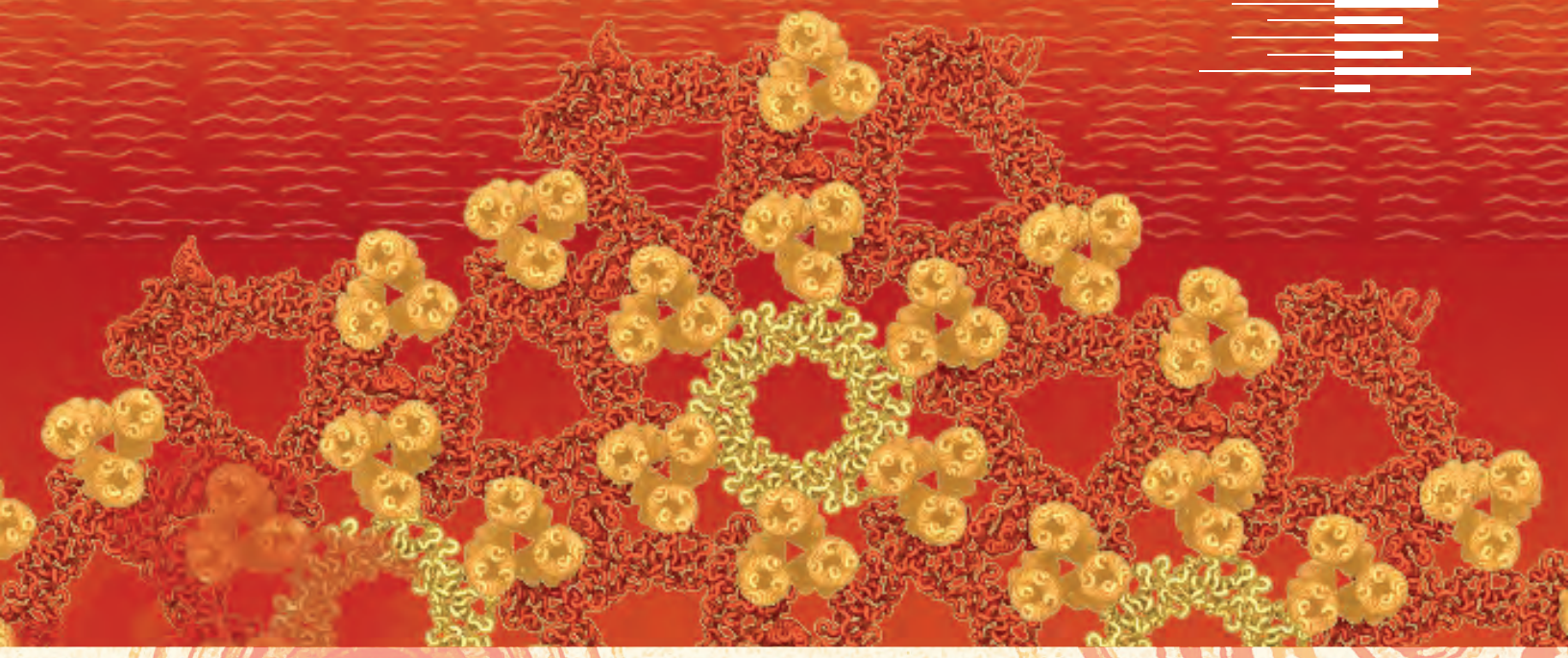
PROGRAM

BIOPHYSICAL SOCIETY 59TH ANNUAL MEETING

FEBRUARY 7-11, 2015 | BALTIMORE, MARYLAND

Biophysical Society



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Options

- SFM-4000 series stopped flow
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- Multi cell T control
- NIR-CD to 1250nm
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- DR-CD for powder samples
- Magnetic CD

Features

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- Auto optimizing optics
- Xe and XeHg sources
- 3 stage wavelength selection
- +/- 0.1nm wavelength accuracy
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SFM-4000 Stopped Flow Series Options

- Dead time to <200μs
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  SFM-2000, SFM-3000, SFM-4000
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- Asymmetric mixing
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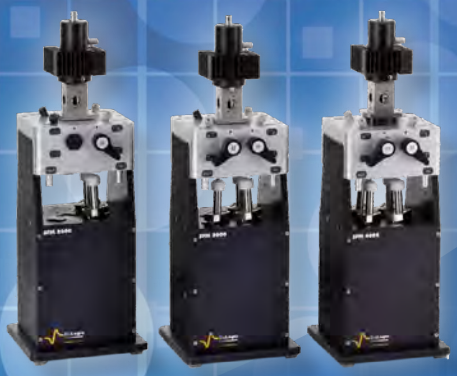
- ***Options: T-jump, Titrator, Quench flow, Freeze quench, and more***



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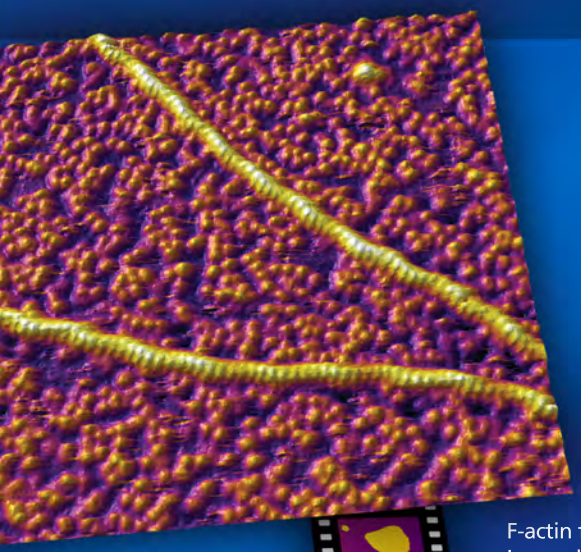
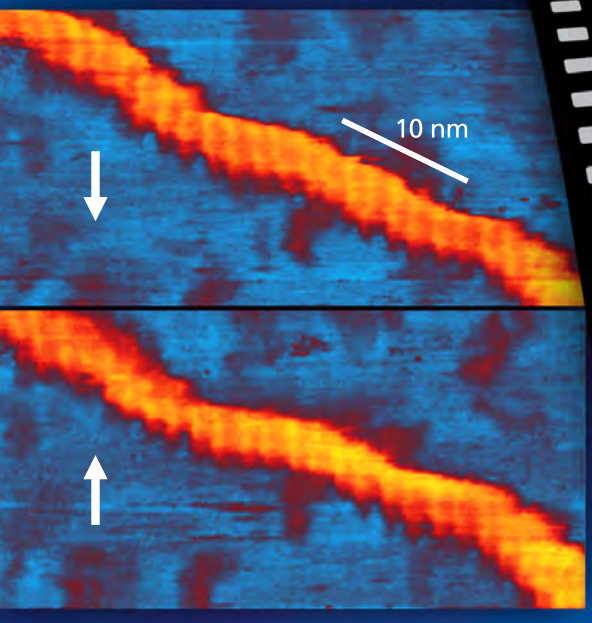


F-actin filaments imaged in fluid

Enzymatic degradation of a supported lipid bilayer



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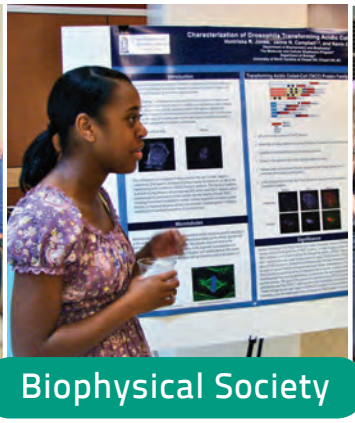

Biophysical Society

2015 Summer Research Program in Biophysics

University of North Carolina at Chapel Hill

Priority Application Deadline: February 16, 2015

Interested in interdisciplinary science? Want to work in the fast-growing area of biomedical research? Looking to get some hands-on lab experience this summer? Check out the Summer Research Program in Biophysics, an 11 week course for undergraduate minority students at the University of North Carolina, Chapel Hill. Course expenses, travel costs, meals, and housing are covered.

Course includes:

- Lectures with UNC faculty members and seminars with visiting professors from graduate programs across the country
- Mentored research experience
- Team-building activities and field trips

Recommended Prerequisites:

- Studying quantitative science: chemistry, physics, biochemistry, and/or computer science
- 2 semesters of biology
- 2 semesters of calculus-level physics
- 3.0 cumulative or higher GPA in science courses

See what past students have to say about the Summer Research Program!

"…this has been the most useful and wonderful summer of my college career. Not only have I learned academically, I have built multiple bridges that can only benefit me in the future."

"It has influenced me to take an additional science course at my university as well as has helped me create ideas for my senior project... the environment of the course created learning."

"I learned new lab techniques as well as worked on the project independently. I was able to complete my own experiments and when I had questions or hit a snag, my mentor was available to help."

For more information or to recommend a student, email Ellen Mackall: **emackall@biophysics.org**, or visit **www.biophysics.org**.

Biophysical Society

Thematic Meetings 2015

New Biological Frontiers Illuminated by Molecular Sensors and Actuators

Taipei, Taiwan
June 28-July 1

• • • •

Biophysics of Proteins and Surfaces: Assembly, Activation, Signaling

Madrid, Spain
October 13-15

• • • •

Polymers and Self- Assembly: From Biology to Nanomaterials

Rio de Janeiro, Brazil
October 25-30

• • • •

Biophysics in the Understanding, Diagnosis and Treatment of Infectious Diseases

Stellenbosch, South Africa
November 16-20

For more information visit **www.biophysics.org**

The moment your data change
scientific minds.
This is the moment we work for.

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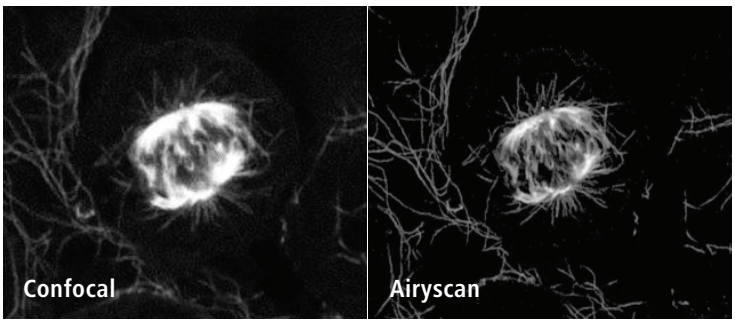

Find out more at our exhibitor showcase:

Technology Innovations from ZEISS, the New ZEISS LSM 880 Confocal with Airyscan and ZEISS Lightsheet Z.1.

Sunday, February 8, 2015, 10:30am-12:00pm, Room B

ZEISS

We make it visible.

Biophysical Society

59th ANNUAL MEETING

FEBRUARY 7-11, 2015 | BALTIMORE, MARYLAND

www.biophysics.org/2015meeting

Table of Contents

National Lecturer

Klaus Schulten

University of Illinois at Urbana-Champaign

Discoveries in Biophysics Through the Computational Microscope

Monday, February 9, 2015, 8:00 PM, Baltimore Convention Center

List of Advertisers in the 2015 Annual Meeting Program

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Bio-Logic USA
Carl Zeiss Microscopy LLC
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Mad City Labs Inc
Molecular Devices LLC
Nanion Technologies GmbH
Sutter Instruments
The Journal of Physical Chemistry

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

Asylum Research, An Oxford Instruments Company
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Science Advances, a new AAAS/*Science* journal
SensiQ Technologies, Inc.
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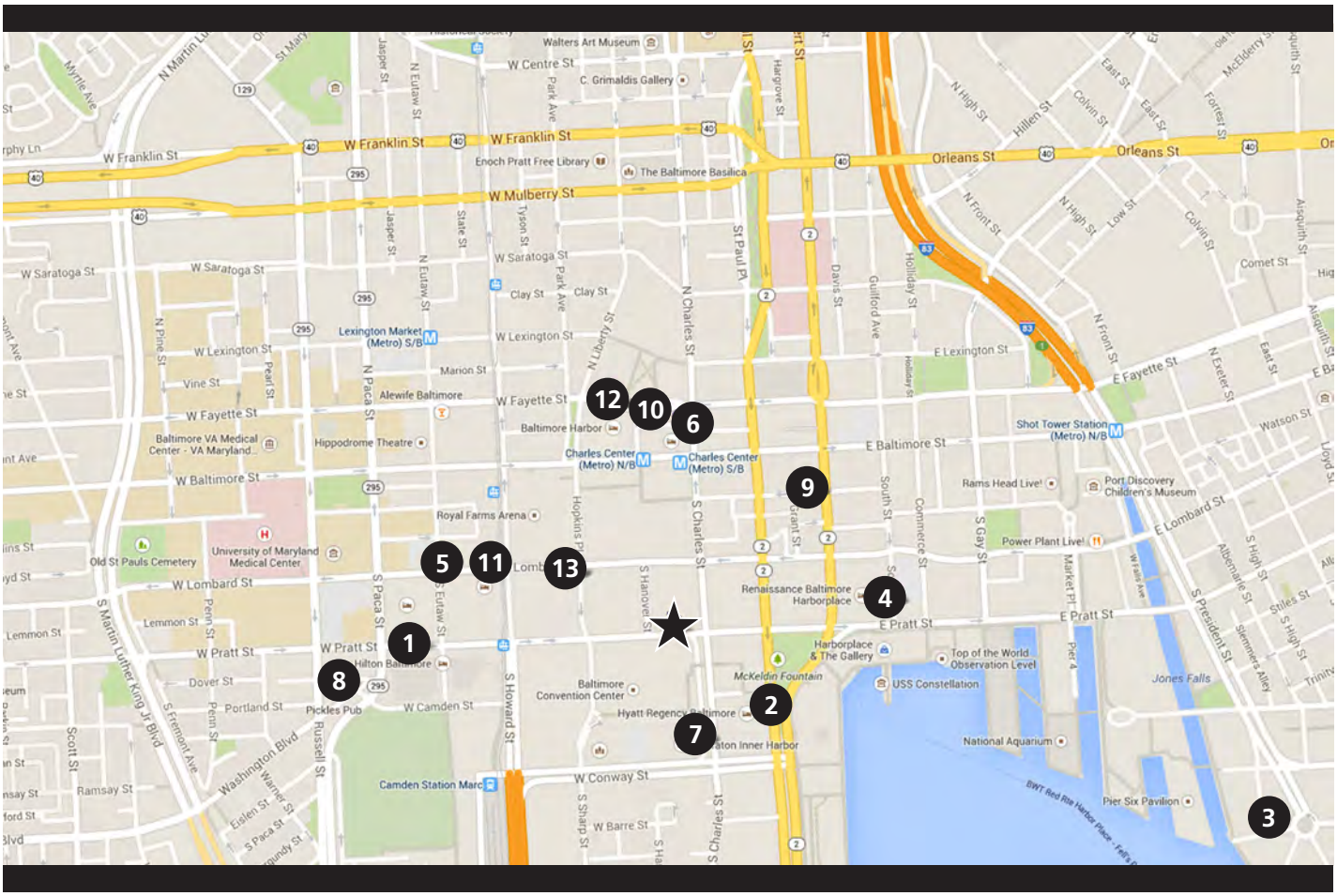
TA Instruments
Tray Inc.
World Precision Instruments
Wyatt Technology Corporation

As of January 9, 2015

Hotel Map



★ BALTIMORE CONVENTION CENTER

1 **HEADQUARTERS HOTEL**
HILTON BALTIMORE

2 HYATT REGENCY

3 BALTIMORE MARRIOTT WATERFRONT

4 RENAISSANCE HARBORPLACE

5 MARRIOTT INNER HARBOR

6 HOTEL MONACO

7 BALTIMORE HARBOR HOTEL

8 HAMPTON INN BALTIMORE/DOWNTOWN

9 HAMPTON INN AND SUITES BALTIMORE INNER HARBOR

10 LORD BALTIMORE HOTEL

11 HOLIDAY INN INNER HARBOR

12 SHERATON CITY CENTER HOTEL

13 DAYS INN INNER HARBOR

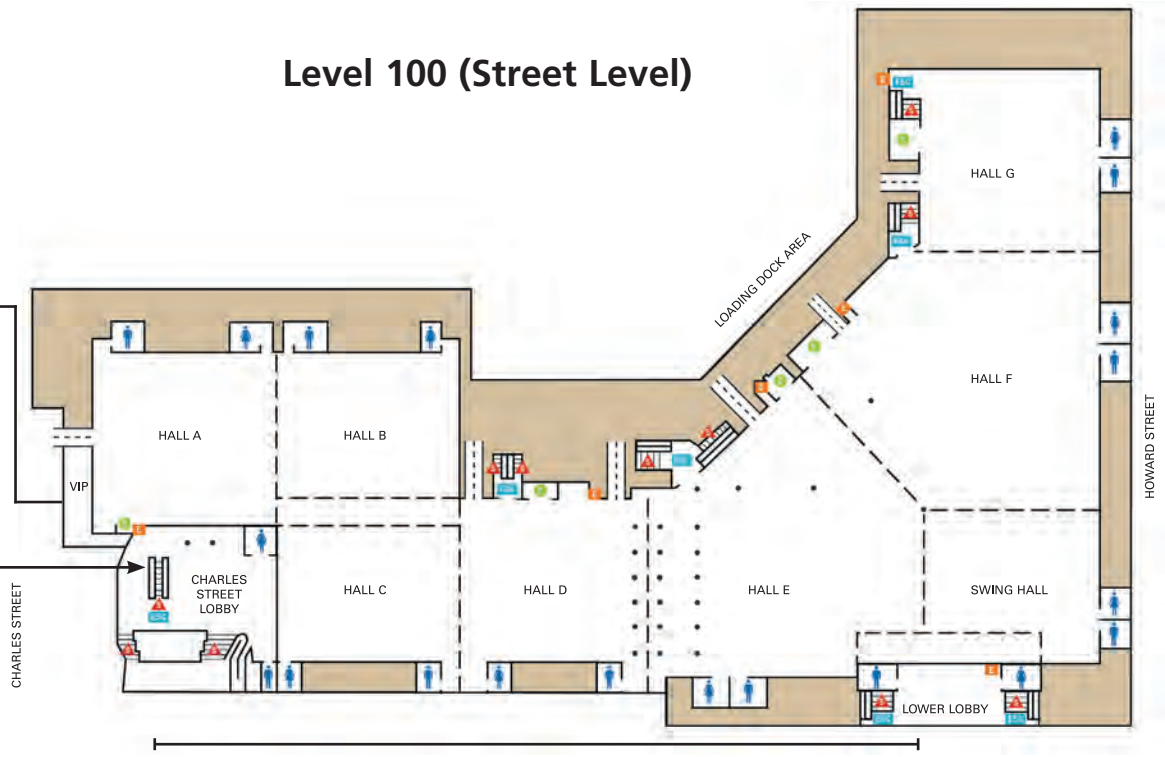
Baltimore Convention Center Facilities

Level 100 (Street Level)

Society Meeting Office

Charles Street Lobby

- Registration
- Coat Check
- Luggage Storage
- Society Help Desk
- Cyber Café
- Poster Pickup
- Society Booth

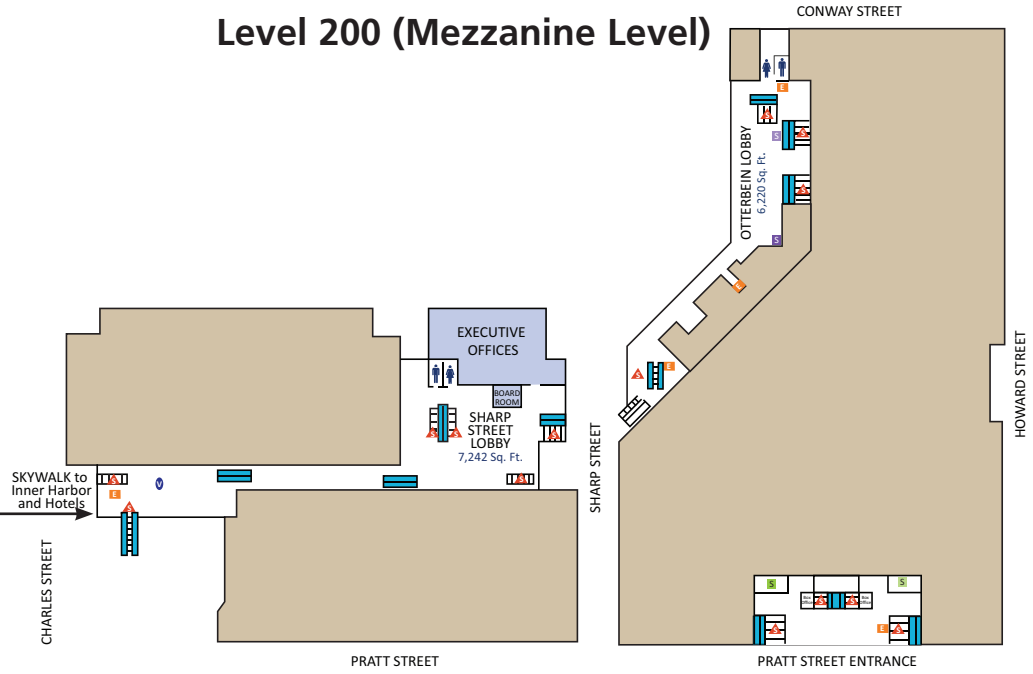


Hall A-E

- Biomolecular Discovery Dome
- Posters & Exhibits
- Graduate and Postdoc Institution Fair
- Industry and Agency Opportunities Fair
- SRAA Competition
- Exhibits Office
- Exhibitor Presentations
- Image Contest

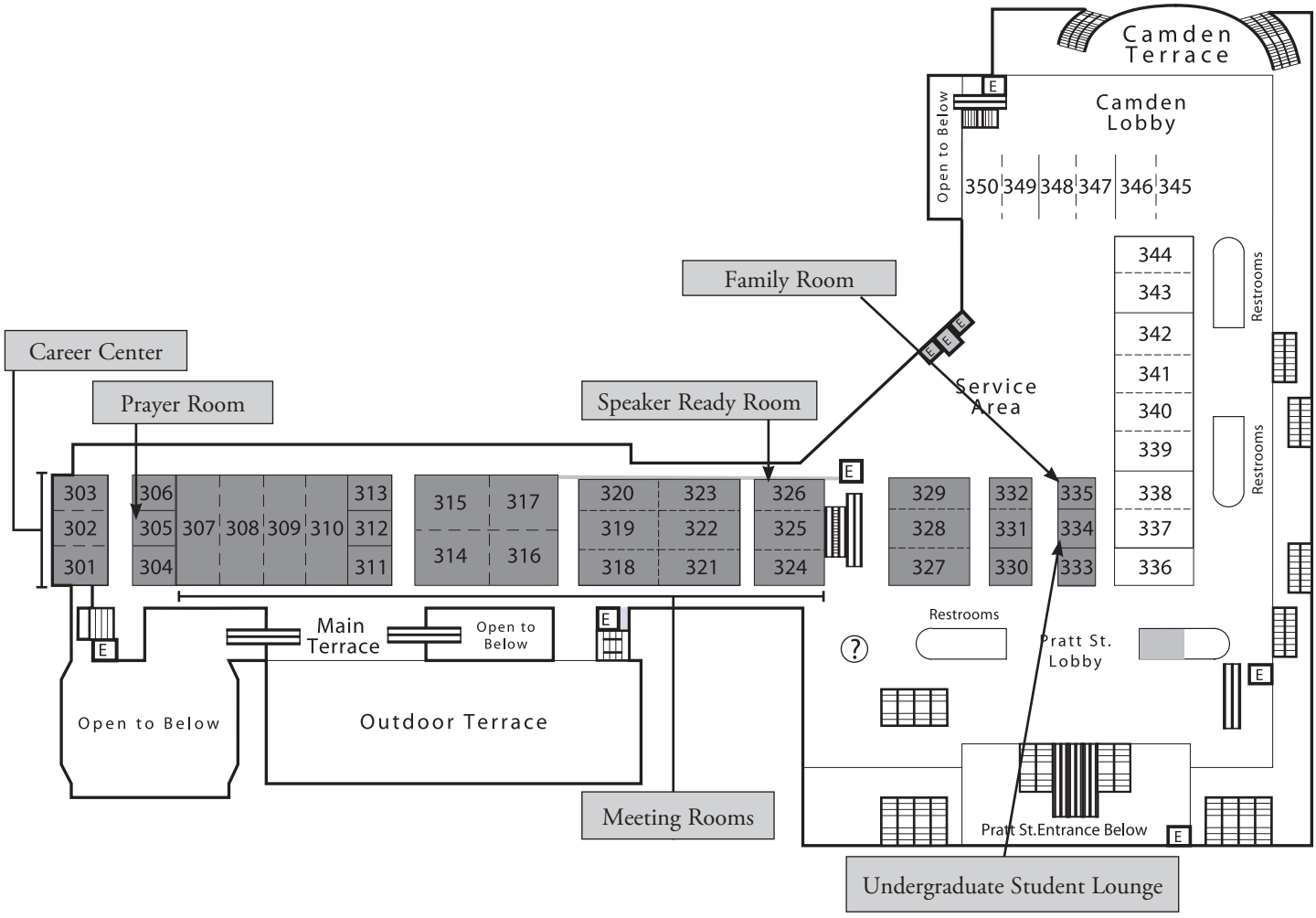
Level 200 (Mezzanine Level)

Undergraduate Mixer and Poster Fest



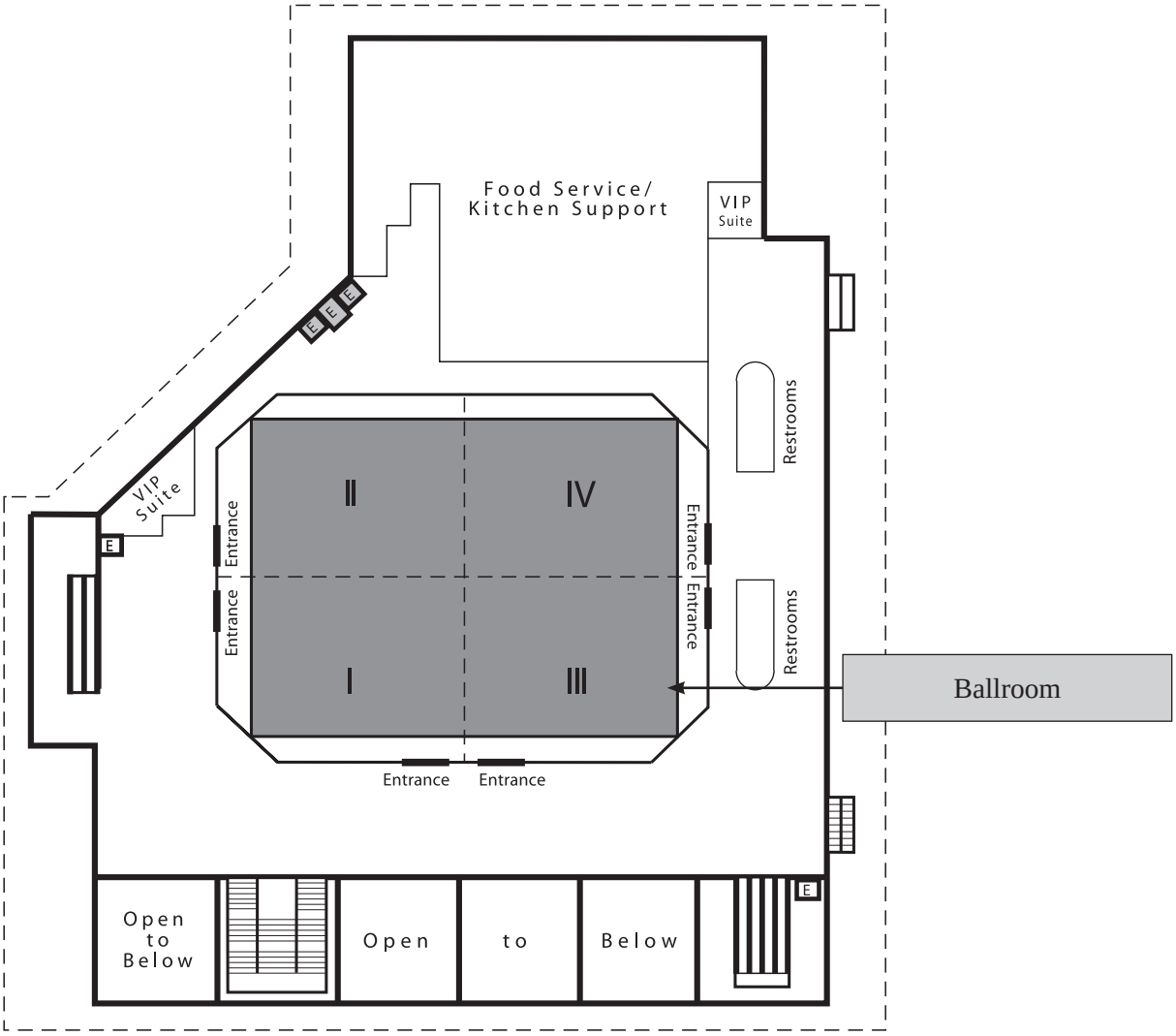
Baltimore Convention Center Facilities

Level 300 (Meeting Rooms)



Baltimore Convention Center Facilities

Level 400 (Ballroom)



Biophysical Society

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Karen Fleming, Johns Hopkins University, Co-Chair
Peter Hinterdorfer, University of Linz, Austria
Vasanthi Jayaraman, University of Texas Health Science Center
Amy Lee, University of Iowa
Robert Nakamoto, University of Virginia Health Science Center
E. Michael Ostap, University of Pennsylvania
David Sept, University of Michigan
Antoine van Oijen, University of Wollongong, Australia
Claudia Veigel, Ludwig Maximillians University, Germany

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Samantha Harris
Marcia Levitus
Merritt Maduke
Daniel Minor
Jeanne Nerbonne
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Term Ending 2016

Juliette Lecomte
Amy Lee
Antoine van Oijen
Bonnie Wallace

Term Ending 2017

Olga Boudker
Kalina Hristova
Joseph D. Puglisi
Michael Pusch

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Nathan Baker, Associate Editor
E. Michael Ostap, Associate Editor
Dave Piston, Associate Editor
Michael Pusch, Associate Editor
Brian Salzberg, Associate Editor
Stanislav Shvartsman, Associate Editor
Claudia Steinem, Associate Editor

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Ray Wolfe, Creative Designer & Systems Engineer
Alisha Yocum, Director of Member Services & Publications
Ying Zhu, Meetings Coordinator

General Information

All functions will be held in the Baltimore 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 Charles Street 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 Bank of America, 100 South Charles Street, Baltimore, MD 21201. ATMs are also available in the Baltimore Convention Center.

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

ATM is open 24 hours.

Business Center, 300 Level

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

Saturday–Wednesday	8:30 AM–5:00 PM

Career Center, Room 301/302/303

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 Baltimore 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 the VIP Lounge, or at the Society Help Desk located at registration in the Charles Street Lobby.

Child Care

Child care is provided by KiddieCorp. On-site registration is available on a limited basis. Visit the BPS Meeting Office, in the VIP Lounge, for additional information.

Coat Check/Luggage Storage, Charles Street Lobby

The cost is $2.00 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	8:00 AM–7:30 PM
Sunday–Tuesday	7:30 AM–6:30 PM
Wednesday	7:30 AM–4:00 PM

Daily Meet-Up

Interested in making new acquaintances and experiencing the cuisine of Baltimore? 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, Exhibit Hall A-E

The Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of 11/21/14 can be found beginning on page 188. Please see Addendum for those registered after 11/21/14.

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 335

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

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, Exhibit Hall E

In case of medical emergency, dial x7055 from any house phone or (410) 649-7055 from a cell phone. The First Aid Room is located behind Hall E. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.

Saturday, February 7	8:30 AM–6:00 PM
Sunday, February 8	8:00 AM–6:00 PM
Monday, February 9	8:00 AM–6:00 PM and 7:30 PM–9:30 PM
Tuesday, February 10	8:00 AM–6:00 PM
Wednesday, February 11	8:00 AM–6:00 PM

Hotel Telephone Numbers

Hilton Baltimore	443-573-8700
Baltimore Harbor Hotel	410-752-1100
Days Inn Inner Harbor	800-615-3107
Hampton Inn Baltimore/Downtown	410-685-5000
Hampton Inn and Suites Baltimore Inner Harbor	410-539-7888
Holiday Inn Inner Harbor	410-685-3500
Hotel Monaco	443-692-6170
Hyatt Regency	410-528-1234
Lord Baltimore Hotel	855-539-1928
Marriott Inner Harbor	410-962-0202
Marriott Waterfront	410-385-3000
Renaissance Harborplace	410-547-1200
Sheraton Inner Harbor	410-962-8300

Individuals Requiring Assistance
Attendees requiring special assistance during the meeting should visit the Society Meeting Office in the VIP Lounge of the Baltimore Convention Center, or call (410) 649-6206. Society staff will do their best to accommodate requests; however, we cannot assure that special needs will be met without prior notice.

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

In addition, a **Cyber Café** is located in the Charles Street 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 new "BPS 360" mobile application is available for download in the Apple App Store, Google Play, Windows Store, and as an HTML 5 website 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 Baltimore Convention Center does not include a public parking facility. There are many public garages located around the city and within walking distance of the Center.

Photography
Registration for the meeting implies consent to having photographs taken and to their use by officials of the Biophysical Society, or their representatives, for editorial and promotional purposes, on the Society website, social media outlets, and publications. Recordings of any kind (audio taping, videotaping, camera, tablets, 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, Inc. will be available for pick up at the Baltimore Convention Center in the Charles Street Lobby near the entrance to 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, Exhibit Hall A-E
Sunday–Wednesday

The Exhibit Hall will open at 8:00 AM each morning. It will remain open for poster viewing until 10:00 PM each night, **except for Tuesday, when it will close at 4:30 PM for safety purposes during exhibit tear down.** Posters are arranged according to topic. Your poster board number begins with "B." On the day of presentation, authors assigned odd-numbered poster boards should present 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, 2014, are scheduled each day, Sunday-Wednesday, during the regular poster sessions. These board numbers will begin with "LB."** See Addendum for listing of abstracts.

Posters are to be removed by 5:00 PM on Sunday and Monday, **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 305
A room will be available for worship or other personal prayer from:

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

Raffles
Exhibitor Raffle: Want to win an Apple iPad Air? Earn raffle entries by visiting with exhibitors Sunday, February 8, through Tuesday, February 10, to collect tickets. The more booths you visit, the more chances to win. Drop the raffle tickets at the Society Booth, in the Charles Street Lobby, by 3:00 PM Tuesday, February 10. The winner will be announced in the Exhibit Hall at 3:00 PM Tuesday afternoon—you must be present at the Meeting to win. Good luck!

Wednesday Poster Session Raffle: Attend the Wednesday poster sessions in the Exhibit Hall for a chance to win a Kindle Fire! 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, Charles Street Lobby
Friday	3:00 PM–5:00 PM
Saturday	8:00 AM–6:30 PM
Sunday–Tuesday	7:30 AM–5:00 PM
Wednesday	8:00 AM–3:00 PM

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

Twitter: @BiophysicalSoc, use hashtag #BPS15
Facebook: www.facebook.com/biophysicalsociety
Blog: www.biophysicalsociety.wordpress.com

Society Booth, Charles Street Lobby
Stop by the Society Booth to purchase BPS merchandise, pick up Society publications, learn about Society programs, drop off exhibitor raffle tickets, or fill out a membership application.

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

Society Meeting Office,
VIP Lounge, Charles Street Lobby
Office Phone: (410) 649-6206

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 326

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 Baltimore 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 Charles Street Lobby at the Baltimore Convention Center.

Baltimore City Taxi	410-327-7777
Arrow Cab	443-575-4111
County Cab	443-575-4110
Diamond Cab of Baltimore	410-947-3333
Yellow Cab Cooperative, Inc	415-333-3333

Undergraduate Student Lounge, Room 334

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. Members of the Education Committee, which sponsors this lounge, will drop in to talk with student attendees about career paths and opportunities.

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

Mark Your Calendars!
Future BPS Annual Meetings

60th Annual Meeting

February 27–March 2, 2016
Los Angeles, California

61st Annual Meeting
February 11–15, 2017
New Orleans, Louisiana

62nd Annual Meeting
February 17–21, 2018
San Francisco, California

Committee Meetings

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

Friday, February 6

3:00 PM–4:30 PM
New Council Orientation
Hilton Baltimore, Peale C

5:00 PM–9:00 PM
Joint Council Reception, Dinner, and Meeting
Hilton Baltimore, Peale A-B

Saturday, February 7

8:30 AM–11:00 AM
Joint Council Meeting (continued)
Hilton Baltimore, Peale A-B

Sunday, February 8

8:30 AM–10:30 AM
Minority Affairs Committee (MAC) Meeting
Room 333

10:30 AM–12:30 PM
International Relations Committee Meeting
Room 313

12:15 PM–2:15 PM
Public Affairs Committee Meeting
Room 333

3:30 PM–5:00 PM
Early Careers Committee Meeting
Room 333

6:00 PM–10:00 PM
Biophysical Journal Editorial Board Dinner
The Center Club

Monday, February 9

8:30 AM–10:30 AM
Committee for Professional Opportunities for Women (CPOW) Meeting
Room 333

3:00 PM–5:00 PM
Membership Committee Meeting
Room 333

Tuesday, February 10

8:00 AM–9:00 AM
Biophysical Society Business Meeting
Room 327/328

9:00 AM–10:00 AM
Subgroup Chairs Meeting
Room 318

3:00 PM–5:00 PM
Education Committee Meeting
Room 333

Wednesday, February 11

8:00 AM–11:00 AM
New Council Meeting
Room 318

12:00 PM–3:00 PM
Publications Committee Meeting
Room 333

The Biophysical Society would like to thank Society members who serve on Council or Committees.

Professional Development & Educational Sessions

The Society's committees have planned many 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 8, to Wednesday, February 11, in Room 334.

Sessions in italics will be held in Career Center, Room 301/302/303.

Saturday, February 7, 2015

3:00 PM–4:00 PM	*Networking: Optimizing Your Time at BPS 2015*
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 8, 2015

7:30 AM–8:30 AM	Postdoctoral Breakfast
9:00 AM–10:00 AM	*Selling Yourself to the Life Sciences Industry*
10:00 AM–5:00 PM	Biomolecular Discovery Dome
10:30 AM–11:30 AM	*Career Planning and Job Searching for Science Professionals: Academic Opportunities*
12:00 NOON–1:00 PM	*Networking: Optimizing Your Time at BPS 2015*
1:30 PM–3:30 PM	Navigating the Transition: Grad Student to Postdoc
2:00 PM–3:30 PM	Teaching Science Like We Do Science: Integrating Research and Education
2:30 PM–3:30 PM	*Having the Right Stuff: Outstanding Resumes/CVs for Outstanding Career Opportunities in Academia and Industry*
2:30 PM–4:00 PM	Science Funding: Is It Time for a New Paradigm?
4:00 PM–5:00 PM	*Beyond the Bench: Preparing for Your Career Transition in the Life Sciences*
5:30 PM–7:00 PM	Mid-Career Mixer

One-on-One Resume and Career Counseling*

8:30 AM–1:00 PM • 2:30 PM–6:00 PM

Monday, February 9, 2015

7:30 AM–8:30 AM	Graduate Student Breakfast
10:00 AM–11:00 AM	*Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*
10:00 AM–5:00 PM	Biomolecular Discovery Dome
11:30 AM–12:30 PM	*Career Planning and Job Searching for Science Professionals: Academic Opportunities*
11:45 AM–1:15 PM	Undergraduate Student Pizza "Breakfast"
1:00 PM– 3:00 PM	Graduate & Postdoc Institution Fair
1:00 PM–3:00 PM	Grant Writing Workshop: How (Not) to Write Your NIH Grant Proposal
1:30 PM–3:00 PM	Biophysics 101: Super Resolution Microscopy
2:15 PM–3:45 PM	How to Get Your Scientific Paper Published
2:30 PM–3:30 PM	*Selling Yourself to the Life Sciences Industry*
2:30 PM–4:00 PM	Overcoming Unconscious Bias & Barriers in Science
2:30 PM–4:00 PM	US Science Education in a Global Context
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, February 10, 2015

9:30 AM–10:30 AM	*Successfully Navigating the International Job Search*
10:00 AM–5:00 PM	Biomolecular Discovery Dome
12:00 NOON–1:30 PM	Funding Opportunities for Faculty at Primarily Undergraduate Institutions
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
1:30 PM–2:30 PM	Conversation with NIGMS Director Jon Lorsch
2:30 PM–3:30 PM	*Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*
2:30 PM–4:30 PM	Grant Opportunities for Early Career Faculty
3:00 PM–4:00 PM	Networking with Minority Biophysicists: Resources & 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 7 in the Career Center, Room 301-303. 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 301/302/303

Alaina G. Levine is a Contributor to National Geographic, science journalist, science and engineering careers consultant, professional speaker and corporate comedian. Her new book on networking strategies for scientists and engineers will be published by Wiley in 2015. As President of Quantum Success Solutions, a career consulting enterprise with a focus on advancing the professional development expertise of scientists and engineers, she has been advising emerging and established scientists and engineers about their careers for over a decade, and has consulted with tens of thousands of early- and mid-career scientific and engineering professionals. She has given over 600 workshops and seminars in the US and Europe and is the author of over 150 articles pertaining to science, engineering, science careers and business in such publications as *Science, Nature, Smithsonian*, *Scientific American*, *IEEE Spectrum*, *New Scientist*, and *COSMOS*. As a science careers journalist, Levine constantly researches employment trends in STEM fields and delivers up-to-date vital information about STEM career issues from interviews with hiring managers, decision-makers and recruiters in myriad industries. Levine is also a Contributor to *NatGeo*, where she writes and blogs for its website, and she pens the career columns for *Physics Today* and the American Physical Society's national publication, *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.

CPOW

Sunday

Xiang-qiang Chu, Wayne State University
295-Pos, B75
PROBING THE DOMAIN MOTIONS OF AN OLIGOMERIC PROTEIN FROM DEEP-SEA HYPERTHERMOPHILE BY NEUTRON SPIN ECHO.

Hyeran Kang, Yale University
118-Plat
SITE-SPECIFIC CATION RELEASE DRIVES ACTIN FILAMENT SEVERING BY VERTEBRATE COFILIN.

Melissa R. Miller, University of California, Berkeley
647-Pos, B427
EVOLUTIONARY DIVERSITY OF PROTEIN NANODOMAINS WITHIN MAMMALIAN SPERM.

Giulia Palermo, Swiss Federal Institute of Technology in Lausanne, Switzerland
297-Pos, B77
MOLECULAR MECHANISM OF RUTHENIUM AND GOLD ANTICANCER AGENTS IN THE ALLOSTERIC REGULATION OF THE HISTONE PROTEINS OF CHROMATIN.

Judith H. Prieto, Western Connecticut State University
278-Pos, B58
GLUTATHIONE REDUCTASE OF *PLASMODIUM FALCIPARUM* AS AN ANTIMALARIAL DRUG TARGET OF METHYLENE BLUE.

Andreja Šarlah, University of Ljubljana, Slovenia
670-Pos, B450
MECHANO-CHEMICAL MODEL FOR THE STEPPING OF CYTOPLASMIC DYNEIN.

Katelyn M. Spillane, National Institute for Medical Research, United Kingdom
704-Pos, B484
CHARACTERIZING MECHANICAL FORCES DURING B CELL RESPONSES.

Monday

Moriah R. Beck, Wichita State University
1487-Pos, B438
PALLADIN NUCLEATES ACTIN ASSEMBLY AND REGULATES CYTOSKELETON ARCHITECTURE.

Ivana Y. Kuo, Yale University
893-Plat
DECREASED POLYCYSTIN 2 EXPRESSION ALTERS CALCIUM-CONTRACTION COUPLING AND CHANGES BETA-ADRENERGIC SIGNALING PATHWAYS.

Fei Li, Michigan State University
1543-Pos, B494
CRYSTAL STRUCTURES OF TRANSLOCATOR PROTEIN 18 KDA (TSPO) AND IDENTIFICATION OF A CHOLESTEROL BINDING ENHANCEMENT MOTIF.

Wednesday

Juan Guan, University of California, San Francisco
2737-Pos, B167
TRACKING CHROMOSOME CONFORMATION IN LIVE CELLS WITH CRISPR IMAGING.

Loan K. Huynh, University of Toronto, Canada
2605-Pos, B35
GLOBAL CONTACTS DIRECT HYDOPHOBIC COLLAPSE IN PROTEIN FOLDING.

Elizabeth Martinez-Hernandez, Loyola University of Chicago
2938-Pos, B368
GENETIC ABLATION OF KLHL1 ALTERS CAV3.2 EXPRESSION IN DRG NEURONS AND MECHANICAL PAIN TRANSMISSION.

Yoshie Narui, The Ohio State University
2847-Pos, B277
STRUCTURAL AND BIOPHYSICAL CHARACTERIZATION OF INNER EAR TIP LINK VARIANTS.

Melanie Paillard, Thomas Jefferson University
3075-Pos, B505
THE STOICHIOMETRY BETWEEN MICU1 AND MCU DETERMINES THE DIFFERENT MITOCHONDRIAL CA2+ UPTAKE PHENOTYPES IN HEART AND LIVER.

Nicoletta Savalli, University of California, Los Angeles
2936-Pos, B366
β2a AND β3 DIFFERENTIALLY MODULATE TIME- AND VOLTAGE-DEPENDENT PROPERTIES OF INDIVIDUAL VOLTAGE SENSORS IN THE HUMAN CAV1.2 CHANNEL.

EDUCATION

Sunday

Bryant L. Doss, Arizona State University
706-Pos, B486
AFM INDENTATION REVEALS ACTOMYOSIN-BASED STIFFENING OF METASTATIC CANCER CELLS DURING INVASION INTO COLLAGEN I MATRICES.

Satchal K. Erramilli, Purdue University
723-Pos, B503
CONFORMATIONAL CHANGES AND COMPLEX FORMATION OF THE NON-CANONICAL RIBOSE ABC TRANSPORTER.

Yifan Ge, Indiana University Purdue University Indianapolis
441-Pos, B221
LIPOPOLYMER CROWDING IN POLYMER-TETHERED LIPID BILAYERS ALTERS LIPID MIXING BEHAVIOR AND PROTEIN SEQUESTRATION IN THE PRESENCE OF RAFT-MIMICKING LIPID MIXTURES.

Kirill S. Grushin, University of Texas Medical Branch at Galveston
881-Pos, B661
PS-GC NANODISCS ASSEMBLY FOR STRUCTURAL STUDIES OF COAGULATION PROTEINS AND THEIR COMPLEXES.

Gregory Hoeprich, University of Vermont
673-Pos, B453
KINESIN-2'S ROLE IN INTRACELLULAR CARGO TRANSPORT: NAVIGATING THE COMPLEX MICROTUBULE LANDSCAPE.

Venkatramanan Krishnamani,University of Iowa
190-Plat
DETERMINING THE FREE ENERGY OF MEMBRANE PROTEIN DIMERIZATION IN LIPID BILAYERS.

Gage Leighton, University of North Carolina at Charlotte
246-Pos, B26
ENVIRONMENTAL AND MUTATION EFFECTS ON THE FOLDING AND DNA-BINDING OF THE PRIMARY DNA RECOGNITION SUBDOMAIN OF SLEEPING BEAUTY TRANSPOSASE.

Geoffrey Li, University of Minnesota
304-Pos, B84
PROBING MULTIPLE TIMESCALE DYNAMICS OF PROTEIN KINASE A-INHIBITOR COMPLEXES.

Fu-Cheng Liang, California Institute of Technology
265-Pos, B45
INTER-DOMAIN DYNAMICS OF A NOVEL CHAPERONE ENABLES EFFECTIVE CAPTURE OF MEMBRANE PROTEIN SUBSTRATES.

Socheata Lim, Western Connecticut State University
278-Pos, B58
GLUTATHIONE REDUCTASE OF PLASMODIUM FALCIPARUM AS AN ANTIMALARIAL DRUG TARGET OF METHYLENE BLUE.

Rong Liu, Wayne State University
714-Pos, B494
DELETION OF H2-CALPONIN IN MACROPHAGES FACILITATES CELL MOTILITY AND LIPID CLEARANCE: A NOVEL MECHANISM TO ATTENUATE ARTERIAL ATHEROSCLEROSIS.

Lauren P. MacConnachie, Wayne State University
522-Pos, B302
THE MEMBRANE BENDING ACTION OF THE SYT-1 C2AB STUDIED ON SUPPORTED LIPID BILAYERS.

Kathryn R. Monopoli, University of Massachusetts
476-Pos, B256
FORMING THE PSEUDOMONAS AERUGINOSA TRANSLOCON REQUIRES SIMULTANEOUS INCORPORATION OF PopB AND PopD.

SooHyun Park, Pennsylvania State University
726-Pos, B506
RECONSTITUTION OF MULTIDRUG RESISTANCE EFFLUX PUMPS IN GIANT LIPOSOMES.

Kayla M. Pate, University of South Carolina
331-Pos, B111
THE ABILITY OF POLYPHENOLS TO REDUCE Aβ-INDUCED APOPTOSIS ASSOCIATED WITH ALZHEIMER'S DISEASE.

Yang Qi, Duke University
293-Pos, B73
VISUALIZING THE INTER-DOMAIN MOTIONS OF A PATHOGENIC PROTEIN USING SPARSE RDC DATA.

Tejeshwar C. Rao, Wayne State University
517-Pos, B297
SYNAPTOTAGMIN-1 AND SYNAPTOTAGMIN-7 DIFFER IN THEIR STIMULUS AND CA2+-DEPENDENCE OF ACTIVATION.

Shyam Srivats, University of Cambridge, United Kingdom
642-Pos, B422
THE SIGMA1 RECEPTOR COMPETES WITH STIM1 TO BIND ORAI1 TO REGULATE STORE OPERATED CALCIUM ENTRY (SOCE).

Kevin Stanley, Illinois State University
720-Pos, B500
Na^+/K^+ PUMP ION BINDING SITE INTERACTIONS REGULATE THE PROTON LEAK PATHWAY.

Xiaolin Zhao, Virginia Polytechnic Institute and State University
472-Pos, B252
STRUCTURAL BASIS OF PHOSPHOINOSITIDE (PIP) RECOGNITION BY THE TIRAP PIP-BINDING MOTIF

Monday

David G. Ackerman, Cornell University
1217-Pos, B168
THE EFFECTS OF WALP PEPTIDES ON PHASE BEHAVIOR IN QUATERNARY LIPID MIXTURES: A MOLECULAR DYNAMICS STUDY.

Ana C. Cadena, University of San Francisco de Quito, Ecuador
1596-Pos, B547
MOLECULAR DYNAMICS STUDIO OF POLY(VINYL ALCOHOL) MECHANICAL PROPERTIES FOR ITS INCORPORATION IN BONES STRUCTURES AS A PVA-PLA SUBSTRATE FOR TISSUE REGENERATION.

Jung Hwa Cho, University of Southern California
900-Plat
NOVEL GENETICALLY ENCODED RATIOMETRIC CALCIUM INDICATORS.

Marta d'Amora, Italian Institute of Technology, Italy
1090-Pos, B41
ZEBRAFISH LARVAE AS MODEL SYSTEM TO STUDY POSSIBLE TOXICITY OF SILVER NANOPARTICLES AT CYTOSKELETAL LEVEL BY MEANS OF ADVANCED MICROSCOPY.

Swapneeta Date, Texas Tech University Health Sciences Center
1549-Pos, B500
THE HUMAN PROTON-COUPLED FOLATE TRANSPORTER: DETERMINATION OF CONFORMATION AND IDENTIFICATION OF THE FOLATE-BINDING POCKET.

Milka Doktorova, Weill Cornell Medical College
1274-Pos, B225
COMPUTATIONAL MODELING OF THE N-TERMINUS OF THE HUMAN DOPAMINE TRANSPORTER (hDAT).

David L. Dotson, Arizona State University
986-Plat
RECENT STRUCTURES AND MOLECULAR DYNAMICS SIMULATIONS OFFER NEW PERSPECTIVE ON NA+/H+ ANTIPORTERS.

Fatma Asli Erdem, Medical University Vienna, Austria
1387-Pos, B338
PHOSPHORYLATION OF KV7 CHANNELS REGULATES THEIR PIP2 SENSITIVITY.

Jinghua Ge, University of North Carolina at Charlotte
1505-Pos, B456
MACROMOLECULAR CROWDING MODULATES CROSS-BRIDGE PERFORMANCE.

Boon Chong Goh, University of Illinois at Urbana-Champaign
1293-Pos, B244
UNRAVELING THE DUAL ROLE OF SURFACTANT PROTEIN A AT ATOMISTIC DETAIL.

Ellyn J. Gray, University of Michigan
1450-Pos, B401
HEXADECANOL REVERSES ETHANOL INDUCED TADPOLE ANESTHESIA AND RAISES CRITICAL TEMPERATURES IN ISOLATED PLASMA MEMBRANE VESICLES.

Zahid Hossain, Stanford University
1681-Pos, B632
CLOUD EXPERIMENTATION FOR BIOLOGY: SYSTEMS ARCHITECTURE AND UTILITY FOR ONLINE EDUCATION AND RESEARCH.

Ikenna D. Ivenso, Texas Tech University
1175-Pos, B126
BROWNIAN DYNAMICS STUDY OF DNA SUPERCOIL RELAXATION.

Alexis Jaramillo Cartagena, Weill Cornell Medical College
1458-Pos, B409
EXPLORATIONS OF LIPID EFFECTS IN CYCLIC NUCLEOTIDE-GATED ION CHANNELS USING A NANODISC PLATFORM.

Andrew J. Kalenkiewicz, University of Michigan
1082-Pos, B33
IMPROVING SMALL MOLECULE DOCKING FOR BCL-XL VIA ACCELERATED MOLECULAR DYNAMICS WITH COSOLVENT.

Myungshim Kang, City University of New York, College of Staten Island
1241-Pos, B192
MULTISCALE SIMULATION OF CONCENTRATION-DEPENDANT INTERACTION OF HYDROPHOBIC DRUG WITH CELL MEMBRANE.

Srinivasan Krishnan, Texas Tech University Health Sciences Center
990-Plat
THE HYDROLYSIS CYCLE OF ATP-BINDING CASSETTE NUCLEOTIDE-BINDING DOMAINS.

Wen Ma, University of Illinois, Urbana-Champaign
1063-Pos, B14
RNA TRANSLOCATION COUPLED TO LARGE-SCALE CONFORMATIONAL TRANSITIONS OF A HEXAMERIC HELICASE.

Asghar M. Razavi, Temple University
987-Plat
UNDERSTANDING SELECTIVITY OF THE NA^+/K^+ -ATPASE USING A COMPUTATIONAL APPROACH.

Nicolaus Schmandt, Case Western Reserve University
963-Plat
AN ELIC-GLIC CHIMERA REVEALS DISTINCT PATHWAYS OF ACTIVATION IN THE CYS-LOOP FAMILY OF RECEPTORS.

Kristian T. Stipe, University of Montana
1223-Pos, B174
LIPID DYNAMICS OF CARDIOLIPIN/DMPC AND CARDIOLIPIN/DOPC IN NANODISCS.

Cassandra M. Theusch, University of Wisconsin - Madison
964-Plat
DISULFIDE TRAPPING THE GABA-A RECEPTOR EXTRACELLULAR BETA-5/BETA-5' LOOP.

Yifei Yang, Yale University
1076-Pos, B27
CHARACTERIZATION OF PC2 CTERM CALCIUM-BINDING INTERACTION AND ITS STRUCTURAL IMPLICATIONS.

Tuesday

Brett E. Alcott, Yale University
2045-Pos, B182
VIRAL MEMBRANE FUSION AT SINGLE PORE RESOLUTION.

Nabil A. Alhakamy, University of Kansas
1933-Pos, B70
DYNAMIC MEASUREMENTS OF MEMBRANE INSERTION POTENTIAL OF SYNTHETIC CELL PENETRATING PEPTIDE/pDNA/$CA2^+$ COMPLEXES.

Kathrin Andrich, Max-Dellbrueck-Centrum for Molecular Medicine, Germany
1939-Pos, B76
AMYLOIDOGENICITY OF IMMUNOGLOBULIN LIGHT CHAINS.

Aishik Chakraborty, The University of Kansas
1932-Pos, B69
TUG OF WAR IN LUNG SURFACTANT COMPONENTS: MINIB DOMINATES OVER CHOLESTEROL DURING LIPID DOMAIN FORMATION.

Joshua P. Clark, Kennesaw State University
2141-Pos, B278
PUTATIVE VOLTAGE SENSITIVE ENZYMES IN PROKARYOTES.

Chengzhi He, The University of British Columbia, Canada
1783-Plat
DIRECTLY OBSERVING THE REVERSIBLE UNFOLDING AND REFOLDING OF AN ALPHA/BETA PROTEIN BY SINGLE-MOLECULE ATOMIC FORCE MICROSCOPY.

Bushra Husain, University of Connecticut
2003-Pos, B140
FACTORS THAT INFLUENCE PKR DIMERIZATION AND ACTIVATION.

Ofer Kimchi, Princeton University
2195-Pos, B332
NON-MARKOVIAN PROTEIN DYNAMICS IN A NEAR-CRITICAL MEMBRANE MODEL.

Adelaide Kingsland, University of Washington
1971-Pos, B108
MISMATCHED DNA BASE PAIRS SHOW INCREASED CONFORMATIONAL FLUCTUATIONS.

Eric Krueger, Boise State University
1765-Plat
NANOPORE SENSORS FOR ANALYSIS OF CIRCULAR DNA TOPOLOGY.

Nicholas A. Kurniawan, FOM Institute AMOLF, Netherlands
2286-Pos, B423
MECHANICAL ADAPTABILITY OF CELL MIGRATION IN 3D COLLAGEN GELS.

Dan C. Li, Washington University School of Medicine
2320-Pos, B457
MOLECULAR DETERMINANTS OF SUBSTRATE SELECTIVITY IN OCT3 (SLC22A3).

Holley E. Lynch, University of Pittsburgh
2290-Pos, B427
HIGH LOCAL CURVATURE REDUCES MIGRATION RATE IN SPREADING MULTI-LAYER TISSUES.

Isha D. Mehta, Texas Woman's University
2388-Pos, B525
PREDICTION OF FUNCTIONALLY LINKED INTERFACE (FLIP) REGIONS IN RESIDUE INTERACTION NETWORK (RIN) MODELS OF PROTEIN STRUCTURES.

Kacey Mersch, University of Iowa
1927-Pos, B64
STRIPPING THE CLC-EC1 DIMERIZATION INTERFACE: AN INVESTIGATION INTO THE ROLE OF VAN DER WAALS INTERACTIONS IN MEMBRANE PROTEIN ASSEMBLY.

Andrea C. Montero Oleas, University of San Francisco de Quito, Ecuador
2437-Pos, B574
COMPUTER AIDED DESIGN OF APTAMER FOR PROTHROMBIN DETECTION IN BLOOD.

Devasena Ponnalagu, Drexel University College of Medicine
1848-Plat
MOLECULAR IDENTITY AND FUNCTIONAL CHARACTERIZATION OF CHLORIDE INTRACELLULAR CHANNEL (CLIC) PROTEINS IN CARDIAC MITOCHONDRIA.

Krishna D. Reddy, University of South Florida
1945-Pos, B82
THE INTRINSICALLY DISORDERED TERMINI OF ZDHHC S-PALMITOYLTRANSFERASES FACILITATE MULTIPLE REGULATORY FUNCTIONS.

Rebika Shrestha, University of Texas at Austin
2019-Pos, B156
DIRECT MEASUREMENT OF DIPOLE ELECTRIC FIELD IN MODEL MEMBRANES USING VIBRTAIONAL SHIFTS OF p-CYANOPHENYLALANINE AND COUPLED WITH MOLECULAR DYNAMICS SIMULATIONS.

Meng Zhang, The Ohio State University
1901-Pos, B38
STUDY OF PROTON TRANSFER IN ESCHERICHIA COLI PHOTOLYASE.

Kevin D. Zolman, Montana State University
2139-Pos, B276
THE ROLE OF THE C2 DOMAIN OF VOLTAGE SENSING PHOSPHATASE (VSP).

Wednesday

Udeep Chawla, University of Arizona
2819-Pos, B249
MEMBRANE-LIPID MEDIATED RHODOPSIN SIGNALING INVOLVES AN ENSEMBLE OF CONFORMATIONAL SUBSTATES.

Cameron J. Jones, Texas Woman's University
2572-Pos, B2
SYSTEMATIC PERTURBATION OF PROTEIN:PROTEIN INTERFACES MAY AID IN FUNCTIONAL CLASSIFICATION.

Lishan Liu, Miami University
3102-Pos, B532
PROBING THE SECONDARY STRUCTURE OF MEMBRANE PROTEINS WITH THE PULSED EPR TECHNIQUE: ELECTRON SPIN EHCO ENVELOPE MODULATION (ESEEM).

John J. Michael, Washington State University
3006-Pos, B436
FUNCTIONAL EFFECTS OF THE H1-HELIX OF RAT CARDIAC TROPONIN T ON CROSSBRIDGE DETACHMENT RATE IS DIFFERENTLY MODULATED BY α- AND β-MYOSIN HEAVY CHAIN ISOFORMS.

Souryvanh Nirasay, University of Quebec at Montreal, Canada
2747-Pos, B177
POLYDOPAMINE AS AN EFFICIENT POLYMER TO PREPARE BIOLOGICALLY RELEVANT SUPPORTED LIPID BILAYERS.

Erney Ramírez-Aportela, Biological Research Centre, CSIC, Spain
2667-Pos, B97
MOLECULAR DYNAMICS AND ASSEMBLY SWITCH OF FTSZ FILAMENTS.

Piere Rodriguez-Aliaga, University of California at Berkeley
2536-Plat
ROLE OF PORE LOOPS IN THE MECHANISM OF POLYPEPTIDE TRANSLOCATION BY A AAA+ PROTEASE MACHINE.

Leo Serebryannyy, University of Illinois at Chicago
2716-Pos, B146
NUCLEAR ACTIN DYNAMICS REGULATE NUCLEAR ORGANIZATION AND TRANSCRIPTION.

Hanif Vahedian-Movahed, Rutgers University
2709-Pos, B139
SEQUENCE-SPECIFIC RNAP-DNA INTERACTIONS IN TRANSCRIPTION INITIATION AND ELONGATION: CORE RECOGNITION ELEMENT (CRE).

Joshua V. Vermaas, University of Illinois at Urbana-Champaign
2815-Pos, B245
STRENGTH, NOT DEPTH: AN EXPLORATION OF DIFFERENTIAL MEMBRANE BINDING KINETICS OF SYNAPTOTAGMIN-1 AND SYNAPTOTAGMIN-7 C2 DOMAINS.

INTERNATIONAL RELATIONS

Sunday

Sherif Abbas, Middle East Technical University, Turkey
78-Plat
EFFECT OF MOLECULAR CROWDING ON THE STRUCTURE AND DYNAMICS OF HUMAN APO AND HOLO TRANSFERRIN USING 2D-IR CORRELATION SPECTROSCOPY.

Aritra Bej, Indian Institute of Chemical Biology
222-Pos, B2
BACKBONE DYNAMICS MODULATES THE AMYLOIDOGENIC PROPENSITY OF TRANSTHYRETIN THROUGH NON-NATIVE INTERMEDIATES.

Ganeko Bernardo-Seisdedos, University of the Basque Country, Spain
113-Plat
CALMODULIN BINDING TO A NOVEL SITE IN THE AB MODULE OF Kv7.2 SUBUNITS REGULATES SURFACE EXPRESSION.

Kim Dung T. Doan, Osaka University, Japan
861-Pos, B641
MULTIMODAL IMAGING PROBING PLATFORM BASED ON UPCONVERTING RARE-EARTH DOPED Gd2O3 NANOCRYSTALS.

Alenka Guček, University of Ljubljana, Slovenia
514-Pos, B294
FUSION PROPERTIES OF GLIOTRANSMITTER VESICLES IN CULTURED ASTROCYTES.

Sabeeha Hasnain, Jawaharlal Nehru University, India
582-Pos, B362
A COMPUTATIONAL MODEL FOR E.COLI CYTOPLASM: DIFFUSION AND HYDRODYNAMICS.

Jozef A. Liwo, University of Gdansk, Poland
788-Pos, B568
A NOVEL METHOD FOR FORCE-FIELD CALIBRATION BASED ON MAXIMUM-LIKELIHOOD APPROACH AND THERMAL UNFOLDING DATA.

Maria J. Marques-Carvalho, University of Porto, Portugal
110-Plat
INTERACTION OF CALMODULIN WITH THE EAG1 POTASSIUM CHANNEL.

Valeria Marquez-Miranda, Andrés Bello National University, Chile
863-Pos, B643
COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS OF THE SELF-ASSEMBLY OF AMPHIPHILIC DENDRIMERS AS GENE CARRIERS.

Emiliano Perez Ipiña, University of Buenos Aires, Argentina
829-Pos, B609
CONCENTRATION ESTIMATES FROM COUNTING INDIVIDUAL MOLECULES.

Belinda K. Wright, University of Western Sydney, Australia
369-Pos, B149
REAL-TIME ANALYSIS OF ENDOGENOUS NUCLEAR NADH IN DIFFERENTIATING CELLS USING THE SPECTRAL PHASOR APPROACH.

Monday

Ariel Afek, Ben-Gurion University, Israel
1028-Plat
PROTEIN-DNA BINDING IN THE ABSENCE OF CONSENSUS BINDING MOTIF.

Nicole Beard, University of Canberra, Australia
1338-Pos, B289
DOXORUBICIN ALTERS CARDIOMYOCYTE CALCIUM REGULATION AND STIMULATES MITOCHONDRIAL SUPEROXIDE FLASH PRODUCTION.

Alberto Hidalgo, Complutense University of Madrid, Spain
1240-Pos, B191
BIOPHISICAL EVALUATION OF DRUG IMPACT ON PULMONARY SURFACTANT PERFORMANCE.

Daniel Klose, University of Osnabrück, Germany
1312-Pos, B263
LIGHT-INDUCED SWITCHING OF HAMP DOMAIN CONFORMATION AND DYNAMICS REVEALED BY TIME-RESOLVED EPR SPECTROSCOPY.

Ainara López-Córdoba, Miguel Hernández University of Elche, Spain
1670-Pos, B621
SICM-BASED NANODELIVERY SYSTEM FOR LOCAL TRPV1 STIMULATION.

Tânia Patrícia Marques de Sousa, University of Lisbon, Portugal
1224-Pos, B175
THE CYTOTOXIC BILE ACID DCA MODULATES APOPTOTIC SIGNALLING THROUGH ALTERATION OF MITOCHONDRIAL MEMBRANE PROPERTIES.

Giuseppe Sancataldo, Italian Institute of Technology
1635-Pos, B586
LIGHT SHEET FLUORESCENCE MICROSCOPY (LSFM) FOR TWO-PHOTON EXCITATION IMAGING OF THICK SAMPLES.

Tuesday

Araitz Alberdi, University of the Basque Country, Spain
1754-Plat
DISRUPTION OF ASSEMBLY/CALMODULIN-BINDING COUPLING AND CALMODULIN-DEPENDENT POTENTIATION OF Kv7.2 CHANNELS BY A EPILEPTOGENIC HELIX D MUTATION.

Debipreeta Bhowmik, Indian Institute of Chemical Biology
1967-Pos, B104
TARGETING HUMAN TELOMERIC G-QUADRUPLEX DNA BY BERBERINE ANALOGS: A COMPARATIVE BIOPHYSICAL INVESTIGATION.

Anwesha Biswas, Indian Institute of Technology, Bombay
1968-Pos, B105
STUDYING LIGAND BINDING AND SITE-SPECIFIC MODE OF DNA BINDING BY GAMMA-BUTYROLACTONE RECEPTOR PROTEIN CPRB FROM STREPTOMYCES COELICOLOR A3(2) USING TWO DIFFERENT FLUORESCENCE TECHNIQUES.

Michal Cifra, Academy of Sciences of the Czech Republic
2257-Pos, B394
MICROTUBULE ELECTRODYNAMICS ASSOCIATED WITH VIBRATIONAL NORMAL MODES.

Silvia Cruz-Rangel, Autonomous University of San Luis Potosí, Mexico
2218-Pos, B355
EXTRACELLULAR CHLORIDE REGULATES TMEM16A GATING.

Istvan Csomos, University of Debrecen, Hungary
2100-Pos, B237
CHELIDONINE INTERFERES WITH IL-6R/STAT3 SIGNALING IN UVEAL MELANOMA CELLS.

José R. López-Blanco, Institute of Physical Chemistry, Spain
2382-Pos, B519
INTEGRATIVE MODELING APPROACHES TO INTERPRET HIGH-RESOLUTION CRYO-EM RECONSTRUCTIONS.

Dominic Narang, Indian Institute of Science Education and Research, Mohali
1938-Pos, B75
THE ROLE OF STRUCTURAL DYNAMICS IN DETERMINING THE PRION STRAIN DIVERSITY.

Jonathan E. Pacheco, National Autonomous University of Mexico
1923-Pos, B60
IDENTIFICATION OF A CHOLESTEROL RECOGNITION/ INTERACTION AMINO ACID CONSENSUS DOMAIN IN STIM1 AND ITS ROLE IN SOCE.

Francesca Pennacchietti, Italian Institute of Technology
2414-Pos, B551
QUANTITATIVE ANALYSIS OF ANCHORING PROTEINS OF THE INHIBITORY SYNAPSE THROUGH SINGLE MOLECULE LOCALIZATION TECHNIQUES.

Chiara Peres, Italian Institute of Technology
2392-Pos, B529
3 COLOR - 3 DIMENSIONAL STED NANOSCOPY.

Cibele Rocha-Resende, Federal University of Minas Gerais, Brazil
2131-Pos, B268
IMPAIRMENT IN ACETYLCHOLINE RELEASE BY CARDIOMYOCYTES LEADS TO ENHANCED PATHOLOGICAL HYPERTROPHY.

Marianne Ruud, University of Oslo, Norway
2232-Pos, B369
REGULATION OF CARDIOMYOCYTE T-TUBULE ORGANIZATION AND DENSITY BY VENTRICULAR WALL STRESS.

Wednesday

Marcelo T. Augusto, Institute of Molecular Medicine, Portugal
2814-Pos, B244
ENHANCED HIV FUSION INHIBITORS EFFICACY REQUIRES MEMBRANE AFFINITY AND EXPOSURE OF THE POCKET BINDING DOMAIN OF C34 DERIVATIVES.

Alessandro Borgia, University of Zurich, Switzerland
2532-Plat
SURPRISING ABUNDANCE OF MISFOLDING DURING REFOLDING OF MULTIDOMAIN PROTEINS.

Charles D. Cox, Victor Chang Cardiac Research Institute, Australia
2848-Pos, B278
PROBING THE MECHANOSENSITIVITY OF PIEZO1 CHANNELS.

Jessica Köth, University of Cologne, Germany
2923-Pos, B353
VENTRICULAR L-TYPE CA2+ CHANNELS AND EXPRESSION OF RGK PROTEINS IN MOUSE MODELS ASSOCIATED WITH DIABETES.

Andrea Magrì, University of Catania, Italy
3082-Pos, B512
THE OVEREXPRESSION OF SUPEROXIDE DISMUTASE 1 RESTORES GROWTH DEFECT IN A PORIN1-LESS YEAST STRAIN AND IMPROVES MITOCHONDRIAL METABOLISM.

Jyotsana J. Parmar, Indian Institute of Technology, Bombay
2718-Pos, B148
NUCLEOSOME KINETICS AND ACCESIBILITY OF DNA.

Maria Ryazantseva, Russian Academy of Sciences
2970-Pos, B400
POSSIBLE ROLE OF STIM1 SENSOR SIGNAL IN MEMORY LOSS CONNECTED WITH FAMILIAL ALZHEIMER'S DISEASE.

Likhesh Sharma, Indian Institute of Science
2582-Pos, B12
ENGINEERING THE CYSTEINE MOTIF 'CXXC' INTO A PROTEIN IMPARTS IT NOVEL PROPERTIES.

David V. Svintradze, Tbilisi State University, Georgia
2588-Pos, B18
MOVING MACROMOLECULAR SURFACES UNDER HYDROPHOBIC/HYDROPHILIC STRESS.

Algirdas Toleikis, National Institute for Medical Research, United Kingdom
2555-Plat
INITIATION OF ASYMMETRIC ROLLING-CIRCLE PLASMID REPLICATION BY REPD STUDIED USING MAGNETIC TWEEZERS.

Yolima P. Torres, Pontifical Xavierian University, Colombia
2869-Pos, B299
MENTHOL-INDUCED CHANGES IN MESENCHYMAL STEM CELL DIFFERENTIATION.

Dilek Yonar, Middle East Technical University, Turkey
3156-Pos, B586
A NOVEL METHOD FOR EARLY DIAGNOSIS OF MALIGNANT PLEURAL MESOTHELIOMA FROM HUMAN SERUM SAMPLES: ATR-FTIR SPECTROSCOPY.

MINORITY AFFAIRS

Sunday

Natnael B. Doilicho, University of Chicago
324-Pos, B104
SURFACE INTERACTIONS RESTRICTS AMYLOIDβ PEPTIDES MOVEMENTS RESULTING IN THEIR RAPID SELF-ASSEMBLY INTO β SHEETS; A MOLECULAR DYNAMICS STUDY.

Vivian M. Gonzalez-Perez, Washington University in St. Louis
117-Plat
BETA-2 AND GAMMA-1 AUXILIARY SUBUNITS COASSEMBLE IN THE SAME BK CHANNEL AND INDEPENDENTLY CONTRIBUTE TO REGULATION OF CHANNEL GATING.

Carol J. Huseby, The Ohio State University
311-Pos, B91
TAU FILAMENT LENGTH DISTRIBUTION REFLECTS END-TO-END ANNEALING.

Abir Maarouf, Wayne State University
171-Plat
RESOLVING NANOSCALE CURVATURE ON LIPID BILAYERS WITH POLARIZED LOCALIZATION MICROSCOPY.

Kasturi Mitra, University of Connecticut
450-Pos, B230
THERMOTROPIC BEHAVIOR OF CARDIOLIPIN AND DIMYRISTOYLPHOSPHATIDYLCHOLINE BILAYERS IN THE PRESENCE AND ABSENCE OF CALCIUM.

Patricia Soto, Creighton University
461-Pos, B241
PRION PROTEINS AND MECHANISMS OF INTERACTION WITH MODEL MEMBRANES.

Monday

Walter Gonzalez, Florida International University
1092-Pos, B43
CHARACTERIZATION OF THE PHOTOPHYSICAL, THERMODYNAMIC AND STRUCTURAL PROPERTIES OF THE TERBIUM(III)-KCHIP3 COMPLEX.

Aliana López de Victoria, University of Central Florida
1129-Pos, B80
TARGETING THE HUMAN DEAD-BOX RNA HELICASE, DDX3, AS A NOVEL STRATEGY TO INHIBIT AGGRESSIVE BREAST CANCER METASTASIS.

Sara Sizemore, Arizona State University
1154-Pos, B105
CHARGE PATTERNING, SALT SCREENING AND DENATURANT EXPANSION IN THE CGRP NEUROPEPTIDE.

Tuesday

Andres T. Cavazos, Indiana University Purdue University Indianapolis
2076-Pos, B213
AN INVESTIGATION OF WHETHER VITAMIN E PREFERENTIALLY INTERACTS WITH POLYUNSATURATED LIPIDS.

Christal R. Davis, University of Colorado Denver
2349-Pos, B486
COMBINED QM/MM STUDY OF THE TRANSLOCATION OF CHLORIDE IONS THROUGH ESCHERICHIA COLI CHLORIDE ION TRANSPORTERS.

Joshua Francois, University of California, San Diego
2288-Pos, B425
MECHANICS OF NEUTROPHIL MIGRATION IN THREE-DIMENSIONAL MATRICES.

Kevin Hauser, Stony Brook University
1997-Pos, B134
A HUMAN TRANSCRIPTION FACTOR IN SEARCH MODE.

Wednesday

Elton Jhamba, Delaware State University
3133-Pos, B563
FLUORESCENCE ANISOTROPY MEASUREMENTS OF FLUOROSCEIN MIXED WITH FICOLL SOLUTIONS.

* **Marisa Aikins**, Oberlin College
MUCIN-ANTIBODY INTERACTIONS IN TRAPPING SALMONELLA TYPHI

* **Samuel Rubin**, Pitzer College
FOLDING MESO-STRINGS WITH PATTERNS OF HYDROPHOBICITY

* **Edwin J. Alvarado**, University of Puerto Rico, Cayey
LONGER LOOPS OF PSEUDOKNOTS WITH APPROPRIATE SEQUENCE FORM
LOCAL TRIPLEX SEGMENTS THAT STABILIZE DNA MOLECULES

* **Sydnie Turner**, Xavier University of Louisiana
PHOSPHOLIPID BIOSYNTHESIS AS AN ANTICANCER TARGET

* See Addendum for programming.

Ancillary Meetings

Society of General Physiologists Council Meeting
Saturday, February 7, 8:00 AM–1:00 PM
Room 318

Korean Biophysicists Meeting
Sunday, February 8, 5:00 PM–6:30 PM
Room 324/325

Biophysics Austria Mixer
Sunday, February 8, 6:00 PM–7:00 PM
Room 327/328/329

SOBLA (The Society for Latinoamerican Biophysicists) Meeting
Tuesday, February 10, 8:00 PM–10:00 PM
Room 330

Friday, February 6, 2015

Daily Program Summary

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

8:00 AM–5:00 PM	**Exhibitor Registration**	**Charles Street Lobby**
8:00 AM–5:00 PM	**Drug Discovery Satellite Meeting XV**	**Room 307/308**
3:00 PM–4:30 PM	**New Council Orientation**	**Hilton Baltimore, Peale C**
3:00 PM–5:00 PM	**Registration**	**Charles Street Lobby**
5:00 PM–9:00 PM	**Joint Council Reception, Dinner, and Meeting**	**Hilton Baltimore, Peale A-B**

Friday, February 6

8:00 AM–5:00 PM, Charles Street Lobby
Exhibitor Registration

8:00 AM–5:00 PM, Room 307/308
Drug Discovery Satellite Meeting XV

Sponsored by Biolin Scientific, ChanTest Corporation; Cytocentrics; Molecular Devices LLC; and Nanion Technologies

Co-Chairs
Morten Sunesen, Biolin Scientific
Chris Mathes, ChanTest Corporation
Thomas Knott, Cytocentrics
James Costantin, Molecular Devices LLC
Niels Fertig, Nanion Technologies GMBH

The symposia will feature presentations from scientists using automated electrophysiology and other emerging technologies from pharmaceutical and biotechnology companies and academia who are actively involved in ion channel drug discovery. Presentations will be focused in the following areas:

- Integration of automated electrophysiology into the drug discovery process and its results
- Applications of automated electrophysiology for ion channel drug discovery (with an emphasis on new and/or novel applications)
- New developments of automated electrophysiology and other emerging technologies

3:00 PM–4:30 PM, Hilton Baltimore, Peale C
New Council Orientation

3:00 PM–5:00 PM, Charles Street Lobby
Registration

5:00 PM–9:00 PM, Hilton Baltimore, Peale A-B
Joint Council Reception, Dinner, and Meeting

Saturday, February 7, 2015

Daily Program Summary

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

8:00 AM–1:00 PM	Society of General Physiologists Council Meeting	Room 318
8:00 AM–6:30 PM	Registration/Exhibitor Registration	Charles Street Lobby
8:30 AM–11:00 AM	Joint Council Meeting	Hilton Baltimore, Peale A-B
9:00 AM–5:10 PM	Subgroup: Membrane Structure and Assembly	Ballroom II
9:00 AM–7:00 PM	Subgroup: Bioenergetics	Room 314/315
9:15 AM–1:30 PM	Subgroup: Molecular Biophysics	Room 321/322/323
10:00 AM–5:15 PM	Subgroup: Mechanobiology	Room 316/317
10:00 AM–6:30 PM	Subgroup: Intrinsically Disordered Proteins	Room 324/325
10:45 AM–5:10 PM	Subgroup: Biopolymers in vivo	Room 330
12:00 PM–6:00 PM	Subgroup: Nanoscale Biophysics	Ballroom IV
12:00 PM–7:00 PM	Career Center	Room 301/302/303
1:00 PM–5:00 PM	Subgroup: Biological Fluorescence	Ballroom III
1:00 PM–6:00 PM	Subgroup: Membrane Biophysics	Ballroom I
1:00 PM–6:15 PM	Subgroup: Motility	Room 307/308
1:00 PM–6:30 PM	Subgroup: Exocytosis & Endocytosis	Room 331/332
1:30 PM–4:05 PM	Subgroup: Permeation & Transport	Room 309/310
3:00 PM–4:00 PM	Career Center Workshop Networking: Optimizing Your Time at BPS 2015	Room 301/302/303
4:00 PM–5:00 PM	Undergraduate Mixer and Poster Fest	Mezzanine
5:00 PM–7:00 PM	Opening Mixer	Charles Street Lobby
5:00 PM–7:00 PM	First-Time Attendee Drop By	Room 311
6:00 PM–10:00 PM	Poster Viewing	Hall C
6:30 PM–7:30 PM	Education, Minority Affairs, and Professional Opportunities for Women Committees Travel Awardee Reception	Room 327/328/329

Saturday, February 7

8:00 AM–1:00 PM, ROOM 318

Society of General Physiologists Council Meeting

8:00 AM–6:30 PM, CHARLES STREET LOBBY

Registration/Exhibitor Registration

8:30 AM–11:00 AM, HILTON BALTIMORE, PEALE A-B

Joint Council Meeting

9:00 AM–5:10 PM, BALLROOM II

Subgroup
Membrane Structure and Assembly

Subgroup Chair
Marjorie Longo, University of California, Davis

1-SUBG 9:00 AM
PHOSPHATIDYLGLYCEROL ASYMMETRY AND TRANSLOCATION IN LIPID MEMBRANES. **John Conboy**

2-SUBG 9:35 AM
CONTROL OF MEMBRANE ASYMMETRY BY P4-ATPASES. **Todd R. Graham**

3-SUBG 10:10 AM
COMPUTER SIMULATIONS OF LIPID FLIP-FLOP AND MEMBRANE ASYMMETRY. **D. Peter Tieleman**

10:45 AM COFFEE BREAK

4-SUBG 11:05 AM
INVESTIGATING THE MECHANISMS OF NON-RANDOM SPHINGOLIPID ORGANIZATION IN THE PLASMA MEMBRANES OF FIBROBLAST CELLS. **Mary L. Kraft**, Jessica F. Frisz, Haley A. Klitzing, Robert L. Wilson, Ashley Yeager, Vladimir Lizunov, Joshua J. Zimmerberg, Peter K. Weber

5-SUBG 11:40 AM
NANOSCALE STRUCTURE AND DYNAMICS OF THE LIQUID ORDERED PHASE. Sodt J. Alexander, Klaus Gawrisch, Richard W. Pastor, **Edward R. Lyman**

12:15 PM BREAK

6-SUBG 1:15 PM
PROBING MEMBRANE PROTEIN SEQUESTRATION AND OLIGOMERIZATION IN POLYMER-TETHERED PHOSPHOLIPID BILAYERS CONTAINING RAFT-MIMICKING LIPID MIXTURES. **Christoph Naumann**

7-SUBG 1:50 PM
PROTEIN CROWDING MODULATES THE SHAPE AND CONTENT OF CURVED MEMBRANES AND COATED VESICLES. **Jeanne Stachowiak**

8-SUBG 2:25 PM
DIRECT MONOLAYER PACKING IMBALANCE AND PHOSPHOLIPID FLIP-FLOP: TWO MECHANISMS OF LOCAL BILAYER DEFORMATION. APPLICATION TO MITOCHONDRIAL CRISTAE OF WILD-TYPE AND CARDIOLIPIN-DEFICIENT MUTANT. Nada Khalifat, Mohammad Rahimi, Anne-Florence Bitbol, Michel Seigneuret, Jean-Baptiste Fournier, Nicolas Puff, Marino Arroyo, **Miglena I. Angelova**

3:00 PM COFFEE BREAK

9-SUBG 3:20 PM
PROTEIN SPATIAL DISTRIBUTION DEPENDS ON MEMBRANE CURVATURE. **Patricia Bassereau**, Coline Prévost, Mijo Simunovic, Sophie Aimon, Gilman Toombes, Andrew Callan-Jones

10-SUBG 3:55 PM
STRUCTURAL BASIS OF MEMBRANE CURVATURE RECOGNITION BY THE ALPS MOTIFS. Liza Mouret, Lydie Vamparys, Joachim Moser von Filseck, Patrick Fuchs, Arnaud Bondon, **Guillaume Drin**

11-SUBG 4:30 PM T.E. THOMPSON AWARD LECTURE
MUSINGS AT MID-CAREER: WHAT IS SO SPECIAL ABOUT OMEGA-3 FATTY ACIDS? **Scott Feller**

5:10 PM BUSINESS MEETING

9:00 AM–7:00 PM, ROOM 314/315

Subgroup
Bioenergetics

Subgroup Co-Chairs
Jan Hoek and György Hajnóczky, Thomas Jefferson University

MORNING SYMPOSIUM: THE MITOCHONDRIAL GENOME

NO ABSTRACT 9:00 AM
SELECTIVE TARGETING OF MTDNA SEQUENCES AND APPLICATIONS TO THERAPY. **Carlos Moraes**

NO ABSTRACT 9:30 AM
NEW PARADIGMS FOR REGULATION OF HUMAN MITOCHONDRIAL TRANSCRIPTION. **Craig Cameron**

12-SUBG 10:00 AM
MITOCHONDRIAL DNA STRESS PRIMES THE ANTIVIRAL INNATE IMMUNE RESPONSE. **Phillip West**

10:30 AM COFFEE BREAK

NO ABSTRACT 11:00 AM
MTDNA TOPOISOMERASES. **Yves Pommier**

NO ABSTRACT 11:30 AM
NEW INSIGHTS INTO THE CAUSES OF MITOCHONDRIAL GENOME INSTABILITY. **Brett Kaufman**

AFTERNOON SYMPOSIUM: MITOCHONDRIAL OUTER MEMBRANE TRANSPORT SYSTEMS: STRUCTURE, PROPERTIES, AND PHYSIOLOGICAL IMPLICATIONS

1:45 PM PRESENTATION OF THE YOUNG BIOENERGETICIST AWARD

13-SUBG 2:00 PM
HIGH RESOLUTION CRYSTAL STRUCTURES OF TRANSLOCATOR PROTEIN 18 KDA (TSPO) REVEAL LIGAND BINDING SITES AND EFFECTS OF A HUMAN SINGLE POLYMORPHISM. **Shelagh Ferguson-Miller**, Fei Li, Jian Liu, Yi Zheng, Lance Valls, R. Michael Garavito

14-SUBG 2:30 PM
TRANSLOCATOR PROTEIN IN MITOCHONDRIAL CHOLESTEROL TRANSPORT AND THE PHARMACOLOGY OF STEROIDOGENESIS. **Vassilios Papadopoulos**

No Abstract **3:00 PM**
BAX CHANNELS: COOPERATIVITY AND VOLTAGE GATING.
Marco Colombini

3:30 PM **COFFEE BREAK**

No Abstract **4:00 PM**
STRUCTURE-GUIDED SIMULATIONS ILLUMINATE THE MECHANISM OF ATP TRANSPORT THROUGH VDAC1.
Jeff Abramson

15-Subg **4:30 PM**
VOLTAGE DEPENDENT ANION CHANNELS (VDAC) AND REGULATION OF MITOCHONDRIAL METABOLISM.
John J. Lemasters

5:00 PM **GENERAL DISCUSSION**

5:15 PM **SUBGROUP BUSINESS MEETING**

7:00 PM **SUBGROUP DINNER**

9:15 AM–1:30 PM, Room 321/322/323

Subgroup
Molecular Biophysics

Subgroup Chair
Zev Bryant, Stanford University

DYNAMICS OF MACROMOLECULAR MACHINES AND ASSEMBLIES

9:15 AM **OPENING REMARKS**

16-Subg **9:30 AM**
BENDING, TWISTING, POPPING: PROTEIN AND NUCLEIC-ACID REMODELING BY ATP-DEPENDENT MACHINES AND SWITCHES. **James Berger**

No Abstract **10:00 AM**
SINGLE-MOLECULE ANALYSIS OF NUCLEOTIDE EXCISION REPAIR PATHWAYS. **Terence Strick**

17-Subg **10:30 AM**
DIRECT OBSERVATION OF STRUCTURE-FUNCTION RELATIONSHIPS IN NUCLEIC ACID PROCESSING ENZYMES.
Yann Chemla

11:00 AM **COFFEE BREAK**

11:15 AM **SUBGROUP BUSINESS MEETING**

No Abstract **11:30 AM**
VISUALIZING HOMOLOGOUS RECOMBINATION AT THE SINGLE-MOLECULE LEVEL USING DNA CURTAINS.
Eric Greene

No Abstract **12:00 PM**
ENGINEERING MOLECULAR FUNCTIONS - SMALL-MOLECULE SENSORS AND CONTROLLABLE MACHINES.
Tanja Kortemme

No Abstract **12:30 PM**
VISUALIZING THE STRUCTURAL PLASTICITY OF THE CYTOSKELETON. **Gregory M. Alushin**

18-Subg **1:00 PM**
HIGH-RESOLUTION MAPPING OF INTRACELLULAR FLUCTUATIONS USING CARBON NANOTUBES. **Nikta Fakhri**

1:30 PM **CONCLUDING REMARKS**

10:00 AM–5:15 PM, Room 316/317

Subgroup
Mechanobiology

Subgroup Chair
Dennis Discher, University of Pennsylvania

10:00 AM **JUNIOR INVESTIGATOR TALKS SELECTED FROM SUBMITTED ABSTRACTS**

11:30 AM **"LIGHTNING TALKS" ON MECHANOBIOLOGY**

12:00 PM **LUNCH BREAK**

19-Subg **1:05 PM**
ACTIN CORTEX MECHANICS AND CELL SHAPE CONTROL IN MIGRATION AND DIVISION. **Ewa K. Paluch**

20-Subg **1:40 PM**
STIFFNESS SENSING THROUGH MYOSIN II MINIFILAMENTS.
Ulrich S. Schwarz

No Abstract **2:15 PM**
CELL MIGRATION. **Kenneth Yamada**

2:50 PM **BREAK**

21-Subg **3:10 PM**
ADAPTATIVE RESPONSE OF CELL CYTOSKELETON RHEOLOGY AND ORDERING GOVERNS MATRIX RIGIDITY SENSING. Mukund Gupta, Bibhu Sarangi, Andrew Callan-Jones, Rene-Marc Mege, Raphael Voituriez, **Benoit Ladoux**

22-Subg **3:45 PM**
MOLECULAR MECHANISMS OF CONTRACTILITY-BASED CELLULAR MECHANOSENSING. **Douglas N. Robinson**

23-Subg **4:20 PM**
DYNEIN TEAMS ASSEMBLE ON LIPID RAFTS TO GENERATE LARGE FORCES ON PHAGOSOMES. **Roop Mallik**

24-Subg **4:55 PM**
INVESTIGATION OF THE ENVZ/OMPR BACTERIAL SIGNALING SYSTEM USING SINGLE PARTICLE TRACKING AND SINGLE MOLECULE FORCE SPECTROSCOPY. **Yong Hwee Foo**, Ricksen Surya Winardhi, Jie Yan, Linda Kenney

5:15 PM **BUSINESS MEETING**

10:00 AM–6:30 PM, Room 324/325

Subgroup
Intrinsically Disordered Proteins

Subgroup Chair
Elizabeth Komives, University of California, San Diego

INTRINSICALLY DISORDERED PROTEINS IN THEIR CELLULAR SETTINGS

10:00 AM **DATABASE DISCUSSION**

10:20 AM **BUSINESS MEETING**

12:30 PM **WELCOME AND ANNOUNCEMENTS**

12:40 PM **INTRODUCTION OF OPENING KEYNOTE SPEAKER**

No Abstract **12:45 PM**
SINGLE-MOLECULE BIOPHYSICS OF INTRINSIC PROTEIN DISORDER. **Ashok Deniz**, Keynote Speaker

No Abstract **1:25 pm**
COOPERATIVE EFFECTS AND STRUCTURAL DYNAMICS IN THE INTRINSICALLY DISORDERED PROTEIN OSTEOPONTIN. **Dariush Hinderberger**

25-Subg **1:55 pm**
INTRINSIC DISORDER, EPIGENETICS, AND LEUKEMIA - THE MLL-AF9 SAGA. **John Bushweller**, Aravinda Kuntimaddi, Jeremy Thorpe, Nicholas Achille, Alyson Lokken, Ritambhara Singh, Mazhar Adli, Nancy Zeleznik-Le

2:25 pm **short talks by postdoctoral awardees**

26-Subg **2:55 pm**
DECODING PROTEIN PLASTICITY FROM SINGLE MOLECULES TO LARGE COMPLEXES. **Edward A. Lemke**

3:20 pm **coffee break**

No Abstract **3:45 pm**
STUDYING PROTEINS AT ATOMIC RESOLUTION IN LIVE CELLS: FROM SCIENCE FICTION TO REALITY. **Phil Selenko**

27-Subg **4:15 pm**
THE ROLE OF PROTEIN DISORDER AND SELF-ASSOCIATION IN THE FORMATION OF CELLULAR BODIES. Melissa R. Marzahn, Jihun Lee, Amandine Palud, Suresh Marada, Amanda Nourse, J. Paul Taylor, Stacey K. Ogden, **Tanja Mittag**

No Abstract **4:45 pm**
AN INTRINSICALLY DISORDERED LINKER PLAYS A CRITICAL ROLE IN BACTERIAL CELL DIVISION. **Petra Levin**

No Abstract **5:15 pm**
SPACE AND TIME IN IDP-MEDIATED INTRACELLULAR PHASE TRANSITIONS. **Clifford P. Brangwynne**

5:45 pm **introduction of closing keynote speaker**

No Abstract **5:50 pm**
CONDITIONALLY DISORDERED CHAPERONES. **Ursula Jakob**, Keynote Speaker

6:30 pm **closing remarks**

10:45 am–5:10 pm, Room 330

Subgroup
Biopolymers in vivo

Subgroup Chair
Silvia Cavagnero, University of Wisconsin, Madison

INTERACTION NETWORKS IN LIVING SYSTEMS

10:45 am **business meeting**

12:55 pm **introduction by the program co-chairs, joan shea and sarah woodson**

28-Subg **1:00 pm**
DYNAMICS OF BACTERIAL RIBOSOME ASSEMBLY IN CELLS. **James R. Williamson**

No Abstract **1:30 pm**
TRACKING SINGLE MRNAS IN LIVE CELLS. **Robert Singer**

No Abstract **2:00 pm**
NEUROTRANSMITTER TRANSLOCATION: INSIGHTS FROM NETWORK MODELS AND MULTISCALE SIMULATIONS. **Ivet Bahar**

2:30 pm **talk chosen from submitted abstracts**

2:50 pm **coffee break**

29-Subg **3:20 pm**
ASSEMBLING THE PIECES OF PROTEIN PUZZLES. **Gerhard Hummer**, Pilar Cossio, Amir Bahrami, Alfredo Jost López, Jürgen Köfinger

30-Subg **3:50 pm**
PROBING SPATIOTEMPORAL REGULATION OF SIGNAL TRANSDUCTION IN LIVING CELLS. **Jin Zhang**

4:20 pm **talk chosen from submitted abstracts**

31-Subg **4:40 pm**
SUPER-RESOLUTION FLUORESCENCE IMAGING WITH STORM. **Xiaowei Zhuang, Keynote Speaker**

5:10 pm **concluding remarks**

12:00 pm–6:00 pm, Ballroom IV

Subgroup
Nanoscale Biophysics

Subgroup Chair
Laura Finzi, Emory University

No Abstract **12:00 pm**
NANOSCALE CONTROL OF ACTIN POLYMERIZATION BY A FORMIN-CAPPING PROTEIN 'DECISION-MAKING' COMPLEX AT THE FILAMENT BARBED END. **Jeff Gelles**

32-Subg **12:30 pm**
INSIGHTS INTO NUCLEIC ACIDS STRUCTURAL DYNAMICS WITH SINGLE MOLECULE FRET STUDIES. **Victoria Birkedal**

33-Subg **1:00 pm**
ULTRASTABLE AFM: IMPROVED STABILITY, PRECISION, AND BANDWIDTH FOR BIO-AFM. **Thomas T. Perkins**

34-Subg **1:30 pm**
REVEALING STRUCTURE AND DYNAMICS OF TELOMERE MAINTENANCE PROTEINS ON DNA: ONE MOLECULE AT A TIME. **Hong Wang**, Jiangguo Lin, Parminder Kaur, Preston Countryman, Patricia Opresko, Susan Smith, Jane Tao

2:00 pm **coffee break**

No Abstract **2:30 pm**
NATIVE PROTEINS CHARACTERIZATION USING NANOPORES. **Amit Meller**

3:00 pm **student talks chosen from abstracts**

35-Subg **4:00 pm**
REVEALING THE MECHANICAL REGULATION OF HEMOSTASIS WITH NOVEL APPROACHES IN SINGLE-MOLECULE MANIPULATION. **Wesley P. Wong**

No Abstract **4:30 pm**
LABEL-FREE OPTICAL DETECTION OF SINGLE NANOSCOPIC BIOPARTICLES. **Vahid Sandoghdar**

5:00 pm **business meeting**

6:00 pm **subgroup dinner**

12:00 PM–7:00 PM, ROOM 301/302/303

Career Center

1:00 PM–5:00 PM, BALLROOM III

Subgroup
Biological Fluorescence

Subgroup Chair
Enrico Gratton, University of California, Irvine

NO ABSTRACT **1:00 PM**
DECONSTRUCTING ORGANOGENESIS USING FLUORESCENCE MICROSCOPY. **Kandice Tanner**

36-SUBG **1:30 PM**
ENGINEERING OF BACTERIAL PHYTOCHROMES FOR IN VIVO IMAGING. **Vladislav Verkhusha**

37-SUBG **2:00 PM**
FLUORESCENCE NANOSCOPY BY POLARIZATION MODULATION (SPOD) AND POLARIZATION ANGLE NARROWING (EXPAN). **Peter J. Walla**, Nour Hafi, Grunwald Matthias, Laura S. Jess, Timo Aspelmeier, Zagrebelski Martha, Dominik Pfennig, Martin Korte, Axel Munk

38-SUBG **2:30 PM**
UNDERSTANDING GENE EXPRESSION HETEROGENEITY IN LIVING CELLS WITH SINGLE-MOLECULE FLUORESCENCE MICROSCOPY. **Daniel Larson**

3:00 PM COFFEE BREAK

39-SUBG **3:20 PM**
METABOLIC IMAGING OF LIVING TISSUES BY FLUORESCENCE LIFETIME MICROSCOPY (FLIM) AND ENDOGENOUS BIOMARKERS. **Chiara Stringari**

NO ABSTRACT **3:50 PM**
DYNAMICS AND SEGREGATION OF PROTEIN AGGREGATES DURING ASYMMETRIC CELL DIVISION. **Rong Li**

4:20 PM YOUNG FLUORESCENCE INVESTIGATOR AWARD AND LECTURE

4:40 PM THE GREGORIO WEBER AWARD AND LECTURE

1:00 PM–6:00 PM, BALLROOM I

Subgroup
Membrane Biophysics

Subgroup Chair
Baron Chanda, University of Wisconsin-Madison

50 YEARS OF MWC: A MODERN PERSPECTIVE OF ALLOSTERY IN ION CHANNELS

1:00 PM OPENING REMARKS

NO ABSTRACT **1:05 PM**
COUPLED CONFORMATIONAL CHANGES AND ALLOSTERY IN CHANNEL GATING. **Richard Aldrich**

40-SUBG **1:35 PM**
ALLOSTERIC MUTANT PHENOTYPES INVESTIGATED ON AN α1 GLYCINE RECEPTOR TRANSMEMBRANE STRUCTURE. **Pierre-Jean Corringer**

NO ABSTRACT **2:05 PM**
STRUCTURAL ANALYSIS OF NMDA RECEPTOR. **Hiro Furukawa**

41-SUBG **2:35 PM**
THERMODYNAMICS OF ACHR ACTIVATION. **Anthony Auerbach**

3:05 PM SUBGROUP BUSINESS MEETING & COFFEE BREAK

NO ABSTRACT **3:40 PM**
NOVEL INSIGHTS INTO THE STRUCTURE AND MECHANISM OF PROTON AND SODIUM/CALCIUM EXCHANGERS. **José D. Faraldo-Gómez**

42-SUBG **4:10 PM**
STRUCTURAL DETERMINANTS OF TRPV CHANNEL ACTIVATION AND MODULATION. **Rachelle Gaudet**

43-SUBG **4:40 PM**
CONFORMATIONAL MOTIONS OF K^+ CHANNEL RCK DOMAINS. **Brad Rothberg**

5:10 PM DAVID YUE MEMORIAL EVENT

6:00 PM COLE AWARD AND DINNER

1:00 PM–6:15 PM, ROOM 307/308

Subgroup
Motility

Subgroup Co-Chairs
Samantha Harris, University of Arizona
Jeffrey R. Moore, Boston University

1:00 PM INTRODUCTION

1:10 PM SHORT TALKS SELECTED FROM SUBMITTED ABSTRACTS

NO ABSTRACT **1:40 PM**
BOTH COMPETITION AND COORDINATION AMONG OPPOSING MOTORS REGULATE ORGANELLE MOTILITY. **Erika Holzbaur**

2:10 PM COFFEE BREAK

44-SUBG **2:30 PM**
MULTIPLEX REGULATION OF CYTOPLASMIC DYNEIN MOTILITY. **Richard J. McKenney**, Walter Huynh, Minhajuddin Siarjuddin, Marvin Tanenbaum, Gira Bhabha, Ronald D. Vale

NO ABSTRACT **3:00 PM**
MAPPING MYOSIN'S STRUCTURAL KINETIC LANDSCAPE FOR BASIC AND THERAPEUTIC DISCOVERY. **Joseph Muretta**

3:30 PM BUSINESS MEETING & COFFEE BREAK

NO ABSTRACT **4:00 PM**
ENGINEERING CYTOSKELETAL MOTORS. **Zev Bryant**

45-SUBG **4:30 PM**
THE KINETICS UNDERLYING THE VELOCITY OF SMOOTH MUSCLE MYOSIN FILAMENT SLIDING ON ACTIN FILAMENTS IN VITRO. Brian D. Haldeman, Richard K. Brizendine, Diego Alcala, Kevin C. Facemyer, Josh E. Baker, **Christine R. Cremo**

5:00 PM COFFEE BREAK

NO ABSTRACT **5:20 PM**
CROSSING THE BRIDGE BETWEEN MUSCLE CONTRACTION AND INTRACELLULAR CARGO TRANSPORT. **David Warshaw**

6:15 PM CLOSING REMARKS

1:00 PM–6:30 PM, ROOM 331/332

Subgroup
Exocytosis & Endocytosis

Subgroup Chair
Gary Matthews, Stony Brook University

1:00 PM **STUDENT TALKS SELECTED FROM POSTERS**

46-SUBG **1:45 PM**
MAPPING THE MOLECULAR DYNAMICS OF CLATHRIN MEDIATED ENDOCYTOSIS. **Christien J. Merrifield**

2:15 PM **COFFEE BREAK**

47-SUBG **2:30 PM**
HAIR CELL RIBBON SYNAPSE FUNCTION - DIFFERENTLY OPTIMIZED FOR HEARING AND BALANCE. Soroush G Sadeghi, Sonja J Pyott, Zhou Yu, **Elisabeth Glowatzki**

48-SUBG **3:00 PM**
ULTRAFAST RECYCLING OF SYNAPTIC VESICLES. **Shigeki Watanabe**, Thorsten Trimbuch, Marcial Camacho-Perez, Benjamin Rost, Christian Rosenmund, Erik M. Jorgensen

49-SUBG **3:30 PM**
COMPLEXIN-MEDIATED INHIBITION OF VESICLE FUSION: CONSERVED FUNCTIONS FROM WORM TO MOUSE. **Jeremy Dittman**, Rachel Wragg, Daniel Radoff, David Snead, Yongming Dong, Jihong Bai, David Eliezer

4:00 PM **COFFEE BREAK**

50-SUBG **4:15 PM KATZ AWARD LECTURE**
KNOWN UNKNOWNS IN EXOCYTOSIS. **Ronald W. Holz**

5:30 PM **BUSINESS MEETING**

6:30 PM **RECEPTION AND SUBGROUP DINNER**

1:30 PM–4:05 PM, ROOM 309/310

Subgroup
Permeation & Transport

Subgroup Chair
Emad Tajkhorshid, University of Illinois at Urbana-Champaign

51-SUBG **1:30 PM**
VOLTAGE-GATED SODIUM CHANNELS: STRUCTURE AND FUNCTION OF COMPLEXES WITH SODIUM CHANNEL BLOCKERS. **B. A. Wallace**

2:05 PM **STUDENT/POSTDOC RESEARCH HIGHLIGHT I**
LIGAND DISCOVERY FOR THE ALANINE-SERINE-CYSTEINE TRANSPORTER (ASCT2, SLC1A5) FROM HOMOLOGY MODELING AND VIRTUAL SCREENING. **Claire Colas**, Christoph Grewer, Armanda Gameiro, Thomas Albers, Kurnvir Singh, Nicholas J. Otte, Helen Shere, Bonomi Massimiliano, Jeff Holst, Avner Schlessinger. **(SEE 270-POS FOR ABSTRACT)**

NO ABSTRACT **2:30 PM**
AN INSIDE JOB: NA^+/H^+ EXCHANGERS LINK ENDOSOMAL PH TO NEUROLOGICAL DISORDERS. **Rajini Rao**

3:05 PM **STUDENT/POSTDOC RESEARCH HIGHLIGHT II**
TOWARDS THERMODYNAMIC CHARACTERIZATION OF TRANSPORT CYCLE IN SECONDARY TRANSPORTERS USING ENHANCED SAMPLING TECHNIQUES. **Mahmoud Moradi**, Giray Enkavi, Emad Tajkhorshid. **(SEE 718-POS FOR ABSTRACT)**

NO ABSTRACT **3:30 PM**
CONDUCTION IN CONNEXIN HEMICHANNELS FROM MOLECULAR DYNAMICS SIMULATIONS. **Mounir Tarek**

4:05 PM **BUSINESS MEETING**

3:00 PM–4:00 PM, ROOM 301/302/303

Career Center Workshop
Networking: Optimizing Your Time at BPS 2015

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 2015) 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 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).

4:00 PM–5:00 PM, MEZZANINE

Undergraduate Mixer and Poster Fest

A social and scientific mixer for all undergraduate students attending the meeting. Come meet other undergraduates and learn about their research projects. Undergraduates listed as co-authors on posters are welcome to practice their poster presentation in a less formal setting, even if not listed as the presenting author. For undergrads who will be presenting during the standard scientific sessions, the mixer provides an additional opportunity to hone presentation skills. Limited presentation spots may be available for those who did not pre-register. Check with the Society Office in the VIP Lounge in the Charles Street Lobby. Organized by the Education Committee.

5:00 PM–7:00 PM, CHARLES STREET LOBBY

Opening Mixer

All registered attendees are welcome to attend this cash bar and light refreshments reception. *Sponsored by Biochemistry*

5:00 PM–7:00 PM, ROOM 311

First-Time Attendee Drop By

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 Membership Committee Members will be on hand to answer your questions about the meeting and help you get the most from your time at the BPS 2015 Baltimore meeting.

6:00 PM–10:00 PM, HALL C

Poster Viewing

6:30 PM–7:30 PM, ROOM 327/328/329

Education, Minority Affairs, and Professional Opportunities for Women Committees Travel Awardee Reception

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, Minority Affairs, and Professional Opportunities for Women Committees.

Speaker
Linda Columbus, University of Virginia

Sunday, February 8, 2015

Daily Program Summary

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

7:30 AM–8:30 AM	**Postdoctoral Breakfast**	**Room 327/328/329**
7:30 AM–9:00 AM	**Exhibitor Presentation: FEI Company** **Cryo-TEM Workflow Solutions: A New Era for 3D Structural Biology**	**Hall C, Room A**
7:30 AM–5:00 PM	**Registration/Exhibitor Registration**	**Charles Street Lobby**
8:00 AM–6:30 PM	**Career Center**	**Room 301/302/303**
8:00 AM–10:00 PM	**Poster Viewing**	**Hall C**
8:15 AM–10:15 AM	**Symposium: Regulated Protein Bridges Connecting Membranes: STIM Proteins in Cellular Signaling** **Chair:** *Richard Lewis, Stanford University* SINGLE-MOLECULE STUDIES OF THE ER CALCIUM SENSOR STIM1. *Richard Lewis* TUNING THE TAPS: STIM1 AND STIM2 REGULATORY MECHANISMS. *Barbara A. Niemeyer* GATING MECHANISMS OF STORE-OPERATED CRAC CHANNELS. *Murali Prakriya* THE MECHANICS OF STIM-ORAI COMMUNICATION. *Patrick Hogan*	**Ballroom I**
8:15 AM–10:15 AM	**Symposium: Mechanosensors** **Chair:** *Marcos Sotomayor, Ohio State University* THE MINIMAL CADHERIN-CATENIN COMPLEX BINDS TO ACTIN FILAMENTS UNDER FORCE. *Alexander Dunn* MECHANISMS AND MECHANOSENSITIVITY: EXCEPTIONAL CADHERINS FOR HEARING AND BALANCE. *Marcos Sotomayor* MECHANICAL FORCES IN B CELL ACTIVATION. *Pavel Tolar* NAVIGATING A MAZE - SENSING AND RESPONDING TO MECHANICAL OBSTACLES DURING CELLULAR INVASIVE GROWTH. *Anja Geitmann*	**Ballroom II**
8:15 AM–10:15 AM	**Platform: Molecular Simulation: Structure and Interactions**	**Ballroom III**
8:15 AM–10:15 AM	**Platform: Protein-Nucleic Acid Interactions I**	**Ballroom IV**
8:15 AM–10:15 AM	**Platform: Protein Structure and Conformation I**	**Room 307/308**
8:15 AM–10:15 AM	**Platform: Membrane Physical Chemistry I**	**Room 309/310**
8:15 AM–10:15 AM	**Platform: Ion Channels, Pharmacology, and Disease**	**Room 314/315**
8:15 AM–10:15 AM	**Platform: Kinesins, Dyneins, and Other MT-based Motors**	**Room 316/317**
8:30 AM–10:30 AM	**Minority Affairs Committee Meeting**	**Room 333**
9:00 AM–10:00 AM	**Career Center Workshop: Selling Yourself to the Life Sciences Industry**	**Room 301/302/303**
10:00 AM–5:00 PM	**Biomolecular Discovery Dome**	**Hall C**
10:00 AM–5:00 PM	**Exhibits**	**Hall C**
10:15 AM–11:00 AM	**Coffee Break**	**Hall C**
10:30 AM–11:30 AM	**Career Center Workshop** **Career Planning and Job Searching for Science Professionals: Academic Opportunities**	**Room 301/302/303**
10:30 AM–12:00 PM	**Exhibitor Presentation: Carl Zeiss Microscopy LLC** **Technology Innovations from ZEISS, the New ZEISS LSM 880** **Confocal with Airyscan and the ZEISS Lightsheet Z.1**	**Hall C, Room B**
10:30 AM–12:30 PM	**International Relations Committee Meeting**	**Room 313**

10:45 AM–12:45 PM	**Symposium: New and Notable** **Co-Chairs:** *Enrique De La Cruz, Yale University, and Karen Fleming, Johns Hopkins University* SINGLE MOLECULE MECHANICS – TOWARDS HIGH THROUGHPUT. *Michelle Wang* TRANSPORT THROUGH CARBON NANOTUBE PORINS IN LIPID MEMBRANES. *Aleksandr Noy* MECHANISMS OF EBOLA VIRUS IMMUNE EVASION. *Gaya Amarasinghe* A VIRUS THAT INFECTS A HYPERTHERMOPHILE ENCAPSIDATES A-FORM DNA. *Frank DiMaio* MECHANISMS OF AMPA RECEPTOR ACTIVATION AND DESENSITIZATION INVESTIGATED BY X-RAY CRYSTALLOGRAPHY, DEER AND CRYO-ELECTRON MICROSCOPY. *Katharina Duerr* RHEOSTATS AND TOGGLE SWITCHES FOR MODIFYING PROTEIN FUNCTION. *Liskin Swint-Kruse* THE PRINCIPLES OF LIPID SCRAMBLING: STRUCTURAL INSIGHTS FROM A TMEM16 FAMILY MEMBER. *Janine Brunner*	**Ballroom I**
10:45 AM–12:45 PM	**Symposium: Systems Biology Approaches in Neuroscience** **Chair:** *Kristin Branson, Howard Hughes Medical Institute* MAPPING BEHAVIOR TO NEURAL ANATOMY USING MACHINE VISION AND THERMOGENETICS. *Kristin Branson* VARIABILITY, ROBUSTNESS AND HOMEOSTASIS IN NEURONS AND NETWORKS. *Eve Marder* IMAGING THE CONNECTOME. *Jeff Lichtman* SPACE-TIME WIRING SPECIFICITY SUPPORTS DIRECTION SELECTIVITY IN THE RETINA. *Sebastian Seung*	**Ballroom II**
10:45 AM–12:45 PM	**Platform: Voltage-gated K Channels I**	**Ballroom III**
10:45 AM–12:45 PM	**Platform: Cytoskeletal Mechanics, Dynamics, Motility, and Myosins**	**Ballroom IV**
10:45 AM–12:45 PM	**Platform: RNA Structure, Translation, and Splicing**	**Room 307/308**
10:45 AM–12:45 PM	**Platform: Membrane Pumps, Transporters, and Exchangers I**	**Room 309/310**
10:45 AM–12:45 PM	**Platform: Enzymes and Protein Function**	**Room 314/315**
10:45 AM–12:45 PM	**Platform: Membrane Dynamics**	**Room 316/317**
12:00 PM–1:00 PM	**Career Center Workshop** **Networking: Optimizing Your Time at BPS 2015**	**Room 301/302/303**
12:15 PM–2:15 PM	**Public Affairs Committee Meeting**	**Room 333**
12:30 PM–1:30 PM	**International Travel Awardee Luncheon**	**Room 327/328/329**
12:30 PM–2:00 PM	**Exhibitor Presentation: TA Instruments** **Technology Advances in Ultrasensitive Isothermal Titration Calorimetry**	**Hall C, Room B**
1:30 PM–3:00 PM	**Navigating the Transition: Grad Student to Postdoc**	**Room 324/325**
1:30 PM–3:00 PM	**Breaking into Industry: How to Find and Apply for an Internship**	**Hall C, Room A**
1:45 PM–3:00 PM	**Snack Break**	**Hall C**
2:00 PM–3:30 PM	**Teaching Science Like We Do Science: Integrating Research and Education Workshop**	**Room 331/332**
2:30 PM–3:30 PM	**Career Center Workshop - Having the Right Stuff:** **Outstanding Resumes/CVs for Outstanding Opportunities in Academia and Industry**	**Room 301/302/303**
2:30 PM–4:00 PM	**Science Funding: Is it Time for a New Paradigm?**	**Room 321/322/323**
2:30 PM–4:00 PM	**Exhibitor Presentation: Bruker Nano Surfaces** **Super-Resolution Microscopy and Its Applications in Fast and Complex Biological Systems**	**Hall C, Room B**
3:30 PM–5:00 PM	**Early Careers Committee Meeting**	**Room 333**
3:30 PM–5:00 PM	**Exhibitor Presentation: Wyatt Technology Corporation** **The Light Scattering Toolkit for Biophysical Characterization:** **Lab Essentials for Enhancing Studies of Purification, Crystallization,** **Formulation, Conjugation, Conformation, and Interactions**	**Hall C, Room A**
4:00 PM–5:00 PM	**Career Center Workshop** **Beyond the Bench: Preparing for Your Career Transition in the Life Sciences**	**Room 301/302/303**
4:00 PM–6:00 PM	**Symposium: Emergent Properties and Collective Behaviors of Complex Systems** **Chair:** *Aaron Dinner, University of Chicago* SCALING LAWS GOVERNING GROWTH AND DIVISION OF SINGLE BACTERIAL CELLS. *Aaron Dinner* DRIVING WITH THE BRAKES ON: AN INCOHERENT TRANSCRIPTIONAL CIRCUIT PATTERNS THE DROSOPHILA EMBRYO. *Angela DePace* TEMPORAL FREQUENCY OF DIRECTIONAL SENSING AND COLLECTIVE MIGRATION IN DICTYOSTELIUM. *Satoshi Sawai* THE EMERGENCE OF HEART FAILURE AS A CONSEQUENCE OF MYOCARDIAL METABOLIC DYSFUNCTION. *Daniel A. Beard*	**Ballroom I**

4:00 PM–6:00 PM	**Symposium: Protein Evolution and Allosteric Networks** **Chair:** *Corey Wilson, Yale University* UNDERSTANDING ENZYME MOLECULAR EVOLUTION TOWARD THERMAL ADAPTATION USING MULTISTATE COMPUTATIONAL PROTEIN DESIGN. *Corey J. Wilson* ALLOSTERIC NETWORKS IN THROMBIN. *Elizabeth Komives* THE EVOLUTION OF ENZYME MECHANISMS AND FUNCTIONAL DIVERSITY. *Janet Thornton* EXPERIMENTAL RECONSTRUCTION OF THE MECHANISMS OF ANCIENT PROTEIN EVOLUTION. *Joe Thornton*	**Ballroom II**
4:00 PM–6:00 PM	**Symposium: Cardiomyopathies and Contractile Proteins** **Chair:** *Leslie Leinwand, University of Colorado* MYOSIN MYOPATHIES. *Leslie Leinwand* POSTTRANSLATIONAL MODIFICATION OF TITIN DOMAINS AS A MAIN REGULATOR OF MYOCARDIAL STIFFNESS. *Wolfgang A. Linke* MYBPC3 GENE THERAPY FOR NEONATAL SARCOMERIC CARDIOMYOPATHIES. *Lucie Carrier* AN INTEGRATIVE APPROACH TO THIN FILAMENT CARDIOMYOPATHIES: FROM MOLECULAR AND COMPUTATIONAL BIOPHYSICS TO MICE. *Jil Tardiff*	**Ballroom III**
4:00 PM–6:00 PM	**Platform: Optical Microscopy and Super-Resolution Imaging I**	**Ballroom IV**
4:00 PM–6:00 PM	**Platform: TRP Channels**	**Room 307/308**
4:00 PM–6:00 PM	**Platform: Protein Lipid Interactions I**	**Room 309/310**
4:00 PM–6:00 PM	**Platform: Protein Assemblies**	**Room 314/315**
4:00 PM–6:00 PM	**Platform: Member Organized Session: Protein Nanoassemblies and Networks in Bacterial Chemotaxis and Other Two-Component Signaling Systems**	**Room 316/317**
4:30 PM–6:00 PM	**Exhibitor Presentation: OriginLab Corporation** **Data Analysis and Graphing Using Origin 2015**	**Hall C, Room B**
5:00 PM–6:30 PM	**Korean Biophysicists Meeting**	**Room 324/325**
5:30 PM–7:00 PM	**Mid-Career Mixer**	**Hilton Baltimore, Johnson**
6:00 PM–7:00 PM	**Biophysics Austria Mixer**	**Room 327/328/329**
6:00 PM–9:00 PM	**Student Research Achievement Award (SRAA) Poster Competition**	**Hall C**
7:30 PM–9:30 PM	**Workshop: Stabilizing Membrane Proteins** **Chair:** *Linda Columbus, University of Virginia* EVOLVING STABLE GPCRS FOR DRUG SCREENING AND STRUCTURAL ANALYSIS. *Andreas Plueckthun* ENGINEERING GPCRS FOR IMPROVED THERMOSTABILITY TO FACILITATE STRUCTURE DETERMINATION. *Christopher G. Tate* INVESTIGATING MEMBRANE PROTEIN FOLDING. *James U. Bowie* TUNING MICELLE DIMENSIONS AND PROPERTIES FOR STABILIZING MEMBRANE PROTEIN FOLD AND FUNCTION. *Linda Columbus*	**Ballroom I**
7:30 PM–9:30 PM	**Workshop: NMR of Complex Systems** **Chair:** *Isabelle Marcotte, University of Quebec at Montreal, Canada* STRUCTURE-BASED MECHANISM FOR RETROVIRAL PRIMER ANNEALING. *Victoria D'Souza* ALLOSTERIC REGULATION OF THE SARCOPLASMIC RETICULUM CA^{2+}-ATPASE BY PHOSPHOLAMBAN AND SARCOLIPIN USING SOLID-STATE NMR SPECTROSCOPY. *Gianluigi Veglia* ON THE BACTERIAL CELL WALL BY LIQUID STATE, STANDARD AND DNP SOLID STATE NMR. *Jean-Pierre Simorre* SOLID-STATE NMR STUDY OF INTACT MICROALGAE. *Isabelle Marcotte*	**Ballroom II**
7:30 PM–9:30 PM	**Workshop: Artificial Cells: Understanding and Engineering** **Chair:** *Margaret Johnson, Johns Hopkins University* THE ENGINEERING OF ARTIFICIAL CELLULAR SYSTEMS USING SYNTHETIC BIOLOGY APPROACHES. *Cheemeng Tan* ENGINEERING SYNTHETIC RIBOSOMES IN VITRO. *Michael Jewett* MEASURING GENE EXPRESSION IN FLY EMBRYOS: FROM SINGLE MOLECULES TO NETWORK DYNAMICS. *Thomas Gregor* EVOLUTION EXPERIMENT WITH TRANSLATION-COUPLED RNA REPLICATION SYSTEM. *Tetsuya Yomo*	**Ballroom III**

Sunday, February 8

7:30 AM–8:30 AM, Room 327/328/329
Postdoctoral Breakfast

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. This year, there will be an emphasis on challenges and opportunities in publishing. 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.

7:30 AM–9:00 AM, Hall C, Room A
Exhibitor Presentation
FEI Company

FEI Cryo-TEM Workflow Solutions: A New Era for 3D Structural Biology
A new frontier exists in unraveling interactive biological and biochemical processes and pathways at the macromolecular level. Of critical importance is the three-dimensional visualization of macromolecular structures and molecular machines in their native functional state. Three techniques play a major role in orchestrating this.

Nuclear magnetic resonance (NMR) has the capability to study specific protein domains or fragments and their functional role in protein folding and dynamics and in ligand binding whereas X-Ray crystallography (XRD) allows visualizing high-resolution but more static 3D structures of apo and liganded proteins, mainly in a monomeric or dimeric state after crystallization. To unravel more physiologically relevant situations however, it is essential to visualize multimeric complexes in their tertiary and quaternary state and their interaction with other complexes. By performing typical cryo-TEM applications like single particle analysis or tomography, this can be achieved. In this so-called translational methodology, cryo-TEM thus provides complementary information to NMR and XRD that can be crucial for drug discovery, e.g. in terms of a better understanding of the mechanism of action inferred from the EM structure of the physiologically relevant complex. This will eventually contribute to answer real biologically as well as medically relevant questions.

Latest developments in the cryo-TEM workflow have brought the 3 major structural biology technologies closer together. Now, finally, a continuum has been reached on all important aspects with regards to resolution and macromolecular scales which allows for the full deployment of the combination of these technologies.

Here, we will illustrate the historical context of these technologies with respect to one another and show how latest developments have reached the critical requirements to fully unleash the power of structural biology in not just answering fundamental questions, but actually contribute to curing diseases and improving health. Also, we will discuss the future of structural biology based on the latest developments of the FEI workflow and its components with a special focus on the advances in contrast enhancement (phase plates) and (direct electron) detection.
Presenter
Chris Arthur, Applications Engineer, FEI Company

7:30 AM–5:00 PM, Charles Street Lobby
Registration/Exhibitor Registration

8:00 AM–6:30 PM, Room 301/302/303
Career Center

8:00 AM–10:00 PM, Hall C
Poster Viewing

8:15 AM–10:15 AM, Ballroom I
Symposium
Regulated Protein Bridges Connecting Membranes: STIM Proteins in Cellular Signaling

Chair
Richard Lewis, Stanford University

52-Symp 8:15 AM
SINGLE-MOLECULE STUDIES OF THE ER CALCIUM SENSOR STIM1. **Richard Lewis**

53-Symp 8:45 AM
TUNING THE TAPS: STIM1 AND STIM2 REGULATORY MECHANISMS. **Barbara A. Niemeyer**

54-Symp 9:15 AM
GATING MECHANISMS OF STORE-OPERATED CRAC CHANNELS. **Murali Prakriya**

55-Symp 9:45 AM
THE MECHANICS OF STIM-ORAI COMMUNICATION. **Patrick Hogan**

8:15 AM–10:15 AM, Ballroom II
Symposium
Mechanosensors

Chair
Marcos Sotomayor, Ohio State University

56-Symp 8:15 AM
THE MINIMAL CADHERIN-CATENIN COMPLEX BINDS TO ACTIN FILAMENTS UNDER FORCE. Craig Buckley, Jiongyi Tan, William Weis, W. James Nelson, **Alexander Dunn**

57-Symp 8:45 AM
MECHANISMS AND MECHANOSENSITIVITY: EXCEPTIONAL CADHERINS FOR HEARING AND BALANCE. **Marcos Sotomayor**

58-Symp 9:15 AM
MECHANICAL FORCES IN B CELL ACTIVATION. **Pavel Tolar**

59-Symp 9:45 AM
NAVIGATING A MAZE - SENSING AND RESPONDING TO MECHANICAL OBSTACLES DURING CELLULAR INVASIVE GROWTH. Carlos Agudelo, Amir Sanati Nezhad, Mahmood Ghanbari, Muthukumaran Packirisamy, **Anja Geitmann**

8:15 AM–10:15 AM, Ballroom III
Platform
Molecular Simulation: Structure and Interactions

Co-Chairs
Oliver Beckstein, Arizona State University
Alexander Shug, Karlsruhe Institute of Technology, Germany

60-PLAT 8:15 AM
ROLE OF DESOLVATION IN THERMODYNAMICS AND KINETICS OF LIGAND BINDING TO A PROTEIN. **Jagannath Mondal**, Richard Friesner, Bruce J. Berne

61-PLAT 8:30 AM
INSIGHTS INTO THE STABILIZING ROLE OF CHOLESTEROL FOR THE AMYLOID PRECURSOR PROTEIN. **Martina Audagnotto**, Matteo Dal Peraro

62-PLAT 8:45 AM
PHARMACOPHORE MODELING USING SITE-IDENTIFICATION BY LIGAND COMPETITIVE SATURATION (SILCS) METHOD WITH MULTIPLE PROBE MOLECULES. **Wenbo Yu**, E. Prabhu Raman, Sirish Kaushik Lakkaraju, Lei Fang, Alexander D. MacKerell Jr.

63-PLAT 9:00 AM
QUANTIFYING MACROMOLECULAR CONFORMATIONAL TRANSITION PATHWAYS. **Oliver Beckstein**, Sean L. Seyler, Avishek Kumar, Michael F. Thorpe

64-PLAT 9:15 AM
COMPUTATIONAL DESIGN OF REPEAT-PROTEINS WITH A PREDEFINED GEOMETRY. **Sebastian Rämisch**, Ulrich Weininger, Jonas Martnisson, Mikael Akke, Ingemar André

65-PLAT 9:30 AM
COMPUTATIONAL PREDICTION OF G-QUADRUPLEX FORMATION. **Jacob S. Calvert**, Alex Kreig, Saurabh Sinha, Sua Myong

66-PLAT 9:45 AM
PROTEIN AND RNA STRUCTURE PREDICTION BY INTEGRATION OF CO-EVOLUTIONARY INFORMATION INTO MOLECULAR SIMULATION. Eleonora De Leonardis, Benjamin Lutz, Simona Cocco, Remi Monasson, Hendrik Szurmant, Martin Weigt, **Alexander Schug**

67-PLAT 10:00 AM
STRUCTURAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS USING MOLECULAR DYNAMICS SIMULATION. **Sarah Rauscher**, Vytautas Gapsys, Bert de Groot, Helmut Grubmüller

8:15 AM–10:15 AM, BALLROOM IV

Platform
Protein-Nucleic Acid Interactions I

Co-Chairs
Svea Grieb, Technical University of Dresden, Germany
Beat Fierz, École Polytechnique Fédérale de Lausanne, Switzerland

68-PLAT 8:15 AM
BINDING COMPETITION STUDIED WITH SINGLE MOLECULE FRET: THE INTEGRON RECOMBINASE OUTCOMPETES THE SINGLE-STRANDED DNA BINDING PROTEIN FOR ITS RECOMBINATION SITE. **M. Svea Grieb**, Varsha Natarajan, Marko Swoboda, Michael Schlierf

69-PLAT 8:30 AM
SINGLE-MOLECULE FRET FOR DYNAMIC STRUCTURAL BIOLOGY: DNA POLYMERASE I STRUCTURE AND MECHANISM WITH ANGSTROM PRECISION. **Marko Sustarsic**, Timothy Craggs, Johannes Hohlbein, Andrew Cuthbert, Nicholas Taylor, Hendrik Kaju, Majid Mosayebi, Jonathan Doye, Achillefs N. Kapanidis

70-PLAT 8:45 AM
HETEROCHROMATIN ASSEMBLY AND DYNAMICS ON THE SINGLE MOLECULE LEVEL. Sinan Kilic, Bachmann Andreas, Louise Bryan, **Beat Fierz**

71-PLAT 9:00 AM
RNA UNWINDING BY THE HELICASE MTR4P AND THE TRAMP COMPLEX INVESTIGATED VIA HIGH-RESOLUTION OPTICAL TRAPPING. **Eric M. Patrick**, Sukanya Srinivasan, Eckhard Jankowsky, Matthew J. Comstock

72-PLAT 9:15 AM
ELECTROSTATIC INTERACTION EFFECTS ON THE BINDING OF SPLICEOSOMAL U1A PROTEIN-SL2 RNA HAIRPIN. **Zhaleh Ghaemi**, Irisbel Guzman, Martin Gruebele, Zaida Luthey-Schulten

73-PLAT 9:30 AM
CHROMOSOME REORGANIZATION BY THE HIGHLY COOPERATIVE DPS PROTEIN. **Natalia Vtyurina**, David Dulin, Margreet Docter, Nynke Dekker, Anne Meyer, Elio Abbondanzieri

74-PLAT 9:45 AM
ASYMMETRIC NUCLEOSOME DISASSEMBLY WITH DISRUPTED HISTONES REVEALED BY TIME RESOLVED SMALL ANGLE X-RAY SCATTERING WITH CONTRAST VARIATION. **Yujie Chen**, Joshua M. Tokuda, Traci Topping, Julie L. Sutton, Steve P. Meisburger, Suzette A. Pabit, Lisa M. Gloss, Lois Pollack

75-PLAT 10:00 AM
UNDERSTANDING WITHOUT READING: ANALOGUE ENCODING OF PHYSICOCHEMICAL PROPERTIES OF PROTEINS IN THEIR COGNATE MESSENGER RNA. **Anton A. Polyansky**, Mario Hlevnjak, Bojan Zagrovic

8:15 AM–10:15 AM, ROOM 307/308

Platform
Protein Structure and Conformation I

Co-Chairs
Silvina Matysiak, University of Maryland
Michelle Peckham, University of Leeds, United Kingdom

76-PLAT 8:15 AM
ROLE OF INTERFACES IN PEPTIDE FOLDING AND AGGREGATION. **Sai Janani Ganesan**, Silvina Matysiak

77-PLAT 8:30 AM
COMBINING NEUTRON REFLECTIVITY AND HYDROGEN DEUTERIUM EXCHANGE MASS SPECTROMETRY TO RESOLVE STRUCTURAL DETAILS OF MEMBRANE ASSOCIATED PROTEINS. **Michael S. Kent**, Bulent Akgun, Hirsh Nanda, Gregory F. Pirrone, John Engen

78-PLAT 8:45 AM INTERNATIONAL TRAVEL AWARDEE
EFFECT OF MOLECULAR CROWDING ON THE STRUCTURE AND DYNAMICS OF HUMAN APO AND HOLO TRANSFERRIN USING 2D-IR CORRELATION SPECTROSCOPY. **Sherif Abbas**, Feride Severcan, Parvez I. Haris

79-PLAT 9:00 AM
STRUCTURAL INSIGHT INTO THE PHOSPHOINOSITIDE-REGULATED CELLULAR DYNAMICS OF ALPHA-ACTININ. **Andrea Ghisleni**, Euripides De Almeida Ribeiro, Nikos Pinotsis, Mark R. Holt, Pauline Bennett, Kristina Djinovic-Carugo, Mathias Gautel

80-PLAT 9:15 AM
DETERMINING HOW MANY IONIC INTERACTIONS ARE NEEDED FOR THE HIGH STABILITY OF SINGLE ALPHA HELICAL (SAH) DOMAINS. Marcin D. Wolny, Matthew R. Batchelor, Peter J. Knight, Emanuele Paci, **Michelle Peckham**

81-PLAT 9:30 AM
NMR EVIDENCE FOR UNUSUAL BIFURCATED HYDROGEN BONDING IN THE TXXH ALPHA-HELIX N-CAPPING MOTIF. **Matthew R. Preimesberger**, Ananya Majumdar, Tural Aksel, Kevin Sforza, Doug Barrick, Juliette T.J. Lecomte

82-PLAT 9:45 AM
OXIDATION INCREASES THE STRENGTH OF THE METHIONINE-AROMATIC INTERACTION. **Andrew K. Lewis**, Alessandro Cembran, Tiffany L. Senkow, Ryan Mahling, Gabriella T. Perell, Megan R. McCarthy, Cheng Her, Benjamin T. Horn, Christopher C. Valley, Christine B. Karim, Jiali Gao, William C. Pomerantz, David D. Thomas, Anne Hinderliter, Jonathan N. Sachs

83-PLAT 10:00 AM
ELECTROSTATICS INSIDE THE SECY TRANSLOCON. **Sara Capponi**, Stephen H. White

8:15 AM–10:15 AM, ROOM 309/310

Platform
Membrane Physical Chemistry I

Co-Chairs
Rumiana Dimova, Max Planck Institute of Colloids and Interfaces, Germany
Ilya Levental, University of Texas Health Medical Center

84-PLAT 8:15 AM
DIFFERENTIATION OF PLASMA MEMBRANE COMPOSITION AND PHYSICAL PROPERTIES. **Ilya Levental**, Kandice R. Levental

85-PLAT 8:30 AM
REAL-TIME IMAGING OF NANOSCOPIC LIPID DOMAINS USING ISCAT. Gabrielle de Wit, John S. H. Danial, Philipp Kukura, **Mark I. Wallace**

86-PLAT 8:45 AM
A FUNDAMENTAL FORCE THAT REGULATES NANO-CLUSTERING OF PROTEINS IN BIOLOGICAL MEMBRANES. **Kranthi Kiran Mandadapu**, Shachi Katira, Suriyanarayanan Vaikuntanathan, Berend Smit, David Chandler

87-PLAT 9:00 AM
THEORY OF REGISTERED AND ANTIREGISTERED PHASE SEPARATION IN MIXED AMPHIPHILIC BILAYERS. **John J. Williamson**, Peter D. Olmsted

88-PLAT 9:15 AM
HOW GM1 AFFECTS THE PHASE STATE AND MECHANICAL PROPERTIES OF PHOSPHOLIPID MEMBRANES. Nico Fricke, **Rumiana Dimova**

89-PLAT 9:30 AM
EXAMINING THE EFFECTS OF CHOLESTEROL: LAURDAN AND PATMAN SEE IT DIFFERENTLY. **Emma R. Moulton**, Kelsey J. Hirsche, Monica L. Hobbs, Morgan M. Schwab, John D. Bell

90-PLAT 9:45 AM
ORIENTATIONAL TEXTURE OF MEMBRANE DOMAINS: EFFECT OF LIPID COMPOSITION AND BINDING OF A BACTERIAL TOXIN. **Adam C. Simonsen**, Jes Dreier, Vita Solovyeva, Jonas C. Jeppesen, Jonathan Brewer

91-PLAT 10:00 AM
PLASMA MEMBRANE VESICLE CRITICAL TEMPERATURE SCALES WITH GROWTH TEMPERATURE IN A ZEBRAFISH CELL LINE. Margaret Burns, Jing Wu, Kathleen Wisner, **Sarah Veatch**

8:15 AM–10:15 AM, ROOM 314/315

Platform
Ion Channels, Pharmacology, and Disease

Co-Chairs
David Busath, Bringham Young University
Lyanne Schlichter, University of Toronto, Canada

92-PLAT 8:15 AM
MOLECULAR DYNAMICS OF AMANTADINE BLOCK IN M2 OF INFLUENZA A: WT VS S31N. Mitchell L. Gleed, Harris Ioannidis, Antonios Kolocouris, **David D. Busath**

93-PLAT 8:30 AM
POTENTIATION OF CFTR GATING BY AN ENERGETICALLY ADDITIVE MECHANISM. **Han-I Yeh**, Jiunn- Tyng Yeh, Tzyh-Chang Hwang

94-PLAT 8:45 AM
AFFINITY CALCULATIONS FOR LIPOPHILIC MODULATORS BINDING TO ISOLATED SITES ON GABA(A) RECEPTORS. **Sruthi Murlidaran**, Reza Salari, Grace Brannigan

95-PLAT 9:00 AM
SLC6A14 MODIFIES FLUID SECRETORY CAPACITY OF CYSTIC FIBROSIS AFFECTED EPITHELIUM BY ENHANCING CFTR CHANNEL FUNCTION. **Saumel Ahmadi**, Catherine Luk, Sunny Xia, Michelle Di Paola, Timothy Chung, Johanna Rommens, Christine Bear

96-PLAT 9:15 AM
ENHANCED ACTIVATION OF AN AMINO-TERMINALLY TRUNCATED ISOFORM OF VOLTAGE-GATED PROTON CHANNEL HVCN1 ENRICHED IN MALIGNANT B CELLS. Elayne Hondares, Mark Brown, Boris Musset, Deri Morgan, Vladimir V. Cherny, Christina Taubert, Mandeep K. Bhamrah, David Coe, Federica Marelli-Berg, John G. Gribben, Martin JS Dyer, Melania Capasso, **Thomas E. DeCoursey**

97-PLAT 9:30 AM
POSITIVE KCA CHANNEL GATING MODULATORS WITH SELECTIVITY FOR KCA3.1. **Brandon M. Brown**, Nichole Coleman, Vladimir Yarov-Yarovoy, Heike Wulff

98-PLAT 9:45 AM
EXPRESSION AND CONTRIBUTIONS OF TRPM7 AND KCA2.3/SK3 CHANNELS TO THE INCREASED MIGRATION AND INVASION OF MICROGLIA IN ANTI-INFLAMMATORY ACTIVATION STATES. Tamjeed Siddiqui, Starlee Lively, Roger Ferreira, Raymond Wong, **Lyanne Schlichter**

99-PLAT 10:00 AM
ATOMIC BASIS FOR POTASSIUM CHANNEL POTENTIATION BY A NOVEL CLASS OF ANTI-EPILEPTIC DRUGS. **Robin Y. Kim**, Michael C. Yau, Stephan A. Pless, Jason D. Galpin, Christopher A. Ahern, Harley T. Kurata

8:15 AM–10:15 AM, ROOM 316/317

Platform
Kinesins, Dyneins, and Other MT-based Motors

Co-Chairs
Sarah Rice, Northwestern University
Etsuko Muto, Riken Brain Science Institute, Japan

100-PLAT 8:15 AM
KINESIN-5 ACTS AS A MICROTUBULE STABILIZER, POLYMERASE AND PLUS-TIP TRACKER. Yalei Chen, **William O. Hancock**

101-PLAT 8:30 AM
WHY ARE KINESIN-2 KIF3AB AND KIF3AC SO PROCESSIVE? **Stephanie Guzik-Lendrum**, Katherine C. Rank, Brandon Bensel, Ivan Rayment, Susan P. Gilbert

102-PLAT 8:45 AM
SRC KINASE PHOSPHO-REGULATION OF THE HUMAN MITOTIC KINESIN EG5. **Sarah Rice**, Kathleen M. Gifford, Joshua S. Waitzman, Taylor Poor, Barbara Mann, Patricia Wadsworth

103-PLAT 9:00 AM
EMERGENCE OF LARGE-SCALE VORTICES OF MICROTUBULES COLLECTIVELY DRIVEN BY AXONEMAL DYNEINS. Naoki Kanatani, **Kazuhiro Oiwa**

104-PLAT 9:15 AM
ULTRASTRUCTURE OF DYNACTIN COMPLEX: A MEDIATOR OF CYTOPLASMIC DYNEIN. **Saikat Chowdhury**, Stephanie A. Ketcham, Trina A. Schroer, Gabriel C. Lander

105-PLAT 9:30 AM
A MECHANICAL SWITCH FROM DIFFUSION TO DIRECTIONAL MOTION ACTIVATES ATPASE IN DYNEIN MOTOR. Seiichi Uchimura, Takashi Fujii, Hiroko Takazaki, Rie Ayukawa, Yosuke Nishikawa, Itsushi Minoura, You Hachikubo, Genji Kurisu, Kazuo Sutoh, Takahide Kon, Keiichi Namba, **Etsuko Muto**

106-PLAT 9:45 AM
CYTOPLASMIC DYNEIN RING TILTING DETECTED BY COMBINED POLTIRF AND SUB-PIXEL PARTICLE TRACKING OF SEMICONDUCTOR QUANTUM RODS. **Lisa G. Lippert**, Tali Dadosh, Benjamin T. Diroll, Jeffrey T. Hallock, Christopher B. Murray, Erika LF Holzbaur, Samara L. Reck-Peterson, Yale E. Goldman

107-PLAT 10:00 AM
BIDIRECTIONAL HELICAL MOTILITY OF CYTOPLASMIC DYNEIN AROUND MICROTUBULES. **Sinan Can**, Mark DeWitt, Ahmet Yildiz

8:30 AM–10:30 AM, ROOM 333
Minority Affairs Committee Meeting

9:00 AM–10:00 AM, ROOM 301/302/303
Career Center Workshop
Selling Yourself to the Life Sciences Industry

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.

10:00 AM–5:00 PM, HALL C
Biomolecular Discovery Dome

Visit this 3-D portable Dome, sponsored by the Public Affairs Committee, to see how difficult biophysical topics can be made accessible to high school students and the public. Short videos that communicate the excitement of looking at macromolecular complexes and understanding the molecular basis for life are being shown throughout the week.

10:00 AM–5:00 PM, HALL C
Exhibits

10:15 AM–11:00 AM, HALL C
Coffee Break

10:30 AM–11:30 AM, ROOM 301/302/303
Career Center Workshop
Career Planning and Job Searching for Science Professionals: Academic Opportunities

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.

10:30 AM–12:00 PM, HALL C, ROOM B
Exhibitor Presentation
Carl Zeiss Microscopy

Technology Innovations from ZEISS, the New ZEISS LSM 880 Confocal with Airyscan and the ZEISS Lightsheet Z.1
New 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 the 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.

The LSM 880 with Airyscan allows you to use multicolor samples with any label and get image quality like you've 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 confocals. 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.

The ZEISS Lightsheet Z.1 features high speed image acquisition and greatly reduced photodamage 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.
Presenters
Joseph Huff, Product Marking Manager, Laser Scanning and Superresolution Microscopy, Carl Zeiss Microscopy LLC
Scott Olenych, Product Marketing Manager, Imaging Products, Carl Zeiss Microscopy LLC

10:30 AM–12:30 PM, ROOM 313
International Relations Committee Meeting

10:45 AM–12:45 PM, BALLROOM I

Symposium
New and Notable

Co-Chairs
Enrique De La Cruz, Yale University
Karen Fleming, Johns Hopkins University

NO ABSTRACT 10:45 AM
SINGLE MOLECULE MECHANICS – TOWARDS HIGH THROUGHPUT. **Michelle Wang**

NO ABSTRACT 11:02 AM
TRANSPORT THROUGH CARBON NANOTUBE PORINS IN LIPID MEMBRANES. **Aleksandr Noy**

NO ABSTRACT 11:19 AM
MECHANISMS OF EBOLA VIRUS IMMUNE EVASION. **Gaya Amarasinghe**

NO ABSTRACT 11:36 AM
A VIRUS THAT INFECTS A HYPERTHERMOPHILE ENCAPSIDATES A-FORM DNA. **Frank DiMaio**

NO ABSTRACT 11:53 AM
MECHANISMS OF AMPA RECEPTOR ACTIVATION AND DESENSITIZATION INVESTIGATED BY X-RAY CRYSTALLOGRAPHY, DEER AND CRYO-ELECTRON MICROSCOPY. **Katharina Duerr**

NO ABSTRACT 12:10 PM
RHEOSTATS AND TOGGLE SWITCHES FOR MODIFYING PROTEIN FUNCTION. **Liskin Swint-Kruse**

NO ABSTRACT 12:27 PM
THE PRINCIPLES OF LIPID SCRAMBLING: STRUCTURAL INSIGHTS FROM A TMEM16 FAMILY MEMBER. **Janine Brunner**

10:45 AM–12:45 PM, BALLROOM II

Symposium
Systems Biology Approaches in Neuroscience

Chair
Kristin Branson, Howard Hughes Medical Institute

108-SYMP 10:45 AM
MAPPING BEHAVIOR TO NEURAL ANATOMY USING MACHINE VISION AND THERMOGENETICS. **Kristin Branson**, Alice A. Robie

NO ABSTRACT 11:15 AM
VARIABILITY, ROBUSTNESS AND HOMEOSTASIS IN NEURONS AND NETWORKS. **Eve Marder**

109-SYMP 11:45 AM
IMAGING THE CONNECTOME. **Jeff Lichtman**

NO ABSTRACT 12:15 PM
SPACE-TIME WIRING SPECIFICITY SUPPORTS DIRECTION SELECTIVITY IN THE RETINA. **Sebastian Seung**

10:45 AM–12:45 PM, BALLROOM III

Platform
Voltage-gated K Channels I

Co-Chairs
Timothy Jegla, Pennsylvania State University
Ramon LaTorre, University of Valparaíso, Chile

110-PLAT 10:45 AM INTERNATIONAL TRAVEL AWARDEE
INTERACTION OF CALMODULIN WITH THE EAG1 POTASSIUM CHANNEL. **Maria J. Marques-Carvalho**, João H. Morais-Cabral

111-PLAT 11:00 AM
EFFECTS OF THE ACCESSORY SUBUNIT Γ1 ON THE EXTERNAL ARCHITECTURE OF BK CHANNEL. **Willy Carrasquel-Ursulaez**, Juan P. Castillo, Yenisleidy Lorenzo, Romina Sepulveda, Daniel Aguayo, Francisco Bezanilla, Fernando D. Gonzalez-Nilo, Ramon Latorre

112-PLAT 11:15 AM
ENHANCED VOLTAGE-CLAMP FLUOROMETRY ASSIGNS DISTANCE CONSTRAINTS TO BK CHANNEL VSD STRUCTURAL TRANSITIONS. **Antonios Pantazis**, Riccardo Olcese

113-PLAT 11:30 AM INTERNATIONAL TRAVEL AWARDEE
CALMODULIN BINDING TO A NOVEL SITE IN THE AB MODULE OF KV7.2 SUBUNITS REGULATES SURFACE EXPRESSION. **Ganeko Bernardo-Seisdedos**, Juncal Fernandez-Orth, Carolina Gomis-Perez, Alessandro Alaimo, Araitz Alberdi, Covadonga Malo, Pilar Areso, Alvaro Villarroel

114-PLAT 11:45 AM
A POINT MUTATION CAUSING EPISODIC ATAXIA REVEALS FUNCTIONAL LINK BETWEEN VOLTAGE SENSOR AND SELECTIVITY FILTER IN SHAKER KV CHANNELS. Dimitri Petitjean, **Rikard Blunck**

115-PLAT 12:00 PM
EVOLUTIONARY ORIGINS OF THE SHAKER FAMILY OF VOLTAGE-GATED POTASSIUM CHANNELS. **Xiaofan Li**, Hansi Liu, Sarah A. Rhodes, Liana Trigg, Fortunay H. Diatta, Jessica K. Sassic, David K. Simmons, Mark Q. Martindale, Timothy Jegla

116-PLAT 12:15 PM
ALTERNATIVE SPLICING MODULATES KV CHANNEL CLUSTERING THROUGH A MOLECULAR 'BALL AND CHAIN' MECHANISM. Nitzan Zandany, Shir Marciano, Elhanan Magidovich, Rinat Yehezkel, Tzilhav Shem-Ad, Limor Lewin, Uri Abdu, Irit Orr, **Ofer Yifrach**

117-PLAT 12:30 PM MINORITY AFFAIRS TRAVEL AWARDEE
BETA-2 AND GAMMA-1 AUXILIARY SUBUNITS COASSEMBLE IN THE SAME BK CHANNEL AND INDEPENDENTLY CONTRIBUTE TO REGULATION OF CHANNEL GATING. **Vivian M. Gonzalez-Perez**, Xiao-Ming Xia, Christopher J. Lingle

10:45 AM–12:45 PM, BALLROOM IV

Platform
Cytoskeletal Mechanics, Dynamics, Motility, and Myosins

Co-Chairs
Michael Greenberg, University of Pennsylvania
Harvey Chin, Columbia University

118-PLAT 10:45 AM CPOW TRAVEL AWARDEE
SITE-SPECIFIC CATION RELEASE DRIVES ACTIN FILAMENT SEVERING BY VERTEBRATE COFILIN. **Hyeran Kang**, Michael J. Bradley, Wenxiang Cao, Kaifeng Zhou, Elena E. Grintsevich, Alphée Michelot, Emil Reisler, Charles V. Sindelar, Mark Hochstrasser, Enrique M. De La Cruz

119-PLAT 11:00 AM
HOW ACTIN INITIATES THE MOTOR ACTIVITY OF MYOSIN. Virginie Ropars, Bin Zong, Paola Llinas, Tatiana Isabet, Lin Song, H. Lee Sweeney, **Anne Houdusse**

120-PLAT 11:15 AM
STRUCTURAL BASIS FOR CALCIUM REGULATION OF THE MOTOR FUNCTION OF MYOSIN-5A. Mei Shen, Sanduo Zheng, Wen-Bo Zhang, Zekuan Lu, **Xiang-dong Li**

121-PLAT 11:30 AM
STRUCTURAL DETERMINANTS OF MYOSIN I MECHANOSENSING: THE N TERMINAL REGION. **Michael J. Greenberg**, Tianming Lin, Henry Shuman, E. Michael Ostap

122-PLAT 11:45 AM
MYOSIN 5 SIDE STEPS ALONG ACTIN. Jaime Ortega-Arroyo, Joanna Andrecka, Yasuharu Takagi, James R. Sellers, **Philipp Kukura**

123-PLAT 12:00 PM
PROBING LIPID VESICLE TRANSPORT IN 3D BY TEAMS OF MYOSIN VA MOTORS AT SUSPENDED ACTIN INTERSECTIONS IN VITRO. **Andrew T. Lombardo**, M. Yusuf Ali, Guy G. Kennedy, Kathleen M. Trybus, David M. Warshaw

124-PLAT 12:15 PM
MEASUREMENTS AND SIMULATIONS OF THE FISSION YEAST CYTOKINETIC RING TENSION DURING CONSTRICTION. **Harvey F. Chin**, Erdem Karatekin, Thomas D. Pollard, Ben O'Shaughnessy

125-PLAT 12:30 PM
A MINIMAL SYSTEM TO ESTABLISH MICROTUBULE-BASED CELL POLARITY *IN VITRO*. **Núria Taberner**, Pierre Recouvreux, Sophie Roth, Marileen Dogterom

10:45 AM–12:45 PM, ROOM 307/308

Platform
RNA Structure, Translation, and Splicing

Co-Chairs
Jeffrey Kieft, University of Colorado, Denver
Aaron Hoskins, University of Wisconsin-Madison

126-PLAT 10:45 AM
BALANCED INTERACTIONS BETWEEN RIBOSOMAL SUBUNITS ALLOW RAPID LARGE-SCALE ROTATION. **Lars V. Bock**, Christian Blau, Andrea C. Vaiana, Helmut Grubmüller

127-PLAT 11:00 AM
REAL-TIME OBSERVATION OF DNA RECOGNITION BY THE RNA-GUIDED ENDONUCLEASE CAS9 USING SINGLE-MOLECULE FRET. **Digvijay Singh**, Samuel H. Sternberg, Jingyi Fei, Jennifer A. Doudna, Taekjip Ha

128-PLAT 11:15 AM
STRUCTURAL POLYMORPHISM OF CAG RNA REPEATS INVESTIGATED BY SINGLE-MOLECULE MECHANICAL UNFOLDING. **Pan T. Li**, William Stephenson

129-PLAT 11:30 AM
HOW FLAVIVIRUSES USE A UNIQUE 'SLIPKNOT-LIKE' STRUCTURE TO MECHANICALLY CONFOUND A CELLULAR EXONUCLEASE AND PRODUCE PATHOGENIC RNA. Erich G. Chapman, David A. Costantino, Jennifer L. Rabe, Stephanie L. Moon, Jay C. Nix, Jeffrey Wilusz, **Jeffrey S. Kieft**

130-PLAT 11:45 AM
MAPPING LONG NON-CODING RNA STRUCTURES WITH FRAGMENTATION AND NEXT-GENERATION SEQUENCING. **Jeffrey Vieregg**, William Richter, Alex Ruthenburg

131-PLAT 12:00 PM
U2 SNRNA CONFORMATION IS REGULATED BY CUS2 TO FACILITATE DEAD-BOX PROTEIN LOADING. U. Sandy Tretbar, **Aaron Hoskins**

132-PLAT 12:15 PM
RNA FLEXIBILITY DEPENDS ON STRUCTURAL CONTEXT. **Julie Sutton**, Lois Pollack

133-PLAT 12:30 PM
SINGLE-MOLECULE STUDIES OF KISSING LOOP INTERACTIONS IN GUANINE RIBOSWITCH. **Maumita Mandal**

10:45 AM–12:45 PM, ROOM 309/310

Platform
Membrane Pumps, Transporters, and Exchangers I

Co-Chairs
Gregory Verdon, Imperial College London, United Kingdom
Joseph Mindell, NIH/NINDS

134-PLAT 10:45 AM
STRUCTURE AND BIOCHEMICAL CHARACTERIZATION OF THE MAMMALIAN FRUCTOSE TRANSPORTER GLUT5. **Gregory Verdon**, Hae Joo Kang, Saba Abdul-Hussein, Abdul Aziz Qureshi, Michihiro Kasahara, So Iwata, Norimichi Nomura, David Drew

135-PLAT 11:00 AM
THE CONFORMATIONAL DYNAMICS OF A SECONDARY MULTIDRUG TRANSPORTER ARE MODULATED BY THE LIPID BILAYER COMPOSITION. **Chloé Martens**

136-PLAT 11:15 AM
THERMODYNAMIC FEATURES OF IIAGLC INHIBITION OF SUGAR SYMPORTERS. **Hariharan Parmeswaran**, Balasubramaniam Dhandayuthapani, Alan Peterkofsky, Ronald H. Kaback, Lan Guan

137-PLAT 11:30 AM
TRANSPORT COUPLING STOICHIOMETRY DETERMINATION OF ELECTROGENIC SECONDARY TRANSPORTERS. **Gabriel A. Fitzgerald**, Christopher Mulligan, Joseph A. Mindell

138-PLAT 11:45 AM
LIGAND-DEPENDENT CONFORMATIONAL CYCLE OF THE NA+/HYDANTOIN TRANSPORTER MHP1. **Kelli Kazmier**, Shruti Sharma, Shahidul M. Islam, Benoit Roux, Hassane S. Mchaourab

139-PLAT 12:00 PM
A KEY ROLE FOR TM5 IN THE NA^+-COUPLED ALTERNATING-ACCESS MECHANISM REVEALED BY COMPUTATIONAL ANALYSIS OF THE MHST STRUCTURES. Zheng Li, **Sebastian Stolzenberg**, Matthias Quick, Lina Malinauskaite, Poul Nissen, Harel Weinstein, Jonathan A. Javitch, Lei Shi

140-Plat 12:15 pm
THE NA1 BINDING SITE IN THE HUMAN SODIUM-PHOSPHATE COTRANSPORTER NAPI-IIA. Cristina Fenollar-Ferrer, Monica Patti, Andreas Werner, Thomas Knoepfel, Ian C. Forster, **Lucy R. Forrest**

141-Plat 12:30 pm
FUNCTIONAL IDENTIFICATION OF THE NA1 SITE OF THE PHOSPHATE COTRANSPORTER NAPI-IIA. **Monica Patti**, Cristina Fenollar-Ferrer, Andreas Werner, Thomas Knöpfel, Lucy Forrest, Ian Forster

10:45 am–12:45 pm, Room 314/315

Platform
Enzymes and Protein Function

Co-Chairs
Kenneth Mills, College of the Holy Cross
Amy Whitaker, Texas A&M University

142-Plat 10:45 am
IDENTIFICATION OF BIOCHEMICALLY DISTINCT PROPERTIES OF THE SUMO CONJUGATION PATHWAY IN PLASMODIUM FALCIPARUM. **Katherine Reiter**, Jurgen Bosch, Michael J. Matunis

143-Plat 11:00 am
UNDERSTANDING E2 MECHANISM USING NMR. **Emily A. Todd**, Douglas R. Putney, Christopher E. Berndsen, Nathan T. Wright

144-Plat 11:15 am
PROTEIN SPLICING: REGULATION BY TEMPERATURE AND OXIDATION STATE OF NON-CANONICAL INTEINS. **Kenneth Mills**, Julie Reitter, Michael Nicastri, Kathryn Colleli, Jennie Williams

145-Plat 11:30 am
DYNAMICS OF A NATURALLY HIDDEN STATE RESTRICTS ADENYLATE KINASE ACTIVITY. **Magnus Wolf-Watz**, Michael Kovermann

146-Plat 11:45 am
FUNCTIONAL UNFOLDING IN E. COLI ADENYLATE KINASE. **Jeremy A. Anderson**, Vincent J. Hilser

147-Plat 12:00 pm
PROPOGATION OF THE ALLOSTERIC SIGNAL IN BACILLUS STEAROTHERMOPHILUS PHOSPHOFRUCTOKINASE EXAMINED BY METHYL-TROSY NMR. **Amy M. Whitaker**, Mandar T. Naik, Gregory D. Reinhart

148-Plat 12:15 pm
MICROSECOND-RESOLUTION RECORDING OF T4 LYSOZYME OBSERVES A BROWNIAN RATCHET. **Maxim V. Akhterov**, Yongki Choi, Tivoli J. Olsen, Patrick C. Sims, Mariam Iftikhar, O. Tolga Gul, Brad L. Corso, Gregory A. Weiss, Philip G. Collins

149-Plat 12:30 pm
HUMAN NEURAMINIDASE ENZYMES ALTER THE LATERAL MOBILITY AND FUNCTION OF INTEGRIN RECEPTORS. **Christopher W. Cairo**

10:45 am–12:45 pm, Room 316/317

Platform
Membrane Dynamics

Co-Chairs
Tyler Reddy, Oxford University, United Kingdom
Gabriel Montaño, Los Alamos National Laboratory

150-Plat 10:45 am
NOTHING TO SNEEZE AT: A FULL-SCALE COMPUTATIONAL MODEL OF THE HUMAN INFLUENZA VIRION. **Tyler Reddy**, David Shorthouse, Daniel Parton, Elizabeth Jefferys, Philip W. Fowler, Matthieu Chavent, Marc Baaden, Mark S.P. Sansom

151-Plat 11:00 am
ROLE OF MEMBRANE-BENDING PROTEINS AS MEMBRANE TENSION SENSORS IN CELL MIGRATION. **Toshiki Itoh**

152-Plat 11:15 am
EXPERIMENT AND SIMULATION REVEAL THE BENDING PROPERTIES OF NANOSCOPIC LIPID DOMAINS. **Jonathan D. Nickels**, Michael Ohl, Xiaolin Cheng, Christopher Stanley, Frederick Heberle, Robert Standaert, John Katsaras

153-Plat 11:30 am
ANALYSIS OF MEMBRANE DOMAINS BY FREEZE-FRACTURE REPLICA LABELING EM. Sho Takatori, Tsuyako Tatematsu, Takuya Akano, Jun Matsumoto, Jinglei Cheng, **Toyoshi Fujimoto**

154-Plat 11:45 am
IMAGING SUB-DIFFRACTION MEMBRANE CURVATURE DYNAMICS DURING CLATHRIN MEDIATED ENDOCYTOSIS. **Adam D. Hoppe**, Shalini Low-Nam, Brandon L. Scott, Jason G. Kerkvliet

155-Plat 12:00 pm
LONG ACYL CHAIN SPHINGOLIPIDS GOVERN VISIBLE MICRODOMAINS AND CHOLESTEROL IN BOTH MODEL AND PLASMA MEMBRANES. **Kevin C. Courtney**, Congyu Zhang, Xiaohui Zha

156-Plat 12:15 pm
USING LIPOPOLYSACCHARIDES TO CREATE 3-D MULTICOMPONENT BIOMIMETIC MEMBRANES ON SOLID SUPPORTS. **Kirstie L. Swingle**, Peter G. Adams, Gabriel A. Montano

157-Plat 12:30 pm
GPI-ANCHORED PROTEINS DO NOT RESIDE IN ORDERED DOMAINS IN THE LIVE CELL PLASMA MEMBRANE. **Eva Sevcsik**, Mario Brameshuber, Martin Fölser, Julian Weghuber, Alf Honigmann, Gerhard J. Schütz

12:00 pm–1:00 pm, Room 301/302/303

Career Center Workshop
Networking: Optimizing Your Time at BPS 2015

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 2015) 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 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).

