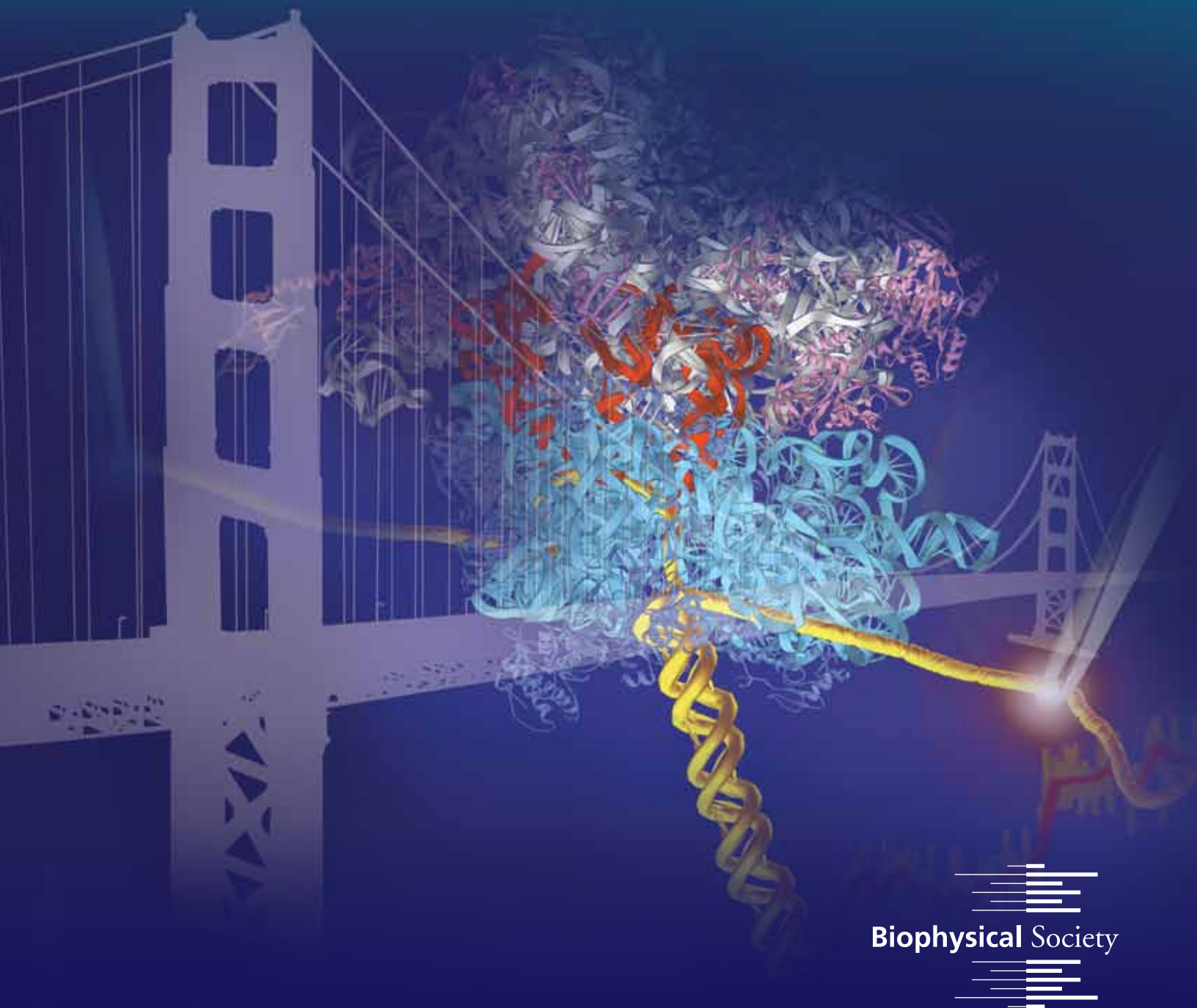


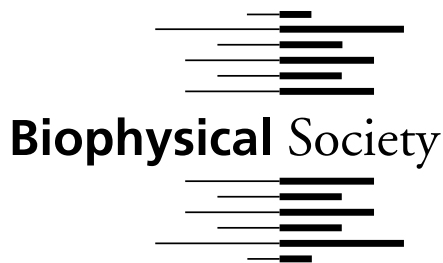
BRIDGING THE SCIENCES TO EXPLORE BIOLOGY

Program

BIOPHYSICAL SOCIETY | 58TH ANNUAL MEETING | FEBRUARY 15–19, 2014
SAN FRANCISCO, CALIFORNIA




Biophysical Society



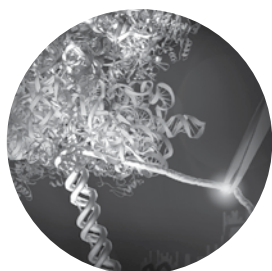
58th Annual Meeting

February 15–19, 2014
San Francisco, California

www.biophysics.org/2014meeting

Table of Contents

Hotel Map	III	SRAA Competition 6:00 PM–9:00 PM	24
Moscone Center Facilities Maps	IV	Workshops 7:30 PM–9:30 PM	25
BART Map	VI	Sunday Posters	26
Society Governance	VII	Monday Schedule of Events	63
General Information	VIII	Symposia 8:15 AM–10:15 AM	66
Society Committee Meetings Schedule	XI	Platforms 8:15 AM–10:15 AM	68
Professional Development & Education Sessions	XII	Symposia 10:45 AM–12:45 PM	69
Travel Awards		Platforms 10:45 AM–12:45 PM	70
CPOW	XIV	Symposia 4:00 PM–6:00 PM	74
Education	XIV	Platforms 4:00 PM–6:00 PM	75
International	XVII	Awards & National Lecture	77
Minority Affairs	XIX	Monday Posters	78
Ancillary Meetings	XX	Tuesday Schedule of Events	115
Friday Schedule of Events	1	Symposia 8:15 AM–10:15 AM	118
Satellite Meeting	2	Platforms 8:15 AM–10:15 AM	118
Saturday Schedule of Events	3	Symposium 10:45 AM–12:45 PM	121
Subgroup Meetings	4	Platforms 10:45 AM–12:45 PM	121
Molecular Biophysics	4	Symposia 4:00 PM–6:00 PM	125
Membrane Structure & Assembly	4	Platforms 4:00 PM–6:00 PM	125
Bioenergetics	5	Workshops 7:30 PM–9:30 PM	127
Intrinsically Disordered Proteins	5	Tuesday Posters	129
Nanoscale Biophysics	5	Wednesday Schedule of Events	165
Biopolymers in vivo	6	Symposia 8:15 AM–10:15 AM	167
Biological Fluorescence	6	Platforms 8:15 AM–10:15 AM	167
Mechanobiology	6	Symposia 1:00 PM–3:00 PM	170
Membrane Biophysics	7	Platforms 1:00 PM–3:00 PM	170
Motility	7	Wednesday Posters	173
Exocytosis & Endocytosis	7	Exhibits	213
Permeation & Transport	8	Exhibitor Presentations	214
Sunday Schedule of Events	9	Exhibitor List	218
Symposia 8:15 AM–10:15 AM	13	Product Categories	233
Platforms 8:15 AM–10:15 AM	14	Exhibitor List by Booth Number	240
Symposia 10:45 AM–12:45 PM	17	Author Index	241
Platforms 10:45 AM–12:45 PM	17	Author Disclosures	290
Symposium 4:00 PM–6:00 PM	21		
Platforms 4:00 PM–6:00 PM	22		



National Lecturer: **Carlos Bustamante**

University of California, Berkeley

A Journey Through Cellular Processes: One Molecule at a Time

List of Advertisers in the 2014 Annual Meeting Program

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

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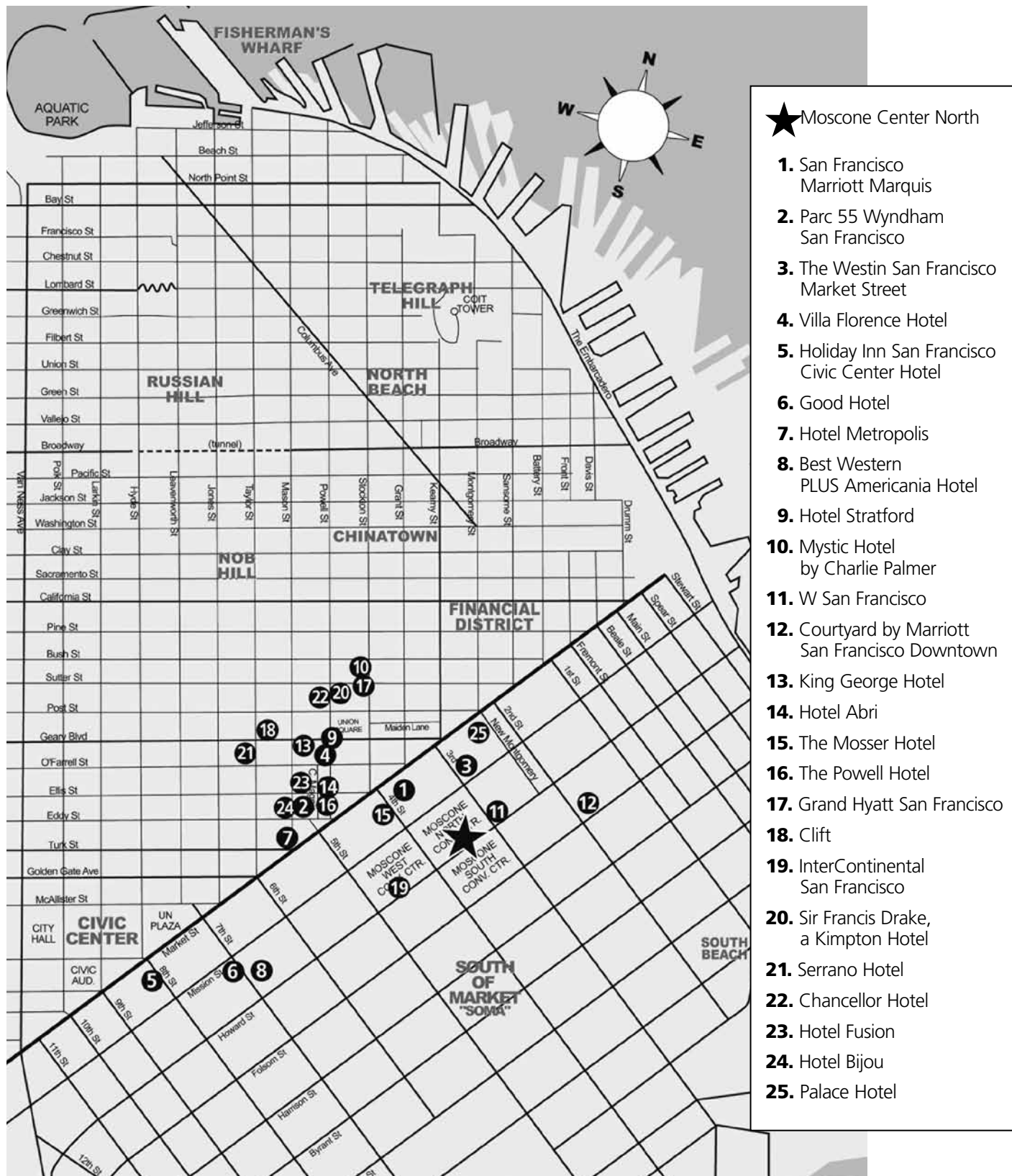
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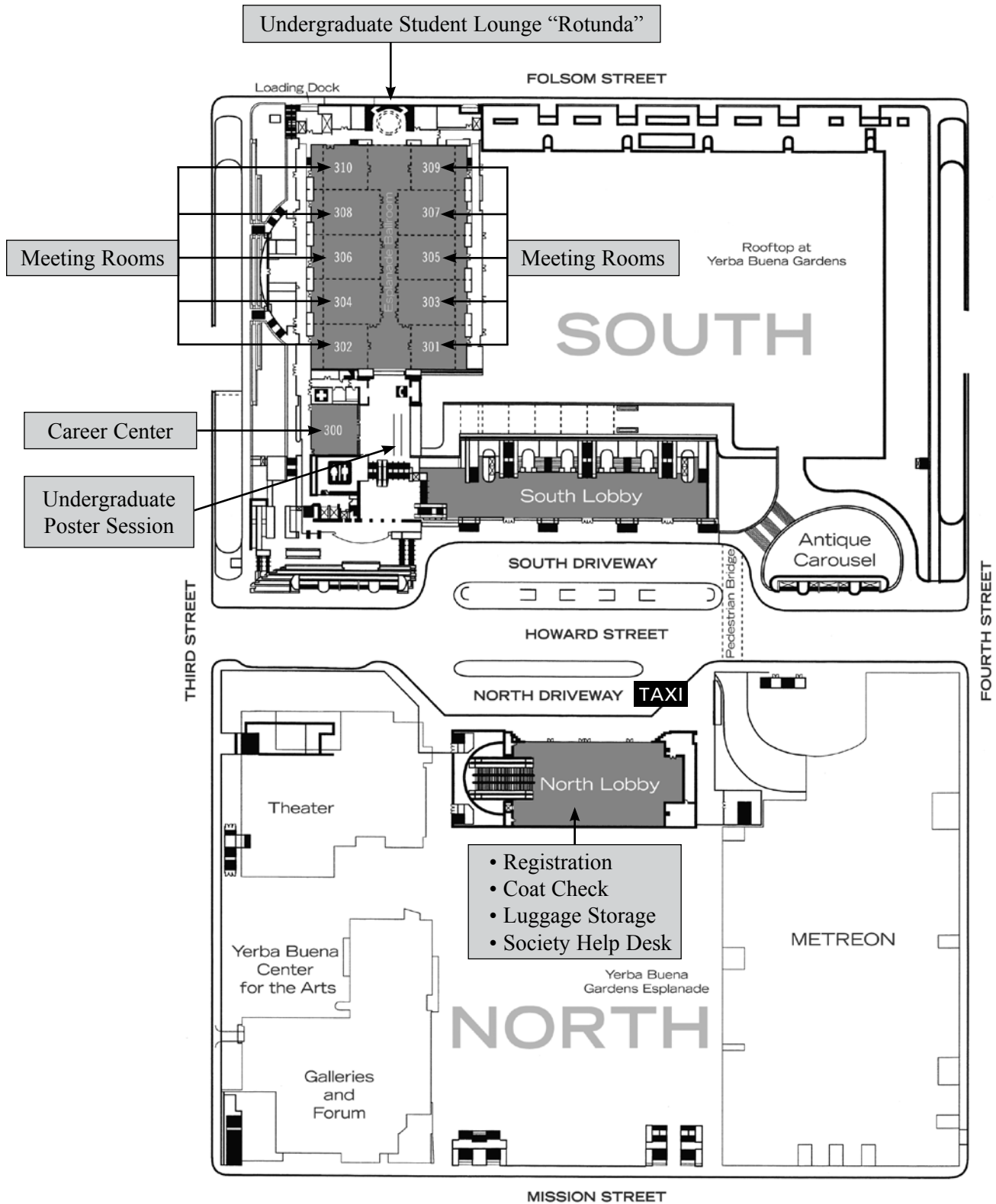
As of December 10, 2013

Hotel Map



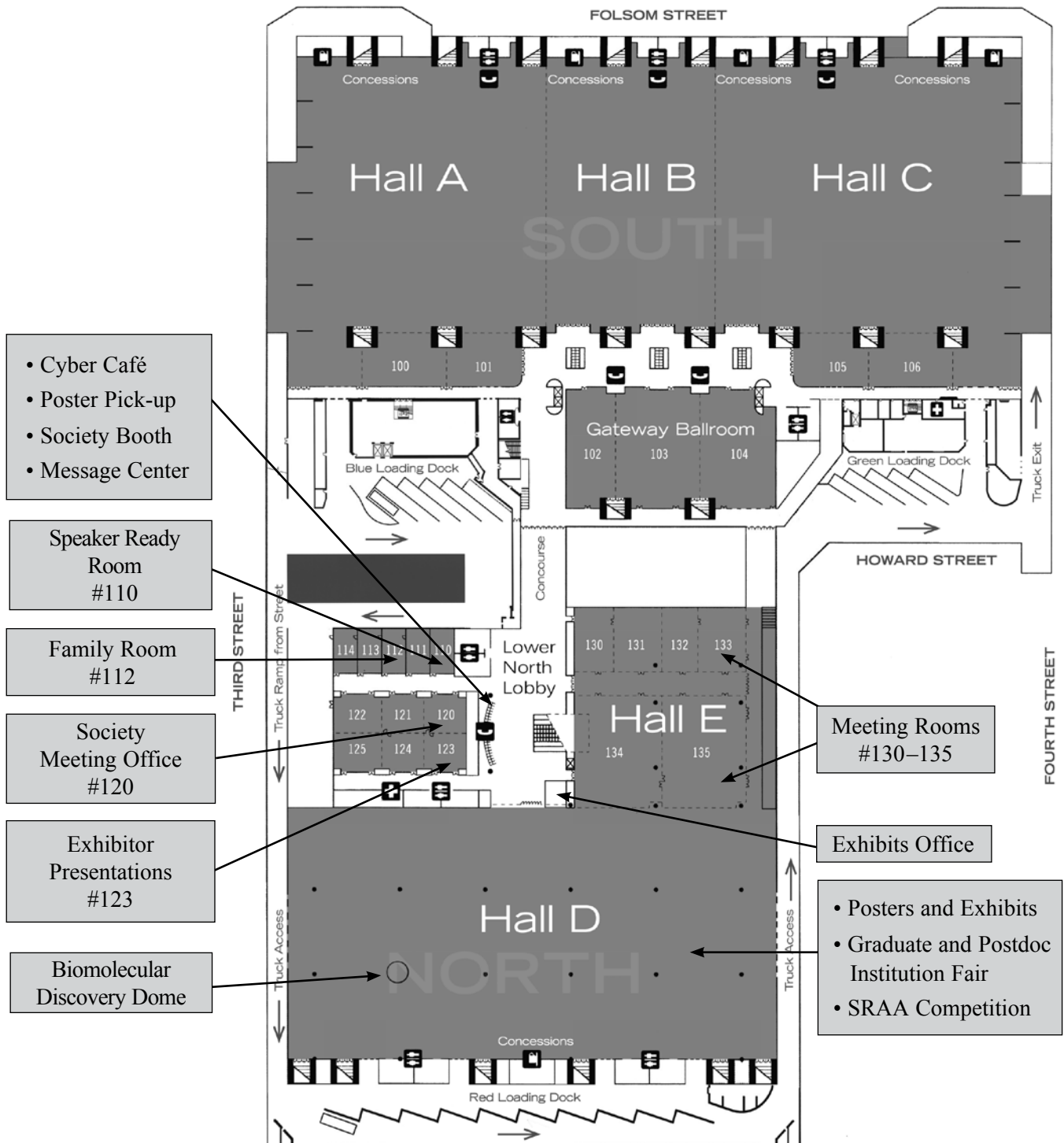
Moscone Center Facilities

Esplanade Level (Street Level)

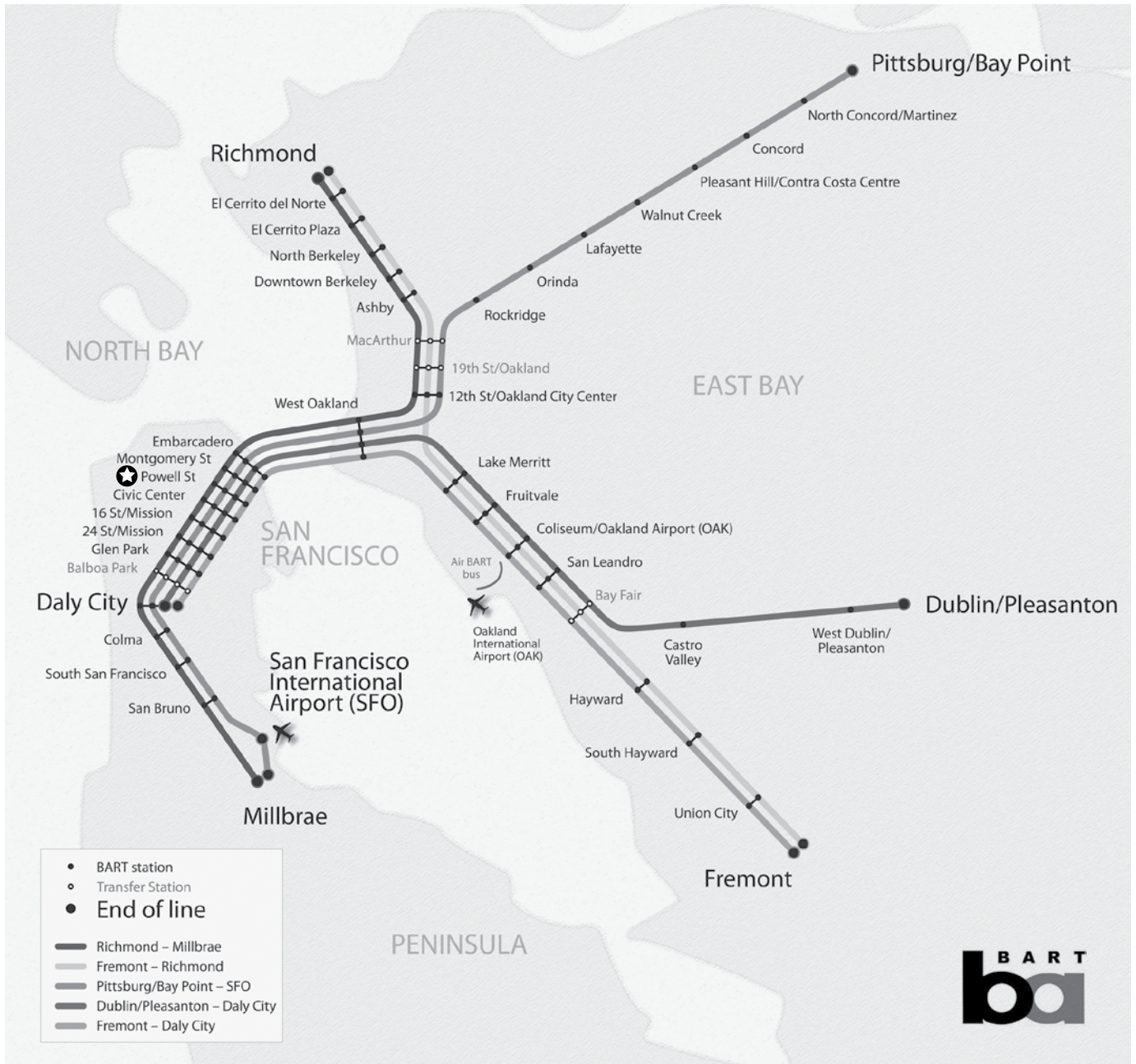


Moscone Center Facilities

Exhibit Level (Lower North Lobby Level)



BART Map (Bay Area Rapid Transit)



★ Moscone Center (Powell St. Station)

2014 Program Committee

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Rebecca Heald, University of California, Berkeley
Peter Hinterdorfer, University of Linz, Austria
Linda Kenney, University of Illinois at Chicago
Tanja Kortemme, University of California, San Francisco
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Claudia Veigel, Ludwig Maximillians University, Germany
Jody Puglisi, Stanford University School of Medicine, Past Chair

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Dorothy Beckett, President-Elect
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Lukas Tamm, Secretary

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Amy Harkins
Peter Hinterdorfer
Marjorie Longo
Gail Robertson
Claudia Veigel

Term Ending 2015

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Marcia Levitus
Merritt Maduke
Daniel Minor
Jeanne Nerbonne
David Yue

Term Ending 2016

Juliette Lecomte
Amy Lee
Antoine van Oijen
Bonnie Wallace

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Kathleen Hall, Associate Editor
Peter Hunter, Associate Editor
E. Michael Ostap, Associate Editor
Dave Piston, Associate Editor
Michael Pusch, Associate Editor
Lukas Tamm, Associate Editor
Brian Salzberg, Reviews Editor

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Ellen Weiss, Director of Policy & Communications
Alisha Yocum, Director of Member Services & Publications
Monika Zakrzewska, Senior Graphic Designer/Project Manager
Ying Zhu, Meetings Coordinator

General Information

All functions will be held in the Moscone Center, 747 Howard Street, San Francisco, CA 94103, unless noted otherwise.

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 North 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, Market Street and Powell Street, 1 Powell Street, San Francisco, CA 94102. ATMs are also available in the Moscone Center.

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

ATM is open 24 hours.

Business Center, Lower North Lobby

The Moscone 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. To contact the business center, call (415) 974-4080 or email facilityservices@moscone.com.

Sunday	10:00 AM–5:00 PM
Monday	10:00 AM–5:00 PM
Tuesday	10:00 AM–5:00 PM
Wednesday	10:00 AM–3:00 PM

Career Center, Room 300

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 Moscone Center will be removed.

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

Certificates of Attendance

Certificates of Attendance may be obtained in person in the Society Meeting Office, Room 120, or at the Society Help Desk located at registration in the North Lobby.

Child Care

Child care is provided by KiddieCorp. On-site registration is available on a limited basis. Visit the BPS Meeting Office, Room 120, for additional information.

Coat Check/Luggage Storage, North Lobby

The cost is \$2.00 per checked coat or small handbag and \$3.00 per checked luggage. 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 San Francisco? Meet at the Society Booth each evening at 5:30 PM where a BPS member will coordinate dinner at a local restaurant.

Exhibits, Exhibit Hall D

The Exhibit Hall features the most advanced equipment, products, services, and publications available. A list of exhibitors as of 11/18/13 can be found beginning on page 218. Please see Addendum for those registered after 11/19/13.

Sunday	10:00 AM–5:00 PM
Monday	10:00 AM–5:00 PM
Tuesday	10:00 AM–5:00 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 112

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 D

In case of medical emergency, dial x511 from any house phone or (415) 974-4021 from a cell phone. For other minor medical needs, this room will be staffed with First Aid Administrators trained in First Aid Response during the hours below.

