RELAXED STATE OF SKELETAL MUSCLE MYOSIN TO TREAT OBESITY AND TYPE 2 DIABETES. Leonardo Nogara, Nariman Naber, Marcella Canton, Carlo Reggiani, Edward Pate, **Roger Cooke**

Cell Mechanics, Mechanosensing, and Motility II (Boards B470 - B494)

1493-Pos BOARD B470

SPACE AND TIME IN LEUKOCYTE MIGRATION. **Donald M. Guu**, Thomas Quast, Luis Alvarez, U. Benjamin Kaupp, Waldemar Kolanus

1494-Pos BOARD B471

BAYESIAN PARAMETER ESTIMATION AND MODEL SELECTION FOR BIOPHYSICAL MODELS OF LEUKOCYTE ROLLING. **Mats L. Moskopp**, Andreas Deussen, Triantafyllos Chavakis, Peter Dieterich

1495-Pos BOARD B472

FORWARD AND INVERSE APPROACHES TO CHARACTERIZING CELLULAR TRACTION FORCES. **Ankur H. Kulkarni**, Prasenjit Ghosh, Nagaraj Balasubramanian, Namrata Gundiah

1496-Pos BOARD B473

BALANCE OF ISOTROPIC AND DIRECTED FORCES DETERMINES CELL SHAPE. **Wim Pomp**, Koen K. Schakenraad, Hedde van Hoorn, Hayri E. Balcioglu, Erik H J Danen, Luca Giomi, Thomas Schmidt

1497-Pos BOARD B474

A COMPUTATIONAL MODEL OF CELL-GENERATED TRACTION FORCES AND FIBRONECTIN ASSEMBLY. **Devin B. Mair**, Thomas J. Petet, Lewis E. Scott, Seth H. Weinberg, Christopher A. Lemmon

1498-Pos BOARD B475

DELETION OF CALPONIN 2 IN MACROPHAGES IS ANTI-INFLAMMATORY AND ATTENUATES THE DEVELOPMENT OF ATHEROSCLEROSIS. **Rong Liu**, Jian-Ping Jin

1499-Pos BOARD B476

PROVISIONAL MATRIX CITRULLINATION CONTRIBUTES TO ENHANCED FIBROBLAST MIGRATION. **Victoria L. Stefanelli**, Thomas H. Barker

1500-Pos BOARD B477

ACTIVE DYNAMIC MECHANICS OF BLOOD CLOT CONTRACTION. **Valerie Tutwiler**, Hailong Wang, Rustem I. Litvinov, John W. Weisel, Vivek Shenoy

1501-Pos BOARD B478

ON THE INFLUENCE OF THE LOCAL CELL WALL ELASTICITY ON THE CELL SHAPE DURING YEAST MATING MORPHOGENESIS. **Björn Goldenbogen**, Wolfgang Giese, Andreas Herrmann, Edda Klipp

1502-Pos BOARD B479

FRACTAL HETEROGENEITY IN MINIMAL MATRIX MODELS OF SCARS MODULATES STIFF-NICHE STEM-CELL RESPONSES VIA NUCLEAR EXIT OF A MECHANOREPRESSOR. P. C. Dave P. Dingal, Yuntao Xia, **Dennis E. Discher**

1503-Pos BOARD B480

EMERGENT COLLECTIVE CHEMOTAXIS WITHOUT SINGLE-CELL GRADIENT SENSING. **Brian Camley**, Juliane Zimmermann, Herbert Levine, Wouter-Jan Rappel

1504-Pos BOARD B481

COMPLEX MECHANICS OF COLLAGEN MATRICES AND THEIR IMPACT ON REMOTE INTERCELLULAR COMMUNICATION. **Hamid Mohammadi**, Anton Zilman, Christopher McCulloch

1505-Pos BOARD B482

IN FISSION YEAST THE CONSTRICTION RATE IS NOT SET BY THE CYTOKINETIC RING, BUT BY THE SEPTUM GROWTH MACHINERY. **Sathish Thiagarajan**, Emilia Laura Munteanu, Rajesh Arasada, Thomas Dean Pollard, Ben O'Shaughnessy

1506-Pos BOARD B483

MULTI-SCALE COMPUTATIONAL MODEL OF EPITHELIAL CELL PROLIFERATION AND MECHANICS. Ali Nematbakhsh, Pavel Brodskiy, Zhiliang Xu, Jeremiah J. Zartman, **Mark Alber**

1507-Pos BOARD B484

INTACT IMMUNOTAXIS COMPRISES AN INTRICATE SPATIOTEMPORAL HIERARCHY OF DISTINCT CHEMOTACTIC PROCESSES - A NEW PARADIGM. **Volkmar Heinrich**

1508-Pos BOARD B485

MODELING THE EFFECTS OF FOCAL ADHESION SIZE RESTRICTION ON CELL SHAPE DURING SPREADING. **Magdalena Stolarska**, Kara Huyett, Aravind Rammohan

1509-Pos BOARD B486

ROTATION TRACKING AND ADHESION FOOTPRINTING REVEAL ASYMMETRIC ROLLING ADHESION MECHANISM. **Isaac T.S. Li**, Taekjip Ha, Yann R. Chelma

1510-Pos BOARD B487

CELL-SUBSTRATE INTERACTION DETERMINES CELLULAR VOLUME AND SHAPE. **Jiaxiang Tao**, Sean Sun

1511-Pos BOARD B488 INTERNATIONAL TRAVEL AWARDEE

MODELING IMMUNE CELL MIGRATION. **Hélène Lyrmann**, Marc Neef, Christian Backes, Markus Hoth, Karsten Kruse, Carsten Kummerow

1512-Pos BOARD B489

THREE-DIMENSIONAL VERTEX SIMULATION ON SMOOTH SURFACE MAINTENANCE OF GROWING EPITHELIAL TISSUE BASED ON INTERCELLULAR MECHANO-FEEDBACK. **Yoshihide Enomoto**, Yasuhiro Inoue, Shigenobu Yonemura, Taiji Adachi

1513-Pos BOARD B490

NANOSCALE MAPPING OF THE BIOMECHANICAL BEHAVIOR IN HEALTHY AND PATHOLOGICAL ERYTHROCYTES. **Massimiliano Papi**, Gabriele Ciasca, Giuseppe Maulucci, Valentina Palmieri, Marco De Spirito

1514-Pos BOARD B491

A STATISTICAL MECHANICAL BASIS OF CELLULAR MOTILITY. **Henry G. Zot**, Javier E. Hasbun, Nguyen Van Minh

1515-Pos BOARD B492

DECIPHERING THE EFFECT OF SUBSTRATE VISCOELASTICITY ON HEPATIC STELLATE CELL FUNCTION AND DIFFERENTIATION IN THE CONTEXT OF LIVER FIBROSIS. **Elisabeth E. Charrier**, Rebecca G. Wells, Paul A. Janmey

1516-Pos BOARD B493

CELL SURFACE MECHANOCHEMISTRY AND THE DETERMINANTS OF BLEB FORMATION, HEALING AND TRAVEL VELOCITY. **Kathryn Manakova**, Jun Allard

1517-Pos BOARD B494

VALIDATION OF A NOVEL EXPERIMENTAL AND COMPUTATIONAL METHODOLOGY TO MEASURE INTERCELLULAR FORCES DURING TISSUE MORPHOGENESIS. **Ernesto Criado-Hidalgo**, Ricardo Serrano, Marta Garcia-Diez, Yi-Ting Yeh, Javier Rodriguez-Rodriguez, Juan Carlos del Alamo, Juan Lasheras

Mitochondrial Permeability (Boards B495 - B508)

1518-Pos BOARD B495 EDUCATION TRAVEL AWARDEE

PERMEABILITY TRANSITION PORE CLOSURE INCREASES MITOCHONDRIAL MATURATION AND MYOCYTE DIFFERENTIATION IN THE NEONATAL HEART. **Jayson V. Lingan**, George A. Porter, Jr

1519-Pos BOARD B496

CYCLOPHILIN D REGULATES THE FORMATION OF SUPERCOMPLEXES IN HEART MITOCHONDRIA. Gisela Beutner, **George A. Porter, Jr.**

1520-Pos BOARD B497

SPG7 IS AN ESSENTIAL AND CONSERVED COMPONENT OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE. **Santhanam Shanmughapriya**, Sudarsan Rajan, Nicholas E. Hoffman, Dhanendra Tomar, Neeharika Nemani, Muniswamy Madesh

1521-Pos BOARD B498

A NOVEL ION CHANNEL IN ATP SYNTHASE C-SUBUNIT RING: GATEKEEPER OF LIFE AND DEATH. **Nelli Mnatsakanyan**, Han-A Park, Jing Wu, Paige Miranda, Elizabeth A. Jonas

1522-Pos BOARD B499

IS THE C-SUBUNIT RING OF THE F1FO ATP SYNTHASE THE ELUSIVE MITOCHONDRIAL PERMEABILITY TRANSITION PORE? **Wenchang Zhou**, Corrine Nief, José D. Faraldo-Gómez

1523-Pos BOARD B500

MITOCHONDRIAL PERMEABILITY TRANSITION PORE (MPTP) FORMATION REQUIRES THE PARTICIPATION OF C-SUBUNIT OF ATP-SYNTHASE, POLYHYDROXYBUTYRATE (PHB) AND INORGANIC POLYPHOSPHATE (POLYP). **Pia A. Elustondo**, Nelli Mnatsakanyan, Zakharian Eleonora, Elizabeth A. Jonas, Evgeny Pavlov

1524-Pos BOARD B501 EDUCATION TRAVEL AWARDEE
CONTRIBUTION OF INORGANIC POLYPHOSPHATE TOWARDS REGULATION OF MITOCHONDRIAL FREE CALCIUM. **M. de la Encarnacion Solesio Torregrosa**, Lusine Demirkhanyan, Eleonora Zakharian, Evgeny Pavlov

1525-Pos BOARD B502
FORMATION OF POLYPHOSPHATE-POLY-BETA-HYDROXYBUTYRATE GRANULE-LIKE COMPLEXES IN HEART FAILURE MYOCYTES. Lusine Demirkhanyan, Ian P. Palmer, Walter Boyd, Claus S. Sondergaard, Kristin Grimsrud, Leigh G. Griffiths, Julie Bossuyt, Donald M. Bers, Eleonora Zakharian, **Elena N. Dedkova**

1526-Pos BOARD B503
ABSENCE OF PHYSIOLOGICAL CALCIUM TRANSIENTS TRIGGERS MITOCHONDRIAL ROS PRODUCTION IN SKELETAL MUSCLE FOLLOWING DENERVATION. Chehade Karam, Jianxun Yi, Carlos Manno, Heping Cheng, Jianjie Ma, **Jingsong Zhou**

1527-Pos BOARD B504
IMPAIRED MITOCHONDRIAL FUNCTION DUE TO FAMILIAL ALZHEIMERS DISEASE-CAUSING PRESENILINS MUTANTS VIA CALCIUM DISRUPTIONS. **Patrick T. Toglia**, Ghanim Ullah

1528-Pos BOARD B505
MICU1, THE CA²⁺ SENSING REGULATOR OF THE MITOCHONDRIAL CA²⁺ UNI-PORTER IS REQUIRED FOR ADAPTATION TO POSTNATAL LIFE. **Melanie Paillard**, Anil N. Antony, Cynthia Moffat, Egle Juskeviciute, Brad Bolon, Emanuel Rubin, György Csordás, Erin L. Seifert, Jan B. Hoek, György Hajnóczky

1529-Pos BOARD B506
MICU1 REGULATION OF MITOCHONDRIAL CALCIUM UPTAKE IS CRUCIAL FOR LIVER REGENERATION. **Anil N. Antony**, Melanie Paillard, Cynthia Moffat, Egle Juskeviciute, Emanuel Rubin, Gyorgy Csordas, Erin Seifert, Gyorgy Hajnoczky, Jan B. Hoek

1530-Pos BOARD B507
STRATEGIC COMPOSITION AND ENRICHMENT OF THE MITOCHONDRIAL CA²⁺ UNI-PORTER AT MITOCHONDRIA-SR ASSOCIATIONS CREATES HOTSPOTS FOR MITOCHONDRIAL CA²⁺ UPTAKE IN THE CARDIAC MUSCLE. **Sergio De la Fuente**, Caitlin Vail, Elorm J. Agra, Kira Holmstrom, Junhui Sun, Jyotsna Mishra, Toren Finkel, Elisabeth Murphy, Suresh K. Joseph, Shey-Shing Sheu, Gyorgy Csordas

1531-Pos BOARD B508
STUDY OF THE CAPACITY OF EACH IP3 RECEPTOR ISOFORM TO SUPPORT ER-MITOCHONDRIAL CALCIUM TRANSFER. **Adam Bartok**, Tünde Golenár, Száva Bánsághi, David Weaver, Kamil J. Alzayady, Suresh K. Joseph, David I. Yule, György Csordás, György Hajnóczky

Energy and Light Transducing Complexes (Boards B509 - B524)

1532-Pos BOARD B509
A POTENTIAL ROTATIONAL MECHANISM OF THE γ - SUBUNIT OF F1 – ATPASE - TORQUE GENERATION THROUGH THE RANDOM MOVEMENT OF AN ASYMMETRIC ROTOR. **Ya-chang Chou**, Yi-Feng Hsiao

1533-Pos BOARD B510
MECHANISM OF ENERGY CONVERSION DURING THE ROTARY CATALYTIC CYCLE OF F1-ATPASE. **Jacek Czub**, Milosz Wieczor, Mateusz Dutkiewicz, Helmut Grubmueller

1534-Pos BOARD B511
ATP SYNTHASE: ADVANTAGES OF THE ROTARY MECHANISM UNDER DIVERSE CONDITIONS. Zining Zhang, **Ramu Anandakrishnan**, Rory Donovan, Daniel Zuckerman

1535-Pos BOARD B512
A NEW GROUP OF EUBACTERIAL LIGHT-DRIVEN PROTON PUMPS LACKING THE CARBOXYLIC PROTON DONOR. Andrew Harris, Milena Ljumovic, Ana-Nicoleta Bondar, Yohei Shibata, Yuto Suzuki, Shota Ito, Keiichi Inoue, Hideki Kandori, **Leonid Brown**

1536-Pos BOARD B513
PHOTO-CURRENT AND TEM IMAGING CHARACTERIZATION OF LIGHT-GATED ION PUMP PROTEINS IN LIPID MEMBRANES. **Joel Kamwa**, Surendra Singh, Jiali Li

1537-Pos BOARD B514
A DNA-BASED BUILDING BLOCK FOR DESIGNER EXCITONIC CIRCUITS. Etienne Boulais, Nicolas Sawaya, **Rémi Veneziano**, Alessio Andreoni, Su Lin, Neal Woodbury, Hao Yan, Alan Aspuru-Guzik, Mark Bathe

1538-Pos BOARD B515
PHOTOINDUCED ELECTRON TRANSFER FROM PORPHYRINS TO QUINONES RANDOMLY DISPERSED IN A POLYMERIC MEDIUM. **Marcelo K. K. Nakaema**, Rosemary Sanches

1539-Pos BOARD B516
THE ROLE OF PROTEIN CONFORMATIONAL CHANGES IN TUNING THE FLUORESCENCE STATE OF LIGHT-HARVESTING COMPLEXES. **Nicoletta Liguori**, Xavier Periole, Laura M. Roy, Yarah Bot, Siewert J. Marrink, Roberta Croce

1540-Pos BOARD B517
PHOTO-INDUCED CHARGE AND ENERGY IN COMPLEXES OF C-TYPE CYTOCHROMES WITH WATER-SOLUBLE PORPHYRINS. **Oleksandr Kokhan**, C. Alexander Hudson, Daniel R. Marzolf, Aidan M. McKenzie

1541-Pos BOARD B518
CHARACTERIZATIONS OF SUBSTRATE DELIVERY PATHWAYS IN THE NITRIC OXIDE REDUCTASE. **Paween Mahinthichaichan**, Robert B. Gennis, Emad Tajkhorshid

1542-Pos BOARD B519
MULTIHEME CYTOCHROMES AND THE BACTERIAL NANOWIRES OF SHEWANELLA ONEIDENSIS MR-1: REGULATION, STRUCTURE, AND EXTRACELLULAR ELECTRON TRANSPORT MECHANISMS. **Sahand Pirbadian**, Sarah E. Barchinger, Poorna Subramanian, Christine M. Sambles, Carol S. Baker, Nigel J. Burroughs, Grant J. Jensen, John H. Golbeck, Mohamed Y. El-Naggar

1543-Pos BOARD B520
DIVIDE-CONQUER-RECOMBINE KINETIC MONTE CARLO SIMULATIONS OF ELECTRON TRANSFER IN THE EXTRACELLULAR REDOX NETWORK OF SHEWANELLA ONEIDENSIS MR-1. **Hye Suk Byun**, C. Masato Nakano, Heng Ma, Sahand Pirbadian, Aiichiro Nakano, Tao Wei, Mohamed Y. El-Naggar

1544-Pos BOARD B521
EFFECT OF DIFFERENT SUBSTRATES ON GROWTH AND REDOX POTENTIAL KINETICS OF ESCHERICHIA COLI WILD TYPE AND HYDROGENASES LACKING MUTANT. **Anna Poladyan**, Satenik Mirzoyan, Armen Trchounian

1545-Pos BOARD B522
COMPARISON OF DICYCLOHEXYLCARBODIIMIDE (DCCD)-INDUCED EFFECTS ON STRUCTURE AND ACTIVITY IN CYTOCHROME C OXIDASE (COX) FROM BOVINE HEART AND RHODOBACTER SPHAEROIDES. **Lawrence J. Prochaska**, Kelli N. Fisher, Christine N. Pokalsky

1546-Pos BOARD B523
 DEBARYOMYCES HANSENI: ADAPTATION MECHANISMS TO DIFFERENT CARBON SOURCES AND OXYGEN CONCENTRATIONS. Alfredo Cabrera Orefice, Rocío Maldonado-Guzmán, Natalia Chiquete-Félix, **Salvador Uribe-Carvajal**

1547-Pos BOARD B524
 REGULATION OF THE REACTION BETWEEN CYTOCHROME C AND CYTOCHROME OXIDASE. **Jennifer Silva-Nash**, Francis Millett, Martha Scharlau

Genetic Regulatory Systems (Boards B525 - B530)

1548-Pos BOARD B525
 THE COMPUTATIONAL DETERMINATION OF SMALL RNA BINDING CONSTANT TO CLARIFY THE SYNTHETIC REGULATORY CIRCUIT IN ESCHERICHIA COLI. Cheng-Ping Jheng, Shih-Wei Wang, Kuan-Ling Chen, Tzu-Han Chen, Shang-Yu Chou, Wan-Sheng Su, **Po-Han Lee**, Cheng-I Lee

1549-Pos BOARD B526
 HIGH PRESSURE INDUCED DNA DAMAGE IN ESCHERICHIA COLI INVOLVES PRESSURE-MEDIATED DISSOCIATION OF THE TETRAMERIC MRR RESTRICTION ENDONUCLEASE. **Anais Bourges**, Anirban Ghosh, Nathalie Declerck, Abram Aertsen, Catherine Royer

1550-Pos BOARD B527
 STOCHASTIC FOCUSING AND DEFOCUSING IN BIOLOGICAL REACTION NETWORKS: LESSONS LEARNED FROM ACCURATE CHEMICAL MASTER EQUATION (ACME) SOLUTIONS. **Gamze Gürsoy**, Anna Terebus, Youfang Cao, Jie Liang

1551-Pos BOARD B528
 SHARED TRANSCRIPTION FACTORS HELP ENCODE THE TIMING OF GENE ACTIVATION. **Prithviraj Chellamuthu**, Shane Jackson, James Boedicker

1552-Pos BOARD B529
 EXACT COMPUTATION OF VELOCITY FIELD AND PROBABILITY FLUX OF TIME-EVOLVING PROBABILITY LANDSCAPE OF STOCHASTIC NETWORKS. **Anna Terebus**, Chun Liu, Jie Liang

1553-Pos BOARD B530
 THE ENERGY LANDSCAPE OF THE MOUSE CARGOME: A MECHANICALLY SENSITIVE FAMILY OF GENES. **Dwight M. Chambers**, Thomas H. Barker

Emerging Techniques and Synthetic Biology (Boards B531 - B537)

1554-Pos BOARD B531
 OPTOGENETIC CONTROL OF MOLECULAR MOTORS AND ORGANELLE DISTRIBUTIONS IN CELLS. **Liting Duan**

1555-Pos BOARD B532
 RATIONAL DESIGN OF A PHOTOACTIVATABLE COFILIN ANALOG USING A NOVEL LOV-BINDING PROTEIN. **Orrin J. Stone**, Hui Wang, Ved P. Sharma, Robert J. Eddy, Rihe Liu, John S. Condeelis, Klaus M. Hahn

1556-Pos BOARD B533
 DEVELOPMENT OF SYNTHETIC GENE CIRCUITS TO AMPLIFY THE PRODUCTION OF BIOMATERIALS, CELLULASES, AND LENTIVIRUS. **Toru Matsu-ura**, Andrey Dovzhenok, Sookyung Lim, Christian I. Hong

1557-Pos BOARD B534
 AUTOMATED HIGH-THROUGHPUT QUANTIFICATION REVEALS MORPHOLOGICAL HETEROGENEITY IN MAMMALIAN CELL POPULATIONS. **Amy Y. Chang**, Steven C. Chen, Morgan L. Truitt, Davide Ruggiero, Wallace F. Marshall

1558-Pos BOARD B535
 DYNAMICS OF EPIGENETIC REGULATION AT THE SINGLE-CELL LEVEL. **Lacramioara Bintu**

1559-Pos BOARD B536
 ATOMISTIC AND REACTION-KINETIC MODELLING FOR ENGINEERING OF FATTY ACID SYNTHASE. **Floris Buelens**, Helmut Grubmüller

1560-Pos BOARD B537
 ENGINEERING BACTERIAL MICROCOMPARTMENTS: ASSEMBLY, PERMEABILITY, AND CARGO TARGETING. **Cheryl Kerfeld**

Molecular and Cellular Neuroscience (Boards B538 - B555)

1561-Pos BOARD B538 EDUCATION TRAVEL AWARDEE
 MOLECULAR MECHANISM OF THE SYNAPTOTAGMIN-SNARE COMPLEX THAT IS ESSENTIAL FOR SYNCHRONOUS SYNAPTIC NEUROTRANSMITTER RELEASE. **Qiangjun Zhou**, Axel T. Brunger

1562-Pos BOARD B539
 LATENCY OF QUANTAL DA RELEASE FROM SOMA OF DOPAMINE NEURONS IN MIDBRAIN SLICES. **Zhuan Zhou**, Li Wang, Ruiying Jiao, Feipeng Zhu, Xiaoxuan Sun, Quanfeng Zhang, Li Zhou, Mingli Li, Bing Liu, Qinglong Wang, Suhua Sun, Yang Lu, Xuanyang Chen, Bin Liu, Changhe Wang

1563-Pos BOARD B540
 PROBING THE CONTRIBUTION OF NAV1.7 AND NAV1.8 TO COLD TOLERANCE IN HIBERNATORS. **Lydia J. Hoffstaetter**, Karen J. Tonsfeldt, Vanessa Matos-Cruz, Slav N. Bagriantsev, Elena O. Gracheva

1564-Pos BOARD B541
 EXPRESSION AND CONTRIBUTIONS OF THE KIR2.1 INWARD-RECTIFIER K⁺ CHANNEL TO PROLIFERATION, MIGRATION AND CHEMOTAXIS OF MICROGLIA IN UNSTIMULATED AND ANTI-INFLAMMATORY STATES. **Doris Lam**, Lyanne Schlichter

1565-Pos BOARD B542
 FLUORESCENCE MICRO-SPECTROSCOPY ASSESSMENT OF THE IN VITRO DIMERIZATION OF BACE1-GFP FUSION PROTEIN IN CULTURED CELLS. Spencer Gardeen, Joseph L. Johnson, **Ahmed Heikal**

1566-Pos BOARD B543 INTERNATIONAL TRAVEL AWARDEE
 STRUCTURAL STUDY OF WHIRLIN, A CRUCIAL PDZ CONTAINING PROTEIN INVOLVED IN THE MECHANOTRANSDUCTION OF AUDITORY HAIR CELLS. **Florent Delhomme**, Florence Cordier, Bertrand Raynal, Amel El Bahloul-Jaziri, Christine Petit, Muriel Delepierre, Nicolas Wolff

1567-Pos BOARD B544
 RESOLVING THE MOLECULAR MECHANISMS OF INHERITED DEAFNESS CAUSED BY MISSENSE MUTATIONS IN CADHERIN-23. **Adrienne Thornburg**, Marcos Sotomayor

1568-Pos BOARD B545 CPOW TRAVEL AWARDEE
 FRAGILE X⁺-ASSOCIATED TREMOR~ATAXIA SYNDROME: LINKING CA²⁺ DYSREGULATION AND DNA DAMAGE RESPONSES. **Gaëlle Robin**, José R. López, Susan Hulsizer, Paul J. Hagerman, Isaac N. Pessah

1569-Pos BOARD B546
 ALTERED ER HOMEOSTASIS AND MITOCHONDRIA ER NETWORK IN PINK1 DEFICIENT PARKINSON'S DISEASE MODELS. **Zhi Yao**, Fernando Bartolome, Andrey Abramov, Sonia Gandhi

1570-Pos BOARD B547
 MICROCAVITATION AS A NEURONAL DAMAGE MECHANISM IN BLAST TRAUMATIC BRAIN INJURY. **Jonathan B. Estrada**, Mark T. Scimone, Alexander K. Landauer, Christian Franck

1571-Pos BOARD B548
STRAIN AND RATE-DEPENDENT DIFFUSE AXONAL INJURY OF 3D NEURON CULTURES UNDER COMPRESSION. Eyal Bar-Kochba, Mark Scimone, Jonathan Estrada, **Christian Franck**

1572-Pos BOARD B549
MECHANISM OF AXONAL CONTRACTILITY IN EMBRYONIC DROSOPHILA MOTOR NEURONS IN VIVO. **Anthony Fan**, Alireza Tofangchi, Taher Saif

1573-Pos BOARD B550
CALIBRATION OF SUB-THRESHOLD EVOKED EPSPS IN DENDRITIC SPINES USING VOLTAGE-SENSITIVE DYES. **Corey D. Acker**, Erika Hoyos, Leslie Loew

1574-Pos BOARD B551
CAGED NEUROACTIVE AMINO ACIDS FOR TWO-PHOTON PHOTOLYSIS OR TP-PHOTOSTIMULATION/INHIBITION. **David Ogden**, Christine Tran, Peter I. Dalko

1575-Pos BOARD B552
APPLICATION OF FLUORESCENCE CORRELATION SPECTROSCOPY TO STUDY DYNAMICS OF PROTEINS INVOLVED IN NEURONAL SYNAPSE-TO-NUCLEUS SIGNALING. **Kevin C. Crosby**, William A. Sather, Mark L. Dell'Acqua

1576-Pos BOARD B553
CELLULAR TAXONOMY OF THE MOUSE STRIATUM AS REVEALED BY SINGLE CELL RNA SEQUENCING. **Geoffrey Stanley**, Ozgun Gokce, Barbara Treutlein, Thomas C. Sudhof, Stephen Quake

1577-Pos BOARD B554
SINGLE-CELL RNA-SEQ OF NEURONS IN THE HUMAN NERVOUS SYSTEM. **Ming-Yi Lin**, Reymundo Dominguez, Jae M. Kim, Tade Souaiaia, Christopher Walker, Camarena Adrian, Joseph Nguyen, Jennifer Herstein, Maite Christi Francois, William J. Mack, Charles Liu, Oleg V. Evgrafov, James A. Knowles, Robert H. Chow

1578-Pos BOARD B555
THE EMERGENCE OF Y-JUNCTIONS IN THE ZEBRAFISH CONE MOSAIC. **Kamirah Demouchet**, Mikiko Nagashima, Jeremy Hadidjojo, Alicides Gonzalez, Linda Barthel, David Lubensky, Pamela Raymond

Molecular Dynamics I (Boards B556 - B583)

1579-Pos BOARD B556
INNER AND OUTER COORDINATION SHELLS OF Mg^{2+} IN CORA SELECTIVITY FILTER FROM MOLECULAR DYNAMICS SIMULATIONS. Sunan Kitjaruwankul, Panisak Boonamaj, **Pornthep Sompornpisut**

1580-Pos BOARD B557
BASES OF SODIUM CHANNEL SELECTIVITY AMONG ORGANIC CATIONS. **Yibo Wang**, Rocio K. Finol-Urdaneta, Sergei Yu Noskov, Robert J. French

1581-Pos BOARD B558
PROBING CONFORMATIONAL CHANGES OF SECONDARY ACTIVE TRANSPORT PROTEINS. **Xiaohong Zhuang**, Jeffery B. Klauda

1582-Pos BOARD B559
ROLE OF INFLUENZA M2 PROTEIN CLUSTERING ON THE INDUCED CURVATURE OF MODEL MEMBRANES. **Eduardo Mendez-Villuendas**, D. Peter Tieleman

1583-Pos BOARD B560
IS THERE A LO+LD COEXISTENCE PHASE IN THE POPC-CHOL MIXTURE? AN INSIGHT THROUGH MOLECULAR DYNAMICS SIMULATIONS. **Fernando Favela-Rosales**, César Millan-Pacheco, Jorge Hernández-Cobos, Mauricio D. Carvajal-Tinoco, Iván Ortega-Blake

1584-Pos BOARD B561
MOLECULAR DYNAMICS SIMULATIONS OF 41 TYPES OF GANGLIOSIDE IN MEMBRANE BILAYERS. **Steve Kim**, Wonpil Im

1585-Pos BOARD B562
MOLECULAR DYNAMICS STUDY OF GANGLIOSIDE GM3/DPPC MEMBRANE BY USING COARSE-GRAINED MODEL. **Kento Inoue**, Eiji Ymamoto, Daisuke Takaiwa, Kenji Yasuoka, Masuhiro Mikami

1586-Pos BOARD B563
MOLECULAR DYNAMICS SIMULATION STUDIES OF LIPOPOLYSACCHARIDE MICELLES. **Pushpa Itagi**, Wonpil Im

1587-Pos BOARD B564
MOLECULAR DYNAMICS SIMULATION STUDIES OF MEMBRANE BILAYERS OF LIPID A FROM VARIOUS GRAM-NEGATIVE BACTERIA. **Seonghoon Kim**, Wonpil Im

1588-Pos BOARD B565
SELF ASSEMBLY OF DISORDERED FOLDED MULTIPHASE PROTEINS BY COMPUTER SIMULATIONS. **Eduardo R. Cruz-Chu**, Konstantinos Gkagkas, Frauke Graeter

1589-Pos BOARD B566 EDUCATION TRAVEL AWARDEE
RATIONAL METHODS TO PHARMACOLOGICALLY TARGET IDPS: DEVELOPING MODULATORS OF TAU AGGREGATION. **David W. Baggett**

1590-Pos BOARD B567
STRUCTURAL STUDIES OF FIBRIL FORMATIONS OF TETRAPEPTIDES USING REPLICA EXCHANGE MOLECULAR DYNAMICS SIMULATIONS. **Yoshitake Sakae**, Yuko Okamoto

1591-Pos BOARD B568
PROBING THE DYNAMICS OF THE HEXAMERIC PILUS RETRACTION MOTOR PILT WITH MOLECULAR DYNAMICS SIMULATION. **Joseph L. Baker**

1592-Pos BOARD B569 EDUCATION TRAVEL AWARDEE
A GATED SUBSTRATE CHANNEL REVEALED IN NITROGENASE THROUGH A COMBINED IR AND MOLECULAR DYNAMICS STUDY. **Leland B. Gee**, Igor Leontyev, Alexei Stuchebrukhov, Aubrey D. Scott, Stephen P. Cramer

1593-Pos BOARD B570
PLEXINA3 TRANS- AND JUXTAMEMBRANE DIMER HELIX ASSOCIATION. In-drani Bera, Pouyan Khakbaz, **Jeffery B. Klauda**

1594-Pos BOARD B571
IN SILICO CHARACTERIZATION OF DOUBLE KNOT TOXIN BINDING TO TRPV1 CHANNEL. **Romina Sepúlveda**, Melissa Alegría-Arcos, Ignacio Diaz-Franulic, Fernando D. González-Nilo

1595-Pos BOARD B572
BRIDGING THE GAP BETWEEN COMPUTATION AND EXPERIMENTS IN GPCRS. **Chaya D. Stern**, Jose M. Perez-Aguilar, Scott C. Blanchard, Harel Weinstein, John D. Chodera

1596-Pos BOARD B573
POTENTIAL OF MEAN FORCE CALCULATIONS AND ISOTHERMAL TITRATION CALORIMETRY MEASUREMENTS OF THE HUMAN CARDIAC TROPONIN C / CALCIUM INTERACTION REVEAL AFFINITY CHANGES AS A FUNCTION OF FAMILIAL HYPERTROPHIC CARDIOMYOPATHY ASSOCIATED MUTATIONS. **Charles M. Stevens**, Kaveh Rayani, Gurpreet Singh, D. Peter Tieleman, Glen F. Tibbitts

1597-Pos BOARD B574
COMPUTATIONAL EVALUATION OF MUTATIONAL EFFECTS ON KINASE DYNAMICS. **Mohammad M. Sultan**, Vijay Pande

1598-Pos BOARD B575
DYNAMICS OF C-TERMINUS MOTION OF NORWALK VIRUS CAPSID BY MOLECULAR DYNAMICS (ALL-ATOM & COARSE GRAINED) SIMULATION. **Mahendra B. Thapa**, Jarek Meller, Mark Rance

1599-Pos BOARD B576
CONFORMATIONAL CHANGES IN ANTIGEN-ANTIBODY BINDING: MOLECULAR DYNAMICS STUDY. **Keiko Shinoda**, Hideaki Fujitani

1600-Pos BOARD B577
NON-EQUILIBRIUM MOLECULAR DYNAMICS TO SIMULATE SHEAR STRESS ON ANGIOTENSIN II TYPE 1 (AT1) RECEPTOR. **Matheus Malta de Sa**, Silvestre Massimo Modestia, Carlota Oliveira Rangel-Yagui, José Eduardo Krieger

1601-Pos BOARD B578
COMPUTATIONAL STUDY ON FLEXIBLE DYNAMICS OF HISTONE TAILS. **Sotaro Fuchigami**

1602-Pos BOARD B579
VISUALIZING THE DYNAMICS OF NEURONAL SIGNALING. **Katrine K. Skeby**, Gaël McGill

1603-Pos BOARD B580
A SIMPLE METHOD FOR PREDICTING CANCER SPECIFIC CELL SURFACE EPITOPES. **Xubiao Peng**, Will C. Guest, Neil R. Cashman, Steven S. Plotkin

1604-Pos BOARD B581
DIPOLE MOMENT AND BINDING ENERGY OF WATER IN PROTEINS FROM CRYSTALLOGRAPHY ANALYSIS. **Aleksandr Morozenko**

1605-Pos BOARD B582
CARBON NANOPARTICLES AND THEIR DIFFERENTIAL ASSOCIATION WITH THE MEMBRANES OF E. COLI: A COARSE-GRAINED MOLECULAR DYNAMICS SIMULATION STUDY. **Pin-Chia Hsu**, Damien Jefferies, Benjamin A. Hall, Syma Khalid

1606-Pos BOARD B583
GRAPHENE NANOPORES FOR PROTEIN SEQUENCING. **James Wilson**, Leila Sloman, Zhiren He, Aleksei Aksimentiev

Computational Methods and Bioinformatics I (Boards B584 - B610)

1607-Pos BOARD B584
ESTIMATION OF ENTROPY CHANGES DUE TO CONFORMATIONAL CHANGES IN MOLECULAR BINDING. **Yuly E. Sanchez**, Julian A. Aguilar

1608-Pos BOARD B585
RIGID DOCKING BASED PROTEIN-PROTEIN INTERACTION PREDICTION USING HIGH SCORING DOCKING MODELS. **Yuri Matsuzaki**, Jaak Simm

1609-Pos BOARD B586
MEGADOCK 4.0. AN ULTRA-HIGH-PERFORMANCE PROTEIN-PROTEIN DOCKING SOFTWARE FOR HETEROGENEOUS SUPERCOMPUTERS. **Masahito Ohue**, Yuri Matsuzaki, Nobuyuki Uchikoga, Takashi Ishida, Yutaka Akiyama

1610-Pos BOARD B587
ANALYSIS OF PHYSICO-CHEMICAL PROPERTIES OF PROTEIN DOCKING DECOYS GENERATED BY RIGID-BODY DOCKING. **Nobuyuki Uchikoga**, Yuri Matsuzaki, Masahito Ohue, Yutaka Akiyama

1611-Pos BOARD B588
DRUDE POLARIZABLE FORCE FIELD FOR MODELING DIVALENT CATIONS IN BIOLOGICAL SYSTEMS. **Hui Li**, Abhi Singharoy, Benoit Roux, Alexander MacKerell

1612-Pos BOARD B589
CALCIUM PARAMETERS IN CHARMM FORCE FIELD REVISITED. **Mohsen Pourmousa**, Richard M. Venable, Richard W. Pastor

1613-Pos BOARD B590
CHARMM-GUI MOLECULAR DYNAMICS SIMULATIONS OF THE NEO-LACTO SERIES IN A POPC BILAYER. **Venkata Malladi**, Wonpil Im

1614-Pos BOARD B591
CHARMM MOLECULAR DYNAMICS OF THE BLOOD GROUP GLYCOLIPIDS IN POPC LIPID BILAYER. **Jaeki Shin**, Wonpil Im

1615-Pos BOARD B592
CHARMM-GUI 10 YEARS FOR BIOMOLECULAR MODELING AND SIMULATION. **Wonpil Im**

1616-Pos BOARD B593
THE BROMOCEA CODE: AN IMPROVED GRAND CANONICAL MONTE CARLO/BROWNIAN DYNAMICS ALGORITHM INCLUDING EXPLICIT ATOMS. **Carlos J. Fernandez Solano**

1617-Pos BOARD B594
ACCURATE ATOM-BY-ATOM PREDICTIONS OF SOLVATION ELECTROSTATICS USING A HYDRATION-SHELL POISSON-BOLTZMANN MODEL. **Jaydeep P. Bardhan**, Matthew G. Knepley

1618-Pos BOARD B595
AN ACCURATE AND EFFICIENT, COMPUTATIONAL METHOD FOR THE HYDRATION FREE ENERGY OF LARGE AND COMPLEX MOLECULES. **Takashi Yoshidome**, **Toru Ekimoto**, Nobuyuki Matubayasi, Yuichi Harano, Masahiro Kinoshita, Mitsunori Ikeguchi

1619-Pos BOARD B596
THE INTERNAL FRICTION AND ANOMALOUS CONFORMATIONAL DIFFUSION OF PROTEINS. **Robert Deak**, Imre Derenyi

1620-Pos BOARD B597
UNIVERSAL SCALING OF CAVITY VOLUME PATHWAYS IN GLOBULAR PROTEINS. **Sheridan B. Green**, **Jenny Farmer**, Donald J. Jacobs

1621-Pos BOARD B598
A RIGOROUS APPROACH TO DERIVE ANALYTICAL EXPRESSIONS IN COARSE-GRAINED FORCE FIELDS. **Adam K. Sieradzan**, **Agnieszka G. Lipska**, **Robert Ganzynkiewicz**, **Michał Głuski**, **Jozef A. Liwo**

1622-Pos BOARD B599
FLUCTUATING FINITE ELEMENT ANALYSIS: DEVELOPMENT AND APPLICATIONS TO CYTOPLASMIC DYNEIN. **Ben Hanson**, Sarah Harris, Daniel Read, Oliver Harlen

1623-Pos BOARD B600
RNA CONFORMATIONAL FLUCTUATIONS FROM ELASTIC NETWORK MODELS: A COMPARISON WITH MOLECULAR DYNAMICS AND SHAPE EXPERIMENTS. **Giovanni Pinamonti**, Sandro Bottaro, Cristian Micheletti, Giovanni Bussi

1624-Pos BOARD B601
PREDICTING A DRUG'S MEMBRANE PERMEABILITY: EVOLUTION OF A COMPUTATIONAL MODEL VALIDATED WITH IN VITRO PERMEABILITY ASSAY DATA. **Timothy S. Carpenter**, M. Windy Mc Nerney, Nicholas A. Be, Victoria Lao, Emma M. Carlson, Brian J. Bennion, Felice C. Lightstone, Carlos A. Valdez

1625-Pos BOARD B602
TRAVELLING WAVE SOLUTIONS FOR A REACTION-DIFFUSION MODELS OF CELL GROWTH. **Brian W. Williams**

1626-Pos BOARD B603
QUANTITATIVE ANALYSIS OF CORTICAL ACTIN-MEMBRANE MICROCLUSTER INTERACTIONS. **Anthony R. Vega**, Jonathon A. Ditlev, Michael K. Rosen, Khuloud Jaqaman

1627-Pos BOARD B604
THREE-DIMENSIONAL MONOLAYER STRESS MICROSCOPY. **Ricardo Serrano**, Aereas Aung, Shyni Varghese, Juan C. del Álamo

1628-Pos BOARD B605
IMPLICATIONS OF KIR/NAV1.5 RECIPROCITY FOR PROPAGATING ACTION POTENTIALS IN CARDIAC CELLS. **Anthony Varghese**

1629-Pos BOARD B606
ACCESSIBLE, FEATURE-RICH SOFTWARE FOR RIGOROUS MODEL FITTING USING MAXIMUM LIKELIHOOD ESTIMATION. **Michael S. Woody**, John H. Lewis, Michael J. Greenberg, Yale E. Goldman, E. Michael Ostap

1630-Pos BOARD B607
IMPROVING FAR-UV CD PREDICTION WITH THE DIPOLE INTERACTION MODEL. **Akongwi Jungong**, Rahul Nori, Igor Uporov, Felix N. Ngassa, Ethan Austhof, Emily Holt, Kathryn A. Thomasson

1631-Pos BOARD B608
A NEW ITERATIVE DEEP NEURAL NETWORK ALGORITHM TO SIGNIFICANTLY IMPROVE IMAGE SEGMENTATION. **Xundong Wu**, Yong Wu, Riccardo Olcese, Ligia Toro, Enrico Stefani

1632-Pos BOARD B609
EFFECT OF DATA PRE-PROCESSING ON SUPER-RESOLUTION RECONSTRUCTION AND PATTERN RECOGNITION. **Maximilano Giuliani**, Adriano Vissa, Amine Driouchi, Christopher M. Yip

1633-Pos BOARD B610
ACCELERATING ANALYSIS OF BIOLOGICAL TARGETS FROM RAW SOLID-STATE MICROPORE DATA. MADIHA HANIF, Yusuf Suleman, Abdul Hafeez, M. Mustafa Rafique, Ali R. Butt, **Samir M. Iqbal**

Biosensors I (Boards B611 - B640)

1634-Pos BOARD B611
BIOAFFINITY DETECTION OF BIOMOLECULES IN COMPLEX MATRICES: REAL TIME DETECTION OF DNA/RNA-HYBRIDIZATION IN CELL EXTRACT VIA ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY MEASUREMENTS. **Loredana Casalis**, Pietro Capaldo, Pietro Parisse, Alessandro Bosco

1635-Pos BOARD B612
SELECTIVE DETECTION OF PROTEIN HOMOLOGUES IN SERUM USING AN OMPG NANOPORE. Monifa A. Fahie, **Min Chen**

1636-Pos BOARD B613
A PIXEL CHARGE SENSOR FOR BIOLOGICAL PROCESSES. **Mikyung Han**, Yuan Mei

1637-Pos BOARD B614
PH SENSING WITH SILICON NANORIBBON DEVICES MODIFIED WITH CARBON NANOTUBE PORINS. **Huanan Zhang**, Scott Dhuey, Ramya Tunuguntla, Aleksandr Noy

1638-Pos BOARD B615
CREATING ROBUST AND REVERSIBLE CELL-GEL NETWORKS USING BORONIC ACID CHEMISTRY. **Adrienne C. Greene**, David R. Wheeler, Erik D. Spoerke, George D. Bachand, Brad H. Jones

1639-Pos BOARD B616
NANOPORE SUBANGSTROM-RESOLUTION SINGLE-MOLECULE TOOL. Ian M. Derrington, Jonathan M. Craig, Eric Stava, Andrew H. Laszlo, Brian C. Ross, Henry Brinkerhoff, Ian C. Nova, Kenji Doering, Benjamin I. Tickman, Jeff G. Mandell, Kevin L. Gunderson, **Jens H. Gundlach**

1640-Pos BOARD B617 EDUCATION TRAVEL AWARDEE
MONITORING LESION DEVELOPMENT DURING IRREVERSIBLE ELECTROPORATION TREATMENT USING ELECTRICAL IMPEDANCE SPECTROSCOPY. **Mohammad Bonakdar**, Eduardo Latouche, rafael V. Davalos

1641-Pos BOARD B618
SIMULTANEOUS IMAGING OF RHO GTPASE AND RHOGEF ACTIVATION USING NOVEL GEF BIOSENSORS REVEALS RELATIONSHIPS BETWEEN GEF AND GTPASE ACTIVATION IN CELL MOTILITY. **Daniel J. Marston**, Marco Vilela, George Glekas, Gaudenz Danuser, John Sondek, Klaus M. Hahn

1642-Pos BOARD B619
STRUCTURE PREDICTION AND 3D MODELING OF SINGLE STRANDED DNA FROM SEQUENCE FOR APTAMER-BASED BIOSENSORS. Iman Jeddi, **Leonor Saiz**

1643-Pos BOARD B620
SINGLE MOLECULE MEASUREMENTS OF SMALL MOLECULE INTERACTIONS WITH METALLIC NANOCCLUSERS. **Arvind Balijepalli**, John Kasianowicz, Jessica Ettetdgui

1644-Pos BOARD B621
SOLID-STATE NANOPORE DETECTION OF DIVERSE NUCLEIC ACID BIOMARKERS WITH DRAG-REGULATED NANOPORE TRANSLOCATION. **Osama K. Zahid**, Fanny Wang, Jan A. Ruzicka, Ethan W. Taylor, Adam R. Hall

1645-Pos BOARD B622
CRITICAL TEST OF NANOPORE-BASED SEQUENCING-BY-SYNTHESIS: CAPTURE OF NUCLEIC ACID TAGS. **Jacob Forstater**, Jessica Ettetdgui, Minchian Chen, Shiv Kumar, Sergey Kalachikov, James Russo, Jingyue Ju, John Kasianowicz

1646-Pos BOARD B623
QUANTIFYING PROTEIN CONCENTRATION USING DESIGNED DNA CARRIERS AND SOLID-STATE NANOPORES. **Jinglin Kong**, Nicholas Bell, Ulrich Keyser

1647-Pos BOARD B624
A MICROFLUIDIC-CHANNEL REGULATED, ELECTROLYTE-GATED GRAPHENE FET BIOSENSOR ARRAY FOR REPEATABLE AND RECALIBRATED DETECTION OF THROMBIN. **Jaebin Choi**, Chaehyun Lim, Youngmo Jung, Dong Heon Shin, Sukang Bae, Sang Kyung Kim, Chulki Kim

1648-Pos BOARD B625
SPONTANEOUS AND RESPONSE STOCHASTIC DYNAMICS OF SACULAR HAIR CELLS. **Rami M. Amro**, Dolores Bozovic, Alexander B. Neiman

1649-Pos BOARD B626
HOW TO MAKE A SWEET SENSOR. **Lily S. Cheung**, Taylor M. Chavez, Wolf B. Frommer

1650-Pos BOARD B627
NANO-DOSING AND DETECTION TO PROBE NEURODEGENERATIVE DISEASE INDUCED BY OLIGOMERS OF BETA AMYLOID. **Wei-Hsin Chen**

1651-Pos BOARD B628
LIVE CELL IMAGING OF CYTOSOLIC NADH/NAD⁺ RATIO IN HEPATOCYTES USING THE FLUORESCENT SENSOR PEREDOX. **Ricard Masia**, William J. McCarty, Carolina Lahmann, Jay Luther, Raymond T. Chung, Martin L. Yarmush, Gary Yellen

1652-Pos BOARD B629
SYNONYMOUS MODIFICATION ENABLES HIGH FIDELITY EXPRESSION OF BIOSENSORS AND PROBES WITH REPETITIVE PROTEIN AND NUCLEOTIDE SEQUENCES. **Bin Wu**, Veronika Miskolci, Louis Hodgson, Robert H. Singer

1653-Pos BOARD B630
BIOMIMETIC NANOPORES FOR STUDYING YEAST NUCLEAR PORE TRANSPORT. **Adithya N. Ananth**, Roderick Versloot, Aravind Dwarkasing, Steffen Frey, Dirk Goerlich, Cees Dekker

1654-Pos BOARD B631
THEORETICAL SIMULATION AND EXPERIMENTAL INVESTIGATION FOR THE IDENTIFICATION AND ANALYSIS OF BIPHASIC SURFACE PLASMON RESONANCE DATA. **Purushottam Tiwari**, Yesim Darici, Jin He, Xuewen Wang, Aykut Uren

1655-Pos BOARD B632
OPTICAL DETECTION OF BIOLOGICAL ACTIVITY, ONE MOLECULE AT A TIME. **Markita P. Landry**, Jingqing Zhang, Paul W. Barone, Jong-Ho Kim, Michael S. Strano

1656-Pos BOARD B633
THE SECRETORY PATHWAY Ca^{2+}/MN^{2+} -ATPASE SPCA2 REGULATES MN^{2+} -DEPENDENT CELL CYCLE PROGRESSION IN 3D CULTURE OF COLON CANCER CELLS. **James Jenkins**, Ruslan Dmitriev, Dmitri Papkovsky

1657-Pos BOARD B634
DETECTION OF E2 ACTIVITY AS A TUMOR MARKER USING AN ARTIFICIAL RING FINGER. **Kazuhide Miyamoto**

1658-Pos BOARD B635
PROBING SURFACE HYDROPHOBICITY OF INDIVIDUAL PROTEIN AT SINGLE-MOLECULE RESOLUTION USING SOLID-STATE NANOPORES. **Ji Li**

1659-Pos BOARD B636
A NEW CLASS OF TARGETABLE, GENETICALLY ENCODED SINGLE-COLOR BIOSENSORS FOR MULTIPLEXED MONITORING OF PHOSPHOINOSITIDES. **Fabian Hertel**, Jin Zhang

1660-Pos BOARD B637
OPTIMIZATION OF PARAMETERS FOR NANOPORE RESISTIVE PULSE SENSING OF MICRORNA. **Josip Ivica**, Philip T.F. Williamson, Maurits R.R. de Planque

1661-Pos BOARD B638
NANOPORE AS A SENSOR BASED ON AVIDIN-BIOTIN SYSTEM. **Mathilde Lepoitevin**, Mikhael Bechelany, Emmanuel Balanzat, Jean-Marc Janot, Sebastien Balme

1662-Pos BOARD B639
FLUORESCENT BIOSENSOR FOR HYALURONIDASE: INTENSITY BASED RATIOMETRIC SENSING AND TIME-GATED DETECTION USING A LONG LIFETIME AZADIOXATRIANGULENIUM (ADOTA) FLUOROPHORE. **Rahul Chib**, Mark Mummert, Ilkay Bora, Sunil Shah, Bo Wegge Laursen, Thomas Just Sorensen, Ignacy Gryczynski, Julian Borejdo, Zygmunt Gryczynski, Rafal Fudala

1663-Pos BOARD B640
THE ROLE OF CONSERVED POLAR AMINO ACIDS AT THE TRANSMEMBRANE LOOP REGIONS OF A GENETICALLY ENCODED VOLTAGE SENSOR. **Masoud Sepehri Rad**

Biomaterials & Biosurfaces (Boards B6411 - B661)

1664-Pos BOARD B641
A FACILE NOVEL METHOD TO CONTROL SURFACE TOPOGRAPHY OF CONDUCTING POLYMER FOR IMPROVED CORONARY STENT PERFORMANCE. **Sahebzadeh Mohammed Nabeeluddin**

1665-Pos BOARD B642
DESIGN OF AN AMYLOID-LIKE NANOSHEET WITH TUNABLE FUNCTIONALITY AS BIO-NANOMATERIALS. **Cong Liu**

1666-Pos BOARD B643
ULTRA-FAST PROTON TRANSPORT IN SUB-1-NM DIAMETER CARBON NANOTUBE PORINS. **Ramya Tunuguntla**, Frances Allen, Kyunghoon Kim, Allison Belliveau, Aleksandr Noy

1667-Pos BOARD B644
ELECTROSTATIC DEPENDENT ELASTIC BEHAVIOR OF HYALURONIC ACID. **John P. Berezney**, Omar A. Saleh

1668-Pos BOARD B645
MECHANICALLY-TUNABLE, PROTEIN-BASED MATERIALS CAN BE FUNCTIONALIZED WITH OTHER PROTEINS AND WITH DNA. David Howell, Shang-Pu Tsai, Kelly Churion, Jan Patterson, Kayla Bayless, **Sarah E. Bondos**

1669-Pos BOARD B646
COMPRESSIVE MECHANICS OF COLLAGEN-FIBRIN COMPOSITES AND THEIR STRUCTURAL ALTERATIONS. **Oleg V. Kim**, Rustem I. Litvinov, John W. Weisel, Mark S. Alber

1670-Pos BOARD B647
POLYMERSOME MEMBRANE PERMEABILITY AND IONIC TRANSPORT PROPERTIES IN THE PRESENCE OF SUB-2NM CARBON NANOTUBE PORINS. **Jeremy Sanborn**, Ramya Tunuguntla, Atul Parikh, Aleksandr Noy

1671-Pos BOARD B648
IMPACT OF PENDANT FUNCTIONAL GROUPS AND METHOD OF PREPARATION ON AGGREGATION BEHAVIOUR OF PEGYLATED COPOLYMERS. **Amy Won**, Frantz Le Devedec, Christine Allen, Christopher M. Yip

1672-Pos BOARD B649
WETTABILITY SWITCH OF ANODIC TITANIUM DIOXIDE NANOTUBES WITH VARIOUS DIAMETERS. **Mukta Kulkarni**, Ita Junkar, Harinarayanan Puliyalil, Ales Iglic

1673-Pos BOARD B650
A MINIMALISTIC IN VITRO 3D MODEL TO STUDY F98 RAT BRAIN TUMOR GROWTH. **Emilie Gontran**, Marjorie Juchaux, Christophe Deroulers, Mathilde Badoual, Olivier Seksek

1674-Pos BOARD B651
CAF1 OF YERSINIA PESTIS FORMS COMPLEX HIGHLY STABLE PROTEIN POLYMERS AND HYDROGEL SCAFFOLDS. **Helen Waller**, Yakup Ulusu, Jeremy H. Lakey

1675-Pos BOARD B652
ADSORPTION OF DNA AND RECA TO CONJUGATES OF SINGLE-WALLED CARBON NANOTUBES AND POLY(N-ISOPROPYLACRYLAMIDE) MOLECULES. **Katsuki Izumi**, Yoshikazu Kumashiro, Kazuo Umemura

1676-Pos BOARD B653
CELLULAR SEMICONDUCTOR FACTORIES: CONTROLLED BACTERIAL SYNTHESIS OF CHALCOGENIDE NANOMATERIALS. **Lindsay Bassman**, Francis Tran, Mohamed El-Naggar, James Boedicker

1677-Pos BOARD B654
ALIGNMENT AND DIAMETER OF ELECTROSPUN PEO FIBERS. Killian McGiboney, Thyra Tanos, **Christine Helms**

1678-Pos BOARD B655
BRAIN-MIMETIC MICROENVIRONMENTS FOR CULTURE OF PRIMARY GLIOBLASTOMA MULTIFORME CELLS. **Weikun Xiao**, Stephanie K. Seidlits, Lisa Ta, David Nathanson

1679-Pos BOARD B656
ADHESION PROPERTIES OF DEFORMABLE ULTRA-LOW CROSSLINKED MICROGEL PARTICLES ON SURFACES. **Michelle Gaines**, Thomas Barker, Alberto Fernandez-Nieves

1680-Pos BOARD B657
BEHAVIOR OF WATER IN 3-D CONFINEMENT: IMPLICATIONS FOR MACROMOLECULAR FUNCTION. Amir Barati-Farimani, Emad Tajkhorshid, Naryana Aluru, **Eric Jakobsson**

1681-Pos BOARD B658
UNDERSTANDING THE INTERACTION BETWEEN BIOMOLECULES AND SILVER NANOPARTICLES. **Horacio Poblete**, Anirudh Agarwal, Suma S. Thomas, Cornelia Bohne, R. Ranjithkumar, Jaywant Phospase, Emilio I. Alarcon, Jeffrey Comer

1682-Pos BOARD B659
DYNAMIC STABILIZATION OF EXPRESSED PROTEINS IN ENGINEERED DIATOM BIOSILICA. Yijia Xiong, Nicole R. Ford, Karen A. Hecht, Guritno Roesijadi, **Thomas C. Squier**

1683-Pos BOARD B660

SECONDARY STRUCTURE AND FOLDING STABILITY OF PROTEINS ADSORBED ON SILICA - PRESSURE VERSUS TEMPERATURE DENATURATION. **Claus Czeslik**, Süleyman Cinar

1684-Pos BOARD B661

SQUID'S SUCKERIN PROTEINS IN BITS & BYTES. **Akshita Kumar**, Srinivasaraghavan Kannan, Julien Lescar, Chandra Verma, Ali Miserez

Tuesday, March 1, 2016

Daily Program Summary

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

7:30 AM–5:00 PM	Registration/Information	West Lobby
8:00 AM–9:00 AM	Biophysical Society Business Meeting	Room 404AB
8:00 AM–4:30 PM	Poster Viewing	West Hall
8:15 AM–10:15 AM	<p>Symposium: Emerging Techniques for Study of Cell Mechanics Chair: <i>Amy Rowat, University of California, Los Angeles</i></p> <p>THE PHYSICS OF SELF-ASSEMBLING CYTOSKELETAL NETWORKS. <i>R. Dyche Mullins</i> FEELING FOR CELL FUNCTION - MECHANICAL PHENOTYPING AT 1,000 CELLS/SEC. <i>Jochen Guck</i> BIOMECHANICAL IDENTIFICATION AND SORTING OF SINGLE CELLS. <i>Todd Sulchek</i> CANCER CELL MECHANOTYPING: FROM SCREENING TO DISEASE BIOPHYSICS. <i>Amy Rowat</i></p>	Petree Hall C
8:15 AM–10:15 AM	<p>Symposium: Multiscale Biophysics of Membranes Chair: <i>Felix Goñi, Basque Country University, Spain</i></p> <p>INTERACTIONS AT THE MEMBRANE-FLUID INTERFACE. <i>Suzanne P. Jarvis</i> CERAMIDE STUDIES FROM THE NANO TO THE MICROSCALE. <i>Felix M Goñi</i> LIPID STRUCTURE AND CONTROL OF MEMBRANE ORDERED DOMAIN FORMATION AND SIZE BY LIPID COMPOSITION AND ASYMMETRY IN VITRO AND IN VIVO. <i>Erwin London</i> THE BIOPHYSICS OF LIVING MEMBRANES: PROTEIN PARTITIONING AND FUNCTIONAL DIFFERENTIATION IN ORDERED PLASMA MEMBRANE DOMAINS. <i>Ilya Levental</i></p>	Petree Hall D
8:15 AM–10:15 AM	Platform: Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating II	Room 502A
8:15 AM–10:15 AM	Platform: Protein Structure, Prediction, and Design	Room 502B
8:15 AM–10:15 AM	Platform: Protein Assemblies	Room 515A
8:15 AM–10:15 AM	Platform: Mechanosensation	Room 515B
8:15 AM–10:15 AM	Platform: Networks and Synthetic Biology	Room 501ABC
8:15 AM–10:15 AM	Platform: Ribosomes and Translation	Room 511ABC
9:00 AM–10:30 AM	Subgroup Chairs Meeting	Room 510
9:30 AM–10:30 AM	<p>Career Center Workshop Career Planning and Job Searching for Science Professionals: Academic Opportunities</p>	Room 518
10:00 AM–4:30 PM	Exhibits	West Hall
10:15 AM–11:00 AM	Coffee Break	West Hall
10:45 AM–12:45 PM	<p>Symposium: Awards Chair: <i>Edward Egelman, University of Virginia, Society President</i></p> <p>TWENTY-EIGHT YEARS, AND STILL (OPTICALLY) TRAPPED! SINGLE MOLECULE BIOPHYSICS COMES OF AGE. <i>Steven M. Block</i> ELEVATOR MECHANISM OF GLUTAMATE TRANSPORTERS. <i>Olga Boudker</i> MECHANICAL ARCHITECTURE OF CELL DIVISION. <i>Sophie Dumont</i> HOW A TAIL WAGS ITS SPERM: REGULATION OF FLAGELLAR MOTILITY BY BIOACTIVE LIPID SIGNALING. <i>Polina V. Lishko</i> X-RAYS AND ELECTRONS ILLUMINATE NEUROTRANSMITTER RECEPTOR STRUCTURE AND MECHANISM. <i>Eric Gouaux</i> CHOLESTEROL, THE MOLECULE YOU THOUGHT YOU KNEW. <i>Philip Yeagle</i></p>	Petree Hall C
10:45 AM–12:45 PM	Platform: Other Channels	Petree Hall D
10:45 AM–12:45 PM	Platform: Actin and Microtubules: Structure and Dynamics	Room 502A
10:45 AM–12:45 PM	Platform: Protein-Lipid Interactions II	Room 502B

10:45 AM–12:45 PM	Platform: Intrinsically Disordered Proteins (IDP) and Aggregates II	Room 515A
10:45 AM–12:45 PM	Platform: Calcium Signaling	Room 515B
10:45 AM–12:45 PM	Platform: Protein-Dynamics and Allostery I	Room 501ABC
10:45 AM–12:45 PM	Platform: RNA Structure and Dynamics	Room 511ABC
11:30 AM–1:00 PM	Exhibitor Presentation: Bruker Nano Surfaces Bioscope Resolve BioFM- Unrivalled AFM Biomechanics and Resolution	Room 505
12:00 PM–1:30 PM	Research Programs at PUIs: Founding, Establishing, and Maintaining a Research Laboratory	Room 408A
12:00 PM–2:00 PM	Postdoc to Faculty Q&A: Transitions Forum and Luncheon	Room 510/512
12:30 PM–2:00 PM	Exhibitor Presentation: Nanion Technologies GmbH Measure More Membrane: Cells, Bilayers and Transporter Activity	Room 513
1:00 PM–3:00 PM	Industry and Agency Opportunities Fair	West Hall
1:30 PM–3:00 PM	GMOs, Severe Weather, and Public Opinion	Room 403A
1:45 PM–3:00 PM	Snack Break	West Hall
1:45 PM–3:45 PM	Poster Presentations and Late Posters	West Hall
2:30 PM–3:30 PM	Career Center Workshop Creating and Using an Effective CV/Résumé	Room 518
2:30 PM–4:00 PM	Postdoc to Faculty: Setting Up a Lab	Room 403B
3:00 PM–4:00 PM	Committee on Inclusion and Diversity Networking Event: Resources and Opportunities	Room 404AB
3:00 PM–5:00 PM	Education Committee Meeting	Room 506
4:00 PM–6:00 PM	Symposium: Optogenetics in Neuroscience Chair: <i>Edward Boyden, MIT</i> TOOLS FOR ANALYZING AND REPAIRING COMPLEX BIOLOGICAL SYSTEMS. <i>Edward S. Boyden</i> CONTROLLING BIOLOGICAL PATHWAYS WITH PHOTOPHARMACOLOGY. <i>Dirk Trauner</i> TOOLS FOR ANATOMICAL AND FUNCTIONAL ANALYSIS OF WIDELY DISTRIBUTED BRAIN NETWORKS. <i>Viviana Gradinaru</i> NATURAL ANION CHANNEL RHODOPSINS: A NEW FAMILY OF TOOLS FOR OPTOGENETIC NEURAL INHIBITION. <i>John L. Spudich</i>	Petree Hall C
4:00 PM–6:00 PM	Symposium: p-ATPases: Structure, Mechanism, and Disease Chair: <i>David Gadsby, Rockefeller University</i> HYBRID FUNCTION OF THE NA/K-ATPASE: PROTON IMPORT ACCOMPANYING NA/K EXCHANGE. <i>David Gadsby</i> SNAPSHOTS OF P-TYPE ATPASES - FROM CRYSTAL STRUCTURES TO SINGLE-MOLECULE STUDIES. <i>Poul Nissen</i> THE NEW KIDS IN THE BLOCK: Fe^{2+} TRANSPORT P-ATPASES. <i>José M. Argüello</i> SECRETORY PATHWAY CALCIUM ATPASES IN BREAST CANCER. <i>Rajini Rao</i>	Petree Hall D
4:00 PM–6:00 PM	Platform: Cardiac Muscle Mechanics and Structure	Room 502A
4:00 PM–6:00 PM	Platform: Protein Stability, Folding, and Chaperones II	Room 502B
4:00 PM–6:00 PM	Platform: Membrane Physical Chemistry III	Room 515A
4:00 PM–6:00 PM	Platform: Molecular, Cellular, and Experimental Neuroscience: Reception, Plasticity, and New Approaches	Room 515B
4:00 PM–6:00 PM	Platform: Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence	Room 501ABC
7:30 PM–9:30 PM	Workshop: Time-resolved Crystallography Chair: <i>Philip Anfinrud, NIH</i> TIME-RESOLVED CRYSTALLOGRAPHY WITH SYNCHROTRON AND FREE ELECTRON LASER SOURCES. <i>Keith Moffat</i> STRUCTURAL DYNAMICS OF PHOTOACTIVE YELLOW PROTEIN INVESTIGATED BY TIME RESOLVED SERIAL FEMTOSECOND CRYSTALLOGRAPHY. <i>Marius Schmidt</i> TIME-RESOLVED FEMTOSECOND CRYSTALLOGRAPHY: TOWARDS MOLECULAR MOVIES OF MOLECULES IN ACTION. <i>Petra Fromme</i> WATCHING PROTEINS FUNCTION WITH TIME-RESOLVED X-RAY DIFFRACTION. <i>Philip Anfinrud</i>	Room 502A

7:30 PM–9:30 PM	<p>Workshop: Frontiers in Biophysical Instrumentation Room 502B Chair: <i>Joerg Bewersdorf, Yale University</i></p> <p>STUDYING CELL DYNAMICS USING QUANTITATIVE PHASE IMAGING. <i>Gabriel Popescu</i> PROBING SINGLE INDIVIDUAL PROTEINS UNFOLD AND REFOLD WITH 1-μs RESOLUTION: IMPROVED AFM-BASED SINGLE MOLECULE FORCE SPECTROSCOPY. <i>Thomas T. Perkins</i> ELUCIDATION OF THE MOLECULAR MACHINERY IN PHOTOSYNTHETIC LIGHT HARVESTING. <i>Gabriela Schlau-Cohen</i> LIVE-CELL OPTICAL MICROSCOPY BEYOND THE DIFFRACTION LIMIT. <i>Joerg Bewersdorf</i></p>
7:30 PM–9:30 PM	<p>Workshop: Computational Methods for Ion Permeation and Selection Room 515A Chair: <i>Maria Kurnikova, Carnegie Mellon University</i></p> <p>WHAT CAN BE LEARNED ABOUT ION CHANNELS FROM MOLECULAR DYNAMICS SIMULATIONS. <i>Benoit Roux</i> CONTINUUM THEORY OF CALCIUM CHANNELS: FUNDAMENTAL INSIGHTS FROM SIMPLIFIED MODELS. <i>Dirk Gillespie</i> COMPUTATIONAL ELECTROPHYSIOLOGY: CLOSE-UPS OF ION PERMEATION AND MIGRATION IN MEMBRANE PROTEINS. <i>Ulrich Zachariae</i> WILL IT PERMEATE? PREDICTING ION CHANNEL ION SELECTIVITY, PERMITTIVITY AND BLOCK MECHANISMS. <i>Maria Kurnikova</i></p>
7:30 PM–9:30 PM	<p>Workshop: Methods for Tracking Single Biomolecule Mobility, Clustering, and Conformational State Room 515B Chair: <i>Keith Lidke, University of New Mexico</i></p> <p>MULTI-COLOR SINGLE PARTICLE TRACKING FOR DETERMINING PROTEIN INTERACTION LIFETIMES. <i>Keith A. Lidke</i> TRACKING SUBCELLULAR DYNAMICS WITH MULTIFOCAL PLANE MICROSCOPY. <i>Raimund J. Ober</i> SINGLE MOLECULES IN THE AGE OF BIG DATA. <i>Maxime Dahan</i> INVESTIGATING HOW MOLECULES COME TO LIFE USING SINGLE MOLECULE FLUORESCENCE TECHNOLOGIES. <i>Taekjip Ha</i></p>
6:00 PM–10:00 PM	<p>Publications Committee Meeting J.W. Marriott, Olympic II</p>
8:00 PM–10:00 PM	<p>SOBLA (The Society for Latinoamerican Biophysicists) Meeting Room 409AB</p>