12:15 PM–2:15 PM, ROOM 333

Public Affairs Committee Meeting

12:30 PM–1:30 PM, ROOM 327/328/329

International Travel Awardee Luncheon

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.

12:30 PM–2:00 PM, HALL C, ROOM B

Exhibitor Presentation TA Instruments

Technology Advances in Ultrasensitive Isothermal Titration Calorimetry

TA Instruments introduces the Affinity ITC, with all new technology for advanced isothermal titration calorimetry. Isothermal Titration Calorimetry is the most effective analytical tool for simply and accurately measuring A/B interactions, especially protein-protein binding. Isothermal Titration Calorimetry provides complete thermodynamics and kinetics without labelling, fixing, or otherwise altering the sample of interest. All new technology from TA Instruments improves the sample throughput, usability, and data quality of all isothermal titration calorimetry experiments.

All-new advanced stirring technology and an innovative isolated injection system improves baseline stability, and mixing homogeneity while applying minimal perturbation to the material of interest. For large-scale screening and high throughput testing, an all-new unattended sample handling system automates up to 96 full titrations and continuous unattended operation for multiple days. Based around a 96-well plate format and multiple wash/rinse containers, the Affinity ITC Auto will greatly increase laboratory productivity without sacrificing sensitivity or reproducibility. The Affinity ITC is available in both the standard (1.0 mL) and low volume (190 µL) cell sizes, extending the range of applications for which automation is available. This presentation will include data examples and tech tips on experimental design using the Affinity ITC Auto.

Presenter

Dile Holton, TA Instruments - Waters LLC, Microcalorimetry Product Manager

1:30 PM–3:00 PM, ROOM 324/325

Navigating the Transition Grad Student to Postdoc

This session, organized by the Early Careers Committee, is designed for graduate students curious about the process of moving from graduate school to a postdoctoral position. A panel of current postdocs will share their experiences with choosing a postdoctoral position and making the transition from graduate school into postdoctoral training.

Speakers

Marcelo Diaz-Bustamante, Johns Hopkins University
David Jones, University of Wisconsin-Madison
Prakash Subramanyam, Columbia University

1:30 PM–3:00 PM, HALL C, ROOM A

Breaking into Industry: How to Find and Apply for an Internship

Are you interested in pursuing a career in industry? Stop by to hear from a panel of experts who work in bio-related industries. The panel will discuss how to find, select, and apply for industry internships, providing attendees with useful tools and resources.

1:45 PM–3:00 PM, HALL C

Snack Break

2:00 PM–3:30 PM, ROOM 331/332

Teaching Science Like We Do Science: Integrating Research and Education Workshop

This workshop will feature speakers who have taught biophysics topics using engaging and effective techniques in the classroom, and authentic, discovery-based undergraduate labs.

Speakers

Pete Nelson, Benedictine University
Leslie Leinwand, University of Colorado, Boulder
Brian Helmke, University of Virginia

2:30 PM–3:30 PM, ROOM 301/302/303

Career Center Workshop Having the Right Stuff: Outstanding Resumes/CVs for Outstanding Opportunities in Academia and Industry

Resumes/CVs don't get you jobs, they get you interviews. Learn the secrets of making your resume/CV one that stands out from the crowd, ensuring it will actually be read, and articulates your value to the organization and your field. Session will also include advice on how to develop your own 30-second brand statement which you can use in networking, and informational and job interviews.

2:30 PM–4:00 PM, ROOM 321/322/323

Science Funding: Is it Time for a New Paradigm?

Public funding has played a key role in supporting the scientific enterprise in the United States and abroad. But with government budgets flat and little political will to change any time soon, scientists are wondering not only how to keep their labs afloat, but also what the future holds for research moving forward. During this informal moderated discussion, BPS members from around the globe will talk about how science is funded in other countries, both from government and private sources.

Moderator

Suzanne Scarlata, Stony Brook University

Participants

Hongwei Wang, Tsinghua University, China
Paul Matsudaira, National University of Singapore
Bonnie Wallace, University of London, United Kingdom
Andreas Pluckthun, University of Zurich, Switzerland

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2:30 PM–4:00 PM, HALL C, ROOM B

Exhibitor Presentation Bruker Nano Surfaces

Super-Resolution Microscopy and Its Applications in Fast and Complex Biological Systems

Super-resolution microscopy has revolutionized the field of biological imaging by providing new insights into biological processes in fields as diverse as developmental biology, neuroscience, cardiovascular research, genetics, infectious disease, and DNA/chromatin structure. The Vutara 350 super-resolution microscope offers a ten-fold improvement in resolution in comparison to traditional light microscopy techniques and is capable of achieving resolutions of 20 nm laterally and 50 nm axially. The Vutara 350 is based on a patented 3D biplane single molecule localization platform. We will discuss the basic principles of operation and features of the Vutara 350 super-resolution microscope. The capability to do 3D multicolor imaging, high speed live cell imaging, 3D particle tracking, and

z-stacking in various biological systems such as cells, tissue, drosophila, C. elegans, bacteria and virus makes the Vutara 350 very versatile.
Presenter
Jeff Stuckey, Product Marketing Manager, Bruker Nano Surfaces

3:30 PM–5:00 PM, ROOM 333
Early Careers Committee Meeting

3:30 PM–5:00 PM, HALL C, ROOM A
Exhibitor Presentation
Wyatt Technology Corporation

The Light Scattering Toolkit for Biophysical Characterization: Lab Essentials for Enhancing Studies of Purification, Crystallization, Formulation, Conjugation, Conformation, and Interactions
Biophysical techniques based on static and dynamic light scattering address many of the key analytical challenges associated with proteins, oligonucleotides, vesicles and other biomacromolecules. This workshop covers the following topics:
1. Batch DLS – traditional cuvette-based dynamic light scattering (DLS) is a fast, easy means of estimating macromolecular and nanoparticle size distributions to assess protein aggregation or the sizes of virus-like particles or drug delivery nanovehicles. In microwell-plate format, DLS is a high-productivity tool useful for optimizing formulation or crystallization conditions with minimal sample consumption or manual labor.
2. SEC-MALS and SEC-DLS – coupling of multi-angle static light scattering (MALS) and DLS detection to size-exclusion chromatography to assess molar mass, size, conformation and conjugation, in solution, independently of column calibration and non-ideal sample-column interactions. In addition to readily assessing aggregation and fragmentation in line with SEC purification, SEC-MALS analyzes protein conjugates such as glycoproteins or membrane proteins bound to surfactant micelles, determining protein oligomeric state and the mass of glycans, polysaccharides or surfactant modifying the protein.
3. FFF-MALS and FFF-DLS – coupling of MALS and DLS to a field-flow fractionation (FFF) device to achieve accurate characterization of macromolecules and nanoparticles from 1-1000 nm, even when soluble and insoluble components are both present in the solution. It does not employ a stationary phase; FFF separates without shear and with minimal surface interactions. FFF produces high-resolution size distributions thanks to true hydrodynamic separation upstream of the light scattering detectors. It also offers the benefits of post-separation downstream analysis by spectroscopy for additional information on samples.
4. CG-MALS – coupling MALS to a composition-gradient device results in a uniquely powerful system for characterizing complex biomolecular interactions, label-free and immobilization-free. Because MALS measures molar masses it is one of the most useful techniques for analyzing multi-domain, multi-protein interactions that go beyond standard 1:1 interactions including systems exhibiting cooperativity and allostery. CG-MALS determines the affinity and absolute molecular stoichiometry of self and/or heteroassociating systems from pM to mM.
Presenter
Stephanie Cope, Applications Scientist, Wyatt Technology Corporation

4:00 PM–5:00 PM, ROOM 301/302/303
Career Center Workshop
Beyond the Bench: Preparing for Your Career Transition in the Life Sciences

There are numerous alternative career options for the seasoned bench scientist who may have decided to take his/her talents and apply them in a new direction. This transition can be accomplished without having to matriculate in another graduate program, and this session explores the how's and why's of making such a transition. Be prepared to talk about the role you are thinking about moving into, why you may have chosen this alternative path, and what successes you may have had thus far.

4:00 PM–6:00 PM, BALLROOM I
Symposium
Emergent Properties and Collective Behaviors of Complex Systems

Chair
Aaron Dinner, University of Chicago

158-SYMP 4:00 PM
SCALING LAWS GOVERNING GROWTH AND DIVISION OF SINGLE BACTERIAL CELLS. **Aaron Dinner**

159-SYMP 4:30 PM
DRIVING WITH THE BRAKES ON: AN INCOHERENT TRANSCRIPTIONAL CIRCUIT PATTERNS THE DROSOPHILA EMBRYO. **Angela DePace**

160-SYMP 5:00 PM
TEMPORAL FREQUENCY OF DIRECTIONAL SENSING AND COLLECTIVE MIGRATION IN DICTYOSTELIUM. **Satoshi Sawai**

161-SYMP 5:30 PM
THE EMERGENCE OF HEART FAILURE AS A CONSEQUENCE OF MYOCARDIAL METABOLIC DYSFUNCTION. **Daniel A. Beard**

4:00 PM–6:00 PM, BALLROOM II
Symposium
Protein Evolution and Allosteric Networks

Chair
Corey Wilson, Yale University

162-SYMP 4:00 PM
UNDERSTANDING ENZYME MOLECULAR EVOLUTION TOWARD THERMAL ADAPTATION USING MULTISTATE COMPUTATIONAL PROTEIN DESIGN. **Corey J. Wilson**

163-SYMP 4:30 PM
ALLOSTERIC NETWORKS IN THROMBIN. **Elizabeth Komives**

164-SYMP 5:00 PM
THE EVOLUTION OF ENZYME MECHANISMS AND FUNCTIONAL DIVERSITY. **Janet Thornton**

NO ABSTRACT 5:30 PM
EXPERIMENTAL RECONSTRUCTION OF THE MECHANISMS OF ANCIENT PROTEIN EVOLUTION. **Joe Thornton**

4:00 PM–6:00 PM, BALLROOM III
Symposium
Cardiomyopathies and Contractile Proteins

Chair
Leslie Leinwand, University of Colorado

165-Symp 4:00 PM
MYOSIN MYOPATHIES. **Leslie Leinwand**

166-Symp 4:30 PM
POSTTRANSLATIONAL MODIFICATION OF TITIN DOMAINS AS A MAIN REGULATOR OF MYOCARDIAL STIFFNESS. **Wolfgang A. Linke**

167-Symp 5:00 PM
MYBPC3 GENE THERAPY FOR NEONATAL SARCOMERIC CARDIOMYOPATHIES. **Lucie Carrier**

168-Symp 5:30 PM
AN INTEGRATIVE APPROACH TO THIN FILAMENT CARDIOMYOPATHIES: FROM MOLECULAR AND COMPUTATIONAL BIOPHYSICS TO MICE. **Jil Tardiff**

4:00 PM–6:00 PM, Ballroom IV

Platform
Optical Microscopy and Super-Resolution Imaging I

Co-Chairs
Keith Lidke, University of New Mexico
Christopher Kelly, Wayne State University

169-Plat 4:00 PM
REFLECTED BEAM LIGHT-SHEET MICROSCOPY FOR WHOLE-CELL 3D SUPER-RESOLUTION IMAGING. **Marjolein BM Meddens**, Sheng Liu, Conrad D. James, Keith A. Lidke

170-Plat 4:15 PM
PROBING THE TRANSCRIPTION CYCLE IN REAL-TIME WITH 3D SUPERRESOLUTION INTERFEROMETRY. **Guanshi Wang**, Jesse Hauver, Zachary Thomas, Seth A. Darst, Alexandros Pertsinidis

171-Plat 4:30 PM MINORITY AFFAIRS TRAVEL AWARDEE
RESOLVING NANOSCALE CURVATURE ON LIPID BILAYERS WITH POLARIZED LOCALIZATION MICROSCOPY. **Abir Maarouf**, Rebecca Lynn Meerschaert, Christopher V. Kelly

172-Plat 4:45 PM
SPATIAL AND FUNCTIONAL ORGANIZATION OF BACTERIAL SUBCELLULAR STRUCTURES IN SUPERRESOLUTION. **Jie Xiao**, Carla Coltharp, Xiaoli Weng, Jackson Buss, Xinxing Yang, Arvin Lagda

173-Plat 5:00 PM
DISEASE PHENOTYPING WITH SUB-RESOLUTION PRECISION BY SINGLE MOLECULE TRACKING IN LIVE ANIMALS. Hong Zhan, Ramunas Stanciauskas, Christian Stigloher, Kevin Dizon, Maelle Jospin, Jean-Louis Bessereau, **Fabien Pinaud**

174-Plat 5:15 PM
SUPER RESOLUTION FLUORESCENCE MICROSCOPY BY CATHODOLUMINESCENCE-ACTIVATED EXCITATION. **Connor G. Bischak**, Craig L. Hetherington, Jake T. Precht, Claire E. Stachelrodt, Zhe Wang, Darrell G. Schlom, Naomi S. Ginsberg

175-Plat 5:30 PM
3D SUPERRESOLUTION MICROSCOPY BY SUPERCRITICAL ANGLE DETECTION. **Joran Deschamps**, Markus Mund, Jonas Ries

176-Plat 5:45 PM
SUPER RESOLUTION IMAGING AND TRACKING OF PROTEIN-PROTEIN INTERACTIONS IN SUB DIFFRACTION CELLULAR SPACE. **Zhen Liu**, Dong Xing, Qian Peter Su, Yun Zhu, Jiamei Zhang, Xinyu Kong, Boxin Xue, Sheng Wang, Hao Sun, Yile Tao, Yujie Sun

4:00 PM–6:00 PM, Room 307/308

Platform
TRP Channels

Co-Chairs
Elenora Zakharian, University of Illinois College of Medicine
Jie Zheng, University of California, Davis

177-Plat 4:00 PM
SURFACE CHARACTERIZATION AND MEMBRANE INTERACTION OF DOUBLE-KNOT TOXIN, AN ACTIVATOR OF TRPV1 CHANNELS. **Chanhyung Bae**, Andres Jara-Oseguera, Dmitriy V. Krepkiy, Jaeha Ryu, Jae Il Kim, Kenton J. Swartz

178-Plat 4:15 PM
HIGH TEMPERATURE SENSITIVITY IS INTRINSIC TO VOLTAGE-GATED POTASSIUM CHANNELS. **Fan Yang**, Jie Zheng

179-Plat 4:30 PM
PERMEATION AND DYNAMICS OF AN OPEN-ACTIVATED TRPV1 CHANNEL. **Carmen Domene**, Leonardo Darre, Simone Furini

180-Plat 4:45 PM
THE L596-W733 BOND BETWEEN S4-S5 LINKER AND TRP DOMAIN MAINTAINS BASAL ACTIVITY AND ENABLES INACTIVATION OF TRPV4. **Jinfeng Teng**, Stephen Loukin, Andriy Anishkin, Ching Kung

181-Plat 5:00 PM
COMPARATIVE SEQUENCE ANALYSIS SUGGESTS A UNIFIED GATING MECHANISM FOR TRP CHANNELS.
Vincenzo Carnevale, Eugene Palovcak, Lucie Delemotte, Michael Klein

182-Plat 5:15 PM
EFFECTS OF INACTIVATION OF TRPM7 KINASE ACTIVITY ON ITS CHANNEL ACTIVITY IN MICE. Taku Kaitsuka, Chiaki Katagiri, Pavani Beesetty, Kenji Nakamura, Siham Hourani, Kazuhito Tomizawa, **J. Ashot Kozak**, Masayuki Matsushita

183-Plat 5:30 PM
TEMPERATURE AND VOLTAGE COUPLING TO TRPM8 CHANNEL OPENING. Natalia Raddatz, **Juan P. Castillo**, Carlos Gonzalez, Osvaldo Alvarez, Ramon Latorre

184-Plat 5:45 PM
TRPM8 IS AN IONOTROPIC TESTOSTERONE RECEPTOR. Swapna Asuthkar, Lusine Demirkhanyan, Xiaohui Sun, Pia Elustondo, Vivek Krishnan, Padmamalini Baskaran, Kiran Kumar Velpula, Baskaran Thyagarajan, Evgeny Pavlov, **Eleonora Zakharian**

4:00 PM–6:00 PM, Room 309/310

Platform
Protein Lipid Interactions I

Co-Chairs
Blake Mertz, West Virginia University
Svetla Stoilova-McPhie, University of Texas Medical Branch at Galveston

185-Plat 4:00 PM
EXPERIMENTAL AND COMPUTATIONAL STUDIES OF PULMONARY SURFACTANT PROTEIN SP-B INTERACTING WITH LIPID BILAYERS. **Mohammad Hassan Khatami**, Ivan Saika-Voivod, Valerie Booth

186-Plat 4:15 PM
CREATION OF WATER-SOLUBLE INTEGRAL MEMBRANE PROTEINS USING AN ENGINEERED AMPHIPATHIC PROTEIN "SHIELD". **Dario Mizrachi**

187-Plat 4:30 PM
VALIDATING THE RETINAL FLIP OF RHODOPSIN USING MOLECULAR DYNAMICS. Jun Feng, **Blake Mertz**

188-Plat 4:45 PM
HIV GP41-ANTIBODY INTERACTION AT THE VIRAL MEMBRANE INTERFACE DEFINED BY EPR SPECTROSCOPY. **Likai Song**, Zhen-Yu J. Sun, Mikyung Kim, Pavanjeet Kaur, Gerhard Wagner, Ellis L. Reinherz

189-Plat 5:00 pm
SMALL ANGLE NEUTRON AND X-RAY SCATTERING REVEAL CONFORMATIONAL DIFFERENCES IN DETERGENTS AFFECTING RHODOPSIN ACTIVATION. **Utsab Shrestha**, Debsindhu Bhowmik, Suchithranga Perera, Udeep Chawla, Andrey V. Struts, Vito Graziano, Shuo Qian, William T. Heller, Michael F. Brown, Xiang-Qiang Chu

190-Plat 5:15 pm **Education Travel Awardee**
DETERMINING THE FREE ENERGY OF MEMBRANE PROTEIN DIMERIZATION IN LIPID BILAYERS.
Venkatramanan Krishnamani, Kacey Mersch, Rahul Chadda, Ankita Chadda, Janice Robertson

191-Plat 5:30 pm
A FRET ANALYSIS OF THE FTSB-FTSL TRANSMEMBRANE DOMAIN INTERACTIONS OF THE E.COLI DIVISOME SUGGESTS A HIGHER ORDER OLIGOMERIC COMPLEX WITH A 1:1 STOICHIOMTERY. **Ambalika S. Khadria**, Alessandro Senes

192-Plat 5:45 pm
MEMBRANE-INDUCED DIMERIZATION OF COAGULATION FACTOR VIII. Daniela Dalm, Kirill Grushin, Jaimy Miller, Montgomery Pettitt, **Svetla Stoilova-McPhie**

4:00 pm–6:00 pm, Room 314/315

Platform
Protein Assemblies

Co-Chairs
Jungsan Sohn, Johns Hopkins Medical Institute
Eric May, University of Connecticut

193-Plat 4:00 pm
THE COOPERATIVE ASSEMBLY OF IFI16 FILAMENTS ON DSDNA PROVIDES INSIGHTS INTO HOST DEFENSE STRATEGY. **Jungsan Sohn**, Seamus Morrone, Tao Wang, Richard Hooy

194-Plat 4:15 pm
A HELICAL TRANSPORT MECHANISM FOR TYPE III SECRETION. Rashmi Gupta, **Gregory Bubnis**, Christian Goosmann, Adam Lange, Helmut Grubmueller, Michael Kolbe

195-Plat 4:30 pm
UNRAVELING THE LINK BETWEEN NONLINEAR MECHANICS, MICROSTRUCTURE, AND MOLECULAR PACKING OF FIBRIN. **Nicholas A. Kurniawan**, Jos Grimbergen, Izabela K. Piechocka, Karin A. Jansen, Fred C. MacKintosh, Jaap Koopman, Gijsje H. Koenderink

196-Plat 4:45 pm
DIMERIZATION OF THE PTEN TUMOR SUPPRESSOR AND ITS STRUCTURAL CHARACTERIZATION BY SAXS. **Frank Heinrich**, Hirsh Nanda, Srinivas Chakravarthy, Rakesh K. Harishchandra, Arne Gericke, Alonzo H. Ross, Mathias Lösche

197-Plat 5:00 pm
MOLECULAR SIMULATIONS OF THE CAPSID RELEASE AND MEMBRANE BINDING PROCESSES OF FLOCK HOUSE LYTIC PEPTIDES. **Allyn R. Brice**, Shivangi Nangia, Eric R. May

198-Plat 5:15 pm
RECONSTITUTION OF MULTIVALENT PDZ DOMAIN BINDING TO THE SCAFFOLD PROTEIN PSD-95 REVEALS TERNARY-COMPLEX SPECIFICITY OF COMBINATORIAL INHIBITION. James J. McCann, Ucheor Choi, **Mark Bowen**

199-Plat 5:30 pm
QUANTIFYING PROTEIN-PROTEIN BINDING ENERGY AND ENTROPY USING MOLECULAR DYNAMICS SIMULATIONS. **Sunhwan Jo**, Wei Jiang, Benoit Roux

200-Plat 5:45 pm
GENERATION OF ELECTROCHEMICAL GRADIENT FROM PEPTIDE SELF-ASSEMBLY. **Sha Li**, Anil K. Mehta, Anton Sidorov, Thomas M. Orlando, David G. Lynn

4:00 pm–6:00 pm, Room 316/317

Platform
Member Organized Session:
Protein Nanoassemblies and Networks in Bacterial Chemotaxis and other Two-component Signaling Systems

Co-Chairs
Lynmarie Thompson, University of Massachusetts
Sriram Subramaniam, NIH

201-Plat 4:00 pm
INSIGHTS FROM PHOSPHORYLATION PROFILING OF AN AUTOREGULATED TWO-COMPONENT SYSTEM. Rong Gao, **Ann Stock**

202-Plat 4:15 pm
HYDROGEN EXCHANGE REVEALS DIFFERENCES BETWEEN BACTERIAL CHEMORECEPTOR SIGNALING STATES. Seena S. Koshy, Xuni Li, Stephen J. Eyles, Robert M. Weis, **Lynmarie K. Thompson**

203-Plat 4:30 pm
DISULFIDE TRAPPING AND SPECTROSCOPIC STUDIES OF BACTERIAL CHEMOSENSORY CORE SIGNALING COMPLEXES: PROBING MOLECULAR MECHANISMS OF COMPLEX ASSEMBLY AND RECEPTOR-REGULATED ON-OFF SWITCHING. **Joseph J. Falke**, Kene N. Piasta, Marie Balboa, Jane Duplantis, Hayden Swisher, Michael Turvey

204-Plat 4:45 pm
FLAGELLAR MOTOR ARCHITECTURE. **Frederick W. Dahlquist**

205-Plat 5:00 pm
STRUCTURE AND DYNAMICS OF THE RECEPTOR:KINASE COMPLEX THAT MEDIATES BACTERIAL CHEMOTAXIS. **Brian R. Crane**

206-Plat 5:15 pm
HAMP: THE CPU DOMAIN OF BACTERIAL CHEMORECEPTORS. **John Parkinson**

207-Plat 5:30 pm
SIGNAL INTEGRATION BY BACTERIAL CHEMOSENSORY COMPLEXES. **Victor Sourjik**

208-Plat 5:45 pm
ARCHITECTURE AND ASSEMBLY OF CHEMORECEPTOR ARRAYS AS SEEN BY ELECTRON CRYOTOMOGRAPHY. **Ariane Briegel**

4:30 pm–6:00 pm, Hall C, Room B

Exhibitor Presentation
OriginLab Corporation

Data Analysis and Graphing Using Origin 2015
Origin is an easy-to-use software application with data analysis and publication-quality graphing for science and engineering. This workshop will cover key features including importing data from multiple sources including Excel and third-party file formats, LabVIEW connectivity, creating and customizing multi-panel graphs, graphical exploration and analysis, curve fitting, peak analysis, signal processing, and statistics. Time

saving features such as templates for graphing and analysis, batch plotting and batch analysis will be presented. Application examples using Origin's programming environment will also be presented.

The workshop will also cover key new features and improvements in the latest version:
Ease-of-use features including graph preview and comment tool tip in Project Explorer, search for string in project, search for functions in dialogs, redesigned axis dialog, enhanced legend, and custom categorical order. New graph types including Heat Map, Kernel Density Plot, Column Scatter Plot. Improvements to profile plot, box plot, contour plot, bubble scale, and color scale. New analysis tools for Distribution Fit, ANOVA of unbalanced data, t-Test on rows. Tool to append worksheets, remove or combine duplicate values, and improved pivot table. Integration of Python as scripting language in Origin.
Presenter
Easwar R. Iyer, VP of Technology, OriginLab Corporation

5:00 PM–6:30 PM, ROOM 324/325
Korean Biophysicists Meeting

5:30 PM–7:00 PM, HILTON BALTIMORE, JOHNSON
Mid-Career Mixer

You have a position working in biophysics and have some funding for your work, but you have 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 tenure, including management of lab staff, getting your work published, and renewing your funding. Refreshments will be provided, with cash bar.

6:00 PM–7:00 PM, ROOM 327/328/329
Biophysics Austria Mixer

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

See page 53 for list of participants.
Sponsored by Biochemistry.
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 verbal presentation of their poster to one or more judges. Winners will be recognized on Monday evening prior to the National Lecture.

7:30 PM–9:30 PM, BALLROOM I
Workshop
Stabilizing Membrane Proteins

Chair
Linda Columbus, University of Virginia

209-WKSHP 7:30 PM
EVOLVING STABLE GPCRS FOR DRUG SCREENING AND STRUCTURAL ANALYSIS. **Andreas Plueckthun**

210-WKSHP 8:00 PM
ENGINEERING GPCRS FOR IMPROVED THERMOSTABILITY TO FACILITATE STRUCTURE DETERMINATION.
Christopher G. Tate

211-WKSHP 8:30 PM
INVESTIGATING MEMBRANE PROTEIN FOLDING.
James U. Bowie

212-WKSHP 9:00 PM
TUNING MICELLE DIMENSIONS AND PROPERTIES FOR STABILIZING MEMBRANE PROTEIN FOLD AND FUNCTION.
Linda Columbus

7:30 PM–9:30 PM, BALLROOM II
Workshop
NMR of Complex Systems

Chair
Isabelle Marcotte, University of Quebec at Montreal, Canada

213-WKSHP 7:30 PM
STRUCTURE-BASED MECHANISM FOR RETROVIRAL PRIMER ANNEALING. **Victoria D'Souza**

214-WKSHP 8:00 PM
ALLOSTERIC REGULATION OF THE SARCOPLASMIC RETICULUM CA^{2+}-ATPASE BY PHOSPHOLAMBAN AND SARCOLIPIN USING SOLID-STATE NMR SPECTROSCOPY.
Gianluigi Veglia

215-WKSHP 8:30 PM
ON THE BACTERIAL CELL WALL BY LIQUID STATE, STANDARD AND DNP SOLID STATE NMR. **Jean-Pierre Simorre**

216-WKSHP 9:00 PM
SOLID-STATE NMR STUDY OF INTACT MICROALGAE.
Isabelle Marcotte

7:30 PM–9:30 PM, BALLROOM III
Workshop
Artificial Cells: Understanding and Engineering

Chair
Margaret Johnson, Johns Hopkins University

217-WKSHP 7:30 PM
THE ENGINEERING OF ARTIFICIAL CELLULAR SYSTEMS USING SYNTHETIC BIOLOGY APPROACHES. **Cheemeng Tan**

218-WKSHP 8:00 PM
ENGINEERING SYNTHETIC RIBOSOMES IN VITRO.
Michael Jewett

219-WKSHP 8:30 PM
MEASURING GENE EXPRESSION IN FLY EMBRYOS: FROM SINGLE MOLECULES TO NETWORK DYNAMICS.
Thomas Gregor

220-WKSHP 9:00 PM
EVOLUTION EXPERIMENT WITH TRANSLATION-COUPLED RNA REPLICATION SYSTEM. **Tetsuya Yomo**

1:45 PM-3:45 PM, Hall C

SUNDAY POSTER SESSIONS

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. All abstracts are available through the desktop planner and mobile app.

Posters should be mounted 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–B27	Protein Structure and Conformation I
B28–B45	Protein Folding and Chaperones
B46–B66	Protein-Small Molecule Interactions I
B67–B88	Protein Dynamics and Allostery I
B89–B115	Intrinsically Disordered Proteins (IDP) and Aggregates I
B116–B136	DNA Replication, Recombination, and Repair
B137–B168	Protein-Nucleic Acid Interactions I
B169–B187	Membrane Dynamics I
B188–B205	Membrane Active Peptides and Toxins I
B206–B231	Membrane Structure I
B232–B258	Protein-Lipid Interactions I
B259–B280	Membrane Receptors and Signal Transduction I
B281–B302	Exocytosis and Endocytosis
B303–B331	Calcium Signaling I
B332–B347	Cardiac, Smooth, and Skeletal Muscle Electrophysiology I
B348–B362	Biopolymers in Vivo
B363–B392	Voltage-gated K Channels I
B393–B408	TRP Channels I
B409–B427	Ion Channel Regulatory Mechanisms I
B428–B443	Cardiac Muscle Regulation I
B444–B471	Kinesins, Dyneins, and Other Microtubule-based Motors
B472–B494	Cell Mechanics, Mechanosensing, and Motility I
B495–B515	Membrane Pumps, Transporters, and Exchangers I
B516–B528	Emerging Techniques and Approaches
B529–B559	Molecular, Cellular, and Systems Neuroscience
B560–B589	Molecular Dynamics I
B590–B613	Single-Molecule Spectroscopy
B614–B639	Force Spectroscopy and Scanning Probe Microscopy
B640–B668	Micro- and Nanotechnology I

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Protein Structure and Conformation I (Boards B1-B27)

221-Pos Board B1
CHASING UNFOLDING INTERMEDIATES OF IG LIGHT CHAINS WITH RESIDUAL STRUCTURES THAT COULD FIT IN AN AMYLOID CORE. **Gilberto Valdes-Garcia**, Cesar Millan-Pacheco, Nina Pastor

222-Pos Board B2 **International Travel Awardee**
BACKBONE DYNAMICS MODULATES THE AMYLOIDOGENIC PROPENSITY OF TRANSTHYRETIN THROUGH NON-NATIVE INTERMEDIATES. **Aritra Bej**, Jitendra K. Das, Shyam S. Mall, Sujoy Mukherjee

223-Pos Board B3
SELF-REPLICATION OF TRANSTHYRETIN AMYLOID AGGREGATES FROM NATIVE TETRAMERS IN VITRO. **Mentor Mulaj**, Tatiana Miti, Martin Muschol

224-Pos Board B4
SAS PROFILE CORRELATIONS REVEAL THE HIERARCHICAL NATURE OF SAS DATA AND SUGGEST NEW SCORING STRATEGIES. **Michael Nilges**, Yannick G. Spill

225-Pos Board B5
COMPUTATIONAL MODELING OF BETA-FIBRILS. **Hamed Tabatabaei Ghomi**, Elizabeth M. Topp, Markus M. Lill

226-Pos Board B6
THE RESVERATROL DERIVATIVE PICEATANNOL ALTERS THE CONFORMATION OF ALZHEIMER'S DISEASE ASSOCIATED Aβ PROTEIN AGGREGATES. **Yiying Wang**, Melissa A. Moss

227-Pos Board B7
EFFECT OF HYDROPHOBIC RESIDUES ON INTERFACIAL FIBRILLIZATION KINETICS. **Samantha McBride**, Chris Tilger, Amir Hirsa

228-Pos Board B8
AGGREGATION PROPENSITY OF PRION IS KINETICALLY CONTROLLED BY INTRAMOLECULAR DIFFUSION OF PROTEIN CHAIN. **Kinshuk R. Srivastava**, Lisa J. Lapidus

229-Pos Board B9
PROBING TEMPERATURE DEPENDENT CONFORMATION CHANGE OF CALMODULIN PROTEIN USING MOLECULAR DYNAMICS SIMULATIONS. **Sunita Negi**

230-Pos Board B10
UNDERSTANDING FORCE-FIELD BIAS IN PIN1WW. **Alexandra Iuga**

231-Pos Board B11
"PUSH AND PULL" HYPOTHESIS TO UNIFY THE PHYSICAL AND CHEMICAL UNFOLDING OF PROTEINS. **Guilherme A. de Oliveira**, Jerson L. Silva

232-Pos Board B12
PROBE THE HEME IRON LIGAND AND CONFORMATIONAL CHANGE OF MISFOLDED STATES OF CYTOCHROME C THROUGH EPR SPECTROSCOPY. **Qing Huang**, Zhigang Ke, Guohua Yao, Shanshan Ma, Jonathan Soffer

233-Pos Board B13
CONSTANT PH SIMULATIONS WITH THE DOUBLE RESERVOIR PH REPLICA EXCHANGE. **Ana Damjanovic**, Benjamin T. Miller, Asim Okur, Bertrand Garcia-Moreno, Bernard R. Brooks

234-Pos Board B14
DETERMINANTS OF DOMAIN SWAPPING IN STAPHYLOCOCCAL NUCLEASE. **Meredith Peck**, Ilaria Caturegli, Jamie L. Schlessman, Aaron Robinson, Bertrand Garcia-Moreno E.

235-Pos Board B15
MOLECULAR BASIS OF TETRAMERIZATION AND PH-GATING IN THE KCSA POTASSIUM CHANNEL CYTOPLASMIC DOMAIN. Guy Kamnesky, Orel Hirschhorn, Hadassa Shaked, Jingfei Chen, Lishan Yao, **Jordan H. Chill**

236-Pos Board B16
CHARACTERIZING A NEW METAL BINDING SITE IN S100B. **Zephan Melville**, Kristen Varney, Michael Cavalier, Sean Stowe, Dylan Weber, Eric Toth, David Weber

237-Pos Board B17
NMR CHARACTERIZATION OF AN UNUSUAL 37 KDA EPIMERIZATION DOMAIN OF YERSINABACTIN SYNTHETASE. **Scott R. Nichols**, Dominique P. Frueh

238-Pos Board B18
FIBRINOGEN HYDRODYNAMIC PROPERTIES FROM NMR-DIFFUSION STUDIES. **Rustem I. Litvinov**, Bulat Z. Idiyatullin, Dilyafruz R. Bakirova, Dzhigangir A. Faizullin, Rauf H. Kurbanov, John W. Weisel, Yuriy F. Zuev

239-Pos Board B19
SITE-RESOLVED MEASUREMENTS OF PROTEIN HYDRATION DYNAMICS. **Bryan S. Marques**, Christine Jorge, Nathaniel V. Nucci, Bertrand E. Garcia-Moreno, A. Joshua Wand

240-Pos Board B20
INTERNAL CAVITIES AND THEIR ROLE AS DETERMINANTS OF PRESSURE UNFOLDING OF PROTEINS. **Jose A. Caro**, Mariano Dellarole, Martin Fossat, Jamie L. Schlessman, Christian Roumestand, Catherine A. Royer, Bertrand Garcia-Moreno E

241-Pos Board B21
CRYSTAL STRUCTURES OF STREPTOCOCCUS PYOGENES CAS2 PROTEIN AT VARIOUS PH CONDITIONS. **Ugeene Jeong**

242-Pos Board B22
CRYSTAL STRUCTURES OF STREPTOCOCCUS PYOGENES AND XANTHOMONAS ORYZAE CAS5D PROTEINS. **Donghyun Ka**, Euiyoung Bae

243-Pos Board B23
UNDERSTANDING STRUCTURAL AND DYNAMIC EFFECTS INDUCED BY KEY COMPONENTS OF THE HCV POLYMERASE REPLICATION COMPLEX. **Ester Sesmero**, Ian F. Thorpe

244-Pos Board B24
MODELING MACROMOLECULAR BODIES USING 3D MEDIAL AXIS TRANSFORMS AND NORMAL MODE ANALYSIS. Lance Edens, Adam Goler, Suhyun Yoon, James A. Brozik, **David J. Keller**

245-Pos Board B25
SIMULATING PROTEIN AND NUCLEIC ACID DYNAMICS ON THE MICROSECOND TO MILLISECOND TIMESCALE. **Hai Nguyen**, James Maier, He Huang, Victoria Perrone, Alberto Perez, Carlos Simmerling

246-Pos Board B26 **Education Travel Awardee**
ENVIRONMENTAL AND MUTATION EFFECTS ON THE FOLDING AND DNA-BINDING OF THE PRIMARY DNA RECOGNITION SUBDOMAIN OF SLEEPING BEAUTY TRANSPOSASE. **Gage Leighton**, Tatiana Konnova, Irina Nesmelova

247-Pos Board B27
CPSF30, A NOVEL NON-CLASSICAL ZINC FINGER PROTEIN THAT UTILIZES IRON & ZINC COORDINATION FOR RNA RECOGNITION. **Geoffrey Shimberg**, Jamie Michalek, Andria Rodrigues, Timothy Stemmler, Sarah Michel

Protein Folding and Chaperones (Boards B28-B45)

248-Pos Board B28
TRANSITION PATH TIMES IN PROTEIN FOLDING STUDIED BY STRUCTURE-BASED SIMULATION. **Mashiho Ito**, Shoji Takada

249-Pos Board B29
FOLDING RATES FROM THERMODYNAMICS SIMULATIONS: APOAZURIN AS AN EXAMPLE. **Dirar M. Homouz**, Margaret S. Cheung

250-Pos Board B30
BARRIERLESS TRANSITION IDENTIFIED DURING FOLDING OF BARSTAR BY USING TIME-RESOLVED FRET FROM 5-FLUROTRYPTOPHAN. **Guruswamy Krishnamoorthy**, Anju Yadav, Jayant Udgaonkar

251-Pos Board B31
DEVELOPMENT OF THE LINE CONFOCAL SYSTEM FOR THE SINGLE MOLECULE TRACKING OF FAST FOLDING DYNAMICS OF PROTEINS. **Hiroyuki Oikawa**, Kiyoto Kamagata, Munehito Arai, Atsuhito Fukasawa, Hiroaki Yokota, Toru Ide, Satoshi Takahashi

252-Pos Board B32
COILED COIL PROBES CAPTURE THE MECHANICAL UNFOLDING PATHWAY OF A LARGE PROTEIN. **Qing Li**, Zackary N. Scholl, Piotr E. Marszalek

253-Pos Board B33
FAST CLOSURE OF LONG LOOPS AT THE INITIATION OF FOLDING OF GLOBULAR PROTEINS STUDIED BY FRET BASED METHODS. **Elisha Haas**

254-Pos Board B34
BASIC RESIDUE AT POSITION 14 IS NOT REQUIRED FOR FAST ASSEMBLY AND DISASSEMBLY KINETICS IN NEURAL CADHERIN. **Nagamani Vunnam**, Nathan I. Hammer, Susan Pedigo

255-Pos Board B35
EFFECTS OF CROWDING AGENTS AND VOLUME EXCLUSION ON AMYLOID BETA FIBRILLATION. **Joe Hakim**, Santiago Schnell

256-Pos Board B36
ENTHALPY MEDIATED PROTEIN STABILIZATION BY MACROMOLECULAR CROWDING. **Michael Senske**, Lisa Törk, Benjamin Born, Martina Havenith, Christian Herrmann, Simon Ebbinghaus

257-Pos Board B37
CROWDING AND THE ORIGIN OF ENTHALPIC DEPLETION FORCES IN PROTEIN INTERACTIONS. **Daniel Harries**, Liel Sapir

258-Pos Board B38
PROTEIN-PROTEIN INTERACTIONS AFFECT NATIVE STATE STABILITY IN CROWDED ENVIRONMENTS. **Alan E. van Giessen**, Bryanne Macdonald, Shannon McCarley, Sundus Noeen, Rabeb Layouni

259-Pos Board B39
THERMALLY INDUCED STRUCTURAL CHANGES IN AN ARMADILLO REPEAT PROTEIN SUGGEST A NOVEL THERMOSENSOR MECHANISM IN A MOLECULAR CHAPERONE. Paul Nicholls, Paul Bujalowski, Jose Barral, **Andres Oberhauser**

260-Pos Board B40
CCT5: A MODEL PROTEIN FOLDING MACHINE. **Kelly M. Knee**, Dipali Patel, Oksana Sergeeva, John J. Kelly, Jay M. Janz, Jonathan A. King, Wyatt Yue, Christine Bulawa

261-Pos Board B41
HOW DO GROUP II CHAPERONINS DISTINGUISH THEIR PARTIALLY FOLDED SUBSTRATES FROM THE NATIVE STATES? **Jonathan A. King**, Oksana Sergeeva, Kelly M. Knee

262-Pos Board B42
REAL TIME NMR FOLDING STUDY OF THE HUMAN GAMMA D CRYSTALLIN IN THE PRESENCE OF METAL IONS. **Lina Rivillas-Acevedo**, Liliana Quintanar, Jonathan King, Carlos Amero

263-Pos Board B43
MODULATION OF THE α–CRYSTALLIN CHAPERON ACTIVITY INDUCED BY CHANGES IN THE EXPOSED SURFACE. **Marco De Spirito**, Michela Chiarpotto, Gabriele Ciasca, Giuseppe Maulucci, Valentina Palmieri, Massimiliano Papi

264-Pos Board B44
CHAPERONES RESCUE LUCIFERASE FOLDING BY SEPARATING ITS DOMAINS. **Zackary N. Scholl**, Weitao Yang, Piotr Marszalek

265-Pos Board B45 **EDUCATION TRAVEL AWARDEE**
INTER-DOMAIN DYNAMICS OF A NOVEL CHAPERONE ENABLES EFFECTIVE CAPTURE OF MEMBRANE PROTEIN SUBSTRATES. **Fu-Cheng Liang**, Camille McAvoy, Samantha Piszkiewicz, Gerard J. Kroon, Maria Yamout, Peter Wright, Shu-ou Shan

Protein-Small Molecule Interactions I (Boards B46-B66)

266-Pos Board B46
DETERMINATION OF BIOMOLECULAR INTERACTIONS USING MICROSCALE THERMOPHORESIS. **Nicole Bouley Ford**

267-Pos Board B47
RATIONAL DESIGN OF SURFACE MODIFIED NANOPARTICLES FOR MODULATION OF AMYLOID BETA AGGREGATION. **Nicholas P. van der Munnik**

268-Pos Board B48
PROBING THE DEPENDENCE OF PH ON SUGAR BINDING AND PROTEIN STRUCTURE IN A POLYSACCHARIDE LYASE. Sook Wong, **Jeffery B. Klauda**

269-Pos Board B49
PROBING THE ROLE OF CONFORMATIONAL ENTROPY IN PROTEIN-INHIBITOR BINDING. **Kyle Harpole**, Senthil Kumar Ganesan, Wolfgang Peti, A. Joshua Wand

270-Pos Board B50
LIGAND DISCOVERY FOR THE ALANINE-SERINE-CYSTEINE TRANSPORTER (ASCT2, SLC1A5) FROM HOMOLOGY MODELING AND VIRTUAL SCREENING. **Claire Colas**, Christoph Grewer, Armanda Gameiro, Thomas Albers, Kurnvir Singh, Nicholas J. Otte, Helen Shere, Bonomi Massimiliano, Jeff Holst, Avner Schlessinger

271-Pos Board B51
THERMODYNAMIC PROPERTIES OF ELP-LABELLED DOXORUBICIN, A DRUG DELIVERY SYSTEM. **Valeria Zai-Rose**

272-Pos Board B52
UNDERSTANDING THE FUNCTION OF A PRO-ANGIOGENIC POLYPEPTIDE HFGF-1 WITH A CANCER INHIBITOR IMATINIB. **Tulsi Modi**, Oluwadamilola Filani, Jason Payne, Raja Murthy

273-Pos Board B53
A SHARED BINDING SITE FOR PROPOFOL AND THIOPENTAL IN ELIC. **Monica N. Kinde**, Weiming Bu, Edom Seyoum, Qiang Chen, Marta M. Wells, David D. Mowrey, Roderic G. Eckenhoff, Yan Xu, Pei Tang

274-Pos Board B54
CRYSTAL VIEW OF ANESTHETICS AND ALCOHOLS BOUND IN THE PORE OF ELIC. **Qiang Chen**, Monica N. Kinde, Aina E. Cohen, Pei Tang, Yan Xu

275-Pos Board B55
ANALYSIS OF ANTIFOLATE DRUGS WITH DISEASE TISSUE SPECIFICITY. **Siobhan M. Deis**, Charles E. Dann III

276-Pos Board B56
PKA-DEPENDENT POTENTIATION MECHANISMS OF HUMAN CFTR ACTIVITY. **Guangyu Wang**

277-Pos Board B57
KINASE STRUCTURAL DYNAMICS ENABLES TIGHT AND SELECTIVE BINDING OF INHIBITORS. **Roman V. Agafonov**, Chris Wilson, Vanessa Buosi, Renee Otten, Dorothee Kern

278-Pos Board B58 **EDUCATION TRAVEL AWARDEE** **CPOW MID-CAREER TRAVEL AWARDEE**
GLUTATHIONE REDUCTASE OF *PLASMODIUM FALCIPARUM* AS AN ANTIMALARIAL DRUG TARGET OF METHYLENE BLUE. **Socheata Lim**, Judith H. Prieto

279-Pos Board B59
EFFECTS OF MOLECULAR CROWDING ON THE BINDING AFFINITY OF DIHYDROFOLATE FOR DIHYDROFOLATE REDUCTASE. **Michael R. Duff**, Elizabeth E. Howell

280-Pos Board B60
QUANTIFYING THE INFLUENCE OF THE CROWDED CYTOPLASM ON SMALL BIOMOLECULE DIFFUSION VIA HOMOGENIZATION THEORY. **Peter M. Kekenes-Huskey**, Caitlin E. Scott

281-Pos Board B61
SPECIFIC OR GENERAL - IT IS ALL ABOUT SOLUTE INTERACTIONS WITH THE PORE. **Ekaterina M. Nestorovich**, Sergey M. Bezrukov

282-Pos Board B62
USING SEDIMENTATION VELOCITY TO INVESTIGATE THE NUCLEOTIDE-LINKED ASSEMBLY OF E. COLI CLPA. **Ryan P. Stafford**, Aaron L. Lucius

283-Pos Board B63
MACROMOLECULAR CROWDER AND LIGAND COMPETE FOR THE CLOSED DOMAIN CLEFT OF MALTOSE BINDING PROTEIN. **Archishman Ghosh**, Huan-Xiang Zhou

284-Pos Board B64
CHARACTERIZATION OF THE CALCIUM-BINDING AND PEPTIDE-BINDING PROPERTIES OF ARRHYTHMOGENIC CALMODULIN MUTANTS. **Shane D. Walton**, Norma M. Elizaga, Hsiang-Ting Ho, Jalal K. Siddiqui, Andrew J. O'Neil, Bin Liu, Sandor Gyorke, Jonathan P. Davis

285-Pos Board B65
LIPOYLATION MECHANISM OF P. FALCIPARUM MITOCHONDRIAL PROTEINS. **Alfredo J. Guerra**, Gustavo A. Afandor, Russell P. Swift, Sean T. Prigge

286-Pos Board B66
UNDERSTANDING THE MOLECULAR DETERMINANTS OF CAPSAICIN MODE OF ACTION. **Khaled M. Elokely**, Eugene Palovack, Lucie Delemotte, Vincenzo Carnevale, Michael L. Klein

Protein Dynamics and Allostery I (Boards B67-B88)

287-Pos Board B67
FORMATION AND DEGRADATION OF INTERMEDIATE HEMOGLOBIN POLYMERS ARE RESPONSIBLE FOR THE COOPERATIVITY OF OXYGEN BINDING ISOTHERMS. **Enrico Bucci**, Stefania Pucciarelli, Mauro Angeletti

288-Pos Board B68
ROLE OF IONIC STRENGTH AND THE BOHR EFFECT IN MODULATING THERMODYNAMIC PROFILES ASSOCIATED WITH CO ESCAPE IN RICE NON-SYMBIOTIC HEMOGLOBIN 1. **David Butcher**, Jaroslava Miksovska

289-Pos Board B69
THE "CAGED" STATE, THE TRANSITION STATE OF THE REGULATION OF OXYGEN-AFFINITY IN HEMOGLOBIN. **Takashi Yonetani**, Kenji Kanaori

290-Pos Board B70
UNDERSTANDING THERMODYNAMICS OF CONFORMATIONAL CHANGE IN THE F-ATPASE. **Nicholas Leioatts**, Helmut Grubmüller

291-Pos Board B71
KINETIC CONTROL OF O2 REACTIVITY IN H-NOX DOMAINS. **Abdelkrim Benabbas**, Yuhan Sun, Weiqiao Zeng, Sandhya Muralidharan, Elizabeth Boon, Paul Champion

292-Pos Board B72
PROBING FLEETING INTERACTIONS IN LARGE AND DYNAMIC NONRIBOSOMAL PEPTIDE SYNTHETASES WITH NOVEL NMR METHODS. **Dominique P. Frueh**, Andrew C. Goodrich, Bradley J. Harden, Scott R. Nichols, Subrata H. Mishra

293-Pos Board B73 **EDUCATION TRAVEL AWARDEE**
VISUALIZING THE INTER-DOMAIN MOTIONS OF A PATHOGENIC PROTEIN USING SPARSE RDC DATA. **Yang Qi**, Jeffrey W. Martin, Anthony Yan, Francois Thelot, Bruce R. Donald, Terrence G. Oas

294-Pos Board B74
MAPPING THE CONFORMATIONAL DYNAMICS OF THE SCAFFOLD PROTEIN PSD-95. **Claus A.M. Seidel**, Jakub Kubiak, Suren Felekyan, Daniel Rohrbeck, James J. McCann, Mark E. Bowen

295-Pos Board B75 CPOW MID-CAREER TRAVEL AWARDEE
PROBING THE DOMAIN MOTIONS OF AN OLIGOMERIC PROTEIN FROM DEEP-SEA HYPERTHERMOPHILE BY NEUTRON SPIN ECHO. Debsindhu Bhowmik, Gurpreet Kaur Dhindsa, Andrew J. Rusek, Kurt Van Delinder, Utsab Shrestha, Joseph D. Ng, Melissa Sharp, Laura R. Stingaciu, **Xiang-qiang Chu**

296-Pos Board B76
THE MECHANISM OF POPULATION SHIFTING AMONG TRANSITION STATES OF ADENYLATE KINASE. **Yujing Wang**, Emre Onuk, Lee Makowski

297-Pos Board B77 CPOW TRAVEL AWARDEE
MOLECULAR MECHANISM OF RUTHENIUM AND GOLD ANTICANCER AGENTS IN THE ALLOSTERIC REGULATION OF THE HISTONE PROTEINS OF CHROMATIN. **Giulia Palermo**, Tina Riedel, Curt Alexander Davey, Paul Joseph Dyson, Ursula Rothlisberger

298-Pos Board B78
CHARACTERIZING NUCLEOTIDE DEPENDENT ALLOSTERY IN G-PROTEINS WITH MOLECULAR DYNAMICS AND NORMAL MODE ANALYSIS. **Xin-Qiu Yao**, Lars Skjærven, Barry J. Grant

299-Pos Board B79
THE EFFECT OF CRYSTAL CONTACT FORCES ON PROTEIN INTRAMOLECULAR DYNAMICS. **Andrea Markelz**, Katherine Niessen, Mengyang Xu

300-Pos Board B80
THERMODYNAMIC AND DYNAMIC BASIS FOR THE BROADENED LIGAND SPECIFICITY OF A TIAM2 PDZ DOMAIN MUTANT. **Ernesto J. Fuentes**, Xu Liu, Lisa C. Golden, Liping Yu

301-Pos Board B81
RELATIVE MECHANICAL FLEXIBILITY OF UBIQUITIN FAMILY PROTEINS: A STUDY USING ELASTIC NETWORK MODEL. **Ranja Sarkar**, Hemachandra Kotamarthi, A.S.R Koti, Ravi Venkatramani

302-Pos Board B82
MOTION AND CONFORMATIONAL ENTROPY IN PROTEIN FUNCTION: CREATION OF AN NMR-BASED ENTROPY METER. Vignesh Kasinath, Kyle W. Harpole, Veronica R. Moorman, Kathleen G. Valentine, Kendra K. Frederick, Kim A. Sharp, **Joshua Wand**

303-Pos Board B83
A TOOL SET TO MAP DYNAMIC ALLOSTERIC NETWORKS THROUGH THE NMR CHEMICAL SHIFT COVARIANCE ANALYSIS (CHESCA). Stephen Boulton, Madoka Akimoto, Rajeevan Selvaratnam, Amir Bashiri, **Giuseppe Melacini**

304-Pos Board B84 EDUCATION TRAVEL AWARDEE
PROBING MULTIPLE TIMESCALE DYNAMICS OF PROTEIN KINASE A-INHIBITOR COMPLEXES. **Geoffrey Li**, Jonggul Kim, Frank Chao, Leanna McDonald, Gianluigi Veglia

305-Pos Board B85
LONG-RANGE PROTEIN VIBRATIONS DEPENDENCE ON LIGAND BINDING: RATE PROMOTING MOTIONS. **Katherine A. Niessen**, Edward Snell, Andrea G. Markelz

306-Pos Board B86
RHODOPSIN PHOTOACTIVATION DYNAMICS REVEALED BY QUASI-ELASTIC NEUTRON SCATTERING. **Debsindhu Bhowmik**, Utsab Shrestha, Suchithranga M. d. c. Perera, Udeep Chawla, Eugene Mamontov, Michael F. Brown, Xiang-Qiang Chu

307-Pos Board B87
ROLE OF STRUCTURAL FLEXIBILITY OF CPSRP43 IN BINDING SUBSTRATES DURING POST-TRANSLATIONAL TARGETING. Feng Gao, Alicia D. Kight, Rory C. Henderson, Srinivas Jayanthi, Parth Patel, Robyn L. Goforth, T.K.S. Kumar, Ralph L. Henry, **Colin D. Heyes**

308-Pos Board B88
FLUCTUATIONS WITHIN THE HYDROGEN BOND NETWORK MODULATE COOPERATIVITY ACROSS THE CONFORMATIONAL ENSEMBLE OF PROTEIN STRUCTURES. **Brittany K. Smith**, Donald J. Jacobs, Dennis R. Livesay

Intrinsically Disordered Proteins (IDP) and Aggregates I (Boards B89-B115)

309-Pos Board B89
ANOMALOUS STIFFNESS CHANGES OF TAU PROTEIN IN X-RAY SINGLE MOLECULE OBSERVATIONS. **Masahiro Shimura**, Yuufuku Matsushita, Keigo Ikezaki, Kouhei Ichiyanagi, Tomohiro Miyasaka, Sekiguchi Hiroshi, Yasuo Ihara, Yuji C. Sasaki

310-Pos Board B90
SIMULATION OF THE DISTRIBUTION OF DISORDERED TAU PROTEINS AROUND ITS AMYLOID FIBRILS CORE. Liang Xu, Martin Margittai, Ruth Nussinov, **Buyong Ma**

311-Pos Board B91 MINORITY AFFAIRS TRAVEL AWARDEE
TAU FILAMENT LENGTH DISTRIBUTION REFLECTS END-TO-END ANNEALING. **Carol J. Huseby**, Ralf Bundschuh, Jeff Kuret

312-Pos Board B92
PARAMETER DISTRIBUTION ANALYSIS OF TAU FRAGMENT K18 FIBRILLIZATION. **Eri Nakatani-Webster**, Shaylin L. Higgins, Abhinav Nath

313-Pos Board B93
HOW UNFOLDED IS TAU? **Arash Foroutan**, Anne Skaja Robinson

314-Pos Board B94
DISEASE RELATED POINT MUTATIONS AND SOLUTION CONDITIONS DETERMINE FIBRILLIZATION BEHAVIOR OF α-SYNUCLEIN. **Arshdeep Sidhu**, Ine Segers Nolten, Vinod Subramaniam

315-Pos Board B95
FIBRIL BREAKING ACCELERATES α-SYNUCLEIN FIBRILLIZATION. **Volodymyr V. Shvadchak**, Mireille M.A.E. Claessens, Vinod Subramaniam

316-Pos Board B96
EXPLORING THE PHASE SPACE OF ALPHA-SYNUCLEIN WITH REPLICA EXCHANGE SIMULATIONS. **Marcin A. Nowosielski**, Peter G. Bolhuis

317-Pos Board B97
SINGLE MOLECULE FLUORESCENCE ASSAY OF ALPHA SYNUCLEIN DIMERIZATION. **Zhengjian Lv**, Alexey V. Krasnoslobodtsev, Yuliang Zhang, Daniel Ysselstein, Jean-Christophe Rochet, Scott Blanchard, Yuri L. Lyubchenko

318-Pos Board B98
ALPHA SYNUCLEIN'S ANOMALOUS STRUCTURAL FLUCTUATIONS IN X-RAY SINGLE MOLECULE OBSERVATIONS. **Naruki Hara**, Masahiro Shimura, Yufuku Matsushita, Keigo Ikezaki, Hiroshi Sekiguchi, Yasushi Kawata, Yuji C. Sasaki

319-Pos Board B99
STUDYING α-SYNUCLEIN MISFOLDING THROUGH FÖRSTER RESONANCE ENERGY TRANSFER. **Conor M. Haney**, Rebecca F. Wissner, E. James Petersson

320-Pos Board B100
INVESTIGATING THE TRIMETHYLAMINE N-OXIDE (TMAO) INDUCED STRUCTURE OF α-SYNUCLEIN. **John J. Ferrie**, Rebecca F. Wissner, E James Petersson

321-Pos Board B101
FROM MONOMERS, DIMERS TO OLIGOMERS: HOW METAL IONS REGULATE AMYLOID BETA PORTEINS IN AMYLOID FORMATION? **Liang Xu**, Buyong Ma

322-Pos Board B102
TRANSIENT BINDING OF ZN(II)REDIRECTS AMYLOID BETA PEPTIDE FROM FIBRIL FORMATION. **Astrid Graslund**, Axel Abelein, Jens Danielsson

323-Pos Board B103
SITE-SPECIFIC DYNAMICS OF $A\beta_{1\text{-}23}$ AMYLOID FORMATION AND FIBRILLAR CONFIGURATION USING AN UNNATURAL AMINO ACID. **Deguo Du**, Haiyang Liu, Richard Lantz, Patrick Cosme, Andrew C. Terentis, Ewa P. Wojcikiewicz, Rolando Oyola

324-Pos Board B104 MINORITY AFFAIRS TRAVEL AWARDEE
SURFACE INTERACTIONS RESTRICTS AMYLOID-β PEPTIDES MOVEMENTS RESULTING IN THEIR RAPID SELF-ASSEMBLY INTO β SHEETS; A MOLECULAR DYNAMICS STUDY. **Natnael B. Doilicho**, Karl F. Freed, Esmael J. Haddadian

325-Pos Board B105
BINDING OF Aβ MONOMER TO DMPC BILAYER USING ISOBARIC-ISOTHERMAL REPLICA EXCHANGE MOLECULAR DYNAMICS. **Christopher Lockhart**, Dmitri K. Klimov

326-Pos Board B106
AMYLOID-β OLIGOMERS: NOW FOR THE STRUCTURE IN THE MEMBRANE. Debanjan Bhowmik, Sudipta Maiti, Kaustubh Mote, Bappaditya Chandra, Perunthiruthy Madhu

327-Pos Board B107
SMALLER LIPOSOMES ACCELERATE THE FIBRILLATION OF AMYLOID β (1-40). **Mayu S. Terakawa**

328-Pos Board B108
AMYLOID FIBRIL NUCLEATION IN REVERSE MICELLES. **Gozde Eskici**, Paul Axelsen

329-Pos Board B109
MICROTUBULE NETWORKS MODULATE CELLULAR SUSCEPTIBILITY TO Aβ-MEDIATED TOXICITY. Nicole Shamitko-Klingensmith, Jonathan W. Boyd, **Justin Legleiter**

330-Pos Board B110
RECONFIGURATION OF THE ALZHEIMER'S PEPTIDE KINETICALLY CONTROLS AGGREGATION IN ALZHEIMER'S DISEASE. Srabasti Acharya, **Lisa J. Lapidus**

331-Pos Board B111 EDUCATION TRAVEL AWARDEE
THE ABILITY OF POLYPHENOLS TO REDUCE Aβ-INDUCED APOPTOSIS ASSOCIATED WITH ALZHEIMER'S DISEASE. **Kayla M. Pate**, McCall Rogers, Melissa Moss

332-Pos Board B112
SELF-PROPAGATIVE REPLICATION OF AMYLOID-β OLIGOMERS IN ALZHEIMER DISEASE. **Dexter N. Dean**, Amit Kumar, Kayla M. Pate, Melissa A. Moss, Vijayaraghavan Rangachari

333-Pos Board B113
ALZHEIMER'S PROTECTIVE A2T MUTATION CHANGES THE CONFORMATIONAL LANDSCAPE OF THE Aβ1-42 MONOMER DIFFERENTLY THAN DOES THE A2V MUTATION. **Payel Das**

334-Pos Board B114
THE EFFECT OF PEPTOIDS ON Aβ AGGREGATION AND NF-κB ACTIVATION IN ALZHEIMER'S DISEASE. Kelly Moore, **Lauren M. Wolf**, J. Phillip Turner, Melissa A. Moss, Shannon Servoss

335-Pos Board B115
EFFECTS OF CARBON NANOPARTICLES ON THE AGGREGATION OF ALZHEIMERS BETA-AMYLOID PEPTIDE. Yunxiang Sun, Luogang Xie, Dongdong Lin, Xinju Yang, **Guanghong Wei**

DNA Replication, Recombination, and Repair (Boards B116-B136)

336-Pos Board B116
SINGLE MOLECULE STUDIES OF RPA'S SEQUENTIAL BINDING TO SSDNA REVEALS A HIGHLY STIFF AND STABLE STATE INDUCED BY THE BINDING OF ZINC. **Jin Chen**, Shimin Le, Walter J. Chazin, Jie Yan

337-Pos Board B117
STUDIES OF THE FTSK DNA TRANSLOCASE USING TWO-COLOR TETHERED FLUOROPHORE MOTION. **Peter F J May**, Pawel Zawadzki, Lidia K. Arciszewska, David Sherratt, Achillefs N. Kapanidis

338-Pos Board B118
UNRAVELING THE INTERPLAY BETWEEN SINGLE-STRANDED DNA-BINDING PROTEIN, DNA POLYMERASE AND SINGLE-STRANDED DNA. **Jordi Cabanas Danes**, Tjalle P. Hoekstra, Iddo Heller, Erwin J.G. Peterman, Gijs J.L. Wuite

339-Pos Board B119
MECHANISTIC INSIGHTS OF HEXAMERIC HELICASE FUNCTION PROVIDED BY SINGLE-MOLECULE FRET. **Sean M. Carney**, Sanford Leuba, Michael Trakselis

340-Pos Board B120
EFFECTS OF DNA STRUCTURAL AND TOPOLOGICAL CONSTRAINTS ON HMGA2 BINDING. **Xiaodan Zhao**, Peter Dröge, Jie Yan

341-Pos Board B121
SINGLE-MOLECULE ANALYSIS OF TRANSCRIPTION-COUPLED REPAIR. **Jun Fan**, Nigel Savery, Nicolas Joly, Terence Strick

342-Pos Board B122
INVESTIGATION OF THE TUS-TER BLOCKING EFFICACY DURING THE CHROMOSOME REPLICATION OF LIVE ESCHERICHIA COLI CELLS. **Sriram Tiruvadi Krishnan**, M. Charl Moolman, Roy de Leeuw, Jacob W.J. Kerssemakers, Nynke H. Dekker

343-Pos Board B123
EXTREMOPHILE DNA PHOTOLYASES: DNA REPAIR UNDER EXTREME CONDITIONS. **Sudipto Munshi**, Brittany N. Stroud, Yvonne M. Gindt, Robert J. Stanley

344-Pos Board B124
STRUCTURE AND NANO-MECHANICS OF DNA DURING THE INITIAL STAGES OF METHYL-DIRECTED MISMATCH REPAIR. **Eric A. Josephs**, Piotr E. Marszalek

345-Pos Board B125
DIRECT VISUALIZATION OF DNA REPLICATION CONFLICTS IN THE BACTERIAL CELL. **Sarah Mangiameli**, Houra Merrikh, Paul Wiggins

346-Pos Board B126
RECG INTERACTION WITH THE DNA REPLICATION FORK. THE ROLE OF E. COLI SSB PROTEIN. **Zhiqiang Sun**, Hui Yin Tan, Piero Bianco, Yuri Lyubchenko

347-Pos Board B127
INTERPLAY MUTS WITH β CLAMP ON MISMATCHED DNA. **Jungsic Oh**, Daehyung Kim, Won-Ki Cho, Jiaquan Liu, Slobodan Jergic, Nicholas Dixon, Richard Fishel, Jong-bong Lee

348-Pos Board B128
INFLUENCE OF DNA CONFORMATION AND REPAIR ENZYME ON GUANINE AND 8-OXOGUANINE BASE FLIPPING. **Giuseppe La Rosa**, Martin Zacharias

349-Pos Board B129
ELASTICITY-DRIVEN SINGLE STRANDED GAP CREATION MECHANISM BY AN EXONUCLEASE III/AP ENDONUCLEASE. **Sangmi Jee**, Hyeryeon Im, Hyosang Lee, Gwangrog Lee

350-Pos Board B130
HOW DOES THE REPLICATION MACHINERY DEAL WITH ROADBLOCKS: A SINGLE-MOLECULE INVESTIGATION. **Enrico Monachino**, Ramon A. van der Valk, Slobodan Jergic, Nicholas E. Dixon, Remus Th. Dame, Antoine M. van Oijen

351-Pos Board B131
REAL-TIME RECA FILAMENT DISASSEMBLY IN THE PRESENCE OF RECX MONITORED USING SINGLE-MOLECULE MANIPULATION BY OPTICAL TWEEZERS. **Georgii Pobegalov**, Alexandr Alekseev, Anton Sabantsev, Alexey Melnikov, Mikhail Khodorkovskiy, Dmitry Baitin

352-Pos Board B132
TOWARD ADDING COMPLEXITY IN SINGLE MOLECULE FRET STUDIES OF DNA MISMATCH REPAIR. **Keith Weninger**, Pengyu Hao, Yue Yang, Elizabeth J. Sacho, Ruoyi Qiu

353-Pos Board B133
CARDIOPROTECTIVE EFFECT OF EXERCISE TRAINING IN HEART FAILURE RATS: EXERCISE TRAINING REDUCES OXIDATIVE STRESS INDUCED NUCLEAR GENOMIC FRAGMENTATION. **Karin Solvang-Garten**, Morteza Esmaeili, Tone Bathen, Morten Høydal, Muhammad Shakil Ahmed, Håvard Attramdal, Øyvind Ellingsen, Tomas Stølen

354-Pos Board B134
ENHANCED DYNAMICS OF MISMATCHED BASE PAIRS ASSOCIATED WITH MSH2-MSH6 RECOGNITION. **Yan Li**, Manju Hingorani, Ishita Mukerji

355-Pos Board B135
RESOLVING THE KINETIC STATES OF A PROOFREADING DNA POLYMERASE. **Szu-Ning Lin**, Jordi Cabanas Danes, Tjalle P. Hoekstra, Douwe Kamsma, Gerrit Sitters, Martin Depken, Remus T. Dame, Gijs Wuite

356-Pos Board B136
BINDING DYNAMICS OF THE HOLLIDAY JUNCTION WITH YEAST MUTS HOMOLOG MSH4-MSH5. **Sudipta Lahiri**, Manju Hingorani, Ishita Mukerji

Protein-Nucleic Acid Interactions I (Boards B137-B168)

357-Pos Board B137
ELUCIDATING THE TRANSITION DYNAMICS OF HIV-1 REVERSE TRANSCRIPTASE USING SINGLE MOLECULE FRET. **Mahipal Ganji**, Elio Abbondanzieri

358-Pos Board B138
NUCLEOTIDES LINKAGE ANALYSIS OF RECBCD DNA HELICASE. **Vera Gaydar**, Arnon Henn

359-Pos Board B139
SINGLE-MOLCULE STUDIES ON DNA TRANSPORTATION MOTORS WITH COMMON REVOLUTION MECHANISM WITHOUT ROTATION. **Mario Vieweger**, Zhengyi Zhao, Hui Zhang, Peixuan Guo

360-Pos Board B140
SINGLE-MOLECULE STUDY OF DED1 HELICASES USING A HAIRPIN SUBSTRATE. Saurabj Raj, Debjani Bagchi, Josette Banroques, Kyle Tanner, **Vincent Croquette**

361-Pos Board B141
REVOLUTION MOTORS IN CELL FOR TRANSPORTATION OF LENGTHY CHROMOSOME WITHOUT COILING OR TORQUE. **Zhengyi Zhao**, Peixuan Guo

362-Pos Board B142
THE MECHANISM OF ROLLING CIRCLE DNA REPLICATION AND THE ROLES OF INITIATOR PROTEIN REPD. Lesley F. Southerden, **Martin R. Webb**

363-Pos Board B143
COOPERATIVE ACTIVITY OF SARS CORONAVIRUS NSP13 HELICASE CHARACTERIZED BY SINGLE MOLECULE FRET. **Hyeryeon Im**, Sangmi Jee, Gwangrog Lee

364-Pos Board B144
MEASURING THE KINETICS OF RESTRICTION ENDONUCLEASES WITH SINGLE MOLECULE RESOLUTION. **Allen C. Price**, Stefano Gambino, Briana Mousely, Lindsay Cathcart, Janelle Winship, Maximilian Benz

365-Pos Board B145
DYNAMIC CONTROL OF PROCESSIVITY DURING DNA DEGRADATION BY A RING-SHAPED NUCLEASE. Suyeon Park, Jungmin Yoo, **Gwangrog Lee**

366-Pos Board B146
THE EFFECT OF SINGLE-STRANDED DNA BINDING PROTEIN RPA2 ON XPD HELICASE PROCESSIVITY. **Barbara Stekas**, Zhi Qi, Masayoshi Honda, Maria Spies, Yann Chemla

367-Pos Board B147
THE ROLE OF DNA SHAPE IN NUCLEOSOME FORMATION AND POSITIONING. **Joshua P. Lequieu**, Gordon S. Freeman, Juan J. de Pablo

368-Pos Board B148
POLYMORPHISM OF HISTONE TAIL INTERACTIONS IN NUCLEOSOME. **Alexey K. Shaytan**, Grigory A. Armeev, Victor B. Zhurkin, David Landsman, Anna R. Panchenko

369-Pos Board B149 INTERNATIONAL TRAVEL AWARDEE
REAL-TIME ANALYSIS OF ENDOGENOUS NUCLEAR NADH IN DIFFERENTIATING CELLS USING THE SPECTRAL PHASOR APPROACH. **Belinda K. Wright**, Mark R. Jones, Michelle A. Digman, Enrico Gratton

370-Pos Board B150
PLASMID-ENCODED NONCODING RNA REGULATES CHROMOSOMAL GENE EXPRESSION. **Wei-Syuan Wang**, Ya-Chiao Lee, Jogadhenu Syama Sundar Prakash, Sue Lin-Chao

371-Pos Board B151
TRMBL2 PROTEIN FROM THERMOCOCCUS KODAKARENSIS COMPETES WITH HISTONES FOR DNA BINDING AND FORMS FILAMENTOUS NUCLEOPROTEIN COMPLEXES THAT AFFECT DNA STRUCTURAL STATE. **Artem K. Efremov**, Yuanyuan Qu, Hugo Maruyama, Ci J. Lim, Kunio Takeyasu, Jie Yan

372-Pos Board B152
FREE ENERGY PROFILES FOR NUCLEOSOMAL DNA UNWRAPPING. **Hidetoshi Kono**, Shun Sakuraba, Hisashi Ishida

373-Pos Board B153
STUDIES OF THE COMPACTION MECHANISMS OF DNA-BINDING PROTEINS USING HORIZONTAL MAGNETIC TWEEZERS. **Roberto Jr Fabian**, Christopher Tyson, Abhijit Sarkar

374-Pos Board B154
EFFECTS OF CATIONIC RESIDUES AND BASE SEQUENCE IN NUCLEIC ACID BINDING OF HISTONE-DERIVED ANTIMICROBIAL PEPTIDES. **Sukin Sim**, Penny Wang, Brittany Beyer, Mala L. Radhakrishnan, Donald E. Elmore

375-Pos Board B155
EFFECT OF AN OXIDATIVE GUANINE LESION ON NUCLEOSOME STABILITY. **Liana Goehring**, Maggie Klureza, Erika Norabuena, Sara Barnes, Elizabeth Jamieson, Megan E. Nunez

376-Pos Board B156
ELUCIDATION OF DNA PACKAGING AND MISPACKAGING IN SPERM NUCLEI BY X-RAY SCATTERING. James M. Hutchison, James Ritchie, **Donald C. Rau**

377-Pos Board B157
YEAST HMGB PROTEINS BOTH DISRUPT AND COMPACT NUCLEOSOMES. **Ran Huo**, Micah J. McCauley, Nicole Becker, Molly H. Nelson Holte, Uma Muthurajan, Karolin Luger, L James Maher III, Nathan Israeloff, Mark C. Williams

378-Pos Board B158
THE EFFECT OF HU PROTEIN ON LAC-REPRESSOR-MEDIATED DNA LOOPING. **Yan Yan**, Sandip Kumar, Laura Finzi, David D. Dunlap

379-Pos Board B159
USING CONTRAST VARIATION WITH SAXS TO VISUALIZE DNA DISSOCIATION FROM NUCLEOSOME CORE PARTICLES. **Joshua M. Tokuda**, Yujie Chen, Traci Topping, Lisa M. Gloss, Lois Pollack

380-Pos Board B160
EFFECTS OF HISTONE VARIANTS MACROH2A AND H2A.Z ON NUCLEOSOME DYNAMICS. **Samuel Bowerman**, Jeff Wereszczynski

381-Pos Board B161
HISTONE PHOSPHORYLATION COMBINED WITH ACETYLATION DRAMATICALLY INCREASE NUCLEOSOME ACCESSIBILITY. **Matthew S. Brehove**, Tao Wang, Justin North, Yi Luo, Jennifer Ottesen, Karolin Luger, Michael G. Poirier

382-Pos Board B162
GLUCOCORTICOID RECEPTOR-DNA DISSOCIATION KINETICS MEASURED IN VITRO REVEAL EXCHANGE ON THE SECOND TIMESCALE. **Rolando W. De Angelis**, Qin Yang, David L. Bain

383-Pos Board B163
GLOBAL CHARACTERIZATION OF TRANSCRIPTION FACTOR LOCALIZATION AND PARTITIONING IN ESCHERICHIA COLI. **Nathan J. Kuwada**, Paul A. Wiggins

384-Pos Board B164
UNRAVELING THE STRUCTURAL, DYNAMIC, THERMODYNAMIC, AND KINETIC HETEROGENEITY IN DNA SITE RECOGNITION BY STRUCTURALLY HOMOLOGOUS ETS TRANSCRIPTION FACTORS. **Gregory M. K. Poon**, Shuo Wang, Gaofei He, Ana Tolic, Miles H. Linde, James K. Bashkin, W. David Wilson

385-Pos Board B165
CHARACTERIZING THE BINDING LANDSCAPE AROUND DNA: IS DNA A SLIDE? **Ignacia Echeverria**, Garegin A. Papoian

386-Pos Board B166
UNDERSTANDING THE TRANSCRIPTIONAL AND TRANSLATIONAL REGULATORY ROLES OF NON-CLASSICAL NEURAL ZINC FINGER PROTEINS INVOLVED IN THE DEVELOPMENT OF THE NERVOUS SYSTEM. **M. Mohsin Khan**, Sarah L.J. Michel, Marie C. Heffern, Thomas J. Meade, Kellie Hom

387-Pos Board B167
MOLECULAR CROWDING ENHANCES FACILITATED DIFFUSION OF TWO HUMAN DNA GLYCOSYLASES. **Shannen L. Cravens**, Joseph D. Schonhoft, Meng Rowland, Alyssa Rodriguez, James T. Stivers

388-Pos Board B168
KINETIC MECHANISMS OF TARGET LOCATION BY INDUCIBLE TRANSCRIPTION FACTOR EGR-1. **Alexandre Esadze**, Catherine A. Kemme, Anatoly B. Kolomeisky, Junji Iwahara

Membrane Dynamics I (Boards B169-B187)

389-Pos Board B169
HYDRATION-MODULATED COLLECTIVE DYNAMICS OF MEMBRANE LIPIDS ARE REVEALED BY SOLID-STATE ^{2}H NMR RELAXATION. **Trivikram R. Molugu**, Soohyun K. Lee, Constantin Job, Michael F. Brown

390-Pos Board B170
SPOT VARIATION FCS IN THE 2D ISING MODEL. **Margaret Burns**, Sarah Veatch

391-Pos Board B171
UNIVERSAL APPROACH TO FRAP ANALYSIS OF ARBITRARY BLEACHING PATTERNS. **Daniel Blumenthal**, Leo Goldstien, Michael Edidin, Levi A. Gheber

392-Pos Board B172
FASTER CALCULATIONS OF DIFFUSION CONSTANTS FOR LIPIDS, WATER AND PROTEINS. Michael Lerner, **Gwendolyn A. Claflin**, Rodoula Kyvelou-Kokkaliaris, Hoang Tran

393-Pos Board B173
THE EFFECT OF LIPID BILAYERS ON MEMBRANE-BOUND PROTEINS. **Kayla Sapp**, Lutz Maibaum

394-Pos Board B174
STRUCTURAL AND DYNAMICAL PROPERTIES OF POPC BILAYERS SUPPORTED ON NANOPOROUS SUBSTRATES. **Nalvi D. Duro**, Marion Gjika, Larry Scott, Sameer Varma

395-Pos Board B175
STUDY OF MIN PROTEIN-INDUCED MEMBRANE WAVES IN VITRO. **Yu-Ming Tu**, Ling Chao, Yu-Ling Shih, Hsiao-Lin Lee

396-Pos Board B176
RAPID ASSESSMENT OF INTRACYTOPLASMIC MEMBRANES IN BACTERIA BY FLUORESCENCE MICROSCOPY. **Kyle Whiddon**, Michael C. Konopka

397-Pos Board B177
HOW RELIABLE ARE MOLECULAR DYNAMICS SIMULATIONS OF MEMBRANE ACTIVE ANTIMICROBIAL PEPTIDES. Yukun Wang, Jakob P Ulmschneider, **Shidi Zhao**

398-Pos Board B178
DYNAMIC STRUCTURAL/AMPHIPHILIC "PORTRAIT" OF BIOMEMBRANES AS THEIR FUNDAMENTAL PROPERTY RELEVANT TO FUNCTION: RESULTS OF ATOMISTIC SIMULATIONS. **Roman G. Efremov**, Darya V. Pyrkova, Nikolay A. Krylov, Pavel E. Volynsky, Anton A. Polyansky

399-Pos Board B179
MONTE CARLO SIMULATIONS OF PHASE-SEPARATED MEMBRANES. **Thomas Torng**

400-Pos Board B180
PLASMA MEMBRANE NANOPLATFORMS ARE DISSOLVED BY OXIDIZED PHOSPHOLIPIDS. **Mario Brameshuber**, Eva Sevcsik, Christina Manner, Benedikt Rossboth, Albin Hermetter, Gerhard J. Schuetz

401-Pos Board B181
HIGH-SPEED SINGLE-PARTICLE TRACKING REVEALS LIPID DYNAMICS IN HETEROGENEOUS RAFT-CONTAINING MEMBRANES. Ying-Hsiu Lin, Hsiao-Mei Wu, **Chia-Lung Hsieh**

402-Pos Board B182
NATURE AND SIZE OF GANGLIOSIDE GM1 NANO-DOMAINS IN LIPID BILAYERS AS REVEALED BY ADVANCED TIME-RESOLVED FLUORESCENCE TECHNIQUES. **Radek Sachl**, Mariana Amaro, Alena Koukalova, Gockan Aydogan, Ilya Mikhalyov, Jana Humpolickova, Martin Hof

403-Pos Board B183
TRANSIENT EFFECT OF CALCIUM INFLUX ON PIP_2 CLUSTERS AND CHOLESTEROL-STABILIZED NANO-DOMAINS IN THE INNER PLASMA MEMBRANE LEAFLET OF INTACT CELLS. **Weixiang Jin**, Arnd Pralle

404-Pos Board B184
MEMBRANE CYTOSKELETAL CHANGES DURING IN-SITU TO INVASIVE PROGRESSION OF BREAST CANCER CELLS OBSERVED BY MULTI-SCALE DIFFUSION ANALYSIS OF TRANSMEMBRANE PROTEINS. **Muhammed F. Simsek**, Arnd Pralle

405-Pos Board B185
'IN VIVO IN SILICO': EFFECTS OF MEMBRANE COMPLEXITY ON PROTEIN-LIPID INTERACTIONS, LIPID NANO-DOMAINS AND CURVATURE. **Heidi Koldsø**, Mark S. P. Sansom

406-Pos Board B186
MORPHOLOGICAL MODIFICATIONS OF THE EARLY SECRETORY PATHWAY IN DIFFERENTIATING SKELETAL MUSCLE CELLS. **Emiliana Giacomello**, Paolo Ronchi, Rainer Pepperkok

407-Pos Board B187
PHASE TRANSITION AND FORMATION OF TRANSMEMBRANE PORE IN STRETCHED PHOSPHOLIPID BILAYER INCLUDING CHOLESTEROL: MOLECULAR DYNAMICS SIMULATION. **Taiki Shigematsu**, Kenichiro Koshiyama, Shigeo Wada

Membrane Active Peptides and Toxins I (Boards B188-B205)

408-Pos Board B188
CHARACTERIZING THE SHIGA TOXIN-RECEPTOR INTERACTION. **Swati Venkat**, Mathias Lösche, Adam D. Linstedt

409-Pos Board B189
COMPARATIVE ANALYSIS OF BLOCK BY POLY-ETHYLENEGLYCOL OF CANONICAL AND LOW-CONDUCTANCE OLIGOMERIC ASSEMBLIES OF ALPHA-HEMOLYSIN: MECHANISTIC IMPLICATIONS. Ekaterina Zaitseva, Gerhard Baaken, **Jan C. Behrends**

410-Pos Board B190
AEROLYSIN BLOCK BY SINGLE POLYETHYLENEGYCOL OLIGOMERS: MASS SENSITIVITY AND VOLTAGE DEPENDENCE. **Gerhard Baaken**, Laurent Bacri, Juan Pelta, Abdelghani Oukhaled, Jan C. Behrends

411-Pos Board B191
POLYAMIDOAMINE DENDRIMERS AS UNIVERSAL PORE-BLOCKING BINARY TOXIN INHIBITORS. **Nnanya U. Kalu**, Veronica Wright, Philip Förstner, Fabienne Bayer, Susanne Felsen, Christina Förtsch, David Y. W. Ng, Tanja Weil, Holger Barth, Ekaterina M. Nestorovich

412-Pos Board B192
IMAGING THE ASSEMBLY OF PERFRINGOLYSIN O. **Michael J. Senior**, Alejandro P. Heuck, Robert J. C. Gilbert, Mark I. Wallace

413-Pos Board B193
KEY RESIDUES IN VIBRIO CHOLERAE CYTOLYSIN INVOLVED IN MEMBRANE BINDING. **Swastik De**, Adele Bubnys, Jinsol Hyun, Rich Olson

414-Pos Board B194
PHYSICOCHEMICAL MEMBRANE PROPERTIES REVEAL A STRUCTURAL ELEMENT INVOLVED IN THE ADAPTATION OF ACTINOPORINS TO CHOLESTEROL-RICH MEMBRANES. **Koldo Morante**, José Manuel Martínez Caaveiro, Koji Tanaka, Juan Manuel González-Mañas, Kouhei Tsumoto

415-Pos Board B195
TARANTULA TOXINS USE COMMON SURFACES FOR INTERACTING WITH KV AND ASIC ION CHANNELS. Maryam Zamanian, Chanhyung Bae, **Kanchan Gupta**, Mirela Milescu, Dmitriy Krepkiy, Drew Tilley, Jon Sack, Vladimir Yarov-Yarovoy, Jae II Kim, Kenton Swartz

416-Pos Board B196
TRANSLOCATION OF CATIONIC AMPHIPATHIC PEPTIDES ACROSS PHOSPHOLIPID BILAYERS. **Paulo F. Almeida**

417-Pos Board B197
ARGININE-GLYCOSAMINOGLYCAN INTERACTION REGULATES PENETRATION EFFICIENCY OF ARGININE-RICH CELL-PENETRATING PEPTIDES IN BIOLOGICAL MEMBRANE. **Yuki Takechi**, Yuto Yanagisawa, Kazuchika Nishitsuji, Kenji Uchimura, Toru Kawakami, Kohsaku Kawakami, Keiichiro Okuhira, Hiroyuki Saito

418-Pos Board B198
USING ENHANCED SAMPLING MOLECULAR DYNAMICS TECHNIQUES TO PROBE THE THERMODYNAMICS OF PHLIP PEPTIDE INSERTION INTO A MODEL LIPID BILAYER. **Yue Ren**, Blake Mertz

419-Pos Board B199
SPECIFIC DELIVERY OF AURISTATINS TO TUMOR CELLS USING PHLIP. **Kelly Burns**, Matthew Robinson, Damien Thévenin

420-Pos Board B200
THE TRIATOMA VIRUS STRUCTURAL PROTEIN VP4 INDUCES MEMBRANE PERMEABILITY THROUGH DYNAMIC PORES. Rubén Sánchez-Eugenia, Julen Goikolea, David Gil-Cartón, Lissete Sánchez-Magraner, **Diego M A Guérin**

421-Pos Board B201
PREDICTING FUNCTIONAL INTERACTIONS IN THE INFLUENZA HEMAGGLUTININ TRANSMEMBRANE DOMAIN VIA SIMULATION. **Matthew J. Eckler**, Peter M. Kasson

422-Pos Board B202
RANDOMLY SELECTED HYDROPHOBIC PEPTIDES INHIBIT LASSA PSEUDOVIRUS. **Andrew Hoffmann**

423-Pos Board B203
BILAYER PERTURBATION IS A PREDICTIVE PARAMETER FOR ANTIMALARIAL DEVELOPMENT. **Nicole Ramsey**, Olaf Andersen

424-Pos Board B204
PREDICTING DRUG TOXICITY: EARLY DETECTION OF LIKELY FAILURES IN DRUG DEVELOPMENT. **R. Lea Sanford**, Wesley Chao, Jeanne Chiaravalli-Giganti, Antonio Luz, J. Fraser Glickman, Olaf S. Andersen

425-Pos Board B205
UNDERSTANDING THE FUNCTION OF THE CYCLIC ANTIFUNGAL LIPOPEPTIDE FENGYCIN USING ALL-ATOM MD SIMULATION. **Sreyoshi Sur**, Alan Grossfield

Membrane Structure I (Boards B206-B231)

426-Pos Board B206
SCATTERING FROM LATERALLY HETEROGENEOUS VESICLES: AN ANALYTICAL FORM FACTOR FOR MULTIPLE DOMAINS. **Frederick A. Heberle**, Vinicius N.P. Anghel, John Katsaras

427-Pos Board B207
EXPERIMENTAL ASSESSMENT OF TILT-DEPENDENT THERMAL FLUCTUATIONS IN LIPID BILAYERS. **Michael S. Jablin**, Kiyotaka Akabori, John F. Nagle

428-Pos Board B208
STRUCTURAL EFFECTS OF UREA AND TMO ON LIPID BILAYERS. **Sergio S. Funari**, Joana Valerio

429-Pos Board B209
DPPC MONOLAYERS EXHIBIT AN ADDITIONAL PHASE TRANSITION AT HIGH SURFACE PRESSURE. **Chen Shen**, Jorge B. de la Serna, Bernd Struth, Beate Klösgen

430-Pos Board B210
HIGH RESOLUTION STRUCTURE OF THE RIPPLE PHASE OF DMPC BILAYERS. Kiyotaka Akabori, **John F. Nagle**

431-Pos Board B211
CATION EFFECTS ON ZWITTERIONIC LIPID MULTILAYERS. **Merrell A. Johnson**, Soenke Seifert, Horia I. Petrache

432-Pos Board B212
ATOMICALLY DETAILED LIPID BILAYER MODELS FOR THE INTERPRETATION OF SCATTERING DATA. Joseph Fogarty, Jianjun Pan, **Sagar A. Pandit**

433-Pos Board B213
VAN DER WAALS INTERACTIONS OF LIPID MEMBRANES IN HIGHLY POLARIZABLE SOLUTIONS. **Ryan Z. Lybarger**, Horia I. Petrache

434-Pos Board B214
CHELATING AGENT INDUCTION OF MULTIPHASE COEXISTENCE IN LIPID MULTILAYERS. **Michael Weisman**, Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache

435-Pos Board B215
HYDROCARBON THICKNESS DICTATES CHOLESTEROL'S LOCATION, ORIENTATION AND MOTION IN A PHOSPHOLIPID BILAYER. **Drew Marquardt**, Brad Van Oosten, Frederick A. Heberle, Norbert Kucerka, Stephen Wassall, Robert Standaert, John Katsaras, Thad A. Harroun

436-Pos Board B216
MEMBRANE DOMAIN INTERACTIONS BY MONTE CARLO TYPE ANALYSIS OF OSMOTIC STRESS DATA. **Benjamin Kollmitzer**, Peter Heftberger, Heinz Amenitsch, Rudolf Podgornik, John F. Nagle, Georg Pabst

437-Pos Board B217
HOW DO CHOLESTEROL AND SATURATED SPHINGOLIPIDS AFFECT ACYL CHAIN ORDER IN THE FLUID PHASE OF BINARY POPC BILAYERS - A STUDY WITH 1-OLEOYL-2-PROPIONYL-DPH-SN-GLYCERO-3-PHOSPHOCHOLINE. **Oskar Engberg**, Henrik Nurmi, Thomas Nyholm, J.P Slotte

438-Pos Board B218
PARTITIONING OF THE TRANSMEMBRANE PEPTIDE GWALP23 BETWEEN LO AND LD PHASES IN MACRO AND NANOSCALE DOMAINS. NANOMETER-SCALE DOMAINS CAN BE TREATED AS A PHASE. **Thais A. Enoki**, Sarah Kim, Fred A. Heberle, Gerald W. Feigenson

439-Pos Board B219
CELL CYCLE POSITION DETERMINES CRITICAL TEMPERATURES IN PLASMA MEMBRANE VESICLES. **Erin M. Gray**, Sarah L. Veatch

440-Pos Board B220
MOLECULAR AND MECHANICAL MANIPULATION OF MEMBRANE DOMAINS IN PLANAR SUPPORTED BILAYERS. **Rochelle Warner**, Tyler Floden, Ahmed A. Heikal, Erin D. Sheets

441-Pos Board B221 EDUCATION TRAVEL AWARDEE
LIPOPOLYMER CROWDING IN POLYMER-TETHERED LIPID BILAYERS ALTERS LIPID MIXING BEHAVIOR AND PROTEIN SEQUESTRATION IN THE PRESENCE OF RAFT-MIMICKING LIPID MIXTURES. **Yifan Ge**, Jiayun Gao, Amanda P. Siegel, Noor F. Hussain, Rainer Jordan, Christoph A. Naumann

442-Pos Board B222
WHY CHOLESTEROL SHOULD BE FOUND LARGELY IN THE CYTOPLASMIC LEAF OF THE PLASMA MEMBRANE. **Michael Schick**, Ha Giang

443-Pos Board B223
DO GEL PHASE LIPID BILAYERS BEHAVE LIKE EULER ELASTICA? **Patrick M. Diggins**, Zachary McDargh, Markus Deserno

444-Pos Board B224
REVISITING THE LINK BETWEEN LIPID MEMBRANE ELASTICITY AND MICROSCOPIC CONTINUUM MODELS. **M. Mert Terzi**, Kaushik Dayal, Luca Deseri, Markus Deserno

445-Pos Board B225
MOLECULAR LEVEL MODELING OF THE EFFECTS OF CHARGE AND SUGARS ON THE PHASE EQUILIBRIUM OF MODEL LIPID BILAYERS. **Shauna Celeste Kennard**, Mark J. Uline

446-Pos Board B226
EDGE STRUCTURE OF THROUGH PORE IN LIPID MEMBRANE. **Sergey A. Akimov**, Arseniy A. Mukovozov, Oleg V. Batishchev

447-Pos Board B227
BOLALIPID MEMBRANES: ELASTICITY THEORY APPROACH. **Timur R. Galimzyanov**, Petr I. Kuzmin, Sergey A. Akimov

448-Pos Board B228
PHYSICAL PROPERTIES AND MEMBRANE PACKING IN HYBRID ARCHAEOSOMES. **Umme Ayesa**, Parkson L.G. Chong

449-Pos Board B229
TEMPERATURE-DEPENDENT LIPID PHASE TRANSITIONS OCCURRING IN HIGHER ORGANISMS. Norman L. Gershfeld, **Ralph Nossal**

450-Pos Board B230 MINORITY AFFAIRS TRAVEL AWARDEE
THERMOTROPIC BEHAVIOR OF CARDIOLIPIN AND DIMYRISTOYLPHOSPHATIDYLCHOLINE BILAYERS IN THE PRESENCE AND ABSENCE OF CALCIUM. **Kasturi Mitra**, Christine Schwall, Arlene Arlene Albert, Nathan Alder

451-Pos Board B231
LAMELLAR-HEXAGONAL TRANSITION KINETICS EXHIBIT AN EXPONENTIAL DEPENDENCE ON TEMPERATURE. Nathan L. Meyers, Peter L. Cook, **Paul E. Harper**

Protein-Lipid Interactions I (Boards B232-B258)

452-Pos Board B232
PH-DEPENDENT CONFORMATIONAL CHANGES IN THE INFLUENZA A M2 FULL-LENGTH PROTEIN IN LIPID BILAYERS. **E. Vindana Ekanayake**, Riqiang Fu, Timothy A. Cross

453-Pos Board B233
CONFORMATIONAL CHANGES OF THE ABC TRANSPORTER MCJD REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Ruo-Xu Gu**, Valentina Corradi, Gurpreet Singh, Konstantinos Beis, Peter Tieleman

454-Pos Board B234
PROLINES AROUND HYPOTHETICAL ACTIVE SITE ARE IMPORTANT FOR THE STRUCTURE AND DYNAMICS OF THE OUTER MEMBRANE PROTEIN G FROM PSEUDOMONAS AERUGINOSA. **Iga Kucharska**, Lukas Tamm

455-Pos Board B235
ANALYZING THE VIABILITY OF VARIOUS NATIVE MEMBRANE MIMICS FOR MEMBRANE PROTEINS USING SITE-DIRECTED SPIN LABELING EPR. **Megan M. Dunagan**, Indra D. Sahu, Rongfu Zhang, Andrew Craig, Robert McMarrick, Gary A. Lorigan

456-Pos Board B236
THE STRUCTURE OF THE OLIGOMERS FORMED BY THE CAVEOLIN MEMBRANE PROTEINS. **Shuqi Wang**, Yanli Zhang, Xinyan Zhang, Sorin Luca

457-Pos Board B237
EXPRESSION AND PURIFICATION OF HUMAN A2B RECEPTOR FOR SPECTROSCOPIC CHARACTERIZATION. **Arash Foroutan**, Anne S. Robinson

458-Pos Board B238
EFFECT OF AN APOPTOTIC MEMBRANE RAFT ON THE CONFORMATIONAL AND DYNAMICAL CHANGES OF CALRETICULIN. Lingyun Wang, Joanne E. Murphy-Ullrich, **Yuhua Song**

459-Pos Board B239
BINDING OF HALICTINE ANTIMICROBIAL PEPTIDES TO MODEL MEMBRANES COMPOSED OF POPC:POPG PHOSPHOLIPIDS. **Tatiana M. Domingues**, Katia R. Perez, Karin A. Riske

460-Pos Board B240
THE BEGINNING OF THE END: CARDIOLIPIN, CYTOCHROME C AND THE APOPTOTIC TRIGGER. **Evan S. O'Brien**, Nathaniel V. Nucci, Brian Fuglestad, Kathleen G. Valentine, A. Joshua Wand

461-Pos Board B241 MINORITY AFFAIRS TRAVEL AWARDEE
PRION PROTEINS AND MECHANISMS OF INTERACTION WITH MODEL MEMBRANES. **Patricia Soto**, William Graft, Roger Gonzalez, Chad Nieri, Bo Zhao, Jason C. Bartz

462-Pos Board B242
FUNCTIONAL CHARACTERIZATION OF HUMAN RHODOPSIN MUTATIONS BY FLUORESCENCE IMAGING. **Caihong Jiang**

463-Pos Board B243
COEXISTENCE OF NATIVE-LIKE AND NON-NATIVE MISFOLDED FERRICYTOCHROME C ON THE SURFAC OF CARDIOLIPIN CONTAINING LIPOSOMES. **Leah A. Pandiscia**, Reinhard Schweitzer-Stenner

464-Pos Board B244
NEISSERIAL OPA PROTEIN DYNAMICS AND INTERACTION WITH HOST CEACAM RECEPTORS. **Marissa K. Kieber**, Tsega Solomon, Linda Columbus

465-Pos Board B245
MEMBRANE PROTEIN MISFOLDING ENFORCES THE POSITIVE-INSIDE RULE. **Nicholas B. Last**, Christopher Miller

466-Pos Board B246
DEVELOPING A UNIVERSAL STERIC TRAPPING STRATEGY FOR STUDYING FOLDING AND STABILITY OF HELICAL MEMBRANE PROTEINS. Ruiqiong Guo, Kristen A. Gaffney, Xuefei Huang, **Heedeok Hong**

467-Pos Board B247
STUDYING MEMBRANE PROTEIN FOLDING BY MOLECULAR DYNAMICS SIMULATIONS. **Jan Domanski**, Mark Sansom, Philip Stansfeld, Robert Best

468-Pos Board B248
IDENTIFYING THE OLIGOMERIZATION STATE OF DEGP IN THE ABSENCE AND PRESENCE OF SUBSTRATE. **Shawn M. Costello**, Ashlee M. Plummer, Karen G. Fleming

469-Pos Board B249
THEORETICAL PREDICTION OF MUTATIONS IMPROVING THERMAL STABILITY OF ADENOSINE A2A RECEPTOR. Yuta Kajiwara, **Satoshi Yasuda**, Yuki Takamuku, Takeshi Murata, Masahiro Kinoshita

470-Pos Board B250
BIOINFORMATIC METHODS FOR THE RAPID IDENTIFICATION OF THERMOSTABILIZING MUTANTS. **David B. Sauer**, Nathan K. Karpowich, Da-Neng Wang

471-Pos Board B251
INTERACTION OF THE PHAGE ENDOLYSIN PLYC WITH MODEL MEMBRANES. **Marilia Barros**, Tarek Vennemann, Frank Heinrich, Daniel Nelson, Mathias Lösche

472-Pos Board B252 **EDUCATION TRAVEL AWARDEE**
STRUCTURAL BASIS OF PHOSPHOINOSITIDE (PIP) RECOGNITION BY THE TIRAP PIP-BINDING MOTIF. **Xiaolin Zhao**, Shuyan Xiao, Sam Berk, Anne M. Brown, David R. Bevan, Geoffrey Armstrong, Daniel G.S. Capelluto

473-Pos Board B253
MECHANISM OF ACTION OF SALT ADAPTATION MUTATIONS IN ARTEMIA FRANCISCANA. **Jessica Eastman**, Sukanyalakshmi Chebrolu, Pablo Artigas

474-Pos Board B254
DETERMINING OLIGOMERIC ORDER OF A MEMBRANE PROTEIN BY DOUBLE ELECTRON-ELECTRON RESONANCE SPECTROSCOPY. Sergey Milikisiyants, Shenlin Wang, Rachel Munro, Matthew Donohue, Leonid S. Brown, Tatyana I. Smirnova, Vladimir Ladizhansky, **Alex I. Smirnov**

475-Pos Board B255
NUCLEOTIDE-DEPENDENT MEMBRANE INTERACTION AND DIMERIZATION OF K-RAS4B. **Hyunbum Jang**, Shaoyong Lu, Mayukh Chakrabarti, Lyuba Khavrutskii, Nadya I. Tarasova, Vadim Gaponenko, Ruth Nussinov

476-Pos Board B256 **EDUCATION TRAVEL AWARDEE**
FORMING THE PSEUDOMONAS AERUGINOSA TRANSLOCON REQUIRES SIMULTANEOUS INCORPORATION OF POPB AND POPD. **Kathryn R. Monopoli**, Alejandro P. Heuck

477-Pos Board B257
INVESTIGATING THE FUNCTIONAL ROLE OF THE TRANSMEMBRANE SEGMENTS OF YTA10, A SUBUNIT OF THE MAAA PROTEASE, IN MEMBRANE PROTEIN DEGRADATION. **Hunsang Lee**, Hyun Kim

478-Pos Board B258
OLIGOMER STOICHIOMETRY OF MEMBRANE-BOUND PROTEINS INVOLVED IN A COOPERATIVE PARTITION EQUILIBRIUM: A HOMO-FRET STUDY. Ana M. Melo, A. Fedorov, M. Prieto, **Ana Coutinho**

Membrane Receptors and Signal Transduction I (Boards B259-B280)

479-Pos Board B259
ACTIVATION AND DRUG DESIGN OF A MUSCARINIC G-PROTEIN COUPLED RECEPTOR. **Yinglong Miao**, J. Andrew McCammon

480-Pos Board B260
ALLOSTERIC EFFECTS OF G-PROTEIN COUPLED RECEPTOR HETEROMERIZATION: RELEVANCE TO PSYCHOSIS. **Jason Younkin**, Lia Baki, Amr Ellaithy, Diomedes E. Logothetis

481-Pos Board B261
MICROTUBULES SHAPE GPCR SPATIOTEMPORAL MEMBRANE ORGANIZATION AND FUNCTION BY SCAFFOLDING CORTICAL SIGNALING HUBS. Sandra de Keijzer, Marjolein B.M. Meddens, Samantha L. Schwartz, Peter J. Bosch, Ben Joosten, Johannes S. Kanger, Vinod Subramaniam, Diane S. Lidke, **Alessandra Cambi**

482-Pos Board B262
LOCALIZATION AND DYNAMICS OF BETA-ADRENERGIC RECEPTOR MEDIATED EGFR TRANSACTIVATION ON MICRO-PATTERNED SURFACES. **Peter Lanzerstorfer**, Ulrike Müller, Diana Zindel, Otmar Höglinger, Cornelius Krasel, Moritz Bünemann, Julian Weghuber

483-Pos Board B263
MEMBRANE CURVATURE REGULATES THE LOCALIZATION OF G PROTEIN COUPLED RECEPTORS AND RAS ISOFORMS. **Dimitrios Stamou**, Kadla Rosholm, Alexander Damalas, Nikos Hatzakis, Volker Wirth, Karen Martinez, Natascha Leijnse, Lene Oddershede, Poul Martin Bendix, Soren Pedersen

484-Pos Board B264
MOLECULAR SIGNATURES OF G-PROTEIN COUPLED RECEPTORS IN PANCREATIC CANCER USING SUPER-RESOLUTION MICROSCOPY. Raphael Jorand, Ottavia Golfetto, Sunetra Biswas, Steven J. Tobin, Huiying Zhang, Vladana Vukojevic, **Tijana Jovanovic-Talisman**

485-Pos Board B265
REAL TIME OBSERVATION OF LIGAND BINDING TO A GPCR: CONFORMATIONAL SELECTION GOVERNS THE ABILITY OF RETINALS TO BIND OPSIN. **Christopher T. Schafer**, David L. Farrens

486-Pos Board B266
NOVEL CHEMICAL BIOLOGY METHODS ILLUMINATE THE FUNCTION OF SINGLE G PROTEIN-COUPLED RECEPTORS. **Thomas Huber**, Thomas P. Sakmar

487-Pos Board B267
POLYMER-BASED NANODISCS FOR STUDYING STRUCTURE AND DYNAMICS OF G-PROTEIN-COUPLED RECEPTORS. **Jana Broecker**, Takefumi Morizumi, Wei-Lin Ou, Oliver P. Ernst

488-Pos Board B268
TRACKING VOLTAGE-SENSITIVE MOVEMENTS OF THE M2 MUSCARINIC ACETYLCHOLINE RECEPTOR. **Michael F. Priest**, Noa Dekel, Ofra Barchad-Avitzur, Yair Ben-Chaim, Francisco Bezanilla

489-Pos Board B269
BETA-ARRESTIN BIASED SIGNALING AT A CLASS A GPCR: MODELING THE ORG27569 INDUCED CB1/BETA-ARRESTIN 1 COMPLEX. **Dow P. Hurst**, Diane L. Lynch, Derek M. Shore, Michael C. Pitman, Patricia H. Reggio

490-Pos Board B270
MOLECULAR DETERMINANTS AND KINETIC PARAMETERS OF LIGAND BINDING TO G PROTEIN-COUPLED RECEPTORS USING MARKOV STATE MODEL ANALYSIS. **Sebastian Schneider**, Davide Provasi, Marta Filizola

491-Pos Board B271
LCK CLUSTER DYNAMICS IN LIVE CELLS. **Florian Baumgart**, Andreas Arnold, Gerhard Schütz

492-Pos Board B272
THE B CELL RECEPTOR DICTATES ITS LOCAL LIPID ENVIRONMENT. **Matthew B. Stone**, Sarah L. Veatch

493-Pos Board B273
FC\EPSILONRI SIGNAL PROPAGATION IS REGULATED THROUGH TRANSIENT BINDING OF SYK.
Samantha L. Schwartz, Mara P. Steinkamp, Cedric Cleyrat, Bridget S. Wilson, Keith A. Lidke, Diane S. Lidke

494-Pos Board B274
ESTABLISHING THE STRUCTURAL RULES FOR LIGAND RECOGNITION, SIGNALING AND ASSEMBLY IN INNATE IMMUNE RECEPTORS. Nils A. Berglund, Mark A. Febbraio, Robert C. Ford, James I. Godfroy 3rd, Daniel A. Holdbrook, Vasileios E. Kargas, Syma Khalid, Graeme I. Lancaster, Hang Yin, **Peter J. Bond**

495-Pos Board B275
THE T CELL RECEPTOR RESIDES IN ORDERED PLASMA MEMBRANE NANODOMAINS THAT AGGREGATE UPON T CELL ACTIVATION. **Ingela Parmryd**, Astrid Riehl, Jelena Dinic, Jeremy Adler

496-Pos Board B276
REINFORCEMENT OF INTEGRIN-MEDIATED T-LYMPHOCYTE ADHESION BY TNF. Qian Li, Dieter Adam, **Christine Selhuber-Unkel**

497-Pos Board B277
PLASMA MEMBRANE ORGANIZATION PROMOTES CD36 SIGNAL TRANSDUCTION IN ENDOTHELIAL CELLS. John Githaka Maringa, Anthony Vega, Michael W. Davidson, Khuloud Jaqaman, **Nicolas Touret**

498-Pos Board B278
SUPER-RESOLUTION IMAGING OF IGE-FCεRI STIMULATED WITH STRUCTURALLY DEFINED LIGANDS. **Eshan D. Mitra**, Sarah A. Shelby, David Holowka, Barbara Baird

499-Pos Board B279
SENDING INNATE IMMUNE SIGNALS ACROSS THE MEMBRANE: A MULTISCALE SIMULATION APPROACH TO TOLL-LIKE RECEPTOR ASSEMBLY. **Vasileios E. Kargas**, Daniel A. Holdbrook, James I. Godfroy III, Hang Yin, Robert C. Ford, Peter J. Bond

500-Pos Board B280
A DNA ORIGAMI PLATFORM FOR PROTEIN INTERACTION ANALYSIS. **Viktoria Motsch**, Roland Hager, Eva Sevcsik, Friedrich Schäffler, Stefan Howorka, Gerhard Schütz

Exocytosis and Endocytosis (Boards B281-B302)

501-Pos Board B281
CLOSURE OF PRE-EXISTING Ω PROFILES MEDIATES COMPENSATORY ENDOCYTOSIS, ENDOCYTOSIS OVERSHOOT AND BULK ENDOCYTOSIS. **Wonchul Shin**, Hsueh-Cheng Chiang, Peter J. Wen, Jiansong Sheng, Ling-Gang Wu

502-Pos Board B282
HOW HALF-COATED JANUS PARTICLES ENTER CELLS.
Yuan Gao, Yan Yu

503-Pos Board B283
INTERACTIONS OF LIPOSOMAL OPA PROTEINS WITH HUMAN CELL SURFACE CEACAM RECEPTORS. **Jason Kuhn**

504-Pos Board B284
ANTIBODY INDUCED PLAP ENDOCYTOSIS IS DEPENDENT ON THE STRUCTURE AND AMOUNT OF STEROLS IN CELLULAR PLASMA MEMBRANE. **Ji Hyun Kim**, Deborah Brown, Erwin London

505-Pos Board B285
CELL SPREADING SIZE REGULATES SIZE OF CLATHRIN-COATED PITS THROUGH TENSION. **Allen Liu**, Xinyu Tan, Johanna Heureaux

506-Pos Board B286
SYNAPTIC VESICLE TURNOVER IN HUMAN BRAIN SYNAPTOSOMES. Arup R. Nath, Ileea Larente, Taufik Valiante, **Elise F. Stanley**

507-Pos Board B287
CONTROLLING STIMULUS-SECRETION COUPLING IN ADRENAL CHROMAFFIN CELLS: A NOVEL ROLE FOR THE SEROTONIN TRANSPORTER? **Rebecca L. Brindley**, Randy D. Blakely, Kevin P.M. Currie

508-Pos Board B288
FUSION OF LYSOSOMES WITH SECRETORY VESICLE LEADS TO EXCESSIVE UNCONTROLLED EXOCYTOSIS IN MUCOLIPIDOSIS TYPE IV. **Malini Ahuja**, Soonhong Park, MinSeuk Kim, Eugen Brailoiu, Shmuel Muallem

509-Pos Board B289
TRPV1 ACTIVATION MODULATES ACETYLCHOLINE RELEASE AT MYONEURAL JUNCTIONS. **Baskaran Thyagarajan**, Joseph Potian, Padmamalini Baskaran, Joseph J. McArdle

510-Pos Board B290
ANALYSIS OF KINETICALLY DISTINGUISHED SYNAPTIC SUBTYPES IN HIPPOCAMPAL NEURONS. **Andreas W. Henkel**

511-Pos Board B291
A MATCHED FILTER ALGORITHM CAN ACCURATELY DETECT AMPEROMETRIC SPIKES RESULTING FROM QUANTAL EXOCYTOSIS AND SEED A CURVE-FITTING ALGORITHM FOR ESTIMATION OF SPIKE PARAMETERS. **Supriya Balaji Ramachandran**, Kevin D. Gillis

512-Pos Board B292
ETHNIC DIFFERENCES IN INSULIN GRANULE EXOCYTOSIS. **Joon Ha**, Arthur Sherman

513-Pos Board B293
QUANTITATIVE IMAGING OF THE EXOCYTOSIS MACHINERY ASSEMBLY. Nikhil R. Gandasi, **Sebastian Barg**

514-Pos Board B294 **International Travel Awardee**
FUSION PROPERTIES OF GLIOTRANSMITTER VESICLES IN CULTURED ASTROCYTES. **Alenka Guček**, Jernej Jorgačevski, Priyanka Singh, Claudia Geisler, Nina Vardjan, Marko Kreft, Alexander Egner, Robert Zorec

515-Pos Board B295
PROBING THE INTERACTION BETWEEN SYNAPTOTAGMIN-1 AND SNARES USING MUTATIONS IN SNAP-25. **Melanie Schupp**, Jakob Balslev Sørensen

516-Pos Board B296
INDUCTION OF HIPPOCAMPAL SYNAPSES ON FUNCTIONALIZED MICROPATTERNS. **Julia Trahe**, Ulrike Keller, Yaroslav Tsytsyura, Jana Huve, Carsten Reissner, Markus Missler, Jacob Piehler, Jurgen Klingauf

517-Pos Board B297 **education travel awardee**
SYNAPTOTAGMIN-1 AND SYNAPTOTAGMIN-7 DIFFER IN THEIR STIMULUS AND CA^{2+}-DEPENDENCE OF ACTIVATION. **Tejeshwar C. Rao**, Andrew R. Peleman, David R. Giovannucci, Arun Anantharam

518-Pos Board B298
THE IDENTIFICATION OF VAMPS IN B-LYMPHOCYTES. **Marie Kelly-Worden**, Fatimah Albrekkan, Michael Dugan, KyLeigh Harnish, Laura Gomez-Jaramillo, Antonio Campos-Caro

519-Pos Board B299
COMPLEXIN: MASTERPIECE IN VESICLE CYCLING AND RELEASE. Eduardo Quiroz-Manriquez, Hector Fonseca-Velez, **Ramon A. Jorquera**

520-Pos Board B300
ENVIRONMENTAL PERTURBATIONS THAT CAUSE STRUCTURAL CHANGES IN THE SNARE PROTEIN SNAP-25. **Jaron J. Hansen**, Timothy T. Harris, Bryce J. Parkinson, Joshua L. Bryan, Katrina J. Welker, Brian J. Buckner, Dixon J. Woodbury

521-Pos Board B301
GRANUPHILIN C2A DOMAIN AS A COINCIDENCE DETECTOR FOR PHOSPHATIDYLSERINE AND PHOSPHOINOSITIDES. **Abena Watson-Siriboe**, Tatyana A. Lyakhova, Jefferson D. Knight

522-Pos Board B302 **education travel awardee**
THE MEMBRANE BENDING ACTION OF THE SYT-1 C2AB STUDIED ON SUPPORTED LIPID BILAYERS. **Lauren P. MacConnachie**, Neo C. Poyiadji, Tejeshwar C. Rao, Arun Anantharam

Calcium Signaling I (Boards B303-B331)

523-Pos Board B303
COMPUTATIONAL SYSTEM ANALYSIS OF CA^{2+} SIGNALING IN THE PANCREATIC BETA-CELLS. **Leonid E. Fridlyand**, Louis H. Philipson

524-Pos Board B304
ACIDIC CALCIUM STORES CONTRIBUTE TO SECRETORY ACTIVITY FOLLOWING ELEVATION OF CAMP IN THE SALIVARY GLAND. **John Imbery**, Sura Khuder, Amanda Weiss, James T. Slama, David R. Giovannucci

525-Pos Board B305
MECHANICS REGULATES ATP-STIMULATED CALCIUM RESPONSE IN FIBROBLAST CELLS. **Josephine Lembong**, Benedikt Sabass, Bo Sun, Matthew E. Rogers, Howard A. Stone

526-Pos Board B306
CALCIUM MOVEMENT IN CARDIAC MITOCHONDRIA. **Liron Boyman**, George S. B. Williams, Aristide C. Chikando, Ramzi J. Khairallah, Sarah Kettlewell, Christopher W. Ward, Godfrey L. Smith, Joseph P. Y. Kao, W J. Lederer

527-Pos Board B307
CALCIUM DYNAMICS AND HOMEOSTASIS IN BREAST CANCER ONCOGENESIS. **Donna Dang**, José P. Llongueras, Rajini Rao

528-Pos Board B308
DIFFERENTIAL EFFECTS OF PLC-COUPLED RECEPTORS ON INTRACELLULAR CALCIUM OSCILLATIONS IN HEK293 CELLS. **Gary S. Bird**, James W. Putney Jr.

529-Pos Board B309
MODULATING CALCIUM ENTRY INTO MICROVASCULAR ENDOTHELIUM BY CONTROLLING MEMBRANE POTENTIAL DURING SUBMAXIMAL MUSCARINIC RECEPTOR ACTIVATION. **Erik J. Behringer**, Steven S. Segal

530-Pos Board B310
REDUCED IP3-MEDIATED CA^{2+} SIGNALING IN AUTISM SPECTRUM DISORDERS IN THE CONTEXT OF FRAGILE X AND TUBEROUS SCLEROSIS SYNDROMES. **Galina Schmunk**, Bryan J. Boubion, Ian F. Smith, Ian Parker, John Jay Gargus

531-Pos Board B311
BUFFERING EFFECTS ON THE LCC CURRENT AND SPATIOTEMPORAL CA^{2+} DYNAMICS. **Libet Garber**, Maura Greiser M.D, George S. B. Williams, W. Jonathan Lederer

532-Pos Board B312
VENTRICULAR WALL STRESS PREDICTS DISRUPTION OF CARDIOMYOCYTE T-TUBULE STRUCTURE AND CA^{2+} HOMEOSTASIS ACROSS THE INFARCTED HEART. **Michael Frisk**, Emil KS Espe, Åsmund T. Røe, J Magnus Aronsen, Lili Zhang, Ulla H. Enger, Ole M. Sejersted, Ivar Sjaastad, Ivar Sjaastad, William E. Louch

533-Pos Board B313
PHYSICAL COUPLING BETWEEN SERCA2 AND PDE3A REGULATES SERCA2 ACTIVITY IN CARDIOMYOCYTES. **Jonas Skogestad**

534-Pos Board B314
PURIFIED IGGS FROM TYPE 2 DIABETES WITH ATRIAL FIBRILLATION INDUCE INTRACELLULAR CALCIUM RELEASE IN CARDIOMYOCYTES THROUGH IP3 PATHWAY. Yanhong Luo, Mark B. Zimering, **Zui Pan**

535-Pos Board B315
STRETCH ACTIVATED CHANNEL ACTIVATION CAN PROMOTE OR SUPPRESS CARDIAC ALTERNANS. **Samuel Galice**, Donald M. Bers, Daisuke Sato

536-Pos Board B316
A NOVEL ROLE FOR B-TYPE NATRIURETIC PEPTIDE AND PHOSPHODIESTERASE 2A IN CARDIAC SYMPATHETIC NEURONS FROM PREHYPERTENSIVE RATS. **Dan Li**, Guoliang Hao, Kun Liu, Lavinia Woodward, Demetris Ioannides, Chieh-Ju Lu, David J. Paterson

537-Pos Board B317
REDUCED HEART RATE IN MICE HARBORING AN SR LUMINAL CA^{2+} SENSOR MUTATION (E4872Q) IS LINKED TO ABNORMAL CA^{2+} RELEASE AND PACEMAKER FUNCTION IN ISOLATED CARDIOCYTES DERIVED FROM THE MUTANT RYR CLONE. **Syevda Sirenko**, Ihor Zahanich, Yelena Tarasova, Daniel R. Riordon, Wenqian Chen, Wayne S.R. Chen, Edward G. Lakatta

538-Pos Board B318
PHOSPHORYLATION-DEPENDENT SYNCHRONIZATION OF RANDOM SPONTANEOUS LOCAL DIASTOLIC CA^{2+} RELEASES REGULATES ACTION POTENTIAL FIRING RHYTHMICITY OF PACEMAKER CELLS. **Dongmei Yang**, Alexey E. Lyashkov, Yael Yaniv, Bruce D. Ziman, Edward G. Lakatta

539-Pos Board B319
ELECTRON-CONFORMATIONAL TRANSFORMATIONS IN NANOSCOPIC RYR2 CHANNELS GOVERN BOTH THE HEART'S CONTRACTION AND BEATING. **Alexander Moskvin**, Alexander Ryvkin, Nikolay Zorin, Kirill Soulim, Bogdan Yaparov, Olga Solovyova, Vladimir Markhasin

540-Pos Board B320
MG56, A MEMBER OF THE MBOAT FAMILY OF PROTEINS, REGULATES INTRACELLULAR CALCIUM SIGNALING IN STRIATED MUSCLE. **Matthew Sermersheim**, Xinyu Zhou, Ki Ho Park, Pei-Hui Lin, Jacob Yount, Wayne Chen, Miyuki Nishi, Hiroshi Takeshima, Jianjie Ma

541-Pos Board B321
CISPLATIN-INDUCED CACHEXIA IN RATS CAUSES ALTERATIONS IN SKELETAL MUSCLE CALCIUM HOMEOSTASIS. Elena Conte, Adriano Fonzino, Sabata Pierno, Giulia Maria Camerino, Maria Cannone, Kejla Musaraj, Laura Rizzi, Elena Bresciani, Antonio Torsello, Diana Conte, **Antonella Liantonio**

542-Pos Board B322
STIM1 ENHANCES SR CA^{2+} CONTENT THROUGH INHIBITING PHOSPHOLAMBAN IN RAT VENTRICULAR MYOCYTES. **Guiling Zhao**, Didier X. P. Brochet, Tianyu Li, Paul Rosenberg, W. Jonathan Lederer

543-Pos Board B323
REGULATION OF CALCINEURIN BY CALCIUM-BINDING COUSINS. Lisa D. Weaver, Brandon R. Uribe, Maria F. Núñez Hernandez, Michael C. Rendleman, Sean A. Klein, Susan E. O'Donnell, **Madeline A. Shea**

544-Pos Board B324
IDENTIFY THE BINDING INTERFACE BETWEEN CALSENILIN AND PRESENILIN 1 C-TERMINAL FRAGMENT. **Khoa N. Pham**, Jaroslava Miksovska

545-Pos Board B325
ROLE OF MITOCHONDRIAL CA^{2+} UNIPORTER IN RADIATION-INDUCED CELL DAMAGE. **Xibao Liu**, Baijuan Gong, Hwei Ling Ong, Kwong Tai Cheng, Madesh Muniswamy, Indu S. Ambudkar

546-Pos Board B326
DIVERSITY OF MITOCHONDRIAL CA ($^{2+}$) SIGNALING: EVIDENCE FROM GENETICALLY ENCODED PROBES. **Xiaohua Zhang**, Naohiro Yamaguchi, Lars Cleemann, Martin Morad

547-Pos Board B327
ANALYSIS OF ATP PRODUCTION EFFICIENCY OF BEAT-TO-BEAT CALCIUM FLUCTUATIONS IN CARDIAC MITOCHONDRIA. **Sangeeta Shukla**, W. Jonathan Lederer, M. Saleet Jafri

548-Pos Board B328
IN VIVO TEMPERATURE SENSITIVITY OF THE CALCIUM AFFINITY OF FLUO-5F AND MAG-FLUO4. **Brian M. Hagen**, Joseph P.Y. Kao, W, Jonathan Lederer

549-Pos Board B329
A NOVEL RED FLUORESCENCE CALCIUM INDICATOR FOR FUNCTIONAL ANALYSIS OF GPCRS AND CALCIUM CHANNEL TARGETS. Qin Zhao, Haitao Guo, George Yi, **Jinfang Liao**, Zhenjun Diwu

550-Pos Board B330
COUPLING INTERACTIONS OF THE DIMERIC SOAR UNIT OF STIM1 WITH ORAI1 CHANNELS. **Yandong Zhou**, Xizhuo Wang, Xianming Wang, Natalia A. Loktionova, Xiangyu Cai, Xiangyu Cai, Youjun Wang, Donald L. Gill

551-Pos Board B331
TRANSLOCATION BETWEEN PI(4,5)P_2-POOR AND PI(4,5) P_2-RICH MICRODOMAINS DURING STORE DEPLETION DETERMINES STIM1 CONFORMATION AND GATING OF ORAI1. **Shmuel Muallem**, Jozsef Maléth, Seok Choi, Malini Ahuja

Cardiac, Smooth, and Skeletal Muscle Electrophysiology I (Boards B332-B347)

552-Pos Board B332
DIFFERENTIAL EFFECTS OF ANTIARRHYTHMIC DRUGS VERNAKALANT AND FLECAINIDE ON HUMAN TWO-PORE-DOMAIN K^+ CHANNELS. **Dierk Thomas**, Claudia Seyler, Patrick A. Schweizer, Hugo A. Katus

553-Pos Board B333
CLASSIFYING THE ELECTROPHYSIOLOGICAL EFFECTS OF CHRONOTROPIC DRUGS ON HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES USING VOLTAGE SENSITIVE DYES AND SUPERVISED MACHINE LEARNING. **Christopher M. Heylman**, Rupsa Datta, Bruce R. Conklin, Steven C. George, Enrico Gratton

554-Pos Board B334
SPARFLOXACIN, A FLUOROQUINOLONE ANTIBIOTIC, SLOWS INACTIVATION OF L-TYPE CA^{2+} CURRENT IN NEONATAL RAT VENTRICULAR MYOCYTES. **Jae Gon Kim**, Sang Woong Park, Hun Ji Kim, Hana Cho, Young Min Bae

555-Pos Board B335
ON-CHIP QUASI-*IN VIVO* PREDICTIVE CARDIOTOXICITY ASSAY USING SPATIOTEMPORAL FLUCTUATION MEASUREMENT ON HUMAN CARDIOMYOCYTE CELL-NETWORK. **Fumimasa Nomura**, Tomoyuki Kaneko, Hideyuki Terazono, Kenji Yasuda

556-Pos Board B336
LABEL-FREE HIGH-THROUGHPUT CARDIOTOXICITY ASSAYS USING COMBINED IMPEDANCE AND EXTRACELLULAR FIELD POTENTIAL MEASUREMENTS. Corina T. Bot, Sonja Stoelzle-Feix, David R. Guinot, Ulrich Thomas, Ulrich Thomas, Leo Doerr, Matthias Beckler, George Okeyo, Joerg Oestreich, **Rodolfo J. Haedo**, Michael George, Niels Fertig

557-Pos Board B337
A NOVEL CLASSIFICATION METHOD WITH SUPERIOR PREDICTION OF DRUG ARRHYTHMIA RISK.
Megan A. Cummins, Eric A. Sobie

558-Pos Board B338
ELECTROPHYSIOLOGY OF CARDIAC TISSUE SLICES BEFORE, DURING, AND AFTER STRETCH. Ken Wang, Razik Mu-u-min, Derek Terrar, David GJ Gavaghan, Peter Kohl, **Christian Bollensdorff**

559-Pos Board B339
DUAL SPIKES OF CATECHOLAMINE RELEASES FROM SYMPATHETIC NERVES IN RODENT HEART SLICES FOLLOWING HYPOXIA-REPERFUSION AS RECORDED BY A NOVEL ELECTROCHEMICAL METHOD. Bing Liu, Shu Guo, Jing Lǔ, Xinjiang Kang, Yun Xiu, Jingli Gu, Yu Mu, Qian Lei, Bin Liu, Kun Liu, Lihuan Li, Changhe Wang, Jimin Cao, **Zhuan Zhou**

560-Pos Board B340
ELECTRONIC EXPRESSION OF IK1 IN HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED CARDIOCYTES REVEALS ATRIAL VS VENTRICULAR SPECIFIC PROPERTIES. Aaron D. Kaplan, Glenna C.L. Bett, **Randall L. Rasmusson**

561-Pos Board B341
NORMALIZATION OF ACTION POTENTIAL PROPERTIES IN HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED CARDIOCYTES BY ELECTRONIC EXPRESSION OF IK1. Aaron D. Kaplan, Agnieszka Lis, Randall L. Rasmusson, **Glenna C L Bett**

562-Pos Board B342
ACTIVATION OF CA^{2+}-DEPENDENT CATION CURRENT BY FLUID SHEAR FORCE IN ATRIAL MYOCYTES. Min-Jeong Son, **Joon-Chul Kim**, Ju Chen, Sun-Hee Woo

563-Pos Board B343
STIM1 INCREASES CA^{2+} STORES IN THE SARCOPLASMIC RETICULUM OF ADULT FELINE VENTRICULAR MYOCYTES. **Constantine Troupes**, Steven Houser

564-Pos Board B344
REGIONAL HETEROGENIETY OF THE INWARDLY RECTIFYING POTASSIUM CURRENT IN THE CANINE HEART. **Brian Panama**, Tanya Zeina, Lini Thomas, Robert Goodrow, Vladislav Nesterenko, Jacqueline Treat, Jonathan Cordeiro

565-Pos Board B345
TRANSIENT OUTWARD K^+ CURRENT UNDERLIES HETEROGENEITY OF ACTION POTENTIAL DURATION AND EARLY AFTERDEPOLARIZATION FROM RIGHT VENTRICLE IN TRANSGENIC RABBIT MODEL OF LONG QT TYPE 1. **Bum-Rak Choi**, Weiyan Li, Dmitry Terentyev, Colin Rees, Radmila Terentieva, Taeyun Kim, Xuwen Peng, Zhilin Qu, Alain Karma, Gideon Koren

566-Pos Board B346
ACTION POTENTIAL REPOLARIZATION IN EQUINE HEARTS. **Kirstine Calloe**, Philip J. Pedersen, Maria de los Angeles Tejada, Kristian L. Poulsen, Søren Grubb, Rikke Buhl, Dan A. Klaerke

567-Pos Board B347
OVEREXPRESSION OF ADENYLYL CYCLASE 8 (AC8) IN MICE INCREASES INTRINSIC HEART RATE (IHR) AND REDUCES HEART RATE VARIABILITY (HRV), AND DETACHES HR AND HRV FROM AUTONOMIC MODULATION. **Michael G. Matt**, Ismayil Ahmet, Oliver Monfredi, Kenta Tsutsui, Edward G. Lakatta

Biopolymers in Vivo (Boards B348-B362)

568-Pos Board B348
A SENSOR FOR QUANTIFICATION OF MACROMOLECULAR CROWDING IN LIVING CELLS. **Arnold J. Boersma**, Boqun Liu, Bert Poolman

569-Pos Board B349
DESOLVATION ENERGY: A RATIONALE FOR CHANGES IN BINDING AFFINITY AS MEASURED BY ITC. **Daryl K. Eggers**, Jennifer M. Le, Duc N. Pham, Nhi T. Nham, Frankie A. Contreras

570-Pos Board B350
RAPIDLY INDUCIBLE DE NOVO SYNTHESIS OF HYDROGELS IN LIVING CELLS. **Takanari Inoue**

571-Pos Board B351
EXCLUDED VOLUME EFFECTS INSIDE THE LIVING CELL. **David Gnutt**, Mimi Gao, Oliver Brylski, Matthias Heyden, Simon Ebbinghaus

572-Pos Board B352
MACROMOLECULAR CROWDING IN THE CYTOSOL: UNDERAPPRECIATED OR OVERESTIMATED? **Joost Groen**, David Foschepoth, Arnold J. Boersma, Hiromi Imamura, Hans A. Heus, Wilhelm T.S. Huck

573-Pos Board B353
THERMODYNAMICS AND KINETICS OF MULTI-PROTEIN BINDING IN CROWDED ENVIRONMENTS. **Youngchan Kim**, Jeetain Mittal

574-Pos Board B354
REAL-TIME TRANSCRIPTION INITIATION BY E.COLI RNA POLYMERASE IN VITRO AND IN VIVO. **Anne Plochowietz**, Diego Duchi Llumigusin, Pawel Zawadzki, Afaf H. El-Sagheer, Tom Brown, Achillefs N. Kapanidis

575-Pos Board B355
A DISORDER-BASED STRATEGY FOR THE INTRODUCTION OF ALLOSTERIC, "HILL-TYPE" COOPERATIVITY INTO ARTIFICIAL RECEPTORS. **Anna J. Simon**, Alexis Vallée-Bélisle, Francesco Ricci, Herschel M. Watkins, Kevin W. Plaxco

576-Pos Board B356
STRUCTURE-FUNCTION RELATIONS AND RIGIDITY PERCOLATION IN BIOPOLYMER NETWORKS IN LIVE TISSUE UNDER SHEAR: BOVINE ARTICULAR CARTILAGE AS A MODEL SYSTEM. Jesse L. Silverberg, **Moumita Das**, Aliyah R. Barrett, Poul B. Petersen, Lawrence J. Bonassar, Itai Cohen

577-Pos Board B357
NUCLEAR DAMAGE IN HIGHLY CONSTRAINED MIGRATION: FROM LAMINA DEFECTS TO DNA BREAKS. **Jerome Irianto**, Avathamsa Athirasala, Rocky Diegmiller, Irena Ivanovska, Dennis E. Discher

578-Pos Board B358
THE KINETICS OF NASCENT PROTEIN FOLDING UPON RELEASE FROM THE RIBOSOME. **Rayna M. Addabbo**, Hon Nam Lam, Brian Arnold, Silvia Cavagnero

579-Pos Board B359
DIFFUSION COEFFICIENT AS A FUNCTION OF MASS FOR GLOBULAR BIOMOLECULES. **Michael J. Saxton**

580-Pos Board B360
DEVELOPING A NANOCARRIER FOR TARGETED DELIVERY OF CARDIO-PROTECTIVE AGENTS. **Nasr N. Alrabadi**, Jennifer I. Lai, Chi L. Pham, Adrina F. Varda, Paul K. Witting, Margaret Sunde

581-Pos Board B361
THE NONRANDOM NATURE OF WEAK INTERACTIONS BETWEEN PROTEINS AND BYSTANDER MACROMOLECULES IN CELLULAR ENVIRONMENTS. **Sanbo Qin**, Huan-Xiang Zhou

582-Pos Board B362 **INTERNATIONAL TRAVEL AWARDEE**
A COMPUTATIONAL MODEL FOR E.COLI CYTOPLASM: DIFFUSION AND HYDRODYNAMICS. **Sabeeha Hasnain**, Christopher L. McClendon, Monica Tremont Hsu, Matthew P. Jacobson, Pradipta Bandyopadhyay

Voltage-gated K Channels I (Boards B363-B392)

583-Pos Board B363
MOVEMENTS OF THE KV2.1 AND KV6.4 S4 SEGMENTS IN HETEROTETRAMERIC KV2.1/KV6.4 CHANNELS. **Elke Bocksteins**, Dirk J. Snyders, Miguel Holmgren

584-Pos Board B364
ION CHANNELS AND SALT BRIDGES: QUANTUM CALCULATIONS SHOW UNUSUAL EFFECTS. **Alisher M. Kariev**, Michael E. Green

585-Pos Board B365
STATE DEPENDENT PHOTO-CROSSLINKING OF THE IKS CHANNEL COMPLEX DEMONSTRATES MOVEMENT OF KCNE1 AT PRE-OPENING MEMBRANE POTENTIALS. **Christopher I. Murray**, Maartje Westhoff, Yasmeen Maurice, Jodene Eldstrom, David Fedida

586-Pos Board B366
TESTING THE HYDRATION STATUS OF THE SHAKER-K CHANNEL VOLTAGE SENSOR DOMAIN WITH SUGARS. **Ignacio Díaz-Franulic**, David Naranjo

587-Pos Board B367
THE EFFECT OF D2O ON THE INACTIVATION KINETICS AND RECOVERY FROM SLOW INACTIVATION OF SHAKER-IR K^+ CHANNELS. Tibor G. Szanto, Orsolya Szilagyi, **Gyorgy Panyi**

588-Pos Board B368
NON-CANONICAL START CODONS REINITIATE TRANSLATION IN N-TERMINAL TRUNCATED KV CHANNELS. **Tanja Kalstrup**, Rikard Blunck

589-Pos Board B369
ACTIVATION GATE REGION INFLUENCES STOICHIOMETRY OF HETEROMERIC SHAKER FAMILY CHANNELS. **Aditya Pisupati**, William J. Horton, Keith Mickolajczyk, Xiaofan Li, Jose Chu, William O. Hancock, Timothy Jegla

590-Pos Board B370
ION PERMEATION IN POTASSIUM CHANNELS INVOLVES DIRECT COULOMB KNOCK-ON BETWEEN IONS. **Ulrich Zachariae**, David A. Kopfer, Chen Song, Tim Gruene, George M. Sheldrick, Bert L. de Groot

591-Pos Board B371
DYNAMICS OF THE KCSA SELECTIVITY FILTER PROBED USING INTRINSIC TYROSINE FLUORESCENCE. **H Raghuraman**, Eduardo Perozo

592-Pos Board B372
ROLE OF THE S6-PXP MOTIF IN U-TYPE INACTIVATION OF HETEROTETRAMERIC KV2.1/KV6.4 CHANNELS. **Jeroen I. Stas**, Elke Bocksteins, Alain J. Labro, Dirk J. Snyders

593-Pos Board B373
VOLTAGE DEPENDENCE OF BK CHANNELS GATING RING MOTION STUDIED BY STATE DEPENDENT FRET. **Pablo Miranda**, Teresa Giraldez, Miguel Holmgren

594-Pos Board B374
QUANTITATIVE MAPPING OF INTERACTIONS IN THE VOLTAGE-SENSOR PORE INTERFACE OF THE SHAKER POTASSIUM CHANNEL. **Kevin Oelstrom**, Ana Fernandez-Mariño, Baron Chanda

595-Pos Board B375
BINDING OF QUATERNARY AMMONIUM IONS TO A POTASSIUM CHANNEL. **Dylan O. Burdette**, Adrian Gross

596-Pos Board B376
STRUCTURE AND DYNAMICS OF THE MTHK K^+ CHANNEL SELECTIVITY FILTER DURING GATING. **David J. Posson**, Céline Boiteux, Toby W. Allen, Crina M. Nimigean

597-Pos Board B377
RECONSTITUTION AND MEASUREMENT OF ION CHANNEL ENSEMBLES IN DROPLET BILAYERS. **Viksita Vijayvergiya**, Shiv Acharya, Jacob Schmidt

598-Pos Board B378
THE CONFORMATION OF KCSA'S SELECTIVITY FILTER INFLUENCES THE OPENING OF ITS ACTIVATION GATE. **Cholpon Tilegenova**, D. Marien Cortes, Luis G. Cuello

599-Pos Board B379
ENGINEERING HERG CHANNEL INNER CAVITY WITHIN KCSA STRUCTURE. **Luis G. Cuello**, D. Marien Cortes

600-Pos Board B380
PIP2 MODIFIES THE FREE ENERGY OF THE KV1.2 VOLTAGE-SENSOR ACTIVATION. **Marina A. Kasimova**, Lucie Delemotte, Michael L. Klein, Vincenzo Carnevale, Mounir Tarek

601-Pos Board B381
K^+-DEPENDENT SELECTIVITY AND EXTERNAL CALCIUM BLOCK OF SHAB POTASSIUM CHANNELS. **Froylan Gomez-Lagunas**, Elisa Carrillo

602-Pos Board B382
TIME-DEPENDENT VOLTAGE SENSOR RELAXATION IN HERG CHANNELS. **Samrat Thouta**, Yu Patrick Shi, Stanislav Sokolov, Yen May Cheng, Tom W.Claydon

603-Pos Board B383
BLOCK OF HERG BY EXTRACELLULAR CALCIUM AND OTHER DIVALENT IONS. Andrew Nguyen, Alice Wong, Angad Oberoi, Thuyvy Le, **Alan Miller**

604-Pos Board B384
EXTERNAL PROTONS DESTABILIZE THE RELAXED STATE OF THE HERG CHANNEL VOLTAGE SENSOR. **Yu Patrick Shi**, Samrat Thouta, Yen May Cheng, Tom W. Claydon

605-Pos Board B385
NOVEL VOLTAGE PROTOCOLS FOR DETERMINING HERG CHANNEL KINETICS. **Gary R. Mirams**, Kylie Beattie, James B. Louttit, Teun de Boer, David J. Gavaghan

606-Pos Board B386
STOICHIOMETRY OF A HERG1 AGONIST ON CHANNEL GATING. **Wei Wu**, Alison Gardner, Frank Sachse, Michael Sanguinetti

607-Pos Board B387
MOLECULAR ORIGINS OF STATE-DEPENDENT HERG1 BLOCKADE BY DOFETILIDE. **Yibo Wang**, Laura Perissinotti, Jiqing Guo, Henry J. Duff, Sergei Yu. Noskov

608-Pos Board B388
THE ROLE OF MET-691 IN HEME-DEPENDENT REGULATION SUPPORTS THE PRESENCE OF A CYTOCHROME-C-LIKE STRUCTURE IN HUMAN BK CHANNELS. **Taleh Yusifov**, Nicoletta Savalli, Saemi Park, Antonios Pantazis, Riccardo Olcese

609-Pos Board B389
THE HEME-BOUND HUMAN BK CHANNEL GATING RING IS A CO SENSOR. **Taleh Yusifov**, Nicoletta Savalli, Stefan H. Heinemann, Toshinori Hoshi, Riccardo Olcese

610-Pos Board B390
A NOVEL APPROACH FOR LOCATING THE SITES OF DRUG ACTION ON BK CHANNELS. **Yanyan Geng**, Alice Butler, Lawrence B. Salkoff, Karl M. Magleby

611-Pos Board B391
CADMIUM COORDINATION BY CYSTEINES INTRODUCED IN THE BK INNER PORE AND ITS STRUCTURAL AND FUNCTIONAL IMPLICATIONS. **Yu Zhou**, Xiaoming Xia, Christopher J. Lingle

612-Pos Board B392
MUTATIONS IN THE S4/S5 LINKER AND S6 OF SLO1 ABLATE THE RESPONSE TO THE NOVEL BK CHANNEL OPENER GOSLO-SR-5-6. **Arvind Kshatri**, Tim I. Webb, Roddy J. Large, Adebola Morayo Akande, Subhrangsu Roy, Gerard P. Sergeant, Noel G. McHale, Keith D. Thornbury, Mark A. Hollywood

TRP Channels I (Boards B393-B408)

613-Pos Board B393
A MECHANISM FOR DETECTING THE RATE OF TEMPERATURE CHANGE IN DROSOPHILA. **Junjie Luo**, Wei L. Shen, Craig Montell

614-Pos Board B394
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF INTERNAL AND EXTERNAL LIGANDS ON TRPA1. **Andrea Bruggemann**, Markus Rapedius, Tom Götze, Claudia Haarmann, Ilka Rinke, Marius Vogel, Timo Stengel, Johannes Stiehler, Michael George, Niels Fertig

615-Pos Board B395
COOLING DOWN TRP CHANNEL: COLD AND CHEMO-SENSITIVITY OF THE HUMAN TRPA1. **Mohamed Kreir**, Lavanya Moparthi, Edward D. Högestätt, Urban Johanson, Andrea Bruggemann, Peter M. Zygmunt, Niels Fertig

616-Pos Board B396
THE ROLE OF TRPA1 AND TRPV1 CHANNELS IN OROFACIAL PAIN. **Roberta Gualdani**, Stefania Ceruti, Giulia Magni, Davide Merli, Lorenzo di Cesare Mannelli, Oscar Francesconi, Barbara Richichi, Giancarlo la Marca, Carla Ghelardini, Maria Rosa Moncelli, Cristina Nativi

617-Pos Board B397
PROBING TEMPERATURE SENSING OF THERMAL TRP CHANNELS BY CALORIMETRY. **Kiran Andra**, Anoop Saxena, Beiying Liu, Feng Qin

618-Pos Board B398
ROLE OF TRPV1 CHANNELS IN GLIOMA CELL VIABILITY AND SURVIVAL. **Yelena Nersesyan**, Swapna Asuthkar, Kiran K. Velpula, Xiaohui Sun, Lusine Demirkhanyan, Eleonora Zakharian

619-Pos Board B399
DIETARY CAPSAICIN AND EXERCISE: ANALYSIS OF A TWO-PRONGED APPROACH TO COUNTERACT OBESITY. **Vivek Krishnan**, Kevin Fettel, Baskaran Thyagarajan

620-Pos Board B400
PROTON AS A DUAL REGULATOR FOR TRPV1. **Bo Hyun Lee**, Jie Zheng

621-Pos Board B401
UNRAVELING ALLOSTERIC COUPLING MECHANISMS IN THE TRPV1 CHANNEL. **Andrés Jara-Oseguera**, Kenton J. Swartz

622-Pos Board B402
MOLECULAR MECHANISM OF TRPV1 ACTIVATION BY CAPSAICIN. Fan Yang, **Xian Xiao**, Wei Cheng, Wei Yang, Vladimir Yarov-Yarovoy, Jie Zheng

623-Pos Board B403
INSIGHT INTO THE STRUCTURE OF TETRAMER HTRPV1 FROM HOMOLOGY MODELING, MOLECULAR DOCKING, MOLECULAR DYNAMICS SIMULATION AND VIRTUAL SCREENING. **Zhiwei Feng**

624-Pos Board B404
THE MOLECULAR DETERMINANTS OF PI(4,5)P2 BINDING TO TRPV1 CHANNELS. **Horacio Poblete**, Ingrid Oyarzún, Pablo Olivero, Jeffrey Comer, Matías Zuñiga, Romina Sepulveda, David Báez-Nieto, Carlos González, Ferando Gonzalez-Nilo, Ramón Latorre