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

Hotel Telephone Numbers

Marriott Marquis	(415) 896-1600
W San Francisco	(415) 777-5300
Westin San Francisco Market Street	(415) 974-6400
Intercontinental San Francisco	(415) 616-6500
Courtyard Marriott San Francisco Downtown	(415) 947-0700
Grand Hyatt San Francisco	(415) 398-1234
Parc 55 Wyndham San Francisco - Union Square	(415) 392-8000
Sir Francis Drake Hotel	(415) 392-7755
Clift Hotel	(415) 775-4700
Hotel Abri	(415) 392-8800
The Palace Hotel	(415) 512-1111
Mystic Hotel by Charlie Palmer	(415) 400-0500
The Mosser Hotel	(415) 986-4400
Chancellor Hotel	(415) 362-2004
Villa Florence Hotel	(415) 397-7700
Serrano Hotel	(415) 885-2500

The Powell Hotel	(415) 398-3200
Hotel Fusion	(415) 568-2525
Holiday Inn San Francisco Civic Center	(415) 626-6103
Best Western PLUS Americana	(415) 626-0200
Hotel Stratford	(415) 397-7080
King George Hotel	(415) 781-5050
Hotel Metropolis	(415) 775-4600
Hotel Bijou	(415) 771-1200
Good Hotel	(415) 621-7001

Individuals Requiring Assistance

Attendees requiring special assistance during the meeting should visit the Society Meeting Office, Room 120 of the Moscone Center, or call (415) 978-3500. 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 Moscone Center, excluding the Exhibit Hall.

In addition, a **Cyber Café** is located in the Lower North Lobby outside of Exhibit Hall D. 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

Message Center, Lower North Lobby

Send and receive messages with meeting attendees through the online message center. Available online and at the cyber café. If you have an emergency situation and need a staff member to take a message, please call (415) 978-3500 to reach the BPS Office.

Mobile App

The Biophysical Society's "BPS Event" mobile application is available for download in the "App Store", "Google Play," and as an HTML5 application for all other devices. You can view/create schedules, view abstracts, and interact virtually with other attendees when using the app.

Parking

There are many parking options—both garages and lots—conveniently located within blocks of the Moscone Center. Additionally, San Francisco has several thousand metered and non-metered timed spaces around the Moscone Center. Meter rates vary per hour depending upon whether the meter is in a central location. Meter debit cards are available for purchase through the city of San Francisco. Please pay attention to the posted meter and regulation signs, including scheduled street cleanings and commuter lane restrictions.

Photography

Registration for the meeting implies consent to having photographs taken and to their use by officials of the Biophysical Society, or their representatives, for editorial and promotional purposes, on the Society website, social media outlets, and publications.

Recordings of any kind (audio taping, videotaping, camera or cell phones) in the session rooms, Exhibit Hall, and poster areas are strictly prohibited, unless accompanied by a member of the Society staff. Any individual seen taking photographs of any session or presentation will be escorted out by security.

Poster Pickup

Posters ordered in advance through AlphaGraphics San Francisco will be available for pick up at the Moscone Center in the Lower North Lobby near Exhibit Hall D 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 D

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, 2013, are scheduled each day, Sunday-Wednesday, during the regular poster sessions. These board numbers will begin with "#LB."

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.

Raffles

Exhibitor Raffle: Want to win an Apple iPad Air? Earn raffle entries by visiting with exhibitors Sunday, February 16, through Tuesday, February 18, to collect tickets. The more booths you visit, the more chances to win. Drop the raffle tickets at the Society Booth, in the Lower North Lobby, by 3:00 PM Tuesday, February 18. 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!

Meet the Speakers/Meet the Editors Raffle: Attend the Wednesday poster session and Meet the Speakers/Meet the Editors event in the Exhibit Hall for a chance to win a Kindle Paperwhite! The event allows attendees the opportunity to meet the speakers who are the leading experts in their field, ask questions for which there was not enough time in the sessions, and foster interactions and collaborations among attendees. Drop your ticket in the ballot box in the Exhibit Hall. Winner will be announced at 12:30 PM on Wednesday at the event. You must be present in the Exhibit Hall to win.

Registration Hours, North 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

Sirens

The City's Outdoor Warning System is designed to alert residents and visitors of San Francisco about possible danger. Specific emergency announcements can be broadcast over any one of the 65 sirens that are located on poles and on top of buildings throughout all neighborhoods in San Francisco, Treasure Island, and Yerba Buena.

They are tested at noon every Tuesday. During the weekly test, the siren emits a single 15-second alert tone, similar to an emergency vehicle siren. In the event of a disaster, the 15-second alert tone will sound repeatedly for 5 minutes.

If you hear the siren at a time other than during its regular test on Tuesday at Noon:

- Stop what you are doing.
- Stay calm.
- Listen for possible voice announcements.
- Turn on the radio or television (such as KCBS 740AM, KQED 88.5 FM) for important information provided by the City.
- Avoid using the telephone. Do not call 9-1-1, unless you have a life-threatening emergency.

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 #BPS14
Facebook: www.facebook.com/biophysicalsociety
Blog: www.biophysicalsociety.wordpress.com

Society Booth, Lower North 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, Room 120

Office Phone: (415) 978-3500

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 110

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 Moscone 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

BART and Muni Railways

The center is located a few blocks from both the BART and Muni Railways. To get to the Moscone Center you will disembark at the Powell Street Stations and exit to 4th and Market Streets. Turn right on 4th Street, walk two blocks south to Howard Street and turn left.

Taking BART from San Francisco International Airport station can bring you directly to the Powell Station and should take approximately 20 minutes.

CalTrain

From the CalTrain Station (Fourth & Townsend). Across 4th Street from the train station, catch the #15, #30, or #45 lines. Get off at Third and Folsom. Walk one block north toward Howard Street. Turn left on Howard.

Taxis

Taxis will be available from the North Lobby of the Moscone Center at the corner of 3rd Street and Howard Street.

- ABC Taxicab: (415) 401-8900
- DeSoto Cab Company: (415) 970-1300
- Luxor Cab, Inc.: (415) 282-4141
- Yellow Cab Cooperative, Inc.: (415) 333-3333

Future Meetings

59th Annual Meeting

February 7–11, 2015
Baltimore, Maryland

60th Annual Meeting

February 27–March 2, 2016
Los Angeles, California

61st Annual Meeting

February 11–15, 2017
New Orleans, Louisiana

Committee Meetings

All rooms are located in the Moscone Center unless noted otherwise.

Friday, February 14

3:00 PM–4:30 PM

New Council Orientation
Marriott Marquis, Pacific F

5:00 PM–9:00 PM

Joint Council Reception, Dinner, and Meeting
Marriott Marquis, Club Room

Saturday, February 15

8:30 AM–11:00 AM

Joint Council Meeting (continued)
Marriott Marquis, Club Room

Sunday, February 16

9:00 AM–10:30 AM

***Committee for Professional Opportunities
for Women (CPOW) Meeting***
Room 122

11:00 AM–NOON

International Relations Committee Meeting
Room 122

12:45 PM–2:15 PM

Public Affairs Committee Meeting
Room 122

3:30 PM–4:30 PM

Early Careers Committee Meeting
Room 122

6:00 PM–10:00 PM

Biophysical Journal Editorial Board Dinner
(Boulevard Restaurant)

Monday, February 17

8:30 AM–10:00 AM

Minority Affairs Committee (MAC) Meeting
Room 122

4:00 PM–5:00 PM

Membership Committee Meeting
Room 122

Tuesday, February 18

8:00 AM–9:00 AM

Biophysical Society Business Meeting
Room 302

9:00 AM–10:00 AM

Subgroup Chairs Meeting
Room 124

3:00 PM–5:00 PM

Education Committee Meeting
Room 122

Wednesday, February 19

8:00 AM–11:00 AM

New Council Meeting
Room 124

12:30 PM–3:00 PM

Publications Committee Meeting
Room 122

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 several professional development activities to take place during the Annual Meeting. Below is a schedule of all of those activities. Detailed descriptions of the sessions can be found in the daily program. In addition, a student lounge for undergraduates will be available Sunday, February 16–Tuesday, February 18 in the Rotunda in Moscone South.

Sessions in italics will be held in Career Center, Room 300.

Saturday, February 15, 2014

- 1:00 PM–2:40 PM *One-on-One Resume Critiques**
- 3:00 PM–4:00 PM *Networking Now: How to Maximize Success at BPS 2014*
- 3:30 PM–4:30 PM Undergraduate Mixer and Poster Fest
- 4:30 PM–5:30 PM *One-on-One Resume Critiques**

Sunday, February 16, 2014

- 7:30 AM–8:30 AM Postdoctoral Breakfast
- 8:30 AM–1:00 PM *One-on-One Resume Critiques**
- 9:00 AM–10:00 AM *Beyond the Bench: Preparing for Your Career Transition in the Life Sciences*
- 10:00 AM–5:00 PM Biomolecular Discovery Dome
- 10:30 AM–11:30 AM *Career Catalyst: Understand Who You Are to Get What You Want*
- NOON–1:00 PM *Selling Yourself to the Life Sciences Industry*
- NOON–2:00 PM Mid-Career Interactive Forum: The Art and Perils of Networking **
- 1:00 PM–2:30 PM Moving on from Your Postdoc Position: Negotiating the Transition
- 2:00 PM–3:30 PM Teaching Science Like We Do Science: Integrating Research and Education
- 2:30 PM–3:30 PM *Networking Now: How to Maximize Success at BPS 2014*
- 2:30 PM–4:00 PM Funding: If Not from Federal Agencies, from Where?
- 2:30 PM–6:00 PM *One-on-One Resume Critiques**
- 4:00 PM–5:00 PM *Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*

Monday, February 17, 2014

- 7:30 AM–8:30 AM Graduate Student Breakfast
- 8:30 AM–10:00 AM *One-on-One Resume Critiques**
- 10:00 AM–11:00 AM *Career Open Forum/Career Q&A Session*
- 10:00 AM–5:00 PM Biomolecular Discovery Dome
- 11:30 AM–12:30 PM *Beyond the Bench: Preparing for Your Career Transition in the Life Sciences*
- 11:30 AM–12:30 PM *One-on-One Resume Critiques**
- 11:30 AM–1:00 PM Undergraduate Student Pizza “Breakfast”

- 1:00 PM–3:00 PM Grant Writing Workshop: How (Not) to Write Your NIH Grant Proposal
- 1:00 PM–3:00 PM Graduate & Postdoc Institution Fair
- 1:30 PM–3:00 PM Biophysics 101: X-Ray Crystallography
- 2:00 PM–5:20 PM *One-on-One Resume Critiques**
- 2:15 PM–3:45 PM How to Get Your Scientific Paper Published
- 2:30 PM–3:30 PM *Career Catalyst: Understand Who You Are to Get What You Want*
- 2:30 PM–4:00 PM Preparing for Promotions: Everything You Wanted to Know but Were Afraid to Ask
- 2:30 PM–4:00 PM Biophysics at the National Large Facilities: Current and Future Science Possibilities
- 4:00 PM–5:00 PM *Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*

Tuesday, February 18, 2014

- 8:00 AM–9:00 AM *One-on-One Resume Critiques**
- 9:30 AM–10:30 AM *The Power of Groups: How to Help Others Help You in Your Job Search*
- 10:00 AM–5:00 PM Biomolecular Discovery Dome
- 11:00 AM–1:00 PM *One-on-One Resume Critiques**
- NOON–2:00 PM Postdoc to Faculty Q & A: Transitions Forum and Luncheon**
- 12:30 PM–2:00 PM Career Opportunities at Primarily Undergraduate Institutions: Finding a Job & Finding Success
- 1:00 PM–2:00 PM Networking with Minority Biophysicists: Resources & Opportunities
- 1:30 PM–2:30 PM Science and Policy with Steven Chu
- 2:15 PM–3:30 PM Wiki-Edit 2014 Contest Kick-Off: The Importance of Open License Media to Our Science
- 2:15 PM–3:30 PM The Basics, the Discoveries and the Controversies
- 2:30 PM–3:30 PM *What to Do When You Are Tired of Doing What You Are Doing: A Unique Interactive Workshop for Experienced Workers*
- 2:30 PM–4:30 PM PhD Careers Beyond the Bench
- 4:00 PM–5:00 PM *One-on-One Resume Critiques**

Wednesday, February 19, 2014

- 8:30 AM–11:45 AM *Rapid Resume Review Process—15 minute one-on-one resume critique sessions*
- 10:00 AM–1:00 PM Biomolecular Discovery Dome

* Slots for the one-on-one resume critiques are available on a first-come, first-served basis and fill up quickly. You may sign up for a critique beginning at noon on Saturday, February 15 in the Career Center, Room 300.

** These events required 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 300

Monica J. Weil is an organizational consultant and executive coach. She has operated her consulting practice, Lifeblood Consulting Group, Inc., since 2002 and has attracted both large and small life sciences clients such as Biogen Idec, Shire Pharmaceuticals Group, NitroMed, Cardiokine, Boston Scientific Corporation, UCB Research Inc., Epix Pharmaceuticals, and the Biotechnology Industry Organization (BIO).

In addition to her work as a consultant, Ms. Weil has over 25 years of industry experience as an internal organizational consultant and human resources professional in the biopharmaceutical and consumer products industries. Her work in these industries has included recruiting and selection, executive coaching, and international/cross-cultural/cross-functional group and team development. As a result of her first-hand experience, she has acquired expertise regarding the impact of human dynamics on organizational effectiveness, corporate and individual performance, and growth and transformation.

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 require-

ments 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

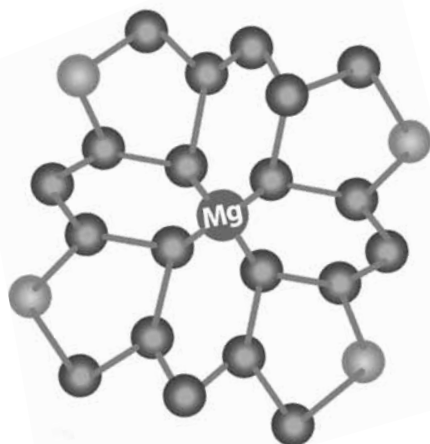
Employers

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.

2014 Summer Research Program in Biophysics



May 13, 2014–July 31, 2014

University of North Carolina at Chapel Hill

Priority Application Deadline: February 15, 2014

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.

Program 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 Courses:

- 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

**Questions? Contact Ellen Mackall, Summer Research Program Administrator
at emackall@biophysics.org or call (240) 290-5611.**

The Biophysical Society Summer Course in Biophysics: Case Studies in the Physics of Life is funded by The National Institute of General Medical Sciences, National Institutes of Health. [2 T36-GM075791]

Travel Grant Awardees

CPOW

Sunday

Kseniya Korobchevskaya, Italian Institute of Technology, Italy
1016-Pos, #B771
DEVELOPMENT OF PUMP-PROBE NANOSCOPY ARCHITECTURE.

Elena Molokanova, Sanford-Burnham Medical Research Institute
772-Pos, #B527
DIFFERENTIAL EFFECTS OF SYNAPTIC AND EXTRASYNAPTIC NMDA RECEPTORS ON $\alpha\beta$ -INDUCED NITRIC OXIDE PRODUCTION IN CEREBROCORTICAL NEURONS.

Eva Sevcsik, Yale University
452-Pos, #B207
CREATING OBSTACLE COURSES FOR RAFT PROTEINS - HOW MICROPATTERNING CAN HELP DECIPHER PLASMA MEMBRANE ORGANIZATION.

Yi H. Zhang, University of Bristol, United Kingdom
709-Pos, #B464
INVESTIGATING STEREOSELECTIVITY OF PHARMACOLOGICAL INHIBITION OF HERG CHANNELS.

Monday

Autumn Carlsen, Wake Forest University School of Medicine
2088-Pos, #B818
SOLID-STATE NANOPORE MAPPING OF DNA WITH SITE-SPECIFIC BOUND LIGANDS.

Irena Ivanovska, University of Pennsylvania
1596.2-Pos, #B326B
LAMIN-A IS MECHANOSENSITIVE TO MATRIX STIFFNESS AND COUPLES TO THE RETINOIC ACID PATHWAY IN DIFFERENTIATION

Radda Rusinova, Weill Cornell Medical College
1519-Pos, #B249
REGULATION OF ION CHANNEL FUNCTION BY THE HOST LIPID BILAYER EXAMINED BY A STOPPED-FLOW SPECTROFLUORIMETRIC ASSAY.

Liqun Zhang, Case Western Reserve University
1571-Pos, #B301
EXPLORING THE STRUCTURE AND DYNAMICS OF ALL-ATOM MODELS FOR THE PLEXIN TRANSMEMBRANE RECEPTOR BOUND TO GTPASES AND TO LIPID BILAYER.

Tuesday

Simona Casini, Leiden University Medical Center, The Netherlands
2795-Pos, #B487
ISOGENIC SETS OF HUMAN PLURIPOTENT STEM CELLS AS MODEL OF LQT2 SYNDROME.

Ulrike Endesfelder, Frankfurt University, Germany
2464-Pos, #B156
SUPER-RESOLUTION FLUORESCENCE MICROSCOPY OF TRANSCRIPTION SITES IN E. COLI.

Hannah R. Malcolm, University of Texas Southwestern
2802-Pos, #B494
A LACK OF SIGNIFICANT LIPID INTERACTIONS IN THE OPEN STATE OF MSCS IMPLIES A JACK-IN-THE-BOX TYPE CHANNEL GATING MECHANISM.

Hanne Poulsen, University of Aarhus, Denmark
2161-Plat
SOMATIC MUTATIONS IN THE NA,K-ATPASE CAN CAUSE HYPERTENSION.

Wednesday

Mily Bhattacharya, Indian Institute of Science Education and Research, India
3461-Pos, #B189
NANOSCALE ASSEMBLY OF PROTEINS INTO AMYLOID OLIGOMERS, PORES AND FIBRILS.

Irina Moreira, University of Porto, Portugal
3534-Pos, #B262
HOT-SPOTS DETECTION - APPLICATION TO A VARIETY OF DIFFERENT PROTEIN-BASED SYSTEMS.

Priyanka Prakash, University of Texas Health Science Center at Houston
3353-Pos, #B81
LIGAND BINDING SITE IDENTIFICATION IN MEMBRANE-BOUND ONCOGENIC K-RAS.

Milica Vukmirovic, Florida State University
3910-Pos, #B638
MYOSIN HEAVY CHAIN ISOFORM SWITCHING IN SKELETAL MUSCLES IN AN A8V-TROPONIN C HYPERTROPHIC CARDIOMYOPATHY KNOCK-IN MOUSE MODEL.

EDUCATION

Sunday

Maiwenn Beauprand, University of Quebec at Montreal, Canada
703-Pos, #B458
EXPRESSION AND PURIFICATION OF A FUNCTIONAL HERG PORE DOMAIN FOR BIOPHYSICAL AND ELECTROPHYSIOLOGICAL STUDIES.

Ben C. Chung, Duke University
89-Plat
CRYSTAL STRUCTURE OF MRAY, AN ESSENTIAL MEMBRANE ENZYME FOR BACTERIAL CELL WALL SYNTHESIS.

Rebekah Daniel, Willamette University
903-Pos, #B658
A ROLE FOR MYOSIN VI IN RETINAL PIGMENT EPITHELIUM PHAGOCYTOSIS.

Yue Ding, Emory University
984-Pos, #B739
A COMBINED SINGLE MOLECULE FRET / MAGNETIC TWEEZERS INSTRUMENT TO CALIBRATE MOLECULAR TENSION - BASED FLUORESCENCE PROBES.

Thais A. Enoki, University of São Paulo, Brazil
453-Pos, #B208
THE INTERACTION BETWEEN THE ANTIMICROBIAL PEPTIDE K-HYA1 AND MODEL MEMBRANES: DISTINCT ACTION IN NEUTRAL OR NEGATIVELY CHARGED BILAYERS.

Amy D. Hanna, Australian National University, Canberra, Australia
594-Pos, #B349
MECHANISMS OF ANTHRACYCLINE-INDUCED DYSFUNCTION OF CALCIUM HANDLING PROTEINS IN THE HEART.

Avelino Javer, University of Cambridge, United Kingdom
420-Pos, #B175
SHORT-TIME DYNAMICS E. COLI CHROMOSOMAL LOCI REVEAL A DEPENDENCE ON COORDINATE AND INDICATE THE PRESENCE OF A SPORADIC BUT UBIQUITOUS SUPER-DIFFUSIVE MOTION.

Sangwoo S. Kim, Swarthmore College
272-Pos, #B27
PROBING AND CHARACTERIZING DISTINCT CONFORMATIONAL STATES POPULATED BY INFLUENZA A M2 PROTEIN.

Jonathan P. Litz, University of Washington
498-Pos, #B253
PROBING CHOLESTEROL-LIPID INTERACTIONS AND CHEMICAL ACTIVITY OF CHOLESTEROL IN BILAYERS VIA CYCLODEXTRIN DEPLETION.

Linnéa Olofsson, Center for Structural Biochemistry, France
534-Pos, #B289
SPECIFIC REGULATION OF TRANSITION RATES BETWEEN ACTIVE AND INACTIVE STATES OF THE METABOTROPIC GLUTAMATE RECEPTOR DETERMINES AGONIST EFFICACY.

Katarina Siposova, Slovak Academy of Sciences, Slovakia
304-Pos, #B59
TRIPLETTIDES SCREENING REPORT: PROLINE IS IMPORTANT FOR A α & β FIBRILS DEPOLYMERIZATION.

Min-Yeh Tsai, National Chiao Tung University, Taiwan
320-Pos, #B75
KINETIC ISING MODEL STUDY OF PROTEIN AGGREGATION.

Katherine E. Ward, University of Notre Dame
487-Pos, #B242
CHARACTERIZING THE CURVE: A MECHANISTIC STUDY OF CPLA2-MEDIATED MEMBRANE BENDING.

Monday

Ashley J. Chui, California State University, Fullerton
1377-Pos, #B107
STATHMIN EXISTS AS AN OLIGOMER IN SOLUTION, AS EVIDENCED BY STATIC LIGHT-SCATTERING, NATIVE GEL ELECTROPHORESIS, AND EPR SPECTROSCOPY.

Joseph Fogarty, University of South Florida
2049-Pos, #B779
OPTIMIZATION OF COARSE-GRAINED WATER-ION INTERACTION PARAMETERS FOR BIOLOGICAL SIMULATION.

Manuela Gabriel, Laboratory for Fluorescence Dynamics
2011-Pos, #B741
SPECTROSCOPIC PROPERTIES OF INTRINSIC PROTEINS IN COLLAGEN SAMPLES BY USING GOLD-NANOPARTICLES AND TWO-PHOTON EXCITED FLUORESCENCE MICROSCOPY.

Tobias M.P. Hartwich, Yale University
2021-Pos, #B751
A SIMPLE CHEMICAL OXYGEN SCAVENGING SYSTEM FOR IMPROVED DSTORM TISSUE IMAGING.

Jonathan M. Kessler, Washington University
1827-Pos, #B557
INTRAFLAGELLAR TRANSPORT INHOMOGENEITY IN CHLAMYDOMONAS IMP3 MUTANT.

Mona Mirheydari, Kent State University
1545-Pos, #B275
STUDYING LIPID INTERACTIONS OF PERILIPIN 3/ TIP 47 USING PHOSPHOLIPID MONOLAYERS.

David D. Mowrey, University of Pittsburgh
1728-Pos, #B458
INSIGHTS INTO THE DISTINCTLY DIFFERENT SENSITIVITIES OF $\alpha 7$ AND $\alpha 7\beta 2$ NACHRS TO THE VOLATILE ANESTHETIC ISOFLURANE.

Ana Sofia F. Oliveira, New University of Lisbon, Portugal
1863-Pos, #B593
MD SIMULATIONS REVEAL AN ALTERNATIVE PATHWAY FOR DIOXYGEN DIFFUSION IN aa3 CYTOCHROME C OXIDASES.

Akash Pandhare, Texas Tech University Health Science Center
1719-Pos, #B449
NEURONAL NICOTINIC ACETYLCHOLINE RECEPTORS: THE DEVELOPMENT OF METHODS FOR PRODUCING AFFINITY-PURIFIED AND LIPID-RECONSTITUTED RECEPTORS THAT RETAIN FUNCTIONALITY.

Stefania Perticaroli, University of Tennessee
1325-Pos, #B55
SUPPRESSION OF PICOSECOND DYNAMICS IN β -CASEIN UPON CALCIUM BINDING.

Piotr Popov, Kent State University
2097-Pos, #B827
LIQUID-CRYSTAL-BASED BIOSENSOR WITHOUT ALIGNMENT SUBSTRATE.

Eduardo A. Quiroz-Manriquez, Central University of the Caribbean, Puerto Rico
1585-Pos, #B315
THE C2B DOMAIN OF SYNAPTOTAGMIN-1 AND COMPLEXIN REDUCE THE ASYNCHRONOUS RELEASE ACTIVATION.

Omer Shafraz, Iowa State University
1960-Pos, #B690
CHARACTERIZING THE INTERACTION OF DESMOSOMAL CADHERINS AT SINGLE MOLECULE LEVEL.

He Tian, Rockefeller University
1559-Pos, #B289
MUTAGENESIS STUDY OF RETINAL ENTRY PATHWAY OF RHODOPSIN.

Chi-Fu Yen, Iowa State University
1961-Pos, #B691
SINGLE MOLECULE CHARACTERIZATION OF THE ROLE OF DIVALENT IONS IN PRION PROTEIN AGGREGATION.

Yongxin Zhao, University of Alberta, Canada
2094-Pos, #B824
A COMPREHENSIVE LIVE CELL SCREENING APPROACH FOR DEVELOPING IMPROVED MICROBIAL RHODOPSIN-BASED VOLTAGE BIOSENSORS.