Tuesday, March 1

Registration/Information

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

Biophysical Society Business Meeting

8:00 AM - 9:00 AM, ROOM 404AB

Poster Viewing

8:00 AM - 4:30 PM, WEST HALL

Symposium

Emerging Techniques for Study of Cell Mechanics

8:15 AM - 10:15 AM, PETREE HALL C

Chair

Amy Rowat, University of California, Los Angeles

NO ABSTRACT 8:15 AM

THE PHYSICS OF SELF-ASSEMBLING CYTOSKELETAL NETWORKS. **R. Dyche Mullins**

1685-SYMP 8:45 AM

FEELING FOR CELL FUNCTION - MECHANICAL PHENOTYPING AT 1,000 CELLS/SEC. **Jochen Guck**

1686-SYMP 9:15 AM

BIOMECHANICAL IDENTIFICATION AND SORTING OF SINGLE CELLS. **Todd Sulchek**

1687-SYMP 9:45 AM

CANCER CELL MECHANOTYPING: FROM SCREENING TO DISEASE BIOPHYSICS. **Amy Rowat**

Symposium

Multiscale Biophysics of Membranes

8:15 AM - 10:15 AM, PETREE HALL D

Chair

Felix Goñi, Basque Country University, Spain

1688-SYMP 8:15 AM

INTERACTIONS AT THE MEMBRANE-FLUID INTERFACE. **Suzanne P. Jarvis**

1689-SYMP 8:45 AM

CERAMIDE STUDIES FROM THE NANO TO THE MICROSCALE. **Felix M. Goñi, Alicia Alonso**

1690-SYMP 9:15 AM

LIPID STRUCTURE AND CONTROL OF MEMBRANE ORDERED DOMAIN FORMATION AND SIZE BY LIPID COMPOSITION AND ASYMMETRY IN VITRO AND IN VIVO. **Erwin London, Deborah A. Brown, Zhen Huang, JiHyun Kim, Guangtao Li, Johnna St.Clair, Qing Wang**

1691-SYMP 9:45 AM

THE BIOPHYSICS OF LIVING MEMBRANES: PROTEIN PARTITIONING AND FUNCTIONAL DIFFERENTIATION IN ORDERED PLASMA MEMBRANE DOMAINS. **Ilya Levental**

Platform

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

8:15 AM - 10:15 AM, ROOM 502A

Co-Chairs

Glenn Bett, State University of New York

Brad Rothberg, Temple University School of Medicine

1692-PLAT 8:15 AM

MOLECULAR DYNAMICS SIMULATIONS OF HYDROPHOBIC MATCHING IN KCSA. **Karen M. Callahan**, Benoit Mondou, Louis Sasseville, Jean-Louis Schwartz, Jurgen Sygusch, Nazzareno D'Avanzo

1693-PLAT 8:30 AM

INSIGHTS INTO ION CHANNEL SELECTIVITY WITH IONIC COULOMB BLOCKADE. **William A.T. Gibby**, Dmitri G. Luchinsky, Igor Kh Kaufman, Peter V.E. McClintock, Aneta Stefanovska, Robert S. Eisenberg

1694-PLAT 8:45 AM

IONIC BASIS OF REPOLARIZATION OF ATRIAL AND VENTRICULAR SPECIFIC CELL TYPES DERIVED FROM HUMAN INDUCED PLURIPOTENT STEM CELLS. Aaron D. Kaplan, **Randall L. Rasmusson**, Glenna CL Bett

1695-PLAT 9:00 AM

SHAKER-IR K CHANNEL GATING IN HEAVY WATER: ROLE OF STRUCTURAL WATER MOLECULES IN INACTIVATION. Tibor G. Szanto, Szabolcs M. Gaal, Zoltan Varga, **Gyorgy Panyi**

1696-PLAT 9:15 AM

AN INTRINSIC LIGAND MEDIATES N- AND C-TERMINAL INTERACTIONS WITH THE KCNH GATING MACHINERY. **Yaxian Zhao**, Joao H. Morais-Cabral, Andreia Sousa Fernandes, Gail A. Robertson

1697-PLAT 9:30 AM

TARGETED ENHANCEMENT OF HERG K⁺ CHANNEL ACTIVITY WITH SCFV ANTIBODY FRAGMENTS. **Greg Starek**, Carol A. Harley, David K. Jones, Gail A. Robertson, João H. Morais-Cabral

1698-PLAT 9:45 AM

FUNCTIONAL AND CRYSTALLOGRAPHIC STUDIES OF HETERO-MULTIMERIC K⁺ CHANNELS. Spandana Vemulapally, D. Marien Cortes, **Luis G. Cuello**

1699-PLAT 10:00 AM

OPTICAL RECORDING OF VOLTAGE ACTIVATION OF ENDOGENOUS POTASSIUM CHANNELS. **Mark W. Lillya**, Laxmi K. Parajuli, Sebastian Fletcher-Taylor, Joyce Huang, Bruce E. Cohen, Karen Zito, Jon T. Sack

Platform

Protein Structure, Prediction, and Design

8:15 AM - 10:15 AM, ROOM 502B

Co-Chairs

Evelyn Deplazes, The University of Queensland, Australia

Edward Lemke, European Molecular Biology Laboratory, Germany

1700-PLAT 8:15 AM

COMBINING PHYSICS AND KNOWLEDGE IN BLIND PROTEIN STRUCTURE PREDICTION. **Alberto Perez**, Emiliano Brini, Joseph Morrone, Jason Wagoner, Justin MacCallum, Ken Dill

1701-PLAT 8:30 AM

A NEW TOOL FOR CUSTOM PROTEIN DESIGN AND ENGINEERING - DH10 BAC-TAG. **Christine Koehler**, Paul Sauter, Mirella Wawryszyn, Gemma Estrada Girona, Markus H. Fritz, Moritz Biskup, Hueseyin Besir, Imre Berger, Vladimir Benes, Jan Korbel, Stefan Braese, Edward A. Lemke

1702-PLAT 8:45 AM
CRYOEM-GUIDED ITERATIVE MOLECULAR DYNAMICS - ROSETTA PROTEIN STRUCTURE REFINEMENT PROTOCOL IMPROVES PROTEIN MODEL QUALITY. **Steffen Lindert**, Melanie Marlett

1703-PLAT 9:00 AM
STRUCTURE-BASED PREDICTION OF PROTEASE MULTISPECIFICITY USING COMPUTATIONAL PROTEIN DESIGN. **Sagar D. Khare**, Aliza Rubenstein, Manasi Pethe

1704-PLAT 9:15 AM
PROTEIN SEQUENCE OPTIMIZATION WITH A POLARIZABLE FORCE FIELD: INSIGHTS FROM PDZ DOMAINS. Jacob M. Litman, Young Joo Sun, Titus Hou, Stephen D. LuCore, Nicolas Panel, Thomas Simonson, Ernesto J. Fuentes, **Michael J. Schnieders**

1705-PLAT 9:30 AM
DE NOVO DESIGN AND BIOPHYSICAL CHARACTERIZATION OF AN AFFINITY-ENHANCED PROTEIN DISPLAYING THE STRUCTURE OF THE BROADLY NEUTRALIZING HIV-1 2F5 ANTIBODY EPI TOPE. **Isabelle Freire Tabosa Viana**, Eduardo Nascimento, Jodi Craigo, Marco Krieger, Robbie Mailliard, Rafael Dhalia, Roberto Lins, Ernesto TA Marques

1706-PLAT 9:45 AM
A TOOL TO INTEGRATE USER EXPERTISE INTO BUILDING ATOMIC LEVEL MODELS FOR LARGE BIOMOLECULAR SYSTEMS. **Till Rudack**, Ryan McGreevy, Marc Siggel, Klaus Schulten

1707-PLAT 10:00 AM
RESIDUE ENVIRONMENT SCORE FOR SELECTING PROTEIN STRUCTURE MODELS AND PROTEIN-PROTEIN DOCKING MODELS. **HyungRae Kim**

Platform Protein Assemblies

8:15 AM - 10:15 AM, ROOM 515A

Co-Chairs

James Cole, University of Connecticut
Alasdair Steven, NIH

1708-PLAT 8:15 AM
SPECIFIC INTERACTION OF A NATURALLY OCCURRING AMYLOIDOGENIC FRAGMENT OF STREPTOCOCCUS MUTANS ADHESIN P1 WITH INTACT P1 ON THE CELL SURFACE MEASURED BY SOLID STATE NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY. **Joanna Long**, Wenxing Tang, Paula Crowley, L. Jeannine Brady

1709-PLAT 8:30 AM
REGULATION OF PKR BY RNA: FORMATION OF ACTIVE AND INACTIVE DIMERS. Bushra Husain, Stephen Hesler, **James Cole**

1710-PLAT 8:45 AM EDUCATION TRAVEL AWARDEE
GOVERNING PRINCIPLES OF MULTIPROTEIN COMPLEX FORMATION ON THE CELL MEMBRANES: AN INVESTIGATION USING SINGLE-MOLECULE RESOLUTION SPATIO-TEMPORAL STOCHASTIC COMPUTER SIMULATIONS AND ANALYTICAL CALCULATIONS. **Osman N. Yagurtcu**, Margaret E. Johnson

1711-PLAT 9:00 AM
CHARACTERIZATION OF NOVEL SPLIT-FLUORESCENT PROTEINS AND QUANTITATIVE ANALYSIS OF THEIR SELF-ASSEMBLY PROCESS. **Tugba Koker**, Anthony Fernandez, Arunima Kolekar, Fabien Pinaud

1712-PLAT 9:15 AM
A NEW DIMENSION OF DETECTION IN ANALYTICAL ULTRACENTRIFUGATION WITH FLUORESCENCE DETECTION USING PHOTOSWITCHABLE FPS AS TIME DOMAIN PROBES. **Huaying Zhao**, George Patterson, Peter Schuck

1713-PLAT 9:30 AM
MOLECULAR ARCHITECTURE OF THE NUP82 COMPLEX, THE CYTOPLASMIC MRNA EXPORT PLATFORM IN THE NUCLEAR PORE COMPLEX. **Seung Joong Kim**, Javier Fernandez-Martinez, Yi Shi, Paula Upla, Riccardo Pellarin, Ilan E. Chemmama, Ilona Nudelman, David L. Stokes, Brian T. Chait, Andrej Sali, Michael P. Rout

1714-PLAT 9:45 AM
LOCAL GEOMETRY AND EVOLUTIONARY CONSERVATION OF PROTEIN SURFACES REVEAL THE MULTIPLE RECOGNITION PATCHES IN PROTEIN-PROTEIN INTERACTIONS. **Elodie Laine**, Hugues Ripoché, Alessandra Carbone

1715-PLAT 10:00 AM
RETINOSCHISIN AT 4 Å RESOLUTION FROM CRYO-EM: A JUNCTIONAL MODEL OF BACK-TO-BACK OCTAMERS FOR ADHESION IN THE RETINA. Gökhan Tolun, Camasamudram Vijayarathy, Rick Huang, Yong Zeng, Yan Li, Paul A. Sieving, J. Bernard Heymann, **Alasdair C. Steven**

Platform Mechanosensation

8:15 AM - 10:15 AM, ROOM 515B

Co-Chairs

Dolores Bozovic, University of California, Los Angeles
Hongxia Fu, Harvard Medical School

1716-PLAT 8:15 AM
SINGLE-MOLECULE ACTIVATION BY FLOW: FORCE-INDUCED CONFORMATIONAL TRANSITIONS REGULATE THE LIGAND BINDING AFFINITY OF A LARGE, POLYMERIC MECHANOSENSOR PROTEIN. **Hongxia Fu**, Yan Jiang, Darren Yang, Wesley P. Wong, Timothy A. Springer

1717-PLAT 8:30 AM
BILAYER-MEDIATED STRUCTURAL TRANSITIONS IN THE TREK-2 MECHANOSENSITIVE K₂P CHANNEL. **Prafulla Aryal**, Viwan Jarerattanachai, Stephen J. Tucker, Mark S.P. Sansom

1718-PLAT 8:45 AM
MAGNETIC NANOPARTICLE STIMULATION FOR DETECTION OF HIGH-ORDER MODE-LOCKING IN HAIR CELLS OF THE INNER EAR. **Dolores Bozovic**, Michael Levy

1719-PLAT 9:00 AM
STRETCH-GATED ION CHANNELS IN NEURONAL MECHANORECEPTORS. **Slav N. Bagriantsev**, Eve R. Schneider, Evan O. Anderson, Jon Matson, Elena O. Gracheva

1720-PLAT 9:15 AM
BIOPHYSICAL FACTORS THAT PROMOTE MECHANICALLY-INDUCED ACTION POTENTIALS IN NEOCORTICAL AND HIPPOCAMPAL PYRAMIDAL NEURONS. Yury A. Nikolaev, Peter J. Dosen, Derek R. Laver, Dirk F. Van Helden, **Owen P. Hamill**

1721-PLAT 9:30 AM CPOW TRAVEL AWARDEE
INFLAMMATORY CYTOKINE IL-1 α UP-REGULATES PIEZO1 AND HYPERSENSITIZES CHONDROCYTES TO COMPRESSION. **Whasil Lee**, Holly Leddy, Amy McNulty, Farshid Guilak, Wolfgang Liedtke

1722-PLAT 9:45 AM
STRUCTURAL AND FUNCTIONAL CHARACTERIZATIONS OF THE MECHANOSENSITIVE PIEZO CHANNEL. **Bailong Xiao**

1723-PLAT 10:00 AM
BENDING PIEZO1: THE EFFECT OF AMPHIPATHS ON THE GATING OF A MECHANOSENSITIVE CHANNEL. **Charles D. Cox**, Boris Martinac

Platform Networks and Synthetic Biology

8:15 AM - 10:15 AM, Room 501ABC

Co-Chairs

Andrew Mugler, *Purdue University*
Chandran Sabanayagam, *University of Delaware*

1724-PLAT 8:15 AM

THE NONEQUILIBRIUM STATISTICAL THERMODYNAMICS OF BIOLOGICAL CYCLES. **Jason A. Wagoner**, Ken Dill

1725-PLAT 8:30 AM

STATISTICAL MECHANICAL FRAMEWORK FOR PREDICTING CELLULAR RESPONSES FROM SINGLE-CELL DATA. **Lila Forte**, Connie Y. Wang, Thomas F. Miller III

1726-PLAT 8:45 AM

FUNDAMENTAL LIMITS TO THE PRECISION OF MULTICELLULAR SENSING. Sean Fancher, Andre Levchenko, Ilya Nemenman, **Andrew Mugler**

1727-PLAT 9:00 AM

EDUCATION TRAVEL AWARDEE
MULTI-SCALE SPATIO-TEMPORAL DYNAMICS OF HISTONE MODIFICATIONS. **Irem Celen**, Jung Doh, Chandran Sabanayagam

1728-PLAT 9:15 AM

DYNAMIC SIMULATIONS OF CELL MIGRATION WITH APPLICATIONS TO BRAIN DEVELOPMENT. **Claude Sinner**, Ines Reinartz, Bernadett Bösze, Steffen Scholpp, Alexander Schug

1729-PLAT 9:30 AM

OPTICAL CONTROL OF CANCER INITIATION IN ZEBRAFISH. **Zhiping Feng**

1730-PLAT 9:45 AM

IN VITRO CONSTRUCTION OF 3D MICROTUBULE NETWORKS AND APPLICATIONS OF BASIC ARTIFICIAL CYTOSKELETON FOR BIOPHYSICAL STUDIES. **Michael D. Vershinin**, Jared Bergman, Olaolu Osunbayo

1731-PLAT 10:00 AM

FROM ION-CHANNELS TO PORINS: ENGINEERING DNA-BASED SYNTHETIC COUNTERPARTS. **Kerstin Göpfrich**, Alexander Ohmann, Satya P. Bhamidimarri, Madhavi V.S.V. Duvvuri, Cristiana I. Bercea, Bertalan Gyenes, Mathias Winterhalter, Ulrich F. Keyser

Platform Ribosomes and Translation

8:15 AM - 10:15 AM, Room 511ABC

Co-Chairs

Rubin Gonzalez, *Columbia University, USA*
Magnus Johansson, *Uppsala University, Sweden*

1732-PLAT 8:15 AM

IN VIVO MEASUREMENTS OF PROTEIN SYNTHESIS KINETICS USING SINGLE-MOLECULE TRACKING OF E.COLI TRNAS. Ivan Volkov, Javier Aguirre, Martin Lindén, Johan Elf, **Magnus Johansson**

1733-PLAT 8:30 AM

CODON POSITIONS THAT STRONGLY INFLUENCE COTRANSLATIONAL FOLDING ARE FAR FROM EQUILIBRIUM: A FRAMEWORK FOR CONTROLLING NASCENT-PROTEIN FOLDING. Ajeet Sharma, **Edward P. O'Brien**

1734-PLAT 8:45 AM

FOLLOWING TRANSLATION AND FOLDING OF INDIVIDUAL PROTEINS BY SINGLE RIBOSOMES IN REAL-TIME USING OPTICAL TWEEZERS. **Alexandros Katranidis**, Florian Wruck, Knud H. Nierhaus, Georg Büldt, Martin Hegner

1735-PLAT 9:00 AM

THE DYNAMIC PATHWAYS OF PROKARYOTIC TRANSLATION TERMINATION AND RECYCLING. **Arjun Prabhakar**, Jin Chen, Joseph D. Puglisi

1736-PLAT 9:15 AM

IN VITRO OPTIMIZATION OF TRANSLATIONAL ACTIVITY WITH MODIFIED RIBOSOMES. **Noémie M. Kempf**, Cristina Remes, Daryan Kempe, Alexandros Katranidis, Jörg Fitter

1737-PLAT 9:30 AM

FUNCTIONAL PROFILING OF RIBOSOMAL RNA MODIFICATIONS USING QUANTITATIVE MASS SPECTROMETRY. **Anna Popova**, James Williamson

1738-PLAT 9:45 AM

SINGLE-MOLECULE ELECTRONIC MEASUREMENTS OF DNA POLYMERASE I. **Denys O. Marushchak**, Kaitlin M. Pugliese, Mackenzie W. Turvey, O. Tolga Gul, Arith J. Rajapakse, Gregory A. Weiss, Philip G. Collins

1739-PLAT 10:00 AM

QUANTIFYING THE ENERGY LANDSCAPE OF RIBOSOME FUNCTION. **Paul C. Whitford**

Subgroup Chairs Meeting

9:00 AM - 10:30 AM, Room 510

Career Center Workshop

Career Planning and Job Searching for Science Professionals: Academic Opportunities

9:30 AM - 10:30 AM, Room 518

Learn how to create a flexible career plan for yourself, and identify and leverage your skills, expertise and experience to find a career (not just a job) that is right for you. Special emphasis will be placed on tips for finding and launching a career in academia, but we will also incorporate the development of a contingency plan for the unexpected twists and turns in life.

Exhibits

10:00 AM - 4:30 PM, WEST HALL

Coffee Break

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

Symposium Awards

10:45 AM - 12:45 PM, PETREE HALL C

Chair

Edward Egelman, *University of Virginia, Society President*

NO ABSTRACT 10:45 AM

TWENTY-EIGHT YEARS, AND STILL (OPTICALLY) TRAPPED! SINGLE MOLECULE BIOPHYSICS COMES OF AGE. **Steven M. Block**

NO ABSTRACT 11:02 AM

ELEVATOR MECHANISM OF GLUTAMATE TRANSPORTERS. **Olga Boudker**

NO ABSTRACT 11:19 AM

MECHANICAL ARCHITECTURE OF CELL DIVISION. **Sophie Dumont**

NO ABSTRACT 11:36 PM

HOW A TAIL WAGS ITS SPERM: REGULATION OF FLAGELLAR MOTILITY BY BIOACTIVE LIPID SIGNALING. **Polina V. Lishko**

NO ABSTRACT 11:53 PM
X-RAYS AND ELECTRONS ILLUMINATE NEUROTRANSMITTER RECEPTOR STRUCTURE AND MECHANISM. **Eric Gouaux**

NO ABSTRACT 12:10 PM
CHOLESTEROL, THE MOLECULE YOU THOUGHT YOU KNEW. **Philip Yeagle**

NO ABSTRACT 12:27 PM
INTERPRETATION OF SOLUTION X-RAY SCATTERING BY EXPLICIT-SOLVENT MOLECULAR DYNAMICS. **Jochen Hub**

Platform Other Channels

10:45 AM - 12:45 PM, PETREE HALL D

Co-Chairs

Jorge Arreola, Universidad Autónoma de San Luis Potosí Inicio, Mexico
Peter Pohl, Johannes Kepler University, Australia

1740-PLAT 10:45 AM
MOLECULAR DETERMINANTS UNDERLYING THE PATHOGENIC MECHANISM OF KID SYNDROME ELICITED BY CX26G12R MUTATION. **Isaac E. García**, Gustavo Contreras, Amaury Pupo, Bernardo Pinto, Ramón Latorre, Jorge E. Contreras, Agustín D. Martínez, Carlos González

1741-PLAT 11:00 AM
THREE-DIMENSIONAL STRUCTURE OF INNEXIN GAP JUNCTION CHANNELS STUDIED BY ELECTRON CRYSTALLOGRAPHY. **Atsunori Oshima**, Tomohiro Matsuzawa, Kazuyoshi Murata, Kazutoshi Tani, Yoshinori Fujiyoshi

1742-PLAT 11:15 AM
ACCESS OF METAL IONS AND METHANETHIOSULFONATE REAGENTS TO THE CALCIUM-GATED CONNEXIN HEMICHANNEL PORE: IMPLICATIONS FOR THE LOCATION OF THE GATE. **William I. Lopez**, Jaya Ramachandran, Andrew L. Harris, Jorge E. Contreras

1743-PLAT 11:30 AM
MEASURING PROTON DEPLETION IN THE VICINITY OF PROTON CHANNELS. **Leon D. Islas**, Victor De la Rosa-Jimenez, Esteban Suarez, Gisela Rangel

1744-PLAT 11:45 AM
ACID-INDUCED CHLORIDE CURRENT IN DISTAL CONVOLUTED TUBULE. William C. Valinsky, Rhian M. Touyz, **Alvin Shrier**

1745-PLAT 12:00 PM
MODULATION OF THE CALCIUM-DEPENDENT CHLORIDE CHANNEL TMEM16A BY EXTRACELLULAR PROTONS. **Silvia Cruz-Rangel**, José J. De Jesús-Pérez, Criss Hartzell, Patricia Pérez-Cornejo, Jorge Arreola

1746-PLAT 12:15 PM
UNUSUAL ION PATHWAY ARCHITECTURE OF THE DUAL-TOPOLOGY FLUORIDE CHANNEL FLUC. **Nicholas B. Last**, Christopher Miller

1747-PLAT 12:30 PM
VOLTAGE SENSITIVITY OF THE BACTERIAL PROTEIN TRANSLOCATION CHANNEL. **Denis G. Knyazev**, Roland Kuttner, Christine Siligan, Lukas Winter, Peter Pohl

Platform Actin and Microtubules: Structure and Dynamics

10:45 AM - 12:45 PM, ROOM 502A

Co-Chairs

David Sept, University of Michigan
Megan Valentine, University of California, Santa Barbara

1748-PLAT 10:45 AM
MOLECULAR EFFECTS OF DEAFNESS MUTATIONS IN ACTIN. Lauren Jepsen, Karina Kruth, Peter Rubenstein, **David Sept**

1749-PLAT 11:00 AM
TARGETED ACTIN DISASSEMBLY BY MICAL AND COFILIN. **Elena E. Grintsevich**, Hunkar Gizem Yesilyurt, Shannon K. Rich, Rwei-Jiun Hung, Jonathan R. Terman, Emil Reisler

1750-PLAT 11:15 AM
F-ACTIN FRAGMENTATION INDUCES DISTINCT MECHANISMS OF STRESS RELAXATION IN THE ACTIN CYTOSKELETON. Wonyeong Jung, Michael P. Murrell, **Taeyoon Kim**

1751-PLAT 11:30 AM
THE EFFECT OF MULTIVALENT CATIONS ON MICROTUBULE-PROTEIN TAU ORDERING. **Chaeyeon Song**, Peter Chung, Herbert P. Miller, Youli Li, Stuart C. Feinstein, Leslie Wilson, Cyrus R. Safinya

1752-PLAT 11:45 AM
NOVEL MECHANISM OF REGULATION OF MICROTUBULE DYNAMICS BY TAU. Rehan Ali, **Christopher L. Berger**

1753-PLAT 12:00 PM
SUPER-RESOLUTION IMAGING OF SLOWLY DEPOLYMERIZING MICROTUBULES REVEALS NO CURVED PROTOFILAMENTS WITH A LIFETIME LONGER THAN SECONDS. **Douglas S. Martin**, Nicholas J. Carter, Robert A. Cross

1754-PLAT 12:15 PM
LOCAL ANCHORAGE OF KINETOCHORE-FIBERS TO THE MAMMALIAN SPINDLE PROVIDES MECHANICAL ISOLATION AND LOAD-BEARING REDUNDANCY. **Mary W. Elting**, Dylan B. Udy, Sophie Dumont

1755-PLAT 12:30 PM
SINGLE-MOLECULE INVESTIGATION OF THE DIFFUSIVE MICROTUBULE +TIP TRACKING PROTEIN EB1. Benjamin J. Lopez, **Megan T. Valentine**

Platform Protein-Lipid Interactions II

10:45 AM - 12:45 PM, ROOM 502B

Co-Chairs

Zhiming Chen, University of Pennsylvania
Durba Sengupta, National Chemical Laboratory, Germany

1756-PLAT 10:45 AM
CROSSLINKING/MS STUDIES OF CHOLESTEROL INTERACTIONS WITH HUMAN $\alpha 1$ GLYCINE RECEPTOR. **Nicholas Ferraro**, Emily Benner, Jeffrey Madura, Michael Cascio

1757-PLAT 11:00 AM
A THERMODYNAMIC STUDY OF THE EFFECTS OF CHOLESTEROL ON THE ACTIVITY OF ANTIMICROBIAL PEPTIDE PROTEGRIN-1. **Nishanth S. Iyengar**, J. Michael Henderson, Tiffany Suwatthee, Indroneil Roy, Alan J. Waring, Ka Yee C. Lee

1758-PLAT 11:15 AM
CONFORMATIONAL DYNAMICS OF GPCR DIMERS IS DEPENDENT ON MEMBRANE CHOLESTEROL. **Durba Sengupta**, Xavier Prasanna, Amitabha Chattopadhyay

1759-PLAT 11:30 AM
CHOLESTEROL PROMOTES THE PERIPHERAL BINDING OF RETROVIRAL PROTEINS TO LIPID BILAYERS. **Milka Doktorova**, Robert Dick, Frederick A. Heberle, Gerald W. Feigenson, Volker M. Vogt

1760-PLAT 11:45 AM
ASSESSING THE MECHANISM BY WHICH A CHOLESTEROL RECOGNITION AMINO ACID CONSENSUS (CRAC) MOTIF RECOGNIZES MEMBRANE CHOLESTEROL. **Evan Koufos**, Angela C. Brown

1761-PLAT 12:00 PM

MISMATCH DEPENDENT TILT OF AMPHIPATHIC α -HELICAL ANTIMICROBIAL PEPTIDES INSERTED IN POSITIVE SPONTANEOUS CURVATURE LIPID MEMBRANES. **Erik Strandberg**, Jonathan Zerweck, Ariadna Grau-Campistany, Marie-Claude Gagnon, Parvesh Wadhvani, Johannes Reichert, Jochen Bürck, Jean-Francois Paquin, Michele Auger, Francesc Rabanal, Anne S. Ulrich

1762-PLAT 12:15 PM

TN-RAS, SYNAPTOTAGMIN1 C2AB, ANNEXINB12 AND AMPHIPHYSIN NBAR CAN DISCRIMINATE SPHERICAL FROM CYLINDRICAL MEMBRANE CURVATURE. **Artu' Breuer**, Jannik Larsen, Kadla Røskva Rosholm, Søren L. Pedersenb, Henrik K. Munch, Vadym Tkach, John J. Sakon, Thomas Bjørnholm, Keith R. Weninger, Poul M. Bendix, Knud J. Jensen, Mark J. Uline, Nikos S. Hatzakis, Dimitrios Stamou

1763-PLAT 12:30 PM

BAR DOMAIN PROTEINS CAN DIFFER SUBSTANTIALLY IN THEIR CAPACITY TO GENERATE MEMBRANE CURVATURE. **Zhiming Chen**, Zheng Shi, Katarzyna I. Jankowska, Tobias Baumgart

Platform**Intrinsically Disordered Proteins (IDP) and Aggregates II****10:45 AM - 12:45 PM, ROOM 515A****Co-Chairs**

Edward Lemke, European Molecular Biology Laboratory, Germany
Sudipta Maiti, Tata Institute of Fundamental Research, India

1764-PLAT 10:45 AM

PLASTICITY OF NUCLEOPORIN NUCLEAR TRANSPORT RECEPTOR INTERACTIONS - MOLECULAR DESCRIPTION OF A HIGHLY DYNAMIC, ULTRAFAST INTERACTION MECHANISM. **Iker Valle Aramburu**, Davide Mercadante, Sigrid Milles, Malene Ringkjøbing, Niccolò Banterle, Christine Koehler, Swati Tyagi, Jane Clarke, Sarah L. Shammis, Martin Blackledge, Frauke Gräter, Edward A. Lemke

1765-PLAT 11:00 AM

A HIDDEN STRUCTURAL TRANSITION ACCOMPANIES THE PROGRESSION OF AMYLOID-BETA OLIGOMERS TO MATURE FIBRILS. Bappaditya Chandra, Debanjan Bhowmik, Barun K. Maity, Debabrata Dhara, Kaustubh Mote, Ravindra Venkatramani, Perunthiruthy K. Madhu, **Sudipta Maiti**

1766-PLAT 11:15 AM

REGULATION OF MAMMALIAN DYNEIN INTERMEDIATE CHAIN. **Jing Jie**, Elisar Barbar

1767-PLAT 11:30 AM

INTRINSICALLY DISORDERED PROTEINS: GATEKEEPERS OF THE NUCLEAR PORE COMPLEX. Ali Ghavami, Liesbeth M. Veenhoff, Erik Van der Giessen, **Patrick R. Onck**

1768-PLAT 11:45 AM

CHARGE PATTERNED SEQUENCES FORM HELICAL STRUCTURES THROUGH CHARGE NEUTRALIZATION. **Tyler S. Harmon**, Rohit V. Pappu

1769-PLAT 12:00 PM

STRUCTURAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS DEPEND STRONGLY ON FORCE FIELD: A COMPARISON TO EXPERIMENT. **Sarah Rauscher**, Vytautas Gapsys, Man Zhou, Qui Van, Michal Gajda, Markus Zweckstetter, Joerg Enderlein, Bert L. de Groot, Helmut Grubmüller

1770-PLAT 12:15 PM

FACTORS MODULATING THE INTERACTION OF HUNTINGTIN WITH LIPID MEMBRANES: IMPLICATIONS FOR HUNTINGTON'S DISEASE. **Justin Legleiter**, James R. Arndt, Maxmore Chaibva, Xiang Gao, Pranav Jain, Olivia Sarver, Stephen Valentine

1771-PLAT 12:30 PM

ELECTROSTATIC CONTRIBUTIONS TO CALMODULIN INTERACTIONS WITH CALCINEURIN. **Trevor P. Creamer**, Erik C. Cook

Platform
Calcium Signaling**10:45 AM - 12:45 PM, ROOM 515B****Co-Chairs**

Anne Carlson, University of Pittsburgh
Yubin Zhou, Texas A&M University

1772-PLAT 10:45 AM

CALCIUM SIGNALING REQUIRED FOR THE FAST POLYSPERMY BLOCK IN XENOPUS LAEVIS. Katherine L. Wozniak, **Anne E. Carlson**

1773-PLAT 11:00 AM

REGULATION OF THE CARDIAC L-TYPE CALCIUM CHANNEL BY THE CYCLIC NUCLEOTIDE CROSS-TALK SIGNALING NETWORK. **Claire Y. Zhao**, Joseph L. Greenstein, Raimond L. Winslow

1774-PLAT 11:15 AM

SR CONTRIBUTION TO CALCIUM CYCLING IN SINO-ATRIAL NODE CELLS: AS SEEN FROM NANOSCALE ELECTRON MICROSCOPY AND NUMERICAL MODELING. **V.Ramesh Iyer**, Oliver Monfredi, Victor Maltsev, Manuela Lavorato, Michael Stern, Clara Franzini-Armstrong

1775-PLAT 11:30 AM

A C-TERMINAL SWITCH GATES THE ORAI1 CHANNEL. **Yandong Zhou**, Xiangyu Cai, xianming wang, Natalia A. Loktionova, Xizhuo Wang, Robert M. Nwokonko, Mohamed Trebak, Donald L. Gill

1776-PLAT 11:45 AM

HIGH-SPEED CONFOCAL IMAGING REVEALS COMPLEX CALCIUM TRANSIENTS IN PLATELETS. **János Vincze**, Renáta Hudák, János Kappelmayer, László Csernoch

1777-PLAT 12:00 PM

NEAR-INFRARED PHOTOACTIVATABLE CONTROL OF CALCIUM SIGNALING. Lian He, Yuanwei Zhang, Guolin Ma, Peng Tan, Youjun Wang, Yun Huang, Patrick Hogan, Gang Han, **Yubin Zhou**

1778-PLAT 12:15 PM

THE FUNCTION OF STROMAL INTERACTION MOLECULE 1 (STIM1) IN HEART. **Guiling Zhao**, Hengtao Zhang, Tianyu Li, Didier X. P. Brochet, Paul Rosenberg, W. Jonathan Lederer

1779-PLAT 12:30 PM

COMPLEMENT-MEDIATED PURE CHEMOTAXIS OF HUMAN NEUTROPHILS NEITHER REQUIRES NOR CAUSES BURSTS IN INTRACELLULAR CALCIUM LEVELS. **Emmet A. Francis**, Volkmar Heinrich

Platform**Protein-Dynamics and Allostery I****10:45 AM - 12:45 PM, ROOM 501ABC****Co-Chairs**

Alessandro Cembran, University of Minnesota Duluth
Blake Mertz, West Virginia University

1780-PLAT 10:45 AM

DYNAMIC HETEROGENEITY AND THE ROLE OF NON-NATIVE CONTACTS IN THE PROTEIN FOLDING/UNFOLDING TRANSITIONS. **Toshifumi Mori**, Shinji Saito

1781-PLAT 11:00 AM

NIPAH VIRUS ENTRY INTO HOST CELL: INTER-MONOMER REARRANGEMENT SIGNALLED BY RECEPTOR BINDING AT ALLOSTERIC SITE. **Priyanka Dutta**, Sameer Varma

1782-PLAT 11:15 AM
LIGAND-SPECIFIC CONFORMATIONAL CHANGES IN CCR7 COUPLED TO SELECTING DIFFERENT SIGNALING PATHWAYS UPON CCL19 AND CCL21 LIGAND BINDING. **Zied Gaieb**, David D. Lo, Dimitrios Morikis

1783-PLAT 11:30 AM
PROTEORHODOPSIN ACTIVATION CAPTURED BY MOLECULAR DYNAMICS SIMULATIONS. **Jun Feng**, Blake Mertz

1784-PLAT 11:45 AM
COORDINATED DYNAMICS ORCHESTRATING THE DNA RE-LIGATION BY DE-POISONED TOPOISOMERASE II. **Nan-Lan Huang**, Jung-Hsin Lin

1785-PLAT 12:00 PM
FROM PHYSICS TO PHENOTYPE: NEW INSIGHTS INTO ALLOSTERIC TRANSPORT MECHANISMS IN LEUT. **Michael V. LeVine**, Michel A. Cuendet, George Khelashvili, Harel Weinstein

1786-PLAT 12:15 PM
PLEIOTROPIC ROLE PLAYED BY THE PDZ DOMAIN IN NEURONAL SIGNALING PATHWAYS. Célia Caillet-Saguy, Pierre Maisonneuve, Florent Delhommel, Henri Buc, Monique Lafon, Muriel Delepierre, Florence Cordier, **Nicolas Wolff**

1787-PLAT 12:30 PM
HYDROPHOBIC INTERACTIONS ELICIT COOPERATIVE RESPONSE IN DYSTROPHIN. **Alessandro Cembran**, Anne Hinderliter, Benjamin T. Horn, Caitlin T. Pederson, Katie L. Schneider, Jesse A. Skogstad

Platform RNA Structure and Dynamics

10:45 AM - 12:45 PM, ROOM 511ABC

Co-Chairs

Ruben Gonzalez, Columbia University

Luis Marky, University of Nebraska Medical Center

1788-PLAT 10:45 AM
INTERROGATION OF CRISPR DYNAMICS WITH FLUORESCENT SINGLE GUIDE RNAS IN LIVE CELLS. Hanhui Ma, Li-Chun Tu, Ardalan Naseri, Shaojie Zhang, Maximillian Huisman, **David Grunwald**, Thoru Pederson

1789-PLAT 11:00 AM
DECIPHERING THE INFLUENZA A MULTI-SEGMENT GENOME COMPLEX PACKAGING USING SINGLE CELL HIGHLY MULTIPLEXED FISH DATA. **Simon Prisner**, Ivan Haralampiev, Matthias Schade, Jasmine Chamiolo, Fabian Jolmes, Oliver Seitz, Andreas Herrmann

1790-PLAT 11:15 AM
EXPLORING THE LIMITS OF A KNOWLEDGE-BASED COARSE-GRAINED MODEL FOR RNA. **Simon Poblete**

1791-PLAT 11:30 AM
HIGH THROUGHPUT CHARACTERIZATION OF RNA TERTIARY ELEMENTS. **Sarah Denny**, Namita Bisaria, Joseph Yesselman, Rhiju Das, Daniel Herschlag, William Greenleaf

1792-PLAT 11:45 AM
LABEL-FREE, HIGH-TIME-RESOLUTION, SINGLE-MOLECULE STUDIES OF RIBOSWITCH FOLDING. Nathan S. Daly, Jason J. Hon, Steven B. Warren, Scott M. Trocchia, Colin Nuckolls, Kenneth L. Shepard, **Ruben L. Gonzalez Jr**

1793-PLAT 12:00 PM
A COMPARATIVE INVESTIGATION OF THE STABILITY OF DNA AND RNA PSEUDOKNOTS. Calliste Reiling-Steffensmeier, **Luis A. Marky**

1794-PLAT 12:15 PM
RNA SECONDARY AND TERTIARY STRUCTURE PREDICTION BY TRACING NUCLEOTIDE CO-EVOLUTION WITH DIRECT COUPLING ANALYSIS. Eleonora De Leonardis, Benjamin Lutz, Sebastian Ratz, Cocco Simona, Remi Monasson, Martin Weigt, **Alexander Schug**

1795-PLAT 12:30 PM
MECHANICAL FORCE AND SALT EFFECTS ON THE THERMODYNAMICS OF A FRAMESHIFTING RNA PSEUDOKNOT. **Naoto Hori**, Natalia A. Denesyuk, D. Thirumalai

Exhibitor Presentation Bruker Nano Surfaces

11:30 AM - 1:00 PM, ROOM 505

BioScope Resolve BioAFM – Unrivalled AFM Biomechanics and Resolution

In this presentation we will introduce new capabilities for cell mechanobiology and highest resolution cell and molecular imaging available on the BioScope Resolve BioAFM. We will explain how innovations in force control and instrument design have enabled BioScope Resolve to be the first AFM to image microvilli on live cells and to consistently resolve the double helix of DNA, while on the inverted microscope. To enable highest resolution and accurate cell mechanics data, the entire AFM mechanical loop of BioScope Resolve has been designed for stability, specifically on biological samples, with biological sample carriers, and when mounted on the inverted microscope. Designed for Bruker's exclusive PeakForce Tapping, BioScope Resolve eliminates the need for fluid cantilever tuning entirely with ScanAsyst and provides quantifiable pN force control for imaging and force mapping. The combination of PeakForce Tapping and FASTForce Volume provides the broadest range of frequencies for mechanical characterization, with a new no-touch calibration method guaranteeing accurate calibration. As we will show in the presentation, BioScope Resolve also features synchronization of these unique mechanical measurements with fluorescence, enabling new kinds of correlative studies.

Speaker

Marcin Walkiewicz, Applications Scientist, Bruker – Atomic Force Microscopy Business

Research Programs at PUIs Founding, Establishing, and Maintaining a Research Laboratory

12:00 PM - 1:30 PM, ROOM 408A

This session, sponsored by the Education Committee, provides guidance on founding, establishing, and maintaining a research laboratory at Primarily Undergraduate Institutions.

Panelists

Ashley R. Carter, Amherst College
Christine P. Piro, Franklin and Marshall College
Alex Small, California State Polytechnic University, Pomona
Paul Urayama, Miami University

Moderator

Scott Brewer, Franklin and Marshall College

Postdoc to Faculty Q&A Transitions Forum and Luncheon

12:00 PM - 2:00 PM, ROOM 510/512

This question-and-answer luncheon, sponsored by the Committee for Professional Opportunities for Women (CPOW), is designed for postdocs finishing and actively applying for academic faculty positions. New faculty and recently tenured faculty in basic science and/or medical school departments will lead the discussion, as well as experienced senior-level 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

Sarah Bondos, Texas A&M
Shelli Frey, Gettysburg College
Fateme Khalili-Araghi, University of Illinois at Chicago
Susy Kohout, Montana State University
Benjamin L. Stottrup, Augsburg College
Valeria Vasquez, University of Tennessee, Memphis
Pernilla Wittung-Stafshede, Chalmers University of Technology, Sweden

Exhibitor Presentation Nanion Technologies GmbH

12:30 PM - 2:00 PM, ROOM 513

Measure More Membrane: Cells, Bilayers and Transporter Activity

As the title suggests, this workshop has one common denominator: membranes and the measurements thereof. We will showcase four versatile products: 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*, on the market since 2003, is still the smallest patch clamp rig in the world, and supports high quality patch clamp recordings; attainable without months or years of training. Giga-seal recordings and the excellent voltage-clamp of the cellular membrane ensure high quality data, and the versatile add-ons allow unprecedented experimental freedom, way beyond the possibilities of conventional patch clamping.

The *Orbit 16* supports the parallel formation of and recordings from up to 16 lipid bilayers, accommodating reconstituted ion channels or nanopores. Using Micro Electrode Cavity Array (MECA, Ionera) recording substrates, containing a 4 x 4 array of circular micro-cavities, the bilayers are automatically formed by remotely actuated painting (Ionera- SPREAD), which will be demonstrated during this session. Relying on the same principle, however with the possibility of active cooling and heating, the recently introduced *Orbit mini*, a minimal footprint, turn-key system, allows 4 parallel lipid bilayer recordings, also using MECA-chips.

Join this workshop for hands-on experiments and information about three outstanding platforms: Port-a-Patch, Orbit 16, and Orbit mini.

Speakers

Andrea Brüggemann, Nanion Technologies GmbH
Niels Fertig, Nanion Technologies GmbH
Gerhard Baaken, Ionera
Ekaterina Zaitseva, Ionera

Industry and Agency Opportunities Fair

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

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.

GMOs, Severe Weather, and Public Opinion

1:30 PM - 3:00 PM, ROOM 403A

Genetically modified organisms are big news in the popular press, with articles often focused on food safety, related regulations, and labelling. What gets less coverage is the role GMOs can play in protecting our food supply and specific plant economies. This session will take a look at the role GMOs have played in these areas and public policy, as well as the press's coverage of this scientific area.

Panelists

Sean Cutler, UC Riverside
Karen Kaplan, *Los Angeles Times*
Alan McHughen, UC Riverside

Snack Break

1:45 PM - 3:00 PM, WEST HALL

Poster Presentations and Late Posters

1:45 PM - 3:45 PM, WEST HALL

Career Center Workshop Creating and Using an Effective CV/Résumé

2:30 PM - 3:30 PM, ROOM 518

The CV and Résumé are critical components of any effective job search, regardless of function, level, or industry. In this workshop, we will look at what constitutes a good résumé or CV, what makes the two documents different, as well as what makes them similar. We will examine sample documents (both good and bad) and discuss which document to use, when to use it, and how to most effectively use it when conducting your job search.

Postdoc to Faculty: Setting Up a Lab

2:30 PM - 4:00 PM, ROOM 403B

This panel, sponsored by the Early Careers Committee, will offer advice on the challenge of setting up your own lab as a new faculty member. Panelists who have recently established independent labs will share their experiences and answer questions about the transition to a tenure-track faculty position.

Panelists

Slav Bagriantsev, Yale University
Alexander Dunn, Stanford University
Susy Kohout, Montana State University

Committee on Inclusion and Diversity Networking Event:

Resources and Opportunities

3:00 PM - 4:00 PM, ROOM 404AB

This networking event, sponsored by the Committee for Inclusion and Diversity, provides minority and underrepresented students and scientists the opportunity to network and discuss challenges and resources with other minority biophysicists.

Education Committee Meeting

3:00 PM - 5:00 PM, ROOM 506

Symposium Optogenetics in Neuroscience

4:00 PM - 6:00 PM, PETREE HALL C

Chair

Edward S. Boyden, MIT

1796-SYMP 4:00 PM

TOOLS FOR ANALYZING AND REPAIRING COMPLEX BIOLOGICAL SYSTEMS. **Edward Boyden**

1797-SYMP 4:30 PM

CONTROLLING BIOLOGICAL PATHWAYS WITH PHOTOPHARMACOLOGY. **Dirk Trauner**

1798-SYMP 5:00 PM

TOOLS FOR ANATOMICAL AND FUNCTIONAL ANALYSIS OF WIDELY DISTRIBUTED BRAIN NETWORKS. **Viviana Gradinaru**

1799-SYMP 5:30 PM

NATURAL ANION CHANNEL RHODOPSINS: A NEW FAMILY OF TOOLS FOR OPTOGENETIC NEURAL INHIBITION. **John L. Spudich**

Symposium

p-ATPases: Structure, Mechanism, and Disease

4:00 PM - 6:00 PM, PETREE HALL D

Chair

David Gadsby, Rockefeller University

1800-SYMP 4:00 PM

HYBRID FUNCTION OF THE NA/K-ATPASE: PROTON IMPORT ACCOMPANYING NA/K EXCHANGE. **David Gadsby**, *Natascia Vedovato*

1801-SYMP 4:30 PM

SNAPSHOTS OF P-TYPE ATPASES - FROM CRYSTAL STRUCTURES TO SINGLE-MOLECULE STUDIES. **Poul Nissen**

1802-SYMP 5:00 PM

THE NEW KIDS IN THE BLOCK: FE²⁺ TRANSPORT P-ATPASES. **José M. Argüello**

1803-SYMP 5:30 PM

SECRETORY PATHWAY CALCIUM ATPASES IN BREAST CANCER. **Rajini Rao**, *Donna Dang*, *José P. Llongueras*

Platform

Cardiac Muscle Mechanics and Structure

4:00 PM - 6:00 PM, ROOM 502A

Co-Chairs

Clara Franzini-Armstrong, University of Pennsylvania

Howard Young, University of Alberta, Canada

1804-PLAT 4:00 PM

FUNCTIONAL IMBALANCE AMONG INDIVIDUAL CARDIOMYOCYTES CAUSED BY CELL-TO-CELL VARIATION IN MUTANT MRNA EXPRESSION. A POSSIBLE TRIGGER FOR HYPERTROPHIC CARDIOMYOPATHY. **Theresa Kraft**, *Mirza Makul*, *Julia Beck*, *Judith Montag*, *Ante Radocaj*, *Andreas Perrot*, *Antonio Francino*, *Francesc Navarro-Lopéz*, *Cristobal G. dos Remedios*, **Bernhard Brenner**

1805-PLAT 4:15 PM

DIFFERENTIAL EFFECTS OF CAMKII ACTIVITY IN HCM-LINKED TNT MUTATIONS. **Sarah J. Lehman**, *Lauren Tal-Grinspan*, *Melissa Lynn*, *Mark E. Anderson*, *Jil C. Tardiff*

1806-PLAT 4:30 PM

UNDERSTANDING VISCOELASTICITY CHANGES IN SINGLE CELLS USING VARIABLE INDENTATION-RATE VISCOELASTIC ANALYSIS. **Matthew A. Caporizzo**, *Patrick Robison*, *Alexey Bogush*, *Benjamin L. Prosser*, *David M. Eckmann*, *Russell J. Composto*

1807-PLAT 4:45 PM

CELLULAR STRESS AFFECTS THE NUCLEOSKELETON IN DILATED CARDIOMYOPATHY. **Marlene Pluess**, *Thomas Iskratsch*, *Pauline Bennett*, *Joseph Dwyer*, *Pragati Pandey*, *Cristobal dos Remedios*, **Elisabeth Ehler**

1808-PLAT 5:00 PM

SIMULTANEOUS HIGH-PRECISION IMAGING OF LOCAL CALCIUM AND SINGLE SARCOMERE LENGTH IN RAT NEONATAL CARDIOMYOCYTES VIA EXPRESSION OF YELLOW CAMELEON-NANO140 IN Z-DISCS. **Seiichi Tsukamoto**, **Kotaro Oyama**, *Teruyuki Fujii*, *Fuyu Kobirumaki-Shimozawa*, *Togo Shimozawa*, *Seine A. Shintani*, *Shin'ichi Ishiwata*, *Norio Fukuda*

1809-PLAT 5:15 PM

ELECTRON TOMOGRAPHY OF MITOCHONDRIAL NANOTUNNELS IN A CPVT MODEL WITH RYR2 LOSS-OF-FUNCTION MUTATION. **Manuela Lavorato**, *V.Ramesh Iyer*, *Yang-Ting Zhao*, *Hector Valdivia*, *Clara Franzini-Armstrong*

1810-PLAT 5:30 PM

CORRELATING STRUCTURE AND FUNCTION IN HUMAN GENETIC VARIANTS OF PHOSPHOLAMBAN AND SARCOLIPIN. **Joseph O. Primeau**, *Gareth P. Armanious*, *Jessica L. Gifford*, *Catharine A. Trieber*, **Howard S. Young**

1811-PLAT 5:45 PM

THE N-TERMINI OF SARCOLIPIN AND PHOSPHOLAMBAN PLAY AN IMPORTANT ROLE IN DISTINCT REGULATION OF SARCO-ENDOPLASMIC RETICULUM CA²⁺ ATPASE (SERCA) FUNCTION. **Sanjayaka K. Sahoo**, *Sana A. Shaikh*, *Danesh H. Sopariwala*, *Naresh C. Bal*, *Dennis S. Bruhn*, *Wojciech Kopec*, *Himanshu Khandelua*, *Muthu Periasamy*

Platform

Protein Stability, Folding, and Chaperones II

4:00 PM - 6:00 PM, ROOM 502B

Co-Chairs

Logan Ahlstrom, University of Michigan

Patrick Wintrade, University of Maryland

1812-PLAT 4:00 PM

OVERCOMING HETEROGENEITY TO STUDY THE STRUCTURE AND ASSEMBLY OF SMALL HEAT-SHOCK PROTEIN CHAPERONES WITH NON-AGGREGATING CLIENTS. **Miranda Collier**, *Justin Benesch*

1813-PLAT 4:15 PM

INTERNATIONAL TRAVEL AWARDEE
STRUCTURE AND STABILITY OF HSP60 AND GROEL IN SOLUTION. **Caterina Ricci**, *Giampaolo Barone*, *Donatella Bulone*, *Giosalba Burgio*, *Rita Carrotta*, *Fabio Librizzi*, *Antonella Marino Gammazza*, *Maria Rosalia Mangione*, *Antonio Palumbo Piccionello*, *Pier Luigi San Biagio*, *Angelo Spinello*, *Francesco Spinozzi*, *Silvia Vilasi*, *Maria Grazia Ortore*

1814-PLAT 4:30 PM

QUANTIFICATION OF MACROMOLECULAR CROWDING IN LIVING CELLS. **Arnold Boersma**, *Boqun Liu*, *Christoffer Aberg*, *Bert Poolman*

1815-PLAT 4:45 PM

INSIGHTS FROM THE FIRST PRINCIPLES BASED LARGE SCALE PROTEIN THERMOSTABILITY CALCULATIONS. **Vytautas Gapsys**, *Servaas Michielssens*, *Daniel Seeliger*, *Bert L. de Groot*

1816-PLAT 5:00 PM

HIGHLY CHARGED PROTEINS ARE THE ACHILLES' HEEL OF AGING PROTEOMES. **Adam M. R. de Graff**, *Michael J. Hazoglou*, *Ken A. Dill*

1817-PLAT 5:15 PM
EVOLUTION UNDER DRUG PRESSURE REMODELS THE FOLDING FREE-ENERGY LANDSCAPE OF HIV-1 PROTEASE. **Julien Roche**

1818-PLAT 5:30 PM
FOLDING MECHANISM OF A METASTABLE SERPIN AT ATOMIC RESOLUTION. Fang Wang, Haiping Ke, Silvio a Beccara, Anne Gershenson, Pietro Faccioli, **Patrick Wintrode**

1819-PLAT 5:45 PM
NMR-INFORMED MOLECULAR MODELING UNCOVERS THE CONFORMATIONAL LANDSCAPE OF CHAPERONE BINDING WITH UNFOLDED SUBSTRATE. **Logan S. Ahlstrom**, Loïc Salmon, Scott Horowitz, Alex Dickson, Charles L. Brooks III, James C.A. Bardwell

Platform Membrane Physical Chemistry III

4:00 PM - 6:00 PM, ROOM 515A

Co-Chairs

Padmini Rangamani, University of California, San Diego
Joseph Zasadzinski, University of Minnesota

1820-PLAT 4:00 PM
ELASTIC DEFORMATION AND COLLECTIVE DYNAMICS IN LIPID MEMBRANES: A SOLID-STATE ²H NMR RELAXATION STUDY. **Soo Hyun K. Lee**, Trivikram R. Molugu, K.J. Mallikarjunaiah, Michael F. Brown

1821-PLAT 4:15 PM
CHOLESTEROL EFFECT ON THE ELASTIC PROPERTIES OF UNSATURATED LIPID BILAYERS. **Pavel Bashkirov**, Ksenia Chekashkina, Ariana Velasco del Olmo, Piotr Kuzmin, Anna Shnyrova, Vadim Frolov

1822-PLAT 4:30 PM
QUANTITATIVE RELATIONSHIP BETWEEN MONOLAYER DOMAIN STRUCTURE AND INTERFACIAL SHEAR RHEOLOGY. **Joseph A. Zasadzinski**

1823-PLAT 4:45 PM
TWO-POINT MICRORHEOLOGY OF PHASE SEPARATED DOMAINS IN LIPID BILAYERS. **Tristan Hormel**, Matthew A. Reyer, Raghuvier Parthasarathy

1824-PLAT 5:00 PM
IN SILICO MEASUREMENT OF THE MECHANICAL PROPERTIES OF REALISTIC BACTERIAL INNER AND OUTER MEMBRANES. **Hyea Hwang**, James C. Gumbart

1825-PLAT 5:15 PM
CAN WE TRUST HYDRODYNAMIC MODELS TO DETERMINE THE BILAYER VISCOSITY EXPERIENCED BY TRANSMEMBRANE PROTEINS? **Vladimir Adrien**, Ksenia Astafyeva, Marina Kuimova, Wladimir Urbach, Nicolas Taulier

1826-PLAT 5:30 PM
COMBINING FLUORESCENCE MICROSCOPY ON FREESTANDING LIPID BILAYERS WITH ELECTRICAL MEASUREMENTS. **Corianne C. van den Akker**, Steven G. Boxer

1827-PLAT 5:45 PM
IRREVERSIBLE THERMODYNAMICS OF LIPID VESICLES UNDER OSMOTIC STRESS. **Morgan Chabanon**, James Ho, Atul N. Parikh, Padmini Rangamani

Platform Molecular, Cellular, and Experimental Neuroscience: Reception, Plasticity, and New Approaches

4:00 PM - 6:00 PM, ROOM 515B

Co-Chairs

Laura Marchetti, Center for Nanotechnology Innovation, Italy
Katalin Torok, St. George's, University of London, United Kingdom

1828-PLAT 4:00 PM
SINGLE MOLECULE IMAGING AND TRACKING OF NEUROTROPHINS AND THEIR RECEPTORS IN LIVING NEURONAL CELLS. **Laura Marchetti**, Teresa De Nadai, Rosy Amodeo, Carmine Di Rienzo, Fulvio Bonsignore, Francesco Gobbo, Fabio Beltram, Stefano Luin, Antonino Cattaneo

1829-PLAT 4:15 PM
SINGLE MOLECULAR OBSERVATION OF DIFFUSIVE DYNAMICS OF NMDA RECEPTORS IN LIVE NEURONS USING SUPER-RESOLUTION IMAGING AND TRACKING. **Sang Hak Lee**, En Cai, Pinghua Ge, Kai Wen Teng, Okunola Jeyifous, Sung Soo Jang, Hee-Jung Chung, William Green, Paul R. Selvin

1830-PLAT 4:30 PM
STOCHASTIC SINGLE-MOLECULE DYNAMICS OF SYNAPTIC RECEPTOR DOMAINS. **Yiwei Li**, Osman Kahraman, Christoph Haselwandter

1831-PLAT 4:45 PM
PARADOXICAL SIGNALING REGULATES STRUCTURAL PLASTICITY IN DENDRITIC SPINES. **Padmini Rangamani**, Michael Levy, Shahid Khan, George Oster

1832-PLAT 5:00 PM
NANO-MECHANICAL PROBING OF SYNAPTIC ACTIVITY AT DENDRITIC SPINES. **John A. Jones Molina**, Nicola Mandriota, Duckhoe Kim, Ju Yang, Rafael Yuste, Ozgur Sahin

1833-PLAT 5:15 PM
DEVELOPMENT OF FAST-RESPONSE GCAMP6 CALCIUM SENSORS FOR MONITORING NEURONAL ACTION POTENTIAL. Nordine Helassa, Borbala Podor, Alan Fine, **Katalin Torok**

1834-PLAT 5:30 PM
OPTOMEA: A PLATFORM FOR ANALYZING SIGNALING EFFICIENCY OF NEURONAL CIRCUITS USING MULTI-LOCATION EXTRACELLULAR ELECTROPHYSIOLOGY, OPTICAL IMAGING AND OPTOGENETICS. Kimberly Sam, Minqi Wang, Yuan-Zhi Liu, Paritosh Pande, Stephen A. Boppart, **Parijat Sengupta**

1835-PLAT 5:45 PM
LIGHT SHEET MICROSCOPY FOR FUNCTIONAL IMAGING OF BRAIN ACTIVITY EVOKED BY NATURAL SENSORY STIMULI. **Andrey Andreev**, Thai Truong, Scott E. Fraser

Platform Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence

4:00 PM - 6:00 PM, ROOM 501ABC

Co-Chairs

Mark Bowen, Stony Brook University
David Thomas, University of Minnesota

1836-PLAT 4:00 PM
FLUORESCENT PROTEIN FRET AS A PROBE OF PROTEIN CONFORMATION IN VIVO AND IN VITRO. Laura Dougherty, Zhuojun Guo, Fang Wu, **Mark E. Bowen**

1837-PLAT 4:15 PM

QUANTITATIVE FLUORESCENCE MICROSCOPY REVEALS FIBROBLAST GROWTH FACTOR RECEPTOR 5 SIGNALING COMPLEX FORMATION.

Pamuditha N. Silva, Romario Regeenes, Nicholas K. Wang, Dawn M. Kilkenny, Jonathan V. Rocheleau

1838-PLAT 4:30 PM

SUPR: SPECTRAL UNMIXING PLATE READER FOR LIVE-CELL FRET BIOSENSOR DRUG SCREENING. **Tory M. Schaaf**, Ji Li, Samantha L. Yuen, Prachi Bawaskar, Benjamin D. Grant, Kurt C. Peterson, David D. Thomas, Greg G. Gillispie

1839-PLAT 4:45 PM

APPLICATION OF FT-IR MICROSCOPY IN THE INVESTIGATION OF THE STRATUM CORNEUM BARRIER FUNCTION. **Enam A. Khalil**, Randa Mansour, Al-Sayed A. Sallam, Imad Hamdan, Ibraheem Yousef

1840-PLAT 5:00 PM

ION-PROTEIN INTERACTIONS BETWEEN A POTASSIUM CHANNEL AND ALKALI METAL CATIONS STUDIED BY ATR-FTIR SPECTROSCOPY. **Yuji Furutani**

1841-PLAT 5:15 PM

INVESTIGATION OF M2 PROTON CHANNEL IN MEMBRANE BY RAPID LASER PH-JUMP TECHNIQUE WITH TRP FLUORESCENCE AS A PROBE. **Ban-Seok Jeong**

1842-PLAT 5:30 PM

SPECTROSCOPIC STUDIES AS A BIOPHYSICAL TOOLBOX FOR PHARMACOKINETIC DRUG PROFILING. **Marlene Lúcio**

1843-PLAT 5:45 PM

FLUORESCENT VISUALIZATION OF CELLULAR ION FLUXES. **Lejie Zhang**, William Kobertz

Workshop Time-resolved Crystallography

7:30 PM - 9:30 PM, ROOM 502A

Chair

Philip Anfinrud, NIH

1844-WKSHP 7:30 PM

TIME-RESOLVED CRYSTALLOGRAPHY WITH SYNCHROTRON AND FREE ELECTRON LASER SOURCES. **Keith Moffat**

1845-WKSHP 8:00 PM

STRUCTURAL DYNAMICS OF PHOTOACTIVE YELLOW PROTEIN INVESTIGATED BY TIME RESOLVED SERIAL FEMTOSECOND CRYSTALLOGRAPHY. **Marius Schmidt**

NO ABSTRACT 8:30 PM

TIME-RESOLVED FEMTOSECOND CRYSTALLOGRAPHY: TOWARDS MOLECULAR MOVIES OF MOLECULES IN ACTION. **Petra Fromme**

1846-WKSHP 9:00 PM

WATCHING PROTEINS FUNCTION WITH TIME-RESOLVED X-RAY DIFFRACTION. **Philip Anfinrud**, Friedrich Schotte, Hyun Sun Cho

Workshop Frontiers in Biophysical Instrumentation

7:30 PM - 9:30 PM, ROOM 502B

Chair

Joerg Bewersdorf, Yale University

1847-WKSHP 7:30 PM

STUDYING CELL DYNAMICS USING QUANTITATIVE PHASE IMAGING. **Gabriel Popescu**

1848-WKSHP 8:00 PM

PROBING SINGLE INDIVIDUAL PROTEINS UNFOLD AND REFOLD WITH 1- μ S RESOLUTION: IMPROVED AFM-BASED SINGLE MOLECULE FORCE SPECTROSCOPY. **Thomas T. Perkins**

1849-WKSHP 8:30 PM

ELUCIDATION OF THE MOLECULAR MACHINERY IN PHOTOSYNTHETIC LIGHT HARVESTING. **Gabriela Schlau-Cohen**

1850-WKSHP 9:00 PM

LIVE-CELL OPTICAL MICROSCOPY BEYOND THE DIFFRACTION LIMIT. **Joerg Bewersdorf**

Workshop Computational Methods for Ion Permeation and Selection

7:30 PM - 9:30 PM, ROOM 515A

Chair

Maria Kurnikova, Carnegie Mellon University

NO ABSTRACT 7:30 PM

WHAT CAN BE LEARNED ABOUT ION CHANNELS FROM MOLECULAR DYNAMICS SIMULATIONS. **Benoit Roux**

1851-WKSHP 8:00 PM

CONTINUUM THEORY OF CALCIUM CHANNELS: FUNDAMENTAL INSIGHTS FROM SIMPLIFIED MODELS. **Dirk Gillespie**

1852-WKSHP 8:30 PM

COMPUTATIONAL ELECTROPHYSIOLOGY: CLOSE-UPS OF ION PERMEATION AND MIGRATION IN MEMBRANE PROTEINS. **Ulrich Zachariae**

1853-WKSHP 9:00 PM

WILL IT PERMEATE? PREDICTING ION CHANNEL ION SELECTIVITY, PERMITTIVITY AND BLOCK MECHANISMS. **Maria Kurnikova**

Workshop Methods for Tracking Single Biomolecule Mobility, Clustering, and Conformational State

7:30 PM - 9:30 PM, ROOM 515B

Chair

Keith Lidke, University of New Mexico

1854-WKSHP 7:30 PM

MULTI-COLOR SINGLE PARTICLE TRACKING FOR DETERMINING PROTEIN INTERACTION LIFETIMES. **Keith A. Lidke**

1855-WKSHP 8:00 PM

TRACKING SUBCELLULAR DYNAMICS WITH MULTIFOCAL PLANE MICROSCOPY. **Raimund J. Ober**

1856-WKSHP 8:30 PM

SINGLE MOLECULES IN THE AGE OF BIG DATA. **Maxime Dahan**

NO ABSTRACT 9:00 PM

INVESTIGATING HOW MOLECULES COME TO LIFE USING SINGLE MOLECULE FLUORESCENCE TECHNOLOGIES. **Taejip Ha**

Publications Committee Meeting

6:00 PM - 10:00 PM, J.W. MARRIOTT, OLYMPIC II

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

8:00 PM - 10:00 PM, ROOM 409AB

TUESDAY POSTER SESSIONS

1:45 PM–3:45 PM, WEST HALL

Below is the list of poster presentations of abstracts submitted by October 1.