625-Pos Board B405
PREPARATION AND EVALUATION OF PLGA COATED CAPSAICIN MAGNETIC NANOPARTICLES FOR TARGET SITE-SPECIFIC PAIN THERAPEUTICS. **Mrudhula Baskaran**, Baskaran Thyagarajan

626-Pos Board B406
DISSOCIATION RATES AS ONE OF THE DIFFERENTIATING FACTORS FOR HYPERTHERMIC AND NON-HYPERTHERMIC TRPV1 ANTAGONISTS. **Laykea Tafesse**, Gang Wu, Kevin Carlin, Toshiyuki Asaki, Toshiyuki Kanemasa, Victor Ilyin

627-Pos Board B407
A SINGLE-RESIDUE SWITCH FOR HIGH TEMPERATURE DEPENDENCE OF THERMAL TRPV3 CHANNELS. **Beiying Liu**, Feng Qin

628-Pos Board B408
THE SPIDER TOXIN GSMTX-4 BLOCKS TRPV4 CATION CHANNELS EXPRESSED IN HEK-293 CELLS. Christian SJ Kesselring, Mirjam Krautwald, Yaxin Zhang, **Heinrich Brinkmeier**

Ion Channel Regulatory Mechanisms I (Boards B409-B427)

629-Pos Board B409
USE-DEPENDENT ACTIVATION OF NEURONAL KV1.2 CHANNEL COMPLEXES. **Victoria A. Baronas**, Brandon R. McGuinness, Yury Y. Vilin, Robin Y. Kim, Arohumam Kan, Runying Yang, Harley T. Kurata

630-Pos Board B410
THE IMPACT OF CHOLESTEROL ON GIRK CHANNELS DEPENDS ON A TRANSMEMBRANE REGION OF THE CHANNELS. **Avia Rosenhouse-Dantsker**

631-Pos Board B411
THE SIGNIFICANCE AND MECHANISMS OF CLUSTERING BY SLC4 COTRANSPORTERS IN THE PLASMA MEMBRANE. **Harry Gill**

632-Pos Board B412
THE ROLE OF ROS IN TETHERING CFTR WITHIN CERAMIDE PLATFORMS AT THE PLASMA MEMBRANE. **Asmahan AbuArish**, Paul W. Wiseman, John W. Hanrahan

633-Pos Board B413
REFINEMENT AND EVALUATION OF A CFTR HOMOLOGY MODEL AND IDENTIFICATION OF RESIDUES CONTROLLING CHANNEL GATING. Gorman Stock, Guiying Cui, Nael A. McCarty, **James C. Gumbart**

634-Pos Board B414
SOLUTION NMR TO INVESTIGATE GATING IN THE NAK CHANNEL. **Joshua Brettmann**, Andrew Meiburg, Katherine Henzler-Wildman

635-Pos Board B415
A NEW CLASS OF POSITIVE GATING MODULATORS OF HKV3.2 CHANNELS: INSIGHTS INTO THE MECHANISM OF ACTION. **Qiansheng Liang**, Giuseppe Alvaro, Charles Large, Manuel Covarrubias

636-Pos Board B416
PKA REDUCES THE RAT AND HUMAN $K_{CA}3.1$ CURRENT, CAM BINDING AND CA^{2+} SIGNALING, WHICH REQUIRES SER332/334 IN THE CAM-BINDING C TERMINUS.
Raymond Wong, Lyanne C. Schlichter

637-Pos Board B417
CARDIAC SODIUM CHANNEL: ACTIVATION BY CAM INVOLVES A NAV1.5-NAV1.5 INTERACTION. Sandra B. Gabelli, Agedi Boto, Victoria Halpernin, Mario A. Bianchet, Federica Farinelli, Srinivas Aripirala, **Jesse B. Yoder**, Jean Jakoncic, Gordon F. Tomaselli, Mario Amzel

638-Pos Board B418
CALMODULATION OF VOLTAGE-GATED CALCIUM CHANNELS BY BLUE LIGHT. **Jacqueline Niu**, Manu Ben-Johny, Paul J. Adams, David T. Yue

639-Pos Board B419
PEGYLATED CHOLESTEROL AND METHYL-BETA-CYCLODEXTRIN ARE MODULATORS OF L-TYPE CALCIUM CHANNEL CURRENT AND DECREASE MEMBRANE CAPACITANCE IN VASCULAR SMOOTH MUSCLE CELLS.
Rikuo Ochi, Sachin A. Gupte

640-Pos Board B420
NMDA RECEPTOR INHIBITION OF L-TYPE CALCIUM CHANNELS VIA ER CALCIUM DEPLETION AND ACTIVATION OF STIM1 IN CULTURED HIPPOCAMPAL NEURONS.
Philip J. Dittmer, Mark L. Dell'Acqua, William A. Sather

641-Pos Board B421
DEFINING POST AS A MODULATOR OF STIM1 FUNCTION DURING T CELL ACTIVATION. **Christina Go**, Robert Hooper, Joseph Kedra, Jonathan Soboloff

642-Pos Board B422 **EDUCATION TRAVEL AWARDEE**
THE SIGMA1 RECEPTOR COMPETES WITH STIM1 TO BIND ORAI1 TO REGULATE STORE OPERATED CALCIUM ENTRY (SOCE). **Shyam Srivats**, Dilshan Balasuriya, Mathias Pasche, Robert Vistal, Colin W. Taylor, Mike J. Edwardson, Ruth D. Murrell-Lagnado

643-Pos Board B423
FUNCTIONAL INTERACTION OF AN ORAI1 PORE RESIDUE WITH THE INACTIVATION DOMAIN OF STIM1.
Franklin M. Mullins, Richard S. Lewis

644-Pos Board B424
STIM1 BINDING TO BOTH THE N' AND C' TERMINI OF ORAI1 IS CRITICAL FOR GATING OF CRAC CHANNELS. **Raz Palty**, Cherise Stanley, Ehud Isacoff

645-Pos Board B425
CLUSTERING OF INWARD RECTIFIER POTASSIUM CHANNELS IN A PIP2-CONTAINING MEMBRANE: A MOLECULAR DYNAMICS SIMULATION STUDY. **Anna L. Duncan**, Heidi Koldsø, Mark S. P. Sansom

646-Pos Board B426
DIRECT CONTACTS OF K^+ IONS IN THE SELECTIVITY FILTER ENABLE THE HIGH CONDUCTANCE OF K^+ CHANNELS.
Chen Song, David A. Köpfer, Tim Gruene, George M. Sheldrick, Mark S. P. Sansom, Ulrich Zachariae, Bert L. de Groot

647-Pos Board B427 **CPOW TRAVEL AWARDEE**
EVOLUTIONARY DIVERSITY OF PROTEIN NANODOMAINS WITHIN MAMMALIAN SPERM. **Melissa R. Miller**, Sam J. Kenny, Steven A. Mansell, Ke Xu, Polina Lishko

Cardiac Muscle Regulation I (Boards B428-B443)

648-Pos Board B428
A FRET-BASED ASSAY FOR MONITORING ACTIONS OF CALCIUM SENSITIZERS ON THE THIN FILAMENT.
Maria E. Moutsoglou, Gi-Ho Kim, Christopher Solis-Ocampo, John M. Robinson

649-Pos Board B429
SPFRET REVEALS THE MECHANISM OF MYOSIN-DEPENDENT ACTIVATION OF TROPONIN WITHIN REGULATED ACTION FILAMENTS. **Gi-Ho Kim**, Maria E. Moutsoglou, Christopher Solis Ocampo, John M. Robinson

650-Pos Board B430
BRIDGING INTEGRATOR 1 (BIN1) INITIATES T-TUBULE GROWTH DURING CARDIAC DEVELOPMENT AND DISEASE. **David B. Lipsett**, Michael Frisk, Neha Singh, Jan Magnus Aronsen, William Marszalec, Ole M. Sejersted, Ivar Sjaastad, J. Andrew Wasserstrom, Geir Christensen, William E. Louch

651-Pos Board B431
CHARACTERIZING PROTEIN BINDING OF PHOSPHOLAMBAN TO SERCA USING CHEMICAL CROSS-LINKING.
Vidhya Sivakumaran, Nikolai Smolin, Seth Robia

652-Pos Board B432
TOAC SPIN LABEL CONFORMATION RESOLVED BY MD SIMULATION OF MEMBRANE-BOUND PHOSPHOLAMBAN. **Andrew Reid**, Jesse McCaffrey, Christine Karim, Bengt Svensson

653-Pos Board B433
USING MOLECULAR DYNAMICS SIMULATIONS TO INTERPRET FLUORESCENCE AND EPR DATA ON LABELED SERCA AND PHOSPHOLAMBAN. **Bengt Svensson**, Xiaoqiong Dong, Karl J. Petersen, Zachary M. James, Jesse E. McCaffrey, Howard S. Young, David D. Thomas

654-Pos Board B434
PHOSPHOLAMBAN PHOSPHORYLATION ALTERS ITS CONFORMATIONAL EQUILIBRIUM TO REGULATE SERCA ACTIVITY. **Leanna McDonald**, Gianluigi Veglia

655-Pos Board B435
ATOMIC-LEVEL CHARACTERIZATION OF THE INHIBITION MECHANISM OF THE CALCIUM PUMP BY PHOSPHOLAMBAN. **L. Michel Espinoza-Fonseca**, Joseph M. Autry, G. Lizbeth Ramírez-Salinas, David D. Thomas

656-Pos Board B436
NOVEL ROLES OF GQ-DEPENDENT SIGNAL TRANSDUCTION FOR CARDIAC PACEMAKING AND CARDIAC IMPULSE PROPAGATION STUDIED BY GQ-KO AND A DREADD. Elisabeth Kaiser, Laura Schröder, Kathrina Wiesen, Jürgen Wess, Qinghai Tian, Lars Kaestner, **Peter Lipp**

657-Pos Board B437
THE LARGE SCALE TRANSCRIPTOME ANALYSIS OF MOUSE SINOATRIAL NODE (SAN). **Yosuke Okamoto**, Kirill V. Tarasov, Bruce D. Ziman, Joonho Lee, Edward G. Lakatta

658-Pos Board B438
A SIMPLE REGULATION OF CARDIOMYOCYTE EXCITABILITY. **Karni S. Moshal**

659-Pos Board B439
MITOCHONDRIAL ABNORMALITIES IN A MOUSE CPVT MODEL WITH RYR2 LOSS-OF-FUNCTION MUTATION. V. Ramesh Iyer, **Manuela Lavorato**, Yang-Ting Zhao, Hector H. Valdivia, Clara Franzini - Armstrong

660-Pos Board B440
WNT SIGNALING SELECTIVELY INHIBITS SODIUM CHANNELS IN CARDIAC MYOCYTES. **Wenbin Liang**, Eduardo Marbán

661-Pos Board B441
THE PHYSIOLOGICAL RELEVANCE OF INTERACTIONS BETWEEN CMYBP-C AND ACTIN STUDIED IN A TRANSGENIC MOUSE MODEL. **Sabine J. van Dijk**, Kristina L. Bezold, Samantha P. Harris

662-Pos Board B442
THE HCM MUTATION L348P IN CMYBP-C ENHANCES THIN FILAMENT ACTIVATION THROUGH TROPOMYOSIN SHIFT. Ji Young Mun, Robert W. Kensler, Samantha P. Harris, **Roger Craig**

663-Pos Board B443
CROSSBRIDGE ARRANGEMENT IN CARDIAC THICK FILAMENTS ISOLATED FROM CMYBP-C PHOSPHOMIMETIC MICE. **Robert W. Kensler**, Roger Craig, Richard L. Moss

Kinesins, Dyneins, and Other Microtubule-based Motors (Boards B444-B471)

664-Pos Board B444
DECRYPTING THE STRUCTURAL, DYNAMIC AND ENERGETIC BASIS OF KINESIN INTERACTING WITH TUBULIN DIMER IN THREE ATPASE STATES BY ALL-ATOM MOLECULAR DYNAMICS SIMULATION. **Wenjun Zheng**, Srirupa Chakraborty

665-Pos Board B445
A NEW MECHANISM OF KINESIN MOLILITY: CONVERSION OF RANDOM MOTION TO DIRECTIONAL MOTION WITH RATCHET STRUCTURE. **Ya-chang Chou**

666-Pos Board B446
QUANTIFICATION OF IFT-DYNEIN DYNAMICS IN C.ELEGANS. **Jona Mijalkovic**, Bram Prevo, Felix Oswald, Pierre JJ Mangeol, Erwin JG Peterman

667-Pos Board B447
3D REAL-TIME ORBITAL TRACKING IN ZEBRAFISH EMBRYOS: HIGH SPATIOTEMPORAL ANALYSIS OF MITOCHONDRIAL DYNAMICS IN NEURONS. **Fabian Wehnekamp**, Gabriela Plucińska, Thomas Misgeld, Don C. Lamb

668-Pos Board B448
MOTOR COORDINATION IN LONG-DISTANCE TRANSPORT IN AXONS. Praveen Chowdary, Daphne Che, **Bianxiao Cui**

669-Pos Board B449
PHOSPHORYLATION REGULATES THE MOTILE PROPERTIES OF A MITOTIC KINESIN. **Ofer Shapira**, Larisa Gheber

670-Pos Board B450 CPOW MID-CAREER TRAVEL AWARDEE
MECHANO-CHEMICAL MODEL FOR THE STEPPING OF CYTOPLASMIC DYNEIN. **Andreja Šarlah**, Andrej Vilfan

671-Pos Board B451
DYNACTIN FUNCTIONS AS BOTH A DYNAMIC TETHER AND BRAKE DURING DYNEIN-DRIVEN MOTILITY. **Swathi Ayloo**, Jacob E. Lazarus, Aditya Dodda, Mariko Tokito, E Michael Ostap, Erika Holzbaur

672-Pos Board B452
TOWARDS SIMULATION OF VIRTUAL CELLS: THE KINESIN-MICROTUBULE MOLECULAR MOTOR. **Srayanta Mukherjee**, Jeffrey Skolnick

673-Pos Board B453 EDUCATION TRAVEL AWARDEE
KINESIN-2'S ROLE IN INTRACELLULAR CARGO TRANSPORT: NAVIGATING THE COMPLEX MICROTUBULE LANDSCAPE. **Gregory Hoeprich**, William Hancock, Christopher Berger

674-Pos Board B454
COOPERATIVE TRANSPORT BY POPULATIONS OF FAST AND SLOW KINESINS UNCOVERS NOVEL FAMILY-DEPENDENT MOTOR CHARACTERISTICS IMPORTANT FOR IN VIVO FUNCTION. Göker Arpağ, Shankar Shastry, William O. Hancock, **Erkan Tüzel**

675-Pos Board B455
KINESIN REGULATION DYNAMICS THROUGH CARGO DELIVERY, A SINGLE MOLECULE INVESTIGATION. **Anthony P. I. Kovacs**, Jonathan M. Kessler, Huawen Lin, Susan K. Dutcher, Yan Mei Wang

676-Pos Board B456
SENSITIVITY OF MULTIPLE-KINESIN TRANSPORT TO MICROTUBULE LATTICE DEFECTS. K M Rifat Faysal, Stephen J. King, **Jing Xu**

677-Pos Board B457
CHARACTERIZING THE ALLOSTERIC EFFECT OF NUCLEOTIDE AND INHIBITOR BINDING TO THE KINESIN MOTOR DOMAIN. **Guido Scarabelli**, Barry J. Grant

678-Pos Board B458
EFFECT OF FORCE AND DISCRETE STEP-SIZE ON THE VELOCITY DISTRIBUTION OF PROCESSIVE MOLECULAR MOTORS. **Huong T. Vu**, Shaon Chakrabarti, Michael Hinczewski, D. Thirumalai

679-Pos Board B459
DEVELOPMENT OF PHOTO-CONTROLLED MOLECULAR SHUTTLE UTILIZING ATP DRIVEN MOTOR KINESIN. **Naozumi Numata**, Kazunori Kondo, Shinsaku Maruta

680-Pos Board B460
STUDY OF PHOSPHO-REGULATION OF A MITOTIC KINESIN USING A DIRECTED EVOLUTION APPROACH. **Alina Goldstein**, Nurit Siegler, Liam Holt, Leah Gheber

681-Pos Board B461
TRANSPORT BY A KINESIN IN THE PRESENCE OF MAGNETIC NANOPARTICLES. **Ehsan Mirzakhalili**, Eleni Gourgou, Bogdan Epureanu

682-Pos Board B462
KINETIC CHARACTERIZATION OF RICE PLANT SPECIFIC KINESIN E11 USING FLUORESCENT ATP ANALOGUE. **Hironobu Taniguchi**, Nozomi Umezu, Shinsaku Maruta

683-Pos Board B463
PHOTO-CONTROL OF MITOTIC KINESIN EG5 USING THIOL GROUP REACTIVE FULGIMIDE DERIVATIVE. **Yuki Tamura**, Dong Gyu Cho, Tae Joon Jeon, Shinsaku Maruta

684-Pos Board B464
PHOTO-REGULATION OF KINESIN INTRAMOLECULARLY CROSSLINKED BY BIFUNCTIONAL AZOBENZNE DERIVATIVE AT THE COILED-COIL STALK REGION. **Haruka Fujio**, Kazunori Kondo, Shinsaku Maruta

685-Pos Board B465
INVESTIGATING CIN8 BI-DIRECTIONALITY AS A MOLECULAR FORCE SENSOR. **Todd Fallesen**, Thomas Surrey

686-Pos Board B466
STRUCTURAL-KINETICS OF THE SWITCH-1 LOOP AND NECK-LINKER ELEMENTS EXPLAINS THE DISTINCT MOLECULAR PHYSIOLOGIES OF KINESIN-1 AND KINESIN-5.
Joseph M. Muretta, Jennifer Major, David D. Thomas, Rosenfeld S. Steven

687-Pos Board B467
PROCESSIVITY OF KINESIN-2 RESULTS FROM REAR-HEAD GATING AND NOT FRONT-HEAD GATING. **Geng-Yuan Chen**, David Arginteanu, William O. Hancock

688-Pos Board B468
HIGH SPEED MICROSCOPY FOR OBSERVING THE STEPPING BEHAVIOR OF KINESIN-1 MOTORS AT SATURATING ATP.
Keith J. Mickolajczyk, Joanna Andrecka, Jaime Ortega-Arroyo, Philipp Kukura, William O. Hancock

689-Pos Board B469
IMPACT OF STRUCTURAL AND DYNAMICAL COMPLEXITY ON KINESIN KINETICS. **Bruna D. Jacobson**, Kasra Manavi, Susan R. Atlas, Lydia Tapia

690-Pos Board B470
THE KINESIN-8 KIF18B USES A NON-CANONICAL FORM OF DIRECTED MOTILITY TO TARGET THE EXTREME MICROTUBULE PLUS-END. Yongdae Shin, **Yaqing Du**, Ryoma Ohi, Matthew Lang

691-Pos Board B471
MOTILITY OF KINETOCHORE KINESIN CENP-E IS ENHANCED BY TUBULIN DETYROSINATION.
Suvranta K. Tripathy, Ricardo Silva E. Sousa, Maria M. Magiera, Anatoly V. Zaytsev, Marin Barisic, Helder Maiato, Carsten Janke, Ekaterina L. Grishchuk

Cell Mechanics, Mechanosensing, and Motility I (Boards B472-B494)

692-Pos Board B472
CONCENTRATION PROFILES OF ACTIN-BINDING MOLECULES IN LAMELLIPODIA WITH RETROGRADE FLOW. **Martin Falcke**

693-Pos Board B473
HELICAL BUCKLING IN FILOPODIA. Natascha Leijnse, Lene B. Oddershede, **Poul M. Bendix**

694-Pos Board B474
CHARACTERISTICS OF CELL SHAPE IN TWO DIMENSIONS. **Elaheh Alizadeh**, Samanthe M. Lyons, Joshua Mannheimer, Jordan Castle, Renee Plomondon, Ashok Prasad

695-Pos Board B475
DOES CELL SHAPE DETERMINE CELL FATE? Samanthe M. Lyons, Elaheh Alizadeh, Joshua Mannheimer, Jordan Castle, Bryce Schroeder, Diego Krapf, David R. Smith, Randy A. Bartels, **Ashok Prasad**

696-Pos Board B476
REAL-TIME DEFORMABILITY CYTOMETRY: HIGH-THROUGHPUT MECHANICAL PHENOTYPING FOR CHANGES IN CELL FUNCTION. Oliver Otto, Philipp Rosendahl, Alexander Mietke, Stefan Golfier, Angela Jacobi, Nicole Töpfner, Christoph Herold, Daniel Klaue, Elisabeth Fischer-Friedrich, **Jochen Guck**

697-Pos Board B477
CORTICAL ACTIN TENSION, ELASTIC MODULUS AND CYTOSOLIC PRESSURE IN FIBROBLASTS DETERMINED USING ATOMIC FORCE MICROSCOPY. **Alexander X. Cartagena-Rivera**, Jeremy S. Logue, Clare M. Waterman, Richard S. Chadwick

698-Pos Board B478
RELATING LOCAL NANOMECHANICAL RESPONSE OF CELLS TO INTRACELLULAR FORCES AND CELL MORPHOLOGY. **Ozgur Sahin**, Nicola Mandriota, John J. Molina, Kathleen Tatem

699-Pos Board B479
CO-CULTURE CHANGES THE MECHANICAL PROPERTIES OF CELLS. **Xinyi Guo**, Keith Bonin, Martin Guthold

700-Pos Board B480
QUANTITATION OF COMPOSITIONAL CHANGES IN THE NON-ERYTHROID MEMBRANE SKELETON DUE TO EXTERNAL FORCES. Eleni K. Degaga, **Martin B. Forstner**

701-Pos Board B481
VIMENTIN INTERMEDIATE FILAMENT MECHANICS IN CELLS UNDER SHEAR STRESS. **Huayin Wu**, Mikkel H. Jensen, Ming Guo, David A. Weitz

702-Pos Board B482
ELECTOMECHANICAL MODEL FOR NON-EXCITABLE CELLS. **Flori H. Yellin**, Varun KAC Sreenivasan, Brenda Farrell, Sean X. Sun

703-Pos Board B483
THE ROLE OF CELLULAR MECHANICAL PROPERTIES IN MICROENVIRONMENT-DEPENDENT BEHAVIOR. **Iris Pak**, Manisha Kanthilal, Eric Darling

704-Pos Board B484 CPOW TRAVEL AWARDEE
CHARACTERIZING MECHANICAL FORCES DURING B CELL RESPONSES. **Katelyn M. Spillane**, Pavel Tolar

705-Pos Board B485
ATOMIC FORCE MICROSCOPY OF TRIPLE NEGATIVE BREAST CANCER CELLS: A PREDICTIVE VALUE OF MECHANICAL PHENOTYPE. **Pawel A. Osmulski**, Karolina Wlodyga, Tim Hui-Ming Huang, Maria E. Gaczynska

706-Pos Board B486 EDUCATION TRAVEL AWARDEE
AFM INDENTATION REVEALS ACTOMYOSIN-BASED STIFFENING OF METASTATIC CANCER CELLS DURING INVASION INTO COLLAGEN I MATRICES. **Bryant L. Doss**, Jack R. Staunton, Stuart M. Lindsay, Robert Ros

707-Pos Board B487
CYTOSKELETAL FORCES DURING T CELL ACTIVATION.
King Lam Hui, Arpita Upadhyaya

708-Pos Board B488
PERSISTENT ACTIVATION OF SIGNAL TRANSDUCTION NETWORKS INDUCES A NOVEL MECHANISM OF CELL DEATH. **Marc Edwards**, Huaqing Cai, Peter Devreotes

709-Pos Board B489
ACUTE MECHANICAL STIMULATION ACTIVATES THE CHEMOTACTIC SIGNALING NETWORK. **Yulia Artemenko**, Jane S. Borleis, Peter N. Devreotes

710-Pos Board B490
PHARMACOLOGICAL ACTIVATION OF MYOSIN II TO CORRECT PANCREATIC CANCER CELL MECHANICS. **Alexandra Surcel**, Qingfeng Zhu, Eric Schiffhauer, Robert Anders, Douglas Robinson

711-Pos Board B491
SH3 DOMAIN OF C-SRC REGULATES ITS DYNAMIC BEHAVIOR IN THE CELL MEMBRANE. **Hiroaki Machiyama**, Tomoyuki Yamaguchi, Tomonobu M. Watanabe, Hideaki Fujita

712-Pos Board B492
INSIGHTS ON RGD-BASED PEPTIDE INTERACTIONS WITH INTEGRIN RECEPTORS FROM ATOMISTIC SIMULATIONS. **Aravind Rammohan**, Jacob Miner, Matthew Mckenzie

713-Pos Board B493
H2-CALPONIN GENE KNOCKOUT INCREASES TRACTION FORCE OF MOUSE FIBROBLASTS IN VITRO. **M Moazzem Hossain**, Guangyi Zhao, Moon-Sook Woo, James H-C. Wang, J.p. Jin

714-Pos Board B494 **EDUCATION TRAVEL AWARDEE**
DELETION OF H2-CALPONIN IN MACROPHAGES FACILITATES CELL MOTILITY AND LIPID CLEARANCE: A NOVEL MECHANISM TO ATTENUATE ARTERIAL ATHEROSCLEROSIS. **Rong Liu**, Jian-Ping Jin

Membrane Pumps, Transporters, and Exchangers I (Boards B495-B515)

715-Pos Board B495
ARRAYED LIPID MEMBRANES ON FEMTOLITER CHAMBERS ALLOW HIGHLY SENSITIVE DETECTION OF ION TRANSLOCATION CATALYZED BY TRANSPORTER PROTEIN. **Rikiya Watanabe**, Naoki Soga, Hiroyuki Noji

716-Pos Board B496
VOLTAGE DEPENDENT CONFORMATIONAL CHANGES OF THE NA^+/K^+-ATPASE REVEALED BY SITE DIRECTED FLUOROMETRY. **Jorge E. Sánchez-Rodríguez**, Pablo Miranda-Fernández, Miguel Holmgren, Francisco Bezanilla

717-Pos Board B497
NA^+/K^+-ATPASE PUMPING MECHANISM: INSIGHTS FROM SIMULATIONS. **Huan Rui**, Avisek Das, Benoit Roux

718-Pos Board B498
TOWARDS THERMODYNAMIC CHARACTERIZATION OF TRANSPORT CYCLE IN SECONDARY TRANSPORTERS USING ENHANCED SAMPLING TECHNIQUES. **Mahmoud Moradi**, Giray Enkavi, Emad Tajkhorshid

719-Pos Board B499
PROTONATION STATES OF KEY ACIDIC RESIDUES AT THE ION BINDING SITES IN NA/K PUMP BY QM CALCULATIONS. **Naoki Tsunekawa**, Chikashi Toyoshima

720-Pos Board B500 **EDUCATION TRAVEL AWARDEE**
NA^+/K^+ PUMP ION BINDING SITE INTERACTIONS REGULATE THE PROTON LEAK PATHWAY. **Kevin Stanley**, Craig Gatto, Pablo Artigas

721-Pos Board B501
POTASSIUM REGULATION OF THE NAK-ATPASE PUMP CURRENTS IN MAMMALIAN SKELETAL MUSCLE FIBERS. **Marino G. Di Franco**, Jerry Lingrel, Judith Heiny

722-Pos Board B502
A COMBINATION OF CURCUMIN WITH EITHER GRAMICIDIN OR OUABAIN SELECTIVELY KILLS CELLS THAT EXPRESS THE MULTIDRUG RESISTANCE-LINKED ABCG2 TRANSPORTER. **Haiyan Liu**, Divya K. Rao, Suresh V. Ambudkar, Michael Mayer

723-Pos Board B503 **EDUCATION TRAVEL AWARDEE**
CONFORMATIONAL CHANGES AND COMPLEX FORMATION OF THE NON-CANONICAL RIBOSE ABC TRANSPORTER. **Satchal K. Erramilli**, Cynthia V. Stauffacher

724-Pos Board B504
MOVEMENT OF THE NUCLEOTIDE BINDING DOMAINS IN THE ABC TRANSPORTER MSBA RECONSTITUTED IN NANODISCS. **Maria E. Zoghbi**, Guillermo A. Altenberg

725-Pos Board B505
MULTISCALE QM/MM SIMULATIONS OF ATP HYDROLYSIS MECHANISM IN ABC-TRANSPORTERS. **Jingzhi Pu**

726-Pos Board B506 **EDUCATION TRAVEL AWARDEE**
RECONSTITUTION OF MULTIDRUG RESISTANCE EFFLUX PUMPS IN GIANT LIPOSOMES. **SooHyun Park**, You Jung Kang, Sheereen Majd

727-Pos Board B507
EXPLORING P-GLYCOPROTEIN SUBSTRATE ACCESS. **Laura Domicevica**, Philip C. Biggin

728-Pos Board B508
METHIONINE IMPORTERS IN SOIL BACTERIA: POTENTIAL FOR TRANSPORTER-COMPONENT CROSSTALK. **Eliza Zielazinski**, Sarah Zerbs, Peter Larsen, Frank Collart, Philip D. Laible

729-Pos Board B509
EPR ACCESSIBILITY MEASUREMENTS OF THE SERCA-PLB COMPLEX USING SITE-DIRECTED SPIN LABELING. **Peter D. Martin**, Zachary M. James, Jesse E. McCaffrey, Dave D. Thomas

730-Pos Board B510
MAPPING OF SARCOLIPIN CONFORMATIONAL STATES ALONG THE ENZYMATIC PATHWAY OF SERCA. **Alysha A. Dicke**, Kaustubh R. Mote, Gianluigi Veglia

731-Pos Board B511
USING A LIVE-CELL HIGH-THROUGHPUT TIME-RESOLVED FRET ASSAY TO DISCOVER ENZYME MODULATORS. **Ji Li**, Tory M. Schaaf, Simon J. Gruber, Razvan L. Cornea, Joseph M. Autry, Samantha L. Yuen, Ryan Chen, Kurt C. Peterson, Gregory D. Gillispie, David D. Thomas

732-Pos Board B512
MOLECULAR DYNAMICS SIMULATIONS OF CALCIUM PUMP STRUCTURAL DISORDER. **Nikolai Smolin**, Seth Robia

733-Pos Board B513
EXPLORING CARDIAC CALCIUM ATPASE DIMERIZATION. **Daniel Blackwell**, Seth Robia

734-Pos Board B514
FUNCTIONAL ANALYSIS OF PROTON-TRANSPORTER AT SINGLE MOLECULE LEVEL. Salome Veshaguri, Sune M. Christensen, **Garima Ghale**, Mads Møller , Christina Lohr , Andreas Lauge Christensen , Marijonas Tutkus , Gerdi Kemmer , Bo Højen Justesen , Ida Louise Jørgensen , Thomas Pomorski , Dimitrios Stamou

735-Pos Board B515
VOLTAGE DEPENDENT REACTIONS IN THE NON-GASTRIC H/K-ATPASE. **Dylan Meyer**, Pablo Artigas, Craig Gatto, Kevin Stanley

Emerging Techniques and Approaches (Boards B516-B528)

736-Pos Board B516
CORRELATING HEART INTERSTITIUM STRUCTURE AND FUNCTION USING HYDRATION AND MAGNETIC RESONANCE IMAGE (MRI) ANALYSES. **Maria P. McGee**, Michael Morykwas, James Jordan, Louis Argenta

737-Pos Board B517
OPSIN SPECTRAL SENSITIVITY DETERMINES THE EFFECTIVENESS OF OPTOGENETICS-BASED DEFIBRILLATION. **Thomas V. Karathanos**, Patrick M. Boyle, Jason D. Bayer, Dafang Wang, Natalia A. Trayanova

738-Pos Board B518
TARGETING PROTEIN-PROTEIN-INTERACTIONS FOR ANTIMALARIAL DRUG DISCOVERY. Lauren E. Boucher, Daisy D. Colon Lopez, Alexia S. Miller, Serge M. Stamm, **Jürgen Bosch**

739-Pos Board B519
LIVING E. COLI IS PERMEABLE TO PROPIDIUM IODIDE: A STUDY BY TIME-RESOLVED SECOND-HARMONIC SCATTERING AND FLUORESCENCE MICROSCOPY. **Mohammad Sharifian Gh.**, Michael J. Wilhelm, Joel B. Sheffield, Hai-Lung Dai

740-Pos Board B520
MAPPING BIOPROCESSING DYNAMICS AND NOISE AT THE SINGLE CELL LEVEL USING MICROFLUIDICS. **Andreas E. Vasdekis**, Gregory Stephanopoulos

741-Pos Board B521
WAVE-PARTICLE DUALITY IN MOLECULAR MACHINES, LIVING CELLS, AND HUMAN BRAINS. **Sungchul Ji**

742-Pos Board B522
MAPPING AND DE NOVO ASSEMBLY OF LONG BARCODED MOLECULES OF DNA FROM A CANCER GENOME. **Jeff G. Reifenberger**, Zeljko Dzakula, Vladimir Dergachev, Thomas Anantharaman, Alex Hastie, Saki Chan, Han Cao

743-Pos Board B523
NANOSTRAWS: A NANOFABRICATED PLATFORM FOR DELIVERY OF CELL-IMPERMEABLE, SYNTHETIC BIOMOLECULES. **Alexander Xu**, Peyton Shieh, Laura Sanman, Nicholas Melosh

744-Pos Board B524
RUTHENIUM(II)BIS(2,2'-BIPYRIDINE) INTERACTIONS WITH NUCLEAOBASES- MODELS FOR DNA BINDING. **Randy W. Larsen**, Chrsiti L. Whittington, Michael T. Kemp, Tarah Word, H. Lee Woodcock, Randy W. Larsen

745-Pos Board B525
NOISE RESPONSE OF P53 OSCILLATION AGAINST SYSTEM SIZE SCALING. **Chong He**, Lock Yue Chew

746-Pos Board B526
THE LIFETIME NAD(P)H FINGERPRINT OF SALMONELLA INFECTION. **Andrea Anzalone**, Araceli Perez-Lopez, Manuela Raffatellu, Enrico Gratton

747-Pos Board B527
SMALL CELL AGGREGATION METHOD WHICH ENABLES US TO OBSERVE ALL CELL'S BEHAVIOR INDIVIDUALLY. **Haruka Hiraoka**, Masahiro Ueda

748-Pos Board B528
GCAMP3-DERIVED GENETICALLY ENCODED PROBES AS RAPID INTRACELLULAR SIGNALS FOR CALCIUM DYNAMICS. **John A. Scaringi**, Nordine Helassa, Katalin Torok, Martin Morad

Molecular, Cellular, and Systems Neuroscience (Boards B529-B559)

749-Pos Board B529
MATHEMATICAL MODELING OF MELANOPSIN'S LIGHT RESPONSE IN IPRGCS AND HEK CELLS. **Phyllis R. Robinson**, Abigail Jackson, Jessica Ortega, Hyewon Kang, Kathleen Hoffman

750-Pos Board B530
A MATHEMATICAL MODEL OF MELANOPSIN PHOTOTRANSDUCTION. **Abigail C. Jackson**, Jessica Ortega

751-Pos Board B531
DETERMINING THE ROLE OF MELANOPSIN C-TAIL IN DEACTIVATION AND TRAFFICKING. **Elelbin A. Ortiz**, Preethi Somasundaram, Evan Cameron, Phyllis Robinson

752-Pos Board B532
MOLECULAR BASIS OF NEURONAL SIGNALING. **Kin Lam**, Zhe Wu, Klaus Schulten

753-Pos Board B533
INDUCIBLE EXTERNAL MAGNETIC FIELDS COUPLED TO INJECTABLE SYNTHETIC MAGNETIC NANOPARTICLES PROPOSED TO REPLACE INVASIVE OPTOGENETICS AS MODULATORS OF ENDOGENOUS ION CHANNEL GATING. **Edward J. Beck**

754-Pos Board B534
V220 MUTANTS OF CIONA VOLTAGE-SENSING DOMAIN BASED GENETICALLY ENCODED FLUORESCENT VOLTAGE SENSORS. **Dhanarajan Rajakumar**, Hong-hua Piao, Bok Eum Kang, Arong Jung, Eun Ha Kim, Bradley J. Baker

755-Pos Board B535
TRANSITION METAL ION FRET MEASUREMENTS IN PLASMA MEMBRANE SHEETS PREPARED BY DEROOFING CULTURED MAMMALIAN CELLS. **Eric Senning**, William N. Zagotta, Sharona E. Gordon

756-Pos Board B536
DEVELOPMENT OF NOVEL FRET-BASED FLUORESCENT VOLTAGE SENSOR PROTEINS. **Masoud Sepehri Rad**, Uhna Sung, Thomas Hughes, Lawrence B. Cohen, Bradley J. Baker

757-Pos Board B537
IMPROVING SIGNAL DYNAMICS OF FLUORESCENT PROTEIN VOLTAGE SENSORS BY OPTIMIZING FRET INTERACTIONS. **Uhna Sung**, Lei Jin, Thomas Hughes, Lawrence B. Cohen, Bradley J. Baker, Masoud Sepehri-Rad

758-Pos Board B538
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF PURKINJE CELLS FROM FHM3 (SCN1A) KNOCK-IN MICE. **Ilaria Zanardi**, Sara Bertelli, Nikolaus Plesnila, Tobias Freilinger, Paola Gavazzo, Michael Pusch

759-Pos Board B539
BIDIRECTIONAL PROPAGATION OF ACTION POTENTIAL IN GIANT AXONS OF NERVE BUNDLES FROM HOMARUS AMERICANUS. **Tian Wang**, Alfredo Gonzalez-Perez, Jorin Diemer, Søren Nissen, Thomas Heimburg

760-Pos Board B540
IMAGING CALCIUM ACTIVITY PATTERNS IN THE DROSOPHILA PUPAL ECDYSIS NEURAL CIRCUIT. **Amicia D. Elliott**, Feici Diao, Brianna F. Waller, Yicong Wu, Andrew G. York, Hari Shroff, Benjamin H. White

761-Pos Board B541
THE INFLUENCE OF VOLTAGE SENSOR ACTIVITY ON ARCLIGHT DYNAMICS. **Jeremy S. Treger**, Michael F. Priest, Francisco Bezanilla

762-Pos Board B542
NONLINEAR AMPA SENSITIVITY TO GLUTAMATE AND RECRUITMENT OF NMDA ACTIVITY IN DENDRITIC SPINES. **Corey D. Acker**, Leslie M. Loew

763-Pos Board B543
BIOPHYSICAL APPROACHES TO THE STUDY OF TRAUMATIC BRAIN INJURY. **Jeffrey T. Mason**

764-Pos Board B544
HYPOTHESES FOR HAIR CELL RIBBON SYNAPSES PROBED BY A BIOMIMETIC SYSTEM. **Kang-Hun Ahn**, Woo Seok Lee

765-Pos Board B545
THE ENERGETICS OF HIGH FREQUENCY DISCHARGE IN ELECTROCYTES: A MATHEMATICAL MODEL WITH EXPLICIT PUMPS. Bela Joos, Michael R. Markham, John E. Lewis, **Catherine E. Morris**

766-Pos Board B546
THE MECHANISM OF INHIBITION OF NECROSIS BY HUMANIN DERIVATIVES: A POTENTIAL TREATMENT FOR ISCHEMIA AND RELATED DISEASES. Aviv Cohen, Jenny Lerner-Yardeni, David Meridor, Moreno Zamai, Valeria R. Caiolfa, Roni Kasher, Ilana Nathan, **Abraham H. Parola**

767-Pos Board B547
COARSE-GRAINED MODEL OF THE SNARE COMPLEX DETERMINES THE NUMBER OF SNARES REQUIRED FOR DOCKING. **Nicole Fortoul**, Pankaj Singh, Chung-Yuen Hui, Maria Bykhovskaia, Anand Jagota

768-Pos Board B548
ORGANIZATION AND DYNAMICS OF NICOTINIC ACETYLCHOLINE RECEPTOR NANOCLUSTERS AT THE CELL SURFACE. **Francisco J. Barrantes**

769-Pos Board B549
MOLECULAR MODELING AND INTERACTION ANALYSIS OF CANNABINOID RECEPTOR INTERACTING PROTEIN CRIP1B. Pratishtha Singh, Howlett Allyn, **Sudha M. Cowsik**

770-Pos Board B550
PHYSICAL AND TOPOLOGICAL CONSTRAINTS ON GROWTH IN HUMAN BRAIN NETWORKS. **Andrew M. Maguire**, Danielle S. Bassett, Ann M. Hermundstad

771-Pos Board B551
UNIFIED MODEL OF SYNAPTIC TRANSMISSION. **Cihan Kaya**, Bing Liu, James R. Faeder, Ivet Bahar

772-Pos Board B552
STRUCTURES OF HUMAN MIRO1 REVEAL CONFORMATIONAL CHANGES. **Julian Klosowiak**, Pamela Focia, Srinivas Chakravarthy, Douglas Freymann, Sarah Rice

773-Pos Board B553
TRANSITION METAL FRET OF CYCLIC NUCLEOTIDE-GATED CHANNELS LABELED WITH THE FLUORESCENT UNNATURAL AMINO ACID ANAP. **Teresa K. Aman**, Sharona E. Gordon, William N. Zagotta

774-Pos Board B554
X-RAY FLUORESCENCE MICROSCOPY ANALYSIS OF METAL-RICH INCLUSION BODIES IN ADULT NEURAL STEM CELLS IN SITU. **Brendan T. Sullivan**, Yulia Pushkar, Gregory Robison, Taisiya Zakharova

775-Pos Board B555
REVEALING THE CELLULAR METABOLIC STATE THROUGH NADH AUTOFLUORESCENCE LIFETIME IN PARKINSON'S DISEASE. **Sandeep Chakraborty**, Chiao-Ming Huang, Artahses Karmenyan, Jin-Wu Tsai, Arthur Chiou

776-Pos Board B556
REGULATION OF COUPLED β-CELL CAMP DYNAMICS. Chris Wilson, Matthew J. Westacott, **Richard K. Benninger**

777-Pos Board B557
A BIOPHYSICAL MODEL CAPTURING TWO TYPES OF BURST FIRING IN GNRH NEURONS. **Spencer Moran**

778-Pos Board B558
SPATIAL AND TEMPORAL ANALYSES OF SLOW ELECTRICAL OSCILLATIONS RECORDED FROM IN-VITRO NEURONAL NETWORKS. Javier I. Suárez, Paritosh Pande, **Parijat Sengupta**

779-Pos Board B559
SK CHANNEL DISTRIBUTION ON NEURONAL AXONS REVEALED BY SINGLE MOLECULE ATOMIC FORCE MICROSCOPY. Krithika Abiraman, Anastasios Tzingounis, **George Lykotrafitis**

Molecular Dynamics I (Boards B560-B589)

780-Pos Board B560
A CHARMM-COMPATIBLE FORCE FIELD FOR N- AND APLHA-METHYLATED PEPTIDES WITH (PHI,PSI) ENERGY CORRECTION GRID. **Kenno Vanommeslaeghe**, Alexander D. MacKerell Jr.

781-Pos Board B561
THE ROLE OF BACKBONE DIPOLE INTERACTIONS IN THE FORMATION OF SECONDARY AND SUPERSECONDARY STRUCTURES. Sai Ganesan, **Silvina Matysiak**

782-Pos Board B562
ENHANCED CONFORMATIONAL SAMPLING OF CARBOHYDRATES USING BIASING POTENTIAL AND SOLUTE TEMPERING REPLICA EXCHANGE: APPLICATION TO THE N-GLYCAN ON THE HIV GP120 ENVELOPE PROTEIN. **Mingjun Yang**, Jing Huang, Alexander D. MacKerell Jr.

783-Pos Board B563
DMD4B-HYDRA: TOWARD A NOVEL DISCRETE MOLECULAR DYNAMICS PROTEIN MODEL. **Derya Meral**, Brigita Urbanc

784-Pos Board B564
TETRAMOLECULAR PARALLEL G-QUADRUPLEX VALIDATION SET FOR MOLECULAR DYNAMICS SIMULATION WITH CHARMM 27 FORCE FIELD. Daniela Barragan, **Marcos V. Becerra**, Miguel A. Mendez

785-Pos Board B565
SAMBE: THE NEW WEBSERVER FOR PREDICTING THE EFFECT OF NSSNP ON THE PROTEIN-PROTEIN BINDING FREE ENERGY. **Marharyta Petukh**, Jacon Morrison, Minghui Li, Anna Panchenko, Emil Alexov

786-Pos Board B566
BIO.B-GEN: AN INITIAL SYSTEM GENERATOR FOR BIOLOGICAL MOLECULAR SIMULATIONS. **Dmitri Rozmanov**, Peter Tieleman

787-Pos Board B567
VALIDATION AND DEVELOPMENT OF THE FORCE FIELD PARAMETERS FOR DRUG AND DRUG-LIKE MOLECULES. **Katarzyna B. Koziara**, Martin Stroet, Alpeshkumar K. Malde, Alan E. Mark

788-Pos Board B568 **International travel awardee**
A NOVEL METHOD FOR FORCE-FIELD CALIBRATION BASED ON MAXIMUM-LIKELIHOOD APPROACH AND THERMAL UNFOLDING DATA. Bartłomiej Zaborowski, Dawid Jagieła, Adam K. Sieradzan, Cezary R. Czaplewski, Anna Hałabis, Agnieszka Lewandowska, Wioletta Żmudzińska, Stanisław Ołdziej, **Jozef A. Liwo**

789-Pos Board B569
QUANTUM MECHANICAL MOLECULAR MECHANICAL CALCULATIONS USING AMOEBA FORCE FIELDS. **Yihan Shao**, Andrew Simmonett, Frank Pickard, Gerhard Koenig, Bernard Brooks

790-Pos Board B570
THE DO'S AND DO NOT'S OF A 100 MILLION ATOM MOLECULAR DYNAMICS SIMULATION. **Abhishek Singharoy**, Danielle Chandler, Jacob Durrant, Melih Sener, Rommie Amaro, Klaus Schulten

791-Pos Board B571
MINIMALLY-BIASED METADYNAMICS METHOD TO SAMPLE CONFORMATIONAL ENSEMBLES COMPATIBLE WITH EXPERIMENTAL MEASUREMENTS. **Fabrizio Marinelli**, José D. Faraldo-Gómez

792-Pos Board B572
EFFICIENT HIGH ACCURACY NON-BONDED INTERACTIONS IN THE CHARMM SIMULATION PACKAGE. **Frank C. Pickard**, Andrew Craig Simmonett, Bernard Rigoberto Brooks

793-Pos Board B573
TOWARDS A POLARIZABLE FORCE FIELD FOR RNA BASED ON THE CLASSICAL DRUDE OSCILLATOR. **Justin A. Lemkul**, Alexey Savelyev, Alexander D. MacKerell, Jr.

794-Pos Board B574
IMPLEMENTATION OF REPLICA-EXCHANGE UMBRELLA SAMPLING TO THE DFTB+ SIMULATION PACKAGE. **Shingo Ito**, Yuko Okamoto, Stephan Irle

795-Pos Board B575
CHARMM GUI MEMBRANE BUILDER UPDATES. **Xi Cheng**, Yifei Qi, Jumin Lee, Sunhwan Jo, Wonpil Im

796-Pos Board B576
EXPERIMENTAL AND THEORETICAL APPROACHES TO THE STUDY OF PROBE DIFFUSION IN MACROMOLECULAR SOLUTIONS. **Preston Donovan**, Yasaman Chehreghanianzabi, Muruhan Rathinam, Silviya Zustiak

797-Pos Board B577
A COUPLED TWO-DIMENSIONAL MAIN CHAIN TORSIONAL POTENTIAL FOR PROTEIN DYNAMICS. Ya Gao, Yongxiu Li, John Z.H. Zhang, **Ye Mei**

798-Pos Board B578
MOLECULAR DYNAMICS SIMULATION OF PROTEIN CRYSTAL WITH POLARIZED PROTEIN-SPECIFIC CHARGE. Yongxiu Li, John Z.H. Zhang, **Ye Mei**

799-Pos Board B579
EXTENSION OF THE CHARMM GENERAL FORCE FIELD TO LINKED NITROGEN-CONTAINING HETREROAROMATIC RINGS. **Lei Fang**, Ignacio Soteras Gutiérrez, Kenno Vanommeslaeghe, Alexander D. MacKerell Jr.

800-Pos Board B580
PHASE DIAGRAM OF LIPID-CHOLESTEROL MIXTURE: COMPARISON BETWEEN DIFFERENT FORCE FIELDS. **Fernando Favela-Rosales**, César Millán-Pacheco, Humberto Saint-Martin, Mauricio D. Carbajal-Tinoco, Iván Ortega-Blake

801-Pos Board B581
NON-MARKOVIAN ANALYSES FOR EXTRACTING LONG-TIME BEHAVIOR FROM MOLECULAR SIMULATION TRAJECTORIES. **Ernesto Suarez**, Daniel M. Zuckerman

802-Pos Board B582
NEW DEVELOPMENTS IN THE COLLECTIVE VARIABLES MODULE: MORE FLEXIBLE, MORE INTERACTIVE. **Giacomo Fiorin**, Jérôme Hénin

803-Pos Board B583
PARAMETRIZATION OF HALOGEN BONDS IN THE CHARMM GENERAL FORCE FIELD. **Ignacio Soteras Gutierrez**

804-Pos Board B584
LOOS: A TOOL FOR MAKING NEW TOOLS FOR ANALYZING MOLECULAR SIMULATIONS. **Tod D. Romo**, Alan Grossfield

805-Pos Board B585
A SMOLUCHOWSKI EQUATION FOR FORCE-MODULATED CHEMISTRY IN SINGLE MOLECULE PULLING EXPERIMENTS. **Gianmarc Grazioli**, Ioan Andricioaei

806-Pos Board B586
CHARMM-GUI MARTINI MAKER FOR COARSE-GRAINED SIMULATIONS. **Yifei Qi**, Xi Cheng, Wonpil Im

807-Pos Board B587
NECESSITY OF HIGH PHYSICAL RESOLUTION IN THE DEVELOPMENT OF FLEXIBLE COARSE-GRAINED PROTEIN MODELS. **ZhiGuang Jia**, Jianhan Chen

808-Pos Board B588
REFINING MULTI-SCALE ENHANCED SAMPLING FOR SIMULATING DISORDERED PROTEIN CONFORMATIONS. **Kuo Hao Lee**, Jianhan Chen

809-Pos Board B589
INVESTIGATION OF A METHOD TO EFFICIENTLY CREATE ELASTIC NETWORKS. **Patrick M. Diggins**, Changjiang Liu, Raffaello Potestio, Markus Deserno

Single-Molecule Spectroscopy (Boards B590-B613)

810-Pos Board B590
MEMBRANE DEFORMATION BY HER2 OVEREXPRESSION DISRUPTS EPITHELIAL INTEGRITY. **Inhee Chung**, Mike Reichelt, Don Dowbenko, Ira Mellman, Mark Sliwkowski

811-Pos Board B591
BLINKING OF QUANTUM DOT PROBES IN SINGLE MEMBRANE MOLECULE ROTATION MEASUREMENTS. Dongmei Zhang, Peter W. Winter, Deborah A. Roess, **B. George Barisas**

812-Pos Board B592
SINGLE-MOLECULE FLUORESCENCE MICROSCOPY AND TRACKING OF LIPIDS IN MITOCHONDRIAL-LIKE SUPPORTED LIPID BILAYERS. **Markus Rose**, Nehad Hirmiz, Cecile Fradin, José Moran-Mirabal

813-Pos Board B593
THE ROLE OF AMINO ACID RESIDUES LOCATED AT THE CATALYTIC SITE IN THE ROTATION OF ENTEROCOCCUS HIRAE V1-ATPASE. **Yoshihiro Minagawa**, Ueno Hiroshi, Mayu Hara, Hiroyuki Noji, Takeshi Murata, Ryota Iino

814-Pos Board B594
INVESTIGATING THE KINETICS OF HSF BINDING USING HIGH THROUGHPUT SINGLE MOLECULE IMAGING. **Alexander L. Van Slyke**, Avtar Singh, Devin Wakefield, Dig Bijay Mahat, Martin S. Buckley, Barbard Baird, John T. Lis, Warren R. Zipfel

815-Pos Board B595
FAST AND USER-FRIENDLY SINGLE-MOLECULE FRET MICROSCOPY SOFTWARE. **Søren Preus**, Lasse Hildebrandt, Sofie L. Noer, Victoria Birkedal

816-Pos Board B596
DYNAMICS MEASUREMENT OF DIFFUSING SINGLE-MOLECULE WITH TENS OF MILLISECOND OBSERVATION TIME BY LIPOSOME TETHERING. **Jea-Yeol Kim**, Cheolhee Kim, Nam Ki Lee

817-Pos Board B597
TOTAL EMISSION DETECTION FOR EFFICIENT AND AFFORDABLE TWO-PHOTON FLUCTUATION CORRELATION SPECTROSCOPY (2P-FCS). **Aleksandr V. Smirnov**, Christian Combs, Justin Lee, Jay R. Knutson

818-Pos Board B598
POSITIONAL FLUOROPHORE PROPERTIES IN HIGH-PRECISION FRET ANALYSIS: ORIENTATION EFFECTS, DYNAMIC QUENCHING AND BEYOND. **Thomas-Otavio Peulen**, Claus A.M. Seidel

819-Pos Board B599
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

820-Pos Board B600
SINGLE MOLECULE FLUORESCENCE STUDY OF G-QUADRUPLEX SENSOR. Yingya Li, Xiao Fan, Yanyan Li, **Haitao Li**

821-Pos Board B601
ESTIMATION OF DNA LOOP INTERACTIONS SUPPORTS THE LOOP DOMAIN MODEL OF INSULATOR ACTION. **Sandip Kumar**, David G. Priest, Yan Yan, Ian B. Dodd, Keith E. Shearwin, David D. Dunlap

822-Pos Board B602
COMPETITOR EFFECT ON MOLECULAR COMPLEX DISSOCIATION IN THE ABSENCE OF TERNARY COMPLEX FORMATION. **Thayaparan Paramanathan**, Daniel Reeves, Larry J. Friedman, Jane Kondev, Jeff Gelles

823-Pos Board B603
SINGLE MOLECULE EVIDENCE FOR LONG RANGE INTERACTIONS DURING COMMITMENT COMPLEX FORMATION. **Joshua D. Larson**, Aaron A. Hoskins

824-Pos Board B604
BAYESIAN CLASSIFICATION OF MRNA AND KINETOCHORE TRANSPORT DYNAMICS. **Zachary Barry**, Nilah Monnier, Hye Yoon Park, Kuan-Chung Su, Zachary Katz, Brian P. English, Arkajit Dey, Keyao Pan, Iain M. Cheeseman, Robert H. Singer, Mark Bathe

825-Pos Board B605
SINGLE MOLECULE STUDIES OF TAU PROTEIN IN THE ABEL TRAP. **Sharla L. Wood**, Lydia Manger, Michael Holden, Martin Margittai, Randall Goldsmith

826-Pos Board B606
EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) MEMBRANE ORGANIZATION AND DYNAMICS INVESTIGATED BY SW-FCCS AND IMAGING FCS. **Thorsten Wohland**, Sibel Yavas, Radek Machan, Shuangru Huang, Shi Ying Lim, Nirmalya Bag

827-Pos Board B607
RAPID MEASUREMENT OF MOLECULAR TRANSPORT AND INTERACTION INSIDE LIVING CELLS WITH SINGLE PLANE ILLUMINATION MICROSCOPY. **Per Niklas Hedde**, Milka Stakic, Enrico Gratton

828-Pos Board B608
CHARACTERIZATION OF FLUORESCENT 3DNA DENDRIMERS WITH FCS AND SINGLE MOLECULE IMAGING. **Qiaoqiao Ruan**, Joseph P. Skinner, Sergey S. Tetin

829-Pos Board B609 INTERNATIONAL TRAVEL AWARDEE
CONCENTRATION ESTIMATES FROM COUNTING INDIVIDUAL MOLECULES. **Emiliano Perez Ipiña**, Silvina Ponce Dawson

830-Pos Board B610
OBSERVATION OF DNA KNOTS USING SOLID-STATE NANOPORES. **Calin Plesa**, Daniel Verschueren, Justus W. Ruitenberg, Menno J. Witteveen, Magnus P. Jonsson, Alexander Y. Grosberg, Yitzhak Rabin, Cees Dekker

831-Pos Board B611
ENHANCED ELECTROSTATIC FORCE MICROSCOPY IMAGING REVEALS MECHANISM OF TRF2 MEDIATED DNA COMPACTION. **Parminder Kaur**

832-Pos Board B612
GRAB & WATCH: CORRELATIVE OPTICAL TWEEZERS-FLUORESCENCE MICROSCOPY (CTFM) AS A VERSATILE TOOL FOR BIOLOGICAL STUDIES. **Gijs J.L. Wuite**, Erwin Peterman

833-Pos Board B613
MANIPULATION WITH MAGNETIC TWEEZERS OF MECHANOSENSITIVE ION CHANNELS AND ADAPTATION MOTORS IN HAIR CELLS OF THE INNER EAR. **Aakash Basu**, Samuel Lagier, Maria Vologodskaia, Brian Fabella, A. J. Hudspeth

Force Spectroscopy and Scanning Probe Microscopy (Boards B614-B639)

834-Pos Board B614
BRINGING FORCE PROBE MOLECULAR DYNAMICS SIMULATIONS CLOSER TO EXPERIMENTS. **Andreas Russek**, Felix Rico, Simon Scheuring, Helmut Grubmuller

835-Pos Board B615
A PRECISION SCANNING PROBE MICROSCOPE WITH DIRECT ACCESS TO THE THREE DIMENSIONAL TIP-SAMPLE INTERACTION FORCE VECTOR. Krishna P. Sigdel, **Gavin M. King**

836-Pos Board B616
FAST AND ACCURATE PHOTODIODE-BASED DETECTION OF MULTIPLE TRAP OPTICAL TWEEZERS WITH CROSSTALK-ELIMINATION. **Dino Ott**, S. Nader S. Reihani, Lene B. Oddershede

837-Pos Board B617
PRECISE PARTITION OF MICRO/NANOPARTICLES IN AN ELECTRO-OPTOFLUIDIC PLATFORM. Mohammad Soltani, **Fan Ye**, Jessica L. Killian, Jun Lin, Michal Lipson, Michelle D. Wang

838-Pos Board B618
TRANSVERSE MAGNETIC TWEEZERS FOR DIRECT DNA EXTENSION MEASUREMENTS. **Guillermo Vargas**, Tomas P. Corrales, James T. Inman, Michelle D. Wang

839-Pos Board B619
HUMAN RED BLOOD CELL ADHESION TO LAMININ MEASURED BY ATOMIC FORCE MICROSCOPY. **George Lykotrafitis**

840-Pos Board B620
ATOMIC FORCE MICROSCOPY (AFM) ANALYSIS OF THE BACTERIAL POLAR PROTEIN POPZ. **Carolina E. Caffaro**, Grant R. Bowman

841-Pos Board B621
ATOMIC FORCE MICROSCOPY OF PROTEIN TRANSLOCATION MACHINERY IN SUPPORTED LIPID BILAYERS. **Raghavendar Reddy Sanganna Gari**, Nathan Frey, Brendan Marsh, Chunfeng Mao, Linda Randall, Gavin King

842-Pos Board B622
A NOVEL AFM-BASED TECHNIQUE FOR MEASURING COUPLED PHENOMENA IN CARDIAC MYOCYTES. **Roberto Raiteri**, Guido Caluori, Mariateresa Tedesco, Henry Hermel Andrade Caicedo, Christopher W. Ward

843-Pos Board B623
CADHERIN CONFORMATIONAL SHUTTLING CAPTURED USING SINGLE MOLECULE ATOMIC FORCE MICROSCOPY. **Kristine Manibog**, Sunae Kim, Sanjeevi Sivasankar

844-Pos Board B624
WHOLE CELL BIOCHEMICAL AND NANOMECHANICAL INVESTIGATIONS OF BACILLUS USING ATOMIC FORCE MICROSCOPY. **Congzhou Wang**, Christopher J. Ehrhardt, Vamsi K. Yadavalli

845-Pos Board B625
EFFECT OF SURFACE DENSITY OF ACTIVE SITES ON RUPTURE FORCE DISTRIBUTIONS OF SINGLE MOLECULE INTERACTIONS. **Anwesha Sarkar**, Essa Mayyas, Peter M. Hoffmann

846-Pos Board B626
NANOMECHANICAL MAPPING OF EYE TISSUE. Asia A. Alhasawi, Lucas D. Stewart, **Erika F. Merschrod S.**

847-Pos Board B627
PROBING OF PNA-DNA HYBRID DUPLEX STABILITY WITH AFM FORCE SPECTROSCOPY. **Samrat Dutta**, Yuri L. Lyubchenko, Bruce A. Armitage

848-Pos Board B628
INVESTIGATION OF FIBRIN FIBER INTERNAL STRUCTURE. **Wei Li**, Peter Brubaker, Martin Guthold

849-Pos Board B629
USING FORCE MAPPING TO OBTAIN DATA ON LIVE BACTERIA IN FLUID. **Megan A. Ferguson**, Sophia Lane, Catherine Mahoney

850-Pos Board B630
AFM MONITORING OF ELASTICITY CHANGES ACCOMPANYING DIFFERENTIATION TOWARDS NEURAL CELLS. **Marcin Dąbrowski**, Katarzyna Roszek, Janusz Strzelecki, Maria Stankiewicz, Wiesław Nowak

851-Pos Board B631
TITIN IS A SPATIALLY HOMOGENOUS LINEAR EXPANDER. **Zsolt Martonfalvi**, Pasquale Bianco, Katalin Naftz, Dorina Koszegi, Miklos Kellermayer

852-Pos Board B632
GLASS: A MULTI-PLATFORM SPECIMEN SUPPORTING SUBSTRATE FOR PRECISION SINGLE MOLECULE STUDIES OF MEMBRANE PROTEINS. **Nagaraju Chada**, Krishna P. Sigdel, Raghavendar Reddy Sanganna Gari, Tina R. Matin, Chunfeng Mao, Brendan Marsh, Linda L. Randall, Gavin M. King

853-Pos Board B633
FORCE SPECTROSCOPY OF DNA-CTAB AGGREGATES. **James S. Tompkins**, Pamela M. St. John

854-Pos Board B634
FIBRINOGENESIS AND FIBRINOLYSIS FOLLOWED WITH NANO-THROMBELASTOGRAPHY. **Tímea Feller**, Miklós S.Z. Kellermayer, Balázs Kiss

855-Pos Board B635
DIRECT OBSERVATION OF TITIN IMMUNOGLOBULIN DOMAIN UNFOLDING-REFOLDING IN MUSCLE SARCOMERES. **Jaime A. Rivas Pardo**, Edward C. Eckels, Ionel Popa, Pallav Kosuri, Wolfgang A. Linke, Julio M. Fernández

856-Pos Board B636
DNA-INDUCED VIRAL ASSEMBLY STUDIED IN REAL-TIME BY OPTICAL TWEEZERS, ACOUSTIC FORCE SPECTROSCOPY AND ATOMIC FORCE MICROSCOPY. **Mariska GM van Rosmalen**, Andreas S. Biebricher, Douwe Kamsma, Adam Zlotnick, Gijs JL Wuite, Wouter H. Roos

857-Pos Board B637
INVESTIGATING FORCE-INDUCED STRUCTURAL CHANGES IN SINGLE COLLAGEN MOLECULES. **Michael W.H. Kirkness**, Nancy R. Forde

858-Pos Board B638
STATIC AND DYNAMIC EFFECTS OF CROWDERS ON MECHANICAL UNFOLDING OF PROTEINS. **Marisa B. Roman**, Gouliang Yang, Frank Ferrone

859-Pos Board B639
DEVELOPMENT OF A WIRELESS, MODULAR CENTRIFUGE FORCE MICROSCOPE FOR USE IN A COMMERCIAL BENCHTOP CENTRIFUGE. **Tony P. Hoang**, Wesley P. Wong, Ken Halvorsen

Micro- and Nanotechnology I (Boards B640-B668)

860-Pos Board B640
COMPARISON OF THE PHOTOTHERMAL EFFICIENCY OF DIFFERENT TYPES OF PLASMONIC NANOPARTICLES IN VITRO AND IN VIVO. **Kamilla Norregaard**, Jesper T. Jørgensen, Poul Martin Bendix, Andreas Kjær, Lene B. Oddershede

861-Pos Board B641 INTERNATIONAL TRAVEL AWARDEE
MULTIMODAL IMAGING PROBING PLATFORM BASED ON UPCONVERTING RARE-EARTH DOPED GD2O3 NANOCRYSTALS. **Kim Dung T. Doan**, Shoichiro Fukushima, Hirohiko Niioka, Masayoshi Ichimiya, Masaaki Ashida, Tsutomu Araki, Mamoru Hashimoto, Jun Miyake

862-Pos Board B642
RECTIFICATION PROPERTIES OF LOW ASPECT RATIO TEM DRILLED NANOPORES. **Justin Menestrina**, Meni Wanunu, Zuzanna Siwy

863-Pos Board B643 INTERNATIONAL TRAVEL AWARDEE
COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS OF THE SELF-ASSEMBLY OF AMPHIPHILIC DENDRIMERS AS GENE CARRIERS. **Valeria Marquez-Miranda**, Iingrid Araya, Maria Belen Camarada, Lars Ratjen, Maria Carolina Otero, Fernando Danilo Gonzalez-Nilo

864-Pos Board B644
RAPID ACTIVITY SCREENING OF ION CHANNELS EXPRESSED IN CELL-FREE SYSTEMS USING A LIPID BILAYER ARRAY PCB-DEVICE. **Ekaterina Zaitseva**, Gerhard Baaken, Sönke Petersen, Christopher Hein, Frank Bernhard, Matthias Beckler, Mohamed Kreir, Michael George, Niels Fertig, Michele Rossi, Federico Thei, Jan C. Behrends

865-Pos Board B645
HIGH-MAGNETIZATION SILICONE MICROBEADS WITH LOW AUTOFLUORESCENCE FOR BIOTECH APPLICATIONS. **David T. Han**, Benjamin A. Evans

866-Pos Board B646
A TWO NANOPORE SYSTEM FOR CONTROLLING DNA MOTION. **Tamas Szalay**

867-Pos Board B647
ION TRANSPORT THROUGH SYNTHETIC NANOPORES DEPOSITED IN POROUS MANGANESE OXIDE WIRES. **Timothy S. Plett**, Trevor Gamble, Eleanor Gillette, Zuzanna Siwy

868-Pos Board B648
IMPROVED PROTOCOL FOR THE HYDROPHOBIZATION OF GLASS PIPETTES FOR USE IN PATCH-CLAMP EXPERIMENTS; TERA-SEALS AND TENTHS OF FA NOISE. **Arturo Galván-Hernández**, Iván Ortega-Blake

869-Pos Board B649
MULTISCALE DIFFUSION MEASUREMENTS IN BIOLOGICAL GELS USING PHOTOACTIVATABLE FLUORESCENT NANOPARTICLES. **Joshua C. Kays**, Benjamin S. Schuster, Daniel B. Allan, Justin Hanes, Robert L. Leheny

870-Pos Board B650
BEHAVIOR RESPONSE OF CAENORHABDITIS ELEGANS TO PHYSICAL COMPLEX STIMULI IN A CONTROLLED MICROFLUIDIC SYSTEM. **Sunhee Yoon**, Hailing Piao, Zhongwei Wang, Insu Lee, Ga Lahm Park, Tae-Joon Jeon, Sun Min Kim

871-Pos Board B651
POWERED DNA LOGIC GATES. **Dominic Scalise**, Rebecca Schulman

872-Pos Board B652
A SYSTEMATIC INVESTIGATION TO DETERMINE THE OPTIMAL LIPID COATING FOR NANOPORE-BASED SENSING EXPERIMENTS. **Olivia M. Eggenberger**, Brandon R. Bruhn, Michael Mayer, Haiyan Liu, Geoffray Leriche, Jerry Yang

873-Pos Board B653
THE EFFECT OF INTER-PARTICLE INTERACTIONS ON HEATING EFFICIENCY IN MAGNETIC NANOPARTICLE HYPERTHERMIA: AN EXPERIMENTAL MODEL. **Matthew D. Bausch**, Benjamin Evans

874-Pos Board B654
THREADING IMMOBILIZED DNA MOLECULES THROUGH SOLID-STATE NANOPORES. **Harpreet Kaur**, Santoshi Nandivada, Changbae Hyun, Tao Huang, Min Xiao, David McNabb, Jiali Li

875-Pos Board B655
COMBINING MICROFLUIDICS AND FLUORESCENCE TO QUANTIFY THE TIMING OF VIRAL RELEASE. Rachel N. Hanson, Christina K. Chan, Emily A. Anderson, **Jolene L. Johnson**

876-Pos Board B656
SINGLE MOLECULE CHARACTERIZATION OF CHOLERA TOXIN AND ITS INTERACTION WITH GM1 GANGLIOSIDES USING LIPID-COATED NANOPORES. **Anirudh Vinnakota**, Brandon R. Bruhn, Erik C. Yusko, Michael Mayer

877-Pos Board B657
IMPROVED PROTOCOLS FOR DIELECTRIC BREAKDOWN NANOPORE BIOSENSORS. Christopher Tow, **Jacob K. Rosenstein**

878-Pos Board B658
FABRICATION OF SUB-20 NM NANOPORE ARRAYS IN MEMBRANES WITH EMBEDDED METAL ELECTRODES AT WAFER SCALES. **Yanxiao Feng**, Deqiang Wang, Jingwei Bai, Sung-wook Nam, Hongbo Peng, Robert Bruce, Lynn Gignac, Markus Brink, Phil Waggoner, Chao Wang, Mike Guillorn, Stanislav Polonsky, Ajay Royyuru, Satyavolu Papa Rao, Gustavo Stolovitzky

879-Pos Board B659
SINGLE DNA MOLECULE SWOLLEN AND TRAPPED IN NANOSLIT. Jinyong Lee, Rakwoo Chang, Yeng-Long Chen, **Kyubong Jo**

880-Pos Board B660
ELECTRICAL PULSE FABRICATED GRAPHENE NANOPORES FOR SINGLE MOLECULE SENSING. **Aaron Kuan**, Bo Lu, Jene Golovchenko

881-Pos Board B661 **EDUCATION TRAVEL AWARDEE**
PS-GC NANODISCS ASSEMBLY FOR STRUCTURAL STUDIES OF COAGULATION PROTEINS AND THEIR COMPLEXES. **Kirill S. Grushin**, Svetla Stoilova-McPhie

882-Pos Board B662
GIANT CONDUCTANCE AND ANOMALOUS CONCENTRATION DEPENDENCE IN SUB-5 NM CARBON NANOTUBE NANOCHANNELS. **Shirui Guo**, Steven F. Buchsbaum, Eric R. Meshot, Matthew W. Davenport, Zuzanna Siwy, Francesco Fornasiero

883-Pos Board B663
SINGLE MOLECULE FRET ANALYSIS OF THE CLOSED AND OPEN STATES OF A DNA ORIGAMI BOX. **Mette Jepsen**, Rasmus S. Sørensen, Ebbe S. Andersen, Jørgen Kjems, Victoria Birkedal

884-Pos Board B664
SINGLE-READ DE NOVO SEQUENCING USING NANOPORE MSPA. **Henry Brinkerhoff**, Brian C. Ross, Jens H. Gundlach

885-Pos Board B665
DECONSTRUCTING STRUCTURAL TRANSITIONS VIA THERMAL TRANSPORT. **Michael Zwolak**, Kirill Velizhanin, Chih-Chun Chien, Yonatan Dubi

886-Pos Board B666
QUANTITATIVE ANALYSIS AND OPTIMIZATION OF ON-CHIP INTERFERENCE FUNCTIONALITIES FOR NANOPHOTONICS STANDING WAVE ARRAY TRAPS. **Jun Lin**, Mohammad Soltani, James Inman, Michelle D. Wang

887-Pos Board B667
DNA-MODIFIED POLYMER PORES ENABLE PH- AND VOLTAGE-GATED CONTROL OF CHANNEL FLUX. **Steven F. Buchsbaum**, Gael Nguyen, Stefan Howorka, Zuzanna Siwy

888-Pos Board B668
BUILDING CONNECTIONS BETWEEN TERMINALS WITH LOCATION UNCERTAINTY USING DNA NANOTUBES. **Abdul Majeed Mohammed**, Rebecca Schulman

Student Research Achievement Award (SRAA) Poster Competition

These posters will be displayed for judging on Sunday, February 8, 6:00 PM–9:00 PM, in the SRAA poster board area marked S1–S97, 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
ENERGETICS OF LATERAL MEMBRANE PROTON DIFFUSION.
Ewald Weichselbaum (3045-Pos, B475)

Board S2
ANALYSIS OF ATP PRODUCTION EFFICIENCY OF BEAT-TO-BEAT CALCIUM FLUCTUATIONS IN CARDIAC MITOCHONDRIA.
Sangeeta Shukla (547-Pos, B327)

Board S3
INVESTIGATING THE MECHANISM OF IRON DEPENDENT REPRESSOR (IDER) ACTIVATION AND DNA BINDING
Soma Ghosh (1892-Pos, B29)

Board S4
MONOVALENT CATION DEPENDENCE ON THE KINASE ACTIVITY OF SALMONELLA TYPHIMURIUM CHEA: EXPERIMENT AND MODELING.
Marie Balboa (2698-Pos, B128)

Board S5
PREDICTION OF FUNCTIONALLY LINKED INTERFACE (FLIP) REGIONS IN RESIDUE INTERACTION NETWORK (RIN) MODELS OF PROTEIN STRUCTURES.
Isha Mehta (2388-Pos, B525)

Board S6
INTERNAL SWITCHES MODULATING ELECTRON FLOW IN BC1 COMPLEX.
Muhammed Hagras (3044-Pos, B474)

Board S7
ZINC INHIBITS HEDGEHOG AUTOPROCESSING: LINKING ZINC DEFICIENCY WITH HEDGEHOG ACTIVATION.
Jian Xie (2687-Pos, B117)

Board S8
NUMERICAL MODELING OF LIPID BIOSYNTHESIS IN MICROALGAE.
Nicole Carbonaro (2374-Pos, B511)

Biological Fluorescence

Board S9
FACTORS THAT INFLUENCE PKR DIMERIZATION AND ACTIVATION.
Bushra Husain (2003-Pos, B140)

Board S10
HIGH-AFFINITY FLUORESCENCE SENSING OF G-QUADRUPLEXES.
D. Pérez-González (1974-Pos, B111)

Board S11
POSITIONAL FLUOROPHORE PROPERTIES IN HIGH-PRECISION FRET ANALYSIS: ORIENTATION EFFECTS, DYNAMIC QUENCHING AND BEYOND.
Thomas-Otavio Peulen (818-Pos, B598)

Board S12
BINDING OF QUATERNARY AMMONIUM IONS TO A POTASSIUM CHANNEL.
Dylan Burdette (595-Pos, B375)

Board S13
MOLECULAR MOBILITY IN AMORPHOUS SUCROSE FILMS MONITORED BY RIBOFLAVIN PHOSPHORESCENCE - POTENTIAL APPLICATIONS IN EDIBLE/BIODEGRADABLE FILMS.
Yan Wang (3130-Pos, B560)

Board S14
LOCAL AND GLOBAL FOLDING IN A 58MER RNA REVEALED BY 2-AMINOPURINE SUBSTITUTIONS AND SPECIFIC NMR LABELS.
Robb Welty (1189-Pos, B140)

Biopolymers in vivo

Board S15
A COMPUTATIONAL MODEL FOR E.COLI CYTOPLASM: DIFFUSION AND HYDRODYNAMICS.
Sabeeha Hasnain (582-Pos, B362)

Board S16
THE KINETICS OF NASCENT PROTEIN FOLDING UPON RELEASE FROM THE RIBOSOME.
Rayna Addabbo (578-Pos, B358)

Board S17
THE HUMAN PROTON-COUPLED FOLATE TRANSPORTER: DETERMINATION OF CONFORMATION AND IDENTIFICATION OF THE FOLATE-BINDING POCKET.
Swapneeta Date (1549-Pos, B500)

Board S18
SINGLE-MOLECULE PROFILING OF RIBOSOME RECODING PHENOMENA.
Jin Chen (1962-Pos, B99)

Board S19
ENABLING SINGLE-MOLECULE DETECTION IN LIVING CELLS: ULTRA-SENSITIVE MICROSCOPY AND SPECTROSCOPY IN 3D.
Ankun Dong (2396-Pos, B533)

Board S20
EFFECT OF FORCE AND DISCRETE STEP-SIZE ON THE VELOCITY DISTRIBUTION OF PROCESSIVE MOLECULAR MOTORS.
Huong Vu (678-Pos, B458)

Board S21
STRUCTURAL AND FUNCTIONAL IMPACT OF AMINO ACID SUBSTITUTION ON CALMODULIN BINDING IN CARDIAC MYOCYTES.
Matthew McCoy (1341-Pos, B292)

Exocytosis & Endocytosis

Board S22
A MATCHED FILTER ALGORITHM CAN ACCURATELY DETECT AMPEROMETRIC SPIKES RESULTING FROM QUANTAL EXOCYTOSIS AND SEED A CURVE-FITTING ALGORITHM FOR ESTIMATION OF SPIKE PARAMETERS.
Supriya Balaji Ramachandran (511-Pos, B291)

Board S23
DETERMINING THE ROLE OF MELANOPSIN C-TAIL IN DEACTIVATION AND TRAFFICKING.
Elelbin Ortiz (751-Pos, B531)

Board S24
DRUNKEN MEMBRANES: HOW DOES ETHANOL IMPACT FUSION OF VESICLES TO PLANAR LIPID BILAYERS?
Brady Hunt (2042-Pos, B179)

Board S25
SYNAPTOTAGMIN-1 AND SYNAPTOTAGMIN-7 DIFFER IN THEIR STIMULUS AND $CA2^{+}$DEPENDENCE OF ACTIVATION
Tejeshwar Rao (517-Pos, B297)

Intrinsically Disordered Proteins

Board S26
THE INTRINSICALLY DISORDERED TERMINI OF ZDHHC S-PALMITOYLTRANSFERASES FACILITATE MULTIPLE REGULATORY FUNCTIONS.
Krishna Reddy (1945-Pos, B82)

Board S27
AN EVOLUTIONARY ALGORITHM FOR THE DESIGN OF DIFFERENT DEGREES OF SECONDARY STRUCTURE IN INTRINSICALLY DISORDERED PROTEINS (IDPS).
Tyler Harmon (1145-Pos, B96)

Board S28
CIDER: CLASSIFICATION OF INTRINSICALLY DISORDERED ENSEMBLE REGIONS.
Alex Holehouse (1146-Pos, B97)

Board S29
PHENYLETHANOIDS CAN MODULATE AMYLOID-β AGGREGATION ASSOCIATED WITH ALZHEIMER'S DISEASE.
S. Zeb Vance (1096-Pos, B47)

Board S30
SINGLE-MOLECULE FORCE SPECTROSCOPY ON UNFOLDED AND INTRINSICALLY DISORDERED PROTEINS.
Hesam Motlagh (1149-Pos, B100)

Board S31
THE ASSOCIATION LANDSCAPE OF UBIQUITIN DIMERIZATION.
Haiqing Zhao (2628-Pos, B58)

Board S32
PHOSPHORYLATION MODULATES CONFORMATIONAL BIAS OF A DISORDERED PEPTIDE.
Alexander Chin (1148-Pos, B99)

Board S33
CHARACTERIZING KINETIC INTERMEDIATE IN AMYLOID SELF-ASSEMBLY.
Chen Liang (2652-Pos, B82)

Mechanobiology

Board S34
ROBUST ELASTIC NETWORK MODEL: PRECISE PREDICTION OF ATOMIC FLUCTUATIONS IN PROTEIN CRYSTAL STRUCTURES.
Min Hyeok Kim (2375-Pos, B512)

Board S35
BROWNIAN DYNAMICS STUDY OF DNA SUPERCOIL RELAXATION.
Ikenna Ivenso (1175-Pos, B126)

Board S36
CHARACTERIZATION OF BIOMECHANICAL PROPERTIES OF PRIMARY ENDOTHELIAL CELLS EXPOSED TO SHEAR STRESS.
Nickolas Boroda (2855-Pos, B285)

Board S37
THERMODYNAMIC AND HYDRODYNAMIC EXAMINATION OF CLPB ASSEMBLY.
JiaBei Lin (1112-Pos, B63)

Board S38
NUCLEOSOME KINETICS AND ACCESIBILITY OF DNA.
Jyotsana Parmar (2718-Pos, B148)

Board S39
THE ABILITY OF POLYPHENOLS TO REDUCE Aβ-INDUCED APOPTOSIS ASSOCIATED WITH ALZHEIMER'S DISEASE.
Kayla Pate (331-Pos, B111)

Membrane Biophysics

Board S40
RESIDUES INVOLVED IN CX26 HEMICHANNELS VOLTAGE DEPENDENT GATING.
Bernardo Pinto (2224-Pos, B361)

Board S41
PHYSICAL COUPLING BETWEEN SERCA2 AND PDE3A REGULATES SERCA2 ACTIVITY IN CARDIOMYOCYTES.

Jonas Skogestad (533-Pos, B313)
Board S42
NMDA RECEPTOR SMFRET STUDIES REVEAL ROLE OF DYNAMICS OF THE AGONIST-BINDING DOMAIN IN MEDIATING AGONIST EFFICACY.
Drew Dolino (1432-Pos, B383)

Board S43
INVESTIGATIONS OF THE STRUCTURAL MECHANISM OF MODULATION OF THE NMDA RECEPTOR.
Rita Sirrieh (1430-Pos, B381)

Board S44
THE ENVIRONMENT MODULATES THE CONFORMATION OF TRANSMEMBRANE HELIX 1A IN THE LEUCINE TRANSPORTER (LeuT).
Kumaresan Jayaraman (2322-Pos, B459)

Board S45
ENGINEERING SELECTIVITY IN RGK PROTEIN INHIBITION OF CAV1/CAV2 CHANNELS.
Akil Puckerin (2922-Pos, B352)

Board S46
A MATHEMATICAL MODEL OF MELANOPSIN PHOTOTRANSDUCTION.
Abigail Jackson (750-Pos, B530)

Board S47
MEMBRANE-LIPID MEDIATED RHODOPSIN SIGNALING INVOLVES AN ENSEMBLE OF CONFORMATIONAL SUBSTATES.
Udeep Chawla (2819-Pos, B249)

Board S48
COMPUTATIONAL MODELING OF THE NTERMINUS OF THE HUMAN DOPAMINE TRANSPORTER (hDAT)
Milka Doktorova (1274-Pos, B225)

Board S49
QUANTITATIVE MAPPING OF INTERACTIONS IN THE VOLTAGE-SENSOR PORE INTERFACE OF THE SHAKER POTASSIUM CHANNEL
Kevin Oelstrom (594-Pos, B374)

Board S50
SENSING THE ELECTROCHEMICAL K^+ GRADIENT: THE VOLTAGE GATING MECHANISM IN K2P POTASSIUM CHANNELS.
Marcus Schewe (2150-Pos, B287)

Board S51
DEVELOPMENT OF A MODEL FOR EXCITABILITY STUDIES USING XENOPUS OOCYTES
Aaron Corbin (1409-Pos, B360)

Membrane Structure and Assembly

Board S52
UNRAVELING THE DUAL ROLE OF SURFACTANT PROTEIN A AT ATOMISTIC DETAIL.
Boon Chong Goh (1293-Pos, B244)

Board S53
COMPARING LO/LD MEMBRANE THICKNESS MISMATCH AND MISCIBILITY TRANSITION TEMPERATURES USING FLUORESCENCE AND ATOMIC FORCE MICROSCOPY.
Joan Bleecker (1216-Pos, B167)
Board S54
SOLID-STATE 2H NMR INVESTIGATION OF TRANSDUCIN ACTIVATION BY RHODOPSIN.
Xiaolin Xu (2072-Pos, B209)

Board S55
MEASUREMENT OF INTERLEAFLET COUPLING IN PHASE SEPARATED BILAYERS USING HIGH SHEAR.
Matthew Blosser (1211-Pos, B162)

Board S56
BIOPHISICAL EVALUATION OF DRUG IMPACT ON PULMONARY SURFACTANT PERFORMANCE.
Alberto Hidalgo (1240-Pos, B191)

Board S57
THE AVERAGE AREA PER MOLECULE OF CHOLESTEROL/PC-LIPID BILAYERS: A REVIEW OF EXPERIMENTAL DATA AND A PHYSICALLY INSPIRED MODEL.
Jonathan Litz (2030-Pos, B167)

Board S58
DPPC MONOLAYERS EXHIBIT AN ADDITIONAL PHASE TRANSITION AT HIGH SURFACE PRESSURE.
Chen Shen (429-Pos, B209)

Board S59
ACTIVITY OF ANTIMICROBIAL PEPTIDE PROTEGRIN-1 IS TUNED BY MEMBRANE CHOLESTEROL CONTENT.
J. Henderson (2792-Pos, B222)

Board S60
THE STUDY OF COMPLEXATION PROCESS BETWEEN CATIONIC GEMINI SURFACTANTS AND DNA USING STRUCTURAL AND SPECTROSCOPIC METHODS.
Weronika Andrzejewska (1972-Pos, B109)

Board S61
THE MOLECULAR MECHANISM OF MONOLAYER SCISSION.
Shachi Katira (2040-Pos, B177)

Board S62
LOCAL BILAYER REORGANISATION BY THE JM REGIONS OF ALL HUMAN RTKS: A MULTISCALE MOLECULAR DYNAMICS STUDY.
George Hedger (1304-Pos, B255)

Molecular Biophysics

Board S63
UNDERSTANDING STRUCTURAL AND DYNAMIC EFFECTS INDUCED BY KEY COMPONENTS OF THE HCV POLYMERASE REPLICATION COMPLEX.
Ester Sesmero (243-Pos, B23)

Board S64
PROTON AS A DUAL REGULATOR FOR TRPV1.
Bo Hyun Lee (620-Pos, B400)

Board S65
NANOSYSTEM BASED ON PHOSPHOLIPIDS AND SURFACTANTS AS INNOVATIVE DELIVERY SYSTEM FOR GENE THERAPY.
Michalina Skupin (1239-Pos, B190)

Board S66
STUDIES OF ZWITTERIONIC LIPOPLEXES - NANOSYSTEM BASED ON PHOSPHOLIPIDS AND SURFACTANTS AS INNOVATIVE DELIVERY SYSTEMS FOR GENE THERAPY.
Joanna Wolak (2762-Pos, B192)

Board S67
THE PORE-DOMAIN OF TRPA1 MEDIATES THE INHIBITORY EFFECT OF THE ANTAGONIST 6-METHYL-5-(2-(TRIFLUOROMETHYL)PHENYL)-1H-INDAZOLE.
Hans Moldenhauer (2951-Pos, B381)

Board S68
THE CARBOXY TERMINUS OF THE LIGAND PEPTIDE DETERMINES MHC CLASS I COMPLEX STABILITY: A COMBINED MOLECULAR DYNAMICS AND EXPERIMENTAL STUDY.
Esam Abualrous (1581-Pos, B532)

Board S69
ELASTICITY-DRIVEN SINGLE STRANDED GAP CREATION MECHANISM BY AN EXONUCLEASE III/AP ENDONUCLEASE.
Sangmi Jee (349-Pos, B129)

Board S70
THE ROLE OF THE THREADING MOIETY IN DNA THREADING INTERCALATION BY RUTHENIUM DIMER COMPLEXES.
Andrew Clark (1999-Pos, B136)

Board S71
MOLECULAR SIMULATIONS OF MUSCLE ACHR AGONIST BINDING SITES.
Srirupa Chakraborty (2158-Pos, B295)

Board S72
PROBING MULTIPLE TIMESCALE DYNAMICS OF PROTEIN KINASE A-INHIBITOR COMPLEXES.
Geoffrey Li (304-Pos, B84)

Board S73
W493R GAIN OF FUNCTION MUTATION IN ATYPICAL CYSTIC FIBROSIS REWIRES THE EPITHELIAL SODIUM CHANNEL DYNAMICS.
Mahmoud Shobair (2948-Pos, B378)

Board S74
SIMULTANEOUS IDENTIFICATION, VISUALIZATION, AND COMPARISON OF COMPLEX EVENTS IN MOLECULAR DYNAMICS SIMULATIONS
Michael LeVine (1906-Pos, B43)

Board S75
NON-CANONICAL START CODONS REINITIATE TRANSLATION IN N-TERMINAL TRUNCATED KV CHANNELS.
Tanja Kalstrup (588-Pos, B368)

Board S76
UNIVERSAL APPROACH TO FRAP ANALYSIS OF ARBITRARY BLEACHING PATTERNS.
Daniel Blumenthal (391-Pos, B171)

Motility

Board S77
DELETION OF H2-CALPONIN IN MACROPHAGES FACILITATES CELL MOTILITY AND LIPID CLEARANCE: A NOVEL MECHANISM TO ATTENUATE ARTERIAL ATHEROSCLEROSIS.
Rong Liu (714-Pos, B494)

Board S78
DYNACTIN FUNCTIONS AS BOTH A DYNAMIC TETHER AND BRAKE DURING DYNEIN-DRIVEN MOTILITY.
Swathi Ayloo (671-Pos, B451)

Board S79
STATISTICAL MECHANICS PROVIDES NOVEL INSIGHTS INTO MICROTUBULE STABILITY AND MECHANISM OF SHRINKAGE.
Ishutesh Jain (2252-Pos, B389)

Board S80
PROTEIN DISORDER IN DYNEIN REGULATION BY DYNACTIN AND NUDE.
Jing Jie (1946-Pos, B83)

Nanoscale Biophysics

Board S81
PROBING LEUCINE SIDE CHAIN DYNAMICS IN AN AMPHIPHILIC PEPTIDE COPRECIPITATED WITH SILICA USING 2H SOLID-STATE NMR.
Helen Ferreira (1104-Pos, B55)

Board S82
NANOPORE-ENHANCED POSITIONING OF MOLECULES IN ZERO-MODE WAVEGUIDES.
Joseph Larkin (1657-Pos, B608)

Board S83
DNA-BINDING PROPERTIES OF PEPTIDE-FUNCTIONALIZED GRAPHENE QUANTUM DOTS.
Bedanga Sapkota (1973-Pos, B110)

Board S84
QUANTITATIVE DNA BINDING, LOOPING, AND COMPACTION PROPERTIES OF THE HIV-1 VIRAL PROTEIN R.
Divakaran Murugesapillai (2004-Pos, B141)

Board S85
SINGLE-MOLECULE DIGITAL IMAGING WITH MOLECULAR RESOLUTION USING DNA-PAINT.
Mingjie Dai (2409-Pos, B546)

Board S86
LOCALIZATION OF LIPIDS TO THE CAVITY AND TRANSMEMBRANE DOMAIN OF ATP-BINDING CASSETTE TRANSPORTER ABCB10, AS REVEALED BY MOLECULAR DYNAMICS SIMULATIONS
Hao Yu Chen (1275-Pos, B226)

Board S87
COILED COIL PROBES CAPTURE THE MECHANICAL UNFOLDING PATHWAY OF A LARGE PROTEIN.
Qing Li (252-Pos, B32)

Board S88
LATERAL INTERACTIONS AFFECT CADHERIN BINDING KINETICS AND FUNCTION.
Nitesh Shashikanth (1119-Pos, B70)

Permeation & Transport

Board S89
SERUM FACTOR ALTERS T-TYPE CAV3.2 GATING KINETICS AND CURRENT DENSITY.
Gray Evans (2930-Pos, B360)

Board S90
POLYAMIDOAMINE DENDRIMERS AS UNIVERSAL PORE-BLOCKING BINARY TOXIN INHIBITORS.
Nnanya Kalu (411-Pos, B191)

Board S91
EXPLORING P-GLYCOPROTEIN SUBSTRATE ACCESS.
Laura Domicevica (727-Pos, B507)

Board S92
RECONSTITUTION OF POTASSIUM-COUPLED SUBSTRATE TRANSPORT IN AN ARCHAEAL HOMOLOGUE OF GLUTAMATE TRANSPORTERS.
Secheol Oh (2315-Pos, B452)

Board S93
A COMPUTATIONAL STUDY OF MONO- AND POLY-UBIQUITIN RECOGNITION BY THE PROTEASOME SUBUNIT RPN10.
Yi Zhang (2358-Pos, B495)

Board S94
A NOVEL STIM2 SPLICE VARIANT FUNCTIONS AS A BREAK FOR STIM MEDIATED ACTIVATION OF ORAI CALCIUM CHANNELS.
Anna-Maria Miederer (2867-Pos, B297)

Board S95
THE CONFORMATION OF KCSA'S SELECTIVITY FILTER INFLUENCES THE OPENING OF ITS ACTIVATION GATE
Cholpon Tilegenova (598-Pos, B378)

Board S96
CYCLODEXTRIN INTERACTION WITH SPECIFIC CHANNEL CYMA FROM K. OXYTOCA
Satya Prathyusha Bhamidimarri (2226-Pos, B363)

Board S97
MUTATIONS IN THE S4/S5 LINKER AND S6 OF SLO1 ABLATE THE RESPONSE TO THE NOVEL BK CHANNEL OPENER GOSLO-SR-5-6.
Arvind Kshatri (612-Pos, B392)

2015 BPS Networking Events

May

University of Kentucky
Lexington, KY

Perdue University
West Lafayette, IN

June

Academy of Science
Prague, Czech Republic

University of
Massachusetts, Amherst
Amherst, MA

July

Paris Descartes University
Paris, France

For dates and additional information, visit www.biophysics.org/**networking**

Do you have an idea for a networking event and want to host one in your area?

BPS will be accepting networking event proposals until April 15 for 2015 and 2016.
For your information about networking events and proposal requirements, visit the website above.

Monday, February 9, 2015

Daily Program Summary

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

7:30 AM–8:30 AM	**Graduate Student Breakfast**	**Room 327/328/329**
7:30 AM–5:00 PM	**Registration/Exhibitor Registration**	**Charles Street Lobby**
8:00 AM–5:30 PM	**Career Center**	**Room 301/302/303**
8:00 AM–10:00 PM	**Poster Viewing**	**Hall C**
8:15 AM–10:15 AM	**Symposium: Future of Biophysics** **Co-Chairs:** *Enrique De La Cruz, Yale University, and Karen Fleming, Johns Hopkins University* STRUCTURAL AND FUNCTIONAL STUDIES OF IONOTROPIC GLUTAMATE RECEPTORS. *Alexander Sobolevsky* STRUCTURAL AND MECHANISTIC DIVERSITY OF TRANSPORT PROTEINS. *Heather Pinkett* ENABLING BIOPHYSICAL DISCOVERIES THROUGH THE LENS OF A COMPUTATIONAL MICROSCOPE. *Rommie E. Amaro* PROTEIN INTERACTIONS TO MAP INFORMATION FLOW IN CELL SIGNALING. *Sivaraj Sivaramakrishnan*	**Ballroom I**
8:15 AM–10:15 AM	**Symposium: Probing Ion Channel Structure/Function Using Novel Tools** **Chair:** *Henry Colecraft, Columbia University* CONFORMATIONAL CHANGES IN VOLTAGE-SENSING DOMAINS: CONCERTED SIMULATION AND SCATTERING STUDIES. *Douglas J. Tobias* TRICKING OUT THE TOOLBOX: USE OF GENETIC CODE EXPANSION FOR THE STUDY OF ION CHANNELS. *Chris Ahern* SMALL MOLECULE MODULATION OF VOLTAGE-GATED ION CHANNELS. *Heike Wulff* CALCIUM CHANNEL ENGINEERING. *Henry M. Colecraft*	**Ballroom II**
8:15 AM–10:15 AM	**Platform: Calcium Signaling**	**Ballroom III**
8:15 AM–10:15 AM	**Platform: Cell Mechanics, Mechanosensing, and Motility I**	**Ballroom IV**
8:15 AM–10:15 AM	**Platform: Membrane Physical Chemistry II**	**Room 307/308**
8:15 AM–10:15 AM	**Platform: Computational and Simulation Methods**	**Room 309/310**
8:15 AM–10:15 AM	**Platform: Protein Dynamics and Allostery I**	**Room 314/315**
8:15 AM–10:15 AM	**Platform: Micro- and Nanotechnology**	**Room 316/317**
8:30 AM–10:00 AM	**Exhibitor Presentation: FEI Company** **Advances in Correlative Light and Electron Microscopy**	**Hall C, Room B**
8:30 AM–10:30 AM	**CPOW Committee Meeting**	**Room 333**
9:30 AM–11:00 AM	**Exhibitor Presentation: Pall ForteBio LLC** **Measuring Engineered Changes in Binding Affinity with the BLItz® Label-Free System**	**Hall C, Room A**
10:00 AM–11:00 AM	**Career Center Workshop** **Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)**	**Room 301/302/303**
10:00 AM–5:00 PM	**Biomolecular Discovery Dome**	**Hall C**
10:00 AM–5:00 PM	**Exhibits**	**Hall C**
10:15 AM–11:00 AM	**Coffee Break**	**Hall C**
10:15 AM–11:15 AM	**New Member Welcome Coffee**	**Room 327/328/329**
10:30 AM–12:00 PM	**Exhibitor Presentation: Molecular Devices LLC** **Performing Positive Allosteric Modulator (PAM) Assays and Investigating Use-Dependent Inhibition of Ion Channels on Automated Electrophysiology Systems Including the IonFlux™ Benchtop Reader and the IonWorks Barracuda® Instrument**	**Hall C, Room B**

10:45 AM–12:45 PM	**Symposium: Epigenetics** **Ballroom I** **Chair:** *Lene Oddershede, University of Copenhagen, Denmark* COST AND PRECISION IN SMALL GENE REGULATORY NETWORKS. *Aleksandra Walczak* METAPHASE CHROMATIN PLATES EXPLAIN THE STRUCTURE AND PHYSICAL PROPERTIES OF CONDENSED CHROMOSOMES. *Joan-Ramon Daban* COOPERATIVITY AND SUPERCOILING MODULATE FUNCTIONS OF HUMAN O6-ALKYLGUANINE DNA ALKYLTRANSFERASE. *Michael G. Fried* DNA SUPERCOILING ENHANCES COOPERATIVITY AND EFFICIENCY OF AN EPIGENETIC SWITCH. *Lene B. Oddershede*
10:45 AM–12:45 PM	**Symposium: Mechanisms of Actin Filament Nucleation and Mechanotransduction** **Ballroom II** **Chair:** *Roberto Dominguez, University of Pennsylvania* MECHANOSENSITIVITY OF FORMIN-ACTIN INTERACTIONS. *Guillaume Romet-Lemonne* WISH/DIP/SPIN90 PROTEINS ACTIVATE ARP2/3 COMPLEX TO CREATE LINEAR ACTIN FILAMENTS THAT SEED ASSEMBLY OF BRANCHED ACTIN NETWORKS. *Brad Nolen* TWO TYPES OF ACTIN NUCLEATORS, THREE WAYS TO MAKE ACTIN FILAMENTS? *Margot Quinlan* MOLECULAR MECHANISM OF ACTIN FILAMENT NUCLEATION BY LEIOMODIN (LMOD). *Roberto Dominguez*
10:45 AM–12:45 PM	**Symposium: Molecular Basis for Mitochondrial Signaling** **Ballroom III** **Chair:** *Tatiana Rostovtseva, NIH* SYSTEMS APPROACHES TO MITOCHONDRIAL CALCIUM SIGNALING. *Fabiana Perocchi* THE MITOCHONDRIAL CALCIUM UNIPORTER: MOLECULAR COMPOSITION AND PHYSIOLOGICAL ROLE. *Rosario Rizzuto* MOLECULAR MECHANISMS OF MITOCHONDRIAL CA^{2+} UPTAKE: ROLE OF MICU1 AND ITS PARALOGS. *György Hajnóczky* HIGH-AFFINITY INTERACTION WITH VDAC LINKS CYTOSOLIC PROTEINS TO MITOCHONDRIAL REGULATION IN HEALTH, CANCER, AND NEURODEGENERATION. *Tatiana K. Rostovtseva*
10:45 AM–12:45 PM	**Platform: Electron Microscopy and Solution Scattering** **Ballroom IV**
10:45 AM–12:45 PM	**Platform: Ligand-gated Channels** **Room 307/308**
10:45 AM–12:45 PM	**Platform: Intrinsically Disordered Proteins (IDP)** **Room 309/310**
10:45 AM–12:45 PM	**Platform: Cardiac, Smooth, and Skeletal Muscle Electrophysiology** **Room 314/315**
10:45 AM–12:45 PM	**Platform: Membrane Pumps, Transporters, and Exchangers II** **Room 316/317**
11:30 AM–12:30 PM	**Career Center Workshop** **Room 301/302/303** **Career Planning and Job Searching for Science Professionals: Academic Opportunities**
11:30 AM–1:00 PM	**Exhibitor Presentation: Asylum Research, an Oxford Instruments Company** **Hall C, Room A** **There's No Other AFM Like Cypher™ – High Resolution Atomic Force Microscopy Made Easier and Faster**
11:45 AM–1:15 PM	**Undergraduate Student Pizza "Breakfast"** **Room 327/328/329**
12:30 PM–2:00 PM	**Exhibitor Presentation: Nanion Technologies GmbH** **Hall C, Room B** **HTS-Compatible Giga-Seal Ion Channel Drug Discovery: Beyond the Bottleneck and Ready for CiPA**
1:00 PM–3:00 PM	**Graduate and Postdoc Institution Fair** **Hall C**
1:00 PM–3:00 PM	**Grant Writing Workshop: How (Not) to Write Your NIH Grant Proposal** **Room 324/325**
1:30 PM–3:00 PM	**Exhibitor Presentation: World Precision Instruments** **Hall C, Room A** **Side-Stepping the Animal Model: Cardiac Work Loops in Human iPSC-derived Myocytes**
1:30 PM–3:00 PM	**Biophysics 101: Super-Resolution Microscopy** **Room 330**
1:45 PM–3:00 PM	**Snack Break** **Hall C**
2:15 PM–3:45 PM	**How to Get Your Scientific Paper Published** **Room 314/315**
2:30 PM–3:30 PM	**Career Center Workshop** **Room 301/302/303** **Selling Yourself to the Life Sciences Industry**

2:30 PM–4:00 PM	**Overcoming Unconscious Bias & Barriers in Science**	**Room 331/332**
2:30 PM–4:00 PM	**US Science Education in a Global Context**	**Room 321/322/323**
2:30 PM–4:00 PM	**Exhibitor Presentation: Sutter Instruments** **Scientists Empowering Scientists**	**Hall C, Room B**
3:00 PM–5:00 PM	**Membership Committee Meeting**	**Room 333**
3:30 PM–5:00 PM	**Exhibitor Presentation: Bruker Nano Surfaces** **Recent Advances in Atomic Force Microscopy for Biological Research**	**Hall C, Room A**
4:00 PM–5:00 PM	**Career Center Workshop** **Successfully Navigating the International Job Search**	**Room 301/302/303**
4:00 PM–6:00 PM	**Symposium:** **Bacterial Subcellular Dynamics at Super-Resolution: This Brings Super-Resolution to a Dynamic Sense** **Chair:** *Julie Biteen, University of Michigan* BEYOND MODEL SYSTEMS: SUPER-RESOLVING THE SUBCELLULAR DYNAMICS OF STARCH DIGESTION IN THE HUMAN GUT MICROBIOME. *Julie S. Biteen* BACTERIAL CHROMOSOME SEGREGATION AT THE SINGLE-MOLECULE LEVEL. *David Sherratt* BACTERIAL CELL WALL PEPTIDOGLYCAN ARCHITECTURE AND DYNAMICS. *Simon J. Foster* 3D FOLDING MECHANISMS OF HIGHER-ORDER CHROMATIN TOPOLOGICAL DOMAINS. *Marcelo Nollmann*	**Ballroom I**
4:00 PM–6:00 PM	**Symposium: Neurotransmitter Transporters** **Chair:** *Olga Boudker, Weill Cornell Medical College* THE STRUCTURAL AND DYNAMIC BASIS OF ION-COUPLED SUBSTRATE UPTAKE BY A GLUTAMATE TRANSPORTER HOMOLOGUE. *Olga Boudker* FUNCTIONAL DYNAMICS OF GLUTAMATE/AMINO ACID TRANSPORTERS OF THE SOLUTE CARRIER 1 FAMILY. *Christof Grewer* TRANSPORTERS IN MOTION: COMBINING COMPUTATIONAL APPROACHES AND LRET-MEASUREMENTS. *Harald H. Sitte* FUNCTIONAL ROLES OF GLUTAMATE TRANSPORT IN MODULATING PHASIC AND TONIC NEUROTRANSMITTER SIGNALING. *Michael P. Kavanaugh*	**Ballroom II**
4:00 PM–6:00 PM	**Platform: Cardiac Muscle Mechanics and Structure**	**Ballroom III**
4:00 PM–6:00 PM	**Platform: Protein Lipid Interactions II**	**Ballroom IV**
4:00 PM–6:00 PM	**Platform: Protein Structure and Conformation II**	**Room 307/308**
4:00 PM–6:00 PM	**Platform: Protein-Nucleic Acid Interactions II**	**Room 309/310**
4:00 PM–6:00 PM	**Platform: Molecular, Cellular, and Systems Neuroscience:** **Experimental Approaches, Modeling, and Tools**	**Room 314/315**
4:00 PM–6:00 PM	**Platform: Large-scale Molecular Simulations**	**Room 316/317**
4:30 PM–6:00 PM	**Exhibitor Presentation: Molecular Devices LLC** **Eliminating 50-60 hz Line-Frequency Noise with the New HumSilencer and pCLAMP Software Tips & Tricks**	**Hall C, Room B**
5:30 PM–7:00 PM	**Exhibitor Presentation: HEKA Elektronik** **HEKA Electrophysiology Update**	**Hall C, Room A**
8:00 PM–9:30 PM	**Awards and National Lecture**	**Ballrooms I-IV**
9:30 PM–12:00 AM	**Reception**	**Hilton Baltimore, Key Ballroom**
9:30 PM–12:00 AM	**Reception Quiet Room**	**Hilton Baltimore, Peale A-C**

Monday, February 9

7:30 AM–8:30 AM, ROOM 327/328/329

Graduate Student Breakfast

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.

7:30 AM–5:00 PM, CHARLES STREET LOBBY

Registration/Exhibitor Registration

8:00 AM–5:30 PM, ROOM 301/302/303

Career Center

8:00 AM–10:00 PM, HALL C

Poster Viewing

8:15 AM–10:15 AM, BALLROOM I

Symposium
Future of Biophysics

Co-Chairs
Enrique De La Cruz, Yale University
Karen Fleming, Johns Hopkins University

NO ABSTRACT 8:15 AM
STRUCTURAL AND FUNCTIONAL STUDIES OF IONOTROPIC GLUTAMATE RECEPTORS. **Alexander Sobolevsky**

NO ABSTRACT 8:45 AM
STRUCTURAL AND MECHANISTIC DIVERSITY OF TRANSPORT PROTEINS. **Heather Pinkett**

NO ABSTRACT 9:15 AM
ENABLING BIOPHYSICAL DISCOVERIES THROUGH THE LENS OF A COMPUTATIONAL MICROSCOPE. **Rommie E. Amaro**

NO ABSTRACT 9:45 AM
PROTEIN INTERACTIONS TO MAP INFORMATION FLOW IN CELL SIGNALING. **Sivaraj Sivaramakrishnan**

8:15 AM–10:15 AM, BALLROOM II

Symposium
Probing Ion Channel Structure/Function Using Novel Tools

Chair
Henry Colecraft, Columbia University

889-SYMP 8:15 AM
CONFORMATIONAL CHANGES IN VOLTAGE-SENSING DOMAINS: CONCERTED SIMULATION AND SCATTERING STUDIES. **Douglas J. Tobias**

890-SYMP 8:45 AM
TRICKING OUT THE TOOLBOX: USE OF GENETIC CODE EXPANSION FOR THE STUDY OF ION CHANNELS. **Chris Ahern**

891-SYMP 9:15 AM
SMALL MOLECULE MODULATION OF VOLTAGE-GATED ION CHANNELS. **Heike Wulff**, Vladimir Yarov-Yarovoy

892-SYMP 9:45 AM
CALCIUM CHANNEL ENGINEERING. **Henry M. Colecraft**

8:15 AM–10:15 AM, BALLROOM III

Platform
Calcium Signaling

Co-Chairs
Erika Kovacs-Bogdan, Harvard University
Madeline Shea, University of Iowa

893-PLAT 8:15 AM CPOW TRAVEL AWARDEE
DECREASED POLYCYSTIN 2 EXPRESSION ALTERS CALCIUM-CONTRACTION COUPLING AND CHANGES BETA-ADRENERGIC SIGNALING PATHWAYS. **Ivana Y. Kuo**, Andrea T. Kwaczala, Lily Nguyen, Stuart G. Campbell, Barbara E. Ehrlich

894-PLAT 8:30 AM
IN VIVO RECONSTITUTION OF THE MITOCHONDRIAL UNIPORTER. **Erika Kovacs-Bogdan**, Yasemin Sancak, Kimberli J. Kamer, Molly Plovanich, Ashwini Jambhekar, Robert J. Huber, Michael A. Myre, Michael D. Blower, Vamsi K. Mootha

895-PLAT 8:45 AM
FLUCTUATIONS IN CALCIUM CONCENTRATION ALTER THE TEMPORAL DYNAMICS OF CALCIUM-DEPENDENT SIGNALING CASCADES. **Seth H. Weinberg**

896-PLAT 9:00 AM
VISUALIZING CALCIUM INFLUX THROUGH SINGLE ORAI1 CHANNELS. **Joseph Dynes**, Anna Amcheslavsky, Michael Cahalan

897-PLAT 9:15 AM
FUNCTIONAL RECONSTITUTION AND STRUCTURAL FLEXIBILITY OF THE CRAC CHANNEL ORAI. **Xiaowei Hou**, Stephen B. Long

898-PLAT 9:30 AM
THERMODYNAMIC AND STRUCTURAL ANALYSIS OF CALMODULIN INTERACTION WITH THE SKELETAL MUSCLE RYANODINE RECEPTOR. **Adina M. Kilpatrick**, Liam Hovey, Madeline A. Shea

899-PLAT 9:45 AM
STRETCH-INDUCED CHANGES IN ATRIAL CA SIGNALING. **Maura Greiser**, Chris Ward, W. Jonathan Lederer

900-PLAT 10:00 AM EDUCATION TRAVEL AWARDEE
NOVEL GENETICALLY ENCODED RATIOMETRIC CALCIUM INDICATORS. **Jung Hwa Cho**, Carter Swanson, Jeannie Chen, Sivaraj Sivaramakrishnan, Robert Chow

8:15 AM–10:15 AM, BALLROOM IV

Platform
Cell Mechanics, Mechanosensing, and Motility I

Co-Chairs
Brannon McCullough, University of Minnesota
Vivian Tang, University of Illinois at Urbana-Champaign

901-PLAT 8:15 AM
COUPLING OF APICAL CONTRACTIONS AND ADHERENS JUNCTION MATURATION BY SYNAPTOPODIN-DEPEDENT RECRUITMENT OF A-ACTININ-4. **Vivian Tang**

902-PLAT 8:30 AM
TWO DISTINCT ACTIN NETWORKS MEDIATE TRACTION OSCILLATIONS TO CONFER MECHANOSENSITIVITY OF FOCAL ADHESIONS. **Zhanghan Wu**, Sergey V. Plotnikov, Clare M. Waterman, Jian Liu

903-PLAT 8:45 AM
MECHANICAL ACTIVATION OF α-CATENIN AND VINCULIN. Mingxi Yao, Chwee Teck Lim, Benoit Ladoux, Rene-Marc Mege, **Jie Yan**

904-PLAT 9:00 AM
MOLECULAR REGULATION OF ACTIN TURNOVER AT THE LEADING EDGE OF MIGRATING CELLS.
Brannon R. McCullough, David J. Odde

905-PLAT 9:15 AM
KINETICS OF MECHANORESPONSE IN THE MAMMALIAN ACTIN CYTOSKELETON. **Eric Schiffhauer**, Tianzhi Luo, Xuyu Qian, Krithika Mohan, Pablo Iglesias, Douglas Robinson

906-PLAT 9:30 AM
CORTICAL DYNEIN POWERED BY POLARIZED ACTOMYOSIN CONTRACTIONS AND PRONUCLEAR DYNEIN SEPARATE CENTROSOMES. **Alessandro De Simone**, Pierre Gönczy

907-PLAT 9:45 AM
ACTOMYOSIN DYNAMICS IN 3D TRACTION FORCE GENERATION. **Leanna M. Owen**, Arjun S. Adhikari, Min Cheol Kim, Natascha Leijnse, Alex R. Dunn

908-PLAT 10:00 AM
PHYSICS VS BIOLOGY OF PHAGOCYTOSIS: CELL RIGIDITY AND SHAPE OVERRIDE CD47 'SELF' SIGNALING IN PHAGOCYTOSIS BY HYPERACTIVATING MYOSIN-II. Nisha Sosale, Andrew Bradshaw, Jaime Agudo, Rumiana Dimova, Reinhard Lipowsky, **Dennis E. Discher**

8:15 AM–10:15 AM, ROOM 307/308

Platform
Membrane Physical Chemistry II

Co-Chairs
Jeanne Stachowiak, The Unviersity of Texas at Austin
Alexander Sodt, NIH/NHLBI

909-PLAT 8:15 AM
CAN LIPIDS BE USED AS MOBILITY STANDARDS IN ARTIFICIAL BILAYERS? **Wladimir Urbach**, Vladimir Adrien, Gamal Rayan, Nicolas Taulier, Patrick Fuchs

910-PLAT 8:30 AM
$CU2^{+}$-PHOSPHATIDYLSERINE BINDING AND ITS IMPLICATIONS FOR PROTEIN-MEMBRANE INTERACTIONS. **Xiao Cong**, David H. Russell, Paul S. Cremer

911-PLAT 8:45 AM
PROTEIN-FREE MEMBRANE FUSION PROBED BY SINGLE GIANT UNILAMELLAR VESICLE IMAGING - THE ROLE OF MEMBRANE CHARGE. **Rafael B. Lira**, Rumiana Dimova, Karin A. Riske

912-PLAT 9:00 AM
HELIX INSERTION DRIVES MEMBRANE BENDING BY ENABLING PROTEIN CROWDING. **Wilton T. Snead**, Varun Bora, Noor Momin, Jeanne C. Stachowiak

913-PLAT 9:15 AM
LIPID-LIPID INTERACTIONS DETERMINE THE MEMBRANE SPONTANEOUS CURVATURE. **Alexander J. Sodt**, Richard M. Venable, Edward Lyman, Richard W. Pastor

914-PLAT 9:30 AM
LIPOSOME ADHESION GENERATES CONTRACTILE TRACTION STRESSES. **Michael P. Murrell**, Raphael Voituriez, Jean-Francois Joanny, Pierre Nassoy, Cecile Sykes, Margaret Gardel

915-PLAT 9:45 AM
DETERMINING MATERIAL ELASTIC PROPERTIES OF ARBITRARILY-SHAPED MEMBRANES USING MOLECULAR DYNAMICS SIMULATIONS WITH APPLICATION TO THE INVERTED HEXAGONAL PHASE. **Niklaus B. Johner**, Daniel Harries, George Khelashvili

916-PLAT 10:00 AM
MOBILITY OF SINGLE-FILE WATER MOLECULES IN AQUAPORINS. Andreas Horner, Florian Zocher, Johannes Preiner, Nicole Ollinger, Christine Siligan, Sergey A. Akimov, **Peter Pohl**

8:15 AM–10:15 AM, ROOM 309/310

Platform
Computational and Simulation Methods

Co-Chairs
Jason Wagoner, Stony Brook University
Sarah Harris, University of Leeds, United Kingdom

917-PLAT 8:15 AM
ADAPTIVE BOUNDARIES IN MULTI-RESOLUTION SIMULATIONS. **Jason A. Wagoner**, Ken Dill, Vijay Pande

918-PLAT 8:30 AM
TO BAYES, OR NOT TO BAYES, INFORMATION IS THE ANSWER. **Paul A. Wiggins**

919-PLAT 8:45 AM
BENCHMARKING AND OPTIMIZING ATOMISTIC FORCEFIELDS WITH DENSITY MEASUREMENTS.
Kyle A. Beauchamp, Julie M. Behr, Patrick B. Grinaway, Arien S. Rustenburg, John D. Chodera

920-PLAT 9:00 AM
IMPLEMENTING SOLUTION X-RAY SCATTERING DATA AS ACTIVE CONSTRAINTS IN MD SIMULATIONS. **Po-chia Chen**, Jochen Hub

921-PLAT 9:15 AM
CONSTANT PH MOLECULAR DYNAMICS IN EXPLICIT SOLVENT WITH ENVELOPING DISTRIBUTION SAMPLING AND HAMILTONIAN EXCHANGE. **Juyong Lee**, Tim Miller, Ana Damjanovic, Bernard R. Brooks

922-PLAT 9:30 AM
MESOSCALE MODELLING OF BIOMOLECULES USING CONTINUUM MECHANICS. **Sarah A. Harris**, Ben Hanson, Robin Richardson, Daniel J. Read, Oliver G. Harlen

923-PLAT 9:45 AM
MULTILEVEL SUMMATION METHOD FOR ELECTROSTATIC FORCE EVALUATION. **Zhe Wu**, David J. Hardy, James C. Phillips, John E. Stone, Robert D. Skeel, Klaus Schulten

924-PLAT 10:00 AM
USING LONG-TIMESCALE MOLECULAR DYNAMICS SIMULATIONS TO BENCHMARK ENHANCED SAMPLING METHODS. **Albert C. Pan**, Thomas M. Weinreich, Stefano Piana, David E. Shaw

8:15 AM–10:15 AM, ROOM 314/315
Platform
Protein Dynamics and Allostery I

Co-Chairs
Ian Thorpe, University of Maryland, Baltimore
Lukas Stelzl, University of Oxford, United Kingdom

925-PLAT 8:15 AM
ALLOSTERIC COMMUNICATION WITHIN THE CYTOPLASMIC REGION OF THE HISTIDINE KINASE CPXA, REVEALED BY MOLECULAR DYNAMICS SIMULATIONS OF THE WILD-TYPE AND M228V PROTEINS. **Marlet Martinez**, Nathalie Duclert, Jean-Michel Betton, Pedro M. Alzari, Michael Nilges, Thérèse E. Malliavin

926-PLAT 8:30 AM
STUDYING THE CONFORMATIONAL EQUILIBRIUM OF THE N-TERMINAL DOMAIN OF DSBD BY NMR AND COMPUTER SIMULATION. **Lukas S. Stelzl**, Despoina A.I. Mavridou, Stuart J. Ferguson, Andrew J. Baldwin, Mark S.P. Sansom, Christina Redfield

927-PLAT 8:45 AM
FUNCTIONAL MECHANISM OF THE PHOTOACTIVE YELLOW PROTEIN: A TRANSIENT ABSORPTION SPECTROSCOPY PERSPECTIVE. **Chandra P. Joshi**, Harald Otto, Maarten P. Heyn

928-PLAT 9:00 AM
DUAL ALLOSTERIC INHIBITORS EXHIBIT ANTAGONISTIC EFFECTS IN THE HEPATITIS C VIRUS POLYMERASE. Jodian A. Brown, **Ian F. Thorpe**

929-PLAT 9:15 AM
MICROSECOND MOTION MODULATES UBIQUITIN BINDING THROUGH AN ALLOSTERIC BACKBONE/SIDE CHAIN NETWORK. **Colin A. Smith**, David Ban, Karin Giller, Stefan Becker, Christian Griesinger, Donghan Lee, Bert L. de Groot

930-PLAT 9:30 AM
ALLOSTERY IN PDZ3: USING UNNATURAL AMINO ACIDS AS SITE-SPECIFIC REPORTERS IN IR SPECTROSCOPY TO PROBE ALLOSTERIC PATHWAYS. **Katharina B. Eberl**, Henrike M. Müller-Werkmeister, Martin Essig, Jens Bredenbeck

931-PLAT 9:45 AM
ALLOSTERIC COMMUNICATION IN RND1 AND RAC1 ASSOCIATION WITH THE PLEXIN-B1 RHOGTPASE BINDING DOMAIN REVEALED BY HYDROGEN EXCHANGE MASS SPECTROSCOPY AND BY SOLUTION NMR. **Shufen Cao**, Matthias Buck

932-PLAT 10:00 AM
CONFORMATIONAL TRANSITIONS IN SWITCH REGIONS OF THE RAS-LIKE GTPASE RAB1B STUDIED BY FREE ENERGY SIMULATIONS. **Manuel Patrick Luitz**, Rainer Bomblies, Martin Zacharias, Evelyn Bender, Aymelt Itzen

8:15 AM–10:15 AM, ROOM 316/317
Platform
Micro- and Nanotechnology

Co-Chairs
Aleksandra Radenovic, Ecole Polytech Federal Lausanne, Switzerland
Sergey Bezrukov, NIH/NICHD

933-PLAT 8:15 AM
PROBING THE MOTION OF THE INTRINSICALLY DISORDERED NEURONAL PROTEIN ALPHA-SYNUCLEIN THROUGH THE VDAC PORE USING A SINGLE-MOLECULE APPROACH. **David P. Hoogerheide**, Philip A. Gurnev, Tatiana K. Rostovtseva, Sergey M. Bezrukov

934-PLAT 8:30 AM
USING NANOPARTICLES TO CONTROL CELLULAR MEMBRANE POTENTIAL. **Emilie A.K. Warren**, Christine K. Payne

935-PLAT 8:45 AM
ELECTRO-WETTING OF A HYDROPHOBIC GATE IN A BIOMIMETIC NANOPORE. **Jemma L. Trick**, Chen Song, Jayne E. Wallace, Hagan Bayley, Mark S P Sansom

936-PLAT 9:00 AM
DEFORMATION OF MCF-7 CELLS IN MICROPORES WITH UNDULATING DIAMETER. **Laura M. Innes**, Ashley Fong, Matthew Pevarnik, Matthew Schiel, Eugenia Toimil-Molares, Luke Theogarajan, Christopher Hughes, Zuzanna Siwy

937-PLAT 9:15 AM
FINGERPRINTING SINGLE LIVING CELLS WITH MOLECULAR PRECISION. **Kim McKelvey**, Volker Kurz, Tetsuya Tanaka, Gregory Timp

938-PLAT 9:30 AM
MECHANICAL MODULATION OF ENZYME ACTIVITY BY RATIONALLY DESIGNED DNA TWEEZERS: FROM THE ENSEMBLE TO THE SINGLE-MOLECULE LEVEL. **Soma Dhakal**, Minghui Liu, Matthew R. Adendorff, Mark Bathe, Hao Yan, Nils G. Walter

939-PLAT 9:45 AM
REGULATION OF LIPID MEMBRANE TRAFFICKING AND TRANSMEMBRANE SIGNALING BY GRAPHENE. **Kristina E. Kitko**, Tu Hong, Roman Lazarenko, Da Ying, Yaqiong Xu, Qi Zhang

940-PLAT 10:00 AM
DEVELOPMENT OF A FLUORESCENCE-BASED ASSAY FOR FUNCTIONAL STUDIES OF TRANSPORTER PROTEINS ON THE SINGLE MOLECULE LEVEL. Salome Veshaguri, Sune M. Christensen, **Mads P. Møller**, Garima Ghale, Christina Lohr, Andreas L. Christensen, Marijonas Tutkus, Gerdi Kemmer, Ida L. Jørgensen, Bo H. Justesen, Patricia Curran, Thomas G. Pomorski, Joseph Mindell, Dimitrios Stamou

8:30 AM–10:00 AM, HALL C, ROOM B
Exhibitor Presentation
FEI Company

Advances in Correlative Light and Electron Microscopy
Correlative light and electron microscopy (CLEM) is a powerful approach that enables combining dynamic information and labelling specificity from fluorescence microscopy with ultra-structural information at nanometer resolution from electron microscopy on the same sample. In recent years technical improvements in fluorescence microscopy have enhanced z-resolution, enabled imaging with high sensitivity using TIRF

and, with super-resolution microscopy, improved the resolution of light microscopy to up to 20 nm. Despite all these advances, fluorescence microscopy can only show what was labelled and an EM is needed to provide the full morphological context on the ultra-structure of the cell. However, CLEM experiments still remain challenging and low throughput.

Over the last years, FEI has introduced different solutions to overcome some of the challenges in CLEM experiments and to make CLEM experiments easier and more efficient. But correlative experiments are rapidly evolving – here, we will present updates on latest developments that have pushed the boundaries of correlative experiments.

Presenter
Meike Pedersen, Product Application Specialist, FEI Company

8:30 AM–10:30 AM, ROOM 333
CPOW Committee Meeting

9:30 AM–11:00 AM, HALL C, ROOM A
Exhibitor Presentation
Pall ForteBio LLC

Measuring Engineered Changes in Binding Affinity with the BLItz® Label-Free System

Combining Organic Synthesis and Directed Evolution to Design Glycocluster HIV Vaccine Candidates

We will describe a new method for design of carbohydrate HIV vaccines, which combines organic synthesis and directed evolution techniques. This work originates from the observation that some HIV positive individuals produce antibodies which are broadly neutralizing and protective against HIV infection. One such antibody, 2G12, recognizes and binds to a cluster of carbohydrates on the viral envelope protein gp120. Our goal is to develop synthetic carbohydrate clusters which closely mimic the viral carbohydrate cluster, and which might thus elicit a 2G12-like antibody response when used as a vaccine. In order to design carbohydrate clusters which closely mimic gp120, we have developed evolution-based strategies, in which immobilized 2G12 is used to recognize and fish out the best glycocluster mimics of gp120 from amongst large libraries of ~10 trillion different glycosylated peptide- or DNA structures. The glycocluster structures obtained by these methods are recognized by antibody 2G12 as strongly as is the viral protein itself, and are thus of great interest for vaccine studies.

Tips and Tricks for Developing BLItz Assays

The BLItz label-free assay system is a simple-to-use benchtop instrument for measuring binding interactions of antibodies and proteins using as little as 4µl of sample. Additional case studies of how the BLItz system is being used to qualify biophysical models will be presented, along with tips and tricks for developing kinetics assays on the BLItz system.

Presenters
Isaac Krauss, Assistant Professor of Chemistry, Brandeis University
Craig Tin, Senior Product Manager, Pall Forte Bio LLC

10:00 AM–11:00 AM, ROOM 301/302/303
Career Center Workshop
Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)

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.

10:00 AM–5:00 PM, HALL C
Biomolecular Discovery Dome

Visit this 3-D portable Dome, sponsored by the Public Affairs Committee, to see how difficult biophysical topics can be made accessible to high school students and the public. Short videos that communicate the excitement of looking at macromolecular complexes and understanding the molecular basis for life are being shown throughout the week.

10:00 AM–5:00 PM, HALL C
Exhibits

10:15 AM–11:00 AM, HALL C
Coffee Break

10:15 AM–11:15 AM, ROOM 327/328/329
New Member Welcome Coffee

All new 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.

10:30 AM–12:00 PM, HALL C, ROOM B
Exhibitor Presentation
Molecular Devices LLC

Performing Positive Allosteric Modulator (PAM) Assays and Investigating Use-Dependent Inhibition of Ion Channels on Automated Electrophysiology Systems Including the IonFlux™ Benchtop Reader and the IonWorks Barracuda® Instrument

PAM Assays

Nicotinic acetylcholine receptors (nAChRs) have been extensively studied due to their importance in physiological processes as well as involvement in several muscle and neuronal human pathologies, and are major therapeutic targets for pharmaceutical drug discovery. Ensemble recordings on the IonFlux HT System were validated with human hnAChR recombinant cell lines developed by Eurofins Discovery Services. Response properties of the nAChRs to the endogenous ligand acetylcholine (ACh), reference agonists, antagonists and positive allosteric modulators (PAMs) were characterized and will be presented.

Ion Channel Use-Dependence

Use-dependent inhibition of ion channels by potential drug candidates is an important aspect to investigate for many drug classes. Data will be presented to demonstrate the ability of automated electrophysiology systems to study the use-dependence block of Na+ channel targets by peptide toxins and known compounds. We will demonstrate the ability of the IonWorks Barracuda system to deliver complex voltage protocols and generate long assay windows which are required for these studies. Pulse trains delivered at 10Hz are used to measure the blockade of current. These experiments demonstrate stable assay windows with uniform currents for 30 minutes and longer during the delivery of periodic pulse trains.

Presenter
James Costantin, Product Marketing Manager, Automated Electrophysiology, Molecular Devices LLC

10:45 AM–12:45 PM, Ballroom I

Symposium
Epigenetics

Chair
Lene Oddershede, University of Copenhagen, Denmark

941-Symp 10:45 AM
COST AND PRECISION IN SMALL GENE REGULATORY NETWORKS. **Aleksandra Walczak**

942-Symp 11:15 AM
METAPHASE CHROMATIN PLATES EXPLAIN THE STRUCTURE AND PHYSICAL PROPERTIES OF CONDENSED CHROMOSOMES. **Joan-Ramon Daban**

943-Symp 11:45 AM
COOPERATIVITY AND SUPERCOILING MODULATE FUNCTIONS OF HUMAN O6-ALKYLGUANINE DNA ALKYLTRANSFERASE. **Michael G. Fried**, Manana Melikishvili, Ingrid Tessmer

944-Symp 12:15 PM
DNA SUPERCOILING ENHANCES COOPERATIVITY AND EFFICIENCY OF AN EPIGENETIC SWITCH. Kamilla Nørregaard, Magnus Andersson, Peter E. Nielsen, Stanley Brown, **Lene B. Oddershede**

10:45 AM–12:45 PM, Ballroom II

Symposium
Mechanisms of Actin Filament Nucleation and Mechanotransduction

Chair
Roberto Dominguez, University of Pennsylvania

945-Symp 10:45 AM
MECHANOSENSITIVITY OF FORMIN-ACTIN INTERACTIONS. **Guillaume Romet-Lemonne**

946-Symp 11:15 AM
WISH/DIP/SPIN90 PROTEINS ACTIVATE ARP2/3 COMPLEX TO CREATE LINEAR ACTIN FILAMENTS THAT SEED ASSEMBLY OF BRANCHED ACTIN NETWORKS. **Brad Nolen**

947-Symp 11:45 AM
TWO TYPES OF ACTIN NUCLEATORS, THREE WAYS TO MAKE ACTIN FILAMENTS? **Margot Quinlan**

948-Symp 12:15 PM
MOLECULAR MECHANISM OF ACTIN FILAMENT NUCLEATION BY LEIOMODIN (LMOD). Malgorzata Boczkowska, Grzegorz Rebowski, **Roberto Dominguez**

10:45 AM–12:45 PM, Ballroom III

Symposium
Molecular Basis for Mitochondrial Signaling

Chair
Tatiana Rostovtseva, NIH

949-Symp 10:45 AM
SYSTEMS APPROACHES TO MITOCHONDRIAL CALCIUM SIGNALING. Jennifer Wettmarshausen, Yiming Cheng, **Fabiana Perocchi**

950-Symp 11:15 AM
THE MITOCHONDRIAL CALCIUM UNIPORTER: MOLECULAR COMPOSITION AND PHYSIOLOGICAL ROLE. **Rosario Rizzuto**

951-Symp 11:45 AM
MOLECULAR MECHANISMS OF MITOCHONDRIAL CA^{2+} UPTAKE: ROLE OF MICU1 AND ITS PARALOGS. **György Hajnóczky**

952-Symp 12:15 PM
HIGH-AFFINITY INTERACTION WITH VDAC LINKS CYTOSOLIC PROTEINS TO MITOCHONDRIAL REGULATION IN HEALTH, CANCER, AND NEURODEGENERATION. **Tatiana K. Rostovtseva**, Philip A. Gurnev, David P. Hoogerheide, Eduardo N. Maldonado, John J. Lemasters, Olga Protchenko, Jennifer C. Lee, Sergey M. Bezrukov

10:45 AM–12:45 PM, Ballroom IV

Platform
Electron Microscopy and Solution Scattering

Co-Chairs
Doreen Matthies, NIH
Daisbube Kihare, Purdue University

953-Plat 10:45 AM
GFP FOR EM: SITE-SPECIFIC LABELING OF PROTEINS FOR ELECTRON MICROSCOPY. **Corey M. Dambacher**, Gabriel C. Lander

954-Plat 11:00 AM
FAST SHAPE-BASED GLOBAL AND LOCAL ELECTRON DENSITY MAP SEARCH. Juan Esquivel-Rodriguez, Xusi Han, Charles Christoffer, Xuejiao Kang, Lyman Monroe, **Daisuke Kihara**

955-Plat 11:15 AM
CYCLOPHILIN A STABILIZES THE MATURE HIV-1 CAPSID THROUGH A NOVEL NON-CANONICAL BINDING SITE. **Peijun Zhang**, Chuang Liu, Juan R. Perilla, In-Ja Byeon, Jiying Ning, Jinwoo Ahn, Chris Aiken, Angela M. Gronenborn, Tatyana Polenova, Klaus Schulten

956-Plat 11:30 AM
RESIDUE SPECIFIC RADIATION DAMAGE OF PROTEIN STRUCTURES USING HIGH-RESOLUTION CRYO-ELECTRON MICROSCOPY. **Doreen Matthies**, Alberto Bartesaghi, Alan Merk, Soojay Banerjee, Sriram Subramaniam

957-Plat 11:45 AM
3D ULTRASTRUCTURAL INVESTIGATION OF ENTIRE PANCREATIC ISLETS OF LANGERHANS BY SERIAL BLOCK FACE SCANNING ELECTRON MICROSCOPY. Gina N. Calco, Jake D. Hoyne, **Bryan C. Kuo**, Maria A. Aronova, Guofeng Zhang, Andre Shomorony, Charlotte R. Pfeifer, Tao Cai, Huanyu Xu, Abner L. Notkins, Richard D. Leapman

958-Plat 12:00 PM
SUPERRESOLUTION FLUORESCENCE MICROSCOPY WITHIN A SCANNING ELECTRON MICROSCOPE. **Craig L. Hetherington**, Connor G. Bischak, Claire E. Stachelrodt, Jake T. Precht, Zhe Wang, Darrell G. Schlom, Naomi S. Ginsberg

959-Plat 12:15 PM
CCP-SAS - NOVEL APPROACHES FOR THE ATOMISTIC MODELLING OF SMALL ANGLE SCATTERING DATA IN BIOLOGY. **David W. Wright**, Ruodan Nan, Gar-Kay Hui, Joseph E. Curtis, Emre H. Brookes, Stephen J. Perkins

960-PLAT 12:30 PM
INTERPRETATION OF SOLUTION X-RAY SCATTERING DATA BY MOLECULAR DYNAMICS. Po-chia Chen, Levin Brinkmann, **Jochen S. Hub**

10:45 AM–12:45 PM, ROOM 307/308

Platform
Ligand-gated Channels

Co-Chairs
John Baenziger, University of Ottawa, Canada
Cynthia Czajkowski, University of Wisconsin-Madison

961-PLAT 10:45 AM
DIVERGENT ROLES FOR M4 IN THE GATING OF TWO PROKARYOTIC PENTAMERIC LIGAND-GATED ION CHANNELS. Camille M. Henault, Peter F. Juranka, Julian S. Surujballi, **John E. Baenziger**

962-PLAT 11:00 AM
SINGLE MOLECULE MOTION MAP OF GLIC BY DIFFRACTED X-RAY TRACKING. **Hiroshi Sekiguchi**, Yufuku Matsushita, Yuri Nishino, Keigo Ikezaki, Atsuo Miyazawa, Naoto Yagi, Christele Huron, Jean-Pierre Changeux, Pierre-Jean Corringer, Yuji C. Sasaki

963-PLAT 11:15 AM EDUCATION TRAVEL AWARDEE
AN ELIC-GLIC CHIMERA REVEALS DISTINCT PATHWAYS OF ACTIVATION IN THE CYS-LOOP FAMILY OF RECEPTORS. **Nicolaus Schmandt**, David T. Lodowski, Vivien Yee, Sudha Chakrapani

964-PLAT 11:30 AM EDUCATION TRAVEL AWARDEE
DISULFIDE TRAPPING THE GABA-A RECEPTOR EXTRACELLULAR BETA-5/BETA-5' LOOP. **Cassandra M. Theusch**, Cynthia Czajkowski

965-PLAT 11:45 AM
CONFORMATIONAL DYNAMICS IN THE GABAA RECEPTOR. Rilei Yu, **Philip C. Biggin**

966-PLAT 12:00 PM
MONITORING THE WORK OF A SINGLE SUBUNIT IN HOMOTETRAMERIC CNGA2 CHANNELS. **Klaus Benndorf**, Nisa Wongsamitkul, Vasilica Nache, Thomas Eick, Sabine Hummert, Eckhard Schulz, Ralf Schmauder, Jana Schirmeyer, Thomas Zimmer

967-PLAT 12:15 PM
ALLOSTERIC REGULATION OF THE CYCLIC NUCLEOTIDE-BINDING DOMAIN IN HCN CHANNELS. **Hannah A. DeBerg**, Shahidul M. Islam, Michael C. Puljung, Benoit Roux, William N. Zagotta, Stefan Stoll

968-PLAT 12:30 PM
RAPID ACTIVATION OF DISTINCT CONDUCTING STATES IN P2X RECEPTOR CHANNELS. **Mufeng Li**, Gilman Toombes, Shai D. Silberberg, Kenton J. Swartz

10:45 AM–12:45 PM, ROOM 309/310

Platform
Intrinsically Disordered Proteins (IDP)

Co-Chairs
Tharin Blumenschein, University of East Anglia, United Kingdom
Travis Hoppe, Drexel University

969-PLAT 10:45 AM
A NEW AND UN-CONVENTIONAL ULTRAFAST BINDING MECHANISM OF INTRINSICALLY DISORDERED PROTEINS TO STRUCTURED PARTNERS. **Davide Mercadante**, Sigrid Milles, Edward A. Lemke, Frauke Gräter

970-PLAT 11:00 AM
COMBINATIONAL EVIDENCE THAT INTRINSIC DISORDER PROVIDES BROAD ASSOCIATION PROFILES. **Travis A. Hoppe**, Robert Best

971-PLAT 11:15 AM
THE INTRINSICALLY DISORDERED C. TRACHOMATIS TARP BINDS ACTIN WITH A PARTIALLY PREFORMED HELIX. James L. Tolchard, Ted Hackstadt, **Tharin M. A. Blumenschein**

972-PLAT 11:30 AM
POST-TRANSLATIONAL MODIFICATION OF P27 REGULATES SIGNAL TRANSMISSION VIA A DYNAMIC INTERACTION WITH CDK2/CYCLIN. **Hugo Sanabria**, Maksym Tsytlonok, Yuefeng Wang, Cheon-Gil Park, Suren Felekyan, Katherina Hemmen, Peter Tompa, Claus A. M. Seidel

973-PLAT 11:45 AM
EFFECTS OF CHARGE INTERACTIONS AND TRANSIENT SECONDARY STRUCTURE ELEMENTS ON THE FUNCTION OF THE DISORDERED RAM REGION OF THE NOTCH RECEPTOR. **Kathryn Sherry**, Rahul Das, Rohit Pappu, Doug Barrick

974-PLAT 12:00 PM
MOLECULAR SIMULATIONS OF UNFOLDED AND INTRINSICALLY DISORDERED PROTEINS. **Gül H. Zerze**, Robert B. Best, Jeetain Mittal

975-PLAT 12:15 PM
CONFORMATIONAL ENTROPIES OF UNFOLDED PEPTIDES: THE SOURCE OF A REALISTIC ESTIMATION OF THE ENTROPY OF UNFOLDED PEPTIDES AND PROTEINS. **Reinhard Schweitzer-Stenner**, Siobhan E. Toal

976-PLAT 12:30 PM
EVIDENCE FOR INTERNAL FRICTION IN IDPS OF THE CALCITONIN PEPTIDE FAMILY. Sara M. Sizemore, Stephanie M. Cope, **Sara M. Vaiana**

10:45 AM–12:45 PM, ROOM 314/315

Platform
Cardiac, Smooth, and Skeletal Muscle Electrophysiology

Co-Chairs
Cathy Proenza, University of Colorado, Denver
Eleonora Grandi, University of California, Davis

977-PLAT 10:45 AM
IONIC MECHANISMS THAT UNDERLIE VENTRICULAR ACTION POTENTIAL PROLONGATION FOLLOWING LOSS OF CAVEOLIN-3 IN ADULT TRANSGENIC MICE. **Vignesh Ramchandran**, Thomas O'Hara, Yogananda S. Markandeya, Ravi C. Balijepalli, Timothy J. Kamp, Natalia A. Trayanova

978-PLAT 11:00 AM
DIABETES SLOWS HEART RATE VIA ELECTRICAL REMODELING OF K^+ CURRENTS IN SINOATRIAL NODE MYOCYTES. Joshua R. St. Clair, Emily J. Sharpe, Andrew Hagar, Clayton Garthe, Julie Juchno, **Cathy Proenza**

979-PLAT 11:15 AM
CARDIAC SPECIFIC LEUCINE-RICH REPEAT CONTAINING 10 (LRRC10) PROTEIN INTERACTS WITH AND REGULATES THE CAV1.2 L-TYPE CA2+ CHANNELS. **Marites T. Woon**, Adrian C. Grimes, Courtney R. Reynolds, Matthew J. Brody, Youngsook Lee, Ravi C. Balijepalli

980-PLAT 11:30 AM
THE CA^{2+} CLOCK IS NOT GOVERNED BY A SINGLE CAMKII OR PKA PHOSPHORYLATION SITE FOR FIGHT OR FLIGHT RESPONSES. **Yuejin Wu**, William J. Kutschke, Hector H. Valdivia, Xander H.T. Wehrens, Mark E. Anderson

981-PLAT 11:45 AM
RANOLAZINE PREVENTS PHASE-3 EARLY AFTERDEPOLARIZATIONS IN HUMAN ATRIAL MYOCYTES BY INHIBITING NA CURRENT NON-EQUILIBRIUM REACTIVATION. Stefano Morotti, Andrew D. McCulloch, Donald M. Bers, Andrew G. Edwards, **Eleonora Grandi**

982-PLAT 12:00 PM
PROBING THE TRAFFICKING ROUTES OF KCNQ1 AND KCNE1 AFTER THEIR ER EXIT. Min Jiang, Mei Zhang, Scott C. Henderson, **Tseng Gea-Ny**

983-PLAT 12:15 PM
TRAFFICKING AND GATING MECHANISMS OF HERG1A C-TERMINUS (LQTS-2) TRUNCATION MUTATIONS ON HERG1A-HERG1B HETERO-MULTIMERIC CHANNEL. Akil Puckerin, Donald D. Chang, Prakash Subramanyam, Henry M. Colecraft, **Ademuyiwa S. Aromolaran**

984-PLAT 12:30 PM
DOMINANT NEGATIVE CONSEQUENCES OF A HERG 1B MUTATION ASSOCIATED WITH INTRAUTERINE FETAL DEATH. **David K. Jones**, Sunita Joshi, Fang Liu, Gail A. Robertson

10:45 AM–12:45 PM, ROOM 316/317

Platform
Membrane Pumps, Transporters, and Exchangers II

Co-Chairs
Vanessa Leone, NIH
Eduardo Chufan, NIH

985-PLAT 10:45 AM
ON THE NA^+/H^+ SELECTIVITY OF MEMBRANE TRANSPORTERS AND ENZYMES: EXPERIMENTAL AND THEORETICAL STUDIES OF AN ATP-SYNTHASE ROTOR RING. **Vanessa Leone**, Ernst Grell, Denys Pogoryelov, Thomas Meier, José D. Faraldo-Gómez

986-PLAT 11:00 AM EDUCATION TRAVEL AWARDEE
RECENT STRUCTURES AND MOLECULAR DYNAMICS SIMULATIONS OFFER NEW PERSPECTIVE ON NA^+/H^+ ANTIPORTERS. **David L. Dotson**, Chiara Lee, Shoko Yashiro, Povilas Uzdavinys, Christoph von Ballmoos, David Drew, Alexander D. Cameron, Oliver Beckstein

987-PLAT 11:15 AM EDUCATION TRAVEL AWARDEE
UNDERSTANDING SELECTIVITY OF THE NA^+/K^+ -ATPASE USING A COMPUTATIONAL APPROACH. **Asghar M. Razavi**, Vincenzo Carnevale, Lucie Delemotte, Vincent A. Voelz

988-PLAT 11:30 AM
X-RAY CRYSTALLOGRAPHIC STUDY OF NA,K-ATPASE IN COMPLEX WITH CARDIOTONIC STEROIDS. **Haruo Ogawa**, Kanna Motoyama, Flemming Cornelius, Bente Vilsen, Chikashi Toyoshima

989-PLAT 11:45 AM
IDENTIFICATION OF STRUCTURAL MOTIFS IN P-GLYCOPROTEIN RESPONSIBLE FOR THE DRUG-MEDIATED INHIBITION OF ATP HYDROLYSIS. **Eduardo E. Chufan**, Khyati Kapoor, Suresh V. Ambudkar

990-PLAT 12:00 PM EDUCATION TRAVEL AWARDEE
THE HYDROLYSIS CYCLE OF ATP-BINDING CASSETTE NUCLEOTIDE-BINDING DOMAINS. **Srinivasan Krishnan**, Maria E. Zoghbi, Guillermo A. Altenberg

991-PLAT 12:15 PM
RECONSTITUTION OF HUMAN ABC TRANSPORTER MRP3 INTO GIANT UNILAMELLAR VESICLES FOR SINGLE MOLECULE TRANSPORT RECORDINGS ON MICRO-STRUCTURED BIOCHIPS. **Patrick Seelheim**, Adriane Wüllner, Hans-Joachim Galla

992-PLAT 12:30 PM
MOLECULAR DYNAMICS SIMULATION STUDY OF A MUTANT CONSTRUCT OF THE ARCHAEAL GLUTAMATE TRANSPORTER GLTPH WITH TRANSPORT RATES AS FAST AS ITS HUMAN COUNTERPART. **Michel A. Cuendet**, Sebastian Stolzenberg, George Khelashvili, Harel Weinstein

11:30 AM–12:30 PM, ROOM 301/302/303

Career Center Workshop
Career Planning and Job Searching for Science Professionals: Academic Opportunities

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.

11:30 AM–1:00 PM, HALL C, ROOM A

Exhibitor Presentation
Asylum Research, an Oxford Instruments Company

There's No Other AFM Like Cypher™ – High Resolution Atomic Force Microscopy Made Easier and Faster
Asylum Research has focused on improving AFM instrumentation to make imaging in liquid easier, faster and more quantitative for life science applications. Please join us for this 'Lunch and Learn' presentation that will focus on the latest technical advances in AFM that enable high resolution imaging of the structure and dynamics of samples including proteins, lipids and nucleic acids. We'll show examples of how the Cypher ES Environmental AFM allows users to control the environment around their sample and perform perfusion experiments easily. You'll learn about Cypher's numerous ease-of-use features such as GetStarted™, GetReal™, and blueDrive™ for easy and stable imaging in liquid. We will introduce you to Fast Force Mapping, our unique technology that measures mechanical properties of your samples faster and more reliably. This is also a great opportunity to ask our scientists any questions you may have about AFM.
Presenter
Irène Revenko, Applications Scientist, Asylum Research, an Oxford Instruments Company

11:45 AM–1:15 PM, Room 327/328/329

Undergraduate Student Pizza "Breakfast"

The Education Committee is hosting this "breakfast" for undergraduate students. This session provides a valuable networking and social opportunity for undergraduate student attendees to meet other students and Committee members, to discuss academic goals and questions, and to develop a biophysics career path. The Emily M. Gray Awardee will also give a talk at this event. Limited to the first 100 attendees.

Emily Gray Awardee Speaker

Meyer Jackson, University of Wisconsin-Madison

12:30 PM–2:00 PM, Hall C, Room B

Exhibitor Presentation
Nanion Technologies GmbH

HTS-Compatible Giga-Seal Ion Channel Drug Discovery: Beyond the Bottleneck and Ready for CiPA

Nanion Technologies is one of the leading providers of automated patch clamp systems, offering a diverse product portfolio covering a broad experimental range from single channel recordings to HTS-compatible ion channel screening from up to 768 cells in parallel. Allowing 20,000 data points per day, the SyncroPatch 384/768PE is unrivalled for high throughput and high quality recordings. Diverse ion channel targets and cell types have successfully been tested on the SyncroPatch 384/768PE including challenging targets such as fast desensitizing ligand ion channels (P2X3 und GluA2), ion channels requiring intracellular activation (Katp, TMEM16a) and heavily regulated channels such as TRPA1.

Early cardiac arrhythmic risk assessment is a hot topic these days calling for new safety screening strategies. 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 unique hybrid system for parallel impedance-based and MEA-like recordings from intact cardiomyocyte networks, has proven a versatile tool for safety and toxicity screening applications serving as an excellent complement to APC. These three platforms enable you to keep up with the requirements of the CiPA-initiative for early prediction of potential cardiac arrhythmias.

During this workshop, we will show how to push the boundaries of ion channel screening projects to achieve HTS-screening standards, and how to get ready for comprehensive safety screening beyond hERG.
Spaces are limited so reserve yours by sending an email to info@nanion.de.

Presenters

Niels Fertig, CEO, Nanion Technologies
Andrea Brüggemann, CSO, Nanion Technologies

1:00 PM–3:00 PM, Hall C

Graduate and Postdoc Institution Fair

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

1:00 PM–3:00 PM, Room 324/325

Grant Writing Workshop
How (Not) to Write Your NIH Grant Proposal

Through mock study sections and discussions, veteran NIH officials will demonstrate what review panels look for when they read and assess proposals. They will also answer questions about peer review, avoiding application pitfalls and responding to review concerns. This session is sponsored by the Public Affairs Committee and is appropriate for both experienced principal investigators and those applying for their first grant.

Speakers

Jean Chin, NIGMS, NIH
Catherine Lewis, NIGMS, NIH
James Mack, CSR, NIH
Don Schneider, CSR, NIH
Mary Ann Wu, NIGMS, NIH

1:30 PM–3:00 PM, Hall C, Room A

Exhibitor Presentation
World Precision Instruments

Side-Stepping the Animal Model: Cardiac Work Loops in Human iPSC-derived Myocytes

Cardiac pressure-volume loops on a complete organ provide the framework for understanding cardiac mechanics in experimental animal models, most notably in the context of Frank-Starling mechanisms. With the development of more sensitive transducers, this work has been applied to single cardiac cells, using freshly isolated cells from an animal model. With the advent of iPSC-derived myocytes, a whole new range of cell types is now available to the investigator. We introduce a novel mounting application for overcoming the technical difficulties in instrumenting these cells for force measurements. With this technology, it is now possible to conduct experiments on human stem cell-derived myocytes.

We will show preliminary results, the tools required for these types of experiments, mounting methods, and a novel method for direct force measurements on human iPSC-derived myocytes. In addition, two different methods for real-time determination of length changes in isolated iPSC-derived myocytes will be presented. The results are preliminary, however indicate the possibility for not only a reduction in the use of the animal models in cardiac research, but also the direct investigation of human cardiovascular disease.

1:30 PM–3:00 PM, Room 330

Biophysics 101:
Super-Resolution Microscopy

Eric Betzig, Stefan W. Hell and William E. Moerner were awarded the Nobel Prize in Chemistry 2014 for their great achievements in developing super-resolution/single-molecule microscopy. This revolutionary progress in optical microscopy enables us to have an unprecedented power peering into the nanoworld in live organisms. This year's "Biophysics 101" session will include two lectures on this topic, outlining the practice of super-resolution/single-molecule microscopy for not-yet-experts, and describing some of its uses and rewards. The session is part of a continuing series of symposia initiated by the Education Committee to educate the Society membership about fundamentals of various biophysical techniques with which they may not be familiar but might want to use.

Speakers

Keith Lidke, University of New Mexico
Weidong Yang, Temple University

1:45 PM–3:00 PM, HALL C

Snack Break

2:15 PM - 3:45 PM, ROOM 314/315

How to Get Your Scientific Paper Published

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 likely 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.

Moderator William O. Hancock

Speakers

E. Michael Ostap, Associate Editor, *Biophysical Journal*
David J. Odde, Editorial Board Member, *Biophysical Journal*
Leslie M. Loew, Editor-in-Chief, *Biophysical Journal*
Beth D. Staehle, Journal Manager, *Biophysical Journal*

2:30 PM–3:30 PM, ROOM 301/302/303

Career Center Workshop
Selling Yourself to the Life Sciences Industry

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.

2:30 PM–4:00 PM, ROOM 331/332

Overcoming Unconscious Bias & Barriers in Science

Most scientists want to detect (and to mitigate) the influence of bias in the context of their research. However, in the context of interpersonal relationships, scientists often act with unconscious biases against another person's gender, age, ethnicity, or socioeconomic status. These unchecked biases limit the career advancement of susceptible individuals and propagate harmful stereotypes. This panel will explore strategies for detecting our unconscious biases and overcoming them.