Tuesday

Mario Brameshuber, Vienna University of Technology, Austria
2589-Pos, #B281
DIRECT IMAGING OF MOBILE NANODOMAINS IN THE LIVE CELL PLASMA MEMBRANE BY USING A TWO-COLOR PHOTBLEACHING APPROACH.

Hugo B. Brandao, McGill University, Canada
3053-Pos, #B745

MEASURING LIGAND-RECEPTOR BINDING RATES
WITH K-SPACE IMAGE CORRELATION SPECTROSCOPY:
THEORY AND EXPERIMENTAL APPLICATIONS.

Elin Edwald, University of Michigan
2587-Pos, #B279

SIZE AND ACYLATION INFLUENCE THE LATERAL MOBILITY
OF PLASMA MEMBRANE PROTEINS IN LIVE CELLS.

Jose C. Flores-Canales, Carnegie Mellon University
2229-Plat

MULTISCALE SIMULATIONS OF DIPHTHERIA TOXIN
T-DOMAIN MEMBRANE ASSOCIATION.

Yaser Hashem, Columbia University
2487-Pos, #B179

STRUCTURE OF THE MAMMALIAN RIBOSOMAL 43S
PREINITIATION COMPLEX BOUND TO THE SCANNING
FACTOR DHX29.

Sha Jin, Max Delbrück Center for Molecular Medicine, Germany
2381-Pos, #B73

AMYLOID- β 42 AGGREGATION ON CELLULAR MEMBRANES
FACILITATES ITS CELLULAR UPTAKE.

Sherry S. W. Leung, Simon Fraser University, Canada
2571-Pos, #B263

EFFECTS OF FLUORESCENT PROBES ON LIPID MEMBRANE
PHYSICAL PROPERTIES.

Zachary A. Levine, University of California, Santa Barbara
2443-Pos, #B135

TAU(273-284): A MOLECULAR DYNAMICS STUDY OF
INTRINSICALLY DISORDERED PROTEIN CONFORMATIONS
IN THE PRESENCE OF OSMOLYTES.

Divakaran Murugesapillai, Northeastern University
2172-Plat

ARCHITECTURAL ROLE OF HMO1 IN BENDING,
BRIDGING AND COMPACTING DNA.

Dakshesh Patel, State University of New York,
Upstate Medical University

2778-Pos, #B470
ALTERATIONS IN IONIC CURRENTS AND GAP
JUNCTIONAL COUPLING BY PAN-HISTONE
DEACETYLASE INHIBITION.

Erika Riederer, Skidmore College
2756-Pos, #B448

ALCOHOL MODULATION OF A EUKARYOTIC LIGAND-
GATED ION CHANNEL OF KNOWN STRUCTURE.

Nuria Roldan, Complutense University of Madrid, Spain
2600-Pos, #B292

PALMITOYLATION AS A KEY FACTOR TO UNDERSTAND
SP-C-LIPID INTERACTIONS IN THE LUNG SURFACTANT
SYSTEM.

Yurou Sang, University of British Columbia, Canada
2425-Pos, #B117

PROBING THE INTERACTIONS BETWEEN U24 FROM
HHV-6A/7 AND FYN-SH3 OR WW DOMAIN PROTEINS.

Suleyman Ucuncuoglu, Emory University
2472-Pos, #B164

SINGLE MOLECULE INVESTIGATION OF RNA
POLYMERASE I USING MULTIPLEXED TETHERED
PARTICLE MOTION.

Chi Wang, Columbia University
2184-Plat

A ROBUST HIGH-THROUGHPUT ASSAY FOR
THERMODYNAMIC CORRECTORS OF THE PREDOMINANT
MOLECULAR DEFECT CAUSING CYSTIC FIBROSIS.

Sylvain Zorman, Yale University
2564-Pos, #B256

COMPARATIVE STUDY OF THE SNARES ZIPPERING
WITH SINGLE MOLECULE RESOLUTION.

Wednesday

Ahmed S. Abdelfattah, University of Alberta, Canada
3183-Plat

DEVELOPMENT OF A RED GENETICALLY-ENCODED VOLTAGE
INDICATOR AND ITS USE WITH CHANNELRHODOPSIN FOR
ALL-OPTICAL ELECTROPHYSIOLOGY.

Andrew Allan, University of Glasgow, United Kingdom
3189-Plat

CORRELATION BETWEEN VENTRICULAR REPOLARISATION
PATTERNS AND T-WAVE GENERATION IN ISOLATED
RABBIT HEARTS USING PANORAMIC IMAGING.

Gaetano Bonifacio, University of Lausanne, Switzerland
3241-Plat

COORDINATED MOVEMENTS DURING ASIC1A ACTIVITY.

Eleni K. Degaga, Syracuse University
3638-Pos, #B366

THE CELLULAR CONTENT OF NON-ERYTHROID SPECTRINS
AND ANKYRINS IS MODULATED BY EXTERNAL FORCES.

Melinda M. Diver, Memorial Sloan-Kettering Cancer Center
3418-Pos, #B146

MAPPING THE SUBSTRATE BINDING SITES OF THE
INTEGRAL MEMBRANE METHYLTRANSFERASE ICMT BY
MUTATIONAL ANALYSIS.

Kaitlyn P. Gerhart, Georgetown University
3482-Pos, #B210

ENANTIOSPECIFIC RECOGNITION OF THE INTRINSICALLY
DISORDERED C-MYC ONCOPROTEIN BY SMALL MOLECULES.

Lindsey D. Handley, University of California, San Diego
3282-Pos, #B10

THE DYNAMIC FUNCTIONAL CONSEQUENCES OF THE
THROMBIN-THROMBOMODULIN INTERACTION.

Nida F. Hasan, University of Maryland
3448-Pos, #B176

CHARGE CROWDING PROMOTES SELF-ASSEMBLY
OF COLLAGEN HETROTRIMERS.

You Jung Kang, Pennsylvania State University
3196-Plat

ELECTROFORMATION OF UNIFORMLY SIZED GIANT
LIPOSOMES WITH FUNCTIONAL MEMBRANE PROTEINS.

Shweta Kothari, Children's Hospital Oakland Research Institute
3611-Pos, #B339

ANALYSIS OF THE MOLECULAR ORGANIZATION OF
LIPOPROTEIN-ASSOCIATED APOLIPOPROTEIN E, AN
ANTI-ATHEROGENIC PROTEIN.

Daniel Lauster, Humboldt University of Berlin, Germany
3272-Plat

RASTERING THE INFLUENZA VIRUS SURFACE WITH
MOLECULAR RULERS AND NANOPARTICLES TO DESIGN
OPTIMAL MULTIVALENT INHIBITORS.

Taylor P. Light, James Madison University
3365-Pos, #B93
INFLUENCE OF HOFMEISTER SALTS ON THE STRUCTURE,
AGGREGATION, AND UNFOLDING OF RECA.

Nicole L. Michmerhuizen, Calvin College
3526-Pos, #B254
A BIOPHYSICAL STUDY OF THE G-QUADRUPLEX-INSULIN
INTERACTION.

William B. Monteith, University of North Carolina at Chapel Hill
3724-Pos, #B452
PROTEIN STABILITY IN LIVING CELLS.

Suchithranga M. D. C. Perera, University of Arizona
3206-Plat
G-PROTEIN-COUPLED RECEPTOR ACTIVATION
INVESTIGATED USING SMALL-ANGLE NEUTRON
SCATTERING.

Priya Putta, Kent University
3629-Pos, #B357
INTERPLAY OF MEMBRANE LIPIDS DIFFERENTIALLY
AFFECTS LIPID BINDING OF PHOSPHATIDIC ACID
EFFECTORS

Utsab R. Shrestha, Wayne State University
3288-Pos, #B16
DYNAMIC BEHAVIOR OF OLIGOMERIC INORGANIC
PYROPHOSPHATASE (IPPASE) STUDIED BY QUASIELASTIC
NEUTRON SCATTERING.

A. Catalina Vélez-Ortega, University of Kentucky
4024-Pos, #B752
HIGH-SPEED HOPPING PROBE SCANNING ION
CONDUCTANCE MICROSCOPY.

Xiaolin Xu, University of Arizona
3293-Pos, #B21
GENERALIZED MODEL-FREE SPECTRAL DENSITY ANALYSIS
APPLIED TO RHODOPSIN ACTIVATION IN MEMBRANES.

INTERNATIONAL

Sunday

Dunja Aksentijevic, King's College London, United Kingdom
945-Pos, #B700
METABOLIC INFLEXIBILITY OF MALONYL CoA
DECARBOXYLASE (MCD) KNOCKOUT MICE LEADS TO
CARDIAC REMODELLING AND HIGH MORTALITY
DURING PERI-WEANING PERIOD.

Daniela Araiza-Olivera, National Autonomous University of Mexico,
Mexico City
824-Pos, #B579
IN SACCHAROMYCES CEREVISIAE A GLYCOLYTIC
METABOLON IS STABILIZED BY F-ACTIN.

Victor Banerjee, Bose Institute, India
319-Pos, #B74
INHIBITION OF INSULIN FIBRILLATION BY A NON TOXIC
PEPTIDE NK9

Prajwal Ciryam, University of Cambridge, United Kingdom
321-Pos, #B76
PROTEOME METASTABILITY IN HEALTH, AGING, AND
DISEASE.

Leonel Malacrida, Clinical Hospital, Uruguay
449-Pos, #B204
PHASOR PLOTS AND SPECTRAL PHASOR ANALYSIS
OF LAURDAN AND PRODAN FOR MEMBRANE
HETEROGENEITY STUDIES: NEW FRONTIERS IN
MEMBRANE BIOPHYSICS.

Guy Nir, Bar Ilan University, Israel
126-Plat
STUDYING PROTEIN-DNA DYNAMICS AND PROTEIN
UNFOLDING USING A FORCE-FREE SINGLE-MOLECULE
TECHNIQUE.

Sarah O. Oni, Lead City University, Nigeria
955-Pos, #B710
IDENTIFICATION OF HEAVY METALS IN WILD PLANTS
GROWN ON BATTERY WASTE.

Yaroslav V. Tkachev, V.A.Engelhardt Institute of Molecular Biology,
Russia
797-Pos, #B552
ROLE OF THE COIL-HELIX TRANSITION WITHIN LOOP2
IN CARDIAC MYOSIN KINETICS MODULATION.

Donna R. Whelan, Monash University, Australia
1040-Pos, #B795
MONITORING THE CONFORMATION AND
CONCENTRATION OF DNA IN LIVE CELLS USING
FOURIER TRANSFORM INFRARED SPECTROSCOPY.

Monday

Debanjan Bhowmik, Tata Institute of Fundamental Research,
India
1371-Pos, #B101
DECOUPLING CONFORMATION, AGGREGATION AND
FUNCTION OF AMYLOID- β MONOMERS AND OLIGOMERS:
AN FCS, SERS AND AFM STUDY.

Jenu V. Chacko, Italian Institute of Technology, Italy
2001-Pos, #B731
INSIGHT INTO HYBRID NANOSCOPY TECHNIQUES: STED
AFM & STORM AFM.

Ksenia Chekashkina, A.N. Frumkin Institute of Physical Chemistry
and Electrochemistry, Russia
1468-Pos, #B198
LIPIDS AS REGULATORS OF EFFECTIVE MEMBRANE RIGIDITY.

André F. Faustino, University of Lisbon, Portugal
1959-Pos, #B689
DENGUE VIRUS CAPSID PROTEIN INTERACTS
SPECIFICALLY WITH VERY LOW-DENSITY
LIPOPROTEINS.

Hema Chandra Kotamarthi, Tata Institute of Fundamental Research,
India
1972-Pos, #B702
EXPERIMENTAL AND SIMULATION STUDIES ON THE
MECHANICAL PROPERTIES OF SUMO PROTEINS.

Ariane Nunes-Alves, University of São Paulo, Brazil
2062-Pos, #B792
A COMPUTATIONAL METHOD INCLUDING PROTEIN
FLEXIBILITY TO ESTIMATE AFFINITIES WITH SMALL LIGANDS.

Andrea Soranno, University of Zürich, Switzerland
1363-Pos, #B93
SINGLE-MOLECULE SPECTROSCOPY REVEALS
POLYMER EFFECTS OF DISORDERED PROTEINS
IN CROWDED ENVIRONMENTS.

Joaquim Trigo Marques, University of Lisbon, Portugal
1056-Pos, #B811
LIPID NANODOMAINS ON MODIFIED GOLD SURFACES -
A BIOMIMETIC PLATFORM TO STUDY ELECTROACTIVE
BIOMOLECULE-MEMBRANE INTERACTIONS

Weihua Ye, Stockholm University, Sweden
1521-Pos, #B251
THE ROLE OF TRP IN ARG-RICH PADDLE DOMAIN-LIPID
INTERACTION.

Hannah Yevick, Curie Institute, France
1802-Pos, #B532
THE EFFECTS OF OUT OF PLANE CURVATURE
ON COLLECTIVE CELL MIGRATION.

Tuesday

Ariel Afek, Ben Gurion University of the Negev, Israel
2518-Pos, #B210
GENOME-WIDE ORGANIZATION OF EUKARYOTIC
PRE-INITIATION COMPLEX IS INFLUENCED BY NON-
CONSENSUS PROTEIN-DNA BINDING

Soumen Basak, Saha Institute of Nuclear Physics, India
2380-Pos, #B72
USE OF FCS TO STUDY PROTEIN DENATURATION
AND AGGREGATION

Juan P. Castillo, University of Valparaiso, Chile
2940-Pos, #B632
K⁺ TRANSLOCATION BY THE GIANT AXON OF THE
HUMBOLDT SQUID NA⁺/K ATPASE.

Gloria de las Heras, University of the Basque Country, Spain
2646-Pos, #B338
IN-SITU DESCRIPTION OF THE ROLE OF PtdIns(3,4,5)P₃ AND
PtdSer ON PDK1 REGULATION IN HUMAN CANCER CELLS BY
ADVANCED QUANTITATIVE MICROSCOPY.

Federica De Leo, Namur Research College, Belgium
3136-Pos, #B828
STRUCTURAL AND DYNAMICAL PROPERTIES OF
MONOCLONAL ANTIBODIES IMMOBILIZED ON CNTs:
A COMPUTATIONAL STUDY.

Begoña García-Alvarez, Complutense University of Madrid, Spain
2612-Pos, #B304
FUNCTIONAL AND STRUCTURAL CHARACTERIZATION
OF PULMONARY SURFACTANT PROTEIN SP-C IN
NANODISCS: A NANOTECHNOLOGICAL APPROACH.

Ramon Guixà-González, Pompeu Fabra University, Spain
2621-Pos, #B313
CELL MEMBRANE COMPOSITION AFFECTS GPCR
AGGREGATION.

Haibo Jiang, Oxford University, United Kingdom
3019-Pos, B711
QUANTITATIVELY IMAGING STABLE ISOTOPES AT
SUBCELLULAR LEVEL WITH CORRELATIVE ELECTRON
MICROSCOPY AND NANOSIMS ANALYSIS.

Benjamin Kollmitzer, University of Graz, Austria
2585-Pos, #B277
PROTEIN PARTITIONING IN LIQUID-ORDERED (LO) /
LIQUID-DISORDERED (LD) DOMAINS DEPENDS ON
LIPID COMPOSITION AND PROTEIN SHAPE.

Alexander Kyrychenko, V.N. Karazin Kharkiv National University,
Ukraine
2569-Pos, #B261
REFINING ANALYSIS OF MEMBRANE PENETRATION
WITH DEPTH-DEPENDENT FLUORESCENCE
QUENCHING AND MOLECULAR DYNAMICS
SIMULATIONS.

Eng Kuan Moo, University of Calgary, Canada
2282-Plat
STRAIN RATE-DEPENDENT MEMBRANE RESERVOIR-
KEY TO CHONDROCYTE DEATH BY IMPACT.

Agustina Olivera-Couto, Pasteur Institute of Montevideo, Uruguay
2353-Pos, #B45
EISOSOMES AND PLASMA MEMBRANE DOMAIN
FORMATION.

Louise Reilly, University of Dundee, United Kingdom
2935-Pos, #B627
REGULATION OF THE CARDIAC SODIUM/CALCIUM
EXCHANGER BY PROTEIN PALMITOYLATION.

Monica Rosas-Lemus, National Autonomous
University of Mexico
2831-Pos, #B523
THE MITOCHONDRIAL PERMEABILITY TRANSITION IN
SACCHAROMYCES CEREVISIAE IS CONTROLLED BY HEXOSE
PHOSPHATES FROM THE GLYCOLYTIC PATHWAY.

Gregory P. Sutton, University of Bristol, United Kingdom
3130-Pos, #B822
POWER, DIRECTION, AND SYNCHRONY - MECHANICAL
PROBLEMS AND SOLUTIONS FROM JUMPING LEAFHOPPER
INSECTS.

Wednesday

Sri Rama Koti Ainavarapu, Tata Institute of Fundamental Research,
India
3394-Pos, #B122
FORCED UNFOLDING OF PERIPLASMIC BINDING PROTEINS
(PBPS) FOLLOWS KINETIC PARTITIONING.

Begum Alaybeyoglu, Bogazici University, Turkey
4063-Pos, #B791
ANALYSIS OF MEMBRANE TRANSLOCATION SIMULATIONS
USING DIMENSIONALITY REDUCTION.

Arthur J. Cheng, Karolinska Institute, Sweden
3685-Pos, #B413
LOCAL REDOX MODIFICATIONS IN SKELETAL MUSCLE
DIFFERENTIALLY AFFECT SARCOPLASMIC RETICULUM
CALCIUM RELEASE AND MUSCLE FORCE GENERATION.

Rafal Jakubowski, Nicolaus Copernicus University, Poland
3345-Pos, #B73
TRANSTHYRETIN INDUCED AMYLOIDOSIS INTERACTIONS,
MECHANISMS AND POTENT DRUGS DESIGN.

Vanessa L. Perillo, Biochemical Research Institute of Bahia Blanca,
Argentina
3604-Pos, #B332
TO BE OR NOT TO BE IN MEMBRANE DOMAINS:
TRANSBILAYER ASYMMETRY AND SPHINGOMYELIN-
DEPENDENT PREFERENTIAL PARTITIONING OF THE
ACETYLCHOLINE RECEPTOR.

Neelanjana Sengupta, National Chemical Laboratory, India
3462-Pos, #B190
ATOMISTIC SIMULATIONS LEND MECHANISTIC INSIGHTS INTO PLAUSIBLE WAYS OF PERTURBING THE NUCLEATION THERMODYNAMICS OF THE FULL-LENGTH A β PEPTIDE.

Varun K. A. Sreenivasan, Macquarie University, Australia
4006-Pos, #B734
MISMATCH BETWEEN THE RESTING MEMBRANE POTENTIAL AND THE VOLTAGE AT MAXIMUM AMPLIFICATION IN OUTER HAIR CELLS (OHCS) OF MAMMALIAN COCHLEA.

Orsolya Szilágyi, University of Debrecen, Medical and Health Science Center, Hungary
3740-Pos, #B468
THE SH3-BINDING DOMAIN OF KV1.3 CHANNELS IS REQUIRED FOR THEIR CONTACTIN-CONVEYED COUPLING TO ACTIN.

Anastasia Vasilyeva, Russian Academy of Sciences, Ural Branch, Russia
3698-Pos, #B426
CONTRIBUTION OF THE MECHANICAL LOADS TO SUSCEPTIBILITY TO ARRHYTHMIA IN SUBENDOCARDIAL AND SUBEPICARDIAL VENTRICULAR MYOCYTES.

Shuai Zhang, Aarhus University, Denmark
4032-Pos, #B760
STUDY SUB-MEMBRANE STRUCTURE AND CORRESPONDING FUNCTIONS OF CONDUCTIVE BACTERIA CABLE BY SPMS.

MINORITY AFFAIRS

Sunday

Rene Barro-Soria, University of Miami
725-Pos, #B480
KCNE1 SEPARATES THE MAIN VOLTAGE SENSOR MOVEMENT AND CHANNEL OPENING IN KCNQ1/KCNE1 CHANNELS.

Daniel Schlingman, Yale University
404-Pos, #B159
ROUTES TO DNA ACCESSIBILITY: ALTERNATIVE PATHWAYS FOR NUCLEOSOME UNWINDING.

Chanrith Siv, University of Michigan, Ann Arbor
1032-Pos, #B787
UNDERSTANDING THE PATHOGENICITY OF VIBRIO CHOLERAE VIA TWO-COLOR LIVE-CELL SUPER-RESOLUTION MICROSCOPY.

Monday

Ashton T. Brock, University of Virginia
1121-Plat
INFLUENCE OF DETERGENT PROPERTIES ON THE SOLUBILIZATION AND FUNCTION OF MEMBRANE PROTEINS.

Jodian A. Brown, University of Maryland, Baltimore County
1329-Pos, #B59
UNDERSTANDING THE MOLECULAR MECHANISM OF SYNERGISTIC INHIBITION IN THE HEPATITIS C VIRUS (HCV) POLYMERASE USING MOLECULAR DYNAMICS SIMULATIONS AND FREE ENERGY CALCULATIONS.

Igal Bucay, University of North Carolina, Chapel Hill
1284-Pos, #B14
DETERMINANTS OF FIBRINOLYSIS IN SINGLE FIBRIN FIBERS.

Jacqueline M. Esquiaqui, University of Florida
1438-Pos, #B168
STUDYING DYNAMICS AND CONFORMATIONAL CHANGES IN THE GLYCINE RIBOSWITCH USING ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY.

Johnnie W. Wright, Indiana University Purdue University
1475-Pos, #B205
ION EXCLUSION FROM MULTILAMELLAR LIPID VESICLES

Tuesday

Jeremiah Babcock, University of Texas, San Antonio
2513-Pos, #B205
THE TRANSPORTATION POTENTIAL OF HUMAN SERUM ALBUMIN FOR MIR106A.

Wednesday

Marcio Duarte Albasini Mourao, Mathematical Biosciences Institute
3995-Pos, #B723
UNRAVELLING THE IMPACT OF OBSTACLES IN DIFFUSION AND KINETICS OF AN ENZYME CATALYSED REACTION.

James Campbell, Baylor College of Medicine
3330-Pos, #B58
INSIGHTS INTO THE CYCLIC NUCLEOTIDE SELECTIVITY MECHANISM OF CYCLIC GMP DEPENDENT PROTEIN KINASE II.

Liez E. Francisco, University of Texas, San Antonio
3495-Pos, #B223
SMALL MOLECULE INHIBITORS OF INTERACTION BETWEEN ERCC1 AND XPA.

Mariel Jimenez, University of Puerto Rico, Rio Piedras Campus
3421-Pos, #B149
DID CLASS 1 AND CLASS 2 AMINOACYL TRNA SYNTHETASES DESCEND FROM GENETICALLY COMPLIMENTARY, CATALYTICALLY ACTIVE ATP-BINDING MOTIFS?

Jan-Michael Rives, Rutgers New Jersey Medical School
3826-Pos, #B554
REGULATION OF TRPV1 BY PHOSPHOINOSITIDES AND OTHER NEGATIVELY CHARGED LIPIDS.

Melissa Hernandez, University of New Mexico
See Addendum for programming
EFFECT OF UREA ON THE SURFACE AND MEMBRANE ACTIVITY OF AMYLOID BETA PEPTIDE.

Gelson Pagan Diaz, University of Puerto Rico, Mayaguez
See Addendum for programming
A NEW LASER-DRIVEN NMR PULSE SEQUENCE FOR NMR SENSITIVITY ENHANCEMENT

Tomas Rodriguez, University of California, Davis
See Addendum for programming
TRACKING PAIRING AND COMPACTION OF MEIOTIC CHROMOSOMES USING FLUORESCENCE MICROSCOPY IN SACCHAROMYCES CEREVISIAE

Ancillary Meetings

Society of General Physiologists Council Meeting

Saturday, February 15, 9:00 AM–1:00 PM
Room 124

Korean Biophysicists Meeting

Sunday, February 16, 5:00 PM–8:00 PM
Room 307

Biophysical Society of Canada - Travel Awards and Mixer

Sunday, February 16, 6:00 PM–7:30 PM
Room 302

Biophysics Austria Mixer

Sunday, February 16, 6:00 PM–7:00 PM
Room 121

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

Tuesday, February 18, 8:00 PM–10:00 PM
Room 309

Wiki Contest

Share what you know about biophysics with the world.
Participate in the biophysics wiki-editing contest!

**Six winners will receive \$100 and free
registration to the 2015 Annual Meeting.**

To learn more, attend the Wiki-Edit Meet up,
Sunday, February 16, 2:15–3:30 PM in Room 309
or visit the website: www.biophysics.org



Deadline to finish your wiki article is **July 15, 2014.**

Looking for a Job? Have a Job Opening?

Check out the Biophysical Society Job Board
www.biophysics.org

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Phone: 240-290-5600 | Fax: 240-290-5555
society@biophysics.org

Biophysical Society TV premieres in San Francisco

Welcome to San Francisco, host to the 2014 BPS Annual Meeting and Biophysical Society TV—your brand new conference television channel dedicated to news and views from the Annual Meeting.

Biophysical Society TV is here to cover the important issues that emerge at the meeting, raise the visibility of the work of biophysicists, and provide an opportunity to learn about cutting-edge research and developments in biophysics.

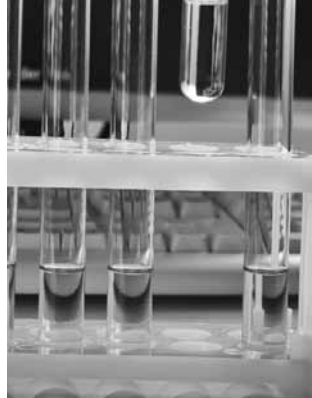
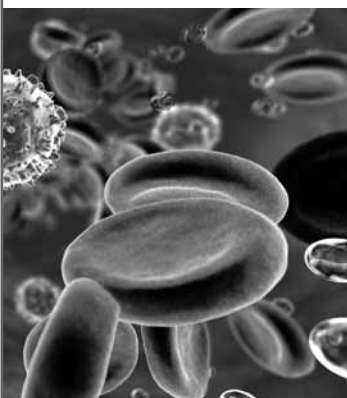
We will be screening a new episode each day of the Annual Meeting featuring: interviews with key speakers, session highlights, feedback from attending delegates, and exclusive pieces produced in partnership with education institutions especially for the meeting.