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 – B21	Protein Structure and Conformation III
B22 – B39	Protein Dynamics and Allostery III
B40 – B56	Protein Assemblies II
B57 – B89	Protein Stability, Folding, and Chaperones II
B90 – B102	Membrane Protein Structure and Folding III
B103 – B109	Enzyme Regulatory Strategies
B110 – B131	Intrinsically Disordered Proteins (IDP) and Aggregates: Aggregation and Assemblies
B132 – B160	DNA Structure and Dynamics I
B161 – B175	RNA Structure and Dynamics
B176 – B192	Membrane Physical Chemistry II
B193 – B217	Membrane-active Peptides and Toxins II
B218 – B247	Protein-Lipid Interactions II
B248 – B267	Membrane Receptors and Signal Transduction II
B268 – B285	Exocytosis and Endocytosis I
B286 – B304	Intracellular Calcium Channels and Calcium Sparks and Waves II
B305 – B314	Voltage-gated Na Channels II
B315 – B341	Voltage-gated Ca Channels
B342 – B377	Ion Channels, Pharmacology, and Disease
B378 – B398	Ligand-gated Channels II
B399 – B423	Kinesins, Dyneins, and Other Microtubule-based Motors
B424 – B436	Cardiac Muscle Mechanics and Structure II
B437 – B444	Cytoskeletal-based Intracellular Transport
B445 – B458	Bacterial Mechanics, Cytoskeleton, and Motility
B459 – B484	Mitochondrial Cell Life and Death
B485 – B507	Systems Biology and Disease
B508 – B516	System and Sensory Neuroscience
B517 – B550	Optical Microscopy and Super-Resolution Imaging II
B551 – B579	Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence
B580 – B588	Computational Methods and Bioinformatics II
B589 – B616	Force Spectroscopy and Scanning Probe Microscopy
B617 – B646	Micro- and Nanotechnology I
B647 – B656	Biosensors II

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

Protein Structure and Conformation III (Boards B1 - B21)

- 1857-Pos BOARD B1**
PHOTO-ISOMERIZATION OF PROLYCOPENE IN CHLOROPLAST OCCURS THROUGH THE TRIPLET STATE: IMPLICATIONS ON CAROTENOID BIOSYNTHESIS. **Vijaya Lakshmi Kanchustambham**
- 1858-Pos BOARD B2**
FUNCTION OF TYR185 IN STABILIZING THE ISOMERIZATION EQUILIBRIUM OF THE RETINAL CHROMOPHORE IN THE BACTERIORHODOPSIN GROUND STATE. Xiaoyan Ding, Bo Peng, Yujiao Gao, Haolin Cui, Dinu Iuga, Peter Judge, Anthony Watts, **Xin Zhao**
- 1859-Pos BOARD B3**
TRYPTOPHAN MUTANTS PROBE THE STRUCTURAL AND FUNCTIONAL STATUS OF A COPPER BINDING, CYTOCHROME C OXIDASE ASSEMBLY PROTEIN FROM BACILLUS SUBTILIS (I.E., BSSCO). **Bruce C. Hill**, Shina Hussain, Diann Andrews
- 1860-Pos BOARD B4**
PRESSURE-INDUCED SPECTRAL SHIFTS IN GFP MUTANTS EXPLAINED BY MOLECULAR DYNAMICS SIMULATIONS. Emanuela Jacchetti, Edi Gabellieri, Patrizia Cioni, Ranieri Bizzarri, **Riccardo Nifosi**
- 1861-Pos BOARD B5**
ON THE ORIGIN OF THE EXTENDED STOKES'S SHIFTS IN FLUORESCENT PROTEINS. **Prem Chapagain**, Chola Regmi, Bernard Gerstman
- 1862-Pos BOARD B6 EDUCATION TRAVEL AWARDEE**
INTERDOMAIN INTERACTIONS AND THE MECHANISM OF STRUCTURAL TRANSFORMATION IN RFAH. **Jeevan B. Gc**, Bernard S. Gerstman, Prem P. Chapagain
- 1863-Pos BOARD B7**
TOOLKIT FOR MULTI-CONFORMATION BIOMOLECULAR STRUCTURE DETERMINATION BY HIGH-PRECISION FRET AND MOLECULAR SIMULATIONS. **Mykola Dimura**, Stanislav Kalinin, Thomas Peulen, Holger Gohlke, Claus A. M. Seidel
- 1864-Pos BOARD B8**
UNDERSTANDING SECONDARY STRUCTURE HYDROGEN BONDS OF PEPTIDES USING STEERED MOLECULAR DYNAMICS SIMULATIONS (SMD). **Ferdiemar C. Guinto**, C. Michael McCallum
- 1865-Pos BOARD B9**
WHY DOES NATURE TIE-UP PROTEINS? STRUCTURAL INSIGHTS FROM SOLUTION STUDIES OF A KNOTTED METHYLTRANSFERASE. **David J. Burban**, Patricia A. Jennings
- 1866-Pos BOARD B10**
BUILDING GRAPHS TO DESCRIBE DYNAMICS, KINETICS AND ENERGETICS IN THE D-ALA:D-LAC LIGASE VANA. Guillaume Bouvier, Nathalie Duclert-Savatier, Michael Nilges, **Thérèse E. Malliavin**
- 1867-Pos BOARD B11**
COMPLEX LASSO: NEW ENTANGLED MOTIFS IN PROTEINS. **Joanna I. Sulkowska**
- 1868-Pos BOARD B12**
COARSE MASTER EQUATION-BASED ANALYSIS OF N-METHYLATION AND TEMPERATURE EFFECTS ON THE DYNAMICS OF CYCLIC PEPTIDES. Aoife Crowe, Goar Sánchez-Sanz, Bartłomiej Tywniuk, Denis C. Shields, **Nicolae-Viorel Buchete**
- 1869-Pos BOARD B13**
INSIGHT INTO THE STRUCTURE OF LUNG SURFACTANT PROTEIN B (SP-B). **Tadiwos G. Asrat**, Dr.Valeri Booth

- 1870-Pos BOARD B14**
STRUCTURAL ANALYSIS OF LIPOCALIN-TYPE PROSTAGLANDIN D SYNTHASE COMPLEXED WITH PROSTAGLANDIN J₂. **Shigeru Shimamoto**, Yuta Nakahata, Yusuke Nakagawa, Yutaro Fukuda, Kosuke Aritake, Yoshihiro Urade, Yuji Hidaka
- 1871-Pos BOARD B15**
THE BIO3D PROJECT: INTERACTIVE TOOLS FOR STRUCTURAL BIOINFORMATICS. **Lars Skjærven**, Shashank Jariwala, Xin-Qiu Yao, Julien Idé, Barry J. Grant
- 1872-Pos BOARD B16**
PROBING LOCAL ENVIRONMENTS OF AN OXYGEN-BINDING HEME-PROTEIN USING A SPECTROSCOPICALLY ACTIVE UNNATURAL AMINO ACID. **Daniyal Tariq**
- 1873-Pos BOARD B17**
STRUCTURAL INSIGHT INTO SPLIT GREEN FLUORESCENT PROTEIN. **Alan Deng**, Steven G. Boxer
- 1874-Pos BOARD B18**
STRUCTURAL AND DYNAMICAL ASPECTS OF ELECTROSTATIC INTERACTIONS BY APPLYING ASPHERICAL ATOM MODEL IN HIV-1 PROTEINASE. **Prashant Kumar**, Paulina Maria Dominiak
- 1875-Pos BOARD B19**
PROBING THE ELASTIC PROPERTIES OF ALPHA HELICES VIA BUCKLING SIMULATIONS. **Nicholas Jin**, Markus Deserno
- 1876-Pos BOARD B20**
HETEROTRIMERIC G-PROTEIN ALPHA (α) SUBUNIT FROM A. THALIANA FORMS TRIMERIC STRUCTURES IN SOLUTION. **Ersoly Cholak**, Ines Karmous, Bihter Avşar, Zehra Sayers
- 1877-Pos BOARD B21**
PROTONATION AND DEPROTONATION REACTION OF ASPARTIC ACID SIDE CHAIN MODULATED BY THE SURROUNDING DIELECTRIC MEDIUM - AB INITIO QUANTUM CHEMICAL STUDIES ON ASPARTIC ACID IN SIXTEEN DIFFERENT SOLVENTS AND TWO PROTEIN STRUCTURES. **Akshay Bhatnagar**, Sruthi Varanasi, Dhruv Pramod Ghiya, Chaitanya Gali Sai Ganesh, Debashree Bandyopadhyay

Protein Dynamics and Allostery III (Boards B22 - B39)

- 1878-Pos BOARD B22**
OXIDATION EFFECTS ON THE VON WILLEBRAND FACTOR A2 DOMAIN INVESTIGATED BY MOLECULAR DYNAMICS SIMULATIONS. **Gianluca Interlandi**
- 1879-Pos BOARD B23**
INSIGHT INTO A RAPID HEME TRANSFER REACTION BETWEEN NEAR TRANSPORTER DOMAINS OF STAPHYLOCOCCUS AUREUS: A THEORETICAL STUDY USING QM/MM AND MD SIMULATIONS. **Yoshitaka Moriwaki**, Tohru Terada, Kouhei Tsumoto, Kentaro Shimizu
- 1880-Pos BOARD B24**
THE COUPLING OF ATP HYDROLYSIS TO RNA TRANSLOCATION IN DENGUE VIRUS NS3 HELICASE: INSIGHTS FROM MOLECULAR DYNAMICS. **Martin McCullagh**, Russell Davidson
- 1881-Pos BOARD B25**
ALLOSTERIC NETWORKS IN THE NUCLEOSOME CORE PARTICLE. **Samuel Bowerman**, Jeff Wereszczynski
- 1882-Pos BOARD B26**
INVESTIGATING DYNAMICS OF HLA MOLECULES BY ENERGY DISSIPATION. Elif Naz Bingol, Onur Sercinoglu, **Pemra Ozbek**

1883-Pos BOARD B27
DYNAMIC NETWORK ANALYSIS OF DREAM PROTEIN DIMER INTER-FACE. **Maurizio A. Diaz**, Walter G. Gonzalez, Joseph Hernandez, Jaroslava Miksovska

1884-Pos BOARD B28
GLOBAL CHANGES INDUCED BY LOCAL PERTURBATIONS TO THE HIV-1 CAPSID. **Shana Bergman**, Timothy R. Lezon

1885-Pos BOARD B29
THE EFFECT OF EBOLA GLYCOPROTEIN EVOLUTION ON PROTEIN FLEXIBILITY. **Christopher Mirabzadeh**

1886-Pos BOARD B30
UNDERSTANDING THE EFFECT OF POLYUNSATURATED FATTY ACIDS ON RHODOPSIN USING ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Letty Salas**, Nicholas Leioatts, Tod D. Romo, Alan Grossfield

1887-Pos BOARD B31
GLOBAL DYNAMICS OF INTACT AMPA AND NMDA RECEPTORS USING ELASTIC NETWORK MODELS. **Ji Young Lee**, Anindita Dutta, James Krieger, Javier Garcia-Nafria, Ingo Greger, Ivet Bahar

1888-Pos BOARD B32
AN ARGININE-RICH LOOP IS CRITICAL FOR THE MODULATION OF THE WATER PERMEABILITY OF AQUAPORIN 0. **James B. Fields**, Karinne Németh-Cahalan, J. Alfredo Freitas, James E. Hall, Douglas J. Tobias

1889-Pos BOARD B33
ELECTROSTATIC AND ALLOSTERIC RESPONSE OF MYOSIN UPON ATP BINDING. **Takato Sato**, Jun Ohnuki, Mitsunori Takano

1890-Pos BOARD B34
ALLOSTERIC REGULATION MECHANISM OF TRIMERIC MEMBRANE. **Yuhang Wang**, Abhi Singharoy, Klaus Schulten, Emad Tajkhorshid

1891-Pos BOARD B35
ALLOSTERIC REGULATION OF RAC1-PAK1 BINDING AFFINITY BY MUTANT RESIDUES THROUGH MOLECULAR SIMULATIONS AND AFM. **Saliha Ece Acuner-Ozbabacan**, Fidan Sumbul, Hamdi Torun, Turkan Haliloglu

1892-Pos BOARD B36
ELUCIDATING THE STRUCTURE, DYNAMICS AND FUNCTIONS OF AN IMMATURE RETROVIRUS IN ATOMISTIC DETAIL. **Boon Chong Goh**, Juan R. Perilla, Katrina J. Heyrana, Matthew R. England, Rebecca C. Craven, Klaus Schulten

1893-Pos BOARD B37
STRUCTURE AND DYNAMICS OF THE LPS INSERTASE LPTD/E IN A REALISTIC OUTER-MEMBRANE MODEL. **Karl Lundquist**, Stephen J. Mayclin, Susan K. Buchanan, James C. Gumbart

1894-Pos BOARD B38
NOVEL ALLOSTERIC MUTATIONS INCREASING CEPHALOSPORIN RESISTANCE OF CTX-M9 BETA LACTAMASES. **Malgorzata J. Latallo**, George A. Cortina, Peter M. Kasson

1895-Pos BOARD B39
INVESTIGATING HIV VIF INTERACTIONS WITH HOST PROTEINS. **K. Aurelia Ball**, John Gross, Matthew Jacobson

Protein Assemblies II (Boards B40 - B56)

1896-Pos BOARD B40
STUDY MOLECULAR INTERACTIONS IN WHOLE CELL EXTRACTS BY FLUORESCENCE-DETECTED ANALYTICAL ULTRACENTRIFUGATION. **Jia Ma**, Huaying Zhao, Kristin Rainey, George Patterson, Peter Schuck

1897-Pos BOARD B41
GRAVITATIONAL SWEEP SEDIMENTATION VELOCITY. Jia Ma, Huaying Zhao, Julia Sandmaier, J. Alexander Liddle, **Peter Schuck**

1898-Pos BOARD B42
ANALYTICAL ULTRACENTRIFUGE STUDIES OF A CYTOKINE, SOLUBLE RECEPTOR INTERACTION: COMPARISON OF SIMULATIONS AND EXPERIMENTS. **Robert Wright**, Peter Sherwood, Walter Stafford, John J. Correia

1899-Pos BOARD B43
A MICROFLUIDIC APPROACH TO THE STUDY OF Z-RING DYNAMICS FORMATION IN LIPOSOMES. **Federico Fanalista**, Siddharth Deshpande, Yaron Caspi, Mercedes Jimenez, German Rivas, Cees Dekker

1900-Pos BOARD B44
FORCE SPECTROSCOPY OF INTERACTIONS OF THE INTEGRIN ALPHAIIIB-BETA3 WITH FIBRIN AND FIBRINOGEN. **Rustem I. Litvinov**, Peter Höök, David H. Farrell, Mark Alber, Joel S. Bennett, John W. Weisel

1901-Pos BOARD B45
SMALL ANGLE NEUTRON SCATTERING OF FIBRINOGEN POLYMERIZATION KINETICS. **Luis A. Palacio**, Christopher B. Stanley, Lucas Burke, Ryan Lybarger, Horia I. Petrache

1902-Pos BOARD B46
THE BINDING INTERFACE BETWEEN HUMAN APOBEC3F AND HIV-1 VIF ELUCIDATED BY GENETIC AND COMPUTATIONAL APPROACHES. **Ozlem Demir**, Christopher Richards, John S. Albin, Nadine M. Shaban, Brett D. Anderson, Rommie E. Amaro, Reuben S. Harris

1903-Pos BOARD B47
CHARACTERIZING BIOPHYSICAL FEATURES DRIVING THE SELF-ASSEMBLY OF MICROTUBULE NANO-ARRAYS. **Adrienne C. Greene**, Marlene Bachand, Andrew Gomez, George D. Bachand

1904-Pos BOARD B48
QUANTIFYING CROWDING EFFECTS ON TRANSIENT ENCOUNTER COMPLEX FORMATION DURING PROTEIN BINDING. **Youngchan Kim**, Jeetain Mittal

1905-Pos BOARD B49
TOWARD MICROSCOPIC SIMULATIONS OF PROTEINS IN CELL-LIKE ENVIRONMENTS. **Fabio Sterpone**, Philippe Derreumaux, Simone Melchionna

1906-Pos BOARD B50
RELATIONSHIPS BETWEEN MECHANOSTABILITY, AGGREGATION RATE AND BINDING AFFINITY OF PEPTIDES: INSIGHTS FROM ALL-ATOM MODELING IN EXPLICIT SOLVENT. Maksim Kouza, Anirban Banerji, Andrzej Kolinski, Irina Buhimschi, **Andrzej Kloczkowski**

1907-Pos BOARD B51
MODELING INTERPROTEIN INTERACTIONS IN CONCENTRATED SOLUTIONS OF WILD-TYPE AND CATARACT-RELATED VARIANTS OF γ D- AND γ S-CRYSTALLINS. **Vera D. Prytkova**, Matthias B. Heyden, Eric Wong, Juan A. Freitas, Douglas J. Tobias

1908-Pos BOARD B52
A FAST METHOD FOR COMPUTING CHEMICAL POTENTIALS AND PHASE EQUILIBRIA OF MACROMOLECULAR MIXTURES. **Sanbo Qin**, Huan-Xiang Zhou

1909-Pos BOARD B53
A MULTI-SCALE MODEL FOR THE ASSEMBLING KINETICS OF PROTEIN COMPLEXES. **Yinghao Wu**

1910-Pos BOARD B54
TWO STUDIES USING CIRCULAR VARIANCE FOR PROTEIN STRUCTURE CHARACTERIZATION. **Mihaly Mezei**

1911-Pos BOARD B55
AN AMINO ACID CODE TO PROTEIN QUATERNARY STRUCTURE. **Keith J. Fraga**, Hyun Joo, Jerry Tsai

1912-Pos BOARD B56
TOWARDS THREE-COLOR LIVE-CELL IMAGING OF SPLICEOSOME ASSEMBLY. **Caitlin M. Davis**, Irisbel Guzman, Martin Gruebele

Protein Stability, Folding, and Chaperones II (Boards B57 - B89)

1913-Pos BOARD B57
WT HUMAN γ D CRYSTALLIN PROMOTES AGGREGATION OF ITS OXIDATION-MIMICKING MUTANTS. **Eugene Serebryany**

1914-Pos BOARD B58
ELUCIDATING THE COORDINATION FEATURES ASSOCIATED TO COPPER AND ZINC INDUCED AGGREGATION OF HUMAN γ -D CRYSTALLIN. **Jose A. Dominguez-Calva**, Eugene Serebryany, Cammeron Haase-Pettingell, Jonathan A. King, Lilianna Quintanar

1915-Pos BOARD B59
FUSION PROTEIN TM-TM INTERACTIONS: MODULATORS OF PRE-FUSION PROTEIN STABILITY. **Stacy Webb**, Rebecca Dutch

1916-Pos BOARD B60
ASSESSMENT OF NICOTINIC ACETYLCHOLINE RECEPTOR DETERGENT COMPLEXES PURITY AND STABILITY FOR STRUCTURAL STUDIES. **Bianca N. Valdés Fernández**, Jose A. Lasalde-Dominicci

1917-Pos BOARD B61
THE TWO STEPS UNFOLDING PROCESS OF THE ANTIBIOTIC PROTEIN COLICIN A PORE FORMING DOMAIN. **Yan Huang**

1918-Pos BOARD B62
DIMER STABILITY OF ALS-ASSOCIATED MUTANTS OF SUPEROXIDE DISMUTASE PROTEINS. **Daniel Lusebrink**, Mona Habibi, Steven Plotkin

1919-Pos BOARD B63
USING INNER-EAR CADHERINS TO TEST HIGH-THROUGHPUT THERMAL SCREENING ASSAYS FOR PROTEIN-PROTEIN INTERACTIONS. **Deepanshu Choudhary**, Anusha Kumar, Thomas J. Magliery, Marcos Sotomayor

1920-Pos BOARD B64
AN ILBP FAMILY MEMBER DOMAIN SWAPPED DIMER IS EVIDENCE FOR A HIGHLY ORDERED FOLDING INTERMEDIATE. **Zahra Assar**, Zahra Nossoni, Wenjing Wang, Babak Borhan, James H. Geiger

1921-Pos BOARD B65
INCREASE IN DOMAIN SWAPPING OF THE DNA-BINDING DOMAIN OF HUMAN FOXP1 IS RELATED TO A DECREASE IN MONOMER FOLDING STABILITY. **Exequiel Medina**, Cristóbal Córdova, Javiera Reyes, César A. Ramírez-Sarmiento, Jorge Babul

1922-Pos BOARD B66
COILED-COIL PROBES IDENTIFIED THE UNFOLDING PATHWAY OF YEAST PHOSPHOGLYCERATE KINASE. **Qing Li**, Zackary N. Scholl, Piotr E. Marszalek

1923-Pos BOARD B67
FOLDING ANALYSES OF THE MAJOR FOLDING INTERMEDIATE OF PROUROGUANYLIN USING DELETION MUTANTS. **Kenta Hattori**, Masaki Okumura, Shigeru Shimamoto, Yuji Hidaka

1924-Pos BOARD B68
INTERDOMAIN CONTACTS AND RNA POLYMERASE CONTROL NATIVE STATE INTERCONVERSION OF THE TRANSFORMER PROTEIN RFAH ON A DUAL-FUNNELED LANDSCAPE. **César A. Ramírez-Sarmiento**, Jeffrey K. Noel, Sandro L. Valenzuela, Irina Artsimovitch

1925-Pos BOARD B69
FAST CLOSURE OF LONG LOOPS AT THE INITIATION OF A PROTEIN FOLDING PATHWAY. **Elisha Haas**, Dan Amir, Tomer Orevi, Gil Rahamim, Sagar Kathuria, Robert C. Matthews, Osman Bilse

1926-Pos BOARD B70
EXAMINING THE VECTORIAL FOLDING PATHWAY OF THE β -HELICAL PEPTIDE, PERTACTIN, USING MOLECULAR DYNAMICS SIMULATIONS. **Anthony Hazel**, James C. Gumbart

1927-Pos BOARD B71
RESOLVING THE HETEROGENEITY OF THE ENSEMBLE OF UNFOLDED STATES BY A COMBINATION OF FLUORESCENCE SPECTROSCOPIC METHODS. **Katherina Hemmen**, Dmitro Rodnin, Igor Markovic, Suren Felekyan, Ralf Kuehnemuth, Hugo Sanabria, Claus A. Seidel

1928-Pos BOARD B72 EDUCATION TRAVEL AWARDEE
KEY ROLES OF TRANSLOCATING LOOPS IN THE MECHANOCHEMICAL COUPLING AND POWER PRODUCTION OF A AAA⁺ PROTEASE MACHINE. **Piere Rodriguez-Aliaga**, Luis Ramirez, Frank Kim, Carlos Bustamante, Andreas Martin

1929-Pos BOARD B73
MOLECULAR MODULATION OF PROTEIN ENERGY LANDSCAPES. **David N. Bunck**, Katrine Museth, Beatriz Atsavapranee, James R. Heath

1930-Pos BOARD B74
ANCESTRAL SEQUENCE RECONSTRUCTION REVEALS THE EVOLUTIONARY HISTORY OF THE FOLDING PATHWAY AND LANDSCAPE OF RIBONUCLEASES H. **Shion A. Lim**, Eric R. Bolin, Michael J. Harms, Kathryn M. Hart, Joseph W. Thornton, Susan Marqusee

1931-Pos BOARD B75
ENGINEERING THE STRUCTURE OF HUMAN ACIDIC FIBROBLAST GROWTH FACTOR THROUGH SITE DIRECTED MUTAGENESIS FOR INCREASED PROTEIN STABILITY. **Julie B. Davis**, Thallapuram K. Suresh Kumar, Srinivas Jayanthi

1932-Pos BOARD B76
STRUCTURAL BASIS FOR INCREASED THERMAL STABILITY OF LOCAL STRUCTURAL ENTROPY-OPTIMIZED ADENYLATE KINASE VARIANTS. Sojin Moon, **Euiyoung Bae**

1933-Pos BOARD B77
INVESTIGATION OF PRESSURE-INDUCED PROTEIN UNFOLDING WITH COARSE-GRAINED MOLECULAR SIMULATION. **Dirar M. Homouz**, Andrei G. Gasic, Jianfa Chen, Margaret S. Cheung

1934-Pos BOARD B78
EXPLORING FOLDING COOPERATIVITY OF A REPEAT PROTEIN FOLDING BY 2D-NMR DETECTED PRESSURE PERTURBATION. **Martin J. Fossat**, Angel Garcia, Doug Barrick, Christian Roumestand, Catherine A. Royer

1935-Pos BOARD B79
DEVELOPMENT AND APPLICATION OF A HIGH THROUGHPUT PROTEIN UNFOLDING KINETIC ASSAY. Qiang Wang, Nicklas Waterhouse, Olusegun Feyijimni, Matthew Dominguez, Zoey Sharp, Rachel Service, Jameson Boothe, **Elliott J. Stollar**

1936-Pos BOARD B80
KINETIC COMPENSATION BETWEEN ESTER-BOND CLEAVAGE, FOLDING AND RELEASE FROM THE RIBOSOME IN PROTEIN BIOGENESIS. **Rayna M. Addabbo**, Hon Nam Lam, Brian Arnold, Silvia Cavagnero

1937-Pos BOARD B81
THE EFFECT OF THE RIBOSOME ON NASCENT CHAIN ENERGY LANDSCAPES. **Madeleine K. Jensen**, Kambiz Hamadani, Avi J. Samelson, Jamie H. Cate, Susan Marqusee

1938-Pos BOARD B82

A NEW TOOL TO MEASURE BIOPHYSICAL PROPERTIES OF RIBOSOME NASCENT CHAINS. **Avi Samelson**, Randy Soto, Madeleine K. Jensen, Susan Marqusee

1939-Pos BOARD B83

CHAPERONE-MEDIATED MECHANICAL PROTEIN FOLDING AT THE SINGLE MOLECULE LEVEL. **Judit Perales-Calvo**, David Giganti, Sergi Garcia-Manyes

1940-Pos BOARD B84 EDUCATION TRAVEL AWARDEE

DIRECT OBSERVATION OF MULTIMER STABILIZATION IN THE MECHANICAL UNFOLDING PATHWAY OF A PROTEIN UNDERGOING OLIGOMERIZATION. **Zackary N. Scholl**, Weitao Yang, Piotr Marszalek

1941-Pos BOARD B85

SINGLE-MOLECULE FORCE-SPECTROSCOPY REVEALS THE CALCIUM DEPENDENCY OF FOLDING INTERMEDIATES IN THE MULTIDOMAIN PROTEIN S. **Zackary N. Scholl**, Qing Li, Weitao Yang, Piotr Marszalek

1942-Pos BOARD B86

THE SCIENCE OF STRETCHING: MECHANICAL ANISOTROPY IN TITIN IG DOMAINS. **Edward C. Eckels**, Jaime Andres Rivas-Pardo, Jessica Valle-Orero, Ionel Popa, Julio M. Fernandez

1943-Pos BOARD B87

USING SINGLE MOLECULE CHEMO-MECHANICAL UNFOLDING TO PROBE THE EFFECT OF ENVIRONMENTAL CONDITIONS ON THE PROTEIN FOLDING PATHWAY. **Emily J. Guinn**, Bharat Jagannathan, Susan Marqusee

1944-Pos BOARD B88

SIMULATED FORCE SPECTROSCOPY OF A BADLY-BEHAVED PROTEIN: ON THE RELIABILITY OF PROTEIN COARSE-GRAINED MODELS. **Mona Habibi**, Joerg Rottler, Steven S. Plotkin

1945-Pos BOARD B89

EXPLORING PROTEIN STABILITY BY NANODSF. **Wyatt Strutz**

Membrane Protein Structure and Folding III (Boards B90 - B102)

1946-Pos BOARD B90

DISSECTING THE FOLDING PATHWAY OF POTASSIUM CHANNEL PORE DOMAINS. **Kevin Song**, Benoît Roux, Tobin Sosnick

1947-Pos BOARD B91

TRANSMEMBRANE SUBSTRATE UNFOLDING IN INTRAMEMBRANE PROTEOLYSIS. Mia Brown, Alaa Abdine, Jose Chavez, Bryan Lada, Renee D. Jiji, Roman Osman, **Jason W. Cooley**, Iban Ubarretxena-Bilandia

1948-Pos BOARD B92

DEEP-UV RESONANCE RAMAN SPECTRAL PROPERTIES OF MEMBRANE PROTEINS. Anahita Zare, Michael Eagleburger, Mia C. Brown, Christopher Halsey, Carol Roach, Olayinka O. Oshokoya, Jeremy King, Jason W. Cooley, **Renee D. Jiji**

1949-Pos BOARD B93

SELECTIVE PRESSURE FOR RAPID MEMBRANE INTEGRATION CONSTRAINS THE SEQUENCE OF BACTERIAL OUTER MEMBRANE PROTEINS. **Ashlee M. Plummer**, Janine H. Peterson, Harris D. Bernstein, Karen G. Fleming

1950-Pos BOARD B94

HAX-1 STRUCTURAL STUDIES AND INTERACTIONS WITH THE SERCA/PHOSPHOLAMBAN COMPLEX. **Kailey J. Soller**, Caitlin Walker, Sarah Nelson, Michael T. Bowser, Gianluigi Veglia

1951-Pos BOARD B95

THE EFFECTS OF SARCOLIPIN PHOSPHORYLATION ON SERCA REGULATION. **Alysha A. Dicke**, Tata Gopinath, Vitaly V. Vostrikov, Gianluigi Veglia

1952-Pos BOARD B96

STRUCTURAL ANALYSIS OF KCNE1 TRANSMEMBRANE MUTANT YIELDING KCNE3-LIKE FUNCTION. **Cheryl L. Law**, Charles R. Sanders

1953-Pos BOARD B97

BIOCHEMICAL CHARACTERIZATION AND STRUCTURE DETERMINATION OF THE CLASS C TAS1R SUBFAMILY OF CHEMOSENSORY RECEPTORS. **Kate L. White**, Tiffany Lian, Raymond C. Stevens

1954-Pos BOARD B98

A SMALL LOOP IN THE SERCA N-DOMAIN FACILITATES THE TRANSITION TO A COMPACT CONFORMATION. **Olga N. Raguimova**, Nikolai Smolin, Seth L. Robia

1955-Pos BOARD B99

DEVELOPMENT OF A NOVEL FRET ASSAY TO CHARACTERIZE THE OLIGOMERIZATION STATE OF SELF-ASSOCIATING TRANSMEMBRANE HELICES. **Philipp Johann Heckmeier**, Mark George Teese, Dieter Langosch

1956-Pos BOARD B100

SINGLE-MOLECULE MEASUREMENT OF MEMBRANE PROTEIN STABILITY. **Robert Jefferson**, Yu-Chu Chang, Eitan Lerner, Shimon Weiss, James Bowie

1957-Pos BOARD B101

COMBINING SOLUTION AND SOLID STATE NMR TECHNIQUES IN THE ANALYSIS OF ARG TO CYS MUTATIONS IN PHOSPHOLAMBAN ASSOCIATED WITH DILATED CARDIOMYOPATHY. **Sarah E. D. Nelson**, Vitaly V. Vostrikov, Kim N. Ha, Kailey Soller, Tata Gopinath, Gianluigi Veglia

1958-Pos BOARD B102

EFFECTIVE APPLICATION OF BICELLES FOR CONFORMATIONAL ANALYSIS OF G PROTEIN-COUPLED RECEPTORS BY HYDROGEN/DEUTERIUM EXCHANGE MASS SPECTROMETRY. **Nguyen Minh Duc**, Yang Du, Su-Youn Lee, Cheng Zhang, Brian K. Kobilka, Ka-Young Chung

Enzyme Regulatory Strategies (Boards B103 - B109)

1959-Pos BOARD B103

CHEMICALLY MODIFIED SURFACES AFFECT THE ACTIVATION VOLUME OF ADSORBED ENZYMES. **Vitor D. Schuabb**, Claus Czeslik

1960-Pos BOARD B104

ALLOSTERIC POTENTIATION OF PEPTIDASE NEUROLYSIN BY SMALL MOLECULES. Srinidhi Jayaraman, Rui Zhu, Naomi J. Wangler, Yehia Mechref, Thomas J. Abbruscato, David A. Ostrov, **Vardan T. Karamyan**

1961-Pos BOARD B105

LINKS OF CONFORMATIONAL SAMPLING TO FUNCTIONAL PLASTICITY AND CLINICAL PHENOTYPES BY SINGLE MOLECULE STUDIES. Matias E. Moses, Sara Thodberg, Krutika Bavishi, Stine Eiersholt, Darui Li, Dimitrios Stamou, Birger L. Moller, Tomas Laursen, **Nikos S. Hatzakis**

1962-Pos BOARD B106

QUANTIFYING THE MOLECULAR CONSTRAINTS DRIVING THE TRIMETHOPRIM RESISTANCE IN ESCHERICHIA COLI. **Yusuf T. Tamer**

1963-Pos BOARD B107

THE CATALYTIC DETERMINANTS OF STREPTOCOCCAL PNEUMONIAE IGA1 PROTEASE ARE FORMED BY MULTIPLE DOMAINS. **Ying-Chih Chi**, Agnieszka A. Kendrick, Jeremy Rahkola, Edward N. Janoff, Elan Z. Eisenmesser

1964-Pos BOARD B108

PRESSURE MODULATION OF THE ENZYMATIC ACTIVITY OF PHOSPHOLIPASE A2 - A PUTATIVE MEMBRANE-ASSOCIATED PRESSURE SENSOR. Saba Suladze, **Roland Winter**

1965-Pos BOARD B109
KINETIC CHARACTERIZATION OF HUMAN LIVER PHOSPHOFRUCTOKINASE. **Amanda J. Tindall**, Gregory D. Reinhart

Intirinsically Disordered Proteins (IDP) and Aggregates: Aggregation and Assemblies (Boards B110 - B131)

1966-Pos BOARD B110 INTERNATIONAL TRAVEL AWARDEE
WATER IN AMYLOIDOGENIC INTRINSICALLY DISORDERED PROTEINS: INTERPLAY OF CONFORMATIONAL PREFERENCE AND AMYLOID AGGREGATION. **Shruti Arya**, Samrat Mukhopadhyay

1967-Pos BOARD B111 CPOW TRVEL AWARDEE
ILL-POSED? NOT A PROBLEM: INFERRING MECHANISMS OF ACTION FROM AMYLOID FORMATION KINETICS USING APPROXIMATE BAYESIAN COMPUTATION. **Eri Nakatani-Webster**, Abhinav Nath

1968-Pos BOARD B112
FRUSTRATION OF CRYSTALLIZATION BY LOCAL POLYMORPHISM: ROLES OF CORE SHAPE AND ENTROPY. **Thomas G. Mason**, Kun Zhao

1969-Pos BOARD B113
MECHANISM OF LIGHT CHAIN AMYLOID FIBRIL FORMATION: SEEDING-NUCLEATION AND POLYMERIZATION AMYLOID FORMATION AND THE CROSS-SEEDING PHENOMENON. **Luis M. Blancas-Mejia**, Marina Ramirez-Alvarado

1970-Pos BOARD B114
RESOLVING THE STRUCTURAL CONVERSION, AGGREGATION AND NEUROTOXICITY OF PRION PROTEINS AT THE SINGLE MOLECULE LEVEL. **Sanjeevi Sivasankar**, Chi-Fu Yen, Dilshan S. Harischandra, Anumantha Kanthasamy

1971-Pos BOARD B115
MEMBRANE-MEDIATED MISFOLDING OF ISLET AMYLOID POLYPEPTIDE IS A SHARED MECHANISM AMONG TYPE 2 DIABETIC RISK FACTORS. **Alan K. Okada**, Kazuki Teranishi, Robert H. Chow, Ralf Langen

1972-Pos BOARD B116
PROFILIN BINDING MODULATES THE AGGREGATION AND PHASE SEPARATION OF HUNTINGTIN N-TERMINAL FRAGMENTS VIA POLYPHASIC LINKAGE. **Ammon E. Posey**, Kiersten M. Ruff, Tyler S. Harmon, Alex S. Holehouse, Rohit V. Pappu

1973-Pos BOARD B117
AMORPHOUS AGGREGATION OF CYTOCHROME C WITH INHERENTLY LOW AMYLOIDOGENICITY IS CHARACTERIZED BY THE METASTABILITY OF SUPERSATURATION AND THE PHASE DIAGRAM. **Yuxi Lin**, József Kardos, Koichiro Ishimori, Yuji Goto, Young-Ho Lee

1974-Pos BOARD B118
PROTEIN AGGREGATION AND PORE-FORMATION OF A NEURODEGENERATIVE PROTEIN FRAGMENT. **Charles H. Chen**, Ayesha Khan, Joseph Jen-Tse Huang, Martin B. Ulmschneider

1975-Pos BOARD B119
TIP-ENHANCED RAMAN SCATTERING REVEALS HETEROGENEITY OF SECONDARY STRUCTURES IN AMYLOID FIBRILS FORMED BY PEPTIDE CGNNQQNY. **Alexey Krasnoslobodtsev**, Joseph Smolsky, Tanja Deckert-Gaudig, Yuliang Zhang, Volker Deckert, Yuri Lyubchenko

1976-Pos BOARD B120
MOLECULAR STUDY OF HIV-TAT AGGREGATION. **Alina Popescu Hategan**, Elena Karnaukhova, Emiliós K. Dimitriadis, Mario A. Bianchet, Avindra Nath

1977-Pos BOARD B121
EVALUATING FREE ENERGIES OF DIMERIZATION OF SHORT POLYGLUTAMINE PEPTIDES WITH MOLECULAR DYNAMICS SIMULATIONS. **Riley J. Workman**, Jeffrey D. Madura

1978-Pos BOARD B122
THE FORMATION OF AMYLOID FIBRIL ON TWO-DIMENSIONAL SURFACE. **Yichih Lin**, E. James Petersson, Zahra Fakhraai

1979-Pos BOARD B123
LIGHT CHAIN AMYLOID FIBRILS ACT AS A RECRUITMENT POINT FOR SOLUBLE PROTEIN AND REVEAL THEIR CYTOTOXIC POTENTIAL IN HUMAN CARDIOMYOCYTES. **Marta Marin-Argany**, Yi Lin, Jonathan S. Wall, Laura R. Elsbernd, Megan McClure, Marina Ramirez-Alvarado

1980-Pos BOARD B124
INSIGHTS INTO THE GENESIS OF LIGHT CHAIN AMYLOID ASSEMBLY. **Pinaki P. Misra**, Luis M. Blancas-Mejia, Marina Ramirez-Alvarado

1981-Pos BOARD B125
MITOCHONDRALLY-DERIVED PEPTIDES AS DEFENSE AGAINST AMYLOID PROTEIN MISFOLDING. **Kazuki Teranishi**, Alan Okada, Kelvin Yen, Pinchas Cohen, Ralf Langen

1982-Pos BOARD B126
BIOPHYSICS OF TARDIGRADE SURVIVAL. **Samantha Piszkiwicz**, Aakash Mehta, Thomas Boothby, Bob Goldstein, Gary Pielak

1983-Pos BOARD B127
TUBULIN TAILS ARE INTRINSICALLY DISORDERED POLYANIONS THAT REGULATE BINDING TO OTHER PROTEINS BY SEQUENCE AS WELL AS CHARGE. **Dan L. Sackett**

1984-Pos BOARD B128
F ACTIN BUNDLING DYNAMICS AND STIFFNESS OF THE TRIOBP-4 F ACTIN BUNDLE. **Justin J. Raupp**, Laura K. Gunther, Yuwen Mei, Alexander Pattyn, Takeshi Sakamoto

1985-Pos BOARD B129
ROLE OF OSMOLYTES ON THE THERMODYNAMIC AND AGGREGATION PROPERTIES OF AN ELP-DRUG CARRIER. **Valeria Zai-Rose**

1986-Pos BOARD B130
GLOBAL AND LOCAL CONFORMATIONAL HETEROGENIETY GOVERNS THE PRE-NUCLEATION PHASE IN AMYLOIDOGENIC SELF-ASSEMBLY. **Dirk Matthes**, Vytautas Gapsys, Julian T. Brennecke, Bert L. de Groot

1987-Pos BOARD B131
CONFORMATIONAL POLYMORPHISM IN CONDITIONALLY DISORDERED NUCLEOPHOSMIN: FROM SINGLE-MOLECULES TO LIQUID DROPLETS. **Priya R. Banerjee**, Diana M. Mitrea, Richard W. Kriwacki, Ashok Deniz

DNA Structure and Dynamics I (Boards B132 - B160)

1988-Pos BOARD B132
LONG-TERM MULTICOLOR TRACKING OF GENOMIC LOCI BY MODIFIED SGRNAS OF THE CRISPR/CAS9 SYSTEM. **Shipeng Shao**

1989-Pos BOARD B133
SINGLE MOLECULE ANALYSIS OF CHROMATIN STRUCTURE. **Michal Levy-Sakin**, Catherine Chu, Chin Lin

1990-Pos BOARD B134
DEPENDENCE OF DNA PERSISTENCE LENGTH ON IONIC STRENGTH OF SOLUTIONS WITH MONOVALENT AND DIVALENT SALTS: A JOINT THEORY-EXPERIMENT STUDY. **Annaël Brunet**, **Catherine Tardin**, Laurence Salome, Philippe Rousseau, Nicolas Destainville, Manoel Manghi

1991-Pos BOARD B135
EFFECTS OF HYDRATION ON THE PHOTOIONIZATION THRESHOLD ENERGY OF DNA COMPONENTS AND ON THE ACTIVATION BARRIERS FOR GUANINE METHYLATION BY DIMETHYL SULFATE. **George A. Papadantonakis**, Daniel R. Eichler, Haley A. Hamann, Katherine A. Harte

1992-Pos BOARD B136
DNA FLEXIBILITY DOES NOT SHOW APPRECIABLE TEMPERATURE DEPENDENCE. **Tunc Kayikcioglu**, Taekjip Ha

1993-Pos BOARD B137
STRUCTURAL CHARACTERIZATION OF DSDNA NANOCOMPLEXES BASED ON AMMONIUM GEMINI SURFACTANTS. **Weronika J. Andrzejewska**, Michalina Skupin, Andrzej Skrzypczak, Maciej Kozak

1994-Pos BOARD B138
CAN MARKOV CHAIN MODELS PREDICT NUCLEOSOME POSITIONING? **Marco Tompitak**, Behrouz Eslami Mossalam, Gerard T. Barkema, Helmut Schiessel

1995-Pos BOARD B139
CONTINUOUSLY SCANNING DNA WITH NANOPORE MSPA. **Matthew T. Noakes**, Ian M. Derrington, Kyle W. Langford, Henry D. Brinkerhoff, Elizabeth Manrao, Andrew H. Laszlo, Joshua Bartlett, Benjamin I. Tickman, Jackie Blum, Jens H. Gundlach

1996-Pos BOARD B140
IMAGING AND TRACING MULTIPLE GENETIC ELEMENTS VIA MULTIPLEXED CRISPR IMAGING. **Narendra Chaudhary**, Hayoon Cho, Narangerel Gantumur, Hajin Kim

1997-Pos BOARD B141
STRUCTURAL FEATURES OF DNA INTERACTION WITH AMINO ACID CONJUGATED DAUNORUBICIN DERIVATIVES. **Ádám Orosz**, Péter Horváth, Gábor Mező, Gabriella Csík

1998-Pos BOARD B142
MOLECULAR DYNAMICS INVESTIGATIONS OF Z[WC] DNA AND ITS POTENTIAL ROLE IN THE B TO Z-DNA TRANSITION. **Ashutosh Rai**, Micaela E. Bush, Alma Gracic, Jinhee Kim, Michael G. Lerner, Alexander K. Seewald, Benjamin L. Yee

1999-Pos BOARD B143
CALCULATING WATSON-CRICK TO HOOGSTEEN TRANSITION KINETICS IN DNA WITH LANGEVIN DYNAMICS AND FOKKER-PLANCK DIFFUSION IN REDUCED CONFIGURATION SPACE. **Gianmarc Grazioli**, Ioan Andricioaei

2000-Pos BOARD B144 EDUCATION TRAVEL AWARDEE
LINKER HISTONES AND THE DYNAMIC CHROMATIN FIBER. **Stefjord Todolli**, Nicolas Clauvelin, Wilma K. Olson

2001-Pos BOARD B145
ENTROPY CALCULATIONS OF HOOGSTEEN AND WATSON-CRICK CONFORMATIONS. **James McSally**, Ioan Andricioaei

2002-Pos BOARD B146
USE OF NUNCHUK NANOSTRUCTURES FOR DYNAMIC DSDNA BEND ANGLE MEASUREMENTS BY FLUORESCENCE MICROSCOPY. Lourdes Velazquez, **Deborah Clayton-Warwick**, Deborah Fygenon

2003-Pos BOARD B147
DYNAMIC RELEASE OF BENDING STRESS IN SHORT DOUBLE-STRANDED DNA BY TWO TYPES OF DEFORMATION. **CheolHee Kim**, O-Chul Lee, Jae-Yeol Kim, Wookyung Sung, Nam Ki Lee

2004-Pos BOARD B148
NUCLEOSOME DYNAMICS AT MICROSECOND TIMESCALE: DNA-PROTEIN INTERACTIONS, WATER-MEDIATED INTERACTIONS AND NUCLEOSOME FORMATION. **Alexey K. Shaytan**, Grigory A. Armeev, Alexander Goncarencu, Victor B. Zhurkin, David Landsman, Anna R. Panchenko

2005-Pos BOARD B149
EFFECTS OF SALT ON THE STABILITY OF A G-QUADRUPLEX FROM THE HUMAN C-MYC PROMOTER. **Byul Kim**

2006-Pos BOARD B150
SINGLE MOLECULE STUDIES OF OXIDATIVE DAMAGE ON HUMAN TELOMERE. **Hui-Ting Lee**, Grace Kim, Patricia Opresko, Sua Myong

2007-Pos BOARD B151
COUNTERION CONDENSATION VS. ZETA POTENTIAL: CAN EITHER THEORY DESCRIBE THE ELECTROPHORESIS OF DNA AND OTHER POLYIONS? **Nancy C. Stellwagen**

2008-Pos BOARD B152
LOCAL COMPRESSIBILITY: GROUND-STATE PREDICTIONS OF QUANTUM YIELD TRENDS IN AZOBENZENE-MODIFIED DNA. **Addie Kingsland**, Soumyadyuti Samai, Yunqi Yan, David Ginger, Lutz Maibaum

2009-Pos BOARD B153
PROBING THE FOLDING DYNAMICS OF HUMAN TELOMERIC G-QUADRUPLEX WITH SINGLE-MOLECULE FRET. **Mikayel Aznauryan**, Siri Søndergaard, Sofie Noer, Birgit Schjøtt, Victoria Birkedal

2010-Pos BOARD B154
DNA-ORIGAMI NANOTUBES AND THEIR INTERACTION WITH MEMBRANES: INSIGHTS THROUGH MULTISCALE MOLECULAR DYNAMICS SIMULATIONS. **Vishal Maingi**, Jaakko J. Uusitalo, Mickaël Lelimosin, Stefan Howorka, Siewert J. Marrink, Mark S.P. Sansom

2011-Pos BOARD B155
HYDRATION CHANGES ACCOMPANYING HELIX-TO-COIL DNA TRANSITIONS. **Iksae Son**, Yuen Lai Shek, David N. Dubins, Tigran V. Chalikian

2012-Pos BOARD B156
STABILITY AND ION DISTRIBUTIONS AROUND LEFT- AND RIGHT-HANDED DNA AND RNA DUPLEXES: A COMPARATIVE STUDY. **Feng Pan**, Viet H. Man, Christopher Roland, Celeste Sagui

2013-Pos BOARD B157
KINETICS AND THERMODYNAMICS OF NON-CANONICAL DNA. **Micah J. McCauley**, Caitlin J. Cain, Leah Furman, Catherine A. Dietrich, Sally Ruderman, Diana Seminario-McCormick, Grace Ferris, Megan E. Nunez, Mark C. Williams

2014-Pos BOARD B158
ACCURATE DATA PROCESS FOR ANALYZING NANOPORE DATA. **Zhen Gu**

2015-Pos BOARD B159
MECHANISTIC INFLUENCE OF NANOMETER LENGTH-SCALE SURFACE CHEMISTRY ON DNA HYBRIDIZATION. **Payel Das**, Sufi Zafar

2016-Pos BOARD B160
TOPOLOGICAL DIVERSITY OF CHROMATIN FIBERS: INTERPLAY BETWEEN NUCLEOSOME REPEAT LENGTH, DNA LINKING NUMBER AND THE LEVEL OF TRANSCRIPTION. **Davood Norouzi**, Ataur Katebi, Tatiana Nikitina, Victor Zhurkin

RNA Structure and Dynamics (Boards B161 - B175)

2017-Pos BOARD B161
CHARACTERIZING THE STRUCTURAL AND ENERGETIC PROPERTIES OF TRNA DURING TRANSLOCATION THROUGH A NANOPORE. **Prasad Bandarkar**, Huan Yang, Meni Wanunu, Paul Whitford

2018-Pos BOARD B162
SYNONYMOUS MUTATIONS REDUCE GENOME COMPACTNESS IN ICOSAHEDRAL SSRNA VIRUSES. **Luca Tubiana**, Anze L. Bozic, Cristian Micheletti, Rudolph Podgornik

Membrane Physical Chemistry II (Boards B176 - B192)

2019-Pos BOARD B163
MIMICKING RIBOSOMAL VECTORIAL UNFOLDING OF RNA PSEUDOKNOT IN A PROTEIN CHANNEL. **Xinyue Zhang**, Xiaojun Xu, Zhiyu Yang, Andrew J. Burcke, Kent S. Gates, Shi-Jie Chen, Li-Qun Gu

2020-Pos BOARD B164
JUNCTION TOPOLOGICAL CONSTRAINTS IN HAIRPIN RIBOZYME FOLDING. **Alex Morriss-Andrews**, Anthony M. Mustoe, Charles L. Brooks, III

2021-Pos BOARD B165
A COMBINED MOLECULAR DOCKING/DYNAMICS APPROACH TO STUDY SELECTIVITY AND BINDING AFFINITY OF L-STEREISOMER RNA APTAMER TOWARDS CCL2 AND RELATED CHEMOKINES. **Senthilkumar Kailasam**

2022-Pos BOARD B166
CONDENSATION OF NUCLEIC ACIDS BY MULTIVALENT IONS: SEQUENCE DEPENDENCE AND THE CURIOUS CASE OF RNA. **Igor S. Tolokh**, Aleksander Drozdetski, Suzette A. Pabit, Andrea M. Katz, Lois Pollack, Nathan A. Baker, Alexey V. Onufriev

2023-Pos BOARD B167
ENTROPIC DETERMINANTS AND BARRIERS IN THE FORMATION OF RNA SECONDARY STRUCTURES. **Chi H. Mak**, Christine Ferry

2024-Pos BOARD B168
ACCURATE DETERMINATION OF THE RNA JUNCTIONS VIA SINGLE-MOLECULE HIGH-PRECISION FRET MEASUREMENTS. **Olga Doroshenko**, Hayk Vardanyan, Sascha Fröbel, Stanislav Kalinin, Simon Sindbert, Oleg Opanasyuk, Christian Hanke, Sabine Müller, Holger Gohlke, Claus A.M. Seidel

2025-Pos BOARD B169
LABEL-FREE, HIGH-TIME-RESOLUTION, SINGLE-MOLECULE STUDIES OF RIBOSWITCH FOLDING. **Nathan S. Daly**, Jason J. Hon, Steven B. Warren, Scott M. Trocchia, Colin Nuckolls, Kenneth L. Shepard, Ruben L. Gonzalez Jr.

2026-Pos BOARD B170
EXPLORING THE EFFECTS OF TEMPERATURE AND PRESSURE ON THE STRUCTURE AND STABILITY OF A SMALL RNA HAIRPIN. **Caroline M P Schuabb**, Salomé Pataráia, Roland Winter

2027-Pos BOARD B171
VFOLDPCX SERVER FOR RNA/RNA COMPLEX STRUCTURE PREDICTION. **Xiaojun Xu**, Shi-Jie Chen

2028-Pos BOARD B172
FOLDING AND CATALYSIS OF THE GLMS RIBOZYME RIBOSWITCH STUDIED AT THE SINGLE-MOLECULE LEVEL. **Andrew Savinov**, Steven M. Block

2029-Pos BOARD B173
KINETIC MODEL OF Mg^{2+} INDUCED RNA TERTIARY FOLDING FROM STOPPED FLOW FLUORESCENCE DATA. **Robb Welty**, Michael J. Rau, Kathleen B. Hall

2030-Pos BOARD B174
CRYSTAL STRUCTURE OF GROUP II INTRON DOMAIN 1 REVEALS A TEMPLATE FOR RNA ASSEMBLY. **Chen Zhao**, Marco Marcia, Kanagalaghatta R. Rajashankar, Anna Marie Pyle

2031-Pos BOARD B175
THERMODYNAMIC STABILITIES OF MULTIBRANCH LOOPS IN BACTERIOPHAGE PACKAGING RNA. **Alyssa Hill**, Susan Schroeder

2032-Pos BOARD B176
CROSS-VALIDATION OF SIMULATION AND EPR OXIMETRY APPROACHES: MEMBRANE CHOLESTEROL REDUCES OXYGEN FLUX. **Gary Angles**, Casey R. Smith, Kristina Bueche, Sally C. Pias

2033-Pos BOARD B177
MEMBRANE CHOLESTEROL SUBSTANTIALLY ALTERS THE FREE ENERGY TOPOLOGY OF OXYGEN TRANSPORT. Casey R. Smith, Kristina Bueche, Gary Angles, **Sally C. Pias**

2034-Pos BOARD B178
INTERACTION OF RESVERATROL WITH LIPID MEMBRANES. Saima Nur, Fariah Nur, Abdelaziz Alsamarah, Payal Chatterjee, Saadia Nur, Jonathan Moreno, Lyna Luo, **Maria Lambros**

2035-Pos BOARD B179
SELECTIVE ASSOCIATION OF COQ10 WITH LOW DENSITY LIPID MEMBRANES. **Sumit Garg**, Vandana Swaminathan, Sirisha Dhavala, Rangaprasad Sarangarajan, Michael Kiebish, Niven Narain

2036-Pos BOARD B180
GENERAL ANESTHETICS RAISE THE MISCIBILITY TRANSITION TEMPERATURE OF MODEL MEMBRANES. **Caitlin Cornell**, Sarah L. Keller

2037-Pos BOARD B181
INTERACTION OF ADENOSINE TRIPHOSPHATE WITH PHOSPHATIDYLCHOLINE LIPID BILAYERS. **Abhinav Ramkumar**, Xiaoling Leng, Ryan Z. Lybarger, Horia I. Petrache

2038-Pos BOARD B182
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USING MOLECULAR DYNAMICS SIMULATIONS TO CHARACTERIZE THE ROLE PLAYED BY BASIC RESIDUES IN INTERACTIONS OF HDAPS AND BACTERIAL LIPID MEMBRANES. **Sung Hyun Lee**, Donald E. Elmore

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STRUCTURAL ANALYSIS OF THE INTERACTION OF THE FUNCTIONAL AMYLOID FORMING PROTEIN ORB2A WITH LIPIDS. **Maria A. Conrad-Soria**, Silvia A. Cervantes, Alexander S. Falk, Thalia H. Bajakian, Ansgar B. Siemer

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INVERSION OF LIGAND BINDING PREFERENCES IN RE-ENGINEERED DYSFERLIN C2AV1. **Faraz Harsini**, Anne Rice, Kerry Fuson, R. Bryan Sutton

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MULTIVALENT MEMBRANE LIPID TARGETING BY THE CALCIUM-INDEPENDENT C2 DOMAINS OF GRANUPHILIN: EVIDENCE FROM COMPUTATION AND EXPERIMENT. Abena Watson-Siriboe, Jack Henderson, J. Ryan Osterberg, Daniel T. Giardina, Marissa DeLima, Hai Lin, **Jefferson Knight**

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ONE AND TWO-PHOTON CALCIUM UNCAGING WITH VISIBLE LIGHT IN CARDIAC MYOCYTES. **Radoslav Janicek**, Hitesh K. Agarwal, Graham C.R. Ellis-Davies, Ernst Niggli

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MOLECULAR ASSEMBLY OF THE MITOCHONDRIAL CALCIUM UNIPORTER COMPLEX. **Ming-Feng Tsai**, Christopher Miller

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MITOCHONDRIAL PERMEABILITY TRANSITION PORE OPENING PROMOTES CALCIUM ALTERNANS AND WAVES IN VENTRICULAR MYOCYTES. **Zhen Song**, Richard Gordan, James N. Weiss, Lai-Hua Xie, Zhilin Qu

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MITOCHONDRIAL SK CHANNELS ATTENUATE Ca^{2+} -DEPENDENT ARRHYTHMIA IN HYPERTROPHIC HEARTS BY REGULATING MITO-ROS-DEPENDENT OXIDATION AND ACTIVITY OF RYR. TaeYun Kim, Weiyan Li, Radmila Terentyeva, Karim Roder, Man Liu, Ian Greener, Richard T. Clements, Samuel C. Dudley, Gideon Koren, Bum-Rak Choi, **Dmitry Terentyev**

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DIASTOLIC CALCIUM LEAK AND THE ROLE OF ZINC. **Benedict Reilly-O'Donnell**, Gavin B. Robertson, Angela Karumbi, Alan J. Stewart, Samantha J. Pitt

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ASSOCIATION BETWEEN β_3 -ADRENOCEPTOR ACTIVATION AND INTRACELLULAR FREE ZINC ION INCREASE CONTRIBUTES TO HYPERGLYCEMIA-INDUCED CARDIAC ER-STRESS. Erkan Tuncay, Aysegul Toy, **Belma Turan**

2149-Pos BOARD B293

SHEAR STRESS ENHANCES Ca^{2+} SPARK OCCURRENCE IN RAT VENTRICULAR MYOCYTES VIA MITOCHONDRIAL NADPH OXIDASE-REACTIVE OXYGEN SPECIES SIGNALING. **Jun Wang**, Joon-Chul Kim, Sun-Hee Woo

2150-Pos BOARD B294

X-ROS WAVELENGTHS IN ATRIAL MYOCYTES PRODUCES ARRHYTHMOGENIC Ca^{2+} SIGNALS. **Maura Greiser**, Ramzi J. Khairallah, Chris Ward, W. Jonathan Lederer

2151-Pos BOARD B295

NOVEL INSIGHTS INTO SINOATRIAL NODAL CELL LOCAL CALCIUM RELEASES (LCRS) FROM AUTOMATED COMPUTER ANALYSIS IN SPONTANEOUSLY BEATING CELLS. **Alexander V. Maltsev**, Sean Parsons, Edward G. Lakatta, Michael D. Stern, Victor A. Maltsev, Oliver J. Monfredi

2152-Pos BOARD B296

SYNCHRONIZATION OF LOCAL CALCIUM RELEASES (LCRS) IN GUINEA PIG SINGLE, ISOLATED SA NODE CELLS CONTRIBUTES TO GENERATION OF RHYTHMIC ACTION POTENTIAL-INDUCED Ca^{2+} TRANSIENTS. **Mary S. Kim**, Larissa A. Maltseva, Alexander V. Maltsev, Sean P. Parsons, Oliver Monfredi, Kenta Tsutsui, Syevda Sirenko, Bruce Ziman, Edward G. Lakatta, Victor A. Maltsev

2153-Pos BOARD B297

COMPUTATIONAL ANALYSIS OF HEART-FAILURE-RELATED REMODELING OF CYTOSOLIC AND NUCLEAR CALCIUM HANDLING IN THE CANINE ATRIAL CARDIOMYOCYTE. **Jordi Heijman**, Xiao Yan Qi, Dobromir Dobrev, Stanley Nattel

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A SYSTEMATIZED APPROACH TO INVESTIGATE CA²⁺ SYNCHRONIZATION IN IPSC-DERIVED CARDIOMYOCYTE NETWORKS. Aled R. Jones, David H. Edwards, Michael J. Cummins, Alan J. Williams, **Christopher H. George**

2155-Pos BOARD B299
NUCLEATION OF CALCIUM WAVES IN CARDIAC CELLS: THE ROLE OF NETWORK CONNECTIVITY. **Gonzalo Hernandez-Hernandez**, Yohannes Shiferaw, Enric Alvarez-Lacalle

2156-Pos BOARD B300
CATECHOLAMINERGIC STIMULATION OF NEURONAL NA⁺ CHANNELS ACCOUNTS FOR TRIGGERED ARRHYTHMIA MECHANISM IN CPVT. **Przemysław B. Radwański**, Hsiang-Ting Ho, Bin Liu, Andriy Belevych, Antonis Aroundas, Wolfgang Dillmann, Bjorn Knollmann, Peter Mohler, Thomas Hund, Sándor Györke

2157-Pos BOARD B301
EFFECTS OF BETA-ADRENERGIC STIMULATION ON RAT FAILING CARDIOMYOCYTES. **Claudia Crocini**, Raffaele Coppini, Cecilia Ferrantini, Ping Yan, Leslie M. Loew, Elisabetta Cerbai, Corrado Poggesi, Francesco S. Pavone, Leonardo Sacconi

2158-Pos BOARD B302
CONDITIONS THAT PROMOTE GOLGI CA²⁺ RELEASE FACILITATE TRAFFICKING OF VEGFR-1 TO THE SURFACE MEMBRANE IN RAT VENTRICULAR MYOCYTES. **Hannah M. Kirton**, Zhaokang Yang, Derek S. Steele

2159-Pos BOARD B303
PROPENSITY AND SEVERITY OF CARDIAC ALTERNANS IS ENHANCED IN HEART FAILURE. **Giedrius Kanaporis**, Lothar A. Blatter

2160-Pos BOARD B304
NOVEL CALMODULIN MUTATION (CALM3-A103V) ASSOCIATED WITH CPVT SYNDROME ACTIVATES ARRHYTHMOGENIC CA WAVES AND SPARKS. **Nieves Gomez-Hurtado**, Dmytro O. Kryshchal, Christopher N. Johnson, Walter J. Chazin, Nicole J. Boczek, Melissa L. Will, David J. Tester, Michael J. Ackerman, Bjorn C. Knollmann

Voltage-gated Na Channels II (Boards B305 - B314)

2161-Pos BOARD B305 EDUCATION TRAVEL AWARDEE
POINT-MUTATIONS IN SKELETAL MUSCLE VOLTAGE-GATED SODIUM CHANNELS CONFER RESISTANCE TO TETRODOTOXIN: BUT AT A COST? **Robert E. del Carlo**, Normand Leblanc, Edmund D. Brodie, Jr., Chis R. Feldman

2162-Pos BOARD B306
INHIBITION OF A VOLTAGE-GATED SODIUM CHANNEL BY PROPOFOL INVOLVES MODULATION OF SLOW INACTIVATION. **Elaine Yang**, Vincenzo Carnevale, Manuel Covarrubias

2163-Pos BOARD B307
A MODIFIED NEURONAL CELL LINE FOR HIGH THROUGHPUT ANALYSIS OF VOLTAGE-GATED SODIUM CHANNELS. **Carlos G. Vanoye**, Tatiana V. Abramova, Jean-Marc L. DeKeyser, Alfred L. George

2164-Pos BOARD B308
DIII OF VOLTAGE-GATED NA⁺ CHANNELS INTERACTS WITH INACTIVATION IN THE TIME DOMAIN OF INTERMEDIATE INACTIVATION. **Eric J. Hsu**, Wandu Zhu, Zoltan Varga, Angela R. Schubert, Jonathan R. Silva

2165-Pos BOARD B309
MAPPING THE NAV1.7 CHANNEL INTERACTION WITH THE CONOTOXIN KIIIA. **Ian H. Kimball**, Phuong T. Nguyen, Jon T. Sack, Vladimir Yarov-Yarovoy

2166-Pos BOARD B310
CLASS I ANTI-ARRHYTHMICS DIFFERENTIALLY REGULATE CARDIAC SODIUM CHANNEL VOLTAGE-SENSING DOMAINS. **Angela R. Schubert**, Wandu Zhu, Jonathan R. Silva

2167-Pos BOARD B311
BIOPHYSICAL CHARACTERIZATION OF TWO NAV1.4 MUTATIONS IDENTIFIED IN PATIENTS WITH COLD-INDUCED MYOTONIA AND PERIODIC PARALYSIS. Hugo Poulin, Pascal Gosselin-Badaroudine, Karima Habbout, Savine Vicart, Damien Syternberg, Serena Giuliano, Sophie Nicole, Said Bendahhou, **Mohamed Chahine**

2168-Pos BOARD B312
MODELING ION CHANNEL KINETICS WITH PARAMETER CONSTRAINTS. **Cynthia B. Lombardo**, Marco A. Navarro, Autoosa Salari, Lorin S. Milesco

2169-Pos BOARD B313 CID TRAVEL AWARDEE
DEFINING THE PROTEIN:PROTEIN INTERACTION INTERFACE OF FGF14:NAV1.6 COMPLEX. Aditya K. Singh, **Syed R. Ali**, Fernanda Laezza

2170-Pos BOARD B314
ACTIVATION DYNAMICS OF SODIUM ION CHANNEL. **Matthew Harrigan**, Vijay Pande

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2171-Pos BOARD B315
SWITCHABLE CARDIAC L TYPE CA²⁺ CHANNEL TRANSCRIPT BY MINERALOCORTICOID PATHWAY. Thassio Mesquita, Gaelle Auguste, Jessica Sabourin, Gema Ruiz Hurtado, Valérie Rouffiac, Florian Le-Billan, Jérôme Fagart, Florence Lefebvre, Say Viengchareun, Eric Morel, Ana Maria Gomez, Marc Lombès, **Jean Pierre Benitah**

2172-Pos BOARD B316
TOWARD A NEW THERAPEUTIC STRATEGY IN THE TREATMENT OF TIMOTHY SYNDROME. **Ivy E. Dick**, Rosy Joshi-Mukherjee, Wanjun Yang, Worawan B. Limpitikul, David T. Yue

2173-Pos BOARD B317
FUNCTIONAL RESCUE OF CALMODULINOPATHY IPSC-DERIVED CARDIOMYOCYTES -- A FORAY INTO PERSONALIZED MEDICINE. **Worawan B. Limpitikul**, Patraranee Limphong, Ivy E. Dick, Myoung Hyun Choi, Wanjun Yang, Jennifer Babich, David J. Tester, Michael J. Ackerman, Gordon F. Tomaselli, David T. Yue

2174-Pos BOARD B318
TOWARDS A STRUCTURAL PERSPECTIVE OF CALCIUM REGULATION OF L-TYPE CALCIUM CHANNELS. **Rahul Banerjee**, Manu Ben-Johny, Ivy Ellen Dick, David Tuckchow Yue

2175-Pos BOARD B319
BLOCKING OF T-TYPE CALCIUM CHANNELS BY TTA-A2 REVEALS A CONSERVATIVE BINDING SITE FOR STATE-DEPENDENT ANTAGONISTS. Eduardo Chavez-Colorado, Zazil Herrera-Carrillo, **Juan C. Gomora**

2176-Pos BOARD B320
FUNCTIONAL AND MOLECULAR INTERACTION OF PHENYLALKYLAMINES AND DIHYDROPYRIDINES WITH THE MODEL CALCIUM CHANNEL CAV-AB. **Tamer M. Gamal El-Din**, Teresa M. Swanson, Lin Tang, Ning Zheng, William A. Catterall

2177-Pos BOARD B321
NITRIC OXIDE INHIBITS HIGH VOLTAGE-ACTIVATED CALCIUM CHANNELS THROUGH S-NITROSYLATION. **Menghua Zhou**, Alexis Bavencoffe, Hui-Lin Pan

2178-Pos BOARD B322
BLOCK OF RECOMBINANT T-TYPE CALCIUM CHANNELS BY GOSSYPOL, A POTENTIAL CONTRACEPTIVE. **Osbaldo Lopez-Charcas**, Zazil Herrera-Carrillo, Luis E. Montiel-Reyes, Juan C. Gomora

2179-Pos BOARD B323
THE ROLE OF CA²⁺ SIGNALING PROTEINS IN CAV1-MEDIATED EXCITATION-TRANSCRIPTION COUPLING. **Nan Liu**, Yaxiong Yang, Xiaodong Liu

2180-Pos BOARD B324
FUNCTIONAL ANALYSIS OF CAV1.1 L-TYPE CALCIUM CHANNELS EXPRESSED IN TSA201 CELLS. Ulises Meza, Christin F. Romberg, Ong Moua, Kurt G. Beam, **Roger A. Bannister**

2181-Pos BOARD B325
ROTENONE, STIMULANT OF SUPEROXIDE RELEASE FROM MITOCHONDRIAL COMPLEX I, TRANSIENTLY AUGMENTS L-TYPE CALCIUM CURRENT IN A7R5 ARTERIAL SMOOTH MUSCLE CELLS. **Rikuo Ochi**, Vidhi Dhagia, Dhara Patel, Michael S. Wolin, Sachin A. Gupta

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CAV1.2 INTERACTION WITH AT1R REDUCES RECEPTOR INTERNALIZATION. Tamara Hermosilla, Matias Encina, Cristian Moreno, Danna Morales, Edgardo Salamanca, Nayareth Hidalgo, Hilda Alfaro, **Diego Varela**

2183-Pos BOARD B327
POSTTRANSLATIONAL PROTEOLYTIC CLEAVAGE OF $\alpha 2\delta$ SUBUNITS: FUNCTIONAL IMPLICATIONS FOR HIGH VOLTAGE-GATED CALCIUM CHANNELS. **Ivan Kadurin**, Simon Rothwell, Otto Meyer, Claudia Bauer, Leon Douglas, Annette Dolphin