Speakers

Chad Forbes, University of Delaware
Sharona Gordon, University of Washington
Rajini Rao, Johns Hopkins University

2:30 PM–4:00 PM, ROOM 321/322/323

US Science Education in a Global Context

Why do students in other countries outperform US students in science? As other countries are increasing their investment in scientific research and creating new opportunities for higher education and work, who will fill the seats in tomorrow's US university science classrooms? Panelists in this session will discuss what other countries are doing differently than the US in science education and the role of the next generation science standards in US education.

Speakers

Bruce Alberts, University of California, San Francisco
Stephen Pruitt, Achieve
Susan Singer, National Science Foundation

2:30 PM–4:00 PM, HALL C, ROOM B

Exhibitor Presentation
Sutter Instruments

Scientists Empowering Scientists

For over 40 years, Sutter Instrument has designed and produced electro-mechanical and optical instrumentation that helps scientists push the limits. While Sutter has long been the market leader in products for micropipette fabrication and micromanipulation, we have continued to expand our Lambda imaging product line and XenoWorks microinjection systems. A strong emphasis has always been placed on providing expert tech support to help our customers achieve the best results in their research.

To further this goal, Sutter Instrument is starting a series of user meetings with tutorial presentations. We will be providing step-by-step guidance to the new experimenter as well as advanced tips and tricks for the experienced user. To round it off, newly introduced products will be discussed on a case-by-case basis. Registration is available online through the Sutter Event Registration Page (http://sutter.eventbrite.com), or by email to info@sutter.com. The number of available spaces is limited, and registrations are accepted on a first-come-first-served basis.

Who should attend?

- Electrophysiologists who use 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.
- Scientists who want to learn more about optimizing their results with pipette pullers and micromanipulators

Presenters

Jan Dolzer, Tech Support and Product Development, Sutter Instrument: Introductory Remarks
Adair Oesterle, Tech Support Micropipette Fabrication and Microinjection, Sutter Instrument: Optimizing Settings on Your Sutter Micropipette Puller
Ali Mahloudji, Tech Support Micromanipulators and Lambda DG Series, Sutter Instrument: Maximizing the Versatility of Your Dual-manipulator Setup

3:00 PM–5:00 PM, ROOM 333

Membership Committee Meeting

3:30 PM–5:00 PM, HALL C, ROOM A

Exhibitor Presentation
Bruker Nano Surfaces

Recent Advances in Atomic Force Microscopy for Biological Research

Bruker's latest BioScope AFM is the perfect integration of AFM and inverted light microscopy. It incorporates Bruker's latest Peak Force Tapping innovations including the new nanomechanics package, which significantly expands mechanobiology applications into a lower modulus range covering live cells and tissues. With its open access design, and bio friendly features and accessories, the latest BioScope AFM is the most integrated and easiest to use life science AFM available. The workshop will include examples of the functional integration of light microscopy techniques with AFM in order to conduct optically guided, high-resolution mapping of both the structural and mechanical properties of mammalian cells.

Presenter

John Thornton, Senior Applications Engineer, Bruker Nano Surfaces

4:00 PM–5:00 PM, ROOM 301/302/303

Career Center Workshop
Successfully Navigating the International Job Search

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.

4:00 PM–6:00 PM, BALLROOM I

Symposium
Bacterial Subcellular Dynamics at Super-Resolution: This Brings Super-Resolution to a Dynamic Sense

Chair
Julie Biteen, University of Michigan

993-SYMP 4:00 PM
BEYOND MODEL SYSTEMS: SUPER-RESOLVING THE SUBCELLULAR DYNAMICS OF STARCH DIGESTION IN THE HUMAN GUT MICROBIOME. Krishanthi S. Karunatilaka, Elizabeth A. Cameron, Eric C. Martens, Nicole M. Koropatkin, **Julie S. Biteen**

994-SYMP 4:30 PM
BACTERIAL CHROMOSOME SEGREGATION AT THE SINGLE-MOLECULE LEVEL. **David Sherratt**

995-SYMP 5:00 PM
BACTERIAL CELL WALL PEPTIDOGLYCAN ARCHITECTURE AND DYNAMICS. **Simon J. Foster**

996-SYMP 5:30 PM
3D FOLDING MECHANISMS OF HIGHER-ORDER CHROMATIN TOPOLOGICAL DOMAINS. **Marcelo Nollmann**

4:00 PM–6:00 PM, BALLROOM II

Symposium
Neurotransmitter Transporters

Chair
Olga Boudker, Weill Cornell Medical College

997-SYMP 4:00 PM
THE STRUCTURAL AND DYNAMIC BASIS OF ION-COUPLED SUBSTRATE UPTAKE BY A GLUTAMATE TRANSPORTER HOMOLOGUE. **Olga Boudker**

998-SYMP 4:30 PM
FUNCTIONAL DYNAMICS OF GLUTAMATE/AMINO ACID TRANSPORTERS OF THE SOLUTE CARRIER 1 FAMILY. **Christof Grewer**

999-SYMP 5:00 PM
TRANSPORTERS IN MOTION: COMBINING COMPUTATIONAL APPROACHES AND LRET-MEASUREMENTS. **Harald H. Sitte**, SanthoshKannan Venkatesan, Azmat Sohail, Kusumika Saha, Kumaresan Jayaraman, Gerhard F. Ecker, Michael Freissmuth, Walter Sandtner, Thomas Stockner

1000-SYMP 5:30 PM
FUNCTIONAL ROLES OF GLUTAMATE TRANSPORT IN MODULATING PHASIC AND TONIC NEUROTRANSMITTER SIGNALING. **Michael P. Kavanaugh**

4:00 PM–6:00 PM, BALLROOM III

Platform
Cardiac Muscle Mechanics and Structure

Co-Chairs
Sabine van Dijk, University of Arizona
Bertrand Tanner, Washington State University

1001-PLAT 4:00 PM
IMPLICATIONS OF ADP-STIMULATED CROSS-BRIDGE CYCLING FOR DIASTOLIC AND SYSTOLIC HEART FAILURE. **Vasco Sequeira**, Cris dos Remedios, Ger J.M. Stienen, Jolanda van der Velden

1002-PLAT 4:15 PM
MYOCARDIAL STRAIN RATE MODULATES THE SPEED OF RELAXATION IN DYNAMICALLY LOADED TWITCH CONTRACTIONS. **Kenneth S. Campbell**, Charles S. Chung

1003-PLAT 4:30 PM
MYOSIN MGADP RELEASE RATE DECREASES AT LONGER SARCOMERE LENGTH TO PROLONG MYOSIN ATTACHMENT IN SKINNED RAT MYOCARDIAL STRIPS. **Bertrand CW Tanner**, Peter O. Awinda, Jason J. Breithaupt

1004-PLAT 4:45 PM
INHERENT FORCE-DEPENDENT PROPERTIES OF β CARDIAC MYOSIN CONTRIBUTE TO THE FORCE-VELOCITY RELATIONSHIP OF CARDIAC MUSCLE. Michael J. Greenberg, Henry Shuman, **E Michael Ostap**

1005-PLAT 5:00 PM
EFFECT OF MUTATIONS IN CMYBP-C ON SARCOMERE MECHANICAL FUNCTION. **Djordje Nedic**, Marina Svicevic, Boban Stojanovic, Michael A. Geeves, Thomas Irving, Richard J. Gilbert, Srboljub M. Mijailovich

1006-PLAT 5:15 PM
THE A31P HCM MUTATION IN CMYBP-C DISRUPTS THE STRUCTURE OF THE C0 DOMAIN BUT DOES NOT CAUSE HAPLOINSUFFICIENCY IN A POPULATION OF OLDER CATS HETEROZYGOUS FOR THE A31P ALLELE.
Sabine J. van Dijk, Kristina L. Bezold, Stacy Mazzalupo, Mark D. Kittleson, Alla S. Kostyukova, Samantha P. Harris

1007-PLAT 5:30 PM
CELL AND MYOFIBRIL CONTRACTILE PROPERTIES OF HIPSC-DERIVED CARDIOMYOCYTES FROM A PATIENT WITH A MYH7 MUTATION ASSOCIATED WITH FAMILIAL CARDIOMYOPATHY. **Josè Manuel Pioner**, Kai- Chun Yang, Lil Pabon, Alice Ward Racca, Mark Y. Jeong, Christian I. Childers, Jesse Macadangdang, Chiara Tesi, Corrado Poggesi, Deok- Ho Kim, Charles E. Murry, Michael Regnier

1008-PLAT 5:45 PM
MODULATION OF CARDIAC TWITCH DYNAMICS BY THE TROPONIN I INHIBITORY REGION. Yasser Aboelkassem, Jordan Bonilla, **Stuart G. Campbell**

4:00 PM–6:00 PM, BALLROOM IV

Platform
Protein Lipid Interactions II

Co-Chairs
Sandro Keller, University of Kaiserslautern, Germany
Sarah McDonald, Johns Hopkins University

1009-PLAT 4:00 PM
AN UNUSUAL MEMBRANE-PROTEIN TOPOLOGY FOR SENSING BILAYER THICKNESS AND TRIGGERING BACTERIAL BIOFILM FORMATION. **Sandro Keller**, Jana Broecker, Sebastian Fiedler, Katharina Gimpl, Martin Textor

1010-PLAT 4:15 PM
INSIGHTS INTO THE SPECIFICITY OF NEISSERIAL OPA PROTEIN INTERACTIONS WITH HUMAN RECEPTORS. **Jennifer N. Martin**, Ryan H. Lo, Alison K. Criss, Linda Columbus

1011-PLAT 4:30 PM
AROMATIC RESIDUES DISPLAY AN ENERGETIC DEPTH-DEPENDENCE IN LIPID BILAYERS THAT CAN BE MODULATED BY NEAREST-NEIGHBOR INTERACTIONS. **Sarah K. McDonald**

1012-PLAT 4:45 PM
PROTEIN AND ENVIRONMENTAL DETERMINANTS OF OMP FATE IN LIPOSOMES. **Mark Culver**, Stephanos Gozali, Alison H. Dewald

1013-PLAT 5:00 PM
STRUCTURE AND FUNCTION OF THE β-BARREL ASSEMBLY MACHINE AND ITS ASSOCIATED CHAPERONES. **Marcelo C. Sousa**

1014-PLAT 5:15 PM
UNFOLDING THE LUMINAL DOMAIN OF BTUB IN A NATIVE BILAYER. **Curtis Balusek**, James C. Gumbart

1015-PLAT 5:30 PM
A SUBSET OF ANNULAR LIPIDS IS LINKED TO THE FLIPPASE ACTIVITY OF AN ABC TRANSPORTER. **Cherine Bechara**, Anne Noll, Nina Morgner, Matteo T. Degiacomi, Robert Tampe, Carol V. Robinson

1016-PLAT 5:45 PM
"SNORKELING" OF THE CHARGED SIDECHAIN OF A TRANSMEMBRANE PEPTIDE AS DIRECTLY OBSERVED BY DOUBLE ELECTRON-ELECTRON RESONANCE EXPERIMENT. Matthew Donohue, Maxim Voynov, Sergey Milikisiyants, Alex I. Smirnov, **Tatyana I. Smirnova**

4:00 PM–6:00 PM, ROOM 307/308

Platform
Protein Structure and Conformation II

Co-Chairs
Lauren Porter, University of Maryland
Krishna Neupane, University of Alberta, Canada

1017-PLAT 4:00 PM
SOLUTION CONFORMATION OF THE UNBOUND HIV-1 PROTEASE DERIVED FROM RESIDUAL DIPOLAR COUPLINGS MEASURED AT AMBIENT AND HIGH-PRESSURE CONDITIONS. **Julien Roche**, John M. Louis, Ad Bax

1018-PLAT 4:15 PM
UNDERSTANDING SIDE CHAIN CONFORMATIONAL VARIABILITY IN PROTEINS. **Asmit Bhowmick**, Teresa Head-Gordon

1019-PLAT 4:30 PM
NAVIGATING IN THE PROTEIN UNIVERSE. Sergey Nepomnyachiy, Rachel Kolodny, **Nir Ben-Tal**

1020-PLAT 4:45 PM
PROTEIN EVOLUTION ACROSS FOLD CLASSES: A 3-α-HELIX BUNDLE CAN SWITCH TO β, α/β, AND α+β FOLDS BY STEPWISE MUTATION. **Lauren L. Porter**, Yanan He, Yihong Chen, John Orban, Philip N. Bryan

1021-PLAT 5:00 PM
RESOLVING CONFORMATIONAL SWITCHING OF AAA^+ PROTEASE FTSH USING SINGLE-MOLECULE FRET. **Martine Ruer**, Philip Gröger, Nadine Bölke, Andreas Hartmann, Michael Schlierf

1022-PLAT 5:15 PM
ANTI-PRION LIGAND BINDING PROMOTES NATIVE PRP FOLDING OVER MISFOLDING AT THE SINGLE MOLECULE LEVEL. **Krishna P. Neupane**, Amar Nath Gupta, Negar Rezajooei, Michael T. Woodside

1023-PLAT 5:30 PM
WHAT COMPUTATIONAL METHODS CAN TEACH US ABOUT THE ALZHEIMER-PROTECTIVE NATURE OF A2V- AND A2T-MUTANT AMYLOID-BETA OLIGOMERS. **Jessica Nasica-Labouze**, Bogdan Tarus, Phuong Nguyen, Philippe Derreumaux

1024-PLAT 5:45 PM
NMR STRUCTURE REVEALS NOVEL INTERACTIONS BETWEEN INTRINSICALLY DISORDERED PEP-19 AND CALMODULIN. **Xu Wang**, John A. Putkey

4:00 PM–6:00 PM, ROOM 309/310

Platform
Protein-Nucleic Acid Interactions II

Co-Chairs
Mark Williams, Northeastern University
Rifka Vlijm, Delft University of Technology, The Netherlands

1025-PLAT 4:00 PM
OLIGOMERIZATION KINETICS OF ORF1P IS CORRELATED WITH LINE1 RETROTRANSPOSITION. **M. Nabuan Naufer**, Anthony V. Furano, Mark C. Williams

1026-PLAT 4:15 PM
NUCLEOSOME ASSEMBLY DYNAMICS INVOLVE SPONTANEOUS FLUCTUATIONS IN THE HANDEDNESS OF TETRASOMES. **Rifka Vlijm**, Mina Lee, Orkide Ordu, Jan Lipfert, Alexandra Lusser, Nynke Dekker, Cees Dekker

1027-PLAT 4:30 PM
FACILITATED DISSOCIATION OF PROTEIN FROM A SINGLE DNA BINDING SITE. **Ramsey I. Kamar**, John F. Marko

1028-PLAT 4:45 PM INTERNATIONAL TRAVEL AWARDEE
PROTEIN-DNA BINDING IN THE ABSENCE OF CONSENSUS BINDING MOTIF. **Ariel Afek**, Joshua L. Schipper, Raluca Gordân, David B. Lukatsky

1029-PLAT 5:00 PM
MAPPING LAC REPRESSOR INTERACTIONS ALONG DNA WITH ULTRA-FAST OPTICAL TWEEZERS. **Alessia Tempestini**, Carina Monico, Francesco Vanzi, Francesco Saverio Pavone, Marco Capitanio

1030-PLAT 5:15 PM
DIRECT OBSERVATION OF TALE PROTEIN SEARCH DYNAMICS ALONG DNA. **Luke W. Cuculis**, Zhanar Abil, Huimin Zhao, Charles M. Schroeder

1031-PLAT 5:30 PM
DYNAMIC DNA TARGET PROOFREADING IN A CRISPR-CAS SYSTEM. **Marius Rutkauskas**, Tomas Sinkunas, Maria S. Tikhomirova, Virginijus Siksnys, Ralf Seidel

1032-PLAT 5:45 PM
SINGLE-MOLECULE IMAGING REVEALS DYNAMICS OF SA1-TRF1 INTERACTIONS ON TELOMERIC DNA. **Jiangguo Lin**, Haijiang Chen, Parminder Kaur, Wang Miao, Preston Countryman, Changjiang You, Jacob Piehler, Yizhi J. Tao, Susan Smith, Hong Wang

4:00 PM–6:00 PM, ROOM 314/315

Platform
Molecular, Cellular, and Systems Neuroscience: Experimental Approaches, Modeling, and Tools

Co-Chairs
Jacob Robinson, Baylor College of Medicine
Benjamin Machta, Princeton University

1033-PLAT 4:00 PM
ELECTROPHYSIOLOGY-BASED SORTING AND SCREENING WITH NANOWIRE ELECTRODES IN MICROFLUIDIC DEVICES. Daniel L. Gonzales, Daniel G. Vercosa, Andrew M. Bell, Benjamin W. Avants, **Jacob T. Robinson**

1034-PLAT 4:15 PM
MECHANICAL SURFACE WAVES ACCOMPANY ACTION POTENTIAL PROPAGATION. **Benjamin B. Machta**, Ahmed El Hady

1035-PLAT 4:30 PM
PENETRATION OF ACTION POTENTIALS DURING COLLISION IN THE MEDIAL GIANT AXON OF INVERTEBRATES. **Rima Budvytyte**, Alfredo Gonzalez-Perez, Lars D. Mosgaard, Soren Nissen, Thomas Heimburg

1036-PLAT 4:45 PM
DYNAMICS OF GLYCINE RECEPTORS AND THEIR INTERACTIONS WITH GEPHYRIN SCAFFOLDS REVEALED WITH HIGH-DENSITY SINGLE PARTICLE TRACKING AND BAYESIAN INFERENCE. **Mohamed El Beheiry**, Jean-Baptiste Masson, Charlotte Salvatico, Christian Specht, Antoine Triller, Maxime Dahan

1037-PLAT 5:00 PM
ROBUST OPTICAL STIMULATION OF NEURONAL ACTIVITY USING FUNCTIONALIZED GOLD NANOPARTICLES. **João L. Carvalho-de-Souza**, Jeremy S. Treger, Bobo Dang, Stephen Kent, David R. Pepperberg, Francisco Bezanilla

1038-PLAT 5:15 PM
LIGAND FINGERPRINTING IN THE MEMBRANE DYNAMICS OF SINGLE TRKA AND P75NTR NEUROTROPHIN RECEPTORS. **Stefano Luin**, Laura Marchetti, Fulvio Bonsignore, Fabio Beltram, Antonino Cattaneo

1039-PLAT 5:30 PM
LOCAL TEMPERATURE EVOLUTION DURING NANOPARTICLE HYPERTHERMIA PROBED BY FLUORESCENCE THERMOMETRY. Rahul Munshi, Idoia Castellanos-Rubio, **Arnd Pralle**

1040-PLAT 5:45 PM
NANOMECHANICAL CHARACTERIZATION OF ACTIVE SYNAPSES IN LIVE HIPPOCAMPAL NEURONS. **Ju Yang**, Roger Lefort, Ozgur Sahin

4:00 PM–6:00 PM, ROOM 316/317

Platform
Large-scale Molecular Simulations

Co-Chairs
Juan Perilla, University of Illinois at Urbana-Champaign
Steven Poelzing, Virginia Tech

1041-PLAT 4:00 PM
COMPUTATIONAL STUDIES ON THE CAMP MODULATION OF THE HCN2 CHANNEL. **Florentina Tofoleanu**, Bernard Brooks

1042-PLAT 4:15 PM
FROM SMALL TO LARGE TO VERY LARGE: MODELING OF BIOMOLECULAR STRUCTURES IN IMPLICIT SOLVENT. **Alexey V. Onufriev**

1043-PLAT 4:30 PM
ACUTE MODULATION OF SODIUM CHANNEL BIOPHYSICAL PROPERTIES USING HIGH-FREQUENCY STIMULATION. **Steven Poelzing**, Michael Entz, Seth H. Weinberg

1044-PLAT 4:45 PM
ANALYSIS OF DOMAIN MOVEMENT AND DYNAMICS OF NORWALK VIRUS CAPSID BY MOLECULAR DYNAMICS (ALL-ATOM AND COARSE GRAINED) SIMULATIONS AND NORMAL MODE ANALYSIS. **Mahendra B. Thapa**, Mark Rance, Jarek Meller

1045-PLAT 5:00 PM
STUDYING THE GATING MECHANISM OF MAMMALIAN KIR CHANNELS USING IN SILICO MUTATIONS. **Eva-Maria Zangerl**, Anna Stary-Weinzinger

1046-PLAT 5:15 PM
MULTISCALE ANALYSIS OF FUNCTIONAL MOTIONS IN F1-ATPASE: FROM PI RELEASE TO ELASTICITY AND FRICTION OF Γ-SUBUNIT ROTATION. **Kei-ichi Okazaki**, Gerhard Hummer

1047-PLAT 5:30 PM
ION CHANNEL REGULATION BY LIPID BILAYERS: THEORY & SIMULATION OF DEFORMED MEMBRANES AROUND GRAMICIDIN A. **Andrew H. Beaven**, Alexander J. Sodt, Olaf S. Andersen, Richard W. Pastor, Wonpil Im

1048-PLAT 5:45 PM
ATOMISTIC CHARACTERIZATION OF THE HIV CAPSID FROM MOLECULAR DYNAMICS SIMULATIONS. **Juan R. Perilla**, Klaus Schulten

4:30 PM–6:00 PM, HALL C, ROOM B

Exhibitor Presentation
Molecular Devices LLC

Eliminating 50-60 hz Line-frequency Noise with the New HumSilencer and pCLAMP Software Tips & Tricks

We will introduce a new feature of the Axon DigidataTM 1550A digitizer, HumSilencer, which provides a smart and simple method for eliminating 50 or 60 Hz line-frequency noise. In addition, we will present solutions to frequently asked questions on our pCLAMP software, a powerful data acquisition and analysis software that is used widely for a variety of electrophysiological recordings in many academic laboratories.

Presenter

Jeffrey Tang, Axon Product Marketing Manager, Molecular Devices LLC

5:30 PM–7:00 PM, HALL C, ROOM A

Exhibitor Presentation
HEKA Elektronik

HEKA Electrophysiology Update

For over 40 years, HEKA has provided innovative products, expert tech support and unmatched service to their customers. HEKA's commitment to technological innovation is reflected by consistent updating of both hardware and software. While yesterday's gold standards try to keep pace with the latest research techniques, HEKA takes the lead.

By popular demand, HEKA is hosting a series of user meetings with tutorial presentations. On one hand, some of the new products will be showcased to the experienced user and, on the other hand, step-by-step guidance is provided to the researcher who is new to the field. Registration is available online through the HEKA Events Page on EventBrite, or by email to events@heka.com. The number of available spaces, food and drink are limited, and registrations are accepted on a first-come-first-served basis.

Who should attend?

• Scientists with experience in patch clamp electrophysiology and related scientific techniques

• Researchers who want to become more efficient in the use of electrophysiology acquisition and analysis software

• PostDocs and graduate students who want to learn more about electrophysiology techniques

Presenters

Hubert Affolter, Senior Software Architect, HEKA Elektronik
Christian Heinemann, General Manager, HEKA Elektronik
Telly Galiatsatos, General Manager, HEKA Instruments

8:00 PM–9:30 PM, BALLROOMS I-IV

Awards and National Lecture

8:00 PM PRESENTATION OF AWARDS

8:15 PM NATIONAL LECTURE

1049-NATL 8:15 PM

DISCOVERIES IN BIOPHYSICS THROUGH THE COMPUTATIONAL MICROSCOPE. **Klaus Schulten**

9:30 PM–12:00 AM, HILTON BALTIMORE, KEY BALLROOM

Reception

Supported by *Science Advances*, a new AAAS/*Science* journal.

Registrants are invited to attend the reception with music, desserts and dancing following the National Lecture. Badges will be required for admittance. Guest badges for this event are available for purchase during registration.

9:30 PM–12:00 AM, HILTON BALTIMORE, PEALE A-C

Reception Quiet Room

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.

1:45 PM-3:45 PM, Hall C

MONDAY POSTER SESSIONS

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. All abstracts are available through the desktop planner and mobile app.

Posters should be mounted 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–B28	Protein Structure and Conformation II
B29–B48	Protein-Small Molecule Interactions II
B49–B70	Protein Assemblies I
B71–B87	Enzymes and Protein Dynamics I
B88–B110	Intrinsically Disordered Proteins (IDP) and Aggregates II
B111–B133	DNA Structure and Dynamics I
B134–B153	RNA Structure and Dynamics
B154–B171	Membrane Physical Chemistry I
B172–B194	Membrane Dynamics II
B195–B223	Biophysical Techniques for the Study of Protein-Lipid Interactions
B224–B248	Protein-Lipid Interactions II
B249–B269	Membrane Receptors and Signal Transduction II
B270–B288	Intracellular Calcium Channels and Calcium Sparks and Waves I
B289–B316	Excitation-Contraction Coupling I
B317–B332	Cardiac Smooth and Skeletal Muscle Electrophysiology II
B333–B363	Voltage-gated K Channels II
B364–B379	TRP Channels II
B380–B409	Ligand-gated Channels I
B410–B430	Cardiac Muscle Mechanics and Structure I
B431–B436	Smooth Muscle Mechanics, Structure, and Regulation
B437–B454	Actin Structure, Dynamics, and Associated Proteins
B455–B472	Myosins
B473–B490	Cell Mechanics, Mechanosensing, and Motility II
B491–B513	Membrane Pumps, Transporters, and Exchangers II
B514–B530	Systems Biology and Disease
B531–B557	Molecular Dynamics II
B558–B586	Optical Microscopy and Super-Resolution Imaging I
B587–B603	Biosensors I
B604–B623	Micro- and Nanotechnology II
B624–B634	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 II (Boards B1-B28)

1050-Pos Board B1
STRUCTURAL RIGIDITY REGULATES FUNCTIONAL INTERACTIONS IN THE HSP40-HSP70 MOLECULAR MACHINE. **Neil Andrew D. Bascos**, Samuel J. Landry

1051-Pos Board B2
STRUCTURAL STUDIES OF SOLUBLE GUANYLATE CYCLASE. **Kenneth Childers**, Franziska Seeger, Elsa Garcin

1052-Pos Board B3
GESTATION OF A GLU PLASMINOGEN SUPRA FOLD VIA MOLECULAR DYNAMICS SIMULATION. **Hyunjin Kim**, Hyung J. Kim, Miguel Llinas

1053-Pos Board B4
CONSTRAINED MAXIMUM LIKELIHOOD ESTIMATION OF THE ABUNDANCES OF PROTEIN CONFORMATION IN A HETEROGENEOUS STRUCTURAL ENSEMBLE FROM SMALL ANGLE X-RAY SCATTERING INTENSITY MEASUREMENTS. **Ahmet Emre Onuk**, Murat Akcakaya, Jaydeep Bardhan, Deniz Erdogmus, Dana H. Brooks, Lee Makowski

1054-Pos Board B5
USING PHYSICS AND HEURISTICS IN PROTEIN STRUCTURE PREDICTION. **Alberto Perez**, Justin MacCallum, Ken A. Dill

1055-Pos Board B6
ELUCIDATING THE FUNCTIONAL SIGNIFICANCE OF THE C-TERMINAL HYPERVARIABLE REGION (HVR) IN K-RAS4A. **Mayukh Chakrabarti**, Shaoyong Lu, Hyunbum Jang, Lyuba Khavrutskii, Nadya I. Tarasova, Vadim Gaponenko, Ruth Nussinov

1056-Pos Board B7
THEORETICAL STUDY OF THE PROTEIN FOLDING DYNAMICS FROM A TIME CORRELATION FUNCTION APPROACH. **Toshifumi Mori**, Shinji Saito

1057-Pos Board B8
EXTENSIVE CONFORMATIONAL HETEROGENEITY WITHIN PROTEIN CORES. **Gregory R. Bowman**

1058-Pos Board B9
CONFORMATIONAL DYNAMICS OF THE PILI CONSTRUCTING SORTASE C ENZYMES. **Emmanuel B. Naziga**, Jeff Wereszczynski

1059-Pos Board B10
TARGETED CONFORMATIONAL TRANSITIONS OF MULTIMERIC PROTEINS BY MONTE CARLO SIMULATIONS COMBINED WITH COLLECTIVE ANISOTROPIC NETWORK MODEL MODES. Yasemin Yesiltepe, Arzu Uyar, Deniz Turgut, Turkan Haliloglu, Pemra Doruker, **Rahmi Ozisik**

1060-Pos Board B11
CONFORMATIONAL FLUCTUATIONS AS AN INTRINSIC MECHANISM OF ACTION OF LIPASE FOLDASE STUDIED BY THE HIGH-PRECISION FRET TOOLKIT AND MD SIMULATIONS. **Jakub Kubiak**, Filip Kovacic, Peter Dollinger, Florian Bleffert, Karl-Erich Jaeger, Holger Gohlke, Claus A. M. Seidel

1061-Pos Board B12
NICKEL REDUCES CALCIUM-DEPENDANT DIMERIZATION BY NEURAL CADHERIN. **Matthew P. Dukes**, Rhianon Kay Rowe, Susan Pedigo

1062-Pos Board B13
EFFECTS OF R102Q MUTATION ON THE STRUCTURAL AND DYNAMIC PROPERTIES OF HUMAN NEURONAL CALCIUM SENSOR-1 PROTEIN. **Qingwen Zhang**, Yuzhen Zhu, Ying Wu, Buyong Ma

1063-Pos Board B14 education travel awardee
RNA TRANSLOCATION COUPLED TO LARGE-SCALE CONFORMATIONAL TRANSITIONS OF A HEXAMERIC HELICASE. **Wen Ma**, Klaus Schulten

1064-Pos Board B15
IDENTIFYING UNIQUE CONFORMATIONS IN THERMUS THERMOPHILUS PHOSPHOFRUCTOKINASE USING FLUORESCENCE PHASORS. **Xinxin Tian**, Mauricio Lasagna, Gregory D. Reinhart

1065-Pos Board B16
PROBING PROTEIN INTERACTIONS OF CYANYLATED ACYL CARRIER PROTEINS USING VIBRATIONAL SPECTROSCOPY. **Connie Friedman**, Michael Jordan, Casey Londergan, Louise Charkoudian

1066-Pos Board B17
IDENTIFICATION AND CHARACTERIZATION OF A YEAST ISO-1-CYTOCHROME C C-TERMINAL DOMAIN SWAPPED DIMER. **Levi J. McClelland**, Tung-Chung Mou, Stephen R. Sprang, Bruce E. Bowler

1067-Pos Board B18
HEME COORDINATION VERSATILITY IN A TRUNCATED HEMOGLOBIN. **Dillon Nye**, Matthew Preimesberger, Christos Kougentakis, Selena Rice, Juliette Lecomte

1068-Pos Board B19
MODELING THE CALCIUM AND INTEGRIN BINDING PROTEIN 2. **Olivia Dickens**, Raul Mendez-Giraldez, Nikolay Dokholyan

1069-Pos Board B20
STRUCTURAL BEHAVIOR OF CARDIAC TROPONIN C VARIANTS PRESENT IN CARDIOMYOPATHIC PATIENTS. **Mayra Marques**, José Pinto, Adolfo Moraes, Martha Sorenson, Jerson Silva, Guilherme Oliveira

1070-Pos Board B21
METHIONINE-AROMATIC INTERACTIONS IN CALMODULIN: A REPLICA EXCHANGE MD AND EPR SPECTROSCOPY STUDY. **Tiffany L. Senkow**, Andrew K. Lewis, Megan R. McCarthy, Cheng Her, David D. Thomas, Jonathan N. Sachs

1071-Pos Board B22
TARGETING MELANOMA WITH SMALL MOLECULES: INHIBITORS OF THE CALCIUM-BINDING PROTEIN S100B. **Michael C. Cavalier**, David J. Weber

1072-Pos Board B23
CRYSTALLIZATION STUDIES OF CALMODULIN BINDING TARGETS. **Abigail L. Healy**, Jennifer Willemsen, Katrina Nayak, Janina Sprenger, Roger Rowlett, Birgitta Frohm, Sara Linse, Karin Åkerfeldt

1073-Pos Board B24
TUNING OF STRUCTURE-FUNCTION RELATIONSHIPS BY MACROMOLECULAR CROWDING. **Laurel Hoffman**, Xu Wang, Hugo Sanabria, Margaret S. Cheung, John Putkey, Neal Waxham

1074-Pos Board B25
UNDERSTANDING THE STRUCTURAL CHANGES OF THE CALCIUM BINDING S100A1 PROTEIN WITH MOLECULAR DYNAMICS SIMULATIONS. **Caitlin E. Scott**, Peter M. Kekenes-Huskey

1075-Pos Board B26
SINGLE-MOLECULE FRET STUDIES OF THE ER CALCIUM SENSOR STIM1. **Stijn van Dorp**, Ucheor B. Choi, Axel T. Brunger, Richard S. Lewis

1076-Pos Board B27 **EDUCATION TRAVEL AWARDEE**
CHARACTERIZATION OF PC2 CTERM CALCIUM-BINDING INTERACTION AND ITS STRUCTURAL IMPLICATIONS. **Yifei Yang**, Camille Keeler, Ivana Y. Kuo, Elias J. Lolis, Michael E. Hodsdon, Barbara E. Ehrlich

1077-Pos Board B28
EPR WITH RIGIDLY BOUND SPIN LABELS USED TO PROBE THE INTERACTION OF CALMODULIN WITH THE RYANODINE RECEPTOR. **Cheng Her**, Christine B. Karim, David D. Thomas

Protein-Small Molecule Interactions II (Boards B29-B48)

1078-Pos Board B29
PREDICTING PEPTIDE BINDING SITES ON PROTEIN SURFACES BY CLUSTERING CHEMICAL INTERACTIONS. **Chengfei Yan**, Xiaoqin Zou

1079-Pos Board B30
HOMOLOGY MODELING AND DOCKING STUDIES IDENTIFY SUBTYPE-SPECIFIC CHARACTERISTICS OF MELANOCORTIN RECEPTOR ACTIVATION. **Sadegh Faramarzi Ganj Abad**, Blake Mertz

1080-Pos Board B31
QUANTIFYING THE THERMODYNAMIC MOLECULAR DRIVING FORCES IN PROTEIN-LIGAND BINDING. **E. Prabhu Raman**, Alexander D. MacKerell, Jr.

1081-Pos Board B32
MARKOVIAN MILESTONING FOR COMPUTING ENTRY, EXIT, AND INTERNAL DIFFUSION RATES OF LIGANDS IN PROTEINS. Tang-Qing Yu, Anthony Bucci, Eric Vanden-Eijnden, **Cameron Abrams**

1082-Pos Board B33 **EDUCATION TRAVEL AWARDEE**
IMPROVING SMALL MOLECULE DOCKING FOR BCL-XL VIA ACCELERATED MOLECULAR DYNAMICS WITH COSOLVENT. **Andrew J. Kalenkiewicz**, Chao-Yie Yang, Barry J. Grant

1083-Pos Board B34
FREE ENERGY LANDSCAPE OF THE MICHAELIS COMPLEX OF LACTATE DEHYDROGENASE: A NETWORK ANALYSIS OF ATOMISTIC SIMULATIONS. **Xiaoliang Pan**, Steven D. Schwartz

1084-Pos Board B35
DISSECTING LIGAND BINDING SITES : A LAYER AT A TIME. **Anasuya Dighe**, Nagasuma Chandra, Saraswathi Vishveshwara, G.K. Ananthasuresh

1085-Pos Board B36
ENCOUNTER AND BINDING OF CAMP AT THE BINDING DOMAIN OF MLOK1. **Béla Voß**, Ulrich Benjamin Kaupp, Helmut Grubmüller

1086-Pos Board B37
HOFMEISTER ION AND COSOLVENT EFFECTS ON THE STRUCTURE, AGGREGATION, AND BACKBONE SOLVATION OF RECA. **Taylor P. Light**, Karen M. Corbett, Michael A. Metrick, Gina MacDonald

1087-Pos Board B38
FOLDAMER-BASED ENANTIOSELECTIVE TARGETING OF ISLET AMYLOID POLYPEPTIDE. **Sunil Kumar**, Diana Schlamadinger, Andrew Miranker

1088-Pos Board B39
STRUCTURAL DYNAMICS OF PROTEINS USING NOVEL VISIBLE FLUORESCENCE PROBES. **Haifeng Pan**

1089-Pos Board B40
INTRINSIC THERMODYNAMICS - STRUCTURE CORRELATION OF CARBONIC ANHYDRASE INHIBITORS. **Daumantas Matulis**, Asta Zubrienė, Lina Baranauskienė, Alexey Smirnov, Vaida Morkūnaitė, Joana Smirnovienė, Miglė Kišonaitė, Povilas Norvaišas, David D. Timm

1090-Pos Board B41 **EDUCATION TRAVEL AWARDEE**
ZEBRAFISH LARVAE AS MODEL SYSTEM TO STUDY POSSIBLE TOXICITY OF SILVER NANOPARTICLES AT CYTOSKELETAL LEVEL BY MEANS OF ADVANCED MICROSCOPY. **Marta d'Amora**, Abdelrasoul N. Gaser, Zeno Lavagnino, Giuseppe Sancataldo, Francesca Cella Zanacchi, Alberto Diaspro

1091-Pos Board B42
MULTIMERIZATION OF SOLUTION-STATE PROTEINS BY ANIONIC PORPHYRINS. **Oleksandr Kokhan**, Nina Ponomarenko, P. Raj Pokkuluri, Marianne Schiffer, David M. Tiede

1092-Pos Board B43 **MINORITY AFFAIRS TRAVEL AWARDEE**
CHARACTERIZATION OF THE PHOTOPHYSICAL, THERMODYNAMIC AND STRUCTURAL PROPERTIES OF THE TERBIUM(III)-KCHIP3 COMPLEX. **Walter Gonzalez**, Jaroslava Miksovska

1093-Pos Board B44
SIMULATIONS OF COSOLUTE EFFECTS ON PROTEIN'S STABILITY. **Jorge A. Alarcon Ochoa**, Angel E. Garcia

1094-Pos Board B45
INTERACTIONS OF AMIDE SOLUTES WITH BIOPOLYMER FUNCTIONAL GROUPS AND HOFMEISTER SALTS. **Xian Cheng**, Irina Shkel, Kevin O'Connor, Hunter Cochran, Evan Buechel, Cristen Molzahn, Tom Record

1095-Pos Board B46
IDENTIFICATION OF INHIBITORS AGAINST P.FALCIPARUM GAP50 AND HUMAN COMPLEMENT FACTOR H INTERACTION IN THE MOSQUITO. **Daisy D. Colón-López**, Serge M. Stamm, Jürgen Bosch

1096-Pos Board B47
PHENYLETHANOIDS CAN MODULATE AMYLOID-β AGGREGATION ASSOCIATED WITH ALZHEIMER'S DISEASE. **S. Zeb Vance**, Kayla Pate, Colman Moore, Melissa Moss

1097-Pos Board B48
PROBING THE ROLE OF CYTOGLOBIN'S EXTENDED TERMINI. **Antonija Tangar**

Protein Assemblies I (Boards B49-B70)

1098-Pos Board B49
STATISTICAL THERMODYNAMICS OF ONE-TO-MANY MOLECULAR RECOGNITION ACCOMPANIED BY PARTNER-DEPENDENT FOLDING: IN THE CASE OF A TUMOR SUPPRESSOR PROTEIN P53. **Tomohiko Hayashi**, Hiraku Oshima, Satoshi Yasuda, Masahiro Kinoshita

1099-Pos Board B50
COMPUTER SIMULATIONS OF VIRAL CAPSID ASSEMBLY WITH PATCHY PARTICLE MODEL. Heinrich C. R. Klein, Johanna E. Baschek, Marvin A. Boettcher, **Ulrich S. Schwarz**

1100-Pos Board B51
CHARACTERIZING THE MCT-1:DENR COMPLEX, A TRANSLATIONAL ENHANCER FOR LYMPHOMA SURVIVAL. **Sean D. Stowe**, Michael C. Cavalier, Raquel Godoy-Ruiz, Kristen M. Varney, Paul T. Wilder, Ronald B. Gartenhaus, David J. Weber

1101-Pos Board B52
PRELIMINARY CHARACTERIZATION OF THE PROTEIN INTERACTION OF THE RAS-RELATED PROTEIN RHEB AND TUBEROUS SCLEROSIS 2 (TSC2). Kyla M. Morris, **Paul D. Adams**

1102-Pos Board B53
MICROSECOND X-RAY DYNAMICS OBSERVATION OF NANO SUPERSATURATED PROTEIN'S NETWORK. **Yufuku Matsushita**, Hiroshi Sekiguchi, Noboru Ohta, Keigo Ikezaki, Yuji Goto, Yuji C Sasaki

1103-Pos Board B54
ANALYSIS OF THE COOPERATIVE INTERACTION BETWEEN THE ALLOSTERICALLY REGULATED PROTEINS GK AND GKRP USING TRYPTOPHAN FLUORESCENCE. **Bogumil Zelent**

1104-Pos Board B55
PROBING LEUCINE SIDE CHAIN DYNAMICS IN AN AMPHIPHILIC PEPTIDE COPRECIPITATED WITH SILICA USING 2H SOLID-STATE NMR. **Helen E. Ferreira**, Gary Drobny

1105-Pos Board B56
AGGRECAN: UNUSUAL POLYELECTROLYTE BIOPHYSICS AND INTERACTIONS CONFERRED BY THE BOTTLEBRUSH STRUCTURE. **Tiffany Omokanwaye**, Preethi L. Chandran

1106-Pos Board B57
OPTIMIZING THE ASSEMBLY OF STACKED RINGS. **Koan Briggs**, Eric J. Deeds

1107-Pos Board B58
HEAT SHOCK TRIGGERS ASSEMBLY OF TRNA SYNTHETASES INTO AN ACTIVE SUPERCOMPLEX. **Joshua Riback**, Pawel Laskowski, Jamie L. Scott, Edward W J Wallace, Alexandra E. Rojek, Michael H. Schwartz, Tobin R. Sosnick, D. Allan Drummond

1108-Pos Board B59
CHROMATOGRAPHIC ASSAY FOR DETERMINING THE EFFECTS OF MICROENVIRONMENT ON DIMERIZATION OF EPITHELIAL CADHERIN K14E MUTANT. **Christopher S. Fox**

1109-Pos Board B60
EXTRAORDINARY STABILITY OF DOMAIN 1 OF NEURAL-CADHERIN. **Samantha Davila**, Molly Edmondson, Susan Pedigo

1110-Pos Board B61
RESIN-EMBEDDED MULTICYCLE IMAGING OF CELLS AND ISOLATED PLASMA MEMBRANES. **Brad Busse**, Paul Blank, Ludmila Bezrukov, Joshua Zimmerberg

1111-Pos Board B62
SPECTROSCOPIC STUDY OF FULL-LENGTH RECOMBINANT PROTEOGLYCAN 4 (RHPRG4): SELF-ASSEMBLY AND INTERACTIONS WITH HYALURONAN. **Suresh C. Regmi**, Tannin A. Schmidt

1112-Pos Board B63
THERMODYNAMIC AND HYDRODYNAMIC EXAMINATION OF CLPB ASSEMBLY. **JiaBei Lin**, Aaron L. Lucius

1113-Pos Board B64
STRUCTURAL STUDY OF AIPL1: MOLECULAR BASIS OF ITS FUNCTION AND ITS ROLE IN BLINDING DISEASES. **Chitrak Gupta**, Abigail Hayes, Mark D. Distefano, Visvanathan Ramamurthy, Blake Mertz

1114-Pos Board B65
NOVEL APPROACHES TO THE STUDY OF PROTEIN-PROTEIN INTERFACE PROPERTIES. **Mihaly Mezei**

1115-Pos Board B66
SEDIMENTATION IN A TIME-VARYING CENTRIFUGAL FIELD FOR RAPID ATTAINMENT OF SEDIMENTATION EQUILIBRIUM. **Peter Schuck**, Michael Metrick, Huaying Zhao

1116-Pos Board B67
ATP BINDING IS PREREQUISITE TO THE HELICAL STRUCTURE OF HUMAN RAD51 PRESYNAPTIC FILAMENT. **Judit Fidy**, Bálint Borka, Eva Bulyaki, Jozsef Kardos, Gusztáv Schay

1117-Pos Board B68
AN EQUILIBRIUM MODEL FOR THE COMBINED EFFECT OF MACROMOLECULAR CROWDING AND SURFACE ADSORPTION ON THE FORMATION OF LINEAR PROTEIN FIBRILS. Travis Hoppe, **Allen P. Minton**

1118-Pos Board B69
AGGREGATION OF CLAUDINS AND FORMATION OF TIGHT JUNCTIONS: A COARSE-GRAINED MOLECULAR DYNAMICS STUDY. **Masoumeh Ozmaian**

1119-Pos Board B70
LATERAL INTERACTIONS AFFECT CADHERIN BINDING KINETICS AND FUNCTION. **Nitesh Shashikanth**, Meridith Kisting, Deborah Leckband

Enzymes and Protein Dynamics I (Boards B71-B87)

1120-Pos Board B71
ACTIVE ROLE OF THE SUBSTRATE DURING CATALYSIS BY THE THERAPEUTIC ENZYME L-ASPARAGINASE II. **Juan M. Vanegas**, Andriy Anishkin, David M. Rogers, Sergei Sukharev, Susan B. Rempe

1121-Pos Board B72
CO AND NO BINDING IN INDUCIBLE NITRIC OXIDE SYNTHASE. Michael Horn, **Karin Nienhaus**, G. Ulrich Nienhaus

1122-Pos Board B73
INTACT PROTEIN ANALYSIS BY MASS SPECTROMETRY TO CHARACTERIZE THE TRUNCATED HEMOGLOBIN THB1 FROM CHLAMYDOMONAS REINHARDTII. **Eric A. Johnson**, Selena L. Rice, Juliette T. Lecomte

1123-Pos Board B74
IN VITRO RECONSTITUTION OF THE ASSIMILATORY SULFITE REDUCTASE FROM ESCHERICHIA COLI. **Isabel Askenasy**, M. Elizabeth Stroupe

1124-Pos Board B75
THE FUNCTIONS OF THE PROTEINS ENCODED BY THE CID AND LRG OPERONS IN S. AUREUS. **Xinyan Zhang**, Yanli Zhang, Maria Podariu, Kenneth Bayles, Sorin Luca

1125-Pos Board B76
EFFECTS OF SIROHEME OCCUPANCY IN ESCHERICHIA COLI ASSIMILATORY SULFITE REDUCTASE HEMOPROTEIN. **Joseph M. Pennington**, M. Elizabeth Stroupe

1126-Pos Board B77
LIGAND-BINDING AND SUBSTRATE TURNOVER OF A HEME PEROXIDASE FROM THE DIATOM THALASSIOSIRA PSEUDONANA. Max Echterling, **Max Warburg**, Katherine Frato

1127-Pos Board B78
SINGLE MOLECULE ACTIVITY MEASUREMENTS OF CYTOCHROME P450 OXIDOREDUCTASE REVEAL THE EXISTENCE OF TWO DISCRETE FUNCTIONAL STATES. Tomas Laursen, Aparajita Singha, Nicolai Rantzau, Marijonas Tutkus, Jonas Borch, Per Hedegård, Dimitrios Stamou, Birger L. Møller, **Nikos S. Hatzakis**

1128-Pos Board B79
INTERACTION OF RIBONUCLEASE III WITH THE REGULATORY MACRODOMAIN PROTEIN YMDB ANALYZED BY DOCKING CALCULATIONS AND SPR EXPERIMENTS. **Mercedes Alfonso-Prieto**, Samridhdi Paudyal, Shiv K. Redhu, Vincenzo Carnevale, Michael L. Klein, Allen W. Nicholson

1129-Pos Board B80 MINORITY AFFAIRS TRAVEL AWARDEE
TARGETING THE HUMAN DEAD-BOX RNA HELICASE, DDX3, AS A NOVEL STRATEGY TO INHIBIT AGGRESSIVE BREAST CANCER METASTASIS. **Aliana López de Victoria**, Eda Koculi

1130-Pos Board B81
KINETICS AND THERMODYNAMICS OF THE ATPASE CYCLE OF THE DEAD-BOX PROTEIN DBP5. **Emily V. Wong**, Wenxiang Cao, Ben Montpetit, Enrique M. De La Cruz

1131-Pos Board B82
SUBSTRATE BINDING EFFECTS OF CARBOHYDRATE BINDING MODULES ON THE CATALYTIC ACTIVITY OF A MULTIFUNCTIONAL CELLULASE. **Johnnie A. Walker**, Taichi E. Takasuka, Kai Deng, Christopher M. Bianchetti, Hannah Udell, Ben M. Prom, Hyunkee Kim, Trent R. Northern, Brian G. Fox

1132-Pos Board B83
CRYSTAL STRUCTURE OF GLYCOSIDE HYDROLASE FAMILY 9 ENDOGLUCANASE WITH AN N-TERMINAL IG-LIKE DOMAIN ISOLATED FROM LEAF-BRANCH COMPOST. **Hiroyuki Okano**, Eiko Kanaya, Masashi Ozaki, Clement Angkawidjaja, Yuichi Koga, Shigenori Kanaya

1133-Pos Board B84
MOLECULAR CHARACTERIZATION OF THE ABA-INDEPENDENT INTERACTIONS BETWEEN PYL10 AND PP2CS IN *ORYZA SATIVA*. **Seungsu Han**, Namhyo Kim, Beom-Gi Kim, Sangho Lee

1134-Pos Board B85
ACTIVATION VOLUMES OF ENZYMES ADSORBED ON SILICA PARTICLES. **Claus Czeslik**, Vitor Schuabb

1135-Pos Board B86
THE ION CHANNEL FUNCTION OF MOUSE CHROMOGRANIN B. **Gaya P. Yadav**, Hui Zheng, Qing Yang, Qiu-Xing Jiang

1136-Pos Board B87
CYTOPLASMIC FREEZING IN S. POMBE UPON GLUCOSE STARVATION. **Minghua Liu**, Maria Heimlicher, Ernst-Ludwig Florin, Damian Brunner, Andreas Hoenger

Intrinsically Disordered Proteins (IDP) and Aggregates II (Boards B88-B110)

1137-Pos Board B88
OPTIMIZED FORCE FIELDS FOR SIMULATIONS OF INTRINSICALLY DISORDERED PROTEINS. **Robert Best**, Wenwei Zheng, Jeetain Mittal

1138-Pos Board B89
ADAPTIVE PARTICLE SIMULATIONS OF ALPHA-SYNUCLEIN FIBRIL FORMATION. **Ioana M. Ilie**, Wouter K. den Otter, Wim J. Briels

1139-Pos Board B90
WHAT DOES EVOLUTION TELL US ABOUT THE STRUCTURE OF A FUNCTIONAL AMYLOID PROTEIN? **Pengfei Tian**, Wouter Boomsma, Yong Wang, Daniel Erik Otzen, Mogens Høgh Jensen, Kresten Lindorff-Larsen

1140-Pos Board B91
ENABLING BIOPHYSICAL CHARACTERIZATION OF INTRINSICALLY DISORDERED PROTEIN ENSEMBLES. **Chakra S. Chennubhotla**, Arvind Ramanathan, Chris Stanley

1141-Pos Board B92
DEVELOPING A PROTOCOL FOR ENSEMBLE AND VIBRATIONAL PROBE-CONTAINING MOLECULAR DYNAMICS SIMULATIONS OF THE NIPAH NTAIL-XD COMPLEX. **Shana R. Burstein**, Rebecca B. Wai, Sara K. Hess, Casey H. Londergan, Jenny Erales, Sonia Longhi

1142-Pos Board B93
USING CHEMICAL SHIFTS TO GENERATE STRUCTURAL ENSEMBLES FOR INTRINSICALLY DISORDERED PROTEINS WITH CONVERGED DISTRIBUTIONS OF SECONDARY STRUCTURE. **F. Marty Ytreberg**, Wade Borcherds, Hongwei Wu, Gary W. Daughdrill

1143-Pos Board B94
IDPS THAT FOLD UPON BINDING: WHAT IS THE ROLE OF THE PARTNER PROTEIN? **Sarah L. Shammas**, Joseph Rogers, Michael Crabtree, Jane Clarke

1144-Pos Board B95
FROM MACROSCOPIC TO MOLECULAR INTERFACES: HOW DO THEY ALTER PROTEIN CONFORMATION? **Mehmet Sayar**, Cahit Dalgicdir

1145-Pos Board B96
AN EVOLUTIONARY ALGORITHM FOR THE DESIGN OF DIFFERENT DEGREES OF SECONDARY STRUCTURE IN INTRINSICALLY DISORDERED PROTEINS (IDPS). **Tyler S. Harmon**, Rohit V. Pappu

1146-Pos Board B97
CIDER: CLASSIFICATION OF INTRINSICALLY DISORDERED ENSEMBLE REGIONS. **Alex S. Holehouse**, James Ahad, Rahul K. Das, Rohit V. Pappu

1147-Pos Board B98
INTRINSICALLY DISORDERED PROTEIN: A THERMODYNAMIC PERSPECTIVE. Jing Li, **James O. Wrabl**, Vincent J. Hilser

1148-Pos Board B99
PHOSPHORYLATION MODULATES CONFORMATIONAL BIAS OF A DISORDERED PEPTIDE. **Alexander F. Chin**, Dmitri Toptygin, Vincent J. Hilser

1149-Pos Board B100
SINGLE-MOLECULE FORCE SPECTROSCOPY ON UNFOLDED AND INTRINSICALLY DISORDERED PROTEINS. **Hesam N. Motlagh**, Vincent J. Hilser

1150-Pos Board B101
LABEL-FREE DETECTION OF PROTEIN SECONDARY STRUCTURE CONTENT IN BIOLOGICAL SPECIMEN BY FOURIER-TRANSFORM INFRARED SPECTROSCOPY. Jeong-Hoh Park, Dong Min Kim, **Sang-Mo Shin**

1151-Pos Board B102
TRANSITIONAL DISORDER: CALCINEURIN AS AN EXAMPLE. **Trevor P. Creamer**, Erik C. Cook, Tori B. Dunlap

1152-Pos Board B103
A SUBSTANTIAL IMPROVEMENT IN PREDICTIONS OF INTRINSICALLY DISORDERED PROTEIN. **Robert W. Williams**

1153-Pos Board B104
IDENTIFICATION OF NOVEL INTRINSICALLY DISORDERED PROTEINS IN EUKARYOTES. **Ingrid Tomljanović**, Tomislav Rončević, Dubravko Pavoković

1154-Pos Board B105 MINORITY AFFAIRS TRAVEL AWARDEE
CHARGE PATTERNING, SALT SCREENING AND DENATURANT EXPANSION IN THE CGRP NEUROPEPTIDE. **Sara Sizemore**, Stephanie Cope, Andrea Soranno, Sara Vaiana

1155-Pos Board B106
GELATION OF HIGHLY CATIONIC ALANINE BASED PEPTIDE IN WATER IN ABSENCE OF CHARGE SCREENING ANIONS. **Jodi Kraus**, Reinhard Schweitzer-Stenner

1156-Pos Board B107
RANDOMIZING INTRINSIC CONFORMATIONAL BIASES BY NEAREST NEIGHBOR INTERACTIONS BETWEEN UNLIKE RESIDUES. **Siobhan Toal**, Christian Richter, Nina Kubatova, Harald Schwalbe, Reinhard Schweitzer-Stenner

1157-Pos Board B108
CONFORMATIONAL EFFECTS ON ALANINE INDUCED INDUCED BY VARIOUS ALCOHOL COSOLVENTS. **Bridget Milorey**, Stefanie Farrell, Siobhan E. Toal, Reinhard Schweitzer-Stenner

1158-Pos Board B109
DOES THE GOLGI REASSEMBLY AND STACKING PROTEIN (GRASP) BEHAVE AS A WELL-STRUCTURED PROTEIN IN SOLUTION? Luis F. Santos Mendes, Assuero F. Garcia, Marcio L. Rodrigues, **Antonio J. Costa-Filho**

1159-Pos Board B110
ASSEMBLY AND DYNAMICS OF LIQUID PHASE PROTEIN DROPLETS COMPRISED OF THE DEAD-BOX RNA HELICASE, LAF-1. **Shana Elbaum**, Younghoon Kim, Sua Myong, Clifford Brangwynne

DNA Structure and Dynamics I (Boards B111-B133)

1160-Pos Board B111
UNFOLDING OF NANOCONFINED CIRCULAR DNA. Mohammadreza Alizadehheidari, Erik Werner, Charleston Noble, Lena Nyberg, Joachim Fritzsche, Fredrik Persson, Bernhard Mehlig, Jonas Tegenfeldt, Tobias Ambjörnsson, **Fredrik Westerlund**

1161-Pos Board B112
SUPERCOIL DIFFUSION ALONG STRETCHED DNA BY BROWNIAN DYNAMICS. **Todd D. Lillian**, Ikenna Ivenso, David Bell, Justin Polk

1162-Pos Board B113
ANALYSING SMALL DNA CONSTRUCTS VIA A CHROMOPHORE MODEL WITHIN THE POINT DIPOLE APPROXIMATION. **Pablo Romano**

1163-Pos Board B114
CHARMM DRUDE POLARIZABLE MD SIMULATIONS REPRODUCE SOLUTION X-RAY DIFFRACTION PATTERNS FOR B-DNA SEQUENCES AND PREDICT DIFFERENTIAL IMPACT OF THE LI^+, NA^+, K^+ AND RB^+ IONS ON DNA CONFORMATIONAL PROPERTIES. **Alexey Savelyev**, Alexander Mackerell

1164-Pos Board B115
MOLECULAR MODELING AND SIMULATIONS OF DNA AT GRAPHENE-WATER INTERFACES TOWARDS DEVELOPING BIOSENSORS AND DRUG DELIVERY VEHICLES. **Srivathsan Vembanur**, Ken Halvorsen, Chris Myers, Alan Chen, Mehmet Yigit

1165-Pos Board B116
COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATION OF RIBOSOMAL DNA AND RNA G-QUADRUPLEXES. **Samuel S. Cho**

1166-Pos Board B117
NANOVISCOSITY EFFECT OF G-QUADRUPLEX AND SINGLE STRAND DNA. **Dongkeun Lee**, Sooyong Kim, Minjung Kim, Seokhyun Jung

1167-Pos Board B118
INTERACTION MODE OF DNA AND POLYCARBAZOLE-TITANIUM DIOXIDE NANOCOMPOSITE: MOLECULAR DOCKING SIMULATION AND IN-VITRO ANTIMICROBIAL STUDY. **Mohd Shoeb Khan**, Noor E Eram, Farha Firdus

1168-Pos Board B119
LATTICE-FREE 3D STRUCTURE-PREDICTION OF PROGRAMMED DNA ASSEMBLIES. **Keyao Pan**, Do-Nyun Kim, Fei Zhang, Matthew Adendorff, Hao Yan, Mark Bathe

1169-Pos Board B120
BROWNIAN DYNAMICS OF FOLDED DNA AND PROTEIN ASSEMBLIES. Reza Sedeh, **Keyao Pan**, Matthew Adendorff, Oskar Hallatschek, Klaus-Jürgen Bathe, Mark Bathe

1170-Pos Board B121
COMBINED MAGNETO-OPTICAL TWEEZERS AND SUPPERESOLUTION FLUORESCENCE IMAGING FOR PROBING DYNAMIC SINGLE-MOLECULE TOPOLOGY OF DNA, AND PROTEIN MACHINES THAT MANIPULATE DNA TOPOLOGY. **Mark C. Leake**

1171-Pos Board B122
TENSION-DEPENDENT STABILITY OF TORSIONALLY CONSTRAINED DNA: MELTING PRECEDES OVERWINDING. **Graeme A. King**, Erwin J. G. Peterman, Gijs J. L. Wuite

1172-Pos Board B123
ESTIMATING PERSISTENCE LENGTH OF DNA FROM MOLECULAR DYNAMICS SIMULATIONS. **Aleksander V. Drozdetski**, Ramu Anandakrishnan, Alexey Onufriev

1173-Pos Board B124
DUAL-BEAM FLUORESCENCE CORRELATION SPECTROSCOPY OF DNA HAIRPIN FOLDING-UNFOLDING REACTION AT VARIOUS TEMPERATURES AND SALT CONCENTRATIONS. **Farshad Abdollah-Nia**, Martin Gelfand, Alan Van Orden

1174-Pos Board B125
ION BINDING AND ELECTROSTATICS IN CONDENSED DNA ARRAYS PROBED BY ION COUNTING TECHNIQUES. **Kurt Andresen**, Wei Meng, Abby Bull, Xiangyun Qiu

1175-Pos Board B126 EDUCATION TRAVEL AWARDEE
BROWNIAN DYNAMICS STUDY OF DNA SUPERCOIL RELAXATION. **Ikenna D. Ivenso**, Todd D. Lillian

1176-Pos Board B127
CHARGE REDISTRIBUTION IN EXCITED STATE LUMICHROME AND LUMAZINE. **Steven E. Meckel**, David T. Barnard, Raymond F. Pauszek III, Robert J. Stanley

1177-Pos Board B128
COMPLEXES OF G-QUADRUPLEX DNA WITH DRUG LIKE MOLECULES. **Harikrushan Ranpura**, Philip H. Bolton

1178-Pos Board B129
DETERMINANTS OF SELF AGGREGATION OF H-TEL. **Robert Macgregor**, Yang Li, Bita Zamiri, Rashid Abu-Ghazalah

1179-Pos Board B130
THE DNA DYNAMICS NEAR NANOPORES AT SUB-MILLISECOND AND SUB-MICROMETER LEVELS BY THE ULTRAVIOLET LIGHT SPOT. **Hirohito Yamazaki**, Mutsumi Tsukahara, Shintaro Ito, Keiko Esashika, Toshiharu Saiki

1180-Pos Board B131
HYDROXYMETHYLATION OF DNA ALTERS NUCLEOSOMAL PROPERTIES IN VITRO. **Agnes Mendonca**, Chongli Yuan

1181-Pos Board B132
DNA DIFFUSION IS DEPENDENT ON IONIC STRENGTH. **Earle Stellwagen**, Nancy C. Stellwagen

1182-Pos Board B133
THE PRESENCE OF ARGININE REGULATES THE SELECTIVITY AND BINDING AFFINITY OF LYSINE RECEPTORS. **Jessicca Abron**, Nicholas Pinkin, Marcey Waters

RNA Structure and Dynamics (Boards B134-B153)

1183-Pos Board B134
FORCE AND TEMPERATURE DEPENDENT FOLDING OF A 2-BASE-PAIR RNA KISSING COMPLEX. **William T. Stephenson**, Ashley Colvin, Alan Chen, Pan T.X. Li

1184-Pos Board B135
A NUCLEOBASE-CENTRIC COARSE-GRAINED MODEL FOR STRUCTURE PREDICTION OF RNA FRAGMENTS. **Simón Poblete**, Sandro Bottaro, Giovanni Bussi

1185-Pos Board B136
MAGNESIUM DEPENDENCE OF THE RNA FREE ENERGY LANDSCAPE. **Ryan L. Hayes**, Jeffrey K. Noel, Ana Mandic, Paul C. Whitford, Karissa Y. Sanbonmatsu, Udayan Mohanty, José N. Onuchic

1186-Pos Board B137
AN ADDITIVE CHARMM FORCE FIELD FOR MODIFIED NUCLEIC ACIDS. **You Xu**, Lennart Nilsson, Alexander D. MacKerrel, Jr.

1187-Pos Board B138
OBSERVATION OF A CHANGE IN TWIST OF AN RNA KISSING COMPLEX USING THE ANGULAR DEPENDENCE OF FLUORESCENCE RESONANCE ENERGY TRANSFER. **Sheema Rahmanseresht**, Peker Milas, Louis Parrot, Ben D. Gamari, Lori S. Goldner

1188-Pos Board B139
KINETIC DESTABILIZATION THROUGH SINGLE POINT MUTATIONS EMPHASIZES THE CRITICAL ROLE PLAYED BY COUPLED TERTIARY INTERACTIONS IN THE FOLDING OF THE AZOARCUS RIBOZYME. **Krishnarjun Sarkar**, Boyang Hua, Taekjip Ha, Sarah A. Woodson

1189-Pos Board B140
LOCAL AND GLOBAL FOLDING IN A 58MER RNA REVEALED BY 2-AMINOPURINE SUBSTITUTIONS AND SPECIFIC NMR LABELS. **Robb Welty**, Michael J. Rau, Kathleen B. Hall

1190-Pos Board B141
RNA JUNCTIONS STRUCTURE AND DISTANCE DETERMINATION VIA ACCURATE SINGLE-MOLECULE HIGH-PRECISION FRET MEASUREMENTS. **Olga Doroshenko**, Hayk Vardanyan, Sasha Froebel, Stanislav Kalinin, Simon Sindbert, Oleg Opanasyuk, Christian Hanke, Sabine Mueller, Holger Gohlke, Claus A.M. Seidel

1191-Pos Board B142
RNA PSEUDOKNOT FOLDING ENERGY LANDSCAPE ELUCIDATED WITH T-JUMP MEASUREMENTS AND KINETIC MODELING. **Jorjethe Roca**, Yogambigai Velmurugu, Ranjani Narayanan, Prasanth Narayanan, Serguei Kouznetsov, Anjum Ansari

1192-Pos Board B143
A BIOPHYSICAL ANALYSIS OF THE CDK5R2 MRNA G-QUADRUPLEX SECONDARY STRUCTURE AND ITS ROLE IN THE PATHOGENESIS OF FRAGILE X SYNDROME. **Christian M. Gaetano**, Mihaela R. Mihailescu

1193-Pos Board B144
A CONSERVED MECHANISM WITHIN THE 5'-LEADER RNA GENOME AMONG HIV-1 AND SIVCPZ STRAINS DURING VIRAL GENOME RECOGNITION. **Thao Tran**, Michael F. Summers

1194-Pos Board B145
SITE-DIRECTED SPIN LABELING EVIDENCE OF THE LEADER-LINKER INTERACTION IN THE GLYCINE RIBOSWITCH USING ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY. **Jacqueline M. Esquiaqui**, Eileen M. Sherman, Jing-Dong Ye, Gail E. Fanucci

1195-Pos Board B146
STRUCTURE OF ADENOVIRUS VIRUS ASSOCIATED RNA-I. Katherine Launer-Felty, C. Jason Wong, **James Cole**

1196-Pos Board B147
SMALL FDU STRAND EXHIBITS SALT-DEPENDENT STABILITY. **Ryan L. Melvin**, William Gmeiner, Freddie R. Salsbury, Jr.

1197-Pos Board B148 MINORITY AFFAIRS TRAVEL AWARDEE
MOLECULAR SIMULATIONS STUDIES OF RNA TETRALOOP HYPERSTABILITY: THE EFFECT OF STEM LENGTH ON FOLDING DYNAMICS. **Jacob C. Miner**, Alan A. Chen, Angel E. García

1198-Pos Board B149
SEQUENCE SPECIFICITY IN RNA-MEDIATED TRANSCRIPTIONAL ATTENUATION EXAMINED BY COARSE-GRAINED MD SIMULATIONS. **Paul M. Gasper**, Alan A. Chen

1199-Pos Board B150
U4 SNRNA REGULATES FORMATION OF THE U6 TELESTEM WITHIN THE U4/U6 DI-SNRNA. **Margaret L. Rodgers**, Allison L. Didychuk, Samuel E. Butcher, David A. Brow, Aaron A. Hoskins

1200-Pos Board B151
A RIBOSOMAL FRAMESHIFTING STRUCTURE IN THE CCR5 MRNA LEADS TO MIRNA-STIMULATED NONSENSE-MEDIATED MRNA DECAY. **Wojciech K. Kasprzak**, Jonathan D. Dinman, Bruce A. Shapiro

1201-Pos Board B152
EXPLORING RNA CONDENSATION. **Suzette A. Pabit**, Andrea M. Katz, Lois Pollack

1202-Pos Board B153
ALTERNATIVE BASE-PAIRING AND CONFORMATIONAL SAMPLING IN LOOP A OF THE HAIRPIN RIBOZYME. **Patrick O. Ochieng**, Beibei Wang, Michael Feig, Charles G. Hoogstraten

Membrane Physical Chemistry I (Boards B154-B171)

1203-Pos Board B154
INFLUENCE OF ETHER BONDS AND BRANCHED LIPID TAILS ON STABILITY OF MEMBRANES TO PORE FORMATION. Petr V. Panov, Sergei A. Akimov, Pavel E. Volynsky, **Oleg V. Batishchev**

1204-Pos Board B155
EFFECT OF ELECTROSTATIC REPULSION ON DMPG BILAYERS. **Daniela A. Nomura**, Thais A. Enoki, M. Teresa Lamy

1205-Pos Board B156
THE EFFECT OF EXCITED FLUOROPHORE ON VESICLE FUSION AT THE SURFACE OF THE ELECTRODE. **Neda Najafinobar**, Johan Dunevall, Jelena Lovric, Hoda M.Fathali, Andrew Ewing, Ann Sofie Cans

1206-Pos Board B157
EFFECT OF DENGUE FUSION PEPTIDE IN ANIONIC LIPID BILAYERS. **Thaís F. Schmidt**, Karin A. Riske

1207-Pos Board B158
MEASURING THE INTRINSIC CURVATURE OF GANGLIOSIDE GM1. **Raktim Dasgupta**, Reinhard Lipowsky, Rumiana Dimova

1208-Pos Board B159
SPONTANEOUS CURVATURE MEASUREMENTS FOR ZWITTERIONIC AND ANIONIC PHOSPHOLIPIDS UNDER BIOMIMETIC PERTURBATIONS AND THEIR IMPLICATIONS TO THE MECHANISMS OF LAMELLAR-NONLAMELLAR PHASE TRANSITIONS. **Kuan-Yu Tsang**, Wen-Fang Chang, Zih-An Fan, Yi-Fan Chen

1209-Pos Board B160
INVESTIGATING THE ROLE OF BILAYER SIZE AND COMPOSITION ON MEMBRANE FLUCTUATIONS USING LARGE COARSE-GRAINED SIMULATIONS. **Philip W. Fowler**, Heidi Koldsø, Anna Duncan, Mark SP Sansom

1210-Pos Board B161
LIGHT-INDUCED TRANSFORMATIONS IN LIPID MEMBRANES. **Vasil Georgiev**, David Bléger, Andrea Grafmüller, Stefan Hecht, Rumiana Dimova

1211-Pos Board B162
MEASUREMENT OF INTERLEAFLET COUPLING IN PHASE SEPARATED BILAYERS USING HIGH SHEAR. **Matthew C. Blosser**, Aurelia R. Honerkamp-Smith, Tao Han, Mikko Haataja, Sarah L. Keller

1212-Pos Board B163
COARSE GRAINED MOLECULAR DYNAMICS SIMULATIONS TO STUDY ASYMMETRIC MEMBRANES. **Michael D. Weiner**, Gerald W. Feigenson

1213-Pos Board B164
ELECTRICAL ASYMMETRIES IN POLARIZED MEMBRANES. **Karis Amata Zecchi**, Lars Dalskov Mosgaard, Thomas Heimburg

1214-Pos Board B165
CHARGE ASYMMETRY IN OUTER MEMBRANE PROTEINS. **Joanna Slusky**, Roland Dunbrack

1215-Pos Board B166
A FUNDAMENTAL FORCE GOVERNING PROTEIN SELF-ASSEMBLY IN MEMBRANES. **Shachi Katira**, Kranthi K. Mandadapu, Suriyanarayanan Vaikuntanathan, Berend Smit, David Chandler

1216-Pos Board B167
COMPARING LO/LD MEMBRANE THICKNESS MISMATCH AND MISCIBILITY TRANSITION TEMPERATURES USING FLUORESCENCE AND ATOMIC FORCE MICROSCOPY. **Joan V. Bleecker**, Phillip A. Cox, Sarah L. Keller

1217-Pos Board B168 EDUCATION TRAVEL AWARDEE
THE EFFECTS OF WALP PEPTIDES ON PHASE BEHAVIOR IN QUATERNARY LIPID MIXTURES: A MOLECULAR DYNAMICS STUDY. **David G. Ackerman**, Gerald W. Feigenson

1218-Pos Board B169
APPEARANCE OF MODULATED BILAYER MORPHOLOGY FOR COEXISTING LD AND LO PHASES IS CORRELATED WITH LINE TENSION. **Sanjula P. Wickramasinghe**, David G. Ackerman, Gerald W. Feigenson

1219-Pos Board B170
MEMBRANE BENDING MODULUS FOR TERNARY MIXTURE MODELS OF THE CELL PLASMA MEMBRANE. **Rebecca Simpson**, David Ackerman, Gerald Feigenson

1220-Pos Board B171
MINOR CHANGES IN STEROL STRUCTURE IMPACT THE MISCIBILITY TEMPERATURES OF MODEL CELL MEMBRANES SIGNIFICANTLY. **Ranee C. James**, Jonathan P. Litz, Sarah L. Keller

Membrane Dynamics II (Boards B172-B194)

1221-Pos Board B172
PIE-FCCS STUDY OF THE EFFECTS OF POLYCATIONIC MACROMOLECULES ON PHOSPHATIDYLSERINE AND PHOSPHATIDYLINOSITOL PHOSPHATE LIPID MOBILITY. **Xiaojun Shi**, Xiaosi Li, Adam W. Smith

1222-Pos Board B173
THE EFFECTS OF CA^{2+} ON THE DYNAMICS OF PIP2 CONTAINING LIPID BILAYERS. **Ian P. Mc Cabe**, Martin B. Forstner

1223-Pos Board B174 EDUCATION TRAVEL AWARDEE
LIPID DYNAMICS OF CARDIOLIPIN/DMPC AND CARDIOLIPIN/DOPC IN NANODISCS. **Kristian T. Stipe**

1224-Pos Board B175 INTERNATIONAL TRAVEL AWARDEE
THE CYTOTOXIC BILE ACID DCA MODULATES APOPTOTIC SIGNALLING THROUGH ALTERATION OF MITOCHONDRIAL MEMBRANE PROPERTIES. **Tânia Patrícia Marques de Sousa**, Rui E. Castro, Sandra N. Pinto, Ana Coutinho, Susana D. Lucas, Rui Moreira, Cecília M.P. Rodrigues, Manuel Prieto, Fábio Fernandes

1225-Pos Board B176
MECHANICS OF EXTRACELLULAR VESICLES FROM RED BLOOD CELLS. **Daan Vorselen**, Susan M. van Dommelen, Jack JWA van Loon, Raymond M. Schiffelers, Wouter H. Roos, Gijs JL Wuite

1226-Pos Board B177
MODELING OF VESICULATION IN HEALTHY AND DEFECTIVE HUMAN ERYTHROCYTE MEMBRANE. He Li, **George Lykotrafitis**

1227-Pos Board B178
MODELING AND SIMULATIONS OF GLYCOSPHINGOLIPIDS DETERMINING A, B, AND O BLOOD GROUPS. **Thaius S. Boyd**, Wonpil Im

1228-Pos Board B179
ADVANCED MODELING OF THE HUMAN SKIN BARRIER. **Christopher M. MacDermaid**, Russell H. DeVane, Michael L. Klein, Giacomo Fiorin

1229-Pos Board B180
DEHYDRATION OF MULTILAMELLAR FATTY ACID MEMBRANES: TOWARDS A COMPUTATIONAL MODEL OF THE STRATUM CORNEUM. Christopher M. MacDermaid, Russell H. Devane, Michael L. Klein, **Giacomo Fiorin**

1230-Pos Board B181
QUANTIFYING MOLECULAR TRANSPORT THROUGH LIPID ELECTROPORES INDUCED BY NANOSECOND PULSED ELECTRIC FIELDS. **Esin B. Sozer**, P. Thomas Vernier

1231-Pos Board B182
CONCENTRATION EFFECT ON THE HYDROGEN-BOND STRENGTH BETWEEN SMALL MOLECULES AT THE OIL/WATER INTERFACE: APPLICATION TO COARSE-GRAINED MODEL DEVELOPMENT. **Vivek K. Yadav**, Chris MacDermaid, Giacomo Fiorin, Michael L. Klein

1232-Pos Board B183
HOW DOES ETHANOL AFFECT THE STABILITY OF SIMPLE MODEL YEAST MEMBRANES? **Ryan M. Konas**, John L. Daristotle, Ndubuisi B. Harbor, Jeffery B. Klauda

1233-Pos Board B184
NOVEL EXPERIMENTAL METHODS TO RESOLVE NANOSCALE MEMBRANE ORGANIZAION AND CURVATURE.
Rebecca L. Meerschaert, Abir Maarouf, Christopher V. Kelly

1234-Pos Board B185
MEMBRANE CURVATURE - THE ASSEMBLER OF PROTEINS. **Mijo Simunovic**, Patricia Bassereau, Gregory A. Voth

1235-Pos Board B186
BIN/AMPHIPHYSIN/RVS (BAR) FAMILY MEMBERS BEND MEMBRANES IN CELLS. **Allison Suarez**, Tasuku Ueno, Robert Huebner, J. Michael McCaffery, Takanari Inoue

1236-Pos Board B187
CURVATURE-GENERATING PROTEINS AND SUBCELLULAR PATTERN FORMATION. Maohan Su, Cheesan Tong, **Min Wu**

1237-Pos Board B188
FINELY-FABRICATED NANOMATERIALS TO REVEAL CURVATURE ROLES IN NEURONAL NETWORK FORMATION. **Milos Galic**

1238-Pos Board B189
ROLE OF SURFACE TENSION IN THE FORMATION OF MEMBRANE TUBES. **Julian Hassinger**, George Oster, Padmini Rangamani

1239-Pos Board B190
NANOSYSTEM BASED ON PHOSPHOLIPIDS AND SURFACTANTS AS INNOVATIVE DELIVERY SYSTEM FOR GENE THERAPY. **Michalina Skupin**, Joanna Wolak, Maciej Kozak

1240-Pos Board B191 INTERNATIONAL TRAVEL AWARDEE
BIOPHISICAL EVALUATION OF DRUG IMPACT ON PULMONARY SURFACTANT PERFORMANCE. **Alberto Hidalgo**, Antonio Cruz, Jesus Perez-Gil

1241-Pos Board B192 EDUCATION TRAVEL AWARDEE
MULTISCALE SIMULATION OF CONCENTRATION-DEPENDANT INTERACTION OF HYDROPHOBIC DRUG WITH CELL MEMBRANE. **Myungshim Kang**, Sharon M. Loverde

1242-Pos Board B193
STABILITY REGIMES AND ENGULFMENT PATTERNS OF NANOPARTICLES AT MEMBRANES. **Jaime Agudo Canalejo**, Reinhard Lipowsky

1243-Pos Board B194
MEMBRANE FLUIDITY IN CANCER CELL MEMBRANES AS A THERAPEUTIC TARGET: VALIDATION USING BPM 31510.
Sumit Garg, Sirisha Dhavala, Katerina Krumova, Michael Kiebish, Vivek Vishnudas, Stephane Gesta, Rangaprasad Sarangarajan, Niven Narain

Biophysical Techniques for the Study of Protein-Lipid Interactions (Boards B195-B223)

1244-Pos Board B195
USING CW-EPR TO EXPLORE SUBSTRATE BINDING AND THE MECHANISM OF TONB-DEPENDENT TRANSPORT IN BTUB. **Arthur K. Sikora**, Benesh Joseph, Thomas F. Prisner, David S. Cafiso

1245-Pos Board B196
CYTOPLASMIC DOMAIN OF DENGUE VIRUS PROTEIN NS4A PREFERENTIALLY BINDS HIGHLY CURVED MEMBRANES. **Yu-Fu Hung**, Melanie Schwarten, Silke Hoffmann, Dieter Willbold, Ella H. Sklan, Bernd W. Koenig

1246-Pos Board B197
PH TITRATION AND ACID ACTIVATION OF THE FULL-LENGTH INFLUENZA A M2 PROTON CHANNEL IN LIPID BILAYERS. **Yimin Miao**, Riqiang Fu, Huan-Xiang Zhou, Huajun Qin, Timothy A. Cross

1247-Pos Board B198
PROBING STRUCTURE AND DYNAMICS OF EXTERNALIZED TRANSMEMBRANE ALPHA HELICES OF S21 PINHOLIN PROTEIN USING ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY. **Daniel Drew**

1248-Pos Board B199
PROBING THE SECONDARY STRUCTURE OF MEMBRANE PROTEIN USING BACTERIAL EXPRESSION SYSTEM AND ELECTRON SPIN ECHO ENVELOPE MODULATION (ESEEM) SPECTROSCOPY. **Rongfu Zhang**, Indra Sahu, Kaylee Gibson, Nefertiti Muhammad, Avnika Bali, Raven Comer, Andrew Craig, Megan Dunagan, Kunkun Wang, Carole Dabney-Smith, Gary Lorigan

1249-Pos Board B200
STRUCTURE AND ACTIVITY OF THE OUTER MEMBRANE PROTEIN AIL FROM YERSINIA PESTIS. **Yi Ding**, Lynn M. Fujimoto, Yong Yao, Gregory V. Plano, Francesca M. Marassi

1250-Pos Board B201
MECHANISMS OF MEMBRANE PROTEIN CRYSTALLIZATION. **Anvar Samadzoda**, Amit Vaish, Anne Skaja Robinson, Abraham Lenhoff

1251-Pos Board B202
TRANSMEMBRANE-PEPTIDE STRUCTURE FORMATION FROM COARSE-GRAINED SIMULATIONS. **Tristan Bereau**, Markus Deserno

1252-Pos Board B203
OPENING THE LATERAL GATE OF THE RHOMBOID PROTEASE COUPLES TO LIPID BINDING. **Ana Nicoleta Bondar**, M. Joanne Lemieux

1253-Pos Board B204
HIGH RESOLUTION MODEL OF HDL WRAPPED WITH TETRAFOIL APOA-I: A COARSE-GRAINED SIMULATION STUDY. **Venkata Reddy Chirasani**, Sanjib Senapati

1254-Pos Board B205
MEMBRANE ASSOCIATION OF SYNAPTOTAGMIN 7 C2A DOMAIN BY MOLECULAR DYNAMICS SIMULATIONS. **Nara Lee Chon**, Jack Henderson, John Ryan Osterberg, Hanif Khan, Nathalie Reuter, Jefferson Knight, Hai Lin

1255-Pos Board B206
INTERPLAY BETWEEN ELECTROSTATICS AND CATION-PI INTERACTIONS GOVERNS THE SPECIFIC MEMBRANE BINDING OF PHOSPHATIDYLINOSITOL-SPECIFIC PHOSPHOLIPASE-C. **Hanif M. Khan**, Cedric Grauffel, Mary F. Roberts, Anne Gershenson, Nathalie Reuter

1256-Pos Board B207
MOLECULAR DETAILS OF THE MECHANISM OF PS RECOGNITION BY TIM PROTEINS. **Javier L. Baylon**, Gregory T. Tietjen, Ka Yee C. Lee, Erin J. Adams, Emad Tajkhorshid

1257-Pos Board B208
ANOMALOUS DYNAMICS OF PLECKSTRIN HOMOLOGY DOMAINS ON LIPID MEMBRANE SURFACES. **Eiji Yamamoto**, Antreas C. Kalli, Takuma Akimoto, Kenji Yasuoka, Mark S. P. Sansom

1258-Pos Board B209
MOLECULAR DYNAMICS SIMULATION STUDIES OF INTERACTIONS OF E. COLI-K12 WITH OMPF IN OUTER MEMBRANES: EFFECTS OF LPS STRUCTURES ON MONOCLONAL ANTIBODIES BINDING. **Dhilon S. Patel**, Emilia L. Wu, Phillip E. Klebba, Wonpil Im

1259-Pos Board B210
MODELLING PROTEIN-MICELLE SYSTEMS IN IMPLICIT WATER. **Rodney E. Versace**, Themis Lazaridis

1260-Pos Board B211
SIMULATIONS PREDICT 18:0-22:6 PHOSPHATIDYLSERINE DRIVES α-SYNUCLEIN INTO THE LIQUID-DISORDERED PHASE IN SYNAPTIC VESICLE LIPID COMPOSITION. **Benjamin E. Brummel**

1261-Pos Board B212
THE STRUCTURE OF A MELITTIN STABILIZED TOROIDAL PORE. **John M. Leveritt III**

1262-Pos Board B213
MEMBRANOME: A DATABASE OF SINGLE-SPANNING TRANSMEMBRANE PROTEINS. **Andrei L. Lomize**, Irina Pogozheva

1263-Pos Board B214
ROSETTA-MPDOCK: A NOVEL COMPUTATIONAL TOOL FOR PROTEIN-PROTEIN DOCKING WITHIN THE MEMBRANE BILAYER. **Julia Koehler Leman**, Rebecca F. Alford, Jeffrey J. Gray

1264-Pos Board B215
SUPER-RESOLUTION IMAGING AND REACTION MAPPING OF P450 3A4 AND P450 REDUCTASE IN HETEROGENEOUS BIOMIMETICS: STARRY NIGHT. **James A. Brozik**, Sara C. Humphreys, Carlo Barnaba, Adam O. Barden, Jeffrey P. Jones

1265-Pos Board B216
APPLICATION OF LUMINESCENCE RESONANCE ENERGY TRANSFER (LRET) FOR STUDY OF SUBSTRATE PEPTIDE BINDING TO PGLB FROM N-LINKED GLYCOSYLATION PATHWAY IN C. JEJUNI AND C. LARI. **Monika Musial-Siwek**, Barbara Imperiali

1266-Pos Board B217
PROBING ENZYME-SUBSTRATE COMPLEX STRUCTURAL DYNAMICS DURING INTRAMEMBRANE PROTEOLYSIS. **Jason W. Cooley**, Mia Brown, Renee D. JiJi

1267-Pos Board B218
TRACING LIPIDS AND THEIR ASSOCIATION WITH KERATIN IN THE ADHESIVE GECKO SETAE BY NMR SPECTROSCOPY. **Dharamdeep Jain**, Alyssa Stark, Peter Niewiarowski, Toshikazu Miyoshi, Ali Dhinojwala

1268-Pos Board B219
INVESTIGATING THE STRUCTURAL DYNAMICS TRANSITIONS OF HUMAN ADIPOCYTE FATTY ACID BINDING PROTEIN BY NMR SPECTROSCOPY. **Kim N. Ha**, Youlin Xia, Yenchi Tran, Adedolapo Ojoawo, Gianluigi Veglia, David A. Bernlohr

1269-Pos Board B220
SOLID STATE NMR STRUCTURAL STUDIES OF ANTIMICROBIAL PEPTIDES LPCIN ANALOGS WITH ENHANCED ACTIVITIES. Ji-Sun Kim, Ji-Ho Jeong, **Yongae Kim**

1270-Pos Board B221
NMR-RESTRAINED STRUCTURE CALCULATIONS OF MEMBRANE PROTEINS IN IMPLICIT LIPID BILAYER MEMBRANES. **Ye Tian**, Charles Schwieters, Stanley Opella, Francesca Marassi

1271-Pos Board B222
GLOBAL FOLD OF HUMAN CANNABINOID TYPE 2 RECEPTOR PROBED BY SOLID-STATE NMR AND MOLECULAR DYNAMICS SIMULATIONS. Tomohiro Kimura, Krishna Vukoti, Diane L. Lynch, Dow P. Hurst, Alan Grossfield, Michael C. Pitman, Patricia H. Reggio, Alexei A. Yeliseev, **Klaus Gawrisch**

1272-Pos Board B223
BCL-2 FAMILY PROTEINS EFFECT ON MITOCHONDRIAL-MIMICKING MEMBRANE STRUCTURE BY SOLID STATE NMR. **Artur PG Dingeldein**, Martin Lidman, Sarka Pokorna, Martin Hof, Anders Pedersen, Göran Karlsson, Gerhard Gröbner

Protein-Lipid Interactions II (Boards B224-B248)

1273-Pos Board B224
DYNAMIC STUDIES OF THE TUMOUR SUPPRESSOR PROTIEN PTEN BINDING TO MEMBRANES COMPOSED PI(4,5)P2 AND VARIOUS ANIONIC LIPIDS. **Brittany M. Neumann**, Alonzo Ross, Arne Gericke

1274-Pos Board B225 **education travel awardee**
COMPUTATIONAL MODELING OF THE N-TERMINUS OF THE HUMAN DOPAMINE TRANSPORTER (HDAT). George Khelashvili, **Milka Doktorova**, Michelle A. Sahai, Niklaus Johner, Lei Shi, Harel Weinstein

1275-Pos Board B226
LOCALIZATION OF LIPIDS TO THE CAVITY AND TRANSMEMBRANE DOMAIN OF ATP-BINDING CASSETTE TRANSPORTER ABCB10, AS REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Hao Yu Chen**, Iwona Siuda, D. Peter Tieleman

1276-Pos Board B227
INVESTIGATING SEC14 DOMAIN LIPID BINDING USING STRUCTURAL MODELING. **Mwangala Akamandisa**, Amanda J. Kedaigle, Mala L. Radhakrishnan, T. Kaye Peterman, Donald E. Elmore

1277-Pos Board B228
A MICROFLUIDIC DEVICE TO STUDY TRANSLOCATION ACROSS LIPID MEMBRANES. **Victor Marin**, Roland Kieffer, Jacqueline Enzlin, Marie-Eve Aubin-Tam

1278-Pos Board B229
BACKSCATTERING INTERFEROMETRY: SEEING MEMBRANE PROTEINS IN A NEW LIGHT. **Janessa Gerhart**, Gabrielle Haddad-Weiser, Amanda Kussrow, Darryl Bornhop, Robert Flowers, Damien Thévenin

1279-Pos Board B230
MEMBRANE INSERTION DEPTH AND CURVATURE SENSING. **Erin R. Tyndall**, Richard L. Gill Jr., Kumaran S. Ramamurthi, Fang Tian

1280-Pos Board B231
CRYSTAL STRUCTURE OF THE BACTERIAL AMINOARABINOSE TRANSFERASE ARNT. **Vasileios I. Petrou**, Oliver B. Clarke, Kathryn M. Schultz, David Tomasek, Brian Kloss, Surajit Banerjee, Kanagalaghatta R. Rajashankar, Candice S. Klug, Lawrence Shapiro, Filippo Mancia

1281-Pos Board B232
DISTINCT MEMBRANE ASSOCIATION MODES FACILITATE CO-TRANSLATIONAL PROTEIN TARGETING. **Yu-Hsien Hwang Fu**, Shu-ou Shan

1282-Pos Board B233
USING FLUORESCENT-LABELED NANODISCS TO STUDY LIPID INTERACTIONS WITH YEAST CYTOCHROME C. **Harmen B. Steele**, Levi J. McClelland, Kristian T. Stipe, Michelle C. Terwilliger, Bruce E. Bowler, J. B. Alexander Ross

1283-Pos Board B234
BIOPHYSICS OF α-SYNUCLEIN INDUCED MEMBRANE REMODELLING. **Zheng Shi**, Elizabeth Rhoades, Tobias Baumgart

1284-Pos Board B235
ACETYLATION REGULATES THE INTERACTION OF HUNTINGTIN WITH LIPID MEMBRANES: IMPLICATIONS FOR HUNTINGTON DISEASE. **Maxmore Chaibva**, James R. Arndt, Stephen J. Valentine, Justin Legleiter

1285-Pos Board B236
CHOLESTEROL MODULATES THE BINDING AND SUBSEQUENT AGGREGATION OF HUNTINGTIN ON LIPID BILAYERS. **Xiang Gao**, Maxmore Chaibva, Pranav Jain, Justin Legleiter

1286-Pos Board B237
SEQUENCE-INDEPENDENT SSDNA RELIEVES PHOSPHOLAMBAN INHIBITION OF SERCA IN A LENGTH DEPENDENT MANNER. **Kailey J. Soller**, Raffaello Verardi, Vitaly V. Vostrikov, Neha Abrol, Seth L. Robia, Michael T. Bowser, Gianluigi Veglia

1287-Pos Board B238
SYSTEMATIC PERTURBATIONS OF MICELLE PROPERTIES TO INVESTIGATE THE STABILIZATION OF MEMBRANE PROTEIN STRUCTURE AND FUNCTION. **Ashton Brock**, Shelby Lipes, Linda Columbus

1288-Pos Board B239
MODIFIED AMINOPHOSPHOLIPIDS STRONGLY ALTER THE FUNCTION OF MITOCHONDRIAL MEMBRANE PROTEIN UCP1. **Olga Jovanovic**, Nadine Burchardt, Lars Gille, Elena E. Pohl

1289-Pos Board B240
THE ROLE OF MEMBRANE CONTEXT IN THE INTERACTION OF POLYGLUTAMINE PEPTIDES WITH LIPID MEMBRANES. **Warren A. Campbell**, Karlina J. Kauffman, Justin Legleiter, Shelli L. Frey

1290-Pos Board B241
PI(4,5)P2 LIPID BINDING INDUCES A REORIENTATION OF FGF2 MOLECULES NEAR MEMBRANE SURFACE TO FACILITATE THE UNCONVENTIONAL OLIGOMERIZATION-DEPENDENT SECRETION PROCESS AS REVEALED BY A COMBINED FTIR/NMR/X-RAY STUDY. Yh Tsao, Js Liu, Jh Kuo, Wn Huang, **Wg Wu**

1291-Pos Board B242
MEMBRANE SHAPE TRANSITION MEDIATED BY CURVATURE-INDUCING PROTEINS, MEMBRANE TENSION, AND MACROCROWDERS. **Zhiming Chen**, Zheng Shi, Tobias Baumgart

1292-Pos Board B243
ESTABLISHING THE SYNERGY OF FORCES GOVERNING TIM3 BINDING TO LIPID MEMBRANES. **Zhiliang Gong**, Greg T. Tietjen, Daniel H. S. Kerr, J. Michael Henderson, Kathleen D. Cao, Nathaniel A. Posner, Theodore L. Steck, Erin J. Adams, Ka Yee C. Lee

1293-Pos Board B244 **education travel awardee**
UNRAVELING THE DUAL ROLE OF SURFACTANT PROTEIN A AT ATOMISTIC DETAIL. **Boon Chong Goh**, Michael J. Rynkiewicz, Francis X. McCormack, Barbara A. Seaton, Klaus Schulten

1294-Pos Board B245
IDENTIFYING THE CHOLINE-CATION TYROSINE-PI INTERACTIONS OF AN AMPHITROPIC PROTEIN. **Tao He**, Hanif M. Khan, Cedric Grauffel, Nathalie Reuter, Anne Gershenson, Mary F. Roberts

1295-Pos Board B246
MEMBRANE INTERACTION OF AMYLOID-BETA PEPTIDE INDUCES SPONTANEOUS MEMBRANE INVAGINATION. Sha Jin, Jörg Nikolaus, Andreas Herrmann, **Jan Bieschke**

1296-Pos Board B247
THE NOVEL INHIBITOR "ANLE145C" EFFICIENTLY INHIBITS FIBRIL FORMATION OF ISLET AMYLOID POLYPEPTIDE (IAPP) AND USES DISTINCTLY DIFFERENT MODES OF ACTION IN THE ABSENCE AND PRESENCE OF MEMBRANES. **Manikam Sadasivam Saravanan**, Sergey Ryazanov, Andrei Leonov, Janine Seeliger, Roland Winter, Armin Giese, Christian Griesinger, J Antoinette Killian

1297-Pos Board B248
INFLUENCE OF SEQUENCE AND LIPID TYPE ON MEMBRANE PERTURBATION BY HUMAN AND RAT AMYLOID β-PEPTIDE (1-42). **Anne M. Brown**, David R. Bevan

Membrane Receptors and Signal Transduction II (Boards B249-B269)

1298-Pos Board B249
EFFECT OF THANATOPHORIC DYSPLASIA TYPE I MUTATIONS ON FIBROBLAST GROWTH FACTOR RECEPTOR 3 DIMERIZATION. **Nuala Del Piccolo**, Kalina Hristova

1299-Pos Board B250
DECODING THE ROLE OF RECEPTOR DIMERIZATION IN PLEXIN-SEMAPHORIN SIGNALING. **Adam W. Smith**, Morgan Marita, Xiaojun Shi, William D. Comar

1300-Pos Board B251
SYNTHETIC MANIPULATION OF PIP2 LEVELS AND PIP2-ASSOCIATED CHEMOTACTIC SIGNALING DISSECTION IN DICTYOSTELIUM. **Yuchuan Miao**, Takanari Inoue, Peter Devreotes

1301-Pos Board B252
CHARGE SHIELDING OF PIP2 BY CATIONS REGULATES ENZYME ACTIVITY OF PHOSPHOLIPASE C. **Jong Bae Seo**, Seung-Ryoung Jung, Weigang Huang, Qisheng Zhang, Duk-Su Koh

1302-Pos Board B253
SOLUBLE AND IMMOBILIZED VEGF INDUCE DISTINCT PATTERNS OF VEGFR2 PHOSPHORYLATION MEDIATED BY INTRACELLULAR TRAFFICKING. **Lindsay E W Clegg**, Feilim Mac Gabhann

1303-Pos Board B254
MEASURING THE ENERGETICS OF EPHA3 DIMERIZATION IN LIVE MAMMALIAN CELLS. **Qingqing Cao**, Deo Singh, Chris King, Matt salotto, Kalina Hristova

1304-Pos Board B255
LOCAL BILAYER REORGANISATION BY THE JM REGIONS OF ALL HUMAN RTKS: A MULTISCALE MOLECULAR DYNAMICS STUDY. **George Hedger**, Mark S.P. Sansom, Heidi Koldsø

1305-Pos Board B256
THE DIPOLE POTENTIAL INFLUENCES THE CLUSTERING OF ERBB PROTEINS. **Tamas Kovacs**, Agnes Szabo, Janos Szollosi, Peter Nagy

1306-Pos Board B257
HOMO AND HETERO DIMERIZATION OF RECEPTOR PROTEIN TYROSINE PHOSPHATASES. **Elizabeth Dembicer**, Maxwell Watkins, Damien Thevenin

1307-Pos Board B258
IN VIVO THERMODYNAMICS OF RTKS IN THE CELL MEMBRANE: QUANTITATIVE SPECTRAL FRET. **Christopher R. King**, Kalina Hristova

1308-Pos Board B259
COMPARISON OF EGFR DIMER STABILITIES IN THE PRESENCE AND ABSENCE OF THE LIGAND EGF. **Matt Salotto**, Deo R. Singh, Chris King, Pat Byrne, Daniel Leahy, Kalina Hristova

1309-Pos Board B260
LABEL-FREE CHARACTERIZATION OF A NOVEL EARLY-STAGE DRUG DISCOVERY PLATFORM. **Edward Esposito**, Verna Frasca, Kevin Mattison

1310-Pos Board B261
PATTERNED LIGAND SURFACES REVEAL F-ACTIN AND INTEGRIN ORGANIZATION AT EGF AND IGE RECEPTOR SIGNALING COMPLEXES. **Devin Wakefield**

1311-Pos Board B262
THE ENERGETICS OF THE CHROMOPHORE REGENERATION PATHWAY IN RHODOPSIN. **He Tian**, Thomas Sakmar, Thomas Huber

1312-Pos Board B263 **international travel awardee**
LIGHT-INDUCED SWITCHING OF HAMP DOMAIN CONFORMATION AND DYNAMICS REVEALED BY TIME-RESOLVED EPR SPECTROSCOPY. **Daniel Klose**, Natalia Voskoboynikova, Philipp S. Orekhov, Ioan Orban-Glass, Christian Rickert, Martin Engelhard, Johann P. Klare, Heinz-Juergen Steinhoff

1313-Pos Board B264
DYNAMIC LIGAND-PROTEIN INTERACTIONS ALTER RHODOPSIN'S CONFORMATIONAL ENSEMBLE: SIMULATIONS OF RHODOPSIN AND OPSIN. **Letty Salas**, Nick Leioatts, Shairy Danial, Tod Romo, Alan Grossfield

1314-Pos Board B265
ATRAP (AT1R ASSOCIATED PROTEIN) ROLE ON ANGIOTENSIN II-MEDIATED NHE3 ACTIVITY MODULATION. **Juliano Z. Polidoro**, Nancy A. Rebouças

1315-Pos Board B266
ENVIRONMENTAL FACTORS ALLOWING STEM CELLS FROM SKELETAL MUSCLE TURNING INTO CARDIAC MUSCLE LIKE SPONTANEOUS BEATING CELLS. Hikari Hayashida, Wataru Yamasaki, **Takayuki Miyanishi**

1316-Pos Board B267
ROLES OF PHOSPHODIESTERASES IN CYCLIC NUCLEOTIDE CROSS-TALK IN CARDIAC MYOCYTES. **Claire Y. Zhao**, Joseph L. Greenstein, Raimond L. Winslow

1317-Pos Board B268
REGULATION OF THE CARDIAC β-ADRENERGIC PATHWAY VIA CAMP-CGMP COMPETITION. **Claire Y. Zhao**, Joseph L. Greenstein, Raimond L. Winslow

1318-Pos Board B269
INTRACELLULAR SIGNALING PATHWAY OF CARDIAC APOPTOSIS IN THE PREDIABETIC HEART. Leandro Sommese, Marilen Federico, Carolina Zanuzzi, Enrique L. Portiansky, John Dedman, Marcia Kaetzel, Wehrens H. Xander, Alicia Mattiazzi, **Julieta Palomeque**

Intracellular Calcium Channels and Calcium Sparks and Waves I (Boards B270-B288)

1319-Pos Board B270
DYSSYNCHRONOUS HEART FAILURE IS ASSOCIATED WITH SPATIALLY HETEROGENEOUS SPARK DENSITY IN LEFT VENTRICULAR CARDIOMYOCYTES. **Justin G. Lichter**, Hui Li, Robin Moss, Thomas S. Seidel, John H. Bridge, Frank B. Sachse

1320-Pos Board B271
INFLUENCE OF RYR2 INHIBITION KINETICS ON CALCIUM SPARKS AND WAVES IN A 3D MODEL OF A CARDIAC CELL. **Derek R. Laver**, Mohammad S. Imtiaz

1321-Pos Board B272
EFFECTS OF TRIAD GEOMETRY AND RYR GATING SCHEME ON SIMULATED SKELETAL MUSCLE SPARKS. **János Vincze**, Beatrix Dienes, Péter Szentesi, László Csernoch, Derek R. Laver

1322-Pos Board B273
SUBCELLULAR CA CHANNEL DISTRIBUTION AND CA ALTERNANS IN ATRIAL MYOCYTES. **Zhen Song**, Korogyi Adam, Peter H. Backx, Zhilin Qu

1323-Pos Board B274
COMPLEX EARLY AND DELAYED AFTERDEPOLARIZATION DYNAMICS CAUSED BY VOLTAGE-CALCIUM COUPLING IN CARDIAC MYOCYTES. **Zhen Song**, Christopher Y. Ko, Michael Nivala, James N. Weiss, Zhilin Qu

1324-Pos Board B275
STRUCTURAL AND FUNCTIONAL DEFECTS OF T-TUBULAR SYSTEM AND THEIR IMPLICATIONS IN CALCIUM RELEASE AND CONTRACTION IN A MOUSE MODEL OF HYPERTROPHIC CARDIOMYOPATHY. **Claudia Crocini**, Cecilia Ferrantini, Raffaele Coppini, Marina Scardigli, Erica Lazzeri, Claudio Chicchi, Ping Yan, Leslie M. Loew, Jill Tardif, Chiara Tesi, Francesco Vanzi, Elisabetta Cerbai, Francesco S. Pavone, Leonardo Sacconi

1325-Pos Board B276
SIMULTANEOUS DETECTION AND COLOCALIZATION OF CALCIUM SPARKS AND RYANODINE RECEPTOR CLUSTERS IN CARDIAC MYOCYTES. Alex Vallmitjana, Florian Hiess, S.R. Wayne Chen, Leif Hove-Madsen, **Raul Benitez**

1326-Pos Board B277
REDUCED CA FLUX VIA RYANODINE RECEPTOR CLUSTER SIZE OR UNITARY CURRENT CAN BOTH PROMOTE LONG-LASTING CA SPARKS. **Daisuke Sato**, Thomas R. Shannon, Donald M. Bers

1327-Pos Board B278
EXPRESSION AND FUNCTION OF INOSITOL 1,4,5-TRISPHOSPHATE RECEPTORS IN THE HEART. **Martha Iveth Garcia**, Darren Boehning

1328-Pos Board B279
OPPOSITE CHANGES OF CA^{2+} WAVE THRESHOLD AND FRACTIONAL SR CA^{2+} RELEASE DURING SERCA STIMULATION IN CARDIOMYOCYTES. **Miguel Fernandez-Tenorio**, Ernst Niggli

1329-Pos Board B280
ELEVATED HOMOCYSTEINE LEVELS RESULT IN CARBONYL FORMATION ON RYR2 AND ENHANCED SENSITIVITY OF SARCOPLASMIC RETICULUM TO ACTIVATION BY CALCIUM. **Laura J. Owen**, Robert M. Strongin, Jeffrey D. Singer, Jonathan J. Abramson

1330-Pos Board B281
PHOSPHODIESTERASE INHIBITION LEADS TO ACTIVATION OF EPAC AND STIMULATION OF CA^{2+} RELEASE FROM BOTH THE GOLGI APPARATUS AND THE SR. Hannah M. Kirton, Zhaokang Yang, **Derek S. Steele**

1331-Pos Board B282
CARDIAC ALTERNANS OCCURS THROUGH THE SYNERGY OF VOLTAGE- AND CALCIUM-DEPENDENT MECHANISMS. Minh Tuan Hoang-Trong, W Jonathan Lederer, **M Saleet Jafri**

1332-Pos Board B283
DEVELOPMENT OF CA ALTERNANS IN ATRIAL MYOCYTES IS MODULATED BY ACTION POTENTIAL MORPHOLOGY. **Giedrius Kanaporis**, Lothar A. Blatter

1333-Pos Board B284
UROCORTIN 2 REGULATES SARCOPLASMIC RETICULUM CALCIUM VIA PHOSPHORYLATION OF PHOSPHOLAMBAN AND SERCA ACTIVATION AND PROTECTS AGAINST PRO-ARRHYTHMIC ALTERNANS IN CARDIAC MYOCYTES FROM NORMAL AND FAILING HEARTS. **Stefanie Walther**, Joshua N. Edwards, Joshua T. Maxwell, Florentina Pluteanu, Susanne Renz, Burkert Pieske, Lothar A. Blatter

1334-Pos Board B285
CALCIUM MEDIATED MECHANISM OF EARLY AFTERDEPOLARIZATIONS IN LQT2 VENTRICULAR MYOCYTES. **Colin M. Rees**, Dmitry Terentyev, Bum-Rak Choi, Gideon Koren, Alain Karma

1335-Pos Board B286
MULTISCALE CONSEQUENCES OF SPONTANEOUS CALCIUM RELEASE ON CARDIAC DELAYED AFTERDEPOLARIZATIONS. **Christopher Y. Ko**, Zhen Song, Zhilin Qu, James N. Weiss

1336-Pos Board B287
FRET-BASED RYR-SELECTIVE DETECTION REVEALS NO SIGNIFICANT COMPETITION BETWEEN CAM AND S100A1 BINDING TO RYRS. **Robyn T. Rebbeck**, Florentin R. Nitu, David Rohde, Patrick Most, Donald M. Bers, David D. Thomas, Razvan L. Cornea

1337-Pos Board B288
CALMODULIN POTENTIATES RYR2 BLOCK AND CA WAVE SUPPRESSION BY FLECAINIDE. Nieves Gomez-Hurtado, Ye W. Oo, Derek Laver, **Bjorn C. Knollmann**

Excitation-Contraction Coupling I (Boards B289-B316)

1338-Pos Board B289 INTERNATIONAL TRAVEL AWARDEE
DOXORUBICIN ALTERS CARDIOMYOCYTE CALCIUM REGULATION AND STIMULATES MITOCHONDRIAL SUPEROXIDE FLASH PRODUCTION. **Nicole Beard**, Amy Hanna, Lan Wei-LaPierre, Kevin Tylock, Hermia Willemse, Angela Dulhunty, Robert Dirksen

1339-Pos Board B290
DYNAMICS OF CA^{2+}-DEPENDENT REGULATION OF THE CARDIAC NA^{+}/CA^{2+} EXCHANGER. **Lulu Chu**, Joseph L. Greenstein, George S.B. Williams, Liron Boyman, Eric A. Legenzov, Brian M. Hagen, W J. Lederer, Raimond L. Winslow

1340-Pos Board B291
NA-CA EXCHANGER CURRENT DURING THE CARDIAC CYCLE IN INTACT PERFUSED MOUSE HEART. Josefina Ramos-Franco, **Yuriana Aguilar-Sanchez**, Ariel L. Escobar

1341-Pos Board B292
STRUCTURAL AND FUNCTIONAL IMPACT OF AMINO ACID SUBSTITUTION ON CALMODULIN BINDING IN CARDIAC MYOCYTES. **Matthew D. McCoy**, Saleet Jafri, Iosif Vaisman

1342-Pos Board B293
THE FUNCTIONAL COMPLEX COMPOSED OF THE SODIUM/BICARBONATE COTRANSPORTER AND THE SOLUBLE ADENYLATE CYCLASE (SAC) MODULATES BASAL CARDIAC CONTRACTILITY. María S. Espejo, María C. Ciancio, Alejandro Orlowski, Verónica C. De Giusti, **Ernesto A. Aiello**

1343-Pos Board B294
DMSO PROTECTS AGAINST STRESS-INDUCED SEALING OF CARDIAC T-TUBULES. **Keita Uchida**, Ian Moench, Anatoli N. Lopatin

1344-Pos Board B295
DUAL ROLE OF FUNCTIONALLY INTACT DYADIC JUNCTIONS IN CARDIAC EXCITATION-CONTRACTION COUPLING. **Prakash Subramanyam**, Donald D. Chang, Henry M. Colecraft

1345-Pos Board B296
SUPER-RESOLUTION ANALYSIS OF THE DISTRIBUTION OF RYR, CAV1.2 AND NCX WITHIN THE MAMMALIAN COUPLON. **David R.L. Scriven**, Reza Tafteh, Keng C. Chou, Edwin D.W. Moore

1346-Pos Board B297
SUPERRESOLUTION MICROSCOPE IMAGE RECONSTRUCTION BY SPATIOTEMPORAL OBJECT DECOMPOSITION AND ASSOCIATION: APPLICATION IN RESOLVING T-TUBULE STRUCTURE IN SKELETAL MUSCLE. **Mingzhai Sun**, Jiaqing Huang, Filiz Bunyak, Kristyn Gumpper, Gejing De, Matthew Sermersheim, George Liu, Pei-Hui Lin, Kannappan Palaniappan, Jianjie Ma

1347-Pos Board B298
VOLTAGE-GATED CALCIUM INFLUX CONTRIBUTES TO SARCOPLASMIC RETICULUM CALCIUM LOADING IN SKELETAL MUSCLE. Gaelle Robin, **Bruno Allard**

1348-Pos Board B299
CONTRIBUTION OF L496-L500-W503 MOTIF OF DHPR-β1A SUBUNIT TO SKELETAL-TYPE EC-COUPLING. Jose M. Eltit, Clara Franzini-Armstrong, **Claudio F. Perez**

1349-Pos Board B300
FRET-BASED STRUCTURAL ANALYSIS OF THE SKELETAL MUSCLE DHPR USING BIARSENICAL LABELING. **Mohana Mahalingam**, Claudio F. Perez, James D. Fessenden

1350-Pos Board B301
DEPENDENCY OF CA^{2+} ALTERNANS ON ION CHANNEL LOCALIZATION IN HUMAN ATRIAL CELLS. **Kelly C. Chang**, Natalia A. Trayanova

1351-Pos Board B302
AGEING CAUSES SEVERE ULTRA-STRUCTURAL MODIFICATION OF CALCIUM RELEASE UNITS AND MITOCHONDRIA IN CARDIOMYOCYTES. Laura d'Onofrio, Alessia Di Fonso, Feliciano Protasi, **Simona Boncompagni**

1352-Pos Board B303
THE EFFECT OF AGING ON CALCIUM TRANSIENTS IN RAT CARDIOMYOCYTES: IMPACT OF NOX INHIBITION. **Daniel R. Gonzalez**, Guillermo B. Barrios

1353-Pos Board B304
OPTOGENETIC MANIPULATION OF CA^{2+} TRANSIENTS AND CONTRACTION IN A MATHEMATICAL MODEL OF CARDIOMYOCYTE FUNCTION. **Yasser Aboelkassem**, Stuart G. Campbell

1354-Pos Board B305
MG29/SYPL2 CONTRIBUTES TO DYSREGULATION OF LIPID COMPOSITION AND STORE OPERATED CA^{2+} ENTRY IN AGING SKELETAL MUSCLE. **Julian A. Vallejo**, Liubov V. Gushchina, Sainath Kotha, Leticia Brotto, Narasimham Parinandi, Noah Weisleder, Marco Brotto

1355-Pos Board B306
DIFFERENTIAL ROLE OF CALSEQUESTRIN ISOFORMS ON CALCIUM ENTRY IN SKELETAL MUSCLE FDB FIBRES. **Francesco Zorzato**, Barbara Mosca, Leda Beergamelli, Giorgia Valle, Alessandra Nori, Susan Treves, Feliciano Protasi, Pomeo Volpe

1356-Pos Board B307
ELEVATION OF NO INCREASES CA^{2+} ENTRY AND RESTING CA^{2+} AND NA^{+} CONCENTRATIONS IN SKELETAL MUSCLE CELLS. **Gaelle Robin**, Francisco Altamirano, Rui Zhang, Enrique Jaimovich, Paul D. Allen, Jose R. Lopez

1357-Pos Board B308
A COMPARTMENT MODEL TO INVESTIGATE THE ROLES OF SR MEMBRANE CHANNELS DURING E-C COUPLING. **Claudio Berti**, Michael Fill, Dirk Gillespie

1358-Pos Board B309
MODEL OF A PROPAGATING ACTION POTENTIAL (AP) IN A TWITCH SKELETAL MUSCLE FIBER MOUNTED IN A DOUBLE-VASELINE-GAP CHAMBER - CURRENTS INVOLVED IN SHAPING THE AP. Fatou Touré, Gabor Gyurkovics, Cedric R.H. Lamboley, **Paul C. Pape**

1359-Pos Board B310
CAMKII-DEPENDENT PHOSPHORYLATION OF RYR2 CAUSES DOMAIN UNZIPPING AND REDUCED CALMODULIN BINDING, BUT DANTROLENE REVERSES THESE EFFECTS. **Hitoshi Uchinoumi**, Yi Yang, Jose L. Puglisi, Ye Chen-Izu, Razvan L. Cornea, Xander H. T. Wehrens, Donald M. Bers

1360-Pos Board B311
DETERMINATION OF THE JUNCTIONAL SPACE $[CA^{2+}]$ SET BY RYANODINE RECEPTOR LEAK IN SLOW- AND FAST-TWITCH MUSCLE FIBRES. Tanya R. Cully, **Bradley S. Launikonis**

1361-Pos Board B312
EFFECT OF CALCIUM IN THE CARDIAC RYANODINE RECEPTOR INTER-MOLECULAR CONTACTS. **Vanessa Cabra**, Montserrat Samso

1362-Pos Board B313
MALIGNANT HYPERTHERMIA SUSCEPTIBILITY MUTATION CAV1.1 R174W DRAMATICALLY ALTERS RYR1 SINGLE CHANNEL FUNCTION. **Wei Feng**, Yao Dong, Roger Bannister, Philip Hopkins, Clara Franzini-Armstrong, Kurt Beam, Paul D. Allen, Isaac Pessah

1363-Pos Board B314
EFFECTS OF MH AND CCD MUTATIONS IN THE CENTRAL REGION ON RYR1 CHANNELS. **Takashi Murayama**, Nagomi Kurebayashi, Toshiko Yamazawa, Hideto Oyamada, Junji Suzuki, Kazunori Kanemaru, Katsuji Oguchi, Masamitsu Iino, Takashi Sakurai

1364-Pos Board B315
CHARACTERIZATION OF DUAL MUTANT RYR1D-S100A1KO MICE WITH DISRUPTED CAM AND S100A1 BINDING TO CAMBD2 AND LACKING S100A1 EXPRESSION. **Erick O. Hernández-Ochoa**, Camilo Vanegas, Stephen J.P. Pratt, Richard M. Lovering, Martin F. Schneider

1365-Pos Board B316
CORRELATION BETWEEN FKBP12/12.6 BOUND TO RYRS, CHANNEL OPENING TO MAXIMAL OR SUBMAXIMAL CONDUCTANCE LEVELS AND MYOPATHY. Gregory Steele, Philip G. Board, Nicole A. Beard, **Angela F. Dulhunty**

Cardiac, Smooth, and Skeletal Muscle Electrophysiology II (Boards B317-B332)

1366-Pos Board B317
A COMPARISON OF ACUTELY ISOLATED HUMAN VENTRICULAR MYOCYTES WITH STEM CELL DERIVED CARDIOCYTES. Aaron D. Kaplan, Agnieszka Lis, Carlos Li, Lei Yang, Michael J. Morales, Glenna C.L. Bett, **Randall L. Rasmusson**

1367-Pos Board B318
AGING ALTERS CAMP SIGNALING AND MEMBRANE-DELIMITED REGULATION OF I_F IN SINOATRIAL MYOCYTES. **Emily J. Sharpe**, Eric D. Larson, Catherine Proenza

1368-Pos Board B319
REGULATION OF ICA DURING SIMULATED ACUTE ISCHEMIA IN DEVELOPING CARDIOMYOCYTES EXPOSED TO HYPOXIA AND LOW PH. **Jose C. Fernandez-Morales**, Xiao-Hua Zhang, Hua Wei, Lars Cleemann, Martin Morad

1369-Pos Board B320
NON-LINEAR REDUCTION OF ION CURRENTS IN CULTURED CARDIAC MYOCYTES: CORRELATION WITH A LOSS OF T-TUBULES? Tanya Zeina, Reuben T. Mathew, Erica Freund, Brian K. Panama, Matthew Betzenhauser, Jacqueline A. Treat, **Jonathan M. Cordeiro**

1370-Pos Board B321
T-TUBULES IN MYOCYTES OF INTACT DOG LEFT AND RIGHT ATRIA. Gary L. Aistrup, Stephen Supple, Caleb Frank, Jasleen Singh, Shannon Tai, Laura Chicos, Anne Zhao, William Marszalec, Rishi Arora, **Andrew Wasserstrom**

1371-Pos Board B322
CDO DEFICIENT MICE DISPLAY CARDIOMYOPATHY WITH ALTERATIONS IN CONNEXINS. **Hyun-ji Kim**, Myong-Ho Jeong, Young-Eun Leem, Jong-Sun Kang, Hana Cho

1372-Pos Board B323
LOSS OF PI3K-GAMMA SCAFFOLD FUNCTION CAUSES SEVERE ELECTRICAL REMODELING IN MICE VENTRICULAR MYOCYTES. **Riccardo Rizzetto**, Alexandra Jr Zahradnikova, Yueyi Wang, Alessandra Ghigo, Rodolphe Fischmeister, Emilio Hirsch, Jean-Pierre Benitah, Ana M. Gomez

1373-Pos Board B324
MASS SPECTROMETRY-BASED ANALYSIS OF THE PHOSPHO-PROTEOME FOR CARDIAC DYSSYNCHRONY AND RESYNCHRONIZATION THERAPY. **Jonathan A. Kirk**, Ronald J. Holewinski, Vidya Venkatraman, Eric Grote, David A. Kass, Jennifer E. Van Eyk

1374-Pos Board B325
MODULATION OF ACTION POTENTIAL ALTERNANS BY IKS IN MYOCARDIAL INFARCTION. Bum-Rak Choi, **Tae Yun Kim**, Mayara Grizotte-Lake, Jean Daley, Lorraine Schofield, Kamana Bist, Joseph Yammine, Yukiko Kunitomo, Yichun Lu, Xuwen Peng, Zhilin Qu, Gideon Koren

1375-Pos Board B326
A GUINEA PIG MODEL FOR HEART FAILURE-ASSOCIATED SUDDEN CARDIAC DEATH. **Ting Liu**, Deeptankar Demazumder, Brian O'Rourke

1376-Pos Board B327
IRON OVERLOAD PROMOTES ARRHYTHMIAS VIA ROS PRODUCTION AND MITOCHONDRIAL MEMBRANE POTENTIAL DEPOLARIZATION. **Richard Gordan**, Nadezhda Fefelova, Judith Gwathmey, Lai-Hua Xie

1377-Pos Board B328
FRET MEASUREMENTS OF CAMP DYNAMICS IN HL1 CELLS SUPPORT THE KEY ROLE OF CONSTITUTIVE AC ACTIVITY IN CARDIAC PACEMAKING. **Evgeny Kobrinsky**, Kirill V. Tarasov, Yelena S. Tarasova, Victor Maltsev, Steven J. Sollott, Edward G. Lakatta

1378-Pos Board B329
ABNORMALITIES IN TRANSMURAL VENTRICULAR ELECTROPHYSIOLOGY IN A HETEROZYGOUS SCN5A KNOCKOUT MOUSE MODEL REVEALED BY TWO-PHOTON MICROSCOPY. **Allen Kelly**, Tomas O. Stølen, Karin Solvang-Garten, Flavien Charpentier, Ulrik Wisløff, Godfrey L. Smith

1379-Pos Board B330
FEATURES OF OPTICAL MAPPING IN BLUE-GREEN AND NIR LIGHTS IN RABBIT HEART. **Rūta Vosyliūtė**, Regina Mačianskienė, Irma Martišienė, Antanas Navalinskas, Rimantas Treinys, Birutė Vaidelytė, Jonas Jurevičius

1380-Pos Board B331
COMPREHENSIVE ANALYSIS OF BEHAVIORAL VARIABILITY IN REAL AND SIMULATED POPULATIONS OF RABBIT LEFT VENTRICULAR CARDIOMYOCYTES. **Ryan A. Devenyi**, Victor Z. Rodriguez, Maria P. Hortigon-Vinagre, Godfrey L. Smith, Eric A. Sobie

1381-Pos Board B332
APPLICATION OF THE RIMARC ALGORITHM TO A LARGE DATA SET OF ACTION POTENTIALS AND CLINICAL PARAMETERS FOR RISK PREDICTION OF ATRIAL FIBRILLATION. **Ursula Ravens**, Deniz Katircioglu-Öztürk, Erich Wettwer, Claire Poulet, Simone Loose, Michael Knaut, Emre Oto, Ali Oto, H. Altay Güvenir

Voltage-gated K Channels II (Boards B333-B363)

1382-Pos Board B333
EFFECT OF AMITRIPTYLINE IN KV7.1/MINK CHANNEL. **Kathya Villatoro**, Sanchez-Chapula Jose Antonio, Tania Ferrer

1383-Pos Board B334
POLYUNSATURATED FATTY ACID ANALOGUES ACT ANTI-ARRHYTHMIC ON THE CARDIAC IKS CHANNEL. **Sara I. Liin**, Malin Silverå Ejneby, Rene Barro-Soria, Johan E. Larsson, Frida Starck Härlin, Bo Hjorth Bentzen, Teija Parkkari, Nicole Schmitt, H. Peter Larsson, Fredrik Elinder

1384-Pos Board B335
INTRACELLULAR CALCIUM ALTERS IKS AMPLITUDE AND KINETICS IN RABBIT MYOCYTES. **Daniel C. Bartos**, Stefano Morotti, Kenneth S. Ginsburg, Eleonora Grandi, Donald M. Bers

1385-Pos Board B336
BUILDING 3-D MODELS OF THE FULL-LENGTH IKS CNANNEL USING COMPUTATIONAL TECHNIQUES. **Yu Xu**, Mei Zhang, Min Jiang, Gea-Ny Tseng

1386-Pos Board B337
KCNE3 STABILIZES THE VOLTAGE SENSOR S4 OF KCNQ1 CHANNEL, KCNE1 UNCOUPLES S4 AND THE GATE. **Rene Barro-Soria**, Gary Peng, Kevin J. Sampson, Robert S. Kass, H. Peter Larsson

1387-Pos Board B338 Education Travel Awardee
PHOSPHORYLATION OF KV7 CHANNELS REGULATES THEIR PIP2 SENSITIVITY. **Fatma Asli Erdem**, Isabella Salzer, Wei-Qiang Chen, Gert Lubec, Mark S. Shapiro, Stefan Boehm, Jae-Won Yang

1388-Pos Board B339
THE SUBFAMILY-SPECIFIC ASSEMBLY OF EAG AND ERG K^+ CHANNELS IS DETERMINED BY BOTH THE AMINO AND THE CARBOXYL RECOGNITION DOMAINS. Ting-Feng Lin, Hao-Han Wu, Chih-Yung Tang, **Chung-Jiuan Jeng**

1389-Pos Board B340
DIRECT PREFERENTIAL INTERACTIONS BETWEEN HERG1A AND HERG1B SUBUNITS: EVIDENCE FOR HERG1A-HERG1B DIMERS. **Beth A. McNally**, Matthew C. Trudeau

1390-Pos Board B341
HOMOLOGOUS DOMAINS MEDIATE DISTINCT GATING FUNCTIONS IN EAG VS. CYCLIC-NUCLEOTIDE GATED CHANNELS. **Yaxian Zhao**, Colin H. Peters, Peter C. Ruben, Gail A. Robertson

1391-Pos Board B342
AN EAG DOMAIN POLYPEPTIDE REGULATES THE DEACTIVATION KINETICS OF THE HERG 1A-3.1 SPLICE VARIANT LINKED TO SCHIZOPHRENIA. **Curtis D. Gallagher**, Matthew C. Trudeau

1392-Pos Board B343
EAG K^+ CHANNEL BINDING TO CAMKII: STRUCTURAL AND BIOCHEMICAL CHARACTERIZATION. **Artur F. Castro-Rodrigues**, Fátima Fonseca, Carol A. Harley, João H. Morais-Cabral

1393-Pos Board B344
EXAMINING THE ROLE OF DIRECT CAMP-BINDING VERSUS PKA-MEDIATED EFFECTS ON INTERACTIONS BETWEEN THE CARDIAC POTASSIUM CHANNEL α-SUBUNIT PROTEINS HERG AND KVLQT1. Yeon Joo Lee, Estelle Kim, **Louise E. Organ-Darling**

1394-Pos Board B345
THE SUBPROTEOME OF MITOBKCA FROM CARDIOMYOCYTES REVEALS NOVEL INSIGHTS INTO BK CHANNEL FUNCTION AND PATHOLOGY. **Jin Zhang**, Zhu Zhang, Ronghui Zhu, Stefani Enrico, Ligia Toro

1395-Pos Board B346
EFFECTS OF IK,ACH CHANNEL INHIBITOR TERTIAPIN-Q ON RIGHT ATRIAL PREPARATIONS FROM PATIENTS IN SINUS RHYTHM AND ATRIAL FIBRILLATION. Claire Poulet, **Sridharan Rajamani**, Ursula Ravens, Luiz Belardinelli

1396-Pos Board B347
MODULATION OF PANCREATIC ISLET ELECTROPHYSIOLOGY AND INSULIN RELEASE BY POTASSIUM CHANNEL SUBUNIT KVBETA2. **Peter Kilfoil**, Oleg A. Barski, Aruni Bhatnagar

1397-Pos Board B348
PHARMACOLOGICAL CONSEQUENCES OF PKC INHIBITION ON KV1.5+KVBETA1.3 CHANNELS. **Alicia de la Cruz**, Alvaro Macias, Angela Prieto, Diego A. Peraza, Michael M. Tamkun, Teresa Gonzalez, Carmen Valenzuela

1398-Pos Board B349
INTERSUBUNIT INTERACTIONS CONTROL KIR CHANNEL INACTIVATION. **William F. Borschel**, Shizhen Wang, Colin G. Nichols

1399-Pos Board B350
INHIBITION OF HSP70 ENHANCES A-TYPE KV4 CURRENT BY REDUCING DEGRADATION OF AUXILIARY KCHP4A. **Jingheng Zhou**, Yiquan Tang, Yanxin Lu, KeWei Wang

1400-Pos Board B351
DYNAMIC SUBUNIT STOICHIOMETRY OF KV4.3-KCHIP4A CHANNEL COMPLEXES VISUALIZED BY SINGLE-MOLECULE SUBUNIT COUNTING. Jingheng Zhou, Yiquan Tang, Liangyi Chen, Zhuo Huang, **KeWei Wang**

1401-Pos Board B352
THE N-TERMINAL EXTENSION OF KCHIP3 IS RESPONSIBLE FOR KCHIP3-CALMODULIN COMPLEX FORMATION. Walter G. Gonzalez, **Andres S. Arango**, Jaroslava Miksovska

1402-Pos Board B353
EXPLORING MOLECULAR MECHANISMS OF THE FUNCTIONAL INTERACTION BETWEEN KV1.3 AND NAV BETA1. **Tomoya Kubota**, Ana M. Correa, Francisco Bezanilla

1403-Pos Board B354
THE EFFECTS OF AUXILIARY SUBUNITS ON KV2.1 PHARMACOLOGY. Alissa J. Becerril, Autoosa Salari, Benjamin S. Vega, **Mirela Milescu**

1404-Pos Board B355
CHARACTERIZATION OF BK CHANNELS CLONED FROM MOUSE SINOATRIAL NODE CELLS. **Michael H. Lai**, Joshua P. Whitt, Andrea L. Meredith

1405-Pos Board B356
REGULATION OF BK CURRENTS BY THE β2 SUBUNIT IN MOUSE SUPRACHIASMATIC NUCLEUS. **Joshua P. Whitt**, Andrea L. Meredith

1406-Pos Board B357
DIRECT MODULATION OF CALCIUM- AND VOLTAGE-GATED POTASSIUM CHANNELS OF LARGE CONDUCTANCE BY LEUKOTRIENES. **Anna N. Bukiya**, Jacob McMillan, Jianxi Liu, Bangalore Shivakumar, Abby L. Parrill, Alex M. Dopico

1407-Pos Board B358
ABLATION OF BK CHANNELS IMPAIRS MITOCHONDRIA AND AFFECTS AGING. **Shubha Gururaja Rao**, Kajol Shah, Gurjaap Singh, Harpreet Singh

1408-Pos Board B359
MOLECULAR BASIS OF SLO CHANNEL(S) FUNCTION IN SPERM REVEALED BY HUMAN GENETICS. **Steven A. Mansell**, Sarah Martins da Silva, Melissa Miller, Christopher LR Barratt, Polina V. Lishko

1409-Pos Board B360
DEVELOPMENT OF A MODEL FOR EXCITABILITY STUDIES USING XENOPUS OOCYTES. **Aaron Corbin**, Sayeed M. Mossadeq, Carlos A. Villalba-Galea

1410-Pos Board B361
LOCALIZATION OF THE *P. FALCIPARUM* K^+ CHANNELS (PFKCH1 AND 2) AND FUNCTIONAL EXPRESSION IN YEAST. Karen Molbaek, Matias Maritn, Peter Ellekvist, Peter Ellekvist, Peter S. Poulsen, Per A. Pedersen, **Dan A. Klaerke**

1411-Pos Board B362
SEVOFLURANE POTENTIATES KV CHANNELS BY INHIBITING A LATE NON-CONDUCTING STATE: A PLAUSIBLE MECHANISM OF GENERAL ANESTHETIC ACTION IMPLICATING THE SELECTIVITY FILTER. **Shelly T. Jones**, Juliana Hosoume, Leticia Stock, Caio Souza, Werner Treptow, Manuel Covarrubias

1412-Pos Board B363
GβΓ SUBUNITS MODULATION OF KV7.4 CHANNELS EXPRESSED IN HEK293 CELLS AT THE SINGLE CHANNEL LEVEL. **Oleksandr Povstyan**, Jennifer B. Stott, Iain A. Greenwood

TRP Channels II (Boards B364-B379)

1413-Pos Board B364
FUNCTIONAL EXPRESSION OF TRPC6 AND TRPV4 CHANNELS IN MOUSE SKELETAL MUSCLE FIBERS. **Yaxin Zhang**, Bo Soelter, Heinrich Brinkmeier

1414-Pos Board B365
HETEROMERIC TRPC3 WITH TRPC1 FORMED VIA ITS ANKYRIN REPEATS REGULATES THE RESTING CYTOSOLIC CA^{2+} LEVELS IN SKELETAL MUSCLE. Jin Seok Woo, **Keon Jin Lee**, Mei Huang, Chung-Hyun Cho, Eun Hui Lee

1415-Pos Board B366
IDENTIFICATION OF AN ESSENTIAL STRUCTURAL ELEMENT OF LIPID GATING MECHANISM IN THE TRANSIENT RECEPTOR POTENTIAL CANONICAL CHANNEL TYPE 3 (TRPC3). **Barbora Svobodova**, Michaela Lichtenegger, Toma Glasnov, Thomas Stockner, Dieter Platzer, Michael Poteser, Klaus Groschner

1416-Pos Board B367
CA2+ AND CALMODULIN REGULATION IN RECEPTOR-OPERATED CATION CURRENTS OF TRPC6 CHANNELS. **Masayuki X. Mori**, Kyohei Itsuki, Mitsuru Hirano, Hideharu Hase, Ryuji Inoue, Yasuo Mori

1417-Pos Board B368
AN ALTERNATIVE ION PERMEATION PATHWAY IN THE TRPM3α1 ISOFORM? **Katharina Held**, Annelies Janssens, Stephan Philipp, Thomas Voets, Joris Vriens

1418-Pos Board B369
REGULATION OF THE TRPM3 CHANNEL IN PLANAR LIPID BILAYERS. **Lusine Demirkhanyan**, Kunitoshi Uchida, Eleonora Zakharian

1419-Pos Board B370
BIOPHYSICAL PROPERTIES OF THE ALTERNATIVE ION PERMEATION PORE IN TRPM3. Katharina Held, Thomas Voets, **Joris Vriens**

1420-Pos Board B371
FUNCTIONAL ANALYSIS OF THE THERMOSENSOR TRPM3 IN INTACT SENSORY FIBERS USING THE SKIN-NERVE ASSAY. **Ine Vandewauw**, Joris Vriens, Andrei Segal, Katharina Zimmermann, Thomas Voets

1421-Pos Board B372
PHOSPHOINOSITIDES AS CO-FACTORS FOR THE ION CHANNEL TRPM3. **Doreen Badheka**, Istvan Borbiro, Tibor Rohacs

1422-Pos Board B373
CHEMICAL ACTIVATION OF ENDOGENOUS AND RECOMBINANT TRPM4 CHANNELS. **Michael G. Leitner**, Niklas Michel, Marc Behrendt, Marlen Dierich, Sandeep Dembla, Maik Konrad, Johannes Oberwinkler, Dominik Oliver

1423-Pos Board B374
THE PLASMA MEMBRANE TRPM8 PLAYS A PROTECTIVE ROLE AGAINST PROSTATE CANCER PROGRESSION; *TRPM8* GENE AS A DOWNSTREAM TARGET OF P53 TUMOR-SUPPRESSOR. **Swapna Asuthkar**, Kiran Kumar Velpula, Pia Elustondo, Eleonora Zakharian

1424-Pos Board B375
THE ROLE OF PLCδ4 IN THE ACTIVITY OF TRPM8 EXPRESSING SENSORY NEURONS. **Yevgen Yudin**, Tibor Rohacs

1425-Pos Board B376
A NOVEL CLASS OF TRANSIENT RECEPTOR POTENTIAL MELASTATIN 8 AGONISTS. **Balazs I. Toth**, Annelies Janssens, Silvia Pinto, Thomas Voets

1426-Pos Board B377
THE N-TERMINAL CLEAVAGE OF PKD1L3 AND ITS EFFECT ON THE FUNCTION OF PKD1L3/TRPP3 RECEPTOR/ION CHANNEL COMPLEX. Parul Kashyap, Mahmud Arif Pavel, **Yong Yu**

1427-Pos Board B378
EFFECTS OF LIPOPOLYSACCHARIDE ON SENSORY TRP CHANNELS OF DORSAL ROOT GANGLION SENSORY NEURONS. **Brett Boonen**, Yeranddy Aguiar Alpizar, Thomas Voets, Karel Talavera Pérez

1428-Pos Board B379
THE BRITE SIDE OF TRPV1: NOVEL ROLE IN BROWNING OF WHITE ADIPOCYTES. **Padmamalini Baskaran**, Vivek Krishnan, Kevin Fettel, Baskaran Thyagarajan

Ligand-gated Channels I (Boards B380-B409)

1429-Pos Board B380
PROTONS POTENTIATE GLUN1/GLUN3A GLYCINERGIC NMDA RECEPTOR CURRENTS. **Kirstie A. Cummings**, Gabriela K. Popescu

1430-Pos Board B381
INVESTIGATIONS OF THE STRUCTURAL MECHANISM OF MODULATION OF THE NMDA RECEPTOR. **Rita E. Sirrieh**, David M. MacLean, Vasanthi Jayaraman

1431-Pos Board B382
EFFECTS OF EXTERNAL AND INTERNAL CA^{2+} ON UNITARY NMDA RECEPTOR PROPERTIES. **Gary J. Iacobucci**, Bruce A. Maki, Gabriela K. Popescu

1432-Pos Board B383
NMDA RECEPTOR SMFRET STUDIES REVEAL ROLE OF DYNAMICS OF THE AGONIST-BINDING DOMAIN IN MEDIATING AGONIST EFFICACY. **Drew M. Dolino**, David R. Cooper, Swarna S. Ramaswamy, Henriette Jaurich, Christy F. Landes, Vasanthi Jayaraman

1433-Pos Board B384
REDUCED CURVATURE OF LIGAND-BINDING DOMAIN FREE ENERGY SURFACE UNDERLIES PARTIAL AGONISM AT NMDA RECEPTORS. **Jian Dai**, Huan-Xiang Zhou

1434-Pos Board B385
MEASUREMENT OF NR1/NR2B NMDA RECEPTOR CURRENTS ON A MICROFLUIDIC BENCHTOP AUTOMATED ELECTROPHYSIOLOGY PLATFORM. Jeffrey Webber, Craig McKay, **James Costantin**, Peter Miu

1435-Pos Board B386
THE STRUCTURAL BASIS OF NEGATIVE COOPERATIVITY BETWEEN SUBUNITS OF THE NMDA RECEPTOR. **David M. MacLean**, Vasanthi Jayaraman

1436-Pos Board B387
SIMULATED CLOSING OF THE NMDA LIGAND-BINDING DOMAIN. **Timothy S. Carpenter**, Felice C. Lightstone

1437-Pos Board B388
EFFECT OF PHOSPHORYLATION ON STRUCTURE OF C-TERMINAL SEGMENT OF AMPA RECEPTOR. **Caitlin E. Nurik**, David R. Cooper, Swarna S. Ramaswamy, Vasanthi Jayaraman

1438-Pos Board B389
CHARACTERIZATION OF A "HOTSPOT" IN THE AMPA RECEPTOR ACTIVATION PATHWAY. **George B. Dawe**, Maria Musgaard, Mark R. Aurousseau, Philip C. Biggin, Derek Bowie

1439-Pos Board B390
DYNAMICS OF THE CYTOPLASMIC REGION OF AN AMPA-SUBTYPE GLUTAMATE RECEPTOR REVEALED BY STATE DEPENDENT FRET. **Ljudmila Katchan**, Linda G. Zachariassen, Anders S. Kristensen, Andrew J R Plested

1440-Pos Board B391
PARTIAL AGONIST BINDING REVEALS A UNIQUE ARRANGEMENT OF AMPA LBDS. **Hector P. Salazar Garcia**, Clarissa Ebli, Miriam Chebli, Andrew Plested

1441-Pos Board B392
STRUCTURAL MECHANISM OF GLUTAMATE RECEPTOR ACTIVATION AND DESENSITIZATION. **Joel R. Meyerson**, Janesh Kumar, Sagar Chittori, Prashant Rao, Jason Pierson, Alberto Bartesaghi, Mark L. Mayer, Sriram Subramaniam

1442-Pos Board B393
LONG TIMESCALE SIMULATIONS OF LIGAND BINDING IN GLUTAMATE RECEPTORS. **Alvin Yu**, Albert Lau

1443-Pos Board B394
CAN ACTIVATION AND DESENSITIZATION PROPERTIES OF IGLURS BE PREDICTED AND UNDERSTOOD BY STUDYING THE LBD DIMER DYNAMICS? **Maria Musgaard**, Bryan Daniels, George B. Dawe, Mark Aurousseau, Derek Bowie, Philip C. Biggin

1444-Pos Board B395
FREE ENERGY LANDSCAPES FOR A KAINATE RECEPTOR LIGAND-BINDING DOMAIN. **Tyler J. Wied**, Albert Y. Lau

1445-Pos Board B396
FUNCTIONAL COUPLING BETWEEN THE FINGER AND THUMB DOMAINS OF ASIC1A. **Aram J. Krauson**, Marcelo D. Carattino

1446-Pos Board B397
GATING MECHANISM AND MOVEMENTS IN ACID SENSING ION CHANNEL 1A. **Swarna S. Ramaswamy**, David MacLean, Hugo Sanabria, Vasanthi Jayaraman

1447-Pos Board B398
CONTROLLED ACTIVATION OF HETEROMERIC P2X RECEPTORS BY ATP AND MAGNESIUM. **Emily Harnish**

1448-Pos Board B399
QUANTITATIVE MEASURE OF CA^{2+} CURRENT AND PERMEABILITY IN ATP-GATED P2X7 RECEPTORS. **Xin Liang**, Damien S.K. Samways, Terrance M. Egan

1449-Pos Board B400
ION ACCUMULATION AND DEPLETION IN PATCH CLAMP EXPERIMENTS. **Gilman E. S. Toombes**, Mufeng Li, Shai D. Silberberg, Kenton J. Swartz

1450-Pos Board B401 **EDUCATION TRAVEL AWARDEE**
HEXADECANOL REVERSES ETHANOL INDUCED TADPOLE ANESTHESIA AND RAISES CRITICAL TEMPERATURES IN ISOLATED PLASMA MEMBRANE VESICLES. **Ellyn J. Gray**, Ann L. Miller, Benjamin B. Machta, Sarah L. Veatch

1451-Pos Board B402
IL-4 TYPE 1 RECEPTOR SIGNALING UP-REGULATES *KCNN4* EXPRESSION, AND INCREASES THE $K_{CA}3.1$ CURRENT AND ITS CONTRIBUTION TO MIGRATION OF ALTERNATIVE-ACTIVATED MICROGLIA. Lyanne Schlichter, **Roger Ferreira**, Starlee Lively

1452-Pos Board B403
EQUILIBRIUM ION SELECTIVITY OF HUMAN TPC2 STUDIED USING A PLASMA MEMBRANE-TARGETED HUMAN TPC2 AND SPERMINE BLOCK. **Andy K. M. Lam**, Antony Galione

1453-Pos Board B404
MECHANISMS OF ACTIVATION OF SLO2.1 CHANNELS BY INTRACELLULAR NA^{+}. **Steven J. Thomson**, Michael C. Sanguinetti

1454-Pos Board B405
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF TMEM16A. **Andrea Bruggemann**, Markus Rapedius, Tom Götze, Claudia Haarmann, Ilka Rinke, Marius Vogel, Timo Stengel, Johannes Stiehler, Michael George, Niels Fertig, Torsten Ertongur-Fauth

1455-Pos Board B406
PHOTODYNAMIC MODIFICATION OF SEA URCHIN SPHCN CHANNEL. **Vinay Kumar Idikuda**, Weihua Gao, Zhuocheng (Justin) Su, Lei Zhou

1456-Pos Board B407
STUDYING THE INFLUENCE OF THE SUBUNIT ARRANGEMENT ON THE FUNCTION OF HETEROTETRAMERIC OLFACTORY CNG CHANNELS.
Jana Schirmeyer, Vasilica Nache, Gunter Ehrlich, Thomas Zimmer, Klaus Benndorf

1457-Pos Board B408
EFFECT OF LIGAND BINDING TO THE B1B SUBUNIT OF OLFACTORY CNG CHANNELS. **Vasilica Nache**, Nisa Wongsamitkul, Thomas Zimmer, Klaus Benndorf

1458-Pos Board B409 **EDUCATION TRAVEL AWARDEE**
EXPLORATIONS OF LIPID EFFECTS IN CYCLIC NUCLEOTIDE-GATED ION CHANNELS USING A NANODISC PLATFORM. **Alexis Jaramillo Cartagena**, Crina Nimigean, Julia Kowal, Henning Stahlberg

Cardiac Muscle Mechanics and Structure I (Boards B410-B430)

1459-Pos Board B410
SELECTIVE ALPHA7 NICOTINIC RECEPTOR AGONIST INCREASES CARDIAC FUNCTION IN ISOLATED MOUSE HEARTS BY A NON-NICOTINIC MECHANISM.
Cyrus G. Takahashi, Pooja Jagadish, Ashwin Jagadish, John P. Toscano, Nazareno Paolocci, Donald B. Hoover

1460-Pos Board B411
LIFE-LONG TREATMENT WITH LATE SODIUM CURRENT BLOCKER REDUCES MYOCARDIAL DYSFUNCTION AND REMODELING IN A MOUSE MODEL OF HYPERTROPHIC CARDIOMYOPATHY. **Francesca Gentile**, Raffaele Coppini, Cecilia Ferrantini, Luca Mazzoni, Manuel J Pioner, Benedetta Tosi, Beatrice Scellini, Alessandro Mugelli, Elisabetta Cerbai, Jill Tardif, Chiara Tesi, Corrado Poggesi

1461-Pos Board B412
STAGE-DEPENDENT BENEFITS AND RISKS OF PIMOBENDAN IN GENETIC DILATED CARDIOMYOPATHY MICE WITH PROGRESSIVE HEART FAILURE. **Miki Nonaka**, Takashi Murayama, Nagomi Kurebyashi, Lei Li, Yuan-Yuan Wang, Sachio Morimoto

1462-Pos Board B413
SAXAGLIPTIN PRESERVES CARDIOMYOCYTE FUNCTION AND MORPHOLOGY IN AORTIC-BANDED MINI-SWINE.
Jessica A. Hiemstra, Dong I. Lee, Ann K. Gibson, Melissa S. Cobb, Craig A. Emter, Timothy L. Domeier

1463-Pos Board B414
DIRECT CARDIOTONIC ACTION OF QUERCETIN, A PLANT FLAVONOID, THROUGH MECHANISM INDEPENDENT OF ITS ANTI-OXIDATIVE ACTION. **Kengo Hayamizu**, Miki Nonaka, Toshihiro Noma, Toshiyuki Sasaguri, Sachio Morimoto

1464-Pos Board B415
DCM MUTATION *ACTC*E361G CAUSES UNCOUPLING OF MYOFIBRIL SENSITIVITY FROM TNI PHOSPHORYLATION THAT CAN BE REVERSED BY EPIGALLOCATECHIN-3-GALLATE. **Petr G. Vikhorev**, Weihua Song, Ross Wilkinson, O'Neal Copeland, Michael A. Ferenczi, Steven B. Marston

1465-Pos Board B416
OBSCURIN MUTATIONS CAUSE HAPLOINSUFFICIENCY AND ARE COMMON IN PATIENTS WITH FAMILIAL DILATED CARDIOMYOPATHY (FDCM). **Steven Marston**, Ralph Knoll, Cristobal dos Remedios, Alex Munster, O'neal Copeland, Cecile Montgiraud

1466-Pos Board B417
DIFFERENTIAL INVOLVEMENT OF VARIOUS SOURCES OF REACTIVE OXYGEN SPECIES IN THYROXIN-INDUCED HEMODYNAMIC CHANGES AND CONTRACTILE DYSFUNCTION OF THE HEART AND DIAPHRAGM MUSCLES. **Mohammad T. Elnakish**, Eric J. Schultz, Rachel L. Gearinger, Nancy S. Saad, Neha Rastogi, Amany A. E. Ahmed, Peter J. Mohler, Paul M.L. Janssen

1467-Pos Board B418
MECHANICAL EFFECTS OF LATE NA-CURRENT BLOCKERS IN HUMAN HYPERTROPHIC CARDIOMYOPATHY MYOCARDIUM. **Cecilia Ferrantini**, Raffaele Coppini, Manuel J. Pioner, Gentile Francesca, Tosi Benedetta, Luca Mazzoni, Luiz Belardinelli, Chiara Tesi, Elisabetta Cerbai, Alessandro Mugelli, Corrado Poggesi

1468-Pos Board B419
MYOCARDIAL DYSFUNCTION IN HYPERTROPHIC CARDIOMYOPATHY: PRIMARY EFFECTS OF SARCOMERIC MUTATIONS VERSUS SECONDARY EC-COUPLING REMODELLING. **Raffaele Coppini**, Cecilia Ferrantini, Francesca Gentile, Luca Mazzoni, Benedetta Tosi, Manuel J. Pioner, Beatrice Scellini, Nicoletta Piroddi, Jil C. Tardiff, Chiara Tesi, Elisabetta Cerbai, Corrado Poggesi

1469-Pos Board B420
R21C MUTATION IN CARDIAC TROPONIN I IMPOSES DIFFERENCES IN THE DEGREE OF ORDER AND KINETICS OF MYOSIN CROSS-BRIDGES OF LEFT AND RIGHT VENTRICLES. **Divya Duggal**, Janhavi Nagwekar, Ryan Rich, Sangram Raut, Rafal Fudala, Hriday Das, Zygmunt Gryczynski, Ignacy Gryczynski, Julian Borejdo

1470-Pos Board B421
SPATIAL DISTRIBUTION OF ACTIN AND MECHANICAL CYCLE OF MYOSIN ARE DIFFERENT IN RIGHT AND LEFT VENTRICLES OF HEALTHY MOUSE HEARTS. **Janhavi Nagwekar**, Divya Duggal, Ryan Rich, Sangram Raut, Rafal Fudala, Ignacy Gryczynski, Zygmunt Gryczynski, Julian Borejdo

1471-Pos Board B422
UPREGULATION OF α1A-SUBTYPE ADRENERGIC SIGNALING IS BENEFICIAL IN FAILING RIGHT VENTRICLE (RV).
Patrick M. Cowley, Guanying Wang, Audrey N. Chang, David H. Lovett, James T. Stull, Paul C. Simpson, Anthony J. Baker

1472-Pos Board B423
WORKLOOP CONTRACTIONS IN ISOLATED CARDIAC MYOCYTES REFLECT IN VIVO PRESSURE-VOLUME DYSFUNCTION IN RAT RIGHT HEART FAILURE.
Ewan D. Fowler, Mark J. Drinkhill, Rob C. Wust, Michiel Helmes, Ger J.M. Stienen, Derek S. Steele, Ed White

1473-Pos Board B424
USING OPTICAL COHERENCE TOMOGRAPHY TO MEASURE DYNAMIC CHANGES IN THE GEOMETRY OF ISOLATED CARDIAC TRABECULAE DURING A TWITCH. **Ming L. Cheuk**, Alexander J. Anderson, June-Chiew Han, Bryan P. Ruddy, Marie-Louise Ward, Denis S. Loiselle, Poul M. F. Nielsen, Andrew J. Taberner

1474-Pos Board B425
SYNCHRONIZATION MODEL OF SARCOMERES IN CONTRACTING CARDIOMYOCYTES. **Virginijus Barzda**, Nicole Prent, Masood Samim, Sara Wegener, Richard Cisek

1475-Pos Board B426
THE POWER OUTPUT OF INTACT, ISOLATED RAT CARDIOMYOCYTES. **Michiel Helmes**, Aref Najafi, Jolanda van der Velden

1476-Pos Board B427
STORAGE USING BDM OR BLEBBISTATIN PRESERVES FUNCTIONAL MEASURES OF UNLOADED CARDIOMYOCYTES. **Charles S. Chung**, Charles Mechas, Kenneth S. Campbell

1477-Pos Board B428
RAPID, HIGH EFFICIENCE PURIFICATION OF MYOFILAMENT PROTEINS USING TOBACCO ETCH VIRUS PROTEASE. **Mengjie Zhang**, Jody L. Martin, Pieter P. De Tombe, Ramzi J. Khairallah

1478-Pos Board B429
STRUCTURAL EFFECTS OF CARDIAC TROPONIN T R92L AND TROPOMYOSIN D230N MUTANTS IN THE CARDIAC THIN FILAMENT. **Mark T. McConnell**, Lauren Grinspan, Jil Tardiff

1479-Pos Board B430
CONTRACTILE PROPERTIES OF MYOFIBRILS FROM HIPSC-DERIVED CARDIOMYOCYTES OF PATIENTS WITH DUCHENNE MUSCULAR DYSTROPHY. **Josè Manuel Pioner**, Alice Ward Racca, Xuan Guan, Lil Pabon, Mark Y. Jeong, Christian I. Childers, Jesse Macadangdang, Veronica Muskheli, Corrado Poggesi, Deok- Ho Kim, David L. Mack, Martin K. Childers, Charles E. Murry, Michael Regnier

Smooth Muscle Mechanics, Structure, and Regulation (Boards B431-B436)

1480-Pos Board B431
AFM REVEALS AGE-DEPENDENT MICROMECHANICAL DEGRADATION OF CARDIOPULMONARY TISSUES IN A MOUSE MODEL OF MARFAN SYNDROME. **Jia-Jye Lee**, Satish Rao, Josephine Galatioto, Francesco Ramirez, Kevin D. Costa