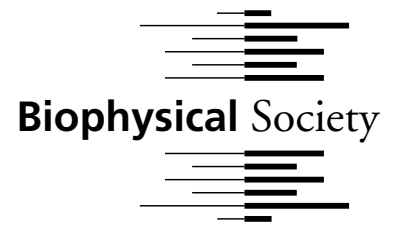
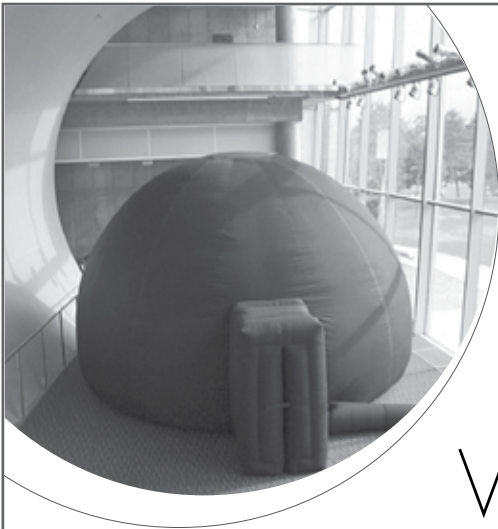
For up to date information and news, follow us on Twitter: [@websedge_health](https://twitter.com/websedge_health)

Take part in Biophysical Society TV!

You will see our camera team touring throughout the Moscone Center. Please do say hello and share your comments on the speakers and sessions you attended. The Biophysical Society TV team welcomes all feedback and would like to hear what you think of your new Annual Meeting TV show, as well as your views on the various issues raised at the meeting.

We hope you enjoy the meeting and Biophysical Society TV!

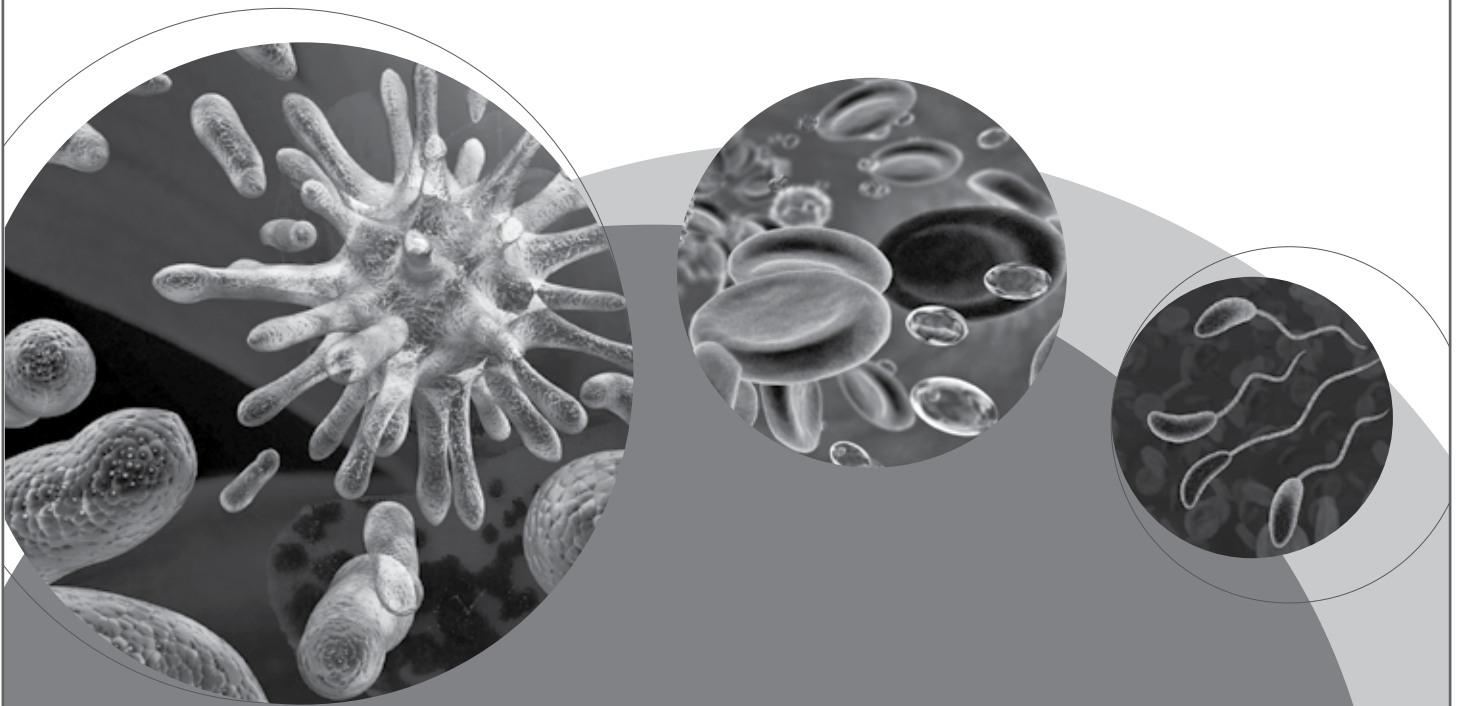




Visit the Biomolecular Discovery Dome

Watch cells and viruses come to life in this stereo-3D portable Dome. See how difficult biophysical topics can be made accessible to the general public. The Public Affairs Committee is pleased to be sponsoring the Dome for the third year in a row. Short videos will present a range of topics that will convey how research visualization provides insights and medical opportunities as to the nature of pathogens and cells. Overall, these videos communicate the excitement of looking at macromolecular complexes and understanding the molecular basis for life. The Biomolecular Discovery Dome will be located in Hall D of the Moscone Center, Sunday, February 16–Wednesday, February 19.

This event is sponsored by the Public Affairs Committee.



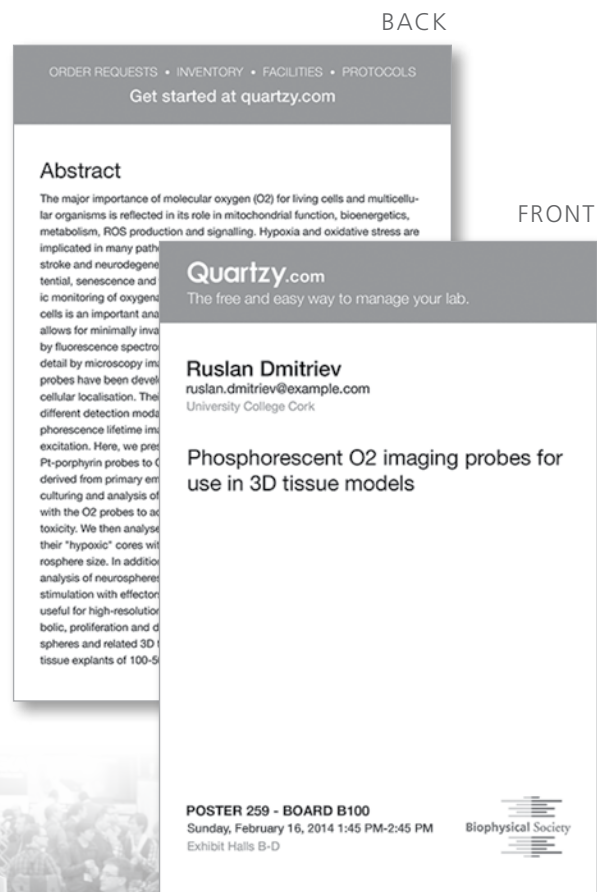
NEW! Free Networking Cards for Poster Presenters

(Sponsored by Quartzzy)

Are you presenting a poster at BPS this year?

If so, you already have 25 pre-printed Networking Cards waiting for you. Networking Cards are like business cards, but designed just for scientists. They carry your contact information, and they also have the title of your poster, your presentation date/time, and your abstract.

You can hand them out to other researchers before, during, or after your poster presentation. Please pick them up at the "Networking Card" tables in the Exhibit Hall.



The cards are sponsored by Quartzzy, the world's leading free online lab management platform.

Friday, February 14, 2014

Daily Program Summary

All rooms are located in the MOSCONE CONVENTION CENTER unless noted otherwise.

8:00 AM–5:00 PM	Exhibitor Registration	North Lobby
8:30 AM–5:00 PM	Drug Discovery Satellite Meeting	Room 130/131
2:00 PM–5:00 PM	Family Room	Room 112
3:00 PM–4:30 PM	New Council Orientation	Marriott Marquis, Pacific F
3:00 PM–5:00 PM	Registration	North Lobby
5:00 PM–9:00 PM	Joint Council Reception, Dinner, and Meeting	Marriott Marquis, Club Room

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Friday, February 14

8:00 AM–5:00 PM, NORTH LOBBY
Exhibitor Registration

8:30 AM–5:00 PM, ROOM 130/131
Drug Discovery Satellite Meeting

*Sponsored by Nanion Technologies; ChanTest; Cytocentrics;
Molecular Devices, LLC; and Sophion Bioscience*

Co-Chairs

Niels Fertig, Nanion Technologies

Chris Mathes, ChanTest Corporation

Jim Costantin, Molecular Devices, LLC

Morten Sunensen, Sophion Bioscience

Dirk Lassen, Cytocentrics Bioscience GmbH

2:00 PM–5:00 PM, ROOM 112
Family Room

3:00 PM–4:30 PM, MARRIOTT MARQUIS, PACIFIC F
New Council Orientation

3:00 PM–5:00 PM, NORTH LOBBY
Registration

5:00 PM–9:00 PM, MARRIOTT MARQUIS, CLUB ROOM
Joint Council Reception, Dinner, and Meeting

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

Saturday, February 15, 2014

Daily Program Summary

All rooms are located in the MOSCONE CONVENTION CENTER unless noted otherwise.

8:00 AM–6:00 PM	Child Care	Marriott Marquis, Pacific H, I, J
8:00 AM–6:00 PM	Undergraduate Student Lounge	Rotunda, 300 Level
8:00 AM–6:30 PM	Registration/Exhibitor Registration	North Lobby
8:00 AM–7:00 PM	Family Room	Room 112
8:30 AM–11:00 AM	Joint Council Meeting	Marriott Marquis, Club Room
9:00 AM–1:00 PM	Society of General Physiologists Council Meeting	Room 124
9:00 AM–1:00 PM	Subgroup: Molecular Biophysics	Room 134
9:00 AM–5:10 PM	Subgroup: Membrane Structure & Assembly	Room 132/133
9:00 AM–7:00 PM	Subgroup: Bioenergetics	Room 310
10:30 AM–7:00 PM	Subgroup: Intrinsically Disordered Proteins	Room 135
12:00 PM–6:00 PM	Subgroup: Nanoscale Biophysics	Room 304
12:00 PM–7:00 PM	Career Center	Room 300
12:15 PM–6:00 PM	Subgroup: Biopolymers in vivo	Room 307
1:00 PM–4:45 PM	Subgroup: Biological Fluorescence	Room 303
1:00 PM–5:05 PM	Subgroup: Mechanobiology	Room 306
1:00 PM–6:00 PM	Subgroup: Membrane Biophysics	Room 130/131
1:00 PM–6:15 PM	Subgroup: Motility	Room 305
1:00 PM–6:30 PM	Subgroup: Exocytosis & Endocytosis	Room 301
1:30 PM–4:00 PM	Subgroup: Permeation & Transport	Room 309
3:00 PM–4:00 PM	Career Center Workshop: Networking Now: How to Maximize Success at BPS 2014	Room 300
3:30 PM–4:30 PM	Undergraduate Mixer and Poster Fest	Outside of Room 300
5:00 PM–7:00 PM	Opening Mixer	Lower North Lobby
5:00 PM–7:00 PM	Meet and Greet	Lower North Lobby
5:00 PM–7:00 PM	First-Time Attendee Drop-By	Room 111
6:00 PM–10:00 PM	Poster Viewing	Hall D
6:30 PM–7:30 PM	Education, Minority Affairs, and Professional Opportunities for Women Committees Travel Awardee Reception	Room 302

Saturday, February 15

8:00 AM–6:00 PM, MARRIOTT MARQUIS, PACIFIC H, I, J
Child Care

8:00 AM–6:00 PM, ROTUNDA, 300 LEVEL
Undergraduate Student Lounge

8:00 AM–6:30 PM, NORTH LOBBY
Registration/Exhibitor Registration

8:00 AM–7:00 PM, ROOM 112
Family Room

8:30 AM–11:00 AM, MARRIOTT MARQUIS, CLUB ROOM
Joint Council Meeting

9:00 AM–1:00 PM, ROOM 124
**Society of General Physiologists
Council Meeting**

9:00 AM–1:00 PM, ROOM 134
**Subgroup
Molecular Biophysics**

Subgroup Chair

Mari DeMarco, University of British Columbia, Canada

BIOMEDICAL APPLICATIONS OF MASS SPECTROMETRY

1-SUBG 9:00 AM
FAST PHOTOCHEMICAL OXIDATION OF PROTEINS (FPOP)
FOR THE CHARACTERIZATION OF MACROMOLECULES.
Lisa M. Jones

2-SUBG 9:30 AM
PROTEIN HYDROGEN EXCHANGE MEASURED BY MASS
SPECTROMETRY. **S. Walter Englander**

3-SUBG 10:00 AM
PROTEIN FOLDING AND BINDING CHARACTERIZED
BY MASS SPECTROMETRY. **Lars Konermann**, Siavash Vahidi,
Modupeola A. Sowole

10:30 AM COFFEE BREAK

10:45 AM SUBGROUP BUSINESS MEETING

NO ABSTRACT 11:00 AM
SINGLE-MOLECULAR MASS SPECTROMETRY ENABLED BY
NANO-ELECTROMECHANICAL SYSTEMS. **Michael Roukes**

4-SUBG 11:30 AM
NATIVE MASS SPECTROMETRY FOR STRUCTURAL BIOPHYSICS.
Justin LP Benesch

5-SUBG 12:00 PM
A NOVEL SOFT IONIZATION PROCESS AND APPLICATIONS
IN IMAGING MASS SPECTROMETRY. Lorelie Imperial,
Sashiprabha M. Vithanarachchi, James Wager-Miller, Ken Mackie,
Matthew J. Allen, **Sarah Trimpin**

6-SUBG 12:30 PM
TISSUE SHOTGUN PROTEOMICS: APPLICATIONS TO THE
CLINICAL LABORATORY. **Surendra Dasari**, Jason D. Theis,
Julie A. Vrana, Ahmet Dogan, Paul J. Kurtin

1:00 PM CONCLUDING REMARKS

9:00 AM–5:10 PM, ROOM 132/133

Subgroup Membrane Structure & Assembly

Subgroup Chair

Felix Goñi, Basque Country University, Spain

7-SUBG 9:00 AM
PROTEIN GYMNASTICS IN THE LIPID BILAYER: LIPIDS AS
DETERMINANTS OF PROTEIN STRUCTURE. **William Dowhan**,
Mikhail Bogdanov, Heidi Vitrac

8-SUBG 9:35 AM
HOW LIPIDS MEDIATE PTEN TUMOR SUPPRESSOR FUNCTION.
Arne Gericke

9-SUBG 10:10 AM
NEW INSIGHTS INTO MITOCHONDRIAL PERMEABILIZATION
IN APOPTOSIS. **Ana J. Garcia-Saez**

10:45 AM COFFEE BREAK

10-SUBG 11:05 AM
EFFECTS OF PHOSPHOINOSITIDES AND THEIR
DERIVATIVES ON ENDOMEMBRANE MORPHOLOGY
AND FUNCTION. **Banafshe Larijani**

11-SUBG 11:40 AM
MOLECULAR BASIS OF THE ASSEMBLY AND BUDDING OF
THE EBOLA VIRUS FROM THE PLASMA MEMBRANE OF
HUMAN CELLS. **Robert V. Stahelin**

12:15 PM COFFEE BREAK

12-SUBG 1:15 PM
VESICLES IN ELECTRIC FIELDS. **Rumiana Dimova**

13-SUBG 1:50 PM
LIPID NANOTUBES AS A TOOL FOR STUDYING NANOSCALE
PROTEO-LIPID DOMAINS. **Anna Shnyrova**

14-SUBG 2:25 PM
HOW CELLS EXPLOIT FORCES TO SENSE AND RESPOND TO
THEIR ENVIRONMENTS. **Viola Vogel**

3:00 PM COFFEE BREAK

15-SUBG 3:20 PM
DETERMINING THE IN-PLANE AND OUT-OF-PLANE
STRUCTURE OF MODEL MEMBRANES; TWO RECENT
EXAMPLES. **John Katsaras**

16-SUBG 3:55 PM
MEMBRANE FUSION BY X-RAYS: FROM MODEL MEMBRANES
TO ORGANELLES. **Tim Salditt**

17-SUBG 4:30 PM T.E. THOMPSON AWARD LECTURE
SOME OF MY GREATEST MISTAKES. **Sarah L. Keller**

5:10 PM SUBGROUP BUSINESS MEETING

9:00 AM–7:00 PM, ROOM 310

Subgroup Bioenergetics

Subgroup Co-Chairs

Jan Hoek and György Hajnóczky, Thomas Jefferson University

MORNING SYMPOSIUM: ION CHANNELS OF THE INNER MITOCHONDRIAL MEMBRANE

18-SUBG 9:00 AM
FOF1-ATP SYNTHASE DIMERS AND THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE FROM YEAST TO MAMMALS.

Paolo Bernardi, Valentina Giorgio, Michela Carraro, Sophia von Stockum, Victoria Burchell, Justina Šileikytė, Valeria Petronilli, Mario Zoratti, Ildikó Szabó, Mike Forte, Giovanna Lippe

19-SUBG 9:30 AM
THE C-SUBUNIT OF THE ATP SYNTHASE FORMS THE PORE OF THE PTP. **Elizabeth Jonas**, Silvio Sacchetti, Han-A Park, Emma Lazrove, Gisela Beutner, George A. Porter, Jr., Kambiz N. Alavian

10:00 AM COFFEE BREAK

20-SUBG 10:30 AM
MITOCHONDRIAL UNCOUPLING AND THERMOGENESIS. **Yuriy V. Kirichok**

21-SUBG 11:00 AM
NEW MITOCHONDRIAL POTASSIUM CHANNELS. **Adam Szewczyk**, Anna Olszewska, Bartłomiej Augustynek, Michał Laskowski, Piotr Bednaarczyk

22-SUBG 11:30 AM
INHIBITION OF A MITOCHONDRIAL POTASSIUM CHANNEL AS A NEW THERAPEUTIC STRATEGY FOR CHRONIC LYMPHOCYTIC LEUKEMIA. **Ildikó Szabó**, Luigi Leanza, Antonella Managò, Federica Frezzato, Kathrin Becker, Livio Trentin, Gianpietro Semenzato, Erich Gulbins, Mario Zoratti

1:40 PM YOUNG INVESTIGATOR AWARD PRESENTATION

AFTERNOON SYMPOSIUM: POST-TRANSLATIONAL MODIFICATIONS OF MITOCHONDRIAL PROTEINS

23-SUBG 2:00 PM
PROTEIN ACYLATION REGULATES METABOLISM. **Matthew Hirsche**

NO ABSTRACT 2:30 PM
SIRT3-MEDIATED ACETYLATION OF MITOCHONDRIAL PROTEINS. **Eric Verdin**

3:00 PM COFFEE BREAK

NO ABSTRACT 3:30 PM
PKA SIGNALING AT THE MITOCHONDRIA. **Susan Taylor**

24-SUBG 4:00 PM
REGULATION OF MITOCHONDRIAL PROTEIN FUNCTION BY PTMS DURING ACUTE AND CHRONIC NUTRIENT STRESS. **David Pagliarini**

NO ABSTRACT 4:30 PM
CARDIAC-MITOCHONDRIA: NUTRIENT SENSORS FOR REDOX-DRIVEN METABOLIC REPROGRAMMING. **Luke Szweda**

5:20 PM SUBGROUP BUSINESS MEETING

7:00 PM SUBGROUP DINNER

10:30 AM–7:00 PM, ROOM 135

Subgroup Intrinsically Disordered Proteins

Subgroup Chair

Ashok Deniz, Scripps Research Institute

INTRINSIC PROTEIN DISORDER: STRUCTURE AND MECHANISMS

10:30 AM SUBGROUP BUSINESS MEETING

25-SUBG 1:00 PM
FOLDING UPON BINDING—IS IT JUST A SIMPLE PROTEIN FOLDING PROBLEM? **Jane Clarke, Keynote Speaker**

26-SUBG 1:45 PM
INSIGHTS INTO THE BINDING MECHANISM OF IDPS FROM MOLECULAR SIMULATION. **Robert Best**

2:10 PM POSTDOC TALK

27-SUBG 2:25 PM
ACCESSIBLE CONFORMATIONS OF N-TERMINAL ACETYLATED ALPHA-SYNUCLEIN: IMPLICATIONS FOR FIBRIL FORMATION. **Jean Baum**

28-SUBG 2:50 PM
DIVERSE TRANSIENT STRUCTURES IN SMALL OLIGOMERS OF α -SYNUCLEIN PROBED BY SINGLE-MOLECULE FORCE SPECTROSCOPY. **Michael Woodside**

3:15 PM COFFEE BREAK

29-SUBG 3:45 PM
CONTROL OF DISORDER AND ORDER IN SIGNALING BY PROTEINS. **Richard Kriwacki**

30-SUBG 4:10 PM
NMR STUDIES OF THE FREE ENERGY LANDSCAPE OF INTRINSICALLY DISORDERED PROTEINS IN THEIR FREE AND BOUND FORMS. **Martin Blackledge**

4:35 PM POSTDOC TALK

31-SUBG 4:50 PM
LINKING INTRINSIC DISORDER TO ALLOSTERIC REGULATION IN THE NMDA RECEPTOR. **Mark Bowen**

32-SUBG 5:15 PM
DECODING SEQUENCE-ENSEMBLE RELATIONSHIPS OF IDPS. **Rohit Pappu**

7:00 PM SUBGROUP DINNER

12:00 PM–6:00 PM, ROOM 304

Subgroup Nanoscale Biophysics

Subgroup Chair

Victoria Birkeedal, Aarhus University, Denmark

33-SUBG 12:00 PM
NANOSCALE MECHANISMS UNDERLYING HIV-1 VIRAL PARTICLE ASSEMBLY AND RELEASE. **Jennifer Lippincott-Schwartz**, Prabuddha Sengupta, Antony Chen, Schuyler van Engelenburg

34-SUBG 12:30 PM
NANOPLASMONICS MEETS BIO. **Jochen Feldmann**

35-SUBG 1:00 PM
SINGLE MOLECULE FLUORESCENCE STUDIES OF PROTEIN AGGREGATES AND THEIR ROLE IN NEURODEGENERATIVE DISEASE. **David Klenerman**

36-SUBG 1:30 PM
ENGINEERING ELECTRON NANOCONDUITS TO ELECTRONICALLY INTERFACE CELLS WITH MATERIALS. **Caroline M. Ajo-Franklin**

2:00 PM COFFEE BREAK

37-SUBG 2:30 PM
ADVANCES IN LIVE CELL NANOSCOPY. **Joerg Bewersdorf**

3:00 PM STUDENT/POSTDOC HIGHLIGHT
COOPERATIVE MECHANICS OF MULTI-MOTOR AXONAL TRANSPORT REVEALED BY NOVEL NANOMANIPULATION IN LIVE NEURONS. **Praveen Chowdary** (SEE 1829-POS FOR ABSTRACT)

38-SUBG 3:15 PM
SINGLE-MOLECULE OBSERVATION IN THE DNA ORIGAMI NANOSTRUCTURES. **Hiroshi Sugiyama**

3:45 PM STUDENT/POSTDOC HIGHLIGHT
BEYOND THE SINGLE-MOLECULE LIMIT IN BIOLOGICAL IMAGING. **Duckhoe Kim** (SEE 4021-POS FOR ABSTRACT)

39-SUBG 4:00 PM
SINGLE CELL GENOME ANALYSIS. **Stephen Quake**

4:30 PM SUBGROUP BUSINESS MEETING

6:00 PM SUBGROUP DINNER

12:00 PM–7:00 PM, ROOM 300
Career Center

12:15 PM–6:00 PM, ROOM 307
**Subgroup
Biopolymers in vivo**

Subgroup Chair
Lila Gierasch, University of Massachusetts

MOLECULAR MACHINES AND HOW THEY FUNCTION INSIDE CELLS

12:15 PM SUBGROUP BUSINESS MEETING

12:55 PM INTRODUCTION BY GILAD HARAN AND JEFFREY SKOLNICK

40-SUBG 1:00 PM
THE MACHINES THAT FOLD PROTEINS IN THE EUKARYOTIC CYTOSOL. **Judith Frydman, Keynote Speaker**

41-SUBG 1:30 PM
UNEXPECTED FUNCTIONS OF THE CLP AAA⁺ UNFOLDASES. **Tania Baker**

42-SUBG 2:00 PM
COIL-COIL UNDER LOAD: STABILITY OF ESSENTIAL MACHINE COMPONENT. **Ron Elber**

2:30 PM POSTDOC TALK

2:50 PM COFFEE BREAK

43-SUBG 3:15 PM
STARLING'S LAW AT SMALL SCALE: SURPRISING SUB-CELLULAR ADAPTATION OF CARGO TRANSPORT TO OPPOSITION TO MOTION. **Steven P. Gross, J.N Babu Reddy**