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BIN1 REGULATES CAV1.2 CHANNEL CLUSTERING IN VENTRICULAR MYOCYTES. **Rose E. Dixon**, Tingting Hong, Robin M. Shaw, Luis F. Santana

2185-Pos BOARD B329
MOLECULAR MIMICKING OF PHOSPHORYLATION AT S1928 AND S1700-T1704 CONFERS MODIFIED SURFACE TRAFFIC PROPERTIES TO CAV1.2 VOLTAGE GATED CALCIUM CHANNELS IN CULTURED HIPPOCAMPAL NEURONS. Alessandra Folci, Angela Steinberger, Ruslan Stanika, Marta Campiglio, Claudia Ramprecht, Gerald J. Obermair, Martin Heine, **Valentina Di Biase**

2186-Pos BOARD B330
THE $\beta 4$ SUBUNIT OF L-TYPE CA²⁺ CHANNELS REGULATES TRANSCRIPTION OF ANTIVIRAL FACTORS IN A HEART CELL LINE. **Eshwar R. Tammineni**, Elba D. Carrillo, Ruben Soto, Antonio Angel-Ambrocio, Rosa M. Del Angel, Maria C. Garcia, Jorge A. Sanchez

2187-Pos BOARD B331
RAD IS AN AGENT OF SKELETAL MUSCLE ATROPHY. **Donald Beqollari**, Christin F. Romberg, Stefano Perni, Clara Franzini-Armstrong, Roger A. Bannister

2188-Pos BOARD B332
ALPHA-ACTININ PROMOTES SURFACE LOCALIZATION AND ION CONDUCTING ACTIVITY OF THE L-TYPE CA²⁺ CHANNEL BY BINDING TO THE IQ REGION OF CAV1.2. **Peter B. Henderson**, Pang-Yen Tseng, Mark Lillya, Carlota Montagut-Bordas, Johannes W. Hell, Mary C. Horne

2189-Pos BOARD B333
DYNAMICAL EFFECTS OF THE SLOWLY ACTIVATING DELAYED RECTIFIER CURRENT ON VOLTAGE AND CALCIUM ALTERNANS IN CARDIAC MYOCYTES. **Nathaniel-Georg S. Gutierrez**, Daisuke Sato

2190-Pos BOARD B334
DIFFERENT ROLES OF IS4 AND IIS4 SEGMENTS IN CAV1.2 GATING. **Stanislav Beyl**, Annette Hohaus, Stansislav Adranovits, Eugen Timin, Steffen Hering

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CAV2.3 MEDIATE ATP RELEASE FROM RAT TAIL ARTERY SYMPATHETIC NERVES. **Somayeh Mojard Kalkhoran**, Damon Poburko, Jag Walia, Cynthia Gershome

2192-Pos BOARD B336
DIRECT INTERACTION BETWEEN N AND C TERMINI OF $\alpha 1C$ SUBUNIT OF CAV1.2 L-TYPE CALCIUM CHANNEL. Adva Benmocha Guggenheimer, **Lior Almagor**, Vladimir Tsemakhovich, Debi Ranjan Tripathy, Joel Hirsch, Nathan Dascal

2193-Pos BOARD B337
HIGH THROUGHPUT PHARMACOLOGY OF CARDIAC L-TYPE CA²⁺ CHANNELS: STABLE RECORDINGS OF CAV1.2 ON A HIGHLY PARALLEL AUTOMATED PATCH CLAMP SYSTEM. **Markus Rapedius**, Andrea Bruggemann, Tom Goetze, Claudia Haarmann, Ilka Rinke, Sonja Stoelzle-Feix, Joerg Oestreich, Michael George, Niels Fertig

2194-Pos BOARD B338
EMINENCE OF VSD I IN THE VOLTAGE-DEPENDENT INACTIVATION OF THE HUMAN CA_v1.2 CHANNEL. **Nicoletta Savalli**, Marina Angelini, Antonios Pantazis, Taleh Yusifov, Alan Neely, Riccardo Olcese

2195-Pos BOARD B339
CROSSTALK BETWEEN BETA SUBUNITS, INTRACELLULAR CA²⁺ SIGNALING AND SNARES IN THE MODULATION OF CAV2.1 CHANNEL STEADY-STATE INACTIVATION. Selma A. Serra, Gemma G. Gené, Miguel A. Valverde, **Jose M. Fernandez-Fernandez**

2196-Pos BOARD B340
REGULATION OF VOLTAGE SENSING STRUCTURES OF CAV1.2 CALCIUM CHANNELS BY THE AUXILIARY β -SUBUNIT ($\beta 3$). **Daniela De Giorgis**, Gustavo Contreras, Nicoletta Savalli, Nieves Navarro-Quezada, Carlos Gonzalez, Riccardo Olcese, Alan Neely

2197-Pos BOARD B341
VOLTAGE-SENSOR PHARMACOLOGY OF CALCIUM CHANNELS. **Autoosa Salari**, Brooklynn R. White, Timothee Pale, Vincent Baggett, Mirela Milesco

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2198-Pos BOARD B342
WHAT TYPE OF ION CHANNELS ARE IDENTIFIED ON OSTEOSARCOMA CELLS MEMBRANE? **Maria B. Seabra**, Juliana P. Aguiar, Wyndly Daniel C. Gaião, Reginaldo P. Silva, Cláudio Gabriel Rodrigues

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THE PATHOGENIC A116V MUTATION ENHANCES THE SELECTIVE ION-CHANNEL ACTIVITY AND TOXICITY OF THE PRION PROTEIN IN LIVING CELLS. **Sabareesan Ambadi Thody**

2200-Pos BOARD B344
Divalent COPPER COMPLEXES AS INFLUENZA A M2 S31N BLOCKERS. **Kelly L. McGuire**, Spencer Wallentine, Nathan A. Gordon, Greg Mohl, Mckay D. Jensen, Roger Harrison, David D. Busath

2201-Pos BOARD B345
OBSERVATION OF PARTIAL AND COMPLETE BLOCK BY AMANTADINE AND RIMANTADINE IN INFLUENZA A M2 S31N BY ELECTROPHYSIOLOGY METHODS. **Kelly L. McGuire**, Mitchell L. Gleed, David D. Busath

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EPR AND ELECTRON MICROSCOPY STUDY OF THE INFLUENZA A M2 TRANSMEMBRANE DOMAIN ASSEMBLY AND DRUG RESPONSE. **Elka R. Georgieva**, Peter P. Borbat, Kirill Grushin, Svetla Stoilova-McPhie, Nichita J. Kulkarni, Zhichun Liang, Jack H. Freed

2203-Pos BOARD B347
ASSESSING THE IN VITRO CARDIOTOXICITY OF SUPERPARAMAGNETIC ION OXIDE NANOPARTICLES (SPIONS). **Roberta Gualdani**, Andrea Guerrini, Elvira Fantechi, Claudio Sangregorio, Maria Rosa Moncelli

2204-Pos BOARD B348
HERG ION CHANNEL ACTIVITY MEASURED IN PLANAR LIPID BILAYER ARRAYS: RECONSTITUTION FROM EUKARYOTIC CELL-FREE EXPRESSION SYSTEM AND CELLULAR MEMBRANE PREPARATIONS. **Ekaterina Zaitseva**, Juan del Rio Martinez, Srujan Kumar Dondapati, Gerhard Baaken, Sönke Petersen, Stefan Kubick, Jan C. Behrends

2205-Pos BOARD B349
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2206-Pos BOARD B350
NOVEL LOCAL ANESTHETICS DEMONSTRATE ISOMER-DEPENDENT ANALGESIA IN MICE. **George Kracke**, Monika VanGordon, Kuanysh Kabytaev, Yulia Sevryugina, Satish Jalisatgi, Fred Hawthorne

2207-Pos BOARD B351
USE-DEPENDENT BLOCK OF HUMAN CARDIAC SODIUM CHANNELS BY GS967. **Franck Potet**, Alfred L. George, Jr

2208-Pos BOARD B352
CONFORMATIONAL CHANGES OF THE NMDA RECEPTORS ASSOCIATED WITH ETHANOL-INDUCED INHIBITION. **Hamid Reza Noori**, Christian Mücksch, Herbert Urbassek

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EXPLORING STRUCTURAL INTERACTIONS OF TARANTULA TOXINS WITH LIPID MEMBRANES USING ROSETTA AND MOLECULAR DYNAMICS SIMULATION. **Puong T. Nguyen**, Jon T. Sack, Toby W. Allen, Vladimir Yarov-Yarovoy

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VALIDATION OF KCA3.1 CHANNEL SMALL MOLECULES INTERACTION SITES PREDICTED BY ROSETTA. **Hai M. Nguyen**, Latika Singh, Heike Wulff, Vladimir Yarov-Yarovoy

2211-Pos BOARD B355
CARDIAC SMALL CONDUCTANCE CALCIUM-ACTIVATED K CHANNELS MAINTAIN REPOLARIZATION RESERVE IN A PHARMACOLOGICAL MODEL OF TYPE 3 LONG QT SYNDROME. Jum Suk Ko, Dechun Yin, Thomas H. Everett, Zhenhui Chen, Michael Rubart, **Peng-Sheng Chen**

2212-Pos BOARD B356
CALCIUM-ACTIVATED POTASSIUM CHANNELS IN THE MALARIA PARASITE ERYTHROCYTE CYCLE. **Matthias Garten**, Marika M. Kachman, Svetlana Glushakova, Joshua Zimmerberg

2213-Pos BOARD B357
SUPPRESSION OF KV2-MEDIATED CURRENTS BY THE ANTICONVULSANT RETIGABINE. **Jeroen I. Stas**, Elke Bocksteins, Dirk J. Snyders

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USING VOLTAGE CLAMP FLUOROMETRY TO UNDERSTAND KCNQ CHANNEL PHARMACOLOGY. **Robin Y. Kim**, Stephan A. Pless, Harley T. Kurata

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A NEW KCNQ1 MUTATION AT THE S5 SEGMENT THAT IMPAIRS ITS ASSOCIATION WITH KCNE1 IS RESPONSIBLE FOR SHORT QT SYNDROME. **Alicia de la Cruz**, Cristina Moreno, Anna Oliveras, Chiara Bartolucci, Juan R. Gimeno, Stefano Severi, Antonio Felipe, Teresa Gonzalez, Pier Lambiase, Carmen Valenzuela

2216-Pos BOARD B360
MOLECULAR DYNAMICS SIMULATIONS OF MUTANT K CHANNELS INVOLVED IN SEVERE EARLY ONSET EPILEPSY. **Robert A. Farley**, Yi Shi, Yibo Wang, Van Ngo, Sergei Noskov

2217-Pos BOARD B361
A MISSENSE MUTATION IN THE SELECTIVITY FILTER OF BK AFFECTS THE CHANNEL'S POTASSIUM CONDUCTANCE. **João L. Carvalho-de-Souza**, Tomoya Kubota, Xiaofei Du, Ramon Latorre, Christopher M. Gomez, Francisco Bezanilla

2218-Pos BOARD B362
PHARMACOLOGY AND REGULATION OF FUNGAL K2P CHANNELS. **Ryan W. Manville**, Fernanda S. Povreslo, Andrew Corran, Anthony Lewis

2219-Pos BOARD B363
THE 2-PORE DOMAIN POTASSIUM CHANNEL TREK-1 REGULATES CYTOKINE SECRETION FROM HUMAN ALVEOLAR EPITHELIAL CELLS INDEPENDENTLY OF POTASSIUM CURRENTS. **Andreas Schwingshackl**, Bin Teng, Marc Borsotto, Christopher M. Waters

2220-Pos BOARD B364
CALCIUM CURRENT PROPERTIES AND LEAK CONDUCTANCE IN MOUSE MUSCLE FIBERS OVEREXPRESSING A TYPE 1 HYPOKALEMIC PERIODIC PARALYSIS MUTANT L-TYPE CALCIUM CHANNEL. Clarisse Fuster, Jimmy Perrot, Christine Berthier, Vincent Jacquemond, **Bruno Allard**

2221-Pos BOARD B365
MICRODOMAIN-SPECIFIC REMODELLING OF AUTONOMIC REGULATION OF L-TYPE CALCIUM CHANNELS REVEALED BY SUPER-RESOLUTION SCANNING PATCH CLAMP IN RAT ATRIAL MYOCYTES IN HEART FAILURE. **Alexey V. Glukhov**, Marina Balycheva, Jose L. Sanchez-Alonso, Navneet Bhogal, Ivan Diakonov, Marta Mazzola, Giuseppe Faggian, Julia Gorelik

2222-Pos BOARD B366
CHARACTERISING THE EFFECTS OF A PEPTIDE DIRECTED AGAINST THE L-TYPE Ca^{2+} CHANNEL ON MITOCHONDRIAL FUNCTION IN HYPERTROPHIC CARDIOMYOPATHY. **Livia C. Hool**, Helena M. Viola, Victoria P.A. Johnstone, Henrietta Cserne Szappanos, Tatiana Tsoutsman, Chris Semsarian, Christine Seidman

2223-Pos BOARD B367
SIMULATION OF L-TYPE CALCIUM CURRENTS USING DIFFERENT EXPERIMENTAL DATA SOURCES: FROM CELL LINE TO IPS-DERIVED CARDIOMYOCYTE. **Ken Wang**, Gary Mirams, Mark Davies, Antonello Caruso, Denis Noble, Ruben Alvarez-Sanchez, Antje Christine Walz, Thierry Lave, Franz Schuler, Thomas Singer, Liudmila Polonchuk

2224-Pos BOARD B368
EFFECT OF FLECAINIDE DERIVATIVES ON SARCOPLASMIC RETICULUM Ca^{2+} RELEASE CONFIRMS A LACK OF DIRECT ACTION ON THE CARDIAC RYANODINE RECEPTOR. **Anita Alvarez-Laviada**, Mark L. Bannister, Nia Lowri Thomas, Sammy A. Mason, Christo L. du Plessis, Abbygail T. Moran, David Neil-Hall, Hasnah Osman, Mark C. Bagley, Kenneth T. McLeod, Christopher H. George, Alan J. Williams

2225-Pos BOARD B369
FUNDAMENTAL GATING DEFECTS OF SUDDEN CARDIAC DEATH-LINKED MUTANT CARDIAC RYANODINE RECEPTORS DETERMINE Ca^{2+} RELEASE DYNAMICS IN CELLS. **Shanna R. Hamilton**, Chloe Maxwell, Christopher H. George, Saptarshi Mukherjee, Alan J. Williams, Nia L. Thomas

2226-Pos BOARD B370
LOSS OF MYOCARDIAL NNOS MEDIATED BY UPREGULATION OF MIR-31 IN HUMAN ATRIA CONTRIBUTES TO BEGETTING OF ATRIAL FIBRILLATION. **Xing Liu**, Svetlana Reilly, Ricardo Carnicer, Alice Recalde, Anna Muszkiewicz, Raja Jayaram, Maria Cristina Carena, Matilde Stefanini, Rohan Wijesurendra, Oliver Lomas, Rana Sayeed, George Krasopoulos, Alfonso Bueno-Orovio, Blanca Rodriguez, Barbara Casadei

2227-Pos BOARD B371
ISOPIMARIC ACID - A PROMISCUOUS ION CHANNEL MODULATOR AND A POTENTIAL DRUG CANDIDATE AGAINST ATRIAL FIBRILLATION. Sajjad Salari, **Malin Silverå Ejneby**, Johan Brask, Fredrik Elinder

2228-Pos BOARD B372
TOWARDS A STRUCTURAL UNDERSTANDING OF CANTÚ DISEASE ASSOCIATED GATING PERTURBATIONS IN THE KATP POTASSIUM CHANNEL. **Eva-Maria Plessl**, Anna Sary-Weinzinger

2229-Pos BOARD B373
MATHEMATICAL MODELING OF HUMAN PANCREATIC ALPHA-CELLS: INSIGHT INTO THE ROLE OF SGLT2 IN GLUCAGON SECRETION. **Morten G. Pedersen**, Ingela Ahlstedt, Eva-Marie Andersson, Sven Göpel

2230-Pos BOARD B374
CFTR POTENTIATORS EXERT DIFFERENT EFFECTS ON HUMAN, MURINE, AND XENOPUS CFTR. **Guiying Cui**, Netya Khazanov, Brandon B. Stauffer, Daniel T. Infield, Barry R. Imhoff, Hanoch Senderowitz, Nael A. McCarty

2231-Pos BOARD B375
CFTR ON AN AUTOMATED PATCH CLAMP SYSTEM. Rasmus B. Jacobsen, **Naja Møller M. Sørensen**

2232-Pos BOARD B376
SLC6A14 ENHANCES CFTR CHANNEL ACTIVITY IN THE CYSTIC FIBROSIS AFFECTED LUNG EPITHELIUM. **Saumel Ahmadi**, Sunny Xia, Michelle Di Paola, Wan Ip, Johanna Rommens, Tanja Gonska, Christine E. Bear

2233-Pos BOARD B377
IDENTIFICATION OF CARDIAC MITOCHONDRIAL CHLORIDE INTRACELLULAR CHANNEL (CLIC) PROTEINS AND THEIR PHYSIOLOGICAL FUNCTION. **Devasena Ponnalagu**, Shubha Gururaja Rao, Piotr Bednarczyk, Yansheng Feng, Jason Farber, Rushi Thanawala, Ahmed Tafsirul Hussain, Jean Chrisostome Bopassa, Adam Szweczyk, Harpreet Singh

Ligand-gated Channels II (Boards B378 - B398)

2234-Pos BOARD B378
CHARACTERIZATION OF THE INTERACTION OF THE INTRACELLULAR DOMAIN OF 5-HT_{3A} RECEPTORS WITH THE CHAPERONE PROTEIN RIC-3. **Elham Pirayesh**, Frankie Leung, Akash Pandhare, Michaela Jansen

2235-Pos BOARD B379
PENTAMERIC STRUCTURE OF THE SOLUBLE INTRACELLULAR DOMAIN OF 5-HT_{3A} RECEPTORS. **Akash Pandhare**, Petar N. Grozdanov, Michaela Jansen

2236-Pos BOARD B380
MASS SPECTROMETRY COUPLED WITH CROSSLINKING AS A STRUCTURAL TOOL FOR STRUCTURAL DETERMINATION OF HUMAN $\alpha 1$ GLYCINE RECEPTOR. **Rathna J. Veeramachaneni**, Chelsea Donelan, Michael Cascio

2237-Pos BOARD B381
PRINCIPAL COMPONENTS FROM LIGAND-GATED ION CHANNEL STRUCTURES ENABLE ENSEMBLE STUDIES OF MICROSECOND-SCALE TRANSITIONS. **Ozge Yoluk**, Laura Orellana, Edward J. Bertaccini, James R. Trudell, Erik Lindahl

2238-Pos BOARD B382
CATION- π INTERACTIONS: COMPUTATIONAL ANALYSES OF THE AROMATIC BOX MOTIF AND THE FLUORINATION STRATEGY FOR EXPERIMENTAL EVALUATION OF CYS-LOOP RECEPTORS AND RELATED STRUCTURES. **Matthew R. Davis**, Dennis A. Dougherty

2239-Pos BOARD B383
EXPLORING THE BINDING OF GABA TO THE INSECT RDL RECEPTOR WITH METADYNAMICS. **Federico Comitani**, Vittorio Limongelli, Carla Molteni

2240-Pos BOARD B384
RELATIVE AFFINITIES OF POSITIVE AND NEGATIVE MODULATORS OF HETEROMERIC GABA(A) RECEPTORS FOR PSEUDO-SYMMETRIC INTER-SUBUNIT BINDING SITES. **Sruthi Murlidaran**, Reza Salari, Jérôme Hémin, Grace Brannigan

2241-Pos BOARD B385
IDENTIFYING GABA-A RECEPTOR MODULATORS THAT BIND TO INTERSUBUNIT SITES IN THE GABA-A RECEPTOR TRANSMEMBRANE DOMAIN. **Selwyn S. Jayakar**, Xiaojuan Zhou, Pavel Y. Savechenkov, Karol S. Bruzik, Keith W. Miller, Jonathan B. Cohen

2242-Pos BOARD B386
INTERACTIONS OF A PHOTOREACTIVE STEROID ANESTHETIC (F4N3-ALPHAXALONE) WITH HUMAN $\alpha 1\beta 3\gamma 2$ GABA-A RECEPTORS. **David C. Chiara**, Pavel Y. Savechenkov, Xiaojuan Zhou, Rooma Desai, Alex T. Stern, Yinghui Zhang, Stuart A. Forman, Karol S. Bruzik, Keith W. Miller, Jonathan B. Cohen

2243-Pos BOARD B387
PULSED ELECTRON PARAMAGNETIC RESONANCE OF SPIN LABELED HUMAN GABA(A)RS FUNCTIONALLY RECONSTITUTED IN LIPID BILAYERS SUGGESTS THERE IS SPACE FOR LIPIDS BETWEEN THE SUBUNITS. Yinghui Zhang, Jessica L. Sarver, Xiaojuan Zhou, David S. Cafiso, **Keith W. Miller**

2244-Pos BOARD B388
VISIBLE-LIGHT ABSORBING, PHOTOLABILE, QUINONE-BASED PROTECTING GROUPS FOR ALCOHOLS AND AMINES. **David P. Walton**, Clinton J. Regan, Oliver S. Shafaat, Chris B. Marotta, Dennis A. Dougherty

2245-Pos BOARD B389
A SOLUBLE GABA_A $\rho 1$ INTRACELLULAR DOMAIN CHIMERA FOR STRUCTURAL STUDIES. **Laura J. Delin**, Akash Pandhare, Katharine Jenkins, Michaela Jansen

2246-Pos BOARD B390
ALLOSTERIC GATING PATHWAYS FOR THE PENTAMERIC LIGAND-GATED ION CHANNEL GLIC. Bogdan Lev, Samuel Murail, Michael Thomas, Marc Baaden, Marc Delarue, **Toby W. Allen**

2247-Pos BOARD B391
INSIGHTS INTO GATING MOTIONS OF GLIC VIA PERTURBATION OF CRITICAL PROLINES WITH NON-CANONICAL AMINO ACID PROBES. **Matthew Rienzo**, Angela R. Rocchi, Stephanie D. Threath, Dennis A. Dougherty, Sarah C. R. Lummiss

2248-Pos BOARD B392
ELUCIDATING PROTON SENSITIVITY AND ACTIVATION IN THE GLOEOBACTER VIOLACEUS LIGAND-GATED ION CHANNEL. **Ákos Nemezc**, Zaineb Fourati, Haidai Hu, Pierre-Jean Corringer, Marc Delarue

2249-Pos BOARD B393
A SINGLE MUTATION IN GLIC REVEALS BOTH THE POTENTIATING AND THE INHIBITORY NATURE OF PROPOFOL. **Stephanie A. Heusser**, Rebecca J. Howard, Iman Pouya, Göran Klement, Cecilia Borghese, R. Adron Harris, Erik Lindahl

2250-Pos BOARD B394
MOLECULAR INSIGHTS INTO ALLOSTERIC MODULATION OF GLIC GATING BY MEMBRANE LIPIDS. **Sandip Basak**, Nicolaus Schmandt, Sudha Chakrapani

2251-Pos BOARD B395
RADIAL TILTING OF THE EXTRACELLULAR DOMAIN OF GLIC REVEALED BY EPR SPECTROSCOPY. **Varun Tiwari**, Abby M. Schuh, Candice S. Klug, Cynthia Czajkowski

2252-Pos BOARD B396

THE CRYSTAL STRUCTURE OF ELIC IN COMPLEX WITH CHLORPROMAZINE UNEXPECTEDLY UNVEILS AN ALLOSTERIC BINDING SITE IN THE LIGAND-BINDING DOMAIN. Mieke Nys, Ana Farinha, Eveline Wijckmans, Marijke Brams, Özge Yoluk, Magnus Andersson, Erik Lindahl, **Chris Ulens**

2253-Pos BOARD B397

PROBING MOLECULAR INTERACTIONS IN ERWINIA LIGAND-GATED ION CHANNEL (ELIC). Gabrielle S. Tender, Dennis A. Dougherty, **Sarah C. Lummis**

2254-Pos BOARD B398

ON THE ATYPICAL CATION-CONDUCTION AND GATING PROPERTIES OF ELIC. **Giovanni Gonzalez-Gutierrez**, Claudio Grosman

Kinesins, Dyneins, and Other Microtubule-based Motors (Boards B399 - B423)

2255-Pos BOARD B399

COMBINED POLTRIF AND SUB-PIXEL PARTICLE TRACKING OF CYTOPLASMIC DYNEIN SUPPORTS A WINCH-LIKE STEPPING MECHANISM. **Lisa G. Lippert**, Tali Dadosh, Benjamin T. Diroll, Christopher B. Murray, Erika LF Holzbaur, Samara L. Reck-Peterson, Yale E. Goldman

2256-Pos BOARD B400

THE MOTILITY OF AXONEMAL DYNEIN IS REGULATED BY THE TUBULIN CODE. **Joshua Alper**, Franziska Decker, Bernice Agana, Jonathon Howard

2257-Pos BOARD B401

DYNEIN DYNAMICS IN VIVO: A SINGLE-MOLECULE VIEW ON ITS FUNCTION IN INTRAFAGELLAR TRANSPORT. Jona Mijalkovic, Bram Prevo, Felix Oswald, Pierre Mangeol, **Erwin J.G. Peterman**

2258-Pos BOARD B402

TRANSPORT BY KINESIN-1 MOTORS DIFFUSING ON A LIPID BILAYER. **Rahul Grover**, Janine Fischer, Petra Schwillle, Stefan Diez

2259-Pos BOARD B403 EDUCATION TRAVEL AWARDEE

KINESIN'S FRONT HEAD IS GATED BY THE BACKWARD ORIENTATION OF ITS NECK LINKER. **Sinan Can**, Merve Yusra Dogan, Frank Cleary, Vedud Purde, Ahmet Yildiz

2260-Pos BOARD B404

MECHANISM OF KINSEIN-2 NAVIGATION AROUND OBSTACLES ON THE MICROUBULE SURFACE. **Gregory Hoeprich**, Keith Mickolajczyk, William O. Hancock, Christopher L. Berger

2261-Pos BOARD B405

ALLOSTERICALLY REGULATED STRUCTURAL FLUCTUATION AND MICROTUBULE-BINDING AFFINITY OF KIF1A --A SIMULATION STUDY OF COARSE-GRAINED MODEL. **Macoto Kikuchi**, Ryo Kanada, Fumiko Takagi

2262-Pos BOARD B406

MAPPING THE PROCESSIVITY DETERMINANTS OF THE KINESIN-3 MOTOR DOMAIN. **Guido Scarabelli**, Virupakshi Soppina, Xin-Qiu Yao, Joseph Atherton, Carolyn A. Moores, Kristen J. Verhey, Barry J. Grant

2263-Pos BOARD B407

N-TERMINAL COILED-COILS IN THE HUMAN KINESIN-5 AND KINESIN-1 STALK ARE SUFFICIENT FOR TETRAMERIC ORGANIZATION. **Rebecca S. Buckley**, Victoria Dauphin, Tomas Vanagunas, David WorthyLake, Hsin-Hung Huang, Thomas M. Huckaba, Sunyoung Kim

2264-Pos BOARD B408

THE STRUCTURAL KINETICS OF SWITCH-1 AND THE NECK LINKER EXPLAIN THE FUNCTIONS OF KINESIN-1 AND EG5. Joseph Muretta, Yonggun Jun, Steven Gross, Jennifer Major, David Thomas, **Steven Rosenfeld**

2265-Pos BOARD B409

REGULATION AND POSSIBLE PHYSIOLOGICAL ROLE OF BI-DIRECTIONAL MOTILITY OF THE KINESIN-5 CIN8. Ofer Shapira, Alina Goldstein, Jawdat Al-Bassam, **Larisa Gheber**

2266-Pos BOARD B410 EDUCATION TRAVEL AWARDEE

TRAPPING THE TRANSITION STATE OF KINESIN-5 PRODUCES A DIFFERENT MULTIMOTOR FORCE OUTCOME THAN INHIBITING PRODUCT RELEASE. **Minmin Luo**, Edward Wojcik, Sunyoung Kim

2267-Pos BOARD B411 CID TRAVEL AWARDEE

NON-CANONICAL MICROTUBULE INTERACTION BY YEAST KINESIN-5, CIN8. **Kayla M. Bell**, Hyokeun Cha, Charles V. Sindelar, Jared C. Cochran

2268-Pos BOARD B412

HIGH-RESOLUTION CRYO-EM STUDIES ON THE YEAST MITOTIC KINESIN-5. **Hyo Keun Cha**, Kayla Bell, Jared Cochran, Charles Sindelar

2269-Pos BOARD B413

SYNTHESIS OF FLUORESCENT-NTA AND ITS APPLICATION TO THE LABELING OF PHOTO-CONTROLLED KINESIN EG5. **Yuki Tamura**, Kei Sadakane, Kentaro Saido, Ryoma Yamamoto, Shinsaku Maruta

2270-Pos BOARD B414

UNDERSTANDING THE SEQUENCE OF CHEMOMECHANICAL TRANSITIONS IN KINESIN-5. **Geng-Yuan Chen**, William O. Hancock

2271-Pos BOARD B415

THREE-DIMENSIONAL MOTILITY OF THE HIGHLY PROCESSION KINESIN-8 ALONG THE MICROTUBULE LATTICE. **Aniruddha Mitra**, Felix Ruhnnow, Salvatore Girardo, Diez Stefan

2272-Pos BOARD B416 EDUCATION TRAVEL AWARDEE

CHROMOKINESINS NOD AND KID USE ALTERNATIVE NUCLEOTIDE MECHANISMS AND ONE-DIMENSIONAL DIFFUSION TO TARGET MICROTUBULE PLUS ENDS. **Benjamin C. Walker**, Caleb A. Starr, Jared C. Cochran

2273-Pos BOARD B417

KINETIC CHARACTERIZATION OF NOVEL RICE PLANT KINESIN E11. **Hironobu Taniguchi**, Naoto Inomoto, Shinsaku Maruta

2274-Pos BOARD B418

EXPLORING THE MECHANISMS OF A PHOSPHORYLATION INDUCED INHIBITION OF MICROTUBULE DEPOLYMERIZATION IN THE KINESIN 13 KLP10A. **Matthieu P.M.H. Benoit**, J. Daniel Diaz, Ana B. Asenjo, Gary J. Gerfen, David J. Sharp, Hernando J. Sosa

2275-Pos BOARD B419

COOPERATIVE TRANSPORT BY POPULATIONS OF FAST AND SLOW KINESINS UNCOVERS NOVEL FAMILY-DEPENDENT MOTOR CHARACTERISTICS IMPORTANT FOR IN VIVO FUNCTION. Göker Arpağ, Shankar Shastry, David Arginteanu, Stephen R. Norris, Kristen Verhey, **William O. Hancock**, Erkan Tuzel

2276-Pos BOARD B420

QUANTITATIVE DETERMINATION OF THE PROBABILITY OF MULTIPLE-MOTOR TRANSPORT IN BEAD-BASED ASSAYS. **Qiaochu Li**, Stephen J. King, Ajay Gopinathan, Jing Xu

2277-Pos BOARD B421

HOW KINESIN MOTOR PROTEINS DEAL WITH TRAFFIC JAMS. **Vandana S. Kushwaha**, Daniël M. Miedema, Dmitry V. Denisov, Seyda Acar, Bernard Nienhuis, Peter Schall, Erwin J.G. Peterman

2278-Pos BOARD B422

PHOTO-CONTROL OF KINESIN DIMERIZATION AND MOTOR ACTIVITY USING PHOTOCROMIC MOLECULES. **Haruka Fujio**, Kazunori Kondo, Shinsaku Maruta

2279-Pos BOARD B423
APLIP1 CONTROLS THE PROCESSIVITY OF NEUREXIN AXONAL TRANSPORT. **Ulises Rey**, Mehmet Ucar, Reinhard Lipowsky, Stephan Sigrist

Cardiac Muscle Mechanics and Structure II (Boards B424 - B436)

2280-Pos BOARD B424
HIGH-SPEED, HIGH-PERFORMANCE REAL-TIME IMAGING OF PHYSIOLOGICAL SARCOMERE DYNAMICS IN THE BEATING MOUSE HEART IN VIVO. **Fuyu Kobirumaki-Shimozawa**, Kotaro Oyama, Togo Shimozawa, Takashi Ohki, Takako Terui, Shin'ichi Ishiwata, Norio Fukuda

2281-Pos BOARD B425
IMAGINGS OF SARCOMERES IN RAT NEONATAL CARDIOMYOCYTES EXPRESSING STRESS FIBER-LIKE STRUCTURES. **Teruyuki Fujii**

2282-Pos BOARD B426
OSCILLATORY BEHAVIOR IN MUSCLE MYOSIN. **Lorenzo Marcucci**, Takumi Washio, Toshio Yangida

2283-Pos BOARD B427
CROSS-BRIDGE GROUP ENSEMBLES DESCRIBING COOPERATIVITY IN THERMODYNAMICALLY CONSISTENT WAY. **Mari Kalda**, Pearu Peterson, Marko Vendelin

2284-Pos BOARD B428
CARDIAC LENGTH-DEPENDENT ACTIVATION: WEAK BINDING HYPOTHESIS TESTED BY A COMPUTATIONAL SARCOMERE MODEL. **William C. Hunter**, Alison L. Schroeder

2285-Pos BOARD B429
MODELING PREDICTS NON-MONOTONIC DEPENDENCE OF MYOFILAMENT Ca^{2+} SENSITIVITY ON TROPOMYOSIN STIFFNESS. **Lorenzo R. Sewanan**, Stuart Campbell

2286-Pos BOARD B430
A FRET INVESTIGATION ON THE EFFECTS OF TROPOMYOSIN D230N AND CARDIAC TROPONIN T R92L MUTANTS ON THE TROPOMYOSIN OVERLAP STRUCTURE. **Mark T. McConnell**, Lauren Tal Grinspan, Benjamin Schwartz, Ofer Z. Fass, Jayant James Jayasundar, Jil C. Tardiff

2287-Pos BOARD B431
MOLECULAR MECHANISMS OF CARDIOMYOPATHY-CAUSING TNT MUTANTS IMPLICATED IN INTERACTIONS WITH TROPOMYOSIN. **Binnu Gangadharan**, Souhrid Mukherjee, Margaret S. Sunitha, Ashvini Dubey, R Sowdhamini, James A. Spudich, John A. Mercer

2288-Pos BOARD B432
 Ca^{2+} -SENSITIVITY AND ELEMENTARY STEPS OF THE CROSS-BRIDGE CYCLE IN PAPILLARY MUSCLE FIBERS FROM THE TROPONIN C (TNC)-A8V KNOCK-IN MOUSE, WHICH EXHIBITS HYPERTROPHIC CARDIOMYOPATHY (HCM). Masataka Kawai, Tarek Karam, **Jose R. Pinto**

2289-Pos BOARD B433
HCM ASSOCIATED CARDIAC TROPONIN I MUTATIONS ALTER CARDIAC TROPONIN FUNCTION, CONTRACTILE PROPERTIES AND MODULATION BY PKA MEDIATED PHOSPHORYLATION. **Yuanhua Cheng**, Lindert teffen, An-Yue Tu, Maria V Razumova, Luping Xie, Lucas Oxenford, Andrew D. McCulloch, J Andrew McCammon, Michael Regnier

2290-Pos BOARD B434
THE ROLE OF CALCIUM AFFINITY AND C-I INTERACTION IN LENGTH-DEPENDENT ACTIVATION. **Jordan M. Klaiman**, Maria V. Razumova, Joseph D. Powers, Cameron W. Turtle, Farid Moussavi-Harami, Todd E. Gillis, Michael Reniger

2291-Pos BOARD B435
SARCOMERE LENGTH DEPENDENT EFFECTS ON Ca^{2+} -INDUCED TROPONIN REGULATION WITHIN CHEMICALLY SKINNED CARDIAC MUSCLE FIBERS. King-Lun Li, R. John Solaro, **Wenji Dong**

2292-Pos BOARD B436
DESIGNING A HIGH AFFINITY CARDIAC TROPONIN ACTIVATOR. **Fangze Cai**, Monica Li, Sandra Pineda-Sanabria, Shorena Gelozia, Steffen Lindert, J. Andrew McCammon, Frederick West, Brian Sykes, Peter Hwang

Cytoskeletal-based Intracellular Transport (Boards B437 - B444)

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BROWNIAN DYNAMICS SIMULATION REVEALS FREEDOM OF MOTORS IN THE CARGO MEMBRANE CAN INFLUENCE CARGO DYNAMICS. **Matthew J. Bovyn**, Steven Gross, Jun Allard

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CONTROLLING VESICLE MOTION IN CORTICAL NEURONS WITH MAGNETIC FORCES. **Anja Kunze**, Coleman Murray, Andy K. Tay, Dino Di Carlo

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THE ROLE OF THE MICROTUBULE CYTOSKELETON IN REGULATING INTRACELLULAR TRANSPORT. **Linda Balabanian**, Christopher L. Berger, Adam G. Hendricks

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MICROTUBULE GLIDING FORMATION ON CURVED SURFACES. **Kaylee Cortes**

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COLLECTIVE EFFECTS OF MOTORS AND MICROTUBULES GEOMETRY IN GLIDING ASSAYS. Neha Khetan, Kunalika Jain, Anushree R. Chaphalkar, **Chaitanya A. Athale**

2298-Pos BOARD B442
MYOSIN VA MOTOR TEAMS NAVIGATE VESICLE CARGOS THROUGH 3D ACTIN FILAMENT INTERSECTIONS. **Andrew T. Lombardo**, Shane Nelson, M. Yusuf Ali, Kathleen Trybus, Sam Walcott, David M. Warshaw

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3D MODEL OF VESICLES TRANSPORTED BY MYOSIN VA MOTOR TEAMS THROUGH ACTIN INTERSECTIONS PREDICTS EXPERIMENTAL DIRECTIONAL OUTCOMES. **Sam Walcott**, Andrew T. Lombardo, Shane Nelson, M. Yusuf Ali, David M. Warshaw

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FORCE GENERATION BY MEMBRANE-ASSOCIATED MYOSIN-I. Serapion Pырpassopoulos, Goker Arpag, Elizabeth A. Feeser, Henry Shuman, **Erkan Tuzel**, E. Michael Ostap

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DYNAMICS OF REVERSIBILITY OF PRESSURE INDUCED CHANGES IN CELL MORPHOLOGY, CELL DIVISION, AND GENE EXPRESSION OF ESCHERICHIA COLI. **Pradeep Kumar**

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DYNAMICS OF PHENOTYPIC REVERSIBILITY OF BACTERIAL CELLS WITH OSCILLATING PRESSURES. **Sudip Nepal**, Pradeep Kumar

2303-Pos BOARD B447
INVESTIGATING THE MATERIAL PROPERTIES OF THE CAULOBACTER CRES-CENTUS ADHESIVE HOLDFAST. **Alex Nyarko**, Hazel Barton, Ali Dhinojwala

2304-Pos BOARD B448
HETEROGENEOUS MOLECULAR DYNAMICS REVEALED THROUGH LIVE, SINGLE-CELL IMAGING. **Zachary T. Barry**, Ethan Garner, Mark Bathe

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COARSE-GRAINED SIMULATIONS REVEAL MECHANISMS OF BACTERIAL MORPHOGENESIS. **Lam T. Nguyen**, Matthew Swilius, James C. Gumbart, Morgan Beeby, Grant J. Jensen

2306-Pos BOARD B450
CAN ESCHERICHIA COLI SENSE SPATIALLY? **Richa Karmakar**, Mahesh S. Tirumkudulu, K. V. Venkatesh

2307-Pos BOARD B451
SODIUM-DRIVEN ENERGY CONVERSION FOR FLAGELLAR ROTATION OF THE EARLIEST DIVERGENT HYPERTHERMOPHILIC BACTERIUM. Norihiko Takekawa, **Masayoshi Nishiyama**, Tsuyoshi Kaneseiki, Tamotsu Kanai, Haruyuki Atomi, Seij Kojima, Michio Homma

2308-Pos BOARD B452
FORCE SPECTROSCOPY OF A BACTERIAL ADHESIN WITH AN INTERNAL THIOESTER BOND. **Daniel Echelman**, Julio Fernandez

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ARCHITECTURE OF THE TYPE IVA PILUS MACHINE. **Yi-Wei Chang**, Lee Rettberg, Anke Treuner-Lange, Janet Iwasa, Lotte Sjøgaard-Andersen, Grant Jensen

2310-Pos BOARD B454
SWIMMING OF A NON-FLAGELLATED BACTERIUM BY A NON-ROTARY MOLECULAR MOTOR. **Matthias Koch**, Julian Roth, Alexander Rohrbach

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INVESTIGATION OF THE BACTERIAL FLAGELLAR MOTORS THROUGH MAGNETIC TORQUE WRENCH. **Ilyong Jung**, Maarten M. van Oene, Nynke H. Dekker

2312-Pos BOARD B456
ELASTIC PROPERTIES OF MAGNETOSOME CHAINS. **Bahareh Kiani**, Damien Faivre, Stefan Klumpp

2313-Pos BOARD B457
DIFFERENTIAL INTERACTION FORCES GOVERN BACTERIAL SORTING AND STABILITY IN EARLY BIOFILMS. **Lena Dewenter**, Enno R. Oldewurtel, Nadzeya Kouzel, Thorsten Volkman, Katja Henseler, Berenike Maier

2314-Pos BOARD B458
DISTINCT MECHANICAL ROLES FOR BACTERIA-PRODUCED BIOPOLYMERS IN BIOFILM INITIATION AND STRENGTH. **Vernita Gordon**, Christopher Rodesney, BJ Cooley, Kristin Kovach, Megan Davis-Fields

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2315-Pos BOARD B459
DARK HYPERICIN AFFECTS SEVERAL SUB-CELLULAR LEVELS. **Katarina Stroffekova**, Veronika Huntosova, Marta Novotova, Zuzana Nichtova, Tibor Kozar, Pavol Miskovsky

2316-Pos BOARD B460
CORRELATION BETWEEN MITOCHONDRIAL MORPHOLOGY AND FUNCTIONALITY AFTER OXIDATIVE STRESS. **Zuzana Nadova**, Lenka Lenkavska, Alexandra Fragola, Stephanie Bonneau, Franck Sureau, Pavol Miskovsky

2317-Pos BOARD B461
OXIDATIVE STRESS AND JNK ACTIVATION CAUSE MITOCHONDRIAL DYSFUNCTION AND CELL DEATH IN HEPATOCARCINOMA AFTER VDAC-TUBULIN ANTAGONISTS. **Eduardo Maldonado**, David N. DeHart, Diana Fang, Kareem Heslop, Monika Beck Gooz, John Lemasters

2318-Pos BOARD B462
STUDY OF THE NIR LIGHT INDUCED EFFECTS ON NEUROBLASTOMA N2A CELLS WITH PARKINSON'S-LIKE FEATURES. **Lenka Koptasikova**, Veronika Huntosova, Emmanuel Gerelli, Pavol Miskovsky, Georges Wagnieres, Katarina Stroffekova

2319-Pos BOARD B463
A PHYSIOLOGICAL ROLE FOR ALPHA-SYNUCLEIN IN THE REGULATION OF ATP SYNTHESIS. **Marthe Ludtmann**, Plamena Angelova, Natalia Ninkina, Sonia Gandhi, Vladimir Buchman, Andrey Abramov

2320-Pos BOARD B464
MEMBRANE-BINDING PEPTIDE INHIBITS BLOCKAGE OF MITOCHONDRIAL VDAC BY ALPHA-SYNUCLEIN: IN SEARCH OF A-SYNUCLEIN TOXICITY PREVENTION. **Philip Gurnev**, David Hoogerheide, Tatiana Rostovtseva, Sergey Bezrukov

2321-Pos BOARD B465
STRAIN DEPENDENT EFFECTS OF ALPHA-SYNUCLEIN MUTATIONS ON MITOCHONDRIAL DYSFUNCTION. **Minee L. Choi**, Zhi Yao, Laura Tosatto, David Klenerman, Andrey Y. Abramov, Sonia Gandhi

2322-Pos BOARD B466
MITOCHONDRIAL TRANSFER BY PHOTOTHERMAL NANOBLADE RESTORES RESPIRATION IN MAMMALIAN CELLS WITH DYSFUNCTIONAL MITOCHONDRIA. **Alexander N. Patananan**, Ting-Hsiang Wu, Enrico Sagullo, Dana Case, Xin Zheng, Yanjing Li, Jason S. Hong, Tara TeSlaa, J. Michael McCaffery, Kayvan Niazi, Daniel Braas, Carla M. Koehler, Thomas G. Graeber, Pei-Yu Chiou, Michael A. Teitell

2323-Pos BOARD B467
DIVISION OF MITOCHONDRIAL NUCLEOIDS VISUALIZED BY BIPLANE FPALM / DSTORM. **Petr Jezek**, Tomas Spacek, Lukas Alan

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FLUORESCENCE MEASUREMENT OF PERICELLULAR OXYGEN. **Liron Boyman**, Joseph P. Y. Kao, Jennie B. Leach, W. Jonathan Lederer, George S. B. Williams

2325-Pos BOARD B469
TECHNIQUES FOR QUANTITATIVE ANALYSIS OF MITOCHONDRIAL DYNAMICS. **David Weaver**, Aniko Gal, Gyorgy Hajnoczky

2326-Pos BOARD B470
ELASTOCAPILLARY INSTABILITY IN MITOCHONDRIAL FISSION. David Gonzalez-Rodriguez, Sébastien Sart, Avin Babataheri, David Tareste, Abdul I. Barakat, Christophe Clanet, **Julien Husson**

2327-Pos BOARD B471
MITOCHONDRIAL NM23-H4/NDPK-D SUPPORTS CARDIOLIPIN SIGNALING TO ELIMINATE DEPOLARIZED MITOCHONDRIA BY MITOPHAGY. **Uwe Schlattner**, Jianfei Jiang, Zhentai Huang, Yulia Y. Tyurina, Céline Desbourdes, Cécile Cottet-Rousselle, Haider Dar, Manish Verma, Vladimir A. Tyurina, Alexandr A. Kapralov, Marie-Lise Lacombe, Charleen T. Chu, Rama Mallampalli, Hülya Bayir, Valerian E. Kagan

2328-Pos BOARD B472
THE ROLE OF LIPIDS IN REGULATION OF PROGRAMMED CELL DEATH. Martin Lidman, Artur Dingeldein, Šárka Pokorná, Radek Šachl, Tobias Sparrman, Martin Hof, **Gerhard Gröbner**

2329-Pos BOARD B473
MITOCHONDRIAL MECHANISMS OF SPORADIC PARKINSONISM: ROLE OF THE 18 KDA PROTEIN TSPO. **Michele Frison**

2330-Pos BOARD B474 CPOW TRAVEL AWARDEE
REGULATION OF MITOCHONDRIAL SIGNALING AND QUALITY CONTROL BY THE 18KDA TRANSLOCATOR PROTEIN (TSPO). **Jemma L. Gatliff**, Daniel East, Federico Turkheimer, Michelangelo Campanella

2331-Pos BOARD B475
GENERATION OF THE OUTER MEMBRANE POTENTIAL IN MITOCHONDRIA BY VDAC-KINASE COMPLEXES: THERMODYNAMIC ESTIMATIONS. **Victor V. Lemeshko**

2332-Pos BOARD B476
THE NEUROPROTECTIVE COORDINATION OF MITOPHAGY BY IF1. **Ivana Matic**, Danilo Faccenda, Caterina Ferraina, Francesca Di Guglielmo, Federica Rossin, Mauro Piacentini, Michelangelo Campanella

2333-Pos BOARD B477
UNDERSTANDING THE ROLE OF MITOCHONDRIAL PATHOPHYSIOLOGY IN FRIEDREICH'S ATAXIA. **Rosella Abeti**, Michael H. Parkinson, Iain P. Hargreaves, Mark A. Pook, Andrey Y. Abramov, Paola Giunti

2334-Pos BOARD B478
MITOCHONDRIAL TARGETING OF APOLLO-NADP⁺ REVEALS THAT PALMITATE-INDUCED TOXICITY IN BETA-CELLS INVOLVES A DROP IN MITOCHONDRIAL NADPH/NADP⁺ REDOX STATE. **William D. Cameron**, Cindy V. Bui, Jonathan V. Rocheleau

2335-Pos BOARD B479
NOVEL MUTATIONS IN SLC25A3 ENCODING THE MITOCHONDRIAL PHOSPHATE CARRIER. **Erin Seifert**, Aniko Gal, Michelle G. Acoba, Steven M. Claypool, Lauren Anderson-Pullinger, Peter Varnai, Cynthia Moffat, David Weaver, Neal Sondheimer, Gyorgy Hajnoczky

2336-Pos BOARD B480
OTOTOXIC AMINOGLYCOSIDES INHIBIT NADH METABOLISM AND INCREASE REACTIVE OXYGEN SPECIES FORMATION IN COCHLEAR CELLS. **Danielle Desa**, Erinn Riley, Michael Nichols, Heather Jensen Smith

2337-Pos BOARD B481
THE INFLUENCE OF ALTERNATIVE ENERGY TRANSFER SYSTEMS ON RESPIRATION IN CREATINE-DEFICIENT MOUSE CARDIOMYOCYTES. **Jelena Branovets**, Svetlana Jugai, Marko Vendelin, Rikke Birkedal

2338-Pos BOARD B482
PEROXYNITRITE PRODUCED VIA NITRIC OXIDE SYNTHESIS IN ISOLATED CARDIAC MITOCHONDRIA. **Harrison J. Gerdes**, Amadou K.S. Camara, James S. Heisner, David F. Stowe

2339-Pos BOARD B483
NUMBER OF OPEN MITOCHONDRIAL VOLTAGE-DEPENDENT ANION CHANNELS AND INTRACELLULAR DIFFUSION COEFFICIENT IN HEART MUSCLE. Päivo Simson, Natalja Jephina, Martin Laasmaa, Jelena Branovets, Pearu Peterson, Rikke Birkedal, **Marko Vendelin**

2340-Pos BOARD B484
DEPLETION OF BAK AFFECTS EMISSION OF REACTIVE OXYGEN SPECIES FROM MITOCHONDRIA. Ma Su Su Aung, Stephen Madamba, **Pablo M. Peixoto**

Systems Biology and Disease (Boards B485 - B507)

2341-Pos BOARD B485
FTIR STUDY OF THE BIOCHEMICAL EFFECTS INDUCED BY X-RAY IRRADIATIONS COMBINED WITH GD NANOPARTICLES IN F98 GLIOMA CELLS. Ibraheem Yousef, **Olivier Seksek**, Josep Sulé-Suso, Silvia Gil, Yolanda Prezado, Immaculada Martinez-Rovira

2342-Pos BOARD B486
INFLAMMATION LEADS TO AN INCREASE OF CHOLESTEROL'S CHEMICAL POTENTIAL IN PLASMA MEMBRANES OF CULTURED CELLS. **Ruben M. Markosyan**, Artem G. Ayuyan, Fredric S. Cohen

2343-Pos BOARD B487
ONSET, TIMING, AND EXPOSURE THERAPY OF STRESS DISORDERS: MECHANISTIC INSIGHT FROM A MATHEMATICAL MODEL OF OSCILLATING NEUROENDOCRINE DYNAMICS. **Lae U. Kim**, Tom Chou, Maria Rita D'Orsogna

2344-Pos BOARD B488
CELL LYSING AND DNA FRAGMENTATION OF LISTERIA MONOCYTOGENES IN ONE STEP. **Tonya Santaus**

2345-Pos BOARD B489
DYNAMICS LIGHT SCATTERING AS A TOOL FOR ASSESSING HEALTH STATUS AND DISEASE RISK. **Ina Mishra**, Vipul Patel, Michelle D. Robinson, Katrina Gordon, Sneha Deodhar, David P. Cistola

2346-Pos BOARD B490
LIVE IMAGING STUDIES OF INVASION PHENOTYPES OF ERYTHROCYTES BY P. FALCIPARUM. **Yen-Chun Lin**

2347-Pos BOARD B491
INTEGRATED ANALYSIS FOR QUANTITATIVE PREDICTIONS OF DRUG INDUCED CARDIOTOXICITY. **Jaehee V. Shim**, Marc R. Birtwistle, Ravi Iyengar, Eric A. Sobie

2348-Pos BOARD B492
BUILDING AN ACCURATE CHROMOSOME SEGREGATION MACHINE IN FISSION YEAST. Hadrien Mary, Guillaume Gay, Thibault Courthéoux, Jonathan Fouchard, Reyes Céline, Sylvie Tournier, **Yannick Gachet**

2349-Pos BOARD B493
A SYNTHETIC KNOB FOR MODULATING ANTIBIOTIC RESISTANCE. Dilay Hazal Ayhan, Yusuf Talha Tamer, Mohammed Akbar, David E. Greenberg, **Erdal Toprak**

2350-Pos BOARD B494
THE EFFECTS OF POPULATION DENSITY ON ANTIBIOTIC EFFICACY IN E. FAECALIS. **Jason Karlake**, Kevin Wood

2351-Pos BOARD B495
RULE-BASED MODELING WITH VIRTUAL CELL: EFFECT OF UBE3A ON DENDRITIC SPINE MORPHOGENESIS. **Judy E. Bloom**, Michael L. Blinov, Leslie M. Loew

2352-Pos BOARD B496
DECODING THE EVOLUTION OF COMPLEX BIOLOGICAL NETWORKS- A THEORY FOR THE DYNAMICS OF MODULARITY IN POPULATIONS. **Liang R. Niestemski**, Jeong-Man Park, Michael W. Deem

2353-Pos BOARD B497
THE β 1-ADRENERGIC RECEPTOR BLOCKER, METOPROLOL, IMPROVES SURVIVAL AND ELECTRICAL REMODELING IN RATS WITH PULMONARY ARTERY HYPERTENSION. **Eleftheria Pervolaraki**, Mark Drinkhill, Ewan Fowler, Rachel Stones, Ed White

2354-Pos BOARD B498
DEVELOPMENT OF PHYSIOLOGIC VERSUS PATHOLOGIC HYPERTROPHY IN MOUSE MODELS EXPRESSING MUTATIONS IN MYOSIN ESSENTIAL LIGHT CHAIN. Katarzyna Kazmierczak, Chen-Ching Yuan, Rosemeire Kanashiro-Takeuchi, Jingsheng Liang, Zhiqun Zhou, Jenice X. Cheah, Jennifer E. Gilda, Aldrin V. Gomes, Thomas C. Irving, **Danuta Szczesna-Cordary**

2355-Pos BOARD B499
RESOLVING AND TARGETING THE MECHANOBIOME OF PANCREATIC DUCTAL ADENOCARCINOMA. **Alexandra Surcel**, Qingfeng Zhu, Eric Schiffhauer, Robert Anders, Douglas Robinson

2356-Pos BOARD B500
REAL TIME TRANSPOSABLE ELEMENT ACTIVITY IN INDIVIDUAL LIVE CELLS. **Neil H. Kim**, Gloria Lee, Nicholas A. Sherer, K. Michael Martini, Nigel Goldenfeld, Thomas E. Kuhlman

2357-Pos BOARD B501
THE ROLE OF EXOSOME-MEDIATED CELL-CELL COMMUNICATION IN INDUCING PHENOTYPIC CHANGES. **Mingyang Lu**, Michela Capello, Herbert Levine, Samir M. Hanash, Eshel Ben-Jacob, Jose' Nelson Onuchic

2358-Pos BOARD B502
ON CANCER RISK AND THE HIERARCHICAL ARCHITECTURE OF TISSUES. **Imre Derenyi**, Gergely J. Szollosi

2359-Pos BOARD B503
PREDICTING THE ONSET OF ALTERNATING RHYTHMS IN NOISY CARDIAC SYSTEMS. **Thomas Quail**, Alvin Shrier, Leon Glass

2360-Pos BOARD B504
MEASUREMENT FOR A NONLINEAR DYNAMICAL THEORY OF ACUTE CELL INJURY. **Doaa T. Taha**, Fika T. Anggraini, Donald J. Degracia, Zhi-Feng Huang

2361-Pos BOARD B505
OPTIMIZING PROTEIN SPECIFICITY IN THE CROWDED CELL THROUGH CONCENTRATION BALANCE AND NETWORK MOTIF SELECTION. **David O. Holland**, Margaret E. Johnson

2362-Pos BOARD B506
AUTOMATED DIAGNOSIS OF LEUKEMIA BASED ON ENTROPY. **Jose M. G. Vilar**

2363-Pos BOARD B507
SPATIAL HOMOGENEITY IN METABOLIC ACTIVITY CONTROLS ELECTRICAL ACTIVITY IN PANCREATIC ISLETS. **Matthew J. Westacott**, Marina Pozzoli, Richard K.P. Benninger

System and Sensory Neuroscience (Boards B508 - B516)

2364-Pos BOARD B508
MAPPING CONNECTIVITY OF NETWORK BURSTING NEURONS. **Tuan D. Nguyen**, Kelly D. O'Connor, Krishna S. Sheth

2365-Pos BOARD B509
BEYOND CONES: COMPUTING TACTILE INPUT FORCES FROM IMPROVED MODELS OF WHISKER BENDING. **Xiyue Wang**, Vincent Huang, Jonathan Sy, Adam Schuyler, David Golomb, Samuel Andrew Hires

2366-Pos BOARD B510
REPRESENTATION OF MECHANOSENSORY FORCES IN SOMATOSENSORY CORTEX DURING OBJECT LOCALIZATION. **Jonathan A. Cheung**, Adam Schuyler, Mariah Kim, Jonathan Sy, Samuel Andrew Hires

2367-Pos BOARD B511
OPTOGENETIC SYNTHESIS OF TOUCH PERCEPTION VIA BIOMIMETIC PHOTO STIMULATION OF S1. **Samson G. King**, Monica Song, N. Mariah Kim, Isis Wyche, Adam Schuyler, S. Andrew Hires

2368-Pos BOARD B512
BOTH GLUTAMATERGIC AND GABAERGIC NEURONS ARE RECRUITED TO BE ASSOCIATIVE MEMORY CELLS. **Jin H. Wang**, Dangui Wang, Zilong Gao, Na Chen, Zhuofen Lei, Shan Cui, Wei Lu

2369-Pos BOARD B513
DO PRESTIN VARIANTS PERSIST WITHIN THE COCHLEA TO AFFECT CHARGE MOVEMENT IN VITRO?. Varun K.A. Sreenivasan, **Vivek Rajasekharan**, Brenda Farrell

2370-Pos BOARD B514
UNIQUE BIOPHYSICAL PROPERTIES OF AN INWARD PROTON CURRENT THAT MEDIATES SOUR TASTE TRANSDUCTION. Wenlei Ye, Jeremy Bushman, **Emily Liman**

2371-Pos BOARD B515
MODULATION BY OFF-FLAVORS OF CNG CHANNELS IN OLFACTORY CILIA. **Hiroko Takeuchi**, Takashi Kurahashi

2372-Pos BOARD B516
IMAGING PARADIGM FOR STUDYING BRAIN-WIDE ACTIVITY PATTERNS IN A DROSOPHILA NEURAL CIRCUIT. **Amicia D. Elliott**, Feici Diao, Yicong Wu, Sarav Shah, Hari Shroff, Benjamin White

Optical Microscopy and Super-Resolution Imaging II (Boards B517 - B550)

2373-Pos BOARD B517
APPLICATION OF THE DIVER DETECTION METHOD TO MULTIPHOTON MICROSCOPY AND FLIM. **Alexander Dvornikov**, Suman Ranjit, Enrico Gratton

2374-Pos BOARD B518
FLUORESCENCE ANISOTROPY IMAGING IN 3D WITH SINGLE PLANE ILLUMINATION MICROSCOPY. **Per Niklas Hedde**, Enrico Gratton

2375-Pos BOARD B519
LABEL FREE LINEAR AND NON-LINEAR EXCITATION NANOSCOPY. Kseniya Korobchevskaya, Chiara Peres, Francesca D'Autilia, Nirmal Mazumder, Luca Lanzano, Peter Saggau, Colin J. R. Sheppard, Alberto Diaspro, **Paolo Bianchini**

2376-Pos BOARD B520
POLARIZATION-RESOLVED PHASE MICROSCOPY FOR QUANTITATIVE RETARDANCE IMAGING. **Chiara Peres**, Renjie Zhou, Poorya Hosseini, Andreea F. Martin, Paolo Bianchini, Alberto Diaspro, Peter T.C. So, Zahid Yaqoob

2377-Pos BOARD B521
MULTIPHOTON STED AND FRET IN HUMAN SKIN: RESOLVING THE SKIN BARRIER. Jes Dreier, Jens A. Sørensen, **Jonathan R. Brewer**

2378-Pos BOARD B522
SNAPSHOT HYPERSPECTRAL LIGHT-SHEET IMAGING ALLOWS 5D INVESTIGATION OF PANCREATIC ISLETS. **Zeno Lavagnino**, David W. Piston

2379-Pos BOARD B523
LIGHT SHEET FLUORESCENCE MICROSCOPY IN INTACT BONES REVEALS SPATIAL LIMITATIONS FOR MEGAKARYOCYTE MIGRATION IN THE MURINE BONE MARROW. Judith M. van Eeuwijk, David Stegner, Oğuzhan Angay, Mari Gorelashvili, Jürgen Pinnecker, Harald Schulze, Bernhard Nieswandt, **Katrin G. Heinze**

2380-Pos BOARD B524
RHESUS D EXPRESSION CLASSIFICATION ON RED BLOOD CELLS USING HIGH-RESOLUTION FLUORESCENCE MICROSCOPY AND MACHINE LEARNING. **Sandra Mayr**

2381-Pos BOARD B525
NANOSCOPIC CELL WALL ARCHITECTURE OF AN IMMUNOGENIC LIGAND IN CANDIDA ALBICANS DURING ANTIFUNGAL DRUG TREATMENT. **Aaron K. Neumann**, Jia Lin, Michael J. Wester, Matthew S. Graus, Keith A. Lidke

2382-Pos BOARD B526
EXPRESSION-ENHANCED FLUORESCENT PROTEINS BASED ON EGFP FOR SUPER-RESOLUTION MICROSCOPY. Sam Duwé, Elke De Zitter, Vincent Gielen, Benjamin Moeyaert, Wim Vandenberg, Tim Grotjohann, Stefan Jakobs, Luc Van Meervelt, **Peter Dedecker**

2383-Pos BOARD B527
OPIOID RECEPTORS ARE ORGANIZED INTO NANODOMAINS IN THE PLASMA MEMBRANE. **Ottavia Golfetto**, Sunetra Biswas, Raphael Jorand, Huiying Zhang, Steven Jeffrey Tobin, Daniel Ganjali, Athanasios Sideris, Alexander R. Small, Vladana Vukojević, Tijana Jovanović-Taliman

2384-Pos BOARD B528
MAPPING CFTR CLUSTERS IN 3D VIA SINGLE MOLECULE STEP PHOTO-BLEACHING ANALYSIS IN EPITHELIAL CELLS. **Paul W. Wiseman**, Jean F. Desjardins, Asmahan Abuarish, John W. Hanrahan

2385-Pos BOARD B529
DIFFUSION ANALYSIS OF LYMPHOCYTE SPECIFIC KINASE REVEALS IMMOBILISATION HOT SPOTS IN LIVE T-CELL PLASMA MEMBRANES. **Andreas M. Arnold**, Florian Baumgart, Gerhard J. Schuetz

2386-Pos BOARD B530
LCK IS RANDOMLY DISTRIBUTED ON THE T CELL PLASMA MEMBRANE. **Florian Baumgart**, Andreas Arnold, Gerhard Schütz

2387-Pos BOARD B531
NANOSCALE SPATIAL ORGANIZATION OF CHROMATIN IN ITS CELLULAR CONTEXT, FROM TELOMERES TO HOX. **Suliana Manley**, Kyle Douglass, Verena Pfeiffer, Aleksandra Vancevska, Pierre Fabre, Alexander Benke, Elisabeth Joye, Thi Hanh Nguyen Huynh, Denis Duboule, Joachim Lingner

2388-Pos BOARD B532
AN ORGANELLE SIZER BASED ON LOCAL IMAGE CORRELATION SPECTROSCOPY DETECTS CHANGES IN SUBCELLULAR MORPHOLOGY. **Lorenzo Scipioni**, Melody Di Bona, Marta D'Amora, Enrico Gratton, Alberto Di-aspro, Luca Lanzanò

2389-Pos BOARD B533
TRACKING GOLD NANORODS IN LIVE CELLS. **Sara Carozza**, Veer I.P. Keizer, Jamie Culkin, Aimee L. Boyle, Alexander Kros, Marcel J.M. Schaaf, John van Noort

2390-Pos BOARD B534
SITE-SPECIFIC LABELING OF PROTEINS IN LIVE MAMMALIAN CELLS USING CLICK CHEMISTRY. **Jun Hee Kang**, Ivana Nikić, Gemma Estrada Girona, Edward A. Lemke

2391-Pos BOARD B535
3D SUPER-RESOLUTION IMAGING OF UNPERTURBED CELLS. **Alexander R. Carr**, James McCol, Ana M. Santos, Ji-Eun Lee, Aleks Ponjavic, Dave Klenerman, Simon Davis, Steven F. Lee

2392-Pos BOARD B536
IMPROVED PHOTO PHYSICAL PROPERTIES OF MEOS3 FOR SINGLE MOLECULE TRACKING. **Lisa-Maria Needham**, Srinjan Basu, Edward Taylor, Ernest D. Laue, David Klenerman, David Lando, Steven F. Lee

2393-Pos BOARD B537
A PHOTOGATE MICROSCOPY TO TRACK SINGLE MOLECULES IN CROWDED ENVIRONMENTS. **Ahmet Yildiz**

2394-Pos BOARD B538
BACKGROUND-SUPPRESSION IN THE DETECTION OF GOLD NANOPARTICLES IN CELLS THROUGH ANTI-STOKES PHOTOLUMINESCENCE. **Aquiles Carattino**, Veer Keizer, Michel Orrit

2395-Pos BOARD B539
QUANTITATIVE SINGLE MOLECULE ANALYSIS OF THE NANOSCALE ORGANIZATION OF THE INHIBITORY SYNAPSE. **Francesca Pennacchietti**, Sebastiano Vascon, Christian Rosillo, Thierry Nieuws, Das Sabyasachi, Alessio Del Bue, Enrica Maria Petrini, Alberto Diaspro, Andrea Barberis, Francesca Cella Zancchi

2396-Pos BOARD B540 INTERNATIONAL TRAVEL AWARDEE
TRACKING THE SWITCH OF INFLUENZA RNA GENESIS BY A NOVEL MULTIPLEXED FISH METHOD IN SINGLE CELLS. **Ivan Haralampiev**, Simon Prisner, Matthias Schade, Jasmine Chamiolo, Fabian Jolmes, Oliver Seitz, Andreas Herrmann

2397-Pos BOARD B541
NAD(P)H-FLIM AND FRET IMAGING OF PANCREATIC ISLET OSCILLATIONS REVEALS NOVEL ACTIVATORS OF MITOCHONDRIAL RESPIRATORY COMPLEX I IN THE SETTING OF OBESITY. Trillian Gregg, Chetan Poudel, Rush Dhillon, Brian A. Schmidt, John M. Denu, Kevin W. Eliceiri, **Matthew J. Merrins**

2398-Pos BOARD B542
TIME-RESOLVED STUDY OF TRIPLEBODY-MEDIATED LYSIS BY NATURAL KILLER CELLS ON MICROSTRUCTURED TARGET CELL ARRAYS. **Elisavet I. Chatzopoulou**, Farzad Sekhavati, Todd A. Braciak, Georg H. Fey, Joachim O. Rädler

2399-Pos BOARD B543
DYNAMIC OPTICAL DISPLACEMENT SPECTROSCOPY TO QUANTIFY BIOMEMBRANE BENDING FLUCTUATIONS. Cornelia Monzel, Daniel Schmidt, Udo Seifert, Ana-Suncana Smith, Kheya Sengupta, **Rudolf Merkel**