1481-Pos Board B432
BRONCHIAL BUT NOT TRACHEAL SMOOTH MUSCLE IS HYPERCONTRACTILE IN AN EQUINE MODEL OF SEVERE ASTHMA. **Oleg S. Matusovsky**, Linda Kachmar, Gijs Ipgma, Nedjma Zitouni, Genevieve Bates, Jean-Pierre Lavoie, Anne-Marie Lauzon

1482-Pos Board B433
REDEFINING THE LATCH-STATE IN HUMAN AIRWAY SMOOTH MUSCLE. **Gijs Ijpma**, Linda Kachmar, Anne-Marie Lauzon

1483-Pos Board B434
KINETIC CHARACTERIZATION OF STABILIZED SMOOTH MUSCLE MYOSIN FILAMENTS. **Brian D. Haldeman**, Christine Cremo, Josh Baker

1484-Pos Board B435
VARYING THE NUMBER OF HEADS IN PHOSPHORYLATED SMOOTH MUSCLE MYOSIN FILAMENTS PROVIDES EVIDENCE FOR ATTACHMENT LIMITED KINETICS OF IN VITRO ACTIN-SLIDING VELOCITIES. **Richard Brizendine**, Diego Alcala, Brian Haldeman, Kevin Facemyer, Josh Baker, Christine Cremo

1485-Pos Board B436
THE STRUCTURE OF THE ACTIN-SMOOTH MUSCLE MYOSIN II COMPLEX IN THE RIGOR STATE. **Zhong Huang**

Actin Structure, Dynamics, and Associated Proteins (Boards B437-B454)

1486-Pos Board B437
ROLE OF H2 CALPONIN IN MYOBLAST DIFFERENTIATION, FUSION AND MYOGENESIS. **Bin Wei**, J.-P. Jin

1487-Pos Board B438 CPOW MID-CAREER TRAVEL AWARDEE
PALLADIN NUCLEATES ACTIN ASSEMBLY AND REGULATES CYTOSKELETON ARCHITECTURE. Ritu Gurung, Ravi Vattepu, Rahul Yadav, **Moriah R. Beck**

1488-Pos Board B439
UNRAVELING THE MYSTERY OF ATP HYDROLYSIS IN ACTIN FILAMENTS. **Martin McCullagh**, Marissa G. Saunders, Gregory A. Voth

1489-Pos Board B440
ACTIN TROPOMYOSIN ASSEMBLY INTERMEDIATES. **Peyman Obeidy**, Thomas L. Sobey, Elvis Pandzic, Philip R. Nicovich, Adelle Coster, Peter Gunning, Till Böcking

1490-Pos Board B441
TENSION AND CONSTRICTION OF THE CYTOKINETIC CONTRACTILE RING DEPEND ON ANCHORING OF RING COMPONENTS TO THE PLASMA MEMBRANE. **Shuyuan Wang**, Ben O'Shaughnessy

1491-Pos Board B442
MICRORHEOLOGY OF IN-VITRO ACTO-MYOSIN NETWORKS IN STEADY STATE. **Adar Sonn-Segev**

1492-Pos Board B443
COUPLING ARP2/3 COMPLEX-MEDIATED ACTIN BRANCHING AND MEMBRANE DEFORMATION BY THE EXOCYST COMPONENT EXO70. **Wei Guo**

1493-Pos Board B444
COARSE-GRAINED SIMULATIONS REVEAL MECHANISMS OF FISSION YEAST CYTOKINESIS. **Lam T. Nguyen**, Matthew T. Swulius, Mithilesh Mishra, Grant J. Jensen

1494-Pos Board B445
ACTIN MACROMOLECULES AND BUNDLES IN CELL-SIZED CONFINEMENT: FROM COLLECTIVE BEHAVIOR TO EMERGING NETWORKS. Siddharth Deshpande, Zoe Swank, **Thomas Pfohl**

1495-Pos Board B446
F-ACTIN HAS SLOW DYNAMICS AND CONCERTED MOVEMENT AS INDICATED BY H/D EXCHANGE RATE MAPPING. Devanand Kowlessur, **Larry S. Tobacman**

1496-Pos Board B447
CHARACTERIZATION AND STABILIZATION OF FASCIN-BUNDLED ACTIN FILAMENTS TRANSPORTED BY HEAVY MEROMYOSIN. **Hideyo Takatsuki**, Alf Månsson

1497-Pos Board B448
CRYO-EM OF ONE STATE OF F-ACTIN YIELDS A NEW ATOMIC FILAMENT MODEL. Vitold E. Galkin, **Albina Orlova**, Gunnar Schroder, Edward H. Egelman

1498-Pos Board B449
MECHANISMS OF FRNK INHIBITION OF FAK IN VASCULAR SMOOTH MUSCLE CELLS. **Taylor J. Zak**, Allan Samarel, Seth Robia

1499-Pos Board B450
ALTERED STRUCTURAL STATE OF ACTIN FILAMENTS UPON MYOSIN II BINDING. **Elina Bengtsson**, Malin Persson, Saroj Kumar, Alf Månsson

1500-Pos Board B451
PHOSPHOMIMIC S3D COFILIN BINDS ACTIN FILAMENTS BUT DOES NOT SEVER THEM. **W. Austin Elam**, Hyeran Kang, Ewa Prochniewicz, Karina Nieves-Torres, David D. Thomas, Enrique M. De La Cruz

1501-Pos Board B452
PALLADIN'S IG4 MUTATION: EXPLORING THE LINK WITH PANCREATIC CANCER. **Stan Saiz**, Joseph Dille, Rahul Yadav, Moriah Beck

1502-Pos Board B453
DYNAMIC ACTOMYOSIN NETWORK MORPHOLOGY IN 3D MODEL OF CYTOKINETIC RING ASSEMBLY. **Tamara C. Bidone**, Haosu Tang, Dimitrios Vavylonis

1503-Pos Board B454
HUMAN TUMOR-ASSOCIATED FIBROBLASTS CAN SENSE THE TOPOGRAPHY OF THEIR ENVIRONMENT. **Mikheil Azatov**, Xiaoyu Sun, John Fourkas, Carol Otey, Arpita Upadhyaya

Myosins (Boards B455-B472)

1504-Pos Board B455
MACROMOLECULAR CROWDING INCREASES CROSS-BRIDGE PERFORMANCE VIA REDUCTION OF ADP AFFINITY TO ACTO-MYOSIN. Jinghua Ge, Sherry Bouriyaphon, **Yuri E. Nesmelov**

1505-Pos Board B456 **EDUCATION TRAVEL AWARDEE**
MACROMOLECULAR CROWDING MODULATES CROSS-BRIDGE PERFORMANCE. **Jinghua Ge**, Sherry D. Bouriyaphone, Yuri E. Nesmelov

1506-Pos Board B457
MUTATING THE SH1 HELIX REGION OF DICTYOSTELIUM MYOSIN II IMPAIRS MOTILE ACTIVITIES AND THERMAL STABILITY. **Kotomi Shibata**

1507-Pos Board B458
A MYOSIN II FRET-BASED BIOSENSOR EXPRESSED IN DICTYOSTELIUM. **Jared G. Matzke**, David D. Thomas, Karl J. Petersen, Joseph M. Muretta, Margaret A. Titus

1508-Pos Board B459
THE INHIBITED, INTERACTING-HEADS MOTIF CHARACTERIZES MYOSIN II FROM THE EARLIEST ANIMALS WITH MUSCLES. Guidenn Sulbarán, Ji Young Mun, Kyoung Hwan Lee, Lorenzo Alamo, Antonio Pinto, Osamu Sato, Mitsuo Ikebe, Xiong Liu, Edward D. Korn, Raúl Padrón, **Roger Craig**

1509-Pos Board B460
DETECTION OF ULTRAFAST MECHANICAL TRANSITIONS IN B-CARDIAC MYOSIN USING HIGH-SPEED OPTICAL TRAPPING. **Michael S. Woody**, Marco Capitanio, E. Michael Ostap, Yale E. Goldman

1510-Pos Board B461
CONVERTER MUTATION DISRUPTS LEVER ARM ROTATION IN MYOSIN V. Anja M. Swenson, Darshan V. Trivedi, **Christopher M. Yengo**

1511-Pos Board B462
MYOSIN STEPS SYMMETRICALLY ALONG ACTIN. **Jaime Ortega Arroyo**, Joanna Andrecka, Gabrielle de Wit, Yasuharu Takagi, James R. Sellers, Philipp Kukura

1512-Pos Board B463
MYOSIN-5 AND MYOSIN-6 DIFFERENTIALLY DETECT ACTIN FILAMENT AGE. Dennis Zimmermann, Alicja Janik, David Kovar, **Ronald Rock**

1513-Pos Board B464
ADAPTER PROTEINS ACTIVATE MYOSIN-VA DURING CARGO TRANSPORT. **M. Yusuf Ali**, Elena Krementsova, Maria Sckolnick, David M. Warshaw, Kathleen M. Trybus

1514-Pos Board B465
ACTIVATION OF DROSOPHILA MELANOGASTER MYOSIN-5 MOTOR FUNCTION BY CALCIUM AND CARGO-BINDING PROTEIN. **Huan-Hong Ji**, Hai-Man Zhang, Mei Shen, Xiang-dong Li

1515-Pos Board B466
14-3-3 PROTEINS TUNE NON-MUSCLE MYOSIN-II ASSEMBLY, PROVIDING A POSSIBLE BRIDGE BETWEEN CELL MECHANICS AND CANCER METASTASIS. **Hoku West-Foyle**, Jonathan Osborne, Douglas Robinson

1516-Pos Board B467
FILOPOD EXTENSION REQUIRES MYTH4-FERM MYOSIN MOTOR ACTIVITY. **Karl J. Petersen**, G.W. Gant Luxton, Margaret A. Titus

1517-Pos Board B468
MYOSIN 19 IS ANCHORED TO THE MITOCHONDRIA, AFFECTING ITS LOCALIZATION AND MORPHOLOGY. **Boris Shneyer**, Marko Usaj, Arnon Henn

1518-Pos Board B469
IN VIVO AND IN VITRO STUDIES OF MYOSIN-XXI DYNAMICS. **Constanze Helbig**, Christopher Batters, Beate Averbeck, Claudia Veigel

1519-Pos Board B470
THE R249Q AND R146N HYPERTROPHIC CARDIOMYOPATHY MYOSIN MUTATIONS DECREASE MUSCLE FORCE AND POWER GENERATION. **Kaylyn Bell**, William A. Kronert, Sanford I. Bernstein, Douglas M. Swank

1520-Pos Board B471
A DROSOPHILA MODEL OF MYOSIN-BASED INCLUSION BODY MYOPATHY TYPE 3: EFFECTS ON MUSCLE STRUCTURE, MUSCLE FUNCTION AND AGGREGATED PROTEIN PROFILES. Jennifer A. Suggs, Girish C. Melkani, Anju Melkani, Eric P. Ratliff, D Brian Foster, **Sanford I. Bernstein**

1521-Pos Board B472
FUNCTIONAL ANALYSIS OF FREEMAN-SHELDON SYNDROME CAUSING MUTATIONS ON EMBRYONIC MYOSIN. **Carlos Vera Velazquez**, Jonathan Walklate, Jonathan Deacon, Michael A. Geeves, Leslie A. Leinwand

Cell Mechanics, Mechanosensing, and Motility II (Boards B473-B490)

1522-Pos Board B473
COMPARISON OF STOCHASTIC SIMULATION METHODS IN MECHANOBIOLOGY. **Sarita Koride**, Sean X. Sun

1523-Pos Board B474
CELL MECHANO-SENSING VIA ACTOMYOSIN CONTRACTILITY. **Taeyoon Kim**

1524-Pos Board B475
MOLECULAR COUNTING IN TRACTION FORCE MICROSCOPY. **Rolf Harkes**, Hayri E. Balcioğlu, Erik HJ Danen, Thomas Schmidt

1525-Pos Board B476
THE LEVEL OF SUBSTRATE DEFORMATION AND NOT TRACTION FORCE REGULATES ADHESION-MEDIATED NEURONAL GROWTH CONE ADVANCE. **Ahmad I. M. Athamneh**, Alexander X. Cartagena-Rivera, Arvind Raman, Daniel M. Suter

1526-Pos Board B477
MALIGNANT MELANOMA CELLS ASSEMBLE A TUMOR BIOFILM THAT PROMOTES SURVIVAL AND RESISTANCE IN RESPONSE TO EXTERNAL STRESSES. **Anna Afasizheva**, Yorihisa Kotobuki, Heather Tillman, Wilfred Vieira, King Leung Fung, Emily Chen, Kandice Tanner

1527-Pos Board B478
PROBING CELLULAR MECHANO-SENSITIVITY USING BIOMEMBRANE-MIMICKING CELL SUBSTRATES OF ADJUSTABLE STIFFNESS. **Yu-Hung Lin**, Yifan Ge, Lena Lautscham, Wolfgang H. Goldmann, Ben Fabry, Christoph A. Naumann

1528-Pos Board B479
NEXT GENERATION MECHANOPHORES FOR UNRAVELING THE ROLE OF INTEGRIN TENSION IN FOCAL ADHESION ASSEMBLY. **Khalid Salaita**

1529-Pos Board B480
VISUALIZING THE INTERIOR ARCHITECTURE OF FOCAL ADHESIONS WITH HIGH-RESOLUTION TRACTION MAPS. **Masatoshi Morimatsu**, Armen H. Mekhdjian, Alice C. Chang, Steven J. Tan, Alexander R. Dunn

1530-Pos Board B481
FINITE ELEMENT MODELING OF CELL TRACTION. **Ghaidan Shamsan**, David J. Odde

1531-Pos Board B482
EFFECT OF SUBSTRATE STIFFNESS ON INTEGRIN-LIGAND BINDING STRENGTH. **Gawain Thomas**, Qi Wen

1532-Pos Board B483
ACTIVE ELASTIC DIMERS: CELLS MOVING ON RIGID TRACKS. **J. M. Schwarz**, J. H. Lopez, Moumita Das

1533-Pos Board B484
UNDERSTANDING THE ROLE OF SUBSTRATE ELASTICITY ON INTRACELLULAR STRESSES DURING CELL SPREADING. **Magdalena Stolarska**, Ahmad Zoubi, Aravind Rammohan

1534-Pos Board B485
MEASURING THREE-DIMENSIONAL TRACTION FORCE OF MESENCHYMAL STEM CELLS ON A TWO-DIMENSIONAL COMPLIANT SUBSTRATE BY THE FINITE ELEMENT METHOD. Hung-huei Lee, Hsuan Yang, Yu-chi Ai, **Keng-hui Lin**, Jia-yang Juang

1535-Pos Board B486
SUBSTRATE STIFFNESS REGULATES THE BEHAVIOR OF HUMAN MONOCYTE-DERIVED MACROPHAGES. Heather N. Hayenga, **Katrina Adlerz**, Helim Aranda-Espinoza

1536-Pos Board B487
THE EFFECT OF P-SELECTIN DIMERS ON NEUTROPHIL ROLLING ON ENDOTHELIUM. **Alex C. Szatmary**

1537-Pos Board B488
THREE-DIMENSIONAL TRACTION FORCES EXERTED BY FILOPODIA AND MEMBRANE PROTRUSIONS DRIVE NEUTROPHIL INVASION. **Yi-Ting Yeh**, Ricardo Serrano, Juan C. del Alamo, Juan C. Lasheras

1538-Pos Board B489
MULTICELLULAR REGULATION OF TENSIONAL HOMEOSTASIS. Elizabeth P. Canovic, Sze Nok Tam, Alicia Zollinger, Michael L. Smith, **Dimitrije Stamenovic**

1539-Pos Board B490
THREE-DIMENSIONAL FOURIER MONOLAYER STRESS MICROSCOPY. **Ricardo Serrano**, Aereas Aung, Shyni Varghese, Juan Carlos Del Alamo

Membrane Pumps, Transporters, and Exchangers II (Boards B491-B513)

1540-Pos Board B491
SINGLE MOLECULE IMAGING REVEALS THE FUNCTIONAL ROLE OF THE NA^+/H^+ EXCHANGER-3 OLIGOMERIZATION. **Victor Babich**, Komal Vadnagara, Gregory I. Mashanov, Francesca Di Sole

1541-Pos Board B492
THE NA^+/H^+ EXCHANGER NHE6 LINKS ENDOSOMAL PH TO AMYLOID PATHOLOGIES IN ALZHEIMER'S DISEASE. **Hari Prasad**, Nir Ben-Tal, Rajini Rao

1542-Pos Board B493
A NOVEL APPROACH TO ANALYZING BINDING DATA FROM NA^+ DRIVEN TRANSPORTERS: BEYOND NON-INTEGER HILL COEFFICIENTS. **Silvia Ravera**, Matthias Quick, Juan P. Nicola, Nancy Carrasco, Mario L. Amzel

1543-Pos Board B494 CPOW TRAVEL AWARDEE
CRYSTAL STRUCTURES OF TRANSLOCATOR PROTEIN 18 KDA (TSPO) AND IDENTIFICATION OF A CHOLESTEROL BINDING ENHANCEMENT MOTIF. **Fei Li**, Jian Liu, Carrie Hiser, Lance Valls, Michael Garavito, Shelagh Ferguson-Miller

1544-Pos Board B495
CHARACTERIZATION OF THE SODIUM IODIDE SYMPORTER BINDING SITES. **Igor Zdravkovic**, Patrycja J. Lech, Stephen J. Russell, Sergei Y. Noskov

1545-Pos Board B496
EFFECT OF MUTATIONS ON TRANSPORT BY THE SODIUM/IODIDE SYMPORTER (NIS). **Yuly E. Sanchez**, L. Mario Amzel, Nancy Carrasco, Juan Pablo Nicola, Giuseppe Ferrandino

1546-Pos Board B497
TOWARDS THE MECHANISM OF SODIUM/PROTON ANTIPORTER IN E. COLI. **Yandong Huang**, Jana Shen

1547-Pos Board B498
THE MOLECULAR BASIS FOR SUBSTRATE SPECIFICITY IN LACTOSE PERMEASE. **Magnus Andersson**, Erik Lindahl, Stephen H. White, Ronald H. Kaback

1548-Pos Board B499
DEFINING THE CONFORMATIONAL STATES IN AN MFS TRANSPORTER, FUCP. **Jo Lee**, Philip C. Biggin

1549-Pos Board B500 **EDUCATION TRAVEL AWARDEE**
THE HUMAN PROTON-COUPLED FOLATE TRANSPORTER: DETERMINATION OF CONFORMATION AND IDENTIFICATION OF THE FOLATE-BINDING POCKET. **Swapneeta Date**, Cheng-Yen Charles Chen, Yidong Chen, Michaela Jansen

1550-Pos Board B501
WHICH FREE ENERGY METHODS CAN PREDICT TRANSPORT BY PROTON-DEPENDENT OLIGOPEPTIDE SYMPORTERS? **M. Firdaus Samsudin**, Nicolae Solcan, Simon Newstead, Mark S. P. Sansom, Philip W. Fowler

1551-Pos Board B502
MECHANISTIC DETAILS OF DRUG TRANSLOCATION IN MEXAB-OPRM EFFLUX PUMP. **Cesar A. Lopez Bautista**, Joshua Phillips, S. Gnanakaran

1552-Pos Board B503
PROTON-DRIVEN MOLECULAR RATCHET ITERATIVELY ACTIVATED BY MICROFLUIDICS. **En-Hsin Lee**, Matthew A. Holden

1553-Pos Board B504
PHYSICAL PICTURE FOR FUNCTIONALLY ROTATING MECHANISM OF THE MULTIDRUG EFFLUX TRANSPORTER ACRB. Hirokazu Mishima, **Hiraku Oshima**, Satoshi Yasuda, Masahiro Kinoshita

1554-Pos Board B505
MOLECULAR PHYSIOLOGY OF UNCOUPLING PROTEINS IN THE CENTRAL NERVOUS SYSTEM: SELF-ASSOCIATION AND PROTON TRANSPORT. **Tuan Hoang**, Matthew D. Smith, Masoud Jelokhani-Niaraki

1555-Pos Board B506
QUERCETIN AFFECTS RESPIRATORY PARAMETERS IN WHOLE H9C2 CELLS BY ANT-DEPENDENT UNCOUPLING. **Aleksey Vladimirovich Zholobenko**, Martin Jaburek, Ange Mouithys-Mickalad, Didier Serteyn, Martin Modriansky

1556-Pos Board B507
IMPAIRED CELL SURFACE EXPRESSION OF ATP1A3 MUTATIONS ASSOCIATED WITH ALTERNATING HEMIPLEGIA OF CHILDHOOD. Christine Simmons, Kathryn Swoboda, Kevin Ess, **Alfred George**

1557-Pos Board B508
SIMULATING FREE RADICAL PRODUCTION FROM COMPLEX I. **Jason Bazil**, Venkat Pannala, Ranjan Dash, Daniel Beard

1558-Pos Board B509
PRELIMINARY CHARACTERIZATION OF VDAC3, AN ELUSIVE MEMBER OF THE OUTER MITOCHONDRIAL MEMBRANE PORE FAMILY. Simona Reina, Vanessa Checchetto, Francesca Guarino, Carlo Guardiani, Ramona Belfiore, Matteo Ceccarelli, Ildiko Szabo, **Vito De Pinto**

1559-Pos Board B510
MOLECULAR ORIGIN OF ION SELECTIVITY IN PHASEOLUS COCCINEUS MITOCHONDRIAL VDAC. Eva-Maria Krammer, Hayet Sadani, Martine Prévost, **Fabrice Homblé**

1560-Pos Board B511
INTRACELLULAR C1 AS A SIGNALING MOLECULE THAT POTENTLY REGULATES NA AND HCO3 TRANSPORTERS. **Nikolay Shcheynikov**, Aran Son, Osamu Yamazaki, Shmuel Muallem, Ehud Ohana, Jeong Hee Hong, Ira Kurtz, Dong Min Shin

1561-Pos Board B512
SIRNA KNOCKDOWN OF CLC-7 PRODUCES A LYSOSOMAL PH INCREASE. Sara B. Lioi, **Mary R. Weston**, Joseph A. Mindell

1562-Pos Board B513
AN UN-BLEACHABLE YFP-BASED CHLORIDE SENSOR. **Sheng Zhong**, Dhasakumar Navaratnam, Joseph Santos-Sacchi

Systems Biology and Disease (Boards B514-B530)

1563-Pos Board B514
HOW BAD IS IT DOC? THE VARYING PREDICTIONS OF ODE CANCER GROWTH MODELS. **Hope E. Murphy**, Hana Jaafari, Hana Dobrovolny

1564-Pos Board B515
SPATIAL ORGANIZATION OF RIBOSOME BIOGENESIS OF ESCHERICHIA COLI. **Cac T. Nguyen**, Thuy Ngo, Seongjin Park, Khan Cox, Taekjip Ha, Zaida A. Luthey-Schulten, Thomas E. Kuhlman

1565-Pos Board B516
SPATIAL SYMMETRY BREAKING DETERMINES SPIRAL WAVE ROTATION DIRECTION IN SIMPLIFIED CARDIAC SYSTEMS. **Thomas Quail**

1566-Pos Board B517
SIGNALING DELAYS PRECLUDE DEFECTS IN LATERAL INHIBITION PATTERNING. **David S. Glass**, Xiaofan Jin, Ingmar Riedel-Kruse

1567-Pos Board B518
MODELING EPITHELIAL-MESENCHYMAL TRANSITIONS IN METASTATIC CANCER. **Mingyang Lu**, Mohit Kumar Jolly, Samir M. Hannash, Herbert Levine, Jose N. Onuchic, Eshel Ben-Jacob

1568-Pos Board B519
THE DENSITY OF COMPETITORS IN A STRATIFIED ENVIRONMENT DETERMINES THE RELATIVE FITNESS OF BIOFILM STRUCTURES. **Vernita D. Gordon**, Kasper N. Kragh, Jaime B. Hutchison, Gavin Melaugh, Christopher A. Rodesney, Yasuhiko Irie, Steve Diggle, Rosalind J. Allen, Thomas Bjarnsholt

1569-Pos Board B520
HOW DO BACTERIAL GROWTH RATES RELATE TO EVOLUTIONARY FITNESS LANDSCAPES FOR ENERGY-EFFICIENCY? **Arijit Maitra**, Ken A. Dill

1570-Pos Board B521
MORUSIN FROM CORTEX MORI INHIBITS INVASIVE GROWTH IN HUMAN HEPATOMA SK-HEP1 CELLS. Tsui-Hwa Tseng, Fung-Jou Lu, Nai-Fang Chen, **Yean-Jang Lee**

1571-Pos Board B522
NOISE TREATMENT IN MODELS OF GENETIC SWITCHES. **Mahua Roy**, Elizabeth L. Read

1572-Pos Board B523
OPTIMIZING PROTEIN EXPRESSION LEVELS AS A FUNCTION OF NETWORK TOPOLOGY MINIMIZES NONFUNCTIONAL COMPLEX FORMATION. **David O. Holland**, Margaret E. Johnson

1573-Pos Board B524
DESIGNING STEM-CELL BASED ANTI-HIV THERAPIES USING MOLECULAR-DETAILED MULTISCALE MODELS. **Iraj Hosseini**, Feilim Mac Gabhann

1574-Pos Board B525
DNA FLUORESCENCE PARAMETERS AND METHYLATION LEVELS OF GUT COMMENSAL ESCHERICHIA COLI FROM CROHN'S DISEASE PATIENTS. **Astghik Pepoyan**, Marine Balayan, Anahit Manvelyan, Seda Marutyan, Lia Minasbekyan, Karlen Hovnanyan, Vardan Tsaturyan

1575-Pos Board B526
ISOLATION, FRAGMENTATION AND THE DETECTION OF LISTERIA DNA FROM GROUND BEEF. **Tonya M. Santaus**

1576-Pos Board B527
RAPID MICROBIAL LYSING AND DNA FRAGMENTATION BY MICROWAVE FOCUSING. **Johan Melendez**, Daniel Kiang, Tonya Santaus, Chris Geddes

1577-Pos Board B528
PALMITATE RE-DIRECTS GLUCOSE UTILIZATION IN TYPE 2 DIABETIC HEARTS, IMPROVING FUNCTION: A METABOLOMIC-FLUXOMIC STUDY. Sonia Cortassa, Viviane Caceres, Carlo G. Tocchetti, Brian O'Rourke, Nazareno Paolocci, **Miguel A. Aon**

1578-Pos Board B529
MODELING HOST - BACTERIAL BIOFILM INTERACTIONS IN LOWER LEG CHRONIC WOUNDS. **M vandeVen**

1579-Pos Board B530
MODEL FOR AGING AND COGNITIVE DECLINE. **Maxwell P. Henderson**

Molecular Dynamics II (Boards B531-B557)

1580-Pos Board B531
COMPARISON OF ACTIVATION ENERGY AND PORE DYNAMICS IN LIQUID AND GEL PHASES OF ELECTROPORATED LIPID BILAYERS USING TEMPERATURE DEPENDENT MD SIMULATIONS. **Amit K. Majhi**, Subbarao Kanchi, Venki Venkataraman, Ganapathy Ayappa, Prabal Maiti

1581-Pos Board B532
THE CARBOXY TERMINUS OF THE LIGAND PEPTIDE DETERMINES MHC CLASS I COMPLEX STABILITY: A COMBINED MOLECULAR DYNAMICS AND EXPERIMENTAL STUDY. **Esam T. Abualrous**

1582-Pos Board B533
MOLECULAR MODELLING IN MRI CONTRAST AGENTS INTERACTING WITH WATER MOLECULES: HIERARCHICAL CLUSTERING METHOD FOR MOLECULAR DYNAMICS DATA ANALYSIS. Luca Guzzardi, Dennis Cazar, Vanessa del Hierro, Fernando J. Torres, **Miguel A. Mendez**

1583-Pos Board B534
HIS 95 ACTS AS A PH GATE IN AQUAPORIN-4. **Shreyas S. Kaptan**, Bert L. de Groot

1584-Pos Board B535
STRUCTURAL AND DYNAMICAL STUDY OF BOVINE CARBONIC ANHYDRASE II IN THE PRESENCE OF SUBSTRATE: AN ESSENTIAL DYNAMICS AND MOLECULAR DYNAMICS SIMULATION STUDY. Elham Morad, **Bahram Goliaei**, Faramarz Mehrnejad

1585-Pos Board B536
RESOLVING THE MECHANISMS OF BACTERIAL RESISTANCE TO MACROLIDE ANTIBIOTICS. **Anna Pavlova**, James C. Gumbart

1586-Pos Board B537
MOLECULAR MODELING OF SELF-ASSEMBLY OF ANTICANCER DRUG AMPHIPHILES. **Myungshim Kang**, Honggang Cui, Sharon M. Loverde

1587-Pos Board B538
SIMULATING THE SERPIN LATENCY TRANSITION AT ATOMIC RESOLUTION. **Patrick Wintrode**, Pietro Faccioli, Silvio a Beccara, Anne Gershenson, Giorgia Cazzolli, Fang Wang

1588-Pos Board B539
ESTIMATING THE DIFFUSION CONSTANT FROM NOISY TRAJECTORIES. **Peter K. Relich**, Keith A. Lidke, Mark J. Olah

1589-Pos Board B540
MOLECULAR INSIGHTS INTO THE SIGNALING MECHANISM OF THE HISTIDINE KINASE CHEA WITHIN AN INTACT BACTERIAL CHEMOSENSORY ARRAY. **C. Keith Cassidy**, Benjamin Himes, Frances Joan D. Alvarez, Juan R. Perilla, Jun Ma, Gongpu Zhao, Peijun Zhang, Klaus Schulten

1590-Pos Board B541
CALCULATION OF CHOLESTEROL BINDING AFFINITY FOR PENTAMERIC LIGAND-GATED ION CHANNELS. **Reza Salari**, Jerome Henin, Grace Brannigan

1591-Pos Board B542
CHARACTERIZATION OF TRANSIENTLY STABLE STRUCTURAL MOTIFS IN INTRINSICALLY DISORDERED PROTEINS USING FREE ENERGY SIMULATIONS. **Rainer Bomblies**, Manuel Luitz, Martin Zacharias

1592-Pos Board B543
COMPUTATIONAL STUDY OF UBIQUITIN RECRUITMENT AND TRANSPORT OF THE 26S PROTEASOME. **Till Rudack**, Yi Zhang, Lela Vucovic, Wei Han, Klaus Schulten

1593-Pos Board B544
ATOMISTIC MECHANISM OF PEPTIDE UNFOLDING AND TRANSLOCATION BY AAA+ UNFOLDING CHAPERONES CLPY. **Huan Wang**, George Stan

1594-Pos Board B545
MECHANISM OF INHIBITION OF GLYCOSIDE HYDROLASES INVESTIGATED BY MOLECULAR DYNAMICS SIMULATIONS. **Rafael C. Bernardi**, Isaac Cann, Erin Imsand, Douglas Clark, Klaus Schulten

1595-Pos Board B546
STRUCTURAL DETERMINANTS OF HYBRID STATE INTERMEDIATES OF THE BACTERIAL RIBOSOME. **Andrea C. Vaiana**, Carsten Kutzner, Lars V. Bock, Christian Blau, Helmut Grubmüller

1596-Pos Board B547 **EDUCATION TRAVEL AWARDEE**
MOLECULAR DYNAMICS STUDIO OF POLY(VINYL ALCOHOL) MECHANICAL PROPERTIES FOR ITS INCORPORATION IN BONES STRUCTURES AS A PVA-PLA SUBSTRATE FOR TISSUE REGENERATION. **Ana C. Cadena**, Dennis Cazar, Samara M. Oña, Miguel A. Mendez

1597-Pos Board B548
MAPPING FUNCTIONAL GROUP REQUIREMENTS OF LIGANDS AT THE OCCLUDED BINDING POCKET OF β2-ADRENERGIC G-PROTEIN COUPLED RECEPTOR USING SITE IDENTIFICATION BY LIGAND COMPETITIVE SATURATION SIMULATIONS. **Sirish K. Lakkaraju**, Wenbo Yu, Prabhu E. Raman, Alexander D. MacKerell Jr.

1598-Pos Board B549
INSIGHTS FROM ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS OF 40 NUCLEOSOME CHROMATIN FIBER. **Ramu Anandakrishnan**, Saeed Izadi, Alexey V. Onufriev

1599-Pos Board B550
COMPUTATIONALLY PROJECTING THE INFLUENCE OF NUCLEIC ACID ON PATHWAYS OF NUCLEATION-LIMITED VIRUS CAPSID ASSEMBLY. **Gregory R. Smith**, Lu Xie, Russell Schwartz

1600-Pos Board B551
DOCKING TO THE HIGHLY FLEXIBLE ESTROGEN RECEPTOR LIGAND BINDING DOMAIN VIA MIXED-RESOLUTION MONTE CARLO. **Sundar Raman Subramanian**, Daniel M. Zuckerman

1601-Pos Board B552
TOWARDS THE SIMULATION OF A COMPLETE ATP SYNTHASE: UNRAVELLING THE STRUCTURAL BASIS OF THE ENZYME'S REVERSIBLE ACTION. **Abhishek Singharoy**, Klaus Schulten

1602-Pos Board B553
SIN MUTATIONS ALTER STRUCTURE AND DYNAMICS OF HUMAN MONONUCLEOSOMES. **Suma Mohan S**, Thomas C. Bishop, Vijayalakshmi Mahadevan

1603-Pos Board B554
QUINONE BINDING IN BACTERIAL PHOTOSYNTHETIC REACTION CENTER. **Arpita Banerjee**, Marilyn Gunner

1604-Pos Board B555
MOLECULAR DYNAMIC SIMULATION STUDIES ON LOLA AND LOLB PROTEINS IN E.COLI. **Priyadarshini Murahari**, Gautam Pennathur, Sharmila Anishetty

1605-Pos Board B556
THE ROLE OF THE ION DEHYDRATION PROCESS IN LOW AND HIGH CONDUCTANCE K CHANNELS. **Romina V. Sepúlveda**, Felipe Bravo-Moraga, Ignacio Diaz-Franulic, Daniel Aguayo, David Naranjo, Ramon Latorre, Fernando D. Gonzalez-Nilo

1606-Pos Board B557
COMPUTATIONAL DESIGN OF ALLOSTERIC INHIBITORS OF AKT AND SGK KINASES. **D. S. Dalafave**, R. E. Dalafave

Optical Microscopy and Super-Resolution Imaging I (Boards B558-B586)

1607-Pos Board B558
AN AUTOMATED PROTOCOL FOR PERFORMANCE BENCHMARKING A WIDEFIELD FLUORESCENCE MICROSCOPE. **Michael Halter**, Elianna Bier, Paul C. DeRose, Gregory A. Cooksey, Steven J. Choquette, Anne L. Plant, John T. Elliott

1608-Pos Board B559
RESPIRATION RATE MEASUREMENTS OF SINGLE BACTERIAL CELLS. **Michael C. Konopka**

1609-Pos Board B560
DEVELOPMENT OF PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL (PBPK) OF CANCER TREATMENT IN MICE. **Jeremy C. Bonor**

1610-Pos Board B561
RAISING THE SPEED LIMIT ON 3D-3WAY FRET MICROSCOPY. **Brandon L. Scott**, Adam D. Hoppe

1611-Pos Board B562
STRETCHED, ORIENTED DNA ARRAYS (SODA) FOR FLUORESCENCE BASED SINGLE-MOLECULE EXPERIMENTS IN COMPLEX ENVIRONMENT. **Eugeniu Ostrofet**, Seungkyu Ha, Richard Janissen, Theo van Laar, Nynke Dekker

1612-Pos Board B563
DUAL-SWITCHING FRET (DSFRET) IMAGING BASED ON PHOTOSWITCHABLE DONOR-ACCEPTOR PAIR. **Yingqi Wang**, Ji Tang, Xiaodong Liu

1613-Pos Board B564
DYNAMIC TURNOVER OF FTSZ-RING IN LIVE CELL. **Xinxing Yang**, Christopher Herrick Bohrer, Jie Xiao

1614-Pos Board B565
COUNTING MOLECULES IN NON-MUSCLE MYOSIN II FILAMENTS. **Xiaohu Wan**

1615-Pos Board B566
Z-PROFILING OF CFTR OLIGOMERIZATION STATE DISTRIBUTIONS VIA SINGLE MOLECULE STEP PHOTOBLEACHING ANALYSIS IN EPITHELIAL CELLS. **Jean-Francois Desjardins**, Asmahan Abu-Arish, Amani Hariri, Hanadi F. Sleiman, Gonzalo Cosa, John W. Hanrahan, Paul W. Wiseman

1616-Pos Board B567
DIMERIZATION OF EPHA2 IN CELL MEMBRANES. **Deo R. Singh**, Chris King, Nisha R. Gupta, Matt Salotto, Kalina Hristova

1617-Pos Board B568
SINGLE MOLECULE ANALYSIS REVEALS COEXISTENCE OF STABLE SEROTONIN TRANSPORTER MONOMERS AND OLIGOMERS IN THE LIVE CELL PLASMA MEMBRANE. Andreas Anderluh, Enrico Klotzsch, Vivek Kumar, Amy H. Newman, Harald H. Sitte, **Gerhard J. Schuetz**

1618-Pos Board B569
RFP TAGS FOR LABELING SECRETORY PATHWAY PROTEINS. **Mingshu Zhang**, Xi Zhang, Lin Yuan, Pingyong Xu

1619-Pos Board B570
"DECORATING" CELLS WITH GENETICALLY ENCODED FLUORESCENT PROTEINS - WHAT COLOR SUITS YOUR EXPERIMENT BEST? **Li-Chun Tu**, Juahdi Monbo, Aviva Joseph, David Grunwald

1620-Pos Board B571
CONFOCAL ABSORPTION MICROSCOPY OF BIOMOLECULES IN THE ATTO-MOLE RANGE. **Alfons Schulte**, Fatholah Salehi, Michael Sigman

1621-Pos Board B572
TESTING A DIFFUSION TRAP MODEL FOR STORE-OPERATED CALCIUM ENTRY BY SINGLE PARTICLE TRACKING. **Minnie M. Wu**, Elizabeth D. Covington, Richard S. Lewis

1622-Pos Board B573
MEMBRANE-PROTEIN DIFFUSION IN E. COLI: A RANDOM WALK IN A HETEROGENEOUS LANDSCAPE.
Aravindan Varadarajan, Felix Oswald, Yves J. M. Bollen, Erwin J.G. Peterman

1623-Pos Board B574
SINGLE-MOLECULE STUDY OF RELA DIFFUSION IN LIVE E. COLI CELLS DURING THE STRINGENT RESPONSE. **Wenting Li**

1624-Pos Board B575
STUDY OF RECEPTOR-LIGAND INTERACTIONS IN LIVING SPECIMENS BY USING DUAL-COLOR DUAL-FOCUS LINE-SCANNING FCS. René M. Doerlich, Qing Chen, Per Niklas Hedde, Vittoria Schuster, Mark Hippler, Gary Davidson, **G. Ulrich Nienhaus**

1625-Pos Board B576
A UNIVERSAL PARTICLE IMAGE CORRELATION SPECTROSCOPY (UPICS) FOR THE ANALYSIS OF FAST AND DENSELY DIFFUSING PARTICLES. Alexander Wolf, Pierre Volz, Thomas Schlieter, Jens Balke, **Ulrike Alexiev**

1626-Pos Board B577
SINGLE CELL IMAGE CORRELATION ANALYSIS AND PHENOTYPIC SCREENING FOR DIABETIC CARDIOMYOPATHY. **Michael Prummer**

1627-Pos Board B578
PROBING SHORT-RANGE PROTEIN BROWNIAN MOTION IN THE CYTOPLASM OF LIVING CELLS. **Carmine Di Rienzo**, Enrico Gratton, Fabio Beltram, Francesco Cardarelli

1628-Pos Board B579
MAPPING DIFFUSION IN A LIVING CELL USING THE PHASOR APPROACH. **Suman Ranjit**, Enrico Gratton, Luca Lanzano

1629-Pos Board B580
FLUORESCENCE FLUCTUATION MICROSCOPY TECHNIQUES TO STUDY MRNA SYNTHESIS AND DYNAMICS. **Paolo Annibale**, Enrico Gratton

1630-Pos Board B581
NANOSCALE PROTEIN DIFFUSION BY STED-BASED PAIR CORRELATION ANALYSIS. **Ranieri Bizzarri**, Paolo Bianchini, Francesco Cardarelli, Mariagrazia Di Luca, Alberto Diaspro

1631-Pos Board B582
ANALYSIS OF TRABECULAR BONE ARCHITECTURE USING TWO PHOTON FLUORESCENCE MICROSCOPY. **Hemanth Akkiraju**, Christopher price, Liyun Wang, Jeffrey Caplan, Anja Nohe

1632-Pos Board B583
NON-LINEAR MICROSCOPY OF MITOCHONDRIAL DAMAGE AND ABNORMAL LIPID METABOLISM IN BETA-AMYLOID EXPRESSING YEAST. **Nisha Rani Agarwal**, Xin Chen, Kumaravel Ponnandai Shunmugavel, Dina Petranovic, Annika Enejder

1633-Pos Board B584
USING SURFACE PLASMON RESONANCE TO STUDY SPECIES TRANSPORT ACROSS LIPID MEMBRANES. **Cheng-Jung Kuo**, Chao Ling

1634-Pos Board B585
APPLICATIONS OF HIGH RESOLUTION SURFACE PLASMON RESONANCE IMAGING TO ADHERENT CELLS: SINGLE MAMMALIAN CELLS TO BACTERIAL BIOFILMS.
Alexander W. Peterson, Michael Halter, Alessandro Tona, Nancy J. Lin, John T. Elliott

1635-Pos Board B586 INTERNATIONAL TRAVEL AWARDEE
LIGHT SHEET FLUORESCENCE MICROSCOPY (LSFM) FOR TWO-PHOTON EXCITATION IMAGING OF THICK SAMPLES. **Giuseppe Sancataldo**, Zeno Lavagnino, Marta d'Amora, Francesca Cella Zanacchi, Alberto Diaspro

Biosensors I (Boards B587-B603)

1636-Pos Board B587
SENSING ELEMENTS ENCAPSULATED WITHIN HYDROGEL MATRIX TO ENHANCE THE SIGNAL-TO-NOISE RATIO.
Huisoo Jang, Sungho Jung, Sun Min Kim, Tae-Joon Jeon

1637-Pos Board B588
SIMULATION RESULTS FOR AN OPTICALLY ACTIVE SEMICONDUCTOR NANOPORE. **Paul V. Gwozdz**, Andre Drews, Abhishek Bhat, August Dorn, Robert H. Blick

1638-Pos Board B589
LIPID BILAYER COATED NANOPIPETTES AS GENERIC NANOPORE SENSORS WITH ENHANCED FUNCTIONALITY. **Raquel L. Fraccari**

1639-Pos Board B590
POLARIZATION-BASED DNA SANDWICH ASSAY WITH AU NANOPARTICLES USING THE INFLUENCE OF INTER-PARTICLE DISTANCE. **Akira Sandambata**, Naoto Mizuno, Keiko Esashika, Toshiharu Saiki

1640-Pos Board B591
OPTICALLY TRACING ELECTRICAL SYNAPSES WITH PROTON CHANNEL-BASED VOLTAGE SENSING PROTEIN.
Bok Eum Kang, Arong Jung, Dhanarajan Rajakumar, Piao Hong Hua, Bradley Baker

1641-Pos Board B592
USING EXPLORATORY DATA ANALYTICS TO IDENTIFY DEFICIENCIES IN MCHERRY RED FLUORESCENT PROTEIN AND SUGGEST IMPROVEMENTS. Michele L. Markwardt, **Mark A. Rizzo**

1642-Pos Board B593
DESIGN OF A THEORETICAL MODEL TO IDENTIFY SPECIFIC SSDNA APTAMERS FOR BIOSENSING APPLICATIONS.
Merina Jahan, Mark J. Uline

1643-Pos Board B594
EXPERIMENTAL DETERMINATION OF TRANSITION DIPOLE MOMENT DIRECTIONS IN REPRESENTATIVE FLUORESCENT PROTEINS. **Alina Kevorkova**, David von Stetten, Antoine Royant, Josef Lazar

1644-Pos Board B595
GLYCINE PROTECTS HEPATOCYTES THROUGH A CHLORIDE INDEPENDENT MECHANISM. **Li Li**, John J. Lemasters

1645-Pos Board B596
SMALL ANGLE NEUTRON SCATTERING STUDIES OF GLUCOSE OXIDASE IMMOBILIZED ON SINGLE LAYER GRAPHENE: RELEVANT TO PROTEIN MICROFLUIDIC CHIP. **Manickam Gurusaran**, Durgesh Rai, Shuo Qian, Kevin Weiss, Volker Urban, Pingzuo Li, Lulu Ma, Tharangattu N. Narayanan, Pulickel M. Ajayan, Kanagaraj Sekar, Sowmya Viswanathan, Venkatesan Renugopalakrishanan

1646-Pos Board B597
APPLICATION OF STRAIN AND CALIBRATION OF FRET EMISSION FOR *IN VITRO* LIVE CELL RESPONSE TO CYTOSKELETAL DEFORMATION. **Jacob M. Knorr**, Daria A. Narmoneva, Donna C. Jones

1647-Pos Board B598
APTAMER SEQUENCE DECONVOLUTION THROUGH MICROARRAY TECHNOLOGY. **Yeh-Hsing Lao**, Chun-Wei Chi, Hui-Yu Chiang, Konan Peck, Lin-Chi Chen, Kam W. Leong

1648-Pos Board B599
DEVELOPING LEAVE ONE OUT GFP BASED BIOSENSORS. **Keith Fraser**, Christian Schenkelberg, Shounak Banerjee, Casey Thornton, Colleen Lamberson, Victoria Jones, Angela Choi, Rachel Altshuler, Jonathan S. Dordick, Christopher Bystroff

1649-Pos Board B600
HIGH-DENSITY, HIGH ASPECT RATIO SILICONE POST ARRAYS FOR MAGNETO OPTICAL BIOSENSING AND TARGETED CELL CAPTURE. **Aaron Neaves**, Benjamin Evans

1650-Pos Board B601
DIMERIZATION INDUCTION AND MEASUREMENT USING FLUOROGEN ACTIVATING PROTEINS GUIDED BY SATURATION MUTAGENESIS. **Yi Wang**

1651-Pos Board B602
ENGINEERING OF ARTIFICIAL PH SWITCH PROTEINS USING INTERNAL IONIZABLE RESIDUES WITH ANOMALOUS PKA VALUES. **Peregrine Bell-Upp**, Jaime Sorenson, Jamie L. Schlessman, Bertrand Garcia-Moreno E.

1652-Pos Board B603
THE DESIGN OF AN $NADP^+$-BIOSENSOR BASED ON CHANGES IN INTERMOLECULAR HOMOFRET OF GLUCOSE-6-PHOSPHATE DEHYDROGENASE. **William D. Cameron**, Cindy V. Bui, Pamuditha N. Silva, Jonathan V. Rocheleau

Micro- and Nanotechnology II (Boards B604-B623)

1653-Pos Board B604
PORES WITH UNDULATING OPENING DIAMETER CAN DETERMINE PARTICLES BY SIZE AND SHAPE. **Crystal Yang**, Preston Hinkle, Dmitriy Melnikov, Henriette E. Bakker, Arnout Imhof, Eugenia Toimil-Molares, Maria Gracheva, Zuzanna Siwy

1654-Pos Board B605
SOLVENT FREE BILAYER RECORDINGS USING A NOVEL ALL-IN-ONE MINIATURIZED AMPLIFIER. **Federico Thei**, Michele Rossi, Marco Bennati, Alessandro Marabelli, Matthias Beckler, Niels Fertig

1655-Pos Board B606
MEASUREMENT OF SALT DEPENDENCE OF SINGLE DNA TRANSLOCATION THROUGH SI NANOPORES WITH ULTRAVIOLET EXCITATION. **Ito Shintaro**, Hirohito Yamazaki, Mutsumi Tsukahara, Keiko Esashika, Toshiharu Saiki

1656-Pos Board B607
DNA NANOSWITCHES: A QUANTITATIVE PLATFORM FOR GEL-BASED BIOMOLECULAR INTERACTION ANALYSIS. **Ken Halvorsen**, Mounir Koussa, Andy Ward, Wesley P. Wong

1657-Pos Board B608
NANOPORE-ENHANCED POSITIONING OF MOLECULES IN ZERO-MODE WAVEGUIDES. **Joseph W. Larkin**, Mathieu Foquet, Stephen W. Turner, Jonas Korlach, Meni Wanunu

1658-Pos Board B609
A MULTIPHASE, COMPUTATIONAL MODELING APPROACH TO UNDERSTAND MICROALGAL FLOW DYNAMICS IN MICROFLUIDIC CHANNELS. **Kristin M. Warren**, Jeremiah N. Mpagazehe, Philip LeDuc, C. Fred Higgs, III

1659-Pos Board B610
PROGRAMMED SYNTHESIS OF FREESTANDING GRAPHENE NANOMEMBRANE ARRAYS. **Pradeep Waduge**, Joseph Larkin, Moneesh Upmanyu, Swastik Kar, Meni Wanunu

1660-Pos Board B611
MOLECULAR RECOGNITION OF TRNA SPECIES USING SOLID-STATE NANOPORES. **Robert Y. Henley**, Brian Ashcroft, Barry Cooperman, Stuart Lindsay, Meni Wanunu

1661-Pos Board B612
SMOOTH DNA TRANSPORT THROUGH A NARROWED PORE GEOMETRY. **Spencer Carson**, James Wilson, Aleksei Aksimentiev, Meni Wanunu

1662-Pos Board B613
ULTRA-PRECISION NANOPORE TOOL TO STUDY ENZYMES AT WORK. **Ian M. Derrington**, Jonathan M. Craig, Henry D. Brinkerhoff, Andrew H. Laszlo, Jens H. Gundlach

1663-Pos Board B614
SOLID-STATE NANOPORE CHARACTERIZATION OF SINGLE-STRAND DNA-SSB INTERACTIONS. Michael M. Marshall, Jan Ruzicka, Osama K. Zahid, Ethan W. Taylor, Vincent C. Henrich, **Adam R. Hall**

1664-Pos Board B615
LABEL-FREE OPTICAL DETECTION OF BIOMOLECULAR TRANSLOCATION THROUGH NANOPORE ARRAYS. Andrey Ivankin, Robert Y. Henley, Joseph Larkin, Spencer Carson, Michael L. Toscano, **Meni Wanunu**

1665-Pos Board B616
ENGINEERED MATERIAL GRADIENTS FOR BIOLOGICALLY INTEGRATED STRETCHABLE ELECTRONICS. **Naser Naserifar**, Philip R. LeDuc, Gary K. Fedder

1666-Pos Board B617
AN INEXPENSIVE AND EFFECTIVE DEVICE FOR DIAGNOSIS OF SICKLE CELL DISEASE. Christopher Brown, Alexey Aprelev, **Frank A. Ferrone**

1667-Pos Board B618
CONTROLLED DELIVERY OF DOPAMINE HYDROCHLORIDE USING SURFACE MODIFIED CARBON DOTS FOR NEURO DISEASES. **M Shahnawaz Khan**, Sunil Pandey, Abou Talib, Mukesh Bhaisare, Hui-Fen Wu

1668-Pos Board B619
CATIONIC LIPOSOMES ENCAPSULATING QUANTUM DOTS FOR ENHANCING THE INTRACELLULAR DELIVERY INTO ASTROCYTES "IN VITRO". **Maria B. Seabra**, Anna Lívia Linard Matos, Renata V. Cavalcanti-Santos, Belmira L. S. Andrade-da Costa, Adriana Fontes, Beate S. Santos

1669-Pos Board B620
PROBING DYNAMIC REASSEMBLY OF CHEMICALLY-ETCHED 3D EMBRYONIC TISSUE. **Melis Hazar**, YongTae Kim, Jiho Song, William C. Messner, Lance A. Davidson, Philip R. LeDuc

1670-Pos Board B621 **international travel awardee**
SICM-BASED NANODELIVERY SYSTEM FOR LOCAL TRPV1 STIMULATION. **Ainara López-Córdoba**, Peter Jönsson, Babak Babakinejad, Paolo Actis, Pavel Novak, Takahashi Yasufumi, Andrew Shevchuck, Uma Anand, Praveen Anand, Anna Drews, Antonio Ferrer-Montiel, David Klenerman, Yuri Korchev

1671-Pos Board B622
DEVELOPING A FRAMEWORK FOR THE NEURAL STEM CELL DIFFERENTIATION IN THE PRESENCE OF CARBON NANOTUBES. **Massooma Pirbhai**, Sabrina Jedlicka, Slava V. Rotkin

1672-Pos Board B623
PHASE CHANGE NANOEMULSIONS FOR CANCER THERAPY AND IMAGING. **Donald A. Fernandes**, Dennis D. Fernandes, Yan J. Wang, Yuchong Li, Claudiu C. Gradinaru, Dérick Rousseau, Michael C. Kolios

Biophysics Education (Boards B624-B634)

1673-Pos Board B624
A NEW COURSE AND TEXTBOOK ON PHYSICAL MODELS OF LIVING SYSTEMS, FOR SCIENCE AND ENGINEERING UNDERGRADUATES. **Philip Nelson**

1674-Pos Board B625
MAKING MOLECULAR GRAPHICS ACCESSIBLE IN THE HIGH SCHOOL CLASSROOM WITH VMD LITE. **Conner Herndon**, James Gumbart

1675-Pos Board B626
THE PEDAGOGICAL VALUE OF LINDERSTRØM-LANG'S PROTEIN ONTOLOGY. **Ryan MB Hoffman**, Andrew B. Ward

1676-Pos Board B627
EXPERIENCES GAINED CREATING A BIOPHYSICS MAJOR AT A PREDOMINATELY UNDERGRADUATE INSTITUTION. **Justin J. Link**

1677-Pos Board B628
A DIY LANGMUIR TROUGH MADE WITH ADRUINO, LABVIEW, AND 3D PRINTED PART'S FOR EDUCATION AND RESEARCH. **Eric J. Alfuth**, Tomas Chester, Nate Roisen, Cain Valtierrez, Vision Bagonza, Benjamin L. Stottrup

1678-Pos Board B629
DELICIOUS BIOPHYSICS: COOKING AS A PROLIFIC SUPPORT TO TEACH BIOPHYSICAL CONCEPTS. **Christophe Lavelle**

1679-Pos Board B630
THE MOLECULAR AND CELLULAR BIOPHYSICS OF PROBIOTIC BACTERIA. **Astghik Z. Pepoyan**

1680-Pos Board B631
ENJOY CO-LEARNING IN ACACEMIC MEETINGS AND CONFERENCES: HOW TO ENHANCE COMMUNICATION AMONG PEERS IN BIOPHYSICS AND NEIGHBORING FIELDS. **Senkei Umehara**

1681-Pos Board B632 **education travel awardee**
CLOUD EXPERIMENTATION FOR BIOLOGY: SYSTEMS ARCHITECTURE AND UTILITY FOR ONLINE EDUCATION AND RESEARCH. **Zahid Hossain**, Xiaofan Jin, Engin Baumbacher, Alice Mira Chung, Stephen Koo, Jordan David Shapiro, Cynthia YTram Truong, Sean Choi, Paulo Blikstein, Ingmar Hans Riedel-Kruse

1682-Pos Board B633
AN INTERDISCIPLINARY HANDS-ON MODULE FOR SCIENCE OUTREACH IN RESOURCE-LIMITED SETTINGS. **Vernita D. Gordon**, Karishma S. Kaushik, Ashley Kessel, Nalin Ratnayeke

1683-Pos Board B634
PROTEIN STRUCTURE SOLUTION SKILLS MADE ACCESSIBLE: STEPS TOWARD AN ONLINE CLASSROOM. **Gundula Bosch**, Lauren E. Boucher, Alexia S. Miller, Jurgen Bosch

Tuesday, February 10, 2015

Daily Program Summary

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

7:30 AM–5:00 PM	**Registration/Information**	**Charles Street Lobby**
8:00 AM–9:00 AM	**Biophysical Society Business Meeting**	**Room 327/328/329**
8:00 AM–4:30 PM	**Poster Viewing**	**Hall C**
8:00 AM–5:30 PM	**Career Center**	**Room 301/302/303**
8:15 AM–10:15 AM	**Symposium: Biophysics of RNA Processing: Degradation, Splicing, DEAD Box Proteins** **Chair:** *Sun Hur, Harvard University* INSIGHTS INTO HELICASE EVOLUTION FROM THE SPECIFICITY AND MECHANISM OF A DEAD-BOX PROTEIN. *Anna L. Mallam* SINGLE-MOLECULE IMAGING OF PRE-MRNA SPLICING. *Sanjay Tyagi* AUXILIARY FACTORS AND RNA SUBSTRATES REGULATE DEAD-BOX PROTEIN ACTIVITY BY MODULATION OF THE DEAD-BOX PROTEIN CONFORMATIONAL CYCLE. *Dagmar Klostermeier* MOLECULAR MECHANISMS OF VIRAL RNA DETECTION: RIG-I AND MDA5. *Sun Hur*	**Ballroom I**
8:15 AM–10:15 AM	**Symposium: Molecules of Memory: Glutamate Receptor Channels** **Chair:** *Mark Mayer, NIH* CONFORMATIONAL CHANGES UNDERLYING GLUTAMATE RECEPTOR GATING. *Mark Mayer* AMPA RECEPTOR STRUCTURE, FUNCTION, AND DYNAMICS. *Robert E. Oswald* INTRACELLULAR DOMAINS OF NMDA RECEPTORS CONTROL CHANNEL PERMEATION AND GATING PROPERTIES. *Gabriela K. Popescu* NMDA RECEPTORS AS DYNAMIC ALLOSTERIC MACHINES. *Pierre Paoletti*	**Ballroom II**
8:15 AM–10:15 AM	**Platform: Single-Molecule Spectroscopy**	**Ballroom III**
8:15 AM–10:15 AM	**Platform: Skeletal Muscle Mechanics, Structure, and Regulation**	**Ballroom IV**
8:15 AM–10:15 AM	**Platform: Intracellular Channels and Calcium Sparks and Waves**	**Room 307/308**
8:15 AM–10:15 AM	**Platform: Membrane Structure**	**Room 309/310**
8:15 AM–10:15 AM	**Platform: Protein Structure and Conformation III**	**Room 314/315**
8:15 AM–10:15 AM	**Platform: Bioengineering and Biomaterials**	**Room 316/317**
9:00 AM–10:00 AM	**Subgroup Chairs Meeting**	**Room 318**
9:30 AM–10:30 AM	**Career Center Workshop** **Successfully Navigating the International Job Search**	**Room 301/302/303**
10:00 AM–5:00 PM	**Biomolecular Discovery Dome**	**Hall C**
10:00 AM–4:30 PM	**Exhibits**	**Hall C**
10:15 AM–11:00 AM	**Coffee Break**	**Hall C**
10:30 AM–12:00 PM	**Exhibitor Presentation: SensiQ Technologies Inc** **Learn How SensiQ's Dynamic Injection (diSPR®) Techniques Enhance the Biophysical Characterization of Binding Events Using Surface Plasmon Resonance Technology**	**Hall C, Room B**
10:45 AM–12:45 PM	**Symposium: Awards Symposium** **Chair:** *Dorothy Beckett, University of Maryland, Society President* RECENT PROGRAMS ON OLD PROBLEMS. *Harold Scheraga* MEMBRANE PROTEINS NEED LIPIDS. *Anthony Watts* EVOLUTION AND ASSEMBLY OF PROTEIN COMPLEXES. *Sarah Teichmann* SURPRISES I FOUND IN STUDYING MEMBRANES. *Gerald W. Feigenson* TALES OF TUBULIN TAILS. *Antonina Roll-Mecak* FROM CYTOKINESIS TO THE EARLY MOUSE EMBRYO DEVELOPMENT: A SIMPLE PHYSICAL VIEW OF CELL MORPHOGENESIS. *Hervé Turlier*	**Ballroom I**

10:45 AM–12:45 PM	**Platform: Protein Fold Stability**	**Ballroom II**
10:45 AM–12:45 PM	**Platform: Voltage-gated K Channels II**	**Ballroom III**
10:45 AM–12:45 PM	**Platform: Membrane Receptors and Signal Transduction**	**Ballroom IV**
10:45 AM–12:45 PM	**Platform: DNA Structure**	**Room 307/308**
10:45 AM–12:45 PM	**Platform: Exocytosis, Endocytosis, and Membrane Fusion**	**Room 309/310**
10:45 AM–12:45 PM	**Platform: Force Spectroscopy and Scanning Probe Microscopy**	**Room 314/315**
10:45 AM–12:45 PM	**Platform: Protein-Small Molecule Interactions**	**Room 316/317**
12:00 PM–1:30 PM	**Funding Opportunities for Faculty at Primarily Undergraduate Institutions**	**Room 331/332**
12:00 PM–2:00 PM	**Postdoc to Faculty Q&A: Transitions Forum and Luncheon**	**Room 318/319**
12:30 PM–2:00 PM	**Exhibitor Presentation: Nanion Technologies GmbH** **Measure More Membrane: Cells, Bilayers and Transporter Activity**	**Hall C, Room B**
1:00 PM–3:00 PM	**Industry and Agency Opportunities Fair**	**Hall C**
1:30 PM–3:00 PM	**Exhibitor Presentation: KinTek Corporation** **KinTek Explorer Software: New Advances in Fitting Kinetic and Equilibrium Data**	**Hall C, Room A**
1:30 PM–2:30 PM	**Conversation with NIGMS Director Jon Lorsch**	**Room 309/310**
1:45 PM–3:00 PM	**Snack Break**	**Hall C**
2:30 PM–3:30 PM	**Career Center Workshop** **Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)**	**Room 301/302/303**
2:30 PM–4:30 PM	**Grant Opportunities for Early Career Faculty**	**Room 330**
3:00 PM–4:00 PM	**Networking with Minority Biophysicists: Resources and Opportunities**	**Room 327/328/329**
3:00 PM–5:00 PM	**Education Committee Meeting**	**Room 333**
4:00 PM–6:00 PM	**Symposium: Nanoclustering of Membranes and Membrane Proteins** **Ballroom I** **Chair:** *Ka Yee Lee, University of Chicago* STRUCTURE AND FUNCTION OF MEMBRANE-REMODELING ESCRT-III ASSEMBLIES. *Adam Frost* IN VIVO-STUDIES OF GPCR CONFORMATIONAL CHANGES USING FLUORESCENCE-BASED ASSAYS. *Martin Lohse* LIPID ORGANIZATION OF THE PLASMA MEMBRANE. *Siewert Marrink* DIFFERENTIAL PHOSPHATIDYLSERINE RECOGNITION BY THE TIM FAMILY OF IMMUNE REGULATORY RECEPTORS. *Ka Yee C. Lee*	
4:00 PM–6:00 PM	**Symposium: Extremophiles: Testing the Physical Limits of Living Systems** **Ballroom II** **Chair:** *Catherine Royer, Rensselaer Polytechnic Institute* PROTEIN FOLDING AT EXTREME TEMPERATURES: CURRENT ISSUES. *Georges Feller* USING SINGLE MOLECULE FORCE SPECTROSCOPY TO PROBE PROTEINS FROM EXTREMOPHILES. *Lorna Dougan* MECHANISMS OF PRESSURE EFFECTS IN BIOLOGY: FROM PROTEINS TO LIVE BACTERIA. *Catherine Ann Royer* WHAT LIMITS MICROBIAL GROWTH AT HIGH PRESSURE? *Doug Bartlett*	
4:00 PM–6:00 PM	**Platform: Optical Microscopy and Super-Resolution Imaging II**	**Ballroom III**
4:00 PM–6:00 PM	**Platform: Cardiac Muscle Regulation**	**Ballroom IV**
4:00 PM–6:00 PM	**Platform: Protein Dynamics and Allostery II**	**Room 307/308**
4:00 PM–6:00 PM	**Platform: Systems Biophysics**	**Room 309/310**
4:00 PM–6:00 PM	**Platform: Ion Channel Regulatory Mechanisms**	**Room 314/315**
4:00 PM–6:00 PM	**Platform: Bioenergetics and Mitochondrial Signaling**	**Room 316/317**

7:30 PM–9:30 PM	**Workshop: Managing Data and Statistics in the Informatics Era** **Ballroom I** **Chair:** *Nathan Baker, Pacific Northwest National Laboratory* A PHYSICIST'S APPROACH TO STATISTICAL ANALYSES OF BIOLOGICAL DATA. *Patrice Koehl* GLYCAN BIOSYNTHESIS: STRUCTURE, INFORMATION, AND HETEROGENEITY. *Mukund Thattai* LARGE-SCALE MACHINE LEARNING APPROACHES FOR MOLECULAR BIOPHYSICS. *Arvind Ramanathan* INFORMATICS APPROACHES TO DATA PRESERVATION AND ANALYSIS IN PROTEIN ELECTROSTATICS. *Nathan A. Baker*
7:30 PM–9:30 PM	**Workshop: Advances in Computing Large Systems** **Ballroom II** **Chair:** *Emad Tajkhorshid, University of Illinois at Urbana-Champaign* REVERSIBLE FOLDING OF HYPERSTABLE RNA TETRALOOPS USING MOLECULAR DYNAMICS SIMULATIONS. *Angel E. Garcia* BACTERIAL OUTER MEMBRANES AND INTERACTIONS WITH MEMBRANE PROTEINS. *Wonpil Im* PROTEIN FOLDING AND RECOGNITION IN THE CELL -- AN IN SILICO APPROACH. *Margaret S. Cheung* ADVANCES IN ATOMIC-LEVEL SIMULATIONS OF LARGE-SCALE FUNCTIONAL MOTIONS OF MEMBRANE TRANSPORTERS. *Emad Tajkhorshid*
7:30 PM–9:30 PM	**Workshop: Microfluidics Tools for Studying Molecules and Cells** **Ballroom III** **Chair:** *Petra Dittrich, ETH Zurich, Switzerland* INTEGRATED MICROFLUIDIC DEVICES FOR STUDYING AGING AND ADHESION OF INDIVIDUAL BACTERIA. *Stephen C. Jacobson* DEMOCRATIZATION OF NEXT-GENERATION IMAGING, DIAGNOSTICS AND MEASUREMENT TOOLS THROUGH COMPUTATIONAL PHOTONICS. *Aydogan Ozcan* A MICROFLUIDIC RAPID FREEZE QUENCH APPARATUS FOR HIGH FIELD EPR MEASUREMENTS. *Daniella Goldfarb* CELL AND VESICLE ANALYSIS IN MICROCHAMBERS. *Petra S. Dittrich*
8:00 PM–10:00 PM	**SOBLA (The Society for Latinoamerican Biophysicists) Meeting** **Room 330**

Tuesday, February 10

7:30 AM–5:00 PM, CHARLES STREET LOBBY
Registration/Information

8:00 AM–9:00 AM, ROOM 327/328/329
Biophysical Society Business Meeting

8:00 AM–4:30 PM, HALL C
Poster Viewing

8:00 AM–5:30 PM, ROOM 301/302/303
Career Center

8:15 AM–10:15 AM, BALLROOM I
Symposium
Biophysics of RNA Processing: Degradation, Splicing, DEAD Box Proteins

Chair
Sun Hur, Harvard University

1684-SYMP 8:15 AM
INSIGHTS INTO HELICASE EVOLUTION FROM THE SPECIFICITY AND MECHANISM OF A DEAD-BOX PROTEIN. **Anna L. Mallam**, David J. Sidote, Alan M. Lambowitz

1685-SYMP 8:45 AM
SINGLE-MOLECULE IMAGING OF PRE-MRNA SPLICING. **Sanjay Tyagi**

1686-SYMP 9:15 AM
AUXILIARY FACTORS AND RNA SUBSTRATES REGULATE DEAD-BOX PROTEIN ACTIVITY BY MODULATION OF THE DEAD-BOX PROTEIN CONFORMATIONAL CYCLE. Ulf Harms, Alexandra Z. Andreou, Airat Gubaev, **Dagmar Klostermeier**

1687-SYMP 9:45 AM
MOLECULAR MECHANISMS OF VIRAL RNA DETECTION: RIG-I AND MDA5. **Sun Hur**

8:15 AM–10:15 AM, BALLROOM II
Symposium
Molecules of Memory: Glutamate Receptor Channels

Chair
Mark Mayer, NIH

1688-SYMP 8:15 AM
CONFORMATIONAL CHANGES UNDERLYING GLUTAMATE RECEPTOR GATING. **Mark Mayer**

1689-SYMP 8:45 AM
AMPA RECEPTOR STRUCTURE, FUNCTION, AND DYNAMICS. **Robert E. Oswald**, Ahmed H. Ahmed, Christopher P. Ptak, Madeline Martinez

1690-SYMP 9:15 AM
INTRACELLULAR DOMAINS OF NMDA RECEPTORS CONTROL CHANNEL PERMEATION AND GATING PROPERTIES. **Gabriela K. Popescu**

1691-SYMP 9:45 AM
NMDA RECEPTORS AS DYNAMIC ALLOSTERIC MACHINES. **Pierre Paoletti**

8:15 AM–10:15 AM, BALLROOM III
Platform
Single-Molecule Spectroscopy

Co-Chairs
H. Peter Lu, Bowling Green State University
Lori Goldner, University of Massachusetts

1692-PLAT 8:15 AM
NMDA RECEPTOR ION CHANNEL DYNAMICS IN LIVING CELLS BY A NOVEL SINGLE-MOLECULE PATCH-CLAMP FRET MICROSCOPY: REVEALING THE MULTIPLE CONFORMATIONAL STATES ASSOCIATED WITH A CHANNEL AT ITS ELECTRICAL OFF STATE. Dibyendu Sasmal, **H. Peter Lu**

1693-PLAT 8:30 AM
EXPLORING TAU CONFORMATIONS AT THE SINGLE-MOLECULE LEVEL IN A MICROFLUIDIC TRAP. **Randall H. Goldsmith**, Sharla Wood, Lydia Manger, Michael Holden, Martin Margittai

1694-PLAT 8:45 AM
3D TRACKING OF SINGLE QUANTUM DOTS THROUGH OFF-FOCUS IMAGING. **Lucia Gardini**, Marco Capitanio, Francesco Saverio Pavone

1695-PLAT 9:00 AM
DECONSTRUCTING PIFE: A SPECTROSCOPIC INVESTIGATION OF THE "PROTEIN INDUCED FLUORESCENCE ENHANCEMENT" PHENOMENON IN CY3. Elana Maria Shepherd Stennett, Monika Anna Ciuba, **Marcia Levitus**

1696-PLAT 9:15 AM
FABRICATION AND SURFACE FUNCTIONALIZATION OF HIGHLY BIREFRINGENT RUTILE PARTICLES FOR TRAPPING IN AN OPTICAL TORQUE WRENCH. **Seungkyu Ha**, Yera Ussembayev, Richard Janissen, Maarten van Oene, Nynke H. Dekker

1697-PLAT 9:30 AM
ELECTRON PARAMAGNETIC RESONANCE FROM A SINGLE BIOMOLECULE. **Richelle M. Teeling-Smith**, Young Woo Jung, Nicolas J. Scozzaro, Jeremy Cardellino, Isaac Rampersaud, Justin A. North, Marek Simon, Vidya P. Bhallamudi, Arfaan Rampersaud, Ezekiel Johnston-Halperin, Michael G. Poirier, P. Chris Hammel

1698-PLAT 9:45 AM
DYNAMICS OF POLYMERIC PROTEIN ASSEMBLIES IN LIVE CELLS REVEALED BY FLUORESCENCE POLARIZATION IMAGING OF SINGLE MOLECULES. **Shalin B. Mehta**, Molly McQuilken, Patricia Occhipinti, Amitabh Verma, Rudolf Oldenbourg, Amy S. Gladfelter, Tomomi Tani

1699-PLAT 10:00 AM
SINGLE-MOLECULE-SENSITIVE FRET IN FREELY-DIFFUSING ATTOLITER DROPLETS. Peker Milas, Sheema Rahmanseresht, Kieran P. Ramos, Ben D. Gamari, **Lori S. Goldner**

8:15 AM–10:15 AM, BALLROOM IV

Platform
Skeletal Muscle Mechanics, Structure, and Regulation

Co-Chairs
Brett Colson, University of Minnesota
Barbara Joureau, VU University Medical Center, The Netherlands

1700-PLAT 8:15 AM
ACTIVATION AND RELAXATION KINETICS IN SKELETAL AND CARDIAC MUSCLES. **Srboljub M. Mijailovich**, Boban Stojanovic, Djordje Nedic, Michael A. Geeves

1701-PLAT 8:30 AM
ALTERNATIVE VERSIONS OF THE MYOSIN CONVERTER VARY CROSS-BRIDGE STIFFNESS AND MUSCLE FORCE GENERATION. **Douglas M. Swank**, Bernadette M. Glasheen, Seemanti Ramanath, Qian Wang

1702-PLAT 8:45 AM
INTERMOLECULAR COOPERATIVITY OF SKELETAL MYOSINS ENHANCES FORCE OUTPUT IN MYOFILAMENTS. **Motoshi Kaya**, Yoshiaki Tani, Takumi Washio, Toshiaki Hisada, Hideo Higuchi

1703-PLAT 9:00 AM
SHORTENING-INDUCED FORCE DEPRESSION IN SINGLE SARCOMERES IS ABOLISHED BY MGADP-ACTIVATION. **Neal Trecarten**, Fabio C. Minozzo, Felipe S. Leite, Dilson E. Rassier

1704-PLAT 9:15 AM
FORCE-SARCOMERE LENGTH RELATIONS IN PATIENTS WITH THIN FILAMENT MYOPATHY CAUSED BY MUTATIONS IN NEB, ACTA1, TPM2, TPM3, KBTBD13, KLHL40 AND KLHL41. **Barbara Joureau**, J.M de Winter, Christopher T. Pappas, Edoardo Malfatti, Alan Beggs, Nigel Clarke, Norma Romero, Carol Gregorio, Henk Granzier, Ger J.M. Stienen, Coen C.A Ottenheijm

1705-PLAT 9:30 AM
AN ACTIVE ROLE FOR THE Z-BAND DURING CONTRACTION AND RELAXATION. Lloyd Zhao, Lanette R. Fee, Sehyang Han, Michael K. Reedy, **Robert J. Perz-Edwards**

1706-PLAT 9:45 AM
EFFECTS OF CARDIAC MYOSIN BINDING PROTEIN-C ON ACTIN MOTILITY ARE EXPLAINED WITH A DRAG-ACTIVATION-COMPETITION MODEL. **Sam Walcott**, Steffen Docken, Samantha P. Harris

1707-PLAT 10:00 AM
THE MYOSIN SUPER-RELAXED STATE IS REGULATED BY ESTRADIOL. **Brett A. Colson**, Karl J. Petersen, Brittany C. Collins, David D. Thomas, Dawn A. Lowe

8:15 AM–10:15 AM, ROOM 307/308

Platform
Intracellular Channels and Calcium Sparks and Waves

Co-Chairs
Montserrat Samso, Carnegie Mellon University
Qiu-Xing Jiang, University of Texas Southwestern Medical Center

1708-PLAT 8:15 AM
STRUCTURAL INSIGHTS INTO THE NATURE OF THE UNIQUE ANION BINDING SITE WITHIN THE CARDIAC RYANODINE RECEPTOR N-TERMINAL REGION AND ASSOCIATED DISEASE MUTATIONS. **Siobhan Wong**, Michele Bedin, Filip Van Petegem

1709-PLAT 8:30 AM
CROSSTALK BETWEEN RYR2 OXIDATION AND PHOSPHORYLATION CONTRIBUTES TO CARDIOMYOPATHY IN MICE WITH DUCHENNE MUSCULAR DYSTROPHY. **George G. Rodney**, Qiongling Wang, Guoliang Wang, Xander H.T. Wehrens

1710-PLAT 8:45 AM
SECRETONEURIN, A NOVEL ENDOGENOUS CAMKII INHIBITOR, AUGMENTS CARDIOMYOCYTE CALCIUM HANDLING AND INHIBITS ARRHYTHMOGENIC CALCIUM RELEASE. Anett H. Ottesen, Cathrine R. Carlson, Andrew G. Edwards, Ole J. B. Landsverk, Rune F. Johansen, Morten K. Moe, Magnar Bjørås, Mats Stridsberg, Torbjørn Omland, Geir Christensen, Helge Røsjø, **William E. Louch**

1711-PLAT 9:00 AM
LARGE-SCALE, AUTOMATED CALCIUM SPARK ANALYSIS USING ISPARK REVEALS FUNCTIONAL AND SPATIAL REMODELING DURING CARDIAC HYPERTROPHY. Qinghai Tian, Laura Schröder, Aline Flockerzi, Andre Zeug, Lars Kaestner, **Peter Lipp**

1712-PLAT 9:15 AM
REGULATION OF CALCIUM CLOCK-MEDIATED PACEMAKING BY INOSITOL-1,4,5-TRISPHOSPHATE RECEPTORS IN MOUSE SINOATRIAL NODAL CELLS. **Nidhi Kapoor**, Andrew Tran, Jeanney Kang, Rui Zhang, Kenneth D. Philipson, Joshua I. Goldhaber

1713-PLAT 9:30 AM
STRUCTURAL STUDIES OF IP3R BY CRYOEM. **Qiu-Xing Jiang**, Hui Zheng, Marc Llaguno

1714-PLAT 9:45 AM
MULTIPLE CLOSED STATES OF THE RYANODINE RECEPTOR DETERMINED BY CRYOEM. Pablo Castro-Hartmann, Joshua Lobo, **Montserrat Samso**

1715-PLAT 10:00 AM
CRYSTAL STRUCTURES OF THE RYANODINE RECEPTOR SPRY2 DOMAIN. **Kelvin Lau**, Filip Van Petegem

8:15 AM–10:15 AM, ROOM 309/310

Platform
Membrane Structure

Co-Chairs
Stephanie Tristram-Nagle, Carnegie Mellon University
Helgi Ingolfsson, Cornell University

1716-PLAT 8:15 AM
INTERACTION OF HIV-1 GAG PROTEIN'S MA MEMBRANE BINDING DOMAIN WITH MEMBRANE MIMICS PROBED BY LOW- AND WIDE-ANGLE X-RAY SCATTERING. Lauren O'Neil, Leah Langer, Davina Perera, Zachary Dell, John F. Nagle, **Stephanie Tristram-Nagle**

1717-PLAT 8:30 AM
INFLUENCE OF DOMAIN SIZE ON STRUCTURE AND ELASTIC FLUCTUATIONS IN COMPLEX LIPID MIXTURES. **Peter Heftberger**, Benjamin Kollmitzer, Frederick Heberle, Jonathan Nickels, John Katsaras, Georg Pabst

1718-PLAT 8:45 AM
PHASE COEXISTENCE IN LIPID MEMBRANES INDUCED BY BUFFERING AGENTS AND CHARGED LIPID HEADGROUPS. Merrell A. Johnson, Soenke Seifert, Millicent A. Firestone, Horia I. Petrache, **Ann C. Kimble-Hill**

1719-Plat 9:00 am
ANALYSIS OF PI(4,5)P2 LATERAL ORGANIZATION AT THE PLASMA MEMBRANE OF LIVING CELLS THROUGH FRET. **Maria João Sarmento**, Ana Coutinho, Manuel Prieto, Fábio Fernandes

1720-Plat 9:15 am
IMPACT OF PI(3,4,5)P3-MEDIATED BETA-ARRESTIN-1 RECRUITMENT ON STRUCTURE OF ASYMMETRIC LIPID BILAYERS. **Achebe N. O. Nzulumike**, Signe Mathiasen, Jacob P. Mahoney, Marité Cárdenas Gómez, Dimitrios G. Stamou, Kell Mortensen

1721-Plat 9:30 am
COMPUTATIONAL LIPIDOMICS AND THE LIPID ORGANIZATION OF CELL ENVELOPES. **Helgi I. Ingolfsson**, Manuel N. Melo, Tsjerk A. Wassenaar, Xavier Periole, Alex H. de Vries, D. Peter Tieleman, Siewert J. Marrink

1722-Plat 9:45 am
PHASE BEHAVIOR OF SYNAPTOSOMAL MEMBRANES: THE EFFECT OF LIPID COMPOSITION AND TEMPERATURE. **Atsuko Kimura**, Gulcin Pekkurnaz, Tomohiro Kimura, Sierra C. Germeyan, Jessica Zimmerberg-Helms, James Loewke, Paul S. Blank, Thomas S. Reese, Klaus Gawrisch, Ludmila Bezrukov, Joshua Zimmerberg

1723-Plat 10:00 am
MORPHOLOGY INDUCED RECEPTOR TRAPPING IN ARTIFICIAL DENDRITIC SPINES. **Wim Pomp**, Thomas Schmidt

8:15 am–10:15 am, Room 314/315

Platform
Protein Structure and Conformation III

Co-Chairs
Nadia Izadi Pruneyre, Institute Pasteur, France
Roberto Delgadillo, CNRS, France

1724-Plat 8:15 am
TRANSMEMBRANE SIGNALING THROUGH A BACTERIAL HEME TRANSPORTER. **Nadia Izadi Pruneyre**

1725-Plat 8:30 am
TOM1 MODULATES THE ENDOSOMAL FUNCTION OF TOLLIP VIA A FOLDING-UPON-BINDING MECHANISM. Shuyan Xiao, Mary K. Brannon, Geoffrey S. Armstrong, Kristen Fread, Jeffrey Ellena, John H. Bushweller, Carla V. Finkielstein, **Daniel G. S. Capelluto**

1726-Plat 8:45 am
X-RAY STRUCTURE OF A CALCIUM ACTIVATED TMEM16 LIPID SCRAMBLASE. **Janine D. Brunner**, Novandy K. Lim, Stephan Schenck

1727-Plat 9:00 am
AUTOPHAGY: SOLUTION STRUCTURE OF THE ATG17-ATG29-ATG31-ATG1-ATG13 COMPLEX. **Juergen Koefinger**, Michael J. Ragusa, Gerhard Hummer, James H. Hurley

1728-Plat 9:15 am
STRUCTURAL STUDIES OF G-ALPHA-Q SIGNALING. **Veronica G. Taylor**, Elena Kondrashkina, Paige Bommarito, George Lund, Tomasz Cierpicki, John J G Tesmer

1729-Plat 9:30 am
KINETICS AND THERMODYNAMICS OF APICOMPLEXA AMA1-RON2SP INTERACTION. **Roberto F. Delgadillo**, Maryse Lebrun, Martin Boulanger, Dominique Douguet

1730-Plat 9:45 am
CONFORMATION OF THE TROPONIN I C-TERMINAL DOMAIN IN SILICO AND IN VITRO: A CONSIDERATION OF DYNAMICS IN COMPARING SIMULATION AND EXPERIMENT. **Lauren Ann Metskas**, Elizabeth Rhoades

1731-Plat 10:00 am
NMR STRUCTURAL STUDIES OF A 52 KDA HETEROCYLIZATION DOMAIN OF THE YERSINIABACTIN NON-RIBOSOMAL PEPTIDE SYNTHETASE. **Subrata H. Mishra**, Bradley J. Harden, Scott R. Nichols, Dominique P. Frueh

8:15 am–10:15 am, Room 316/317

Platform
Bioengineering and Biomaterials

Co-Chairs
Jacob Schmidt, University of California, Los Angeles
Stavroula Sofou, Rutgers University

1732-Plat 8:15 am
NANOPARTICLE-INDUCED MEMBRANE PORE FORMATION STUDIED WITH LIPID BILAYER ARRAYS. **Jacob Schmidt**

1733-Plat 8:30 am
STICKY PATCHES ON LIPID NANOPARTICLES GENERATE BINDING GEOMETRIES THAT ENABLE EFFECTIVE TARGETING OF OTHERWISE UNTARGETABLE CANCERS. Michelle Sempkowski, Yannis Kevrekidis, **Stavroula Sofou**

1734-Plat 8:45 am
CONTROLLED ACTIVATION OF PROTEIN ROTATIONAL DYNAMICS USING SMART HYDROGEL TETHERING. Yijia Xiong, Brenda M. Beech, Curt B. Boschek, Cheryl L. Baird, Diana J. Bigelow, Kathleen McAteer, **Thomas C. Squier**

1735-Plat 9:00 am
IMMOBILIZATION OF PROTEINS ON CHEMICALLY MODIFIED GERMANIUM INVESTIGATED BY ATR-FTIR. **Jonas Schartner**, Konstantin Gavriljuk, Andreas Nabers, Klaus Gerwert, Carsten Kötting

1736-Plat 9:15 am
USE OF SHORT AMYLOIDOGENIC PEPTIDES IN PROTEIN-LIGAND DETECTION SYSTEMS. Gabriela M. Guerra, Sónia Gonçalves, Nuno C. Santos, **Ivo C. Martins**

1737-Plat 9:30 am
ICE GROWTH CONTROL WITH ICE-BINDING PROTEINS. **Ido Braslavsky**, Ran Drori, Yeliz Celik, Peter L. Davies

1738-Plat 9:45 am
A TWO-COLOR NON-MUSCLE SERCA FRET SENSOR FOR DIABETES DRUG DISCOVERY USING FLUORESCENCE LIFETIME DETECTION. **Tory Schaaf**, Ji Li, Rocio Foncea, Simon Gruber, Kurt Peterson, Karl Petersen, Cornea Razvan, Greg Gillispie, David Bernlohr, David Thomas

1739-Plat 10:00 am
A NOVEL MOLECULAR RULER BETWEEN FLUORESCENT PROTEINS. **Gary CH Mo**, Jin Zhang

9:00 AM–10:00 AM, ROOM 318

Subgroup Chairs Meeting

9:30 AM–10:30 AM, ROOM 301/302/303

Career Center Workshop
Successfully Navigating the International Job Search

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.

10:00 AM–5:00 PM, HALL C

Biomolecular Discovery Dome

Visit this 3-D portable Dome, sponsored by the Public Affairs Committee, to see how difficult biophysical topics can be made accessible to high school students and the public. Short videos that communicate the excitement of looking at macromolecular complexes and understanding the molecular basis for life are being shown throughout the week.

10:00 AM–5:00 PM, HALL C

Exhibits

10:15 AM–11:00 AM, HALL C

Coffee Break

10:30 AM–12:00 PM, HALL C, ROOM B

Exhibitor Presentation
SensiQ Technologies Inc

High End Microscope Platform for Multimodal Live Cell Imaging
SensiQ's dynamic injection methods provide complete, one-pass kinetic and equilibrium data from a single injection while reducing statistical error/noise. Simply load one, highest analyte concentration vial and the instrument exposes the surface to either a stepwise (FastStep®) or continuous gradient (OneStep®) of concentrations. These approaches increase the ease/throughput of SPR experiments and provide complete data sets for interactions that are complicated by incomplete surface regeneration. FastStep® uses a patented onboard micro-mixing technique to create increasing fixed concentrations of analyte in real time without generating partial dissociation responses as the instrument prepares subsequent concentrations. This technique improves throughput by decreasing the time to complete a full run while simplifying data analysis. OneStep® is the ultimate evolution of FastStep®. Taylor dispersion fluidics establish a continuous gradient of analyte concentrations which is flowed over the surface to generate a sigmoidal binding curve. This technique introduces a time dependent variable that is not possible in traditional injection techniques and allows for the quantitative separation of multiple binding sites with different affinities. OneStep® also increases the dynamic range of allowable concentrations thereby removing the need to perform test injections or accurately guess the affinity of an unknown interaction. Importantly, OneStep® also provides added data content in SPR experiments by providing a measure of the analyte diffusion coefficient to help identify analytes that have a tendency to oligomerize or aggregate. SensiQs' operational software was developed to simplify assay development and instrument operation. Using a drag and drop icon based programming approach, traditional program "scripting" is eliminated to simplify and speed assay development. Executable protocols for high throughput experiments can be developed in minutes. Programming examples will show how operational actions have been optimized to decrease runtime and increase throughput. Streamlining data analysis of small or large data sets using our Q-Dat software will also be presented.
Presenters
Derek Beahm, SensiQ Application Scientist
Rick Cope, SensiQ Sales Representative

10:45 AM–12:45 PM, BALLROOM I

Symposium
Awards Symposium

Chair
Dorothy Beckett, University of Maryland, Society President

NO ABSTRACT **10:45 AM**
RECENT PROGRESS ON OLD PROBLEMS. **Harold Scheraga**

NO ABSTRACT **11:05 AM**
MEMBRANE PROTEINS NEED LIPIDS. **Anthony Watts**

NO ABSTRACT **11:25 AM**
EVOLUTION AND ASSEMBLY OF PROTEIN COMPLEXES. **Sarah Teichmann**

NO ABSTRACT **11:45 AM**
SURPRISES I FOUND IN STUDYING MEMBRANES. **Gerald W. Feigenson**

NO ABSTRACT **12:05 PM**
TALES OF TUBULIN TAILS. **Antonina Roll-Mecak**

NO ABSTRACT **1:25 PM**
FROM CYTOKINESIS TO THE EARLY MOUSE EMBRYO DEVELOPMENT: A SIMPLE PHYSICAL VIEW OF CELL MORPHOGENESIS. **Hervé Turlier**

10:45 AM–12:45 PM, BALLROOM II

Platform
Protein Fold Stability

Co-Chairs
Dominika Gruszka, Cambridge University, United Kingdom
Nathaniel Nucci, Rowan University

1740-PLAT **10:45 AM**
THE FOLDING OF SASG: A LONG AND REMARKABLY STRONG MONOMERIC PROTEIN RESPONSIBLE FOR BIOFILM FORMATION IS A HIGHLY COOPERATIVE SYSTEM.
Dominika T. Gruszka, Fiona Whelan, Emanuele Paci, David J. Brockwell, Jennifer R. Potts, Jane Clarke

1741-PLAT **11:00 AM**
PUTTING ON THE SQUEEZE: SOLUTION NMR INVESTIGATIONS OF PROTEIN STRUCTURE AND HYDRATION UNDER HIGH PRESSURE. **Nathaniel V. Nucci**, Brian Fuglestad, Connie Liao, Evangelia A. Athanasoula, A. Joshua Wand

1742-PLAT **11:15 AM**
EFFECTS OF CROWDING, OSMOLYTES, TEMPERATURE AND PRESSURE ON THE INTERACTION POTENTIAL OF DENSE PROTEIN SOLUTIONS. **Roland Winter**

1743-PLAT **11:30 AM**
A MULTISCALE MODEL FOR PH-DEPENDENT FOLDING AND BINDING OF A CONDITIONALLY DISORDERED CHAPERONE.
Logan S. Ahlstrom, Sean M. Law, Alex Dickson, Charles L. Brooks III

1744-Plat 11:45 AM
STRUCTURAL ORIGIN OF LANDSCAPE ROUGHNESS IN PROTEIN FOLDING FROM SINGLE-MOLECULE FRET AND ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS.
Hoi Sung Chung, Stefano Piana-Agostinetti, David E. Shaw, William A. Eaton

1745-Plat 12:00 PM
RESOLVING COOPERATIVE INTERACTIONS IN PROTEIN FOLDING. **Jacob D. Marold**, Thuy P. Dao, Tural Aksel, Doug Barrick

1746-Plat 12:15 PM
MAPPING THE MECHANISM OF FAST PROTEIN FOLDING WITH MULTIPLE PROBES. **Taras V. Pogorelov**, Maxim B. Prigozhin, Shu-Han Chao, Martin Gruebele

1747-Plat 12:30 PM
PHOTOBLEACHING AND STABILITY OF RED FLUORESCENT PROTEINS. **Mengyang Xu**, Deepu K. George, Ralph Jimenez, Andrea G. Markelz

10:45 AM–12:45 PM, Ballroom III

Platform
Voltage-gated K Channels II

Co-Chairs
Jianmin Cui, Washington University in St. Louis
Kelly Aromolaran, Albert Einstein College of Medicine

1748-Plat 10:45 AM
EMERGING ROLE FOR KCNQ1 IN ISCHEMIA-INDUCED NEURONAL DEATH. **Kelly A. Aromolaran**, Jee-Yeon Hwang, Thomas V. McDonald, R.Suzanne Zukin

1749-Plat 11:00 AM
SPECTROSCOPIC AND BIOCHEMICAL STUDIES OF TRIP8B REGULATION OF HCN CHANNELS. **John R. Bankston**, Hannah A. DeBerg, Joel C. Rosenbaum, Peter S. Brzovic, Stefan Stoll, William N. Zagotta

1750-Plat 11:15 AM
EPILEPSY RELATED SLACK CHANNEL MUTANTS LEAD TO CHANNEL OVER-ACTIVITY BY TWO DIFFERENT MECHANISMS. Qiong-Yao Tang, Fei-Fei Zhang, Jie Xu, Ran Wang, Jian Chen, **Zhe Zhang**

1751-Plat 11:30 AM
QUANTUM CALCULATIONS SHOW A WATER COLUMN IN A POTASSIUM ION CHANNEL PORE, AND ITS ROLE IN GATING AND CONDUCTION. Alisher M. Kariev, **Michael E. Green**

1752-Plat 11:45 AM
PIP2 AND SURFACE EXPRESSION UNDERLIE APO-CALMODULIN DEPENDENT KV7.2/KCNQ2 CURRENT POTENTIATION. **Carolina Gomis-Perez**, Maria Virginia Soldovieri, Araitz Alberdi, Paolo Ambrosino, Michela Di Maria, Alessandro Alaimo, Ganeko Bernardo-Seisdedos, Covadonga Malo, Pilar Areso, Maurizio Taglialatela, Alvaro Villarroel

1753-Plat 12:00 PM
THE MECHANISM OF KCNE1 MODULATION OF KCNQ1 CHANNELS. Mark A. Zaydman, Marina Kasimova, Kelli Delaloye, Jingyi Shi, Hongwu Liang, Zachary Beller, Mounir Tarek, **Jianmin Cui**

1754-Plat 12:15 PM INTERNATIONAL TRAVEL AWARDEE
DISRUPTION OF ASSEMBLY/CALMODULIN-BINDING COUPLING AND CALMODULIN-DEPENDENT POTENTIATION OF KV7.2 CHANNELS BY A EPILEPTOGENIC HELIX D MUTATION. **Araitz Alberdi**, Ganeko Bernardo-Seisdedos, Carolina Gomis-Perez, Alessandro Alaimo, Covadonga Malo, Elisabeth Butz, Christian Wahl-Schott, Pilar Areso, Alvaro Villarroel

1755-Plat 12:30 PM
STATIN INHIBITS IKS INTERNALIZATION IN RESPONSE TO PROLONGED STRESS STIMULUS. **Xiaorong Xu Parks**, Elsa Ronzier, Rachael E. Abraham, Jin O-Uchi, Coeli M. Lopes

10:45 AM–12:45 PM, Ballroom IV

Platform
Membrane Receptors and Signal Transduction

Co-Chairs
Kalina Hristova, Johns Hopkins University
Nils Berglund, Bioinformatics Institute, Singapore

1756-Plat 10:45 AM
CONFRONTATIONAL DYNAMICS OF A GPCR REVEALED BY SINGLE MOLECULE FRET. **Reza Vafabakhsh**, Joshua Levitz, Ehud Y. Isacoff

1757-Plat 11:00 AM
BIASED AGONISM AT OPIOID RECEPTORS: INSIGHTS FROM ANALYSIS OF STRUCTURAL INTERACTION FINGERPRINTS.
Davide Provasi, Paola Bisignano, Marta Filizola

1758-Plat 11:15 AM
CONFORMATIONAL DYNAMICS OF A G PROTEIN-COUPLED RECEPTOR AT THE SINGLE-MOLECULE LEVEL.
Rajan Lamichhane, Jeffrey J. Liu, Raymond C. Stevens, David P. Millar

1759-Plat 11:30 AM
ENTRY FROM THE LIPID BILAYER: A NOVEL PATHWAY FOR INHIBITION OF A PEPTIDE G-PROTEIN COUPLED RECEPTOR BY A LIPOPHILIC SMALL MOLECULE. **Michael P. Bokoch**, Hyunil I. Jo, James R. Valcourt, Yoga Srinivasan, Kazuma Yasuhara, Albert C. Pan, Ron O. Dror, David E. Shaw, William F. DeGrado, Shaun R. Coughlin

1760-Plat 11:45 AM
SINGLE MOLECULE IMAGING OF M_2 MUSCARINIC RECEPTORS IN LIVE HEART EXPLANTS. **Gregory I. Mashanov**, Tatiana A. Nenasheva, Ross A. Breckenridge, Nigel J.M. Birdsall, Justin E. Molloy

1761-Plat 12:00 PM
THE STRUCTURAL BASIS FOR LIPID A RECOGNITION IN THE CD14 INNATE IMMUNE CO-RECEPTOR. **Nils A. Berglund**, Daniel A. Holdbrook, Syma Khalid, Peter J. Bond

1762-Plat 12:15 PM
INSIDE-OUT SIGNALING OF ONCOGENIC EGFR MUTANTS PROMOTES LIGAND-INDEPENDENT DIMERIZATION.
Christopher C. Valley, Donna J. Arndt-Jovin, Thomas M. Jovin, Mara P. Steinkamp, Alexey I. Chizhik, Narain Karedla, William S. Hlavacek, Bridget S. Wilson, Keith A. Lidke, Diane S. Lidke

1763-Plat 12:30 PM
MECHANISMS OF AUTOINHIBITION AND DIMERIZATION OF THE EGF RECEPTOR FAMILY. **Patrick Byrne**, Kalina Hristova, Daniel Leahy

10:45 AM–12:45 PM, ROOM 307/308

Platform
DNA Structure

Co-Chairs
Luis Marky, University of Nebraska Medical Center
Thomas Kuhlman, University of Illinois at Urbana-Champaign

1764-PLAT 10:45 AM
SOLID-TO-FLUID DNA TRANSITION INSIDE HSV-1 CAPSID CLOSE TO THE TEMPERATURE OF INFECTION. **Alex Evilevitch**, Udom Sae-Ueng, Dong Li, Xiaobing Zuo, Jamie Huffman, Fred Homa, Donald Rau

1765-PLAT 11:00 AM **EDUCATION TRAVEL AWARDEE**
NANOPORE SENSORS FOR ANALYSIS OF CIRCULAR DNA TOPOLOGY. **Eric Krueger**, Jiwook Shim, A. Nicole Chang, Basheer Subei, Arman Fathizadeh, Katie Livingston, Paul Davis, Elton Graugnard, Fatemeh Khalili-Araghi, Rashid Bashir, David Estrada, Daniel Fologea

1766-PLAT 11:15 AM
MECHANICAL PROPERTIES AND STRAND INVASION OF DUPLEX TELOMERE DNA PROBED USING MAGNETIC TWEEZERS. **Xi Long**, Michael D. Stone

1767-PLAT 11:30 AM
HIGH-THROUGHPUT QUANTIFICATION OF THE IMPACT OF DIFFERENT OSMOLYTES ON THE THERMAL STABILITY OF DNA. **Prem K. Sinha**, Mikhail Sinev, Jörg Rösgen

1768-PLAT 11:45 AM
REAL TIME TRANSPOSABLE ELEMENT DYNAMICS. **Thomas E. Kuhlman**

1769-PLAT 12:00 PM
EFFECT OF METHYLATION ON THE NANOMECHANICS OF DOUBLE-STRANDED DNA. **Csaba I. Pongor**, Pasquale Bianco, Miklós Kellermayer

1770-PLAT 12:15 PM
THERMODYNAMICS FOR THE INTERACTION OF PEG-PLL COPOLYMERS WITH DNA. Hui-Ting Lee, Alexander J. Lushnikov, Irine Khustsishvili, **Luis A. Marky**

1771-PLAT 12:30 PM
CORRELATING DRUG BINDING AFFINITIES WITH BASE PAIR OPENING RATES IN DNA. **Mary E. Hatcher**, Mary Creedon

10:45 AM–12:45 PM, ROOM 309/310

Platform
Exocytosis, Endocytosis and Membrane Fusion

Co-Chairs
Anne Kenworthy, Vanderbilt University
Gregory Melikian, Emory University

1772-PLAT 10:45 AM
MICROTUBULE MOTORS DRIVE PLASMA MEMBRANE TUBULATION IN CLATHRIN-INDEPENDENT ENDOCYTOSIS. Charles A. Day, Nicholas W. Baetz, Ajit Tiwari, Kimberly R. Drake, Courtney A. Copeland, Lewis J. Kraft, Bing Han, Daniel J. Chinnapen, Michael W. Davidson, Randall K. Holmes, Michael G. Jobling, Trina A. Schroer, Wayne I. Lencer, **Anne K. Kenworthy**

1773-PLAT 11:00 AM
HIGH-SPEED ATOMIC FORCE MICROSCOPY OF ESCRT PROTEIN ASSEMBLY. Lorena Redondo, Nicolas Chiaruttini, Atsushi Miyagi, Adai Colom, Aurélien Roux, **Simon Scheuring**

1774-PLAT 11:15 AM
MECHANISMS OF MEMBRANE SHAPING BY PERIPHERAL PROTEINS. **Tobias Baumgart**

1775-PLAT 11:30 AM
ROLE OF HEMAGGLUTININ PALMITOYLATION IN ASSEMBLY AND FUSION OF INFLUENZA VIRUS-LIKE PARTICLES. **Petr Chlanda**, Elena Mekhedov, Hang Waters, Paul S. Blank, Josh Zimmerberg

1776-PLAT 11:45 AM
PREFUSION STRUCTURES OF LIPID-BOUND SNARE PROTEINS SUGGEST FOLDING PATHWAYS OF TRANS-SNARE COMPLEX. **Binyong Liang**, Volker Kiessling, Damian Dawidowski, David S. Cafiso, Lukas K. Tamm

1777-PLAT 12:00 PM
ENERGETICS AND KINETICS OF SNARE ZIPPERING AND REGULATION REVEALED BY SINGLE-MOLECULE MANIPULATION APPROACH. **Yongli Zhang**

1778-PLAT 12:15 PM
TEMPORALLY RESOLVING PROTEIN AND LIPID COLOCALIZATION AT EXOCYTIC SITES IN INS-1 CELLS. **Adam J. Trexler**, Justin Taraska

1779-PLAT 12:30 PM
DEFINING A RETROVIRUS ENTRY SITE BY SINGLE PARTICLE TRACKING. **Gregory Melikian**, Sergi Padilla-Parra, Naoyuki Kondo, Mariana Marin

10:45 AM–12:45 PM, ROOM 314/315

Platform
Force Spectroscopy and Scanning Probe Microscopy

Co-Chairs
Felix Rico, INSERM and Aix-Marseille University, France
Yan Jiang, Harvard University

1780-PLAT 10:45 AM
IMAGING AND THREE-DIMENSIONAL RECONSTRUCTION OF CHEMICAL GROUPS IN A PROTEIN COMPLEX USING DNA LABELS. **Duckhoe Kim**, Ozgur Sahin

1781-PLAT 11:00 AM
ACOUSTIC FORCE SPECTROSCOPY. **Douwe Kamsma**, Gerrit Sitters, Gregor Thalhammer, Monika Ritsch-Marte, Erwin J.G. Peterman, Gijs J.L. Wuite

1782-PLAT 11:15 AM
REVISITING THE FREE ENERGY OF MODULAR PROTEINS UNDER FORCE. **Ionel Popa**, Jaime Andrés Rivas-Pardo, Edward C. Eckels, Jessica Valle-Orero, Thomas B. Kahn, Ronen Berkovich, Guillaume Stirnemann, Hu Chen, Vicente I. Fernandez, Bruce J. Berne, Jie Yan, Julio M. Fernandez

1783-PLAT 11:30 AM **EDUCATION TRAVEL AWARDEE**
DIRECTLY OBSERVING THE REVERSIBLE UNFOLDING AND REFOLDING OF AN ALPHA/BETA PROTEIN BY SINGLE-MOLECULE ATOMIC FORCE MICROSCOPY. **Chengzhi He**, Chunguang Hu, Xiaodong Hu, Xiaotang Hu, Adam Xiao, Hongbin Li

1784-Plat 11:45 am
ELECTROMAGNETIC TWEEZERS WITH INDEPENDENT FORCE AND TORQUE CONTROL. **Chang Jiang**, Troy A. Lionberger, Diane M. Wiener, Edgar Meyhöfer

1785-Plat 12:00 pm
SURFACE-FREE SINGLE-MOLECULE FORCE SPECTROSCOPY. **Yan Jiang**, Wesley Wong

1786-Plat 12:15 pm
HIGH-SPEED FORCE SPECTROSCOPY UNBINDS STREPTAVIDIN-BIOTIN AT THE VELOCITY OF MOLECULAR DYNAMICS SIMULATIONS. **Felix Rico**, Andreas Russek, Helmut Grubmueller, Simon Scheuring

1787-Plat 12:30 pm
THE PRINCESS AND THE PEA: A STORY OF CELL MECHANICS. **Mehdi Roeinpeikar**, Qian Xu, Xuefeng Wang, Taekjip Ha

10:45 am–12:45 pm, Room 316/317

Platform
Protein-Small Molecule Interactions

Co-Chairs
Jürgen Bosch, Johns Hopkins University
Sonya Hanson, Memorial Sloan Kettering Cancer Center

1788-Plat 10:45 am
BIASING POTENTIAL REPLICA EXCHANGE MULTI-SITE λ-DYNAMICS FOR EFFICIENT FREE ENERGY CALCULATIONS OF PROTEIN-LIGAND INTERACTIONS. **Kira A. Armacost**, Garrett B. Goh, Charles L. Brooks

1789-Plat 11:00 am
SURVEY OF PHOSPHORYLATION NEAR DRUG BINDING SITES IN THE PROTEIN DATA BANK (PDB) AND THEIR EFFECTS. **Kyle P. Smith**, Kathleen M. Gifford, Joshua S. Waitzman, Sarah E. Rice

1790-Plat 11:15 am **Education Travel Awardee**
IDENTIFICATION AND CHARACTERIZATION OF PROTEIN-PROTEIN INTERACTION EFFECTORS TARGETING THE INVASION MACHINERY OF THE MALARIA PARASITE. **Lauren E. Boucher**, Christine S. Hopp, Photini Sinnis, Jürgen Bosch

1791-Plat 11:30 am
ABSOLUTE BINDING FREE ENERGY CALCULATIONS OF BROMODOMAIN INHIBITORS. **Matteo Aldeghi**, Stefan Knapp, Alexander Heifetz, John J. Barker, Michael J. Bodkin, Richard J. Law, Philip C. Biggin

1792-Plat 11:45 am
POSITIVE MODULATORS OF GLYCINE RECEPTORS WITH ANALGESIC POTENTIAL IDENTIFIED BY VIRTUAL SCREENING. **Marta M. Wells**, David D. Mowrey, Edom Seyoum, Tianmo Sun, Yan Xu, Pei Tang

1793-Plat 12:00 pm
GREEN AND BLACK TEA POLYPHENOLS MECHANISTICALLY INHIBIT THE AGGREGATION OF AMYLOID-β IN ALZHEIMER'S DISEASE. **Shelby E. Chastain**, Melissa Moss

1794-Plat 12:15 pm
EFFECT OF REACTIVE ALDEHYDES ON IONOPHORE-MEDIATED TRANSMEMBRANE TRANSLOCATIONS OF H^+ AND K^+. **Alina A. Pashkovskaya**, Elena E. Pohl

1795-Plat 12:30 pm
DEVELOPING HIGH-THROUGHPUT FLUORESCENCE-BASED ASSAYS FOR MEASURING KINASE INHIBITOR FREE ENERGIES OF BINDING. **Sonya M. Hanson**, Jan-Hendrik Prinz, Julie M. Behr, Patrick B. Grinaway, Arien S. Rustenburg, Kyle A. Beauchamp, Daniel L. Parton, John D. Chodera

12:00 pm–1:30 pm, Room 331/332

Funding Opportunities for Faculty at Primarily Undergraduate Institutions

The Education Committee is hosting this session aimed at helping PUI faculty find funding sources that will help them to establish or maintain an active and productive undergraduate research laboratory.

Speakers
Jean Chin, NIGMS
Kamal Shukla, NSF

12:00 pm–2:00 pm, Room 318/319

Postdoc to Faculty Q&A: Transitions Forum and Luncheon

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 Health Science Center
Jane Clarke, University of Cambridge, United Kingdom
Barry Grant, University of Michigan
Anne Hinderliter, University of Minnesota, Duluth
Rohit Pappu, Washington University, St. Louis
Catherine Royer, Rensselaer Polytechnic Institute
Madeline Shea, University of Iowa Carver College of Medicine
Shai Silberberg, NIH/NINDS
Joanna Sulkowska, University of Warsaw, Poland

12:30 pm–2:00 pm, Hall C, Room B

Exhibitor Presentation
Nanion Technologies GmbH

Measure More Membrane: Cells, Bilayers and Transporter Activity
The Port-a-Patch turned 10 years old last year, and is going stronger than ever. It's still the smallest patch clamp rig in the world, and makes patch clamp recordings accessible to anyone spending a couple of hours with it. Giga-seal recordings and the excellent voltage-clamp of the cellular membrane ensure high quality data, and the Port-a-Patch add-ons allow unprecedented experimental freedom, including temperature control, internal perfusion, automated action potential recordings, and recordings from primary and stem cell-derived cells.

The Orbit 16 is a parallel device for efficient formation of and recordings from up to 16 artificial bilayers at once, for parallel bilayer-reconstitution of ion channels and nanopores. Using Micro Electrode Cavity Array (MECA, Ionera), a 4 x 4 array of circular micro-cavities in a highly inert polymer, the bilayer is automatically formed by remotely actuated painting (Ionera- SPREAD), which all will be demonstrated during the session.

Ion transporters and pumps play an important role within general metabolism and information processing of organisms. The SURFE2R is a unique platform for direct measurements ion transporters and ion channels in diverse and heterologous membranes. It is easy-to-handle, highly sensitive and a very efficient screening platform. The SURFE2R N1 is a small footprint, fully automated device recording from membrane preparations, with proven success using native tissue, mammalian and insect cell lines, bacteria, organelles, and proteoliposomes.

Join this workshop for hands-on experiments and information about three outstanding platforms: Port-a-Patch, Orbit 16 and SURFE2R N1! We look forward to seeing you!

Spaces are limited so reserve yours by sending an email to info@nanion.de.
Presenters
Andrea Brüggemann, CSO, Nanion Technologies GmbH
Maria Barthmes, Application Specialist, Nanion Technologies GmbH
Gerhard Baaken, CEO, Ionera

1:00 PM–3:00 PM, HALL C

Industry and Agency Opportunities Fair

This fair will introduce attendees to companies and agencies that have employment and funding opportunities outside of academia. Stop by the fair to learn about the variety of opportunities available to scientists in industry and government and to talk one-on-one with representatives from participating organizations. Don't forget to check out the Career Center, Room 301/302/303, for current job prospects offered by many of the participating organizations.

1:30 PM–3:00 PM, HALL C, ROOM A

Exhibitor Presentation
KinTek Corporation

KinTek Explorer Software: New Advances in Fitting Kinetic and Equilibrium Data
Fitting kinetic data based upon numerical integration of rate equations offers many advantages over conventional fitting of data based upon equations derived from simple models. Fitting by simulation is the most rigorous and eliminates numerous errors in simplifying assumptions needed to derive equations. Every day papers are published that contain errors in kinetic analysis that could have been avoided if the data had been fit using KinTek Explorer software.

In this presentation, Dr. Johnson will show how global fitting of kinetic data can be accomplished with ease using the fast, dynamic simulation in KinTek Explorer software, overcoming the all-to-common errors in conventional fitting. Moreover, data are fit to derive rate constants directly defining steps in a model, not merely observed rates (Eigenvalues). New advances in the software allow fitting kinetic data from single molecule experiments and families of curves can be fit simultaneous to define voltage-dependent rate constants or data from Temperature-jump or Pressure-jump experiments. In addition, equilibrium titration data can be fit using a unique endpoint simulation method, and time-resolved spectra can be fit using singular value decomposition (SVD). All experiments can be fit simultaneously and accurate error estimates are derived using robust confidence contour analysis.
Presenters
Kenneth A. Johnson, President, KinTek Corporation
Roger Williams, Professor of Biochemistry, University of Texas at Austin

1:30 PM–2:30 PM, ROOM 309/310

Conversation with NIGMS Director Jon Lorsch

Jon Lorsch assumed the role of Director of the National Institute of General Medical Sciences in 2013. One year in, he is leading a five-year strategic planning effort at NIH for the Institute and examining how the Institute can make the most of its resources to support fundamental research. Come to this session to learn more about Lorsch's vision for NIGMS as well as what is new at the Institute.

1:45 PM–3:00 PM, HALL C

Snack Break

2:30 PM–3:30 PM, ROOM 301/302/303

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

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.

2:30 PM–4:30 PM, ROOM 330

Grant Opportunities for Early Career Faculty

In this panel, hosted by the Early Careers Committee, program coordinators and research administrators from key funding agencies will discuss and answer questions about the timeline, strategies, and funding opportunities for new faculty working to establish their independent laboratories.
Speakers
Bishow Adhikari, NIH
Beth Schachter, Beth Schachter Consulting
Kamal Shukla, NSF

3:00 PM–4:00 PM, ROOM 327/328/329

Networking with Minority Biophysicists: Resources and Opportunities

This networking event, sponsored by the Minority Affairs Committee, provides minority students and scientists the opportunity to network and discuss challenges and resources with other minority biophysicists.

3:00 PM–5:00 PM, ROOM 333

Education Committee Meeting

4:00 PM–6:00 PM, BALLROOM I

Symposium
Nanoclustering of Membranes and Membrane Proteins

Chair
Ka Yee Lee, University of Chicago

1796-SYMP **4:00 PM**
STRUCTURE AND FUNCTION OF MEMBRANE-REMODELING ESCRT-III ASSEMBLIES. John McCullough, Marissa Saunders, Leremy Colf, Wes Sundquist, **Adam Frost**

1797-Symp 4:30 pm
IN VIVO-STUDIES OF GPCR CONFORMATIONAL CHANGES USING FLUORESCENCE-BASED ASSAYS. **Martin Lohse**

1798-Symp 5:00 pm
LIPID ORGANIZATION OF THE PLASMA MEMBRANE. Helgi I. Ingolfsson, Peter Tieleman, **Siewert Marrink**

1799-Symp 5:30 pm
DIFFERENTIAL PHOSPHATIDYLSERINE RECOGNITION BY THE TIM FAMILY OF IMMUNE REGULATORY RECEPTORS. **Ka Yee C. Lee**

4:00 pm–6:00 pm, Ballroom II

Symposium
Extremophiles: Testing the Physical Limits of Living Systems

Chair
Catherine Royer, Rensselaer Polytechnic Institute

1800-Symp 4:00 pm
PROTEIN FOLDING AT EXTREME TEMPERATURES: CURRENT ISSUES. **Georges Feller**

1801-Symp 4:30 pm
USING SINGLE MOLECULE FORCE SPECTROSCOPY TO PROBE PROTEINS FROM EXTREMOPHILES. **Lorna Dougan**

1802-Symp 5:00 pm
MECHANISMS OF PRESSURE EFFECTS IN BIOLOGY: FROM PROTEINS TO LIVE BACTERIA. **Catherine Ann Royer**

1803-Symp 5:30 pm
WHAT LIMITS MICROBIAL GROWTH AT HIGH PRESSURE? **Doug Bartlett**

4:00 pm–6:00 pm, Ballroom III

Platform
Optical Microscopy and Super-Resolution Imaging II

Co-Chairs
Luca Lanzano, Italian Institute of Technology, Italy
Johan Elf, Uppsala University, Sweden

1804-Plat 4:00 pm
BACKGROUND-FREE SUPER-RESOLUTION MICROSCOPY OF SUBCELLULAR STRUCTURES BY LIFETIME TUNING AND PHOTONS SEPARATION. **Luca Lanzano**, Ivan Coto Hernandez, Marco Castello, Enrico Gratton, Alberto Diaspro, Giuseppe Vicidomini

1805-Plat 4:15 pm
INVESTIGATING CELLULAR FOCAL ADHESIONS ON NANO-PATTERNED SUBSTRATES WITH DUAL COLOR PHOTO-ACTIVATED LOCALIZATION MICROSCOPY.
Hendrik G. Deschout, Michelle A. Baird, Michael W. Davidson, Joachim P. Spatz, Aleksandra Radenovic

1806-Plat 4:30 pm **minority affairs travel awardee**
QUANTITATIVE ANALYSIS OF NANOSCALE LIPID BILAYER MODIFICATIONS VIA SECOND HARMONIC GENERATING PROBES. **Erick K. Moen**, Hope Beier, Andrea Armani, Bennett Ibey

1807-Plat 4:45 pm
FUNCTIONAL IMAGING OF INTACT PANCREATIC ISLETS BY INVERTED SELECTIVE PLANE ILLUMINATION MICROSCOPY.
Zeno Lavagnino, David W. Piston

1808-Plat 5:00 pm
SINGLE MOLECULE TRACKING IN LIVING CELLS - MULTISTEP REACTIONS, SIMULATED MICROSCOPY AND NEW ANALYSIS METHODS. Martin Lindén, **Johan Elf**

1809-Plat 5:15 pm
MAPPING THE DIFFUSIVE ROUTE OF NANOPARTICLES IN LIVE CELLS REVEALS SHAPE TO CONTROL NUCLEAR ACCESSIBILITY. **Elizabeth Hinde**, Hien T. Duong, Bunyamin Karagoz, Justin J. Gooding, Cyrille Boyer, Katharina Gaus

1810-Plat 5:30 pm
CORRELATIVE IPALM AND PLATINUM REPLICA ELECTRON TOMOGRAPHY PINPOINTS ENDOCYTIC PROTEINS ON THE MAMMALIAN CELL CORTEX IN 3D. **Kem A. Sochacki**, Gleb Shtengel, Harald F. Hess, Justin W. Taraska

1811-Plat 5:45 pm
REFSOFI FOR IMAGING PROTEIN-PROTEIN INTERACTIONS IN LIVING CELLS IN SUPER-RESOLUTION. **Fabian Hertel**, Gary Mo, Sam Duwé, Peter Dedecker, Jin Zhang

4:00 pm–6:00 pm, Ballroom IV

Platform
Cardiac Muscle Regulation

Co-Chairs
Maegen Ackermann, University of Maryland, Baltimore
Michael Previs, University of Vermont

1812-Plat 4:00 pm
OVEREXPRESSION OF FOXO IN THE HEART AMELIORATES PERFORMANCE DECLINE THROUGH ENHANCED UPS PROCESSING IN AGING DROSOPHILA. **Anna C. Blice-Baum**, Gaurav Kaushik, Meera C. Viswanathan, Alexander C. Zambon, Adam J. Engler, Rolf Bodmer, Anthony Cammarato

1813-Plat 4:15 pm
OBSCURINS' MECHANISTIC INVOLVEMENT IN SIGNAL TRANSDUCTION AT THE CARDIAC INTERCALATED DISC. **Maegen Ackermann**, Nicole Perry, Aikaterini Kontrogianni-Konstantopoulos

1814-Plat 4:30 pm
THE N-TERMINAL HYPERVARIABLE REGION OF TROPONIN T DIFFERENTIALLY MODULATES THE AFFINITY OF TROPOMYOSIN-BINDING SITES. **Chinthaka K. Amarasinghe**, Jian-Ping Jin

1815-Plat 4:45 pm
CONSTITUTIVE PHOSPHORYLATION OF MYOSIN REGULATORY LIGHT CHAIN (RLC) IN VIVO IS MAINTAINED BY LOW KINASE AND PHOSPHATASE ACTIVITIES.
Audrey N. Chang, Patrick M. Cowley, Anthony J. Baker, Kristine E. Kamm, James T. Stull

1816-Plat 5:00 pm
EPIGALLOCATECHIN-3-GALLATE REVERSES THE DEFECTS IN MODULATION OF CA^{2+}-SENSITIVITY BY TROPONIN I PHOSPHORYLATION CAUSED BY HYPERTROPHIC AND DILATED CARDIOMYOPATHY MUTATIONS IN CARDIAC MUSCLE. **Maria Papadaki**, Petr Vikhorev, Steven Marston, Andrew Messer

1817-Plat 5:15 pm
MYOSIN-BINDING PROTEIN C CORRECTS AN INTRINSIC NON-UNIFORMITY IN CARDIAC EXCITATION-CONTRACTION COUPLING. **Michael J. Previs**, Benjamin L. Prosser, Ji Young Mun, Samantha Beck Previs, James Gulick, Kyounghwan Lee, Jeffrey Robbins, Roger Craig, W. Jonathan Lederer, David M. Warshaw

1818-Plat 5:30 pm
DIRECT DETECTION OF THE THERMODYNAMICS AND STRUCTURAL KINETICS OF A 2-COLOR SERCA BIOSENSOR BY TRANSIENT TIME-RESOLVED FRET. Simon J. Gruber, **Rebecca Goldblum**, Jenica Zhong, Kurt Peterson, Tory M. Schaaf, Joseph M. Autry, Gregory D. Gillispie, David D. Thomas, Joseph M. Muretta

1819-Plat 5:45 pm
PHOSPHOLAMBAN-INDEPENDENT ADRENERGIC RESERVE IN SERCA2 ABLATED HEARTS. **Frazer I. Heinis**, Joseph M. Metzger

4:00 pm–6:00 pm, Room 307/308

Platform
Protein Dynamics and Allostery II

Co-Chairs
James Munro, Tufts University
Joana Paulino, Florida State University

1820-Plat 4:00 pm
CONFORMATIONAL DYNAMICS OF SINGLE HIV-1 ENVELOPE PROTEINS ON THE SURFACE OF NATIVE VIRIONS. **James B. Munro**, Jason Gorman, Xiaochu Ma, Zhou Zhou, James Arthos, Dennis Burton, Wayne Koff, Joel Courter, Amos Smith, Peter Kwong, Scott Blanchard, Walther Mothes

1821-Plat 4:15 pm
ALLOSTERIC REGULATION OF NIPAH VIRUS ENTRY INTO HOST CELLS. **Sameer Varma**, Priyanka Dutta, Mohsen Botlani

1822-Plat 4:30 pm
SPECIFIC PROTEIN-LIPID INTERACTIONS STABILIZE AN ACTIVE STATE OF THE BETA 2 ADRENERGIC RECEPTOR. **Chris Neale**, Henry D. Herce, Régis Pomès, Angel E. García

1823-Plat 4:45 pm
DYNAMICS OF M2 PROTON CHANNEL: INSIGHTS INTO THE MOTIONS OF THE PRIMARY AND SECONDARY GATES. **Joana Paulino**, Ivan Hung, Timothy A. Cross

1824-Plat 5:00 pm
IDENTIFICATION OF AN ENDOGENOUS ALLOSTERIC MODULATOR'S BINDING SITE AT THE HUMAN CANNABINOID-1 RECEPTOR, USING FORCED-BIASED METROPOLIS MONTE CARLO SIMULATED ANNEALING METHOD (MMC) AND MOLECULAR DYNAMICS. **Derek M. Shore**, Dow P. Hurst, Diane L. Lynch, Patricia H. Reggio

1825-Plat 5:15 pm
LIGAND-G PROTEIN ALLOSTERIC COMMUNICATION THROUGH INTERNAL WATERS IN GPCR COMPLEXES. **Roman Osman**, Jose Carlos Gomez, Mihaly Mezei, Dov Barak, Arnau Cordomi, Leonardo Pardo

1826-Plat 5:30 pm
INSERTION OF β-BARREL PROTEINS IN GRAM-NEGATIVE BACTERIA. **Karl Lundquist**, James C. Gumbart

1827-Plat 5:45 pm
SUPER-RESOLUTION MAPPING OF THE DYNAMICS OF PERIODIC STRUCTURAL DEFECTS IN COLLAGEN FIBRILS. **Andrew Dittmore**, Jonathan Silver, Barry Marmer, Gregory I. Goldberg, Keir C. Neuman

4:00 pm–6:00 pm, Room 309/310

Platform
Systems Biophysics

Co-Chairs
Cees Decker, Delft University of Technology, The Netherlands
Hye Ran Koh, University of Illinois at Urbana-Champaign

1828-Plat 4:00 pm
SYMMETRY AND SCALE ORIENT MIN OSCILLATION PATTERNS IN BACTERIAL SHAPE SCULPTURES. Fabai Wu, bas van Schie, Juan Keymer, **Cees Dekker**

1829-Plat 4:15 pm
QUANTITATIVE ANALYSIS OF RNA INTERFERENCE BY MRNA COUTING AT SINGLE-CELL LEVEL. **Hye Ran Koh**, Sua Myong

1830-Plat 4:30 pm
ENVIRONMENTAL STATISTICS AND OPTIMAL REGULATION. **David A. Sivak**, Matt Thomson

1831-Plat 4:45 pm
FUNDAMENTAL CONSTRAINTS ON THE ABUNDANCES OF CHEMOTAXIS PROTEINS. **Anne-Florence Bitbol**, Ned S. Wingreen

1832-Plat 5:00 pm
EARLY LINEAGE BIFURCATION DURING DIFFERENTIATION OF EMBRYONIC STEM CELLS REVEALED BY SINGLE-CELL TRANSCRIPTOMICS. **Stefan Semrau**, Johanna Goldmann, Magali Soumillon, Tarjei Mikkelsen, Rudolf Jaenisch, Alexander van Oudenaarden

1833-Plat 5:15 pm
EMERGENT BEHAVIOURS OF STEM CELLS IN ORGANOGENESIS DEMONSTRATED BY HYBRID MODELLING. **Benjamin A. Hall**, Nir Piterman, Alex Hajnal, Jasmin Fisher

1834-Plat 5:30 pm
PHAGE DNA DYNAMICS IN CORRELATION WITH CELL FATES. Qiuyan Shao, Alexander Hawkins, **Lanying Zeng**

1835-Plat 5:45 pm
SYSTEMS MECHANO-BIOLOGY: TENSION-INHIBITED PROTEIN TURNOVER IS SUFFICIENT TO PHYSICALLY CONTROL GENE CIRCUITS. **P. C. Dave P. Dingal**, Dennis E. Discher

4:00 pm–6:00 pm, Room 314/315

Platform
Ion Channel Regulatory Mechanisms

Co-Chairs
Takanari Inove, Johns Hopkins University
Michelle Yen, Stanford University

1836-Plat 4:00 pm
COUPLING OF DISTINCT ION CHANNEL TYPES IN NEURONS MEDIATED BY AKAP79/150. Jie Zhang, **Mark S. Shapiro**

1837-PLAT 4:15 PM
STOICHIOMETRY OF CRAC CHANNEL ASSEMBLY AND GATING. **Michelle Yen**, Lumila A. Lokteva, Richard S. Lewis

1838-PLAT 4:30 PM
STRUCTURE AND SELECTIVITY IN BESTROPHIN ION CHANNELS. **Tingting Yang**, Qun Liu, Brian Kloss, Renato Bruni, Ravi C. Kalathur, Youzhong Guo, Edda Kloppmann, Burkhard Rost, Henry M. Colecraft, Wayne A. Hendrickson

1839-PLAT 4:45 PM
HCN CHANNELS: THE MOLECULAR BASIS FOR THEIR CAMP-TRIP8B REGULATION. **Andrea Saponaro**, Chiara Donadoni, Sofia R. Pauleta, Francesca Cantini, Manolis Matzapetakis, Gerhard Thiel, Lucia Banci, Bina Santoro, Anna Moroni

1840-PLAT 5:00 PM
LIVE CELL BIOCHEMISTRY IMPLICATES PROTEIN KINASE A MODULATION OF L-TYPE CAV1.4 CHANNELS. **Lingjie Sang**, Ivy E. Dick, David T. Yue

1841-PLAT 5:15 PM
A COMPREHENSIVE SEARCH FOR CALCIUM BINDING SITES CRITICAL FOR TMEM16A CALCIUM-ACTIVATED CHLORIDE CHANNEL ACTIVITY. **Huanghe Yang**, Jason Tien, Christian J. Peters, Xiu Ming Wong, Tong Cheng, Yuh Nung Jan, Lily Y. Jan

1842-PLAT 5:30 PM
MOLECULAR MECHANISM OF ZINC INHIBITION ON VOLTAGE-GATED PROTON CHANNEL HV1. **Feng Qiu**, Adam Chamberlin, Sergei Noskov, H. Peter Larsson

1843-PLAT 5:45 PM
ALCOHOL INHIBITION OF A CHEMICALLY-ACTIVATED GIRK2 CHANNEL. **Ian W. Glaaser**, Nidaa O. Marsh, Senyon Choe, Paul A. Slesinger

4:00 PM–6:00 PM, ROOM 316/317

Platform
Bioenergetics and Mitochondrial Signaling

Co-Chairs
Eduardo Maldonado, Medical University of South Carolina
Nathan Alder, University of Connecticut

1844-PLAT 4:00 PM
INVESTIGATION OF THE ROLE OF THE PHOSPHOLIPID CARDIOLIPIN IN ACTIVATING RESPIRATORY COMPLEX ACTIVITY. Murugappan Sathappa, Christine T. Schwall, Matthew R. Greenwood, Matthew G. Baile, Steven M. Claypool, **Nathan N. Alder**

1845-PLAT 4:15 PM
BACTERIAL NANOWIRES OF SHEWANELLA ONEIDENSIS MR-1 ARE OUTER MEMBRANE AND PERIPLASMIC EXTENSIONS OF THE EXTRACELLULAR ELECTRON TRANSPORT COMPONENTS. **Sahand Pirbadian**, Sarah E. Barchinger, Kar Man Leung, Hye Suk Byun, Yamini Jangir, Rachida A. Bouhenni, Samantha B. Reed, Margaret F. Romine, Daad A. Saffarini, Liang Shi, Yuri A. Gorby, John H. Golbeck, Mohamed Y. El-Naggar

1846-PLAT 4:30 PM
PIGMENT-SPECIFIC FLUORESCENCE SPECTROSCOPY OF SINGLE ANTENNA COMPLEXES IN SOLUTION. **Quan Wang**, W. E. Moerner

1847-PLAT 4:45 PM
AUTOMATED DETECTION OF WHOLE-CELL MITOCHONDRIAL MOTILITY AND ITS DEPENDENCE ON CYTOARCHITECTURAL INTEGRITY. **Judith Kandel**, Philip Chou, David M. Eckmann

1848-PLAT 5:00 PM EDUCATION TRAVEL AWARDEE
MOLECULAR IDENTITY AND FUNCTIONAL CHARACTERIZATION OF CHLORIDE INTRACELLULAR CHANNEL (CLIC) PROTEINS IN CARDIAC MITOCHONDRIA. **Devasena Ponnalagu**, Jason Farber, Sowmya Sukur, Wenyu Xin, Shubha Gururaja Rao, Harpreet Singh

1849-PLAT 5:15 PM
MITOCHONDRIAL NM23-H4/NDPK-D IS MULTIFUNCTIONAL: FUELING MITOCHONDRIAL GTPASE OPA1 AND TRIGGERING MITOPHAGY. **Uwe Schlattner**, Mathieu Boissan, Guillaume Montagnac, Malgorzata Tokarska-Schlattner, Cécile Cottet-Rousselle, Céline Desbourdes, Marie-Lise Lacombe, Lorena Griparic, Zhentai Huang, Yulia Y. Tyurina, Jian Fei Jiang, Alexander M. van der Bliek, Aurélien Roux, Philippe Chavrier, Valerian E. Kagan

1850-PLAT 5:30 PM
VDAC OPENING DRUGS TO INDUCE MITOCHONDRIAL DYSFUNCTION AND CELL DEATH. **Eduardo N. Maldonado**, Monika Gooz, David N. DeHart, John J. Lemasters

1851-PLAT 5:45 PM
THE 18KDA TRANSLOCATOR PROTEIN INTERACTS WITH VDAC1 AND TRIGGERS A ROS-MEDIATED INHIBITION OF MITOCHONDRIAL AUTOPHAGY. **Michelangelo Campanella**

7:30 PM–9:30 PM, BALLROOM I

Workshop
Managing Data and Statistics in the Informatics Era

Chair
Nathan Baker, Pacific Northwest National Laboratory

1852-WKSHP 7:30 PM
A PHYSICIST'S APPROACH TO STATISTICAL ANALYSES OF BIOLOGICAL DATA. **Patrice Koehl**

1853-WKSHP 8:00 PM
GLYCAN BIOSYNTHESIS: STRUCTURE, INFORMATION, AND HETEROGENEITY. Anjali Jaiman, **Mukund Thattai**

1854-WKSHP 8:30 PM
LARGE-SCALE MACHINE LEARNING APPROACHES FOR MOLECULAR BIOPHYSICS. **Arvind Ramanathan**, Chakra S. Chennubhotla, Pratul K. Agarwal, Christopher B. Stanley

1855-WKSHP 9:00 PM
INFORMATICS APPROACHES TO DATA PRESERVATION AND ANALYSIS IN PROTEIN ELECTROSTATICS. **Nathan A. Baker**, Chase Dowling, Luke Gosink, Trenton Pulsipher, Susanna-Assunta Sansone

7:30 PM–9:30 PM, BALLROOM II

Workshop
Advances in Computing Large Systems

Chair
Emad Tajkhorshid, University of Illinois at Urbana-Champaign

1856-WKSHP 7:30 PM
REVERSIBLE FOLDING OF HYPERSTABLE RNA TETRALOOPS USING MOLECULAR DYNAMICS SIMULATIONS.
Angel E. Garcia, Jacob Miner, Alan A. Chen

1857-WKSHP 8:00 PM
BACTERIAL OUTER MEMBRANES AND INTERACTIONS WITH MEMBRANE PROTEINS. **Wonpil Im**

1858-WKSHP 8:30 PM
PROTEIN FOLDING AND RECOGNITION IN THE CELL -- AN IN SILICO APPROACH. **Margaret S. Cheung**

1859-WKSHP 9:00 PM
ADVANCES IN ATOMIC-LEVEL SIMULATIONS OF LARGE-SCALE FUNCTIONAL MOTIONS OF MEMBRANE TRANSPORTERS. **Emad Tajkhorshid**, Mahmoud Moradi, Jing Li, Po-Chao Wen, Sundar Thangapandian, Josh Vermaas

7:30 PM–9:30 PM, BALLROOM III

Workshop
Microfluidics Tools for Studying Molecules and Cells

Chair
Petra Dittrich, ETH Zurich, Switzerland

1860-WKSHP 7:30 PM
INTEGRATED MICROFLUIDIC DEVICES FOR STUDYING AGING AND ADHESION OF INDIVIDUAL BACTERIA.
Stephen C. Jacobson, Joshua D. Baker, David T. Kysela, Yves V. Brun

1861-WKSHP 8:00 PM
DEMOCRATIZATION OF NEXT-GENERATION IMAGING, DIAGNOSTICS AND MEASUREMENT TOOLS THROUGH COMPUTATIONAL PHOTONICS. **Aydogan Ozcan**

1862-WKSHP 8:30 PM
A MICROFLUIDIC RAPID FREEZE QUENCH APPARATUS FOR HIGH FIELD EPR MEASUREMENTS. Alberto Collauto, Royi Kaufmann, **Daniella Goldfarb**

1863-WKSHP 9:00 PM
CELL AND VESICLE ANALYSIS IN MICROCHAMBERS.
Petra S. Dittrich

8:00 PM–10:00 PM, ROOM 330

SOBLA
(The Society for Latinoamerican Biophysicists) Meeting

1:45 PM-3:45 PM, Hall C

TUESDAY POSTER SESSIONS

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. All abstracts are available through the desktop planner and mobile app.

Posters should be mounted 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 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.

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 can be mounted beginning at 7:00 AM on Wednesday.