3:45 PM POSTDOC TALK

44-SUBG 4:05 PM
STOCHASTIC SIMULATIONS OF CELLULAR PROCESSES: FROM SINGLE CELLS TO COLONIES. **Zaida Luthey-Schulten**

45-SUBG 4:35 PM
TRANSCRIPTION AGAINST SUPERCOILING. **Sunney Xie, Keynote Speaker**

6:00 PM SUBGROUP DINNER

1:00 PM–4:45 PM, ROOM 303
**Subgroup
Biological Fluorescence**

Subgroup Chair
Joachim Mueller, University of Minnesota

46-SUBG 1:00 PM
PROBING SPATIOTEMPORAL REGULATION OF SIGNAL TRANSDUCTION IN LIVING CELLS. **Jin Zhang**

47-SUBG 1:30 PM
IN VIVO DEEP TISSUE MULTIPHOTON MICROSCOPY. **Chris Xu**

48-SUBG 2:00 PM
FLUORESCENCE POLARIZATION AND FLUCTUATION ANALYSIS REVEALS CHANGES IN CAMKII HOLOENZYME ORGANIZATION WITH ACTIVATION AND SUBSEQUENT T-SITE INTERACTIONS. **Steven S. Vogel**

2:30 PM SUBGROUP BUSINESS MEETING

2:45 PM COFFEE BREAK

49-SUBG 3:15 PM
QUANTITATIVE SUPER-RESOLUTION IMAGING OF BIOLOGICAL PROCESSES WITH HIGH SPATIOTEMPORAL RESOLUTION. **Melike Lakadamyali**

50-SUBG 3:45 PM
IMAGING FLUORESCENCE CORRELATION SPECTROSCOPY MEASURES DYNAMICS AND STRUCTURE IN LIVE SAMPLES. **Thorsten Wohland**

4:15 PM YOUNG FLUORESCENCE INVESTIGATOR AWARD AND LECTURE

4:45 PM THE GREGORIO WEBER AWARD AND LECTURE

1:00 PM–5:05 PM, ROOM 306
**Subgroup
Mechanobiology**

Subgroup Chair
Linda Kenney, University of Illinois at Chicago

1:00 PM INTRODUCTION

51-SUBG 1:05 PM
IN VITRO CONTRACTION OF CYTOKINETIC RING DEPENDS ON MYOSIN II BUT NOT ON ACTIN DYNAMICS. **Mohan Balasubramanian**

52-SUBG 1:40 PM
SIGNALING REACTIONS ON THE MEMBRANE: THE ROLES OF FORCE, SPACE, AND TIME. **Jay Groves**

2:15 PM
LAMIN-A IS MECHANOSENSITIVE TO MATRIX STIFFNESS AND COUPLES TO THE RETINOIC ACID PATHWAY IN DIFFERENTIATION. **Irena L. Ivanovska**, Joe Swift, Dennis E. Discher (SEE 1596.2-POS FOR ABSTRACT)

2:35 PM COFFEE BREAK

54-SUBG 3:00 PM
ENVIRONMENTAL SENSING BY THE ENVZ MECHANOSENSOR. **Linda Kenney**

3:35 PM
POWER, DIRECTION, AND SYNCHRONY - MECHANICAL PROBLEMS AND SOLUTIONS FROM JUMPING LEAFHOPPER INSECTS. **Gregory P. Sutton** (SEE 3130-POS FOR ABSTRACT)

55-SUBG 3:55 PM
NONLINEAR ELASTICITY OF MUSCLE AND ITS ROLE IN MOTOR CONTROL. Neelima Sharma, **Madhusudhan Venkadesan**

NO ABSTRACT 4:30 PM
INTERPLAY BETWEEN CYTOSKELETAL HOMEOSTASIS AND TUMOR BIOLOGY. **Mary Beckerle**

5:05 PM SUBGROUP BUSINESS MEETING

1:00 PM–6:00 PM, ROOM 130/131

Subgroup Membrane Biophysics

Subgroup Chair

Henry Colecraft, Columbia University

NECESSARY (ACCESSORY) SUBUNITS OF ION CHANNELS: WHAT THEY DO AND HOW THEY DO IT

1:00 PM OPENING REMARKS

56-SUBG 1:05 PM
CHILDHOOD SWEETHEART VS LATE SUITOR: CAV CHANNEL REGULATION BY AUXILIARY BETA AND ALPHA2DELTA SUBUNITS. **Henry M. Colecraft**

57-SUBG 1:35 PM
DUAL REGULATION OF M-TYPE K⁺ CHANNELS BY AKAP79/150 SIGNALING COMPLEXES. **Mark S. Shapiro**

58-SUBG 2:05 PM
AUXILIARY-SUBUNIT-DEPENDENT MODULATION OF SLO1 BK CHANNELS THAT UNDERLIES THE HYPOTENSIVE EFFECT OF FISH OIL. **Toshinori Hoshi**

59-SUBG 2:35 PM
POWERFUL AND ANCIENT EMBRACE OF FOUR-DOMAIN VOLTAGE-GATED CHANNELS WITH CALMODULIN. **David T. Yue**, Manu Ben Johny, Paul J. Adams

3:05 PM SUBGROUP BUSINESS MEETING & COFFEE BREAK

60-SUBG 3:40 PM
SODIUM CHANNEL β 1 SUBUNITS: OVERACHIEVERS OF THE ION CHANNEL FAMILY. **Lori Isom**

61-SUBG 4:10 PM
TRIP(8B)ING UP AND DOWN HCN CHANNEL GATING AND TRAFFICKING. **Steven A. Siegelbaum**, Lei Hu, Bina Santoro

NO ABSTRACT 4:40 PM
AUXILIARY SUBUNITS ASSIST AMPA RECEPTOR. **Roger Nicoll**

5:10 PM CONCLUSION

6:00 PM COLE AWARD DINNER AND CEREMONY

1:00 PM–6:15 PM, ROOM 305

Subgroup Motility

Subgroup Co-Chairs

Stefan Diez, Technical University of Dresden, Germany
Samara Reck-Peterson, Harvard Medical School

1:00 PM INTRODUCTION

62-SUBG 1:10 PM
MOVEMENT OF SIGNALING RECEPTORS INSIDE PRIMARY CILIA. **Maxence Nachury**

63-SUBG 1:40 PM
PROBING FORCES ON NEWLY GENERATED SPINDLE MICROTUBULE MINUS-ENDS. Mary W. Elting, Christina L. Hueschen, Dylan B. Udy, **Sophie Dumont**

2:10 PM COFFEE BREAK

64-SUBG 2:30 PM
STRUCTURAL, MECHANICAL, AND BIOCHEMICAL INSIGHTS INTO THE MECHANISM OF MYOSIN FORCE SENSING. **E. Michael Ostap**, Michael J. Greenberg, Adam Zwolak, Tianming Lin, Charles V. Sindelar, Yale E. Goldman, Roberto Dominguez, Henry Shuman

65-SUBG 3:00 PM
A STRUCTURAL MODEL OF THE KINESIN-5 MECHANOCHEMICAL CYCLE. **Carolyn A. Moores**, Adeline Goulet, Jennifer Major, Yonggun Jun, Steven Gross, Steven Rosenfeld

3:30 PM SUBGROUP BUSINESS MEETING & COFFEE BREAK

66-SUBG 4:00 PM
FROM EXTENSILE MICROTUBULES BUNDLES TO SYNTHETIC CILIA AND SELF-MIXING ACTIVE GELS. **Zvonimir Dogic**

67-SUBG 4:30 PM
TUG-OF-WAR: MECHANICAL COORDINATION OF MOLECULAR MOTORS. **Stefan Klumpp**

5:00 PM COFFEE BREAK

68-SUBG 5:20 PM
MECHANISMS OF DYNEIN-DRIVEN MICROTUBULE SLIDING AND CARGO TRANSPORT. **Ronald Vale, Keynote Speaker**, Hui-Chun Cheng, Gira Bhabha, Richard McKenney, Marvin Tanenbaum, Courtney Schroeder

6:15 PM CLOSING REMARKS

1:00 PM–6:30 PM, ROOM 301

Subgroup Exocytosis & Endocytosis

Subgroup Co-Chair

Elizabeth Seward, University of Sheffield, United Kingdom

1:00 PM POSTER COMMUNICATIONS

69-SUBG 1:45 PM
EXOCYTOTIC FUSION PORE INTERMEDIATES OF DENSE-CORE VESICLES. Jernej Jorgačevski, Nina Vardjan, Ana C. Calejo, Alenka Guček, Boštjan Rituper, Ajda Flašker, Marko Kreft, **Robert Zorec**

2:15 PM COFFEE BREAK

70-SUBG 2:30 PM
DYNAMIN-CATALYZED MEMBRANE FUSION. **Sandra Schmid**

71-SUBG 3:00 PM
A NOVEL PLAYER IN EARLY BIOGENESIS OF INSULIN GRANUALS FROM TRANS-GOLGI NETWORK. Wen Du, Pingping Lv, Dongwan Cheng, Eli Song, **Tao Xu**

72-SUBG 3:30 PM
COMPLEXITY OF COMPLEXIN. **Robert Chow**

4:00 PM COFFEE BREAK

73-SUBG 4:15 PM KATZ AWARD LECTURE
NEW INSIGHTS INTO THE MOLECULAR MECHANISM OF CALCIUM-TRIGGERED SYNAPTIC VESICLE FUSION. **Axel Brunger**

5:30 PM SUBGROUP BUSINESS MEETING

6:30 PM WELCOME RECEPTION AND SUBGROUP DINNER

1:30 PM–4:00 PM, ROOM 309

Subgroup Permeation & Transport

Subgroup Chair

Dirk Gillespie, Rush University Medical Center

No ABSTRACT 1:30 PM
STRUCTURAL BASIS OF IRON PIRACY BY PATHOGENIC NEIS-SERIA. **Susan Buchanan**

2:05 PM POSTDOC RESEARCH HIGHLIGHT
ION SELECTIVITY OF AN ATP-SYNTHASE MEMBRANE ROTOR DETERMINED BY ISOTHERMAL TITRATION CALORIMETRY. **Vanessa Leone**

74-SUBG 2:30 PM
ION CONDUCTION MECHANISM OF A VIRAL PROTON CHANNEL FROM SOLID-STATE NMR. **Mei Hong**

3:05 PM STUDENT RESEARCH HIGHLIGHT
DEFINING THE CONFORMATIONAL STATE OF THE K⁺ CHANNEL SELECTIVITY FILTER DURING C-TYPE INACTIVATION. **Jared L. Ostmeyer**

75-SUBG 3:30 PM
ALL-ATOM SIMULATION OF ION PERMEATION IN SINGLE-FILE CHANNELS. **Morten Ø. Jensen**

4:00 PM SUBGROUP BUSINESS MEETING

3:00 PM–4:00 PM, ROOM 300

Career Center Workshop Networking Now: How to Maximize Success at BPS 2014

You have probably heard that you have to network, network, network to find a job or jump start your career. Meetings and conferences such as BPS 2014 provide many opportunities to network, but capitalizing on these opportunities can sometimes be a challenge. This highly interactive session will provide networking tips, techniques, strategies and practice to meet that challenge and ensure your success.

3:30 PM–4:30 PM, OUTSIDE OF ROOM 300

Undergraduate Mixer and Poster Fest

Come network with other undergraduates who are attending the meeting, socialize, and learn about their research projects. Undergraduates who are presenting posters at the meeting will be presenting their posters here as well. Limited presentation spots may be available for those who did not pre-register. Check with the Society Office in Room 120. Organized by the Education Committee.

5:00 PM–7:00 PM, LOWER NORTH LOBBY

Opening Mixer

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

5:00 PM–7:00 PM, LOWER NORTH LOBBY

Meet and Greet

Stop by the Early Careers Meet and Greet table on your way to the mixer! Members of the Early Careers Committee will be on hand to welcome first-time attendees and those attending solo, provide introductions to other newcomers and information about local San Francisco hotspots, and help interested attendees arrange self-organized dinners at nearby restaurants.

5:00 PM–7:00 PM, ROOM 111

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 gain the most from your time at the BPS 2014 San Francisco meeting.

6:00 PM–10:00 PM, HALL D

Poster Viewing

6:30 PM–7:30 PM, ROOM 302

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

During this reception, recipients of travel awards will be honored and presented with their awards by the chairs of the Education, Minority Affairs, and Professional Opportunities for Women Committees.

Speaker:

Linda Columbus, University of Virginia

Sunday, February 16, 2014

Daily Program Summary

All rooms are located in the MOSCONE CONVENTION CENTER unless noted otherwise.

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7:30 AM–8:30 AM	Postdoctoral Breakfast	Room 302
7:30 AM–5:00 PM	Registration/Exhibitor Registration	North Lobby
7:30 AM–10:00 PM	Family Room	Room 112
8:00 AM–8:45 AM	Exhibitor Presentation: FEI Company High End Microscope Platform for Multimodal Live Cell Imaging	Room 123
8:00 AM–5:30 PM	Career Center	Room 300
8:00 AM–6:00 PM	Child Care	Marriott Marquis, Pacific H, I, J
8:00 AM–6:00 PM	Undergraduate Student Lounge	Rotunda, 300 Level
8:00 AM–10:00 PM	Poster Viewing	Hall D
8:15 AM–10:15 AM	Symposium: Membrane Transport in Fatty Acid Synthesis and Obesity Co-Chairs: <i>Ana Pajor, University of California, San Diego, and Da-Neng Wang, New York University School of Medicine</i> SODIUM-DEPENDENT DICARBOXYLATE AND CITRATE TRANSPORTERS OF THE SLC13 FAMILY. <i>Ana M. Pajor</i> STRUCTURE AND MECHANISM OF A BACTERIAL SODIUM-DEPENDENT DICARBOXYLATE TRANSPORTER. <i>Da-Neng Wang</i> I'M NOT DEAD YET: FLIES AND MICE. <i>Stephen Helfand</i> IN VIVO NMR STUDIES ON THE MECHANISM OF LIPID-INDUCED INSULIN RESISTANCE IN HUMANS. <i>Gerald I. Shulman</i>	Room 134
8:15 AM–10:15 AM	Symposium: Force Generation in Cell and Tissue Networks Co-Chairs: <i>Michael Sheetz, Columbia University, and Clare Waterman, NHLBI</i> MECHANOSENSING BY TROPOMYOSIN-CONTROLLED MYOSIN CONTRACTIONS. <i>Michael Sheetz</i> MYOSIN II CONTROLS CELLULAR BRANCHING MORPHOGENESIS AND MIGRATION IN 3D BY MINIMIZING PLASMA MEMBRANE CURVATURE. <i>Clare Waterman</i> CONTRACTILITY DRIVEN SELF-ORGANIZATION OF THE ACTIN CYTOSKELETON. <i>Alexander D. Bershadsky</i> DYNAMIC ORGANIZATION OF DEVELOPING EPITHELIA. <i>Frank Julicher</i>	Room 135
8:15 AM–10:15 AM	Platform: Membrane Protein Structure, Dynamics, and Interactions	Room 130/131
8:15 AM–10:15 AM	Platform: Voltage-gated K Channels: Activation/Inactivation Mechanisms	Room 132/133
8:15 AM–10:15 AM	Platform: Protein-Lipid Interactions I	Room 303
8:15 AM–10:15 AM	Platform: Biosensors	Room 304
8:15 AM–10:15 AM	Platform: Membrane Receptors and Signal Transduction I	Room 305
8:15 AM–10:15 AM	Platform: Protein-Nucleic Acid Interactions I	Room 306
9:00 AM–10:00 AM	Career Center Workshop: Beyond the Bench: Preparing for Your Career Transition in the Life Sciences	Room 300
9:00 AM–10:30 AM	CPOW Committee Meeting	Room 122
9:00 AM–10:30 AM	Exhibitor Presentation: Forte Bio, A Division of Pall Life Sciences Developing Assays for Kinetic Characterization on the BLItz System	Room 123
10:00 AM–5:00 PM	Biomolecular Discovery Dome	Hall D
10:00 AM–5:00 PM	Exhibits	Hall D
10:15 AM–11:00 AM	Coffee Break	Hall D
10:30 AM–11:30 AM	Career Center Workshop: Career Catalyst: Understand Who You Are to Get What You Want	Room 300

10:45 AM–12:45 PM	Symposium: RNA Assemblies and DNA Origami Co-Chairs: <i>Christina Smolke, Stanford University, and Andrew Turberfield, University of Oxford, United Kingdom</i> DESIGNING SYNTHETIC REGULATORY RNAS: NEW TOOLS FOR TEMPORAL AND SPATIAL CONTROL IN BIOLOGICAL SYSTEMS. <i>Christina Smolke</i> MOLECULAR MACHINERY FROM DNA: SYNTHETIC BIOLOGY FROM THE BOTTOM UP. <i>Andrew Turberfield</i> STRUCTURAL EVOLUTION OF RNA SELF-ASSEMBLY. <i>Luc Jaeger</i> DYNAMIC DNA ORIGAMI-BASED NANOPARTICLE ASSEMBLIES. <i>Tim Liedl</i>	Room 134
10:45 AM–12:45 PM	Symposium: New and Notable Chair: <i>Robert Nakamoto, University of Virginia Health Science Center</i> STRUCTURE OF THE CRISPR RNA-GUIDED SURVEILLANCE COMPLEX FROM THE ADAPTIVE IMMUNE SYSTEM IN ESCHERICHIA COLI. <i>Blake Wiedenhef</i> ELUCIDATION OF FILAMENTOUS STRUCTURES IN IMMUNE SIGNALING. <i>Hao Wu</i> HIGH THROUGHPUT 3D PALM IMAGING ELUCIDATES MECHANISMS OF BACTERIAL CELL DIVISION. <i>Suliana Manley</i> CHROMOSOME TERRITORIES SPATIALLY REORGANISE DURING DNA-DAMAGE RESPONSE IN MAMMALIAN NUCLEI. <i>Basuthkar Rao</i> MYOSIN II FUNCTIONS AS A DIRECT MECHANOSENSOR FOR INTERCELLULAR INVASION DURING CELL-CELL FUSION. <i>Elizabeth Chen</i> STEROL BINDING CONTROLS PARTITIONING OF THE AMYLOID PRECURSOR C99 PROTEIN BETWEEN ORDERED AND DISORDERED MEMBRANES. <i>Anne Kenworthy</i> STRUCTURAL INSIGHTS INTO TRP CHANNEL ACTIVATION. <i>Erhu Cao</i>	Room 135
10:45 AM–12:45 PM	Platform: Optical Microscopy and Super Resolution Imaging I	Room 130/131
10:45 AM–12:45 PM	Platform: Protein Gymnastics of Large-Scale Structural Rearrangements	Room 132/133
10:45 AM–12:45 PM	Platform: Bioenergetic Processes in Bacteria, Chloroplasts, and Mitochondria	Room 303
10:45 AM–12:45 PM	Platform: Ligand-gated Channels I	Room 304
10:45 AM–12:45 PM	Platform: Exocytosis and Endocytosis	Room 305
10:45 AM–12:45 PM	Platform: Cardiac Muscle I	Room 306
11:00 AM–12:00 PM	International Relations Committee Meeting	Room 122
11:00 AM–12:30 PM	Exhibitor Presentation: Molecular Devices, LLC Investigating Use-Dependent Inhibition of Ion Channels on Automated Electrophysiology Systems including the IonWorks Barracuda® Instrument and the IonFlux™ Benchtop Reader	Room 123
12:00 PM–1:00 PM	Career Center Workshop: Selling Yourself to the Life Sciences Industry	Room 300
12:00 PM–1:00 PM	International Travel Awardee Luncheon	Room 121
12:00 PM–2:00 PM	Mid-Career Interactive Forum: The Art and Perils of Networking	Room 302
12:45 PM–2:15 PM	Public Affairs Committee Meeting	Room 122
1:00 PM–2:30 PM	Exhibitor Presentation: KinTek New Advances in Fitting Kinetic and Equilibrium Data by Simulation	Room 123
1:00 PM–2:30 PM	Moving on from Your Postdoc Position: Negotiating the Transition	Room 307
1:45 PM–3:00 PM	Snack Break	Hall D
1:45 PM–3:45 PM	Poster Presentations and Late Posters	Hall D
2:00 PM–3:30 PM	Teaching Science Like We Do Science: Integration of Research and Education Workshop	Room 310
2:15 PM–3:30 PM	Wiki-Edit 2014 Contest Kick-Off: The Importance of Open License Media to Our Science	Room 309
2:30 PM–3:30 PM	Career Center Workshop: Networking Now: How to Maximize Success at BPS 2014	Room 300
2:30 PM–4:00 PM	Funding: If Not from Federal Agencies, from Where?	Room 301
3:00 PM–4:30 PM	Exhibitor Presentation: Nanosurf, Inc. Development of Automation and Nanofluidics to Extend Applications of Atomic Force Microscopy	Room 123
3:30 PM–4:30 PM	Early Careers Committee Meeting	Room 122
4:00 PM–5:00 PM	Career Center Workshop: Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)	Room 300

4:00 PM–6:00 PM	<p>Symposium: Cellular Stress, Protein Folding, and Disease Co-Chairs: <i>Judy Kim, University of California, San Diego, and Conner Sandefur, University of North Carolina at Chapel Hill</i></p> <p>SPECTROSCOPIC STUDIES OF MEMBRANE PROTEIN FOLDING: CHANGES IN HYDRATION. <i>Judy Kim</i> PROTEIN INTERACTIONS AND TRANSITION TIMES THAT INFLUENCE THE PATHOGENESIS OF PROTEIN FOLDING DISEASES. <i>Santiago Schnell</i> POST-TRANSLATIONAL MODIFICATIONS PROMOTE FORMATION OF SOD1 OLIGOMERS WITH POTENTIAL TOXICITY IN ALS. <i>Nikolay V. Dokholyan</i> CELL STRESS AND PROTEOSTASIS NETWORKS IN BIOLOGY, AGING, AND DISEASE. <i>Richard Morimoto</i></p>	Room 134
4:00 PM–6:00 PM	<p>Symposium: Celebrating 100 Years of Crystallography: X-Rays Are Photons Too Co-Chairs: <i>Gregory Petsko, Brandeis University, and Jane Richardson, Duke University</i></p> <p>CRYSTALLOGRAPHY - ENERGETICALLY INNOVATIVE AT 100. <i>Jane S. Richardson</i> CRYSTAL STRUCTURES OF ACTIVATED G-PROTEIN COUPLED RECEPTORS. <i>William Weis</i> COMBINING CRYSTALLOGRAPHIC AND STRUCTURE-MODELING APPROACHES IN MACROMOLECULAR CRYSTALLOGRAPHY. <i>Thomas C. Terwilliger</i> STRUCTURES OF THE UNIVERSAL TRANSLATOR, THE RIBOSOME. <i>Jamie H. D. Cate</i> XFELS FOR IMAGING MOLECULAR DYNAMICS. <i>John Spence</i> THE NEXT 100 YEARS OF CRYSTALLOGRAPHY: HOW THE HECK SHOULD I KNOW? <i>Gregory A. Petsko</i></p>	Room 135
4:00 PM–6:00 PM	<p>Symposium: Liquid Protein Assemblies in Spatial Organization and Ultrasensitive Signaling in Cells Co-Chairs: <i>Julie Forman-Kay, Hospital for Sick Children, Canada, and Tanja Mittag, St. Jude Children's Research Hospital</i></p> <p>PHASE SEPARATION OF DISORDERED PROTEIN IN THE FORMATION OF MEMBRANE-LESS ORGANELLES. <i>Julie D. Forman-Kay</i> THE LIQUID STATE OF (ELASTOMERIC) PROTEINS. <i>Régis Pomès</i> DECODING MOLECULAR PLASTICITY UNDERLYING NUCLEOCYTOPLASMIC TRANSPORT: FROM SINGLE MOLECULES TO LARGE ASSEMBLIES. <i>Edward A. Lemke</i> PHASE SEPARATION OF MULTI-VALENT SIGNALING PROTEINS. <i>Michael K. Rosen</i></p>	Room 130/131
4:00 PM–6:00 PM	Platform: Voltage-gated Na Channels	Room 132/133
4:00 PM–6:00 PM	Platform: Molecular Dynamics I	Room 303
4:00 PM–6:00 PM	Platform: Assemblies and Aggregates	Room 304
4:00 PM–6:00 PM	Platform: Membrane Physical Chemistry I	Room 305
4:00 PM–6:00 PM	Platform: Cell Mechanics and Motility I	Room 306
5:00 PM–6:30 PM	Exhibitor Presentation: Asylum Research, an Oxford Instruments Company New blueDrive™ Photothermal Excitation for Superior AFM Tapping Mode Imaging	Room 123
5:00 PM–8:00 PM	Korean Biophysicists Meeting	Room 307
6:00 PM–7:00 PM	Biophysics Austria Mixer	Room 121
6:00 PM–7:30 PM	Biophysical Society of Canada—Travel Awards and Mixer	Room 302
6:00 PM–9:00 PM	Student Research Achievement Award (SRAA) Poster Competition	Hall D
7:00 PM–8:30 PM	Exhibitor Presentation: FEI Company Cryo-TEM: A New Era for 3D Structural Analysis of Protein Complexes	Room 123
7:30 PM–9:30 PM	<p>Workshop: Polarizable Force Fields from Biomolecular Simulations Co-Chairs: <i>Alexander MacKerell, University of Maryland, and Benoit Roux, University of Chicago</i></p> <p>DEVELOPMENT OF A POLARIZABLE FORCE FIELD FOR MACROMOLECULES BASED ON THE CLASSICAL DRUDE OSCILLATOR. <i>Alexander MacKerell</i> ION CHANNEL SIMULATION WITH EXPLICIT SOLVENT AND LIPID MEMBRANE BASED ON THE DRUDE POLARIZABLE FORCE FIELD. <i>Benoit Roux</i> FORCEBALANCE: A SYSTEMATIC, REPRODUCIBLE, STATISTICALLY DRIVEN APPROACH TO MORE ACCURATE MOLECULAR DYNAMICS MODELS. <i>Vijay Pande</i> ATOMISTIC AND COARSE-GRAINED MODELS FOR BIOMOLECULAR SIMULATIONS. <i>Teresa Head-Gordon</i></p>	Room 134

<p>7:30 PM-9:30 PM</p>	<p>Workshop: Single Molecule Dynamics Using FRET/LRET Co-Chairs: <i>Irina Gopich, NIDDK, NIH, and Achilles Kapanidis, University of Oxford, United Kingdom</i></p> <p>THEORY OF SINGLE-MOLECULE PHOTON SEQUENCES. <i>Irina V. Gopich</i> TRANSITION-PATH TIMES IN PROTEIN FOLDING FROM SINGLE-MOLECULE FRET. <i>Hoi Sung Chung</i></p> <p>NEW FRET METHODS FOR STUDYING PROCESSING OF NUCLEIC ACIDS BY PROTEIN MACHINES. <i>Achilles Kapanidis</i></p> <p>SINGLE MOLECULE FOUR COLOR FRET REVEALS THE MECHANISM OF AN ATP DRIVEN MULTICOMPONENT MOTOR. <i>Thorsten Hugel</i></p>	<p>Room 135</p>
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Sunday, February 16

7:30 AM–8:30 AM, ROOM 302
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. Members of the Early Careers Committee will discuss careers in industry. They will also be available to answer questions about how the Committee serves postdocs in the biophysical community and to recruit new Committee members. Limited to the first 100 attendees.