2400-Pos BOARD B544
SINGLE-PARTICLE TRACKING ANALYSIS USING THE RADIUS OF GYRATION TENSOR, REVISITED. **Michael J. Saxton**

2401-Pos BOARD B545
QUANTITATIVE DETERMINATION OF PHOTOTOXICITY IN LIVE CELL SUPER-RESOLUTION MICROSCOPY. **Alexander Goryaynov**, Julia Neuwirth, Joerg Bewersdorf

2402-Pos BOARD B546
ILLUMINATING DYNAMIC PROCESSES IN THE EMBRYOGENESIS OF CAENORHABDITIS ELEGANS WITH LIGHTSHEET MICROSCOPY. **Philipp Struntz**, Rolf Fickentscher, Matthias Weiss

2403-Pos BOARD B547
NITROGEN-VACANCY SPINS IN DIAMOND A POSSIBLE TOOL TO STUDY PROTEIN DIFFUSION AND OLIGOMERIZATION. **Sri Ranjini Arumugam**

2404-Pos BOARD B548
MGARNET, A FAR-RED FLUORESCENT PROTEIN FOR LIVE-CELL STED IMAGING. Anika Hense, Benedikt Prunsche, Peng Gao, Yuji Ishitsuka, **Karin Nienhaus**, G. Ulrich Nienhaus

2405-Pos BOARD B549
SUPER-RESOLUTION IMAGING OF PLASMA MEMBRANE LESIONS INFLECTED BY 405-NM LASER LIGHT. Lu Zhou, Volker Middel, **G. Ulrich Nienhaus**, Uwe Uwe Strähle

2406-Pos BOARD B550
TWO-PHOTON EXCITATION STED-FCS WITH FAR-RED DYES IN TISSUE - MEASURING DIFFUSION IN STRATUM CORNEUM. **Jes Dreier**, Jens A. Soerensen, Jonathan R. Brewer

Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence (Boards B551 - B579)

2407-Pos BOARD B551
SYNTHETIC OPTIMIZATION OF AN EFFECTIVE VIBRATIONAL REPORTER UNNATURAL AMINO ACID: 4-(AZIDOMETHYL)-L-PHENYLALANINE. **Tianjiao Shi**, Scott H. Brewer, Edward E. Fenlon

2408-Pos BOARD B552
SYNTHESIS AND EVALUATION OF THIOCYANATE AND SELENOCYANATE DERIVATIVES OF ADENOSINE AND PHENYLALANINE AS VIBRATIONAL REPORTERS. **Daniel E. Levin**, Edward E. Fenlon, Scott H. Brewer

2409-Pos BOARD B553
INVESTIGATION OF NOVEL SPECTROSCOPIC FEATURES IN THE NEAR ULTRAVIOLET REGION ARISING FROM NON-AROMATIC AMINO ACIDS IN PEPTIDES AND PROTEINS. **Saumya Prasad**, Imon Mandal, Ashim Paul, Bhubaneswar Mandal, Ravindra Venkatramani, Rajaram Swaminathan

2410-Pos BOARD B554
CHARACTERIZATION OF THE ROLE OF INDIVIDUAL EF-HANDS IN DREAM IN MODULATING CONFORMATIONAL DYNAMICS, OLIGOMERIC STATES, AND INTERACTION WITH DNA. **Khoa N. Pham**, Jose Alfonso, Jaroslava Miksovska

2411-Pos BOARD B555
PHOTOPHYSICAL CHARACTERIZATION OF FLUORESCENT LYSOZYME STABILIZED GOLD NANOCCLUSERS AND THEIR APPLICATIONS. **Sunil Ajit Shah**, Rahul Chib, Bryan Jan, Zygmunt Gryczynski, Ignacy Gryczynski

2412-Pos BOARD B556
LIPOPLEXES FOR GENE DELIVERY CHARACTERIZED BY FLUORESCENCE CORRELATION SPECTROSCOPY. **Juliane Lopes de Assis**, Iago L. Grobas, Paula Viegas Pereira Signoretti, Aline Marie Fernandes, Maria Adelaide Carvalho Miranda, Bruno F. B. Silva, Rafael Hospodar Felipe Valverde, Marcelo Einicker-Lamas, Pieter A. A. De Beule

2413-Pos BOARD B557
MANIPULATIONS OF THE TNF-RECEPTOR AFFINITY AND OLIGOMERIZATION CHARACTERIZED BY FLUORESCENCE LIFETIME MEASUREMENTS. **Chih Hung Lo**, Andrew Lewis, Tory Schaaf, Prachi Bawaskar, Nagamani Vunnam, Karl Peterson, David Thomas, Jonathan Sachs

2414-Pos BOARD B558
RESOLVING STRUCTURAL DYNAMICS OF THE SERCA-PLB COMPLEX BY MERGING MD SIMULATION AND ORIENTATION-SENSITIVE EPR MEASUREMENT. **Andrew Reid**, Peter Martin, Jesse McCaffrey, Bengt Svensson

2415-Pos BOARD B559
DETECTING COUNTERFEIT PHARMACEUTICALS THROUGH UV SPECTROPHOTOMETRY. **Gabriela Figueroa**, Bruce Ray, Horia Petrache

2416-Pos BOARD B560
MEASURING STRUCTURAL CHANGES AS A FUNCTION OF PROTEIN CONCENTRATION USING INFRARED SPECTROSCOPY. **Curtis W. Meuse**

2417-Pos BOARD B561
PHOTOPHYSICAL PROPERTIES OF SYNTHETIC FOOD DYES. Bogumil Zelent, Chris Bialas, Rahul Chib, Ignacy Gryczynski, Sarah Waxman, Meera Patel, Maria G. Corradini, **Richard D. Ludescher**

2418-Pos BOARD B562
RIBOFLAVIN AS A GRAS LUMINESCENT PROBE OF FOOD AND PHARMACEUTICAL QUALITY. **Yan L. Wang**, Victoria Yeung, Maria G. Corradini, Richard D. Ludescher

2419-Pos BOARD B563
REVEALING STRUCTURAL FEATURES AND AFFINITIES OF PROTEIN COMPLEXES IN LIVING CELLS BY MFIS-FRET. **Qijun Ma**, Marc Somssich, Stanislav Kalinin, Thomas Peulen, Ralf Kühnemuth, Yvonne Stahl, Rüdiger Simon, Stefanie Weidtkamp-Peters, Claus A.M. Seidel

2420-Pos BOARD B564
BINDING STUDIES OF BIOTIN LABELED MACROMOLECULES TO STREPTAVIDIN IN SOLUTION AND ON SOLID SURFACES. **Qiaoqiao Ruan**, Kerry M. Swift, Richard A. Haack, Sergey Y. Tetin

2421-Pos BOARD B565
IMPROVED FRET-BASED TRILATERATION METHODS APPLIED TO THE MAPPING OF CALMODULIN WITHIN THE RYANODINE RECEPTOR. **Bengt Svensson**, Robyn T. Rebbeck, David D. Thomas, Razvan L. Cornea

2422-Pos BOARD B566
NANOSCALE CHEMICAL AND TOPOLOGY IMAGING OF COLLAGEN WITH PHOTO-INDUCED FORCE MICROSCOPY. Will Morrison, Jinhui Tao, Katie Park, **Derek Nowak**, Sung Park, James De Yoreo

2423-Pos BOARD B567
CORRELATIVE FLOURESCENCE - BRILLOUIN SCATTERING IMAGING OF PLANTS. **Kareem Elsayad**, Marcal Gallemi, Edmundo R. Sanchez-Guajardo, Lijuan Zhang, Youssef Belkhadir

2424-Pos BOARD B568
DETERMINATION OF ANTIBODY BINDING AFFINITY USING SINGLE-MOLECULE COUNTING AND FLOW. **Patrick J. Macdonald**, Qiaoqiao Ruan, Richard A. Haack, Sergey Y. Tetin

2425-Pos BOARD B569
MULTI-CHANNEL TIRF IMAGING OF CARDIAC CALCIUM SIGNALS. **Lars Cleemann**, Martin Morad

2426-Pos BOARD B570
OPTICALLY MODULATED PHOTOSWITCHABLE FLUORESCENT PROTEINS YIELD IMPROVED BIOLOGICAL IMAGING SENSITIVITY. **Yen-Cheng Chen**, Amy E. Jablonski, Irina Issaeva, Daisy Bourassa, Jung-Cheng Hsiang, Christoph J. Fahrni, Robert M. Dickson

2427-Pos BOARD B571
ULTRASENSITIVE TIME- AND SPACE-RESOLVED DETECTION OF LUMINESCENCE, I.E. SINGLET OXYGEN PHOSPHORESCENCE. **Christian Litwinski**, Sebastian Tannert, Manoel Veiga, Felix Koberling, Volker Buschmann, Matthias Patting, Marcus Sackrow, Michael Wahl, Olaf Schulz, Marcelle Koenig, Rainer Erdmann, Christian Wolf, Christian Kaufmann, Humberto Rodriguez Alvarez

2428-Pos BOARD B572
LINEAR COMBINATION BETWEEN LIFETIME AND SPECTRAL PHASOR PLOTS: A NEW APPROACH TO STUDY MEMBRANE ORGANIZATION WITH LAURDAN. **Leonel S. Malacrida**, David M. Jameson, Enrico Gratton

2429-Pos BOARD B573
DARK STATE DYNAMICS OF RED FLUORESCENT PROTEINS IN THE CELL ENVIRONMENT MEASURED IN MICROFLUIDIC FLOW. **Premashis Manna**, Felix Vietmeyer, Ralph Jimenez

2430-Pos BOARD B574
EXPERIMENTAL DETERMINATION OF SINGLE- AND TWO-PHOTON EXCITATION TRANSITION MOMENTS IN REPRESENTATIVE FLUORESCENT PROTEINS. **Josef Lazar**, Prakash Shukla, Richard Chazal, Alexey Bondar, David von Stetten, Antoine Royant

2431-Pos BOARD B575
FLUORESCENCE FLUCTUATION SPECTROSCOPY IN THE PERINUCLEAR SPACE. **Jared Hennen**, Cosmo Saunders, G. W. Gant Luxton, Joachim D. Mueller

2432-Pos BOARD B576
A COMPARISON OF LIBS FOR THE QUANTIFICATION OF AU NANOPARTICLES USING 1064 NM, 532 NM, AND 266 NM EXCITATION. Komal Vig, Aaleyah Joe, **Cleon M. Barnett**

2433-Pos BOARD B577
DIRECT LABEL-FREE MEASUREMENT OF THE DISTRIBUTION OF SMALL MOLECULAR WEIGHT COMPOUND INSIDE THICK BIOLOGICAL TISSUE USING COHERENT RAMAN MICROSCOPY. Masahiko Kawagishil, Yuki Obara, Takayuki Suzuki, Masumi Hayashi, Kazuhiko Misawa, **Sumio Terada**

2434-Pos BOARD B578
COMPARISON BETWEEN AUTOFLUORESCENCE AND REFLECTANCE-BASED HYPERSPECTRAL IMAGING FOR VISUALIZATION OF ATRIAL ABLATION LESIONS. **Huda Asfour**, Mohammed Aljishi, Tigran Chahbazian, Luther Swift, Narine Muselimyan, Daniel Gil, Narine Sarvazyan

2435-Pos BOARD B579
USE OF EXCITATION EMISSION MATRICES TO REVEAL SPECTRAL CHANGES CAUSED BY RADIOFREQUENCY ABLATION OF CARDIAC TISSUE.
Mohammed Aljishi, Huda Asfour, Luther Swift, Narine Muselimyan, Tigran Chahbazian, Narine Sarvazyan

Computational Methods and Bioinformatics II (Boards B580 - B588)

2436-Pos BOARD B580
HUNTING STRATEGY OF PHAGES THAT INFECT BACTERIA. **Arlette R. Baljon**, Elena Arroyo, Peter Salamon, Jim Nulton, Ben Felts, Jeremy Barr, Forest Rohwer

2437-Pos BOARD B581
BIOPHYSICAL IMPLICATIONS OF EBOLA VIRUS EVOLUTION. Craig R. Miller, Erin L. Johnson, Aran Z. Burke, Kyle P. Martin, Tanya A. Miura, Celeste J. Brown, Holly A. Wichman, **F. Marty Ytreberg**

2438-Pos BOARD B582
RULE-BASED MODELING AND SIMULATION FOR BEGINNERS: INTUITIVE GRAPHICAL INTERFACE WITHIN VIRTUAL CELL. **Michael L. Blinov**, Dan Vasilescu, Ion I. Moraru, Leslie M. Loew, James C. Schaff

2439-Pos BOARD B583
MAPPING EPIGENETIC LANDSCAPES OF GENE REGULATORY NETWORKS BY ADAPTIVE WEIGHTED ENSEMBLE SAMPLING. **Margaret J. Tse**, Brian K. Chu, Elizabeth L. Read

2440-Pos BOARD B584
USING NETWORK MODELS OF PROTEINS TO PREDICT FUNCTIONALLY LINKED INTERFACES OF PROTEINS (FLIPS) AT THE RESIDUE LEVEL. **Isha D. Mehta**, Brian W. Beck

2441-Pos BOARD B585
ANALYSIS OF NOVEL MECHANISMS UNDERLYING ASPIRIN RESISTANCE USING BIOINFORMATICS APPROACH. Beryen Lai, Mallory Brooke Lai, **Baskaran Thyagarajan**

2442-Pos BOARD B586
CLUSTERING AND VISUALIZING OF MEMBRANE PROTEINS SEQUENCE SIMILARITY NETWORK. **Geng-Ming Hu**, Te-Lun Mai, Chi-Ming Chen

2443-Pos BOARD B587
EVOLUTION AND STRUCTURAL ADAPTATION TO MEMBRANES OF SINGLE-PASS TRANSMEMBRANE PROTEINS. **Andrei L. Lomize**, Irina Pogozheva

2444-Pos BOARD B588
TABULATION AS A HIGH-RESOLUTION ALTERNATIVE TO COARSE-GRAINING PROTEIN INTERACTIONS: INITIAL APPLICATION TO VIRUS CAPSID SUBUNITS. **Justin M. Spirti**, Daniel M. Zuckerman

Force Spectroscopy and Scanning Probe Microscopy (Boards B589 - B616)

2445-Pos BOARD B589
EXAMINING THE MECHANICAL PROPERTIES OF COPPER BINDING AZURIN USING SINGLE MOLECULE FORCE SPECTROSCOPY AND STEERED MOLECULAR DYNAMICS. **Anju Yadav**, Sanjoy Paul, Ravindra Venkatramani, Sri Rama Koti Ainavarapu

2446-Pos BOARD B590
RESOLVING INDIVIDUAL DAMAGE SITES IN DNA WITH AFM USING REENGINEERED REPAIR PROTEINS. **Christopher J. Fitzgibbon**, Eric A. Josephs, Piotr E. Marszalek

2447-Pos BOARD B591
DIRECT OBSERVATION OF THE FOLDING TRAJECTORY OF A SLIPKNOTTED PROTEIN. **Chengzhi He**, Chunmei Lyu, Chunguang Hu, Xiaodong Hu, Xiaotang Hu, Hongbin Li

2448-Pos BOARD B592
MUTUAL A DOMAIN INTERACTIONS IN THE FORCE SENSING PROTEIN VON WILLEBRAND FACTOR (VWF). **Sandra Posch**, Camilo Aponte-Santamaria, Frauke Gräter, Tobias Obser, Gesa König, Maria A. Brehm, Hermann J. Gruber, Reinhard Schneppenheim, Robert Tampé, Peter Hinterdorfer

2449-Pos BOARD B593
SURPRISING FORCE-DEPENDENT UNFOLDING OF TITIN IMMUNOGLOBULIN DOMAIN REVEALED BY MAGNETIC TWEEZERS. Guohua Yuan, Zhoujie Yang, Hui Qian, Xin Zhou, Jie Yan, **Hu Chen**

2450-Pos BOARD B594
MULTIPLE INTERMEDIATES IN THE FOLDING OF SUPEROXIDE DISMUTASE 1 REVEALED BY SINGLE MOLECULE FORCE SPECTROSCOPY. **Supratik Sen Mojumdar**, Derek R. Dee, Logan Rouleau, Uttam Anand, Craig Garen, Michael T. Woodside

2451-Pos BOARD B595
SWINGING ARMS OF ANTIBODY IGG MAKE THE ANTIGEN BINDING DOCCILE. **Norito Kotani**, Ramanujam Kumaresan, Yoko Kawamoto-Ozaki, Takao Okada

2452-Pos BOARD B596
MOLECULAR TOOLS FOR ADVANCED SINGLE-MOLECULE STUDIES. **Fabian Baumann**, Magnus Sebastian Bauer, Lukas Frederik Milles, Hermann Eduard Gaub, Diana Angela Pippig

2453-Pos BOARD B597
MECHANICAL PROPERTIES OF THE FIBRIN NETWORK ON THE MACROSCOPIC AND MICROSCOPIC SCALES. **Timea Feller**, Balazs Kiss, Jolan Harsfalvi, Miklos Kellermayer

2454-Pos BOARD B598
AGGREGATES OF AMPHOTERICIN B ONTO SUPPORTED LIPID BILAYERS OF DOPC:SM:CHOL. **Arturo Galván-Hernández**, Carlos Muñoz-Garay, Iván Ortega-Blake

2455-Pos BOARD B599
SINGLE MOLECULAR FORCE SENSING REVEALS FIBRONECTIN-SPECIFIC BINDING EPITOPES OF BACTERIAL CURLI FIMBRIAE. **Yoo Jin Oh**, Michael Hubauer-Brenner, Hermann J. Gruber, Yidan Cui, Sungsu Park, Peter Hinterdorfer

2456-Pos BOARD B600 INTERNATIONAL TRAVEL AWARDEE
SELECTIVE INTERACTION BETWEEN TOXIC AMYLOID OLIGOMERS AND THE CELL MEMBRANE REVEALED BY INNOVATIVE AFM APPLICATIONS. **Reinier Oropesa-Nuñez**, Silvia Seghezze, Sandeep Keshavan, Silvia Dante, Cristina Cecchi, Massimo Stefani, Fabrizio Chiti, Alberto Diaspro, Claudio Canale

2457-Pos BOARD B601
STRUCTURAL AND MECHANICAL CUES IN CARTILAGE MORPHOGENESIS. **Carina Prein**, Hauke Clausen-Schaumann, Attila Aszodi

2458-Pos BOARD B602
BIOPHYSICAL CHARACTERIZATION OF ANTIMICROBIAL RESISTANCE. **Mehrdad M. Tajkarimi**

2459-Pos BOARD B603
NANOMECHANICAL AND VISCOELASTIC MEASUREMENTS IN BIOLOGICAL ATOMIC FORCE MICROSCOPY (AFM). **Sophia Hohlbauch**

2460-Pos BOARD B604 INTERNATIONAL TRAVEL AWARDEE
COMBINED MAGNETO-OPTICAL TWEEZERS AND SUPER-RESOLUTION FLUORESCENCE IMAGING FOR PROBING DYNAMIC SINGLE-MOLECULE TOPOLOGY OF DNA, AND PROTEIN MACHINES THAT MANIPULATE DNA TOPOLOGY. **Zhaokun Zhou**, Helen Miller, Christoph Baumann, Mark Leake

2461-Pos BOARD B605
TRAPPING OF HIGHLY BIREFRINGENT RUTILE NANOCYLINDERS IN THE OPTICAL TORQUE WRENCH. **Yera Y. Ussembayev**, Seungkyu Ha, Richard Janissen, Maarten M. van Oene, Nynke H. Dekker

2462-Pos BOARD B606
IMPROVED AXIAL OPTICAL TRAPPING. **Russell Pollari**, Joshua N. Milstein

2463-Pos BOARD B607
ENHANCED SITE-SPECIFIC ANCHORING OF BIOMOLECULES FOR SINGLE-MOLECULE FORCE SPECTROSCOPY. **Robert Walder**, William J. Van Patten, Ayush Adhikari, Marc-Andre LeBlanc, Stephen R. Okoniewski, Ruby May A. Sullan, Marcelo C. Sousa, Thomas T. Perkins

2464-Pos BOARD B608
A NOVEL PLATFORM FOR TAILORING MEMBRANE PROTEIN MOBILITY. **Andreas Karner**, Benedikt Nimmervoll, Birgit Plochberger, Enrico Klotzsch, Andreas Horner, Denis G. Knyazev, Roland Kuttner, Klemens Winkler, Lukas Winter, Christine Siligan, Nicole Ollinger, Peter Pohl, Johannes Preiner

2465-Pos BOARD B609
IMPROVED CALIBRATION METHOD FOR THE NONLINEAR REGIME OF A SINGLE-BEAM OPTICAL TRAP ALLOWS HIGHER FORCE APPLICATIONS. **Jamianne C. Wilcox**, Benjamin J. Lopez, Otger Campas, Megan T. Valentine

2466-Pos BOARD B610
PRECISE CONTROL AND MEASUREMENT OF TEMPERATURE WITH FEMTOSECOND OPTICAL TWEEZERS. **Dipankar Mondal**, Debabrata Goswami

2467-Pos BOARD B611
A COMBINED IMAGING AND FORCE SPECTROSCOPY APPROACH REVEALS THE MATERIAL PROPERTIES OF VIRAL NANOPARTICLES. **Denise Denning**, Gijis J.L. Wuite, Wouter H. Roos

2468-Pos BOARD B612
HIGH SPEED AFM THROUGH NON-RASTER SCANNING AND HIGH SPEED ACTUATION. Trevor Ashley, Tian Huang, William Nagel, **Sean Andersson**, Kam Leang

2469-Pos BOARD B613
HIGH RESOLUTION MAGNETIC TWEEZERS TO PROBE SINGLE MOLECULE DYNAMICS. **Bob M. Lansdorp**, Omar A. Saleh

2470-Pos BOARD B614 EDUCATION TRAVEL AWARDEE
MULTIPLEXED MECHANOCHEMISTRY ASSAY - A TOOL FOR MULTIPLEXED SINGLE MOLECULE BOND RUPTURE FORCE STUDIES. **Bhavik Nathwani**, Darren Yang, Wesley Wong, William M. Shih

2471-Pos BOARD B615
LABEL-FREE INTRAMOLECULAR CHEMICAL MICROSCOPY OF A PROTEIN-RNA COMPLEX. **Duckhoe Kim**, Zhenghan Gao, Ozgur Sahin

2472-Pos BOARD B616
TUNING THE MUSIC: ACOUSTIC FORCE SPECTROSCOPY (AFS) 2.0. **Douwe Kamsma**, Ramon Creyghton, Gerrit Sitters, Erwin J.G. Peterman, Gijis J.L. Wuite

Micro- and Nanotechnology I (Boards B617 - B646)

2473-Pos BOARD B617 CID TRAVEL AWARDEE
CHARACTERIZATION OF NUCLEOSOMES USING DNA ORIGAMI. **Jenny V. Le**, Yi Luo, Christopher R. Lucas, Michael G. Poirier, Carlos E. Castro

2474-Pos BOARD B618
THERAPEUTIC ENHANCEMENT WITH NUCLEAR TARGETED GOLD NANOPARTICLES. **Celina J. Yang**, Devika B. Chithrani

2475-Pos BOARD B619
MICROCARRIER-GUIDED NANOPORE DIELECTROPHORESIS FOR SELECTIVE NUCLEIC ACID DETECTION. **Kai Tian**, Karl Decker, Aleksei Aksimentiev, Liqun Gu

2476-Pos BOARD B620
DIPOLE EFFECTS ON ION TRANSPORT DEMONSTRATED IN APROTIC SOLVENTS. **Timothy S. Plett**, Wenqing Shi, Yuhan Zeng, William Mann, Ivan Vlassioug, Lane Baker, Zuzanna S. Siwy

2477-Pos BOARD B621
A NOVEL MULTI-LAYER MICROFLUIDIC PIPETTE ASPIRATION DEVICE FOR STUDYING MECHANOSENSITIVE VESICLES. Lap Man Lee, Danielle Chase, **Allen Liu**

2478-Pos BOARD B622
AN ION-SPECIFIC EFFECT ON POLYMER-PROTEIN INTERACTION ENHANCES RESOLUTION OF NANOPORE-BASED DETECTION. Aleksandra Dylewska-Chaumeil, Gerhard Baaken, **Jan C. Behrends**

2479-Pos BOARD B623
IONIC AND MOLECULAR TRANSPORT INSIDE CARBON NANOTUBES: TOWARDS THE DETECTION OF INDIVIDUAL BIOMOLECULES. Khadija Yazda, Said Tahir, Thierry Michel, Jean-Baptiste Thibaud, **Francois Henn**, Vincent Jourdain

2480-Pos BOARD B624
FABRICATION OF LOW NOISE BOROSILICATE GLASS NANOPORES FOR SINGLE MOLECULE SENSING. Jayesh Bafna, **Gautam Soni**

2481-Pos BOARD B625
IN VITRO STUDIES OF MULTIFUNCTIONAL PERFLUOROCARBON NANO-EMULSIONS FOR CANCER THERAPY AND IMAGING. **Donald A. Fernandes**, Dennis D. Fernandes, Claudiu C. Gradinaru, Michael C. Kolios

2482-Pos BOARD B626 INTERNATIONAL TRAVEL AWARDEE
MAGNETIC FOCUSING AND HYDRODYNAMIC DEFLECTION OF MICROPARTICLES IN A MICRODEVICE. **Vikash Kumar**, Pouya Rezai

2483-Pos BOARD B627
CONTROLLING GLIDING TRAJECTORIES OF MICROTUBULES BY ALTERING MICROTUBULE FLEXURAL RIGIDITY. **Naoto Isozaki**, Scott Erickson, Shintaku Hirofumi, Hidetoshi Kotera, Taviare L. Hawkins, Jennifer L. Ross, Ryuji Yokokawa

2484-Pos BOARD B628
A MICROFLUIDIC DEVICE FOR SINGLE CELL IMAGING AND INTRACELLULAR COMPONENTS COUNTING. **David C. Duran**, Juan Manuel Pedraza

2485-Pos BOARD B629
UNDERSTANDING THE ELECTROSTATIC CONTRIBUTION TO GOLD NANOPARTICLE-PROTEIN BINDING. **Ailin Wang**, Randika Perera, Nicholas Fitzkee

- 2486-Pos BOARD B630**
FILOVIRUS MIMICS DELIVER EFFECTIVELY. **Praful R. Nair**, Kyle R. Spinler, Mohammed R. Vakili, Afsaneh Lavasanifar, Dennis E. Discher
- 2487-Pos BOARD B631**
WORMPHARM: A MICROFLUIDIC PLATFORM FOR PHARMACOGENETIC STUDIES ON C. ELEGANS. **Andrew Moore**, Jung Doh, Irem Celen, Michael Moore, Chandran Sabanayagam
- 2488-Pos BOARD B632**
SEPARATION OF PEPTIDES AND INTERACTION WITH FORWARD OSMOSIS BIOMIMETIC MEMBRANES: A SOLUTION DIFFUSION MODEL. **Niada Bajraktari**, Henrik T. Madsen, Mathias F. Gruber, Elzbieta L. Jensen, Henrik Jensen, Claus Hélix-Nielsen
- 2489-Pos BOARD B633**
TRANSLOCATION OF SHORT POLYMERS THROUGH A SIEVE. **Isam Hasan**, Nidhal Sulaiman, Julia Yeomans
- 2490-Pos BOARD B634**
ANOMALOUS IONIC CONDUCTANCE IN CARBON NANOTUBE NANOCHANNELS. **Steven Buchsbaum**, Shirui Guo, Preston Hinkle, Eric Meshot, Anh Pham, Zuzanna Siwy, Francesco Fornasiero
- 2491-Pos BOARD B635**
RADIAL DEPENDENCE OF DNA TRANSLOCATION VELOCITY IN A SOLID-STATE NANOPORE. **Binquan Luan**
- 2492-Pos BOARD B636**
NANO-CONFINED POLYMER STRUCTURES FOR PROTEIN BINDING. **Jaroslav Jacak**, Richard Wollhofen, Andrea Sonnleitner, Thomas A. Klar
- 2493-Pos BOARD B637**
SELF-ASSISTED OPTOTHERMAL TRAPPING OF GOLD NANORODS UNDER TWO-PHOTON EXCITATION. **Hongtao Chen**, Enrico Gratton, Michelle A. Digman
- 2494-Pos BOARD B638**
SEQUENCE DIRECTED FORMATION OF COVALENT PROTEIN-DNA BONDS. **Klaus N. Lovendahl**, Wendy R. Gordon
- 2495-Pos BOARD B639**
STABILITY OF SOLID-STATE NANOPORE FABRICATED BY DIELECTRIC BREAKDOWN. **Cuifeng Ying**, Yanxiao Feng, Yuechuan Zhang, Wenyan Zhou, Wangwei Hui, Deqiang Wang, Jianguo Tian
- 2496-Pos BOARD B640**
ANOMALOUS TRANSIT TIME AND PULSE AMPLITUDE OF HIGHLY CHARGED PARTICLES IN RESISTIVE PULSING. **Yinghua Qiu**, Preston Hinkle, Crystal Yang, Ivan V. Vlassiuk, Zuzanna Siwy
- 2497-Pos BOARD B641**
REAL-TIME STATISTICS ON ION-CHANNEL RECORDINGS USING A NOVEL ALL-IN-ONE BLM EDUCATIONAL KIT WITH EMBEDDED MINIATURIZED AMPLIFIER. Michele Rossi, **Federico Thei**, Marco Bennati, Bajram Hushi, Matteo Marra, Marco Crescentini
- 2498-Pos BOARD B642**
A NEW PROCEDURE FOR MEASURING PARTICLE LENGTH USING THE RESISTIVE PULSE TECHNIQUE WITH IRREGULAR SINGLE MICROPORES. **Preston Hinkle**, Yinghua Qiu, Crystal Yang, Zuzanna Siwy, Arnout Imhof, Henriette Bakker
- 2499-Pos BOARD B643**
TUNING THE PHYSICAL PROPERTIES OF LIPOSOMES TO UNDERSTAND HYDROPHOBIC DRUG DELIVERY MECHANISMS. **Victoria M. Steffes**, Ramsey N. Majzoub, Bretton J. Fletcher, Kai K. Ewert, Cyrus R. Safinya

- 2500-Pos BOARD B644**
3D NANO-ELECTRODES FOR ELECTROPHYSIOLOGY: HOW SIZE EFFECTS SEAL RESISTANCE. **Allister F. McGuire**, Francesca Santoro, Felix Alfonso, Yi Cui, Bianxiao Cui
- 2501-Pos BOARD B645**
QUANTIFYING AMINO ACIDS SPECIFICITY IN THE PROTEIN RADIATION DAMAGE. Senamees S. Khrais, Halima A. AlNaqbi, Selwa M. Boularaoui, Syed M. Tariq, Deborah L. Gater, **Abdel F. Isakovic**
- 2502-Pos BOARD B646**
DETERMINATION OF ELECTROPHORETIC FORCES IN A GEL MATRIX IN DIFFERENT IONIC STRENGTH CONDITIONS. **Rachel Flaugh**, Joshua Lallman, Kristy L. Kounovsky-Shafer

Biosensors II (Boards B647 - B656)

- 2503-Pos BOARD B647**
USE OF WATER-SOLUBLE OXYGEN SENSORS TO STUDY THE OXYGEN CONSUMPTION DURING PHOTOSENSITIZATION WITH HYPERICIN IN VITRO AND IN VIVO. **Veronika Huntosova**, Dominik Belej, Emmanuel Gerelli, Pavol Miskovsky, Georges Wagnieres
- 2504-Pos BOARD B648**
DETECTION OF SHUNT OCCLUSIONS WITHIN CLINICAL RANGE. **David J. Apigo**, Philip L. Bartholomew, Alokik Kanwal, Reginald C. Farrow, Gordon A. Thomas
- 2505-Pos BOARD B649**
NANOPARTICLE SHAPE AND SIZE CHARACTERIZATION WITH SOLID STATE NANOPORES. **Santoshi Nandivada**, Mourad Benamara, Jiali Li
- 2506-Pos BOARD B650**
REAL TIME, IN VIVO PHOTOACOUSTIC POTASSIUM IMAGING AND MONITORING. **Jeffrey Folz**, Chang Lee, Wuliang Zhang, Raoul Kopelman
- 2507-Pos BOARD B651**
STEPWISE TRANSPORT OF STRETCHED SSDNA THROUGH GRAPHENE NANOPORES. **Hu Qiu**, Aditya Sarathy, Jean-Pierre Leburton, Klaus Schulten
- 2508-Pos BOARD B652**
APOLLO-NADP⁺ IN 3D: FLUORESCENCE ANISOTROPY IMAGING OF A HOMOFRET-BASED BIOSENSOR FOR NADP⁺ IN LIVING TISSUE. **Cindy V. Bui**, William D. Cameron, Jonathan V. Rocheleau
- 2509-Pos BOARD B653**
DEVELOPING SENSORS OF CHEMICAL WARFARE AGENT SIMULANTS WITH FLUORESCENT DYE MOLECULES. **Suhyun Yoon**, David Keller
- 2510-Pos BOARD B654**
TARGETING THE SERCA-PLB COMPLEX FOR TREATMENT OF HEART FAILURE. **Daniel Stroik**, Tory Schaaf, Simon Gruber, Prachi Bawaskar, Gregory D. Gillispie, Roger Hajjar, David D. Thomas
- 2511-Pos BOARD B655**
DEVELOPMENT AND CHARACTERIZATION OF A NOVEL BISTABLE DNA SENSOR FOR ANTI-HIV DRUG DISCOVERY. **Nan Thuzar Myint**, Raghavaran M. Iyer, Deborah J. Kerwood, Phillip N. Borer
- 2512-Pos BOARD B656**
DETECTING THE SEQUENCE OF AMINO ACID QUADROMERS IN PROTEIN MOLECULES USING A SUB-NANOMETER-DIAMETER PORE. **Zhuxin Dong**, Eamonn Kennedy, Clare Tennant, Gregory L. Timp



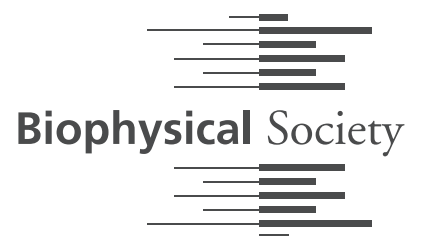
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Wednesday, March 2, 2016

Daily Program Summary

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

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8:00 AM–11:00 AM	New Council Meeting	Room 510
8:15 AM–10:15 AM	Symposium: Voltage Sensing and Gating Chair: <i>Peter Larsson, University of Miami</i>	Petree Hall C
8:15 AM–10:15 AM	CONFORMATIONAL CHANGES DURING VOLTAGE SENSING. <i>Francisco Bezanilla</i> VOLTAGE-SENSING DOMAINS AS ION CHANNELS. <i>Francesco Tombola</i> MOLECULAR LOCATIONS OF GATES IN POTASSIUM CHANNELS. <i>Crina Nimigean</i> MECHANISMS OF KCNE BETA SUBUNIT MODULATION OF VOLTAGE SENSING AND GATING IN KCNQ1 CHANNELS. <i>Peter Larsson</i>	
8:15 AM–10:15 AM	Symposium: Chemomechanical Coupling in Immune Response Chair: <i>Jay Groves, University of California, Berkeley</i>	Petree Hall D
8:15 AM–10:15 AM	SIGNALING REACTIONS ON MEMBRANE SURFACES: THE ROLES OF SPACE, FORCE, AND TIME. <i>Jay Groves</i> CHEMOMECHANICAL INTERACTIONS ENHANCE IGE-FC ϵ RI SIGNALING IN MAST CELLS. <i>Barbara Baird</i> PROTEIN NANOCLUSTERING AS FUNCTIONAL UNIT OF IMMUNE CELLS. <i>Maria Garcia-Parajo</i> ANATOMIC COMPARTMENTALIZATION REGULATES TCR-Pep-MHC INTERACTION AND FATE. <i>Cheng Zhu</i>	
8:15 AM–10:15 AM	Platform: Cell Mechanics, Mechanosensing, and Motility II	Room 502A
8:15 AM–10:15 AM	Platform: Protein Dynamics and Allostery II	Room 502B
8:15 AM–10:15 AM	Platform: Protein-Nucleic Acid Interaction	Room 515A
8:15 AM–10:15 AM	Platform: Force Spectroscopy and Scanning Probe Microscopy	Room 515B
8:15 AM–10:15 AM	Platform: Biosensors	Room 501ABC
8:15 AM–10:15 AM	Platform: Membrane Fusion	Room 511ABC
10:30 AM–12:30 PM	Poster Presentations and Late Posters	West Hall
1:00 PM–3:00 PM	Symposium: Multiscale Correlative Imaging Techniques Chair: <i>Jacob Hoogenboom, Delft University of Technology, Netherlands</i>	Petree Hall C
1:00 PM–3:00 PM	CORRELATIVE IMAGING OF INTRACELLULAR TRANSPORT PROCESSES AT HIGH RESOLUTION. <i>Melike Lakadamyali</i> VIVO IMAGING OF CELLULAR DYNAMICS FROM THE NANOSCALE TO THE MACROSCALE. <i>Eric Betzig</i> LOCALIZING MOLECULES IN CELLULAR CT SCANS. <i>Carolyn Larabell</i> MATCHING SCALES AND CAPABILITIES WITH INTEGRATED FLUORESCENCE AND ELECTRON MICROSCOPY. <i>Jacob P. Hoogenboom</i>	
1:00 PM–3:00 PM	Symposium: Crowding and Order in the Genome Chair: <i>John Marko, Northwestern University</i>	Petree Hall D
1:00 PM–3:00 PM	PREDICTABILITY AND CONTROL OF GENE BURSTING IN LIVE MAMMALIAN CELLS. <i>Ibrahim Cissé</i> SINGLE-MOLECULE IMAGING OF RNA IN LIVE CELLS. <i>Maria Carmo-Fonseca</i> SEEING IS BELIEVING VS SEEING IS DECEIVING IN THE CELL NUCLEUS. <i>David Grunwald</i> MICROMECHANICAL STUDY OF MAMMALIAN METAPHASE CHROMOSOMES AND NUCLEI. <i>John F. Marko</i>	
1:00 PM–3:00 PM	Platform: Molecular Dynamics II	Room 502A
1:00 PM–3:00 PM	Platform: Cardiac Muscle Regulation	Room 502B
1:00 PM–3:00 PM	Platform: Ion Channels, Pharmacology, and Disease	Room 515A
1:00 PM–3:00 PM	Platform: Protein Plasticity & Binding	Room 515B
1:00 PM–3:00 PM	Platform: Micro- and Nanotechnology	Room 501ABC
1:00 PM–3:00 PM	Platform: Membrane Receptors and Signal Transduction	Room 511ABC

Wednesday, March 2

New Council Meeting

8:00 AM - 11:00 AM, ROOM 510

Symposium

Voltage Sensing and Gating

8:15 AM - 10:15 AM, PETREE HALL C

Chair

Peter Larsson, University of Miami

2513-SYMP 8:15 AM
CONFORMATIONAL CHANGES DURING VOLTAGE SENSING. **Francisco Bezanilla**, Jerome Lacroix, Michael Priest

2514-SYMP 8:45 AM
VOLTAGE-SENSING DOMAINS AS ION CHANNELS. **Francesco Tombola**

2515-SYMP 9:15 AM
MOLECULAR LOCATIONS OF GATES IN POTASSIUM CHANNELS. **Crina Nimigean**

2516-SYMP 9:45 AM
MECHANISMS OF KCNE BETA SUBUNIT MODULATION OF VOLTAGE SENSING AND GATING IN KCNQ1 CHANNELS. **Peter Larsson**

Symposium

Chemomechanical Coupling in Immune Response

8:15 AM - 10:15 AM, PETREE HALL D

Chair

Jay Groves, University of California, Berkeley

2517-SYMP 8:15 AM
SIGNALING REACTIONS ON MEMBRANE SURFACES: THE ROLES OF SPACE, FORCE, AND TIME. **Jay Groves**

2518-SYMP 8:45 AM
CHEMOMECHANICAL INTERACTIONS ENHANCE IGE-FC ϵ R1 SIGNALING IN MAST CELLS. **Barbara Baird**

2519-SYMP 9:15 AM
PROTEIN NANOCLUSTERING AS FUNCTIONAL UNIT OF IMMUNE CELLS. **Maria Garcia-Parajo**

2520-SYMP 9:45 AM
ANATOMIC COMPARTMENTALIZATION REGULATES TCR-PEP-MHC INTERACTION AND FATE. **Cheng Zhu**, Prithiviraj Jothikumar, Young-Jin Seo, Arash Grakoui

Platform

Cell Mechanics, Mechanosensing, and Motility II

8:15 AM - 10:15 AM, ROOM 502A

Co-Chairs

Joshua Franco, University of California, San Diego

Daniel Hammer, University of Pennsylvania

2521-PLAT 8:15 AM
THE FORCE DYNAMICS OF INTERACTING CELLS. **Daniel A. Hammer**, Micah Dembo, Marc Herant, Olga Shebanova

2522-PLAT 8:30 AM EDUCATION TRAVEL AWARDEE
MECHANOBIOLOGY IN CELL-CELL FUSION: ROLES OF MYOSIN II AND SPECTRIN IN MECHANOSENSING AND FORCE GENERATION DURING CELL-CELL FUSION. **Ji Hoon Kim**, Elizabeth Chen

2523-PLAT 8:45 AM
MYOSIN II FACILITATES LIGAND DISCRIMINATION DURING T CELL ACTIVATION. **Jinsung Hong**, Sricharan Murugesan, John A. Hammer

2524-PLAT 9:00 AM
MECHANISMS OF B CELL ANTIGEN EXTRACTION REVEALED BY DNA-BASED MOLECULAR SENSORS. **Katelyn M. Spillane**, Pavel Tolar

2525-PLAT 9:15 AM
CELL MIGRATION IN MECHANICALLY RESISTIVE ENVIRONMENT. **Nishit Srivastava**, Robert Kay, Alexandre Kabla

2526-PLAT 9:30 AM
ACTIN RETROGRADE FLOWS STABILIZE CELL POLARITY BY MECHANOCHEMICAL FEEDBACK LOOPS IN MIGRATING CELLS. **Stefan Wieser**, Verena Ruprecht, Monika Ritsch-Marte, Carl-Philipp Heisenberg, Matthieu Piel, Michael Sixt

2527-PLAT 9:45 AM
MECHANICS OF ADHESION DEPENDENT AND INDEPENDENT NEUTROPHIL MIGRATION IN THREE-DIMENSIONAL EXTRA-CELLULAR MATRICES. **Joshua Francois**, Ruedi Meili, Juan Carlos del Alamo, Richard A. Firtel, Juan C. Lasheras

2528-PLAT 10:00 AM
CORTICAL CONTRACTION WAVES AT CYTOKINESIS OF LARGE CELLS. **Johanna Bischof**, Christoph Brand, Ulrich Schwarz, Peter Lenart

Platform

Protein Dynamics and Allostery II

8:15 AM - 10:15 AM, ROOM 502B

Co-Chairs

Ernesto Fuentes, University of Iowa

Henrike Mueller-Werkmeister, University of Toronto, Canada

2529-PLAT 8:15 AM
ALLOSTERIC REGULATION OF UHRF1 FOR DNA METHYLATION MAINTENANCE. **Zhi-Min Zhang**, Scott B. Rothbart, David F. Allison, Joseph S. Harrison, Yinsheng Wang, Brian D. Strahl, Gang G. Wang, **Jikui Song**

2530-PLAT 8:30 AM
OPTICAL ABSORBANCE SENSITIVITY TO RUGGED ENERGY LANDSCAPE. **Katherine A. Niessen**, Edward Snell, Andrea G. Markelz

2531-PLAT 8:45 AM
ROLE OF AROMATIC RESIDUES IN DYNAMIC NETWORKS IN DREAM/KCHIP3. **Walter G. Gonzalez**, Maurizio Diaz, David H. Perez, Jaroslava Miksovska

2532-PLAT 9:00 AM
CAPTURING FUNCTIONALLY RELEVANT PROTEIN MOTIONS AT THE ATOMIC LEVEL: FEMTOSECOND TIME RESOLVED SERIAL CRYSTALLOGRAPHY OF LIGAND DISSOCIATION OF CARBOXY-MYOGLOBIN. **Henrike M. Müller-Werkmeister**, Anling Kuo, Helen M. Ginn, Saeed Oghbaey, Antoine Sarracini, Olivier Pare-Labrosse, Darren Sherrell, Alexander Marx, Sascha W. Epp, Arwen R. Pearson, Robin L. Owen, David I. Stuart, Oliver P. Ernst, R. J. Dwayne Miller

2533-PLAT 9:15 AM
MECHANISM OF CYCLIC AMP PARTIAL AGONISM IN PROTEIN KINASE G (PKG). **Bryan VanSchouwen**, Rajeevan Selvaratnam, Rajanish Giri, Robin Lorenz, Friedrich W. Herberg, Choel Kim, Giuseppe Melacini

2534-PLAT 9:30 AM
 MAPPING MOTIONS AND STRUCTURE TO A STATE NECESSARY FOR OLIGOMERIZATION OF A LARGE GTPASE: A JOINT SAXS, NSE, EPR AND FRET STUDY. **Thomas-Otavio Peulen**, Carola S. Hengstenberg, Ralf Biehl, Mykola Dimura, Alessandro Valeri, Semra Ince, Tobias Vöpel, Bela Farago, Holger Gohlke, Christian Herrmann, Johann Klare, Andreas Stadler, Claus A.M. Seidel

2535-PLAT 9:45 AM
 TONB BINDING PRODUCES ALLOSTERIC CHANGES IN THE OUTER LOOPS AND SUBSTRATE BINDING SITE OF THE TBDT BTUB. **Arthur K. Sikora**, David Cafiso

2536-PLAT 10:00 AM
 CONFORMATIONAL DYNAMICS AND STRUCTURE UNDERLIE THE NOVEL LIGAND BINDING SPECIFICITY OF A TIAM1 PDZ DOMAIN MUTANT. **Ernesto J. Fuentes**, Xu Liu, David C. Speckhard, Tyson R. Shepherd, Sarah R. Hengel, Liping Liping, C. Andrew Fowler, Lokesh Gakhar

**Platform
 Protein-Nucleic Acid Interaction**

8:15 AM - 10:15 AM, ROOM 515A

Co-Chairs

Timothy Craggs, University of Oxford, United Kingdom
Steve Harvey, University of Pennsylvania

2537-PLAT 8:15 AM
 HOW STRUCTURE-SPECIFIC DNA-BINDING PROTEINS RECOGNISE THEIR SUBSTRATES. **Timothy D. Craggs**, Marko Sustarsic, Majid Mosayebi, Hendrik Kaju, Johannes Hohlbein, Phillip C. Biggin, Jonathan P.K. Doye, Achilles N. Kapanidis

2538-PLAT 8:30 AM
 FLIPPING BY DNA BOUND PROTEINS OCCURS THROUGH RAPID REBINDING. **Mahipal Ganji**, Margreet Docter, Stuart F.J. Le Grice, Elio Abbondanzieri

2539-PLAT 8:45 AM
 STEPWISE NUCLEOSOME TRANSLOCATION BY RSC REMODELING COMPLEXES. **Bryan T. Harada**, William L. Hwang, Sebastian Deindl, Blaine Bartholomew, Xiaowei Zhuang

2540-PLAT 9:00 AM
 PROBING HELICASE DYNAMICS ON NUCLEIC ACIDS THROUGH FLUORESCENCE-FORCE MEASUREMENTS. **Chang-Ting Lin**, Meigang Gu, Charles M. Rice, Virginia A. Zakian, Taekjip Ha Ha

2541-PLAT 9:15 AM
 THE SCRUNCHWORM HYPOTHESIS: TRANSITIONS BETWEEN A-DNA AND B-DNA PROVIDE THE DRIVING FORCE FOR GENOME PACKAGING IN DOUBLE-STRANDED DNA BACTERIOPHAGES. **Stephen C. Harvey**, James T. Waters, James C. Gumbart, Harold D. Kim

2542-PLAT 9:30 AM
 TFAM REGULATES MITOCHONDRIAL TRANSCRIPTION THROUGH SEQUENCE-SPECIFIC DNA LOOPING. **Divakaran Murugesapillai**, Maria F. Lodeiro, Louis J. Maher III, Craig E. Cameron, Mark C. Williams

2543-PLAT 9:45 AM
 VISUALIZING THE ASSEMBLY OF DNA CONDENSATION CLUSTERS BY SMC USING SINGLE-MOLECULE MICROSCOPY. **Hyeonjun Kim**, Joseph J. Loparo

2544-PLAT 10:00 AM
 SINGLE MOLECULE IMAGING OF P53'S DYNAMIC INTERACTION WITH CHROMATIN. Vincent Wong, Zhe Liu, Sam Peng, Charles Kenworthy, Wei-Li Liu, **Robert A Coleman**

**Platform
 Force Spectroscopy and Scanning Probe
 Microscopy**

8:15 AM - 10:15 AM, ROOM 515B

Co-Chairs

Pieter De Beule, International Iberian Nanotechnology Laboratory, Portugal
A. Catalina Velez-Ortega, University of Kentucky

2545-PLAT 8:15 AM
 ACOUSTIC FORCE SPECTROSCOPY: AN INSTRUMENT TO PERFORM HIGHLY PARALLEL SINGLE MOLECULE MEASUREMENTS. **Gerrit Sitters**, Felix Oswald, Douwe Kamsma, Jerom Langeveld, Willem Peutz, Erwin Peterman, Gijs Wuite, Olivier Heyning

2546-PLAT 8:30 AM
 A NOVEL METHOD FOR MULTIPLEXED NANOMETRIC BEAD TRACKING. **Thomas Brouwer**, John van Noort

2547-PLAT 8:45 AM
 SIMULTANEOUS ADVANCED MICROSCOPIES FOR LIVE CELL SIGNALING DYNAMICS INVESTIGATIONS. Adelaide Miranda, Marco Martins, **Pieter A. A. De Beule**

2548-PLAT 9:00 AM
 VIDEO-BASED FORCE DETECTION IN OPTICAL TWEEZERS TO MEASURE DNA TRANSLOCATION THROUGH SI-NX AND LIPID-COATED NANOPORES. **Andy Sischka**, Sebastian Knust, Lukas Galla, Andreas J. Meyer, Andre Spiering, Michael Mayer, Adam R. Hall, Peter Reimann, Karsten Gall, Dario Anselmetti

2549-PLAT 9:15 AM
 ADAPTIVE HOPPING PROBE ION CONDUCTANCE MICROSCOPY OF LIVE CELLS AT ~5-10 NM RESOLUTION. **A. Catalina Velez-Ortega**, Oleg Belov, Pavel Novak, Samir A. Rawashdeh, Yuri E. Korchev, Gregory I. Frolenkov

2550-PLAT 9:30 AM
 DIRECT OBSERVATION OF TRANSITION PATHS DURING THE FOLDING OF PROTEINS AND NUCLEIC ACIDS. Krishna Neupane, Daniel AN Foster, Derek R. Dee, Hao Yu, Feng Wang, **Michael T. Woodside**

2551-PLAT 9:45 AM
 EQUILIBRIUM FOLDING OF AN INDIVIDUAL BACTERIORHODOPSIN INTO AND OUT OF ITS NATIVE LIPID BILAYER RESOLVES ENERGY LANDSCAPES AND HIDDEN DYNAMICS. **Hao Yu**, Matthew G. W. Siewny, Devin T. Edwards, Aric W. Sanders, Thomas T. Perkins

2552-PLAT 10:00 AM
 BINDING MECHANISM OF PURINE NUCLEOTIDES TO MITOCHONDRIAL UNCOUPLING PROTEINS EXPLORED BY RECOGNITION FORCE SPECTROSCOPY. **Melanie Koehler**, Gabriel Macher, Anne Rupprecht, Rong Zhu, Hermann J. Gruber, Elena E. Pohl, Peter Hinterdorfer

**Platform
 Biosensors**

8:15 AM - 10:15 AM, ROOM 501ABC

Co-Chairs

Loredana Casalis, Elettra Sincrotrone Trieste, Italy
Sergey Sekatskii, École Polytechnique Fédérale de Lausanne, Switzerland

2553-PLAT 8:15 AM INTERNATIONAL TRAVEL AWARDEE
 CONTROLLING THE NANOSCOPIC CONFINEMENT OF ENZYMES INSIDE CLYA NANOPORES FOR SINGLE-PROTEIN STUDIES. **Annemie Biesemans**, Misha Soskine, Giovanni Maglia

2554-PLAT 8:30 AM
LABEL-FREE OPTICAL BIOSENSOR BASED ON PHOTONIC CRYSTAL SURFACE WAVES REVEALS BINDING KINETICS OF ANTIBODIES TO LIVING BACTERIA IN REAL TIME. Ekaterina Rostova, Giovanni Dietler, **Sergey K. Sekatskii**

2555-PLAT 8:45 AM
SINGLE WAVELENGTH EXCITATION DUAL COLOR FLIM FOR MULTIPLEXING GENETICALLY ENCODED FRET BIOSENSORS. **Claire Demeautis**, François Sipieter, Julien Roul, Catherine Chapuis, Sergi Padilla-Parra, Franck Riquet, Marc Tramier

2556-PLAT 9:00 AM
HIGH-RESOLUTION ANALYSIS OF MOLECULAR OXYGEN IN MAMMALIAN CELL MODELS BY PHOSPHORESCENCE LIFETIME IMAGING MICROSCOPY. **Ruslan I. Dmitriev**, James Jenkins, Irina A. Okkelman, Dmitri B. Papkovsky

2557-PLAT 9:15 AM
A NANO-IMMUNOASSAY BASED ON FLUORESCENCE AND ATOMIC FORCE SPECTROSCOPY FOR THE DETECTION OF CIRCULATING CANCER BIOMARKERS: THE CASE OF HER2 POSITIVE BREAST CANCER. **Loredana Casalis**, Elena Ambrosetti, Pietro Parisse, Alessandro Bosco, Ario De Marco, Elda Tagliabue

2558-PLAT 9:30 AM
DETECTION OF A GEOGRAPHICALLY DIVERSE MALARIAL BIOMARKER VIA MULTI-EPI TOPE TARGETED SCREENING. **JingXin Liang**, Arundhati Nag, Samir Das, David Bunck, Amy McCarthy, Anvita Mishra, John E. Heath, Belen Villalonga, James R. Heath

2559-PLAT 9:45 AM
NANOCUSTER BEACONS FOR DETECTION OF A SINGLE N6-METHYL-ADENINE EPIGENETIC MODIFICATION. Yu-An Chen, Judy M. Oblisca, Yen-Liang Liu, Cong Liu, Mary L. Gwozdz, **Tim Yeh**

2560-PLAT 10:00 AM
SENSING MEMBRANE POTENTIAL BY INORGANIC SEMICONDUCTOR NANORODS. Kyoungwon Park+, **Yung Kuo**, Volodymyr Shvadchak, Antonino Ingargiola, Xinghong Dai, Lawrence Hsiung, Wookyeom Kim, Z. Hong Zhou, Peng Zou, Alex J. Levine, Jack Li, Shimon Weiss

Platform Membrane Fusion 8:15 AM - 10:15 AM, ROOM 511ABC

Co-Chairs

Claire François-Martin, Ecole Normale Supérieure, France
Chris Stroupe, University of Virginia

2561-PLAT 8:15 AM
EXPERIMENTAL MEASUREMENT OF THE ACTIVATION ENERGY OF PHOSPHOLIPID MEMBRANE FUSION. **Claire François-Martin**, James E Rothman, Frédéric Pincet

2562-PLAT 8:30 AM
PLANAR PORE-SPANNING MEMBRANES: A PLATFORM TO STUDY SNARE-MEDIATED FUSION PROCESSES. Raphael Hubrich, Jan Kuhlmann, Lando LG Schwenen, Dragomir Milovanovic, Reinhard Jahn, Burkhard Geil, **Claudia Steinem**

2563-PLAT 8:45 AM
DIRECT QUANTITATIVE DETECTION OF DOC2B-INDUCED HEMIFUSION IN OPTICALLY TRAPPED MEMBRANES. **Ineke Brouwer**, Asiya Giniatullina, Niels Laurens, Jan R.T. van Weering, Dirk Bald, Alexander J.A. Groffen, Gijs J.L. Wuite

2564-PLAT 9:00 AM
CELL FUSION STAGE IN OSTEOCLAST FORMATION. **Santosh K. Verma**, Evgenia Leikina, Kamran Melikov, Leonid V. Chernomordik

2565-PLAT 9:15 AM
THE ROLE OF ACIDIC PH IN EBOLA MEDIATED CELL-CELL FUSION. **Ruben Markosyan**, Grigory Melikian, Chungui Miao, Shan-Lu Liu, Fredric S. Cohen

2566-PLAT 9:30 AM INTERNATIONAL TRAVEL AWARDEE
THE MECHANISM OF HIV ENTRY INHIBITION BY 25-HYDROXYCHOLESTEROL. **Bárbara Gomes**, Axel Hollmann, Nuno C. Santos

2567-PLAT 9:45 AM
RECEPTOR-MEDIATED HDL-LIPID UPTAKE IS REGULATED BY ELASTIC PROPERTIES OF THE PLASMA MEMBRANE. Birgit Plochberger, Clemens Roehrl, Johannes Preiner, Julian Weghuber, Erdinc Sezgin, Peter Hinterdorfer, Herbert Stangl, **Gerhard J. Schuetz**

2568-PLAT 10:00 AM
THE HOPS/CLASS C VPS COMPLEX TETHERS MEMBRANES BY BINDING TO A RAB GTPASE IN ONE MEMBRANE AND DIRECTLY TO A SECOND MEMBRANE VIA A CURVATURE-SENSING MOTIF. **Christopher Stroupe**

Poster Presentations and Late Posters 10:30 AM - 12:30 PM, WEST HALL

Symposium Multiscale Correlative Imaging Techniques 1:00 PM - 3:00 PM, PETREE HALL C

Chair

Jacob Hoogenboom, Delft University of Technology, Netherlands

2569-SYMP 1:00 PM
CORRELATIVE IMAGING OF INTRACELLULAR TRANSPORT PROCESSES AT HIGH RESOLUTION. **Melike Lakadamyalı**

2570-SYMP 1:30 PM
IN VIVO IMAGING OF CELLULAR DYNAMICS FROM THE NANOSCALE TO THE MACROSCALE. **Eric Betzig**

2571-SYMP 2:00 PM
LOCALIZING MOLECULES IN CELLULAR CT SCANS. **Carolyn Larabell**, Gerry McDermott, Mark Le Gros

2572-SYMP 2:30 PM
MATCHING SCALES AND CAPABILITIES WITH INTEGRATED FLUORESCENCE AND ELECTRON MICROSCOPY. **Jacob P. Hoogenboom**

Symposium Crowding and Order in the Genome 1:00 PM - 3:00 PM, PETREE HALL D

Chair

John Marko, Northwestern University

2573-SYMP 1:00 PM
PREDICTABILITY AND CONTROL OF GENE BURSTING IN LIVE MAMMALIAN CELLS. **Ibrahim Cissé**

2574-SYMP 1:30 PM
SINGLE-MOLECULE IMAGING OF RNA IN LIVE CELLS. **Maria Carmo-Fonseca**

NO ABSTRACT 2:00 PM
SEEING IS BELIEVING VS SEEING IS DECEIVING IN THE CELL NUCLEUS. **David Grunwald**

2575-SYMP 2:30 PM
MICROMECHANICAL STUDY OF MAMMALIAN METAPHASE CHROMOSOMES AND NUCLEI. **John F. Marko**

Platform Molecular Dynamics II

1:00 PM - 3:00 PM, ROOM 502A

Co-Chairs

Tristan Bereau, Max Planck Institute for Polymer Research, Germany
Tobin Sosnick, University of Chicago

2576-PLAT 1:00 PM

RNA CONFORMATIONAL ENSEMBLES: NARROWING THE GAP BETWEEN EXPERIMENTS AND SIMULATIONS WITH METADYNAMICS. **Alejandro Gil-Ley**, Sandro Bottaro, Giovanni Bussi

2577-PLAT 1:15 PM

APPLICATION OF THE STRING AND 2D HAMILTONIAN REPLICA EXCHANGE UMBRELLA SAMPLING METHODS FOR THE STUDY OF CONFORMATIONAL CHANGES IN THE BACTERIAL ASPARTATE TRANSPORTER GLT(PH). **Hristina R. Zhekova**, Bogdan Lev, Sergei Noskov

2578-PLAT 1:30 PM

EDUCATION TRAVEL AWARDEE

QUANTIFYING MACROMOLECULAR TRANSITION PATHS WITH PATH SIMILARITY ANALYSIS. **Sean L. Seyler**, Avishek Kumar, Taylor Colburn, Michael F. Thorpe, Oliver Beckstein

2579-PLAT 1:45 PM

INVESTIGATING KINETICS OF CONFORMATIONAL CHANGE USING MOLECULAR DYNAMICS AND MILESTONING. **Hiroshi Fujisaki**, Ayori Mitsutake

2580-PLAT 2:00 PM

IMPROVED KINETICS OF MOLECULAR SIMULATIONS USING BIASED MARKOV STATE MODELS. Joseph F. Rudzinski, Kurt Kremer, **Tristan Bereau**

2581-PLAT 2:15 PM

UPSIDE: A NEW DYNAMICS METHOD CAPABLE OF COOPERATIVE DE NOVO PROTEIN FOLDING IN CPU-HOURS. **Tobin R. Sosnick**, John M. Jumper, Karl F. Freed

2582-PLAT 2:30 PM

MODELLING CYSTEINE DISULFIDE EXCHANGE REACTIONS BY MOLECULAR DYNAMICS SIMULATIONS. **Katra Kolšek**, Camilo Aponte-Santamaría, Frauke Gräter

2583-PLAT 2:45 PM

CLASSICAL DENSITY FUNCTIONAL THEORY FOR IMPLICIT SOLVENT SIMULATIONS. **Eric A. Mills**, Steven S. Plotkin

Platform Cardiac Muscle Regulation

1:00 PM - 3:00 PM, ROOM 502B

Co-Chairs

Nazha Hamdani, Ruhr University Bochum, Germany
Alla Kostyukova, Washington State University

2584-PLAT 1:00 PM

DOES TROPOMYOSIN SLIDE OR ROLL OVER F-ACTIN DURING REGULATORY TRANSITIONS? Michael Rynkiewicz, Veronika Schott, Marek Orzechowski, Stefan Fischer, **William Lehman**

2585-PLAT 1:15 PM

TROPOMYOSIN DYNAMICS DURING CARDIAC THIN FILAMENT ACTIVATION AS GOVERNED BY A MULTI-WELL ENERGY LANDSCAPE. **Yasser Aboelkassem**, Natalia Trayanova

2586-PLAT 1:30 PM

INVESTIGATING COOPERATIVITY USING A NEW BIOPHYSICALLY DETAILED CARDIAC CONTRACTION MODEL. **Sander Land**, Steven A. Niederer

2587-PLAT 1:45 PM

CARDIOMYOPATHY-ASSOCIATED MUTATION K15N IN TROPOMYOSIN AFFECTS ITS INTERACTION WITH LEIOMODIN AND TROPOMODULIN. Mert Colpan, Dmitri Tolkatchev, Samantha Grover, Gregory L. Helms, John R. Cort, Natalia Moroz, **Alla S. Kostyukova**

2588-PLAT 2:00 PM

INTEGRATION OF CARDIAC TROPONIN I PHOSPHORYLATIONS TO MODULATE FUNCTION. **Hussam E. Salhi**, Nicholas P. Gualtieri, Shane D. Walton, Elizabeth A. Brundage, Jonathan P. Davis, Brandon J. Biesiadecki

2589-PLAT 2:15 PM

CROSSTALK WITHIN CARDIAC TROPONIN COMPLEX WITH THE R145W MUTATION IN CARDIAC TROPONIN I. **Nikolai Smolin**, Alexey V. Dvornikov, Jodi L. Martin, Seth L. Robia, Pieter P. de Tombe

2590-PLAT 2:30 PM

CMYBP-C PHOSPHORYLATION MODULATES SARCOMERE LENGTH-DEPENDENT CHANGES IN CARDIAC MUSCLE CONTRACTILE FUNCTION. **Ranganath Mamidi**, Kenneth S. Gresham, Julian E. Stelzer

2591-PLAT 2:45 PM

IMPACT OF CGMP-PKG PATHWAY MODULATION ON TITIN PHOSPHORYLATION AND TITIN-BASED MYOCARDIAL PASSIVE STIFFNESS. **Nazha Hamdani**, Melissa Herwig, Soraya Heopler, Doris Koesling, Marcus Kreuger, Michaela Kuhn, Wolfgang A. Linke

Platform

Ion Channels, Pharmacology, and Disease

1:00 PM - 3:00 PM, ROOM 515A

Co-Chairs

Aurelia Honerkamp-Smith, University of Cambridge, United Kingdom
Harley Kurata, University of Alberta, Canada

2592-PLAT 1:00 PM

POSITIVE ALLOSTERIC MODULATION OF SK CHANNELS BY RILUZOLE. Young-Woo Nam, Sara Ali, Stephen Chiang, Tia Alexander, **Miao Zhang**

2593-PLAT 1:15 PM

DEFINING THE MOLECULAR MECHANISMS OF SUBTYPE SPECIFIC KCNQ2/3 POTASSIUM CHANNEL ACTIVATORS. **Wei-Ting (Alice) Wang**, Michael Yau, Harley Kurata

2594-PLAT 1:30 PM

VOLTAGE-DEPENDENT ACCESSIBILITY OF PHOSPHORYLATION SITES AT THE CARBOXY-TERMINAL DOMAIN OF KV1.3 CHANNELS DETERMINES KV1.3-INDUCED CELL PROLIFERATION. **Teresa Pérez-García**, Pilar Ciudad, Laura Jiménez-Perez, Ines Alvarez-Miguel, Alba Santos-Hipolito, Esperanza Alonso, Miguel A. de la Fuente, José R. López-López

2595-PLAT 1:45 PM

USING UNNATURAL AMINO ACIDS TO PROBE THE MOLECULAR BASIS FOR HERG DRUG BLOCK. **Logan Macdonald**, Robin Y. Kim, Harley T. Kurata, Christopher Ahern, David Fedida

2596-PLAT 2:00 PM

MANUAL PATCH-CLAMP RECORDING FOR MEDIUM-THROUGHPUT ION CHANNEL DRUG SCREENING: ASSAY VALIDATION BY SEARCHING FOR A BLOCKER OF NUCLEAR MONOVALENT CATIONIC CHANNEL. **Viktor Yarotsky**, Robert T. Dirksen

2597-PLAT 2:15 PM

ON THE RELATION BETWEEN HERG CHANNEL BLOCK IN CELL LINE AND ACTION POTENTIAL PROLONGATION IN HUMAN IPSC CARDIOMYOCYTES. **Priyanka Saxena**, Maria Hortigon-Vinagre, Stanislav Beyl, Igor Baburin,

Anna Costa, Adriaan P IJzerman, Philipp K ugler, Eugen Timin, Godfrey Smith, Steffen Hering

2598-PLAT 2:30 PM
SOMATIC MOSAICISM OF NOVEL SCN5A MUTATION IN PURKINJE SYSTEM (PS) MAY UNDERLIE 2:1 BLOCK IN AN INFANT WITH LONG QT SYNDROME (LQTS). **Joseph K. Yu**, Patrick M. Boyle, Thomas O'Hara, James R. Priest, Euan Ashley, Natalia A. Trayanova

2599-PLAT 2:45 PM
THE VOLTAGE-GATED POTASSIUM CHANNEL KV1.3 AS A TARGET FOR INHIBITING DETRIMENTAL M1 MICROGLIA FUNCTIONS. Yi-Je Chen, Hai M. Nguyen, Izumi Maezawa, Lee-Way Jin, **Heike Wulff**

Platform Protein Plasticity & Binding

1:00 PM - 3:00 PM, ROOM 515B

Co-Chairs

Margaret Cheung, University of Houston
Oliver Fiset, Ruhr-University Bochum, Germany

2600-PLAT 1:00 PM
A STRUCTURAL CHARACTERIZATION OF THE KV7.2-KV7.3 M CHANNEL PROXIMAL C-TERMINUS/CAM COMPLEX. **Roi Strulovich**, William Tobelaim, Bernard Attali, Joel A. Hirsch

2601-PLAT 1:15 PM
LESSONS IN PROTEIN DESIGN FROM COMBINED EVOLUTION AND CONFORMATIONAL DYNAMICS. **Margaret S. Cheung**, Swarnendu Tripathi, M. N. Waxham, Yin Liu

2602-PLAT 1:30 PM
IN SILICO IDENTIFICATION OF BINDING SITES RESPONSIBLE FOR SPECIES SPECIFICITY ON HUMAN CD81 AND HEPATITIS C VIRUS E2 PROTEIN. **Chun-Chun Chang**, Hao-Jen Hsu, Je-Wen Liou

2603-PLAT 1:45 PM
SINGLE-MOLECULE EXPERIMENTS TO RESOLVE STRUCTURAL AND MECHANICAL PROPERTIES OF CONDENSIN. **Jorine Eeftens**, Allard Katan, Marc Kschonsak, Markus Hassler, Essam Dief, Liza de Wilde, Christian Haering, Cees Dekker

2604-PLAT 2:00 PM
PROTEIN COMPLEXES FROM MD SIMULATIONS: THE ROPE-PULLING GAME OF TAPASIN AND HISTOCOMPATIBILITY MOLECULES. **Olivier Fiset**, Lars V. Sch fer

2605-PLAT 2:15 PM
REMEDIAL SYNERGISTIC CONCOCTION OF β -CYCLODEXTRIN AND NATURALLY OCCURRING POLYPHENOLS TARGETING α -SYNUCLEIN AGGREGATION UNDER CELL MIMICKING CONDITIONS. **Saurabh Gautam**, Prमित K. Chowdhury

2606-PLAT 2:30 PM
CONFORMATIONAL CHANGE IN THE ECTODOMAIN OF THE AMYLOID PRECURSOR PROTEIN IN RESPONSE TO PROTEOLYTIC PROCESSING: THE RANDOM COIL REGIONS MATTER. **Clare Peters-Libeu**

2607-PLAT 2:45 PM
THE NON AMYLOID- β COMPONENT (NAC) OF HUMAN α -SYNUCLEIN OLIGOMERS INDUCES THE FORMATION OF NEW A β OLIGOMERS: INSIGHT INTO THE MOLECULAR INTERACTIONS THAT LINK PARKINSON'S DISEASE AND ALZHEIMER'S DISEASE. **Yoav Atsmon-Raz**, Yifat Miller

Platform Micro- and Nanotechnology

1:00 PM - 3:00 PM, ROOM 501ABC

Co-Chairs

Nicholas Fitzkee, Mississippi State University
Meni Wanunu, Northeastern University

2608-PLAT 1:00 PM
HOW DO NANOPARTICLE SIZE AND PROTEIN CHARGE AFFECT GOLD NANOPARTICLE-PROTEIN INTERACTIONS? **Nicholas C. Fitzkee**, Ailin Wang, Karen E. Woods, Randika Perera

2609-PLAT 1:15 PM
BIOINTERACTIONS OF ULTRASMALL GOLD NANOPARTICLES: INFLUENCE OF NANOPARTICLE SIZE AND SURFACE CHEMISTRY. Luiza L. Knittel, Sergio A. Hassan, Maria A. Aronova, Peter Schuck, Richard D. Leapman, **Aljoscka A. Sousa**

2610-PLAT 1:30 PM
TOWARDS A "GREEN" ANTIMICROBIAL THERAPY: STUDY OF GRAPHENE NANOSHEETS INTERACTION WITH HUMAN PATHOGENS. **Valentina Palmieri**, Massimiliano Papi, Francesca Bugli, Mariacarmela Lauriola, Claudio Conti, Gabriele Ciasca, Giuseppe Maulucci, Maurizio Sanguinetti, Marco De Spirito

2611-PLAT 1:45 PM
TRACKING SINGLE-PARTICLE ROTATION DURING MACROPHAGE UPTAKE. **Lucero Sanchez**, Yan Yu

2612-PLAT 2:00 PM
PEPTIDE TRANSLOCATION THROUGH SINGLE LYSININ CHANNELS. **Nisha Shrestha**, Sheenah Bryant, Xinzhu Pu, Paul Carnig, Juliette Tinker, Charles Hanna, Daniel Fologea

2613-PLAT 2:15 PM
NANOPORE ZERO-MODE WAVEGUIDES FOR DNA SEQUENCING AND BEYOND. Joseph Larkin, Robert Y. Henley, Jonas Korlach, **Meni Wanunu**

2614-PLAT 2:30 PM
CARBON NANOTUBE PORINS: BIOMIMETIC MEMBRANE PORE CHANNELS FOR NANOFUIDIC STUDIES. **Aleksandr Noy**

2615-PLAT 2:45 PM
IMPROVING DNA SEQUENCING WITH NANOPORE MSPA. **Henry Brinkerhoff**

Platform Membrane Receptors and Signal Transduction

1:00 PM - 3:00 PM, ROOM 511ABC

Co-Chairs

Diane Lidke, University of New Mexico
Christian Sieben, Humboldt-University Berlin, Germany

2616-PLAT 1:00 PM
THE DYNAMICS AND LOCALIZATION OF THE EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) ON LIVE CELL PLASMA MEMBRANE STUDIED BY ITIR-FCS. **Shuangru Huang**, Nirmalya Bag, Thorsten Wohland

2617-PLAT 1:15 PM
PROBING THE NON-GENETIC CELL-TO-CELL HETEROGENEITY IN EGFR-MEDIATED MAPK ACTIVATION BY SUPER-RESOLUTION MICROSCOPY. **Oana Coban**

2618-PLAT 1:30 PM
INFLUENZA A VIRUSES USE MULTIVALENT SIALIC ACID CLUSTERS FOR CELL BINDING AND RECEPTOR ACTIVATION. **Christian Sieben**, Suliana Manley

2619-PLAT 1:45 PM
THE BINDING LIFETIME OF SYK KINASE TO THE IMMUNE RECEPTOR FC ϵ R1

REGULATES THE EFFICIENCY OF SIGNAL PROPAGATION. **Samantha L. Schwartz**, Cedric Cleyrat, Bridget S. Wilson, Keith A. Lidke, Diane S. Lidke

2620-PLAT 2:00 PM

DOES RECEPTOR PHOSPHORYLATION AFFECT LATERAL DIMERIZATION? **Deo R. Singh**, Michael Paul, Kalina Hristova

2621-PLAT 2:15 PM

OPTICAL PROBING OF METABOTROPIC GLUTAMATE RECEPTORS. **Josh Levitz**, Chris Habrian, Shashank Bharill, Zhu Fu, Reza Vafabakhsh, Ehud Isacoff

2622-PLAT 2:30 PM

PRECOUPLING OF G PROTEINS WITH GPCRS VISUALIZED BY TWO-PHOTON POLARIZATION MICROSCOPY. **Alexey Bondar**, Adela Brzakova, Stepan Timr, Josef Lazar

2623-PLAT 2:45 PM

MAPPING SINGLE MOLECULE RECEPTOR BINDING TO EARLY CELLULAR ACTIVATION IN LIVING PRIMARY T CELLS. **Jenny J. Lin**, Kate N. Alfieri, Shalini T. Low-Nam, Jay T. Groves

WEDNESDAY POSTER SESSIONS

10:30 AM–12:30 PM, WEST HALL

Below is the list of poster presentations of abstracts submitted by October 1.