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

Board Numbers	Category
B1–B28	Protein Structure and Conformation III
B29–B49	Protein Dynamics and Allostery II
B50–B70	Membrane Protein Interactions
B71–B94	Intrinsically Disordered Proteins (IDP) and Aggregates III
B95–B103	Ribosomes and Translation
B104–B131	DNA Structure and Dynamics II
B132–B154	Protein-Nucleic Acid Interactions II
B155–B175	Membrane Physical Chemistry II
B176–B199	Membrane Fusion
B200–B223	Membrane Structure II
B224–B245	Membrane Receptors and Signal Transduction III
B246–B252	Excitation-Contraction Coupling II
B253–B270	Muscle Regulation
B271–B291	Mechanisms of Voltage Sensing and Gating
B292–B318	Ligand-gated Channels II
B319–B338	Ion Channel Regulatory Mechanisms II
B339–B366	Other Channels
B367–B386	Cardiac Muscle Mechanics and Structure II
B387–B405	Microtubules, Structure Dynamics, and Associated Proteins
B406–B422	Cytoskeletal Assemblies and Dynamics
B423–B450	Cell Mechanics, Mechanosensing, and Motility III
B451–B467	Membrane Pumps, Transporters, and Exchangers III
B468–B473	Genetic and Epigenetic Regulatory Systems
B474–B481	Synthetic Biology
B482–B506	Molecular Dynamics III
B507–B528	Computational Methods and Bioinformatics
B529–B558	Optical Microscopy and Super-Resolution Imaging II
B559–B578	Biosensors II
B579–B603	Biomaterials

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

Protein Structure and Conformation III (Boards B1-B28)

1864-Pos Board B1
THE MECHANOENZYMATIC PROPERTIES OF DRP1 IN NUCLEOTIDE INDUCED CONSTRICTION OF LIPID BILAYERS. **Christopher A. Francy**, Frances J.D. Alvarez, Louie Zhou, Jason A. Mears

1865-Pos Board B2
CAVEOLIN REVEALED: A MUTAGENESIS STUDY OF CAVEOLIN-1. **Sarah Plucinsky**, Kerney J. Glover

1866-Pos Board B3
RECONSTITUTION AND TOPOLOGICAL ANALYSIS OF CAVEOLIN-1 IN BICELLES. **Kyle Root**

1867-Pos Board B4
FRAGMENT-BASED DRUG DESIGN APPROACH FOR TARGETING PHOSPHOLIPID BIOSYNTHESIS PATHWAY IN PLASMODIUM FALCIPARUM. **Ewelina Guca**, Marina Lavigne, François Hoh, Jean-François Guichou, Christian Roumestand, Henri Vial, Rachel Cerdan

1868-Pos Board B5
MECHANISMS OF PIN1 REGULATION OF IRAKM STABILITY IN TOLL-LIKE RECEPTOR/INTERLEUKIN-1 RECEPTOR SIGNALING. **Jeahoo Kwon**, Morris Nechama, Kun Ping Lu, Linda K. Nicholson

1869-Pos Board B6
USING BIOCHEMICAL AND STRUCTURAL APPROACHES TO STUDY ERBB2-CONTAINING HETERODIMERS. **Lily L. Raines**, Daniel J. Leahy

1870-Pos Board B7
PROBING THE CELLULAR ENTRY PATHWAY VIA TOLC OF THE CYTOTOXIN, COLICIN E1. **Karen S. Jakes**, Stanislav D. Zakharov, Xin S. Wang, Ilya Seleznev, William A. Cramer

1871-Pos Board B8
THE MEMBRANE CATALYSIS MODEL: APELIN AND ITS RECEPTOR. **Robin E. Patterson**, Nathan Weatherbee-Martin, Nigel A. Chapman, Denis J. Dupré, Jan K. Rainey

1872-Pos Board B9
FUNCTIONALITY OF MSCL IN DROPLET INTERFACE BILAYER. **Mohammad Heiranian**, Amir Barati Farimani, Narayana Aluru

1873-Pos Board B10
HOMOLOGY MODELS OF THE TRIMERIC CNG CHANNEL C-LEUCINE ZIPPER DOMAINS OFFER INSIGHT ABOUT THE OLFACTORY CNG CHANNEL SUBUNIT STOICHIOMETRY. Dillion M. Fox, Christopher M. MacDermaid, **Jacqueline Tanaka**

1874-Pos Board B11
MOLECULAR DYNAMICS SIMULATIONS OF WILD-TYPE AND MUTANT AQP6 CHANNELS: INVESTIGATION OF ANION TRANSPORT IN HUMAN AQP6. Ravi Kumar Verma, **Ramasubbu Sankararamakrishnan**

1875-Pos Board B12
AN INTRA-MOLECULAR DISULFIDE CROSS-LINK STABILIZES AN INWARD-ORIENTED TRANSPORT INTERMEDIATE CONFORMATION OF THE TONB-DEPENDENT TRANSPORTERS. **Shimei Gong**, Nazir Barekzi, Katarzyna Niedzielska, Nicholas E. Sherman, Robert K. Nakamoto

1876-Pos Board B13
LIVE-CELL MEASUREMENTS OF THE CONFORMATIONAL REARRANGEMENTS IN BAX AT THE INITIATION OF APOPTOSIS. **Robert F. Gahl**, Yi He, Shiqin Yu, Nico Tjandra

1877-Pos Board B14
FIS1 AND DNM1L COOPERATE IN MITOCHONDRIAL FISSION: CONVERGENCE OF EVOLUTION AND INTELLIGENT DESIGN. **Blake Hill**, Megan Cleland Harwig, Cara Marie Manlandro, Lora K. Picton, Nolan W. Kennedy

1878-Pos Board B15
STRUCTURAL BASIS FOR ENHANCED HIV-1 NEUTRALIZATION BY A DIMERIC IMMUNOGLOBULIN G FORM OF THE GLYCAN-RECOGNIZING ANTIBODY 2G12. **Yunji Wu**, Pamela J. Bjorkman

1879-Pos Board B16
A COMPUTATIONAL AND EXPERIMENTAL STUDY OF THE STRUCTURE OF FOXL1 PROTEIN. **Jessica E. Besaw**, Valerie Booth, Christopher N. Rowley

1880-Pos Board B17
ALL-ALPHA TO ALL-BETA STRUCTURAL CONVERSION IN THE TRANSCRIPTION FACTOR RFAH. **Jeevan B. Gc**

1881-Pos Board B18
SMALL-ANGLE X-RAY SCATTERING AND BIOCHEMICAL STUDIES OF AN INTRAMOLECULAR TANDEM COILED COIL. **Donghyuk Shin**, Seungsu Han, Gwanho Kim, Gyu Hee Kim, Xu Xheng, Yang-Gyun Kim, Sangho Lee

1882-Pos Board B19
CHARACTERIZATION OF AMYNTHAS GRACILIS HEMOGLOBIN (HBAG) AND ITS SUBUNITS BY AUC AND MALDI-TOF-MS. **Patricia S. Santiago**, Francisco Adriano O. Carvalho, Jonathan B. S Oliveira, Angela P. D Linhares, Patrícia G. Morgante, José Wilson P. Carvalho, Marcel Tabak

1883-Pos Board B20
STRUCTURE AND FUNCTION OF CLOSTRIDIAL YTER. **Margaret Hurley**, Katherine L. Germane, Matthew Servinsky, Elliot Gerlach, Christian Sund

1884-Pos Board B21
NMR STRUCTURAL CHARACTERIZATION FOR PROTEASES OF DENGUE AND WEST NILE VIRUSES AND ITS INSIGHT INTO DRUG DISCOVERY. **Congbao Kang**

1885-Pos Board B22
MONITORING PROTEIN STRUCTURE ON THE SURFACE OF GOLD NANOPARTICLES USING NMR SPECTROSCOPY. Ailin Wang, Karen Woods, Tam Vo, Alex Coats, **Nicholas C. Fitzkee**

1886-Pos Board B23
3D RECONSTRUCTION OF THE S885A MUTANT OF THE HUMAN MITOCHONDRIAL LON PROTEASE. **Sami Kereiche**, Lubomir Kovacik

1887-Pos Board B24
STRUCTURE AND DYNAMICS OF THE EIIC SUGAR UPTAKE SYSTEM. **Zhenning Ren**, Ming Zhou

1888-Pos Board B25
PREDICTING THE EFFECTS OF CLINICALLY OBSERVED KINASE MUTATIONS USING MOLECULAR MODELING AND MACHINE LEARNING ALGORITHMS. **E. Joseph Jordan**, Peter J. Huwe, Yael Mosse, Mark Lemmon, Ravi Radhakrishnan

1889-Pos Board B26
ACTIVATION MECHANISM OF A SIGNALING PROTEIN AT ATOMIC RESOLUTION. **Francesco Pontiggia**, Dimitar V. Pachov, Michael W. Clarkson, Janice Villali, Michael F. Hagan, Vijay S. Pande, Dorothee Kern

1890-Pos Board B27
CRYSTAL STRUCTURES OF TREHALOSE SYNTHASE FROM DEINOCOCCUS RADIODURANS REVEAL A CLOSED CONFORMATION FOR INTRAMOLECULAR ISOMERIZATION CATALYSIS AND MUTANT INDUCTION OF AN ACTIVE-SITE APERTURE. **Sih-Yao Chow**, Yung-Lin Wang, Li-Ci Ye, Shwu-Huey Liaw

1891-Pos Board B28
BIOPHYSICAL CHARACTERIZATION OF NATURALLY OCCURRING TITIN-M10 MUTATIONS. **Nathan T. Wright**, Michael W. Rudloff

Protein Dynamics and Allostery II (Boards B29-B49)

1892-Pos Board B29
INVESTIGATING THE MECHANISM OF IRON DEPENDENT REPRESSOR (IDER) ACTIVATION AND DNA BINDING. **Soma Ghosh**, Nagasuma Chandra, Saraswathi Vishveshwara

1893-Pos Board B30
DYNAMIC CHARACTERISTICS OF ALLOSTERIC PATHWAYS IN SCFV ANTIBODY FRAGMENTS. **Amit Srivastava**, Malgorzata B. Tracka, Shahid Uddin, Jose Casas-Finet, Dennis R. Livesay, Donald J. Jacobs

1894-Pos Board B31
FUNCTIONALLY IMPORTANT RESIDUES FROM MODE COUPLING DURING SHORT-TIME PROTEIN DYNAMICS. Onur Varol, Deniz Yuret, Burak Erman, **Alkan Kabakcioglu**

1895-Pos Board B32
HIGH-SPEED AFM OBSERVATION OF ANTIBODY IGG CHARACTERISTIC OF SWINGING ARMS. **Norito Kotani**, Tomohiro Hirano, Takashi Morii, Takao Okada

1896-Pos Board B33
VISUALIZING GLOBAL PROPERTIES OF A MOLECULAR DYNAMICS TRAJECTORY. **Hao Zhou**, Shangyang Li, Makowski Lee

1897-Pos Board B34
COMPUTATIONAL MODELING OF THE FCαRI RECEPTOR BINDING IN THE FCα DOMAIN OF THE HUMAN ANTIBODY IGA: CORSE-GRAINED MOLECULAR DYNAMICS (MD) METHODS. **Manori Jayasinghe**, Monica T. Posgai, Sam Tonddast-Navaei, George M. Ibrahim, George Stan, Andrew B. Herr

1898-Pos Board B35
COMPUTER-AIDED DRUG DISCOVERY APPROACH FINDS CALCIUM SENSITIZER OF CARDIAC TROPONIN. **Steffen Lindert**, Monica X. Li, Brian Sykes, J. Andrew McCammon

1899-Pos Board B36
A COARSE-GRAINED LANGEVIN EQUATION FOR PROTEIN DYNAMICS: GLOBAL ANISOTROPY AND A MODE APPROACH TO LOCAL COMPLEXITY. **Jeremy T. Copperman**, Marina G. Guenza

1900-Pos Board B37
LOOKING AT ESTROGEN RECEPTOR FROM SMALL ANGLES. **Sichun Yang**, Wei Huang, Krishna M. Ravikumar

1901-Pos Board B38 **EDUCATION TRAVEL AWARDEE**
STUDY OF PROTON TRANSFER IN ESCHERICHIA COLI PHOTOLYASE. **Meng Zhang**, Zheyun Liu, Jiang Li, Lijuan Wang, Dongping Zhong

1902-Pos Board B39
ABROGATING RAS ABNORMAL FUNCTION BY TARGETING MEMBRANE BOUND RAS MONOMERS AND OLIGOMERS. **Priyanka Prakash Srivastava**, Alemayehu A. Gorfe

1903-Pos Board B40
IDENTIFYING TRANSIENT BINDING POCKETS IN PROTEIN DYNAMICS FOR ALLOSTERIC DRUG DESIGN. **Supriyo Bhattacharya**, Vinod Kasam, Hubert Li, Nagarajan Vaidehi

1904-Pos Board B41
LEARNING ABOUT TRANSITIONS: ADAPTIVE CONTROL IN THE MOLECULAR MARSHAL (M2) FRAMEWORK. **Thomas B. Woolf**, Sarana Y. Nutanong, Yanif Ahmad, Raman Arora

1905-Pos Board B42
CHARACTERIZING DYNAMICS OF ANION/PI INTERACTIONS THROUGH MOLECULAR DYNAMICS SIMULATIONS. **Karan Kapoor**, Michael Duff, Robert Hinde, Jerome Baudry, Elizabeth Howell

1906-Pos Board B43
SIMULTANEOUS IDENTIFICATION, VISUALIZATION, AND COMPARISON OF COMPLEX EVENTS IN MOLECULAR DYNAMICS SIMULATIONS. **Michael V. LeVine**, George Khelashvili, Harel Weinstein

1907-Pos Board B44
UNRAVELING THE DYNAMICS OF THE EF1 HAND UPON CA^{2+} BINDING IN NEUROCALCIN DELTA. **Yang Yang**, Anuradha Krishnan, Jeffrey Viviano, Venkat Venkataraman

1908-Pos Board B45
MECHANICAL PROPERTIES OF DNA BINDING PROTEINS: TALES IN SILICO. **Yuichi Togashi**, Naoya Tochio

1909-Pos Board B46
WATCHING CONFORMATIONAL CHANGES IN PROTEINS BY MOLECULAR DYNAMICS SIMULATIONS. **Kresten Lindorff-Larsen**

1910-Pos Board B47
A HINGE MIGRATION MECHANISM UNLOCKS THE EVOLUTION OF GREEN-TO-RED PHOTOCONVERSION IN GFP-LIKE PROTEINS. **Rebekka M. Wachter**, Hanseong Kim, Taisong Zou, S. Banu Ozkan

1911-Pos Board B48
A MULTI-PRONGED APPROACH FOR UNCOVERING ALLOSTERIC NETWORKS IN CASPASES. **Jeanne A. Hardy**

1912-Pos Board B49
REGULATION OF KINASES: 1 BILLION YEARS OF EVOLUTION. **Roman Agafonov**, Chris Wilson, Sarita Biswas, Dorothee Kern

Membrane Protein Interactions (Boards B50-B70)

1913-Pos Board B50
INTERACTIONS OF DOK7 WITH MODEL MEMBRANES CONTAINING ANIONIC LIPIDS AND PHOSOPHOINOSITIDES. **Amanda Buyan**, Antreas C. Kalli, Mark S.P. Sansom

1914-Pos Board B51
THE DIFFERENCE IN ARL2 AND ARL3 MEMBRANE BINDING AND LOCALIZATION. Shobhna Kapoor, Simone Möbitz, Shehab A. Ismail, Eyad Kalawy Fansa, Alfred Wittinghofer, Roland Winter, **Katrin Weise**

1915-Pos Board B52
REGULATION OF K-RAS MEMBRANE ASSOCIATION: CALMODULIN VERSUS PDEδ. **Benjamin Sperlich**, Shobhna Kapoor, Alexander Werkmüller, Simone Möbitz, Gunther Zimmermann, Gemma Triola, Herbert Waldmann, Roland Winter, Katrin Weise

1916-Pos Board B53
ROLE OF FISB-CARDIOLIPIN INTERACTIONS IN MEMBRANE FISSION DURING SPORULATION IN BACILLUS SUBTILIS. **Martha Braun**, Christopher Daniel Rodrigues, David Rudner, Erdem Karatekin

1917-Pos Board B54
INTERACTION OF MODEL LIPID VESICLES WITH ALVEOLAR MACROPHAGES. **Robinah Maasa**

1918-Pos Board B55
INVESTIGATION OF THE STRUCTURE OF DIMERS OF THE VOLTAGE-GATED PROTON CHANNEL. **Adam C. Chamberlin**, Sergei Noskov, Feng Qiu, Peter Larsson

1919-Pos Board B56
ACTIVATION OF THE CA^{2+}-ACTIVATED CHLORIDE CHANNEL TMEM16A. **Novandy K. Lim**, Janine D. Brunner, Stephan Schenck, Raimund Dutzler

1920-Pos Board B57
INVESTIGATING THE EFFECT OF PKA PHOSPHORYLATION ON INTRAMOLECULAR INTERACTIONS IN PURIFIED FULL LENGTH WILDTYPE CFTR. **Stephanie Chin**, Mohabir Ramjeesingh, Paul Eckford, Christine Bear

1921-Pos Board B58
BIPHASIC INFLUENCE OF BULK ANIONIC PHOSPHOLIPIDS FOR PIP2 GATING OF KIR2.1 CHANNELS THROUGH BINDING TO TWO DISTINCT SITES. **Sun-Joo Lee**, Jacob Gyore, Sarah Heyman, Colin G. Nichols

1922-Pos Board B59
CONFORMATIONAL CHANGES THAT OPENS TRKH ION CHANNEL. **Hanzhi Zhang**, Yaping Pan, Ming Zhang

1923-Pos Board B60 **INTERNATIONAL TRAVEL AWARDEE**
IDENTIFICATION OF A CHOLESTEROL RECOGNITION/ INTERACTION AMINO ACID CONSENSUS DOMAIN IN STIM1 AND ITS ROLE IN SOCE. **Jonathan E. Pacheco**, Luis Vaca

1924-Pos Board B61
MODELING STRUCTURE OF HUMAN PAPILLOMAVIRUS TYPE 16 E5 PROTEIN - A MOLECULAR DYNAMICS SIMULATION STUDY. **Dhani R. Mahato**, Wolfgang B. Fischer

1925-Pos Board B62
BCL-XL DESTABILIZATION OF CERAMIDE CHANNELS: ROLE OF THE HYDROPHOBIC GROOVE. **Kai-Ti Chang**, Andriy Anishkin, Marco Colombini

1926-Pos Board B63
CONFORMATION CHANGES OF A 7TM RECEPTOR CAUSED BY THE SAMPLE ENVIRONMENT AS STUDIED BY MULTIDISCIPLINARY BIOPHYSICAL METHODS. Xiaoyan Ding, Zhen Cao, Bo Peng, Anthony Watts, **Xin Zhao**

1927-Pos Board B64 **EDUCATION TRAVEL AWARDEE**
STRIPPING THE CLC-EC1 DIMERIZATION INTERFACE: AN INVESTIGATION INTO THE ROLE OF VAN DER WAALS INTERACTIONS IN MEMBRANE PROTEIN ASSEMBLY. **Kacey Mersch**, Ankita Chadda, Venkatramanan Krishnamani, Janice L. Robertson

1928-Pos Board B65
SARCOLIPIN-MEDIATED REGULATION OF SERCA BY COMPUTER SIMULATIONS. **Alessandro Cembran**, Alysha A. Dicke, Alfonso De Simone, Kaustubh R. Mote, Vitaly V. Vostrikov, Gianluigi Veglia

1929-Pos Board B66
MONITORING APOLIPOPROTEIN BINDING TO SINGLE LIPOPROTEINS. **Michel de Messieres**, Abby Ng, Cornelio J. Duarte, Alan T. Remaley, Jennifer C. Lee

1930-Pos Board B67
NMDA RECEPTOR TRANSMEMBRANE DOMAIN: STRUCTURE AND MECHANISM OF ION SELECTIVITY. **Samaneh Mesbahi**, Lea Veras, Jon W. Johnson, Maria Kurnikova

1931-Pos Board B68
ELUCIDATION OF THE CHANNEL ACTIVITIES OF GRAMICIDIN A IN THE PRESENCE OF IONIC LIQUIDS (ILS) USING MODEL CELL MEMBRANES. **Hyunil Ryu**, Hwankyu Lee, Iwata Seigo, Sangbaek Choi, Young-Rok Kim, Maruta Shinsaku, Sun Min Kim, Tae-Joon Jeon

1932-Pos Board B69 **EDUCATION TRAVEL AWARDEE**
TUG OF WAR IN LUNG SURFACTANT COMPONENTS: MINIB DOMINATES OVER CHOLESTEROL DURING LIPID DOMAIN FORMATION. **Aishik Chakraborty**, Erica Hui, Alan J. Waring, Prajnaparamita Dhar

1933-Pos Board B70 **EDUCATION TRAVEL AWARDEE**
DYNAMIC MEASUREMENTS OF MEMBRANE INSERTION POTENTIAL OF SYNTHETIC CELL PENETRATING PEPTIDE/ PDNA/CA^{2+} COMPLEXES. **Nabil A. Alhakamy**, Cory J. Berkland, Prajna Dhar

Intrinsically Disordered Proteins (IDP) and Aggregates III (Boards B71-B94)

1934-Pos Board B71
SECONDARY METAL BINDING TO AMYLOID-BETA MONOMER IS INSIGNIFICANT UNDER SYNAPTIC CONDITIONS. Thomas Branch, Mauricio Barahona, **Liming Ying**

1935-Pos Board B72
GAS-PHASE CONFORMATIONS OF A HUNTINGTIN N-TERMINAL PEPTIDE REVEAL CONDENSED-PHASE HETEROGENEITY WITH AND WITHOUT THE PRESENCE OF A PPII HELIX. **James R. Arndt**, Samaneh G. Kondalaji, Olivia Sarver, Megan M. Maurer, Arlo Parker, Justin Legleiter, Stephen J. Valentine

1936-Pos Board B73
HUNTINGTIN N-TERMINAL FRAGMENT FIBRILS HAVE A RIGID AMYLOID CORE FLANKED BY NON-AMYLOID DOMAINS WITH INCREASED DYNAMICS. Cody L. Hoop, Hsiang-Kai Lin, Karunakar Kar, Ronald Wetzel, **Patrick C A van der Wel**

1937-Pos Board B74
INITIATING POLYGLUTAMINE AGGREGATION --- COMPUTATIONAL CLARIFICATION OF THE STRUCTURAL DETAILS. **Markus S. Miettinen**, Luca Monticelli, Praveen Nedumpully-Govindan, Volker Knecht, Zoya Ignatova

1938-Pos Board B75 INTERNATIONAL TRAVEL AWARDEE
THE ROLE OF STRUCTURAL DYNAMICS IN DETERMINING THE PRION STRAIN DIVERSITY. **Dominic Narang**, Anup K. Srivastava, Samrat Mukhopadhyay

1939-Pos Board B76 EDUCATION TRAVEL AWARDEE
AMYLOIDOGENICITY OF IMMUNOGLOBULIN LIGHT CHAINS. **Kathrin Andrich**, Ute Hegenbart, Stefan Schönland, Erich Wanker, Jan Bieschke

1940-Pos Board B77
PREDICTION OF THE EFFECTS OF THE VAL66MET POLYMORPHISM AND ADJACENT STRUCTURED DOMAINS ON THE CONFORMATIONAL ENSEMBLE OF AN INTRINSICALLY DISORDERED PROTEIN, BRAIN-DERIVED NEUROTROPHIC FACTOR. **Ruchi Lohia**, Reza Salari, Grace Brannigan

1941-Pos Board B78
STRUCTURAL STABILITY OF DIABETES-RELATED AMYLIN PROTOFILAMENTS: APPLICATIONS TO FIBRIL DESIGN. **Ye Yuan**, Bartlomiej Tywoniuk, Nicolae-Viorel Buchete

1942-Pos Board B79
EXPLOSIVE FIBRILLATION KINETICS OF TWO-CHAIN INSULIN FRAGMENT RELEASED UPON PARTIAL DIGESTION WITH PEPSIN. **Wojciech Dzwolak**, Marcin Piejko, Robert Dec, Viktoria Babenko, Agnieszka Hoang, Monika Szewczyk, Pawel Mak

1943-Pos Board B80
ELUCIDATING THE ROLE OF OLIGOMERS IN INSULIN AGGREGATION USING BIOPHYSICAL METHODS. **Matthew T. Mawhinney**, Brigita Urbanc

1944-Pos Board B81
DMSO INDUCED BREAKING UP OF INSULIN FIBRILS MONITORED BY VIBRATIONAL CIRCULAR DICHROISM. **Ge Zhang**, Viktoria Babenko, Wojciech Dzwolak, Timothy A. Keiderling

1945-Pos Board B82 EDUCATION TRAVEL AWARDEE
THE INTRINSICALLY DISORDERED TERMINI OF ZDHHC S-PALMITOYLTRANSFERASES FACILITATE MULTIPLE REGULATORY FUNCTIONS. **Krishna D. Reddy**, Jeremy D. Baker, Bin Xue, Robert J. Deschenes, Vladimir N. Uversky

1946-Pos Board B83
PROTEIN DISORDER IN DYNEIN REGULATION BY DYNACTIN AND NUDE. **Jing Jie**, Elisar Barbar

1947-Pos Board B84
A FUZZY DNA BINDING REGION IN MBD2 RECRUITS THE HISTONE DEACETYLASE CORE COMPLEX OF NURD AND MODIFIES KINETICS OF DNA BINDING. **David C. Williams**, Megha Desai, Gordon D. Ginder

1948-Pos Board B85
C/EBPβ: CASE STUDY FOR THE IMPORTANCE OF INTRINSIC DISORDER FOR PROTEIN FUNCTION. **Maria Miller**

1949-Pos Board B86
STRUCTURAL AND DYNAMIC ANALYSIS ON DISORDERED H4 HISTONE TAIL BY MODIFIED AWSEM-MD. **Hao Wu**, Garegin Papoian

1950-Pos Board B87
THE ACETYLATION LANDSCAPE OF THE H4 HISTONE TAIL. **David Winogradoff**, Ignacia Echeverria, Garegin Papoian

1951-Pos Board B88
COMPARING SOLUTION STRUCTURES OF AMYLIN AND CGRP BY NANOSECOND LASER-PUMP SPECTROSCOPY AND ATOMISTIC SIMULATIONS. Sara M. Sizemore, Gül H. Zerze, Stephanie M. Cope, Jeetain Mittal, **Sara M. Vaiana**

1952-Pos Board B89
PRIMARY SEQUENCE CONTROLS THE SPECIFICITY AND AFFINITY OF A SMALL MOLECULE BINDING TO THE INTRINSICALLY DISORDERED PROTEIN C-MYC. **Lisette M. Fred**, Kaitlyn P. Gerhart, Bethany L. Zablotsky, Scott A. Barnett, Steven J. Metallo

1953-Pos Board B90
INTERACTION OF THE INTRINSICALLY DISORDERED C-MYC ONCOPROTEIN WITH RACEMIC AND ENANTIOPURE SMALL MOLECULES. **Kaitlyn P. Gerhart**, Steven J. Metallo

1954-Pos Board B91
THE INTRINSICALLY DISORDERED C-TERMINAL TAILS OF E.COLI SINGLE-STRANDED DNA BINDING PROTEIN REGULATE COOPERATIVE BINDING TO SINGLE-STRANDED DNA. **Alexander G. Kozlov**, Elizabeth Weiland, Anuradha Mittal, Vince Waldman, Rohit V. Pappu, Lohman M. Timothy

1955-Pos Board B92
ASSESSING BINDING PERTURBATION DUE TO ARTIFICIAL VIBRATIONAL PROBE GROUPS IN THE NUCLEOPROTEIN-PHOSPHOPROTEIN COMPLEX OF THE NIPAH VIRUS. **Rebecca B. Wai**, Shana R. Burstein, Sara K. Hess, Jenny Erales, Sonia Longhi, Casey H. Londergan

1956-Pos Board B93
CLAWS, DISORDER, AND CONFORMATIONAL DYNAMICS OF THE C TERMINAL REGION OF HUMAN DESMOPLAKIN. **Charles E. McAnany**, Cameron Mura

1957-Pos Board B94
THE ROLE OF HIGHER-ORDER SPOP OLIGOMERS FOR LOCALIZATION TO CELLULAR "BODIES" AND UBIQUITINATION ACTIVITY. Melissa R. Marzahn, Jihun Lee, Suresh Marada, Amanda Nourse, Huaying Zhao, Peter Schuck, Stacey K. Ogden, **Tanja Mittag**

Ribosomes and Translation (Boards B95-B103)

1958-Pos Board B95
TOWARDS A WHOLE-CELL MODEL OF RIBOSOME BIOGENESIS: KINETIC MODELING OF SSU ASSEMBLY. **Tyler M. Earnest**, Ke Chen, Jonathan Lai, Zan Luthey-Schulten

1959-Pos Board B96
A STRUCTURAL MODEL OF THE RIBOSOME-BOUND PROTEIN INSERTASE YIDC REVEALS LATERAL TRANSLOCATION OF THE NASCENT CHAIN. **Abhishek Singharoy**, Stephan Wickles, Roland Beckmann, Klaus Schulten

1960-Pos Board B97
RNA STRUCTURAL MODULATION IN THE HEART OF THE RIBOSOME. **Jared J. Childs**, Jirair Gevorkyan, Eda Koculi

1961-Pos Board B98
SIMULATING RIBOSOME DYNAMICS AND TRNA TRANSLOCATION. **Kien Nguyen**, Paul Charles Whitford

1962-Pos Board B99
SINGLE-MOLECULE PROFILING OF RIBOSOME RECODING PHENOMENA. **Jin Chen**, Joseph D. Puglisi

1963-Pos Board B100
RIBOSOME ASSISTED GTP HYDROLYSIS BY EF-TU - MECHANISM AND THE ROLE OF ASP21. **Ram Prasad Bora**

1964-Pos Board B101
USING HYDROXYL RADICAL FOOTPRINTING TO OBSERVE RIBOSOME ASSEMBLY INTERMEDIATES IN VIVO. **Ryan Hulscher**

1965-Pos Board B102
EXPLORING THE MECHANISM OF DHH1-MEDIATED TRANSLATIONAL REPRESSION. **Aditya Radhakrishnan**, Rachel Green

1966-Pos Board B103
EXTRA-CODING CHARACTERISTICS OF HERG MRNA ARE ESSENTIAL FOR CHANNEL FUNCTION. **Marika L. Osterbur**, Thomas V. McDonald

DNA Structure and Dynamics II (Boards B104-B131)

1967-Pos Board B104 INTERNATIONAL TRAVEL AWARDEE
TARGETING HUMAN TELOMERIC G-QUADRUPLEX DNA BY BERBERINE ANALOGS: A COMPARATIVE BIOPHYSICAL INVESTIGATION. **Debipreeta Bhowmik**, Gopinatha Suresh Kumar

1968-Pos Board B105 INTERNATIONAL TRAVEL AWARDEE
STUDYING LIGAND BINDING AND SITE-SPECIFIC MODE OF DNA BINDING BY GAMMA-BUTYROLACTONE RECEPTOR PROTEIN CPRB FROM STREPTOMYCES COELICOLOR A3(2) USING TWO DIFFERENT FLUORESCENCE TECHNIQUES. **Anwesha Biswas**, G. Naresh Patwari, G. Krishnamoorthy, Ruchi Anand

1969-Pos Board B106
DNA PSEUDOKNOTS WITH APPROPRIATE LOOP LENGTHS AND SEQUENCE COMPLEMENTARY TO THE STEM FORM STABILIZING BASE-TRIPLET STACKS. **Calliste Reiling**, Irine Khutsishvili, Luis A. Marky

1970-Pos Board B107
SEQUENCE DEPENDENT PLECTONEME DYNAMICS. **Marco Tompitak**, Behrouz Eslami Mossallam, Gerard Barkema, Helmut Schiessel

1971-Pos Board B108 EDUCATION TRAVEL AWARDEE
MISMATCHED DNA BASE PAIRS SHOW INCREASED CONFORMATIONAL FLUCTUATIONS. **Adelaide Kingsland**, Lutz Maibaum

1972-Pos Board B109
THE STUDY OF COMPLEXATION PROCESS BETWEEN CATIONIC GEMINI SURFACTANTS AND DNA USING STRUCTURAL AND SPECTROSCOPIC METHODS. **Weronika J. Andrzejewska**, Michalina Skupin, Magdalena Murawska, Andrzej Skrzypczak, Maciej Kozak

1973-Pos Board B110
DNA-BINDING PROPERTIES OF PEPTIDE-FUNCTIONALIZED GRAPHENE QUANTUM DOTS. **Bedanga Sapkota**, Mirela Mustata, Jian Zhang, Gevorg Grigoryan, Meni Wanunu

1974-Pos Board B111
HIGH-AFFINITY FLUORESCENCE SENSING OF G-QUADRUPLEXES. **D. Cibrán Pérez-González**, Flor Rodríguez-Prieto, J. Carlos Penedo

1975-Pos Board B112
SINGLE MOLECULE MEASUREMENTS OF THE UNFOLDING BEHAVIOR OF DIVERSE DNA HAIRPIN ASSEMBLIES. Caitlin J. Cain, Sally Ruderman, Catherine A. Deitrich, Diana Seminario, Micah J. McCauley, Mark C. Williams, **Megan E. Nunez**

1976-Pos Board B113
OPTIMIZING TETHERED PARTICLE MOTION TO MEASURE DNA COMPACTION BY PROTAMINE. **Matthew Woop**, Robert D. Schwab, Ji Hoon Lee, Ashley R. Carter

1977-Pos Board B114
COMPARING EFFECTS OF DIFFERENT TRANSITION METAL COMPLEXES UNDER OSMOTIC STRESS IN THE B-TO-Z DNA TRANSITION. **Richard S. Preisler**, Maimouna Cisse, Daniela Rey-Ardila, Aloise Diedrich, Kelsey Polak

1978-Pos Board B115
THE EFFECTS OF IONIC STRENGTH ON THE HYDRODYNAMIC PROPERTIES OF I-MOTIF FOLDING. **Robert T. Wright**, Samantha M. Reilly, Randy M. Wadkins, John J. Correia

1979-Pos Board B116
MOLECULAR DYNAMICS INVESTIGATION OF IMMOBILE DNA FOUR-WAY JUNCTIONS. **Matthew R. Adendorff**, Mark Bathe

1980-Pos Board B117
ENSEMBLE MODELS OF NUCLEOSOME ARRAYS CONSTRAINED BY SMALL-ANGLE X-RAY SCATTERING. **Steven C. Howell**, Wei Meng, Kurt Andresen, Agnes Mendonca, Chongli Yuan, Bing-Rui Zhou, Yawen Bai, Joseph E. Curtis, Xiangyun Qiu

1981-Pos Board B118
TORQUE MEASUREMENTS DURING THE SPONTANEOUS UNBRAIDING OF DNA MOLECULES SHOWED LARGE FLUCTUATIONS ATTRIBUTABLE TO THE FORMATION OF STABLE DNA-DNA INTERACTIONS. **Carlos J. Martínez-Santiago**, Mónica Fernández-Sierra, Edwin Quiñones

1982-Pos Board B119
QUANTIFYING THE STABILITY OF ACRIDINES TO RIBOSOMAL G-QUADRUPLEXES. **Billy Nicholson**, Adam Green, Samuel Cho

1983-Pos Board B120
MOLECULAR IDENTIFICATION OF THE EARTHWORM AMYNTHAS GRACILIS. **Patricia G. Morgante**, Ana Caroline Conrado, Patricia S. Santiago

1984-Pos Board B121
MOLECULAR DYNAMICS INVESTIGATIONS OF Z[WC] DNA AND THE B TO Z-DNA TRANSITION. **Michael G. Lerner**, Alma Gracic, Jinhee Kim, Ashutosh Rai, Alexander K. Seewald, Benjamin L. Yee

1985-Pos Board B122
STRUCTURE AND THERMODYNAMICS OF AEGIS NUCLEOTIDES P AND Z IN DNA. Xiaoyu Wang, Kenneth K. Sharp, Shuichi Hoshika, Stanislav Bellaousov, Xiaoju Zhang, David H. Mathews, Steven A. Benner, Raymond J. Peterson, **Jason D. Kahn**

1986-Pos Board B123
BINDING STUDIES OF SMALL MOLECULES TO TELOMERIC QUADRUPLEX DNA FOR TARGETED SINGLET OXYGEN PRODUCTION. **Yasemin Kopkalli**, Craig Biegel, Ryan Khemraj, Lesley Davenport

1987-Pos Board B124
REGULATION OF THE 3' UTR IN BDNF MRNA AT THE DNA LEVEL. **Brett A. DeMarco**

1988-Pos Board B125
QUANTITATIVE INVESTIGATION OF THE ROLE OF SEQA IN ESCHERICHIA COLI CHROMOSOME SEGREGATION. **Julie A. Cass**, Nathan J. Kuwada, Paul A. Wiggins

1989-Pos Board B126
PACKING AND PHASE TRANSITIONS IN DNA DUPLEXES AND TETRAPLEXES: SIMILARITIES AND DIFFERENCES. Selcuk Yasar, Rudolf Podgornik, **V. Adrian Parsegian**

1990-Pos Board B127
THE RELATIONSHIP BETWEEN ELECTROPHORETIC MOBILITY AND POLYELECTROLYTE CHARGE. **Nancy C. Stellwagen**

1991-Pos Board B128
ENHANCED SAMPLING OF DNA STEP PARAMETERS: IMPACT OF METHYLATION ON DNA SHAPE AND FLEXIBILITY. **Aleksandra Karolak**, Arjan van der Vaart

1992-Pos Board B129
THREE-DIMENSIONAL MODELING OF SINGLE STRANDED HAIRPIN DNA APTAMERS. Iman Jeddi, **Leonor Saiz**

1993-Pos Board B130
RESOLVING THE DNA BINDING MODE OF A ROTATIONALLY FLEXIBLE BINUCLEAR RUTHENIUM COMPLEX. **Ali A. Almaqwashi**, Johanna Andersson, Per Lincoln, Ioulia Rouzina, Fredrik Westerlund, Mark C. Williams

1994-Pos Board B131
EPIGENETICS AND OTHER FACTORS THAT AFFECT FOLDING AND STABILITY OF DNA I-MOTIF STRUCTURES. Samantha M. Reilly, Yogini P. Bhavsar-Jog, Sara E. Wingate, Daniel F. Lyons, Robert T. Wright, Tracy A. Brooks, John J. Correia, David M. Jameson, **Randy M. Wadkins**

Protein-Nucleic Acid Interactions II (Boards B132-B154)

1995-Pos Board B132
ACTIVATION OF PKR BY STEM-LOOP RNAS WITH FLANKING SSRNA TAILS. **Christopher Mayo**, Prisma Lopez, James Cole

1996-Pos Board B133
DETERMINING THE DNA DIFFUSION BEHAVIOR OF SA2 ON VARIOUS DNA SUBSTRATES. **Preston J. Countryman**, Jiangguo Lin, Parminder Kaur, Edward Brennan, Haijiang Chen, Changjiang You, Jacob Piehler, Yizhi Jane Tao, Hong Wang

1997-Pos Board B134 **minority affairs travel awardee**
A HUMAN TRANSCRIPTION FACTOR IN SEARCH MODE. **Kevin Hauser**, Bernard Essuman, Evangelos Coutsias, Miguel Garcia-Diaz, Carlos Simmerling

1998-Pos Board B135
TWO-STEP DNA INTERCALATION BY THREADING OF THE FLEXIBLE RUTHENIUM DIMER STUDIED BY THE SINGLE MOLECULE DNA STRETCHING. **Ioulia Rouzina**, Meriem Bahira, Ali Almaqwashi, Micah McCauley, Fredrik Westerlund, Mark C. Williams

1999-Pos Board B136
THE ROLE OF THE THREADING MOIETY IN DNA THREADING INTERCALATION BY RUTHENIUM DIMER COMPLEXES. **Andrew G. Clark**, Thayaparan Paramanathan, Fredrik Westerlund, Per Lincoln, Micah J. McCauley, Ioulia Rouzina, Mark C. Williams

2000-Pos Board B137
MOLECULAR INTERACTION BETWEEN ESCHERICHIA COLI TOPOISOMERASE I AND PBAD/THIO SUPERCOILED PLASMID DNA. **Purushottam Tiwari**, Thirunavukkarasu Annamalai, Bokun Cheng, Gagandeep Narula, Xuewen Wang, Yuk-Ching Tse-Dinh, Jin He, Yesim Darici

2001-Pos Board B138
FORCE REGULATED ASSOCIATION DYNAMICS OF RPA ON FORKED DNA. **Felix E. Kemmerich**, Peter Daldrop, Maryna Levikova, Petr Cejka, Ralf Seidel

2002-Pos Board B139
SPECIFIC BINDING OF THE NUCLEOCAPSID PROTEIN TRANSFORMS THE FOLDING LANDSCAPE OF THE HIV-1 TAR RNA HAIRPIN. **Micah J. McCauley**, Ioulia Rouzina, Kelly Hoadley, Robert J. Gorelick, Karin Musier-Forsyth, Mark C. Williams

2003-Pos Board B140 EDUCATION TRAVEL AWARDEE
FACTORS THAT INFLUENCE PKR DIMERIZATION AND ACTIVATION. **Bushra Husain**, Michael Bruno, Matthew Angeliadis, James Cole

2004-Pos Board B141
QUANTITATIVE DNA BINDING, LOOPING, AND COMPACTION PROPERTIES OF THE HIV-1 VIRAL PROTEIN R. **Divakaran Murugesapillai**, Micah J. McCauley, Ioulia Rouzina, Serge Bouaziz, Mark C. Williams

2005-Pos Board B142
REPETITIVE SINGLE-MOLECULE FRET FLUCTUATIONS UPON T4 GENE 32 PROTEIN BINDING TO SINGLE-STRANDED DNA. **Wonbae Lee**, John P. Gillies, Davis Jose, Peter H. von Hippel, Andrew H. Marcus

2006-Pos Board B143
HOW MECP2 AND R.DPNI PROTEINS RECOGNIZE METHYLATED DNA. **Volkhard Helms**, Siba Shanak

2007-Pos Board B144
DNA LOOPING AND GENOME ARCHITECTURE: HOW PROTEINS CAN CONNECT AND ORGANIZE CHROMOSOMES. **Nicolas Clauvelin**, Wilma K. Olson

2008-Pos Board B145
COMMON ASPECTS OF G-QUADRUPLEX DESTABILIZATION AMONG HELICASES AND SINGLE STRANDED DNA BINDING PROTEINS. **Jagat B. Budhathoki**, Sujay Ray, Pavel Janscak, Jaya Yodh, Hamza Balci

2009-Pos Board B146
DYNAMIC INTERACTIONS BETWEEN DNA AND THE T4 SINGLE-STRANDED BINDING PROTEIN GP32: MULTI-DIMENSIONAL CORRELATION ANALYSIS OF MICROSECOND SINGLE-MOLECULE FRET AND LINEAR DICHROISM FLUCTUATIONS. **Carey Phelps**, Brett Israels, Wonbae Lee, Davis Jose, Peter H. von Hippel, Andrew H. Marcus

2010-Pos Board B147
EXPLORATION OF CYTOSINE METHYLATION EFFECTS ON PROTEIN-DNA BINDING. Skyler Uhl, Amber M. Velasco, Allison M. Nice, **Winston Timp**

2011-Pos Board B148
MOLECULAR MECHANISM OF PROCESSIVE 3' TO 5' RNA TRANSLOCATION IN THE RNA EXOSOME COMPLEX. **Lela Vukovic**, Debora L. Makino, Christophe Chipot, Elena Conti, Klaus Schulten

2012-Pos Board B149
PROBING DNA BENDING KINETICS BY YNHP6A WITH ULTRAFAST TEMPERATURE JUMP SPECTROSCOPY. **Manas K. Sarangi**, Molly Nelson-Holte, Jim Maher, Anjum Ansari

2013-Pos Board B150
SINGLE-MOLECULE DNA MELTING BUBBLE FORMATION AND SINGLE-STRAND BINDING PROTEIN INTERACTION. **Marko Swoboda**, Lisa Hannusch, Maj Svea Grieb, Michael Schlierf

2014-Pos Board B151
INVESTIGATION OF THE ROLE PLAYED BY THE RNA G-QUADRUPLEX STRUCTURE IN ALS/FTD PATHOLOGY. **Damian McAninch**, Mihaela Rita Mihailescu

2015-Pos Board B152
CHARACTERIZATION OF AIM2 DNA-BINDING PROPERTIES AND FILAMENT FORMATION. **Seamus Morrone**, Mariusz Matyszewski, Jungsan Sohn

2016-Pos Board B153
CHARACTERIZATION OF IHF BINDING TO DNA FOUR-WAY JUNCTIONS AND FORKS. **Veronica Birdsall**, Vivian Deng, Ishita Mukerji

2017-Pos Board B154
DYNAMICS OF GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE INTERFACIAL REGIONS AFFECT BINDING TO AU-RICH RNA. **Michael White**, Mohsin Khan, Daniel Deredge, Christina Ross, Royston Quintyn, Beth Zucconi, Vicki Wysocki, Patrick Wintrode, Gerald Wilson, Elsa Garcin

Membrane Physical Chemistry II (Boards B155-B175)

2018-Pos Board B155
CALCIUM EFFECT ON DIRECTED LIPID FLOW IN MEMBRANE: IMPROVING KNOWLEDGE ABOUT DIRECTED CELL PROCESSES IN BIOLOGICAL CELLS. **Baharan Ali Doosti**

2019-Pos Board B156 EDUCATION TRAVEL AWARDEE
DIRECT MEASUREMENT OF DIPOLE ELECTRIC FIELD IN MODEL MEMBRANES USING VIBRTAIONAL SHIFTS OF P-CYANOPHENYLALANINE AND COUPLED WITH MOLECULAR DYNAMICS SIMULATIONS. **Rebika Shrestha**, Lauren J. Webb

2020-Pos Board B157
CELL PENETRATING PEPTIDE MEDIATED TRANSPORT ACROSS MEMBRANES. **Xin Li**, Jing Huang, Matthew A. Holden

2021-Pos Board B158
ENHANCED MEMBRANE PERMEABILITY IN E. COLI INDUCED BY EXTRACELLULAR ADENOSINE TRIPHOSPHATE. **Michael J. Wilhelm**, Mohammad Sharifian Gh., Hai-Lung Dai

2022-Pos Board B159
TRANS-MEMBRANE PERMEATION MECHANISM OF CHARGED METHYL GUANIDINE. **Yukun Wang**

2023-Pos Board B160
IMAGING POTASSIUM FLUX THROUGH INDIVIDUAL ELECTROPORES. **Marc Szabo**, Mark I. Wallace

2024-Pos Board B161
VARIABLE ADHESION STRENGTH FOR GIANT UNILAMELLAR VESICLES CONTROLLED BY EXTERNAL ELECTROSTATIC POTENTIALS. **Jan Steinkuehler**, Jaime Agudo-Canalejo, Reinhard Lipowsky, Rumiana Dimova

2025-Pos Board B162
SINGLE CELL FORCE SPECTROSCOPY ANALYSIS FOR ACINETOBACTER BAYLYI MUTATION AGGREGATION. **Mehrdad M. Tajkarimi**, Albert M. Hung, Scott H. Harrison, Jeffrey E. Barrick, Joseph L. Graves Jr.

2026-Pos Board B163
MEMBRANE ENVIRONMENT CAN ENHANCE THE INTERACTION OF GLYCAN BINDING PROTEIN TO CELL SURFACE GLYCAN RECEPTORS. Lei Shen, Yini Wang, Chia-I Lin, Hung-wen Liu, Athena Guo, **Xiaoyang Zhu**

2027-Pos Board B164
IMPACT OF COMPOSITION UPON ORDERED MEMBRANE DOMAIN("RAFT") FORMATION BY LIPIDS FROM PATHOGENIC BACTERIA. **Zhen Huang**

2028-Pos Board B165
STABILIZATION OF GLYCOSPHINGOLIPID DOMAINS BY PALMITOYL CERAMIDE IN UNSATURATED PHOSPHATIDYLCHOLINE BILAYERS. **Abdullah Al Sazzad**, J.Peter Slotte, Max Lönnfors

2029-Pos Board B166
COMPARISON OF LINE TENSION MEASUREMENT TECHNIQUES IN PHASE SEPARATED MULTI-COMPONENT LIPID MONOLAYERS. **Juan TigreLazo**, Joan C. Kunz, Vision Bagonza, Andrew H. Nguyen, Emil Eldo, Benjamin L. Stottrup

2030-Pos Board B167
THE AVERAGE AREA PER MOLECULE OF CHOLESTEROL/PC-LIPID BILAYERS: A REVIEW OF EXPERIMENTAL DATA AND A PHYSICALLY INSPIRED MODEL. **Jonathan P. Litz**, Sarah L. Keller

2031-Pos Board B168
CHOLESTEROL BILAYER DOMAIN IN PHOSPHOLIPID BILAYER MEMBRANES CAN BE DETECTED BY CONFOCAL MICROSCOPE. Marija Raguz, Nada Ilic, Suresh Kumar, Mariusz Zereba, **Laxman Mainali**, Witold K. Subczynski

2032-Pos Board B169
CORRELATED MOTION AND COMPLEX FORMATION OF LIPID-RAFT COMPONENTS ANALYZED BY HIGH-RESOLUTION SECONDARY ION MASS SPECTROMETRY. **Monica M. Lozano**, Jennifer S. Hovis, Frank R. Moss III, Krishna Kumar, Steven G. Boxer

2033-Pos Board B170
DOMAIN MORPHOLOGIES OF COMPLEX PHOSPHOINOSITIDE/LIPID LANGMUIR FILMS IN THE PRESENCE OF BIVALENT CATIONS. **Katrice E. King**, Arne Gericke

2034-Pos Board B171
CERAMIDE AND CHOLESTEROL EFFECTS ON PHOSPHOLIPID BILAYERS UNDER THE AFM: CHARACTERIZATION OF COMPLEX LIPID PHASES. Aritz B. García-Arribas, Jon V. Busto, Alicia Alonso, **Felix M Goni**

2035-Pos Board B172
END-PRODUCT DIACYLGLYCEROL ENHANCES ACTIVITY OF PHOSPHATIDYLINOSITOL PHOSPHOLIPASE C THROUGH CHANGES IN MEMBRANE LIPID DOMAIN STRUCTURE. Hasna Ahyayauch, Jesús Sot, M. Isabel Collado, Nerea Huarte, José Requejo-Isidro, Félix M. Goñi, **Alicia Alonso**

2036-Pos Board B173
LESSONS FROM KINETICS: ASSESSING NUANCES IN BILAYER PROPERTIES BY EXAMINING EQUILIBRATION. **John D. Bell**, Clinton S. McCleskey, Joseph Chen, Emma R. Moulton, Morgan M. Schwab, Holli K. Wiberg

2037-Pos Board B174
THE CHEMICAL POTENTIAL OF CHOLESTEROL REGULATES THE PRO-METASTATIC PHENOTYPE IN A CELL CULTURE MODEL OF BREAST CANCER. **Artem G. Ayuyan**, Fredric S. Cohen

2038-Pos Board B175
MEMBRANE RESISTANCE TO DETERGENT-INDUCED SOLUBILIZATION AS A MATTER OF PHYSICAL PHASE IN BINARY LIPID MIXTURES. **Bruno Mattei**, Ana David Cruz França, Karin Amaral Riske

Membrane Fusion (Boards B176-B199)

2039-Pos Board B176
ACTIN AND DYNAMIN CONTROL THE FATE OF THE FUSION INTERMEDIATE - THE Ω-PROFILE. **Peter Wen**

2040-Pos Board B177
THE MOLECULAR MECHANISM OF MONOLAYER SCISSION. **Shachi Katira**, Berend Smit

2041-Pos Board B178
LIPID TRANSFER KINETICS FROM NANOLIPOPROTEIN PARTICLES TO BICELLES. **Robert Renthal**, Ginny Lai, Kevin Munoz Forti

2042-Pos Board B179
DRUNKEN MEMBRANES: HOW DOES ETHANOL IMPACT FUSION OF VESICLES TO PLANAR LIPID BILAYERS? **Brady Hunt**, Jason R. Paxman, D. Coulson Huntington, Dixon J. Woodbury

2043-Pos Board B180
ROLE OF ELECTROSTATIC INTERACTIONS IN THE ANCHORING OF DENGUE E PROTEIN TO LIPID MEMBRANES. **Juan M. Vanegas**, David M. Rogers, Michael S. Kent, Susan B. Rempe

2044-Pos Board B181
CALCIUM SENSITIVE RING-LIKE OLIGOMERS OF SYNAPTOTAGMIN: IMPLICATIONS FOR REGULATION OF NEUROTRANSMITTER RELEASE. **Shyam Krishnakumar**

2045-Pos Board B182 **Education Travel Awardee**
VIRAL MEMBRANE FUSION AT SINGLE PORE RESOLUTION. **Brett E. Alcott**, Zhenyong Wu, Ben O'Shaughnessy, Erdem Karatekin

2046-Pos Board B183
EFFECT OF CHOLESTEROL DEPLETION ON HA DISTRIBUTION IN THE VIRAL MEMBRANE OF INFLUENZA. **Rebecca A. Dunning**, Marta K. Domanska, Kelly Dryden, Mark Yeager, Peter M. Kasson

2047-Pos Board B184
CHOLESTEROL AND INFLUENZA VIRAL FUSION MECHANISMS: USING STEROL ANALOGUES TO PROBE MECHANISM. **Katarzyna E. Zawada**, Dominik Wrona, Marta K. Domańska, Peter M. Kasson

2048-Pos Board B185
CHARACTERIZATION OF HIV-1 ENTRY SITE SPECIFICITY USING SINGLE-PARTICLE TRACKING. **Chetan Sood**, Mariana Marin, Gregory B. Melikian

2049-Pos Board B186
RECOGNITION OF LIPID DOMAIN BOUNDARIES BY THE HIV FUSION PEPTIDE IS AN ESSENTIAL STEP FOR HIV MEMBRANE FUSION. **Sung-Tae Yang**, Volker Kiessling, Lukas K. Tamm

2050-Pos Board B187
POST FUSION STRUCTURE OF THE TRANSMEMBRANE DOMAIN OF THE EBOLA VIRUS SURFACE GLYCOPROTEIN. **Jinwoo Lee**, Lukas K. Tamm

2051-Pos Board B188
THE ROLE OF ACIDIC PH IN EBOLA MEDIATED CELL-CELL FUSION. **Ruben Markosyan**, Grigory Melikyan, Shan-Lu Liu, Fred Cohen

2052-Pos Board B189
REAL-TIME IMAGING REVEALS THAT HIV-1 VPR DISSOCIATES FROM THE CORE AND ACCUMULATES IN THE NUCLEUS AFTER VIRAL FUSION. **Tanay M. Desai**, Mariana Marin, Gregory B. Melikyan

2053-Pos Board B190
DELIVERY OF LIPOSOMAL CONTENTS TO OUTER MEMBRANE VESICLES FROM GRAM NEGATIVE BACTERIA. Michael Ficurilli, Carol Liu, Christopher Riviello, Maria Jose Pozo, **Paul R. Meers**

2054-Pos Board B191
FUSION FORE DILATION BY SNARE PROTEINS. **Zhenyong Wu**, Oscar Daniel Bello, Sarah Marie Auclair, Wensi Vennekate, Shyam Sundar Krishnakumar, Erdem Karatekin

2055-Pos Board B192
CONTROL OF FUSION PORE NUCLEATION AND DYNAMICS BY SNARE PROTEIN TRANSMEMBRANE DOMAINS. Zhenyong Wu, Sarah M. Auclair, Oscar D. Bello, Wensi Vennekate, Shyam Krishnakumar, **Erdem Karatekin**

2056-Pos Board B193
SNARE MEDIATED FUSION WITH MEMBRANE TENSION CONTROL. **Joerg Nikolaus**, Erdem Karatekin

2057-Pos Board B194
COLLECTIVE ACTION OF SNAREPINS EXERTS FORCES BETWEEN MEMBRANES THAT ACTIVATE FUSION. **Hakhamanesh Mostafavi**, Ben Stratton, Jason M. Warner, Erdem Karatekin, Ben O'Shaughnessy

2058-Pos Board B195
CHOLESTEROL MODULATES SNARE MEDIATED HEMI- AND FULL-FUSION. **Alex J. B. Kreutzberger**, Volker Kiessling, Lukas K. Tamm

2059-Pos Board B196
CHASING THE FUNCTIONAL ASYMMETRY BETWEEN C2A AND C2B IN FULL-LENGTH SYNAPTOTAGMIN 1 DURING CA^{2+}-DEPENDENT MEMBRANE BINDING. **Volker Kiessling**, Bin Lu, Lukas K. Tamm, David S. Cafiso

2060-Pos Board B197
MECHANICAL MODEL FOR SELF-ASSEMBLY OF SYNAPTOTAGMIN ON A LIPID MEMBRANE. **Jie Zhu**, James E. Rothman

2061-Pos Board B198
SINGLE VESICLE ASSAY TO STUDY MEMBRANE TETHERING AND DOCKING FACTORS. **Jiajie Diao**

2062-Pos Board B199
DEFICIENCY OF HID-1 LEADS TO IMPAIRED PROINSULIN PROCESSING. **Wen Du**, Tao Xu

Membrane Structure II (Boards B200-B223)

2063-Pos Board B200
ROLE OF HEADGROUP DIPOLE INTERACTIONS IN PHOSPHATIDYLCHOLINE AND PHOSPHATIDYLSERINE BILAYERS. **Hongcheng Xu**, Sai Ganesan, Silvina Matysiak

2064-Pos Board B201
DOMAIN FORMATION IN QUARTERNARY LIPID BILAYER SYSTEM: A COARSE-GRAINED MOLECULAR DYNAMICS STUDY. **Shushan He**, Lutz Maibaum

2065-Pos Board B202
INVESTIGATING LIPID PHASE CHANGES FROM LIQUID CRYSTALLINE TO RIPPLE TO GEL PHASES WITH ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Pouyan Khakbaz**, Jeffery Klauda

2066-Pos Board B203
MOLECULAR DYNAMICS SIMULATIONS OF SPHINGOMYELIN-CHOLESTEROL BILAYERS. **Hojin Kang**, Jeffery B. Klauda

2067-Pos Board B204
INFLUENCE OF CHOLESTEROL ON PHOSPHOLIPID BILAYER DYNAMICS. **Christopher T. Boughter**, Jeffery B. Klauda

2068-Pos Board B205
MICROSCOPIC MODEL AND ANALYTIC DERIVATION OF AREA PER MOLECULE FOR DPPC-CHOLESTEROL BILAYERS. Boris B. Kheyfets, **Sergei I. Mukhin**

2069-Pos Board B206
SIMULATION STUDY OF COMPOSITION FLUCTUATIONS IN LIPID BILAYERS. **Svetlana Baoukina**, Dmitri Rozmanov, D. Peter Tieleman

2070-Pos Board B207
FATTY ACID INTERACTIONS WITH RNA BUILDING BLOCKS: ORIGIN OF LIFE IMPLICATIONS. **Parisa Akhshi**, Peter Tieleman

2071-Pos Board B208
OPEN COLLABORATION THAT USES NMR DATA TO JUDGE THE CORRECTNESS OF PHOSPHOLIPID GLYCEROL AND HEAD GROUP STRUCTURES IN MOLECULAR DYNAMICS SIMULATIONS. Patrick F. J. Fuchs, Matti Javanainen, Antti Lamberg, **Markus S. Miettinen**, Luca Monticelli, Jukka Määttä, O. H. Samuli Ollila, Marius Retegan, Hubert Santuz

2072-Pos Board B209
SOLID-STATE 2H NMR INVESTIGATION OF TRANSDUCIN ACTIVATION BY RHODOPSIN. **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

2073-Pos Board B210
N-3 PUFA-CONTAINING PHOSPHOLIPIDS STUDIED BY MD SIMULATIONS: A COMPARISON OF EPA, DPA AND DHA. **Xiaoling Leng**, Jacob J. Kinnun, Saame Shaikh, Stephen Wassall, Scott Feller

2074-Pos Board B211
DHA DISORDERS RAFT-LIKE DOMAINS AS REVEALED BY SOLID STATE 2H NMR. **Jacob J. Kinnun**, Justin A. Williams, William Stillwell, Robert Bittman, Saame R. Shaikh, Stephen R. Wassall

2075-Pos Board B212
DISORDERLY POLYUNSATURATED FATTY ACIDS AND ORDERLY CHOLESTEROL: JUST HOW DO THEY GET ALONG IN A MEMBRANE? Denise V. Greathouse, Jacob J. Kinnun, Justin A. Williams, Drew Marquardt, Jeffrey B. Klauda, Roger E. Koeppe II, John Katsaras, Thad A. Harroun, **Stephen R. Wassall**

2076-Pos Board B213 MINORITY AFFAIRS TRAVEL AWARDEE
AN INVESTIGATION OF WHETHER VITAMIN E PREFERENTIALLY INTERACTS WITH POLYUNSATURATED LIPIDS. **Andres T. Cavazos**, Jacob J. Kinnun, Justin A. Williams, Bruce D. Ray, Morris Bank, Paul E. Harper, Jeffrey Atkinson, Horia I. Petrache, Stephen R. Wassall

2077-Pos Board B214
MOLECULAR DYNAMICS STUDIES OF LIPID I AND LIPID II IN VARIOUS OF LIPID BILAYER ENVIRONMENTS. **Seonghoon Kim**, Wonpil Im

2078-Pos Board B215
EICOSAPENTAENOIC ACID-CONTAINING MEMBRANE DOMAIN INVOLVED IN CELL DIVISION OF A COLD-ADAPTED BACTERIUM. **Jun Kawamoto**, Nobuyoshi Esaki, Tatsuo Kurihara

2079-Pos Board B216
STRONG H-BONDS FORM BILAYERS: OCHROMONAS DANICA IS AN EXTREME EXAMPLE. **Thomas H. Haines**

2080-Pos Board B217
CHOLESTEROL FLIP-FLOP AND LACK OF SWELLING IN STRATUM CORNEUM LIPID BILAYERS. **Peter Olmsted**, Chinmay Das, Massimo Noro

2081-Pos Board B218
HYDRATION AND SUPRAMOLECULAR ORGANIZATION STUDIES OF LAMELLAR BODIES IN A549 LUNG CELLS USING LAURDAN FLUORESCENCE. **Leonel S. Malacrida**, Soledad Astrada, Mariela Bolatti, Arturo Briva, Luis A. Bagatolli

2082-Pos Board B219
MODULATION OF PHOSPHOINOSITIDE MONOLAYER COMPRESSIBILITIES BY PHYSIOLOGICAL LEVELS OF CA^{2+}. **Adolphe Kazadi Badiambile**, Martin B. Forstner

2083-Pos Board B220
PROTON PERMEATION THROUGH EXTREMOPHILE-INSPIRED LIPID MEMBRANES. **Thomas B. H. Schroeder**, Kathryn N. Haengel, Mitchell A. Johnson, Claire L. Wang, Geoffray Leriche, Takaoki Koyanagi, Jerry Yang, Michael Mayer

2084-Pos Board B221
VIBRATIONAL SPECTROSCOPIC STUDIES PROBING CARDIOLIPIN CONTAINING LIPOSOMES WITH AND WITHOUT CYTOCHROME C BOUND TO ITS ANIONIC SURFACE. **Dzmitry Malyshka**, Leah Pandiscia, Reinhard Schweitzer-Stenner

2085-Pos Board B222
DROPLET INTERFACE BILAYER AS CELL MEMBRANE MIMICS: WATER PERMEABILITY STUDIES. **Sunghee Lee**

2086-Pos Board B223
COMPARISON OF REACTIVE OXYGEN SPECIES PRODUCTION ACTIVITY AND BINDING ABILITY OF PORPHYRINS IN CELL MEMBRANE MODELS. **Barnabás Bőcskei-Antal**, Bianka Nagy, Szilvia Anikó Tóth, Nikoletta Kósa, István Voszka, Gabriella Csík, Levente Herényi

Membrane Receptors and Signal Transduction III (Boards B224-B245)

2087-Pos Board B224
INVESTIGATING THE EFFECT OF SODIUM AND VOLTAGE ON δ-OPIOID RECEPTORS. **Owen N. Vickery**, Daniel T. Baptista-Hon, Daniel Seeliger, Tim G. Hales, Ulrich Zachariae

2088-Pos Board B225
STRUCTURE-GUIDED DISCOVERY OF POSITIVE ALLOSTERIC MODULATORS OF THE MU-OPIOID RECEPTOR.
Paola Bisignano, Neil T. Burford, Samuel W. Gerritz, Andrew Alt, Marta Filizola

2089-Pos Board B226
BINDING POCKETS AND POSES OF ALLOSTERIC MODULATORS OF OPIOID RECEPTORS IDENTIFIED BY METADYNAMICS. **Yi Shang**, Holly R. Yeatman, Neil Burford, Kathryn Livingston, Paola Bisignano, John Traynor, Andrew Alt, Arthur Christopoulos, Meritxell Canals, Marta Filizola

2090-Pos Board B227
STRUCTURAL DYNAMICS AND ENERGETICS UNDERLYING ALLOSTERIC INACTIVATION OF A GPCR: INSIGHTS GAINED FROM SITE-DIRECTED FLUORESCENCE LABELING (SDFL) STUDIES OF THE CANNABINOID RECEPTOR CB1. Jonathan Fay, **David L. Farrens**

2091-Pos Board B228
OPTIMIZATION OF SYNTHETICALLY NOVEL AGONISTS OF THE PUTATIVE CANNABINOID RECEPTOR, GPR55, USING AN ACTIVATED STATE MODEL. **Mary A. Lingerfelt**, Pingwei Zhao, Lara Fakhouri, Mary E. Abood, Mitchell P. Croatt, Patricia H. Reggio

2092-Pos Board B229
SIGNALING THROUGH HOMOMERIC AND HETEROMERIC DOPAMINE D2 AND CANNABINOID CB1 RECEPTORS. **Guoqing Xiang**

2093-Pos Board B230
PHARMACOLOGICAL IMPLICATIONS OF A2AR-D2R HETEROMERIZATION AND THE SIGNIFICANCE FOR PARKINSON'S DISEASE. **Candice Hatcher-Solis**, Diomedes E. Logothetis

2094-Pos Board B231
STRUCTURAL BASIS FOR THE ALLOSTERIC PHARMACOLOGY OF SB269652 IN DOPAMINE D2 RECEPTOR. **Mayako Michino**, Christopher J. Draper-Joyce, Prashant Donthamsetti, Jonathan A. Javitch, J. Robert Lane, Lei Shi

2095-Pos Board B232
CROSS-SIGNALING BETWEEN THE METABOTROPIC GLUTAMATE RECEPTOR 2 AND THE SEROTONIN 2A RECEPTOR IN HEK-293 CELLS. **Lia Baki**, Jason Younkin, Jose Miguel Eltit, Miguel Fribourg, Amr Ellaithy, Gyu Park, Zhanna Vysotskaya, Diomedes E. Logothetis

2096-Pos Board B233
A POSITIVE ALLOSTERIC MODULATOR OF THE METABOTROPIC GLUTAMATE 2 RECEPTOR ALTERS 5-HT2A RECEPTOR SIGNALING IN A HETEROMERIC COMPLEX. **Amr Ellaithy**, Jason Younkin, Lia Baki, Diomedes Logothetis

2097-Pos Board B234
ASSEMBLY AND COOPERATIVITY OF METABOTROPIC GLUTAMATE RECEPTORS. **Josh Levitz**, Reza Vafabakhsh, Shashank Bharill, Shashank Bharill, Ehud Y. Isacoff

2098-Pos Board B235
GLYCAN-BASED CONNECTIVITY REGULATES THE HIERARCHICAL ORGANIZATION OF MEMBRANE RECEPTORS BY COUPLING THEIR MICRO- AND NANO-SCALE LATERAL MOBILITY. Juan A. Torreno-Pina, Bruno Castro, Alessandra Cambi, Carlo Manzo, **Maria Garcia-Parajo**

2099-Pos Board B236
THE ROLE OF LIGAND DENSITY IN THE BINDING OF VON WILLEBRAND FACTOR BY THE GLYCOPROTEIN IB-IX-V COMPLEX IN PLATELETS. **Zeinab Al-Rekabi**, Shirin Feghhi, Nikita Taparia, Adam D. Munday, Wendy E. Thomas, Jose A. Lopez, Joachim P. Spatz, Nathan J. Sniadecki

2100-Pos Board B237 INTERNATIONAL TRAVEL AWARDEE
CHELIDONINE INTERFERES WITH IL-6R/STAT3 SIGNALING IN UVEAL MELANOMA CELLS. **Istvan Csomos**, Eniko Nizsaloczki, Gabriella Nagy, Laszlo Matyus, Andrea Bodnar

2101-Pos Board B238
THE SITE OF ARACHIDONIC ACID RELEASE DRIVES CALCIUM DYNAMICS IN β-CELLS. **Dmytro A. Yushchenko**, André Nadler, Rainer Mueller, Frank Stein, Gurleen Khandpur, Suihan Feng, Carsten Schultz

2102-Pos Board B239
MULTI-SCALE LINKAGES BETWEEN SINGLE-MOLECULE INTEGRIN DYNAMICS AND CELL PROTRUSION. **Khuloud Jaqaman**, James A. Galbraith, Michael Davidson, Gaudenz Danuser, Catherine G. Galbraith

2103-Pos Board B240
WEAK ERGODICITY BREAKING OF MEMBRANE RECEPTOR MOTION STEMMING FROM RANDOM DIFFUSIVITY. **Carlo Manzo**, Juan A. Torreno-Pina, Pietro Massignan, Gerald J. Lapeyre Jr., Maciej Lewenstein, Maria F. Garcia-Parajo

2104-Pos Board B241
RESTRICTED MOBILITY OF TONB AND FEPA IN E. COLI MEMBRANES. Yoriko Lill, Lorne D. Jordan, Chuck R. Smallwood, Salete M. Newton, Phillip E. Klebba, **Ken Ritchie**

2105-Pos Board B242
CRYO-ELECTRON TOMOGRAPHY AND COMPUTER SIMULATIONS REVEAL DISTINCT CHEA KINASE CONFORMATION IN BACTERIAL CHEMOTAXIS SIGNALING RECEPTOR COMPLEX. **Benjamin A. Himes**, C. Keith Cassidy, Jun Ma, Frances Joan D. Alvarez, Juan R. Perilla, Gongpu Zhao, Klaus Schulten, Peijun Zhang

2106-Pos Board B243
TRACKING CEACAM1 INTERACTIONS AND DYNAMICS WITH HOMO-FRET AND IMAGE CORRELATION TECHNIQUES. **Amy M. Won**, Scott D. Gray-Owen, Christopher M. Yip

2107-Pos Board B244
MOLECULAR MECHANISM ASSOCIATED TO THE OFFSPRING`S COGNITIVE IMPAIRMENT DUE TO MATERNAL THYROID HORMONES DEFICIENCY DURING GESTATION. **Maria Cecilia Opazo**, Luis Venegas, Pablo Cisternas, Eduardo Albornoz, Enzo Seguel, Susan Bueno, Alexis Kalergis, Claudia Riedel

2108-Pos Board B245
P2X4 FORMS ATP-ACTIVATED CHANNELS ON LYSOSOMAL MEMBRANES REGULATED BY LUMINAL PH AND SLC17A9 PROTEINS. **Xianping Dong**

Excitation-Contraction Coupling II (Boards B246-B252)

2109-Pos Board B246
IDENTIFICATION OF MAJOR FKBP12 BINDING DETERMINANTS IN RYR1. Razvan L. Cornea, Filip Van Petegem, **James D. Fessenden**

2110-Pos Board B247
GENETIC DELETION OF FKBP12.6 ACCELERATES CARDIAC AGING IN MICE. **Guangju Ji**

2111-Pos Board B248
PROPERTIES OF ATRIAL MYOCYTE CALCIUM HANDLING IN CANINE MODEL OF CHRONIC HEART FAILURE. **Andriy Belevych**, Hsiang-Ting Ho, Qing Lou, Lucia Brunello, Ingrid Bonilla, Karsten Schober, Kent Mowrey, Raul Weiss, Cynthia A. Carnes, Sandor Gyorke

2112-Pos Board B249
EFFECT OF HYPERTROPHIC CALCIUM SIGNALS AND ALTERED EXCITATION-CONTRACTION COUPLING ON THE CALCINEURIN-NFAT PATHWAY. **Joseph L. Greenstein**, Tejas Mehta, Raimond L. Winslow

2113-Pos Board B250
EC COUPLING FOR MUSCLE AFICIONADOS: ABNORMAL CONTRACTION AND DISRUPTED EXCITABILITY IN SOME ENZYMATICALLY DISSOCIATED SKELETAL MUSCLE FIBERS. **Camilo Vanegas**, Martin F. Schneider, Erick O. Hernández-Ochoa

2114-Pos Board B251
EXCITATION-CONTRACTION COUPLING IN HUMAN EXTRAOCULAR MUSCLES:THERE IS MORE THAN MEETS THE EYE. Marijana Sekulic-Jablanovic, Anja Palmowski-Wolfe, Francesco Zorzato, **Susan Treves**

2115-Pos Board B252
THE CALCIUM-ACTIVATED CHLORIDE CHANNEL IN ZEBRAFISH SKELETAL MUSCLE IS ACTIVATED DURING EXCITATION-CONTRACTION COUPLING. **Shu Fun Josephine Ng**, Anamika Dayal, Manfred Grabner

Muscle Regulation (Boards B253-B270)

2116-Pos Board B253
PROTEINS IN STRIATED MUSCLES THAT TRANSCRIBED FROM THE CONTIGUOUS REGION OF CONNECTIN GENE. **Akira Hanashima**, Naruki Sato, Sumiko Kimura, Takashi Sakurai, Takashi Murayama

2117-Pos Board B254
SKELETAL MYOSIN BINDING PROTEIN-C ISOFORMS MODULATE ACTOMYOSIN CONTRACTILITY AND ARE REGULATED BY PHOSPHORYLATION. **Amy Li**, Samantha Beck Previs, Michael Previs, Brian Lin, Cristobal dos Remedios, Roger Craig, Sakthivel Sadayappan, David Warshaw

2118-Pos Board B255
IN VITRO RECONSTITUTION OF SKELETAL MUSCLE CONTRACTION USING NATIVE THIN FILAMENTS. Augustine Cleetus, Khushboo Rastogi, **Ravikrishnan Elangovan**

2119-Pos Board B256
DIRECT TROPONIN-MYOSIN INTERACTION ENHANCES ATPASE ACTIVITY OF CARDIAC HMM. **Nazanin Bohlooli Ghashghaee**, King-Lun Li, Wen-Ji Dong

2120-Pos Board B257
THE REGULATION OF ACTOMYOSIN ATPASE IN CARDIAC MUSCLE BY THE N-TERMINAL EXTENSION OF CARDIAC TROPONIN T. **Laura Gunther**, Hanzhong Feng, Hongguang Wei, Justin Raupp, Jian-Ping Jin, Takeshi Sakamoto

2121-Pos Board B258
PSEUDO-ACETYLATION OF ACTIN RESIDUES K326 AND K328 DISRUPTS DROSOPHILA FLIGHT PERFORMANCE AND MUSCLE STRUCTURE. **William M. Schmidt**, Meera Cozhimuttam Viswanathan, Anna C. Blice-Baum, D. Brian Foster, Anthony Cammarato

2122-Pos Board B259
STUDYING TROPONIN WITHIN REGULATED ACTIN AT SINGLE MOLECULE RESOLUTION. **Christopher Solis-Ocampo**, Maria E. Moutsoglou, Gi-Ho Kim, John M. Robinson

2123-Pos Board B260
OBSERVING THE PCA-FORCE RELATIONSHIP WITH A 3-BEAD LASER TRAP ASSAY. **Thomas J. Longyear**, Sam Walcott, Edward P. Debold

2124-Pos Board B261
ENERGY LANDSCAPES REVEAL THE MYOPATHIC EFFECTS OF TROPOMYOSIN MUTATIONS. Marek Orzechowski, Gerrie P. Farman, Jeffrey R. Moore, Stefan Fischer, **William Lehman**

2125-Pos Board B262
ESTIMATION OF LOCAL FORCES IN MYOFILAMENTS USING X-RAY DIFFRACTION PATTERNS AND MUSCLE MECHANICS DATA. Momcilo Prodanovic, Djordje Nedic, **Thomas C. Irving**, Srboljub M. Mijailovich

2126-Pos Board B263
HIERARCHY OF REGULATORY INTERACTIONS IN THE SARCOPLASMIC RETICULUM CALCIUM TRANSPORT COMPLEX. John E. Rubin, Bengt Svensson, Kurt C. Peterson, Seth L. Robia, David D. Thomas, **Joseph M. Autry**

2127-Pos Board B264
REGULATION OF MYOBLAST PROLIFERATION AND DIFFERENTIATION BY ANOCTAMIN 5 AND 6. **Li Xu**, Renzhi Han, LiXia Zhao

2128-Pos Board B265
CHARGED VESICLES POTENTLY INDUCE NLRP3 INFLAMMASOME ACTIVATION. **Lixia Zhao**, Li Xu, Zhenyu Zhong, Yougang Zhai, Liang Qiao, Renzhi Han

2129-Pos Board B266
MITSUGUMIN 56 IS AN MBOAT FAMILY MEMBER AND CONTRIBUTES TO POSTNATAL MUSCLE MATURATION. **Myuki Nishi**, Bo Van, Shinji Komazaki, Daiju Yamazaki, Ki-Ho Park, Jianjie Ma, Hiroshi Takeshima

2130-Pos Board B267
SUPPRESSED AUTOPHAGY FLUX IN SKELETAL MUSCLE OF AN AMYOTROPHIC LATERAL SCLEROSIS MOUSE MODEL. **Yajuan Xiao**, Changling Ma, Jianxun Yi, Shaoping Wu, Guo Luo, Xiulong Xu, Pei-Hui Lin, Jun Sun, Jingsong Zhou

2131-Pos Board B268 **International Travel Awardee**
IMPAIRMENT IN ACETYLCHOLINE RELEASE BY CARDIOMYOCYTES LEADS TO ENHANCED PATHOLOGICAL HYPERTROPHY. **Cibele Rocha-Resende**, Vania Prado, Marco Prado, Aristobolo Mendes Silva, Silvia Guatimosim

2132-Pos Board B269
MYOPATHIC CHANGES IN MURINE SKELETAL MUSCLE LACKING SYNEMIN. **Karla Garcia-Pelagio**, Joaquin Muriel, Andrea O´Neill, Patrick Desmond, Richard M. Lovering, Linda Lund, Meredith Bond, Robert Bloch

2133-Pos Board B270
CYTOKINE STIMULATION INDUCES NOX2-DEPENDENT ROS PRODUCTION AND DECREASES MUSCLE FUNCTION. **James A. Loehr**, Reem Abo-Zahrah, Rituraj Pal, George G. Rodney

Mechanisms of Voltage Sensing and Gating (Boards B271-B291)

2134-Pos Board B271
AN EXPERIMENTALLY-VALIDATED MODEL STRUCTURE OF THE HV1 PROTON CHANNEL VOLTAGE SENSOR IN ITS RESTING STATE. Younes Mokrab, Ashley Bennett, Mark S. P. Sansom, **I. Scott Ramsey**

2135-Pos Board B272
UNVEILING POTENTIAL BINDING SITES IN THE HV1 FOUR HELIX BUNDLE. **Eleonora Gianti**, Lucie Delemotte, Vincenzo Carnevale, Francesco Tombola, Douglas Tobias, Michael L. Klein

2136-Pos Board B273
ALLOSTERIC COUPLING BETWEEN OPEN SUBUNITS IN THE HV1 PROTON CHANNEL PROBED BY GUANIDINO-THIAZOLES. **Liang Hong**, Vikrant Singh, Heike Wulff, Francesco Tombola

2137-Pos Board B274
CHARACTERIZATION AND SUBCELLULAR LOCALIZATION OF HV1 IN LINGULODINIUM POLYEDRUM CONFIRMS ITS ROLE IN BIOLUMINESCENCE. **Juan D. Rodriguez**, Saddef Haq, Kristine F. Nowak, Deri Morgan, Vladimir V. Cherny, Steven Bernstein, Maredith S. Sapp, John R. Curcuru, Coretha Antchouey, Scott J. Nowak, Allen Place, Thomas E. DeCoursey, Susan M E Smith

2138-Pos Board B275
ENGINEERED VOLTAGE SENSING PHOSPHATASES: WHAT DO THEY TELL US ABOUT THE GATING MECHANISM? Angeliki Mavrantoni, Kirstin Hobiger, Michael G. Leitner, Dominik Oliver, **Christian R. Halaszovich**

2139-Pos Board B276 **Education Travel Awardee**
THE ROLE OF THE C2 DOMAIN OF VOLTAGE SENSING PHOSPHATASE (VSP). **Kevin D. Zolman**, Paul M. Castle, Susy C. Kohout

2140-Pos Board B277
INVESTIGATING THE FUNCTION OF A NOVEL VOLTAGE-SENSING PROTEIN. **Erika Babikow**, Ferenc Papp, Suvendu Lomash, Jamie Smith, Kenton Swartz

2141-Pos Board B278 **Education Travel Awardee**
PUTATIVE VOLTAGE SENSITIVE ENZYMES IN PROKARYOTES. **Joshua P. Clark**, Susan M. E. Smith

2142-Pos Board B279
SEQUENCE SIGNATURE OF VOLTAGE SENSING DETECTED VIA DIMENSIONALITY REDUCTION TECHNIQUES. **Daniele Granata**, Matteo Marsili, Michael L. Klein, Vincenzo Carnevale

2143-Pos Board B280
LIPID-DEPENDENT CONFORMATIONAL TRANSITIONS IN KVAP ARE DRIVEN BY VOLTAGE SENSING DOMAIN. **Qufei Li**, Julia Skalska, Sherry Wanderling, Eduardo Perozo

2144-Pos Board B281
MOLECULAR DETERMINANTS OF TEMPERATURE DEPENDENT GATING OF ION CHANNELS. **Sandipan Chowdhury**, Brian W. Jarecki, Baron Chanda

2145-Pos Board B282
THE GATING CHARGE OF KV1.2 IS LESS THAN EXPECTED FROM ITS SIMILARITY TO SHAKER. **Itzel G. Ishida**, Gisela E. Rangel-Yescas, Leon D. Islas

2146-Pos Board B283
DISCONTINUITY BETWEEN THE VOLTAGE-SENSOR AND THE PORE DOMAIN DOES NOT ABOLISH VOLTAGE-GATING OF KV10.1 POTASSIUM CHANNEL. **Adam P. Tomczak**, Eva Lörinczi, Juan Camilo Gomez-Posada, Walter Stühmer, Luis A. Pardo

2147-Pos Board B284
TWO KCNQ1 MUTATIONS ASSOCIATED WITH FAMILIAL ATRIAL FIBRILLATION, S140G AND V141M, DEMONSTRATE DISTINCT VOLTAGE SENSOR PHENOTYPES. **Gary Peng**, Kevin J. Sampson, Rene Barro-Soria, H. Peter Larsson, Robert S. Kass

2148-Pos Board B285
MOLECULAR DETERMINANTS OF VOLTAGE SENSOR DOMAIN ACTIVATION. **Lucie Delemotte**, Vincenzo Carnevale, Michael L Klein, Marina A. Kasimova, Mounir Tarek

2149-Pos Board B286
ROLE OF THE VOLTAGE SENSING DOMAIN S1-S4 IN TRPV1 CHANNELS. **Juan Zhao**, Rikard Blunck

2150-Pos Board B287
SENSING THE ELECTROCHEMICAL K^+ GRADIENT: THE VOLTAGE GATING MECHANISM IN K2P POTASSIUM CHANNELS. **Marcus Schewe**, Ehsan Nematian-Ardestani, Thomas Linke, Klaus Benndorf, Stephen J. Tucker, Markus Rapedius, Thomas Baukrowitz

2151-Pos Board B288
CAN CLC-2 CHLORIDE CHANNEL BE ACTIVATED BY HYPERPOLARIZATION ALONE IN CELLS DIALYZED WITH NON-PERMEANT ANIONS? José J. De Jesús-Pérez, Alejandra Castro-Chong, Ru-Chi Shieh, Carmen Y. Hernández-Carballo, Jose A. De Santiago-Castillo, **Jorge Arreola**

2152-Pos Board B289
MOLECULAR BASIS OF VOLTAGE-DEPENDENT GATING IN CLC TRANSPORTERS. **Jan-Philipp Machtens**, Matthias Grieschat, Christoph Fahlke, Alexi K. Alekov

2153-Pos Board B290
MULTIPHASIC PROFILES: DISCONTINUOUS TRANSITIONS IN CONDUCTANCE-VOLTAGE DATA FOR ION CHANNELS. **Per Nissen**

2154-Pos Board B291
A HIGHLY COOPERATIVE AND STEEPLY VOLTAGE GATED CHANNEL TRIPLET. **Shang H. Lin**, Benjamin Wu, Marco Colombini

Ligand-gated Channels II (Boards B292-B318)

2155-Pos Board B292
NON-EQUIVALENT LIGAND SELECTIVITY OF AGONIST SITES IN (α4β2)2α4 NICOTINIC ACETYLCHOLINE RECEPTORS: A KEY DETERMINANT OF AGONIST EFFICACY. **Simone Mazzaferro**, Federica Gasparri, karina New, Constanza Alcaino, Isabel Bermudez

2156-Pos Board B293
DESFORMYLFLUSTRABROMINE POTENTIATES HIGH-SENSITIVITY α4β2 RECEPTORS BY INCREASING CHANNEL OPENING RATE. **Arianna Demmerly**, Brian W. Edmonds

2157-Pos Board B294
IS THE ACHR A CUCKOO-CLOCK? LOCAL AND REMOTE INTERACTIONS OF THE α M2-3 LINKER IN GATING. **Shaweta Gupta**, Prasad Purohit, Anthony Auerbach

2158-Pos Board B295
MOLECULAR SIMULATIONS OF MUSCLE ACHR AGONIST BINDING SITES. **Srirupa Chakraborty**, Tapan K. Nayak, Iva Bruhova, Wenjun Zheng, Anthony L. Auerbach

2159-Pos Board B296
DIFFERENCES IN AGONIST ENERGY AT THE NEUROTRANSMITTER BINDING SITES IN THE NEUROMUSCULAR ACETYLCHOLINE RECEPTORS. **Tapan K. Nayak**, Anthony Auerbach

2160-Pos Board B297
INTERACTION OF 7-METHOXYTACRINE-ADAMANTYLAMINE CHOLINESTERASE INHIBITORS WITH NICOTINIC AND MUSCARINIC ACETYLCHOLINE RECEPTORS. Ze-Jun Wang, Vendula Sepsova, Katarina Spilovska, Tasnim S. Mohamed, **Ayman K. Hamouda**

2161-Pos Board B298
STEPCHILD NICOTINE: EFFECT OF THE NAME-GIVING AGONIST ON MUSCLE-TYPE NICOTINIC ACETYLCHOLINE RECEPTOR. **Abhilasha Ladha**, Klaus Benndorf, Jana Kusch

2162-Pos Board B299
THE ROLE OF THE M3 HELIX IN ACHR GATING AND PAM ACTION. **Aashutosh Vihani**, Prasad Purohit, Anthony Auerbach

2163-Pos Board B300
MODAL GATING OF MUSCLE ACHRS HAVING LOOP C MUTATIONS. **Ridhima Vij**

2164-Pos Board B301
DISSECTING THE INHIBITORY AND POTENTIATION EFFECTS OF DESFORMYLFLUSTRABROMINE ON A MUSCLE-TYPE NICOTINIC ACETYLCHOLINE RECEPTOR (NACHR). **Tasnim S. Mohamed**, Ze-Jun Wang, Tiffany R. Trevino, Ayman K. Hamouda

2165-Pos Board B302 INTERNATIONAL TRAVEL AWARDEE
EXPLORING ALPHA7 POSITIVE ALLOSTERIC MODULATORS FROM A SINGLE-CHANNEL PERSPECTIVE. **Natalia D. Andersen**, Jeremias Corradi, Fernanda Tolosa, Nehuen Gasparini, Hugo R. Arias, Cecilia B. Bouzat

2166-Pos Board B303
GATING RITUAL: SIMULATIONS OF GATING IN GLUTAMATE-GATED CHLORIDE CHANNEL. **Ozge Yoluk**, Stephanie Heusser, Magnus Andersson, Laura Orellana, Erik Lindahl

2167-Pos Board B304
AROMATIC RESIDUES IN THE TRANSMEMBRANE HELICES PLAY AN ESSENTIAL ROLE IN THE HOMOPENTAMERIC ASSEMBLY OF THE GLUCL α. **Anke Dopychai**, Clairentine F. Pokam, Gunther Schmalzing

2168-Pos Board B305
OPENING AND SELECTIVITY OF THE GLIC LIGAND-GATED ION CHANNEL CAN BE TUNED BY MUTATION OF HYDROPHOBIC RESIDUES IN THE PORE. Özge Yoluk, Stephanie Heusser, Iman Pouya, Rebecca Howard, Göran Klement, **Erik Lindahl**

2169-Pos Board B306
GLIC-ELIC CHIMERAS HAVE UNEXPECTED CHARACTERISTICS. **Sarah C. Lummis**, Mona Alqazzaz

2170-Pos Board B307
ROLE OF THE TRANSMEMBRANE α-HELIX M4 IN THE POTENTIATION OF PENTAMERIC LIGAND-GATED ION CHANNELS. **Camille M. Hénault**, Casey L. Carswell, Sruthi Murlidaran, JP Daniel Therien, Peter F. Juranka, Julian A. Surujballi, Grace Brannigan, John E. Baenziger

2171-Pos Board B308
THE KINETIC PROPERTIES OF THE HUMAN GLYCINE RECEPTOR IN RESPONSE TO DIFFERENT AGONISTS. **Elliot J. Hurdiss**, Timo Greiner, Rilei Yu, Phillip C. Biggin, Lucia G. Sivilotti

2172-Pos Board B309
EVOLUTION OF PRO-LOOP CHANNELS: A FRESH LOOK AT THE FORMER CYS-LOOP FAMILY. Mariama Jaiteh, Antoine Taly, **Jérôme Hénin**

2173-Pos Board B310
ELECTROMAGNETIC FIELDS INHIBIT CYS-LOOP RECEPTOR FUNCTION BY INDUCING A NOVEL CONFORMATIONAL STATE. Fernanda Tolosa, Walter R. Cravero, **Cecilia B. Bouzat**

2174-Pos Board B311
SUPER-RESOLUTION IMAGING AND SINGLE PARTICLE TRACKING OF SEROTONIN 5HT3A RECEPTOR IN BIOMIMETIC MEMBRANES. **Adam O. Barden**, Adam S. Goler, James A. Brozik

2175-Pos Board B312
INTERACTION OF BUPROPION WITH 5-HT_{3A} RECEPTORS. **Akash Pandhare**, Dominique Gagnon, Henrik Wilms, Michael P. Blanton, Michaela Jansen

2176-Pos Board B313
EXPLORING THE GATING PATHWAY IN AN EUKARYOTIC LIGAND-GATED ION CHANNEL. **Stephanie A. Heusser**, Ozge Yoluk, Erik Lindahl

2177-Pos Board B314
COMPLEX MODULATION OF THE $GABA_A$ α1β2Γ2 RECEPTOR FUNCTION BY BUPROPION. **Jeremy M. Thompson**, Aneesh Pappu, Akash Pandhare, Michaela Jansen

2178-Pos Board B315
BUILDING GABAA RECEPTORS FOR STRUCTURAL DETERMINATION. **Duncan C. Laverty**, Adam Cryar, Konstantinos Thalassinos, Trevor G. Smart

2179-Pos Board B316
DOPAMINE DIRECTLY MODULATES GABAA RECEPTORS. **Paul Hoerbelt**, Mark W. Fleck

2180-Pos Board B317
MMTX1 AND MMTX2 FROM CORAL SNAKE VENOM POTENTLY MODULATE GABA(A) RECEPTOR ACTIVITY. Jean-Pierre Rosso, Jürgen R. Schwarz, Marcelo Diaz-Bustamante, Brigitte Céard, José María Gutiérrez, Matthias Kneussel, Olaf Pongs, **Frank Bosmans**, Pierre E. Bougis

2181-Pos Board B318
MONITORING MOTIONS IN GABA-A RECEPTOR INTERSUBUNIT TRANSMEMBRANE CAVITIES. **Tzu-Wei Tsao**, Borna Ghosh, Cynthia Czajkowski

Ion Channel Regulatory Mechanisms II (Boards B319-B338)

2182-Pos Board B319
LIBERATION OF PSER68-PLM INHIBITION OF NCX1 BY AN OPTIMIZED ANCHORING DISRUPTOR PEPTIDE. **Kjetil Hodne**, Pimthanya Wanichawan, Tandekile Lubelwana Hafver, William Edward Louch, Marianne Lunde, Marita Martinsen, Ole Mathias Sejersted, Cathrine Rein Carlson

2183-Pos Board B320
THE TALK-1 C-TERMINUS IS A CHARGE-SENSITIVE MODULE REGULATING CHANNEL ACTIVITY. **Nicholas Vierra**, Prasanna K. Dadi, Farah Ladak, David A. Jacobson

2184-Pos Board B321
INVESTIGATING VIRAL CHANNEL FORMING PROTEIN VPU WITH COARSE-GRAINING MOLECULAR DYNAMICS SIMULATION. **Meng-Han Lin**, Wolfgang Fischer

2185-Pos Board B322
KIR2.1 CHANNELS COMPENSATE FOR THE LOSS OF KATP CHANNELS IN SUR1 NULL ISLETS. **Suryakiran Vadrevu**, Jinhua Ren, Min Zhang, Eric J. Glynn, Arthur Sherman, Leslie S. Satin

2186-Pos Board B323
SECRETED HUMAN CLCA1 ACTIVATES CALCIUM-DEPENDENT
CHLORIDE CURRENTS VIA INTERACTION WITH TMEM16A (ANOCTAMIN 1). **Monica Sala-Rabanal**, Zeynep Yurtsever, Colin G. Nichols, Tom J. Brett

2187-Pos Board B324
INHIBITION OF THE CFTR CHLORIDE CHANNEL BY SPHINGOMYELINASE. **Brandon Stauffer**, Guiying Cui, Daniel T. Infield, Nael McCarty

2188-Pos Board B325
MOLECULAR DYNAMICS SIMULATIONS OF CALCIUM BINDING SITES IN THE RCK DOMAIN OF THE MTHK GATING RING. **Tangzhen Zhao**, Yukun Wang, Qin Xu, Dongqing Wei

2189-Pos Board B326
FUNCTIONAL COUPLING BETWEEN ANO1 AND TRPV1 CHANNELS IN SENSORY NEURONS. Shihab Shah, **Nikita Gamper**

2190-Pos Board B327
PHOSPHOLIPASE D2 SPECIFICALLY REGULATES TREK CHANNELS VIA DIRECT INTERACTION AND LOCAL PRODUCTION OF PHOSPHATIDIC ACID. Yannick Comoglio, Levitz Joshua, Michael Kienzler, Florian Lesage, Ehud Isacoff, **Guillaume Sandoz**

2191-Pos Board B328
THE MODULATORY FUNCTION OF THE BK CHANNEL Γ1 SUBUNIT IS DETERMINED BY ITS TRANSMEMBRANE DOMAIN. Qin Li, Jiyuan Zhang, Karren Yen, **Jiusheng Yan**

2192-Pos Board B329
DIFFERENTIAL EFFECTS OF PIP2 ON SLO1 BK CHANNELS WITH DIFFERENT AUXILIARY SUBUNITS. **Yutao Tian**, Florian Ullrich, Rong Xu, Heinemann H. Stefan, Shangwei Hou, Toshinori Hoshi

2193-Pos Board B330
A FLUOROGEN-ACTIVATING BIOSENSOR FOR ANALYSIS OF BK CHANNEL TRAFFIC AND SURFACE RESIDENCY. **Christopher Pratt**, Jianjun He, Alison Barth, Marcel Bruchez

2194-Pos Board B331
UNDERSTANDING THE DYNAMICS OF K2P CHANNELS IN COMPLEX LIPID BILAYERS. **Prafulla Aryal**, Stephen J. Tucker, Mark SP Sansom

2195-Pos Board B332 **EDUCATION TRAVEL AWARDEE**
NON-MARKOVIAN PROTEIN DYNAMICS IN A NEAR-CRITICAL MEMBRANE MODEL. **Ofer Kimchi**, Benjamin B. Machta

2196-Pos Board B333
MECHANISMS OF TREK-2 POTASSIUM CHANNEL GATING. **Conor McClenaghan**, Elizabeth Carpenter, Tucker J. Stephen

2197-Pos Board B334
THE MOLECULAR BASIS FOR HEME MODULATION OF KATP CHANNELS. **Mark Burton**, Sofia Kapetanaki, Noel Davies, John Mitcheson, Ralf Schmid, Peter Moody, Emma Raven, Nina Storey

2198-Pos Board B335
NMR STRUCTURAL STUDIES OF THE BINDING OF ACTIVATING MAMBA TOXIN TX7335 ON THE POTASSIUM CHANNEL KCSA. **Jing Zhu**, Ulfat Shahzad, Sebastien F. Poget

2199-Pos Board B336
MECHANISM OF INHIBITION OF THE GLUA1 AMPA RECEPTOR CHANNEL OPENING BY 2,3-BENZODIAZEPINE COMPOUNDS. **Andrew Wu**

2200-Pos Board B337
SIMULTANEOUS MEASUREMENTS OF INTRACELLULAR [CA^{2+}]I AND [CAMP]I IN INTACT ISLETS TO STUDY THE MECHANISM UNDERLYING DOPAMINERGIC INHIBITION OF INSULIN SECRETION. **Alessandro Ustione**, David W. Piston

2201-Pos Board B338
DETERMINING THE DOPAMINERGIC FEEDBACK PATHWAY IN PANCREATIC β-CELLS WITH FLUORESCENCE FLUCTUATION SPECTROSCOPY. **Brittany Caldwell**, Alessandro Ustione, David Piston

Other Channels (Boards B339-B366)

2202-Pos Board B339
STATISTICAL ANALYSIS OF MULTICHANNEL SIGNALS. Rishabh Kumar, Prashant Srinivasa, **Horia I. Petrache**

2203-Pos Board B340
NOVEL STEP DETECTION ALGORITHMS FOR PHOTOBLEACHING ANALYSIS OF PROTEIN COMPLEXES WITH MANY SUBUNITS. **Nathan C. Deffenbaugh**, Yalei Chen, Charles T. Anderson, William O. Hancock

2204-Pos Board B341
SINGLE-FILE WATER PERMEATION THROUGH AQUAPORIN CHANNELS. **Peter H. Nelson**

2205-Pos Board B342
MAKING AN AQUAPORIN WATER-TIGHT: STRUCTURAL BASIS OF SELECTIVITY IN PLANT NODULIN 26 INTRINSIC PROTEINS. **Zachary G. Beamer**, Tian Li, Jerome Baudry, Daniel M. Roberts

2206-Pos Board B343
MECHANISM OF PROTON TRANSPORT OF THE M2 PROTON CHANNEL STUDIED BY CONSTANT PH MOLECULAR DYNAMICS. **Wei Chen**, Jana K. Shen

2207-Pos Board B344
PROTON PERMEATION IN CI-HV1 VOLTAGE-GATED PROTON CHANNELS OCCURS THROUGH A PROTON WIRE INVOLVING RESIDUES D160 AND D222 AND IT IS MODULATED BY N264. **Amaury Pupo**, David Baez-Nieto, Ester Otarola, Osvaldo Yañez, Ariela Vergara-Jaque, Wendy Gonzalez, Karen Castillo, Gustavo Contreras, H. Peter Larsson, Ramón Latorre, Carlos Gonzalez

2208-Pos Board B345
FREE ENERGY SIMULATIONS OF ION TRANSLOCATION THROUGH VOLTAGE-GATED PROTON CHANNEL HV1. **Kethika Kulleperuma**, Susan M. E. Smith, Thomas E. DeCoursey, Regis Pomes

2209-Pos Board B346
INVESTIGATING THE POTENTIATION EFFECT OF 2-APB ON CRAC CHANNELS. **Xiaolan Xu**, Sher Ali Syed, Tao Xu

2210-Pos Board B347
SLO2.X POTASSIUM CHANNELS ARE INVOLVED IN THE REGULATION OF HEART MITOCHONDRIAL FUNCTION. **Charles Owen Smith**

2211-Pos Board B348
HUMAN ERYTHROCYTE MECHANO-ACTIVATED K^+ CHANNEL A, A KINETIC STUDY OF INTRABURST ACTIVITY: EFFECT OF CHLORPROMAZINE. Alejandro Mata, **Jesus G. Romero**

2212-Pos Board B349
MECHANISMS UNDERLYING THE LOSS-OF-FUNCTIONAL KIR6.1 KATP CHANNEL MUTATIONS IN SUDDEN INFANT DEATH SYNDROME. **Bi-Hua Tan**, Blaise Z. Peterson, Ryan Li, Tianyu Sun, Sinisa Dovat, Michael J. Ackerman, Chunhua Song

2213-Pos Board B350
STUDYING CLUSTERING OF KCSA CHANNELS USING SINGLE-CHANNEL VOLTAGE-CLAMP FLUORESCENCE IMAGING. **Hugo McGuire**, Rikard Blunck

2214-Pos Board B351
CRYSTAL STRUCTURE OF FLUC, A MICROBIAL FLUORIDE CHANNEL. **Randy Stockbridge**, Ludmila Kolmakova-Partensky, Akiko Koide, Shohei Koide, Simon Newstead, Christopher Miller

2215-Pos Board B352
TWO-SIDED SIMULTANEOUS BLOCK OF A F- CHANNEL (FLUC). **Daniel L. Turman**, Randy Stockbridge, Christopher Miller

2216-Pos Board B353
REGULATION OF CLC-3 CL-/H^+ TRANSPORT AND "GATING" TRANSIENTS BY CHLORIDE PATHWAY RESIDUES AND EXTERNAL PROTONS. **Jeffrey Rohrbough**, Fred S. Lamb, Hong-Ngan Nguyen

2217-Pos Board B354
ENERGETICS AND MECHANISM OF PERMEATION ACROSS FNT CHANNELS. **Kalina Atkovska**, Jochen Hub

2218-Pos Board B355 **International Travel Awardee**
EXTRACELLULAR CHLORIDE REGULATES TMEM16A GATING. Juan A. Contreras-Vite, **Silvia Cruz-Rangel**, Patricia Pérez-Cornejo, H. Criss Hartzell, Jorge Arreola

2219-Pos Board B356
ACTIVATION OF ATP SECRETION VIA VOLUME-REGULATED ANION CHANNELS BY SPHINGOSINE-1-PHOSPHATE IN RAW MACROPHAGES. Philipp Burow, Manuela Klapperstück, **Fritz Markwardt**

2220-Pos Board B357
POSITIONING OF THE FIRST EXTRACELLULAR LOOP OF CFTR HAS SIGNIFICANT EFFECTS ON CFTR GATING. **Daniel T. Infield**, Guiying Cui, Christopher Kuang, Nael A. McCarty

2221-Pos Board B358
EFFECTS OF THE CONNEXIN43 CT ON GAP JUNCTION SUB-DOMAIN ORGANIZATION AND MYOCYTE-FIBROBLAST INTERACTIONS IN THE INJURY BORDER ZONE.
Emily L. Ongstad, Robert G. Gourdie

2222-Pos Board B359
MOLECULAR DYNAMICS OF SELECTIVE SUGAR PERMEATION THROUGH THE CONNEXIN26 CHANNEL. Lyna Luo, Angelo R. Rossi, **Andrew L. Harris**

2223-Pos Board B360
THE RESIDUES IN THE FIRST EXTRACELLULAR DOMAIN PLAY AN IMPORTANT ROLE IN TRANSJUNCTIONAL-VOLTAGE DEPENDENT GATING AND UNITARY CHANNEL CONDUCTANCE OF CX50 GAP JUNCTION CHANNELS. Xiaoling Tong, Hiroshi Aoyama, Swathy Sudhakar, Honghong Chen, **Donglin Bai**

2224-Pos Board B361
RESIDUES INVOLVED IN CX26 HEMICHANNELS VOLTAGE DEPENDENT GATING. **Bernardo I. Pinto**, David Baez-Nieto, Amaury Pupo, Agustin Martinez, Ramon Latorre, Carlos Gonzalez

2225-Pos Board B362
UNDERSTANDING THE CONFORMATIONAL DYNAMICS OF THE PORIN OCCK5. **Karunakar Reddy Pothula**

2226-Pos Board B363
CYCLODEXTRIN INTERACTION WITH SPECIFIC CHANNEL CYMA FROM K. OXYTOCA. **Satya Prathyusha Bhamidimarri**, Jing Lu, Jigneshkumar Dahyabhai Prajapati, Ivan Barcena Uribarri, Bert van den Berg, Ulrich Kleinekathoefer, Mathias Winterhalter

2227-Pos Board B364
MIMICKING BIOLOGY WITH NANOMATERIALS: CARBON NANOTUBE PORINS IN LIPID MEMBRANES. **Aleksandr Noy**

2228-Pos Board B365
UNDERSTANDING THE TRANSLOCATION OF FLUOROQUINOLONES THROUGH OMPC USING THE METADYNAMICS. **Jigneshkumar D. Prajapati**, Harsha Bajaj, Matteo Ceccarelli, Mathias Winterhalter, Ulrich Kleinekathöfer

2229-Pos Board B366
SINGLE-MOLECULE DETECTION OF INSERTION AND FOLDING OF OMPA IN DROPLET INTERFACE BILAYERS.
Eve E. Weatherill, David P. Marshall, Mark I. Wallace

Cardiac Muscle Mechanics and Structure II (Boards B367-B386)

2230-Pos Board B367
FROM MOLECULE TO ORGAN: A MULTISCALE SIMULATOR OF HEART CONTRACTION. **Lorenzo Marcucci**, Toshio Yanagida, Takumi Washio

2231-Pos Board B368
SUBSTRATE STIFFNESS-MODULATED REGISTRY PHASE CORRELATIONS IN CARDIOMYOCYTES MAPS STRUCTURAL ORDER TO COHERENT BEATING. **Kinjal Dasbiswas**, Stephanie J. Majkut, Dennis E. Discher, Samuel A. Safran

2232-Pos Board B369 INTERNATIONAL TRAVEL AWARDEE
REGULATION OF CARDIOMYOCYTE T-TUBULE ORGANIZATION AND DENSITY BY VENTRICULAR WALL STRESS. **Marianne Ruud**, Michael Frisk, Per Andreas Norseng, Åsmund Treu Røe, Emil Espe, Jan Magnus Aronsen, Ivar Sjaastad, Ole M. Sejersted, Geir Arve Christensen, William Edward Louch

2233-Pos Board B370
COMPUTATIONAL MODEL OF CROSS-BRIDGE CYCLING AND FORCE GENERATION TO EXPLAIN THE EFFECT OF METABOLITES ON CARDIAC MUSCLE MECHANICS.
Shivendra Tewari, Scott Bugenhagen, Bradley Palmer, Daniel Beard

2234-Pos Board B371
FROM CONTRACTILE NON-UNIFORMITIES AND MECHANICAL INSTABILITIES TO HYPERTROPHIC CARDIOMYOPATHY. **Alf Mansson**

2235-Pos Board B372
OXIDATIVE STRESS REGULATES TITIN ELASTICITY BY AFFECTING IG-DOMAIN STABILITY. **Nazha Hamdani**, Jorge Alegre-Cebollada, Martin Breitkreuz, Lars Leichert, Julio M. Fernandez, Wolfgang A Linke

2236-Pos Board B373
AB-CRYSTALLIN BINDS TO TITIN IG DOMAINS AND INCREASES STIFFNESS OF SKINNED CARDIAC TRABECULAE. **Cameron W. Turtle**, Georg Hochberg, Henrik Müller, Katja Gehmlich, Andrew Baldwin, Charles Redwood, Justin Benesch

2237-Pos Board B374
STRUCTURAL THERMODYNAMICS AND KINETICS OF THE CARDIAC MYOSIN/OMECAMTIV MECARBIL COMPLEX REVEALED BY TIME-RESOLVED FRET. **John Rohde**, Daniel O. Johnsrud, Sinziana Cornea, Kurt C. Peterson, Gregory D. Gillispie, David D. Thomas, Joseph M. Muretta

2238-Pos Board B375
IMPACT OF OMECAMTIV MECARBIL ON HUMAN β-CARDIAC MYOSIN STRUCTURE AND FUNCTION. **Anja M. Swenson**, Howard D. White, Christopher M. Yengo

2239-Pos Board B376
THE R146N AND R249Q MYOSIN MUTATIONS DISRUPT MOTOR FUNCTION AND MYOFIBRILLAR STRUCTURE AND CAUSE CARDIOMYOPATHY IN DROSOPHILA.
Meera Cozhimuttam Viswanathan, William Kronert, Girish Melkani, Anju Melkani, Anthony Cammarato, Sanford Bernstein

2240-Pos Board B377
EFFECTS OF HYPERTROPHIC CARDIOMYOPATHY CAUSING R403Q MUTATION ON HUMAN BETA-CARDIAC MYOSIN BIOMECHANICAL FUNCTION: SINGLE MOLECULE TO ENSEMBLE STUDIES. **Suman Nag**, Ruth Sommese, Shirley Sutton, Kathleen Ruppel, James Spudich

2241-Pos Board B378
CHARACTERIZATION OF α-TROPOMYOSIN (TM) MUTANTS THAT CAUSE HYPERTROPHIC CARDIOMYOPATHY (HCM) IN HUMANS: IN VITRO MOTILITY ASSAYS WITH A MICROSCOPIC HEAT PULSE. **Shuya Ishii**, Kotaro Oyama, Madoka Suzuki, Masataka Kawai, Shin'ichi Ishiwata

2242-Pos Board B379
PEPTIDE MODULATION OF MYOSIN COILED COIL STABILITY MONITORED WITH OPTICAL AND FORCE SPECTROSCOPY. **James W. Dunn**, Michael Bih, Rohit Singh, Douglas D. Root

2243-Pos Board B380
ENHANCED TROPONIN-I BINDING EXPLAINS THE FUNCTIONAL CHANGES PRODUCED BY THE HYPERTROPHIC CARDIOMYOPATHY A8V MUTATION OF CARDIAC TROPONIN-C. **Clara A. Michell**, Jose R. Pinto, Javier E. Hasbun, Henry G. Zot

2244-Pos Board B381
STEADY-STATE PREDICTIONS FROM A COMPACT COOPERATIVE KINETIC MODEL OF CARDIAC SARCOMERE DYNAMICS. **William C. Hunter**

2245-Pos Board B382
SERINE 61 PHOSPHORYLATION RESCUES CARDIOMYOPATHIC EFFECTS OF TROPOMYOSIN MUTATION. Gerrie P. Farman, Marek Orzechowski, Stefan Fischer, Lehman William, **Jeffrey R. Moore**

2246-Pos Board B383
MOLECULAR DYNAMICS STUDIES ON PHOSPHORYLATED AND UNPHOSPHORYLATED CARDIAC TROPONIN. **Andrew E. Messer**, Maria Papadaki, Steven B. Marston, Ian R. Gould

2247-Pos Board B384
BORROWING FROM THE PLATYPUS: PROLINE SUBSTITUTION IN CARDIAC TROPONIN I. **Anthony D. Vetter**, Brian R. Thompson, Evelyne H. Houang, Yuk Sham, Joseph M. Metzger

2248-Pos Board B385
A COARSE-GRAINED MODEL TO STUDY CALCIUM ACTIVATION OF THE CARDIAC THIN FILAMENT. **Jing Zhang**, Steven D. Schwartz

2249-Pos Board B386
AN EXPLICITLY SOLVATED FULL ATOMISTIC MODEL OF THE CARDIAC THIN FILAMENT AND APPLICATION ON THE CALCIUM BINDING AFFINITY EFFECTS FROM FAMILIAL HYPERTROPHIC CARDIOMYOPATHY LINKED MUTATIONS. **Michael R. Williams**, Sarah J. Lehman, Jil C. Tardiff, Steven D. Schwartz

Microtubules, Structure Dynamics, and Associated Proteins (Boards B387-B405)

2250-Pos Board B387
TRANSFORMATION OF TAXOL-STABILIZED MICROTUBULES INTO INVERTED TUBULIN TUBULES TRIGGERED BY A TUBULIN CONFORMATION SWITCH. **Chaeyeon Song**, Miguel A. Ojeda-Lopez, Daniel J. Needleman, Avi Ginsburg, Phillip A. Kohl, Youli Li, Herbert P. Miller, Leslie Wilson, Uri Raviv, Myung Chul Choi, Cyrus R. Safinya

2251-Pos Board B388
SINGLE-MOLECULE FRET REVEALS AN EXTENDED STRUCTURE OF TAU BOUND TO TUBULIN HETERODIMERS. **Ana M. Melo**, Garrett Cobb, Juliana Coraor, Shana Elbaum-Garfinkle, Elizabeth Rhoades

2252-Pos Board B389
STATISTICAL MECHANICS PROVIDES NOVEL INSIGHTS INTO MICROTUBULE STABILITY AND MECHANISM OF SHRINKAGE. **Ishutesh Jain**, Mandar M. Inamdar, Ranjith Padinhateeri

2253-Pos Board B390
MOLECULAR DYNAMICS STUDY OF THE EFFECT OF POLYAMINE ON MICROTUBULE CONFORMATIONS. **Chola Regmi**, Shengfeng Cheng

2254-Pos Board B391
MOLECULAR BASIS FOR AGE-DEPENDENT MICROTUBULE ACETYLATION. **Antonina Roll-Mecak**, Agnieszka Szyk, Alexandra Deaconescu, Jeffrey Spector, Max Valenstein, Niko Grigorieff

2255-Pos Board B392
KATANIN ACTIVITY IS REGULATED BY COMMON CELLULAR COMPONENTS. **Megan E. Bailey**, Jennifer L. Ross

2256-Pos Board B393
MOLECULAR BASIS FOR AGE-DEPENDENT ACETYLATION BY TUBULIN ACETYLTRANSFERASE. **Jeffrey Spector**, Agnieszka Szyk, Alexandra M. Deaconescu, Max Valenstein, Benjamin Goodman, Vasilisa Kormendi, Nikolaus Grigorieff, Antonina Roll-Mecak

2257-Pos Board B394 **International Travel Awardee**
MICROTUBULE ELECTRODYNAMICS ASSOCIATED WITH VIBRATIONAL NORMAL MODES. **Michal Cifra**, Daniel Havelka, Marco A. Deriu, Ondřej Kučera

2258-Pos Board B395
MICROTUBULE-DRIVEN CONFORMATIONAL CHANGES IN PLATELET MORPHOGENESIS. **Wylie Stroberg**, Seth Lichter

2259-Pos Board B396
TRIM50 INTERACTS WITH MICROTUBULES TO FACILITATE VESICLE TRAFFICKING IN GASTRIC PARIETAL CELLS. **Kristyn N. Gumpper**, Mingzhai Sun, Jiaqing Huang, Pei-Hui Lin, Miyuki Nishi, Hiroshi Takeshima, Jianjie Ma

2260-Pos Board B397
GENERATION OF DIFFERENTIALLY MODIFIED MICROTUBULES USING IN VITRO ENZYMATIC APPROACHES. **Annapurna Vemu**

2261-Pos Board B398
DYNAMICS OF MICROTUBULE NETWORKS WITH ANTIPARALLEL CROSSLINKERS. **Kasimira T. Stanhope**, Jennifer L. Ross

2262-Pos Board B399
KINETOCHORE DYNAMIC STRUCTURE AT SUPER-RESOLUTION ACCURACY AND MECHANICAL STIFFNESS REVEALED IN VITRO BY COMBINED TIRF AND OPTICAL TWEEZERS. **Yi Deng**, Kwaku Opoku, Charles Asbury

2263-Pos Board B400
ASYMMETRIC FRICTION OF NON-MOTOR MAPS CAN LEAD TO THEIR DIRECTIONAL MOTION IN ACTIVE MICROTUBULE NETWORKS. **Scott Forth**, Kuo-Chiang Hsia, Yuta Shimamoto, Tarun Kapoor

2264-Pos Board B401
THE DETERMINATION OF YOUNG'S MODULUS FOR MICROTUBULES STABILIZED WITH TAXOL AND ANALYSIS OF VIBRATIONAL MODES. **John Palmieri**, Camelia Prodan, Gordon Thomas

2265-Pos Board B402
REGULATION OF TAU DYNAMICS BY PHOSPHORYLATION IN THE SQUID GIANT AXON. **Miranda Redmond**, Gregory Hoeprich, Meghan Pantalia, Gerardo Morfini, Christopher Berger

2266-Pos Board B403
GENERATION OF DIFFERENTIALLY MODIFIED MICROTUBULES USING IN VITRO ENZYMATIC APPROACHES. Annapurna Vemu, **Christopher P. Garnham**, Duck-Yeon Lee, Antonina Roll-Mecak

2267-Pos Board B404
A COMPARISON OF THE CONFORMATIONAL CHANGES OF TAU ISOFORMS IN THE TAU-TUBULIN COMPLEX. **Juliana Coraor**, Ana M. Melo, Garrett Cobb, Elizabeth Rhoades

2268-Pos Board B405
ANALYZING THE FREQUENCY OF THERMALLY FLUCTUATING SEGMENTS OF MICROTUBULES. **Jennifer Rochette**, Camelia Prodan, Gordon Thomas

Cytoskeletal Assemblies and Dynamics (Boards B406-B422)

2269-Pos Board B406
EFFECTS OF ADDED DIVALENT COUNTERIONS ON THE PROPERTIES AND BEHAVIORS OF MICROTUBULE FILAMENTS. Nathan F. Bouxsein, **George D. Bachand**

2270-Pos Board B407
SPATIO-TEMPORAL MODEL FOR SILENCING OF THE MITOTIC SPINDLE ASSEMBLY CHECKPOINT. **Jing Chen**, Jian Liu

2271-Pos Board B408
A BUNDLE OF ANTIPARALLEL MICROTUBULES CONNECTS SISTER K-FIBERS AND BALANCES FORCES WITHIN THE METAPHASE SPINDLE. **Anastasia Solomatina**, Janko Kajtez, Jonas Rudiger, Anna H. Klemm, Gheorghe Cojoc, Ivana Šumanovac Šestak, Maja Novak, Nenad Pavin, Iva M. Tolić

2272-Pos Board B409
THE KINETICS OF FESSELIN (AVIAN SYNAPTOPODIN 2) BINDING TO SMOOTH MUSCLE MYOSIN IS DEPENDENT ON CALCIUM-CALMODULIN. **Joseph M. Chalovich**, Nathaniel Kingsbury, Alexandria Mara

2273-Pos Board B410
FORCE GENERATION AND CONTRACTION OF RANDOM ACTOMYOSIN RINGS. **Dietmar B. Oelz**, Boris Rubinstein, Alex Mogilner

2274-Pos Board B411
SIMULATING COMPLEX MECHANOCHEMISTRY OF ACTIN NETWORKS. **James E. Komianos**, Konstantin Popov, Garegin Papoian

2275-Pos Board B412
VISUALIZING F-ACTIN STRUCTURE IN DEVELOPING ZEBRAFISH ZYGOTES TO SUPPLEMENT VISCOELASTIC MEASUREMENTS. **Luka Matej Devenica**, Marco A. Catipovic, Josef G. Trapani, Ashley R. Carter

2276-Pos Board B413
VISUALIZING THE COMPARTMENTALIZATION OF THE SURFACE OF MAMMALIAN CELLS BY CORTICAL ACTIN WITH SUPERRESOLUTION. **Sanaz Sadegh**, Jenny L. Higgins, Michael M. Tamkun, Diego Krapf

2277-Pos Board B414
NON-INVASIVE IMAGING OF F-ACTIN DYNAMICS IN LIVING CELLS BY ATOMIC FORCE MICROSCOPY. **Aiko Yoshida**

2278-Pos Board B415
STUDYING THE MECHANICAL PROPERTIES OF CYTOSKELETAL FORMATION USING MICRORHEOLOGY. **Elizabeth D. White**, Marco A. Catipovic, Maria L. Kilfoil, Josef G. Trapani, Ashley R. Carter

2279-Pos Board B416
ADAPTATION OF ACTIN CYTOSKELETON DURING SUSPENDED ANIMATION. Clara Kao, Mark A. Messerli, Jonathan D. Gitlin, **Shalin B. Mehta**

2280-Pos Board B417
HOW DOES THE INTERPLAY BETWEEN SEMIFLEXIBLE POLYMERS DETERMINE COMPOSITE NETWORK MECHANICS? **Mikkel H. Jensen**, Eliza J. Morris, Robert D. Goldman, David A. Weitz

2281-Pos Board B418
AXIAL ELASTICITY AND MECHANICAL FRAGMENTATION OF DESMIN INTERMEDIATE FILAMENTS. **Balazs Kiss**, Miklós S.Z. Kellermayer

2282-Pos Board B419
A COMPETE-AND-SURVIVE MECHANISM EXPLAINS THE SINGLE FTSZ-RING FORMATION. **Liping Xiong**, Ganhui Lan

2283-Pos Board B420
FLUORESCENCE MICROSCOPY AND SOLUTION NMR STUDIES OF CYTOSKELETAL PROTEINS FROM TETRAHYMENA. **Robert Sterner**, Jerry Honts, Adina Kilpatrick

2284-Pos Board B421
TEMPORAL RESPONSE OF BACTERIAL CELLS TO HIGH PRESSURES. **Sudip Nepal**, Pradeep Kumar

2285-Pos Board B422
DEVELOPMENT OF A MICROFLUIDIC PLATFORM TO STUDY EFFECTS OF PHYSICAL STRESSES ON MICROGLIAL ACTIVATION. **Jin-Sung Park**, Song Ih Ahn, Eun Young Park, Minjeong Son, Sukhyun Song, jennifer H. Shin

Cell Mechanics, Mechanosensing, and Motility III (Boards B423-B450)

2286-Pos Board B423 **Education Travel Awardee**
MECHANICAL ADAPTABILITY OF CELL MIGRATION IN 3D COLLAGEN GELS. **Nicholas A. Kurniawan**, Wei Sun, Chwee Teck Lim

2287-Pos Board B424
ACTIN DYNAMICS AND SIGNALING ACTIVATION OF B LYMPHOCYTES RESPOND TO SUBSTRATE TOPOGRAPHY. **Christina M. Ketchum**, Xiaoyu Sun, Heather Miller, John Fourkas, Wenxia Song, Arpita Upadhyaya

2288-Pos Board B425 **Minority Affairs Travel Awardee**
MECHANICS OF NEUTROPHIL MIGRATION IN THREE-DIMENSIONAL MATRICES. **Joshua Francois**, Ruedi Meili, Juan Carlos del Alamo, Richard Firtel, Juan C. Lasheras

2289-Pos Board B426
COLLECTIVE 3D MIGRATION OF EMBRYONIC EPITHELIAL MESENCHYMAL COMPOSITE TISSUES ARE REGULATED BY SURFACE TOPOLOGY. **Jiho Song**, Joe Shawky, Yong Tae Kim, Melis Hazar, Metin Sitti, Philip R. LeDuc, Lance A. Davidson

2290-Pos Board B427 **Education Travel Awardee**
HIGH LOCAL CURVATURE REDUCES MIGRATION RATE IN SPREADING MULTI-LAYER TISSUES. **Holley E. Lynch**, Shirley X. Yancey, Lance A. Davidson

2291-Pos Board B428
KEY EFFECTS OF CONFINEMENT ON CELL MOTILITY. **Amélie Godeau**, Daniel Riveline

2292-Pos Board B429
CELLS AS ACTIVE PARTICLES IN ASYMMETRIC POTENTIALS: MOTILITY UNDER EXTERNAL GRADIENTS. **Jordi Comelles**, David Caballero, Raphael Voituriez, Verónica Hortigüela, Viktoria Wollrab, Amélie L. Godeau, Josep Samitier, Elena Martínez, Daniel Riveline

2293-Pos Board B430
CHARACTERIZING NEW GENES REGULATING CELL-SUBSTRATE ADHESION TO DISCOVER NOVEL REGULATORY MECHANISMS OF CELL MOTILITY. **Thomas J. Lampert**, Peter N. Devreotes

2294-Pos Board B431
EVOLUTIONARILY CONSERVED COUPLING OF ADAPTIVE AND EXCITABLE NETWORKS MEDIATES EUKARYOTIC CHEMOTAXIS. **Chuan-Hsiang Huang**, Ming Tang, Mingjie Wang, Changji Shi, Pablo A. Iglesias, Peter N. Devreotes

2295-Pos Board B432
CELL POLARISATION DRIVEN BY SUBSTRATE-MEDIATED INTRACELLULAR INTERACTIONS - CONSEQUENCES FOR MIGRATION AND CHEMOTAXIS. **Marco Leoni**, Pierre Sens

2296-Pos Board B433
THE INTERPLAY BETWEEN CELL MOTILITY AND PROTEOLYSIS IN THE ESTABLISHMENT OF BRAIN METASTASIS. **Alexus Devine**, Kandice Tanner

2297-Pos Board B434
COMPARSION OF MIGRATION PATTERN BETWEEN YOUNG AND SENESCENT MESENCHYMAL STEM CELLS IN TIME LAPSE MICROSCOPY. **Ching-Fen Jiang**, Shan-hui Hsu, Ka-Pei Tsai, Jia-Yin Li

2298-Pos Board B435
SINGLE CELL BIOPHYSICS DRIVES WOUND HEALING DYNAMICS. **Dhruv K. Vig**

2299-Pos Board B436
FEEDBACK INTERACTIONS BETWEEN INTRACELLULAR CONTRACTION AND LEADING EDGE PROTRUSION IN DIRECTED CELL MIGRATION. **Sangyoon J. Han**, Gaudenz Danuser

2300-Pos Board B437
FORCES BEHIND CELL ADHESION AND MIGRATION IN MICROGRAVITY. **Carlos Luna**, Rebecca J. Stevick, Alvin G. Yew, Adam H. Hsieh

2301-Pos Board B438
A MOLECULE BASED REACTION-TRANSPORTATION MODEL EXPLAINS THE OSCILLATORY MIGRATION OF ZYXIN-DEPLETED HUMAN FIBROSARCOMA CELLS. **Jianlei Chen**, Ganhui Lan

2302-Pos Board B439
FLOW-DRIVEN CELL MOTILITY UNDER ELECTRICAL FIELDS. **Yizeng Li**, Sean Sun

2303-Pos Board B440
CIRCULAR DORSAL RUFFLES INCREASE DIRECTIONAL PERSISTENCE OF CELL MIGRATION BY ACTIN DIFFUSION FROM RUFFLES TO LAMELLIPODIA. **Yukai Zeng**, Philip LeDuc, Cheng Gee Koh, Keng-Hwee Chiam

2304-Pos Board B441
MODELING TRANSMIGRATION OF MALARIA INFECTED RED BLOOD CELLS THROUGH INTER-ENDOTHELIAL SLITS IN HUMAN SPLEENS USING DISSIPATIVE PARTICLE DYNAMICS. **Zhangli Peng**, Igor Pivkin, Ming Dao, George Karniadakis

2305-Pos Board B442
RESTRICTED EXCHANGE ENVIRONMENT CHAMBERS FOR CREATING AND MANIPULATING DIFFUSIVE GRADIENTS IN 2D CELL CULTURE. **William F. Heinz**, Jeffrey Werbin, Jan H. Hoh

2306-Pos Board B443
COUPLING A MECHANOSENSITIVE CHANNEL WITH A VESICLE UNDER SHEAR FLOW. **On Shun Pak**, Yuan-nan Young, Shravan Veerapaneni, Howard Stone

2307-Pos Board B444
PERTURBING THE ACTIVE PROCESS OF HAIR CELLS: SELF RECOVERY OF SPONTANEOUS OSCILLATIONS FOLLOWING OVERSTIMULATION. **Elizabeth Mills**, Dolores Bozovic

2308-Pos Board B445
EQUATIONS OF INTER-DOUBLET SEPARATION EXPLAIN WAVE PROPAGATION AND OSCILLATIONS IN FLAGELLA. **Philip V. Bayly**, Kate S. Wilson

2309-Pos Board B446
HOW CILIA OR EUKARYOTIC FLAGELLA BEAT. **Kenneth W. Foster**, Jyothish Vidyadharan, Ashok Sangani

2310-Pos Board B447
INHIBITION OF CA^{2+} TRANSPORT TRIGGERS CHANGES IN CILIARY INTRAFLAGELLAR TRANSPORT RATE AND PARTICLE COMPOSITION. **Mikhail Sergeev**, Jagesh V. Shah

2311-Pos Board B448
USING IN VIVO OPTICAL SECTIONING TO INVESTIGATE MECHANICAL ASPECTS OF VOLVOX DEVELOPMENT. **Aurelia R. Honerkamp-Smith**, Stephanie Hoehn, Hugo Wioland, Pierre A. Haas, Philipp Khuc Trong, Raymond E. Goldstein

2312-Pos Board B449
SELF-HEALING BIOMATERIALS: ENTANGLED DNA NETWORKS. **Maria Kilfoil**

2313-Pos Board B450
TITIN HYSTERESIS IS GREATER FOR ACTIVELY LENGTHENED COMPARED TO PASSIVELY LENGTHENED SKELETAL MUSCLE SARCOMERES. Jens Herzog, **Timothy R. Leonard**, Azim Jinha, Walter Herzog

Membrane Pumps, Transporters, and Exchangers III (Boards B451-B467)

2314-Pos Board B451
VIBRATIONAL STUDIES OF CHANNELRHODOPSIN-1 FROM CHLAMYDOMONAS AUGUSTAE: PROTONATION CHANGES DURING THE EARLY PHOTOCYCLE. **Adrian Yi**, John I. Ogren, Sergey Mamaev, Hai Li, Johan Lugtenburg, Willem J. DeGrip, John L. Spudich, Kenneth J. Rothschild

2315-Pos Board B452
RECONSTITUTION OF POTASSIUM-COUPLED SUBSTRATE TRANSPORT IN AN ARCHAEAL HOMOLOGUE OF GLUTAMATE TRANSPORTERS. **Secheol Oh**, Olga Boudker

2316-Pos Board B453
A MUTATION IN TM7 OF EXCITATORY AMINO ACID TRANSPORTERS DISRUPTS THE SUBSTRATE-DEPENDENT GATING OF THE INTRINSIC ANION CONDUCTANCE AND DRIVES THE CHANNEL INTO A CONSTITUTIVELY OPEN STATE. **Delany Torres Salazar**, Jennie Garcia-Olivares, Susan G. Amara

2317-Pos Board B454
STUDYING ELECTROGENIC TRANSPORTERS OF THE SOLUTE CARRIER FAMILY (SLC) UTILIZING SOLID SUPPORTED MEMBRANE TECHNOLOGY. **Maria Barthmes**, Melanie Giesler, Andrea Brüggemann

2318-Pos Board B455
PHYSIOLOGICAL IMPLICATIONS OF TRANSEPITHELIAL CARBOXYLIC ACID ABSORPTION AND REGULATION BY SLC26A6. **Ehud Ohana**, Nikolay Shcheynikov, Shmuel Muallem

2319-Pos Board B456
ASSESSING PROTOMER INDEPENDENCE OF THE DIMERIC C4-DICARBOXYLATE TRANSPORTER, VCINDY. **Christopher Mulligan**, Gabriel A. Fitzgerald, Joseph A. Mindell

2320-Pos Board B457 education travel awardee
MOLECULAR DETERMINANTS OF SUBSTRATE SELECTIVITY IN OCT3 (SLC22A3). **Dan C. Li**, Colin G. Nichols, Monica Sala-Rabanal

2321-Pos Board B458
THE ROLE OF ANNULAR LIPIDS IN THE MECHANISM OF MEMBRANE PROTEIN SOLUBILIZATION AND FORMATION OF FUNCTIONALLY COMPETENT PROTEOMICELLES. Michael V. LeVine, **George Khelashvili**, Lei Shi, Matthias Quick, Jonathan Javitch, Harel Weinstein

2322-Pos Board B459
THE ENVIRONMENT MODULATES THE CONFORMATION OF TRANSMEMBRANE HELIX 1A IN THE LEUCINE TRANSPORTER (LEUT). **Kumaresan Jayaraman**, Azmat Sohail, Santhoshkannan Venkatesan, Walter Santdner, Harald Sitte, Thomas Stockner

2323-Pos Board B460
COMPUTATIONAL AND EXPERIMENTAL INVESTIGATION OF THE HUMAN AND D. MELANOGASTER DOPAMINE TRANSPORTERS. **Tyler Steele**, Louis J. De Felice

2324-Pos Board B461
VISUALIZATION OF MOLECULAR EVENTS FROM DOPAMINE-BINDING TO -RELEASE BY HUMAN DOPAMINE TRANSPORTER. **Mary H. Cheng**, Ivet Bahar

2325-Pos Board B462
CHARACTERIZATION OF A SECONDARY SITE OF DRUG ACTION ON THE HUMAN DOPAMINE TRANSPORTER. **Ernesto Solis, Jr.**, Igor Zdravkovic, Renata Kolanos, Farhana Sakloth, Sergei Y. Noskov, Richard A. Glennon, Louis J. De Felice

2326-Pos Board B463
CARBOXYL RESIDUES REQUIRED FOR TRANSPORT BY A VESICULAR MONOAMINE TRANSPORTER HOMOLOG FROM BREVIBACILLUS BREVIS (BBMAT). **Ariela Vergara-Jaque**, Dana Yaffe, Yonatan Shuster, Dina Listov, Sitaram Meena, Satinder K. Singh, Shimon Schuldiner, Lucy R. Forrest

2327-Pos Board B464
MONOAMINE TRANSPORTERS PRODUCE CALCIUM SIGNALS THROUGH L-TYPE CALCIUM CHANNEL ACTIVATION. Krasnodara N. Cameron, Ernesto Solis, Jr, Iwona Ruchala, Louis J. De Felice, **Jose M. Eltit**

2328-Pos Board B465
A KINETIC ASSESSMENT OF LIGAND BINDING TO MONOAMINE-TRANSPORTERS. Peter S. Hasenhuetl, Michael Freissmuth, Harald H. Sitte, **Walter Sandtner**

2329-Pos Board B466
PROTON TRANSPORT MECHANISM OF THE E.COLI COPPER TRANSPORT EFFLUX PUMP. **Arman Fathizadeh**, Fatemeh Khalili-Araghi

2330-Pos Board B467
THE ROLE OF HISTIDINE RESIDUES IN THE SPECIFICITY OF THE HUMAN ZINC TRANSPORTER HZIP4. **Robert Dempski**, Sagar Antala, Elizabeth Bafaro

Genetic and Epigenetic Regulatory Systems (Boards B468-B473)

2331-Pos Board B468
HYBRID MICRORNA CONTROL OF COLON CANCER STEM CELL ASYMMETRIC DIVISION. **Xiling Shen**

2332-Pos Board B469
NUCLEOCYTOPLASMIC SHUTTLING OF A GATA-FAMILY TRANSCRIPTION FACTOR FUNCTIONS AS A DEVELOPMENT TIMER. **Huaqing Cai**, Mariko Katoh-Kurasawa, Tetsuya Muramoto, Balaji Santhanam, Yu Long, Lei Li, Masahiro Ueda, Pablo A. Iglesias, Gad Shaulsky, Peter N. Devreotes

2333-Pos Board B470
STOCHASTIC CONTROL OF INTRACELLULAR LATENCY AND TRANSACTIVATION IN HUMAN IMMUNODEFICIENCY VIRUS TYPE 1 (HIV-1). **Youfang Cao**, Jie Liang

2334-Pos Board B471
PATH ATTRACTORS AND THE ORIGINS OF STOCHASTIC BIFRUCATION AND DEPHASING IN GENETIC NETWORKS. **Davit Potoyan**, Peter Wolynes

2335-Pos Board B472
WORMS IN SPACE: EPIGENETIC RESPONSE OF C. ELEGANS IN SIMULATED MICROGRAVITY. **Chandran R. Sabanayagam**, Aroshan K. Jayasinghe, Jung H. Doh, Irem Celen, Andrew Moore, Michael T. Moore

2336-Pos Board B473
STOCHASTIC MULTISTABILITY FROM SIMPLE NETWORK MOTIFS. **Anna Terebus**, Youfang Cao, Jie Liang

Synthetic Biology (Boards B474-B481)

2337-Pos Board B474
METABOLIC CHANNELING AND SPATIAL EFFECTS OF BIFUNCTIONAL ENZYMES. **Wenlong Xu**, Ashok Prasad

2338-Pos Board B475
SURFACE DISPLAY OF A UNIQUE ENZYME AS A NEW REPORTER IN SYNTHETIC BIOLOGY. **Felicia Y. Scott**, Warren C. Ruder

2339-Pos Board B476
A MULTISCALE DISSECTION OF DECISION-MAKING IN MICROBIAL ECOSYSTEMS. **James Boedicker**

2340-Pos Board B477
ENGINEERING ELECTRON TRANSFERRING PROTEINS AND THEIR ASSEMBLY AT ELECTRONIC INTERFACES. Bryan A. Fry, Chris Bialas, Zhenyu Zhao, Geetha Goparaju, Christopher C. Moser, P. Leslie Dutton, **Bohdana M. Discher**

2341-Pos Board B478
AUTOMATED DESIGN OF ENZYME-DRIVEN DNA CIRCUITS. **Tom F. A. de Greef**

2342-Pos Board B479
COUPLING THE INCREASE IN MEMBRANE TENSION AND THE SYNTHESIS OF PHOSPHATIDYLSERINE IN A "SMART" ARTIFICIAL CELL. **Kenneth Kwun Yin Ho**, Victoria Murray, Jin Woo Lee, Allen Liu

2343-Pos Board B480
LIGHT-CONTROLLED GROWTH FACTOR-MEDIATED SIGNAL TRANSDUCTION. **Kai Zhang**

2344-Pos Board B481
PATTERNED BIOFILMS FOR ENGINEERING MICROBIAL CONSORTIA. **Xiaofan Jin**, David S. Glass, Ingmar Riedel-Kruse

Molecular Dynamics III (Boards B482-B506)

2345-Pos Board B482
COARSE-GRAINED MD SIMULATIONS OF PEGYLATED COILED COILS AND THEIR SELF-ASSEMBLED MICELLES. **Sun Young Woo**, Hwankyu Lee

2346-Pos Board B483
MOLECULAR DYNAMICS SIMULATIONS ON THE PERIPLASMIC-OPEN STATE LACTOSE PERMEASE. **Xiaohong Zhuang**, Jeffery B. Klauda

2347-Pos Board B484
ELASTIC PROPERTY OF DYNEIN MOTOR DOMAIN OBTAINED FROM ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS IN EXPLICIT WATER. **Narutoshi Kamiya**, Tadaaki Mashimo, Yu Takano, Takahide Kon, Genji Kurisu, Haruki Nakamura

2348-Pos Board B485
MEMBRANE BINDING OF THE OSH4 CURVATURE-SENSING PEPTIDE. **Viviana Monje-Galvan**, Jeffery B. Klauda

2349-Pos Board B486 MINORITY AFFAIRS TRAVEL AWARDEE
COMBINED QM/MM STUDY OF THE TRANSLOCATION OF CHLORIDE IONS THROUGH ESCHERICHIA COLI CHLORIDE ION TRANSPORTERS. **Christal R. Davis**, Soroosh Pezeshki, Christina Garza, Hai Lin

2350-Pos Board B487
MOLECULAR MODELS OF NANODISCS FOR STUDYING MEMBRANE PROTEINS. **Iwona Siuda**, D. Peter Tieleman

2351-Pos Board B488
INFLUENCE OF YERSINIA PESTIS LIPOPOLYSACCHARIDE STRUCTURE UPON OUTER MEMBRANE DYNAMICS: INSIGHT FROM MOLECULAR DYNAMICS SIMULATIONS. **Thomas J. Piggot**, Syma Khalid, Richard B. Sessions

2352-Pos Board B489
COMPUTATIONAL STUDIES OF NILE RED IN LIPID BILAYERS. **Gurpreet Singh**, Adam C. Chamberlin, Sergei Y. Noskov, D Peter Tieleman

2353-Pos Board B490
MOLECULAR DYNAMICS STUDIES FOR THE SUGAR TRANSPORTATION MECHANISM IN PHOSPHOTRANSFERASE SYSTEMS (PTSS). **Jumin Lee**, Wonpil Im

2354-Pos Board B491
EFFECT OF ASYMMETRY ON BILAYER MEMBRANE SYSTEMS. **Soohyung Park**, Wonpil Im

2355-Pos Board B492
CONFORMATIONAL DYNAMICS OF PHUS. **Zhi Yue**, Jana Shen

2356-Pos Board B493
AQUAPORIN-0 WATER CONDUCTION REGULATION BY CALMODULIN. Thanh Bach, Lucas Montgomery, **Ugur Akgun**

2357-Pos Board B494
RESOLVING MEMBRANE-PROTEIN COMPLEXES WITH JOINT NEUTRON REFLECTIVITY AND MOLECULAR SIMULATION REFINEMENT. **Bradley W. Treece**, Mathias Lösche, Hirsh Nanda

2358-Pos Board B495
A COMPUTATIONAL STUDY OF MONO- AND POLY-UBIQUITIN RECOGNITION BY THE PROTEASOME SUBUNIT RPN10. **Yi Zhang**

2359-Pos Board B496
EVALUATING POLYGLUTAMINE PEPTIDE MONOMERS AND DIMERS WITH ENHANCED SAMPLING MD SIMULATIONS. **Riley J. Workman**, Jeffry D. Madura

2360-Pos Board B497
POLYMERIZATION OF FTSZ AT HIGH PRESSURES: A MOLECULAR DYNAMICS STUDY. **Scott M. Dicken**, Sudip Nepal, Pradeep Kumar

2361-Pos Board B498
DEVELOPMENT OF A NOVEL COARSE-GRAINED MODEL OF THE NUCLEOSOME CORE PARTICLE FOR LONG-TIMESCALE SIMULATIONS. **Mohammad Alwarawrah**, Jeff Wereszczynski

2362-Pos Board B499
MEMBRANE CURVATURE INDUCED VIA INFLUENZA M2 PROTEIN CLUSTERS. **Eduardo Mendez-Villuendas**, D. Peter Tieleman

2363-Pos Board B500
HYDROGEN BOND FLEXIBILITY AND WATER DYNAMICS IN THE FAR RED FLUORESCENT PROTEIN TAGRFP675. **Prem Chapagain**, Chola K. Regmi, Bernard S. Gerstman

2364-Pos Board B501
MOLECULAR DYNAMICS STUDY OF THE BIODEGRADATION PROCESS OF THE BIOPOLYMER POLY (LACTIC)/POLY (VINYL) SCAFFOLD FOR BONE TISSUE ENGINEERING. **Samara M. Oña**, Ana C. Cadena, Miguel M. Mendez

2365-Pos Board B502
A MOLECULAR DYNAMICS STUDY ON SSRI ANTIDEPRESSANT DRUGS. **Mohsen Ramezanpour**, Hamed Seyed-Allaei

2366-Pos Board B503
MOLECULAR DYNAMICS SIMULATIONS HELPS TO RATIONALIZE COPB MUTATIONS AND THEIR RELATIONSHIPS TO WILSON DISEASE. **Samuel Jayakanthan**, Megan M. McEvoy, Thomas B. Woolf

2367-Pos Board B504
MOLECULAR UNDERSTANDING OF THE BINDING OF MACROLIDE ANTIBIOTICS TO THE RIBOSOME USING SITE-IDENTIFICATION VIA LIGAND COMPETITIVE SATURATION. **Meagan C. Small**, Sirish Kaushik Lakkaraju, E. Prabhu Raman, Rodrigo B. Andrade, Alexander D. MacKerell, Jr.

2368-Pos Board B505
INTRODUCING MOLECULAR FLEXIBILITY IN EFFICIENT SIMULATIONS OF MANY-PROTEIN SYSTEMS. **Vera Prytkova**, Matthias Heyden, Douglas Tobias, J. Alfredo Freites

2369-Pos Board B506
DOCKING AND DESIGN OF OLIGOSACCHARIDES, GLYCOPROTEINS, AND GLYCOLIPIDS. **Jason W. Labonte**, Jeffrey J. Gray

Computational Methods and Bioinformatics (Boards B507-B528)

2370-Pos Board B507
SIMULATING METABOLISM WITH STATISTICAL THERMODYNAMICS. **William R. Cannon**, Dennis G. Thomas, Douglas J. Baxter

2371-Pos Board B508
BAYESIAN CRYO-EM REFINEMENT. **Christian Blau**, Lars Bock, Carsten Kutzner, Andrea Vaiana, Helmut Grubmuller

2372-Pos Board B509
APPLYING DERIVATIVE-FREE OPTIMIZATION TO FIT KINETIC PARAMETERS OF VIRAL CAPSID SELF-ASSEMBLY MODELS FROM MULTI-SOURCE BULK IN VITRO DATA. **Lu Xie**, Gregory Smith, Russell Schwartz

2373-Pos Board B510
A COMPUTATIONAL MODEL OF CELL-GENERATED TRACTION FORCES AND FIBRONECTIN ASSEMBLY. **Seth H. Weinberg**, Lewis E. Scott, Devin B. Mair, Christopher A. Lemmon

2374-Pos Board B511
NUMERICAL MODELING OF LIPID BIOSYNTHESIS IN MICROALGAE. **Nicole J. Carbonaro**, May M. Li, Matthew W. Sweeney, Ian F. Thorpe

2375-Pos Board B512
ROBUST ELASTIC NETWORK MODEL: PRECISE PREDICTION OF ATOMIC FLUCTUATIONS IN PROTEIN CRYSTAL STRUCTURES. **Min Hyeok Kim**, Byung Ho Lee, Moon Ki Kim

2376-Pos Board B513
PROTEIN TRANSLOCATION THROUGH AN ELECTRICALLY TUNABLE MEMBRANE. Ining Amy Jou, Dmitriy V. Melnikov, **Maria Gracheva**

2377-Pos Board B514
TRAVELING WAVE SOLUTIONS TO REACTION-DIFFUSION EQUATIONS BASED ON THE LAMBERT W FUNCTION. **Brian W. Williams**

2378-Pos Board B515
QUANTITATIVE THEORY OF ACTIVE DIFFUSION TRAJECTORIES BY INSTANTANEOUS DIFFUSION COEFFICIENT. **Soya Shinkai**, Yuichi Togashi

2379-Pos Board B516
ANALYSIS OF AMINO ACID PROPERTIES IN INTERACTION SURFACES OF DECOYS GENERATED BY RE-DOCKING SCHEME. **Nobuyuki Uchikoga**, Yuri Matsuzaki, Masahito Ohue, Takatsugu Hirokawa, Yutaka Akiyama

2380-Pos Board B517
INFERENCEMAP: MAPPING OF SINGLE-MOLECULE DYNAMICS USING BAYESIAN INFERENCE. **Mohamed El Beheiry**, Maxime Dahan, Jean-Baptiste Masson

2381-Pos Board B518
NEUROIMAGE: A NOVEL HIGHLY EFFICIENT TOOL FOR IMAGE PROCESSING OF IN VIVO NEURAL NETWORKS. **Christian Heusinger**, André Drews, Aune Koitmäe, Robert Blick

2382-Pos Board B519 INTERNATIONAL TRAVEL AWARDEE
INTEGRATIVE MODELING APPROACHES TO INTERPRET HIGH-RESOLUTION CRYO-EM RECONSTRUCTIONS. Alejandro Jesús Canosa-Valls, Erney Ramírez-Aportela, Pablo Chacón, **José R. López-Blanco**

2383-Pos Board B520
ENERGY TABULATION STRATEGIES FOR ACCELERATED MONTE CARLO SIMULATION AT MULTIPLE LENGTH SCALES. **Justin M. Spiriti**, Daniel M. Zuckerman

2384-Pos Board B521
G-LOSA: AN EFFICIENT COMPUTATIONAL TOOL FOR LOCAL STRUCTURE-CENTRIC BIOLOGICAL STUDIES. **Hui Sun Lee**, Wonpil Im

2385-Pos Board B522
MULTI-SCALE DEEP NEURAL NETWORK MICROSCOPIC IMAGE SEGMENTATION. **Xundong Wu**, Yong Wu, Enrico Stefani

2386-Pos Board B523
USING RULES & PATHWAY DATABASES TO CREATE QUANTITATIVE MECHANISTIC MODELS IN VIRTUAL CELL. Michael L. Blinov, Dan Vasilescu, James C. Schaff, Ion I. Moraru, **Leslie M. Loew**

2387-Pos Board B524
A STATISTICAL OVERVIEW OF EXPERIMENTALLY DEFINED ANISOTROPIC DISPLACEMENT PARAMETERS (ADP) CURRENTLY DEPOSITED IN THE RCSB PDB. **Christopher B. Waite**, Lei Zhou

2388-Pos Board B525 EDUCATION TRAVEL AWARDEE
PREDICTION OF FUNCTIONALLY LINKED INTERFACE (FLIP) REGIONS IN RESIDUE INTERACTION NETWORK (RIN) MODELS OF PROTEIN STRUCTURES. **Isha D. Mehta**, Brian W. Beck

2389-Pos Board B526
A LANGEVIN DYNAMICS ALGORITHM FOR COARSE-GRAIN MODELING OF PROTEIN CLUSTERS. **Paul J. Michalski**, Leslie M. Loew

2390-Pos Board B527
DFGMODEL: PREDICTING PROTEIN KINASE STRUCTURES IN INACTIVE STATES FOR STRUCTURE-BASED DISCOVERY OF TYPE-II INHIBITORS. **Peter Man-Un Ung**, Avner Schlessinger

2391-Pos Board B528
VIRTUAL REALITY ENVIRONMENT FOR PATCHING AND IMAGING IN BRAIN SLICES. **Jaime V.K. Hibbard**, Marco A. Navarro, Michael E. Miller, Tyler W. Nivin, Lorin S. Milescu

Optical Microscopy and Super-Resolution Imaging II (Boards B529-B558)

2392-Pos Board B529 INTERNATIONAL TRAVEL AWARDEE
3 COLOR - 3 DIMENSIONAL STED NANOSCOPY. **Chiara Peres**, Michele Oneto, Francesca D'Autilia, Silvia Galiani, Luca Lanzano', Giuseppe Vicidomini, Alberto Diaspro, Paolo Bianchini

2393-Pos Board B530
EFFICIENT INTEGRATED 3D AND MULTI-COLOR SINGLE MOLECULE SUPER-RESOLUTION IMAGING. Kenny Chung, Tobias Hartwich, **David Baddeley**

2394-Pos Board B531
THREE-DIMENSIONAL SUPER-RESOLUTION PROTEIN LOCALIZATION CORRELATED WITH VITRIFIED CELLULAR CONTEXT. **Wei Ji**, Bei Liu, Yanhong Xue, Wei Zhao, Tao Xu

2395-Pos Board B532
3D MICROSCOPY OF ROD-SHAPED BACTERIA REVEALS ROLES OF MREB IN DIAMETER CONTROL AND CENTER-LINE CURVATURE. **Benjamin P. Bratton**, Jeffrey P. Nguyen, Nikolay Ouzounov, Randy M. Morgenstein, Zemer Gitai, Joshua P. Shaevitz

2396-Pos Board B533
ENABLING SINGLE-MOLECULE DETECTION IN LIVING CELLS: ULTRA-SENSITIVE MICROSCOPY AND SPECTROSCOPY IN 3D. **Ankun Dong**, Alexandros Pertsinidis

2397-Pos Board B534
ANALYSIS OF NANOSCALE PROTEIN CLUSTERING WITH QUANTITATIVE LOCALIZATION MICROSCOPY.
Philip R. Nicovich, Thibault Tabarin, Johannes Stiegler, Sophie V. Pageon, Katharina Gaus

2398-Pos Board B535
VIDEO-RATE SUPER RESOLUTION MICROSCOPY IN LIVING CELLS. **Fang Huang**, Caroline E. Laplante, Yu Lin, Thomas D. Pollard, Joerg Bewersdorf

2399-Pos Board B536
DUAL-OBJECTIVE POINTILLISM MICROSCOPY SETUP WITH INTERFEROMETRIC AND ASTIGMATIC DETECTION. **Nora C. Schmidt**, Jana Hüve, Jürgen Klingauf

2400-Pos Board B537
HIV GP120 EPITOPE PROFILE ON CELL-BOUND VIRIONS ASSESSED USING VARIOUS MICROSCOPY TECHNIQUES. **Meron Mengistu**, George K. Lewis, Anthony L. DeVico

2401-Pos Board B538
STRUCTURAL STUDY OF CILIARY TRANSITION ZONE WITH MULTICOLOR 3D STORM. **Xiaoyu Shi**, Galo Garcia, Jeremy F. Reiter, Bo Huang

2402-Pos Board B539
CHARACTERIZATION OF CEACAM1 STRUCTURE AND DYNAMICS BY CORRELATED HOMO-FRET AND DSTORM IMAGING. **Amine Driouchi**, Scott D. Gray-Owen, Christopher M. Yip

2403-Pos Board B540
SUB-DIFFRACTION LIMIT CHARACTERIZATION OF THE HIGHER-ORDER STRUCTURE AND NANOSCALE CYTOSKELETAL ARRANGEMENT OF SEPTINS BY DSTORM. **Adriano Vissa**, Theodore Pham, William S. Trimble, Peter K. Kim, Christopher M. Yip

2404-Pos Board B541
DYNAMICS OF THE ACTIN CYTOSKELETON AND PLASMA MEMBRANE AT THE IMMUNOLOGICAL SYNAPSE REVEALED USING LIVE-CELL SUPER-RESOLUTION MICROSCOPY.
George W. Ashdown, Andrew Cope, Paul W. Wiseman, Dylan M. Owen

2405-Pos Board B542
FULL FIELD NONLINEAR STRUCTURED ILLUMINATION MICROSCOPY WITH STED. Han Zhang, **Yu Li**, Ming Zhao, Leilei Peng

2406-Pos Board B543
REDUCING PHOTOBLEACHING IN STED MICROSCOPY WITH HIGHER SCANNING SPEED. **Yong Wu**, Xundong Wu, Ligia Toro, Enrico Stefani

2407-Pos Board B544
DNA-PAINT AND EXCHANGE-PAINT FOR MULTIPLEXED 3D SUPER-RESOLUTION MICROSCOPY. **Jesse L. Silverberg**, Ralf Jungmann, Maier S. Avendano, Johannes B. Woehrstein, Mingjie Dai, Peng Yin

2408-Pos Board B545
QUANTITATIVE MULTIPLEXED SUPER-RESOLUTION NEURONAL SYNAPSE IMAGING USING DNA-PAINT.
Syuan-Ming Guo, Remi Veneziano, Russell E. McConnell, Sarit Agasti, Simon Gordonov, Tony Kulesa, Frank B. Gertler, Paul Blainey, Ed Boyden, Peng Yin, Mark Bathe

2409-Pos Board B546
SINGLE-MOLECULE DIGITAL IMAGING WITH MOLECULAR RESOLUTION USING DNA-PAINT. **Mingjie Dai**, Ralf Jungmann, Peng Yin

2410-Pos Board B547
CHARACTERIZING FIBROSIS IN MOUSE KIDNEY USING AUTO FLUORESCENCE FLIM AND SHG IN UUO MODEL.
Moshe Levi, Evgenia Dobrinskikh, Suman Ranjit, John Montford, Alexander Dvornikov, Allison Lehman, Seth Furgeson, Raphael Nemenoff, Enrico Gratton

2411-Pos Board B548
HIGH SENSITIVITY NDD FLIM AND PATTERN MATCHING BASED FLUOROPHORE IDENTIFICATION. **Marcelle Koenig**, Benedikt Kraemer, Volker Buschmann, Matthias Patting, Felix Koberling, Rainer Erdmann

2412-Pos Board B549
METABOLIC PROFILING OF THE SKIN TO MONITOR THE ONSET AND PROGRESSION OF SQUAMOUS CELL CARCINOMA THROUGH TIME- AND WAVELENGTH-RESOLVED FLUORESCENCE LIFETIME IMAGING.
Christina R. Miller, Michael G. Nichols

2413-Pos Board B550
MAPPING P53 ALTERATIONS IN METABOLISM UPON DNA DAMAGE USING THE PHASOR/FLIM AND NUMBER & MOLECULAR BRIGHTNESS ANALYSIS. **Michelle A. Digman**, Swathi Bagilthaya

2414-Pos Board B551 INTERNATIONAL TRAVEL AWARDEE
QUANTITATIVE ANALYSIS OF ANCHORING PROTEINS OF THE INHIBITORY SYNAPSE THROUGH SINGLE MOLECULE LOCALIZATION TECHNIQUES. **Francesca Pennacchietti**, Sebastiano Vascon, Alessio Del Bue, Enrica Maria Petrini, Andrea Barberis, Francesca Cella Zanacchi, Alberto Diaspro

2415-Pos Board B552
SINGLE MOLECULE ANALYSIS OF ENDOGENOUS MRNA IN STRESS GRANULES. **Ko Sugawara**, Kohki Okabe, Takashi Funatsu

2416-Pos Board B553
SUPER-OSCILLATORY IMAGING OF NANOPARTICLE INTERACTIONS WITH NEURONS. **Edward T F Rogers**, Shmma Quraishe, Joanne L. Bailey, Tracey A. Newman, John E. Chad, Nikolay I. Zheludev, Peter J S Smith

2417-Pos Board B554
QUANTITATIVE SUPER-RESOLUTION MICROSCOPY USING NOVEL MEDITOPE REAGENTS. **Ottavia Golfetto**, Eliedonna E. Cacao, Raphael Jorand, Sunetra Biswas, Cindy Zer, Kendra N. Avery, John C. Williams, Tijana Jovanovic-Talisman

2418-Pos Board B555
FOURIER TRANSFORM INFRARED SPECTROSCOPY AND IMAGING IN CANCER DIAGNOSIS AND CHARACTERIZATION. **Feride Severcan**, Nihal Simsek Ozek, Seher Gok

2419-Pos Board B556
QUANTITATIVE IMAGING OF PROTEOME DEGRADATION IN LIVE CELLS BY STIMULATED RAMAN SCATTERING. **Yihui Shen**, Fang Xu, Wei Min

2420-Pos Board B557
VIBRATIONAL IMAGING OF GLUCOSE UPTAKE IN LIVE CELLS AND TISSUES BY STIMULATED RAMAN SCATTERING MICROSCOPY. **Fanghao Hu**, Zhixing Chen, Luyuan Zhang, Yihui Shen, Lu Wei, Wei Min

2421-Pos Board B558
BEAM-SCANNING BROADBAND CARS MICROSCOPY FOR RAPID TISSUE IMAGING. **Ian Seungwan Ryu**, Charles H. Camp, Jr., Marcus T. Cicerone, Young Jong Lee

Biosensors II (Boards B559-B578)

2422-Pos Board B559
FLUOROPHOTOMETRIC DETERMINATION OF CRITICAL MICELLE CONCENTRATION (CMC) OF IONIC AND NON-IONIC SURFACTANTS WITH CARBON DOTS BASED ON THE STOKES SHIFT. **Mukesh L. Bhaisare**, Sunil Pandey, M Shahnawaz Khan, Abou Talib, Hui-Fen Wu

2423-Pos Board B560
NOVEL BIOSENSORS BASED ON WATER-SOLUBLE FLUORESCENT SILVER NANOCLUSTERS FOR SELECTIVELY DETECTION OF THIOL-AMINO ACID. Taiqun Yang, Yuting Chen, Kun Zhang, Kehan Huang, Haifeng Pan, **Sanjun Zhang**, Jianhua Xu

2424-Pos Board B561
NOVEL STRATEGIES FOR MICRO-CONTACT PRINTING BASED PROTEIN-PROTEIN INTERACTION DETECTION. **Ulrike Müller**, Peter Lanzerstorfer, Andreas Arnold, Eva Sevcsik, Gerald Kreindl, Otmar Höglinger, Gerhard Schütz, Julian Weghuber

2425-Pos Board B562
MILLISECOND TIME RESOLVED ELECTROCHEMICAL DETECTION OF NON-ELECTROACTIVE NEUROTRANSMITTER RELEASE. **Ann-Sofie Cans**, Jacqueline Keighron, Michael Kurczy, Joakim Wigström, Yuanmo Wang, Jenny Bergman

2426-Pos Board B563
SOLID-STATE NANOPORE DETECTION OF EPIGENETIC DNA MODIFICATIONS. **Osama K. Zahid**, Fanny Wang, Jan A. Ruzicka, Ethan W. Taylor, Adam R. Hall

2427-Pos Board B564
DYNAMICS AND ENERGY CONTRIBUTIONS FOR TRANSPORT OF PERTACTIN THROUGH AN AEROLYSIN NANOPORE. **Benjamin Cressiot**, Esther Braselmann, Abdelghani Oukhaled, Juan Pelta, Patricia L. Clark

2428-Pos Board B565
A NEW ENVIRONMENTAL BIOSENSOR FOR CELL FREE SYNTHETIC BIOLOGICAL SYSTEMS. **Ruihua Zhang**, Warren C. Ruder

2429-Pos Board B566
NANOPORE SEQUENCING OF "ALIEN" DNA BASES. **Jonathan M. Craig**, Mark Svet, Ian Derrington, Jens Gundlach, Henry Brinkerhoff, Andrew Laszlo, Ian Nova, Kenji Doering, Matt Noakes

2430-Pos Board B567
ROBUST MEMBRANE-EMBEDDED PHI29 MOTOR CHANNEL FOR SENSING OF SINGLE MOLECULE AND HIGH-THROUGHPUT FINGERPRINTING OF DNA. **Peixuan Guo**, Shaoying Wang, Farzin Haque

2431-Pos Board B568 EDUCATION TRAVEL AWARDEE
SINGLE MOLECULE NUCLEIC ACID SENSING IN AN OPTICAL NANOPORE ARRAY. **Shuo Huang**

2432-Pos Board B569
AN ATR-FTIR BASED IMMUNO-BIOSENSOR FOR THE DETECTION AND ANALYSIS OF DISEASE RELATED BIOMARKERS FROM LIQUID SAMPLES. **Andreas Nabers**, Julian Ollesch, Jonas Schartner, Klaus Gerwert

2433-Pos Board B570
SLOWING DOWN DNA TRANSLOCATION AND NEUTRAL SINGLE MOLECULES DETECTION THROUGH SOLID-STATE NANOPORES BY PRESSURE. **Qing Zhao**

2434-Pos Board B571
A NEXT GENERATION LABEL-FREE POC SENSING PLATFORM. **Jasmine Sze**

2435-Pos Board B572
REAL-TIME DETECTION OF LIPID BILAYER ASSEMBLY AND DETERGENT-INITIATED SOLUBILIZATION. **Victoria L. Sun**

2436-Pos Board B573
A GENERAL STRATEGY TO SYNTHESIZE ULTRASTABLE, LIGAND-GENERAL MOLECULAR TENSION PROBES FOR VISUALIZING CELL FORCES. **Yuan Chang**, Khalid Salaita

2437-Pos Board B574 EDUCATION TRAVEL AWARDEE
COMPUTER AIDED DESIGN OF APTAMER FOR PROTHROMBIN DETECTION IN BLOOD. **Andrea C. Montero Oleas**, Miguel A. Mendez

2438-Pos Board B575
ROS DETECTION AND QUANTIFICATION WITH LANTHANIDE-BASED NANOSENSORS. **Mouna Abdesselem**, Thierry Gacoin, Jean-Pierre Boilot, Pierre-Louis Tharaux, Antigoni Alexandrou, Cédric Bouzigues

2439-Pos Board B576
SINGLE-LAYER MOLEBDENUM DISULPHIDE NANOPORE FOR DNA DETECTION. **Amir Barati Farimani**, Kyoungmin Min, Narayana Aluru

2440-Pos Board B577
BIOSENSOR APPROACH BY UV SPECTROPHOTOMETRIC DETECTION. **Yekbun Adiguzel**

2441-Pos Board B578
BIOLOGICAL CHANNEL CONFINEMENT IN NANOSTRUCTURED NANOPORE. **Sébastien Balme**, Mathilde Lepoitevin, Adib Abou-Chayaa, Mikhael Bechelany, Jean-Marc Janot, Emmanuel Balanzat

Biomaterials (Boards B579-B603)

2442-Pos Board B579
1H NMR STUDY OF THE ADSORPTION MECHANISM FOR TI-BINDING PEPTIDE ON TIO2 NANOPARTICLES. **Yu Suzuki**, Tetsuo Asakura

2443-Pos Board B580
ROLES OF SPIDER WRAPPING SILK PROTEIN DOMAINS IN FIBRE PROPERTY. **Lingling Xu**, Marie-Laurence Tremblay, Kathleen E. Orrel, Xiang-Qin Liu, Jan K. Rainey

2444-Pos Board B581
A STUDY IN SEMENOGELIN I HYDROGEL AGGREGATION KINETICS. **Beatrice Ary**, Connie Friedman, Matthew Rohn, Birgitta Frohm, Luigi Gentile, Ulf Olsson, Sara Linse, Karin Akerfeldt

2445-Pos Board B582
LOCAL O2 GRADIENTS IN POROUS 3D SCAFFOLD MONITORED BY PHOSPHORESCENT LIFETIME IMAGING MICROSCOPY. **James Jenkins**

2446-Pos Board B583
ROLE OF HIGH-ORDER HYDRODYNAMIC INTERACTION OF SEMIFLEXIBLE FILAMENT DYNAMICS. **Jyothirmai J. Simhadri**, Preethi L. Chandran

2447-Pos Board B584
CHARACTERIZING THE POLYETHYLENIMINE POLYMER DYNAMICS AS A PH BUFFER FOR ITS USE AS DNA AGGREGATING AGENT. **Danielle N. Miller**, Quentinn Roby, Preethi L. Chandran, Kimberly Curtis

2448-Pos Board B585
INTERACTIONS OF CELL SURFACE GLYCOPROTEINS. **Komitige H. Perera**, Preethi L. Chandran

2449-Pos Board B586
EFFECT OF POLY-ETHYLENIMINE DYNAMICS ON DNA NANOPARTICLE PACKING. **Paul A. Millard**, Preethi L. Chandran

2450-Pos Board B587
BIO-INSPIRED PH RESPONSIVE HYDROGELS FOR PROGRAMMED ACTIVATION OF ELECTROCHEMICAL STORAGE SYSTEMS IN BIOLOGY. **Nateé Johnson**, Young Jo Kim, Hangjun Dingh, Philip LeDuc, Christopher Bettinger

2451-Pos Board B588
DIFFUSING COLLOIDAL PROBES OF CELL SURFACES. **Gregg A. Duncan**, Michael A. Bevan

2452-Pos Board B589
ARCHAEAL TETRAETHER FREE STANDING LIPID MEMBRANES IN A PDMS AND PCB BASED FLUIDIC PLATFORM. **Parkson Chong**, Xiang Ren, Hongseok Noh, Caglan Kumbur, Wenqiao Yuan, Jack Zhou

2453-Pos Board B590
DEDUCING THE MACROMOLECULAR ORGANIZATION OF *ARABIDOPSIS THALIANA* LEAF CUTICLES BY SOLID-STATE NMR. **Subhasish Chatterjee**, Frederic Beisson, Gaetan Verdier, Ruth E. Stark

2454-Pos Board B591
INJECTABLE REVERSE THERMAL GEL BIOPOLYMERS MAY ACT AS AN EXTRACELLULAR MATRIX AND CELL VEHICLE FOR CARDIAC TISSUE ENGINEERING. **Brisa M. Pena Castellanos**, Daewon Park, Carlin S S. Long, Valentina Martinelli, Susanna Bosi, Laura Ballerini, Maurizio Prato, Carmen Sucharov, Mark Jeong, Matthew R. G. Taylor, Robin Shandas, Luisa Mestroni

2455-Pos Board B592
INFLUENCE OF CHEMICAL CONJUGATION STRATEGIES ON FIBRONECTIN'S BIOACTIVITY. **Michael Byad**, Karine Vallières, Pascale Chevallier, Corinne Hoesli, Gaétan Laroche

2456-Pos Board B593
DECONSTRUCTING THE ROLE OF THE MICROENVIRONMENT ON DRUG EFFICACY IN A BRAIN-MIMETIC PLATFORM FOR CUTANEOUS METASTATIC MELANOMA. **Benjamin H. Blehm**, Nancy Jiang, Yorihisa Kotobuki, Kandice Tanner

2457-Pos Board B594
RIGIDITY OF POLY-L-GLUTAMIC ACID: INFLUENCE OF SECONDARY AND SUPRAMOLECULAR STRUCTURES. **Stefania Perticaroli**, Jonathan D. Nickels, Alexei P. Sokolov

2458-Pos Board B595
BIO-LITHOGRAPHY: A NOVEL PROCESS FOR MODIFICATION AND PATTERNING OF SUPPORTED LIPID BILAYERS USING LIPOPOLYSACCHARIDE, A BIOLOGICAL AMPHIPHILE. **Peter G. Adams**, Kirstie L. Swingle, Walter F. Paxton, John J. Nogan, Loreen Lamoureux, Millicent A. Firestone, Harshini Mukundan, Gabriel A. Montaño

2459-Pos Board B596
THE BACTERIAL SPORE AS AN ENERGY-RICH ADAPTIVE MATERIAL. **Michael DeLay**, Xi Chen, Jonathan Dworkin, Adam Driks, Ozgur Sahin

2460-Pos Board B597
STRESS-INDUCED LAMELLAR ORDER IN SPIDER SILK FIBERS. **Eduardo R. Cruz-Chu**, Patil Sandeep, Imke Greving, Martin Mueller, Frauke Graeter

2461-Pos Board B598
LIVE CELL INTERACTIONS WITH BIOCOMPATIBLE ULTRA-SHORT CARBON NANOTUBE PORINS. **Jia Geng**, Whitney Stannard, Arthur Escalada, Kyunghoon Kim, Michael P. Thelen, Vadim A. Frolov, Aleksandr Noy

2462-Pos Board B599
TITRATION PROPERTIES AND PH-DEPENDENT AGGREGATION OF CHITOSAN. **Brian H. Morrow**, Gregory F. Payne, Jana K. Shen

2463-Pos Board B600
USING SPORES OF BACILLUS TO CREATE EVAPORATION-DRIVEN ENGINES. **Xi Chen**, Davis W. Goodnight, Zhenghan Gao, Ahmet-Hamdi Cavusoglu, Nina Sabharwal, Michael DeLay, Adam Driks, Ozgur Sahin

2464-Pos Board B601
TRANSPORT PROPERTIES OF CARBON NANOTUBE PORINS IN LIPID VESICLES. **Ramya H. Tunuguntla**, Allison Belliveau, Kyunghoon Kim, Jia Geng, Caroline Ajo-Franklin, Aleksandr Noy

2465-Pos Board B602
FIELD EFFECT TRANSISTORS BASED ON SEMICONDUCTIVE MICROBIALLY SYNTHESIZED CHALCOGENIDE NANOFIBERS. **Ian R. McFarlane**, Julia R. Lazzari-Dean, Mohamed Y. El-Naggar

2466-Pos Board B603
NANOMECHANICAL DEFORMATION BEHAVIOR OF AMYLOID FIBRILS. Bumjoon Choi, Sangwoo Lee, **Kilho Eom**

Wednesday, February 11, 2015

Daily Program Summary

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

8:00 AM–11:00 AM	**New Council Meeting**	**Room 318**
8:00 AM–3:00 PM	**Poster Viewing**	**Hall C**
8:15 AM–10:15 AM	**Symposium: Membrane Trafficking** **Chair:** *Kerney Jebrell Glover, Lehigh University* PROBING THE STRUCTURE, TOPOLOGY, AND OLIGOMERIZATION OF CAVEOLIN-1. *Kerney Jebrell Glover* PHO85/CDK5 IS A POSITIVE REGULATOR OF PHOSPHATIDYLINOSITOL 3,5-BISPHOSPHATE VIA DIRECT PHOSPHORYLATION OF FAB1/PIKFYVE. *Lois Weisman* DYNAMIN AT THE BRINK OF FISSION. *Jenny E. Hinshaw* STUDYING MEMBRANE FUSION AT THE MOLECULAR LEVEL USING A BIOMIMETIC MODEL SYSTEM. *Alexander Kros*	**Ballroom I**
8:15 AM–10:15 AM	**Symposium: Nanopores: Methods and Mechanistic Insights** **Chair:** *Zuzanna Siwy, University of California, Irvine* POLYMERS THROUGH PROTEIN PORES: SINGLE-MOLECULE EXPERIMENTS WITH NUCLEIC ACIDS, POLYPEPTIDES AND POLYSACCHARIDES. *Hagan Bayley* MOLYBDENUM DISULFIDE NANOPORES: WHY 3 ATOMS ARE BETTER THAN ONE? *Aleksandra Radenovic* REAL-TIME SHAPE DETERMINATION AND 5-D FINGERPRINTING OF SINGLE PROTEINS. *Michael Mayer* PORES WITH UNDULATING DIAMETER FOR MULTIPRONGED CHARACTERIZATION OF SINGLE PARTICLES AND CELLS IN RESISTIVE-PULSE TECHNIQUE. *Zuzanna S. Siwy*	**Ballroom II**
8:15 AM–10:15 AM	**Platform: Voltage-gated Na and Ca Channels**	**Ballroom III**
8:15 AM–10:15 AM	**Platform: Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence**	**Ballroom IV**
8:15 AM–10:15 AM	**Platform: Cell Mechanics, Mechanosensing, and Motility II**	**Room 307/308**
8:15 AM–10:15 AM	**Platform: Intrinsically Disordered Proteins (IDP) and Aggregates**	**Room 309/310**
8:15 AM–10:15 AM	**Platform: Membrane Active Peptides and Toxins**	**Room 314/315**
9:00 AM–1:00 PM	**Biomolecular Discovery Dome**	**Hall C**
10:30 AM–11:15 AM	**Coffee Break**	**Hall C**
12:00 PM–3:00 PM	**Publications Committee Meeting**	**Room 333**
1:00 PM–3:00 PM	**Symposium: Advances in Electron Microscopy** **Chair:** *Yifan Cheng, University of California, San Francisco* CRYO-EM OF DNA REPAIR PROTEIN COMPLEXES. *Hong-Wei Wang* STRUCTURAL MATURATION OF HEPATITIS B CORE PROTEIN CAPSIDS. *Bettina Boettcher* SINGLE PARTICLE CRYO-EM OF CALCIUM RELEASE CHANNELS. *Irina I. Serysheva* SINGLE PARTICLE CRYOEM OF INTEGRAL MEMBRANE PROTEINS. *Yifan Cheng*	**Ballroom I**
1:00 PM–3:00 PM	**Symposium: Catalysis in the Membrane** **Chair:** *Jochen Zimmer, University of Virginia* ZMPSTE24 AND PREMATURE AGEING: A UNIQUE INTEGRAL MEMBRANE METALLOPROTEASE WITH A HOLE IN THE MIDDLE. *Liz Carpenter* THE MECHANISM OF RHOMBOID INTRAMEMBRANE PROTEASE. *Ya Ha* CLEAVAGE-DEPENDENT AND INDEPENDENT ROLE OF THE SERINE PROTEASE CAP1/PRSS8. *Edith Hummler* A MOLECULAR DESCRIPTION OF CELLULOSE BIOSYNTHESIS. *Jochen Zimmer*	**Ballroom II**

1:00 PM–3:00 PM	Platform: Protein-Lipid Interactions III	Ballroom III
1:00 PM–3:00 PM	Platform: Protein Folding and Chaperones	Ballroom IV
1:00 PM–3:00 PM	Platform: Excitation-Contraction Coupling	Room 307/308
1:00 PM–3:00 PM	Platform: Mechanosensation	Room 309/310
1:00 PM–3:00 PM	Platform: DNA Replication and Transcription	Room 314/315
1:00 PM–3:00 PM	Platform: Actin Filaments and Microtubules	Room 316/317

Wednesday, February 11

8:00 AM–11:00 AM, ROOM 318
New Council Meeting

8:00 AM–3:00 PM, HALL C
Poster Viewing

8:15 AM–10:15 AM, BALLROOM I
Symposium
Membrane Trafficking

Chair
Kerney Jebrell Glover, Lehigh University

2467-SYMP 8:15 AM
PROBING THE STRUCTURE, TOPOLOGY, AND OLIGOMERIZATION OF CAVEOLIN-1. **Kerney Jebrell Glover**

2468-SYMP 8:45 AM
PHO85/CDK5 IS A POSITIVE REGULATOR OF PHOSPHATIDYLINOSITOL 3,5-BISPHOSPHATE VIA DIRECT PHOSPHORYLATION OF FAB1/PIKFYVE. Natsuko Jin, **Lois Weisman**

2469-SYMP 9:15 AM
DYNAMIN AT THE BRINK OF FISSION. **Jenny E. Hinshaw**, Anna C. Sundborger, Shunming Fang, Jurgen A. Heymann, Pampa Ray, Joshua S. Chappie

2470-SYMP 9:45 AM
STUDYING MEMBRANE FUSION AT THE MOLECULAR LEVEL USING A BIOMIMETIC MODEL SYSTEM. **Alexander Kros**

8:15 AM–10:15 AM, BALLROOM II
Symposium
Nanopores: Methods and Mechanistic Insights

Chair
Zuzanna Siwy, University of California, Irvine

2471-SYMP 8:15 AM
POLYMERS THROUGH PROTEIN PORES: SINGLE-MOLECULE EXPERIMENTS WITH NUCLEIC ACIDS, POLYPEPTIDES AND POLYSACCHARIDES. **Hagan Bayley**

2472-SYMP 8:45 AM
MOLYBDENUM DISULFIDE NANOPORES: WHY 3 ATOMS ARE BETTER THAN ONE? **Aleksandra Radenovic**

2473-SYMP 9:15 AM
REAL-TIME SHAPE DETERMINATION AND 5-D FINGERPRINTING OF SINGLE PROTEINS. **Michael Mayer**

2474-SYMP 9:45 AM
PORES WITH UNDULATING DIAMETER FOR MULTIPRONGED CHARACTERIZATION OF SINGLE PARTICLES AND CELLS IN RESISTIVE-PULSE TECHNIQUE. **Zuzanna S. Siwy**, Laura Innes, Matthew Schiel, Ivan Vlassiouk, Kenneth J. Shea, Luke Theogarajan

8:15 AM–10:15 AM, BALLROOM III
Platform
Voltage-gated Na and Ca Channels

Co-Chairs
Jon Silva, Washington University in St. Louis
Bonnie Wallace, Birkbeck College, University of London, United Kingdom

2475-PLAT 8:15 AM
SODIUM ION COORDINATION IN THE SELECTIVITY FILTER OF A VOLTAGE-GATED SODIUM CHANNEL. **Claire E. Naylor**, Claire Bagneris, Paul G. DeCaen, David E. Clapham, B.A. Wallace

2476-PLAT 8:30 AM
CONDUCTION AND SELECTIVITY IN NA+ CHANNELS ANALYZED BY BIAS-EXCHANGE METADYNAMICS SIMULATIONS. **Simone Furini**, Paolo Barbini, Carmen Domene

2477-PLAT 8:45 AM
INACTIVATION VOLTAGE SENSOR S4 IN DOMAIN IV OF NAV1.2 CONTROLS IMMOBILIZATION OF S4 IN DOMAIN III AS SHOWN BY OMEGA CURRENTS. **Nikolaus G. Greeff**, Claudia Lehmann, Hansjakob Heldstab

2478-PLAT 9:00 AM
AUTOSOMAL RECESSIVE INHERITANCE OF CONGENITAL MYASTHENIC SYNDROME IS ASSOCIATED WITH SKELETAL MUSCLE SODIUM CHANNEL MUTATIONS. Karima Habbout, Serena Guiliano, Hugo Poulin, Damien Sternberg, Bruno Eymard, François Rivier, Raul Juntas Morales, Mohamed Chahine, Sophie Nicole, **Saïd Bendahhou**

2479-PLAT 9:15 AM
OPTICAL TRACKING OF NAV1.5 CONFORMATION REVEALS MOLECULAR MECHANISMS β1 SUBUNIT REGULATION. **Wandi Zhu**, Eric J. Hsu, Angela R. Schubert, Zoltan Varga, Jonathan R. Silva

2480-PLAT 9:30 AM
LIVE-CELL IMAGING OF MIDCHANNEL PROTEOLYSIS OF NEURONAL SURFACE L-TYPE CALCIUM CHANNELS. **Ioannis E. Michailidis**, Dan Zhang, Jian Yang

2481-PLAT 9:45 AM
MECHANISMS OF AUXILIARY α2δ-1 SUBUNIT REGULATION OF VOLTAGE-GATED CALCIUM CHANNELS. **Sihui Ma**, Henry M. Colecraft

2482-PLAT 10:00 AM
TOWARDS A COMMON STRUCTURE-FUNCTION FRAMEWORK FOR CALMODULIN REGULATION OF CALCIUM AND SODIUM CHANNELS. **Manu B. Johny**, Paul J. Adams, Billy Kang, David T. Yue

8:15 AM–10:15 AM, BALLROOM IV
Platform
Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence

Co-Chairs
Richard Thompson, University of Maryland
Rudra Kafle, University of Michigan

2483-PLAT 8:15 AM
RATIOMETRIC BIOLUMINESCENCE-BASED ZINC BIOSENSOR WITH NANOMOLAR SENSITIVITY. Evgenia G. Matveeva, Graham Franke, Leslie Bourne, Andrea K. Stoddard, Carol A. Fierke, **Richard B. Thompson**

2484-Plat 8:30 am
FROM CHARGE STATE TO ISOSURFACES TO SPECTRA: UNRAVELING THE MYSTERY OF LYS-TRP DIPEPTIDE FLUORESCENCE. **Azaria Eisenberg**, Laura Juszczak

2485-Plat 8:45 am
REAL-TIME QUANTIFICATION OF TIME-GATED AUTOFLUORESCENCE SPECTRUM SHAPE TO TRACK MITOCHONDRIAL METABOLISM. **Paul Urayama**, Jeff Maltas, Zac Long, Arthur Oliva, Jeff Folz, Lana Amer, Dylan Palo

2486-Plat 9:00 am
NANOSCALE INFRARED SPECTROSCOPY OF BIOLOGICAL SYSTEMS. **Eoghan Dillon**, Mike Lo, Kevin Kjoller, Qichi Hu, Roshan Shetty

2487-Plat 9:15 am
FLAVONOLS AS LUMINESCENT PROBES OF WATER ACTIVITY IN FOODS AND PHARMACEUTICALS. Siyu (Suzie) Wang, An N. Le, Maria G. Corradini, **Richard D. Ludescher**

2488-Plat 9:30 am
SENSITIVE DETECTION OF NAD^+/$NADP^+$ VIA STRONG COUPLING FLUORESCENCE FROM SILVER NANOCLUSTERS. Yufeng Yuan, Yan Chen, Kehan Huang, Haifeng Pan, Sanjun Zhang, **Jianhua Xu**

2489-Plat 9:45 am
NON-DESTRUCTIVE LABEL-FREE MONITORING OF DRUG INTAKE IN LIVE CELLS USING ATR FT-IR SPECTROSCOPY. **Pedro L. Fale**, K. L. Andrew Chan

2490-Plat 10:00 am
PHOTOBLEACHING CORRECTION IN FLUORESCENCE CORRELATION SPECTROSCOPY. **Rudra P. Kafle**, Molly R. Liebeskind, Jens-Christian Meiners

8:15 am–10:15 am, Room 307/308

Platform
Cell Mechanics, Mechanosensing, and Motility II

Co-Chairs
Begona Alvarez-Gonzalez, University of California, San Diego
Christian Franck, Brown University

2491-Plat 8:15 am
HIGH RESOLUTION, LARGE DEFORMATION 3D TRACTION FORCE MICROSCOPY. Jennet Toyjanova, Eyal Bar-Kochba, Cristina Lopez-Fagundo, Jonathan Reichner, Diane Hoffman-Kim, **Christian Franck**

2492-Plat 8:30 am
CORRELATIVE TRACTION FORCE MICROSCOPY AND FLUORESCENCE FLUCTUATION ANALYSIS OF MOLECULAR AGGREGATION AND COMPLEX FORMATION IN CELL ADHESIONS IN DISTINCT MICROENVIRONMENTS. **Alexia I. Bachir**, Jessica Zareno, Kristopher E. Kubow, Sangyoon Han, Kostadinos Moissoglu, Gaudenz Danuser, Enrico Gratton, Edward Plow, Alan R. Horwitz

2493-Plat 8:45 am
TRACKING ROTATION DURING LEUKOCYTE ROLLING REVEALS ASYMMETRIC ADHESION PROPERTIES. **Isaac T.S. Li**, Taekjip Ha, Yann R. Chemla

2494-Plat 9:00 am
CHROMATIN ASSOCIATION WITH THE NUCLEAR ENVELOPE SUPPORTS STABLE NUCLEAR MECHANICS. **Sarah M. Schreiner**, Peter K. Koo, Yao Zhao, Simon G. J. Mochrie, Megan C. King

2495-Plat 9:15 am
THREE-DIMENSIONAL BALANCE OF CORTICAL TENSION AND AXIAL CONTRACTILITY ENABLES FAST AMOEBOID MIGRATION. **Begona Alvarez-Gonzalez**, Ruedi Meili, Effie Bastounis, Richard A. Firtel, Juan C. Lasheras, Juan C. del Alamo

2496-Plat 9:30 am
MEASURING MECHANICAL FORCE DURING ZEBRAFISH DEVELOPMENT USING AN EXPRESSIBLE TENSION SENSOR. **Andrea Hamilton**, Victoria Wu, Alex Dunn, Ingmar Riedel-Kruse

2497-Plat 9:45 am
TWO DISTINCT REGIMES OF INTEGRIN MOLECULAR FORCES. **Xuefeng Wang**, Taekjip Ha

2498-Plat 10:00 am
DYNAMIC TRACTION FORCES OF HUMAN NEUTROPHIL ADHESION. **Steven J. Henry**, Christopher S. Chen, John C. Crocker, Daniel A. Hammer

8:15 am–10:15 am, Room 309/310

Platform
Intrinsically Disordered Proteins (IDP) and Aggregates

Co-Chairs
Alexandra Klinger, University of Pennsylvania
Mark Brown, Yale University

2499-Plat 8:15 am
SEQUENCE SPECIFIC RADIOLYTIC FOOTPRINTING STUDY OF MONOMER, OLIGOMERIC AND FIBRILLAR AMYLOID BETA (1-42). **Alexandra L. Klinger**, Janna Kiselar, Anant Paravastu, Terrone Rosenberry

2500-Plat 8:30 am
NOVEL METHODOLOGIES FOR THE COMPUTATIONAL STUDY OF PROTEIN AGGREGATION. **David Shorthouse**, Thomas Gallagher, Mark Sansom

2501-Plat 8:45 am
MULTISCALE SIMULATIONS PROVIDE MECHANISTIC INSIGHTS INTO THE EFFECTS OF SEQUENCE CONTEXTS ON EARLY-STAGE POLYGLUTAMINE-MEDIATED AGGREGATION. **Kiersten M. Ruff**, Rohit V. Pappu

2502-Plat 9:00 am
NEW INSIGHT INTO AMYLOID-β FIBRIL GROWTH AND ITS INHIBITION: KINETIC NETWORK ANALYSIS OF MULTI-SCALE MOLECULAR DYNAMICS SIMULATIONS. **Wei Han**, Klaus Schulten

2503-Plat 9:15 am
A ROLE FOR UNSTRUCTURED RESIDUES IN THE INDUCTION OF MEMBRANE PORATION BY PRE-AMYLOID ASSEMBLIES OF ISLET AMYLOID POLYPEPTIDE. **Mark A. Brown**, Elizabeth Rhoades, Andrew D. Miranker

2504-Plat 9:30 am
KEEPING IT DISORDERED: A NEW MECHANISM OF PROTEIN QUALITY CONTROL? **Priya R. Banerjee**, Ashok Deniz

2505-Plat 9:45 AM
HIV-TAT PROTEIN-AMYLOID BETA COMPLEX: FROM MOLECULAR INTERACTION TO INCREASED NEUROTOXICITY. **Alina Popescu Hategan**, Joseph Steiner, Mario A. Bianchet, Elena Karnaukhova, Emilios K. Dimitriadis, Avindra Nath

2506-Plat 10:00 AM
THE INTRINSICALLY DISORDERED MEMBRANE ENZYMES SELENOPROTEIN S AND SELENOPROTEIN K. Liu Jun, zhengqi Zhang, **Sharon Rozovsky**

8:15 AM–10:15 AM, Room 314/315

Platform
Membrane Active Peptides and Toxins

Co-Chairs
Patricia Clark, University of Notre Dame
B. Scott Perrin, NIH/NHLBI

2507-Plat 8:15 AM
MULTIPLE DRIVING FORCES CONTRIBUTE TO TRANSLOCATION OF AUTOTRANSPORTER VIRULENCE PROTEINS. Igor Drobnak, Esther Braselmann, **Patricia L. Clark**

2508-Plat 8:30 AM
DECIPHERING PROTEIN MEMBRANE INTERACTIONS INVOLVED IN THE TRANSLOCATION PROCESS OF A BACTERIAL TOXIN, THE ADENYLATE CYCLASE (CYAA) TOXIN FROM B. PERTUSSIS. Orso Subrini, Johanna Karst, Ana-Cristina Sotomayor-Pérez, Audrey Hessel, Edithe Selwa, Nicolas Sapay, Rémi Veneziano, Jonathan Pansieri, Joel Chopineau, Daniel Ladant, **Alexandre Chenal**

2509-Plat 8:45 AM
MOVING ALONG THE FREE ENERGY LANDSCAPE OF MEMBRANE INSERTION OF THE DIPHTHERIA TOXIN TRANSLOCATION DOMAIN. **Mauricio Vargas-Uribe**, Mykola V. Rodnin, Alexander Kyrychenko, Alexey S. Ladokhin

2510-Plat 9:00 AM
ASSESSING THE TRANSLOCATION OF CPPS USING FORCE MEASUREMENT, SINGLE MOLECULES AND EMULSIONS. **Pierre Soule**, Abdou Rachid Thiam, Frédéric Pincet, Alain Joliot, Sandrine Sagan, Sophie Cribier, Nicolas Rodriguez

2511-Plat 9:15 AM
SYNTHETIC MOLECULAR EVOLUTION APPROACH: DISCOVERY AND CHARACTERIZATION OF NOVEL ANTIVIRAL PEPTIDES. **Jing He**, Gregory Wiedman, Kalina Hristova, William C. Wimley

2512-Plat 9:30 AM
PORE FORMATION MECHANISMS OF MELITTIN-LIKE MEMBRANE-ACTIVE PEPTIDES. **Charles H. Chen**, Gregory Wiedman, Yukun Wang, Ayesha Khan, Martin B. Ulmschneider

2513-Plat 9:45 AM
THE CURVATURE INDUCTION OF SURFACE-BOUND ANTIMICROBIAL PEPTIDES PISCIDIN 1 AND PISCIDIN 3 VARIES WITH LIPID CHAIN LENGTH. **Bradley S. Perrin**, Alexander J. Sodt, Myriam L. Cotten, Richard W. Pastor

2514-Plat 10:00 AM
A GENERAL MECHANISM FOR OFF-TARGET EFFECTS: STUDIES WITH AMIODARONE AND OTHER ANTIARRHYTHMICS. **Radda Rusinova**, Roger E. Koeppe II, Olaf S. Andersen

9:00 AM–1:00 PM, Hall C

Biomolecular Discovery Dome

Visit this 3-D portable Dome, sponsored by the Public Affairs Committee, to see how difficult biophysical topics can be made accessible to high school students and the public. Short videos that communicate the excitement of looking at macromolecular complexes and understanding the molecular basis for life are being shown throughout the week.