Speakers:

Andrew Whitley, HORIBA Instruments, Inc.

Avia Rosenhouse-Dantsker, University of Illinois at Chicago

7:30 AM–5:00 PM, NORTH LOBBY
Registration/Exhibitor Registration

7:30 AM–10:00 PM, ROOM 112
Family Room

8:00 AM–8:45 AM, ROOM 123
**Exhibitor Presentation
FEI Company**

High End Microscope Platform for Multimodal Live Cell Imaging

Ultimately, the secrets of life can only be studied in the living stage - dynamic processes have to be followed in space and time in living cells to fully understand their interplay. Successful live cell imaging experiments require minimizing the phototoxicity while the acquisition speed has to match the dynamics of the process to be studied. Especially on rare samples, extraction of the highest possible amount of data from a single experiment is needed.

The iMIC, our digital fluorescence microscope, has been optimized to meet the challenges of live cell imaging. It offers fast measurement at best sensitivity and minimal bleaching. Depending on the sample and the process to be studied, a variety of specialized microscopy techniques can be chosen to optimize the result. Fast wide-field imaging, spinning disc confocal, FRAP and FRET can be combined in one flexible setup and used on the same sample. Moreover FEI's unprecedented solution for TIRF imaging makes the iMIC an even more valuable instrument.

TIRF is the way to get superior Z resolution using affordable laser and camera technology. However, constant need for realignment and inhomogeneous excitation have been drawbacks of this technology, especially for quantitative measurements. Our motorized multi-point TIRF module, giving full control over penetration depth for different excitation wavelengths, automatically adjusted TIRF angle and a simple user interface, brings the application to a next level. To monitor even fast processes in living cells utilizing different modalities, switching between TIRF, epi-fluorescence or FRAP is possible within milliseconds, using our Polytrope imaging mode switch.

FEI's proprietary confocal spinning disk design excels with superior resolution and best alignment of color channels in multi-color 3D image stacks. Transmission through the disk is enhanced by micro-mirrors, not micro-lenses. This concept allows us to achieve perfect achromatic correction in the wavelength range of 405 to 700nm.

Most imaging techniques can also be combined with our two-photon microscopy solution. Based on the renowned digital Yanus laser scanner and GaAsP photomultipliers with large sensitive surface, the two-photon implementation yields very large fields of view with perfect resolution corner to corner.

Presenters:

Meike Pedersen, Product Marketing Manager, FEI Munich GmbH
Tilman Franke, Product Marketing Manager, FEI Munich GmbH
Gregor Heiss, Product Marketing Engineer, FEI Munich GmbH

8:00 AM–5:30 PM, ROOM 300
Career Center

8:00 AM–6:00 PM, MARRIOTT MARQUIS, PACIFIC H, I, J
Child Care

8:00 AM–6:00 PM, ROTUNDA, 300 LEVEL
Undergraduate Student Lounge

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 stop by to answer questions student attendees may have about career paths and opportunities.

8:00 AM–10:00 PM, HALL D
Poster Viewing

8:15 AM–10:15 AM, ROOM 134
Symposium

Membrane Transport in Fatty Acid Synthesis and Obesity

Co-Chairs

Ana Pajor, University of California, San Diego

Da-Neng Wang, New York University School of Medicine

76-SYMP 8:15 AM
SODIUM-DEPENDENT DICARBOXYLATE AND CITRATE TRANSPORTERS OF THE SLC13 FAMILY. **Ana M. Pajor**

77-SYMP 8:45 AM
STRUCTURE AND MECHANISM OF A BACTERIAL SODIUM-DEPENDENT DICARBOXYLATE TRANSPORTER. Romina Mancusso, **Da-Neng Wang**

78-SYMP 9:15 AM
I'M NOT DEAD YET: FLIES AND MICE. Andreas L. Birkenfeld, Varman T. Samuel, Gerald I. Shulman, Rafael De Cabo, Robert A. Renan, Chen-Tseh Zhu, **Stephen Helfand**

79-SYMP 9:45 AM
IN VIVO NMR STUDIES ON THE MECHANISM OF LIPID-INDUCED INSULIN RESISTANCE IN HUMANS. **Gerald I. Shulman**

8:15 AM–10:15 AM, ROOM 135
Symposium

Force Generation in Cell and Tissue Networks

Co-Chairs

Michael Sheetz, Columbia University

Clare Waterman, NHLBI

80-SYMP 8:15 AM
MECHANOSENSING BY TROPOMYOSIN-CONTROLLED MYOSIN CONTRACTIONS. **Michael Sheetz**

81-Symp **8:45 AM**
MYOSIN II CONTROLS CELLULAR BRANCHING
MORPHOGENESIS AND MIGRATION IN 3D BY MINIMIZING
PLASMA MEMBRANE CURVATURE. Fischer A. R, Hunter Elliot,
Clare Waterman, Gaudenz Danuser

82-Symp **9:15 AM**
CONTRACTILITY DRIVEN SELF-ORGANIZATION OF THE
ACTIN CYTOSKELETON. **Alexander D. Bershadsky**

83-Symp **9:45 AM**
DYNAMIC ORGANIZATION OF DEVELOPING EPITHELIA.
Frank Julicher

8:15 AM–10:15 AM, ROOM 130/131

Platform
**Membrane Protein Structure, Dynamics,
and Interactions**

Co-Chairs

Lumelle A. Schneeweis, Bristol-Myers Squibb
Philip Biggin, Oxford University, United Kingdom

84-PLAT **8:15 AM**
INTEGRATING THE SIGNALS: IMPLICATIONS OF CFTR NBD1
ALLOSTERY TO CYSTIC FIBROSIS. **Dawson E. Jennifer**,
Andrew Chong, Robert Vernon, Rhea Hudson, Patrick Farber,
Julie D. Forman-Kay

85-PLAT **8:30 AM**
PROBING LIGAND DYNAMICS IN MEMBRANE-BOUND
CYTOCHROME P450 3A4 TO CHARACTERIZE SUBSTRATE
ACCESS AND PRODUCT EGRESS PATHWAYS. **Javier Baylon**,
Emad Tajkhorshid

86-PLAT **8:45 AM**
CHARACTERIZATION OF CHOLESTEROL AND DRUG LIGAND
INTERACTIONS WITH TRANSLOCATOR PROTEIN 18 KDA
(TSPO) FROM *RHODOBACTER SPHAEROIDES*. **Fei Li**, Lance Valls,
Shelagh Ferguson-Miller

87-PLAT **9:00 AM**
MONITORING INTRAMEMBRANE PROTEOLYTIC CLEAVAGE
REACTIONS USING ISOTOPE-ASSISTED VIBRATIONAL
INTERROGATION OF MEMBRANE EMBEDDED (IVIBE) PROTEINS.
Mia Brown, Renee D. Jiji, Iban Ubarretxena-Bilandia, Jason W. Cooley

88-PLAT **9:15 AM**
INVESTIGATING LIGAND-MODULATION OF GPCR ACTIVATION
PATHWAYS. **Morgan Lawrenz**, Kai Kohlhoff, Diwakar Shukla,
Greg Bowman, Russ Altman, Vijay Pande

89-PLAT **9:30 AM** **EDUCATION TRAVEL AWARDEE**
CRYSTAL STRUCTURE OF MRAY, AN ESSENTIAL MEMBRANE
ENZYME FOR BACTERIAL CELL WALL SYNTHESIS.
Ben C. Chung, Jinshi Zhao, Robert Gillespie, Do Yeon Kwon,
Ziqiang Guan, Jiyong Hong, Pei Zhou, Seok-Yong Lee

90-PLAT **9:45 AM**
COMBINING MODELLING AND SITE-DIRECTED
MUTAGENESIS TO EXPLORE AGONIST BINDING TO HUMAN
OREXIN RECEPTORS. Alexander Heifetz, Oliver Barker,
G. Benjamin Morris, Richard J. Law, Mark Slack, **Philip C. Biggin**

91-PLAT **10:00 AM**
KINETIC EXCLUSION ANALYSIS (KINEXA) OF AVIDITY
ENHANCEMENT OF A MULTI-VALENT ADNECTIN
BINDING TO CLUSTERED RECEPTORS ON CHO CELLS.
Lumelle A. Schneeweis, Sandra V. Hatcher, Bryan Barnhart,
Thomas R. Glass, Lin Cheng, Benjamin Blum, Eric Lawrence,
Rolf Ryseck, Ray Camphausen, Bozena M. Abramczyk, Anthony Della Pietra,
Martin J. Corbett, Thomas McDonagh, Michael L. Doyle, James Bryson

8:15 AM–10:15 AM, ROOM 132/133

Platform
**Voltage-gated K Channels:
Activation/Inactivation Mechanisms**

Co-Chairs

Manuel Covarrubias, Jefferson Medical College of Thomas Jefferson University
Serdar Durdagi, Babcesehir University, Turkey

92-PLAT **8:15 AM**
A-TYPE KV4 CHANNEL CLOSED-STATE INACTIVATION IS
MODULATED BY THE TETRAMERIZATION DOMAIN
INTERACTING WITH AUXILIARY KCHIP4A. Yi-Quan Tang, Fan
Yang, Jingheng Zhou, Jie Zheng, **KeWei Wang**

93-PLAT **8:30 AM**
TWO-IN-ONE: ACTIVATION AND INACTIVATION AT THE
INTRACELLULAR GATE OF A KV CHANNEL. **Manuel Covarrubias**,
Jeffrey D. Fineberg

94-PLAT **8:45 AM**
DEVELOPMENT AND VALIDATION STUDIES OF UNIVERSAL
PHARMACOPHORE MODELS FOR HERG CHANNEL OPENERS.
Serdar Durdagi, Matthew Patterson, Sergei Y. Noskov

95-PLAT **9:00 AM**
N-TERMINAL REGULATION OF HERG1 K⁺ CHANNEL
DEACTIVATION. **Steven J. Thomson**, Angela Hansen,
Michael C. Sanguinetti

96-PLAT **9:15 AM**
LIPID AFFINITY TO THE VOLTAGE-GATED POTASSIUM
CHANNEL KVAP. **Elise Faure**, Christine Thompson, Rikard Blunck

97-PLAT **9:30 AM**
A STRUCTURAL DRIVEN KINETIC CYCLE FOR KCSA GATING.
Luis G. Cuello, D. Marien Cortes, Eduardo Perozo

98-PLAT **9:45 AM**
STATE-DEPENDENT CROSSLINKING IN IKS DEMONSTRATES
A CLOSED-STATE INTERACTION BETWEEN KCNE1 AT F57
AND KCNQ1 THAT INHIBITS CHANNEL OPENING.
Christopher I. Murray, Yasmeen Maurice, Jodene Eldstrom,
David Fedida

99-PLAT **10:00 AM**
MOVING GATING CHARGES THROUGH THE GATING PORE
IN A KV CHANNEL VOLTAGE-SENSOR. **Jerome J. Lacroix**,
Clark H. Hyde, Fabiana V. Campos, Francisco Bezanilla

8:15 AM–10:15 AM, ROOM 303
Platform
Protein-Lipid Interactions I

Co-Chairs

Scott Feller, Wabash College
Ka Yee Lee, University of Chicago

100-PLAT 8:15 AM
REPLICA EXCHANGE UMBRELLA SAMPLING SIMULATIONS PROVIDE INSIGHT INTO THE ROLE OF DOCOSAHEXAENOIC ACID IN MODULATING THE STABILITY OF TRANSMEMBRANE PROTEINS. Ryan Snyder, Bo Wang, Matthew Roark, **Scott E. Feller**

101-PLAT 8:30 AM
PROTON-COUPLED WATER AND HYDROGEN-BOND DYNAMICS IN CHANNELRHODOPSIN. Christopher Mielack, Coral del Val, Maria Luiza Bondar, **Ana Nicoleta Bondar**

102-PLAT 8:45 AM
APPLICATION OF THE VIRTUAL SITE TECHNIQUE TO LIPIDS IN GROMACS, HYDROGENS DEGREES OF FREEDOM REMOVAL AND PERFORMANCE INCREASE. **Bastien Loubet**, Wojciech Kopec, Himanshu Khandelia

103-PLAT 9:00 AM
MOLECULAR DETAILS OF α -SYNUCLEIN MEMBRANE ASSOCIATION REVEALED BY NEUTRON REFLECTOMETRY. **Jennifer C. Lee**, Zhiping Jiang, Sara Hess, Ryan P. McGlinchey, Thai Leong Yap, Frank Heinrich

104-PLAT 9:15 AM
UNDERSTANDING PROTEIN-MEMBRANE INTERACTIONS VIA FREE ENERGY CALCULATIONS. **Joakim P. M. Jämbeck**, Alexander P. Lyubartsev

105-PLAT 9:30 AM
A MOLECULAR MECHANISM FOR DIFFERENTIAL RECOGNITION OF MEMBRANE PHOSPHATIDYL SERINE BY THE IMMUNE REGULATORY RECEPTOR TIM4. Gregory T. Tietjen, Zhiliang Gong, Chiu-Hao Chen, Ernesto Vargas, James E. Crooks, Kathleen D. Cao, Charles T.R. Heffern, J. Michael Henderson, Benoit Roux, Mati Meron, Binhua Lin, Mark Schlossman, Theodore L. Steck, Erin J. Adams, **Ka Yee C. Lee**

106-PLAT 9:45 AM
THE POINT OF NO RETURN; 3D STRUCTURE OF BAX-MEDIATED PORES IN MEMBRANE BILAYERS. **Dorit Hanein**, Xiao-Ping Xu, Dayong Zhai, Eldar Kim, Mark Swift, John C. Reed, Niels Volkmann

107-PLAT 10:00 AM
VOLTAGE- AND CALCIUM-DEPENDENT TOXIN TRANSLOCATION ACROSS A TETHERED LIPID BILAYER. **Joel Chopineau**, Remi Veneziano, Claire Rossi, Jean-Marie Devoisselle, Alexandre Chenal, Daniel Ladant

8:15 AM–10:15 AM, ROOM 304
Platform
Biosensors

Co-Chairs

Leon Harrington, University of Oxford, United Kingdom
Mikhail Shapiro, California Institute of Technology

108-PLAT 8:15 AM
ELECTROSTATICALLY ENHANCED ASSOCIATION OF A PIM KINASE SUBSTRATE REVEALED BY STOCHASTIC DETECTION. **Leon Harrington**, Stephen Cheley, Leila T. Alexander, Stefan Knapp, Hagan Bayley

109-PLAT 8:30 AM
PROBING DNA METHYLATION IN BREAST CANCER CELL LINES USING SOLID-STATE NANOPORES. **Azadeh Bahrami**, Eric W. Lam, Tim Albrecht

110-PLAT 8:45 AM
LABEL-FREE DETECTION OF THE P53-DNA COMPLEX. **Philippa Nuttall**, Eric Lam, Tim Albrecht

111-PLAT 9:00 AM
THERMODYNAMIC CHARACTERIZATION OF PROTEINS WITH ELECTRICALLY ACTUATED DNA NANOLEVERS. **Thomas Welte**, Ralf Strasser, Frank Fischer, Wolfgang Kaiser, Ulrich Rant

112-PLAT 9:15 AM
EVALUATING INTRACELLULAR CROWDED WITH A GLYCINE-INSERTED MUTANT FLUORESCENT PROTEIN. **Takamitsu J. Morikawa**, Hiroaki Machiyama, Kazuko Okamoto, Keiko Yoshizawa, Hideaki Fujita, Taro Ichimura, Katsumi Imada, Takaharu Nagai, Toshio Yanagida, Tomonobu M. Watanabe

113-PLAT 9:30 AM
NIR FLUORESCENT PROTEINS WITH SYNTHETIC CHROMOPHORES FOR DEEP TISSUE IMAGING. **Ming Zhang**

114-PLAT 9:45 AM
GENETICALLY ENCODED GAS NANOSTRUCTURES AS BIOPHYSICALLY TUNABLE MOLECULAR REPORTERS FOR MRI AND ULTRASOUND. **Mikhail G. Shapiro**

115-PLAT 10:00 AM
LABEL-FREE OPTICAL DETECTION AND SUPER-RESOLUTION MICROSCOPY OF SINGLE PROTEINS. **Vahid Sandoghdar**, Marek Piliarik

8:15 AM–10:15 AM, ROOM 305
Platform
Membrane Receptors and Signal Transduction I

Co-Chairs

Monica Mazzolini, SISSA, Italy
Geoffrey O'Donoghue, University of California, Berkeley

116-PLAT 8:15 AM
DIRECT, SINGLE MOLECULE, CELL-BY-CELL OBSERVATION OF MOLECULAR KINETICS AND THERMODYNAMICS IN EARLY LYMPHOCYTE SIGNALING. **Geoffrey P. O'Donoghue**, Rafal Pielak, Jenny J. Lin, Jay T. Groves

117-PLAT 8:30 AM
RESTRICTED SPOTS OF LIGHT REVEAL AN EFFICACY GRADIENT OF THE PHOTOTRANSDUCTION CASCADE ALONG THE ROD OUTER SEGMENT. **Monica Mazzolini**, Laura Andolfi, Giuseppe Facchetti, Marco Lazzarino, Remo Proietti Zaccaria, Salvatore Tuccio, Johannes Treu, Claudio Altafini, Enzo Di Fabrizio, Gert Rapp, Vincent Torre

118-PLAT 8:45 AM
USING MAGNETIC PROBES TO STUDY RECEPTOR CLUSTERING IN LIVE CELLS. **Burcu Celikkol**, Alessandra Cambi, Carl G. Figdor, Vinod Subramaniam, Johannes S. Kanger

119-PLAT 9:00 AM
TOWARD SINGLE-MOLECULE IMAGING OF ELECTROPORATED BACTERIAL FLAGELLAR MOTOR PROTEINS IN MOTILE E. COLI. **Diana Di Paolo**

120-PLAT **9:15 AM**
SINGLE-MOLECULE TRACKING OF SMOOTHENED IN THE PRIMARY CILIUM. **Lucien E. Weiss**, Ljiljana Milenkovic, Steffen J. Sahl, Theodore L. Roth, Matthew P. Scott, W E. Moerner

121-PLAT **9:30 AM**
DIFFERENTIAL CLUSTERING OF SRC FAMILY KINASE ON LIPID BILAYERS REGULATES A NET PHOSPHORYLATION ACTIVITY IN A RECEPTOR-KINASE-PHOSPHATASE NETWORK. Gabriela Furlan, Li Huang, Takashi Minowa, Nobutaka Hanagata, Chiho Kataoka, **Yoshihisa Kaizuka**

122-PLAT **9:45 AM**
OPTICAL PROBING OF METABOTROPIC GLUTAMATE RECEPTOR ASSEMBLY AND COOPERATIVITY. **Josh Levitz**, Shashank Bharill, Reza Vafabakhsh, Ehud Y. Isacoff

123-PLAT **10:00 AM**
THE STRUCTURE AND OLIGOMERICITY OF THE TRANSMEMBRANE DOMAIN OF CYTOKINE RECEPTORS IS MODULATED BY THE PROTEIN/LIPID RATIO. **Katrine Bugge**, Kresten Lindorff-Larsen, Michael J. Waters, Vincent Goffin, Birthe B. Kragelund

8:15 AM–10:15 AM, ROOM 306

Platform

Protein-Nucleic Acid Interactions I

Co-Chairs

Marco Capitanio, University of Florence, Italy
Timothy Blosser, Delft University of Technology, The Netherlands

124-PLAT **8:15 AM**
PROTEIN DNA INTERACTION MEASURED WITH ULTRA FAST FORCE CLAMP OPTICAL TWEEZERS. Carina Monico, Alessia Tempestini, Francesco Vanzi, Francesco Pavone, **Marco Capitanio**

125-PLAT **8:30 AM**
MECHANICAL CHARACTERIZATION OF A FAST DNA MOTOR: SPOIIE. **Ninning Liu**, Gheorghe Chistol, Carlos Bustamante

126-PLAT **8:45 AM** INTERNATIONAL TRAVEL AWARDEE
STUDYING PROTEIN-DNA DYNAMICS AND PROTEIN UNFOLDING USING A FORCE-FREE SINGLE-MOLECULE TECHNIQUE. **Guy Nir**, Moshe Lindner, Yuval Garini

127-PLAT **9:00 AM**
MULTIPLE LAC-MEDIATED LOOPS REVEALED BY BAYESIAN STATISTICS AND TETHERED PARTICLE MOTION. **Martin Lindén**, Stephanie Johnson, Jan-Willem van de Meent, Rob Phillips, Chris Wiggins

128-PLAT **9:15 AM**
SUBSTRATE RECOGNITION AND SPECIFICITY OF DOUBLE-STRANDED RNA BINDING PROTEINS. **Lela Vukovic**, Hye Ran Koh, Sua Myong, Klaus Schulten

129-PLAT **9:30 AM**
MOLECULAR MECHANISM OF INHIBITION OF THE PKR-RNA INTERACTION BY THE INFLUENZA A VIRUS NS1 PROTEIN—A THREE COLOUR BASED FLIM-FRET APPROACH IN LIVING CELLS. **Fabian Jolmes**, Sieben Christian, Thorsten Wolff, Andreas Herrmann

130-PLAT **9:45 AM**
ELUCIDATING RESTRICTION ENDONUCLEASES REACTION MECHANISMS VIA DWELL-TIME DISTRIBUTION ANALYSIS. **Candice M. Etson**, Petar Todorov, David R. Walt

131-PLAT **10:00 AM**
DEFENSE AGAINST VIRAL ATTACK: SINGLE-MOLECULE VIEW ON A BACTERIAL ADAPTIVE IMMUNE SYSTEM. **Timothy Blosser**, Edze Westra, Luuk Loeff, Cees Dekker, Stan Brouns, Chirlmin Joo

9:00 AM–10:00 AM, ROOM 300

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.

9:00 AM–10:30 AM, ROOM 122

CPOW Committee Meeting

9:00 AM–10:30 AM, ROOM 123

Exhibitor Presentation

Forte Bio, A Division of Pall Life Sciences

Developing Assays for Kinetic Characterization on the BLItz System

The BLItz system is a simple-to-use, affordable label-free assay system capable of delivering rich insight into real-time binding interactions of antibodies and proteins. This workshop will present several case studies of how the BLItz system is being used to validate biophysical models.

As part of the workshop, learn tips and tricks for developing a kinetics assay on the BLItz system and take the opportunity to perform a hands-on demo of the system.

Presenter:

Renee Tobias, Applications Scientist, Pall ForteBio

10:00 AM–5:00 PM, HALL D

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 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 D

Exhibits

10:15 AM–11:00 AM, HALL D

Coffee Break

10:30 AM–11:30 AM, ROOM 300

Career Center Workshop Career Catalyst: Understand Who You Are to Get What You Want

Confucius said: "Learning without thought is labor lost; thought without learning is perilous." Consider investing some time in this updated self-reflection workshop to learn, think and talk about whom you are and what you want. Truly understanding yourself—your likes/dislikes, your passions, preferences, and personality quirks—can lead not only to career success but to a happy and fulfilling life. This workshop will provide tools and techniques to help you translate self-reflection into meaningful career choices.