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 – B13	Protein Structure and Conformation IV
B14 – B40	Protein Structure, Prediction, and Design
B41 – B70	Protein-Small Molecule Interactions II
B71 – B92	Enzymes Function, Cofactors, and Post-translational Modifications
B93 – B113	Intrinsically Disordered Proteins (IDP) and Aggregates: A β , Tau, and α -Synuclein
B114 – B140	Investigating the Properties of Intrinsically Disordered Proteins (IDP)
B141 – B152	Protein-Nucleic Acid Interactions II
B153 – B175	DNA Structure and Dynamics II
B176 – B204	Membrane Dynamics
B205 – B234	Protein-Lipid Interactions III
B235 – B264	Membrane Structure II
B265 – B283	Cardiac Smooth and Skeletal Muscle Electrophysiology II
B284 – B305	Membrane Receptors and Signal Transduction III
B306 – B316	Exocytosis and Endocytosis II
B317 – B327	Intracellular Transport
B328 – B342	Excitation-Contraction Coupling II
B343 – B347	Voltage-gated K Channels and voltage Mechanisms of Voltage Sensing and Gating III
B348 – B363	Ligand-gated Channels III
B364 – B388	Ion Channel Regulatory Mechanisms
B389 – B407	TRP Channels II
B408 – B420	Myosins
B421 – B437	Cytoskeletal Assemblies and Dynamics
BB438 – B463	Cell Mechanics, Mechanosensing, and Motility III
B464 – B490	Membrane Pumps, Transporters, and Exchangers II
B491 – B497	Computational Neuroscience
B498 – B537	Single-Molecule Spectroscopy
B538 – B567	Molecular Dynamics II
B568 – B591	Optical Microscopy and Super-Resolution Imaging III
B592 – B617	Micro-and Nantotechnology II

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Protein Structure and Conformation IV (Boards B1 - B13)

2624-Pos BOARD B1
CHANGES IN β L-CRYSTALLIN AND OVALBUMIN DUE TO EXPOSURE TO GREEN AND RED LIGHT. **Juan Horacio Espinoza Rodríguez**, Hilda Mercado Uribe

2625-Pos BOARD B2
THE EFFECT OF SMALL MOLECULES ON EARLY AND LATE EVENTS OF ALPHA SYNUCLEIN AGGREGATION IN SOLUTION AND INSIDE LIVING CELLS. **Amrita Kundu**, Sumanta Ghosh, Krishnananda Chattopadhyay

2626-Pos BOARD B3
MENADIONE SUPPRESSES AMYLOID FIBRILLOGENESIS AND CYTOTOXICITY: IMPLICATION IN THE TREATMENT OF SYSTEMIC AMYLOIDOSIS. **Parvez Alam**, Sumit K. Chaturvedi, Mohd K. Siddiqi, Rizwan H. Khan

2627-Pos BOARD B4
OLIGOMERIC STRUCTURES OF AN AGGREGATION-TRIGGERING FRAGMENT OF SOD1 PROTEIN. **Qingwen Zhang**, Yu Zou

2628-Pos BOARD B5
STRUCTURAL REARRANGEMENT FROM OLIGOMER TO FIBRIL IN A DESIGNED AMPHIPHILIC PEPTIDE. **Heng Chi**, Timothy A. Keiderling

2629-Pos BOARD B6
STUDY OF MOLECULAR MECHANISMS OF AMYLOID β -PEPTIDE VARIANTS AGGREGATION IN PRESENCE OF SURFACTANTS. **Michalina Skupin**, Maciej Kozak

2630-Pos BOARD B7
ANOMALOUS IRREVERSIBLE "CONVERSION" OF TAG-BFP FLUORESCENCE SPECTRA IN THE PRESENCE OF TAG-RFP: POSSIBLE MODEL OF PRION INTERACTIONS. **Andrey Samsonov**, Andrea Klarich, Nathan Zenser, Hongyi Zhang, Dmitry Malkov

2631-Pos BOARD B8
COMPARATIVE CONFORMATIONAL DYNAMICS OF CELLULAR PRION PROTEINS TOWARDS ELUCIDATING THE SPECIES BARRIER. **Robyn Hamada**, Jesse Woo, Ronald Shikiya, Patricia Soto

2632-Pos BOARD B9
EXPLORING THE ORB2 FIBRIL CORE. **Alexander S. Falk**, Silvia A. Cervantes, Maria A. Conrad-Soria, Thalia H. Bajakian, Ansgar B. Siemer

2633-Pos BOARD B10
CONFORMATIONAL SHIFTS IN HUNTINGTIN EXON 1 MONOMER ARE DEPENDENT ON TEMPERATURE AND POLYGLUTAMINE LENGTH. Natalie C. Kegulian, **Mario J. Isas**, Sean S. Chung, Nitin K. Pandey, Jose M. Bravo, Ralf Langen

2634-Pos BOARD B11
ASSEMBLY MECHANISM AND NANOMECHANICS OF $A\beta$ IN ALZHEIMER'S DISEASE. Hsien-Shun Liao, **Catherine Stark**, James B. Yao, Havisha Garimella, Paul D. Smith, Curtis W. Meuse, Albert J. Jin

2635-Pos BOARD B12
INVESTIGATION ON PLEXIN RHO GTPASE BINDING DOMAIN (RBD) BINDING WITH SMALL RHO GTPASES USING MOLECULAR DYNAMICS SIMULATIONS. **Liqun Zhang**, Thomas Centa, Matthias Buck

2636-Pos BOARD B13
CONFORMATIONAL PLASTICITY OF THE MAGE-A3 PROTEIN AS A THERAPEUTIC STRATEGY IN MULTIPLE MYELOMA. **Roman Osman**, Hearn J. Cho, Anna H. Mei, Joseph A. Newman, Opher Gileadi

Protein Structure, Prediction, and Design (Boards B14 - B40)

2637-Pos BOARD B14
ENHANCING THE COEVOLUTIONARY SIGNAL. **Travis A. Hoppe**, Pengfei Tian, Robert Best

2638-Pos BOARD B15
ALTERNATIVE APPROACH TO PROTEIN STRUCTURE PREDICTION BASED ON SEQUENTIAL SIMILARITY OF PHYSICAL PROPERTIES. **Yi He**, S. Rackovsky, Yanping Yin, Harold A. Scheraga

2639-Pos BOARD B16
PROTEIN RETHREADING. **Salem Faham**, Sandra Poulos, Austin Yu, Sayeh Agah

2640-Pos BOARD B17
PREDICTION OF PROTEIN RIGID DOMAINS AND HINGE RESIDUES BASED ON GRAPH THEORY AND ELASTIC NETWORK MODEL. **Julian Lee**, Jun Sim, Jaehyun Sim, Eunsung Park

2641-Pos BOARD B18
CHARACTERIZING THE STATISTICAL PROPERTIES OF PROTEIN SURFACES. **Ji Hyun Bak**, Anne-Florence Bitbol, William Bialek

2642-Pos BOARD B19
A NOVEL IN SILICO 4D GEOMETRICAL MEASURE OF THE ACTIVE SITE CORRELATES WITH THE ENZYMIC ACTIVITY OF HCV NS3 PROTEASE; IMPLICATIONS IN CATALYSIS AND DRUG DESIGN. **Mohammad S. Yousef**, Hamzah Hamad, Jeremy Thurston, Thomas Teague, Edward Ackad

2643-Pos BOARD B20
TENSILE MECHANICS OF COILED COIL PROTEIN STRUCTURES. Mojtaba Jokar, **Korosh Torabi**

2644-Pos BOARD B21
DESIGN AND ENGINEERING OF NANOPORES WITH EMERGENT FUNCTIONS. **Giovanni Maglia**

2645-Pos BOARD B22
ON THE COMBINATION OF RESTRAINT-DRIVEN DOCKING OF FLEXIBLE PEPTIDES TO ION CHANNELS - LESSONS LEARNT FROM THE COMPLEX FORMED BY THE SPIDER VENOM PCTX1 AND THE ACID SENSING ION CHANNEL1. **Evelyne Deplazes**, Josephine Davies, Alexandre M. J. J. Bonvin, Alan E. Mark

2646-Pos BOARD B23
DE NOVO DESIGNED PEPTIDES INHIBIT THE CYTOKINES BINDING TO THEIR RECEPTORS FROM MOLECULAR SIMULATIONS AND IN VITRO EXPERIMENTS. **Yi Chung**, Shinn-Jong Jiang, Je-Wen Liou, Hao-Jen Hsu

2647-Pos BOARD B24
MUTUALLY EXCLUSIVE FOLDING AND ITS ESCAPE HATCH: DESIGNING FUNCTIONAL POLYMERS BY ENGINEERED DOMAIN SWAPPING. **Joshua M. Karchin**, Jeung-Hoi Ha, Stewart N. Loh

2648-Pos BOARD B25
COMBINING FRAGMENTATION OF AN AMINO ACYL TRNA SYNTHETASE WITH FUSION TO INTERACTING PROTEINS TO INCREASE CONTROL OVER PROTEIN METABOLIC LABELING. **Emily E. Thomas**

2649-Pos BOARD B26
DE NOVO DESIGN AND IN SILICO OPTIMIZATION OF ANTIBODY-LIKE BINDERS TARGETING EBOLA VIRAL ANTIGEN. **Muyun Lihan**, Boon Chong Goh, Tong Li, Costas D. Maranas, Klaus Shulten

Protein-Small Molecule Interactions II (Boards B41 - B70)

2650-Pos BOARD B27
COMPUTATIONAL APPROACH TO DESIGNING ANTIBODY FOR EBOLA VIRUS. **Amir Barati Farimani**, Narayana R. Aluru, Emad Tajkhorshid, Eric Jakobsson

2651-Pos BOARD B28
STRUCTURAL REFINEMENT OF BAR-PH DOMAINS REMODELING CELL MEMBRANE USING MDFF. Chun Chan, Xiaoyun Pang, Yan Zhang, Victor W. Hsu, Fei Sun, **Jun Fan**

2652-Pos BOARD B29
STRUCTURE AND INTERACTION OF TYPE II CAS1 FROM STERPTOCOCCUS PYOGENES. **Donghyun Ka**, Euiyoung Bae

2653-Pos BOARD B30
PROBING P53 ACTIVATING STAPLED-PEPTIDE INTERACTION WITH ALBUMIN USING MOLECULAR DOCKING AND SIMULATION. **Garima Tiwari**, Chandra S. Verma

2654-Pos BOARD B31
COMPUTATIONAL AND EXPERIMENTAL STUDY OF NEUROGLOBIN AND CARBON MONOXIDE. **Lauren Nelson**, Samuel Cho, Daniel Kim-Shapiro

2655-Pos BOARD B32
ELUCIDATING THE ROLE OF STRUCTURAL DYNAMICS IN LIGAND SELECTION OF HUMAN ADIPOCYTE FATTY ACID BINDING PROTEIN BY NMR SPECTROSCOPY. **Kim N. Ha**, Youlin Xia, Yenchu Tran, Gianluigi Veglia, David Bernlohr

2656-Pos BOARD B33
THE KNOB-SOCKET MODEL: AN AMINO ACID CODE DESCRIBING PROTEIN TERTIARY PACKING STRUCTURE. Hyun Joo, Keith J. Fraga, **Jerry Tsai**

2657-Pos BOARD B34
AN AMINO ACID CODE FOR THE RATIONAL DESIGN AND INVESTIGATION OF PROTEIN PACKING STRUCTURE USING THE KNOB-SOCKET MODEL. **Shivarni Patel**, Hyun Joo, Jerry Tsai

2658-Pos BOARD B35
AUTOMATED CROSS-LINKS-BASED CONFORMATIONAL SAMPLING OF PROTEIN ASSEMBLIES : THE GEOMETRICAL CHALLENGE OF CROSS-LINKS. **Mathias Ferber**, Michael Nilges, Guillaume Bouvier

2659-Pos BOARD B36
PHOTOCONTROL OF PROTEIN AFFINITY REAGENTS BY RED LIGHT USING AZOBENZENE SWITCHES. **Amirhossein Babalhavaeji**, Mingxin Dong, Di Wu, G. Andrew Woolley

2660-Pos BOARD B37
BLUE LIGHT CONTROL OF CREB VIA A DESIGNED DOMINANT NEGATIVE. **Jakeb M. Reis**, Ahmed M. Ali, Yan Xia, Asim Rashid, Valentina Mercaldo, Katherine Brechun, Vitali Borisenko, Sheena Josselyn, John Karanicolas, Andrew Woolley

2661-Pos BOARD B38
VIBRATIONAL AND ELECTRONIC STARK EFFECTS IN GREEN FLUORESCENT PROTEIN. **Joshua D. Slocum**, Lauren J. Webb

2662-Pos BOARD B39
A SPLIT GFP BARREL WITH AN INTERNAL CAVITY THAT BINDS THE CHROMOPHORE. **Chi-Yun Lin**, Steven G. Boxer

2663-Pos BOARD B40
A REVERSIBLY PHOTODISSOCIABLE SPLIT GFP. **Johan H. Both**, Steven G. Boxer

2664-Pos BOARD B41 INTERNATIONAL TRAVEL AWARDEE
MODELING PROTEIN- DNA INTERACTION ON GROUNDS OF QUANTUM ENTANGLEMENT. **Yadira Medina Guevara**, Joao D. T. Arruda-Neto, Danyer Perez Adan

2665-Pos BOARD B42
ACCELERATED MOLECULAR DYNAMICS SIMULATIONS OF PHOSPHATE BINDING PROTEINS. **Sigurd F. Truelsen**

2666-Pos BOARD B43
INVESTIGATION OF INHIBITORY POTENCY OF BHQ DERIVATIVES AS SERCA INHIBITORS TO USE AS POTENTIAL DRUGS AS WELL AS TOOLS TO STUDY THE SERCA FUNCTION: BINDING FREE ENERGY COMPUTATION USING FEP/MD SIMULATIONS. **Manori Jayasinghe**, Qi Wang, Andrew Schirmer, George Stan

2667-Pos BOARD B44
INVESTIGATION OF HNO-DERIVED MODIFICATIONS ON PHOSPHOLAMBAN. **Gizem Keceli**, Ananya Majumdar, Chevon N. Thorpe, James E. Mahaney, Nazareno Paolucci, John P. Toscano

2668-Pos BOARD B45
PHOSPHOLAMBAN INTERACTION WITH SR CA-ATPASE INVESTIGATED BY PRE-STEADY STATE CHARGE MEASUREMENTS. **Serena Smeazzetto**, Howard S. Young, Catharine A. Trieber, Maria Rosa Moncelli, Francesco Tadini-Buoninsegni

2669-Pos BOARD B46
MOLECULAR COMPETITORS OF THE ALPHA GLOBIN/ENOS INTERACTION. **T. C. Stevenson Keller IV**, Joshua T. Butcher, Brant E. Isakson, Linda M. Columbus

2670-Pos BOARD B47
CANCER CELL-DIRECTED DRUG DELIVERY AND CHEMOPOTENTIATING EFFECTS BY GSP1-ACTIVATED NITRIC OXIDE (NO)-RELEASING PRODRUG. **Vandana Kumari**, Ryan J. Holland, Christina E. Luthers, Marzena A. Dyba, Sergey G. Tarasov, Joseph E. Saavedra, Larry K. Keefer, Xinhua Ji

2671-Pos BOARD B48
ISOTHERMAL ANALYSIS OF INTERACTION BETWEEN LIPOCALIN-TYPE PROSTAGLANDIN D SYNTHASE AND PROSTANOIDS. **Yusuke Nakagawa**, Shigeru Shimamoto, Yutaro Fukuda, Takahiro Maruno, Yuji Kobayashi, Tadayasu Ohkubo, Kousuke Aritake, Yoshihiro Urade, Yuji Hidaka

2672-Pos BOARD B49
FLUNITRAZEPAM CONVERSION BY CYP3A4 IS ALTERED BY CAFFEINE AND ETHANOL. **Thomas R. Larson**, Larry R. Masterson

2673-Pos BOARD B50
DECIPHERING THE BINDING MODE OF PROMISING ANTITUBERCULOSIS COMPOUNDS WITH THEIR BACTERIAL MEMBRANE TARGET IN LIVING CELLS BY NMR. Catherine Simenel, Guillaume Bouvier, Michael Nilges, **Nadia Izadi Pruneyre**

2674-Pos BOARD B51
A RAPID BIOCHEMICAL ASSAY TO MEASURE SMALL MOLECULES BINDING TO PREGNANE XENOBIOTIC RECEPTORS FROM HUMAN, DOG AND RAT. **Anita Niedziela-Majka**, Kristina Hinman, Johannes Voigt, Magdeleine Hung, Andrew Post, Roman Sakowicz

2675-Pos BOARD B52
CHARACTERIZATION OF THE MOLECULAR INTERACTIONS BETWEEN PARE/GYRB AND AN INHIBITOR AND ITS INSIGHT INTO DEVELOPING ANTIBACTERIAL AGENTS. **Congbao Kang**

2676-Pos BOARD B53
STRUCTURAL BASIS OF MEMBRANE TARGETING BY THE INNATE IMMUNITY ADAPTOR TIRAP. **Xiaolin Zhao**, Shuyuan Xiao, Jeffrey Ellena, Geoffrey Armstrong, Daniel Capelluto

2677-Pos BOARD B54
NOVEL MODULATORS OF GLYCINE RECEPTORS. **Marta M. Wells**, Andrew Maxwell, Yan Xu, Pei Tang

2678-Pos BOARD B55
SCREENING OF A PROTEIN-PROTEIN INTERACTION FOCUSED LIBRARY TARGETING BIG3-PHB2 INTERACTION. **Takeru Chigira**, Satoru Nagatoishi, Kouhei Tsumoto

2679-Pos BOARD B56
PEPTIDES DERIVED FROM CXCL8 BASED ON IN SILICO ANALYSIS INHIBIT CXCL8 INTERACTIONS WITH ITS RECEPTOR CXCR1. Chun-Chun Chang, Shinn-Jong Jiang, Je-Wen Liou, Yi Chung, **Hao-Jen Hsu**

2680-Pos BOARD B57
PROTEIN-PEPTIDE DOCKING WITH HIGH CONFORMATIONAL FLEXIBILITY USING CABS-DOCK WEB TOOL. **Maksim Kouza**, Maciej Blaszczyk, Mateusz Kurcinski, Lukasz Wieteska, Aleksander Debinski, Andrzej Kolinski, Sebastian Kmiecik

2681-Pos BOARD B58
INCREASED FLEXIBILITY OF LOCAL CONFORMATION IN THE N-TERMINAL DOMAIN OF MDMX ENHANCES LIGAND-BINDING AFFINITY. **Lingyun Qin**, Rong Chen, Huili Liu, Zhengding Su

2682-Pos BOARD B59
THE INFLUENCES OF DRUG-RESISTANT MUTATIONS OF EGFR TO THE INHIBITOR BINDING AFFINITY AND THE DRUG TARGET SELECTIVITY PROFILES. **Jiyong Park**, Joseph J. McDonald, Russell C. Petter, Ken Houk

2683-Pos BOARD B60
THE IMPACT OF EXPERIMENTAL, PROTEIN STRUCTURE ON OUR ABILITY TO MODEL PROTEIN FUNCTION. **Oleg Y. Borbulevych**, Lance M. Westerhoff

2684-Pos BOARD B61
HEPARIN-SCLEROSTIN INTERACTIONS FROM SURFACE PLASMON RESONANCE AND MOLECULAR DYNAMICS SIMULATIONS. **J. Joel Janke**, Fuming Zhang, Robert J. Linhardt, Angel E. Garcia

2685-Pos BOARD B62
MOLECULAR BASES BASIS OF ANTIBIOTIC TRANSLOCATION ACROSS OUTER MEMBRANE PORINS OF ENTEROBACTER AEROGENES. **Jiajun Wang**, Muriel Masi, Harsha Bajaj, Mohamed Kreir, Mathias Winterhalter, Niels Fertig

2686-Pos BOARD B63
STUDY OF LIGAND BINDING SELECTIVITY OF HISTONE DEACETYLASES BY REPLICA-EXCHANGE UMBRELLA SAMPLING MOLECULAR DYNAMICS SIMULATIONS. **Shuichiro Tsukamoto**, Yoshitake Sakae, Yukihiko Itoh, Takayoshi Suzuki, Yuko Okamoto

2687-Pos BOARD B64 INTERNATIONAL TRAVEL AWARDEE
PREDICTING LIGAND SELECTIVITY ACROSS BROMODOMAIN FAMILIES. **Matteo Aldeghi**, Alexander Heifetz, Michael J. Bodkin, Stefan Knapp, Philip C. Biggin

2688-Pos BOARD B65
A MOLECULAR DYNAMICS STUDY OF MICHAELIS COMPLEX FOR DESIGNING SELECTIVE TRANSITION STATE ANALOG INHIBITORS FOR CYSTEINE PROTEASE CALPAIN-2. **Payal Chatterjee**, Abdelaziz Alsamarah, David Kent, Li Qian, David Wych, Christine N. Pham, Alla Avetisyan, Steven Standley, Michel Baudry, Yun Luo

2689-Pos BOARD B66
MECHANISM OF UREA CONDUCTION THROUGH H. PYLORI UREI. **Ugur Akgun**

2690-Pos BOARD B67 CPOW TRAVEL AWARDEE
DISSECTING THE CONTRIBUTION OF KINASE CONFORMATIONAL REORGANIZATION ENERGIES TO INHIBITOR SELECTIVITY. **Sonya M. Hanson**, Lucelenie Rodriguez, Julie M. Behr, Andrea Rizzi, Daniel L. Parton, Kyle A. Beauchamp, Joshua H. Fass, Jan-Hendrik Prinz, Sarah E. Boyce, Markus A. Seeliger, Nicholas M. Levinson, John D. Chodera

2691-Pos BOARD B68
MULTISCALE MODELING OF DENDRIMERS FOR BIOLOGICAL APPLICATIONS. **Bo Wang**, Esteban Gurzov, Pu Chun Ke, Feng Ding

2692-Pos BOARD B69
PHOSPHORYLATION MODIFIES COUPLING OF THE MEMBRANE DOMAINS AND NBD1 OF FULL LENGTH CFTR. **Stephanie Chin**, Mohabir Ramjeesingh, Paul Eckford, Christine E. Bear

2693-Pos BOARD B70
A FUSION PROTEIN OF P53 PEPTIDE AND MDMX AS AN EFFICIENT MODEL FOR SCREENING OF ANTICANCER PRODRUGS WITH FLUORESCENCE SPECTROSCOPY. Rong Chen, Lingyun Qin, **Zheng Su**

Enzymes Function, Cofactors, and Post-translational Modifications (Boards B71 - B92)

2694-Pos BOARD B71 EDUCATION TRAVEL AWARDEE
IMPULSIVE ENZYMES: A NEW FORCE IN MECHANOBIOLOGY. **Krishna Kanti Dey**, Ayusman Sen

2695-Pos BOARD B72
DISSECTING PROTON DELOCALIZATION AND THE ELECTROSTATIC CONTRIBUTION TO CATALYSIS IN AN ENZYME'S HYDROGEN BOND NETWORK WITH UNNATURAL AMINO ACIDS. **Yufan Wu**, Steven G. Boxer

2696-Pos BOARD B73
VIBRATIONAL STARK EFFECTS FOR DIVERSE CARBONYL PROBES APPLIED TO THE RE-INTERPRETATION OF IR AND RAMAN DATA IN TERMS OF ELECTRIC FIELDS AT ENZYME ACTIVE SITES. **Samuel H. Schneider**, Steven G. Boxer

2697-Pos BOARD B74
COMPUTATIONAL STUDY ON THE CATALYTIC EFFECT OF THE MAGNESIUM IONS IN THE MECHANISM OF DNA POLYMERASES. **Ricardo A. Matute**, Arieh Warshel

2698-Pos BOARD B75
THE EFFECT OF MAGNESIUM ION CONCENTRATION ON THE NUCLEOTIDE SPECIFICITY AND FIDELITY OF HIV-1 REVERSE TRANSCRIPTASE. **Shanzhong Gong**, Kenneth Johnson

2699-Pos BOARD B76 EDUCATION TRAVEL AWARDEE
THE ROLE OF PHOSPHORYLATION AND ACETYLATION OF TFAM IN DNA BINDING REGULATION USING SINGLE-MOLECULE MANIPULATION AND FLUORESCENCE MICROSCOPY. **Maryam Hashemi Shabestari**, Graeme A. King, Wouter H. Roos, Carolyn K. Suzuki, Gijs J. L. Wuite

2700-Pos BOARD B77 EDUCATION TRAVEL AWARDEE
NEW INSIGHT INTO THE CATALYTIC AND INHIBITION MECHANISM OF THE HUMAN ACYL PROTEIN THIOESTERASE. **Martina Audagnotto**, Sylvia Ho, Patrick Sandoz, Nicole Andenmatten, Gisou van der Goot, Matteo Dal Peraro

2701-Pos BOARD B78
STRUCTURAL AND BIOCHEMICAL INVESTIGATIONS ON THE CATALYTIC MECHANISM OF PYRIDOXAL KINASE (PDXK) FROM SALMONELLA TYPHIMURIUM AND ITS INTERACTIONS WITH PLP-DEPENDENT ENZYMES. **G. Deka**, J. F. Benazir, J. N. Kalyani, H. S. Savithri, M.R.N. Murthy

2702-Pos BOARD B79
MOLECULAR BASIS FOR COHESIN ACETYLATION BY ESTABLISHMENT OF SISTER CHROMATID COHESION N-ACETYLTRANSFERASE (ESCO1). **Yadillette Rivera-Colon**, Andrew Maguire, Glen P. Liszczak, Ronen Marmorstein

2703-Pos BOARD B80
ORIGINS OF CATALYTIC SPECIFICITY IN BACTERIAL OLIGOSACCHARYLTRANSFERASE. **Brittany R. Morgan**, Francesca Massi

2704-Pos BOARD B81
MOLECULAR MECHANISM OF THE CATALYTIC REACTION OF NO REDUCTASE REVEALED BY NOVEL TIME-RESOLVED VISIBLE/IR ABSORPTION SPECTROMETERS WITH MICROFLUIDIC DEVICE. **Tetsunari Kimura**, Hanae Takeda, Shoko Ishii, Takehiko Tosha, Yoshitsugu Shiro, Minoru Kubo

2705-Pos BOARD B82
DROPLET-BASED MICROFLUIDICS FOR MEASURING ENZYMIC ACTIVITIES: APPLICATION TO L-ASPARAGINASE USED IN ANTILEUKEMIC THERAPY. **Manfred W. Konrad**, Christos S. Karamitros, Joanan Lopez Morales, Jean-Christophe Baret

2706-Pos BOARD B83 EDUCATION TRAVEL AWARDEE
TRANSGLUTAMINASE FACTOR XIII CROSS-LINKS REACTIVE GLUTAMINES IN DISORDERED REGIONS OF FIBRINOGEN α C. **Kelly Njine Mouapi**, Kerrie A. Smith, Robert A.S Ariens, Helen Philippou, Muriel C. Maurer

2707-Pos BOARD B84
CHARACTERIZATION OF THE PYRUVATE OXIDASE CIDC FROM S. AUREUS. **Xinyan Zhang**, Kenneth Bayles, Sorin Luca

2708-Pos BOARD B85
PHOSPHODIESTERASE 5 SIGNALS THROUGH HIPPO/TAZ PATHWAY IN MAINTAINING STEMNESS OF PROSTATE CANCER CELLS. **Naihua Liu**, Xing Ji, Ximei Wu

2709-Pos BOARD B86
THE NEET PROTEINS MEDIATE IRON-SULFUR CLUSTER TRANSPORT FROM THE MITOCHONDRIA TO CYTOSOLIC PROTEINS. **Colin H. Lipper**, Mark L. Paddock, Rachel Nechushtai, Patricia A. Jennings

2710-Pos BOARD B87
KINETIC AND STRUCTURAL ANALYSES OF A DYNAMIN MECHANOEZYME. **Blake Hill**, Nolan Kennedy

2711-Pos BOARD B88
KINETIC DISSECTION OF THE PRE-EXISTING CONFORMATIONAL EQUILIBRIUM IN THE TRYPSIN FOLD. Austin D. Vogt, **Pradipta Chakraborty**, Enrico Di Cera

2712-Pos BOARD B89
INFLUENCE OF DIFFUSION ON THE KINETICS OF MULTISITE PHOSPHORYLATION. **Irina V. Gopich**, Attila Szabo

2713-Pos BOARD B90
EFFECTS OF METAL SUBSTITUTION IN HDAC8 AND IMPLICATIONS FOR KINETICS. **Nathan Gallup**, Michael Nechay

2714-Pos BOARD B91
SYNTHESIZING CAGED-NAD MOLECULES TO CONDUCT LAUE TIME-RESOLVED CRYSTALLOGRAPHY MEASUREMENTS ON HMGCOA REDUCTASE. **Vatsal Purohit**, Farbod Salahi, Nic Steussy, Paul Helquist, Olaf Weist, Cynthia Stauffacher

2715-Pos BOARD B92
DISTRIBUTION OF IMMOBILIZED ENZYMES ON THE SURFACE AND INTO THE MESOPOROUS SILICA PARTICLE. **Pegah S. Nabavi Zadeh**, Björn Åkerman

Intrinsically Disordered Proteins (IDP) and Aggregates: A β , Tau, and α -Synuclein (Boards B93 - B113)

2716-Pos BOARD B93
WHY PRESSURE IS BAD FOR YOUR BRAIN? HYDROSTATIC PRESSURE PROMOTES AGGREGATION OF ALPHA-SYNUCLEIN IN CELLS. **Urszula P. Golebiewska**, Suzanne Scarlata

2717-Pos BOARD B94
AGGREGATION AND FIBRILLATION OF α -SYNUCLEIN BY POLYMORPH PATCHY PARTICLES. **Ioana M. Ilie**, Wouter K. den Otter, Wim J. Briels

2718-Pos BOARD B95
ALPHA-SYNUCLEIN AND ITS INTERACTION WITH CYTOSKELETON (ASSOCIATED) PROTEINS: IMPLICATIONS IN PARKINSON'S DISEASE. **Senthil Kumar Thangaraj**, Lisanne Dijk, Mireille Claessens

2719-Pos BOARD B96
MOLECULAR DYNAMICS SIMULATIONS OF ALPHA-SYNUCLEIN ENSEMBLE FRET MEASUREMENTS FROM DIFFERENT FORCE FIELDS. Reinhard Klement, **Timo Graen**, Asaf Grupi, Elisha Haas, Helmut Grubmüller

2720-Pos BOARD B97
UNCONVENTIONAL CHAPERONE INHIBITS AMYLOID FORMATION BY PROMOTING OFF-PATHWAY AGGREGATION. Illes-Toth Eva, Shah Maliha, Wu Nelson, Verzini Silvia, Selenko Philipp, Wanker E. Erich, **Jan Bieschke**

2721-Pos BOARD B98 EDUCATION TRAVEL AWARDEE
MULTI-TARGET THERAPEUTIC POTENTIAL OF GREEN TEA CATECHINS AND BLACK TEA THEAFLAVINS TOWARD A β -INDUCED SIGNAL PATHWAYS INVOLVED IN ALZHEIMER'S DISEASE. **Shelby E. Chastain**, Melissa Moss

2722-Pos BOARD B99
EFFECT OF ACIDIC PH ON THE STABILITY OF ALPHA-SYNUCLEIN DIMERS. **Zhengjian Lv**, Alexey V. Krasnoslobodtsev, Yuliang Zhang, Daniel Ysselstein, Jean-Christophe Rochet, Scott C. Blanchard, Yuri L. Lyubchenko

2723-Pos BOARD B100
THE INTERPLAY OF INTRINSIC DISORDER AND MACROMOLECULAR CROWDING ON α -SYNUCLEIN FIBRIL FORMATION. **Nobu C. Shirai**, Macoto Kikuchi

2724-Pos BOARD B101
ASSESSING N-TERMINAL MODIFICATIONS ON ALPHA-SYNUCLEIN STRUCTURE AND FUNCTION. **Siobhan Toal**, David DeWitt, Adam Trexler, Mark Brown, Elizabeth Rhoades

2725-Pos BOARD B102
EFFICIENT LIPID PEROXIDATION CATALYZED BY AMYLOID-BETA-COPPER COMPLEX: OBSERVATION OF CHEMICAL OSCILLATION AND CHAOS. Ciaran McFarlane, Paul Girvan, Thomas Branch, **Liming Ying**

2726-Pos BOARD B103
SELF-ASSEMBLY OF FULL-SIZE AMYLOID BETA 40 PROTEINS IN DIMERS. **Mohtadin Hashemi**, Yuliang Zhang, Zhengjian Lv, Yuri L. Lyubchenko

2727-Pos BOARD B104
X-RAY DIGITAL AGGREGATED DYNAMICS OF INTRINSICALLY DISORDERED PROTEINS. **Naruki Hara**, Yufuku Matsushita, Keigo Ikezaki, Hiroshi Sekiguchi, Naoya Fukui, Yasushi Kawata, Yuji C. Sasaki

2728-Pos BOARD B105
TAU MEDIATES WIDELY-SPACED MICROTUBULE BUNDLES THROUGH LOCAL POLYION ATTRACTIONS AT THE MIDPLANE LAYER: A NOVEL, FUNCTIONAL MECHANISM FOR INTRINSICALLY DISORDERED PROTEINS. **Peter J. Chung**, Chaeyeon Song, Joanna Deek, Herbert P. Miller, Youli Li, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

2729-Pos BOARD B106 EDUCATION TRAVEL AWARDEE
A β FIBRILS ACT AS AQUEOUS PORES: A MOLECULAR DYNAMICS STUDY. **Sachin R. Natesh**, Stephen C. Meredith, Tobin R. Sosnick, Karl F. Freed, Esmael J. Haddadian

2730-Pos BOARD B107
DANCING WITH STRINGS: THE CONFORMATIONAL DYNAMICS OF VQIXXK MOTIFS WITHIN TAU PROTEIN IN MONOMER, FIBRIL AND HYPER-PHOSPHORYLATED FILAMENT STATES. **Buyong Ma**, Guanghong Wei, Jie Zhen, Ruth Nussinov

2731-Pos BOARD B108
THE CONFORMATION OF A β -PEPTIDE AGGREGATES ON 2D SURFACES IS DIFFERENT THAN IN SOLUTION: A MOLECULAR DYNAMICS STUDY. **Sachin R. Natesh**, Kark F. Freed, **Esmael J. Haddadian**

2732-Pos BOARD B109
TAU BINDS TO MULTIPLE TUBULIN DIMERS WITH HELICAL STRUCTURE. **Xiaohan Li**, Jacob A. Culver, Elizabeth Rhoades

2733-Pos BOARD B110
THE DISPARATE EFFECTS OF TWO MOLECULAR CHAPERONES ON TAU AMYLOID FORMATION. **Hannah E.R. Baughman**, Amanda F. Clouser, Rachel E. Klevit, Abhinav Nath

2734-Pos BOARD B111
BINDING-ACTIVATED SUPERRADIANT PROBES FOR AMYLOID IN SOLUTION AND TISSUE. **Patrick Donabedian**, Nicole Maphis, Shanya Jiang, Kiran Bhaskar, David Whitten, Eva Chi

2735-Pos BOARD B112
AMYLOID AGGREGATION OF AMYLIN: GAIN OF FUNCTION ALONG AGGREGATION PATHWAY? **Anoop Rawat**, Debanjan Bhowmik, Barun Kumar Maity, Sudipta Maiti

2736-Pos BOARD B113
AMYLOID- β (1-42)OLIGOMER MODELS DEVELOPED USING COMBINED SOLID STATE NMR AND SEQUENCE SPECIFIC HYDROXYL RADICAL FOOTPRINTING DATA. **Alexandra Klinger**, Cong Guo, Huan-Xiang Zhou, Anant Paravastu, Janna Kiselar, Andrew J. Nix, Terrone L. Rosenberry

Investigating the Properties of Intrinsically Disordered Proteins (IDP) (Boards B114 - B140)

2737-Pos BOARD B114
NMR INVESTIGATION OF CALMODULIN INDUCED FOLDING IN THE REGULATORY DOMAIN OF CALCINEURIN. **Dinesh K. Yadav**

2738-Pos BOARD B115
PROTEIN DESIGN FOR DECREASED DISORDER: SHERP AS AN EXEMPLAR PROTEIN. **Elliot Drew**, David T. Jones, B.A. Wallace

2739-Pos BOARD B116
STRUCTURAL MODELS OF AN INTRINSICALLY DISORDERED PROTEIN ADAPTED FOR BACTERIAL SECRETION. **Darragh Patrick O'Brien**, Belen Hernandez, Dominique Durand, Veronique Hourdel, Ana Cristina Sotomayor Pérez, Patrice Vachette, Mahmoud Ghomi, Julia Chamot-Rooke, Daniel Ladant, Sébastien Brier, **Alexandre Chenal**

2740-Pos BOARD B117
MULTI-COLOR SINGLE MOLECULE FRET STUDY OF INTRINSICALLY DISORDERED PROTEIN BINDING. **Hoi Sung Chung**, Fanjie Meng, Jae-Yeol Kim, John M. Louis

2741-Pos BOARD B118
CHARACTERIZATION OF AN INTRINSIC DISORDER DOMAIN AND FUNCTIONAL ACTIVITY OF CHIZ MEMBRANE PROTEIN FROM MYCOBACTERIUM TUBERCULOSIS. **Cristian A. Escobar**, Riqiang Fu, Timothy A. Cross

2742-Pos BOARD B119
EXPERIMENTAL POLYPROLINE II PROPENSITIES DESCRIBE SEQUENCE-DEPENDENT VARIABILITY IN THE HYDRODYNAMIC SIZE OF INTRINSICALLY DISORDERED PROTEINS. **Steven T. Whitten**

2743-Pos BOARD B120
RESCUING THE OVER-COLLAPSE OF INTRINSICALLY DISORDERED PROTEINS USING A FORCE FIELD DERIVED BY A NEW PARADIGM. **Daive Mercadante**, Sigrid Milles, Gustavo Fuertes, Dmitri Svergun, Edward A. Lemke, Frauke Gräter

2744-Pos BOARD B121
PROTEOMIC AND BIOPHYSICAL ANALYSIS OF POLAR TRACTS. **Kiersten M. Ruff**, Alex S. Holehouse, Mary G.O. Richardson, Rohit V. Pappu

2745-Pos BOARD B122
SINGLE-MOLECULE DISSECTION OF THE CONFORMATIONS, DYNAMICS AND BINDING OF THE DISORDERED 4E-BP2 PROTEIN. **Zhenfu Zhang**, Alaji Bah, Hamda Sajjad, Julie D. Forman-Kay, Claudiu C. Gradinaru

2746-Pos BOARD B123
LC8 MOTIF RECOGNITION: INSIGHTS FROM THE LC8-CHICA COMPLEX. **Sarah Clark**

2747-Pos BOARD B124
NMR-BASED MOLECULAR VIEW OF THE BIOLOGY AND BIOPHYSICS OF WIP, AN INTRINSICALLY DISORDERED PROTEIN. **Eva Rozentur-Shkop**, Hadassa Shaked, **Jordan Chill**

2748-Pos BOARD B125 EDUCATION TRAVEL AWARDEE
DYNAMICS OF CONTACT FORMATION IN DISORDERED POLYPEPTIDES. **Gül H. Zerze**, Robert B. Best, Jeetain Mittal

2749-Pos BOARD B126
CHEMICAL PERTURBATION OF AN INTRINSICALLY DISORDERED REGION OF TFIID DISTINGUISHES DE NOVO TRANSCRIPTION INITIATION FROM REINITIATION. **Zhengjian Zhang**, Zarko Boskovic, Mahmud Hussain, Wenxin Hu, Carla Inouye, Angela Koehler, Stuart Schreiber, Robert Tjian

2750-Pos BOARD B127
RNA-BINDING DOMAIN DISORDER MODULATES THE RNA DESTABILIZING ACTIVITY IN THE TTP FAMILY OF PROTEINS. **Laura M. Deveau**, **Francesca Massi**

2751-Pos BOARD B128
PROBING THE CONFORMATIONAL ENSEMBLE OF A BACTERIAL ANTITOXIN THROUGH MOLECULAR DYNAMICS SIMULATIONS AND MASS SPECTROMETRY. **Virginia M. Burger**, Albert Konijnenberg, Alexandra Vanderwelde, Frank Sobott, Remy Loris, Collin M. Stultz

2752-Pos BOARD B129
THE ROLE OF INTRINSIC DISORDER IN THE MOLECULAR MECHANISM OF NUCLEAR TRANSPORT. **Laura K. Maguire**, Kathryn Wall, Geoff Armstrong, Kaushik Dutta, Samuel Sparks, Deniz B. Temel, Alia Kamal, Jaclyn Tetenbaum-Novatt, Michael P. Rout, David Cowburn, Loren Hough

2753-Pos BOARD B130
ELUCIDATING THE MECHANISM OF RECOGNITION AND BINDING OF PROTEIN KINASE INHIBITOR BY PROTEIN KINASE A USING NMR AND FLUORESCENCE SPECTROSCOPY. **Geoffrey Li**, Cristina Olivieri, Matthew Neibergall, Jonggul Kim, Susan Taylor, Joseph Muretta, Gianluigi Veglia

2754-Pos BOARD B131
CONFORMATIONS AND EXCHANGE DYNAMICS OF FLGM, AN INTRINSICALLY DISORDERED PROTEIN, IN DILUTE AND CROWDED CONDITIONS STUDIED BY NMR SPECTROSCOPY. **Pieter E S Smith**, Huan-Xiang Zhou

2755-Pos BOARD B132
HYDROPHOBICITY OF POLY(A)-BINDING PROTEIN'S INTRINSICALLY DISORDERED REGION DETERMINES ITS CONFORMATION AND ORGANISM THERMOTOLERANCE. **Joshua Riback**, Chris Katanski, Tobin R. Sosnick, D. Allan Drummond

2756-Pos BOARD B133
SMFRET AND DEER DISTANCE MEASUREMENTS AS APPLIED TO DISORDERED AND STRUCTURED PROTEINS. Keith Weninger, Ruoyi Qiu, Erkang Ou, Sergey Milikisiyants, Hugo Sanabria, **Tatyana I. Smirnova**

2757-Pos BOARD B134
LIKE-CHARGE REGIONS (LCRS) AND OTHER EVOLUTIONARILY CONSERVED FEATURES REGULATE FG NETWORK FORMATION AT THE CENTER OF THE NPC. **Mohaddeseh Peyro**, Mohammad Soheilypour, Briana Lynne Lee, Ali Ghavami, Mohammad R. K. Mofrad

2758-Pos BOARD B135
EFFECTS OF A STRUCTURED DOMAIN ON THE CONFORMATIONAL ENSEMBLE OF DISORDERED REGIONS IN BRAIN-DERIVED NEUROTROPHIC FACTOR. **Ruchi Lohia**, Reza Salari, Grace Brannigan

2759-Pos BOARD B136
ULTRA-SENSITIVE NUCLEOSOME BINDING RESPONSE OF FACT BY THE PHOSPHORYLATION TO ITS IDP ELEMENT. **Shin-ichi Tate**

2760-Pos BOARD B137
SPECTRAL PROPERTIES OF "DISORDERED" AND POLYPROLINE II STRUCTURES DEFINED BY CIRCULAR DICHROISM SPECTROSCOPY. **Jose Luiz S. Lopes**, A J. Miles, Lee Whitmore, BA Wallace

2761-Pos BOARD B138
DIMENSIONS AND DYNAMICS OF HIGHLY COOPERATIVE SIC1-WD40 BINDING: SMFRET THROUGH A POLYMER PHYSICS LENS. **Gregory Gomes**, Veronika Csizmok, Jianhui Song, Hue Sun Chan, Julie Forman-Kay, Claudiu C. Gradinaru

2762-Pos BOARD B139
SMALL ANGLE NEUTRON SCATTERING OF THE INTRINSICALLY DISORDERED PROTEIN FLGM UNDER CROWDED CONDITIONS. **Anthony Banks**, Kevin Weiss, Chris Stanley, Huan-Xiang Zhou

2763-Pos BOARD B140
PROMISCUOUS BINDING OF MEMBRANE PROTEINS ON FLEXIBLE CO-CHAPERONES, YEAST SGT2 AND HUMAN SGTA. **Ku-Feng Lin**, William M. Clemons

Protein-Nucleic Acid Interactions II (Boards B141 - B152)

2764-Pos BOARD B141
INVESTIGATION OF PARTITION MECHANISM OF HIGH-COPY NUMBER BACTERIAL PLASMIDS VIA REPLICATION INCOMPATIBILITY. Tai-Ming Hsu, **Yi-Ren Chang**

2765-Pos BOARD B142
CHARACTERIZATION OF NUCLEIC ACID BINDING BY THE HISTONE-DERIVED ANTIMICROBIAL PEPTIDES BUFORIN II AND DESHDAP1. **Sukin Sim**, Kara J. Cutrona, Brittany Beyer, Penny Wang, Mala L. Radhakrishnan, Donald E. Elmore

2766-Pos BOARD B143
OXYGEN-TO-SULFUR SUBSTITUTION OF DNA PHOSPHATE ENTROPICALLY ENHANCES PROTEIN-DNA AFFINITY. **Dan Nguyen**, Levani Zandarashvili, Kurtis M. Anderson, Mark A. White, David G. Gorenstein, Junji Iwahara

2767-Pos BOARD B144
ROLE OF THE MOIETY CHIRALITY IN DETERMINING THE DNA BINDING CHARACTERISTICS OF THREADING INTERCALATORS. **Thayaparan Paramanathan**, Nicholas Bryden, Fredrik Westerlund, Per Lincoln, Micah McCauley, Ioulia Rouzina, Mark C. Williams

2768-Pos BOARD B145
DIRECT OBSERVATION OF THE STEPPING BEHAVIOR OF E. COLI UVRD HELICASE. **Kevin D. Whitley**, Matthew J. Comstock, Haifeng Jia, Timothy M. Lohman, Yann R. Chemla

2769-Pos BOARD B146
EFFECTS OF HFQ ON THE CONFORMATION AND COMPACTION OF DNA. **Johan R. van der Maarel**, Kai Jiang, Veronique Arluison, Jeroen van Kan

2770-Pos BOARD B147
EFFECTS OF H2A HISTONE VARIANTS ON DNA SEQUENCE AND NUCLEOSOME STRUCTURE USING COARSE GRAIN SIMULATIONS. **Ignacio Faustino**, Siewert-Jan Marrink

2771-Pos BOARD B148
EFFECTOR-FREE MOLECULAR MECHANISM OF EPIGENETIC REGULATION REVEALED BY MOLECULAR DYNAMICS SIMULATIONS AND SINGLE-MOLECULE FRET EXPERIMENTS. Jejoong Yoo, Hajin Kim, Taekjip Ha, **Aleksei Aksimentiev**

2772-Pos BOARD B149 EDUCATION TRAVEL AWARDEE
NUCLEOSOME KINETICS REGULATES THE BINDING TIMESCALES OF NON-HISTONE PROTEINS TO DNA SITES. **Jyotsana J. Parmar**, Dibyendu Das, Ranjith Padinhateeri

2773-Pos BOARD B150
EFFECT OF THE SECONDARY STRUCTURE OF LONG RNAs ON THEIR PACKAGING BY VIRAL CAPSID PROTEIN. **Christian Beren**, Lisa Dreesens, Katherine Liu, Richard Sportsman, Charles Knobler, William Gelbart

2774-Pos BOARD B151
RECOGNITION AND CONDENSATION OF THE BACTERIAL CENTROMERE BY PARB. **Gemma L. Fisher**, César L. Pastrana, James A. Taylor, Annika Butterer, Frank Sobott, Fernando Moreno-Herrero, Mark S. Dillingham

2775-Pos BOARD B152
INVESTIGATING THE HANDEDNESS DYNAMICS OF TETRASOMES. **Orkide Ordu**, Rifka Vlijm, Mina Lee, Alexandra Lusser, Cees Dekker, Nynke H. Dekker

DNA Structure and Dynamics II (Boards B153 - B175)

2776-Pos BOARD B153
INTERACTION OF TETRAALKYLAMMONIUM⁺ AND DNA. **Earle Stellwagen**, Nancy Stellwagen

2777-Pos BOARD B154
BASE-PAIR LEVEL ANALYSIS OF DNA FOUR-WAY JUNCTION STRUCTURE AND DYNAMICS. Matthew R. Adendorff, **Mark Bathe**

2778-Pos BOARD B155
MEASURING AND MODELING THE EFFECT OF SINGLE MISMATCH ON DNA STRAND DISPLACEMENT. **D. Bo Broadwater, Jr.**, Harold D. Kim

2779-Pos BOARD B156
DNA ORIGAMI FORCE BALANCE. Philipp C. Nickels, Phil Holzmeister, Bettina Wünsch, Dina Grohmann, Philipp Tinnefeld, **Tim Liedl**

2780-Pos BOARD B157
THE OCCURRENCE OF PLECTONEMES IN SUPERCOILED DNA DEPENDS ON DNA SEQUENCE. **Sung Hyun Kim**, Mahipal Ganji, Jaco van der Torre, Elio Abbondanzieri, Cees Dekker

2781-Pos BOARD B158
PREDICTING THE MECHANISM AND KINETICS OF THE WATSON-CRICK TO HOOGSTEEN BASE PAIRING TRANSITION. **Jocelyne Vreede**, Peter G. Bolhuis, David WH Swenson

2782-Pos BOARD B159
BIOPHYSICAL MECHANISM OF SEQUENCE-DEPENDENT ATTRACTION BETWEEN DOUBLE-STRANDED DNAs AND ITS BIOLOGICAL SIGNIFICANCE. **Hajin Kim**

2783-Pos BOARD B160
G-QUADRUPLEXES RECOGNITION BY PLATINUM COMPLEXES PROBED BY SITE-DIRECTED SPIN LABELING. Xiaojun Zhang, Cuixia Xu, Zong-Wan Mao, **Peter Qin**

2784-Pos BOARD B161
COMPUTATIONAL INVESTIGATION OF THE DISSOCIATIVE RECOMBINATION OF ADENINE, GUANINE, THYMINE, AND CYTOSINE. **Zachary P. Chen**, Hwoi Chan Kwon, Yoon Seo Lee, Charles P. De Guzman, Vola M. Andrianarijaona

2785-Pos BOARD B162
ELUCIDATING THE ROLE OF ELECTROSTATICS IN CONDENSED DNA ARCHITECTURES. **Sarah Hansen**, Wei Meng, Abby Bull, Xiangyun Qiu, Kurt Andresen

2786-Pos BOARD B163
DESIGN AND CONSTRUCT A TYPE OF FLUORESCENTLY LABELED CIRCULAR DNA MOLECULES TO STUDY DNA TOPOLOGY AND TOPOISOMERASES BY FLUORESCENCE RESONANCE ENERGY TRANSFER (FRET). **Maria De Cabrera**, Maxwell Gu, Fenfei Leng

2787-Pos BOARD B164
THE EFFECT OF LOCAL MELTING OF DNA ON DNA LOOP FORMATION. **Jiyoun Jeong**, Harold D. Kim

2788-Pos BOARD B165
A SURVEY OF THE IONIZATION ENERGIES OF THE DNA NITROGENOUS BASES VIA DFT-BASED CALCULATIONS OF THEIR POTENTIAL ENERGY SURFACES. **Hwoi Chan Kwon**, Zachary P. Chen, Aaron Z. Watson, Vola M. Andrianarijaona

2789-Pos BOARD B166
THE ROLE OF INTER-NUCLEOBASE COULOMBIC DECAY IN THE PHOTOIONIZATION OF DNA. **Abraham C. Duot**, Justin Lyu, David Rivas, Michael Andrianarijaona

2790-Pos BOARD B167
DYNAMICS OF LARGE DNA LOOPS. **Zubair Azad**, Robert Riehn

2791-Pos BOARD B168
SYSTEMATIC AND QUANTITATIVE ANALYSIS OF G-QUADRUPLEX DNA FOLDING. **Chun-Ying Lee**, Alex Kreig, Sua Myong

2792-Pos BOARD B169
STRUCTURE-BASED DESIGN, SYNTHESIS, AND CHARACTERIZATION OF CUSTOM DNA NANOPARTICLES. **Sakul Ratanalert**, Remi Veneziano, Kaiming Zhang, Keyao Pan, Fei Zhang, Wah Chiu, Hao Yan, Mark Bathe

2793-Pos BOARD B170
STAPLE-FREE DNA SELF-ASSEMBLY. **Sakul Ratanalert**, Mark Bathe

2794-Pos BOARD B171
NUCLEIC ACID-PEPTIDE COMPLEXES CONTROLLED BY DNA HYBRIDIZATION. **Jeffrey Vieregg**, Michael Lueckheide, Lorraine Leon, Amanda Marciel, Matthew Tirrell

2795-Pos BOARD B172
THE ROLE OF ENTROPY IN EXPLAINING TIGHTLY BEND DNA PROPENSITY AND KINETIC BARRIERS TO BASE PAIR UNZIPPING. **Ioan Andricioaei**

2796-Pos BOARD B173
DESIGNING AN ELECTROCHEMICALLY LABELLED THROMBIN DNA AP-TAMER USING MOLECULAR DYNAMICS SIMULATIONS. **Loan K. Huynh**, Alan Chen

2797-Pos BOARD B174
DYNAMIC CONTROL OF DNA ORIGAMI NANOSTRUCTURES VIA GOLD NANOPARTICLES. **Joshua A. Johnson**, Abhilasha Dehankar, Qirui Fan, Jessica Winter, Carlos Castro

2798-Pos BOARD B175
COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATION OF RIBOSOMAL DNA AND RNA G-QUADRUPLEXES. **Samuel S. Cho**

Membrane Dynamics (Boards B176 - B204)

2799-Pos BOARD B176
FLIP-FLOP PROMOTION BY MEMBRANE-SPANNING SEQUENCES IN THE ER MEMBRANE PROTEINS. **Hiroyuki Nakao**, Keisuke Ikeda, Yasushi Ishihama, Minoru Nakano

2800-Pos BOARD B177
MOLECULAR DYNAMICS SIMULATIONS OF INTER-LEAFLET DEPENDENCE IN ASYMMETRIC LIPID MEMBRANES. **Michael D. Weiner**, Gerald W. Feigenson

2801-Pos BOARD B178
CONTROLLING MEMBRANE DYNAMICS BY TUNING THE HYDROPHOBIC MISMATCH AND LIPID COMPOSITION. **Butler D. Paul**, Elizabeth Kelley, Rana Ashkar, Robert Bradbury, Andrea Woodka, Michihiro Nagao

2802-Pos BOARD B179
STOCHASTIC BUT FINE-TUNED: DUALISM IN CELL MEMBRANES' ORGANIZATION AS REVEALED BY COMPUTER SIMULATIONS. **Roman G. Efremov**

2803-Pos BOARD B180
PRE-TRANSITION EFFECTS MEDIATE FORCES OF ASSEMBLY BETWEEN TRANSMEMBRANE PROTEINS: THE ORDERPHOBIC EFFECT. **Shachi Katira**, Kranthi K. Mandadapu, Suriyanarayanan Vaikuntanathan, Berend Smit, David Chandler

2804-Pos BOARD B181
MEMBRANE CROWDING AND ANOMALOUS DIFFUSION IN ARTIFICIAL LIPID BILAYERS. **Helena L.E. Coker**, Matthew R. Cheetham, Ravinash Krishna Kumar, Mark I. Wallace

2805-Pos BOARD B182
FAST MEMBRANE DYNAMICS IN PLANAR SUSPENDED LIPID BILAYERS REVEALED BY SINGLE PARTICLE TRACKING. **Xinxin Woodward**, Abir Kabbani, Christopher V. Kelly

2806-Pos BOARD B183
INVESTIGATING MEMBRANE DOMAIN DYNAMICS USING MULTIMODAL OPTICAL MICROSCOPY. Tyler Floden, Rochelle Warner, Ahmed A. Heikal, **Erin D. Sheets**

2807-Pos BOARD B184
FASTER, MORE ACCURATE QUANTIFICATION OF DIFFUSION AND CORRELATED MOTIONS IN LIPID BILAYERS. **Tara M. Urner**, Gwendolyn A. Clafin, Michael G. Lerner, Rodoula Kyvelou-Kokkalis

2808-Pos BOARD B185
SINGLE PARTICLE TRACKING IN DOUBLE CUSHIONED, BLEBBED SUPPORTED LIPID BILAYERS ENABLES STUDIES OF TRANSMEMBRANE PROTEIN DIFFUSION. **Rohit R. Singh**, Martin I. Malgago, Maurine Linder, Susan Daniel

2809-Pos BOARD B186
NANO-SUBSTRUCTURES OF RAFT-MIMETIC LIQUID-ORDERED MEMBRANE DOMAINS REVEALED BY HIGH-SPEED SINGLE-PARTICLE TRACKING. Hsiao-Mei Wu, Ying-Hsiu Lin, Tzu-Chi Yen, **Chia-Lung Hsieh**

2810-Pos BOARD B187
SUPERDIFFUSIVE MOTION OF MEMBRANE-TARGETING DOMAINS. **Diego Krapf**, Grace Campagnola, Kanti Nepal, Olve B. Peersen

2811-Pos BOARD B188
CALCULATING TRANSMEMBRANE DIFFUSIVITY. **Christopher N. Rowley**, Ernest Awoonor-Williams, Kari Gaalswyk

2812-Pos BOARD B189
PROBING ROLE OF CHOLESTEROL IN INTEGRIN CROSSTALK AND COMPLEXATION OF INTEGRINS WITH GPI-ANCHORED UROKINASE RECEPTORS AND GANGLIOSIDES USING MODEL LIPID MIXTURES. **Yifan Ge**, Jiayun Gao, Rainer Jordan, Christoph Naumann

2813-Pos BOARD B190 EDUCATION TRAVEL AWARDEE
DYNAMICS AND STATICS IN PHASE SEPARATING, ADHERING LIPID MEMBRANES. **Orrin Shindell**, Natalie Mica, Max Ritzer, Vernita D. Gordon

2814-Pos BOARD B191
SPECIFIC ADHESION OF GIANT PLASMA MEMBRANE VESICLES TO SURFACE-IMMOBILIZED SIRP α BY MEMBRANE RECONSTITUTED "MARKER OF SELF" SIGNALING PROTEIN CD47. **Jan Steinkühler**, Cory Alvey, Reinhard Lipowsky, Rumiana Dimova, Dennis Discher

2815-Pos BOARD B192
T-CELLS IN SUSPENSION DO NOT SHOW PRE-CLUSTERED LCK. **Jorge Bernardino de la Serna**, Veronica T. Chang, Dominic Waithe, Ricardo A. Fernandes, Marco Fritzsche, Ana Mafalda Santos, Dilip Shrestha, James H. Felce, Meike C. Assmann, Simon J. Davis, Christian Eggeling

2816-Pos BOARD B193
SINGLE-MOLECULE FLUORESCENCE IMAGING TO DETERMINE THE STOICHIOMETRY OF THE TWIN-ARGININE TRANSLOCASE. **Hajra Basit**, Felicity Alcock, Ben Berks, Mark I. Wallace

2817-Pos BOARD B194
DC-SIGN MEDIATED DENGUE VIRUS ENTRY INTO CELLS. **Kenneth Jacobson**, Ping Liu, Marc Ridilla, Laurie Betts, Aravinda de Silva, Nancy L. Thompson

2818-Pos BOARD B195
EFFECT OF DENGUE FUSION PEPTIDE IN LANGMUIR MONOLAYERS. **Thaís F. Schmidt**, Christian Salesse, Karin A. Riske

2819-Pos BOARD B196
DIRECTING MEMBRANE PORE AND STALK FORMATION IN MD SIMULATIONS WITH EMBEDDED MECHANICAL DEVICES. **Gregory Bubnis**, Helmut Grubmuller

2820-Pos BOARD B197
MITOCHONDRIAL MEMBRANE FUSION: COMPUTATIONAL MODELING OF MITOFUSINS. **Dario De Vecchis**, Antoine Taly, Marc Baaden, Jérôme Hénin

2821-Pos BOARD B198
MOLECULAR DYNAMICS SIMULATIONS OF MEMBRANE TRANSLOCATION OF DENDRIMERS. **Valreia Marquez-Miranda**, Ingrid Araya-Duran, Jeffrey Comer, Maria Carolina Otero Acuna, Jonathon Canan, Fernando Danilo Gonzalez Nilo

2822-Pos BOARD B199
THE SIZE OF A REVERSE MICELLE. **Gozde Eskici**, Paul H. Axelsen

2823-Pos BOARD B200
FLUCTUATING LIPID NANODOMAINS NEAR CRITICAL TRANSITIONS. George R. Heath, Stephen D. Evans, **Simon D. Connell**