10:30 AM–11:15 AM, Hall C

Coffee Break

12:00 PM–3:00 PM, Room 333

Publications Committee Meeting

1:00 PM–3:00 PM, Ballroom I

Symposium
Advances in Electron Microscopy

Chair
Yifan Cheng, University of California, San Francisco

2515-Symp 1:00 PM
CRYO-EM OF DNA REPAIR PROTEIN COMPLEXES. **Hong-Wei Wang**

2516-Symp 1:30 PM
STRUCTURAL MATURATION OF HEPATITIS B CORE PROTEIN CAPSIDS. **Bettina Boettcher**

2517-Symp 2:00 PM
SINGLE PARTICLE CRYO-EM OF CALCIUM RELEASE CHANNELS. **Irina I. Serysheva**

2518-Symp 2:30 PM
SINGLE PARTICLE CRYOEM OF INTEGRAL MEMBRANE PROTEINS. **Yifan Cheng**

1:00 PM–3:00 PM, Ballroom II

Symposium
Catalysis in the Membrane

Chair
Jochen Zimmer, University of Virginia

2519-Symp 1:00 PM
ZMPSTE24 AND PREMATURE AGEING: A UNIQUE INTEGRAL MEMBRANE METALLOPROTEASE WITH A HOLE IN THE MIDDLE. **Liz Carpenter**

2520-Symp 1:30 PM
THE MECHANISM OF RHOMBOID INTRAMEMBRANE PROTEASE. **Ya Ha**

2521-Symp 2:00 PM
CLEAVAGE-DEPENDENT AND INDEPENDENT ROLE OF THE SERINE PROTEASE CAP1/PRSS8. **Edith Hummler**

2522-Symp 2:30 PM
A MOLECULAR DESCRIPTION OF CELLULOSE BIOSYNTHESIS. **Jochen Zimmer**

1:00 PM–3:00 PM, BALLROOM III

Platform
Protein-Lipid Interactions III

Co-Chairs
Renee JiJi, University of Missouri
James Sturgis, Aix-Marseille Université, France

2523-PLAT 1:00 PM
ELUCIDATING THE INTERACTION OF 5-LIPOXYGENASE AND FLAP. **Ramakrishnan B.Kumar**, Hans Hebert, Caroline Jegerschöld

2524-PLAT 1:15 PM
DESTABILIZING AQUAPORIN Z ASSEMBLY: EFFECTS ON STRUCTURE, FUNCTION AND DYNAMICS. Victoria Schmidt, Pierre Hubert, Valerie Prima, **James Sturgis**

2525-PLAT 1:30 PM
THE ROLE OF LIPID ENVIRONMENT ON PEPTIDE STRUCTURE AND FOLDING. **Renee D. JiJi**, Jian Xiong, Anahita Zare, Jason W. Cooley

2526-PLAT 1:45 PM
INVESTIGATION ON THE INTERACTION BETWEEN PLEXIN INTRACELLULAR PLUS TRANSMEMBRANE DOMAINS WITH GTPASES AND WITH THE LIPID BILAYER USING ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Liqun Zhang**, Buck Matthias

2527-PLAT 2:00 PM
ROLE OF PHOSPHOLAMBAN MUTATIONS IN PROTEIN-PROTEIN INTERACTIONS. **Vitaly V. Vostrikov**, Kailey J. Soller, Kim N. Ha, Sarah E. Nelson, Tata Gopinath, Gianluigi Veglia

2528-PLAT 2:15 PM
SINGLE-MOLECULE FRET DETECTION OF GXXXG-MEDIATED TRANSMEMBRANE HELIX-HELIX INTERACTIONS. **Yoshiaki Yano**, Kotaro Kondo, Katsumi Matsuzaki

2529-PLAT 2:30 PM
SPONTANEOUS RECONSTITUTION OF BOVINE RHODOPSIN INTO ARTIFICIAL MEMBRANES. **Udeep Chawla**, Wan Zheng, Liangju Kuang, Yunjiang Jiang, Suchithranga M. D. C. Perera, Michael F. Brown, Hongjun Liang

2530-PLAT 2:45 PM
COARSE-GRAINED MODELING OF MINUTE-TIMESCALE CO-TRANSLATIONAL MEMBRANE PROTEIN INTEGRATION VIA THE SEC-TRANSLOCON. **Michiel J.M. Niesen**, Thomas F. Miller III

1:00 PM–3:00 PM, BALLROOM IV

Platform
Protein Folding and Chaperones

Co-Chairs
Wilfredo Colon, Rensselaer Polytechnic Institute
Liliana Quintanar, Cinvestav, Mexico

2531-PLAT 1:00 PM
PROTEOMICS-LEVEL IDENTIFICATION OF DEGRADATION-RESISTANT PROTEINS PROVIDE INSIGHT ABOUT THEIR POTENTIAL ROLES IN ORGANISMAL ADAPTATION TO STRESS. Ke Xia, Jennifer Wilcox, Kayleigh Kobovitch, Brian Ortiz, Areeg Khalil, **Wilfredo Colon**

2532-PLAT 1:15 PM INTERNATIONAL TRAVEL AWARDEE
SURPRISING ABUNDANCE OF MISFOLDING DURING REFOLDING OF MULTIDOMAIN PROTEINS. **Alessandro Borgia**, Katherine R. Kemplen, Madeleine B. Borgia, Robert B. Best, Andrea Soranno, Daniel Nettels, Bengt Wunderlich, Jane Clarke, Benjamin Schuler

2533-PLAT 1:30 PM
TWO-DIMENSIONAL FLUORESCENCE LIFETIME CORRELATION SPECTROSCOPY ON THE FOLDING MECHANISM OF B DOMAIN OF PROTEIN A. **Takuhiro Otosu**, Kunihiko Ishii, Hiroyuki Oikawa, Munehito Arai, Satoshi Takahashi, Tahei Tahara

2534-PLAT 1:45 PM
CONFORMATIONAL DYNAMICS OF MOLECULAR CHAPERONES INVESTIGATED BY SINGLE MOLECULE MULTICOLOR FÖRSTER RESONANCE ENERGY TRANSFER. **Lena Voith von Voithenberg**, Anders Barth, Swati Tyagi, Christine Koehler, Edward A. Lemke, Don C. Lamb

2535-PLAT 2:00 PM
COPPER AND ZINC BINDING SPECIFICALLY INDUCE THE AGGREGATION OF HUMAN Γ-D CRYSTALLIN. **Liliana Quintanar**, Evgene Serebryany, Jose Antonio Domínguez-Calva, Cameron Haasse-Pettingell, Jonathan A. King

2536-PLAT 2:15 PM EDUCATION TRAVEL AWARDEE
ROLE OF PORE LOOPS IN THE MECHANISM OF POLYPEPTIDE TRANSLOCATION BY A AAA+ PROTEASE MACHINE. **Piere Rodriguez-Aliaga**, Luis E. Ramirez, Frank Kim, Andreas Martin, Carlos Bustamante

2537-PLAT 2:30 PM
(DIS)ASSEMBLY AND STRUCTURAL STABILITY OF MTHSP60 AND ITS PRECURSOR NAÏVE FORM. **Dario Spigolon**, Silvia Vilasi, Maria Rosalia Mangione, PierLuigi San Biagio, Donatella Bulone

2538-PLAT 2:45 PM
CHARACTERIZING THE CONFORMATIONAL ENSEMBLES OF THE E. COLI HSP70, DNAK REVEALS THE ROLE OF THE INTERMEDIATE STATE. **Alex Liqi Lai**, Mandy Blackburn, Eugenia M. Clerico, Peter Borbat, Lila M. Gierasch, Jack H. Freed

1:00 PM–3:00 PM, ROOM 307/308

Platform
Excitation-Contraction Coupling

Co-Chairs
Benjamin Prosser, University of Pennsylvania
William Louch, University of Oslo, Norway

2539-PLAT 1:00 PM
IDENTIFICATION OF A CALSEQUESTRIN-1 MUTATION IN A HUMAN VACUOLAR MYOPATHY. **Daniela Rossi**, Bianca Vezzani, Valeria Del Re, Virginia Barone, Simone Spinozzi, Alessandra Gamberucci, Stefania Lorenzini, Cecilia Paolini, Feliciano Protasi, Carlo Reggiani, Vincenzo Sorrentino, Lucia Galli

2540-PLAT 1:15 PM
MICROTUBULE DETYROSINATION MODULATES STRETCH-DEPENDENT X-ROS SIGNALING IN HEART. Patrick G. Robison, Jaclyn P. Kerr, Alexey I. Bogush, Daniel A. Harki, Christopher W. Ward, **Benjamin L. Prosser**

2541-PLAT 1:30 PM
SERCA LOCATED IN THE JUNCTIONAL SR SHAPES CALCIUM RELEASE IN CARDIAC MYOCYTES. **Terje R. Kolstad**, Mathis K. Stokke, Espen Stang, Sverre H. Brorson, Louch E. William, Ole M. Sejersted

2542-PLAT 1:45 PM
LARGE AMPLITUDE RATE-DEPENDENT MECHANICAL ALTERNANS MAY PRECEDE ARRHYTHMOGENESIS IN HUMAN HEART FAILURE AND ARE LINKED TO ELECTRICAL ALTERNANS VIA ABNORMAL CALCIUM HANDLING.
Melanie Zile, Natalia Trayanova

2543-PLAT 2:00 PM
NA^+/H^+ EXCHANGE BLOCKERS REVEAL THE EXISTENCE OF A SKELETAL MUSCLE CA^{2+}/H^+ EXCHANGER, WHICH IS ALTERED IN MALIGNANT HYPERTHERMIA MUSCLE CELLS.
Gaelle Robin, Francisco Altamirano, Eric Esteve, Isaac N. Pessah, Paul D. Allen, Jose R. Lopez

2544-PLAT 2:15 PM
CALCIUM SPARKLETS IN INTACT MAMMALIAN SKELETAL MUSCLE FIBERS EXPRESSING THE EMBRYONIC CAV1.1 SPLICE VARIANT. Beatrix Dienes, Nasreen Sultana, Janos Vincze, Monika Sztretye, Peter Szentesi, Bernhard E. Flucher, **Laszlo Csernoch**

2545-PLAT 2:30 PM
CALCIUM CHANNEL DYSFUNCTION IN A MUTANT MOUSE MODEL OF MALIGNANT HYPERTHERMIA(CAV1.1 R174W). Donald Beqollari, Christin F. Romberg, Wei Feng, Jose R. Lopez, Manuela Lavorato, Stefano Perni, Philip M. Hopkins, Clara Franzini-Armstrong, Isaac N. Pessah, Paul D. Allen, Kurt G. Beam, **Roger A. Bannister**

2546-PLAT 2:45 PM
SPATIALLY LOCALIZED DISRUPTIONS OF VOLTAGE ACTIVATED CALCIUM RELEASE IN MTM1-DEFICIENT MUSCLE FIBERS. Candice Kutchukian, Karine Poulard, Anna Buj-Bello, **Vincent Jacquemond**

1:00 PM–3:00 PM, ROOM 309/310

Platform
Mechanosensation

Co-Chairs
Camilo Andres Aponte-Santamaria, Heidelberg Institute for Theoretical Studies (HITS), Germany
Anthony Peng, Stanford University

2547-PLAT 1:00 PM
THE PRIMARY CILIUM IS A SELF-ADAPTABLE, INTEGRATING NEXUS FOR MECHANICAL STIMULI AND CELL SIGNALING.
An M. Nguyen, Yuan N. Young, **Christopher R. Jacobs**

2548-PLAT 1:15 PM
MECHANOSENSITIVE VON WILLEBRAND FACTOR PROTEIN-PROTEIN INTERACTIONS REGULATE HEMOSTASIS.
Camilo A. Aponte Santamaría, Volker Huck, Sandra Posch, Agnieszka K. Bronowska, Sandra Grässle, Maria A. Brehm, Tobias Obser, Reinhard Schneppenheim, Peter Hinterdorfer, Stefan W. Schneider, Carsten Baldauf, Frauke Gräter

2549-PLAT 1:30 PM
STRUCTURAL STUDY OF A NOVEL PARTIAL CALCIUM-FREE LINKER AND A POSITIVELY SELECTED VARIATION IN PROTOCADHERIN-15: IMPLICATIONS FOR HEARING AND CELL ADHESION. **Robert E. Powers**, Rachelle Gaudet, Marcos Sotomayor

2550-PLAT 1:45 PM
CALCIUM INFLUX THROUGH TRPV1 INHIBITS PIEZO CHANNELS VIA PHOSPHOINOSITIDE DEPLETION.
Istvan Borbiro, Doreen Badheka, Tibor Rohacs

2551-PLAT 2:00 PM
PIEZO1 TRANSDUCES EXTRACELLULAR MATRIX MECHANICAL CUES TO DIRECT HUMAN NEURAL STEM CELL FATE. **Medha M. Pathak**, Jamison L. Nourse, Truc Tran, Jennifer Hwe, Janahan Arulmoli, Dai Trang T. Le, Elena Bernardis, Lisa A. Flanagan, Francesco Tombola

2552-PLAT 2:15 PM
MECHANOSIGNALLING OF FOCAL ADHESION KINASE.
Jing Zhou, Camilo Aponte-Santamaria, Agnieszka Bronowska, Frauke Gräter

2553-PLAT 2:30 PM
MODULATION OF RAT AUDITORY HAIR CELL MECHANOTRANSDUCTION CHANNEL RESTING OPEN PROBABILITY IMPLICATES A ROLE FOR THE LIPID BILAYER.
Anthony Peng, Radhakrishnan Gnanasamdandam, Frederick Sachs, Anthony Ricci

2554-PLAT 2:45 PM
PROBING THE STRUCTURE AND FUNCTION OF TMC1 IN SENSORY HAIR CELLS USING MUTAGENESIS AND CYSTEINE MODIFICATION. **Xiao-Ping Liu**, Bifeng Pan, Yukako Asai, Kyoto Kurima, Andrew J. Griffith, Jeffrey R. Holt

1:00 PM–3:00 PM, ROOM 314/315

Platform
DNA Replication and Transcription

Co-Chairs
Enrico Gratton, University of California, Irvine
Laura Finzi, Emory University

2555-PLAT 1:00 PM INTERNATIONAL TRAVEL AWARDEE
INITIATION OF ASYMMETRIC ROLLING-CIRCLE PLASMID REPLICATION BY REPD STUDIED USING MAGNETIC TWEEZERS. **Algirdas Toleikis**, Simone Kunzelmann, Gregory I. Mashanov, Martin R. Webb, Justin E. Molloy

2556-PLAT 1:15 PM
MECHANISTIC STUDIES OF DNA-PROTEIN INTERACTIONS IN BACTERIOPHAGE T4 DNA REPLICATION COMPLEXES AT SINGLE-BASE RESOLUTION. **Davis Jose**, Lee Wonbae, Gillies P. John, Marcus H. Andrew, Peter H. von Hippel

2557-PLAT 1:30 PM
DNA TRANSLOCATIONS IN REAL-TIME: INSIGHTS INTO NON-HOMOLOGOUS END JOINING PATHWAY.
Andrea Candelli, Ineke Brouwer, Gerrit Sitters, Stephanie Heerema, Mauro Modesti, Erwin J.G. Peterman, Gijs J.L. Wuite

2558-PLAT 1:45 PM
CORRELATIVE NANOMANIPULATION AND COLOCALIZATION OF SINGLE-MOLECULES TO STUDY TRANSCRIPTION-COUPLED DNA REPAIR. **Evan T. Graves**, Camille Duboc, Jun Fan, Terence Strick

2559-PLAT 2:00 PM
FUNCTIONAL IMPLICATIONS OF THE RECQ HELICASE - TOPOISOMERASE III - SSB COMPLEX: INSIGHTS FROM SINGLE MOLECULE MEASUREMENTS. **Maria Mills**, Yeonee Seol, Keir Neuman

2560-Plat 2:15 pm
TRANSCRIPTION KINETICS HETEROGENEITY OF HIGHLY MOBILE IDENTICAL GENES REVEALED BY SIMULTANEOUS MEASUREMENT AT THE SINGLE CELL LEVEL. **Enrico Gratton**, Paolo Annibale

2561-Plat 2:30 pm
DYNAMICS OF GREB INTERACTIONS WITH RNA POLYMERASE: HOW A REGULATORY PROTEIN MAY PATROL THE GENOME FOR TRANSCRIPTION COMPLEXES TO RESCUE. **Larry E. Tetone**, Larry J. Friedman, Melisa L. Osborne, Harini Ravi, Scotty Kyzer, Rachel A. Mooney, Robert Landick, Jeff Gelles

2562-Plat 2:45 pm
A SINGLE MOLECULE PERSPECTIVE OF ELONGATION BY RNA POLYMERASE I. Suleyman Ucuncuoglu, David A. Schneider, David D. Dunlap, **Laura Finzi**

1:00 pm–3:00 pm, Room 316/317

Platform
Actin Filaments and Microtubules

Co-Chairs
Peter Chung, University of California, Santa Barbara
Ekaterina Grishchuk, University of Pennsylvania

2563-Plat 1:00 pm
DIRECT MONOMER-BY-MONOMER OBSERVATION OF GELSOLIN-MEDIATED ACTIN FILAMENT NUCLEATION. **Alvaro H. Crevenna**, Maria Hoyer, Don C. Lamb

2564-Plat 1:15 pm
ACTIN FILAMENT NUCLEATION IS INFLUENCED BY ELECTROSTATIC INTERACTIONS WITH THE BNI1P FORMIN FH2 DOMAIN. **Joseph L. Baker**, Naomi Courtemanche, Daniel L. Parton, Martin McCullagh, Thomas D. Pollard, Gregory A. Voth

2565-Plat 1:30 pm
THREE DIMENSIONAL RECONSTRUCTION OF THE NATIVE CARDIAC THIN FILAMENT DECORATED WITH MYOSIN-BINDING PROTEIN C FRAGMENT: IMPLICATIONS FOR CARDIAC REGULATION. Samantha Harris, Betty Virok, Howard White, **Vitold E. Galkin**

2566-Plat 1:45 pm
NEW MODELS FOR REGULATION OF VINCULIN BY ACTIN AND PHOSPHOLIPIDS. **Peter M. Thompson**, Hyunna T. Lee, Laura Kim, Srinivas Ramachandran, Arpit Tandon, Raul Mendez-Giraldez, Gregory M. Alushin, Nikolay V. Dokholyan, Sharon L. Campbell

2567-Plat 2:00 pm
TOWARDS A MODEL OF THE TAU-TUBULIN COMPLEX. **Xiaohan Li**, Jacob Culver, Elizabeth Rhoades

2568-Plat 2:15 pm
MULTIPLE REVERSIBLE MOLECULAR EVENTS AT THE MICROTUBULE TIP DRIVE THE AGE-DEPENDENT MICROTUBULE CATASTROPHES. Pavel Zakharov, Nikita Gudimchuk, Vladimir Voevodin, Alexander Tikhonravov, Fazly I. Ataullakhanov, **Ekaterina L. Grishchuk**

2569-Plat 2:30 pm
INTRINSICALLY DISORDERED MAP TAU MEDIATES BOTH SHORT-RANGE ATTRACTION AND LONG-RANGE REPULSION BETWEEN MICROTUBULES. **Peter J. Chung**, M.C. Choi, Uri Raviv, Herb P. Miller, Les Wilson, Stuart C. Feinstein, Cyrus R. Safinya

2570-Plat 2:45 pm
EB1: A HIGHLY DYNAMIC AND DIFFUSIVE MICROTUBULE +TIP-TRACKING PROTEIN. **Benjamin J. Lopez**, Megan T. Valentine

10:30 AM-12:30 PM, Hall C

WEDNESDAY POSTER SESSIONS

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. 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

Board Numbers	Category
B1–B29	Protein Structure and Conformation IV
B30–B60	Protein Folds
B61–B76	Protein Stability
B77–B98	Protein Assemblies II
B99–B116	Protein Dynamics and Allostery III
B117–B134	Enzymes and Protein Dynamics II
B135–B146	Transcription
B147–B174	Chromatin and the Nucleoid
B175–B200	Membrane Physical Chemistry III
B201–B227	Membrane Active Peptides and Toxins II
B228–B243	Proteins, Lipids, and Small Molecules
B244–B269	Protein-Lipid Interactions III
B270–B292	Mechanosensation
B293–B299	Calcium Signaling II
B300–B316	Intracellular Calcium Channels and Calcium Sparks and Waves II
B317–B322	Nucleo-Cytoplasmic Transport
B323–B350	Voltage-gated Na Channels
B351–B370	Voltage-gated Ca Channels
B371–B400	Ion Channels, Pharmacology, and Disease
B401–B428	Skeletal Muscle Mechanics, Structure, and Regulation
B429–B444	Cardiac Muscle Regulation II
B445–B449	Cytoskeletal-based Intracellular Transport
B450–B467	Bacterial Mechanics, Cytoskeleton, and Motility
B468–B485	Energy Transduction, Electron and Proton Transfer, and Light Harvesting
B486–B514	Mitochondria in Cell Life and Death
B515–B530	Cellular Signaling and Metabolic Networks
B531–B542	Magnetic Resonance Spectroscopy, Imaging, and EPR Spectroscopy
B543–B559	Electron Microscopy, Diffraction, and Scattering Techniques
B560–B588	Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence
B589–B611	Bioengineering
B612–B617	Engineered Biosurfaces
B618–B629	Biosurface Interactions

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

Protein Structure and Conformation IV (Boards B1-B29)

2571-Pos Board B1
BIOCHEMICAL STATE OF THE ARYL CARRIER PROTEIN DIRECTS SEQUENTIAL DOMAIN-DOMAIN INTERACTIONS IN THE YERSINIABACTIN SYNTHETASE SYSTEM.
Andrew C. Goodrich, Dominique P. Frueh

2572-Pos Board B2 EDUCATION TRAVEL AWARDEE
SYSTEMATIC PERTURBATION OF PROTEIN:PROTEIN INTERFACES MAY AID IN FUNCTIONAL CLASSIFICATION. **Cameron J. Jones**, Ambreen Qureshi, Sanjana Sudarshan, Brian Beck

2573-Pos Board B3
STRUCTURAL ANALYSIS OF LIPOCALIN-TYPE PROSTAGLANDIN D SYNTHASE COMPLEXED WITH PROSTAGLANDIN J_2. **Yuta Nakahata**, Shigeru Shimamoto, Tadayasu Ohkubo, Kosuke Aritake, Yoshihiro Urade, Yuji Hidaka

2574-Pos Board B4
THE ORIGIN OF CDR H3 STRUCTURAL DIVERSITY.
Brian D. Weitzner, Roland L. Dunbrack, Jeffrey J. Gray

2575-Pos Board B5
BIOPHYSICAL, BIOCHEMICAL AND FUNCTIONAL STUDIES OF A NOVEL FUNGAL TEC1 PARALOG. **Lenka Slachtova**, Matthew Lohse, Sandy Johnson, Sudha Veeraraghavan

2576-Pos Board B6
STRUCTURE AND MOLECULAR DYNAMICS OF THE IG58/58 DOMAINS OF OBSCURIN. **Tracy A. Caldwell**, Nathan T. Wright, Rachel A. Policke, Isaiah Sumner, Christopher E. Berndsen

2577-Pos Board B7
STRUCTURAL STUDIES OF OBSCURIN IG2. **Matthew C. Oehler**, Nathan T. Wright, Christopher E. Berndsen

2578-Pos Board B8
THE UNUSUAL HEME COORDINATION OF THB1, A HEMOGLOBIN FROM CHLAMYDOMONAS REINHARDTII. **Selena L. Rice**, Matt R. Preimesberger, Jamie L. Schlessman, Lauren E. Boucher, Jurgen Bosch, Juliette T.J. Lecomte

2579-Pos Board B9
CHARACTERIZING STERIC LIMITATIONS OF THE HEME POCKET IN THE GAS-BINDING TT H-NOX PROTEIN USING SITE-SPECIFIC INCORPORATION OF UNNATURAL AMINO ACIDS. **Lukasz T. Olenginski**, Christine M. Phillips-Piro

2580-Pos Board B10
SINGLE MOLECULE FÖRSTER RESONANCE ENERGY TRANSFER STUDIES OF THE EFFECT OF DEGLYCOSYLATION ON THE STRUCTURE OF IMMUNOGLOBULIN G.
Cathrine A. Southern, Mark S. Piraino, Jihad Aburas, Alan J. Mlotkowski

2581-Pos Board B11
PROBING STRUCTURAL IMPLICATIONS OF UNNATURAL AMINO ACID INCORPORATION INTO GREEN FLUORESCENT PROTEIN. **Nicole Maurici**, Andrew Dippel, Melanie Liskov, Scott Brewer, Christine Phillips-Piro

2582-Pos Board B12 INTERNATIONAL TRAVEL AWARDEE
ENGINEERING THE CYSTEINE MOTIF 'CXXC' INTO A PROTEIN IMPARTS IT NOVEL PROPERTIES. **Likhesh Sharma**

2583-Pos Board B13
DECIPHERING THE GLYCOSYLATION CODE. **Christopher Ellis**, Will Noid

2584-Pos Board B14
INTERACTIONS BETWEEN THROMBOMODULIN AND COMPLEMENT COMPONENT C3 STUDIED BY FLUORESCENCE RESONANCE ENERGY TRANSFER.
Gavin Palowitch, Caroline Gambone, Julia R. Koeppe

2585-Pos Board B15
STRUCTURAL ANALYSIS OF THE ECTODOMAIN OF THE ANTI-VIRAL PROTEIN BST-2. **Kelly E. Du Pont**, Aidan M. McKenzie, Samantha B. Chinn, Christopher E. Berndsen

2586-Pos Board B16
MACROMOLECULAR CROWDING OF A PROTEIN COMPLEX BY SMALL ANGLE NEUTRON SCATTERING AND SMALL ANGLE X-RAY SCATTERING. **Ajith Rajapaksha**, Christopher B. Stanley, Brian A. Todd

2587-Pos Board B17
CONFORMATIONAL DYNAMICS AND FUNCTIONAL ASYMMETRY OF ABCE1, A RIBOSOME RECYCLING PROTEIN. **Hadas Leonov**, Bert L. de Groot, Helmut Grubmueller

2588-Pos Board B18 INTERNATIONAL TRAVEL AWARDEE
MOVING MACROMOLECULAR SURFACES UNDER HYDROPHOBIC/HYDROPHILIC STRESS. **David V. Svintradze**

2589-Pos Board B19
DYNAMICS OF GAL80P IN THE GAL80P-GAL3P COMPLEX DIFFER SIGNIFICANTLY FROM THE DYNAMICS IN THE GAL80P-GAL1P COMPLEX: IMPLICATIONS FOR THE HIGHER SPECIFICITY OF GAL3P TOWARDS TRANSCRIPTIONAL INDUCTION OF GAL GENES. **Sanjay K. Upadhyay**, Jakob P. Ulmschneider

2590-Pos Board B20
DEATH EFFECTOR DOMAIN FLEXIBILITY IN MEDIATING PROTEIN-PROTEIN INTERACTIONS. **Yufeng Wei**

2591-Pos Board B21
INHIBITION OF GPR18 THROUGH DOCKING OF KNOWN ANTAGONISTS USING A HOMOLOGY MODEL. **Jenn L. Reynolds**

2592-Pos Board B22
TARGETING APICOMPLEXAN ATG8 FOR RATIONAL DRUG DESIGN. **Alexia S. Miller**, Adelaide U.P. Hain, Jürgen Bosch

2593-Pos Board B23
PROBING CONFORMATIONAL CHANGE IN THE FIRST ACTIN-BINDING DOMAIN OF DYSTROPHIN. **Michael E. Fealey**, David D. Thomas

2594-Pos Board B24
THE INTERACTION BETWEEN L-PGDS AND ITS SUBSTRATES OR PRODUCTS, AS DETERMINED BY ISOTHERMAL TITRATION CALORIMETRY AND NMR. **Shigeru Shimamoto**, Yutaro Fukuda, Takahiro Maruno, Yuji Kobayashi, Tadayasu Ohkubo, Kosuke Aritake, Yoshihiro Urade, Yuji Hidaka

2595-Pos Board B25
INVESTIGATING INTERACTIONS BETWEEN THE LECTIN-LIKE DOMAIN OF THROMBOMODULIN AND COMPLEMENT COMPONENT 3. **Daniel DeHelian**, Thomas Holt, Nathan Fritzinger, Julia R. Koeppe

2596-Pos Board B26
PROBING BUFFER-SPECIFIC EFFECTS ON NUCLEOTIDE BINDING TO RECA USING DIFFERENCE FTIR. **Joshua E. Temple**, Gina MacDonald

2597-Pos Board B27
REVISITING ALLOSTERY IN THE LAC REPRESSOR PROTEIN. **Matthew A. Stetz**, Marie V. Carter, Kathleen G. Valentine, A. Joshua Wand

2598-Pos Board B28
ACTIVATION OF PHOSPHOLIPASE C-β BY Gβγ INVOLVES INTERACTIONS WITH THE PH-EF HAND DOMAIN INTERFACE. **Ganesh Kadamur**, Elliott M. Ross

2599-Pos Board B29
LOCALIZATION OF SMALL LIGANDS IN A METABOLIC PROTEIN COMPLEX USING CRYO-ELECTRON MICROSCOPY. **Mario J. Borgnia**, Soojay Banerjee, Prashant Rao, Alberto Bartesaghi, Allan Merk, Jason Pierson, Sriram Subramaniam, Jacqueline Milne

Protein Folds (Boards B30-B60)

2600-Pos Board B30
UREA INTERACTIONS WITH NATIVE AND UNFOLDED PROTEINS: A VOLUMETRIC STUDY. **Ikbae Son**

2601-Pos Board B31
PREDICTION OF CO-TRANSLATIONAL PROTEIN FOLDING IN LIVING CELLS. **Edward P. O'Brien**, Daniel A. Nissley

2602-Pos Board B32
ELUCIDATING THE FOLDING PATHWAYS OF CALCIUM-BINDING PROTEINS. **Apurva Shah**, Daniel Goldman, Lisa Alexander, Carlos Bustamante

2603-Pos Board B33
THE COMPUTATIONAL STUDIES OF CO-TRANSLATIONAL PROTEIN FOLDING. **Tomasz Wlodarski**, Chris Waudby, Chan Sammy, Michele Vendruscolo, John Christodoulou

2604-Pos Board B34
RARE EXAMPLE OF A PROTEIN WHERE AN ISOLATED DOMAIN IS MORE STABLE THAN THE FULL-LENGTH. Swati Bandi, Surinder Singh, **Krishna Mallela**

2605-Pos Board B35 CPOW TRAVEL AWARDEE
GLOBAL CONTACTS DIRECT HYDOPHOBIC COLLAPSE IN PROTEIN FOLDING. **Loan K. Huynh**, Chris Neale, Régis Pomès, Hue Sun Chan

2606-Pos Board B36
CHEMICAL REGULATION OF DISULFIDE COUPLED FOLDING OF DISULFIDE RICH PEPTIDE, HEPCIDIN, AND ITS PRECURSOR PROTEIN. **Yuji Hidaka**, Kana Ohshige, Takeyoshi Nakanishi, Shigeru Shimamoto

2607-Pos Board B37
SPECTROSCOPIC AND SAXS STUDIES OF HUMAN CYSTATIN C MUTANTS - EARLY STAGES OF AMYLOID FORMATION PROCESS. **Maciej Kozak**, Zuzanna Pietralik, Aneta Szymanska, Michał Taube

2608-Pos Board B38
DIFFERENTIAL EFFECTS ON LIGHT CHAIN AMYLOID FORMATION DEPEND ON MUTATIONS AND TYPE OF GLYCOSAMINOGLYCANS. **Luis M. Blancas-Mejia**, Jared A. Hammernik, Marta Marin-Argany, Marina Ramirez-Alvarado

2609-Pos Board B39
SMALL ANGLE NEUTRON AND X-RAY SCATTERING OF PLASMA GLYCOPROTEIN INTERACTIONS WITH LIPID MEMBRANES. **Luis A. Palacio**, Christopher B. Stanley, Soenke Seifert, Ryan Lybarger, Horia I. Petrache

2610-Pos Board B40
ANALYTICAL CHARACTERIZATION OF FGF SIGNALING COMPLEX. **Jason N. Payne**, Tulsi Modi, Oluwadamilola Filani, Raja Murthy

2611-Pos Board B41
INTERACTIONS BETWEEN PAIRS OF CHARGES BURIED IN THE HYDROPHOBIC INTERIOR OF A PROTEIN ARE UNEXPECTEDLY WEAK. **Aaron Robinson**, Andrea Theodoru, Jamie Schlessman, Bertrand Garcia-Moreno E

2612-Pos Board B42
A REASON FOR LONG TALES. **Kathryn R. Geiger**, Doug Barrick

2613-Pos Board B43
EFFECT OF GAMMA RADIATION ON THE STRUCTURAL AND FUNCTIONAL INTEGRITY OF IGG. Claudia C. Smeltzer, Nina N. Lukinova, Nicole D. Towcimak, David Mann, William N. Drohan, **Yuri V. Griko**

2614-Pos Board B44
PHOTOACOUSTIC CALORIMETRY STUDIES OF FERRIC CYTOCHROME-C FOLDING USING AN NO PHOTO-TRIGGER. **Tarah A. Word**, Randy W. Larsen

2615-Pos Board B45
SIMULATION OF PRESSURE-INDUCED AND TEMPERATURE-INDUCED DENATURATION OF PHOSPHOGLYCERATE KINASE. **Jianfa Chen**, Margaret S. Cheung

2616-Pos Board B46
INTERMOLECULAR INTERACTIONS IN HIGHLY CONCENTRATED PROTEIN SOLUTIONS UPON COMPRESSION AND THE ROLE OF THE SOLVENT. Sebastian Grobelny, **Mirko Erlkamp**, Johannes Möller, Metin Tolan, Roland Winter

2617-Pos Board B47
ATOMISTIC AND COARSE-GRAINED MD SIMULATIONS OF THE INTRINSICALLY DISORDERED BACILLUS SUBTILIS RIBONUCLEASE P PROTEIN. **Cecilia G. Rambarat**

2618-Pos Board B48
THE DOCK-AND-COALESCE MECHANISM FOR THE ASSOCIATION OF INTRINSICALLY DISORDERED WASP WITH THE CDC42 GTPASE. **Li Ou**, Megan Matthews, Xiaodong Pang, Huan-Xaing Zhou

2619-Pos Board B49
COOPERATIVE HELIX FORMATION IN THE (AAQAA)3 PEPTIDE OBTAINED WITH THE DRUDE POLARIZABLE FORCE FIELD. **Jing Huang**, Alexander D. MacKerell

2620-Pos Board B50
DEPENDENCE OF INTERNAL FRICTION ON NATIVE TOPOLOGY. **Wenwei Zheng**, David de Sancho, Travis Hoppe, Robert B. Best

2621-Pos Board B51
THERMODYNAMICS OF β-STRUCTURES FROM MOLECULAR DYNAMICS SIMULATIONS. **Anthony Hazel**, James C. Gumbart

2622-Pos Board B52
USING KINETIC NETWORK MODELS TO UNDERSTAND FOLDING MECHANISMS OF GB1 HAIRPIN AND ITS TRPZIP VARIANTS. **Vincent A. Voelz**, Asghar Razavi

2623-Pos Board B53
INFLUENCE OF ZINC-BINDING ON FOLDING AND DYNAMICS OF ZINC FINGER PROTEINS: IN SILICO. **Ryan Godwin**, William Gmeiner, Freddie Salsbury

2624-Pos Board B54
FOLDING MECHANISM OF PROTEINS IM7 AND IM9, FROM COMPUTER SIMULATIONS IN A REALISTIC ATOMISTIC FORCE FIELD. **Fang Wang**, Giorgia Cazzolli, Patrick Wintrode, Pietro Faccioli

2625-Pos Board B55
MELTDOWN - A TOOL FOR CLASSIFICATION AND ANALYSIS OF DSF DATA. Michael Jayne, Marko Ristic, Nicholas Rosa, Shane A. Seabrook, Janet Newman, David Lovell, **Del Lucent**

2626-Pos Board B56
PHYSICS BASED STRUCTURE REFINEMENT IN CASP11 USING GEOMETRIC UNFOLDING AND HIERARCHICALLY RESTRAINED REPLICA EXCHANGE MOLECULAR DYNAMICS. **Avishek Kumar**, Paul Campitelli, Sefika Banu Ozkan, Michael F. Thorpe

2627-Pos Board B57
ROLE OF SIDE CHAIN SIZE IN THE FORMATION OF SECONDARY STRUCTURES IN MODEL PEPTIDES. **Farbod Mahmoudinobar**, Cristiano L. Dias, Ronen Zangi

2628-Pos Board B58
THE ASSOCIATION LANDSCAPE OF UBIQUITIN DIMERIZATION. **Haiqing Zhao**, David Fushman, Garegin A. Papoian

2629-Pos Board B59
ROLES OF UREA AND TMAO ON THE INTERACTION BETWEEN EXTENDED NON-POLAR PEPTIDES. **Zhaoqian Su**, Jampanis R. Srinivasa, Cristiano L. Dias

2630-Pos Board B60
PROBING THE DOWNHILL FOLDING KINETICS OF LAMBDA{6-85} MUTANTS WITH OPTICAL TWEEZERS. **Ann Mukhortava**, Andreas Hartmann, Michael Schlierf

Protein Stability (Boards B61-B76)

2631-Pos Board B61
MECHANICAL ASPECTS OF PROTEIN THERMOSTABILITY. **Guillaume Stirnemann**, Maria Kalimeri, Fabio Sterpone

2632-Pos Board B62
THERMAL STABILITY OF A B-TYPE HEME PEROXIDASE FROM THE PSYCHROPHILIC DIATOM FRAGILARIOPSIS CYLINDRUS. **Thuy Duong Nguyen**, Katherine Frato

2633-Pos Board B63
UNDERSTANDING THE ROLE OF GLYCOSYLATION IN THE THERMOSTABILITY OF CEL7A. **Jodi A. Hadden**

2634-Pos Board B64
SINGLE-MOLECULE STUDIES OF MULTIDOMAIN PROTEIN FOLDING. **Kaixian Liu**, Christian Kaiser

2635-Pos Board B65
FOLDING AND UNFOLDING DYNAMICS OF TITIN IMMUNOGLOBULIN DOMAIN UNDER CONSTANT FORCES. **Hu Chen**, Guohua Yuan, Jie Yan

2636-Pos Board B66
EXPLORING THE STABILITY LIMITS OF ACTIN AND ITS SUPRASTRUCTURES. **Christopher Rosin**, Mirko Erlkamp, Julian von der Ecken, Stefan Raunser, Roland Winter

2637-Pos Board B67
THERMAL STABILIZATION OF ADENYLATE KINASES BY OPTIMIZING LOCAL STRUCTURAL ENTROPY. **Sojin Moon**, Euiyoung Bae

2638-Pos Board B68
MOS1 TRANSPOSASE THERMODYNAMIC STABILITY AND FLEXIBILITY. **Daniel P. Godfrey**, Christopher M. Singer, Donald J. Jacobs, Irina V. Nesmelova

2639-Pos Board B69
STABILIZATION AND DE-STABILIZATION OF (MEMBRANE-) PROTEINS BY MICROBIAL GLYCOLIPID AND LIPOPEPTIDE BIOSURFACTANTS - *IN-VIVO* RELEVANCE AND INDUSTRIAL APPLICATIONS. **Kell K. Andersen**, Brian S. Vad, Marcel Stenvang, Morten S. Dueholm, Per H. Nielsen, Daniel Otzen

2640-Pos Board B70
STABILITY ANALYSIS OF CFTR VIA TRYPTIC DIGESTION. **Christopher Holmes**

2641-Pos Board B71
MODULATION OF CYTOCHROME C STABILITY DURING CHEMICAL AND THERMAL DENATURIZATION BY ADDITION OF HOFMEISTER IONS. **Eric S. Peterson**, Mikayla J. Freese, Sean J. Steinke

2642-Pos Board B72
THEORETICAL PREDICTION OF THERMAL-STABILITY CHANGES UPON MUTATIONS OF A PROTEIN. **Shota Murakami**, Hiraku Oshima, Tomohiko Hayashi, Masahiro Kinoshita

2643-Pos Board B73
TUNING OF ALPHA-SYNUCLEIN AGGREGATION BY SMALL MOLECULES AND BACTERIAL PROTEINS. **Pernilla Wittung-stafshede**

2644-Pos Board B74
EZRIN IS A POTENT MODULATOR OF ALPHA-SYNUCLEIN OLIGOMERIZATION. **Timea E. Illes-Toth**, Maliha Shah, Nelson Wu, Silvia Verzini, Philipp Selenko, Erich Wanker

2645-Pos Board B75
ELECTROSTATICS PROMOTES MOLECULAR CROWDING AND SELECTS THE FIBRILLATION PATHWAY IN FIBRIL-FORMING PROTEIN SOLUTIONS. Samuele Raccosta, Vincenzo Martorana, **Mauro Manno**

2646-Pos Board B76
ROLE OF SIDE-CHAINS IN FORMING PEPTIDE AGGREGATES AND FIBRILS. IR AND VCD SPECTROSCOPIC STUDIES. THEORY AND EXPERIMENT. Heng Chi, **Fernando Tobias**, Jiří Kessler, Jan Kubelka, Petr Bouř, Timothy A. Keiderling

Protein Assemblies II (Boards B77-B98)

2647-Pos Board B77
ASSEMBLY OF THE RIG-I 2CARD SIGNALING COMPLEX. **David Mouser**

2648-Pos Board B78
CHARACTERIZATION OF THE MDA5 2CARD SIGNALING COMPLEX. **Cassie Zerbe**, James Cole

2649-Pos Board B79
DETAILED MECHANISM OF RAPID AMYLOID FIBRIL SELF-ASSEMBLY DUE TO SURFACE DIFFUSION. **Yi-Chih Lin**, E. James Petersson, Zahra Fakhraai

2650-Pos Board B80
CO-AGGREGATION OF ALPHA-SYNUCLEIN WITH AMYLIN(HIAPP) LEADS TO AN INCREASED RISK IN TYPE II DIABETES PATIENTS FOR DEVELOPING PARKINSON'S DISEASE. **Yoav Atsmon-Raz**, Yifat Miller

2651-Pos Board B81
INSIGHT INTO THE METAL BINDING SITES IN AMYLIN AGGREGATES. Vered Wineman-Fisher, **Yifat Miller**

2652-Pos Board B82
CHARACTERIZING KINETIC INTERMEDIATE IN AMYLOID SELF-ASSEMBLY. **Chen Liang**

2653-Pos Board B83
SITE-SPECIFIC STRUCTURAL CHANGES IN UNMODIFIED AND PYROGLUTAMYLATED AMYLOID BETA PEPTIDE BY ISOTOPE-EDITED FTIR. **Greg Goldblatt**, Jason O. Matos, Jeremy Gornto, Laura N. Puentes, Angel Docobo, Suren A. Tatulian

2654-Pos Board B84
PREPARATION PROTOCOLS OF BETA-AMYLOID (1-40) PROMOTE THE FORMATION OF POLYMORPHIC AGGREGATES AND ALTERED INTERACTIONS WITH LIPID BILAYERS. **Elizabeth A. Yates**, Justin Legleiter

2655-Pos Board B85
THERMODYNAMICS OF ABETA(16-21) DISSOCIATION FROM AN AMYLOID FIBRIL. **Cristiano L. Dias**, Srinivasa Rao Jampani

2656-Pos Board B86
A COMPUTATIONAL STUDY OF AMYLOID β-PROTEIN ASSEMBLY IN CROWDED ENVIRONMENTS. **Matthew J. Voelker**, Brigita Urbanc, Mark Betnel

2657-Pos Board B87
TRANSITION OF AMYLOID OLIGOMERS TO MATURE FIBRILS: INTERNAL CONVERSION VS. COMPETING ASSEMBLY PATHWAYS? **Tatiana Miti**, Mentor Mulaj, Martin Muschol

2658-Pos Board B88
STRUCTURAL VARIATIONS OF AMYLOID β-PROTEIN FIBRILS SEEDED WITH EXTRACTED FIBRILS FROM BRAIN TISSUE OF ALZHEIMER'S DISEASE MODEL MICE. **Hiroaki Komatsu**, Paul H. Axelsen

2659-Pos Board B89
DETERMINATION OF NUCLEATION MASS FOR AMYLOID-β AGGREGATION. Preetam Ghosh, Amit Kumar, Vijayaraghavan Rangachari, **Ashwin Vaidya**

2660-Pos Board B90
MORPHOLOGY SELECTION THROUGH GEOMETRIC FRUSTRATION IN TWISTED FILAMENT BUNDLES AND FIBERS. Doug Hall, **Isaac R. Bruss**, Justin Barone, Gregory M. Grason

2661-Pos Board B91
NOVEL SINGLE-MOLECULE RESOLUTION METHOD FOR SPATIO-TEMPORAL SIMULATIONS OF PROTEIN BINDING AND RECRUITMENT ON THE MEMBRANE. **Osman N. Yogurtcu**, Margaret E. Johnson

2662-Pos Board B92
STOICHIOMETRY AS A KEY MODULATOR OF PIP PLANT AQUAPORINS BIOLOGICAL ACTIVITY. **Cintia Jozefkowicz**, Lorena Sigaut, Agustina Canessa Fortuna, Florencia Scochera, Luis González Flecha, Lia I. Pietrasanta, Nicolás D. Ayub, Gabriela Soto, Gabriela Amodeo, Karina Alleva

2663-Pos Board B93
LANDSCAPES OF MEMBRANE PROTEIN INTERACTIONS FROM HIGH-THROUGHPUT MD SIMULATIONS USING THE DAFT APPROACH. **Tsjerk A. Wassenaar**, Kristyna Pluhackova, Anastassiia Moussatova, Durba Sengupta, Siewert J. Marrink, D. Peter Tieleman, Rainer A. Böckmann

2664-Pos Board B94
INCREASED SIGNALING EFFICIENCY OF CONVENTIONAL PKC THROUGH SELF-ASSEMBLED CLUSTERING ON THE PLASMA MEMBRANE. Xin Hui, Mike Bonny, Lars Kaestner, Karsten Kruse, **Peter Lipp**

2665-Pos Board B95
DEVELOPMENT OF TOOLS TO STUDY RETROVIRAL GAG ASSEMBLY ON GIANT UNILAMELLAR VESICLES(GUV). **Yi Wen**, Robert Dick, Volker Vogt, Gerald Feigenson

2666-Pos Board B96
PARADIGM SHIFT IN THE MECHANISM OF HIV-1 CORE BIOGENESIS. **Gabriel A. Frank**, Kedar Narayan, Julian W. Bess Jr, Gregory Q. Del Prete, Xiongwu Wu, Amy Moran, Lisa Hartnell, Lesley A. Earl, Jeffrey D. Lifson, Sriram Subramaniam

2667-Pos Board B97 EDUCATION TRAVEL AWARDEE
MOLECULAR DYNAMICS AND ASSEMBLY SWITCH OF FTSZ FILAMENTS. **Erney Ramírez-Aportela**, José Ramón López-Blanco, José Manuel Andreu, Pablo Chacon

2668-Pos Board B98
STRUCTURAL AND BIOPHYSICAL COMPARISON OF UPEC AND ETEC ADHESION FIMBRIAE. Narges Mortezaei, Bhupender Singh, **Esther Bullitt**, Johan Zakrisson, Chelsea R. Epler, Krister Wiklund, Magnus Andersson

Protein Dynamics and Allostery III (Boards B99-B116)

2669-Pos Board B99
PROPOSED THERMODYNAMIC BASIS FOR SYNAPTOTAGMIN RESPONSE. **Anne Hinderliter**

2670-Pos Board B100
ALLOSTERIC FUNCTIONAL SWITCH IN POLIOVIRUS 3C PROTEASE. **Yan M. Chan**, David D. Boehr

2671-Pos Board B101
THE STRUCTURAL BASIS OF ATP AS AN ALLOSTERIC MODULATOR. **Shaoyong Lu**, Wenkang Huang, Qi Wang, Qiancheng Shen, Shuai Li, Ruth Nussinov, Jian Zhang

2672-Pos Board B102
GEOMETRIC DESCRIPTION OF DYNAMIN INDUCED MEMBRANE FISSION. Pablo Vázquez-Montejo, **Zachary McDargh**, Markus Deserno

2673-Pos Board B103
TWO PATHWAYS MEDIATE INTER-DOMAIN ALLOSTERIC REGULATION IN PIN1. **Jingjing Guo**, Xiaodong Pang, Huan-Xiang Zhou

2674-Pos Board B104
THE IMPACT OF PERTURBING DYNAMIC AMINO ACID NETWORKS IN A (β/α)8 BARREL ENZYME. **Kathleen F. O'Rourke**, Jennifer M. Axe, Nicole E. Kerstetter, David D. Boehr

2675-Pos Board B105
CONFORMATIONAL EXCHANGE COUPLED TO IONIZATION OF LYS RESIDUES BURIED IN HYDROPHOBIC ENVIRONMENTS IN PROTEINS. **Daniel E. Richman**, Ananya Majumdar, Bertrand Garcia-Moreno

2676-Pos Board B106
NMR INVESTIGATION OF ENERGY BARRIERS FOR HYDROGEN-BOND BREAKAGE OF PROTEIN SIDE-CHAIN NH3+ GROUPS. **Levani Zandarashvili**, Junji Iwahara

2677-Pos Board B107
THUMB II SITE INHIBITOR ALLOSTERICALLY SUPPRESSES THE DYNAMICS OF HCV RNA-DEPENDENT RNA POLYMERASE. **Daniel J. Deredge**, Kenneth Johnson, Patrick Wintrode

2678-Pos Board B108
DYSFUNCTIONAL CONFORMATIONAL DYNAMICS OF PROTEIN KINASE A FROM R14 DELETION OF PHOSPHOLAMBAN. **Jonggul Kim**, Larry R. Masterson, Alessandro Cembran, Raffaello Verardi, Lei Shi, Jiali Gao, Gianluigi Veglia

2679-Pos Board B109
DYNAMICAL X-RAY SINGLE MOLECULE OBSERVATIONS OF THE MOLECULAR RECOGNITION PROCESS IN MAJOR HISTOCOMPATIBILITY COMPLEX MOLECULE.
Toshihiro Miyabe, Yufuku Matsushita, Kosuke Kasadera, Yuko Kozono, Hiroshi Sekiguchi, Keigo Ikezaki, Haruo Kozono, Yuji C. Sasaki

2680-Pos Board B110
UNEXPECTED VASP-EVH1 INTERACTIONS WITH IRAK1 AND ZYXIN: PHOSPHORYLATION AND BIVALENT BINDING.
Lucila A. Acevedo, Alex I. Greenwood, Jeahoo Kwon, Kun P. Lu, Linda K. Nicholson

2681-Pos Board B111
INFLUENCE OF RNA BINDING ON THE CONFORMATIONAL DYNAMICS OF THE LASSA VIRUS NUCLEOPROTEIN.
Jason Pattis, Eric R. May

2682-Pos Board B112
SITE-SPECIFIC CONFORMATIONAL DIVERSITY IN CALMODULIN USING CYANYLATED CYSTEINE VIBRATIONAL PROBES ALONG ITS BINDING INTERFACES. **Kristen L. Kelly**, Rebecca Wai, Kanika Ramchandani, Casey Londergan

2683-Pos Board B113
BACKBONE FLEXIBILITY AS A DETERMINANT OF PKA VALUES OF BURIED IONIZABLE GROUPS IN PROTEINS.
Bertrand Garcia-Moreno, Gabrieal Ortega, Meredith T. Peck, Aaron Robinson, Jamie L. Schlessman

2684-Pos Board B114
REGULATION OF THE MOLECULAR BRAKE REGION IN FGFR2 KINASE. **Jerome M. Karp**, David Cowburn

2685-Pos Board B115
PKA VALUES OF BURIED GROUPS IN PROTEINS ARE SENSITIVE TO THE GLOBAL THERMODYNAMIC STABILITY. **Jaime L. Sorenson**, Raidizon Mercedes, Jamie L. Schlessman, Bertrand García-Moreno

2686-Pos Board B116
CRITICAL ROLE OF A GLYCINE RESIDUE IN AN ALLOSTERIC SWITCH. Dorothy Beckett, **William Cressman**

Enzymes and Protein Dynamics II (Boards B117-B134)

2687-Pos Board B117
ZINC INHIBITS HEDGEHOG AUTOPROCESSING:LINKING ZINC DEFICIENCY WITH HEDGEHOG ACTIVATION. **Jian Xie**, Timothy Owen, Ke Xia, Ajay Vikram Singh, Emiley Tou, Lingyun Li, Leo Q. Wan, Brian Callahan, Chunyu Wang

2688-Pos Board B118
PROBING FACTOR XIII SUBSTRATE SPECIFICITY FOR FIBRINOGEN αC (233-425) USING MALDI-TOF MASS SPECTROMETRY AND 2D 15N-1H HSQC NMR SPECTROSCOPY. **Kelly Njine Mouapi**, Jacob Bell, Kerrie Smith, Helen Philippou, Robert Ariens, Muriel Maurer

2689-Pos Board B119
LIGAND BINDING TO ANION BINDING EXOSITES AS PROTHROMBIN IS CONVERTED TO ACTIVE THROMBIN. **Ramya Billur**, Marina V. Malovichko, Muriel C. Maurer

2690-Pos Board B120
MOLECULAR DYNAMICS STUDIES OF THE UBIQUITIN CONJUGATION MECHANISM. **Serban Zamfir**

2691-Pos Board B121
PROTEOLYSIS OF ABNORMAL PRION PROTEIN WITH A THERMOSTABLE PROTEASE FROM A HYPER-THERMOPHILIC ARCHAEON THERMOCOCCUS KODAKARENSIS KOD1.
Yuichi Koga, Nami Shimizu, Akikazu Sakudo, Shigenori Kanaya

2692-Pos Board B122
KINETIC CHARACTERIZATION OF HUMAN LIVER PHOSPHOFRUCTOKINASE. **Amanda Tindall**, Gregory D. Reinhart

2693-Pos Board B123
USE OF 2-PHOTON FLUORESCENCE CORRELATION SPECTROSCOPY AND ELECTRON MICROSCOPY TO ELLUCIDATE THE DEPENDENCE OF RLPFK SELF ASSOCIATION ON LIGAND CONCENTRATION. **David Holland**, Jeng-Yih Chang, Junjie Zhang, Gregory D. Reinhart

2694-Pos Board B124
THE ISOLATED LARGE SUBUNIT OF E. COLI CARBAMOYLPHOSPHATE SYNTHETASE DEVIATES FROM KINETIC MECHANISM AND ALLOSTERIC BEHAVIOR OF THE HOLOENZYME. **Robert Koenig**, Gregory D. Reinhart

2695-Pos Board B125
FREE-ENERGY LANDSCAPES OF THE TRANSLOCATION OF A SUBSTRATE IN FOUR PROTEASOME - ACTIVATOR COMPLEXES ANALYZED USING MOLECULAR DYNAMICS SIMULATIONS. **Hisashi Ishida**

2696-Pos Board B126
DEVELOPMENT OF A NOVEL ASSAY FOR PINK1-PARKIN-MIRO1 PATHWAY. **Sungjin Park**, Julian L. Klosowiak, Alexander V. Statsyuk, Sarah E. Rice

2697-Pos Board B127
MODELING THE EFFECT OF DIRECT PKA-PDE BINDING IN THE FORMATION OF LOCALIZED MICRODOMAINS OF CAMP IN ADULT CARDIOMYOCYTES. **Britton W. Boras**

2698-Pos Board B128
MONOVALENT CATION DEPENDENCE ON THE KINASE ACTIVITY OF SALMONELLA TYPHIMURIUM CHEA: EXPERIMENT AND MODELING. **Marie Balboa**, Michael Turvey, Joseph Falke, Kene Piasta, Margaret Hurley

2699-Pos Board B129
COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATION OF INTRAMOLECULAR REGULATORY INTERACTIONS IN HCK. **Matthew P. Pond**, Sunhwan Jo, H. Clark Hyde, Michelle H. Wright, Lydia Blachowicz, Francisco Bezanilla, Benoit Roux

2700-Pos Board B130
A NUDIX HYDROLASE NECESSARY FOR MYCOBACTERIUM TUBERCULOSIS SURVIVAL UNDER OXIDATIVE STRESS. Kerstin A. Wolff, **Andres H. de la Peña**, Hoa T. Nguyen, L. Mario Amzel, Sandra B. Gabelli, Liem Nguyen

2701-Pos Board B131
UNDERSTANDING THE CATALYTIC MECHANISM OF LAMINARIPENTAOSE PRODUCING β-1,3-GLUCANASE. Xiaochen Zhang, Kevin Osenburg, **Shuhua Ma**

2702-Pos Board B132
X-RAY STRUCTURE OF A MAMMALIAN STEAROYL-COA DESATURASE-1. Yonghong Bai, Jason G. McCoy, Elena J. Levin, **Ming Zhou**

2703-Pos Board B133
PROBING AND MANIPULATING ENZYME ACTIVITY AND CONFORMATIONAL DYNAMICS BY SINGLE-MOLECULE AFM-FRET AND MAGNETIC TWEEZERS-FRET ULTRAMICROSCOPY. Qing Guo, Yufan He, **H. Peter Lu**

2704-Pos Board B134
MOONPROT: A DATABASE FOR PROTEINS THAT ARE KNOWN TO MOONLIGHT. **Constance Jeffery**, Mathew Mani, Shadi Zabad, Chang Chen, Vaishak Amblee, Haipeng Liu, Tanu Mathur, Grant Zwicke, Bansi Patel, Jagravi Thakkar

Transcription (Boards B135-B146)

2705-Pos Board B135
MOLECULAR ORIGINS OF BIMODAL MRNA COPY NUMBER DISTRIBUTION. **Keisuke Fujita**, Mitsuhiro Iwaki, Toshio Yanagida

2706-Pos Board B136
UNCOVERING THE DYNAMICS OF RNA POLYMERASE IN LIVE E. COLI CELLS. **Kelsey Bettridge**, Christopher Bohrer, Xinxing Yang, Max Klein, Jie Xiao

2707-Pos Board B137
SPATIAL ORGANIZATION OF TRANSCRIPTION IN E.COLI CELLS. **Xiaoli Weng**, Arvin C. Lagda, Jie Xiao

2708-Pos Board B138
BACTERIAL TRANSCRIPT ELONGATION COMPLEXES CAN RETAIN SIGMA FACTOR THROUGHOUT RNA SYNTHESIS. **Timothy T. Harden**, Larry J. Friedman, Christopher D. Wells, Ann Hochschild, Jane Kondev, Jeff Gelles

2709-Pos Board B139 EDUCATION TRAVEL AWARDEE
SEQUENCE-SPECIFIC RNAP-DNA INTERACTIONS IN TRANSCRIPTION INITIATION AND ELONGATION: CORE RECOGNITION ELEMENT (CRE). **Hanif Vahedian-Movahed**, Yu Zhang, Jeremy Bird, Irina Vvedenskaya, Jared Knobloch, Seth Goldman, Bryce Nickels, Richard H. Ebright

2710-Pos Board B140
TRANSIENT-STATE KINETIC ANALYSIS OF THE RNA POLYMERASE I NUCLEOTIDE ADDITION CYCLE. **Francis D. Appling**

2711-Pos Board B141
CROWDING ON DNA AS A SOURCE OF BURSTS IN MRNA PRODUCTION. **Aafke A. van den Berg**, S. Martin Depken

2712-Pos Board B142
LIVE-CELL SINGLE-MOLECULE IMAGING OF SENSE AND ANTISENSE TRANSCRIPTION OF A YEAST GENE. **Antoine Coulon**, Tineke L. Lenstra, Carson C. Chow, Daniel R. Larson

2713-Pos Board B143
THE MECHANISM OF TRANSCRIPTION STALLING UNDER TORSION. **Chuang Tan**, Jie Ma, Jeremy G. Bird, James T. Inman, Jeffrey W. Roberts, Michelle D. Wang

2714-Pos Board B144
A HIGH-THROUGHPUT SINGLE-MOLECULE ASSAY FOR SCREENING TRANSCRIPTIONAL INTERFERENCE. **Amir Mazouchi**, Tai-Wei Su, Joshua Milstein

2715-Pos Board B145
DNA LOOPING BOTH ENHANCES AND SUPPRESES TRANSCRIPTIONAL NOISE. Jose M.G. Vilar, **Leonor Saiz**

2716-Pos Board B146 EDUCATION TRAVEL AWARDEE
NUCLEAR ACTIN DYNAMICS REGULATE NUCLEAR ORGANIZATION AND TRANSCRIPTION. **Leo Serebryannyy**, Megan Parilla, Paolo Annibale, Christina Cruz, Dmitri Kudryashov, Enrico Gratton, Cara J. Gottardi, Primal de Lanerolle

Chromatin and the Nucleoid (Boards B147-B174)

2717-Pos Board B147
EPIGENETICS: HOW MUCH PHYSICS DO WE NEED TO UNDERSTAND IT? **Christophe Lavelle**

2718-Pos Board B148 INTERNATIONAL TRAVEL AWARDEE
NUCLEOSOME KINETICS AND ACCESIBILITY OF DNA. **Jyotsana J. Parmar**, Dibyendu Das, Ranjith Padinhateeri

2719-Pos Board B149
CHROMOSOME-NUCLEAR ENVELOPE INTERACTIONS HAVE MULTIPLE EFFECTS ON CHROMOSOME FOLDING DYNAMICS IN SIMULATION. **Nicholas A. Kinney**, Igor V. Sharakhov, Alexey V. Onufriev

2720-Pos Board B150
BIOPHYSICAL MODELS OF NUCLEOSOME POSITIONING. **Razvan V. Chereji**, David D. Clark

2721-Pos Board B151
PREDICTION OF CHROMOSOME CONFORMATIONS WITH MAXIMUM ENTROPY PRINCIPLE. **Bin Zhang**, Peter G. Wolynes

2722-Pos Board B152
MODELING THE BINDING OF H-NS TO DNA. Eva C. van Mastbergen, **Jocelyne Vreede**

2723-Pos Board B153
THE BINDING LANDSCAPES OF THE H3/H4 AND CENP-A/H4 DIMERS. **Haiqing Zhao**, Yamini Dalal, Garegin A. Papoian

2724-Pos Board B154
TOPOLOGICAL POLYMORPHISM OF TWO-START NUCLEOSOME FIBERS: A STEREOCHEMICAL ANALYSIS. **Davood Norouzi**, Victor B. Zhurkin

2725-Pos Board B155
MULTIVALENT TARGETING OF NUCLEOSOMES BY THE BRG1 AT-HOOK AND BROMODMAIN. Daniel P. Farrell, Katayoun Varzavand, **Catherine A. Musselman**

2726-Pos Board B156
QUANTIFICATION OF INTERPHASE CHROMATIN DYNAMICS IN FISSION YEAST. **Takeshi Sugawara**, Kenta Masuda, Jun-ichi Uewaki, Akinori Awazu, Hiraku Nishimori, Masaru Ueno

2727-Pos Board B157
EFFECT OF ARCHITECTURE OF CELL NUCLEUS ON THE FOLDING PRINCIPLES OF 3D GENOME OF BUDDING YEAST. **Gamze Gürsoy**, Yun Xu, Jie Liang

2728-Pos Board B158
TORQUE MEDIATED KINETICS OF CENP-A NUCLEOSOMES REVEALS RESILIENCE TO TENSION. **Rifka Vlijm**, Yamini Dalal, Cees Dekker

2729-Pos Board B159
THE CHD1 CHROMATIN REMODELER CAN SENSE A PROTEIN BOUND AT THE EDGE OF THE NUCLEOSOME AND IS SENSITIVE TO DNA UNWRAPPING. Ilana Nodelman, Kyle Horvath, Jessica Winger, Robert Levendosky, Ashok Patel, Ming Li, Michelle Wang, **Gregory Bowman**

2730-Pos Board B160
MECHANOCHEMISTRY OF PERSISTENT PLASMID MOVEMENT. **Longhua Hu**, Jian Liu

2731-Pos Board B161
NUCLEOSOME REPEAT LENGTH RELATES TO THE GENE EXPRESSION LEVEL IN YEAST. **Ataur R. Katebi**, Davood Norouzi, Feng Cui, Victor Zhurkin

2732-Pos Board B162
USING FRET TO MONITOR NUCLEOSOME MOVEMENT BY THE CHD1 CHROMATIN REMODELER. **Robert Levendosky**, Kyle Horvath, Srinivas Chakravarthy, Matt Hobson, Gregory Bowman

2733-Pos Board B163
DEVELOPMENT OF A "REALISTIC" MODEL OF THE DYNAMIC CHROMATIN FIBER USING AN INTEGRATED COMPUTATIONAL APPROACH. **Stefjord Todolli**, Nil Rawal, Nicolas Clauvelin, Willy Wriggers, Wilma K. Olson

2734-Pos Board B164
MATRIX CONSTRAINTS REGULATE TRANSCRIPTION DEPENDENT 3D ORGANIZATION OF CHROMOSOMES. **Yejun Wang**, Mallika Nagarajan, G. V. Shivashankar

2735-Pos Board B165
MECHANISM AND FUNCTION OF CHROMATIN POSITIONAL FLUCTUATIONS IN INTERPHASE. **Alexandra Zidovska**

2736-Pos Board B166
UNIQUE MECHANICAL PROPERTIES OF CELL NUCLEI REGULATED BY CHROMATIN. **Chii J. Chan**, Wenhong Li, Jana Scholze, Mirjam Schürmann, Jochen Guck

2737-Pos Board B167 CPOW TRAVEL AWARDEE
TRACKING CHROMOSOME CONFORMATION IN LIVE CELLS WITH CRISPR IMAGING. **Juan Guan**, Jeffrey Hu, Baohui Chen, Sakaya Sekine, Sanjeev Balakrishnan, Bo Huang

2738-Pos Board B168
CONFORMATIONAL SAMPLING OF UNMODIFIED AND ACETYLATED H3 HISTONE TAILS ON A NUCLEOSOME BY ALL-ATOM MODEL MOLECULAR DYNAMICS SIMULATIONS. **Jinzen Ikebe**, Shun Sakuraba, Hidetoshi Kono

2739-Pos Board B169
DYNAMICS OF THE NUCLEOSOME CORE PARTICLE REVEALED FROM A NEW DATABASE OF HIGH-RESOLUTION X-RAY CRYSTALLOGRAPHIC AND SIMULATED STRUCTURES. **Gautam Singh**, Andrew V. Colasanti, Nicolas Clauvelin, Wilma K. Olson

2740-Pos Board B170
THE EFFECT OF NUCLEOSOME UNWRAPPING ON CHD1-INDUCED CHROMATIN REMODELING. **Jessica Winger**, Gregory Bowman

2741-Pos Board B171
ACETYLATION OF HISTONE H3 LYSINE 56 ABOLISHES LINKER HISTONE REGULATION OF TRANSCRIPTION FACTOR BINDING. Morgan Bernier, Yi Luo, kingsley Nwole, Jennifer J. Ottesen, **Poirier G. Poirier**

2742-Pos Board B172
MECHANISM OF NUCLEOID COLLAPSE IN E. COLI. **Elio A. Abbondanzieri**

2743-Pos Board B173
THE BACTERIAL NUCLEOID DRIVES CYTOPLASMIC DYNAMICS. **Stella Stylianidou**, Nathan J. Kuwada, Paul A. Wiggins

2744-Pos Board B174
ACTO-MYOSIN CONTRACTILITY REGULATES NUCLEAR AND CHROMATIN PLASTICITY. **Ekta Makhija**, D.S. Jokhun, G.V. Shivashankar

Membrane Physical Chemistry III (Boards B175-B200)

2745-Pos Board B175
AMINO ACIDS AND PEPTIDES STABILIZE FATTY ACID MEMBRANES AGAINST SALT-INDUCED FLOCCULATION. **Moshe Gordon**, Roy A. Black, Matthew C. Blosser, Sarah L. Keller

2746-Pos Board B176
MEASUREMENT OF THE VISCOSITY OF E.COLI MEMBRANES USING MOLECULAR ROTORS AND FLIM. **Jacek T. Mika**, Alexander J. Thompson, Johan Hofkens, Marina K. Kuimova

2747-Pos Board B177 EDUCATION TRAVEL AWARDEE
POLYDOPAMINE AS AN EFFICIENT POLYMER TO PREPARE BIOLOGICALLY RELEVANT SUPPORTED LIPID BILAYERS. **Souryvanh Nirasay**, Antonella Badia, Jerome P. Claverie, Isabelle Marcotte

2748-Pos Board B178
POLYMER AND SILICA SUPPORTED BILAYER FORMATION STUDIED THROUGH TIME RESOLVED SPATIAL POINT PATTERN ANALYSIS OF VESICLE DEPOSITION. **Stephen Cross**, Oliver Birkholz, Jacob Piehler, Matthew Peel, Suman Peel

2749-Pos Board B179
CONTROLLED MODULATION OF LIPID BILAYER STATE BY A PHOTOSENSITIVE MEMBRANE EFFECTOR. Chen Shen, Lars Jørgensen, Dordaneh Zargarani, Benjamin Runge, Bridget Murphy, Olaf Magnussen, **Beate Klösgen**

2750-Pos Board B180
CREATING FLUID SUPPORTED LIPID BILAYERS WITH HIGH AMOUNTS OF PHOSPHATIDYLETHANOLAMINE.
Anne Sendecki, Matthew F. Poyton, Tinglu Yang, Paul S. Cremer

2751-Pos Board B181
BIOPHYSICAL ANALYSIS OF A SUCCESSFUL PROTOCOL TO RECONSTITUTE TETRAMERS OF THE M2 MUSCARINIC RECEPTOR. **Helen Y. Fan**, Dar'ya S. Redka, Heiko Heerklotz

2752-Pos Board B182
ION-MOBILITY MASS SPECTROMETRY ASSAY FOR INCORPORATION OF PHYTANIC ACID INTO MUSCLE PHOSPHOLIPIDS. Glen Humphrey, Peter S. Backlund, **Paul S. Blank**, Joshua Zimmerberg

2753-Pos Board B183
FLUCTUATION-INDUCED INTERACTIONS BETWEEN MEMBRANE-BOUND PROTEINS. Kayla Sapp, **Lutz Maibaum**

2754-Pos Board B184
EFFECT OF PHOSPHATIDYLINOSITOL-BISPHOSPHATE (PIP_2) LIPIDS ON MEMBRANE STRUCTURE AND FORCES.
Sourav Haldar, Paul S. Blank, Joshua Zimmerberg, Donald C. Rau

2755-Pos Board B185
PHOSPHOLIPID GIANT UNILAMELLAR VESICLES (GUVS) MELT LIKE LARGE (LUVS), NOT MULITILAMELLAR (MLVS), VESICLES. **Mark A. Kreutzberger**, Paulo F. Almeida

2756-Pos Board B186
BIOMOLECULES ALTERING THE LIPID MOLECULAR SHAPE IN MODEL NON-LAMELLAR MEMBRANES.
Chandrashekhar V. Kulkarni, Yogita Patil-Sen, Mukta Kulkarni, Ales Iglic

2757-Pos Board B187
DOES THE MEYER-OVERTON CORRELATION NEED TO BE MODIFIED. **Henrike Sasse-Middelhoff**, Thomas Heimburg

2758-Pos Board B188
ASSOCIATION OF MODEL NEUROTRANSMITTERS WITH LIPID BILAYER MEMBRANES. **Brian Josey**, Frank Heinrich, Mathias Lösche, Robert Cantor

2759-Pos Board B189
EFFECTS OF ARCHAEAL TETRAETHER LIPIDS ON MEMBRANE PARTITIONING OF THE ANTIFUNGAL DRUG NYSTATIN. **Melvin Hudson**, Parkson Chong, Umme Ayesa

2760-Pos Board B190
POLYSTYRENE NANOPARTICLES ALTER THE STABILITY OF MODEL CELL MEMBRANES. David Van Doren, Luke Cuculis, **Shelli L. Frey**

2761-Pos Board B191
HOW NSAIDS AFFECT LIPID MONOLAYER AND BILAYER PROPERTIES. **Jaime Larsen**, Melanie Grooms, Brendan G. Ashton, David D. Busath

2762-Pos Board B192
STUDIES OF ZWITTERIONIC LIPOPLEXES - NANOSYSTEM BASED ON PHOSPHOLIPIDS AND SURFACTANTS AS INNOVATIVE DELIVERY SYSTEMS FOR GENE THERAPY.
Joanna Wolak, Michalina Skupin, Zuzanna Pietralik, Weronika Andrzejewska, Maciej Kozak

2763-Pos Board B193
PHOTOTHERMAL MANIPULATION OF MEMBRANES.
Scott K. Shaw, Bradley D. Smith

2764-Pos Board B194
THEORETICAL AND EXPERIMENTAL INSIGHTS INTO LIPOPOLYSACCHARIDES-POLYMYXIN B INTERACTIONS USING GENETICALLY MODIFIED ENTEROBACTERIAL STRAINS. **Daniel R. Aguayo**, Javier Salazar, Jaime Huerta, Mackarenna Alarcón, Belén Navarro, Nicolás Pacheco, Hegaly Mendoza

2765-Pos Board B195
INTERACTION OF THYMOL WITH CELL MEMBRANES MODELS STUDIED WITH TENSIOMETRY, VIBRATIONAL SPECTROSCOPY AND MOLECULAR SIMULATION. João Victor N. Ferreira, Tabata M. Capello, Leonardo J. Amaral de Siqueira, João Henrique G. Lago, **Luciano Caseli**

2766-Pos Board B196
EFFECTS OF CATIONS ON THE MATERIAL PROPERTIES OF MODEL CELL MEMBRANES. **Michael J. Counihan**, Carly R. Strelez, Shelli L. Frey

2767-Pos Board B197
A STUDY OF HOW CHELATING AGENTS INTERACT WITH NEUTRAL LIPID MEMBRANES. **James L. Wallis**, Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache

2768-Pos Board B198
SPECIFICITY AND COMPETITIVE CATION ASSOCIATION TO PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE MODEL MEMBRANES. **Edgar E. Kooijman**, Zachary T. Graber, Wenji Wang, Ivan Kuzmenko, David Vaknin

2769-Pos Board B199
CHARGE DEPENDENCE OF POPG:POPC-LIPOSOME REPULSIONS IN DEIONIZED WATER. **Joel A. Cohen**, Ming-Tzo Wei, H. Daniel Ou-Yang

2770-Pos Board B200
THE EFFECT OF COMPARTMENTALIZATION ON THE KINETICS OF TRANSITION METAL ION-INDUCED LDL PEROXIDATION. **Dov A. Lichtenberg**, Ilya Pinchuk

Membrane Active Peptides and Toxins II (Boards B201-B227)

2771-Pos Board B201
THE PRESENCE OF ANTIPARALLEL BETA-SHEETS IN TOXIC FIBRILS FORMED BY ABETA ON GM1 CLUSTERS. Yuki Okada, Hiroshi Ueno, Yoshiaki Yano, Masaru Hoshino, Hikari Itoh-Watanabe, Akira Naito, **Katsumi Matsuzaki**

2772-Pos Board B202
STRUCTURAL TRANSFORMATION OF AMYLOID PEPTIDES INTERACTING WITH LIPID MEMBRANES. Yen Sun, **Huey W. Huang**

2773-Pos Board B203
ALPHA-SYNUCLEIN STABILIZES SMALL UNILAMELLAR VESICLES BY REDUCING BOTH MEMBRANE SURFACE TENSION AND RIGIDITY. **Anthony R. Braun**, Jonathan N. Sachs

2774-Pos Board B204
MEMBRANES CAN FINELY TUNE PEPTIDE-INDUCED LIPID EXTRACTION BY MODULATING THEIR LIPID COMPOSITION. Alexandre Therrien, **Michel Lafleur**

2775-Pos Board B205
MECHANISM OF ACTION OF β-HAIRPIN ANTIMICROBIAL PEPTIDES. **Richard B. Lipkin**, Themis Lazaridis

2776-Pos Board B206
ATTACK ON SINGLE ESCHERICHIA COLI SPHEROPLASTS BY ANTIMICROBIAL PEPTIDES. **Tzu-Lin Sun**, Yen Sun, Huey W. Huang

2777-Pos Board B207
INSIGHTS INTO THE EFFECTS OF ANTIMICROBIAL PEPTIDES ON LIVE E. COLI CELLS USING TIME-LAPSE FLUORESCENCE MICROSCOPY. **Ranga Rajan**, James C. Weisshaar

2778-Pos Board B208
HISTIDINE-RICH DESIGNER PEPTIDES WITH PH-DEPENDENT MEMBRANE TOPOLOGY, ANTIMICROBIAL, NUCLEIC ACID TRANSFECTION AND VIRAL TRANSDUCTION CAPABILITIES. Christopher Aisenbrey, Philippe Bertani, Andrea Farrotti, David Fenard, Anne Galy, Elise Glattard, Arnaud Marquette, Jesus Raya, Evgeniy S. Salnikov, Joachim Seelig, Lorenzo Stella, Louic Vermeer, Nathaliia Voievoda, **Burkhard Bechinger**

2779-Pos Board B209
EFFECT OF HISTIDINE RICH ANTIMICROBIAL PEPTIDES,GAD-1 AND GAD-2,ON MODEL MEMBRANES AT DIFFERENT PH VALUES. **Gagandeep K. Sandhu**, Michael R. Morrow, Valerie Booth

2780-Pos Board B210
THE TRANSMEMBRANE STATE OF ANTIMICROBIAL PISCIDIN IN BACTERIAL CELL MEMBRANE MIMICS DRAMATICALLY ALTERS THE POLAR-NONPOLAR SEGREGATION OF THE BILAYER. **Myriam Cotten**, Jorge I. Hernandez, Kimberly Bogardus, Mihaela Mihailescu

2781-Pos Board B211
ANTIMICROBIAL PEPTIDE PISCIDIN PERMEABILIZES BACTERIAL MEMBRANES AND BINDS INTRACELLULAR TARGETS AT SUB-LETHAL CONCENTRATIONS. **Mason Schoeneck**, Robert Hayden, Gina Goldberg, Bryan Ferguson, Michael McCormick, Herman Lehman, Myriam Cotten

2782-Pos Board B212
MOLECULAR DYNAMICS SIMULATIONS REVEAL MECHANISTIC DETAILS OF POLYMYXIN PENETRATION INTO BOTH MEMBRANES OF E.COLI. **Syma Khalid**, Nils A. Berglund, Peter J. Bond, Thomas J. Piggot

2783-Pos Board B213
THERMODYNAMICS GOVERN THE MECHANISM OF ANTIMICROBIAL LIPOPEPTIDES: INSIGHTS FROM COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Dejun Lin**, Alan Grossfield

2784-Pos Board B214
THE NATURE OF DAPTOMYCIN AGGREGATES. **Ming-Tao Lee**, Wei-Chin Hung, Yen-Fei Chen, Huey W. Huang

2785-Pos Board B215
LIPID SELECTIVITY OF FUNGICIDAL LIPOPEPTIDES. **Sebastian Fiedler**, Quang Huynh, Hiren Patel, Heiko Heerklotz

2786-Pos Board B216
STRUCTURE AND MEMBRANE TOPOLOGY OF THE PORE-FORMING PEPTIDE MACULATIN 1.1. **Marc-Antoine Sani**, Terry P. Lybrand, Frances Separovic

2787-Pos Board B217
STRUCTURE OF TRANSMEMBRANE PORES STABILIZED BY ANTIMICROBIAL PEPTIDES MAGAININ AND PGLA. **Almudena Pino Angeles**, John M. Leveritt III, Themis Lazaridis

2788-Pos Board B218
MODULATION OF THE INTERACTION BETWEEN DETERGENT MICELLES AND MODEL PEPTIDE ANTIBIOTICS BY VARYING THE PEPTIDE CHARGE DISTRIBUTION. **John Weirich**, Brianna Haight, Olivier Lequin, Lucie Khemtémourian, Ludovic Carlier, Adrienne Loh

2789-Pos Board B219
ISOMERIC MODEL ANTIBIOTIC PEPTIDES DIFFERING ONLY IN CHARGE PLACEMENT ADOPT DIFFERENT HELICAL CONFORMATIONS. Jayna Sharma, Riley Larson, Olivier Lequin, Lucie Khemtémourian, Ludovic Carlier, Kevin Larsen, Theodore Savage, **Adrienne Loh**

2790-Pos Board B220
ANISOTROPIC MEMBRANE CURVATURE SENSING BY ANTIBACTERIAL PEPTIDES. Jordi Gómez-Llobregat, **Martin Lindén**

2791-Pos Board B221
MEMBRANE INTERACTION OF AN ANTI-BACTERIAL AAPEPTIDE DEFINED BY EPR SPECTROSCOPY. **Pavanjeet Kaur**, Yaqiong Li, Jianfeng Cai, Likai Song

2792-Pos Board B222
ACTIVITY OF ANTIMICROBIAL PEPTIDE PROTEGRIN-1 IS TUNED BY MEMBRANE CHOLESTEROL CONTENT. **J. Michael Henderson**, Kathleen D. Cao, Zhiliang L. Gong, Gregory T. Tietjen, Charles T. R. Heffern, Daniel Kerr, Nishanth Iyengar, Indroneil Roy, Alan J. Waring, Mati Meron, Binhua Lin, Sushil Satija, Jaroslaw Majewski, Ka Yee C. Lee

2793-Pos Board B223
WHAT VESICLE LEAKAGE REVEALS ABOUT ANTIMICROBIAL ACTIVITY (AND WHAT IT DOESN'T). Sara Hovakeemian, Runhui Liu, Samuel H. Gellman, **Heiko Heerklotz**

2794-Pos Board B224
VIRUS-MIMICKING POLYMER MOLECULAR BRUSHES ARE POTENT ANTIBIOTICS WITH DOUBLE SELECTIVITY. Yunjiang Jiang, Wan Zheng, Hairong Ma, **Hongjun Liang**

2795-Pos Board B225
ANALYSIS OF PISCIDIN AND LIPOPOLYSACCHARIDE INTERACTIONS: A STEP TOWARDS CHARACTERIZING IMMUNOMODULATION. **Laura McCormick**, Myriam Cotten

2796-Pos Board B226
STUDYING THE MECHANISMS OF HYBRID PEPTIDES CONTAINING PERMEABALIZING AND CELL PENETRATING DOMAINS. **Maria A. LaBouyer**, Donald E. Elmore

2797-Pos Board B227
BINDING OF DAPTOMYCIN TO LIPID BILAYERS IS NOT SIGNIFICANTLY ALTERED BY THE INCLUSION OF LYSYL-PHOSPHATIDYLGLYCEROL. Tala Khatib, Hannah Lineberry, Heather Stevenson, Bayer S. Arnold, Michael R. Yeaman, **Antje Pokorny**

Proteins, Lipids, and Small Molecules (Boards B228-B243)

2798-Pos Board B228
PHOSPHATIDYLSERINE, A LIPID PRESENT AT THE OUTER MEMBRANE LEAFLET OF CANCER CELLS, HINDERS THE INSERTION OF PHLIP, A POTENTIAL CANCER CELL MARKER. **Haden Scott**

2799-Pos Board B229
UNDERSTANDING MOLECULAR COMPLEXITY IN PROTEIN AND PEPTIDE-LIPID SYSTEMS. Hannah M. Britt, Vian S. Ismail, Aruna S. Prakash, Jackie A. Mosely, **John M. Sanderson**

2800-Pos Board B230
PHLIP® TARGETING AND DELIVERY OF PNA TO SILENCE MICRORNA IN TUMOR CELLS§. **Donald M. Engelman**, Christopher J. Cheng, Raman Bahal, Imran A. Babar, Zachary Pincus, Francisco N. Barrera, Connie Liu, Alexander Svoronos, Demetrios T. Braddock, Peter M. Glazer, W Mark Saltzman, Frank J. Slack

2801-Pos Board B231
MEMBRANE CHOLESTEROL ASSOCIATION AND STRUCTURE OF TWO LEUKOTOXIN PEPTIDES. **Cayla M. Miller**, Angela C. Brown, Jeetain Mittal

2802-Pos Board B232
CHOLESTEROL ACCESSIBILITY SENSING BY PERFRINGOLYSIN O DERIVATIVES IS LINKED TO CHANGES IN THE SIZE OF THE OLIGOMER. Benjamin B. Jonhson, Robert J.C. Gilbert, **Alejandro P. Heuck**

2803-Pos Board B233
FREE ENERGIES FOR TRANS-MEMBRANE PORE FORMATION IN THE PRESENCE OF ARGININE-RICH PEPTIDES FROM MOLECULAR DYNAMICS SIMULATIONS. **Neha Awasthi**, Jochen S. Hub

2804-Pos Board B234
RESPONSE OF GWALP TRANSMEMBRANE PEPTIDES TO INCORPORATION OF BURIED HISTIDINE RESIDUES. **Ashley N. Martfeld**, Denise V. Greathouse, Roger E. Koeppe

2805-Pos Board B235
INFLUENCE OF CHOLESTEROL ON SINGLE ARGININE-CONTAINING TRANSMEMBRANE HELICAL PEPTIDES. **Jordana K. Thibado**, Ashley N. Martfeld, Denise V. Greathouse, Roger E. Koeppe

2806-Pos Board B236
INFLUENCE OF A POTENTIALLY DESTABILIZING CENTRAL TRYPTOPHAN ON TRANSMEMBRANE HELIX DOMAINS. **Vasu Suresh Kumar**, Ashley N. Martfeld, Denise V. Greathouse, Roger E. Koeppe

2807-Pos Board B237
IONIZATION-DEPENDENT BEHAVIOR OF TRANSMEMBRANE HELICES THAT INCORPORATE GLU OR TYR RESIDUES. **Venkatesan Rajagopalan**, Denise V. Greathouse, Roger E. Koeppe

2808-Pos Board B238
DETECTION OF HELIX FRAYING IN DESIGNED TRANSMEMBRANE ALPHA HELICES. **Armin Mortazavi**, Venkatesan Rajagopalan, Denise V. Greathouse, Roger E. Koeppe

2809-Pos Board B239
COMPARING PEPTIDE-LIPID INTERACTIONS AND ANTIMICROBIAL ACTIVITIES OF PEPTIDES WITH SIMILAR "CORE" LENGTHS BUT VARIABLE ARGININE AND TRYPTOPHAN RESIDUES. **Sara E. Whitlock**, Roger E. Koeppe II, Denise A. Greathouse

2810-Pos Board B240
CHARACTERIZATION OF MAXIMIN 3 STRUCTURE AND MEMBRANE LEAKAGE. Brian Herbst, Jillian Glatz, **Elizabeth Middleton**

2811-Pos Board B241
CHARACTERIZATION OF MEMBRANE INTERACTIONS OF ANTIMICROBIAL LACTOFERRICIN PEPTIDES WITH CENTRAL RESIDUE SUBSTITUTIONS. **Amanda Lowe**, Denise V. Greathouse

2812-Pos Board B242
PROMOTION OF COALESCENCE IN BICELLAR MIXTURES BY AN SP-B FRAGMENT. **Chris Miranda**, Valerie Booth, Michael R. Morrow

2813-Pos Board B243
LIPID COMPOSITION INFLUENCES THE INSERTION AND FOLDING OF PHLIP PEPTIDES. **Alexander G. Karabadzhak**, Dhammika Weerakkody, Oleg A. Andreev, Yana K. Reshetnyak, Donald M. Engelman

Protein-Lipid Interactions III (Boards B244-B269)

2814-Pos Board B244 INTERNATIONAL TRAVEL AWARDEE
ENHANCED HIV FUSION INHIBITORS EFFICACY REQUIRES MEMBRANE AFFINITY AND EXPOSURE OF THE POCKET BINDING DOMAIN OF C34 DERIVATIVES. **Marcelo T. Augusto**, Axel Hollmann, Miguel A. R. B. Castanho, Matteo Porotto, Antonello Pessi, Nuno C. Santos

2815-Pos Board B245 EDUCATION TRAVEL AWARDEE
STRENGTH, NOT DEPTH: AN EXPLORATION OF DIFFERENTIAL MEMBRANE BINDING KINETICS OF SYNAPTOTAGMIN-1 AND SYNAPTOTAGMIN-7 C2 DOMAINS. **Joshua V. Vermaas**, Emad Tajkhorshid

2816-Pos Board B246
HOW SYNAPTOTAGMIN I, N-BAR AND F-BAR DOMAINS GENERATE MEMBRANE CURVATURE. **Zhe Wu**, Hang Yu, Anton Arkhipov, Ying Yin, Klaus Schulten

2817-Pos Board B247
RECONSTITUTION AND CHARACTERIZATION OF NA/K-ATPASE IN MODEL LIPID MEMBRANES. **Tripta Bhatia**

2818-Pos Board B248
DETERGENT-FREE EXTRACTION OF THE REACTION CENTER FROM *RHODOBACTER SPHAEROIDES* INTO NATIVE NANODISCS. NANODISC SIZE MATTERS! **Stefan Scheidelaar**, David Swainsbury, Martijn Koorengevel, Hans Meeldijk, Eefjan Breukink, Rienk van Grondelle, Michael Jones, J. Antoinette Killian

2819-Pos Board B249 **education travel awardee**
MEMBRANE-LIPID MEDIATED RHODOPSIN SIGNALING INVOLVES AN ENSEMBLE OF CONFORMATIONAL SUBSTATES. **Udeep Chawla**, Blake Mertz, Eglof Ritter, Franz Bartl, Michael F. Brown

2820-Pos Board B250
INSIDE THE CELL UNDER OXIDATIVE STRESS: PROTEIN ASSEMBLY AT MITOCHONDRIAL MEMBRANES AND ITS CONSEQUENCES. Martin Lidman, Artur Dingeldein, Ilona Dudka, Farhana Nasrin, **Gerhard Gröbner**

2821-Pos Board B251
ELUCIDATION OF A RAFT-PARTITIONING MOTIF IN TRANSMEMBRANE PROTEINS. **Joseph H. Lorent**, Blanca B. Diaz-Rohrer, Kevin J. Spring, Ilya Levental

2822-Pos Board B252
THE MECHANISM OF THE DISINTEGRATION OF PHOSPHOLIPID MEMBRANES WITH HUMAN MONOACYLGLYCEROL LIPASE (HMGL). **Vitalii I. Silin**, Ioannis Karageorgos, David J. Vanderah, Nikolai Zvonok, John Marino, Alexandros Makriyannis

2823-Pos Board B253
EFFECT OF LIPID COMPOSITION ON THE AFFINITY AND BINDING OF DIMERIC TUBULIN TO MEMBRANES STUDIED USING SURFACE PLASMON RESONANCE, NEUTRON REFLECTIVITY, ELECTROPHYSIOLOGY, AND AC ELECTRICAL METHODS. **David P. Hoogerheide**, Oscar Teijido Hermida, Tatiana K. Rostovtseva, Sergey M. Bezrukov, Hirsh Nanda

2824-Pos Board B254
MEMBRANE INTERACTIONS WITH NA-CATH. **Robin Samuel**, Haijuad Du, Michael Massiah, Barney Bishop, Susan Gillmor

2825-Pos Board B255
A COMBINED EFFECT OF PROTEINS SP-B AND SP-C AND MEMBRANE CURVATURE ON CHOLESTEROL PARTITION IN LUNG SURFACTANT MEMBRANES: ANSWERS FROM FLUORESCENCE. Nuria Roldan, Thomas K.M. Nyholm, Peter Slotte, Jesus Perez-Gil, **Begoña Garcia Alvarez**

2826-Pos Board B256
PH-INDUCED REORGANIZATION AND MEMBRANE INSERTION OF THE DIPHTHERIA TOXIN T-DOMAIN STUDIED BY SPR AND NEUTRON REFLECTOMETRY. **Rebecca Eells**, Frank Heinirch, Mathias Lösche, Mykola V. Rodnin, Alexey S. Ladokhin

2827-Pos Board B257
RECONSTITUTION OF THE COAT PROTEIN COMPLEX II INDUCES MORPHOLOGICAL CHANGES ON ARTIFICIAL MEMBRANES. **Sebastian Daum**, Daniela Krüger, Lea Dietrich, Mona Groß, Annette Meister, Kirsten Bacia

2828-Pos Board B258
SOLUBILIZATION OF MEMBRANES BY STYRENE MALEIC ACID (SMA) RESULTS IN FORMATION OF NANODISCS WITH RETENTION OF NATIVE LIPID COMPOSITION. **Juan J. Dminguez Pardo**

2829-Pos Board B259
THE EFFECT OF OXIDIZED LIPIDS ON THE INTERPLAY OF BCL-2 AND BAX PROTEINS AT MITOCHONDRIAL MEMBRANES. **Martin N. Lidman**, Artur Dingeldein, Marcus Wallgren, Anders Pedersen, Göran Karlsson, Sarka Pokorna, Martin Hof, Gerhard Gröbner

2830-Pos Board B260
THE INTERACTION OF HSP70 WITH PHOSPHATIDYLSERINE MEMBRANES IS MEDIATED BY A HIGHLY POSITIVE REGION OF THE MOLECULE. Victor Lopez, David M. Cauvi, Nelson Arispe, **Antonio De Maio**

2831-Pos Board B261
ELUCIDATING THE T CELL RECEPTOR TRANSMEMBRANE ORGANIZATION VIA MULTI-SCALE MOLECULAR DYNAMICS SIMULATIONS. **Antreas C. Kalli**, Andre Cohnen, Oreste Acuto, Mark S. P. Sansom

2832-Pos Board B262
EVOLUTIONARY AVOIDANCE OF TRANSMEMBRANE EMBEDDED ARGININES IS DUE TO SLOWED FOLDING KINETICS. **Ashlee M. Plummer**, Harris D. Bernstein, Karen G. Fleming

2833-Pos Board B263
SITE DIRECTED SPIN LABEL EPR SPECTROSCOPY OF INFLUENZA A M2 PROTEIN. **Kathleen Howard**, Bryan Green, Shenstone Huang, Sang Woo Kim

2834-Pos Board B264
STUDYING THE MEMBRANE-BOUND CONFORMATION OF ALPHA-SYNUCLEIN USING A MODEL TRANSMEMBRANE PEPTIDE SYSTEM IN A LIPID BILAYER. **Graham P. Lobel**, Alice R. Vienneau, Casey H. Londergan

2835-Pos Board B265
STRUCTURAL COMPARISON OF MEMBRANE-BOUND RETROVIRAL GAG PROTEINS. Marilia Barros, Robert A. Dick, Siddhartha A.K. Datta, Volker M. Vogt, Alan Rein, Mathias Lösche, **Hirsh Nanda**

2836-Pos Board B266
PROBING PROTEIN-LIPID INTERACTIONS AT THE SINGLE MOLECULE LEVEL. **Tina R. Matin**, Krishna P. Sigdel, Linda L. Randall, Gavin M. King

2837-Pos Board B267
SINGLE-MOLECULE DIFFUSION MEASUREMENTS INDICATE INDEPENDENT MEMBRANE INSERTION BY THE TANDEM C2 DOMAINS OF SYNAPTOTAGMIN 7. Joseph Vasquez, Kan Chantranuvatana, Daniel Giardina, **Jefferson Knight**

2838-Pos Board B268
SINGLE MOLECULE DIFFUSION STUDIES OF PTEN: INSIGHTS INTO MEMBRANE BINDING. **Rakesh K. Harishchandra**, Anne-Marie M. Bryant, Abigail C. Cornwell, Mathias Lösche, Alonzo H. Ross, Arne Gericke

2839-Pos Board B269
A SINGLE-MOLECULE IMAGING BASED METHOD FOR ESTIMATING SUBUNIT STOICHIOMETRY OF PURIFIED MEMBRANE PROTEIN COMPLEXES IN LIPOSOMES. **Rahul Chadda**, Larry Friedman, Ankita Chadda, Mike Rigney, Luci-Kolmakova Partensky, Jeff Gelles, Janice L. Robertson

Mechanosensation (Boards B270-B292)

2840-Pos Board B270
NANOBIOMECHANICS AND MECHANOTRANSDUCTION OF SENSORY NEURONS. **Laura Andolfi**, Marco Lazzarino, Valentina Masciotti, Yanmei Qi, Jing Hu

2841-Pos Board B271
CROSS-LINKED MATRIX RIGIDITY AND SOLUBLE FACTORS INDUCE DIFFERENTIATION VIA DISTINCT BUT OVERLAPPING PATHWAYS. Irena L. Ivanovska, Joe Swift, Kyle Spinler, P. C. Dave P. Dingal, **Dennis E. Discher**

2842-Pos Board B272
ALTERED CONTRACTILE MACHINERY IN AIRWAY EPITHELIAL CELLS IN RESPONSE TO CIGARETTE SMOKE. Corrine Kliment, Vasudha Srivastava, Douglas Robinson, **Ramana Sidhaye**

2843-Pos Board B273
PRIMARY CILIA LENGTH IS CRITICAL TO CELLULAR MECHANOTRANSDUCTION. **Milos Spasic**, Christopher Jacobs

2844-Pos Board B274
STRUCTURE OF AN INNER-EAR PROTOCADHERIN-15 FRAGMENT WITH AN ATYPICAL CALCIUM-FREE LINKER. **Raul Araya-Secchi**, Marcos Sotomayor

2845-Pos Board B275
FORCE-FREE TRANSITION FROM CLOSED TO OPEN MSCL: A MOLECULAR DYNAMICS STUDY. **Natalie E. Smith**, Ben Corry

2846-Pos Board B276
PATCH CLAMP CHARACTERISATON OF THE EFFECT OF CARDIOLIPIN ON THE BACTERIAL MECHANOSENSITIVE CHANNELS OF SMALL (MSCS) AND LARGE (MSCL) CONDUCTANCE. Pietro Ridone, Yoshitaka Nakayama, Boris Martinac, **Andrew R. Battle**

2847-Pos Board B277 CPOW TRAVEL AWARDEE
STRUCTURAL AND BIOPHYSICAL CHARACTERIZATION OF INNER EAR TIP LINK VARIANTS. **Yoshie Narui**, Marcos Sotomayor

2848-Pos Board B278 INTERNATIONAL TRAVEL AWARDEE
PROBING THE MECHANOSENSITIVITY OF PIEZO1 CHANNELS. **Charles D. Cox**, Boris Martinac

2849-Pos Board B279
SENSING FORCE BY TRIGEMINAL NEURONS OF ACUTELY MECHANOSENSITIVE BIRDS. Eve R. Schneider, Marco Mastrotto, Willem J. Laursen, Vincent P. Schulz, Jena B. Goodman, Owen H. Funk, Patrick G. Gallagher, Elena O. Gracheva, **Sviatoslav N. Bagriantsev**

2850-Pos Board B280
IS CRYPTOCHROME A PRIMARY SENSOR OF EXTREMELY LOW FREQUENCY MAGNETIC FIELDS IN CHILDHOOD LEUKEMIA? **Patricia L. Bounds**, Niels Kuster

2851-Pos Board B281
A STRUCTURE-FUNCTION APPROACH TO UNDERSTANDING THE DUAL FUNCTIONS OF THE PLANT MECHANOSENSITIVE ION CHANNEL MSL10. **Grigory Maksaev**, Kira Veley, Elizabeth Haswell

2852-Pos Board B282
FLUID SHEAR INDUCES PROARRHYTHMIC CA^{2+} WAVE AND ALTERS ATRIAL CA^{2+} SIGNALING: A ROLE OF AUTOCRINE ACTIVATIONS OF P2-PURINERGIC/TYPE 2 INOSITOL TRISPHOSPHATE RECEPTOR SIGNALING. Joon-Chul Kim, Ju Chen, **Sun-Hee Woo**

2853-Pos Board B283
THE DYNAMIC INTERPLAY BETWEEN CLEAVAGE FURROW PROTEINS IN CELLULAR MECHANORESPONSIVENESS. **Vasudha Srivastava**, Irina Tchernyshyov, Jennifer Van Eyk, Douglas N. Robinson

2854-Pos Board B284
EFFECTS OF PHYSICAL LOADING ON ADIPOGENIC DIFFERENTIATION IN 3T3-L1 PREADIPOCYTES. Jongyun Choi, **Jeongkun Lee**, Yeong-Min Yoo, Chi Hyun Kim

2855-Pos Board B285
CHARACTERIZATION OF BIOMECHANICAL PROPERTIES OF PRIMARY ENDOTHELIAL CELLS EXPOSED TO SHEAR STRESS. **Nickolas Boroda**, Andrew K. Wong, Pierre Llanos, Shahin Rafii, Sina Y. Rabbany

2856-Pos Board B286
REMODELING OF CAVEOLAE MEDIATES STRETCH-INDUCED INCREASE OF L-TYPE CALCIUM CURRENT IN RAT MESENTERIC ARTERY. **Kyung-Chul Shin**, Sang Woong Park, Hyunji Park, Jin-Yeon Park, Young-Sun Kang, Dong Jun Sung, Hyung-Sik Kim, Soon-Cheol Chung, Jae Gon Kim, Hana Cho, Young Min Bae

2857-Pos Board B287
MECHANOSENSITIVITY OF TRPC6 ION CHANNELS. **Yury A. Nikolaev**, Paul R. Rohde, Charles D. Cox, Derek R. Laver, Boris Martinac

2858-Pos Board B288
THE N-TERMINAL DOMAIN ACTS AS AN ANCHOR DURING THE GATING CYCLE OF MSCL. Navid Bavi, Takeshi Nomura, Qinghua Qin, **Boris Martinac**

2859-Pos Board B289
THE TENSION-ACTIVATED CHANNELS IN THE CYTOPLASMIC MEMBRANE OF VIBRIO CHOLERAE. **Ian Rowe**, Simona Patange, Vladislav Belyy, Anthony Yasmann, Sergei Sukharev

2860-Pos Board B290
THE ELECTROPHYSIOLOGY OF MECHANOSENSITIVE CHANNELS IN PSEUDOMONAS AERUGINOSA. **Ugur Cetiner**, Sergei Sukharev, Ian Donald Rowe, Christina Mayhew, Andriy Anishkin

2861-Pos Board B291
THE N-TERMINAL DOMAIN OF BACTERIAL MECHANOSENSITIVE MSCL ACTS AS A MECHANOSENSOR: MOLECULAR DYNAMICS STUDY. **Yasuyuki Sawada**, Masahiro Sokabe

2862-Pos Board B292
SINGLE-MOLECULE FORCE-SPECTROSCOPY OF INNER EAR PROTEINS. **Mounir A. Koussa**, Wesley P. Wong, David P. Corey

Calcium Signaling II (Boards B293-B299)

2863-Pos Board B293
PROBING THE FUNCTIONAL COUPLING INTERFACE BETWEEN STIM1 AND ORAI1. **Xizhuo Wang**, Eunan Hendron, Yandong Zhou, Jun-Ichi Goto, Katsuhiko Mikoshiba, Yoshihiro Baba, Tomohiro Kurosaki, Youjun Wang, Donald L. Gill

2864-Pos Board B294
STIM1 AND STIM2 PROTEINS REGULATION OF ENDOGENOUS STORE-OPERATED CALCIUM CHANNELS IN HEK293 CELLS. **Alexey Shalygin**, Olga Zimina, Vera Kamaletdinova, Anton Skopin, Lyuba Glushankova, Galina N. Mozhayeva, Elena Kaznacheyeva

2865-Pos Board B295
STIM1-STIM2 INTERACTIONS MODULATE STORE-OPERATED CALCIUM ENTRY. **Krishna Subedi**, Hwei Ling Ong, Indu Ambudkar

2866-Pos Board B296
REMODELING OF THE CYTOSKELETON AND REGULATION OF STORE-OPERATED CALCIUM ENTRY. **Lorena de Souza**, Timothy Lockwich, Hwei Ling Ong, Kwong Tai Cheng, Indu S. Ambudkar

2867-Pos Board B297
A NOVEL STIM2 SPLICE VARIANT FUNCTIONS AS A BREAK FOR STIM MEDIATED ACTIVATION OF ORAI CALCIUM CHANNELS. **Anna-Maria Miederer**, Dalia Alansary, Gertrud Schwaer, Martin Jung, Barbara A. Niemeyer

2868-Pos Board B298
ROLES OF THE ORAI1 C-TERMINUS AND N-TERMINUS IN 2-APB-INDUCED STIM1 COUPLING. **Yandong Zhou**, Youjun Wang, Xizhuo Wang, Natalia A. Loktionova, Xianming Wang, Donald L. Gill

2869-Pos Board B299 **International Travel Awardee**
MENTHOL-INDUCED CHANGES IN MESENCHYMAL STEM CELL DIFFERENTIATION. Juan C. Henao, Adriana Grismaldo, **Yolima P. Torres**

Intracellular Calcium Channels and Calcium Sparks and Waves II (Boards B300-B316)

2870-Pos Board B300
MICU1 AND MICU2 OPERATE TOGETHER TO REGULATE THE UNIPORTER. **Kimberli J. Kamer**, Vamsi K. Mootha

2871-Pos Board B301
ACTIVATION OF MITOCHONDRIAL SK CHANNELS IN CARDIOMYOCYTES DERIVED FROM HYPERTROPHIC HEARTS ATTENUATES CCA^{2+}-DEPENDENT ARRHYTHMIA BY REDUCING MITOCHONDRIAL ROS PRODUCTION THEREBY STABILIZING RYRS. TaeYun Kim, Weiyan Li, Karim Roder, Radmila Terentyeva, Gideon Koren, Bum-Rak Choi, **Dmitry Terentyev**

2872-Pos Board B302
ALTERED RYANODINE RECEPTOR FUNCTION IN ISCHEMIC HEART DISEASE: IS THERE A ROLE FOR MITOCHONDRIA? **Demetrio J. Santiago**, Eef Dries, Ilse Lenaerts, Karin R. Sipido

2873-Pos Board B303
STATIN INDUCED MYOPATHY: A ROLE FOR MITOCHONDRIAL CA^{2+} AND NO IN ENHANCED SARCOPLASMIC RETICULUM CA^{2+} LEAK. **Sabine Lotteau**, David MacDougall, Derek Steele, Sarah Calaghan

2874-Pos Board B304
RIESKE IRON-SULFUR PROTEIN-DEPENDENT MITOCHONDRIAL ROS-MEDIATED DISSOCIATION OF FKBP12.6/RYR2 COMPLEX PLAYS AN ESSENTIAL ROLE IN PULMONARY HYPERTENSION. **Yong-Xiao Wang**, Yun-Min Zheng

2875-Pos Board B305
CALCIUM SIGNALING AMONG RYR2S WITHIN A CALCIUM RELEASE UNIT DURING A CALCIUM SPARK. **Didier X.P. Brochet**, Gang Wang, W. Jonathan Lederer, Heping Cheng

2876-Pos Board B306
BIOORTHOGONAL CALCIUM MODULATION BY DIRECT INTRACELLULAR ACCESS USING NANOSTRAWS. **Alexander Xu**, Amin Aalipour, Sally Kim, Nicholas Melosh

2877-Pos Board B307
EFFECTS OF ARRHYTHMOGENIC MUTATIONS ON CA^{2+}-INDUCED CA^{2+} RELEASE ACTIVITIES OF TYPE 2 RYANODINE RECEPTORS. **Nagomi Kurebayashi**, Takashi Murayama, Junji Suzuki, Kazunori Kanemaru, Masamitsu Iino, Takashi Sakurai

2878-Pos Board B308
DHBP BLOCK OF RYANODINE RECEPTOR CHANNELS. **Yuanzhao Lv**, Julio A. Copello

2879-Pos Board B309
FILLING THE GAP BETWEEN CALCIUM SPARKS AND WAVES: AUTOMATIC DETECTION AND CLASSIFICATION OF LOCAL CALCIUM RELEASES IN CARDIAC PACEMAKER CELLS. **Alexander V. Maltsev**, Michael D. Stern

2880-Pos Board B310
BASAL ACTIVITY OF EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) AND PHOSPHOLIPASE C (PLC) ARE REQUIRED TO SUSTAIN SPONTANEOUS BEATING OF CARDIAC PACEMAKER CELLS. **Tatiana M. Vinogradova**, Kirill V. Tarasov, Edward G. Lakatta

2881-Pos Board B311
A NEW SIMPLIFIED 3D MODEL OF CARDIAC PACEMAKER CELL BASED ON SUPERRESOLUTION STRUCTURED ILLUMINATION MICROSCOPY (SIM). **Victor A. Maltsev**, Oliver Monfredi, Hari Shroff, Andrew G. York, Anna V. Maltsev, Edward G. Lakatta, Michael D. Stern

2882-Pos Board B312
GLYCOSIDE-INDUCED COLLAPSE OF THE SODIUM AND CALCIUM GRADIENTS LEADS TO A BIPHASIC EFFECT ON CARDIAC CELL PACEMAKER FUNCTION. **Rostislav Bychkov**, Syevda Sirenko, Yael Yaniv, Victor A. Maltsev, Edward G. Lakatta

2883-Pos Board B313
AUTONOMIC STIMULATION MODULATES ACTION POTENTIAL FIRING RATE IN CARDIAC PACEMAKER CELLS VIA SYNCHRONIZATION OF LOCAL CALCIUM PUMPING AND RELEASE. **Oliver J. Monfredi**, Edward G. Lakatta, Victor A. Maltsev

2884-Pos Board B314
EXCITATION-METABOLISM COUPLING IN MOUSE HEART. **Andrew P. Wescott**, W. J. Lederer, George S. B. Williams

2885-Pos Board B315
SIMILARITIES AND DIFFERENCES IN GATING OF THE TWO-PORE CHANNELS TPC1 AND TPC2. **Archana Jha**, Malini Ahuja, Shmuel Muallem

2886-Pos Board B316
MITOCHONDRIAL CALCIUM AND BIOENERGETICS CONTROLLED BY TIGHT COORDINATION OF MCU AND NCLX. **Ming-Feng Tsai**, Chuck Phillips, Christopher Miller

Nucleo-Cytoplasmic Transport (Boards B317-B322)

2887-Pos Board B317
OBSERVING SIGNAL TRANSDUCTION DIRECTLY AT THE SINGLE-MOLECULE LEVEL IN LIVE EUKARYOTIC CELLS. **Adam JM Wollman**, Sviatlana Shashkova, Erik Hedlund, Stefan Hohmann, Mark C. Leake

2888-Pos Board B318
IN VIVO ANALYSIS OF PROTEIN CROWDING IN THE NUCLEAR PORE COMPLEX DURING INTERPHASE AND MITOSIS. **Hide A Konishi**, Suguru Asai, Tomonobu M Watanabe, Shige H Yoshimura

2889-Pos Board B319
MICROINJECTION OF FL-TRNA FOR THE STUDY OF TRNA SUBCELLULAR DYNAMICS. **Sean E. Anderson**, Anna Kashina, Haim H. Bau, Barry S. Cooperman

2890-Pos Board B320
INVOLVEMENT OF WATER MOLECULES IN THE FORMATION OF HYDROPHOBIC BARRIER IN THE NUCLEAR PORE COMPLEX. **Suguru Asai**, Hide A. Konishi, Shige H. Yoshimura

2891-Pos Board B321
MONITORING AND MODELING EFFECTS OF IGF1, INSULIN AND GREEN TEA COMPOUND EGCG ON NUCLEAR-CYTOPLASMIC DISTRIBUTION OF FOXO1-GFP IN SKELETAL MUSCLE FIBERS. Robert Wimmer, **Sarah Russell**, Bradford Peercy, Martin Schneider

2892-Pos Board B322
THE AUTOPHAGOSOME MARKER LC3 UNDERGOES REGULATED TARGETING TO THE NUCLEUS AND NUCLEOLUS. **Lewis J. Kraft**, Jacob Dowler, Anne K. Kenworthy

Voltage-gated Na Channels (Boards B323-B350)

2893-Pos Board B323
RESTING STATE OF S4 IDENTIFIED FOR EACH DOMAIN OF NAV1.2 USING OMEGA CURRENT TECHNIQUE. **Claudia Lehmann**, Hansjakob Heldstab, Nikolaus G. Greeff

2894-Pos Board B324
SELECTIVE IMMOBILIZATION OF S4 IN DOMAIN III AND IV OF RAT BRAIN NAV1.2 SHOWN BY OMEGA CURRENTS. **Nikolaus Greeff**, Hansjakob Heldstab, Claudia Lehmann

2895-Pos Board B325
VOLTAGE SENSOR DOMAINS AND CLOSED-STATE INACTIVATION IN SODIUM CHANNELS. **James R. Groome**

2896-Pos Board B326
GATING PORE CURRENTS ARE COMMON DEFECTS OF TWO NAV1.5 MUTATIONS IN PATIENTS WITH MIXED ARRHYTHMIAS AND DILATED CARDIOMYOPATHY. **Adrien Moreau**, Pascal Gosselin-Badaroudine, Lucie Delemotte, Michael L. Klein, Mohamed Chahine

2897-Pos Board B327
INTERACTION OF THE CARDIAC SODIUM CHANNEL ALPHA-SUBUNITS LEADS TO COUPLED GATING PROPERTIES. **Jérôme Clatot**, Haiyan Liu, Eckard Ficker, Isabelle Deschênes

2898-Pos Board B328
SUPERRESOLUTION MICROSCOPY REVEALS SODIUM CHANNEL LOCALIZATION WITHIN INTERCALATED DISK MICRODOMAINS: IMPLICATIONS FOR EPHAPTIC COUPLING. **Rengasayee Veeraraghavan**, Joyce Lin, James P. Keener, Steven Poelzing, Robert G. Gourdie

2899-Pos Board B329
LOSS OF CALMODULIN-MEDIATED REGULATION OF NA^+ CHANNEL CAUSES REMODELING OF ELECTRICAL AND JUNCTIONAL PROTEINS; AND INDUCES DILATED CARDIOMYOPATHY IN IQ/$AA^{+/-}$ MICE. **Rosy Joshi-Mukherjee**, Hana Cho, Takeshi Aiba, Deborah DiSilvestre, Gordon F. Tomaselli

2900-Pos Board B330
MUTATION SPECIFIC DRUG RESPONSE AND CARDIAC RISK IN LONG QT TYPE 3. **Elsa Ronzier**, Yitschak Biton, Alessandra Matavel, Arthur Moss, Wojciech Zareba, Coeli Lopes

2901-Pos Board B331
ROTATIONAL SYMMETRY OF TWO PYRETHROID RECEPTOR SITES IN THE MOSQUITO SODIUM CHANNEL. Yuzhe Du, Yoshiko Nomura, Ke Dong, **Boris S. Zhorov**

2902-Pos Board B332
NAV1.7 INHIBITOR, PF-05089771, INHIBITS FAST- AND SLOW-INACTIVATED CHANNELS WITH SIMILAR AFFINITIES. **Jonathan Theile**, Matthew Fuller, Mark Chapman

2903-Pos Board B333
STRUCTURAL MODELING OF LOCAL ANESTHETIC BINDING TO THE PORE-DOMAIN OF HUMAN NAV1.5 IN OPEN AND CLOSED STATES USING ROSETTA. **Kevin DeMarco**

2904-Pos Board B334
UNDERSTANDING THE STATE DEPENDENCE OF VOLTAGE SENSOR TOXIN ACTION ON VOLTAGE GATED SODIUM CHANNELS. **Phuong T. Nguyen**, Ian H. Kimball, Kenneth S. Eum, Bruce E. Cohen, Jon T. Sack, Vladimir Yarov-Yarovoy

2905-Pos Board B335
TARGETING PROTEIN:PROTEIN INTERACTION SITES FOR DRUG DEVELOPMENT AGAINST VOLTAGE-GATED SODIUM CHANNELS. **Syed R. Ali**, Zhiqing Liu, Miroslav N. Nenov, Neli I. Panova-Elektro, Jia Zhou, Svetla Stoilova-McPhie, Fernanda Laezza

2906-Pos Board B336
SODIUM SELECTIVE CONDUCTION, INACTIVATION AND INHIBITION MECHANISMS USING THE BACTERIAL NAVAB CHANNEL. Céline Boiteux, Igor Vorobyov, Robert J. French, Christopher French, Vladimir Yarov-Yarovoy, **Toby W. Allen**

2907-Pos Board B337
MOLECULAR DYNAMICS SIMULATIONS DESCRIBE THE MECHANISM OF K BLOCK IN BACTERIAL NAV CHANNELS. Van Ngo, Yibo Wang, Sergei Noskov, Stephan Haas, **Robert A. Farley**

2908-Pos Board B338
MOLECULAR DYNAMICS STUDY OF ION CONDUCTION AND SELECTIVITY IN A PROKARYOTIC ION CHANNEL. **Karen M. Callahan**, Benoît Roux

2909-Pos Board B339
COUPLING OF CHANNEL FLUCTUATIONS IN ION PERMEATION AND SELECTIVITY IN BACTERIAL SODIUM CHANNEL NAVAB. **Christopher Ing**, Nilmadhab Chakrabarti, Ning Zheng, William A. Catterall, Régis Pomès

2910-Pos Board B340
EXPRESSION, PURIFICATION, AND PRELIMINARY CHARACTERIZATION OF A HUMAN CARDIAC SODIUM CHANNEL VOLTAGE SENSING DOMAIN.
Mohammed H. Bhuiyan, Sebastien F. Poget

2911-Pos Board B341
A THERMODYNAMIC ANALYSIS OF DISEASE-CAUSING MUTATIONS IN THE NAV1.5 C-TERMINUS. Ching-Chieh Tung, Ricardo E. Rivera-Acevedo, **Bernd R. Gardill**, Filip Van Petegem

2912-Pos Board B342
FUNCTIONAL CONSEQUENCES OF A NOVEL NAV1.9 MUTATION (L1302F) CAUSING CONGENITAL INSENSITIVITY TO PAIN. **Carlos G. Vanoye**, Tatiana V. Abranova, Chris C. Ramdoski, Paul Goldberg, Charles J. Cohen, Alfred L. George

2913-Pos Board B343
INFANT SUDDEN DEATH: NOVEL MUTATIONS RESPONSIBLE FOR IMPAIRED NAV1.5 CHANNEL FUNCTION. Jace Morganstein, Kundan Jana, Monique N. Foster, Tomoe Y. Nakamura, Thomas V. McDonald, Yingying Tang, **William A. Coetzee**

2914-Pos Board B344
BIOPHYSICAL AND MOLECULAR ANALYSIS OF THE SODIUM CURRENT IN HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. Brian K. Panama, Robert J. Goodrow, Serge Sicouri, Charles Antzelevitch, Jacqueline A. Treat, **Jonathan M. Cordeiro**

2915-Pos Board B345
NAV1.5 C-TERMINAL DOMAINS INFLUENCE CALCIUM REGULATION OF FAST INACTIVATION SEPARATELY FROM CALMODULIN INTERACTION. **Franck Potet**, Svetlana Stepanovic, Sabina Kupershmidt, Alfred L. George, Jr

2916-Pos Board B346
CAMKII-DEPENDENT REGULATION OF CARDIAC SODIUM CHANNEL. **Federica Farinelli**, Deborah DiSilvestre, Peihong Dong, Yanli Tian, Gordon Tomaselli

2917-Pos Board B347
RECRUITMENT OF CALMODULIN TO THE TAIL OF THE VOLTAGE-GATED SODIUM CHANNEL NAV1.2. **Liam Hovey**, Corinne Andresen, Dagan Marx, Madeline Shea

2918-Pos Board B348
COUPLING COMPARTMENTAL MODELS TO LIVE NEURONS TO INVESTIGATE ACTION POTENTIAL MECHANISMS. **Marco A. Navarro**, Sarah L. Debs, Lorin S. Milescu

2919-Pos Board B349
OPTIMIZING A NAV1.5 MARKOV-MODEL WITH A GENETIC ALGORITHM. **Zach R. Teed**, Arie Krumholtz, Jonathon R. Silva

2920-Pos Board B350
RATE CONSTANT MODELS CANNOT DESCRIBE MOVEMENT OF CHARGED ATOMS OR MOLECULES. **Bob Eisenberg**

Voltage-gated Ca Channels (Boards B351-B370)

2921-Pos Board B351
TARGETING T-TYPE CHANNELS WITH PROTXII-LIKE TOXINS. **Autoosa Salari**, Mirela Milescu

2922-Pos Board B352
ENGINEERING SELECTIVITY IN RGK PROTEIN INHIBITION OF CAV1/CAV2 CHANNELS. **Akil Puckerin**

2923-Pos Board B353 INTERNATIONAL TRAVEL AWARDEE
VENTRICULAR L-TYPE CA^{2+} CHANNELS AND EXPRESSION OF RGK PROTEINS IN MOUSE MODELS ASSOCIATED WITH DIABETES. **Jessica Köth**, Christian Fabisch, Stefan Herzig, Jan Matthes

2924-Pos Board B354
INHIBITION OF HUMAN $CA_V2.3$ CHANNELS VIA μ-, δ- AND κ-OPIOID RECEPTOR ACTIVATION. Geza Berecki, Leonid Motin, **David J. Adams**

2925-Pos Board B355
CONTROL OF FUNCTIONAL TARGETING OF CAV1.2 CHANNELS BY THE Γ6. **Roman Shirokov**, Thomas Comollo, Rose Rendon

2926-Pos Board B356
L-TYPE CA^{2+} CHANNEL CAVB SUBUNITS ASSOCIATE WITH AND DIFFERENTIALLY REGULATE THE CARDIAC CAV3.2 T-TYPE CA^{2+} CHANNEL CURRENTS. **Marites T. Woon**, Ravi C. Balijepalli

2927-Pos Board B357
HOMOLOGOUS SERINE/THREONINE IN THE CA_V $2.2\alpha_1$ AND $2.3\alpha_1$ SUBUNITS BEHAVE SIMILARLY, AS STIMULATORY AND INHIBITORY PKC SITES. **Ganesan L. Kamatchi**

2928-Pos Board B358
NOREPINEPHRINE UPREGULATES T-TYPE CALCIUM CHANNELS IN RAT PINEALOCYTES. **Haijie Yu**, Jong Bae Seo, Seung-Ryoung Jung, Duk-Su Koh, Bertil Hille

2929-Pos Board B359
SINGLE-CHANNEL ANALYSIS OF THE INHIBITION OF THE CALCIUM DEPENDENT INACTIVATION BY THE C-TERMINAL MODULATOR DOMAIN OF CAV1.3 CHANNELS. **Elza Kuzmenkina**, Elena Novikova, Wanchana Jangsangthong, Stefan Herzig

2930-Pos Board B360
SERUM FACTOR ALTERS T-TYPE CAV3.2 GATING KINETICS AND CURRENT DENSITY. **Gray Evans**, Slobodan M. Todorovic

2931-Pos Board B361
CONVERGENT MODULATIONS BY CARBOXYL-TERMINI ACROSS L-TYPE CALCIUM CHANNEL SUBTYPES. **Yaxiong Yang**, Min Liu, Nan Liu, Xiaodong Liu

2932-Pos Board B362
MODAL BIFURCATION OF CAV1.3 SIGNALING IN CORTICAL NEURONS. **Min Liu**, Yaxiong Yang, Nan Liu, Ji Tang, Xuyang Sun, Xiaodong Liu

2933-Pos Board B363
THE EFFECT OF AUTISM CANDIDATE-GENE MUTATIONS IN THE VOLTAGE-GATED CALCIUM CHANNEL β2 SUBUNIT ON SINGLE CHANNEL KINETICS. **Alexandra F. Breitenkamp**, Ajay K. Singh, Vincent Mortier, Patrick Despang, Marion Brill, Elza Kuzmenkina, Stefan Herzig

2934-Pos Board B364
DIVERGENT REGULATION OF CARDIOMYOCYTE CAV1.2 CURRENTS BY CALMODULIN MUTANTS ASSOCIATED WITH HUMAN SUDDEN DEATH SYNDROMES. **Dmytro O. Kryshtal**, Hyun S. Hwang, Christopher N. Johnson, Walter J. Chazin, Alfred L. George Jr., Bjorn C. Knollmann

2935-Pos Board B365
A PQ-CHANNEL MUTATION ASSOCIATED WITH EPILEPSY ALTERS THE VOLTAGE DEPENDENCE OF CHANNEL INACTIVATION. Ellie Dubrovina, Gabrielle Suppa, Keith Thomas, **Zafir Buraei**

2936-Pos Board B366 CPOW TRAVEL AWARDEE
β2A AND β3 DIFFERENTIALLY MODULATE TIME- AND VOLTAGE-DEPENDENT PROPERTIES OF INDIVIDUAL VOLTAGE SENSORS IN THE HUMAN CAV1.2 CHANNEL. **Nicoletta Savalli**, Daniel Sigg, Alan Neely, Riccardo Olcese

2937-Pos Board B367
THE α2δ SUBUNIT EFFICIENTLY COUPLES VSDS ACTIVATION TO PORE OPENING IN HUMAN CAV1.2 CHANNELS. **Nicoletta Savalli**, Antonios Pantazis, Daniel Sigg, Alan Neely, Riccardo Olcese

2938-Pos Board B368 CPOW TRAVEL AWARDEE
GENETIC ABLATION OF KLHL1 ALTERS CAV3.2 EXPRESSION IN DRG NEURONS AND MECHANICAL PAIN TRANSMISSION. **Elizabeth Martinez-Hernandez**, Yungui He, Paula P. Perissinotti, Erik Almazan, Michael D. Koobb, Erika S. Piedras-Renteria

2939-Pos Board B369
MORPHOLINO OLIGOMER PEPTIDE THERAPY IMPROVES MITOCHONDRIAL FUNCTION IN *MDX* CARDIOMYOPATHY. Victoria P. Johnstone, Abbie M. Adams, Steve D. Wilton, Sue Fletcher, **Livia C. Hool**

2940-Pos Board B370
HIGH SUSCEPTIBILITY TO NON-ALCOHOLIC FATTY LIVER DISEASE IN TWO-PORE CHANNEL 2-DEFICIENT MICE. Christian Grimm, Cheng-Chang Chen, Elisabeth Butz, Martin Biel, **Christian Wahl-Schott**

Ion Channels, Pharmacology, and Disease (Boards B371-B400)

2941-Pos Board B371
RELEVANCE OF SARS-COV E PROTEIN ION CHANNEL ACTIVITY IN VIRUS PATHOGENESIS. **Carmina Verdiá Báguena**, José L. Nieto-Torres, Marta L. De Diego, Jose M. Jimenez-Guardeño, Jose A. Regla-Nava, Raul Fernandez-Delgado, carlos Castaño-Rodríguez, Jaume Torres, Antonio Alcaraz, Vicente M. Aguilella, Luis Enjuanes

2942-Pos Board B372
DIVALENT COPPER COMPOUND AS INHIBITORY AGENT OF INFLUENZA A. **Kelly L. McGuire**, Nathan A. Gordon, Roger G. Harrison, David D. Busath

2943-Pos Board B373
INSIGHTS ON MOLECULAR DETERMINANTS OF HERG K^+ CHANNEL INHIBITION: DESIGN, SYNTHESIS, AND BIOLOGICAL EVALUATION OF LUBELUZOLE DERIVATIVES. **Roberta Gualdani**, Maria Maddalena Cavalluzzi, Francesco Tadini-Buoninsegni, Maria Rosa Moncelli, Giovanni Lentini

2944-Pos Board B374
VALIDATION OF KCA3.1 CHANNEL NIFEDIPINE INTERACTION SITE PREDICTED BY ROSETTA MODELING METHOD. **Hai M. Nguyen**, Heike Wulff, Vladimir Yarov-Yarovoy

2945-Pos Board B375
GBR-12909: POTENT BLOCKER OF PEAK AND LATE NAV1.5 CURRENTS. **Carlos Obejero-Paz**, James Kramer, Andrew Bruening-Wright, Antonio Lacerda, Arthur Brown

2946-Pos Board B376
VX-770 AND NPPB MODULATE CFTR GATING VIA DIFFERENT BUT DEPENDENT MECHANISMS. **Wen Ying Lin**, Kangyang Jih, Tzyh-chang Hwang

2947-Pos Board B377
"USE DEPENDENCE" WITHOUT A BALL AND CHAIN - INHIBITION OF BACTERIAL SODIUM CHANNELS BY μ-CONTOXINS. Rocio K. Finol-Urdaneta, Denys McMaster, **Robert J. French**

2948-Pos Board B378
W493R GAIN OF FUNCTION MUTATION IN ATYPICAL CYSTIC FIBROSIS REWIRES THE EPITHELIAL SODIUM CHANNEL DYNAMICS. **Mahmoud Shobair**, Yan H. Dang, Hong He, Jack M. Stutts, Nikolay V. Dokholyan

2949-Pos Board B379
ROLE OF THREONINE 338 IN CFTR GATING. **Hsuan-Ting Kuo**, Tzyh-Chang Hwang

2950-Pos Board B380
PP1 ANCHORING ONTO NCX1 FACILITATES DEPHOSPHORYLATION OF P-SER68-PLM. **Tandekile Lubelwana Hafver**, Pimthanya Wanichawan, Kjetil Hodne, Jan Magnus Aronsen, Bjørn Dalhus, Marianne Lunde, Ulla Enger, Marita Mathisen, William Fuller, Ivar Sjaastad, Ole Sejersted, Cathrine Carlson

2951-Pos Board B381
THE PORE-DOMAIN OF TRPA1 MEDIATES THE INHIBITORY EFFECT OF THE ANTAGONIST 6-METHYL-5-(2-(TRIFLUOROMETHYL)PHENYL)-1H-INDAZOLE. **Hans Moldenhauer**, Ramon Latorre, Jorg Grandl

2952-Pos Board B382
PLANAR PATCH CLAMP SYSTEM CAPABLE OF RECORDING MECHANOSENSITIVE ACTIVITY OF ION CHANNELS. **Ken Takahashi**, Keiji Naruse

2953-Pos Board B383
SINGLE-CHANNEL ANALYSIS OF THE MOLECULAR PHARMACOLOGY OF THE LONG QT SYNDROME VARIANT 3. **Seth H. Robey**, Kevin J. Sampson, Robert S. Kass

2954-Pos Board B384
AUTOMATED PATCH-CLAMP PHARMACOLOGY ASSAYS USING HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. Olaf Scheel, Stefanie Frech, **Bogdan P. Amuzescu**, Jörg Eisfeld, Kun-Han Lin, Thomas Knott

2955-Pos Board B385
PHARMACOLOGICAL CHARACTERIZATION OF NR1/NR2A AND NR1/NR2B GLUTAMATE RECEPTORS USING AN ELECTROPHYSIOLOGY BASED HTS ASSAY. **Nikolai Fedorov**, Yuri Kuryshev, Amy Wright, Zhiqi Liu, Luke Armstrong, Glenn E. Kirsch, Arthur M. Brown

2956-Pos Board B386
CHARACTERIZATION OF SMALL MOLECULE MODULATORS OF THE CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR USING BACKSCATTERING INTERFEROMETRY. **Ashley Lockwood**, David Heidary, Christopher Richards, Michael Baksh, M.G. Finn

2957-Pos Board B387
DANTROLENE INHIBITION OF RYR2 REQUIRES CALMODULIN. **Ye W. Oo**, N Gomez-Hurtado, D.F. vanHelden, M. S Imtiaz, B.C Knollmann, D.R Laver

2958-Pos Board B388
M1 AND M2 MICROGLIA EXHIBIT SIGNIFICANT DIFFERENCES IN THEIR K+ CHANNEL EXPRESSION. **Eva Melanie Grossinger**, Hai Minh Nguyen, Yi-Je Chen, Izumi Maezawa, Heike Wulff