10:45 AM–12:45 PM, ROOM 134

Symposium RNA Assemblies and DNA Origami

Co-Chairs

Christina Smolke, Stanford University

Andrew Turberfield, University of Oxford, United Kingdom

132-SYMP 10:45 AM
DESIGNING SYNTHETIC REGULATORY RNAs: NEW TOOLS FOR TEMPORAL AND SPATIAL CONTROL IN BIOLOGICAL SYSTEMS. **Christina Smolke**

133-SYMP 11:15 AM
MOLECULAR MACHINERY FROM DNA: SYNTHETIC BIOLOGY FROM THE BOTTOM UP. **Andrew J. Turberfield**

134-SYMP 11:45 AM
STRUCTURAL EVOLUTION OF RNA SELF-ASSEMBLY. **Luc Jaeger**

135-SYMP 12:15 PM
DYNAMIC DNA ORIGAMI-BASED NANOPARTICLE ASSEMBLIES. **Tim Liedl**

10:45 AM–12:45 PM, ROOM 135

Symposium New and Notable

Chair

Robert Nakamoto, University of Virginia Health Science Center

NO ABSTRACT 10:45 AM
STRUCTURE OF THE CRISPR RNA-GUIDED SURVEILLANCE COMPLEX FROM THE ADAPTIVE IMMUNE SYSTEM IN ESCHERICHIA COLI. *Blake Wiedenhef*

NO ABSTRACT 11:02 AM
ELUCIDATION OF FILAMENTOUS STRUCTURES IN IMMUNE SIGNALING. *Hao Wu*

NO ABSTRACT 11:19 AM
HIGH THROUGHPUT 3D PALM IMAGING ELUCIDATES MECHANISMS OF BACTERIAL CELL DIVISION. *Suliana Manley*

NO ABSTRACT 11:36 PM
CHROMOSOME TERRITORIES SPATIALLY REORGANISE DURING DNA-DAMAGE RESPONSE IN MAMMALIAN NUCLEI. *Basuthkar Rao*

NO ABSTRACT 11:53 PM
MYOSIN II FUNCTIONS AS A DIRECT MECHANOSENSOR FOR INTERCELLULAR INVASION DURING CELL-CELL FUSION. *Elizabeth Chen*

NO ABSTRACT 12:10 PM
STEROL BINDING CONTROLS PARTITIONING OF THE AMYLOID PRECURSOR C99 PROTEIN BETWEEN ORDERED AND DISORDERED MEMBRANES. *Anne Kenworthy*

NO ABSTRACT 12:27 PM
STRUCTURAL INSIGHTS INTO TRP CHANNEL ACTIVATION. *Erhu Cao*

10:45 AM–12:45 PM, ROOM 130/131

Platform Optical Microscopy and Super Resolution Imaging I

Co-Chairs

Don Lamb, LMU Munich, Germany

Manfred Lindau, Cornell University

136-PLAT 10:45 AM
3D REAL-TIME ORBITAL TRACKING MICROSCOPY IN ZEBRA FISH EMBRYOS. Fabian Wehnekamp, Gabriela Gabriela, Christoph Bräuchle, Thomas Misgeld, **Don C. Lamb**

137-PLAT 11:00 AM
NANOSCOPY BY FLUORESCENCE DEMODULATION AND POLARIZATION ANGLE NARROWING. **Peter J. Walla**, Nour Hafi, Matthias Grunwald, Laura Van den Heuvel, Aspelmeier Timo, Marta Zagrebelsky, Martin Korte, Axel Munk

138-PLAT 11:15 AM
CIRCADIAN METABOLIC OSCILLATIONS IN THE EPIDERMIS STEM CELLS BY FLUORESCENCE LIFETIME MICROSCOPY OF NADH IN VIVO. **Chiara Stringari**, Mikhail Geyfman, Hong Wang, Viera Crosignani, Vivek Kumar, Joseph S. Takahashi, Bogi Andersen, Enrico Gratton

139-PLAT 11:30 AM
IMAGING OF INTRACELLULAR VISCOSITY AND MEMBRANE ORDER BY NEW MOLECULAR ROTORS SUITABLE FOR PHASOR ANALYSIS OF FLUORESCENCE LIFETIME. Giovanni Signore, Gerardo Abbandonato, Antonella Battisti, Silvio Panettieri, Barbara Storti, Emanuela Jacchetti, Francesco Cardarelli, Fabio Beltram, **Ranieri Bizzarri**

140-PLAT 11:45 AM
TIME SUPER-RESOLUTION FLUORESCENCE IMAGING BY EVENT CORRELATION MICROSCOPY. **Manfred Lindau**, Qinghua Fang, Ying Zhao

141-PLAT 12:00 PM
HIGH RESOLUTION SURFACE PLASMON RESONANCE IMAGING OF FOCAL ADHESIONS IN SINGLE CELLS. **Alexander W. Peterson**, Michael Halter, Alessandro Tona, Kiran Bhadriraju, John T. Elliott, Anne L. Plant

142-PLAT 12:15 PM
CORRELATION FUNCTIONS PROVIDE A UNIVERSAL FRAMEWORK FOR QUANTITATIVE ANALYSIS OF LOCALIZATION-BASED SUPER-RESOLUTION MICROSCOPY IMAGES. **Joerg Schnitzbauer**, Xiaoyu Shi, Robert Kasper, Baohui Chen, Shijie Zhao, Daichi Kamiyama, Bo Huang

143-PLAT 12:30 PM
SUPER-RESOLUTION IMAGING OF PROTEIN-PROTEIN INTERACTIONS BY BIMOLECULAR COMPLEMENTATION OF PHOTOACTIVATABLE FLUORESCENT PROTEINS. **Antony Lee**, Alyssa B. Rosenbloom, Sang-Hyuk Lee, Carlos Bustamante

10:45 AM–12:45 PM, ROOM 132/133

Platform Protein Gymnastics of Large-Scale Structural Rearrangements

Co-Chairs

Andy LiWang, University of California, Merced

Michael Nilges, Pasteur Institute, France

144-PLAT 10:45 AM
ROBUSTNESS OF ROTARY CATALYSIS MECHANISM OF F₁-ATPASE. **Rikiya Watanabe**, Hiroyuki Noji

145-PLAT 11:00 AM
ELECTROSTATIC BASIS OF THE UNIDIRECTIONAL WALKING MOTION IN MYOSIN MOLECULAR MOTORS. **Shayantani Mukherjee**, Arie Warshel

146-PLAT 11:15 AM
DIFFERENT 3D DOMAIN-SWAPPED OLIGOMERIC CYANOVIRIN-N STRUCTURES SUGGEST TRAPPED FOLDING INTERMEDIATES. **Leonardus Koharudin**, Lin Liu, Angela M. Gronenborn

147-PLAT **11:30 AM**
STRUCTURAL BASIS OF CONFORMATIONAL TRANSITIONS INVOLVED IN PSEUDOPILUS ASSEMBLY AND STABILITY. **Michael Nilges**, Mangayarkarasi Nivaskumar, Guillaume Bouvier, Manuel Campos, Edward H. Egelman, Xiong Yu, Olivera Francetic

148-PLAT **11:45 AM**
A SINGLE INTER-DOMAIN SALT BRIDGE WITHIN THE HUMAN ARGONAUTE 2 PROTEIN CRUCIALLY AFFECTS PROTEIN FOLDING AND CONSEQUENTLY ENZYMATIC ACTIVITY. **Munishikha Kalia**, Sarah Willkomm, Jens Christian Claussen, Alexandre M.J.J. Bonvin, Tobias Restle

149-PLAT **12:00 PM**
MECHANISMS OF SUBSTRATE DEGRADATION BY ENERGY-DEPENDENT PROTEASES. **Andreas Martin**, Mary Matyskiela, Kristofer Nyquist, Gabriel Lander, Robyn Beckwith, Eric Estrin, Evan Worden

150-PLAT **12:15 PM**
STRUCTURE, DYNAMICS, EVOLUTION AND FUNCTION OF A MAJOR SCAFFOLD COMPONENT IN THE NUCLEAR PORE COMPLEX. **Seung Joong Kim**, Parthasarathy Sampathkumar, Paula Upla, William Rice, Jeremy Phillips, Benjamin Timney, Javier Fernandez-Martinez, Andrej Sali, Michael Rout, Steven Almo

151-PLAT **12:30 PM**
STRUCTURAL GYMNASTICS BY PROTEINS MAKE THE CLOCK MECHANISM GO ROUND AND ROUND. Yong-Gang Chang, Roger Tseng, William K. Myers, Jonathan Kerby, David Britt, **Andy LiWang**

10:45 AM–12:45 PM, ROOM 303

Platform
**Bioenergetic Processes in Bacteria,
Chloroplasts, and Mitochondria**

Co-Chairs
Gabriela Schlau-Cohen, Stanford University
Wang Wang, University of Washington

152-PLAT **10:45 AM**
SINGLE-MOLECULE LIVE-CELL IMAGING OF BACTERIAL RESPIRATORY COMPLEXES INDICATES OXPHOS DELOCALIZATION. **Mark Leake**

153-PLAT **11:00 AM**
CARDIOLIPINS AT THE INTERFACE OF SUPERCOMPLEXES IN THE RESPIRATORY CHAIN. **Clement Arnarez**, Siewert-Jan Marrink, Xavier Periole

154-PLAT **11:15 AM**
ELUCIDATION OF THE PHOTODYNAMICS OF SINGLE PHOTOSYNTHETIC LH2 COMPLEXES IN SOLUTION. **Gabriela S. Schlau-Cohen**, Quan Wang, June Southall, Richard J. Cogdell, W.E. Moerner

155-PLAT **11:30 AM**
MECHANISM OF WATER SPLITTING BY PHOTOSYSTEM II. **Yulia Pushkar**, Katherine Davis, Lifan Yan

156-PLAT **11:45 AM**
STRUCTURAL COUPLING OF THE EF HAND AND C-TERMINAL GTPASE DOMAINS IN THE MITOCHONDRIAL PROTEIN MIRO. **Julian Klosowiak**, Pamela Focia, Srinivas Chakravarthy, Eric Landahl, Douglas Freymann, Sarah Rice

157-PLAT **12:00 PM**
INTERACTION OF THE BAK HOMODIMER WITH THE MEMBRANE. Sreevidya Aluvila, Tirtha Mandal, **Kyoung Joon Oh**

158-PLAT **12:15 PM**
FISSION PROMOTES RESPIRATION AND ROS PRODUCTION IN INDIVIDUAL MITOCHONDRIA. **Huiliang Zhang**, Shey-Shing Sheu, Wang Wang

159-PLAT **12:30 PM**
THE CORRELATION BETWEEN UCP EXPRESSION AND CELLULAR METABOLISM. **Anne Rupprecht**, Dana Sittner, Alina Smorodchenko, Karolina E. Hilse, Rudolf Moldzio, Andrea E. M. Seiler, Anja U. Bräuer, Elena E. Pohl

10:45 AM–12:45 PM, ROOM 304

Platform
Ligand-gated Channels I

Co-Chairs
Andrew Plested, Leibniz-Institut für Molekulare Pharmakologie (FMP), Germany
Ehud Isacoff, University of California, Berkeley

160-PLAT **10:45 AM**
ENERGETIC COUPLING OF THE LIGAND BINDING DOMAIN TO PORE OPENING IN NMDA RECEPTORS. **Rashek Kazi**, Jian Dai, Melissa Daniel, Huan-Xiang Zhou, Lonnie P. Wollmuth

161-PLAT **11:00 AM**
REGULATORY IONS BOUND AT THE IGLUR LIGAND BINDING DOMAIN DIMER INTERFACE - A SHARED PROPERTY OF GLUK2 AND AVGLUR1? **Maria Musgaard**, Jack Barber, M. Khadeesh bin Imtiaz, Philip C. Biggin

162-PLAT **11:15 AM**
NMDA AND AMPA RECEPTOR LIGAND-BINDING DOMAINS EXHIBIT SUBTYPE-SPECIFIC CONFORMATIONAL PROPENSITIES. John Belcher, Yongneng Yao, Anthony Berger, Mark L. Mayer, **Albert Y. Lau**

163-PLAT **11:30 AM**
PROBING THE CHANNEL GATING OF A GLUTAMATE RECEPTOR WITH A PHOTOACTIVE UNNATURAL AMINO ACID. **Viktoria Klippenstein**, Andrew J. Plested

164-PLAT **11:45 AM**
ACTIVATION OF LIGAND BINDING DOMAINS OF AN AMPA-TYPE GLUTAMATE RECEPTOR. **Jelena Baranovic**, Miriam Chebli, Hector P. Salazar, Katja Faelber, Valentina Ghisi, Albert Y. Lau, Oliver Daumke, Andrew J R Plested

165-PLAT **12:00 PM**
PROBING THE GATING OF IONOTROPIC GLUTAMATE RECEPTORS WITH TETHERED PHOTOSWITCHABLE LIGANDS. **Andreas Reiner**, Ehud Y. Isacoff

166-PLAT **12:15 PM**
OCCUPANCY OF A SINGLE BINDING SITE IS SUFFICIENT FOR AMPAR ACTIVATION. **Indrani Bhattacharyya**, Rikard Blunck

167-PLAT **12:30 PM**
IMAGED BY CRYO-EM, ACTIVATED AND DESENSITIZED GLUA2 GLUTAMATE RECEPTORS SHOW EXTREME FLEXIBILITY. **Hideki Shigematsu**, Youshan Yang, Yangyang Yan, Katharina Duerr, Eric Gouaux, Fred J. Sigworth

10:45 AM–12:45 PM, ROOM 305

Platform Exocytosis and Endocytosis

Co-Chairs

Jenny Hinshaw, NIDDK, NIH
Diego Krapf, Colorado State University

168-PLAT 10:45 AM WITHDRAWN

169-PLAT 11:00 AM
MOLECULAR DYNAMICS SIMULATIONS OF SNARE COMPLEX UNZIPPING. **Satyan Sharma**, Manfred Lindau

170-PLAT 11:15 AM
CHOLESTEROL PROMOTES OPENING OF THE SNARE-MEDIATED FUSION PORE. **Benjamin S. Stratton**, Zhenyong Wu, Jason M. Warner, George Wei, Emma C. Wagnon, Erdem Karatekin, Ben O'Shaughnessy

171-PLAT 11:30 AM
PROTEIN MOBILITY IN SECRETORY GRANULES AND FUSION PORE EXPANSION: FACTORS AFFECTING PROTEIN SECRETION. **Annita Ngatchou-Weiss**, Mary A. Bittner, Arun Anantharam, Daniel Axelrod, Ronald W. Holz

172-PLAT 11:45 AM
NANOSTRUCTURE-INDUCED MEMBRANE CURVATURE RECRUITS ENDOCYTOSIS MACHINERY IN LIVING CELLS. **Wenting Zhao**, Lindsey Hanson, Ziliang Lin, Yi Cui, Bianxiao Cui

173-PLAT 12:00 PM
A DYNAMIN MUTANT DEFINES A SUPER-CONSTRICTED PRE-FISSION STEP. **Anna Sunborger**, Jurgen A. Heyman, Shunming Fang, Joshua S. Chappie, Jenny E. Hinshaw

174-PLAT 12:15 PM
CLATHRIN AGGREGATION BY ROTATIONAL BROWNIAN DYNAMICS. **Ioana M. Ilie**, Wouter K. den Otter, Wim J. Briels

175-PLAT 12:30 PM
QUANTIFYING THE DYNAMIC INTERACTIONS BETWEEN A CLATHRIN-COATED PIT AND CARGO MOLECULES. Aubrey V. Weigel, Michael M. Tamkun, **Diego Krapf**

10:45 AM–12:45 PM, ROOM 306

Platform Cardiac Muscle I

Co-Chairs

Steven Schwartz, University of Arizona
Gerrie Farman, Boston University

176-PLAT 10:45 AM
A REVISED ATOMISTIC MODEL OF THE CARDIAC THIN FILAMENT AND APPLICATION TO A SPECIFIC DISEASE CAUSING MUTATION. **Michael R. Williams**, Jil Tardiff, Steven Schwartz

177-PLAT 11:00 AM
MOLECULAR MECHANISM FOR THE REGULATION OF CARDIAC MUSCLE CONTRACTION BY TROPONIN. Ivanka Sevrieva, Andrea Knowles, **Yin-Biao Sun**

178-PLAT 11:15 AM
CALCIUM-SENSITIVE DYNAMIC EFFECTS OF TROPONIN'S TNI INHIBITORY REGION. Julie Mouannes Kozaili, Devanand Kowlessur, **Larry S. Tobacman**

179-PLAT 11:30 AM
DYNAMIC EFFECTS OF TROPOMYOSIN D230N MUTATION AND FETAL TROPONIN T ON THE TROPOMYOSIN OVERLAP REGION. **Mark T. McConnell**, Jayant J. Jayasundar, Lauren Grinspan, Ofer Z. Fass, Benjamin Schwartz, Jil C. Tardiff

180-PLAT 11:45 AM
IN SITU STRUCTURAL CHANGES IN THICK AND THIN FILAMENTS OF CARDIAC MUSCLE INDUCED BY FRAGMENTS OF MYOSIN BINDING PROTEIN C (MYBP-C). **Thomas Kampourakis**, Yin-Biao Sun, Mathias Gautel, Malcolm Irving

181-PLAT 12:00 PM
IMPACT OF FAMILIAL HYPERTROPHIC CARDIOMYOPATHY-LINKED MUTATIONS IN THE N-TERMINUS OF THE MYOSIN REGULATORY LIGHT CHAIN ON THE CALCIUM BASED MOTILITY. **Gerrie P. Farman**, Priya Mutha, Katarzyna Kazmierczak, Danuta Szczesna-Cordary, Jeffery R. Moore

182-PLAT 12:15 PM
PHOSPHORYLATION MODULATES THE DYNAMICS OF THE N-TERMINAL TAIL IN CARDIAC RLC. **Arianna Fornili**, Elena Rostkova, Franca Fraternali, Mark Pfuhl

183-PLAT 12:30 PM
FAMILIAL HYPERTROPHIC CARDIOMYOPATHY-LINKED MUTATION (K104E) IN THE MYOSIN REGULATORY LIGHT CHAIN AFFECTS SARCOMERIC STRUCTURE AND FUNCTION IN TG-MICE. **Wenrui Huang**, Jingsheng Liang, Katarzyna Kazmierczak, Priya Muthu, Chen-Ching Yuan, Ana I. Rojas, Divya Duggal, Julian Borejdo, Thomas C. Irving, Danuta Szczesna-Cordary

11:00 AM–12:00 PM, ROOM 122

International Relations Committee Meeting

11:00 AM–12:30 PM, ROOM 123

Exhibitor Presentation Molecular Devices, LLC

Investigating Use-Dependent Inhibition of Ion Channels on Automated Electrophysiology Systems including the IonWorks Barracuda® Instrument and the IonFlux™ Benchtop Reader

Use-dependent inhibition of ion channels by potential drug candidates is an important aspect to investigate for many drug classes. Use-dependent drugs specifically target ion channels in cells that are more electrically active. For example, a drug targeting pain that is more potent to Na⁺ channels in neurons actively firing action potentials is a better drug candidate. Data will be presented to demonstrate the ability of automated electrophysiology systems to study the use-dependence block of Na⁺ channel targets. Tetracaine, lidocaine, and TTX exhibit very different behavior in terms of their use-dependent blockage. We will demonstrate the ability of the instrumentation 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 blockage of current. Data from a separate study will also be presented that demonstrate blockage and enhancement of NaV1.5 currents by various peptide toxins. Both sets of 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

12:00 PM–1:00 PM, ROOM 300

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.

12:00 PM–1:00 PM, ROOM 121

International Travel Awardee Luncheon

Recipients of the 2014 International Travel Awards will be recognized during this luncheon. This event is hosted by the International Relations Committee.

12:00 PM–2:00 PM, ROOM 302

Mid-Career Interactive Forum: The Art and Perils of Networking

This event, sponsored by the Committee for Professional Opportunities for Women, will accelerate and expand the professional impact of mid-career biophysicists. How can you continue to develop your career AFTER having secured a job and AFTER having established a lab? Learn how to increase your impact and to widen your scientific influence beyond the bench. This year's discussion will center on the value of a supportive professional network and will include dos and don'ts of professional interactions. The goal is for you to begin to add to your existing network advisors, mentors, and advocates for the "next step," which can be serving on grant review panels and editorial boards or becoming more involved with decision-making at your institution and in professional societies. Experienced panelists, including department chairs, society leaders and senior editors will each speak briefly about their own experiences, leading into an extended question-and-answer exchange with the audience. The session will close with small-group and one-on-one interactions aimed to offer more individualized suggestions for career advancement and opportunities for networking. Pre-registration was required for lunch. If you are interested in attending and did not register, you are welcome to participate on a space-available basis.

Speakers:

Alfred L. George, Jr., Vanderbilt University School of Medicine
Ivet Bahar, University of Pittsburgh
Harel Weinstein, Weill Cornell Medical College

12:45 PM–2:15 PM, ROOM 122

Public Affairs Committee Meeting

1:00 PM–2:30 PM, ROOM 123

Exhibitor Presentation KinTek

New Advances in Fitting Kinetic and Equilibrium Data by Simulation

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 the need to derive equations; however, it also requires an understanding of the kinetics and critical thought to avoid overly complex models.

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. New advances in the software allow fitting kinetic data from single molecule experiments and families of curves can be

fit simultaneously 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). Moreover, all experiments can be fit simultaneously.

Presenters:

Kenneth A. Johnson, President, KinTek Corporation
Roger Williams, Professor of Biochemistry, University of Texas at Austin

1:00 PM–2:30 PM, ROOM 307

Moving on from Your Postdoc Position Negotiating the Transition

This popular session, hosted by the Early Careers Committee, will provide advice on how to find a permanent position after your postdoctoral training.

Speakers:

Seth Robia, Loyola University, Chicago
Stuart Campbell, Yale University
Ravi Balijepalli, University of Wisconsin School of Medicine and Public Health
Marcos Sotomayor, The Ohio State University

1:45 PM–3:00 PM, HALL D

Snack Break

1:45 PM–3:45 PM, HALL D

Poster Presentations and Late Posters

(For a complete listing of regular Sunday Poster Presentations, see page 26.)

The list of Sunday Late Posters is in the Program addendum.

Posters will be on display all day long. Authors with odd-numbered boards will present from 1:45 PM–2:45 PM, and those with even-numbered boards will present from 2:45 PM–3:45 PM. Additional hours (day or evening) may be posted by the authors as desired. Paper may also be left on the board so that visitors may request an appointment.

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.

2:00 PM–3:30 PM, ROOM 310

Teaching Science Like We Do Science: Integration of Research and Education Workshop

This workshop is designed to highlight undergraduate STEM education initiatives at the national level. The presentation and discussion will focus on both resources available for faculty to aid them in developing effective practices and funding opportunities for faculty interested in bringing curricular and instructional change to their courses.

Speakers:

Terry Woodin, NSF
Melissa McCartney, Science in the Classroom, AAAS

2:15 PM–3:30 PM, ROOM 309

Wiki-Edit 2014 Contest Kick-off: The Importance of Open License Media to Our Science

Interested in learning more about the need for open-license media, and perhaps entering the Society's second annual wiki-edit contest to do your part for biophysics, on the medium we all use? Come to this demonstration and discussion for contest entrants and anyone curious about the do's and don'ts of posting images and the broader impact of such

activities. The 2013 wiki-edit contest winners will also be introduced at the session. Register your username, do an edit, and get a WikiProject Biophysics button to wear!

Speakers:

Daniel Mietchen, WikiProject Open Access and Museum für Naturkunde, Berlin (User: Daniel Mietchen)
Jane Richardson, Duke University, BPS Past President and addicted wiki editor (User: Dcrjsr)

2:30 PM–3:30 PM, ROOM 300

**Career Center Workshop
Networking Now: How to Maximize Success
at BPS 2014**

You have probably heard that you have to network, network, network to find a job or jump start your career. Meetings and conferences such as BPS 2014 provide many opportunities to network, but capitalizing on these opportunities can sometimes be a challenge. This highly interactive session will provide networking tips, techniques, strategies and practice to meet that challenge and ensure your success.

2:30 PM–4:00 PM, ROOM 301

**Funding
If Not from Federal Agencies, from Where?**

Come hear experts representing foundations, nonprofits, universities, and business discuss non-federal sources of research funding, how to pursue them, and whether they present a viable substitute for decreased government funding sources. The panelists will also discuss if and how their funding strategies have changed in response to federal funding, how scientists can effectively forge relationships with industry and foundations, and how universities are responding to the changing funding landscape. This session is sponsored by the Public Affairs Committee.

Speakers:

Robert Conn, President, The Kavli Foundation
Bill Balke, University of California, San Francisco, and American Heart Association
Mark Adams, Scientific Director, J. Craig Venter Institute

3:00 PM–4:30 PM, ROOM 123

**Exhibitor Presentation
Nanosurf, Inc.**

Development of Automation and Nanofluidics to Extend Applications of Atomic Force Microscopy

In an effort to extend the range of atomic force microscope (AFM) applications, we have developed automation routines for nanomechanical analysis of large uneven samples and incorporated nanofluidics for nanomanipulation experiments.

We will present details of a method that has been developed to compensate for the Z-range limitation and to automate the data collection over large sample areas. To compensate for large surface corrugations on biologically relevant samples, customized hardware and software algorithms for automated leveling have been developed and implemented. This method consists of a patented vertical alignment system, which is activated whenever the Z piezo reaches its limit (i.e., max. extension or max. retraction). This method allows for AFM investigation to proceed uninterrupted and error-free over corrugated surfaces.

FluidFM combines the positional accuracy and force sensitivity of AFM with the unique possibilities of nanofluidics to provide a whole new level of control and possibilities in nanomanipulations and analysis. The FluidFM system includes a fully integrated AFM, pressure controller and hollow microfabricated cantilevers. The integrative nature of its touchscreen-based control software brings together optical, force, pressure, and position control in one place. The entire system is easy to use and allows objects and experimental settings to be manipulated via on-screen interactions. Moving a sample or indicating

measurement positions has never been more intuitive. Details of several different applications of FluidFM in cell biology will be presented including pick and place of single cells, single cell force spectroscopy, cellular injection and micropatterning under liquids.

Presenters:

Marko Loparic, Research Associate, Biozentrum and the Swiss Nanoscience Institute, University of Basel
Saju Nettikadan, General Manager, Nanosurf, Inc.