2824-Pos BOARD B201
MICELLES AND BICELLES AS MEMBRANE MIMICS FOR MEMBRANE PROTEIN CHARACTERIZATION. **Ashton Brock**, Shelby Lipes, Ryan Oliver, Svetlana Baoukina, Peter Tieleman, Linda Columbus

2825-Pos BOARD B202
DETAILED INVESTIGATION OF DETERGENT MICELLE FORMATION USING MOLECULAR DYNAMICS SIMULATIONS. **Sadegh Faramarzi**, Danielle Grodi, Andrew Philpott, Michael Block, Madison Kukura, Erica Harvey, Blake Mertz

2826-Pos BOARD B203 INTERNATIONAL TRAVEL AWARDEE
ATOMISTIC AND COARSE-GRAINED MOLECULAR SIMULATIONS OF MIXED LAMELLAR/NONLAMELLAR LIPID MEMBRANES. **Wei Ding**, Michail Palaiokostas, Wen Wang, Mario Orsi

2827-Pos BOARD B204
ATOMISTIC SIMULATIONS OF SMALL MOLECULE PERMEATION THROUGH LAMELLAR/NONLAMELLAR LIPID MEMBRANES. **Michail Palaiokostas**, Wei Ding, Mario Orsi

Protein-Lipid Interactions III (Boards B205 - B234)

2828-Pos BOARD B205
MEMPROTMD: PROTEIN-LIPID INTERACTIONS OF PHOSPHOLIPID BIOSYNTHETIC ENZYMES AND DEVELOPMENT OF THE WEB DATABASE. **Thomas D. Newport**, Mark S.P. Sansom, Phillip J. Stansfeld

2829-Pos BOARD B206
LIPOPHILICITY IS A KEY FACTOR TO INCREASE THE ANTIVIRAL ACTIVITY OF HIV NEUTRALIZING ANTIBODIES. **Marcelo T. Augusto**, Axel Hollmann, Fulvia Troise, Ana S. Veiga, Antonello Pessi, Nuno C. Santos

2830-Pos BOARD B207
FREE ENERGIES OF INTERACTION OF PH DOMAINS WITH PHOSPHATIDYLINOSITOL PHOSPHATE LIPIDS. **Fiona B. Naughton**, Antreas C. Kalli, Mark S P Sansom

2831-Pos BOARD B208
BINDING OF GABRA1 CYTOPLASMIC PEPTIDE TO PHOSPHATIDYLSERINE UNILAMELLAR VESICLES. Julie L. Mustard, **Norbert W. Seidler**

2832-Pos BOARD B209
THE SYNAPTOTAGMIN-7 C2AB DOMAIN ALTERS MEMBRANE MORPHOLOGY IN A CALCIUM-DEPENDENT MANNER. **Peter Dahl**, Joseph Vasquez, Jefferson Knight, Arun Anantharam

2833-Pos BOARD B210
INTERPLAY BETWEEN HYDROPHOBIC AND ELECTROSTATIC INTERACTIONS IN PROTONATION-DEPENDENT INSERTION OF TRANSMEMBRANE HELICES. **Victor Vasquez-Montes**, Alexander Kyrychenko, Mykola V. Rodnin, Stephen H. White, Martin B. Ulmschneider, Alexey S. Ladokhin

2834-Pos BOARD B211
SINGLE MOLECULE DIFFUSION OF PHOSPHATIDYLINOSITOL BISPHTHOSPHATE (PIP2) LIPIDS ON ASYMMETRIC LIPID BILAYERS UNDER THE INFLUENCE OF POLYCATIONIC MACROMOLECULES. **Xiaojun Shi**, Xiaosi Li, Maryam Kohram, Adam W. Smith

2835-Pos BOARD B212 EDUCATION TRAVEL AWARDEE
MEMBRANE FISSION BY PROTEIN CROWDING. **Wilton T. Snead**, Carl C. Hayden, Jeanne C. Stachowiak

2836-Pos BOARD B213
UNDERSTANDING THE ROLE OF PEPTIDE-LIPID REACTIONS IN BIOLOGICAL SYSTEMS. **Hannah M. Britt**, Vian S. Ismail, Jackie A. Mosely, John M. Sanderson

2837-Pos BOARD B214
SELECTIVE TARGETING OF LIPID DROPLETS BY PROTEINS. **Morris E. Cohen**, Gregory A. Voth

2838-Pos BOARD B215
MEMBRANE LATERAL PRESSURE CONTROLS HYDRATION AND WATER MOBILITY AT THE COPPER-BINDING SITE OF THE P1B-TYPE COPPER ATP-ASE COP-A FROM LEGIONELLA PNEUMOPHILA. **Karim Fahmy**, Elisabeth Fischermeier, Ahmed Sayed

2839-Pos BOARD B216
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2848-Pos BOARD B225
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2863-Pos BOARD B240
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2867-Pos BOARD B244
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2878-Pos BOARD B255
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2882-Pos BOARD B259
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2889-Pos BOARD B266
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GOLGI MEMBRANE COMPARTMENTALIZATION: BIOPHYSICAL ASPECTS AND PHYSIOLOGICAL IMPLICATIONS. **Felix Campelo**, Josse van Galen, Vivek Malhotra
- 2941-Pos BOARD B318**
SUPER-RESOLUTION IMAGING OF NUCLEAR IMPORT OF ADENO-ASSOCIATED VIRUS IN LIVE CELLS. **Joseph M. Kelich**, Jiong Ma, Connor Magura, Weidong Yang
- 2942-Pos BOARD B319**
SINGLE-POINT FRAP DISTINGUISHES INNER AND OUTER NUCLEAR MEMBRANE PROTEIN DISTRIBUTION. **Krishna C. Mudumbi**, Weidong Yang, Jiong Ma, Eric C. Schirmer
- 2943-Pos BOARD B320**
QUANTITATIVE ANALYSIS OF AUTOPHAGIC FLUX BY RATIOMETRIC PH-IMAGING OF AUTOPHAGIC INTERMEDIATES. **Giuseppe Maulucci**, Michela Chiarotto, Massimiliano Papi, Valentina Palmieri, Gabriele Ciasca, Maria Carmela Lauriola, Daniela Samengo, Giovambattista Pani, Marco De Spirito
- 2944-Pos BOARD B321**
EFFECTS OF OBSTACLE BINDING AND BOUND MOBILITY IN A LATTICE MODEL OF PROTEIN DIFFUSION. **M. D. Betterton**, Samantha Norris, Franck Vernerey, Loren E. Hough
- 2945-Pos BOARD B322**
GENOMIC INTEGRATION OCCURS IN THE PACKAGING CELL VIA UNEXPORTED LENTIVIRAL PRECURSORS. Abdullah Mosabbir, **Anam Qudrat**, Kevin Truong
- 2946-Pos BOARD B323**
INTERCELLULAR TRANSPORT OF PROTEINS CARRIED BY NANODIAMONDS THROUGH MEMBRANE NANOTUBES. **Chandra P. Epperla**
- 2947-Pos BOARD B324**
ANISOTROPIC AND ANOMALOUS DIFFUSION IN MITOTIC CELLS. **Matthias Weiss**
- 2948-Pos BOARD B325**
ANALYSIS OF SCFD2 - A NEW MEMBER OF THE SM PROTEIN FAMILY. **Janeta V. Iordanova**, Dirk Fasshauer
- 2949-Pos BOARD B326**
QUANTIFYING THE INFLUENCE OF THE CROWDED CYTOPLASM ON IONIC DIFFUSION. **Selcuk Atalay**, Caitlin E. Scott, Peter M. Kekenus-Huskey
- 2950-Pos BOARD B327**
TRANSPORT IMAGING OF LIVING CELLS. **Szabolcs Osváth**, Levente Herényi, Gergely Agócs, Katalin Kis Petik, Miklós S.Z. Kellermayer

Excitation-Contraction Coupling II (Boards B328 - B342)

- 2951-Pos BOARD B328**
FLUORESCENT DEXTRAN DIFFUSION ASSAY TO STUDY CARDIAC T-TUBULES. **Keita Uchida**, Anatoli N. Lopatin
- 2952-Pos BOARD B329**
THE T-SYSTEM PROVIDES A DYNAMIC Ca^{2+} -BUFFER IN HUMAN SKELETAL MUSCLE FIBRES. **Tanya R. Cully**, Bradley S. Launikonis
- 2953-Pos BOARD B330**
POSTNATAL DEVELOPMENT OF T-TUBULES IN SHEEP ATRIAL MYOCYTES. **Charlotte E.R. Smith**, David A. Eisner, Andrew W. Trafford, Katharine M. Dibb

- 2954-Pos BOARD B331**
RELATIONSHIP BETWEEN MULTI-SCALE CARDIOMYOCYTE ORGANIZATION AND FUNCTION IN TRABECULAE OF THE FAILING HUMAN HEART. **Michelle L. Munro**, Xin Shen, Marie Ward, David J. Crossman, Christian Soeller
- 2955-Pos BOARD B332**
MODULATION BY CGP-37157 (CGP) ANALOGS OF THE SARCOPLASMIC RETICULUM CALCIUM ATPASE SERCA). Melanie M. Loulousis, Yuanzhao L. Darcy, **Julio A. Copello**
- 2956-Pos BOARD B333**
ENHANCED CARDIAC CONTRACTILITY AND Ca^{2+} SIGNALLING FOLLOWING DIETARY NITRATE SUPPLEMENTATION IN MICE. Niklas Ivarsson, Gianluigi Pironti, Jingning Yang, Alex Bersellini Farinotti, William Jonsson, Camilla Svensson, Håkan Westerblad, Eddie Weitzberg, Jon Lundberg, John Pernow, Johanna Lanner, **Daniel C. Andersson**
- 2957-Pos BOARD B334**
CAMKII AND HEART FAILURE PROMOTE A PATHOLOGICAL RYANODINE RECEPTOR CONFORMATION THAT REDUCES CALMODULIN BINDING AND ENHANCES SR Ca^{2+} LEAK. **Hitoshi Uchinoumi**, Yi Yang, Tetsuro Oda, Jose L. Puglisi, Ye Chen-Izu, Razvan L. Cornea, Xander H.T. Wehrens, Donald M. Bers
- 2958-Pos BOARD B335**
CARDIAC-SPECIFIC OVEREXPRESSION OF PHOSPHODIESTERASE 2 (PDE2) IN MOUSE IS CARDIOPROTECTIVE. **Marta Lindner**, Christiane Vettel, Matthias Dewenter, Merle Riedel, Simon Lämmle, Fleur Mason, Simon Meinecke, Thomas Wieland, Hind Mehel, Sarah Karam, Patrick Lechene, Jerome Leroy, Gregoire Vandecasteele, Ali El-Armouche, Rodolphe Fischmeister
- 2959-Pos BOARD B336**
CARDIAC OVER-EXPRESSION OF CREATINE KINASE DIFFERENTIALLY AFFECTS CARDIOMYOCYTE FUNCTION IN ISCHEMIC AND NON-ISCHEMIC HEART FAILURE. **Carlo G. Tocchetti**, Michelle K. Leppo, Djahida Bedja, Yibin Wang, Robert G. Weiss, Nazareno Paolucci
- 2960-Pos BOARD B337**
MECHANICAL REMODELING OF ATRIAL MYOCARDIUM IN HCM MOUSE MODELS CARRYING CTNT MUTATIONS. **Josè Manuel Pioner**, Francesca Gentile, Raffaele Coppini, Beatrice Scellini, Jil Tardiff, Chiara Tesi, Corrado Poggesi, Cecilia Ferrantini
- 2961-Pos BOARD B338**
MECHANO-CHEMO-TRANSDUCTION IN RABBIT CARDIOMYOCYTES MEDIATED BY NO SIGNALING. **Rafael Shimkunus**, Zhong Jian, Bence Hegyi, John Shaw, Nipavan Chiamvimonvat, Kenneth Ginsburg, Julie Bossuyt, Donald M. Bers, Kit S. Lam, Leighton T. Izu, Ye Chen-Izu
- 2962-Pos BOARD B339**
THE ROLE OF ROS AND CALCIUM FOR THE PROLONGED FORCE DEPRESSION AFTER ECCENTRIC CONTRACTIONS. **Håkan Westerblad**, Niklas Ivarsson, Abram Katz, Sigita Kamandulis, Maja Schlittler, Marius Brazaitis, Albertas Skurvydas
- 2963-Pos BOARD B340**
THE LOSS OF THE TRANSMEMBRANE PROTEIN MG23 AFFECTS THE FAST-TWITCH FEATURE OF EDL MUSCLE. **Myuki Nishi**, Takahisa Gouda, Nagomi Kurebayashi, Yu Takahashi, Shinji Komazaki, Hua Zhu, Hiroshi Takeshima
- 2964-Pos BOARD B341**
ROLES OF MITSUGUMIN53 IN SKELETAL MUSCLE. **Mi Kyoung Ahn**, Keon Jin Lee, Mei Huang, Jianjie Ma, Eun Hui Lee
- 2965-Pos BOARD B342**
SILDENAFIL IS EFFECTIVE TO ENHANCE THE PROLIFERATION OF SKELETAL MYOBLASTS. **Mei Huang**, Keon Jin Lee, Mi Kyoung Ahn, Chung-Hyun Cho, Eun Hui Lee

Voltage-gated K Channels and Mechanisms of Voltage Sensing and Gating III (Boards B343 - B347)

2966-Pos BOARD B343
TRYPTOPHAN 207 IS CRUCIAL TO THE UNIQUE PROPERTIES OF THE HUMAN VOLTAGE GATED PROTON CHANNEL, HHV1. Vladimir V. Cherny, Deri Morgan, Boris Musset, Gustavo Chaves2, Susan M.E. Smith, **Thomas E. DeCoursey**

2967-Pos BOARD B344
HV1 PROTON CHANNEL RESTING-STATE VOLTAGE SENSOR MODEL STRUCTURES ARE REFINED BY EXPERIMENTAL MAPPING OF ZINC-COORDINATING RESIDUES. **Victor De-la-Rosa**, Ashley L. Bennett, Ian Scott Ramsey

2968-Pos BOARD B345
KVAP GATING STATES PROBED BY ELECTRON SPIN-ECHO ENVELOPE MODULATION (ESEEM) SPECTROSCOPY. **Dylan O. Burdette**, Adrian Gross

2969-Pos BOARD B346
REGULATION OF HERG1B BY HERG1A N-TERMINAL REGIONS. **Beth A. McNally**, Matthew C. Trudeau

2970-Pos BOARD B347
MULTIPLE METAL BRIDGES AT THE INTRACELLULAR GATE OF A VOLTAGE ACTIVATED POTASSIUM CHANNEL PREVENT CLOSING. **Angel A. de la Cruz Landrau**, Miguel Holmgren

Ligand-gated Channels III (Boards B348 - B363)

2971-Pos BOARD B348
MOLECULAR MODELING OF CHARGE SELECTIVITY IN PENTAMERIC LIGAND-GATED ION CHANNELS. **Tyler J. Harpole**, Claudio Grosman

2972-Pos BOARD B349
PATCH CLAMP FLUOROMETRY IN OUTSIDE-OUT PATCHES FOR LIGAND-GATED ION CHANNELS. **Matthias Wulf**, Stephan A. Pless

2973-Pos BOARD B350
THE ROLE OF A TRYPTOPHAN CLUSTER IN THE EXTRACELLULAR DOMAIN OF CYS-LOOP RECEPTORS. **Nina Braun**, Timothy Lynagh, Rilei Yu, Philip C. Biggin, Stephan A. Pless

2974-Pos BOARD B351
EXPRESSION AND PURIFICATION OF THE INTRACELLULAR DOMAIN OF A CATIONIC PENTAMERIC LIGAND-GATED ION CHANNEL. **Katharine Jenkins**, Akash Pandhare, Laura J. Delin, Michaela Jansen

2975-Pos BOARD B352
FUNCTIONAL AND BIOCHEMICAL CHARACTERIZATION OF ALVINELLA POMPEJANA CYS-LOOP RECEPTOR HOMOLOGUES. **Eveline Wijckmans**, Mieke Nys, Sarah Debaveye, Marijke Brams, Els Pardon, Daniel Bertrand, Jan Steyaert, Chris Ulens

2976-Pos BOARD B353
UNDERSTANDING NICOTINIC RECEPTOR ASSEMBLY IN THE ENDOPLASMIC RETICULUM WITH SINGLE MOLECULE FLUORESCENCE MICROSCOPY. **Chris Richards**, Ashley Loe, Faruk Moonschi

2977-Pos BOARD B354
PROBING BINDING INTERACTIONS OF AGONISTS WITH THE $\alpha 6\beta 2$ NICOTINIC ACETYLCHOLINE RECEPTOR. **Michael R. Post**, Dennis A. Dougherty, Henry A. Lester

2978-Pos BOARD B355
EFFECTS OF MENTHOL ON $\alpha 3\beta 4^*$ NICOTINIC RECEPTORS. **Suparna Patowary**, Elisha D.W. Mackey, Sheri L. McKinney, Purnima Deshpande, Brandon J. Henderson, Gabriel Biener, Valerica Raicu, Henry A. Lester

2979-Pos BOARD B356
SELECTIVITY OF SPIROIMINE PHYCOTOXINS TOWARD NICOTINIC ACETYLCHOLINE RECEPTORS. **Bogdan I. Iorga**, Rómulo Aráoz, Evelyne Benoit, Jordi Molgó

2980-Pos BOARD B357
SIMULATIONS OF ENDPLATE ACHRS: AGONIST SITE β -SHEET AND M1 π -HELIX. **Srirupa Chakraborty**, Anthony Auerbach

2981-Pos BOARD B358
FUNDAMENTAL CONSTANTS FOR ACTIVATION OF HUMAN ENDPLATE RECEPTORS. **Anthony Auerbach**, Tapan K. Nayak

2982-Pos BOARD B359
EFFECTS OF QUASI-NATIVE LIPID COMPOSITION ON MEMBRANE DOMAIN FORMATION INDUCED BY NICOTINIC ACETYLCHOLINE RECEPTORS. **Liam M. Sharp**, Reza Salari, Grace Brannigan

2983-Pos BOARD B360
INTERACTOME MAPS OF THE ACETYLCHOLINE RECEPTOR GATE REGION. **Tapan K. Nayak**, Anthony Auerbach

2984-Pos BOARD B361
THE $\beta 2(+)/\alpha 4(-)$ INTERFACES OF $(\alpha 4\beta 2)2\alpha 4$ NICOTINIC RECEPTORS ALLOSTERICALLY CONTRIBUTE TO RECEPTOR FUNCTION. **Simone Mazzaferro**, Isabel Bermudez, Silvia Garcia Del Villar, Karina K. New

2985-Pos BOARD B362
BETWEEN THE SHEETS: INTER-SUBUNIT BACKBONE INTERACTIONS AT ACHR NEUROTRANSMITTER BINDING SITES. **Shaweta Gupta**, Srirupa Chakraborty, Anthony Auerbach

2986-Pos BOARD B363
INTERACTION OF THE POSITIVE ALLOSTERIC MODULATOR LY2087101 WITH $\alpha 4\beta 2$ NICOTINIC ACETYLCHOLINE RECEPTOR. Ze-Jun Wang, Farah Deba, Tiffany R. Trevino, Kara Ramos, **Ayman K. Hamouda**

Ion Channel Regulatory Mechanisms (Boards B364 - B388)

2987-Pos BOARD B364
HIGH MEMBRANE PERMEABILITY FOR MELATONIN. **Haijie Yu**, Eamonn Dickson, Seung-Ryoung Jung, Duk-Su Koh, Bertil Hille

2988-Pos BOARD B365
LOCKING THE ASYMMETRIC OPEN CONFORMATION OF Mg^{2+} CHANNEL CORA WITH A SYNTHETIC ANTIBODY FRAGMENT. **Bharat Reddy**, Pawel Dominik, Olivier Dalmas, Tony Kossiakoff, Eduardo Perozo

2989-Pos BOARD B366
MITOGENIC ACTIVATION AND PROLIFERATION OF T LYMPHOCYTES IN TRPM7 KINASE-DEAD MUTANT MICE. **Pavani Beesetty**, Masayuki Matsushita, J. Ashot Kozak

2990-Pos BOARD B367
DYNAMIC INTERPLAY OF CALMODULIN AND FIBROBLAST GROWTH FACTOR HOMOLOGOUS FACTORS IN REGULATING NA CHANNELS. **Manu B. Johnny**, Gordon F. Tomaselli, David T. Yue

2991-Pos BOARD B368 CPOW TRAVEL AWARDEE
SECRETED HUMAN CLCA1 ACTIVATES CALCIUM-DEPENDENT CHLORIDE CURRENTS THROUGH DIRECT BINDING OF ITS VWA DOMAIN WITH AN EXTRACELLULAR LOOP OF TMEM16A/ANOCTAMIN 1. **Monica Sala-Rabanal**, Zeynep Yurtsever, Colin G. Nichols, Tom J. Brett

2992-Pos BOARD B369
FUNCTIONAL COUPLING BETWEEN TRPV1 AND ANO1 IN SENSORY NEURONS REQUIRES CA²⁺-RELEASE FROM THE ENDOPLASMIC RETICULUM. **Shihab Shah**, Nikita Gamper

2993-Pos BOARD B370
TRANSCRIPTIONAL REGULATION OF POTASSIUM CHANNEL EXPRESSION BY G9A IN NEUROPATHIC PAIN. **Hui-Lin Pan**, Shao-Rui Chen, Geoffroy Laumet, Yuhao Zhang

2994-Pos BOARD B371
NICOTINE-UPREGULATION OF ALPHA 7 NACHR IN XENOPUS OOCYTES. **Joseph Farley**, Mohammad F. Islam, Patrick B. Schwartz, Kristi DeBoeuf, Jayharsh Panchal, Thangaraju Murugesan, Jed E. Rose

2995-Pos BOARD B372
MOLECULAR MECHANISM OF USE-DEPENDENT ACTIVATION OF KV1.2 CHANNEL COMPLEXES AND ITS IMPACT ON REGULATION OF NEURONAL EXCITABILITY. **Victoria A. Baronas**, Brandon R. McGuinness, Yury Y. Vilin, Stefano G. Brigidi, Shernaz X. Bamji, Runying Yang, Harley T. Kurata

2996-Pos BOARD B373
HETERODIMERIZATION WITHIN THE TREK CHANNEL SUBFAMILY. **Guillaume Sandoz**

2997-Pos BOARD B374
POLYMODAL GATING OF THE TREK-2 K2P POTASSIUM CHANNEL INVOLVES STRUCTURALLY DISTINCT OPEN STATES. **Conor McClenaghan**, Marcus Schewe, Thomas Baukowitz, **Stephen J. Tucker**

2998-Pos BOARD B375
KV7.5 POTASSIUM CHANNEL SUBUNITS ARE THE PRIMARY TARGET FOR PKA-DEPENDENT ENHANCEMENT OF VASCULAR SMOOTH MUSCLE KV7 CURRENTS. **Lyubov I. Brueggemann**, Bharath K. Mani, Christina Robakowski, Leanne L. Cribbs, Kenneth L. Byron

2999-Pos BOARD B376
INTRACELLULAR ZINC AND ASCORBATE POTENTIATE KCNQ CURRENTS VIA DISTINCT MECHANISMS. **Aurelien Boillat**, Haixia Gao, Chris Peers, Nikita Gamper

3000-Pos BOARD B377
INTRACELLULAR ZINC POTENTIATES KCNQ CHANNELS THROUGH MODULATION OF THEIR SENSITIVITY TO PIP2. **Haixia Gao**, Aurelien Boillat, Chris Peers, **Nikita Gamper**

3001-Pos BOARD B378
MODULATION OF NEURONAL KIR3 CHANNELS BY CHOLESTEROL. **Anna N. Bukiya**, **Avia Rosenhouse-Dantsker**

3002-Pos BOARD B379
CROSS-TALK BETWEEN CHOLESTEROL, PIP2 AND CAVEOLIN IN REGULATING KIR2 CHANNELS. **Huazhi Han**, Avia Rosenhouse-Dantsker, Radhakrishnan Gnanasambandam, Frederick Sachs, **Irena Levitan**

3003-Pos BOARD B380
A SHARED MECHANISM OF BK CHANNEL ACTIVATION BY MALLOTOXIN AND AUXILIARY γ 1 SUBUNIT. **Xin Guan**, Qin Li, **Jiusheng Yan**

3004-Pos BOARD B381
A CRITICAL ROLE OF THE S6 TRANSMEMBRANE HELIX IN BK CHANNEL MODULATION BY AUXILIARY γ SUBUNITS. **Qin Li**, Jiusheng Yan

3005-Pos BOARD B382
THE STRETCH-ACTIVATED BK (SAKCA) CHANNEL IN CHICK HEART IS INHIBITED BY THE SPIDER PEPTIDE GSMTX-4. **Qiong-Yao Tang**, Xiao-Dong Tang, Yan-Jun Feng, Hui Li, Fei-Fei Zhang, Zhe Zhang, Masahiro Sokabe

3006-Pos BOARD B383
N-LINKED GLYCOSYLATION REGULATES CALHM1 CHANNEL FUNCTION AND SUBCELLULAR LOCALIZATION. **Akiyuki Taruno**, Hongxin Sun, Makiko Kashio, Yoshinori Marunaka

3007-Pos BOARD B384
EFFECTS OF EXCLUDED VOLUME AND INDUCED N-TERMINAL CONFORMATIONAL CHANGE ON ION TRANSLOCATION ACROSS VDAC. **Sai Shashank Chavali**, Grace Brannigan, Reza Salari

3008-Pos BOARD B385
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF TWO NOVEL ION CHANNELS OF MITOCHONDRIA. **Vanessa Checchetto**, Angela Paggio, Simona Reina, Diego De Stefani, Vito De Pinto, Rosario Rizzuto, Ildikò Szabò

3009-Pos BOARD B386
CONFORMATIONAL CHANGES THAT OPENS TRKH ION CHANNEL. **Hanzhi Zhang**, Zhao Wang, Wah Chiu, Ming Zhou

3010-Pos BOARD B387 CID TRAVEL AWARDEE
ELUCIDATING THE PH DEPENDENT MECHANISM OF OMPG GATING. **Christina M. Chisholm**, Emily Friis, Monifa A. Fahie, Min Chen

3011-Pos BOARD B388
CHARACTERIZATION OF TRANSMEMBRANE SYNTHETIC CHLORIDE ION TRANSPORTERS. **Ahmed Fuwad**

TRP Channels II (Boards B389 - B407)

3012-Pos BOARD B389
STORE-OPERATED CA²⁺ ENTRY MEDIATED BY ORAI1 AND TRPC1 PARTICIPATES TO INSULIN SECRETION IN RAT β -CELLS. **Jessica Sabourin**, Loïc Le Gal, Jacques-Antoine Haefliger, Eric Raddatz, Florent Allagnat

3013-Pos BOARD B390
TRPC3-CALCINEURIN MICRODOMAINS GOVERN ORAI1 SIGNALING IN MAST CELLS. **Michael Poteser**, Bernadett Bacsá, Oleksandra Tiapko, Michaela Lichtenegger, Irene Frischauf, Christoph Romanin, **Klaus Groschner**

3014-Pos BOARD B391
MODULATION OF NEURONAL ACTIVITY BY SYNTHETIC ACTIVATORS OF LIPID-GATED TRPC CHANNELS. **Oleksandra Tiapko**, Toma Glasnov, Gemma Guedes de la Cruz, Michael Poteser, Michaela Lichtenegger, Klaus Groschner

3015-Pos BOARD B392 INTERNATIONAL TRAVEL AWARDEE
MECHANOSENSITIVITY OF TRPC6 ION CHANNEL RECONSTITUTED IN THE LIPOSOMES. **Yury A. Nikolaev**, Paul R. Rohde, Derek R. Laver, Boris Martinac

3016-Pos BOARD B393
CRITICAL ROLES OF G_{i/o} PROTEINS AND PHOSPHOLIASE C- δ 1 IN THE ACTIVATION OF RECEPTOR-OPERATED TRPC4 CHANNELS. **Dhananjay Thakur**, Jin Bin Tian, Jaepyo Jeon, Michael X. Zhu

3017-Pos BOARD B394
REGULATOR OF G PROTEIN SIGNALING (RGS) AND GOLOCO PROTEINS SUPPRESS TRPC4 CHANNEL FUNCTION VIA ACTING AT GAI/O. **Jaepyo Jeon**, Dhananjay P. Thakur, Jin Bin Tian, Michael X. Zhu

3018-Pos BOARD B395
INTRACELLULAR CALCIUM ACTIVATED AN ENDOGENOUS CURRENT IN HEK293 CELLS, BUT DID NOT ACTIVATE TRPC4-MEDIATED CURRENTS. **Yekaterina Merkulova**, Nicholas Penington, Keith Williams

3019-Pos BOARD B396
STORE OPERATED CALCIUM CHANNELS, NEW TARGETS OF ALDOSTERONE IN CARDIOMYOCYTES. **Fiona Bartoli**, Jessica Sabourin, Ana-Maria Gomez, Jean-Pierre Benitah

3020-Pos BOARD B397

THE CYCLIC AMP SIGNALING PATHWAY AND DIRECT PKA PHOSPHORYLATION REGULATE POLYCYSTIN-2 (TRPP2) CHANNEL FUNCTION. **María del Rocío Cantero**, Irina F. Velázquez, Andrew J. Streets, Albert C.M. Ong, Horacio F. Cantiello

3021-Pos BOARD B398

REGULATION OF POLYCYSTIN-2 TRPP2 ASSOCIATED CATION CURRENTS IN THE RENAL EPITHELIAL CELL LINE LLC-PK1 BY THE CALCIUM-SENSING RECEPTOR. Xiao Qing Dai, **Paula L. Perez**, Mariano Smoler, María del Rocío Cantero, Horacio F. Cantiello

3022-Pos BOARD B399

FURTHER EVIDENCE OF AN ALTERNATIVE ION PERMEATION PATHWAY IN THE NOCICEPTOR TRPM3. **Katharina Held**, Annelies Janssens, Thomas Voets, Joris Vriens

3023-Pos BOARD B400

TRPM3 EXHIBITS SLIGHT TEMPERATURE SENSITIVITY IN THE PLANAR LIPID BILAYER SYSTEM AND REQUIRES THE PRESENCE OF PIP_2 . **Lusine Demirkhanyan**, Kunitoshi Uchida, Swapna Asuthkar, Alejandro Cohen, Makoto Tominaga, Eleonora Zakharian

3024-Pos BOARD B401

ROLE OF THE KINASE DOMAIN IN TRPM7 CHANNEL ACTIVITY AND FUNCTION. **Ceredwyn E. Hill**, Mustafa D. Ahmadzai

3025-Pos BOARD B402

TESTOSTERONE IS A HIGHLY POTENT AND SPECIFIC AGONIST OF TRPM8. Zahir Hussain, Lusine Demirkhanyan, Swapna Asuthkar, **Eleonora Zakharian**

3026-Pos BOARD B403

UBIQUITIN-MEDIATED TRPM8 PROTEIN DEGRADATION IN THE PATHOGENESIS OF PROSTATE CANCER. **Swapna Asuthkar**, Alejandro Cohen, Lusine Demirkhanyan, Eleonora Zakharian

3027-Pos BOARD B404

COMPETITIVE PIRT AND $PI(4,5)P_2$ INTERACTIONS MODULATE TRPM8. Nicholas J. Sisco, Parthasarathi Rath, **Wade D. Van Horn**

3028-Pos BOARD B405

IMPLICATIONS OF HUMAN TRPM8 CHANNEL GATING FROM SENSING DOMAIN AND MENTHOL BINDING STUDIES. **Parthasarathi Rath**

3029-Pos BOARD B406

BIOPHYSICAL CHARACTERIZATION OF HUMAN TRANSIENT RECEPTOR POTENTIAL MELASTATIN 8 (TRPM8) ION CHANNEL MODULATION BY PHOSPHOINOSITIDE REGULATOR OF TRP (PIRT). **Jacob K. Hilton**, Nicholas J. Sisco, Parthasarathi Rath, Wade D. Van Horn

3030-Pos BOARD B407

TARGETING SEQUENCE AND FUNCTION-DEPENDENCE OF SUBCELLULAR LOCALIZATION OF TRANSIENT RECEPTOR POTENTIAL MUCOLIPIN CHANNELS. **Jian Xiong**, Xinghua Feng, Michael X. Zhu

Myosins (Boards B408 - B420)

3031-Pos BOARD B408

STRUCTURAL COORDINATION OF THE MYOSIN POWERSTROKE. **Joseph Muretta**, John Rohde, David D. Thomas

3032-Pos BOARD B409

MECHANISM OF COOPERATIVE FORCE GENERATIONS BETWEEN SKELETAL MYOSINS. **Motoshi Kaya**, Yoshiaki Tani, Takumi Washio, Toshiaki Hisada, Hideo Higuchi

3033-Pos BOARD B410

β -MYHC MUTATIONS LINKED TO EARLY-ONSET HCM AND DCM SHOW DIFFERENCES IN PRE-STEADY AND STEADY STATE KINETIC PARAMETERS. **Carlos D. Vera Velazquez**, Jonathan Walklate, Michael A. Geeves, Leslie A. Leinwand

3034-Pos BOARD B411

ARACHIDONIC ACID DIRECTLY BINDS AND ACTIVATES BETA-CARDIAC MYOSIN IN THE REGULATED CARDIAC ACTOMYOSIN COMPLEX. **Manuel H. Taft**, Giulia Falorsi, Michael B. Radke, Salma Pathan-Chhatbar, Nikolas Hundt, Claudia Thiel, Mirco Müller, Vincenzo Lombardi, Dietmar J. Manstein

3035-Pos BOARD B412

MODELLING OF DOUBLE HIT MUTATIONS IN THORACIC AORTIC ANEURYSM DISEASE THAT HAVE VARIABLE IMPACT ON PHENOTYPE. **Brett D. Hambly**, Elizabeth Robertson, Stefanie S. Portelli, Yaxin Lu, Murat Kekic, Richmond Jeremy

3036-Pos BOARD B413

ELECTROSTATICS OF ACTOMYOSIN INTERFACE AND THE RATE OF RIGOR BINDING. **Jinghua Ge**, Bhavana Ambil, Furong Huang, Yuri E. Nesmelov

3037-Pos BOARD B414

MYOSIN II HEAD INTERACTION IN PRIMITIVE SPECIES. Kyoungwan Lee, Shixin Yang, Xiong Liu, Edward D. Korn, Floyd Sarsoza, Sanford I. Bernstein, Luther Pollard, Matthew J. Lord, Kathleen M. Trybus, **Roger Craig**

3038-Pos BOARD B415 EDUCATION TRAVEL AWARDEE

CHARACTERIZATION OF A UNIQUE MYOSIN IIIA DEAFNESS MUTATION WHICH ENHANCES ACTIN-SLIDING VELOCITY BUT ABOLISHES FILOPODIA TIP LOCALIZATION. **Manmeet H. Raval**, Lina Jamis, William Unrath, Omar A. Quintero, M'hamed Grati, Jasmine Crenshaw, Xue Zhong Liu, Christopher M. Yengo

3039-Pos BOARD B416

LARGE VESICLE MOVES IN ROLLING MANNER BY MYOSIN 5C ALONG ACTIN TRACKS. **Justin J. Raupp**, Alexander Pattyn, Laura K. Gunther, Xuequn Chen, Takeshi Sakamoto

3040-Pos BOARD B417

MYOSIN 19 IS AN OUTER MITOCHONDRIAL MEMBRANE MOTOR AND EFFECTOR OF STARVATION INDUCED FILOPODIA WITH UNIQUE KINETIC FEATURES. **Arnon Henn**, Boris Shneyer, Marko Usaj

3041-Pos BOARD B418

COMPARING THE MOTILITY OF MYOSIN X WITH PARALLEL AND ANTI-PARALLEL DIMERIZATION DOMAINS. **Matthew A. Caporizzo**, Claire E. Fishman, Osamu Sato, Mitsuo Ikebe, Yale E. Goldman

3042-Pos BOARD B419

DYNAMIC ACTIN NETWORKS UTILIZED TO SUPPORT SIMULTANEOUS PROGRESSIVE MOTILITY OF TWO DIFFERENT MYOSIN MOTOR CLASSES. **Alicja Santos**, Ronald S. Rock

3043-Pos BOARD B420 EDUCATION TRAVEL AWARDEE

FLUORESCENCE INTERFERENCE CONTRAST MICROSCOPY (FLIC) - A NEW TOOL TO STUDY THE COLLECTIVE MOTOR DYNAMICS. **Agata K. Krenc**, Jagoda Rokicka, Ronald S. Rock

Cytoskeletal Assemblies and Dynamics (Boards B421 - B437)

3044-Pos BOARD B421

MEASURING THE ON-RATE OF MEMBRANE-CYTOSKELETON BONDS AT THE NEAR-EQUILIBRIUM REGION. **Vivek Rajasekharan**, Varun K. A. Sreenivasan, Jeffrey N. Myers, Fred A. Pereira, Brenda Farrell

3045-Pos BOARD B422 INTERNATIONAL TRAVEL AWARDEE
DYNAMIC INSTABILITY EMERGES FROM MICROMECHANICS AND CHEMICAL KINETICS OF MICROTUBULE PROTOFILAMENTS. **Ishutesh Jain**, Ranjith Padinhateeri

3046-Pos BOARD B423 INTERNATIONAL TRAVEL AWARDEE
EFFECT OF BRANCHING ON FORCE-VELOCITY CURVES AND LENGTH FLUCTUATIONS OF ACTIN NETWORKS. **Deepak K. Hansda**, Shamik Sen, Ranjith Padinhateeri

3047-Pos BOARD B424
GLASSY DYNAMICS OF PASSIVE AND ACTIVE NETWORK MATERIALS: A MICROSCOPIC THEORY. **Shenshen Wang**, Peter Wolynes

3048-Pos BOARD B425
BOUNDARY EFFECTS ON ACTIVE ACTIN GELS. **Felix Keber**, Andreas Bausch

3049-Pos BOARD B426
FROM NANOSCALE TO MESOSCALE: INTEGRATING ADVANCED MICROSCOPY TECHNIQUES TO REVEAL THE ULTRASTRUCTURE AND COORDINATED DYNAMICS OF MECHANOSENSORY PODOSOMES. Koen van den Dries, Marjolein BM Meddens, Elvis Pandzic, Ben Joosten, Johan A. Slotman, Leila Nahidiazar, Kees Jalink, Adriaan B. Houtsmuller, Paul W. Wisemann, **Alessandra Cambi**

3050-Pos BOARD B427
STRUCTURE AND DYNAMICS OF FILOPODIA STUDIED BY ELECTRON CRYOTOMOGRAPHY AND SINGLE MOLECULE FLUORESCENCE IMAGING. Andrew Howe, James Streetley, Michelle Peckham, Peter B. Rosenthal, **Justin E. Molloy**

3051-Pos BOARD B428
ACTIN FILAMENTS BUNDLING MECHANISMS BY FASCIN IN FILOPODIA WERE REVEALED WITH CRYO-ET. **Shinji Aramaki**, Kouta Mayanagi, Kazuhiro Aoyama, Takuo Yasunaga

3052-Pos BOARD B429
SUBSTRATE REGULATION OF CYTOSKELETAL ORDER AND BEATING STRAIN DYNAMICS OF CARDIOMYOCYTES. Kinjal Dasbiswas, Ohad Cohen, **Sam Safran**

3053-Pos BOARD B430
A MISSENSE MUTATION IN THE OBSCURIN GENE LEADS TO HYPERTROPHIC CARDIOMYOPATHY DUE TO DEREGULATED CALCIUM CYCLING. Li-Yen R. Hu, Maegen Ackermann, Peter Hecker, Benjamin Prosser, Brendan King, Kelly O'Connell, Larry Asico, Pedro Jose, Nathan Wright, Jonathan Lederer, **Aikaterini Kontrogianni-Konstantopoulos**

3054-Pos BOARD B431
TWO ISOFORMS OF MYOSIN-II ACCOUNT FOR THE TENSION OF THE FISSION YEAST CYTOKINETIC RING. **Shuyuan Wang**, Harvey F. Chin, Erdem Karatekin, Thomas D. Pollard, Ben O'Shaughnessy

3055-Pos BOARD B432
FULL T-CELL ACTIVATION BUT NOT EARLY SIGNALING REQUIRES ACTIN REMODELING. **Marco Fritzsche**, Christian Eggeling

3056-Pos BOARD B433
3-D TOPOLOGICAL ARRANGEMENT OF CYTOSKELETON MODULATED BY ENVIRONMENTAL MECHANICS. **Chiao-Yu Tseng**, Emilio Sanchez, Chin-Lin Guo

3057-Pos BOARD B434
STORAGE AND ABRUPT RELEASE OF ELASTIC ENERGY IN THE MICROTUBULE-EG5 NETWORK. Takayuki Torisawa, Daisuke Taniguchi, Shuji Ishihara, **Kazuhiro Oiwa**

3058-Pos BOARD B435
QUANTIFYING THE EFFECT OF ELECTRIC FIELDS IN THE FREQUENCY RANGE OF 100-500 KHZ ON MITOTIC SPINDLE STRUCTURES. **Zeev Bormzon**, Cornelia Wenger, Moshe Giladi, Noa Urman, Rosa S. Schneiderman, Tali Voloshin Sela, Ya'ara Porat, Mijal Munster, Roni Blat, shay sherbo, Uri Weinberg, Eilon Kirson, Pedro C. Miranda, Yoram Wasserman, Yoram Palti

3059-Pos BOARD B436
BRIGHTNESS CHARACTERIZATION OF SUN1 AND SUN2 BY Z-SCAN FLUORESCENCE FLUCTUATION SPECTROSCOPY. Cosmo A. Saunders, Jared Hennen, Elizabeth M. Smith, Joachim D. Mueller, **GW Gant Luxton**

3060-Pos BOARD B437
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Cell Mechanics, Mechanosensing, and Motility III (Boards B438 - B463)

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THE VINCULIN D1 DOMAIN STABILIZES α E-CATENIN IN A STRONG ACTIN BINDING STATE. **Nicolas A. Bax**

3062-Pos BOARD B439
MECHANOSENSITIVITY OF ACTIN TURNOVER ALLOWS CELLS TO MAINTAIN HOMEOSTASIS AGAINST MYOSIN-II CONTRACTILE FLUCTUATIONS IN THE CYTOSKELETON. Shuyuan Wang, **Sathish Thiyagarajan**, Mark A. Smith, Elizabeth Blankman, Laura M. Chapin, Mary C. Beckerle, Ben O'Shaughnessy

3063-Pos BOARD B440
MODELING MECHANICALLY-INDUCED GROWTH CONE ADVANCE REVEALS THE IMPORTANCE OF MICROMETER-SCALE ELASTIC ADHESION STRUCTURES IN RIGIDITY SENSING. **Ahmad I M Athamneh**, Rodolfo Amezcua, Arvind Raman, Daniel M. Suter

3064-Pos BOARD B441
BINDING FORCES OF SINGLE α M β 2 INTEGRIN-FIBRINOGEN INTERACTIONS ON LIVING CELLS. **Wayne B. Christenson**

3065-Pos BOARD B442
THE MECHANICAL PROPERTIES OF TALIN ROD DOMAIN. **Mingxi Yao**, Benjamin T. Goult, Michael P. Sheetz, Jie Yan

3066-Pos BOARD B443
FRUSTRATED PHAGOCYTOTIC SPREADING DYNAMICS END IN DISTINCT NON-MUSCLE MYOSIN II DEPENDENT CONTRACTION. **Daniel T. Kovari**, Wenbin Wei, Jan-Simon Toro, Ruth E. Fogg, Karen Porter, Jennifer E. Curtis

3067-Pos BOARD B444
ROLE OF TOPOGRAPHIC CUES ON CANCER CELL PROLIFERATION. **Parthiv Kant Chaudhuri**

3068-Pos BOARD B445
CELL MECHANICAL PROPERTIES AND CANCER METASTASIS: EFFECTS OF CANCER DRUGS AND RADIOTHERAPY. Sruti V. Prathivadhi-Bhayankaram, Carolyn E. Taylor, Jianhao Ning, Michael Nichols, **Andrew E. Ekpenyong**

3069-Pos BOARD B446
EVALUATING BREAST CANCER CELL MORPHOLOGY AS A PREDICTOR OF INVASIVE CAPACITY. **Michelle J. Ziperstein**, Asja Guzman, Laura J. Kaufman

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THE ROLE OF HETEROGENEITY IN CANCER CELL MIGRATION. **Christoph Mark**, Claus Metzner, Julian Steinwachs, Lena Lautscham, Ben Fabry

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MECHANICAL INDUCTION OF THE TUMORIGENIC β -CATENIN PATHWAY BY TUMOUR GROWTH PRESSURE IN VIVO. **Emmanuel Farge**

3072-Pos BOARD B449

SEGREGATION OF MOBILE NUCLEAR PROTEINS AWAY FROM CHROMATIN WHEN THE NUCLEUS IS CONSTRICTED. **Charlotte R. Pfeifer**, Jerome Irianto, Dennis E. Discher

3073-Pos BOARD B450

A CHEMO-MECHANICAL MODEL FOR EXTRACELLULAR MATRIX AND NUCLEAR RIGIDITY REGULATED SIZE OF FOCAL ADHESION PLAQUES. **Xuan Cao**, Yuan Lin, Tristian P. Driscoll, Janusz Franco-Barraza, Edna Cukierman, Robert L. Mauck, Vivek Shenoy

3074-Pos BOARD B451

SPINDLE MICRO-FLUCTUATIONS OF LENGTH REVEAL ITS DYNAMICS OVER CELL DIVISION. **Benjamin Mercat**, Xavier Pinson, Jonathan Fouchard, Hadrien Mary, Sylvain Pastezeur, Zahraa Alayan, Yannick Gachet, Sylvie Tournier, H el ene Bouvrais, Jacques P ecr eaux

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ACTOMYOSIN NETWORK CONTRACTILITY TRIGGERS A STOCHASTIC TRANSFORMATION INTO HIGHLY MOTILE AMOEBOID CELLS. **Verena Ruprecht**, Stefan Wieser, Andrew Callan-Jones, Michael Smutny, Hitoshi Morita, Keisuke Sako, Vanessa Barone, Monika Ritsch-Marte, Michael Sixt, Raphael Voituriez, Carl-Philipp Heisenberg

3076-Pos BOARD B453

CYTOSKELETAL AND ADHESION DYNAMICS ARE COUPLED TO MATRIX DEFORMATION IN 3D CELL MIGRATION. **Leanna M. Owen**, Arjun S. Adhikari, Mohak Patel, Natascha Leijnse, Min Cheol Kim, Christian Franck, Alexander R. Dunn

3077-Pos BOARD B454

HOMEOSTASIS OF PLASMA MEMBRANE TENSION THROUGH SURFACE AREA REGULATION IN EPITHELIAL CELLS. **Andreas Janshoff**, Bastian Brueckner, Stefan Nehls

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CELL MOTILITY AND GROWTH FACTORS ACCORDING TO DIFFERENTIALLY VARIATIONAL SURFACES. **David V. Svintrazde**

3079-Pos BOARD B456

CELLULAR ADHESION: EVALUATING THE EFFECT OF RECEPTOR-LIGAND CHEMISTRIES, DISTRIBUTION OF RECEPTORS, AND SPREAD VERSUS SPHERICAL CELL GEOMETRY. **Aravind R. Rammohan**, Mathew Mckenzie, Ravi Radhakrishnan, Natesan Ramakrishnan

3080-Pos BOARD B457

CELL FORMATION AND COMPETITION IN THREE DIMENSIONS. Anqi Huang, Jianmin Yin, Weimiao Yu, **Timothy E. Saunders**

3081-Pos BOARD B458

MECHANICAL PROPERTIES OF DIFFERENTIATING STEM CELLS ON PEPTIDE NANOFIBERS. **Ahmet E. Topal**, Ayse B. Tekinay, Mustafa O. Guler, Aykutlu Dana

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COHERENT MOTION OF MONOLAYER SHEETS UNDER ACTIVE AND PASSIVE CONFINEMENT: FROM BUILD-UP TO CONSEQUENCE. **SS Soumya**, Dibyendu Das, Shamik Sen, Mandar M. Inamdar

3083-Pos BOARD B460

MECHANOBIOLOGICAL INDUCTION OF LONG-RANGE CONTRACTILITY AND SIZE SCALING IN CELL ASSEMBLIES. **Kinjal Dasbiswas**, Samuel Safran

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CORTICAL FLOW-DRIVEN SHAPES OF NON-ADHERENT CELLS. **Andrew Callan-Jones**, Verena Ruprecht, Stefan Wieser, Carl-Philipp Heisenberg, Rapha el Voituriez

3085-Pos BOARD B462

AN ACTIVE CONTRACTION MODEL OF VALVULAR INTERSTITIAL CELLS. Yusuke Sakamoto, **Michael S. Sacks**

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MULTI-CELLULAR MECHANICAL REGULATION OF ENDOTHELIAL PERMEABILITY. **Corey Hardin**, Ramaswamy Krishnan, Emanuela Del Gado

Membrane Pumps, Transporters, and Exchangers II (Boards B464 - B490)

3087-Pos BOARD B464

THE MECHANICAL INSIGHTS INTO PROTON/ELECTRON TRANSFER IN CYTOCHROME C OXIDASE REVEALED BY DIRECT MODELING OF VOLTAGE CHANGES IN RESPONSE TO CHARGE SEPARATION. **Ilsoo Kim**, Arie H Warshel

3088-Pos BOARD B465

WHAT KEEPS TOLC CLOSED? INSIGHTS FROM MOLECULAR DYNAMICS SIMULATIONS. **Fabio Grassi**, Vassilij N. Bavro, Ulrich Kleinekath ofer

3089-Pos BOARD B466

SPONTANEOUS INWARD OPENING OF THE DOPAMINE TRANSPORTER IS TRIGGERED BY PIP2-REGULATED DYNAMICS OF THE N-TERMINUS. **George Khelashvili**, Nathaniel Stanley, Michelle Sahai, Jaime Medina, Michael V. LeVine, Lei Shi, Gianni De Fabritiis, Harel Weinstein

3090-Pos BOARD B467

COMPUTATIONAL INVESTIGATION OF THE TRANSPORT MECHANISM OF NEUROTRANSMITTER SODIUM SYMPORTERS USING A PHYSIOLOGICAL ION GRADIENT. **Emily M. Benner**, Jeffrey D. Madura

3091-Pos BOARD B468

TOWARDS IDENTIFYING BIOLOGICALLY RELEVANT INTERMEDIATE CONFORMATIONAL STATES IN DOPAMINE TRANSPORTER. **Ara M. Abramyan**, Nicholas Taro, Sebastian Stolzenberg, Lei Shi

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KEEPING SECONDARY TRANSPORTERS UNDER CONTROL: LESSONS FROM A Na^+/Ca^{2+} EXCHANGER. **Fabrizio Marinelli**, Jos e Faraldo-G omez

3093-Pos BOARD B470 CID TRAVEL AWARDEE

COMBINED QM/MM DYNAMICS SIMULATIONS OF PROTON TRANSFER IN E. COLI CLC CHLORIDE/PROTON ANTIporter. **Christina Garza**

3094-Pos BOARD B471

COMPUTATIONAL STUDIES OF ELEVATOR-LIKE MOVEMENTS IN SECONDARY TRANSPORT. Cristina Fenollar-Ferrer, Claudio Anselmi, Ariela Vergara Jaque, Hossein Ali Karimi-Verzaneh, Horacio Poblete-Vilches, Christopher Mulligan, Ian C. Forster, Joseph A. Mindell, Jos e D. Faraldo-G omez, **Lucy R. Forrest**

3095-Pos BOARD B472

DISSECTING FUNCTIONAL CORRELATES OF A DOUBLE MUTATION ENHANCING GLTPH TRANSPORT EFFICIENCY USING ALCHEMICAL FREE ENERGY CALCULATIONS. **Michel A. Cuendet**, Harel Weinstein

3096-Pos BOARD B473

HIGH-RESOLUTION STRUCTURES AND MOLECULAR DYNAMICS SIMULATIONS OF THERMUS THERMOPHILUS NAPA REVEAL A LARGE-SCALE CONFORMATIONAL CHANGE FOR ION TRANSLOCATION. **David L. Dotson**, Mathieu Coincon, Povilas Uzdaviny, Emmanuel Nji, Iven Winkelmann, Saba Abdul-Hussein, Alexander D. Cameron, David Drew, Oliver Beckstein

3097-Pos BOARD B474

STRUCTURAL CHARACTERIZATION OF SUBSTRATE TRANSPORT SELECTIVITY OF THE SLC13 FAMILY OF Na^+ /DICARBOXYLATE COTransportERS. **Claire Colas**, Ana M. Pajor, Avner Schlessinger

3098-Pos BOARD B475

A MOLECULAR DYNAMICS BASED MODEL OF THE OUTWARD-FACING STATE AND TRANSPORT MECHANISM OF THE HUMAN NACT HOMOLOG VCINDY. **Noah Trebesch**, Joshua V. Vermaas, Emad Tajkhorshid

3099-Pos BOARD B476
MOLECULAR DYNAMICS OF THE MTRE EFFLUX GATE FROM N. GONOR-RHOEAE. **Giulia Tamburrino**, Owen N. Vickery, Alexander Krahl, Anthony G. Hope, Ulrich Zachariae

3100-Pos BOARD B477
ELECTROSTATIC LOCK CONTROLLING STRUCTURAL TRANSITION IN THE EMRE POLYAROMATIC CATION TRANSPORTER. **Joshua V. Vermaas**, Emad Tajkhorshid

3101-Pos BOARD B478 INTERNATIONAL TRAVEL AWARDEE
RESCUE OF NA⁺ AFFINITY IN ASPARTATE-928 MUTANTS OF NA⁺,K⁺-ATPASE BY SECONDARY MUTATION OF GLUTAMATE-314. **Rikke Holm**, Anja P. Einholm, Jens P. Andersen, Pablo Artigas, Bente Vilsen

3102-Pos BOARD B479
ENZYMATIC REQUIREMENTS FOR NON-CANONICAL PROTON IMPORT BY NA/K PUMPS. **Kevin Stanley**, Craig Gatto, Pablo Artigas

3103-Pos BOARD B480
BINDING SITE PROTONATION AND UPHILL OCCLUSION CONTROL THE NA⁺/K⁺-PUMP SELECTIVITY. **Huan Rui**, Benoît Roux

3104-Pos BOARD B481
CONFORMATIONAL TRANSITIONS AND ALTERNATIVE ACCESS MECHANISM IN ATP-DRIVEN CALCIUM PUMP SERCA. **Avisek Das**, Benoit Roux

3105-Pos BOARD B482
KINETICS BY X-RAY CRYSTALLOGRAPHY: SEQUENTIAL SUBSTITUTION OF K⁺ BOUND TO NA⁺,K⁺-ATPASE. **Haruo Ogawa**, Flemming Cornelius, Ayami Hirata, Chikashi Toyoshima

3106-Pos BOARD B483
MOLECULAR MECHANISM BY WHICH TWO LYSINE SUBSTITUTIONS ALTER NA/K-PUMP STOICHIOMETRY TO CONFER HIGH-SALINITY ADAPTATION IN BRINE SHRIMP. **Dylan J. Meyer**, Jessica Eastman, Huan Rui, Kevin Stanley, Craig Gatto, Benoit Roux, Pablo Artigas

3107-Pos BOARD B484
NANOSECOND FLUORESCENCE AND MICROSECOND SIMULATION OF SERCA REGULATORY INTERACTIONS WITH SARCOLIPIN AND PHOSPHOLAMBAN. **Joseph M. Autry**, Michel Espinoza-Fonseca, Kurt C. Peterson, Bengt Svensson, David D. Thomas

3108-Pos BOARD B485
IN VITRO DEMONSTRATION OF LIGHT-DRIVEN NA⁺/H⁺ PUMPING BY A MICROBIAL RHODOPSIN. **Hai Li**, Oleg A. Sineshchekov, Giordano F. Z. da Silva, John L. Spudich

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THE DIVERSITY OF LIGHT-DRIVEN ION PUMPS AND THEIR CONVERSION INTO ION CHANNELS. **Arend Vogt**, Christiane Grimm, Peter Hegemann

3110-Pos BOARD B487
LOCALIZATION OF A SODIUM BINDING SITE IN THE SODIUM TRANSLOCATING NADH:UBIQUINONE OXIDOREDUCTASE. **Katherine G. Mezc**, Blanca Barquera

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CHARACTERIZING NANOPORE-POLYMER INTERACTIONS AND CYS-LOOP PROTEIN RECEPTOR GATING. **Nicholas B. Guros**, Jeffery B. Klauda

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KEY DIFFERENCES IN MOLECULAR TRANSPORT MECHANISMS OF UNCOUPLING PROTEINS. **Gabriel Macher**, Melanie Köhler, Anne Rupprecht, Peter Hinterdorfer, Elena Pohl

3113-Pos BOARD B490
WATER PATHWAY ANALYSIS OF MULTI-DRUG EFFLUX TRANSPORTER ACRB. **Tsutomu Yamane**, Ryotaro Koike, Motonori Ota, Satoshi Murakami, Akinori Kidera, Mitsunori Ikeguchi

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3115-Pos BOARD B492
RESONANCES AND SPECTRAL CHARACTERISTICS OF A NEURAL NETWORK FOR THE SONG MOTOR PATHWAY IN BIRDS. **Cristiano Giordani**, Hector Fabio Rivera-Gutierrez, Ruggero Micheletto

3116-Pos BOARD B493
NOISE-DRIVEN SYNCHRONIZATION OF COUPLED NEURAL NETWORKS. **Anis Yuniati**, Te-Lun Mai, Chi-Ming Chen

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A UNIFIED FRAMEWORK FOR NEURONAL SPIKES, SEIZURES, SPREADING DEPRESSION, AND ISCHEMIA-INDUCED ANOXIC DEPOLARIZATION. **Ghanim Ullah**, Yina Wei, Steven J. Schiff

3118-Pos BOARD B495
CELL VOLUME IN BRAIN PATHOLOGIES: ANIONS-CONTROLLED NEURAL AND GLIAL SWELLING IN SPREADING DEPOLARIZATION AND INCREASED NEURONAL SUSCEPTIBILITY TO ISCHEMIC INJURY DUE TO LARGE EXTRACELLULAR SPACE. **Niklas Hubel**

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MULTI-SCALE SPATIAL SIMULATIONS REVEAL THE EFFECT OF DOPAMINE TRANSPORTER LOCALIZATION ON DOPAMINE NEUROTRANSMISSION. **Cihan Kaya**, Ethan R. Block, Alexander Sorokin, James R. Faeder, Ivet Bahar

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SYNTHETIC PERSONS. **Otto E. Rossler**

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ADVANCING 3D SINGLE MOLECULE TRACKING BY TIME-GATING AND FAST SIMULTANEOUS SPINNING DISK IMAGING FOR CONTEXTUAL INFORMATION. **Dominik G. Stich**, Matthew S. DeVore, Cédric Cleyrat, Mary L. Phipps, Bridget S. Wilson, Peter M. Goodwin, James H. Werner

3122-Pos BOARD B499
PHOTON-HDF5: AN OPEN FILE FORMAT FOR TIMESTAMP-BASED SINGLE-MOLECULE FLUORESCENCE DATA. Antonino Ingargiola, **Robert Boutelle**, Ted Laurence, Shimon Weiss, Xavier Michalet

3123-Pos BOARD B500
A 16 CHANNEL SPAD ARRAY FOR HIGH-THROUGHPUT TCSPC MEASUREMENTS OF SINGLE-MOLECULE FRET OF FREELY DIFFUSING MOLECULES. **Antonino Ingargiola**, Pietro Peronio, Ivan Rech, Angelo Gulinatti, Massimo Ghioni, Shimon Weiss, Xavier Michalet

3124-Pos BOARD B501
THE NEXT GENERATION OF NANOPHOTONIC STANDING-WAVE ARRAY TRAPS FOR PRECISION MANIPULATION. **Jun Lin**, Fan Ye, Ryan Badman, James Inman, Michelle Wang

3125-Pos BOARD B502
IMPROVING Z-TRACKING ACCURACY IN TWO-PHOTON SINGLE-PARTICLE TRACKING MICROSCOPE. **Cong Liu**, Evan Perillo, Yen-Liang Liu, Ajay Rastog, Andrew Dunn, Tim Yeh

3126-Pos BOARD B503 INTERNATIONAL TRAVEL AWARDEE
ON ARTIFACTS IN SINGLE-MOLECULE FORCE SPECTROSCOPY. **Pilar Cossio**, Gerhard Hummer, Attila Szabo

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OPEN COMPUTATIONAL TOOLS FOR FREELY DIFFUSING SINGLE-MOLECULE FLUORESCENCE ANALYSIS. **Antonino Ingargiola**, Ted Laurence, Robert Boutelle, Shimon Weiss, Xavier Michalet

3128-Pos BOARD B505

QUANTITATIVE THREE-COLOR FRET FOR THE STUDY OF COORDINATED INTRAMOLECULAR MOTION. **Anders Barth**, Lena Voith von Voithenberg, Ganesh Agam, Don C. Lamb

3129-Pos BOARD B506

BIO-AVAILABILITY OF HEAVY METALS IN WILD PLANTS FOUND IN AN ABANDONED BATTERY WASTE SITE. **Sarah Oni**, Olumuyiwa Ogunlaja, Olusola Ladokun

3130-Pos BOARD B507

DNA HAIRPIN DYNAMICS UNDER MOLECULAR CROWDING CONDITIONS. **Laura E. Baltierra-Jasso**, Michael J. Morten, Linda Laflör, Steven D. Quinn, Steven W. Magennis

3131-Pos BOARD B508

SINGLE MOLECULE FLUORESCENCE STUDIES OF TRANSITION PATHS IN DNA HAIRPIN FOLDING. **Katherine Truex**, Hoi Sung Chung, John M. Louis, William A. Eaton

3132-Pos BOARD B509

A COMPARATIVE STUDY ON G-QUADRUPLEX UNFOLDING ACTIVITY OF RECQ HELICASES. **Jagat B. Budhathoki**, Hamza Balci, Jaya G. Yodh, Pavel Janscak, Parastoo Maleki, William Roy

3133-Pos BOARD B510

A HYBRID SINGLE MOLECULE METHOD TO INVESTIGATE SUB-NANOMETER DYNAMICS OF DNA AND PROTEIN AT A SUB-MS RESOLUTION. Sijie Wei, Jongseong Kim, Jaehyoun Lee, **Tae-Hee Lee**

3134-Pos BOARD B511

A SINGLE MOLECULE STUDY OF G-QUADRUPLEX AND TELOMESTATIN INTERACTIONS. **Parastoo Maleki**, Y MA, K Iida, Kazuo Nagasawa, Hamza Balci

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MULTIPLEXED FORCE SPECTROSCOPY USING DNA NANOSWITCH A CENTRIFUGE. **Darren Yang**, Andrew R. Ward, Ken Halvorsen, Wesley P. Wong

3136-Pos BOARD B513

THE EFFECT MAGNESIUM CATIONS TO THE FORMATION OF G-QUADRUPLEX STUDIED BY SINGLE-MOLECULE SPECTROSCOPY. **I-Ren Lee**, Hao-Yi Hsu, Jia-Yu Wu

3137-Pos BOARD B514

SINGLE-MOLECULE STUDIES OF FLUORESCENTLY-LABELLED POLYSACCHARIDES. **Steven D. Quinn**, Charlotte E. Dalton, Robin A. Jeanneret, John M. Gardiner, Steven W. Magennis

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PROTEIN FOLDING DRIVES MUSCLE CONTRACTION. **Jaime A. Rivas Pardo**, Edward C. Eckels, Ionel Popa, Pallav Kosuri, Wolfgang A. Linke, Julio M. Fernandez

3139-Pos BOARD B516

ON-RATE SWITCHING UNDER FORCE INCREASES THE BINDING OF VON WILLEBRAND FACTOR A1 TO GPIIb/IIIa. **Nathan Hudson**, Jongseong Kim, Timothy A. Springer

3140-Pos BOARD B517

UNFOLDING/FOLDING OF A MULTI-DOMAIN PROTEIN UNTANGLED BY SINGLE-MOLECULE FRET. **Antonie Schöne**, Daryan Kempe, Michele Cerminara, Matteo Gabba, Tina Züchner, Jörg Fitter

3141-Pos BOARD B518

STRUCTURAL DYNAMICS OF THE FULL-LENGTH METABOTROPIC GLUTAMATE RECEPTORS BY SINGLE-MOLECULE FRET. **Anne-Marinette Cao**, Fataneh Fatemi, Philippe Rondard, Jean-Philippe PinN, Emmanuel Margeat

3142-Pos BOARD B519

QUANTIFYING MEMBRANE BINDING OF THE GTPASE SAR1 BY DUAL-COLOR FLUORESCENCE CROSS-CORRELATION SPECTROSCOPY. Daniela Kruger, Jan Ebenhan, Stefan Werner, Sebastian Daum, **Kirsten Bacia**

3143-Pos BOARD B520

SINGLE MOLECULE LIGAND BINDING FRET AT HCN2 CHANNEL DOMAINS IN ZERO-MODE WAVEGUIDES. **Marcel P. Goldschen-Ohm**, Vadim Klénchin, Randall Goldsmith, Baron Chanda

3144-Pos BOARD B521

SINGLE-MOLECULE FRET REVEALS ALTERNATIVE LIGAND AND OSMOLYTE-DEPENDENT α -SYNUCLEIN FOLDING. **Mahdi M. Moosa**, Allan Chris M. Ferreón, Ashok Deniz

3145-Pos BOARD B522

BIOPHYSICAL CHARACTERIZATION OF MECHANOSENSORS WITHIN THE PLASMA PROTEIN VON WILLEBRAND FACTOR AND ITS RECEPTOR PLATELET GLYCOPROTEIN IB-IX. **Xiaohui Zhang**, Wei Zhang, Matthew Dragovich, Wei Deng, Renhao Li

3146-Pos BOARD B523

STOICHIOMETRIC ANALYSIS OF PROTEIN COMPLEXES BY CELL FUSION AND SINGLE MOLECULE IMAGING. **Avtar Singh**, Maria Sirenko, Alexander Song, Paul J. Kammermeier, Warren R. Zipfel

3147-Pos BOARD B524

THE SECRETED SIGNALING PROTEIN WNT3 RESIDES IN PLASMA MEMBRANE LIPID DOMAINS IN VIVO: A SPIM-FCS STUDY. **Thorsten Wohland**, Xue Wen Ng, Cathleen Teh, Vladimir Korzh

3148-Pos BOARD B525

SINGLE MOLECULE FLUORESCENCE STUDIES ON NUCLEOSOME DYNAMICS. **Kathrin Tegeler**, Johanna Mehl, Martin Würtz, Alexander Gansen, Katalin Toth, Yaakov Levy, Jörg Langowski

3149-Pos BOARD B526 EDUCATION TRAVEL AWARDEE

DYNAMICS OF EGFR TRAFFICKING FROM MEMBRANE INTO DEEP CYTOPLASM REVEALED BY A SPATIOTEMPORALLY MULTIPLEXED 3D TRACKING MICROSCOPE. **Yen-Liang Liu**, Evan P. Perillo, Cong Liu, Peter M. Yu, Chao-Kai Chou, Mien-Chie Hung, Andrew K. Dunn, Tim Yeh

3150-Pos BOARD B527

OPTICAL BIOSENSORS TO EXPLORE BIOLOGICAL SYSTEMS. **Marta Espina Palanco**, Klaus Bo Mogensen, Nils H. Skovgaard Andersen, Kirstine Berg-Sørensen, Claus Hélix-Nielsen, Katrin Kneipp

3151-Pos BOARD B528

STUDYING THE HSP90 MACHINERY IN LIVING CELLS BY SINGLE MOLECULE FRET. **Philipp Wortmann**, Fernando Aprile-Garcia, Ritwick Sawarkar, Thorsten Hugel