2959-Pos Board B389
ATHEROGENIC VERY-LOW-DENSITY LIPOPROTEIN SHORTENS ATRIAL ACTION POTENTIAL DURATION BY INCREASING POTASSIUM CURRENTS AND CALCIUM TRANSIENT. **Hsiang-Chun Lee**, Chi Wei, Liang-Yin Ke, Pei-Shang Tsai, Hsin-Ting Lin, Yi-Lin Shiao, Bin-Nan Wu, Chu-Huang Chen, Sheng-Hsiung Sheu

2960-Pos Board B390
NEW INSIGHT INTO THE INVOLVEMENT OF LARGE-CONDUCTANCE CALCIUM-ACTIVATED-POTASSIUM-CHANNEL(BK) IN CELL VIABILITY: PATHOPHYSIOLOGICAL IMPLICATIONS IN NEUROMUSCULAR DISORDERS. **Angela Curci**, Antonietta Mele, Giulia Maria Camerino, Diana Conte, Domenico Tricarico

2961-Pos Board B391
LONG-TERM MODULATION OF ION CHANNELS BY ALDOSTERONE IN ADULT RAT ATRIAL MYOCYTES. **Erick B. Rios-Perez**, Maricela García-Castañeda, Guillermo Avila

2962-Pos Board B392
THE ANTI-PROLIFERATIVE EFFECT OF CATION CHANNEL BLOCKERS ON T LYMPHOCYTES STIMULATED BY ANTI-CD3 AND ANTI-CD28. **Zoltan Varga**, Zoltan Petho, Andras Balajthy, Adam Bartok, Sandor Somodi, Orsolya Szilagyi, Gyorgy Panyi

2963-Pos Board B393
PROTON CHANNELS ARE PRESENT IN CELL MEMBRANES OF THE BREAST CANCER CELL LINE MDA MB 231 AND AFFECT RECOVERY FROM AN ACID LOAD. **Deri Morgan**, Patrick McIntire, Vladimir Cherny, Susan Smith, Boris Musset, Thomas DeCoursey

2964-Pos Board B394
TOK1 POTASSIUM CHANNELS IN PHYTOPATHOGENIC FUNGI. **William R. Manville**, Andrew Corran, Anthony Lewis

2965-Pos Board B395
KCA1.1 (BK) CHANNELS ON FIBROBLAST-LIKE SYNOVIOCYTES: A NOVEL THERAPEUTIC TARGET FOR RHEUMATOID ARTHRITIS. Mark R. Tanner, **Zoltan Petho**, Rajeev B. Tajhya, Redwan Huq, Frank T. Horrigan, Percio S. Gulco, Christine Beeton

2966-Pos Board B396
KIDNEY CLC-K CHLORIDE CHANNELS INHIBITORS: DEFINITION OF NOVEL STRUCTURAL REQUIREMENTS AND EFFICACY IN CLC-K POLYMORPHISM ASSOCIATED WITH HYPERTENSION. **Paola Imbrici**, Antonella Liantonio, Giuseppe Fracchiolla, Giuseppe Carbonara, Maria Maddalena Dinardo, Michael Pusch, Diana Conte

2967-Pos Board B397
COMPUTATIONAL STUDIES ON BLADDER SMOOTH MUSCLE: MODELING ION CHANNELS AND THEIR ROLE IN GENERATING ELECTRICAL ACTIVITY. **Chitaranjan Mahapatra**, Rohit Manchanda

2968-Pos Board B398
MODELING NEUROLOGICAL DISEASE WITH HUMAN IPS CELL-DERIVED NEURONS CONTAINING A KCNT1 MUTATION. **Kile P. Mangan**, Michael McLachlan, Tom Burke, Benjamin Meline, Nathan Meyer, Lucas Chase, Brad Swanson, Coby B. Carlson, Susan DeLaura, Eugenia Jones

2969-Pos Board B399
NOVEL MUTATION OF SCN1A IN A GERMAN FAMILY PRESENTING WITH BOTH HEMIPLEGIC MIGRAINE AND EPILEPSY. **Chunxiang Fan**, Frank Lehmann-Horn, Karin Jurkat-Rott

2970-Pos Board B400 **international travel awardee**
POSSIBLE ROLE OF STIM1 SENSOR SIGNAL IN MEMORY LOSS CONNECTED WITH FAMILIAL ALZHEIMER'S DISEASE. **Maria Ryazantseva**, Ksenia Skobeleva, Anna Goncharova, Nikolai Kamyshev, Elena Kaznacheyeva

Skeletal Muscle Mechanics, Structure, and Regulation (Boards B401-B428)

2971-Pos Board B401
DIRECT ASSESSMENT OF SKELETAL MUSCLE CONTRACTILE STRENGTH IN LIVE WILDTYPE AND RBFOX MORPHANT ZEBRAFISH LARVAE. **Brit L. Martin**, Tom L. Gallagher, Neha Rastogi, Christine E. Beattie, Sharon L. Amacher, Paul M. L. Janssen

2972-Pos Board B402
ZEBRAFISH MYOFILAMENTS AND THEIR ASSEMBLIES ARE GOOD STRUCTURAL MODELS FOR STUDYING DISEASE MUTATIONS. Fa-Qing Zhao, John L. Woodhead, **Roger Craig**

2973-Pos Board B403
IMPROVED IMAGING, 3D RECONSTRUCTION AND HOMOLOGY MODELING OF TARANTULA THICK FILAMENTS. **Shixin Yang**, Fa-Qing Zhao, Guidenn Sulbarán, John L. Woodhead, Lorenzo Alamo, Antonio Pinto, Raúl Padrón, Roger Craig

2974-Pos Board B404
SPECTROSCOPIC STUDIES OF THE SUPER-RELAXED STATE OF SKELETAL MUSCLE. Leonardo Nogara, Nariman Naber, Edward Pate, Marcella Canton, Carlo Reggiani, **Roger Cooke**

2975-Pos Board B405
X-RAY DIFFRACTION FROM INSECT FLIGHT MUSCLE FIBERS WITH EXCHANGED CONTRACTILE PROTEINS. **Hiroyuki Iwamoto**, Naoto Yagi

2976-Pos Board B406
THE M-LINE PROTEIN OBSCURIN IN THE DEVELOPMENT OF INSECT FLIGHT MUSCLE. Anja Katzemich, Kevin Leonard, Sean Sweeney, John Sparrow, **Belinda Bullard**

2977-Pos Board B407
SARCOLEMMAL BIOMECHANICS AND EXCITABILITY IN MALFORMED MUSCLE FIBERS OF DYSTROPHIC MICE. Karla P. Garcia-Pelagio, Erick O. Hernández-Ochoa, Stephen J.P. Pratt, Kathleen Twomey, **Richard M. Lovering**

2978-Pos Board B408 **CPOW travel awardee**
MIR181A TARGETS THE 3'UTR OF MG29, A MUSCLE-SPECIFIC SYNAPTOPHYSIN FAMILY GENE, FOR DOWN-REGULATION OF MG29 EXPRESSION IN DYSTROPHIC SKELETAL MUSCLE. **Feng Jin**, Kyoung-Han Choi, Jae-Kyun Ko, Ki-Ho Park, Chao Cheng, Xiaoli Yao, Zhenguo Liu, Jianjie Ma, Hua Zhu

2979-Pos Board B409
CALCIUM SENSITIVITY AFTER ACTIVE SHORTENING IN RABBIT PSOAS FIBRES. **Venus Joumaa**, Walter Herzog

2980-Pos Board B410
FORCE TRANSIENTS DURING STRETCH OF MYOFIBRILS ACTIVATED WITH MGADP. **Fabio C. Minozzo**, Dilson E. Rassier

2981-Pos Board B411
PASSIVE FORCE ANALYSIS OF SINGLE SARCOMERES FROM MUSCLES LACKING ARGINYL-TRNA-PROTEIN TRANSFERASE (ATE1). **Felipe de Souza Leite**, Fabio C. Minozzo, Neal Trecarten, Xuemei Han, John R. Yates, Anna Kashina, Dilson E. Rassier

2982-Pos Board B412
DIRECT EVIDENCE FOR THE EFFECT OF TITIN STIFFNESS ON THICK-FILAMENT MECHANICAL PROPERTIES IN STRETCHED MUSCLE SARCOMERES. Yong Li, **Wolfgang A. Linke**

2983-Pos Board B413
RESIDUAL FORCE ENHANCEMENT IN CARDIAC MYOFIBRILS. **Kevin R. Boldt**, Venus Joumaa, Walter Herzog

2984-Pos Board B414
THE EFFECTS OF TITIN DEGRADATION ON PASSIVE STIFFNESS PROPERTIES OF SKINNED RABBIT PSOAS FIBERS DURING OSMOTIC COMPRESSION. **Ian C. Smith**, Walter Herzog

2985-Pos Board B415
ELEVATED IONIC STRENGTH DIMINISHES FORCE/CROSS-BRIDGE AND THE NUMBER OF FORCE-GENERATING CROSS-BRIDGES. Li Wang, Anzel Bahadir, **Masataka Kawai**

2986-Pos Board B416
FORMATION OF THE MOTOR PROTEIN-PHOTOCHROMIC ADP ANALOGUE-FLUOROMETAL TERNARY COMPLEX AND PHOTO-REVERSIBLE TRANSITION ALONG THE STEPS IN ATPASE CYCLE. **Akihisa Iwata**, Takeshi Itaba, Mitsuo Ohmori, Shinya Mitsuhashi, Shinsaku Maruta

2987-Pos Board B417
BACKBONE ORIENTATION AND DISTANCE MEASUREMENTS IN MYOSIN II: APPLICATIONS OF HIGH-RESOLUTION EPR USING A BIFUNCTIONAL SPIN LABEL. **Benjamin P. Binder**, Andrew R. Thompson, Sinziana Cornea, Rebecca J. Moen, David D. Thomas

2988-Pos Board B418
POST-TRANSLATIONAL MODIFICATION OF TUBULIN AMPLIFIES X-ROS SIGNALING IN STRIATED MUSCLE. **Jaclyn P. Kerr**, Benjamin L. Prosser, Guoli Shi, Patrick Robison, Aaron M. Kempema, Joseph K. Hexum, Daniel A. Harki, Stuart S. Martin, Roberto Raiteri, Christopher W. Ward

2989-Pos Board B419
RELOADING INJURY, CHRONIC RECOVERY, AND FIBER TYPE ADAPTION OF MOUSE SOLEUS MUSCLE AFTER FOUR WEEKS OF HIND LIMB SUSPENSION. **Hanzhong Feng**, Moh H. Malek, Xue-Qun Chen, Jian-Ping Jin

2990-Pos Board B420
MINIMUM AND MAXIMUM LIMIT TO NUMBER OF MYOSIN II MOTORS PARTICIPATING IN AN ENSEMBLE MOTILITY. **Khushboo Rastogi**, Shabeel Hamnaf, Vikas Pandey, Sunil Nath, Ravikrishnan Elangovan

2991-Pos Board B421
MUSCLE SHORTENING VELOCITY IS MODULATED BY ALTERNATIVE MYOSIN CONVERTERS. **Christopher S. Newhard**, Bernadette M. Glasheen, Debra Sheppard, Lauren Riley, Douglas M. Swank

2992-Pos Board B422
ACTOMYOSIN REGULATION BY CONSERVED SITES OF TM5NM1 (TPM3.1), A NONMUSCLE TROPOMYOSIN. **Bipasha Barua**, Sarah E. Hitchcock-DeGregori

2993-Pos Board B423
THE BINDING OF S1A1-ADP TO SKELETAL THIN FILAMENTS IS INSENSITIVE TO THE PRESENCE OF COVALENTLY BOUND PHOSPHATE IN TROPOMYOSIN. **David H. Heeley**, Charitha L. Goonasekara, White D. Howard

2994-Pos Board B424
THE FUNCTIONAL CONSEQUENCES OF HYPERTROPHIC CARDIOMYOPATHY TROPONIN C MUTATIONS IN THE REGULATION OF SLOW SKELETAL MUSCLE CONTRACTION: THE PROTECTIVE ROLE OF SLOW SKELETAL TROPONIN I. Tiago Veltri, Clara A. Michell, Maicon Landim, David Dweck, **Jose R. Pinto**

2995-Pos Board B425
STRUCTURAL AND FUNCTIONAL CHANGES IN SKELETAL MUSCLES IN AN A8V-TROPONIN C HYPERTROPHIC CARDIOMYOPATHY KNOCK-IN MOUSE MODEL. Milica Vukmirovic, Marcos Angel Sanchez-Gonzalez, Gregory S. Frye, Andrew Koutnik, **David A. Gonzalez**, Edda Ruiz, Eric Krivensky, David Dweck, Leonardo F. Ferreira, Jose Renato Pinto

2996-Pos Board B426
MODELLING THE CALCIUM DEPENDENT ACTIN-MYOSIN ATP-ASE CYCLE IN SOLUTION. Srboljub M. Mijailovich, Djordje Nedic, Marina Svicevic, Boban Stojanovic, **Michael Geeves**

2997-Pos Board B427
EFFECT OF ACTIN AND NUCLEOTIDE ON THE MOVEMENT OF A1-TYPE MYOSIN ESSENTIAL LIGHT CHAIN, DETECTED BY TIME-RESOLVED FRET. **Piyali Guhathakurta**, Ewa Prochniewicz, David D. Thomas

2998-Pos Board B428
SYSTEMATIC VARIATIONS IN FAST-TYPE MYOSIN LIGHT CHAIN 1 SEQUENCE CORRELATE WITH SPECIES BODY MASS. **Peter J. Reiser**, Sabahattin Bicer

Cardiac Muscle Regulation II (Boards B429-B444)

2999-Pos Board B429
CARDIAC OVER-EXPRESSION OF CREATINE KINASE IMPROVES FUNCTION IN FAILING MYOCYTES. **Carlo G. Tocchetti**, Michelle Leppo, Yibin Wang, Robert G. Weiss, Nazareno Paolocci

3000-Pos Board B430
ACUTE ABLATION OF CARDIAC MYOSIN LIGHT CHAIN KINASE DECREASES CARDIAC PERFORMANCE. **Audrey N. Chang**, Pavan Battiprolu, Joseph A. Hill, Kristine E. Kamm, James T. Stull

3001-Pos Board B431
CARDIAC REMODELING IN THE MOUSE MODEL OF MARFAN SYNDROME DEVELOPS INDEPENDENTLY FROM AORTIC AND VALVULAR ABNORMALITIES. **Natalia Petrashevskaya**, Hyun-Jin Tae, Shanon Marshall, Melissa Krawczyk, Mark Talan

3002-Pos Board B432
TRANSGENIC OVER-EXPRESSION OF CARBONIC ANHYDRASE III IN CARDIAC MUSCLE DEMONSTRATES A MECHANISM TO RESIST ACIDOSIS. **Hanzhong Feng**, Jian-Ping Jin

3003-Pos Board B433
MYOCARDIAL INTERSTITIAL SEROTONIN AND ITS MAJOR METABOLITE, 5-HYDROXYINDOLE ACETIC ACID LEVELS DETERMINED BY MICRODIALYSIS TECHNIQUE IN IN VIVO RAT HEART. **Cheng-Kun Du**, Dong-Yun Zhan, Tsuyoshi Akiyama, Takashi Sonobe, Tadakatsu Inagaki, Mikiyasu Shirai

3004-Pos Board B434
THE TREATMENT BENEFIT OF GHRELIN ON A MOUSE MODEL OF INHERITED DILATED CARDIOMYOPATHY CAUSED BY TROPONIN MUTATION. **DongYun Zhan**, ChengKun Du, Sachio Morimoto, Tsuyoshi Akiyama, Daryl O Schwenke, Hiroshi Hosoda, Kenji Kangawa, Mikiyasu Shirai

3005-Pos Board B435
THE CARDIAC TROPONIN T MUTANT MISSING THE N-TERMINAL EXTENSION CAUSES DOSE-DEPENDENT EFFECTS ON CARDIAC FUNCTION AND REMODELING IN TRANSGENIC MICE. Sampath K. Gollapudi, Joseph Maricelli, **John J. Michael**, O. Lynne Nelson, Dan B. Rodgers, Murali Chandra

3006-Pos Board B436 education travel awardee
FUNCTIONAL EFFECTS OF THE H1-HELIX OF RAT CARDIAC TROPONIN T ON CROSSBRIDGE DETACHMENT RATE IS DIFFERENTLY MODULATED BY α- AND β-MYOSIN HEAVY CHAIN ISOFORMS. **John J. Michael**, Murali Chandra

3007-Pos Board B437
ENGINEERING CARDIAC TROPONIN C: POTENTIAL THERAPEUTIC FOR HEART FAILURE. **Vikram Shettigar**, Sean C. Little, Bo Zhang, Jianchao Zhang, Steve Roof, Zhaobin Xu, Elizabeth A. Brundage, Brandon J. Biesiadecki, Noah Weisleder, Paul Janssen, Mark T. Ziolo, Jonathan P. Davis

3008-Pos Board B438
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, Jonathan P. Davis

3009-Pos Board B439
THE CONTRIBUTION OF MYOSIN BINDING PROTEIN-C AND TROPONIN I PHOSPHORYLATION TO THE β-ADRENERGIC ACCELERATION OF LEFT VENTRICULAR CONTRACTION AND RELAXATION. **Kenneth S. Gresham**, Julian E. Stelzer

3010-Pos Board B440
MOLECULE SPECIFIC EFFECTS OF PKA-MEDIATED PHOSPHORYLATION ON MYOFIBRILLAR FUNCTION. **Laurin M. Hanft**, Brandon J. Biesiadecki, Craig A. Emter, Kerry S. McDonald

3011-Pos Board B441
LENGTH-DEPENDENT CONTRACTILE DYNAMICS ARE BLUNTED UPON ABLATION OF CARDIAC MYOSIN BINDING PROTEIN-C. **Ranganath Mamidi**, Kenneth S. Gresham, Julian E. Stelzer

3012-Pos Board B442
CARDIAC TROPONIN I SER-23/24 AND TYR-26 PHOSPHORYLATION CROSSTALK. **Hussam E. Salhi**, Shane D. Walton, Nathan C. Hassel, Elizabeth A. Brundage, Pieter P. de Tombe, Paul M.L. Janssen, Jonathan P. Davis, Brandon J. Biesiadecki

3013-Pos Board B443
CARDIAC MYOSIN ESSENTIAL LIGHT CHAIN N-TERMINUS REGULATES MOTOR STEP-SIZE. Yihua Wang, Katalin Ajtai, Katarzyna Kazmierczak, Danuta Szczesna-Cordary, **Thomas P. Burghardt**

3014-Pos Board B444
HUMAN IPS CELL-DERIVED CARDIOMYOCYTES CARRYING MHC-R403Q EXHIBIT ASPECTS OF HYPERTROPHIC CARDIOMYOPATHY IN VITRO. **Eugenia Jones**, Coby B. Carlson, Chad Koonce, Natsuyo Aoyama, Jun Wang, Benjamin Meline, Steven J. Kattman, Blake Anson

Cytoskeletal-based Intracellular Transport (Boards B445-B449)

3015-Pos Board B445
CONTROL OF THE INITIATION AND TERMINATION OF KINESIN-1-DRIVEN TRANSPORT BY MYOSIN-IC AND NON-MUSCLE TROPOMYOSIN. **Betsy B. McIntosh**, Erika L.F. Holzbaur, E. Michael Ostap

3016-Pos Board B446
VISUALIZING MELANOSOME TRANSFER IN VIVO. **John A. Hammer**, Xufeng S. Wu

3017-Pos Board B447
THE EFFECTS OF WILD-TYPE AND DISEASE-LINKED TAU MUTANTS ON CARGO TRANSPORT IN CELLS. Dezhi Yu, Stuart Feinstein, **Megan T. Valentine**

3018-Pos Board B448
ENVIRONMENTAL INFLUENCE ON MICROTUBULE-BASED BIDIRECTIONAL CARGO TRANSPORT. **Sarah Klein**, Cecile Appert-Rolland, Ludger Santen

3019-Pos Board B449
A SINGLE-MOLECULE VIEW ON KINESIN MOTOR-PROTEIN COOPERATION IN INTRAFLAGELLAR TRANSPORT IN LIVING C. ELEGANS. Bram Prevo, Pierre J.J. Mangeol, Felix Oswald, Jonathan M. Scholey, **Erwin J.G. Peterman**

Bacterial Mechanics, Cytoskeleton, and Motility (Boards B450-B467)

3020-Pos Board B450
COLONIZATION, COMPETITION, AND DISPERSAL OF PATHOGENS IN FLUID FLOW NETWORKS. **MinYoung Kevin Kim**, Albert Siryaporn, Yi Shen, Zemer Gitai, Howard A. Stone

3021-Pos Board B451
SPATIAL REGULATORS FOR BACTERIAL CELL DIVISION SELF-ORGANIZE INTO AN OSCILLATOR ON A FLAT BILAYER. **Anthony Vecchiarelli**, Ling Chin Hwang, Min Li, Yeonee Seol, Michiyo Mizuuchi, Keir Neuman, Kiyoshi Mizuuchi

3022-Pos Board B452
POSITIVE REGULATION MECHANISM IN LOCALIZING CELL DIVISION PROTEINS IN ESCHERICHIA COLI. Matthew W. Bailey, **Jaan Männik**

3023-Pos Board B453
CELL DIVISION REGULATORS MINC AND MIND FORM POLYMERS IN THE PRESENCE OF NUCLEOTIDE. **Joseph Conti**, Marissa Viola, Jodi Camberg

3024-Pos Board B454
SUPERRESOLUTION INVESTIGATION OF THE E. COLI CELL DIVISION RING DURING CONSTRICTION. **Carla Coltharp**, Jie Xiao

3025-Pos Board B455
BACTERIAL GROWTH AND SHAPE REGULATION BY EXTERNAL COMPRESSION. **Fangwei Si**, Bo Li, Sean X. Sun

3026-Pos Board B456
DISSECTING THE MECHANISM OF TYPE VI SECRETION SYSTEM EFFECTOR DELIVERY BY FLUORESCENCE CROSS-CORRELATION MICROSCOPY. **Jacqueline Corbitt**, Michele LeRoux, Robin Kirkpatrick, Joseph Mougous, Paul A. Wiggins

3027-Pos Board B457
ROLE OF FUMARATE IN THE OPERATION OF THE BACTERIAL FLAGELLAR MOTOR. Jyoti Sharma, Vidhu Soman, Ravikrishnan Elangovan, **Sunil Nath**

3028-Pos Board B458
A GTPASE DEFICIENT FTSZ MUTANT ASSEMBLES INEFFICIENTLY AND IMPAIRS CYTOKINESIS IN BACILLUS SUBTILIS CELLS. Hemendra PS Dhaked, Anusri Bhattacharya, Saroj Yadav, **Dulal Panda**

3029-Pos Board B459
BACTERIAL MOTILITY MEASURED BY A MINIATURE CHAMBER FOR HIGH-PRESSURE MICROSCOPY. **Masayoshi Nishiyama**, Seiji Kojima

3030-Pos Board B460
BACTERIAL FLAGELLAR SWITCHING: HIDDEN MARKOV STEPS REVEALED. **Henry G. Zot**, Javier E. Hasbun, Nguyen Van Minh

3031-Pos Board B461
MECHANICAL STRESS CHANGES THE MOVEMENTS AND ORGANIZATION OF BIOFILM-ASSOCIATED BACTERIA. **David J. Lemon**, Xingbo Yang, Pragya Srivastava, M. Cristina Marchetti, Anthony Garza

3032-Pos Board B462
ATOMIC FORCE MICROSCOPE SPECTROSCOPY: PROGRESS TOWARD ANTIBIOTIC RESISTANCE AND BIOFILM STUDIES. **Mehrdad M. Tajkarimi**, Albert M. Hung, Scott H. Harrison, Joseph L. Graves

3033-Pos Board B463
DEPLETION-MEDIATED PATTERN FORMATION IN A GROWING BACTERIAL COLONY. **Pushpita Ghosh**, Jagannath Mondal, Eshel Ben-Jacob, Herbert Levine

3034-Pos Board B464
BACTERIAL CHEMOTACTIC TUMBLE ANGLES REDUCE BACKTRACKING AND MAXIMIZE INFORMATION GATHERING. **Jan H. Hoh**, William F. Heinz

3035-Pos Board B465
ANTIBODIES CHANGE THE MECHANICS OF ADHESION FIMBRIAE - A CASE STUDY OF CS20 FIMBRIAE EXPRESSED BY ENTEROTOXIGENIC ESCHERICHIA COLI. **Narges Mortezaei**, Bhupender Singh, Bernt Eric Uhlin, Stephen J. Savarino, Esther Bullitt, Magnus Andersson

3036-Pos Board B466
SINGLE CELL DYNAMICS DRIVE TURBULENT FLOW IN THE COLLECTIVE MOTION OF BACTERIA. **Alex Hamby**, Charles Wolgemuth

3037-Pos Board B467
COUPLING SCHEME OF THE ROTARY MOTOR THERMOPHILIC F1. **Kengo Adachi**, Kazuhiro Oiwa, Masasuke Yoshida, Kazuhiko Kinosita, Jr.

Energy Transduction, Electron and Proton Transfer, and Light Harvesting (Boards B468-B485)

3038-Pos Board B468
EXPLORING THE STAPHYLOCOCCUS EPIDERMIDIS RESPIRATORY CHAIN. **Cristina Uribe Alvarez**, Natalia Chiquete-Félix, Salvador Uribe-Carvajal, Antonio Peña

3039-Pos Board B469
NEW PERSPECTIVES ON QUINOL BINDING MOTIFS AT THE BC1 COMPLEX BASED ON MD SIMULATIONS. **Angela M. Barragan**, Abhishek Singharoy, Anthony R. Crofts, Klaus Schulten, Ilia A. Solov'yov

3040-Pos Board B470
GLUTATHIONE S-TRANSFERASE KAPPA 1 KNOCKDOWN EXACERBATES COMPLEX-III-MEDIATED ROS PRODUCTION IN H9C2 CARDIAC CELLS. **Kyriakos N. Papanicolaou**, Agnieszka Sidor, Jasma Rucker, Brian O'Rourke, D.Brian Foster

3041-Pos Board B471
EVALUATION OF HEME PERIPHERAL GROUPS INTERACTIONS IN LOW-DIELECTRIC CONSTANT MEDIA. Jose F. Cerda, **Alaina T. Stockhausen**, Nicolette D. Wilkes, Kathleen R. Silva, Allyson R. Langley, Mary C. Malloy, Brady O. Werkheiser

3042-Pos Board B472
THEORETICAL INVESTIGATION OF THE PRIMARY EVENT IN PROTEORHODOPSIN ACTIVATION. **Choongkeun Lee**, Blake Mertz

3043-Pos Board B473
THE ELECTRON TRANSFER IN FERREDOXINS. **Kelly N. Tran**, Toshiko Ichiye

3044-Pos Board B474
INTERNAL SWITCHES MODULATING ELECTRON FLOW IN BC1 COMPLEX. **Muhammad A. Hagras**, Alexei A. Stuchebrukhov

3045-Pos Board B475
ENERGETICS OF LATERAL MEMBRANE PROTON DIFFUSION. **Ewald Weichselbaum**, Denis Knyazev, Peter Pohl

3046-Pos Board B476
ASSESSING THE PROTONATION STATE AND DYNAMICS OF HIS37 IN THE INFLUENZA M2 PROTON CHANNEL USING RAMAN SPECTROSCOPY. **Michael D. Tentilucci**, Matthew G. Romei, Casey H. Londergan

3047-Pos Board B477
EFFECTS OF LASER SPOT SIZES IN LASER DRIVEN PROTON THERAPY. Tung-Chang Liu, Xi Shao, Chuan-Sheng Liu, **Catherine Zhuang**, Bengt Eliasson, Jyhpyng Wang, Shih-Hung Chen

3048-Pos Board B478
CHARACTERIZATION OF EXCITED STATE ETHENO-FAD: A PROBE OF THE ROLE OF ADENINE IN DNA PHOTOLYASE. **Kimberly Jacoby**, Vijay R. Singh, Madhavan Narayanan, Robert J. Stanley

3049-Pos Board B479
HIGH-RESOLUTION ELECTRONIC STRUCTURE OF THE PRIMARY ELECTRON ACCEPTOR A0 OF PHOTOSYSTEM I. **Stuart Smith**, Jaya Tripathi, Sergey Milikisiyants, Sijie Hao, John H. Golbeck, K.V. Lakshmi

3050-Pos Board B480
ENVIRONMENTAL COUPLING AND POPULATION DYNAMICS IN THE PE545 LIGHT-HARVESTING COMPLEX. Mortaza Aghtar, Johan Strümpfer, Klaus Schulten, **Ulrich Kleinekathöfer**

3051-Pos Board B481
THE CO-ASSEMBLY OF COLLAGEN-MIMETIC PEPTIDES AND NATURAL PROTEINS. **Kenneth N. McGuinness**, Kathryn E. Drzewiecki, Michael J. Kopka, Arpita A. Patel, Robert A. Niederman, David I. Shreiber, Vikas Nanda

3052-Pos Board B482
STUDYING THE STRUCTURAL AND ELECTRONIC CONFIGURATIONS DURING PHOTOCATALYTIC ACTIVATION OF O2 AT A DIIRON(II) COMPLEX. **Dooshaye Moonshiram**, Ally Aukauloo, Frederic Avenier, Steve Southworth, Carl Lehmann, Antonio Picon

3053-Pos Board B483
PROGRAMMING NANOPHOTONIC MATERIALS WITH DNA. **Étienne Boulais**, Wei Sun, Nicolas Sawaya, Yera Hakobyan, Weili Wang, Amy Guan, Keyao Pan, Alan Aspuru-Guzik, Peng Yin, Mark Bathe

3054-Pos Board B484
EPR AND X-RAY SPECTROSCOPY CHARACTERIZATION OF REPORTED MONO-RUTHENIUM WATER SPLITTING CATALYSTS. **Vatsal Purohit**, Dooshaye Moonshiram, Lifen Yan, Igor Alperovich, Yulia Pushkar

3055-Pos Board B485
PHOTOSYNTHESIS IN A SINGLE PROTEIN. **Eskil M. Andersen**, Ronald L. Koder, Andrew C. Mutter

Mitochondria in Cell Life and Death (Boards B486-B514)

3056-Pos Board B486
NEW FLUORESCENCE PROBES FOR VISUALIZING CELL STRUCTURES AND FUNCTION. **Yuning Hong**

3057-Pos Board B487
MONITORING MITOCHONDRIAL MEMBRANE POTENTIAL WITH MITOVIEW 633: A NEW MOLECULAR PROBE. Jarod Benowitz, Qince Li, KahYong Goh, Chih-Chang Wei, **Lufang Zhou**

3058-Pos Board B488
BIOPHYSICAL AND BIOCHEMICAL PROPERTIES OF THE LARGE CONDUCTANCE POTASSIUM CHANNEL IN FIBROBLAST MITOCHONDRIA. **Piotr Bednarczyk**, Anna Kicińska, Wiesława Jarmuszkiewicz, Adam Szewczyk

3059-Pos Board B489
IDENTIFICATION OF THE ATP REGULATED POTASSIUM CHANNEL IN MITOCHONDRIA OF FIBROBLAST CELLS. **Adam Szewczyk**, Piotr Bednarczyk, Anna Kicińska, Wiesława Jarmuszkiewicz

3060-Pos Board B490
SUPPRESSION OF DYNAMIN-RELATED PROTEIN 1 BY EICOSAPENTAENOIC ACID AMELIORATES PALMITATE-INDUCED LIPOTOXICITY IN DIFFERENCIATED H9C2 MYOCYTES. **Atsushi Sakamoto**, Masao Saotome, Terumori Satoh, Daishi Nonaka, Tsuyoshi Urushida, Hideki Katoh, Hiroshi Satoh, Hideharu Hayashi

3061-Pos Board B491
CARDIOLIPIN REORGANIZATION AND PHASE TRANSITION INDUCED BY DYNAMIN-RELATED PROTEIN 1 FACILITATES MITOCHONDRIAL MEMBRANE FISSION. Natalia Stepanyants, Patrick Macdonald, **Rajesh Ramachandran**

3062-Pos Board B492
VDAC3 FORMS TYPICAL VOLTAGE-GATED, ANION-SELECTIVE, AND TUBULIN-SENSITIVE CHANNELS. **Oscar Teijido Hermida**, Adam J. Kuszak, Susan K. Buchanan, Sergey M. Bezrukov, Tatiana K. Rostovtseva

3063-Pos Board B493
CHANNELING OF MITOCHONDRIAL ENERGY IN CARDIAC AND CANCER CELLS BY THE METABOLICALLY-DEPENDENT OUTER MEMBRANE POTENTIAL. **Victor V. Lemeshko**

3064-Pos Board B494
ALPHA-SYNUCLEIN BLOCKS VDAC SUGGESTING MECHANISM OF MITOCHONDRIAL REGULATION AND TOXICITY IN PARKINSON DISEASE. **Philip A. Gurnev**, Tatiana K. Rostovtseva, David P. Hoogerheide, Olga Protchenko, Thai Leong Yap, Jennifer C. Lee, Sergey M. Bezrukov

3065-Pos Board B495
MITOCHONDRIAL DNA: THE HEART OF THE MATTER. **Meagan McManus**, Martin Picard, Alessia Angelin, Prasanth Potluri, Jagat Narula, Douglas Wallace

3066-Pos Board B496
ACTIVATION OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE LEADS TO THE INCREASE IN AMOUNT OF C-SUBUNIT OF ATP SYNTHASE ASSOCIATED WITH CHANNEL-FORMING COMPLEX OF POLYHYDROXYBUTYRATE AND INORGANIC POLYPHOSPHATE. **Pia A. Elustondo**, Alexander Negoda, Alejandro M. Cohen, Evgeny Pavlov

3067-Pos Board B497
SMALL-MOLECULE PKD INHIBITOR PREVENTS MITOCHONDRIAL FRAGMENTATION AND DYSFUNCTION DURING GQ-PROTEIN COUPLED RECEPTOR STIMULATION IN CARDIAC CELLS. **Bong Sook Jhun**, Xiaole Xu, Jyotsna Mishra, Stephen Hurst, Jin O-Uchi, Shey-Shing Sheu

3068-Pos Board B498
EPR DATA SUPPORT THE EXISTENCE OF A SYMMETRIC BH3-IN-GROOVE HOMODIMER IN OLIGOMERIC BAK. **Tirtha Mandal**, Kyoung Joon Oh

3069-Pos Board B499
MODULATION OF MEMBRANE INTERACTIONS OF ANTI-APOPTOTIC REGULATOR BCL-XL BY LIPIDS. Mauricio Vargas-Uribe, Mykola V. Rodnin, **Alexey S. Ladokhin**

3070-Pos Board B500
BINDING OF PRO-APOPTOTIC PROTEIN BAX TO CYTOPROTECTIVE UDCA AND TUDCA. Tânia Sousa, Ana Coutinho, Soojay Banerjee, Rui Castro, Richard Youle, Cecília Rodrigues, Manuel Prieto, **Fábio Fernandes**

3071-Pos Board B501
MAC INHIBITORS NEUTRALIZE THE PRO-APOPTOTIC EFFECTS OF TBID. **Pablo M. Peixoto**, Oscar H. Teijido, Laurent M. Dejean, Evgeny Pavlov, Bruno Antonsson, Kathleen W. Kinnally

3072-Pos Board B502
TYROSINE PHOSPHORYLATION OF MITOCHONDRIAL CA^{2+} UNIPORTER REGULATES MITOCHONDRIAL CA^{2+} UPTAKE. **Jin O-Uchi**, Stephen Hurst, Jyotsna Mishra, Xiaole Xu, Bong Sook Jhun, Shey-Shing Sheu

3073-Pos Board B503
CARDIOPROTECTIVE ROLES OF NEURONAL CA^{2+} SENSOR-1 DURING STRESS. **Tomoe Y. Nakamura-Nishitani**, Shu Nakao, Shigeo Wakabayashi

3074-Pos Board B504
INITIATION OF ELECTRON TRANSPORT ACTIVITY AND A DECREASE OF OXIDATIVE STRESS OCCUR SIMULTANEOUSLY DURING EMBRYONIC HEART DEVELOPMENT. Gisela Beutner, **George A. Porter, Jr.**

3075-Pos Board B505 CPOW TRAVEL AWARDEE
THE STOICHIOMETRY BETWEEN MICU1 AND MCU DETERMINES THE DIFFERENT MITOCHONDRIAL CA^{2+} UPTAKE PHENOTYPES IN HEART AND LIVER. **Melanie Paillard**, György Csordás, Tünde Golenár, Cynthia Moffat, Erin Seifert, György Hajnóczky

3076-Pos Board B506
ER CALCIUM RELEASE IS TUNED BY MITOCHONDRIAL REDOX NANODOMAINS. **David M. Booth**, Balázs Enyedi, Miklós Geiszt, Péter Várnai, György Hajnóczky

3077-Pos Board B507
REACTIVE OXYGEN SPECIES (ROS) SUPPRESS MITOCHONDRIAL MOTILITY. **Valentina Debattisti**, Masao Saotome, Sudipto Das, Gyorgy Hajnoczky

3078-Pos Board B508
MIRO1 IS DISPENSABLE FOR CALCIUM-MEDIATED INHIBITION OF MITOCHONDRIAL MOVEMENT. **David B. Weaver**, Agnieszka Lewandowska, Tammy T. Nguyen, Valentina Debattisti, Janet M. Shaw, Gyorgy Hajnoczky

3079-Pos Board B509
MITOCHONDRIAL FUSION DYNAMICS IN THE HEART. **Veronica Eisner**, Ryan Cupo, Erhe Gao, György Csordás, Lan Cheng, Jessica Ibetti, J. Kurt Chuprun, Walter J. Koch, György Hajnóczky

3080-Pos Board B510
MECHANISTIC CHARACTERIZATION OF THE THIOREDOXIN SYSTEM IN THE REMOVAL OF HYDROGEN PEROXIDE. **Venkat R. Pannala**, Ranjan K. Dash

3081-Pos Board B511
HIGHER MITOCHONDRIAL MEMBRANE POTENTIAL INDUCES ROS PRODUCTION IN THE FAMILIAR FORM OF FRONTOTEMPORAL DEMENTIA WITH MAPT MUTATIONS. **Noemi Esteras Gallego**, Selina Wray, Elisavet Preza, Andrey Y. Abramov

3082-Pos Board B512 INTERNATIONAL TRAVEL AWARDEE
THE OVEREXPRESSION OF SUPEROXIDE DISMUTASE 1 RESTORES GROWTH DEFECT IN A PORIN1-LESS YEAST STRAIN AND IMPROVES MITOCHONDRIAL METABOLISM. **Andrea Magrì**, Simona Reina, Flora M. Tomasello, Maria C. Di Rosa, Angela Messina, Vito De Pinto

3083-Pos Board B513
THE ROLE OF COMPLEX I IN MITOCHONDRIAL REACTIVE OXYGEN SPECIES FORMATION IN COCHLEAR SENSORY AND SUPPORTING CELLS DURING OTOTOXIC AMINOGLYCOSIDE EXPOSURE. **Danielle Desa**, Michael G. Nichols, Heather Jensen Smith

3084-Pos Board B514
MITOCHONDRIAL IRON AND SPHINGOSINE SYNERGIZE INITIATION OF HEPATOCYTE DEATH BY AUGMENTING OXIDATIVE STRESS. **Sergei A. Novgorodov**, Tatyana I. Gudz, Andaleb Kholmukhamedov, Raymond Deepe, John J. Lemasters

Cellular Signaling and Metabolic Networks (Boards B515-B530)

3085-Pos Board B515
GUARDIAN FUNCTION OF MITSUGUMIN 53 IN CELL MEMBRANE REPAIR AND METABOLIC SYNDROME. **Hanley Ma**, Jason Liu, Zehua Bian, Yuqi Cui, Xinyu Zhou, Xuefeng Zhou, Bo Zhang, Timothy M. Adesanya, Ki Ho Park, Hua Zhu

3086-Pos Board B516
NON-INVASIVE INTEROGATION OF SIGNALING ACTIVATED GENE REGULATION. **Gregor Neuert**

3087-Pos Board B517
MONTE CARLO SIMULATION OF WNT PROPAGATION BY A NOVEL TRANSPORT MECHANISM COMPLEMENTING A JOINT EXPERIMENTAL STUDY. **Claude Sinner**, Eliana Stanganello, Anja I.H. Hagemann, Benjamin Mattes, Dana Meyen, Sabrina Weber, Erez Raz, Steffen Scholpp, Alexander Schug

3088-Pos Board B518
A GENETICALLY-ENCODED FRET SENSOR BASED ON AMP-ACTIVATED PROTEIN KINASE REPORTS ALLOSTERIC KINASE ACTIVATION. **Uwe Schlattner**, Martin Pelosse, Imre Berger

3089-Pos Board B519
INTEGRATED OMIC ANALYSIS OF A GUINEA PIG MODEL OF HEART FAILURE AND SUDDEN CARDIAC DEATH. **D. Brian Foster**, Ting Liu, Robert N. O'Meallly, C. Conover Talbot Jr., Robert N. Cole, Brian O'Rourke

3090-Pos Board B520
CELLULAR SIGNALING NETWORKS FUNCTION AS GENERALIZED WIENER-KOLMOGOROV FILTERS TO SUPPRESS NOISE. **Michael Hinczewski**, Devarajan Thirumalai

3091-Pos Board B521
TO GROW IS NOT ENOUGH: THE IMPACT OF CELL RESPONSE TIME ON FITNESS. **Nash Rochman**, Fangwei Si, Sean Sun

3092-Pos Board B522
BCL-2 OVEREXPRESSION STIMULATES GLYCOLYSIS AND LACTIC FERMENTATION IN A BAX-DEPENDENT FASHION. Bushra Mahmood, Jessica Wilson, Miriam Ahmad, Patricia Olino, Justin King, **Laurent Dejean**

3093-Pos Board B523
HUMAN ADIPOSE CELL RESPONSE TO INSULIN: ANALYSIS OF CELLULAR SWITCH-LIKE TRANSFORMATIONS AND DISTRIBUTIONS. Vladimir A. Lizunov, **Paul S. Blank**, Karin G. Stenkula, Monica Skarulis, Samuel Cushman, Joshua Zimmerberg

3094-Pos Board B524
ACCELERATING SYSTEMS BIOLOGY COMPUTATION: ENHANCED SAMPLING OF SPATIALLY REALISTIC STOCHASTIC MODELS USING THE WEIGHTED ENSEMBLE APPROACH. **Rory Donovan**

3095-Pos Board B525
ACCUMULATIONS AND ENERGY RECYCLING PATHWAY IN P. FALCIPARUM GAMETOCYTE-INFECTED HUMAN ERYTHROCYTES. **Fuyuki Tokumasu**, Takeshi Q. Tanaka, Suzumi Tokuoka, Daichi Nakatani, Shin-ichiro Kawazu, Kiyoshi Kita

3096-Pos Board B526
PHOTO-REGULATION OF THE INTERACTION BETWEEN RAS AND RALGDS USING GTP ANALOGUES COMPOSED OF PHOTOCHROMIC MOLECULES. Kaori Masuhara, Seigo Iwata, Nobuhisa Umeki, **Shinsaku Maruta**

3097-Pos Board B527
PHENOTYPIC PROPERTIES OF SCAFFOLD-BASED SIGNALING PARADIGMS. **Ryan Suderman**, Addison Schauer, Eric J. Deeds

3098-Pos Board B528
GLUCOSE-INDUCED CYCLIC-AMP OSCILLATIONS: MODELING INCRETIN IMPACT ON PANCREATIC BETA CELL SECRETION. **Bradford E. Peercy**, Richard Bertram, Arthur Sherman

3099-Pos Board B529
MODELING HER2 INHIBITION IN BREAST CANCER CELLS. **Marc Y. Fink**, Danni Zhou

3100-Pos Board B530
NONCANONICAL NEUROTRANSMISSION AT THE NEUROMUSCULAR JUNCTION. **Huinan Li**, Mark Lee Harlow

Magnetic Resonance Spectroscopy, Imaging, and EPR Spectroscopy (Boards B531-B542)

3101-Pos Board B531
MULTI-COMPONENT WATER DYNAMICS AND EXCHANGE IN BRAIN CORTICAL TISSUE PROBED VIA IN-VITRO D-T2 2D CORRELATION NMR. **Ruiliang Bai**, Peter J. Basser

3102-Pos Board B532 **EDUCATION TRAVEL AWARDEE**
PROBING THE SECONDARY STRUCTURE OF MEMBRANE PROTEINS WITH THE PULSED EPR TECHNIQUE: ELECTRON SPIN EHCO ENVELOPE MODULATION (ESEEM). **Lishan Liu**, Gary Lorigan

3103-Pos Board B533
SPIN-LABELED UNI-LAMELLAR VESICLES AS AN OXYGEN SENSITIVE ANALYTE FOR MEASUREMENT OF CELLULAR RESPIRATION USING RAT DOPAMINERGIC NEURONAL CELLS. **Laxman Mainali**, Jason W. Sidabras, Theodore Camenisch, Jeannette Vasquez-Vivar, James Hyde, Witold K. Subczynski

3104-Pos Board B534
PROBING THE PROTEIN-PROTEIN INTERACTIONS BETWEEN KCNQ1 AND KCNE1 USING ELECTRON PARAMAGNETIC RESONANCE (EPR) SPECTROSCOPY. **Andrew F. Craig**, Indra D. Sahu, Rongfy Zhang, Megan M. Dunagan, Kunkun Wang, Robert M. McCarrick, Gary A. Lorigan

3105-Pos Board B535
CHARACTERIZATION OF A BIFUNCTIONAL SPIN LABEL FOR THE STRUCTURE AND DYNAMICS OF A MEMBRANE PROTEIN USING CW-EPR SPECTROSCOPY. **Lauren M. Bottorf**, Indra D. Sahu, Lishan Liu, Gary A. Lorigan

3106-Pos Board B536
EPR SPECTROSCOPIC STUDY OF THE VOLTAGE-SENSOR DOMAIN (VSD) OF THE HUMAN KCNQ1 POTASSIUM ION CHANNEL. **Indra D. Sahu**, Brett M. Kroncke, Megan M. Dunagan, Rongfu Zhang, Andrew Craig, Kunkun Wang, Avnika Bali, Robert M. McCarrick, Charles R. Sanders, Gary A. Lorigan

3107-Pos Board B537
COMBINING SINGLE CRYSTAL ELECTRON PARAMAGNETIC RESONANCE AND X-RAY CRYSTALLOGRAPHY TO STUDY THE ORIENTATION AND DYNAMICS OF MTSSL SPIN LABELS IN T4 LYSOZYME. **Phillipp Consentius**, Bernhard Loll, Ulrich Gohlke, Thomas Risse

3108-Pos Board B538
UNCERTAINTY QUANTIFICATION IN DEER SPECTROSCOPY USING BAYESIAN STATISTICAL INVERSION METHODS. **Thomas H. Edwards**, Stefan Stoll

3109-Pos Board B539
CHARACTERIZATION OF CALMODULIN BINDING TO THE RYANODINE RECEPTOR BY SOLUTION AND SOLID-STATE NMR. **Sarah E. Nelson**, Tata Gopinath, David D. Thomas, Gianluigi Veglia

3110-Pos Board B540
CONFINED SPACE, STRUCTURAL BIOLOGY, BIOPHYSICS AND DRUG DISCOVERY. **Brian Fuglestad**, Christine Jorge, Bryan Marques, Nathaniel V. Nucci, Evan O'Brien, Kathleen G. Valentine, A. Joshua Wand

3111-Pos Board B541
SARA: A SOFTWARE ENVIRONMENT SUPPORTING RAPID ACQUISITION AND ANALYSIS OF NMR RELAXATION RATES WITH ACCORDION SPECTROSCOPY. **Bradley J. Harden**, Dominique P. Frueh

3112-Pos Board B542
THE STRUCTURE AND FUNCTION OF SUPRAMOLECULAR SELF-ASSEMBLING BINARY GUANOSINE GELS. **Alexander Bruening**, Stuart Smith, Linda B. McGown, K. V. Lakshmi

Electron Microscopy, Diffraction, and Scattering Techniques (Boards B543-B559)

3113-Pos Board B543
CRYO-ELECTRON TOMOGRAPHY AND SUB-TOMOGRAM AVERAGING OF ISOLATED Z-DISCS FROM HONEYBEE FLIGHT MUSCLE. Mara Rusu, Dianne Taylor, Kenneth Taylor, **John Trinick**

3114-Pos Board B544
LABEL-FREE MOLECULAR OBSERVATIONS OF MEMBRANE-ASSOCIATED SPECIES USING BACKSCATTERING INTERFEROMETRY. **Michael M. Baksh**, Ashley Lockwood, Christopher Richards, M.G. Finn, David Heidary

3115-Pos Board B545
STABILIZED, NON-FOULING TRANSMISSION ELECTRON MICROSCOPY GRID COATINGS FOR THE SELECTIVE CAPTURE OF HIS-TAG T7 VIRUS AND HIS-TAG GRO EL FROM CELL LYSATES. **Christopher J. Benjamin**, Kyle J. Wright, Seok-Hee Hyun, David H. Thompson

3116-Pos Board B546
SCANNING TRANSMISSION ELECTRON TOMOGRAPHY OF BLOOD PLATELETS IN THICK SECTIONS. **Jake D. Hoyne**, Gina N. Calco, Bryan C. Kuo, Maria A. Aronova, Alioscka A. Sousa, Qianping He, Guofeng Zhang, Irina D. Pokrovskaya, Laura MacDonald, Andrew A. Prince, Brian Storrie, Richard D. Leapman

3117-Pos Board B547
THREE-DIMENSIONAL MICROSTRUCTURAL VISUALIZATION OF MITOSIS USING FOCUSED ION BEAM-SCANNING ELECTRON MICROSCOPE (FIB-SEM) AND 3MV ULTRA-HIGH VOLTAGE ELECTRON MICROSCOPE (UHVEM) TOMOGRAPHY WITH NANOSCALE RESOLUTION AT WHOLE CELL LEVEL. **Atsuko H. Iwane**, Keisuke Ohta

3118-Pos Board B548
REGULATION OF MYOSIN VI STUDIED BY ELECTRON MICROSCOPY. **Dario Saczko-Brack**, Heike Ellrich, Christine Werner, Christopher Batters, Claudia Veigel

3119-Pos Board B549
THE STERIC FINE STRUCTURE OF MAURER'S CLEFT IN "UNROOFED" PLASMODIUM FALCIPARUM-INFECTED ERYTHROCYTES. **Eri H. Hayakawa**, Fuyuki Tokumasu, Jiro Usukura, Hiroyuki Matsuoka, Takafumi Tsuboi, Thomas E. Wellems

3120-Pos Board B550
TOWARDS FEMTOSECOND ELECTRON DIFFRACTION OF PROTEINS - TECHNICAL CHALLENGES AND SAMPLE PREPARATION STRATEGIES. **Henrike M. Mueller-Werkmeister**, Daniel Badali, Oliver P. Ernst, R. J. Dwayne Miller

3121-Pos Board B551
DEVELOPMENT OF CRYO-ELECTRON MICROSCOPY SAMPLE PREPARATION FOR THE EXAMINATION OF NANOBUBBLE. Xi Zhan, **Lige Tonggu**, Mo Li, Liguo Wang

3122-Pos Board B552
TIME-RESOLVED CRYO-EM STUDY OF RIBOSOME SUBUNIT ASSOCIATION BY MIXING-SPRAYING. Bo Chen, **Sandip Kaledhonkar**, Ming Sun, Bingxing Shen, Ruben L. Gonzalez, Joachim Frank

3123-Pos Board B553
A COMPUTATIONAL MODELING OF MACROMOLECULAR ENSEMBLE CONFORMATION AND BLURRING IN CRYO EM. Bijan Afsari, **Jin Seob Kim**, Gregory Chirikjian

3124-Pos Board B554
A COMPUTATIONAL MODELING OF MACROMOLECULAR ASSEMBLIES IN SAXS. **Jin Seob Kim**, Bijan Afsari, Gregory S. Chirikjian

3125-Pos Board B555
SUB-SURFACE SERIAL BLOCK FACE SCANNING ELECTRON MICROSCOPY. Qianping He, Maria A. Aronova, David C. Joy, Guofeng Zhang, **Richard D. Leapman**

3126-Pos Board B556
FIXED PATH LENGTH SAMPLE HOLDERS ENABLE ROBUST CRYOSAXS MEASUREMENTS FROM SUB-MICROLITER SAMPLE VOLUMES. **Andrea M. Katz**, Jesse B. Hopkins, Steve P. Meisburger, Matthew A. Warkentin, Robert E. Thorne, Lois Pollack

3127-Pos Board B557
3D DYNAMICAL OBSERVATIONS OF SINGLE MOLECULE MOTIONS BY X-RAYS, ELECTRON AND NEUTRON. **Yuji C. Sasaki**, Keigo Ikezaki, Kouhei Ichiyanagi, Hiroshi Sekiguchi, Naoto Yagi

3128-Pos Board B558
ACCURATE DETERMINATION OF TAUTOMERIC/ PROTONATION STATES IN QUANTUM-MECHANIC DRIVEN MACROMOLECULAR CRYSTALLOGRAPHIC REFINEMENT. **Oleg Y. Borbulevych**, Lance M. Westerhoff

3129-Pos Board B559
TRANSMISSION X-RAY IMAGING DETECTOR CAPTURES THE LAST LIGHT AT NSLS. **Jen Bohon**, Erik M. Muller, Wenxiang Ding, Mengjia Gaowei, Tianyi Zhou, John Smedley

Optical Spectroscopy: CD, UV-VIS, Vibrational, Fluorescence (Boards B560-B588)

3130-Pos Board B560
MOLECULAR MOBILITY IN AMORPHOUS SUCROSE FILMS MONITORED BY RIBOFLAVIN PHOSPHORESCENCE - POTENTIAL APPLICATIONS IN EDIBLE/BIODEGRADABLE FILMS. **Yan L. Wang**, Maria G. Corradini, Richard D. Ludescher

3131-Pos Board B561
IMPROVING FAR UV CIRCULAR DICHROISM CALCULATIONS OF PEPTIDES AND PROTEINS WITH THE DIPOLE INTERACTION MODEL. **Akongnwi C. Jungong**, Jenna Soukup, Tsvetan Aleksandrov, Rahul Nori, Emma Miller, Igor Uporov, Kathryn A. Thomasson

3132-Pos Board B562
DETECTION AND IDENTIFICATION OF AMINO ACIDS IN FICOLL SOLUTIONS WITH FEMTOSECOND LASER-INDUCED BREAKDOWN SPECTROSCOPY. Poopalasingam Sivakumar, Yury Markushin, Elton Jhamba, Zakaria MRah, Leon A. Taleh, Angel Fernancdez, Noureddine Melikechi, **Hacene Boukari**

3133-Pos Board B563 MINORITY AFFAIRS TRAVEL AWARDEE
FLUORESCENCE ANISOTROPY MEASUREMENTS OF FLUOROSCEIN MIXED WITH FICOLL SOLUTIONS. **Elton Jhamba**, Zakaria M'Rah, Yuriy Markushin, Noureddine Melikechi, Hacene Boukari

3134-Pos Board B564
DEVELOPMENT OF A QUANTUM-MECHANICAL ANALYSIS OF STARK EFFECTS OF PORPHYRINS EMPLOYED AS SENSORS OF INTERNAL ELECTRIC FIELDS IN BIOLOGICAL SYSTEMS. **Hannah E. Wagie**, Jorg C. Woehl, Peter Geissinger

3135-Pos Board B565
MD+QM INVESTIGATIONS OF THE LENGTH SCALE AND FORCEFIELD DEPENDENCE OF THE TIME DEPENDENT FLUORESCENT STOKES SHIFT OF WILD TYPE STAPHYLOCOCCAL NUCLEASE AND CHARGE MUTANTS. **J. Nathan Scott**, Patrik R. Callis

3136-Pos Board B566
DETECTING COUNTERFEIT PHARMACEUTICALS THROUGH UV SPECTROPHOTOMETRY. **Gabriela Figueroa**, Luis A. Palacio, Bruce D. Ray, Horia I. Petrache, Alfredo Lopez-Yunez

3137-Pos Board B567
HYPERSPECTRAL ANALYSIS OF LAURDAN EMISSION SPECTRA IN RED BLOOD CELLS AND GIANT UNILAMELLAR VESICLES. **Catherine Leonard**, Abdelmounaim Errachid, Julie Daubie, Didier Beghuin, Pierre-Jacques Courtois, Marie-Paule Mingeot-Leclercq, Donatienne Tyteca

3138-Pos Board B568
DETECTION OF INTERACTIONS OF INOSITOL PHOSPHOLIPIDS WITH ION CHANNELS. **Felix Chin**, Anoop Saxena, Feng Qin, Ping-Chin Cheng

3139-Pos Board B569
FOOD COLORS AS INTRINSIC LUMINESCENT SENSORS IN EDIBLE PRODUCTS. **Sarah M. Waxman**, Ariella Kashi, Adam Karami, Meera Patel, Maria G. Corradini, Richard Ludescher

3140-Pos Board B570
PROBING THE INTERNAL AND EXTERNAL STRUCTURE OF CARBON NANODOTS THROUGH FLUORESCENCE QUENCHING. **Rachel Taylor**, Jan Karolin, Chris Geddes

3141-Pos Board B571
FLUORESCENCE STUDIES OF A LONG LIFETIME FLUOROPHORE, ADOTA IN SILICA AND PVA THIN FILMS. **Rahul Chib**, Sangram Raut, Sunil Shah, Beata Grobelna, Irina Akopova, Ryan Rich, Thomas Just Sørensen, Bo W. . Laursen, Zygmunt Gryczynski, Ignacy Gryczynski

3142-Pos Board B572
A COMPARISON OF PHOTOPHYSICAL CHARACTERISTICS OF RHDL ENCAPSULATED ANTI-CANCER DRUG VALRUBICIN AND FREE VALRUBICIN. **Sunil Ajit Shah**, Rahul Chib, Sangram Raut, Jaclyn Bermudez, Nirupama Sabnis, Divya Duggal, Andras Lacko, Zygmunt Gryczynski, Ignacy Gryczynski

3143-Pos Board B573
SPECTRAL DISTORTIONS IN METAL-ENHANCED FLUORESCENCE. **Jan O. Karolin**, Hilla Ben Hamo, Chris D. Geddes

3144-Pos Board B574
ULTRASENSITIVE DETECTION ALLOWS FOR SINGLET OXYGEN PHOSPHORESCENCE DETECTION, AN IMPORTANT PREREQUISITE FOR PHOTODYNAMIC THERAPY. **Marcelle Koenig**, Manoel Veiga, Sebastian Tannert, Felix Koberling, Volker Buschmann, Matthias Patting, Marcus Sackrow, Michael Wahl, Rainer Erdmann, Peter Kapusta, Christian Wolf, Christian Kaufmann, Humberto Rodriguez

3145-Pos Board B575
ACCOUNTING FOR PHOTOPHYSICAL PROCESSES AND SPECIFIC SIGNAL INTENSITY CHANGE IN FLUORESCENCE-DETECTED SEDIMENTATION VELOCITY ANALYTICAL ULTRACENTRIFUGATION. **Huaying Zhao**, Jia Ma, Maria Ingaramo, Eric Andrade, Jeff MacDonald, Glen Ramsay, Grzegorz Piszczek, George Patterson, Peter Schuck

3146-Pos Board B576
SEDIMENTATION VELOCITY ANALYSIS OF THE EGFPS IN E.COLI WHOLE CELL EXTRACTS USING FLUORESCENCE DETECTION SYSTEM. **Jia Ma**, Huaying Zhao, Peter Schuck

3147-Pos Board B577
TWO-COLOR IMAGING USING SPECTRAL VARIANTS OF IRFP670 AND IRFP682 NEAR-INFRARED FLUORESCENT PROTEINS. **Mikhail Baloban**, Daria M. Shcherbakova, Vladislav V. Verkhusha

3148-Pos Board B578
TUNING THE PHOTOPHYSICAL PROPERTIES OF THE GREEN FLUORESCENT PROTEIN WITH UNNATURAL AMINO ACIDS. **Gregory M. Olenginski**, Christine M. Phillips-Piro, Scott H. Brewer

3149-Pos Board B579
USE OF THE METHYL ESTER OF A FLUORESCENT UNNATURAL AMINO ACID TO FACILITATE SITE-SPECIFIC INCORPORATION OF FLUORESCENT PROBES IN PROTEINS. **Joshua R. Berlin**, William Lopez, Mohit R. Jain, Jorge E. Contreras

3150-Pos Board B580
DITHIOAMIDE PEPTIDES AND PROTEINS: SYNTHESIS AND APPLICATION TO TRACKING PROTEIN CONFORMATIONAL CHANGES BY FLUORESCENCE SPECTROSCOPY. **Yun Huang**

3151-Pos Board B581
PARALLELS BETWEEN ENZYME ACTION AND TRYPTOPHAN FLUORESCENCE BRIGHTNESS IN PROTEINS. **Pedro L. Muíño**, Patrik R. Callis

3152-Pos Board B582
INVESTIGATION OF E. COLI HEPTOSYLTRANSFERASE I DYNAMICS. **Joy M. Cote**

3153-Pos Board B583
THE ROLE OF CHAPERONE PROTEINS IN CATARACT AGGREGATION: A TWO-DIMENSIONAL INFRARED STUDY. **Tianqi O. Zhang**, Martin T. Zanni

3154-Pos Board B584
DEVELOPMENT OF A VIBRATIONAL HYDRATION RULER. **Elise Tookmanian**, Edward Fenlon, Scott Brewer

3155-Pos Board B585
THE EFFECT OF SELENIUM TREATMENT ON-DIABETIC-INDUCED STRUCTURAL VARIATIONS IN THE MOLECULES OF RAT KIDNEY PLASMA MEMBRANE. **Rafig Gurbanov**, Sherif Abbas, Mehmet Bilgin, Feride Severcan

3156-Pos Board B586 **International Travel Awardee**
A NOVEL METHOD FOR EARLY DIAGNOSIS OF MALIGNANT PLEURAL MESOTHELIOMA FROM HUMAN SERUM SAMPLES: ATR-FTIR SPECTROSCOPY. **Dilek Yonar**, Abdulsamet Sandal, Salih Emri, Feride Severcan

3157-Pos Board B587
INVESTIGATION OF GENDER EFFECT ON OBESITY USING A MODEL OF INBREED OBESE MOUSE LINES BY FOURIER TRANSFORM INFRARED IMAGING. **Fatma Kucuk Baloglu**, Gudrun Brockmann, Sebastian Heise, Sebnem Garip, Feride Severcan

3158-Pos Board B588
MEASURING THE DISTRIBUTION OF TAURINE MOLECULE INSIDE BIOLOGICAL TISSUE VIA INTRINSIC MOLECULAR VIBRATIONS USING NONLINEAR RAMAN SPECTROSCOPY. **Masahiko Kawagishi**, Yuki Obara, Takayuki Suzuki, Masumi Hayashi, Kazuhiko Misawa, Sumio Terada

Bioengineering (Boards B589-B611)

3159-Pos Board B589
THE ALPHA BETA REARRANGEMENT OF THE ASP-GLY SEQUENCE. Kazuki Koda, **Kazuki Koda**

3160-Pos Board B590
PHOTO-REGULATION OF SMALL G PROTEIN NORMAL AND ONCOGENIC K-RAS USING PHOTOCHROMIC MOLECULES. **Seigo Iwata**, Kaori Masuhara, Nobuhisa Umeki, Kazunori Kondo, Shinsaku Maruta

3161-Pos Board B591
HARNESSING THE DYNAMICAL MOVEMENT OF OMPG LOOPS FOR PROTEIN SENSING. Monifa Fahie, Christina Chisholm, **Min Chen**

3162-Pos Board B592
MULTICOLOR MONOMERIC NEAR-INFRARED FLUORESCENT PROTEINS. **Daria M. Shcherbakova**, Mikhail Baloban, Vladislav V. Verkhusha

3163-Pos Board B593
DESIGN AND CHARACTERIZATION OF FORCE-SENSITIVE DNA ORIGAMI COMPONENTS. **Yi Luo**, Michael W. Hoduba, Michael G. Poirier, Carlos E. Castro

3164-Pos Board B594
REMODELING PROTEIN INTERFACES TO REGULATE RECOGNITION. **James R. Horn**, Megan L. Murtaugh, Sean W. Fanning, Christopher A. Smith, Dionne H. Griffin

3165-Pos Board B595
A CONTINUOUS-FLOW C. ELEGANS SORTING SYSTEM WITH INTEGRATED OPTICAL FIBER DETECTION AND LAMINAR FLOW SWITCHING. **Nitish Thakor**, Yuanjun Yan, Li Fang Ng, Li Theng Ng, Kwan Bum Choi, Jan Gruber, Andrew Bettiol

3166-Pos Board B596
DISCOVERING EMERGENT BEHAVIOR OF HOST-MICROBIOME INTERACTIONS WITH BIOMIMETIC ROBOTICS. **Keith C. Heyde**, Warren C. Ruder

3167-Pos Board B597
REGULATION OF CELL FUNCTION VIA EXTRACELLULAR BIOPHYSICAL ENVIRONMENT: A THEORETICAL-EXPERIMENTAL APPROACH. **Toloo Taghian**, Abdul Sheikh, Daria Narmoneva, Andrei Kogan

3168-Pos Board B598
MECHANOBIOLOGY OF MRNA LOCALIZATION IN BREAST CANCER CELLS. **Susan M. Hamilla**, Stavroula Mili, Helim Aranda-Espinoza

3169-Pos Board B599
MECHANICS OF OPTIC VESICLE MORPHOGENESIS IN THE CHICK EMBRYO. **Seyedhadi Hosseini**, Larry Taber

3170-Pos Board B600
CELL-FREE EXPRESSION SYSTEMS: FROM GENE CIRCUITS TO SELF-ASSEMBLY PROCESSES IN A TEST TUBE. Ryan Marshall, Mark Rustad, Jonathan Garamella, **Vincent Noireaux**

3171-Pos Board B601
INCREASING TARGETING AND EFFICACY OF ANTI-TUMOR ANTIBODY. **Justin McKetney**, Rebecca Kerr, Edward J. Collins

3172-Pos Board B602
EXPLORING BIOLOGICALLY BASED MALNOURISHMENT THROUGH A GUT-ON-A-CHIP APPROACH. **Eric S. Parigoris**, Kyle B. Justus

3173-Pos Board B603
DEVELOPING A MICROFLUIDIC DEVICE FOR ADENOVIRAL TRANSFECTION OF PANCREATIC ISLETS. Pamuditha N. Silva, Zaid Atto, Uilki Tufa, Dawn M. Kilkenny, **Jonathan V. Rocheleau**

3174-Pos Board B604
POLYPEPTIDES FOR BIO-TETHERING AND SELF-ASSEMBLY OF LITHIUM ION BATTERY ELECTRODES. **Alex Winton**

3175-Pos Board B605
SHOCKING THE WORLD OF BATTERIES: A BIO-INSPIRED APPROACH TO ELECTRODE CONSTRUCTION. **Scott J. Riley**

3176-Pos Board B606
MICRO- AND NANO-CHAMBER ARRAY CHIPS FOR A SINGLE MOLECULE ANALYSIS. **Noritada Kaji**

3177-Pos Board B607
DECODING LONG NANOPORE READS OF BACTERIOPHAGE PHI X 174. **Andrew H. Laszlo**, Ian M. Derrington, Brian C. Ross, Henry Brinkerhoff, Andrew C. Adey, Ian C. Nova, Jon M. Craig, Kyle W. Langford, Jenny Mae Samson, Riza Daza, Kenji Doering, Jay Shendure, Jens H. Gundlach

3178-Pos Board B608
A SYSTEMATIC METHOD FOR DESIGNING DNA NANOSTRUCTURE ASSEMBLY PROCESSES. **John Zenk**, Chanon Tuntivate, Rebecca Schulman

3179-Pos Board B609
MICROFLUIDICS FOR RARE CELL CAPTURE. **Chwee Teck Lim**

3180-Pos Board B610
EFFECT OF MAGNETIC NANOPARTICLES ON IMPROVING DOXORUBICIN TREATMENT OF T47D BREAST CANCER CELLS. Sarah A. Alobaid, Yuan You, Hasanain D. Al-Saadi, Michael J. Rossi, **Saion K. Sinha**

3181-Pos Board B611
NOVEL 'THERANOSTIC' MAGNETIC NANOPARTICLES FOR THERAPY AND IMAGING. Farah Benyettou, Rachid Rezgui, Ali Trabolsi, **Mazin Magzoub**

Engineered Biosurfaces (Boards B612-B617)

3182-Pos Board B612
PUSHING MICROPATTERNING TO THE NANOSCALE. **Martin Fölser**, Marco Lindner, Eva Sevcsik, Iris Bergmair, Gerhard Schütz

3183-Pos Board B613
STRUCTURAL AND FUNCTIONAL STUDY OF MIDBODY DURING CYTOKINESIS. **Rongqin Li**, Weiwei Zhang, Q.Peter Su, Boxin Xue, Yujie Sun

3184-Pos Board B614
PROBING THE MINIMUM GEOMETRIC REQUIREMENTS FOR T-CELL STIMULATION. **Haogang Cai**, David Depoil, Michael P. Sheetz, Michael L. Dustin, Shalom J. Wind

3185-Pos Board B615
VOLTAGE GATING IN NANOPORES CONTAINING ANTHRAQUINONE MIMICS BIOLOGICAL MEMBRANE PROTEINS. **Matthew Pevarnik**, Weibin Cui, Luke Theogarajan

3186-Pos Board B616
MODELING OF THE LIQUID CRYSTAL/LIPID INTERFACE FOR BIO-SENSING APPLICATIONS. **Donya Ohadi**, Mark Uline

3187-Pos Board B617
SURFACE MODIFICATION OF SOLID-STATE NANOPORES FOR STICKY-FREE TRANSLOCATION OF SINGLE-STRANDED DNA. **Zhipeng Tang**

Biosurface Interactions (Boards B618-B629)

3188-Pos Board B618
PREDICTING ADHESION OF FUNCTIONALIZED NANOCARRIERS FOR SPECIFIC PEPTIDE SEQUENCES USING ATOMISTIC POTENTIALS OF MEAN FORCE. **Matt McKenzie**, Aravind Rammohan, Jacob Miner, Natesan Ramakrishnan, Ravi Radhakrishnan

3189-Pos Board B619
ACTIVATED MEMBRANE SURFACES BY FUNCTIONALIZED PEPTIDES. **Daniel R. Scott**, Vitalii Silin, David Vanderah, John P. Marino, Susan Krueger, Hirsh Nanda

3190-Pos Board B620
CHARACTERIZATION OF PEPTIDES DESIGNED TO CONTROL CRYSTAL NUCLEATION AND GROWTH. **Shourya Sonkar Roy Burman**, Michael S. Pacella, James J. De Yoreo, Jeffrey J. Gray

3191-Pos Board B621
EXAMINING BACTERIAL CELL INTERACTIONS USING ATOMIC FORCE MICROSCOPY. **Ronald Aucapina**, Nadia Ouedraogo, Megan A. Ferguson

3192-Pos Board B622
A SELF-CONSISTENT MULTISCALE METHODOLOGY FOR PREDICTING ADHESION OF MAMMALIAN CELLS ONTO FUNCTIONALIZED SURFACES. **Aravind R. Rammohan**, matthew mckenzie, Jacob Miner, Natesan ramakrishnan, Ravi Radhakrishnan

3193-Pos Board B623
MAPPING INTERACTIONS BETWEEN SILVER NANOPARTICLES AND BIOMOLECULES AT THE ATOMIC LEVEL. **Jeffrey Comer**, Horacio Poblete, Emilio I. Alarcon

3194-Pos Board B624
PROTEIN CORONA AND SECONDARY STRUCTURE IN RESPONSE TO NANOPARTICLE PEGYLATION. **Sabiha Runa**, Alexandra Hill, Victoria Cochran, Christine Payne

3195-Pos Board B625
A THEORETICAL STUDY OF POLYMER-BASED DRUG DELIVERY SYSTEMS. **Ebtisam A. Aldaais**, Mark J. Uline

3196-Pos Board B626
RED BLOOD CELL BEHAVIOR WITHIN THE EXCLUSION ZONE. István Huszár, András Laki, Kristóf Iván, **Miklós S. Kellermayer**

3197-Pos Board B627
SOLID-BINDING PEPTIDES AS A BIOTEMPLATE FOR LI-ION BATTERY ELECTRODES. **Evgenia Barannikova**, Mark Allen

3198-Pos Board B628
CURRENT FLUCTUATION ANALYSIS IN A PROTEIN NANOPORE. **María Queralt-Martín**, M. Lidón López, Vicente M. Aguilella, Antonio Alcaraz

3199-Pos Board B629
NATURALLY SYNTHETIC: USING BIOLOGY TO IMPROVE TECHNOLOGY. **Mark A. Allen**, Evgenia Barannikova, Scott Riley, Alexander Winton

Notes

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Notes

Exhibit Dates and Times

Sunday, February 8 10:00 AM–5:00 PM
Monday, February 9 10:00 AM–5:00 PM
Tuesday, February 10 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 Apple iPad Air 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 3:00 PM on Tuesday, February 10. The drawing will take place on Tuesday, February 10 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 the Exhibit Hall of the Baltimore Convention Center.
See pages 214–219 for detailed abstracts.

Exhibit Hall, Room A

Sunday, February 8

7:30 AM–9:00 AM:	FEI Company
3:30 PM–5:00 PM:	Wyatt Technology Corporation

Monday, February 9

9:30 AM–11:00 AM:	Pall ForteBio
11:30 AM–1:00 PM:	Asylum Research, an Oxford Instruments Company
1:30 PM–3:00 PM:	World Precision Instruments
3:30 PM–5:00 PM:	Bruker Nano Surfaces
5:30 PM–7:00 PM:	HEKA Elektronik

Tuesday, February 10

1:30 PM–3:00 PM:	KinTek Corporation

Exhibit Hall, Room B

Sunday, February 8

10:30 AM–12:00 NOON:	Carl Zeiss Microscopy LLC
12:30 PM–2:00 PM:	TA Instruments
2:30 PM–4:00 PM:	Bruker Nano Surfaces
4:30 PM–6:00 PM:	OriginLab Corporation

Monday, February 9

8:30 AM–10:00 AM:	FEI Company
10:30 AM–12:00 NOON:	Molecular Devices LLC
12:30 PM–2:00 PM:	Nanion Technologies GmbH
2:30 PM–4:00 PM:	Sutter Instrument
4:30 PM–6:00 PM:	Molecular Devices

Tuesday, February 10

10:30 AM–12:00 NOON:	SensiQ Technologies Inc
12:30 PM–2:00 PM:	Nanion Technologies GmbH

Annual Meeting Sponsors*

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**As of January 9, 2015*

Room A: Sunday, February 8

7:30 AM–9:00 AM

FEI Company

FEI Cryo-TEM Workflow Solutions: A New Era for 3D Structural Biology

A new frontier exists in unraveling interactive biological and biochemical processes and pathways at the macromolecular level. Of critical importance is the three-dimensional visualization of macromolecular structures and molecular machines in their native functional state. Three techniques play a major role in orchestrating this.

Nuclear magnetic resonance (NMR) has the capability to study specific protein domains or fragments and their functional role in protein folding and dynamics and in ligand binding whereas X-Ray crystallography (XRD) allows visualizing high-resolution but more static 3D structures of apo and liganded proteins, mainly in a monomeric or dimeric state after crystallization. To unravel more physiologically relevant situations however, it is essential to visualize multimeric complexes in their tertiary and quaternary state and their interaction with other complexes. By performing typical cryo-TEM applications like single particle analysis or tomography, this can be achieved. In this so-called translational methodology, cryo-TEM thus provides complementary information to NMR and XRD that can be crucial for drug discovery, e.g. in terms of a better understanding of the mechanism of action inferred from the EM structure of the physiologically relevant complex. This will eventually contribute to answer real biologically as well as medically relevant questions.

Latest developments in the cryo-TEM workflow have brought the 3 major structural biology technologies closer together. Now, finally, a continuum has been reached on all important aspects with regards to resolution and macromolecular scales which allows for the full deployment of the combination of these technologies.

Here, we will illustrate the historical context of these technologies with respect to one another and show how latest developments have reached the critical requirements to fully unleash the power of structural biology in not just answering fundamental questions, but actually contribute to curing diseases and improving health. Also, we will discuss the future of structural biology based on the latest developments of the FEI workflow and its components with a special focus on the advances in contrast enhancement (phase plates) and (direct electron) detection.

Presenter

Chris Arthur , Applications Engineer, FEI Company

3:30 PM–5:00 PM

Wyatt Technology Corporation

The Light Scattering Toolkit for Biophysical Characterization: Lab Essentials for Enhancing Studies of Purification, Crystallization, Formulation, Conjugation, Conformation, and Interactions

Biophysical techniques based on static and dynamic light scattering address many of the key analytical challenges associated with proteins, oligonucleotides, vesicles and other biomacromolecules. This workshop covers the following topics:

1. Batch DLS—traditional cuvette-based dynamic light scattering (DLS) is a fast, easy means of estimating macromolecular and nanoparticle size distributions to assess protein aggregation or the sizes of virus-like particles or drug delivery nanovehicles. In microwell-plate format, DLS is a high-productivity tool useful for optimizing formulation or crystallization conditions with minimal sample consumption or manual labor.

2. SEC-MALS and SEC-DLS—coupling of multi-angle static light scattering (MALS) and DLS detection to size-exclusion chromatography to assess molar mass, size, conformation and conjugation, in solution, independently of column calibration and non-ideal sample-column interactions. In addition to readily assessing aggregation and fragmentation in line with SEC purification, SEC-MALS analyzes protein conjugates such as glycoproteins or membrane proteins bound to surfactant micelles, determining protein oligomeric state and the mass of glycans, polysaccharides or surfactant modifying the protein.

3. FFF-MALS and FFF-DLS—coupling of MALS and DLS to a field-flow fractionation (FFF) device to achieve accurate characterization of macromolecules and nanoparticles from 1-1000 nm, even when soluble and insoluble components are both present in the solution. It does not employ a stationary phase; FFF separates without shear and with minimal surface interactions. FFF produces high-resolution size distributions thanks to true hydrodynamic separation upstream of the light scattering detectors. It also offers the benefits of post-separation downstream analysis by spectroscopy for additional information on samples.

4. CG-MALS—coupling MALS to a composition-gradient device results in a uniquely powerful system for characterizing complex biomolecular interactions, label-free and immobilization-free. Because MALS measures molar masses it is one of the most useful techniques for analyzing multi-domain, multi-protein interactions that go beyond standard 1:1 interactions including systems exhibiting cooperativity and allostery. CG-MALS determines the affinity and absolute molecular stoichiometry of self and/or heteroassociating systems from pM to mM.

Presenter

Stephanie Cope, Applications Scientist, Wyatt Technology Corporation

Room A: Monday, February 9

9:30 AM–11:00 AM

Pall ForteBio LLC

Measuring Engineered Changes in Binding Affinity with the BLItz® Label-Free System

Combining Organic Synthesis and Directed Evolution to Design Glycocluster HIV Vaccine Candidates

We will describe a new method for design of carbohydrate HIV vaccines, which combines organic synthesis and directed evolution techniques. This work originates from the observation that some HIV positive individuals produce antibodies which are broadly neutralizing and protective against HIV infection. One such antibody, 2G12, recognizes and binds to a cluster of carbohydrates on the viral envelope protein gp120. Our goal is to develop synthetic carbohydrate clusters which closely mimic the viral carbohydrate cluster, and which might thus elicit a 2G12-like antibody response when used as a vaccine. In order to design carbohydrate clusters which closely mimic gp120, we have developed evolution-based strategies, in which immobilized 2G12 is used to recognize and fish out the best glycocluster mimics of gp120 from amongst large libraries of ~10 trillion different glycosylated peptide- or DNA structures. The glycocluster structures obtained by these methods are recognized by antibody 2G12 as strongly as is the viral protein itself, and are thus of great interest for vaccine studies.

Tips and Tricks for Developing BLItz Assays

The BLItz label-free assay system is a simple-to-use benchtop instrument for measuring binding interactions of antibodies and proteins using as little as 4µl of sample. Additional case studies of how the BLItz system is being used to qualify biophysical models will be presented, along with tips and tricks for developing kinetics assays on the BLItz system.

Presenters

Isaac Krauss, Assistant Professor of Chemistry, Brandeis University
Craig Tin, Senior Product Manager, Pall Forte Bio LLC

11:30 AM–1:00 PM

Asylum Research, an Oxford Instruments Company

There's No Other AFM Like Cypher™ — High Resolution Atomic Force Microscopy Made Easier and Faster

Asylum Research has focused on improving AFM instrumentation to make imaging in liquid easier, faster and more quantitative for life science applications. Please join us for this 'Lunch and Learn' presentation that will focus on the latest technical advances in AFM that enable high resolution imaging of the structure and dynamics of samples including proteins, lipids and nucleic acids. We'll show examples of how the Cypher ES Environmental AFM allows users to control the environment around their sample and perform perfusion experiments easily. You'll learn about Cypher's numerous ease-of-use features such as GetStarted™, GetReal™, and blueDrive™ for easy and stable imaging in liquid. We will introduce you to Fast Force Mapping, our unique technology that measures mechanical properties of your samples faster and more reliably. This is also a great opportunity to ask our scientists any questions you may have about AFM.

Presenter

Irène Revenko, Applications Scientist, Asylum Research, an Oxford Instruments Company

1:30 PM–3:00 PM

World Precision Instruments

Side-Stepping the Animal Model: Cardiac Work Loops in Human iPSC-derived Myocytes.

Cardiac pressure-volume loops on a complete organ provide the framework for understanding cardiac mechanics in experimental animal models, most notably in the context of Frank-Starling mechanisms. With the development of more sensitive transducers, this work has been applied to single cardiac cells, using freshly isolated cells from an animal model. With the advent of iPSC-derived myocytes, a whole new range of cell types is now available to the investigator. We introduce a novel mounting application for overcoming the technical difficulties in instrumenting these cells for force measurements. With this technology, it is now possible to conduct experiments on human stem cell-derived myocytes.

We will show preliminary results, the tools required for these types of experiments, mounting methods, and a novel method for direct force measurements on human iPSC-derived myocytes. In addition, two different methods for real-time determination of length changes in isolated iPSC-derived myocytes will be presented. The results are preliminary, however indicate the possibility for not only a reduction in the use of the animal models in cardiac research, but also the direct investigation of human cardiovascular disease.

3:30 PM–5:00 PM

Bruker Nano Surfaces

Recent Advances in Atomic Force Microscopy for Biological Research

Bruker's latest BioScope AFM is the perfect integration of AFM and inverted light microscopy. It incorporates Bruker's latest Peak Force Tapping innovations including the new nanomechanics package, which significantly expands mechanobiology applications into a lower modulus range covering live cells and tissues. With its open access design, and bio friendly features and accessories, the latest BioScope AFM is the most integrated and easiest to use life science AFM available. The workshop will include examples of the functional integration of light microscopy techniques with AFM in order to conduct optically guided, high-resolution mapping of both the structural and mechanical properties of mammalian cells.

Presenter

John Thornton, Senior Applications Engineer, Bruker Nano Surfaces

5:30 PM–7:00 PM

HEKA Elektronik

HEKA Electrophysiology Update

For over 40 years, HEKA has provided innovative products, expert tech support and unmatched service to their customers. HEKA's commitment to technological innovation is reflected by consistent updating of both hardware and software. While yesterday's gold standards try to keep pace with the latest research techniques, HEKA takes the lead.

By popular demand, HEKA is hosting a series of user meetings with tutorial presentations. On one hand, some of the new products will be showcased to the experienced user and, on the other hand, step-by-step guidance is provided to the researcher who is new to the field. Registration is available online through the HEKA Events Page on EventBrite, or by

email to events@heka.com. The number of available spaces, food and drink are limited, and registrations are accepted on a first-come-first-served basis.

Who should attend?

- Scientists with experience in patch clamp electrophysiology and related scientific techniques
- Researchers who want to become more efficient in the use of electrophysiology acquisition and analysis software
- PostDocs and graduate students who want to learn more about electrophysiology techniques

Presenters
Hubert Affolter, Senior Software Architect, HEKA Elektronik
Christian Heinemann, General Manager, HEKA Elektronik
Telly Galiatsatos, General Manager, HEKA Instruments

Room A: Tuesday, February 10

1:30 PM–3:00 PM

KinTek Corporation

KinTek Explorer Software: New Advances in Fitting Kinetic and Equilibrium Data

Fitting kinetic data based upon numerical integration of rate equations offers many advantages over conventional fitting of data based upon equations derived from simple models. Fitting by simulation is the most rigorous and eliminates numerous errors in simplifying assumptions needed to derive equations. Every day papers are published that contain errors in kinetic analysis that could have been avoided if the data had been fit using KinTek Explorer software.

In this presentation, Dr. Johnson will show how global fitting of kinetic data can be accomplished with ease using the fast, dynamic simulation in KinTek Explorer software, overcoming the all-to-common errors in conventional fitting. Moreover, data are fit to derive rate constants directly defining steps in a model, not merely observed rates (Eigenvalues). New advances in the software allow fitting kinetic data from single molecule experiments and families of curves can be fit simultaneous to define voltage-dependent rate constants or data from Temperature-jump or Pressure-jump experiments. In addition, equilibrium titration data can be fit using a unique endpoint simulation method, and time-resolved spectra can be fit using singular value decomposition (SVD). All experiments can be fit simultaneously and accurate error estimates are derived using robust confidence contour analysis

Presenters
Kenneth A. Johnson, President, KinTek Corporation
Roger Williams, Professor of Biochemistry, University of Texas at Austin

Room B: Sunday, February 8

10:30 AM–12:00 NOON

Carl Zeiss Microscopy LLC

Technology Innovations from ZEISS, the New ZEISS LSM 880 Confocal with Airyscan and the ZEISS Lightsheet Z.1

New 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 the 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.

The LSM 880 with Airyscan allows you to use multicolor samples with any label and get image quality like you've 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 confocals. 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.

The ZEISS Lightsheet Z.1 features high speed image acquisition and greatly reduced photodamage 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.

Presenters
Joseph Huff, Product Marking Manager, Laser Scanning and Superresolution Microscopy, Carl Zeiss Microscopy LLC
Scott Olenych, Product Marketing Manager, Imaging Products, Carl Zeiss Microscopy LLC

12:30 PM–2:00 PM

TA Instruments

Technology Advances in Ultrasensitive Isothermal Titration Calorimetry

TA Instruments introduces the Affinity ITC, with all new technology for advanced isothermal titration calorimetry. Isothermal Titration Calorimetry is the most effective analytical tool for simply and accurately measuring A/B interactions, especially protein-protein binding. Isothermal Titration Calorimetry provides complete thermodynamics and kinetics without labelling, fixing, or otherwise altering the sample of interest. All new technology from TA Instruments improves the sample throughput, usability, and data quality of all isothermal titration calorimetry experiments.

All-new advanced stirring technology and an innovative isolated injection system improves baseline stability, and mixing homogeneity while applying minimal perturbation to the material of interest. For large-scale screening and high throughput testing, an all-new unattended sample handling system automates up to 96 full titrations and continuous unattended operation for multiple days. Based around a 96-well plate format and multiple wash/rinse containers, the Affinity ITC Auto will greatly increase laboratory productivity without sacrificing sensitivity or reproducibility. The Affinity ITC is available in both the standard (1.0 mL) and low volume (190 µL) cell sizes, extending the range of applications for which automation is available. This presentation will include data examples and tech tips on experimental design using the Affinity ITC Auto.

Presenter

Dile Holton, Microcalorimetry Product Manager, TA Instruments

2:30 PM–4:00 PM

Bruker Nano Surfaces

Super-Resolution Microscopy and Its Applications in Fast and Complex Biological Systems

Super-resolution microscopy has revolutionized the field of biological imaging by providing new insights into biological processes in fields as diverse as developmental biology, neuroscience, cardiovascular research, genetics, infectious disease, and DNA/chromatin structure. The Vutara 350 super-resolution microscope offers a ten-fold improvement in resolution in comparison to traditional light microscopy techniques and is capable of achieving resolutions of 20 nm laterally and 50 nm axially. The Vutara 350 is based on a patented 3D biplane single molecule localization platform.

We will discuss the basic principles of operation and features of the Vutara 350 super-resolution microscope. The capability to do 3D multicolor imaging, high speed live cell imaging, 3D particle tracking, and z-stacking in various biological systems such as cells, tissue, drosophila, C. elegans, bacteria and virus makes the Vutara 350 very versatile.

Presenter

Jeff Stuckey, Product Marketing Manager, Bruker Nano Surfaces

4:30 PM–6:00 PM

OriginLab Corporation

Data Analysis and Graphing Using Origin 2015

Origin is an easy-to-use software application with data analysis and publication-quality graphing for science and engineering. This workshop will cover key features including importing data from multiple sources including Excel and third-party file formats, LabVIEW connectivity, creating and customizing multi-panel graphs, graphical exploration and analysis, curve fitting, peak analysis, signal processing, and statistics. Time saving features such as templates for graphing and analysis, batch plotting and batch analysis will be presented. Application examples using Origin's programming environment will also be presented.

The workshop will also cover key new features and improvements in the latest version:

Ease-of-use features including graph preview and comment tool tip in Project Explorer, search for string in project, search for functions in dialogs, redesigned axis dialog, enhanced legend, and custom categorical order. New graph types including Heat Map, Kernel Density Plot, Column Scatter Plot. Improvements to profile plot, box plot, contour plot, bubble scale, and color scale. New analysis tools for Distribution Fit, ANOVA of unbalanced data, t-Test on rows. Tool to append worksheets, remove or combine duplicate values, and improved pivot table. Integration of Python as scripting language in Origin.

Presenter

Easwar R. Iyer, VP of Technology, OriginLab Corporation

Room B: Monday, February 9

8:30 AM–10:00 AM

FEI Company

Advances in Correlative Light and Electron Microscopy

Correlative light and electron microscopy (CLEM) is a powerful approach that enables combining dynamic information and labelling specificity from fluorescence microscopy with ultra-structural information at nanometer resolution from electron microscopy on the same sample. In recent years technical improvements in fluorescence microscopy have enhanced z-resolution, enabled imaging with high sensitivity using TIRF and, with super-resolution microscopy, improved the resolution of light microscopy to up to 20 nm. Despite all these advances, fluorescence microscopy can only show what was labelled and an EM is needed to provide the full morphological context on the ultra-structure of the cell. However, CLEM experiments still remain challenging and low through-put.

Over the last years, FEI has introduced different solutions to overcome some of the challenges in CLEM experiments and to make CLEM experiments easier and more efficient. But correlative experiments are rapidly evolving – here, we will present updates on latest developments that have pushed the boundaries of correlative experiments.

Presenter

Meike Pedersen , Product Application Specialist, FEI Company

10:30 AM–12:00 NOON

Molecular Devices LLC

Performing Positive Allosteric Modulator (PAM) Assays and Investigating Use-Dependent Inhibition of Ion Channels on Automated Electrophysiology Systems Including the IonFlux™ Benchtop Reader and the IonWorks Barracuda® Instrument

PAM Assays
Nicotinic acetylcholine receptors (nAChRs) have been extensively studied due to their importance in physiological processes as well as involvement in several muscle and neuronal human pathologies, and are major therapeutic targets for pharmaceutical drug discovery. Ensemble recordings on the IonFlux HT System were validated with human hnAChR recombinant cell lines developed by Eurofins Discovery Services. Response properties of the nAChRs to the endogenous ligand acetylcholine (ACh), reference agonists, antagonists and positive allosteric modulators (PAMs) were characterized and will be presented.

Ion Channel Use-Dependence
Use-dependent inhibition of ion channels by potential drug candidates is an important aspect to investigate for many drug classes. Data will be presented to demonstrate the ability of automated electrophysiology systems to study the use-dependence block of Na+ channel targets by peptide toxins and known compounds. We will demonstrate the ability of the IonWorks Barracuda system to deliver complex voltage protocols and generate long assay windows which are required for these studies.Pulse trains delivered at 10Hz are used to measure the blockade of current. These experiments demonstrate stable assay windows with uniform currents for 30 minutes and longer during the delivery of periodic pulse trains.

Presenter
James Costantin, Product Marketing Manager, Automated Electrophysiology, Molecular Devices LLC

12:30 PM–2:00 PM

Nanion Technologies GmbH

HTS-Compatible Giga-Seal Ion Channel Drug Discovery: Beyond the Bottleneck and Ready for CiPA

Nanion Technologies is one of the leading providers of automated patch clamp systems, offering a diverse product portfolio covering a broad experimental range from single channel recordings to HTS-compatible ion channel screening from up to 768 cells in parallel. Allowing 20,000 data points per day, the SyncroPatch 384/768PE is unrivalled for high throughput and high quality recordings. Diverse ion channel targets and cell types have successfully been tested on the SyncroPatch 384/768PE including challenging targets such as fast desensitizing ligand ion channels (P2X3 und GluA2), ion channels requiring intracellular activation (Katp, TMEM16a) and heavily regulated channels such as TRPA1.

Early cardiac arrhythmic risk assessment is a hot topic these days calling for new safety screening strategies. 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 unique hybrid system for parallel impedance-based and MEA-like recordings from intact cardiomyocyte networks, has proven a versatile tool for safety and toxicity screening applications serving as an excellent complement to APC. These three platforms enable you to keep up with the requirements of the CiPA-initiative for early prediction of potential cardiac arrhythmias.

During this workshop, we will show how to push the boundaries of ion channel screening projects to achieve HTS-screening standards, and how to get ready for comprehensive safety screening beyond hERG.
Spaces are limited so reserve yours by sending an email to info@nanion.de.

Presenters
Niels Fertig, CEO, Nanion Technologies GmbH
Andrea Brüggemann, CSO, Nanion Technologies GmbH

2:30 PM–4:00 PM

Sutter Instrument

Scientists Empowering Scientists

For over 40 years, Sutter Instrument has designed and produced electromechanical and optical instrumentation that helps scientists push the limits. While Sutter has long been the market leader in products for micropipette fabrication and micromanipulation, we have continued to expand our Lambda imaging product line and XenoWorks microinjection systems. A strong emphasis has always been placed on providing expert tech support to help our customers achieve the best results in their research.
To further this goal, Sutter Instrument is starting a series of user meetings with tutorial presentations. We will be providing step-by-step guidance to the new experimenter as well as advanced tips and tricks for the experienced user. To round it off, newly introduced products will be discussed on a case-by-case basis.

Registration is available online through the Sutter Event Registration Page (http://sutter.eventbrite.com), or by email to info@sutter.com. The number of available spaces is limited, and registrations are accepted on a first-come-first-served basis.

Who should attend?
- Electrophysiologists who use 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.
- Scientists who want to learn more about optimizing their results with pipette pullers and micromanipulators

Presenters
Jan Dolzer, Tech Support and Product Development, Sutter Instrument: Introductory Remarks
Adair Oesterle, Tech Support Micropipette Fabrication and Microinjection, Sutter Instrument: Optimizing Settings on Your Sutter Micropipette Puller
Ali Mahloudji, Tech Support Micromanipulators and Lambda DG Series, Sutter Instrument: Maximizing the Versatility of Your Dual-manipulator Setup

4:30 PM–6:00 PM

Molecular Devices LLC

Eliminating 50-60 hz Line-frequency Noise with the New HumSilencer and pCLAMP Software Tips & Tricks

We will introduce a new feature of the Axon DigidataTM 1550A digitizer, HumSilencer, which provides a smart and simple method for eliminating 50 or 60 Hz line-frequency noise. In addition, we will present solutions to frequently asked questions on our pCLAMP software, a powerful data acquisition and analysis software that is used widely for a variety of electrophysiological recordings in many academic laboratories.

Presenter

Jeffrey Tang, Axon Product Marketing Manager, Molecular Devices LLC

Room B: Tuesday, February 10

10:30 AM–12:00 NOON

SensiQ Technologies Inc

Learn How SensiQ's Dynamic Injection (diSPR®) Techniques Enhance the Biophysical Characterization of Binding Events Using Surface Plasmon Resonance Technology

SensiQ's dynamic injection methods provide complete, one-pass kinetic and equilibrium data from a single injection while reducing statistical error/noise. Simply load one, highest analyte concentration vial and the instrument exposes the surface to either a stepwise (FastStep®) or continuous gradient (OneStep®) of concentrations. These approaches increase the ease/throughput of SPR experiments and provide complete data sets for interactions that are complicated by incomplete surface regeneration.

FastStep® uses a patented onboard micro-mixing technique to create increasing fixed concentrations of analyte in real time without generating partial dissociation responses as the instrument prepares subsequent concentrations. This technique improves throughput by decreasing the time to complete a full run while simplifying data analysis.

OneStep® is the ultimate evolution of FastStep®. Taylor dispersion fluidics establish a continuous gradient of analyte concentrations which is flowed over the surface to generate a sigmoidal binding curve. This technique introduces a time dependent variable that is not possible in traditional injection techniques and allows for the quantitative separation of multiple binding sites with different affinities. OneStep® also increases the dynamic range of allowable concentrations thereby removing the need to perform test injections or accurately guess the affinity of an unknown interaction. Importantly, OneStep® also provides added data content in SPR experiments by providing a measure of the analyte diffusion coefficient to help identify analytes that have a tendency to oligomerize or aggregate.

SensiQs' operational software was developed to simplify assay development and instrument operation. Using a drag and drop icon based programming approach, traditional program "scripting" is eliminated to simplify and speed assay development. Executable protocols for high throughput experiments can be developed in minutes. Programming examples will show how operational actions have been optimized to decrease runtime and increase throughput. Streamlining data analysis of small or large data sets using our Q-Dat software will also be presented.

Presenters

Derek Beahm, SensiQ Application Scientist
Rick Cope, SensiQ Sales Representative

12:30 PM–2:00 PM

Nanion Technologies GmbH

Measure More Membrane: Cells, Bilayers and Transporter Activity

The Port-a-Patch turned 10 years old last year, and is going stronger than ever. It's still the smallest patch clamp rig in the world, and makes patch clamp recordings accessible to anyone spending a couple of hours with it. Giga-seal recordings and the excellent voltage-clamp of the cellular membrane ensure high quality data, and the Port-a-Patch add-ons allow unprecedented experimental freedom, including temperature control, internal perfusion, automated action potential recordings, and recordings from primary and stem cell-derived cells.

The Orbit 16 is a parallel device for efficient formation of and recordings from up to 16 artificial bilayers at once, for parallel bilayer-reconstitution of ion channels and nanopores. Using Micro Electrode Cavity Array (MECA, Ionera), a 4 x 4 array of circular micro-cavities in a highly inert polymer, the bilayer is automatically formed by remotely actuated painting (Ionera-SPREAD), which all will be demonstrated during the session.

Ion transporters and pumps play an important role within general metabolism and information processing of organisms. The SURFE2R is a unique platform for direct measurements ion transporters and ion channels in diverse and heterologous membranes. It is easy-to-handle, highly sensitive and a very efficient screening platform. The SURFE2R N1 is a small footprint, fully automated device recording from membrane preparations, with proven success using native tissue, mammalian and insect cell lines, bacteria, organelles, and proteoliposomes.

Join this workshop for hands-on experiments and information about three outstanding platforms: Port-a-Patch, Orbit 16 and SURFE2R N1! We look forward to seeing you!

Spaces are limited so reserve yours by sending an email to info@nanion.de.

Presenters

Andrea Brüggemann, CSO, Nanion Technologies GmbH
Maria Barthmes, Application Specialist, Nanion Technologies
Gerhard Baaken, CEO, Ionera

Company Name Booth Number

89 North 355

1 Mill St., Unit 285
Burlington, VT 05401
www.89north.com

89 North provides products to improve research and clinical fluorescence imaging for the life sciences. Our products surround the research microscope including light sources, image splitters, laser combiners and filter wheels. We also offer engineering and manufacturing expertise to customize existing products or to create new solutions for systems integration.

AAAS Science & Technology Policy Fellowships 158

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The AAAS Science & Technology Policy Fellowships® provide scientists and engineers with a unique opportunity to apply their knowledge and skills to national and international issues, while learning first-hand about establishing and implementing policy. Fellows serve yearlong assignments in all three branches of the federal government in Washington, D.C.

AAT Bioquest 266

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Anasys Instruments 743
FEI Company 728
NanoAndMore USA 469
OriginLab Corporation 487
Rigaku Americas Corporation 379

AFM/NSOM/Confocal Microscopes
Anasys Instruments 743
Asylum Research, an Oxford Instruments Company 344
Bruker Nano Surfaces 744
HORIBA/PTI 128
Mad City Labs Inc 244
MicroSurfaces Inc 146
NanoMagnetics Instruments 435
Park Systems 236

Amperometry/Voltammetry Instrumentation
HEKA Electronik 628
Neuroscience Tools 148
npi electronic 443

Amphipols
Anatrace 350

Amplifiers
AutoMate Scientific 144
HEKA Electronik 628
Multi Channel Systems 444
NeoBiosystems Inc 347
Neuroscience Tools 148
npi electronic 443
Pacer Scientific 356
Warner Instruments 274
World Precision Instruments 336

Analytical/Testing Services
Anton Paar USA 360
Avanti Polar Lipids Inc 327
OriginLab Corporation 487
Park Systems 236
Peptides International 284
SensiQ Technologies Inc 643

Antibodies
AAT Bioquest 266
Cedarlane Corporation 136
Electron Microscopy Sciences 279
GenScript 138
Jackson ImmunoResearch Laboratories Inc 150
Malvern Instruments 343
Matreya LLC 270
NanoTemper Technologies Inc 362
One World Lab 827

Antibody Microarray Products
TIRF Labs 268

Biochemical Reagents
AAT Bioquest 266
Avanti Polar Lipids Inc 327
Cedarlane Corporation 136
One World Lab 827

Assay Kits
AAT Bioquest 266
Cedarlane Corporation 136
Molecular Devices 235
One World Lab 827
Seahorse Bioscience 732

Atomic Force Microscopes
Anasys Instruments 743
Keysight Technologies 257
Luigs & Neumann GmbH 737
Mad City Labs Inc 244
Park Systems 236

Biochemicals
Matreya LLC 270
One World Lab 827
Renishaw Inc 729

Biotechnology
Anton Paar USA 360
Biolin Scientific 382
Bruker Nano Surfaces 744
Cobolt 366
Luigs & Neumann GmbH 737
Pall ForteBio LLC 644
Renishaw Inc 729
TA Instruments 373
Wyatt Technology Corporation 273

Cameras
Carl Zeiss Microscopy LLC 455
Hamamatsu Corporation 265
Ludesco/Accu-Scope 380
Mightex Systems 156
Nikon Instruments Inc 280
Olympus 256
PCO-TECH Inc 337
PHASICS 283
Photometrics 238
SciMeasure 465
Stanford Photonics Inc 275
Thorlabs 328

Cell Biology Products
AAT Bioquest 266
American Society for Cell Biology (ASCB) 631
Cedarlane Corporation 136
FEI Company 728
Fluicell (former Avalance Biotech) 365
GenScript 138
Ludesco/Accu-Scope 380
Precision Plastics Inc 287
Seahorse Bioscience 732

Cell Culture Products
BRANDEL Inc 727
Cedarlane Corporation 136
IonOptix 260

Centrifuges
Electron Microscopy Sciences 279

Chromatography
Malvern Instruments 343
Wyatt Technology Corporation 273

Circular Dichroism Spectrometer
JASCO 250
Quantum Northwest Inc 432

Computational Software
FEI Company 728
KinTek Corporation 428

Computers hardware and software
Aurora Scientific Inc 461
KinTek Corporation 428
SciMeasure 465

Confocal Microscopes
Carl Zeiss Microscopy LLC 455
ISS Inc 374
LUMICKS BV 467
Nikon Instruments Inc 280
Olympus 256
Thorlabs 328

Curvettes
World Precision Instruments 336

Crystallization Utilities
Anatrace 350

Company Name	Booth Number

Crystallography

Anatrace	350
Cedarlane Corporation	136
Rigaku Americas Corporation	379

Data Acquisition

Bio-Logic USA	438
Ecocyte Bioscience US LLC	370
elements srl	292
HEKA Electronik	628
IonOptix	260
Laboratory for Fluorescence Dynamics	436
Neuroscience Tools	148
World Precision Instruments	336

Data Analysis

IonOptix	260
KinTek Corporation	428
Laboratory for Fluorescence Dynamics	436
OriginLab Corporation	487

Data Analysis Software

Aurora Scientific Inc	461
BRANDEL Inc	727
ISS Inc	374
KinTek Corporation	428
Laboratory for Fluorescence Dynamics	436
NanoTemper Technologies Inc	362
Olympus	256
OriginLab Corporation	487

Detergents

Anatrace	350

Digitizers

elements srl	292

Dissecting Equipment

Ludesco/AccuScope	380

Drug Discovery

BioNavis Ltd.	629
ChanTest A Charles River Company	367
GenScript	138
MicroSurfaces Inc	146
Nanion Technologies GmbH	243
NanoTemper Technologies Inc	362
Pall ForteBio LLC	644
Seahorse Bioscience	732
SensiQ Technologies Inc	643

Electromechanical Instrumentation

IonOptix	260

Company Name	Booth Number

Electrophoresis Equipment

npi electronic	443
Wyatt Technology Corporation	273

Electrophysiological Data Acquisition

Alembic Instruments Inc	269
ChanTest A Charles River Company	367
Ecocyte Bioscience US LLC	370
elements srl	292
HEKA Electronik	628
Molecular Devices LLC	235
Multi Channel Systems	444
NeoBiosystems Inc	347
Neuroscience Tools	148

Electrophysiology Equipment

Aurora Scientific Inc	461
AutoMate Scientific	144
Cell MicroControls	349
Ecocyte Bioscience US LLC	370
elements srl	292
Ionovation	630
Luigs & Neumann GmbH	737
Multi Channel Systems	444
Nanion Technologies GmbH	243
Narishige International USA Inc	491
Pacer Scientific	356
Scientifica Ltd	447
Sensapex	627
Warner Instruments	274
World Precision Instruments	336

Electrophysiological Instruments

Alembic Instruments Inc	269
elements srl	292
HEKA Electronik	628
Ionovation	630
Molecular Devices LLC	235
Nanion Technologies GmbH	243
NeoBiosystems Inc	347
Neuroscience Tools	148
Scientifica Ltd	447
Sensapex	627
Sutter Instrument	228
Warner Instruments	274

Electrophysiology Software

elements srl	292
Molecular Devices LLC	235

Environmental Chambers

Cell MicroControls	349
Precision Plastics Inc	287
Tokai Hit Co Ltd	369
World Precision Instruments	336

Company Name	Booth Number

Filter Wheels

89 North	355
Ludl Electronic Products	359
Olympus	256
Prior Scientific Inc	368
Sutter Instrument	228

Flash Lamps

89 North	355
Hamamatsu Corporation	265

Fluid Flow Chambers

Cell MicroControls	349
Warner Instruments	274

Fluorescence Anisotropy

Edinburgh Instruments	390
HORIBA/PTI	128
ISS Inc	374
JASCO	250
TgK Scientific Ltd	291

Fluorescence Correlation Spectroscopy

Ionovation	630
ISS Inc	374
Laboratory for Fluorescence Dynamics	436

Fluorescence Image Analysis Equipment

Aurora Scientific Inc	461
FEI Company	728
Ionovation	630
ISS Inc	374
Laboratory for Fluorescence Dynamics	436
Photometrics	238
Rigaku Americas Corporation	379
SciMeasure	465

Fluorescence Lifetime Imaging

HORIBA/PTI	128
ISS Inc	374
Laboratory for Fluorescence Dynamics	436
PicoQuant Photonics	288
SciMeasure	465
Stanford Photonics Inc	275

Fluorescent Filters

Chroma Technology	355
Electron Microscopy Sciences	279
Ludesco/Accu-Scope	380

Fluorescent Probes

AAT Bioquest	266
Jackson ImmunoResearch Laboratories Inc	150

Company Name	Booth Number

Fluorometers

Edinburgh Instruments	390
HORIBA/PTI	128
IonOptix	260
ISS Inc	374
JASCO	250
Quantum Northwest Inc	432
TgK Scientific Ltd	291
TIRF Labs	268
World Precision Instruments	336

Glass Capillary Tubing

Narishige International USA Inc	491
Sutter Instrument	228
Warner Instruments	274

High-Throughput Instrumentation

Ecocyte Bioscience US LLC	370
JASCO	250
Ludl Electronic Products	359
Mad City Labs Inc	244
Malvern Instruments	343
Molecular Devices LLC	235
Multi Channel Systems	444
Nanion Technologies GmbH	243
SensiQ Technologies Inc	643
Sophion	381
Wyatt Technology Corporation	273

Image Acquisition Systems

Aurora Scientific Inc	461
HEKA Electronik	628
Ionovation	630
Molecular Devices LLC	235
Olympus	256
PHASICS	283
Photometrics	238
Stanford Photonics Inc	275

Image Analysis

Nikon Instruments Inc	280
Olympus	256
PHASICS	283

Image Analysis Software

Aurora Scientific Inc	461
Hamamatsu Corporation	265
Olympus	256
PHASICS	283
Stanford Photonics Inc	275

Image Analysis High Resolution

Olympus	256

Company Name	Booth Number

Image Analyzers FISH Applications

MicroSurfaces Inc	146

Image Analyzers High Resolution

Bruker Nano Surfaces	744

Image Analyzers High Speed

NanoAndMore USA	469

Image Analyzers Ratiometric Dyes

AAT Bioquest	266

Image Intensifiers

Hamamatsu Corporation	265
Stanford Photonics Inc	275

Image Stabilization

Mad City Labs Inc	244

Imaging Chambers

ALA Scientific Instruments	445
Stanford Photonics Inc	275
Tokai Hit Co Ltd	369
Warner Instruments	274

Imaging Spectral

Chroma Technology	355

Imaging Systems

89 North	355
Carl Zeiss Microscopy LLC	455
FEI Company	728
Ludl Electronic Products	359
NanoAndMore USA	469
PHASICS	283
Photometrics	238
Scientifica Ltd	447
SciMeasure	465
Stanford Photonics Inc	275
Thorlabs	328

Immunochemicals

Jackson ImmunoResearch Laboratories Inc	150
One World Lab	827

Incubators

Olympus	256
Tokai Hit Co Ltd	369

Company Name	Booth Number

Infrared Spectroscopy

Agilent Technologies	255
Anasys Instruments	743
TgK Scientific Ltd	291

Interferometers

PHASICS	283

Ion Channels

Alembic Instruments Inc	269
Anatrace	350
ChanTest A Charles River Company	367
Fluicell (former Avalance Biotech)	365
Ionovation	630
Molecular Devices LLC	235
Nanion Technologies GmbH	243
Neuroscience Tools	148
Peptides International	284
Scientifica Ltd	447
Sophion	382
TIRF Labs	268

Isotope-Labeled Compounds

Peptides International	284

Label Free Sensing

Biolin Scientific	382
BioNavis Ltd.	629
NanoTemper Technologies Inc	362
PHASICS	283
SensiQ Technologies Inc	643
TA Instruments	373

Labeling Dyes

NanoTemper Technologies Inc	362
One World Lab	827
Peptides International	284

Laboratory Apparatus & Equipment

Bio-Logic USA	438
BRANDEL Inc	727
Electron Microscopy Sciences	279
Park Systems	236
PicoQuant Photonics	288
Renishaw Inc	729
Seahorse Bioscience	732
Siskiyou Corporation	361
TA Instruments	373

Langmuir Troughs

Biolin Scientific	382

Company Name	Booth Number

Lasers

Cobolt	366
Edinburgh Instruments	390
ISS Inc	374
PicoQuant Photonics	288
Renishaw Inc	729
RPMC Lasers Inc	387
Thorlabs	328

Life Sciences

AAAS Science & Technology Policy Fellowships	158
American Society for Cell Biology (ASCB)	631
Anasys Instruments	743
Cedarlane Corporation	136
Chroma Technology	355
Cobolt	366
GenScript	138
MicroSurfaces Inc	146
Olympus	256
One World Lab	827
OriginLab Corporation	487
PicoQuant Photonics	288
Rapp OptoElectronic	738
Renishaw Inc	729
Rigaku Americas Corporation	379
SciMeasure	465
SensiQ Technologies Inc	643
TA Instruments	373

Light Sheet Microscopy

ASI/Applied Scientific Instrumentation Inc	335
Chroma Technology	355
Mad City Labs Inc	244
NanoAndMore USA	469
Photometrics	238
TIRF Labs	268

Light Sources

89 North	355
Chroma Technology	355
Cobolt	366
Hamamatsu Corporation	265
HORIBA/PTI	128
ISS Inc	374
KinTek Corporation	428
Mightex Systems	156
Pacer Scientific	356
Prior Scientific Inc	368
Rapp OptoElectronic	738
Siskiyou Corporation	361
Sutter Instrument	228

Lipids

Anatrace	350
Avanti Polar Lipids Inc	327
BioNavis Ltd	629
Matreya LLC	270

Company Name	Booth Number

Liposome Preparation Equipment

Avanti Polar Lipids Inc	327

Liquid Chromatography Instruments

Agilent Technologies	255
Wyatt Technology Corporation	273

Magnetic Stirrers

Electron Microscopy Sciences	279

Mass Spectrometry

Agilent Technologies	255
Bio-Logic USA	438
Extrel CMS	646
Peptides International	284
Renishaw Inc	729

Micro Environmental Control

ALA Scientific Instruments	445

Microcalorimetry Systems

Malvern Instruments	343
TA Instruments	373

Microdissecting Instruments

World Precision Instruments	336

Microelectrode Holders

ALA Scientific Instruments	445
Luigs & Neumann GmbH	737
Sensapex	627
Warner Instruments	274

Microelectrodes

Ecocyte Bioscience US LLC	370

Microfluidic Chambers

ALA Scientific Instruments	445
Fluicell (former Avalance Biotech)	365
Ionovation	630
LUMICKS BV	467
MicroSurfaces Inc	146

Microforges

ALA Scientific Instruments	445
Narishige International USA Inc	491

Company Name	Booth Number

Microinjectors

ASI/Applied Scientific Instrumentation Inc	335
Narishige International USA Inc	491
npi electronic	443
Sutter Instrument	228
Warner Instruments	274
World Precision Instruments	336

Micromanipulators

ASI/Applied Scientific Instrumentation Inc	335
AutoMate Scientific	144
Ecocyte Bioscience US LLC	370
Fluicell (former Avalance Biotech)	365
Luigs & Neumann GmbH	737
LUMICKS BV	467
Mad City Labs Inc	244
Narishige International USA Inc	491
NeoBiosystems Inc	347
Pacer Scientific	356
Prior Scientific Inc	368
Scientifica Ltd	447
Sensapex	627
Siskiyou Corporation	361
Sutter Instrument	228
Warner Instruments	274
World Precision Instruments	336

Micropipette Pullers

AutoMate Scientific	144
Narishige International USA Inc	491
Pacer Scientific	356
Siskiyou Corporation	361
Sutter Instrument	228

Micropipettes

Fluicell (former Avalance Biotech)	365

Micropositioners

ASI/Applied Scientific Instrumentation Inc	335
Mad City Labs Inc	244
NeoBiosystems Inc	347
PI Physik Instrumente L.P. Piezo Nano Positioning	259
Sensapex	627
Sutter Instrument	228

Company Name	Booth Number

Microscope Accessories

89 North	355
Carl Zeiss Microscopy LLC	455
Cell MicroControls	349
Chroma Technology	355
Cobolt	366
Electron Microscopy Sciences	279
Fluicell (former Avalance Biotech)	365
Ionovation	630
Ludesco/Accu-Scope	380
Ludl Electronic Products	359
Mad City Labs Inc	244
Mightex Systems	156
Olympus	256
Pacer Scientific	356
Park Systems	236
Precision Plastics Inc	287
Prior Scientific Inc	368
Rapp OptoElectronic	738
Sutter Instrument	228
TIRF Labs	268
Tokai Hit Co Ltd	369

Microscope Stages

ASI/Applied Scientific Instrumentation Inc	335
Ludesco/Accu-Scope	380
Ludl Electronic Products	359
Mad City Labs Inc	244
Nikon Instruments Inc	280
Olympus	256
PI Physik Instrumente L.P. Piezo Nano Positioning	259
Prior Scientific Inc	368
Scientifica Ltd	447
Siskiyou Corporation	361
Sutter Instrument	228

Microscope Drift Correction

ASI/Applied Scientific Instrumentation Inc	335
Mad City Labs Inc	244

Microscopes

ASI/Applied Scientific Instrumentation Inc	335
Asylum Research, an Oxford Instruments Company	344
Bio-Logic USA	438
Bruker Nano Surfaces	744
Carl Zeiss Microscopy LLC	455
FEI Company	728
ISS Inc	374
Laboratory for Fluorescence Dynamics	436
Ludesco/Accu-Scope	380
Luigs & Neumann GmbH	737
LUMICKS BV	467
Mad City Labs Inc	244
NanoAndMore USA	469
Nikon Instruments Inc	280
Olympus	256
Park Systems	236
PHASICS	283
PicoQuant Photonics	288
Rapp OptoElectronic	738
Renishaw Inc	729
Scientifica Ltd	447
Sutter Instrument	228
Thorlabs	328

Microscopy Chambers

Fluicell (former Avalance Biotech)	365
Precision Plastics Inc	287
Warner Instruments	274

Monochromators

89 North	355
HORIBA/PTI	128
ISS Inc	374

Molecular Biology Products

Anton Paar USA	360
Cedarlane Corporation	136
GenScript	138
NanoTemper Technologies Inc	362
Rigaku Americas Corporation	379

Nanopositioning Systems

ASI/Applied Scientific Instrumentation Inc	335
FEI Company	728
Ludl Electronic Products	359
Mad City Labs Inc	244
NanoMagnetics Instruments	435
NeoBiosystems Inc	347
PI Physik Instrumente L.P. Piezo Nano Positioning	259
Prior Scientific Inc	368

Near-Field Scanning Optical Microscopes (NSOM)

Anasys Instruments	743
TIRF Labs	268

Particle Sizing Products

Malvern Instruments	343
NanoAndMore USA	469
Wyatt Technology Corporation	273

Patch Clamp Instrumentation

Alembic Instruments Inc	269
HEKA Electronik	628
Molecular Devices LLC	235
Multi Channel Systems	444
Nanion Technologies GmbH	243
Narishige International USA Inc	491
NeoBiosystems Inc	347
Neuroscience Tools	148
Nikon Instruments Inc	280
npi electronic	443
Pacer Scientific	356
Scientifica Ltd	447
Sensapex	627
Sophion	381
Sutter Instrument	228
TIRF Labs	268
Warner Instruments	274

Peptides

GenScript	138
NanoTemper Technologies Inc	362
One World Lab	827
Peptides International	284

Perfusion Stepper System

Warner Instruments	274

Perfusion Systems

ALA Scientific Instruments	445
AutoMate Scientific	144
BRANDEL Inc	727
Cell MicroControls	349
Warner Instruments	274

Phamaceutical Development Equipment

Anton Paar USA	360
Cobolt	366
FEI Company	728
Malvern Instruments	343
Nanion Technologies GmbH	243
SensiQ Technologies Inc	643

Phospholipids

Avanti Polar Lipids Inc	327
Matreya LLC	270

Photometers

Rapp OptoElectronic	738

Piezo Lens Positioners

Mad City Labs Inc	244
PI Physik Instrumente L.P. Piezo Nano Positioning	259

Piezo Scanning Stages

Mad City Labs Inc 244
NanoMagnetics Instruments 435
Olympus 256
PI Physik Instrumente 259
L.P. Piezo Nano Positioning

Piezo Stages

Ludl Electronic Products 359
Mad City Labs Inc 244
NanoMagnetics Instruments 435
Nikon Instruments Inc 280
Olympus 256
PI Physik Instrumente 259
L.P. Piezo Nano Positioning
Prior Scientific Inc 368
Sensapex 627

Pipettes

Electron Microscopy Sciences 279
Fluicell (former Avalance Biotech) 365
Narishige International USA Inc 491
Siskiyou Corporation 361

Plate Dispensers

BRANDEL Inc 727

Protein Binding Studies

Anton Paar USA 360
LUMICKS BV 467
NanoTemper Technologies Inc 362
Pall ForteBio LLC 644
TA Instruments 373
TIRF Labs 268

Protein Expression

GenScript 138
Luigs & Neumann GmbH 737
LUMICKS BV 467
Pall ForteBio LLC 644

Protein Purification Systems

Pall ForteBio LLC 644

Protein Structure Data

Anton Paar USA 360
Pall ForteBio LLC 644
Rigaku Americas Corporation 379
SensiQ Technologies Inc 643

Pumps

BRANDEL Inc 727
NeoBiosystems Inc 347
World Precision Instruments 336

Publications

AIP Publishing 529
American Physiological Society 538
American Society for Cell Biology (ASCB) 631
Cambridge University Press 532
Cell Press 535
CRC Press / Taylor & Francis Group 528
Garland Science 530
IOP Publishing 536
Physics Today 527
PLOS 636
Rockefeller University Press 437
Royal Society Publishing 543
Springer 544
The Journal of Physiology 545
The New York Times 531
Wiley 645

Quartz Crystal Microbalance

Biolin Scientific 382

Recording Chambers

ALA Scientific Instruments 445
AutoMate Scientific 144
Cell MicroControls 349
Ecocyte Bioscience US LLC 370
Warner Instruments 274

Reagents

AAT Bioquest 266
ChanTest A Charles River Company 367
Electron Microscopy Sciences 279
GenScript 138
Jackson ImmunoResearch Laboratories Inc 150
Peptides International 284

Rheometers/Viscometers

Anton Paar USA 360
Biolin Scientific 382
Malvern Instruments 343
TA Instruments 373

Scanning Electron Microscope

Carl Zeiss Microscopy LLC 455
Keysight Technologies 257

Scanning Probe Microscopes

Anasys Instruments 743
Asylum Research, an Oxford Instruments Company 344
Bruker Nano Surfaces 744
Keysight Technologies 257
Mad City Labs Inc 244
NanoMagnetics Instruments 435
Park Systems 236

Scientific CMOS Cameras

Hamamatsu Corporation 265
Ludesco/Accu-Scope 380
Photometrics 238
SciMeasure 465

Scientific Software Shutters

Prior Scientific Inc 368
Sutter Instrument 228

Screening High-Throughput

AAT Bioquest 266
AutoMate Scientific 144
ChanTest A Charles River Company 367
Ecocyte Bioscience US LLC 370
Ludl Electronic Products 359
Mad City Labs Inc 244
Multi Channel Systems 444
Nanion Technologies GmbH 243
SensiQ Technologies Inc 643

Sensors

Biolin Scientific 382
Hamamatsu Corporation 265
MicroSurfaces Inc 146
Pall ForteBio LLC 644

Software

elements srl 292
OriginLab Corporation 487

Spectrofluorometers

Agilent Technologies 255
Edinburgh Instruments 390
HORIBA/PTI 128
ISS Inc 374
JASCO 250
KinTek Corporation 428
TgK Scientific Ltd 291

Spectrometers

Agilent Technologies 255
Edinburgh Instruments 390
Luigs & Neumann GmbH 737
Mightex Systems 156
Quantum Northwest Inc 432
Rigaku Americas Corporation 379
TgK Scientific Ltd 291

Spectrophotometer Light Sources

89 North 355
Mightex Systems 156

Spectrophotometers

89 North 355
Agilent Technologies 255
JASCO 250
Quantum Northwest Inc 432
TgK Scientific Ltd 291
Wyatt Technology Corporation 273

Spectroscopy Accessories

Bio-Logic USA 438
Chroma Technology 355
Edinburgh Instruments 390
ISS Inc 374
OriginLab Corporation 487
Quantum Northwest Inc 432
World Precision Instruments 336

Solid State Lasers

Cobolt 366

Stimulus Isolators

Multi Channel Systems 444
npi electronic 443
Warner Instruments 274
World Precision Instruments 336

Sphingolipids

Avanti Polar Lipids Inc 327
Matreya LLC 270

Stand Alone Stopped-Flow Unit

KinTek Corporation 428

Stepper Technology

Mad City Labs Inc 244
Sutter Instrument 228

Sterols

Avanti Polar Lipids Inc 327

Stimulators

Aurora Scientific Inc 461
BRANDEL Inc 727
Cell MicroControls 349
IonOptix 260
Pacer Scientific 356
World Precision Instruments 336

Stopped-Flow Spectroscopy

Bio-Logic USA 438
JASCO 250
KinTek Corporation 428
TgK Scientific Ltd 291

Substrates

Peptides International 284

Super Resolution (SR) Microscopy

Anasys Instruments 743
Bruker Nano Surfaces 744
Chroma Technology 355
Cobolt 366
LUMICKS BV 467
Mad City Labs Inc 244
NanoAndMore USA 469
Nikon Instruments Inc 280
Olympus 256
Photometrics 238
Stanford Photonics Inc 275

Surgical Instruments

World Precision Instruments 336

TCSPC Components

Edinburgh Instruments 390
ISS Inc 374

Temperature Controllers

ALA Scientific Instruments 445
Aurora Scientific Inc 461
Cell MicroControls 349
Multi Channel Systems 444
npi electronic 443
Quantum Northwest Inc 432
Tokai Hit Co Ltd 369
Warner Instruments 274
World Precision Instruments 336

Tensiometers

Biolin Scientific 382

UV Spectroscopy

Agilent Technologies 255
Bio-Logic USA 438
Edinburgh Instruments 390
HORIBA/PTI 128
JASCO 250
Quantum Northwest Inc 432
TgK Scientific Ltd 291

Vibration Isolation Systems

AutoMate Scientific 144
Park Systems 236
TMC Ametek 348

Video Microscopy Systems

IonOptix 260
LUMICKS BV 467
Nikon Instruments Inc 280
Photometrics 238
SciMeasure 465

Visible Spectroscopy

Agilent Technologies 255
Quantum Northwest Inc 432
Renishaw Inc 729

Voltage Clamp Instrumentation

Alembic Instruments Inc 269
elements srl 292
HEKA Electronik 628
Neuroscience Tools 148
npi electronic 443

X-ray Diffraction Equipment

Rayonix 745
Rigaku Americas Corporation 379

X-ray Imaging Equipment

Rayonix 745

Zeta Potential

Anton Paar USA 360
Malvern Instruments 343
NanoAndMore USA 469
Wyatt Technology Corporation 273

Exhibitor List and Booth Numbers

Booth Number/Exhibitor

128 HORIBA/PTI
136 Cedarlane Corporation
138 GenScript
144 AutoMate Scientific
146 MicroSurfaces Inc
148 Neuroscience Tools
150 Jackson ImmunoResearch Laboratories Inc
156 Mightex Systems
158 AAAS Science & Technology Policy Fellowships
228 Sutter Instrument
235 Molecular Devices LLC
236 Park Systems
238 Photometrics
243 Nanion Technologies GmbH
244 Mad City Labs Inc
250 JASCO
255 Agilent Technologies
256 Olympus
257 Keysight Technologies NEW
259 PI Physik Instrumente L.P., Piezo Nano Positioning
260 IonOptix
265 Hamamatsu Corporation
266 AAT Bioquest
268 TIRF Labs
269 Alembic Instruments Inc
270 Matreya LLC NEW
273 Wyatt Technology Corporation
274 Warner Instruments
275 Stanford Photonics Inc
279 Electron Microscopy Sciences
280 Nikon Instruments Inc
283 PHASICS
284 Peptides International
287 Precision Plastics Inc
288 PicoQuant Photonics
291 TgK Scientific Ltd
292 elements srl NEW
327 Avanti Polar Lipids Inc
328 Thorlabs
335 ASI/Applied Scientific Instrumentation
336 World Precision Instruments
337 PCO-TECH Inc

Booth Number/Exhibitor

343 Malvern Instruments
344 Asylum Research, An Oxford Instruments Company
347 NeoBiosystems Inc
348 TMC Ametek NEW
349 Cell MicroControls
350 Anatrace
355 Chroma Technology
356 Pacer Scientific
359 Ludl Electronics Products
360 Anton Paar USA
361 Siskiyou Corporation
362 NanoTemper Technologies Inc
365 Fluicell (former Avalance Biotech)
366 Cobolt
367 ChanTest, A Charles River Company
368 Prior Scientific Inc
369 Tokai Hit Co Ltd
370 Ecocyte Bioscience US LLC
373 TA Instruments
374 ISS Inc
379 Rigaku Americas Corporation
380 Ludesco/Accu-Scope NEW
381 Sophion
382 Biolin Scientific Inc
387 RPMC Lasers Inc
390 Edinburgh Instruments
428 KinTek Corporation
432 Quantum Northwest Inc
435 NanoMagnetics Instruments
436 Laboratory for Fluorescence Dynamics
437 Rockefeller University Press
438 Bio-Logic USA
443 npi electronic
444 Multi Channel Systems
445 ALA Scientific Instruments
447 Scientifica Ltd
455 Carl Zeiss Microscopy LLC
459 Aviv Biomedical Inc
461 Aurora Scientific Inc
465 SciMeasure
467 LUMICKS BV NEW
469 NanoAndMore USA
487 OriginLab Corporation

Booth Number/Exhibitor

491 Narishige International USA Inc
527 Physics Today
528 CRC Press/Taylor & Francis Group
529 AIP Publishing
530 Garland Science
531 The New York Times
532 Cambridge University Press
535 Cell Press
536 IOP Publishing
538 American Physiological Society
543 Royal Society Publishing
544 Springer
545 The Journal of Physiology
627 Sensapex
628 HEKA Electronik
629 BioNavis Ltd
630 Ionovation
631 American Society for Cell Biology
636 PLOS
643 SensiQ Technologies Inc
644 Pall ForteBio LLC
645 Wiley
646 Extrel CMS
727 BRANDEL Inc
728 FEI Company
729 Renishaw Inc NEW
732 Seahorse Bioscience
737 Luigs & Neumann GmbH
738 Rapp OptoElectronic
743 Anasys Instruments
744 Bruker Nano Surfaces
745 Rayonix
827 One World Lab

Author Index

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

X

Y

Z

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1. Stock options or bond holdings in a for-profit corporation or self-directed pension plan
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Anantharaman, Thomas	BioNano Genomics	Employment (full or part-time) in funding company	742-Pos
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Bett, Glenna	Cytocybernetics	Ownership or Partnership in funding organization	561-Pos
Bett, Glenna	Cytocybernetics	Ownership or Partnership in funding organization	1366-Pos
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Bruggemann, Andrea	Nanion Technologies	Ownership or Partnership in funding organization	1454-Pos
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Bruhn, Brandon	Oxford Nanopores Technologies Ltd	Research funded by industry grant	876-Pos
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Carlson, Coby	CDI	Employment (full or part-time) in funding company	2968-Pos
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Dhavala, Sirisha	Berg LLC	Employment (full or part-time) in funding company	1243-Pos
Digman, Michelle	NIH P50-GM076516	Research funded by industry grant	369-Pos
Diwu, Zhenjun	AAT Bioquest	Employment (full or part-time) in funding company	549-Pos
Dowbenko, Don	Genentech, Incorporated, a member of the Roche Group	Employment (full or part-time) in funding company	810-Pos
Dzakula, Zeljko	BioNano Genomics	Employment (full or part-time) in funding company	742-Pos
Eggenberger, Olivia	Oxford Nanopore	Research funded by industry grant	872-Pos
Eisfeld, Jörg	j.eisfeld@cytocentrics.com	Employment (full or part-time) in funding company	2954-Pos
Emter, Craig	Bristol Myer/AstraZenca	Research funded by industry grant	1462-Pos
Fedorov, Nikolai	ChanTest	Employment (full or part-time) in funding company	2955-Pos
Fisher, Jasmin	Microsoft	Employment (full or part-time) in funding company	1833-Plat

Name	Disclosure Entity	Disclosure Type	Presentation Number
Foquet, Mathieu	Pacific Biosciences	Other	1657-Pos
Ford, Nicole	NanoTemper Technologies	Employment (full or part-time) in funding company	266-Pos
Frech, Stefanie	Cytocentrics Bioscience GmbH	Employment (full or part-time) in funding company	2954-Pos
Friesner, Richard	Schrodinger Inc	Consulting fees or other remuneration from industry	60-Plat
Fuller, Matthew	Pfizer, Inc.	Employment (full or part-time) in funding company	2902-Pos
Gallagher, Thomas	Lonza Biologics	Employment (full or part-time) in funding company	2500-Plat
Garg, Sumit	BERG LLC	Employment (full or part-time) in funding company	1243-Pos
Gesta, Stephane	Berg LLC	Employment (full or part-time) in funding company	1243-Pos
Goldberg, Paul	Xenon Pharmaceuticals	Employment (full or part-time) in funding company	2912-Pos
Golovchenko, Jene	Oxford Nanopore Technology	Research funded by industry grant	880-Pos
Gourdie, Robert	R.G.G. is a member of the Scientific Advisory Board of FirstString Research Inc., a company spun off from his lab that is testing aCT1 in clinical trials for skin wound healing.	Non-remunerative positions of influence such as officer, board member, trustee, or public spokesperson in company	2221-Pos
Gratton, Enrico	NIH P50-GM076516	Research funded by industry grant	369-Pos
Guo, Haitao	AAT Bioquest	Employment (full or part-time) in funding company	549-Pos
Hall, Benjamin	Microsoft	Employment (full or part-time) in funding company	1833-Plat
Hall, Kathleen	Agilent	Research funded by industry grant	1189-Pos
Hastie, Alex	BioNano Genomics	Employment (full or part-time) in funding company	742-Pos
Heerklotz, Heiko	Bayer CropScience	Research funded by industry grant	2785-Pos
Heerklotz, Heiko	Bayer CropScience	Research funded by industry grant	2793-Pos
Heifetz, Alexander	Evotec (U.K.) Ltd.	Employment (full or part-time) in funding company	1791-Plat
Helmes, Michiel	Ionoptix ltd	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	1475-Pos
Hoshika, Shuichi	Firebird Biomolecular Sciences	Employment (full or part-time) in funding company	1985-Pos
Huang, Tao	NIH Grant	Other	874-Pos
Hyun, Changbae	NIH Grant	Other	874-Pos
Hyun, Seok-Hee	Pandion Laboratories LLC	Research funded by industry grant	3115-Pos
Jacobs, Donald	MedImmune Ltd	Research funded by industry grant	1893-Pos
Jones, Eugenia	CDI	Employment (full or part-time) in funding company	3014-Pos
Jones, Eugenia	CDI	Employment (full or part-time) in funding company	2968-Pos
Kass, Robert	Gilead Sciences	Research funded by industry grant	2953-Pos
Kattman, Steven	CDI	Employment (full or part-time) in funding company	3014-Pos
Kaur, Harpreet	NIH Grant	Other	874-Pos
Kiebish, Michael	Berg LLC	Employment (full or part-time) in funding company	1243-Pos
Kirsch, Glenn	ChanTest	Employment (full or part-time) in funding company	2955-Pos
Knott, Thomas	Cytocentrics Bioscience GmbH	Employment (full or part-time) in funding company	2954-Pos
Koonce, Chad	CDI	Employment (full or part-time) in funding company	3014-Pos
Korlach, Jonas	Pacific Biosciences	Other	1657-Pos
Kramer, James	ChanTest Corp.	Employment (full or part-time) in funding company	2945-Pos
Krumova, Katerina	Berg LLC	Employment (full or part-time) in funding company	1243-Pos
Kuryshev, Yuri	ChanTest	Employment (full or part-time) in funding company	2955-Pos
Lacerda, Antonio	ChanTest Corp.	Employment (full or part-time) in funding company	2945-Pos

Name	Disclosure Entity	Disclosure Type	Presentation Number
Large, Charles	Autifony Therapeutics Limited	Employment (full or part-time) in funding company	635-Pos
Law, Richard	Evotec (U.K.) Ltd.	Employment (full or part-time) in funding company	1791-Plat
Lazar, Josef	Innovative Bioimaging, LLC	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	1643-Pos
Lee, Jo	UCB Pharma	Research funded by industry grant	1548-Pos
Li, Jiali	NIH Grant	Other	874-Pos
Liang, Qiansheng	Autifony Therapeutics Limited	Research funded by industry grant	635-Pos
Liao, Jinfang	AAT Bioquest	Employment (full or part-time) in funding company	549-Pos
Lin, Kun-Han	Cytocentrics Bioscience GmbH	Employment (full or part-time) in funding company	2954-Pos
Liu, Zhiqi	ChanTest	Employment (full or part-time) in funding company	2955-Pos
Livesay, Dennis	MedImmune Ltd	Research funded by industry grant	1893-Pos
Louttit, James	GlaxoSmithKline	Employment (full or part-time) in funding company	605-Pos
Ludescher, Richard	Pepsi Co.	Research funded by industry grant	3139-Pos
Ma, Jianjie	Founder of Trim-edicine	Other	1346-Pos
Mangan, Kile	CDI	Employment (full or part-time) in funding company	2968-Pos
Mayer, Michael	Oxford Nanopore	Research funded by industry grant	872-Pos
Mayer, Michael	Oxford Nanopores Technologies Ltd	Research funded by industry grant	876-Pos
McKay, Craig	Molecular Devices, LLC	Employment (full or part-time) in funding company	1434-Pos
McLachlan, Michael	CDI	Employment (full or part-time) in funding company	2968-Pos
McNabb, David	NIH Grant	Other	874-Pos
Meline, Benjamin	CDI	Employment (full or part-time) in funding company	3014-Pos
Meline, Benjamin	CDI	Employment (full or part-time) in funding company	2968-Pos
Mellman, Ira	Genentech, Incorporated, a member of the Roche Group	Employment (full or part-time) in funding company	810-Pos
Melosh, Nicholas	Stealth Biosciences	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	743-Pos
Melosh, Nicholas	Stealth Biosciences	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	2876-Pos
Meyer, Nathan	CDI	Ownership or Partnership in funding organization	2968-Pos
Mirams, Gary	GlaxoSmithKline	Research funded by industry grant	605-Pos
Miu, Peter	Molecular Devices, LLC	Employment (full or part-time) in funding company	1434-Pos
Moss, Richard	Consultant for Myokardia, Inc.	Consulting fees or other remuneration from industry	663-Pos
Nandivada, Santoshi	NIH Grant	Other	874-Pos
Narain, Niven	Berg LLC	Ownership or Partnership in funding organization	1243-Pos
Nelson, Philip	WH Freeman and Co.	Receipt of royalties from referenced company products	1673-Pos
Obejero-Paz, Carlos	ChanTest Corporation	Employment (full or part-time) in funding company	2945-Pos
Ozcan, Aydogan	Holomic LLC	Non-remunerative positions of influence such as officer, board member, trustee, or public spokesperson in company	1861-Wkshp
Peterman, Erwin	LUMICKS	Receipt of royalties from referenced company products	2557-Plat
Peterman, Erwin	LUMICKS	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	832-Pos
Peterson, Raymond	Celadon Laboratories	Employment (full or part-time) in funding company	1985-Pos

Name	Disclosure Entity	Disclosure Type	Presentation Number
Pierson, Jason	FEI Company	Employment (full or part-time) in funding company	1441-Pos
Piterman, Nir	Microsoft	Employment (full or part-time) in funding company	1833-Plat
Prummer, Michael	F. Hoffmann-La Roche Ltd.	Employment (full or part-time) in funding company	1626-Pos
Rajamani, Sridharan	Gilead Sciences	Employment (full or part-time) in funding company	1395-Pos
Ramdoski, Chris	Xenon Phamaceuticals	Employment (full or part-time) in funding company	2912-Pos
Rammohan, Aravind	Corning, Inc.	Employment (full or part-time) in funding company	1533-Pos
Rasmusson, Randall	Cytocybernetics	Ownership or Partnership in funding organization	560-Pos
Rasmusson, Randall	Cytocybernetics	Ownership or Partnership in funding organization	561-Pos
Rasmusson, Randall	Cytocybernetics	Ownership or Partnership in funding organization	1366-Pos
Rau, Michael	Agilent	Research funded by industry grant	1189-Pos
Reichelt, Mike	Genentech, Incorporated, a member of the Roche Group	Employment (full or part-time) in funding company	810-Pos
Reifenberger, Jeff	BioNano Genomics	Employment (full or part-time) in funding company	742-Pos
Robey, Seth	Gilead Sciences	Research funded by industry grant	2953-Pos
Sahin, Ozgur	Bruker-nano, Inc.	Receipt of royalties from referenced company products	1780-Plat
Sarangarajan, Rangaprasad	Berg LLC	Employment (full or part-time) in funding company	1243-Pos
Scheel, Olaf	Cytocentrics Bioscience GmbH	Employment (full or part-time) in funding company	2954-Pos
Seeliger, Daniel	Boehringer Ingelheim	Employment (full or part-time) in funding company	2087-Pos
Shorthouse, David	Lonza Biologics	Research funded by industry grant	2500-Plat
Silverberg, Jesse	R.J., M.D., M.S.A., J.B.W. and P.Y. have filed a provisional US patent application regarding the current work	Other	2407-Pos
Sitte, Harald	Torrex-Chiesi Pharma	Consulting fees or other remuneration from industry	999-Symp
Sitters, Gerrit	LUMICKS	Receipt of royalties from referenced company products	2557-Plat
Skupin, Michalina	Acknowledgments: The study was supported by research grant „GENERACJA PR-ZYSZŁOŚCI” from Ministry of Science and Higher Education (Poland) – decision: 12/POIG/GP/2013.	Other	1239-Pos
Sliwkowski, Mark	Genentech, Incorporated, a member of the Roche Group	Employment (full or part-time) in funding company	810-Pos
Smith, Godfrey	Shareholder in Clyde Bioscience Ltd (UK)	Other	1380-Pos
Srivastava, Amit	MedImmune Ltd	Research funded by industry grant	1893-Pos
Stolarska, Magdalena	Corning, Inc.	Consulting fees or other remuneration from industry	1533-Pos
Swanson, Brad	CDI	Employment (full or part-time) in funding company	2968-Pos
Tate, Christopher	Heptares Therapeutics	Consulting fees or other remuneration from industry	210-Wkshp
Taylor, J.	Third Rock Ventures	Consulting fees or other remuneration from industry	27-Subg
Theile, Jonathan	Pfizer, Inc.	Employment (full or part-time) in funding company	2902-Pos
Thomas, Dierk	MSD Sharp and Dohme	Research funded by industry grant	552-Pos

Name	Disclosure Entity	Disclosure Type	Presentation Number
Thompson, David	Pandion Laboratories LLC	Ownership or Partnership in funding organization	3115-Pos
Tracka, Malgorzata	MedImmune Ltd	Employment (full or part-time) in funding company	1893-Pos
Trayanova, Natalia	Cardiosolv, LLC	Ownership or Partnership in funding organization	737-Pos
Trick, Jemma	Oxford Nanopore Technologies	Research funded by industry grant	935-Plat
Turner, Stephen	Pacific Biosciences	Other	1657-Pos
Uddin, Shahid	MedImmune Ltd	Employment (full or part-time) in funding company	1893-Pos
Vanegas, Juan	Sandia National Labs is a multi-program laboratory operated by Sandia Corp., a wholly owned subsidiary of Lockheed Martin Corp., for the US DOE's NNSA under contract DE-AC04-94AL85000	Other	2043-Pos
Vanegas, Juan	Sandia National Labs is a multi-program laboratory operated by Sandia Corp., a wholly owned subsidiary of Lockheed Martin Corp., for the US DOE's NNSA under contract DE-AC04-94AL85000	Other	1120-Pos
Vickery, Owen	Boehringer Ingelheim	Research funded by industry grant	2087-Pos
Villatoro, Kathya	CONACYT MEXICO	Other	1382-Pos
Vinnakota, Anirudh	Oxford Nanopores Technologies Ltd	Research funded by industry grant	876-Pos
Vishnudas, Vivek	Berg LLC	Employment (full or part-time) in funding company	1243-Pos
Wallace, Jayne	Oxford Nanopore Technologies	Employment (full or part-time) in funding company	935-Plat
Wand, A. Joshua	Daedalus Innovations, LLC	Receipt of royalties from referenced company products	239-Pos
Wand, A.	Daedalus Innovations LLC	Receipt of royalties from referenced company products	3110-Pos
Wand, A.	Daedalus Innovations, LLC	Receipt of royalties from referenced company products	1741-Plat
Wand, A.	Daedalus Innovations, LLC	Receipt of royalties from referenced company products	460-Pos
Wang, Jun	CDI	Employment (full or part-time) in funding company	3014-Pos
Webber, Jeffrey	Molecular Devices, LLC	Employment (full or part-time) in funding company	1434-Pos
Weiss, Robert	NanoCor Therapeutics Inc.	Receipt of royalties from referenced company products	2999-Pos
Welty, Robb	Agilent	Research funded by industry grant	1189-Pos
Westerhoff, Lance	NIH	Research funded by industry grant	3128-Pos
Williams, John	Meditope Biosciences, Inc.	Non-remunerative positions of influence such as officer, board member, trustee, or public spokesperson in company	2417-Pos
Wolak, Joanna	The study was supported by research grant „GENERACJA PRZYSZŁOŚCI" from Ministry of Science and Higher Education (Poland) – decision: 12/POIG/GP/2013.	Other	2762-Pos

Name	Disclosure Entity	Disclosure Type	Presentation Number
Wong, Wesley	Takeda	Research funded by industry grant	1656-Pos
Wong, Wesley	Takeda New Frontier Science	Research funded by industry grant	35-Subg
Wright, Amy	ChanTest	Employment (full or part-time) in funding company	2955-Pos
Wuite, Gijs	LUMICKS	Receipt of royalties from referenced company products	2557-Plat
Wuite, Gijs	LUMICKS	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	832-Pos
Wulff, Heike	H.W. is an inventor on UC patents claiming PAP-1 for immunosuppression and neuroinflammation. She holds scientific founder stocks in Airmid Inc.	Other	2958-Pos
Xiao, Min	NIH Grant	Other	874-Pos
Xu, Alexander	Stealth Biosciences	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	743-Pos
Xu, Alexander	Stealth Biosciences	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	2876-Pos
Yi, George	Full time employee	Employment (full or part-time) in funding company	549-Pos
Yusko, Erik	Oxford Nanopores Technologies Ltd	Research funded by industry grant	876-Pos
Zachariae, Ulrich	Boehringer Ingelheim	Research funded by industry grant	2087-Pos
Zanni, Martin	PhaseTech Spectroscopy, Inc.	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	3153-Pos
Zhan, Xi	Revalesio	Research funded by industry grant	3121-Pos
Zhao, Qin	AAT Bioquest	Employment (full or part-time) in funding company	549-Pos
Zoubi, Ahmad	Summer intern at Corning, Inc.	Employment (full or part-time) in funding company	1533-Pos

Notes

Notes

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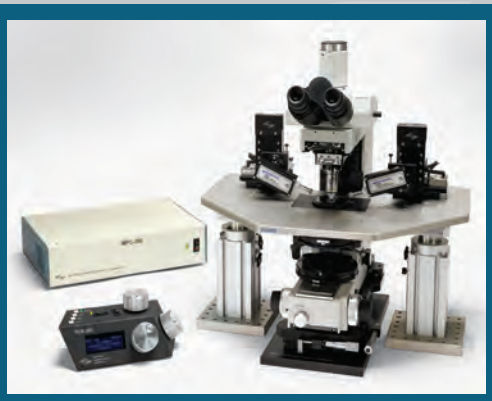

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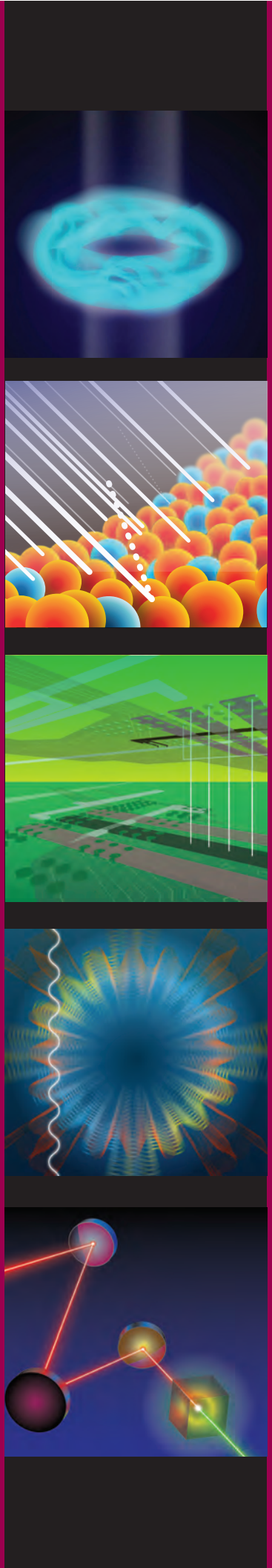

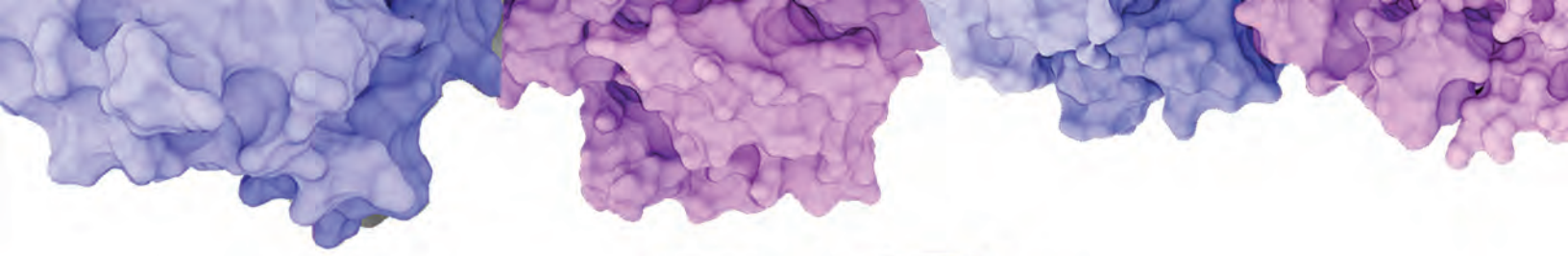

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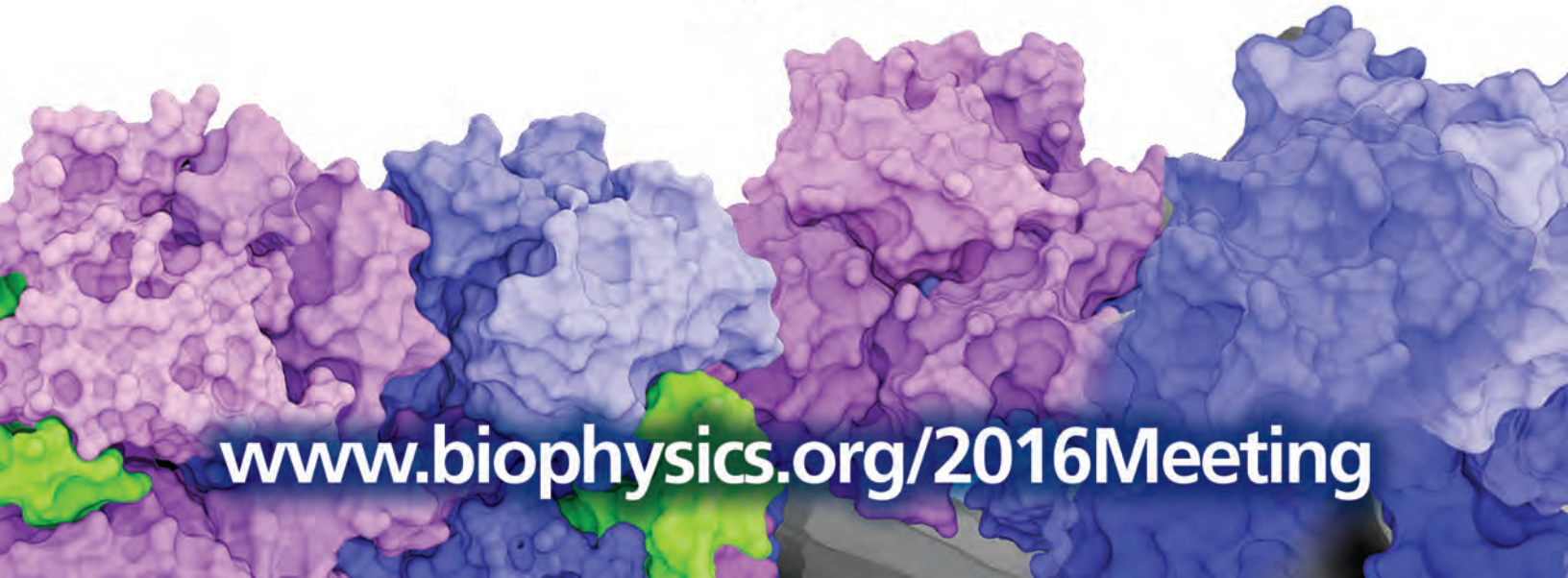

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