3152-Pos BOARD B529

DIFFUSION AND BIOCHEMICAL REACTIONS IN INHOMOGENEOUS CROWDED FLUIDS. **Olivia Stiehl**, Matthias Weiss

3153-Pos BOARD B530

SINGLE-MOLECULE MASSPIC ANALYSIS OF SHORT-CHAIN PEG. **Siyun Chen**, Chan Cao, Yi-tao Long

3154-Pos BOARD B531

SINGLE-MOLECULE ASSAY DEVELOPMENT FOR STUDYING HUMAN RNA POLYMERASE II PROMOTER-PROXIMAL PAUSING. **Yazan K. Alhadid**, Benjamin L. Allen, SangYoon Chung, Dylan J. Taatjes, Shimon Weiss

3155-Pos BOARD B532
DESIGN AND DEVELOPMENT OF A TELOMERE SENSOR BASED ON FLUORESCENCE ENERGY TRANSFER. **Haitao Li**

3156-Pos BOARD B533
BEYOND AN 'ON-OFF' ACTIVATION MODEL OF G-PROTEIN-COUPLED RECEPTORS. **Julia Wagner**, Mike Friedrich, Martin J. Lohse, Katrin G. Heinze

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NANO PATTERNED SURFACE EMBEDDED MICROFLUIDIC DEVICE TO STUDY CUTANEOUS WOUND HEALING PROCESS. **Insu Lee**

3218-Pos BOARD B595
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3219-Pos BOARD B596
SPATIOTEMPORAL CONTROL OF T CELL STIMULATION USING JANUS PARTICLES. **Kwahun Lee**, Yi Yi, Yan Yu

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3223-Pos BOARD B600
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3224-Pos BOARD B601
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3225-Pos BOARD B602
ASYMMETRIC SALT PROFILES EXPAND REACTION CONDITIONS FOR NANOPORE SEQUENCING WITH MSPA. **Ian C. Nova**, Ian M. Derrington, Benjamin I. Tickman, Jonathan M. Craig, Matthew Noakes, Jens Gundlach

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3228-Pos BOARD B605
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SINGLE-SITE RESOLUTION DETECTION OF METHYLATION IN DNA WITH GRAPHENE NANOPORES. **Aditya Sarathy**, Hu Qiu, Klaus Schulten, Jean-Pierre Leburton

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SINGLE OLIGONUCLEOTIDE DISCRIMINATION WITH AEROLYSIN NANOPORE. Chan Cao, Yi-Lun Ying, **Yi-Tao Long**

3234-Pos BOARD B611
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3236-Pos BOARD B613
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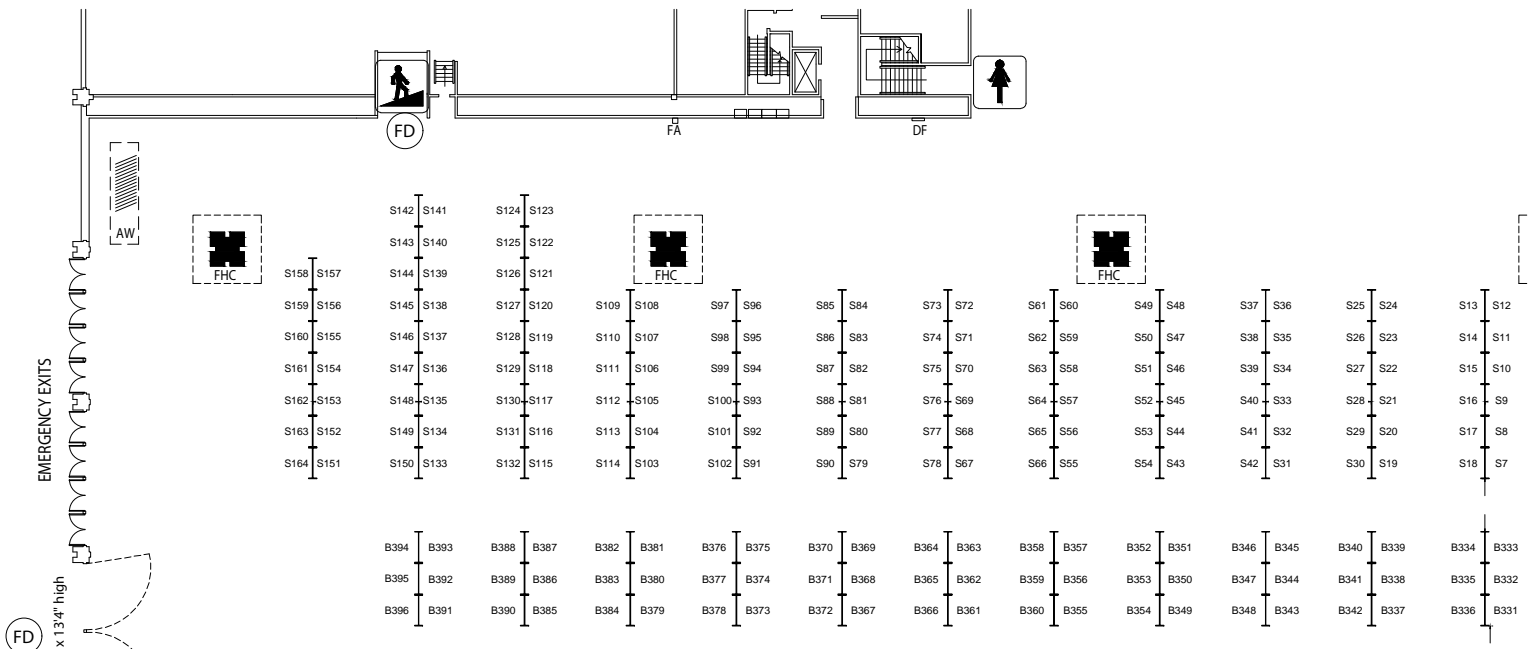
3239-Pos BOARD B616
SINGLE NUCLEOTIDE DISCRIMINATION WITH ELECTRO-OPTICAL NANOPORE. **Chan Cao**, Yi-Tao Long

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ENTROPICALLY CONTROLLED NANOMECHANICAL DNA ORIGAMI DEVICES. Michael W. Hudoba, Yi Luo, Randy Patton, Michael G. Poirier, **Carlos Castro**

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Exhibitor List and Booth Numbers

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804 AAT Bioquest Inc	715 Elements SRL	434 Onefive GmbH NEW 2016
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913 Biolin Scientific	1000 LUMICKS	1024 Seahorse Bioscience, a part of Agilent Technologies
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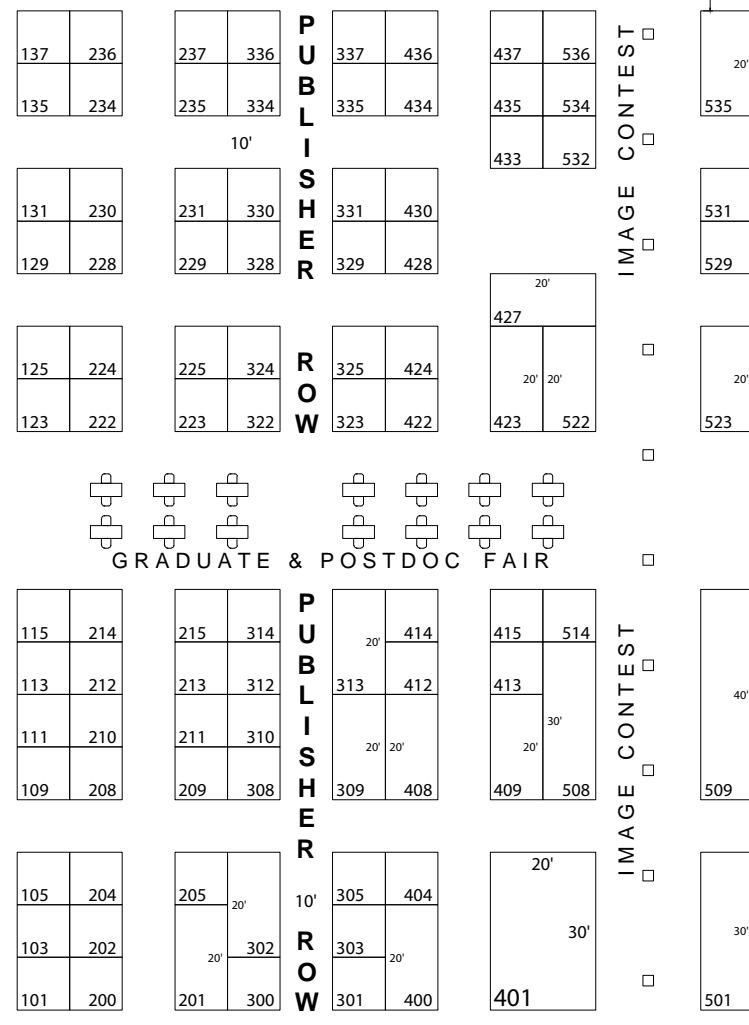
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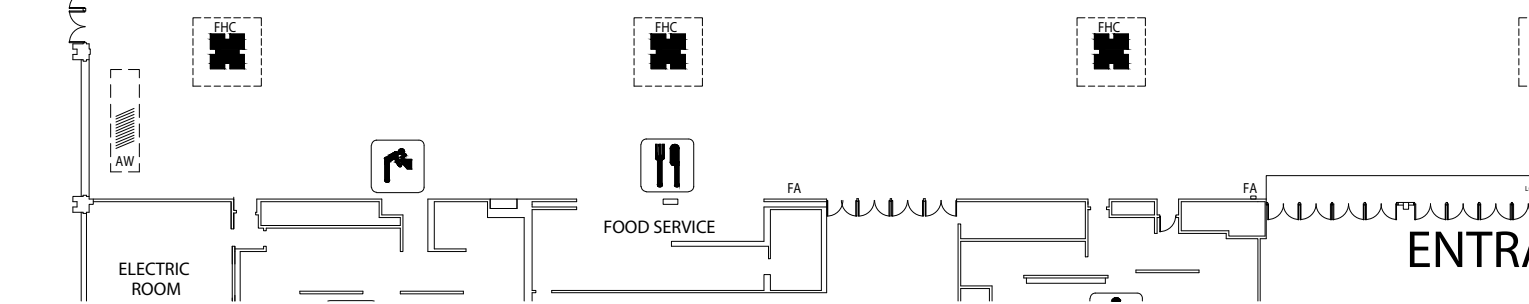
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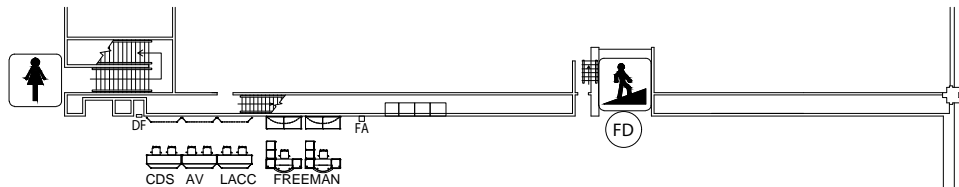


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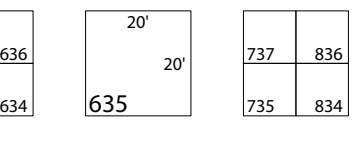
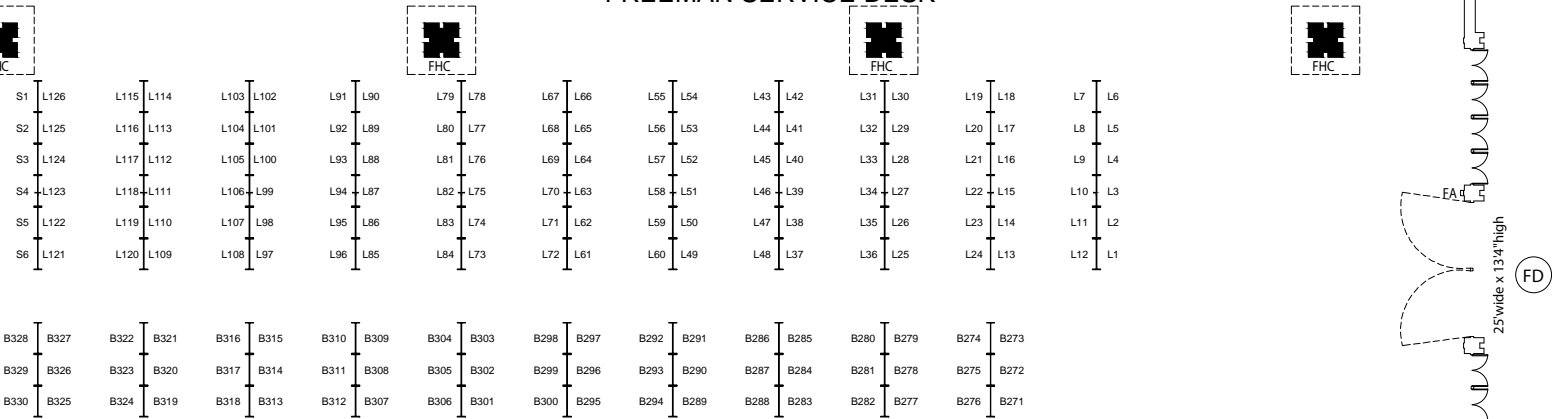
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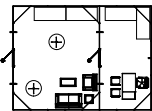




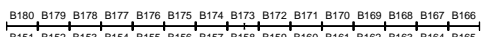
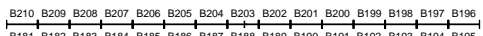
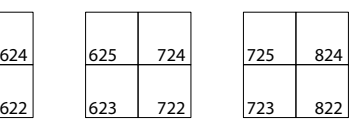
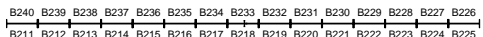
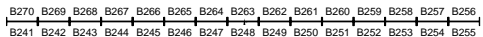
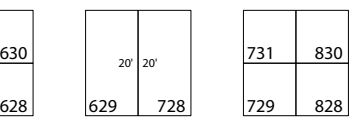
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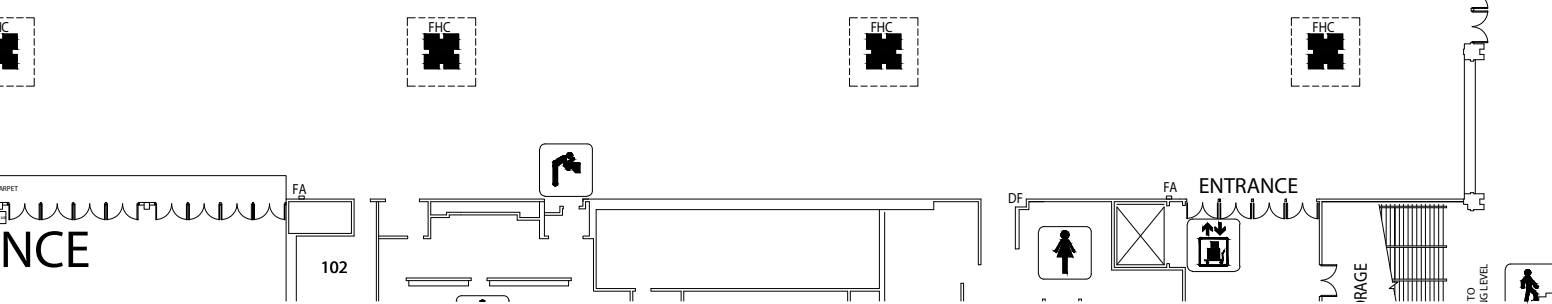
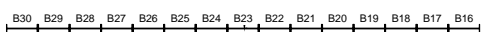
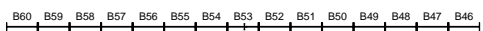
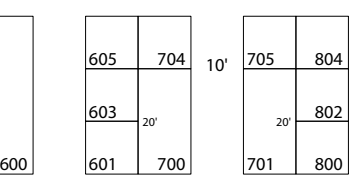
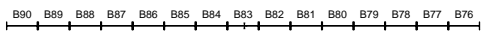
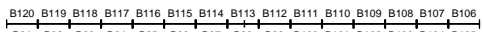
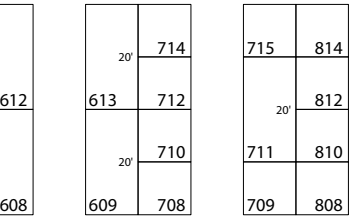
**Exhibit Management Office/
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HALL A



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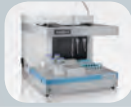
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Port-a-Patch.

The world's smallest patch clamp rig.



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Product Demonstrations:

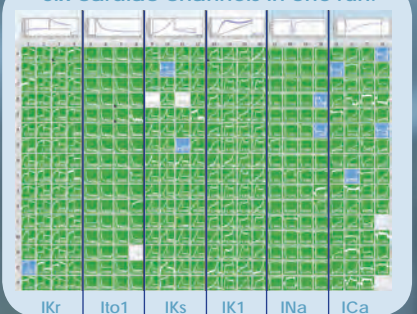
Monday February 29
12:30 – 2:00 PM
Room 513
LA Convention Center

Ion Channel Drug Discovery:
Beyond the Bottleneck and Ready
for CiPA
Live experiments!

Tuesday March 1
12:30 – 2:00 PM
Room 513
LA Convention Center

Measure More Membrane:
Cells and Bilayers on the Port-a-Patch,
Orbit16 and Orbit mini
Live experiments!

Six cardiac channels in one run:



Welcome!

www.nanion.de

Exhibit Dates and Times

Sunday, February 28 10:00 AM–5:00 PM
Monday, February 29 10:00 AM–5:00 PM
Tuesday, March 1 10:00 AM–4:30 PM

Coffee Served Daily 10:15 AM–11:00 AM

Afternoon Snack Served Daily 1:45 PM–3:00 PM

Exhibit Raffle

Enter to win an 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, March 1. The drawing will take place on Tuesday, March 1 at 3:00 PM and announced in the Exhibit Hall — you must be present at the Meeting to win!

Exhibitor Presentations

Exhibitor Presentations will take place in Rooms 505 and 513 of the Los Angeles Convention Center.
See pages 166–170 for detailed abstracts.

Room 505

Sunday, February 28

5:30 PM – 7:00 PM: HEKA Electronic + Multi Channel Systems

Monday, February 29

9:30 AM–11:00 AM: Sophion together with Biolin Scientific
11:30 AM–1:00 PM: Asylum Research, an Oxford Instruments Company
1:30 PM–3:00 PM: KinTek Corp
3:30 PM–5:00 PM: Bruker Nano Surfaces
5:30 PM–7:00 PM: Sutter Instrument

Tuesday, March 1

11:30 PM–1:00 PM: Bruker Nano Surfaces

Room 513

Sunday, February 28

10:30 AM–12:00 PM: Carl Zeiss Microscopy LLC

Monday, February 29

10:30 AM–12:00 PM: Wyatt Technology Corporation
12:30 PM–2:00 PM: Nanion Technologies GmbH
2:30 PM–4:00 PM: Renishaw Inc
4:30 PM–6:00 PM: Molecular Devices

Tuesday, March 1

12:30 PM–2:00 PM: Nanion Technologies GmbH

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The Journal of Physical Chemistry
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**As of January 19, 2016*

Exhibitor Presentations

Rooms 505, 513, Los Angeles Convention Center

Room 505: Sunday, February 28

5:30 PM–7:00 PM

HEKA Elektronik + Multi Channel Systems

PATCHMASTER and PatchServer: Solutions for Patch Clamp

Presentation 1: Combined Patch Clamp and Imaging with PATCHMASTER and SmartLUX

SmartLUX is the new imaging extension for PATCHMASTER software synchronizing image acquisition and patch clamp data recordings. Image based data such as fluorescence intensities form ROIs that are stored as traces together with current and voltage traces in the PATCHMASTER data file. A link between data points of the trace and the images enables convenient automatic display of the corresponding images when replaying the patch clamp data.

Presentation 2: Multi-Patch Experiments with EPC 10 Quadro and PATCHMASTER

PATCHMASTER software allows the user to control up to 8 patch clamp amplifiers (2 x EPC 10 USB Quadro) in parallel, making it an ideal platform for either conventional multi-patch experiments or automated patch clamping. The Multi-Cell extension of PATCHMASTER allows easy setup and execution of acquisition sequences and analysis methods for operating all amplifiers in parallel. Conventional patch clamping with multiple electrodes can be facilitated by automating processes using the Protocol Editor.

Presentation 3: PatchServer: A Pipette-Based Automatic Patch Clamp System

PatchServer is Multi Channel Systems' new automated patch-clamp system that adds on to a manual patch-clamp setup. It is able to establish single-channel and whole-cell recording configurations using standard glass electrodes. The automation includes sealing on suspended cells, establishing recording configurations, and moving to application bays for solution exchange – all under visual control. PatchServer comes in a one channel version for performing single experiments, as well as a four channel version for recording from four cells in parallel using the EPC 10 Quadro from HEKA. A piezo-driven ultra-fast solution exchanger (UFA tool) is available as an option and can be easily integrated.

Speakers

Christian Heinemann, Head of Engineering at HEKA Elektronik
Juergen Rettinger, Product Manager – Ion Channel Product Line at Multi Channel Systems

Room 505: Monday, February 29

9:30 AM–11:00 AM

Sophion together with Biolin Scientific

Pioneering Ion Channels - Expanding the Boundaries of Automated Patch Clamp

Recent advances in automated patch clamp for voltage and ligand gated ion channels with emphasis on NMDA, cardiac safety and induced pluripotent stem cells

Speakers

Timm Danker, NMI, Germany
Automated Patch Clamp on Cardiac Ion Channels and Multiwell MEA Recordings on Human iPSC-derived Cardiomyocytes: a Complementary Approach for Predictable Proarrhythmia Assessments

Caterina Virginio, Aptuit
NMDA Receptors: Meaningful Biophysical and Pharmacological Studies to Redefine Ligands Properties

Denise Franz, University of Rostock, Germany
Electrophysiological Characterization of Human Induced Pluripotent Stem Cell-derived Dopaminergic Neurons on the QPatch

11:30 AM–1:00 PM

Asylum Research, an Oxford Instruments Company

Soft, Sticky, and Viscous: Practical Considerations for Measuring Cell Mechanics with AFM

The atomic force microscope (AFM) has found broad use in the investigation of cell mechanics, with numerous studies of cell stiffness and modulus dating back over a decade. Because AFM can quantitatively measure the mechanical properties of individual live cells, novel insights to cell function and to cell-substrate interactions have been realized. This is pertinent for cell biology, as it has been demonstrated that the geometrical and mechanical properties of the extracellular microenvironment are important in such processes as cancer, cardiovascular disease, muscular dystrophy, and even the control of cell life and death. Indeed, the ability to control and quantify these external geometrical and mechanical parameters now arises as a key issue in the field and AFM seems poised to play a prominent role in building that understanding.

The use of AFM in this field presents unique challenges and opportunities. Some of the most important considerations are because many of the AFM techniques used here have largely been borrowed from those first developed for materials science. This is simultaneously a success of interdisciplinary research and an opportunity to further tailor measurements to cells and biological materials, which have some fundamentally different characteristics compared to polymers. Most dramatically, cells are far “softer” than polymers, usually at least 100× lower in modulus than even soft rubbers and easily 10,000× lower in modulus than some common plastics. Further, cells are usually quite “sticky,” leading to large adhesion to the AFM tip that can complicate measurements. Finally, cells are often strongly viscoelastic, exhibiting not just elastic deformation described by the elastic modulus but also a viscous response that depends on

the velocity of the deformation- and this mechanical component can sometimes be lost or ignored in certain experimental setups and techniques. In fact, this viscous response may prove just as enlightening to cell mechanics as the elastic response more commonly measured alone until recently. This talk will discuss these important issues that must be considered when AFM techniques are applied to cells and other biological materials.

Speaker

Sophia Hohlbauch, Asylum Research, an Oxford Instruments Company

1:30 PM–3:00 PM

KinTek Corporation

Why You Should Fit Kinetic and Equilibrium Binding Data Using Kintek Explorer Software

KinTek Explorer software offers the fastest, most dynamic and robust method of fitting kinetic or equilibrium binding data. Based on fast numerical integration of rate equations, data are fit without the often-inaccurate approximations needed to derive equations. Rather than fitting data to extract “observed rates” or Eigenvalues, which must be then interpreted in second step, *KinTek Explorer* yield rate and equilibrium constants directly while accounting for both the rate and amplitude of observable reactions. By modeling the experiments exactly as performed, all details of the experimental setup are included, eliminating errors in interpretation. Moreover, multiple experiments can be fit simultaneously to a single unifying model. Fast dynamic simulation using proprietary methods for numerical integration allows you to explore parameter space and learn kinetics. Don’t be fooled by other vendors pretending to do the same. Only *KinTek Explorer* offers such robust and dynamic data fitting.

In this presentation, Professor Johnson will introduce the theory and operation of the software to show you how easy it is to fit data to any model you care to input. Examples of experiments that can be fit include: transient and single turnover stopped-flow kinetics, steady state kinetics, slow onset inhibition, equilibrium titrations, rapid-quench-flow kinetics, temperature dependence, voltage-dependent rate constants. In addition time-resolved absorbance or fluorescence and pH-dependent spectra can be analyzed by singular value decomposition to yield spectra and time- or pH-dependence of each species. In addition to describing *KinTek Explorer’s* basic features, Dr. Johnson will introduce new features and will be available to help you to fit your own data. Learn about what you are missing in your own data fitting. See www.kintek-corp.com for more information.

Speaker

Kenneth A Johnson, President, KinTek Corporation; Professor of Biochemistry, University of Texas at Austin

3:30 PM–5:00 PM

Bruker Nano Surfaces

Advances in Live Super-resolution Imaging Using the Vutara 352 Microscope

Super-resolution microscopy has made a significant impact in the field of biological imaging by enabling a ten-fold improvement in spatial resolution over traditional light microscopy techniques. Most of the imaging has been so far targeted at fixed specimens with a few live cell applications. The Vutara 352 microscope has been engineered towards live-cell imaging by enhancing spatial and temporal resolution in single molecule localization super-resolution. The sCMOS detector in the Vutara 352 enables imaging at 800 fps at full ROI and at video frame rates at reduced ROI. Two color simultaneous imaging can be applied in both super-resolution live cell and 3D particle tracking experiments. The biplane based detection path enables imaging thicker samples such as whole mount *Drosophila* and offers deeper penetration into tissues. The Vutara 352 also includes real time localization along with several statistical and live cell analysis features for processing data. In summary, the Vutara 352 microscope is a powerful super-resolution imaging and analysis tool.

Speaker

Manasa Gudheti, Applications Scientist at Bruker – Fluorescence Microscopy Business

5:30 PM–7:00 PM

Sutter Instrument

Scientists Empowering Scientists

Patch clamp electrophysiology has matured from a highly specialized scientific technique to a recognized method used to address a variety of experimental questions. Sutter Instrument introduces a highly flexible, intuitive patch clamp instrumentation and software package that enables the experimenter to quickly set up and perform routine tasks, yet remains highly configurable to meet the demands of the experienced electrophysiologist.

We will demonstrate how the IPA™ Integrated Patch Amplifier and SutterPatch™ software can be used for a variety of commonly performed assays, including the characterization of an ionic current and the recording of synaptic events in tissue slices. We will also highlight how the IPA and SutterPatch software provide easy access and flexibility to perform and fine-tune the most challenging acquisition and analysis scenarios.

Building on the basic pipette pulling tutorials presented at the 2015 user meeting and a mid-year webinar, we will further teach advanced techniques that enable the user to create specialized pipette morphologies for unique applications.

There will be plenty of opportunity for discussion with hosts and speakers from the Sutter Instrument Tech Support Team.

Who should attend?

- Electrophysiologists who use amplifiers, micropipettes and micro-manipulators for patch clamp, sharp electrode or extracellular recordings.
- Researchers who perform microinjections, including nuclear transfer, sperm injection and application of substances into cell cultures or intact organisms.

Speakers

Jan Dolzer, Tech Support and Product Development, Sutter Instrument
Gregory Hjelmstad, Tech Support and Product Development, Sutter Instrument

Room 505: Tuesday, March 1

11:30 AM–1:00 PM

Bruker Nano Surfaces

BioScope Resolve BioAFM – Unrivalled AFM Biomechanics and Resolution

In this presentation we will introduce new capabilities for cell mechanobiology and highest resolution cell and molecular imaging available on the BioScope Resolve BioAFM. We will explain how innovations in force control and instrument design have enabled BioScope Resolve to be the first AFM to image microvilli on live cells and to consistently resolve the double helix of DNA, while on the inverted microscope. To enable highest resolution and accurate cell mechanics data, the entire AFM mechanical loop of BioScope Resolve has been designed for stability, specifically on biological samples, with biological sample carriers, and when mounted on the inverted microscope. Designed for Bruker's exclusive PeakForce Tapping, BioScope Resolve eliminates the need for fluid cantilever tuning entirely with ScanAsyst and provides quantifiable pN force control for imaging and force mapping. The combination of PeakForce Tapping and FASTForce Volume provides the broadest range of frequencies for mechanical characterization, with a new no-touch calibration method guaranteeing accurate calibration. As we will show in the presentation, BioScope Resolve also features synchronization of these unique mechanical measurements with fluorescence, enabling new kinds of correlative studies.

Speaker

Marcin Walkiewicz, PhD, Applications Scientist, Bruker – Atomic Force Microscopy Business

Room 513: Sunday, February 28

10:30 AM–12:00 PM

Carl Zeiss Microscopy LLC

Technology Innovations: ZEISS LSM 880 Confocal with Airyscan and ZEISS Lightsheet Z.1

These microscopes from ZEISS address both ends of the spectrum of samples, live high speed imaging with superresolution and high speed imaging of large live and fixed tissues. Learn how ZEISS LSM 880 with Airyscan maintains the mantra that each photon of emission light is precious, while expanding the triangle of sensitivity, resolution and speed of acquisition.

ZEISS LSM 880 with Airyscan allows you to use multicolor samples with any label and get image quality like you have never seen before. With Airyscan you are always able to select the optimal acquisition strategy for your sample: Simply decide whether you want to gain 1.7x higher resolution in all three dimensions – resulting in a 5x smaller confocal volume. Or push the sensitivity beyond the limits of all conventional confocal microscopes; or use the increase in signal-to-noise ratio to speed up your image acquisition.

Traditionally, deeply imaging into intact tissue typically requires multiphoton excitation to penetrate deeper than near the surface of a tissue. Using a "clearing" method to remove the light obstructing opaque molecules from a tissue has been another technique for deep imaging. Techniques such as SCALE, CLARITY, ClearT, SeeDB, CUBIC and others have allowed researchers to image deeper than a millimeter into cleared animal model brains and organs.

ZEISS Lightsheet Z.1 features high speed image acquisition and greatly reduced photo damage making imaging of live developmental samples and fixed and cleared tissues easier than ever before. Come learn about using the innovative ZEISS Lightsheet Z.1 microscope for imaging of fixed and cleared tissues.

Speaker

Joseph Huff, Product Marketing Manager, Laser Scanning and Superresolution Microscopy, Carl Zeiss Microscopy LLC

Scott Olenych, Product Marketing Manager, Imaging Products, Carl Zeiss Microscopy LLC

Room 513: Monday, February 29

10:30 AM–12:00 PM

Wyatt Technology Corporation

Get it Right the First Time - Enhancing Protein Binding and Structural Studies with the Light-Scattering Toolkit

Biophysical binding studies utilizing surface plasmon resonance (SPR), bio-layer interferometry (BLI), isothermal titration calorimetry (ITC), and related techniques are central to the study of protein-protein, protein-DNA and similar biomolecular interactions. Though these are well-established techniques, in a variety of circumstances, binding measurements may be ambiguous or even fail to provide useful data. Wasted measurements can end up being costly in terms of consumables and time.

Small-angle X-ray scattering (SAXS) and small-angle neutron scattering (SANS) are powerful techniques for studying biomolecular structure. SAXS and SANS usually require precious beam time at large facilities, leaving little room for error where the sample preparation is concerned. Poor samples provide poor SAXS/SANS data, but the opportunity to utilize the X-ray or neutron beam may never be recovered.

One thing that SAXS and SANS have in common with SPR, BLI and ITC, is the urgent need to verify sample quality and aggregation state in solution prior to carrying out structural or binding measurements. This seminar discusses a suite of complementary techniques, all based on light scattering, that are useful in assessing and troubleshooting many of the underlying characterization issues. Multi-angle light scattering (MALS) and dynamic light scattering (DLS) can help researchers assess solution quality prior to running binding or structural experiments, qualify aggregation behavior of analytes, and characterize complex interactions that may not be amenable to standard characterization methodology. Judicious use of the biophysical light-scattering toolkit is essential for robust and reliable interaction and structure studies.

Speaker

Sophia Kenrick, Application Specialist, Wyatt Technology Corporation

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 ranging from single channel recordings to HTS-compatible ion channel drug discovery. During this workshop, we will show 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 going well beyond hERG.

Cardiac arrhythmic risk assessment is a hot topic these days calling for new screening strategies. With the CiPA-initiative, the panel of cardiac ion channels to consider have drastically expanded, consequently requiring increased data throughput for early compound safety prediction.

The *SyncoPatch 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. Examples will be shown, where six different cardiac channels were recorded using one single plate, in one single run.

Patchliner, a medium-throughput APC platform, supports automated current clamp recordings, experiments at physiological temperatures, and a minimal cell usage, making it the ideal partner for safety testing on stem cell derived cardiomyocytes. Additionally, the CardioExcyte 96, a hybrid system combining impedance-based and EFP recordings from beating cardiomyocyte networks from 96 recording wells in parallel, has proven a versatile tool for safety and toxicity screening applications serving as a powerful tool complementing APC.

The *SURFE2R* technology allows direct and functional measurements electrogenic transporter. Hands-on experiments on the SURFE2R will be shown. Also membrane fragments from Chantest, a Charles River company, will be used.

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.

Speakers

Maria Barthmes, Nanion Technologies GmbH
Andrea Brüggemann, Nanion Technologies GmbH
Niels Fertig, Nanion Technologies GmbH
Markus Rapedius, Nanion Technologies GmbH

2:30 PM–4:00 PM

Renishaw Inc

Innovative Raman Imaging in the Life Sciences

When light illuminates a sample, most of it scatters without changing. A tiny fraction of the light however is Raman scattered. The Raman scattered light excites the phonons in the samples and produces a spectrum. This spectrum tells us how the atoms are vibrating, providing a chemical fingerprint which allows identification of the sample. Raman spectroscopy produces chemical and structural information to help us understand more about the material being analyzed. The ability to probe the chemical and molecular structure of biological materials is obtained directly without the need for any dyes or markers. These systems can be utilized to generate chemical images of cells, tissue, bone and biocompatible materials with very high spatial resolution. It has been employed for cancer diagnosis, stem cell differentiation, skin treatments, protein structure analysis, bio-diagnostics and bacterial identification.

Renishaw's inVia confocal Raman microscope can be integrated with other instruments, such as atomic force microscopy (AFM) and scanning electron microscopy (SEM), to provide Raman analysis from the same point on the sample. This talk will provide an introduction to Raman microscopy with biological materials, the instrumentation required for these techniques and will highlight some applications where Raman microscopy is making the biggest impact with biological materials.

Speakers

Tim Prusnick, USA Sales Manager SPD, Renishaw Inc
Andrew King, Regional Sales Manager - West Coast, Renishaw Inc
Mark Canales, Field Applications Specialist (Life Science) Spectroscopy Products Division, Renishaw Inc

4:30 PM–6:00 PM

Molecular Devices LLC

Pushing the Performance Envelope: Evaluation of the NMDA receptor using Automated Electrophysiology and Fast Fluidics

Ligand gated ion channels (LGICs) mediate fast synaptic transmission in the nervous system and are highly attractive drug targets due to the pivotal role they play in many physiological functions. The N-Methyl-D-Aspartate (NMDA) receptor is a LGIC that is activated by glutamate, the primary excitatory neurotransmitter in the nervous system. Functional impairment or over-excitation of the NMDA receptor occurs in a variety of disease states, however efficient screening for compounds that target the NMDA receptor remains elusive.

Over the last decade, automated electrophysiology has become an indispensable tool for analyzing ion channel activities. Here data will be presented evaluating the fluidic performance of automated patch clamp and its impact on measurement of NMDA receptor activity. We examine channel biophysics both in the presence and absence of extracellular Mg^{2+} , calculate the EC50 of glutamate and the IC50s of antagonists D-AP5 and Ifenprodil, and explore use-dependent blockage by MK801. We also examine differences between competitive and non-competitive inhibition models. Our studies demonstrate the robust fluidics performance of our automated electrophysiology system and its successful application to high-throughput screens and compound profiling assays targeting LGICs.

Speaker

Jeff Webber, Product Manager, Molecular Devices LLC

Room 513: Tuesday, March 1

12:30 PM–2:00 PM

Nanion Technologies GmbH

Measure More Membrane: Cells, Bilayers and Transporter Activity

As the title suggests, this workshop has one common denominator: membranes and the measurements thereof. We will showcase four versatile products: 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*, on the market since 2003, is still the smallest patch clamp rig in the world, and supports high quality patch clamp recordings; attainable without months or years of training. Giga-seal recordings and the excellent voltage-clamp of the cellular membrane ensure high quality data, and the versatile add-ons allow unprecedented experimental freedom, way beyond the possibilities of conventional patch clamping.

The *Orbit 16* supports the parallel formation of and recordings from up to 16 lipid bilayers, accommodating reconstituted ion channels or nanopores. Using Micro Electrode Cavity Array (MECA, Ionera) recording substrates, containing a 4 x 4 array of circular micro-cavities, the bilayers are automatically formed by remotely actuated painting (Ionera-SPREAD), which will be demonstrated during this session. Relying on the same principle, however with the possibility of active cooling and heating, the recently introduced Orbit mini, a minimal footprint, turn-key system, allows 4 parallel lipid bilayer recordings, also using MECA-chips.

Join this workshop for hands-on experiments and information about three outstanding platforms: Port-a-Patch, Orbit 16, and Orbit mini.

Speakers

Andrea Brüggemann, Nanion Technologies GmbH
Niels Fertig, Nanion Technologies GmbH
Gerhard Baaken, Ionera
Ekaterina Zaitseva, Ionera

Exhibitor List

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
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KinTek Corporation	428	HEKA Elektronik	423		
Laboratory for Fluorescence Dynamics	704	Multi Channel Systems	522	Fluorescent Filters	
Wyatt Technology Corporation	601	NeoBiosystems Inc	536	Chroma Technology Corporation	728
		npi electronic GmbH	322	Semrock Inc	723
Data Analysis Software		Pacer Scientific	623		
Agilent Technologies Inc	809	Sensapex OY	123	Fluorescent Probes	
Applied Photophysics	923	Sutter Instrument	600	AAT Bioquest Inc	804
Bitplane Inc	724	Thorlabs	401		
De Novo Software	412	Warner Instruments	427	Fluorometers	
DRV Technologies	223			Aviv Biomedical Inc	1012
Elements SRL	715	Electrophysiology Software		Edinburgh Instruments	612
KinTek Corporation	428	Elements SRL	715	HORIBA Scientific	801
Laboratory for Fluorescence Dynamics	704	Multi Channel Systems	522	IonOptix	535
SensiQ Technologies Inc	1008	NeoBiosystems Inc	536	ISS Inc	635
		Sutter Instrument	600	Quantum Northwest Inc	901
Detergents				Glass Capillary Tubing	
Anatrace	529	Environmental Chambers		Sutter Instrument	600
NanoTemper Technologies Inc	705	Cell MicroControls	622	Warner Instruments	427
		Park Systems Inc	802		
Digitizers				High-Throughput Instrumentation	
Sutter Instrument	600	Filter Wheels		Biolin Scientific	913
		89 North	629	BiOptix	812
Drug Discovery		ASI/Applied Scientific Instrumentation	531	Charles River	424
Axiogenesis AG	922	Chroma Technology Corporation	728	Ecocyte Bioscience US LLC	630
Beckman Coulter Life Sciences	1014	Prior Scientific Inc	125	Mad City Labs Inc	501
BiOptix	812	Sutter Instrument	600	Maxcyte Inc	811
Charles River	424			Multi Channel Systems	522
Creoptix	222	Flash Lamps		Nanon Technologies	509
KinTek Corporation	428	Hamamatsu Corporation	409	NanoTemper Technologies Inc	705
Maxcyte Inc	811	Fluid Flow Chambers		NeoBiosystems Inc	536
Nanolive SA	810	Hellma USA	709	Rayonix LLC	115
Renishaw Inc	603	LUMICKS	1000		
Seahorse Bioscience, a part of Agilent Technologies	1024				
Technologies	1024				
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SciMeasure	815	Hinds Instruments	103	Lasers	
SensiQ Technologies Inc	1008	Mad City Labs Inc	501	89 North	629
Sophion Bioscience	909	Nanolive SA	810	Applied Photophysics	923
Wyatt Technology Corporation	601	Nikon Instruments Inc	523	Cobolt AB	413
Image Acquisition Systems		Photometrics	404	Edinburgh Instruments	612
Aurora Scientific Inc	636	Rayonix LLC	115	LUMICKS	1000
Hinds Instruments	103	SciMedia/BrainVision	415	Onefive GmbH	434
PCO-TECH Inc	532	Thorlabs	401	PicoQuant Photonics North America Inc	201
Rayonix LLC	115	Tokai Hit Co Ltd	725	Rapp OptoElectronic GmbH	722
SciMeasure	815	UVP LLC	814	RPMC Lasers Inc	433
UVP LLC	814	Imaging, Spectral		Semrock Inc	723
Image Analysis		Chroma Technology Corporation	728	Thorlabs	401
Bitplane Inc	724	Hinds Instruments	103	TOPTICA Photonics Inc	634
DRV Technologies	223	Malvern Instruments Ltd	711	Life Sciences	
Malvern Instruments Ltd	711	Immunochemicals		89 North	629
NIC@IIT	624	Aviva Systems Biology Corporation	214	Agilent Technologies Inc	809
PCO-TECH Inc	532	Incubators		ALVEOLE	731
Renishaw Inc	603	Aviv Biomedical Inc	1012	Anasys Instruments	808
Image Analysis Software		Tokai Hit Co Ltd	725	Andor Technology	625
Andor Technology	625	Warner Instruments	427	Applied Photophysics	923
Aurora Scientific Inc	636	Infrared Spectroscopy		Avanti Polar Lipids Inc	508
Bitplane Inc	724	Anasys Instruments	808	Axiogenesis AG	922
Carl Zeiss Microscopy LLC	101	BioLogic USA	514	Beckman Coulter Life Sciences	1014
De Novo Software	412	JASCO	437	Bitplane Inc	724
DRV Technologies	223	TgK Scientific Ltd	729	Chroma Technology Corporation	728
Laboratory for Fluorescence Dynamics	704	Interferometers		Garland Science	300
NanoAndMore USA Inc	910	Creoptix	222	Larodan	534
Nanolive SA	810	Ion Channels		LUMICKS	1000
Nikon Instruments Inc	523	Axiogenesis AG	922	Mightex Systems	823
SciMedia/BrainVision	415	Biolin Scientific	913	NanoAndMore USA Inc	910
Image Analysis, High Resolution		Charles River	424	NIC@IIT	624
DRV Technologies	223	Ionovation GmbH	435	Olympus	408
Ionovation GmbH	435	Maxcyte Inc	811	Photometrics	404
PCO-TECH Inc	532	Nanon Technologies	509	Rapp OptoElectronic GmbH	722
Image Analyzers, High Resolution		Isotope-Labeled Compounds		Renishaw Inc	603
SciMeasure	815	Larodan	534	Rigaku Oxford Diffraction	828
PCO-TECH Inc	532	Label Free Sensing		Seahorse Bioscience, a part of Agilent Technologies	1024
SciMeasure	815	Axiogenesis AG	922	Siskiyou Corporation	708
Image Analyzers, Ratiometric Dyes		BiOptix	812	TA Instruments	200
AAT Bioquest Inc	804	Creoptix	222	Thorlabs	401
Image Intensifiers		Nanolive SA	810	Tokai Hit Co Ltd	725
PCO-TECH Inc	532	NanoTemper Technologies Inc	705	Light Sheet Microscopy	
Image Stabilization		SensiQ Technologies Inc	1008	Andor Technology	625
Mad City Labs Inc	501	Labeling Dyes		ASI/Applied Scientific Instrumentation	531
Imaging Chambers		AAT Bioquest Inc	804	Carl Zeiss Microscopy LLC	101
ALA Scientific Instruments	324	Larodan	534	Mad City Labs Inc	501
Cell MicroControls	622	Laboratory Apparatus & Equipment		NIC@IIT	624
Tokai Hit Co Ltd	725	Beckman Coulter Life Sciences	1014	Photometrics	404
Warner Instruments	427	Electron Microscopy Sciences	613	SciMeasure	815
Imaging Systems		Namiki Precision Jewel Co Ltd	813	Light Sources	
89 North	629	PicoQuant Photonics North America Inc	201	89 North	629
ASI/Applied Scientific Instrumentation	531	UVP LLC	814	Chroma Technology Corporation	728
Charles River	424	Langmuir Troughs		Cobolt AB	413
		Biolin Scientific	913	Hamamatsu Corporation	409

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TgK Scientific Ltd	729	Micromanipulators		Carl Zeiss Microscopy LLC	101
Lipids		ASI/Applied Scientific Instrumentation	531	Hinds Instruments	103
Anasys Instruments	808	Electron Microscopy Sciences	613	Ionovation GmbH	435
Anatrace	529	Narishige International USA Inc	1022	LUMICKS	1000
Avanti Polar Lipids Inc	508	NeoBiosystems Inc	536	Mad City Labs Inc	501
Larodan	534	Pacer Scientific	623	Mightex Systems	823
Matreya LLC	605	Prior Scientific Inc	125	NanoAndMore USA Inc	910
Liposome Preparation Equipment		Sensapex OY	123	Nanolive SA	810
Avanti Polar Lipids Inc	508	Siskiyou Corporation	708	NIC@IIT	624
Nanion Technologies	509	Sutter Instrument	600	Nikon Instruments Inc	523
Liquid Chromatography Instruments		Micropipette Pullers		Olympus	408
Agilent Technologies Inc	809	HEKA Elektronik	423	Renishaw Inc	603
JASCO	437	Narishige International USA Inc	1022	SciMedia/BrainVision	415
Wyatt Technology Corporation	601	Pacer Scientific	623	Sutter Instrument	600
Magnetic Resonance Imaging		Siskiyou Corporation	708	Thorlabs	401
Charles River	424	Sutter Instrument	600	WITec Instruments	712
Magnetic Stirrers		Micropipettes		Microscopy Chambers	
Quantum Northwest Inc	901	Fluicell	825	ASI/Applied Scientific Instrumentation	531
Mass Spectrometry		Micropositioners		Cell MicroControls	622
Agilent Technologies Inc	809	ASI/Applied Scientific Instrumentation	531	Tokai Hit Co Ltd	725
Charles River	424	Mad City Labs Inc	501	Warner Instruments	427
Micro Environmental Control		NeoBiosystems Inc	536	Molecular Biology Products	
ALA Scientific Instruments	324	PI (Physik Instrumente)	400	Aviva Systems Biology Corporation	214
ALVEOLE	731	Sensapex OY	123	Cedarlane	800
Microcalorimetry Systems		Sutter Instrument	600	UVP LLC	814
Malvern Instruments Ltd	711	Microscope Accessories		Monochromators	
TA Instruments	200	89 North	629	HORIBA Scientific	801
Microelectrode Holders		ASI/Applied Scientific Instrumentation	531	Nanopositioning Systems	
ALA Scientific Instruments	324	Chroma Technology Corporation	728	ASI/Applied Scientific Instrumentation	531
Sensapex OY	123	Cobolt AB	413	Mad City Labs Inc	501
Warner Instruments	427	Electron Microscopy Sciences	613	PI (Physik Instrumente)	400
Microelectrodes		Mad City Labs Inc	501	Prior Scientific Inc	125
Ecocyte Bioscience US LLC	630	Minus K Technology Inc	714	Near-Field Scanning Optical Microscopes (NSOM)	
Microfluidic Chambers		NanoAndMore USA Inc	910	Mad City Labs Inc	501
ALA Scientific Instruments	324	Park Systems Inc	802	WITec Instruments	712
Creoptix	222	Prior Scientific Inc	125	Nuclear Magnetic Resonance	
Elements SRL	715	Rapp OptoElectronic GmbH	722	Charles River	424
Fluicell	825	Semrock Inc	723	Particle Sizing Products	
Hellma USA	709	Siskiyou Corporation	708	Anton Paar USA	1010
LUMICKS	1000	Thorlabs	401	Beckman Coulter Life Sciences	1014
Microforges		Microscope Drift Correction		Malvern Instruments Ltd	711
ALA Scientific Instruments	324	ASI/Applied Scientific Instrumentation	531	Wyatt Technology Corporation	601
Narishige International USA Inc	1022	Mad City Labs Inc	501	Patch Clamp Instrumentation	
Microinjectors		Nikon Instruments Inc	523	Alembic Instruments Inc	422
ASI/Applied Scientific Instrumentation	531	Microscope Stages		Biolin Scientific	913
Fluicell	825	ASI/Applied Scientific Instrumentation	531	HEKA Elektronik	423
Narishige International USA Inc	1022	Mad City Labs Inc	501	Ionovation GmbH	435
npi electronic GmbH	322	Narishige International USA Inc	1022	Multi Channel Systems	522
Sutter Instrument	600	Pacer Scientific	623	Nanion Technologies	509
Warner Instruments	427	PI (Physik Instrumente)	400	Narishige International USA Inc	1022
		Prior Scientific Inc	125	NeoBiosystems Inc	536
		Siskiyou Corporation	708	npi electronic GmbH	322
		Microscopes		Pacer Scientific	623
		ASI/Applied Scientific Instrumentation	531	Sensapex OY	123
		Asylum Research, an Oxford Instruments Company	609	Siskiyou Corporation	708
		Bruker Nano Surfaces	700/701	Sophion Bioscience	909
		Caliber Imaging & Diagnostics Inc	912	Warner Instruments	427

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Anasys Instruments	808	Anatrace	529	Andor Technology	625
Cedarlane	800	Protein Structure Data		Hamamatsu Corporation	409
Perfusion Stepper System		Anasys Instruments	808	SciMeasure	815
NeoBiosystems Inc	536	Anatrace	529	Screening, High-Throughput	
Warner Instruments	427	Applied Photophysics	923	Axiogenesis AG	922
Perfusion Systems		Charles River	424	Beckman Coulter Life Sciences	1014
ALA Scientific Instruments	324	Rayonix LLC	115	BiOptix	812
Cell MicroControls	622	Rigaku Oxford Diffraction	828	Charles River	424
Ecocyte Bioscience US LLC	630	Publications		Creoptix	222
Narishige International USA Inc	1022	AIP Publishing	310	Ecocyte Bioscience US LLC	630
Tokai Hit Co Ltd	725	Cambridge University Press	205	Mad City Labs Inc	501
Warner Instruments	427	Garland Science	300	Maxcyte Inc	811
Pharmaceutical Development Equipment		IOP Publishing	309	Multi Channel Systems	522
Malvern Instruments Ltd	711	Physics Today	303	Nanion Technologies	509
Maxcyte Inc	811	Rockefeller University Press	308	Nikon Instruments Inc	523
Phospholipids		Society for Neuroscience	312	SensiQ Technologies Inc	1008
Avanti Polar Lipids Inc	508	Springer	302	Sensors	
Larodan	534	The Journal of Physiology	314	Creoptix	222
Matreya LLC	605	Pumps		SensiQ Technologies Inc	1008
Piezo Lens Positioners		NeoBiosystems Inc	536	Shutters	
ASI/Applied Scientific Instrumentation	531	Quartz Crystal Microbalance		Prior Scientific Inc	125
Mad City Labs Inc	501	Biolin Scientific	913	Signal Transduction Reagents	
PI (Physik Instrumente)	400	Reagents		Matreya LLC	605
Piezo Scanning Stages		Avanti Polar Lipids Inc	508	Software	
ASI/Applied Scientific Instrumentation	531	Aviva Systems Biology Corporation	214	Bitplane Inc	724
Mad City Labs Inc	501	Cedarlane	800	De Novo Software	412
PI (Physik Instrumente)	400	Electron Microscopy Sciences	613	DRV Technologies	223
Prior Scientific Inc	125	Gene Tools LLC	822	Solid State Lasers	
Piezo Stages		Rigaku Oxford Diffraction	828	Cobolt AB	413
ASI/Applied Scientific Instrumentation	531	UVP LLC	814	Spectrofluorometers	
Mad City Labs Inc	501	Recording Chambers		Edinburgh Instruments	612
PI (Physik Instrumente)	400	ALA Scientific Instruments	324	ISS Inc	635
Prior Scientific Inc	125	Cell MicroControls	622	JASCO	437
Sensapex OY	123	Ecocyte Bioscience US LLC	630	Olis Inc	903
Pipettes		Warner Instruments	427	Spectrometers	
Electron Microscopy Sciences	613	Rheometers/Viscometers		Andor Technology	625
Rainin Instrument LLC	1002	Anton Paar USA	1010	Applied Photophysics	923
Probes		TA Instruments	200	Aviv Biomedical Inc	1012
Asylum Research, an Oxford Instruments Company	609	Wyatt Technology Corporation	601	BioLogic USA	514
NanoAndMore USA Inc	910	Scanning Electron Microscope		Edinburgh Instruments	612
Park Systems Inc	802	Keysight Technologies	323	JASCO	437
Protein Binding Studies		Mad City Labs Inc	501	Mightex Systems	823
Anasys Instruments	808	Scanning Probe Microscopes		WITec Instruments	712
Creoptix	222	App Nano	710	Spectrophotometer Light Sources	
NanoTemper Technologies Inc	705	Asylum Research, an Oxford Instruments Company	609	Hellma USA	709
SensiQ Technologies Inc	1008	JPK Instruments AG	908	Spectrophotometers	
TA Instruments	200	Keysight Technologies	323	Aviv Biomedical Inc	1012
Protein Expression		Mad City Labs Inc	501	BioLogic USA	514
Charles River	424	NanoAndMore USA Inc	910	HORIBA Scientific	801
Maxcyte Inc	811	Park Systems Inc	802	JASCO	437
		WITec Instruments	712	Olis Inc	903
				Quantum Northwest Inc	901
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Spectroscopy Accessories		Surface Plasmon Resonance Instrumentation		npi electronic GmbH 322	
Applied Photophysics	923	BiOptix	812	Sophion Bioscience	909
Cobolt AB	413	Charles River	424	Sutter Instrument	600
Hellma USA	709	Creoptix	222	X-ray Diffraction Equipment	
Olis Inc	903	SensiQ Technologies Inc	1008	Anton Paar USA	1010
Quantum Northwest Inc	901	TCSPEC Components		Olympus	408
Semrock Inc	723	Edinburgh Instruments	612	Rayonix LLC	115
Sphingolipids		ISS Inc	635	Rigaku Oxford Diffraction	828
Avanti Polar Lipids Inc	508	Mad City Labs Inc	501	X-ray Imaging Equipment	
Larodan	534	PicoQuant Photonics North America Inc	201	Andor Technology	625
Matreya LLC	605	Temperature Controllers		Carl Zeiss Microscopy LLC	101
Stand Alone Stopped-Flow Unit		ALA Scientific Instruments	324	Rayonix LLC	115
KinTek Corporation	428	Aurora Scientific Inc	636	Zeta Potential	
Olis Inc	903	Cell MicroControls	622	Anton Paar USA	1010
TgK Scientific Ltd	729	Nanon Technologies	509	Malvern Instruments Ltd	711
Stepper Technology		npi electronic GmbH	322	Wyatt Technology Corporation	601
Mad City Labs Inc	501	Warner Instruments	427		
Siskiyou Corporation	708	Tensiometers			
Sterols		Biolin Scientific	913		
Avanti Polar Lipids Inc	508	Tomography			
Stimulators		Nanolive SA	810		
Aurora Scientific Inc	636	Rayonix LLC	115		
IonOptix	535	UV Spectroscopy			
IonOptix	535	Agilent Technologies Inc	809		
Mightex Systems	823	BioLogic USA	514		
Pacer Scientific	623	Edinburgh Instruments	612		
Warner Instruments	427	Hellma USA	709		
Stimulus Isolators		HORIBA Scientific	801		
npi electronic GmbH	322	JASCO	437		
Warner Instruments	427	Olis Inc	903		
Stopped-Flow Spectroscopy		Quantum Northwest Inc	901		
Applied Photophysics	923	TgK Scientific Ltd	729		
Aviv Biomedical Inc	1012	Vibration Isolation Systems			
BioLogic USA	514	Electron Microscopy Sciences	613		
JASCO	437	Minus K Technology Inc	714		
KinTek Corporation	428	Narishige International USA Inc	1022		
Olis Inc	903	Pacer Scientific	623		
TgK Scientific Ltd	729	Thorlabs	401		
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Namiki Precision Jewel Co Ltd	813	Video Microscopy Systems			
Super Resolution (SR) Microscopy		IonOptix	535		
App Nano	710	Ionovation GmbH	435		
ASI/Applied Scientific Instrumentation	531	Nikon Instruments Inc	523		
Bitplane Inc	724	Visible Spectroscopy			
Carl Zeiss Microscopy LLC	101	Hellma USA	709		
Laboratory for Fluorescence Dynamics	704	KinTek Corporation	428		
LUMICKS	1000	Olis Inc	903		
Mad City Labs Inc	501	Quantum Northwest Inc	901		
NIC@IIT	624	Voltage Clamp Instrumentation			
Nikon Instruments Inc	523	Alembic Instruments Inc	422		
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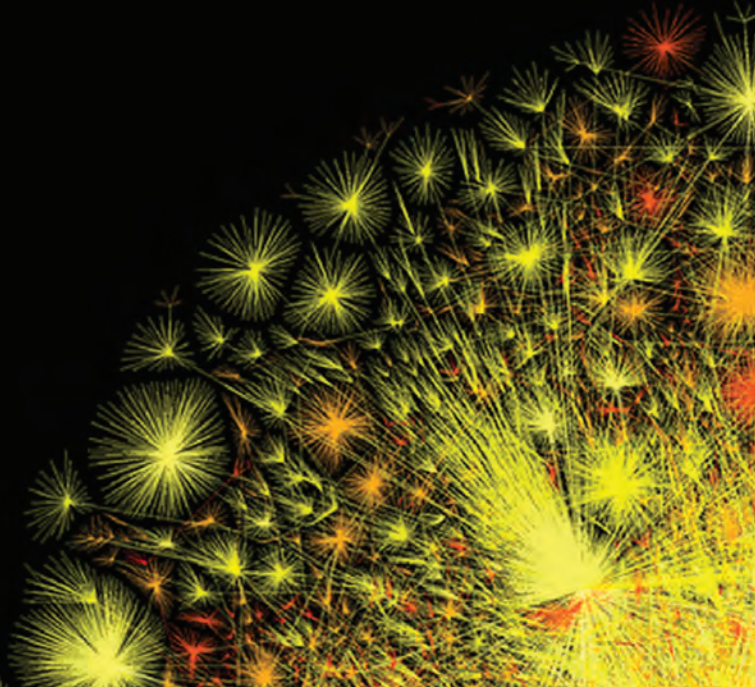
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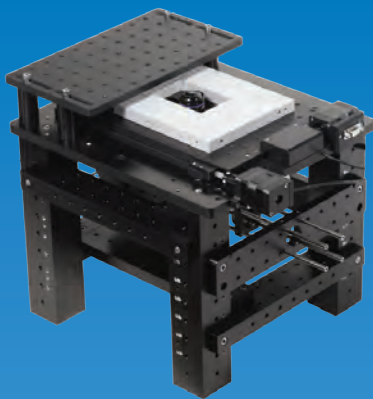


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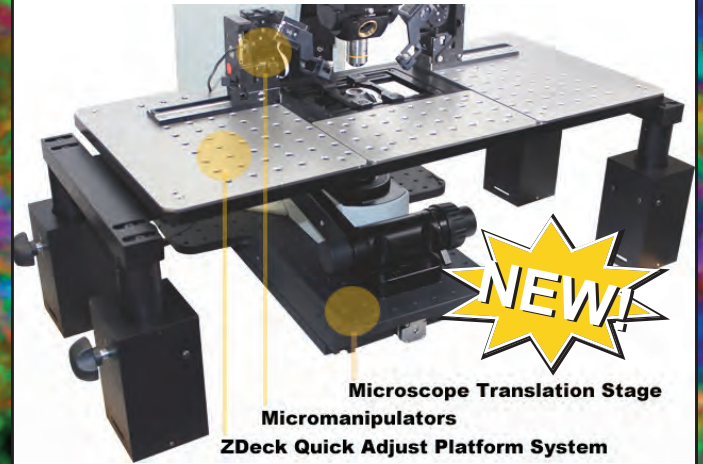
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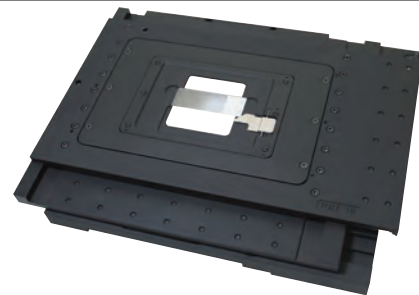
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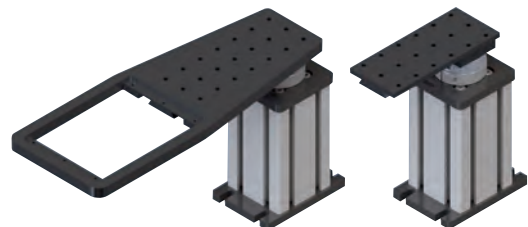
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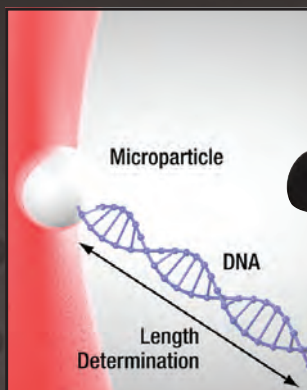
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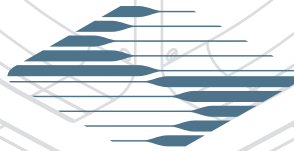


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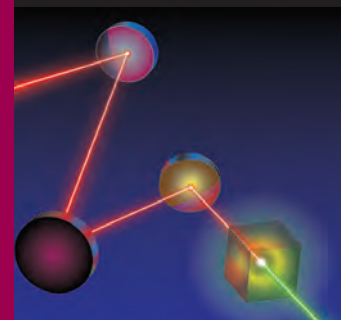
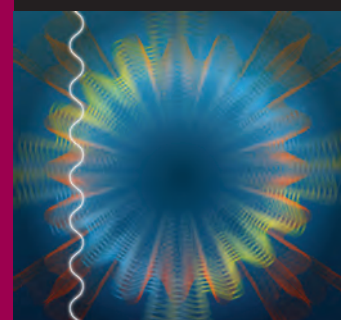
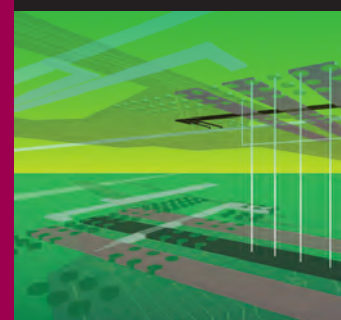
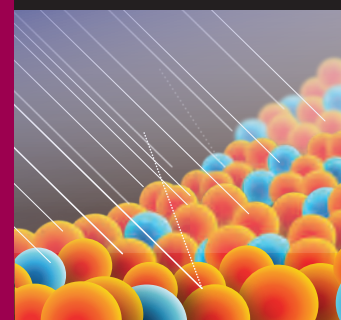
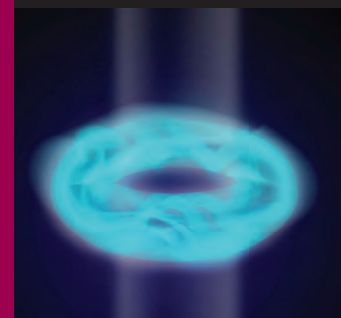
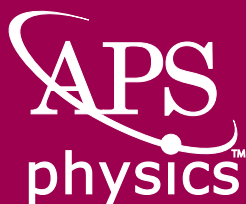
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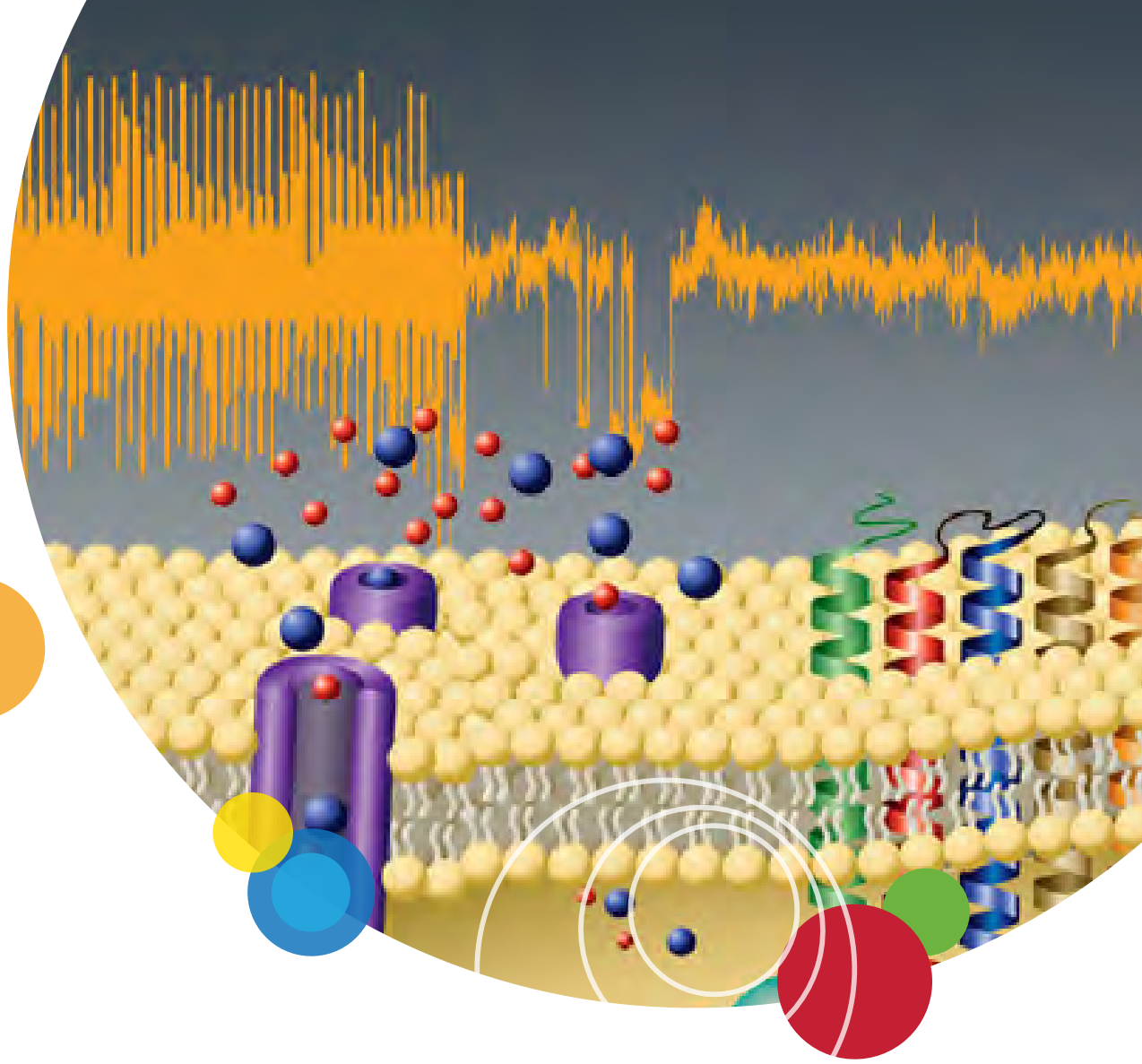
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