3:30 PM–4:30 PM, ROOM 122

Early Careers Committee Meeting

4:00 PM–5:00 PM, ROOM 300

**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.

4:00 PM–6:00 PM, ROOM 134

**Symposium
Cellular Stress, Protein Folding, and Disease**

Co-Chairs

Judy Kim, University of California, San Diego
Conner Sandefur, University of North Carolina at Chapel Hill

184-SYMP 4:00 PM

SPECTROSCOPIC STUDIES OF MEMBRANE PROTEIN FOLDING: CHANGES IN HYDRATION. **Judy Kim**

185-SYMP 4:30 PM

PROTEIN INTERACTIONS AND TRANSITION TIMES THAT INFLUENCE THE PATHOGENESIS OF PROTEIN FOLDING DISEASES. **Santiago Schnell**

186-SYMP 5:00 PM

POST-TRANSLATIONAL MODIFICATIONS PROMOTE FORMATION OF SOD1 OLIGOMERS WITH POTENTIAL TOXICITY IN ALS. **Nikolay V. Dokholyan**, Rachel L. Redler, Elizabeth A. Proctor, Feng V. Ding, Kyle Wilcox, Michael Caplow

187-SYMP 5:30 PM

CELL STRESS AND PROTEOSTASIS NETWORKS IN BIOLOGY, AGING, AND DISEASE. **Richard Morimoto**

4:00 PM–6:00 PM, ROOM 135

**Symposium
Celebrating 100 Years of Crystallography:
X-Rays Are Photons Too**

Co-Chairs

Gregory Petsko, Brandeis University
Jane Richardson, Duke University

188-SYMP 4:00 PM

CRYSTALLOGRAPHY-ENERGETICALLY INNOVATIVE AT 100. **Jane S. Richardson**

189-SYMP 4:20 PM
CRYSTAL STRUCTURES OF ACTIVATED G-PROTEIN COUPLED RECEPTORS. **William Weis**

190-SYMP 4:40 PM
COMBINING CRYSTALLOGRAPHIC AND STRUCTURE-MODELING APPROACHES IN MACROMOLECULAR CRYSTALLOGRAPHY. **Thomas C. Terwilliger**, Frank DiMaio, Randy J. Read, David Baker, Axel T. Brunger, Paul D. Adams, Pavel V. Afonine, Li-Wei Hung

191-SYMP 5:00 PM
STRUCTURES OF THE UNIVERSAL TRANSLATOR, THE RIBOSOME. **Jamie H. D. Cate**

192-SYMP 5:20 PM
XFELS FOR IMAGING MOLECULAR DYNAMICS. **John Spence**

193-SYMP 5:40 PM
THE NEXT 100 YEARS OF CRYSTALLOGRAPHY: HOW THE HECK SHOULD I KNOW? **Gregory A. Petsko**

4:00 PM–6:00 PM, ROOM 130/131

Symposium Liquid Protein Assemblies in Spatial Organization and Ultrasensitive Signaling in Cells

Co-Chairs

Julie Forman-Kay, Hospital for Sick Children, Canada

Tanja Mittag, St. Jude Children's Research Hospital

194-SYMP 4:00 PM
PHASE SEPARATION OF DISORDERED PROTEIN IN THE FORMATION OF MEMBRANE-LESS ORGANELLES. Timothy J. Nott, Patrick Farber, Evangelia Petsalakis, Dylan Jervis, Andrew J. Baldwin, **Julie D. Forman-Kay**

195-SYMP 4:30 PM
THE LIQUID STATE OF (ELASTOMERIC) PROTEINS. **Régis Pomès**

196-SYMP 5:00 PM
DECODING MOLECULAR PLASTICITY UNDERLYING NUCLEOCYTOPLASMIC TRANSPORT: FROM SINGLE MOLECULES TO LARGE ASSEMBLIES. **Edward A. Lemke**

197-SYMP 5:30 PM
PHASE SEPARATION OF MULTI-VALENT SIGNALING PROTEINS. **Michael K. Rosen**

4:00 PM–6:00 PM, ROOM 132/133

Platform Voltage-gated Na Channels

Co-Chairs

Bonnie Wallace, Birkbeck College, United Kingdom

Jonathan Silva, Washington University in St. Louis

198-PLAT 4:00 PM
STRUCTURE/FUNCTION INSIGHTS INTO EUKARYOTIC CHANNEL BLOCKER BINDING SITES IN A PROKARYOTIC SODIUM CHANNEL. **Claire Bagnéris**, Claire E. Naylor, Paul G. DeCaen, David E. Clapham, David Pryde, B. A. Wallace

199-PLAT 4:15 PM
INTRACELLULAR CALCIUM ATTENUATES PERSISTENT CURRENT CONDUCTED BY MUTANT HUMAN CARDIAC SODIUM CHANNELS IN LONG-QT SYNDROME. **Franck Potet**, Thomas M. Beckermann, Jennifer D. Kunic, Alfred L. George

200-PLAT 4:30 PM
SINGLE-PARTICLE TRACKING PALM OF NAV1.6 IN HIPPOCAMPAL NEURONS DEMONSTRATES UNIQUE SUBCELLULAR DIFFUSION LANDSCAPES. **Elizabeth J. Akin**, Kristen Brown, Sanaz Sadegh, Aubrey V. Weigel, Jean-Baptiste Masson, Diego Krapf, Michael M. Tamkun

201-PLAT 4:45 PM
 $\beta 4$ MODULATES $Na_v 1.2$ TOXIN PHARMACOLOGY. **John M. Gilchrist**, Samir Das, Filip Van Petegem, Frank Bosmans

202-PLAT 5:00 PM
DISTINCT VOLTAGE SENSOR GATING OF CARDIAC Na_v CHANNELS. **Zoltan Varga**, Angela R. Schubert, Alexandra B. Asaro, Jianmin Cui, Mark A. Zaydman, Colin G. Nichols, Jonathan R. Silva

203-PLAT 5:15 PM
CRYSTAL STRUCTURE OF THE $Na_v\beta 4$ EXTRACELLULAR DOMAIN. **Samir Das**, John Gilchrist, Frank Bosmans, Filip Van Petegem

204-PLAT 5:30 PM
MOLECULAR DYNAMICS STUDIES OF ION CONDUCTION IN A PROKARYOTIC CHANNEL. **Karen M. Callahan**, Benoit Roux

205-PLAT 5:45 PM
PHOSPHOPROTEOMIC IDENTIFICATION OF CAMKII- AND HEART FAILURE-DEPENDENT PHOSPHORYLATION SITES ON THE NATIVE CARDIAC NAV1.5 CHANNEL PROTEIN. Fabien Cohan, Sophie Burel, Cheryl F. Lichti, Joan H. Brown, Flavien Charpentier, Jeanne M. Nerbonne, Reid R. Townsend, Lars M. Maier, **Céline Marionneau**

4:00 PM–6:00 PM, ROOM 303

Platform Molecular Dynamics I

Co-Chairs

Cameron Mura, University of Virginia

Karissa Sanbonmatsu, Los Alamos National Laboratory

206-PLAT 4:00 PM
CONFORMATIONAL DYNAMICS DURING GPCR - G PROTEIN COUPLING. **Alexander S. Rose**, Matthias Elgeti, Patrick Scheerer, Ulrich Zacchariae, Martin Heck, Franz J. Bartl, Helmut Grubmüller, Klaus P. Hofmann, Peter W. Hildebrand

207-PLAT 4:15 PM
MODELING AND INHIBITOR DESIGN OF Ca^{2+} -INDEPENDENT PHOSPHOLIPASE A2. **Denis Bucher**, Varnavas D. Mouchlis, Edward A. Dennis, J Andrew McCammon

208-PLAT 4:30 PM
MEMBRANE DEPENDENCE OF THE MECHANOSENSITIVE CHANNEL OF LARGE CONDUCTANCE. **Helgi I. Ingólfsson**, Clement Arnarez, Neeraj Kumar, Martin Walko, Herman J. C. Berendsen, Armağan Koçer, Siewert J. Marrink

209-PLAT 4:45 PM
UNDERSTANDING THE SPECIAL PROPERTIES OF [NIFESE] HYDROGENASES THROUGH THE USE OF COMPUTATIONAL METHODOLOGIES. **Carla SA Baltazar**, Victor H. Teixeira, Cláudio M. Soares

210-PLAT 5:00 PM
STRUCTURAL INSIGHTS ON THE STATHERIN N-TERMINAL BINDING DOMAIN IN THE ADSORBED STATE. **Michael Deighan**, Tobias Weidner, Jim Pfaendtner

211-PLAT 5:15 PM
UNDERSTANDING THE MOLECULAR MECHANISMS BY WHICH ALLOSTERIC LIGANDS INHIBIT THE RNA POLYMERASE FROM THE HEPATITIS C VIRUS. **Brittney Davis**, Ian Thorpe

212-PLAT 5:30 PM
MOLECULAR DYNAMICS SIMULATIONS OF RIBOSOMES: INTEGRATING THEORY AND EXPERIMENT. Serdal Kirmizialtin, **Karissa Y. Sanbonmatsu**

213-PLAT 5:45 PM
RESOLVING THE MECHANISMS OF BACTERIAL RESISTANCE TO MACROLIDE ANTIBIOTICS. **Anna Pavlova**, James C. Gumbart

4:00 PM–6:00 PM, ROOM 304

Platform Assemblies and Aggregates

Co-Chairs

Liming Ying, Imperial College London, United Kingdom
Astrid Graslund, Stockholm University, Sweden

214-PLAT 4:00 PM
KINETICS OF METAL AMYLOID-BETA BINDING AND EFFICACY OF LIGANDS TARGETING METAL AMYLOID-BETA INTERACTIONS. Thomas Branch, Martin Evans, Mauricio Barahona, **Liming Ying**

215-PLAT 4:15 PM
AMYLOIDS. HOW TO STUDY THEM WITH TWO-DIMENSIONAL CORRELATION SPECTROSCOPY. **Jose Luis R. Arrondo**, Jon Ander Nieto, Igor De la Arada

216-PLAT 4:30 PM
SURFACE-CATALYZED NUCLEATION OF AMYLOIDOGENIC PEPTIDES BY PEPTIDE-SPECIFIC TEMPLATES. **Marisa Rubio**, Andrew D. Miranker

217-PLAT 4:45 PM
FORMATION OF DYNAMIC SOLUBLE SURFACTANT-INDUCED AMYLOID BETA PEPTIDE AGGREGATION INTERMEDIATES. Axel Abelein, Jorn D. Kaspersen, Soren B. Nielsen, Grethe V. Jensen, Gunna Christiansen, Jan S. Pedersen, Jens Danielsson, Daniel E. Otzen, **Astrid Graslund**

218-PLAT 5:00 PM
AGGREGATION OF OXIDATION-MIMICKING MUTANTS OF GAMMA-D CRYSTALLIN SUPPORTS A DOMAIN SWAPPING MODEL. **Eugene Serebryany**, Jonathan A. King

219-PLAT 5:15 PM
APPLICATIONS OF TWO-DIMENSIONAL INFRARED SPECTROSCOPY TO STUDIES OF STRUCTURE AND MECHANISM IN LENS CRYSTALLIN PROTEIN AGGREGATES. **Tianqi O. Zhang**, Sean D. Moran, Martin T. Zanni

220-PLAT 5:30 PM
UNRAVELING THE MECHANISM OF CELL DEATH INDUCED BY CHEMICAL AND PROTEIN FIBRILS. **Olivier Julien**, Martin Kampmann, Michael C. Bassik, Vincent J. Venditto, Julie A. Zorn, Arnold L. Rheingold, Jonathan S. Weissman, James A. Wells

221-PLAT 5:45 PM
ATP-MG+2 MEDIATED ASSEMBLY OF RUBISCO ACTIVASE INVESTIGATED USING FLUORESCENCE CORRELATION SPECTROSCOPY. **Manas Chakraborty**, Agnieszka Kuriata, J Nathan Henderson, Michael E. Salvucci, Rebekka Wachter, Marcia Levitus

4:00 PM–6:00 PM, ROOM 305

Platform Membrane Physical Chemistry I

Co-Chairs

Beate Klösgen, University of Southern Denmark, Denmark
Christopher Rowley, Memorial University of Newfoundland, Canada

222-PLAT 4:00 PM
ELECTRIC FIELD INDUCED CO-LOCALIZATION OF MEMBRANE COMPONENTS IN SUPPORTED LIPID BILAYERS DETECTED BY SECONDARY ION MASS SPECTROMETRY. **Monica M. Lozano**, Jennifer Hovis, Frank R. Moss, Krishna Kumar, Steven G. Boxer

223-PLAT 4:15 PM
LIPID BILAYER STRUCTURE AND DYNAMICS STUDIED WITH MOLECULAR DYNAMICS SIMULATIONS AND NMR MEASUREMENTS. Tiago Ferreira, Daniel Topgaard, **Samuli O H Ollila**

224-PLAT 4:30 PM
UNDERSTANDING THE MEMBRANE PERMEABILITY OF HYDROGEN SULFIDE THROUGH MOLECULAR DYNAMICS SIMULATIONS USING A POLARIZABLE FORCE FIELD. **Christopher N. Rowley**, Saleh Riahi

225-PLAT 4:45 PM
THE INTERACTION OF RESVERATROL WITH DPPC BILAYERS - A BIOPHYSICAL CONTRIBUTION ON THE MEDITERRANEAN DIET. Alexis de Ghellinck, Chen Shen, Paul Stein, Giovanna Fragneto, Michele Sferrazza, **Beate M. Klösgen**

226-PLAT 5:00 PM
DMPC: A REMARKABLE EXCEPTION TO THE TOCOPHEROL'S MEMBRANE PRESENCE. **Drew Marquardt**, Justin A. Williams, Jacob J. Kinnun, Norbert Kucerka, Jeffrey Atkinson, Stephen R. Wassall, John Katsaras, Thad A. Harroun

227-PLAT 5:15 PM
LIPID MEDIATED HETEROGENEITY IN CISPLATIN RESISTANCE IN CANCER CELL LINES. **Krishnan Raghunathan**, Arif Ahsan, Dipankar Ray, Mukesh Nyati, Sarah Veatch

228-PLAT 5:30 PM
CREATING FREE-STANDING LIPID BILAYERS ON FUSED SILICA SUBSTRATES WITH NANOGATING STRUCTURE. **Po-Yu Peng**, Po-Chieh Chiang, Ling Chao

229-PLAT 5:45 PM
MICROFLUIDIC FABRICATION OF GIANT UNILAMELLAR LIPID VESICLES WITH CONTROLLED MICRODOMAIN FORMATION. **Laura R. Arriaga**, Sujit S. Datta, Shin-Hyun Kim, Esther Amstad, Thomas E. Kodger, Francisco Monroy, David A. Weitz

4:00 PM–6:00 PM, ROOM 306

Platform Cell Mechanics and Motility I

Co-Chairs

Ariel Livne, Weizmann Institute of Science, Israel
Kellie Beicker, University of North Carolina at Chapel Hill

230-PLAT 4:00 PM
CELL REORIENTATION UNDER CYCLIC STRETCHING. **Ariel Livne**, Eran Bouchbinder, Benjamin Geiger

231-PLAT 4:15 PM
COMPRESSION, VOLUME AND PROLIFERATION ARREST.
Morgan Delarue, Fabien Montel, Danijela Vignjevic, Jacques Prost,
Jean-François Joanny, Giovanni Cappello

232-PLAT 4:30 PM
THE EVOLUTION OF MECHANICAL PROPERTIES OF
DIFFERENTIATING STEM CELLS IS FATE- AND FUNCTION-
DEPENDENT. Andrew Ekpenyong, **Jochen Guck**

233-PLAT 4:45 PM
VIEWING NUCLEAR DEFORMATION WITH SIDEWAYS
MICROSCOPY. **Kellie N. Beicker**, Timothy E. O'Brien,
Michael R. Falvo, Richard Superfine

234-PLAT 5:00 PM
IMAGING MECHANICAL FORCE TRANSMISSION AT SINGLE
INTEGRINS IN LIVING CELLS. **Masatoshi Morimatsu**,
Armen H. Mekhjian, Alice Chang, Alexander R. Dunn

235-PLAT 5:15 PM
THE ROLE OF ARP2/3 IN DRG GROWTH CONES MOTILITY.
Wasim A. Sayyad, Paolo Fabris, Jelena Ban, Erika Ercolini, Vincent Torre

236-PLAT 5:30 PM
PROBING CELL MEMBRANE MECHANICS BY MAGNETIC
PARTICLE ACTUATION AND 3D ROTATIONAL PARTICLE
TRACKING. Matthias Irmscher, Arthur M. de Jong, **Holger Kress**,
Menno W.J. Prins

237-PLAT 5:45 PM
TIGHT COUPLING BETWEEN NUCLEUS AND CELL MIGRATION
THROUGH THE PERINUCLEAR ACTIN CAP. **Dong-Hwee Kim**,
Denis Wirtz

5:00 PM–6:30 PM, ROOM 123
Exhibitor Presentation
Asylum Research, an Oxford Instruments
Company

**New blueDrive™ Photothermal Excitation for Superior AFM Tapping
Mode Imaging**

Asylum Research, an Oxford Instruments company, will introduce its new blueDrive Photothermal Excitation capabilities exclusively available on Cypher™, the highest resolution fast scanning AFM. blueDrive significantly enhances the performance of tapping mode imaging with more simple, stable and quantitative operation, and providing extremely clean tunes in both air and water. Typically, a piezoacoustic excitation has been used to drive the cantilever oscillation. Though piezo drive is favored for design simplicity, the response of the cantilever is often far from ideal, causing users to spend countless time selecting a clean cantilever tune. Asylum's blueDrive excitation mechanism produces an almost perfect response by directly exciting the cantilever photothermally with a blue laser. blueDrive is ideal for high resolution imaging of biological samples in fluid including proteins, lipids and nucleic acids, as well as force measurements and nanomechanics. In this presentation, we will explain how blueDrive works, how it achieves simple cantilever tunes, and show real world results for biophysics applications.

Presenter:

Nick Geisse, Applications Scientist, Asylum Research, an Oxford Instruments company

5:00 PM–8:00 PM, ROOM 307
Korean Biophysicists Meeting

6:00 PM–7:00 PM, ROOM 121
Biophysics Austria Mixer

6:00 PM–7:30 PM, ROOM 302
**Biophysical Society of Canada–
Travel Awards and Mixer**

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

This session features students who are presenting posters at the Meeting and have pre-registered for the competition. During the 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.

7:00 PM–8:30 PM, ROOM 123
Exhibitor Presentation
FEI Company

Cryo-TEM: A New Era for 3D Structural Analysis of Protein Complexes

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 three 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.

Presenters:

Marc Storms, Marketing Manager, Life Sciences, FEI Company
Jeff Lengyel, Product Marketing Manager, FEI Company
Eric Hnath, Product Marketing Manager, Structural Biology, FEI Company
Thomas Wohlfarth, Director, Structural Biology Businesses, FEI Company

7:30 PM–9:30 PM, ROOM 134

Workshop
Polarizable Force Fields from
Biomolecular Simulations

Co-Chairs

Alexander MacKerell, University of Maryland

Benoit Roux, University of Chicago

238-WKSHP 7:30 PM

DEVELOPMENT OF A POLARIZABLE FORCE FIELD FOR MACROMOLECULES BASED ON THE CLASSICAL DRUDE OSCILLATOR. **Alexander MacKerell**

239-WKSHP 8:00 PM

ION CHANNEL SIMULATION WITH EXPLICIT SOLVENT AND LIPID MEMBRANE BASED ON THE DRUDE POLARIZABLE FORCE FIELD. **Benoit Roux**, Hui Li, Janamejaya Chowdhary, Edward Harder, Pedro E. M. Lopes, Lei Huang, Alexander D. MacKerell, Jr.

240-WKSHP 8:30 PM

FORCEBALANCE: A SYSTEMATIC, REPRODUCIBLE, STATISTICALLY DRIVEN APPROACH TO MORE ACCURATE MOLECULAR DYNAMICS MODELS. **Vijay Pande**

241-WKSHP 9:00 PM

ATOMISTIC AND COARSE-GRAINED MODELS FOR BIOMOLECULAR SIMULATIONS. **Teresa Head-Gordon**

7:30 PM–9:30 PM, ROOM 135

Workshop
Single Molecule Dynamics Using FRET/LRET

Co-Chairs

Irina Gopich, NIDDK, NIH

Achillefs Kapanidis, University of Oxford, United Kingdom

242-WKSHP 7:30 PM

THEORY OF SINGLE-MOLECULE PHOTON SEQUENCES.

Irina V. Gopich

243-WKSHP 8:00 PM

TRANSITION-PATH TIMES IN PROTEIN FOLDING FROM SINGLE-MOLECULE FRET. **Hoi Sung Chung**

244-WKSHP 8:30 PM

NEW FRET METHODS FOR STUDYING PROCESSING OF NUCLEIC ACIDS BY PROTEIN MACHINES. **Achillefs Kapanidis**

245-WKSHP 9:00 PM

SINGLE MOLECULE FOUR COLOR FRET REVEALS THE MECHANISM OF AN ATP DRIVEN MULTICOMPONENT MOTOR. **Thorsten Hugel**

SUNDAY POSTER SESSIONS

The list of Sunday Late Posters is in the Program addendum. The abstracts are available through the online itinerary planner.

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

<u>BOARD NUMBERS</u>	<u>CATEGORY</u>
B1–B29	Protein Structures
B30–B54	Protein Conformation
B55–B80	Assemblies and Aggregates I
B81–B98	Virus Structure and Assembly
B99–B128	DNA Structure and Dynamics I
B129–B150	Protein-Nucleic Acid Interactions I
B151–B180	Chromatin and the Nucleoid
B181–B207	Membrane Dynamics I
B208–B235	Membrane-Active Peptides and Toxins I
B236–B265	Membrane Structure I
B266–B287	Protein-Lipid Interactions I
B288–B313	Membrane Receptors and Signal Transduction I
B314–B338	Ryanodine and IDP Receptors
B339–B363	Calcium Signaling I
B364–B390	Cardiac, Smooth, and Skeletal Muscle Electrophysiology I
B391–B420	Excitation-Contraction Coupling I
B421–B438	Voltage-gated Na Channels I
B439–B456	Voltage-gated Ca Channels I
B457–B486	Voltage-gated K Channels I
B487–B515	Anion Channels and Transporters
B516–B544	Ligand-gated Channels I
B545–B576	Muscle: Fiber and Molecular Mechanics and Structure I
B577–B593	Actin and Actin-binding Proteins I
B594–B623	Cytoskeletal Protein Dynamics
B624–B653	Cell Mechanics and Motility I
B654–B669	Unconventional Myosins
B670–B682	Light Energy Harvesting, Trapping, and Transfer
B683–B701	Mitochondria in Cell Life and Death I
B702–B711	Synthetic Biology
B712–B720	Synaptic Transmission
B721–B730	Magnetic Resonance Spectroscopy and Imaging
B731–B757	Advances in Single-Molecule Spectroscopy I
B758–B787	Optical Microscopy and Super Resolution Imaging I
B788–B796	Advances in UV-VIS-IR Spectroscopy
B797–B804	Bioinformatics
B805–B820	Biosurface Interactions and Engineered Biosurfaces
B821–B850	Micro- and Nanotechnology I
B851–B865	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 Structures (Boards #B1–#B29)

- 246-Pos** **BOARD #B1**
STRUCTURE AND FUNCTION OF TWO PUTATIVE VIRULENCE FACTORS FROM FRANCISELLA TULARENSIS. **Geoffrey K. Feld**
- 247-Pos** **BOARD #B2**
CRYSTAL STRUCTURE OF AN INACTIVE VARIANT OF THE VIBRIO CHOLERAE QUORUM-SENSING MASTER REGULATOR HAPR. **Justin Cruite**, Patrick Succo, Anita Prasad, Ashish Raychaudhuri, Saumya Raychaudhuri, F. Jon Kull
- 248-Pos** **BOARD #B3**
X-RAY STRUCTURE DETERMINATION OF THE FIRST INSECT SKELETAL MUSCLE MYOSIN II. **James T. Caldwell**, Girish Melkani, Sanford I. Bernstein, Tom Huxford
- 249-Pos** **BOARD #B4**
THE CATALYTIC SUBUNIT OF THE SWR1 REMODELER HAS A HISTONE CHAPERONE ROLE FOR THE H2A.Z-H2B DIMER. **Jingjun Hong**
- 250-Pos** **BOARD #B5**
STRUCTURE AND FUNCTION OF THE GENOMICALLY-ENCODED FOSFOMYCIN RESISTANCE ENZYME, FOSB, FROM STAPHYLOCOCCUS AUREUS. **Matthew K. Thompson**, Michael Goodman, Mary Keithly, Neal Hammer, Paul Cook, Kevin Jagessar, Joel Harp, Eric Skaar, Richard N. Armstrong
- 251-Pos** **BOARD #B6**
STRUCTURAL INSIGHTS INTO MODULATION OF MICAL BY ITS CALPONIN HOMOLOG (CH) DOMAIN. **Saif S. Alqassim**, Mario A. Bianchet, L. Mario Amzel
- 252-Pos** **BOARD #B7**
THE USE OF ENGINEERED ANTIBODY FRAGMENTS TO PROMOTE CRYSTALLIZATION OF MEMBRANE PROTEINS. **Sibel Kalyoncu**, Jennifer L. Johnson, David P. Heaner Jr, Ivan A. Morales, Jeongmin Hyun, Jennifer C. Pai, Kevin Etminger, Jennifer A. Maynard, Raquel L. Lieberman
- 253-Pos** **BOARD #B8**
ESCHERICHIA COLI AS HOST FOR MEMBRANE PROTEIN STRUCTURE DETERMINATION: A GLOBAL ANALYSIS. Georges Hattab, Karine Moncoq, Dror Warschawski, **Bruno Miroux**
- 254-Pos** **BOARD #B9**
ELUCIDATION OF MECHANISTIC DETAILS FROM STRUCTURAL STUDIES OF DNA GYRASE. **Katarzyna M. Soczek**, Kathryn H. Gunn, Chandra J. Critchelow, Tim Grant, Peter Rosenthal, Alfonso Mondragon
- 255-Pos** **BOARD #B10**
DETERMINATION OF THE DYNAMIC STRUCTURES OF NACENT DISCOIDAL HIGH-DENSITY LIPOPROTEIN (HDL) BOUND TO LECITHIN CHOLESTEROL ACYLTRANSFERASE (LCAT) AND PARAOXONASE 1 (PON1). **Matthew J. Rames**, Lei Zhang, Xing Zhang, Gary Ren
- 256-Pos** **BOARD #B11**
STRUCTURAL STUDIES OF THE YEAST PRP8-SNU114 COMPLEX. **Yangzi He**, Shenping Wu, David Booth, David Agarrd, Yifan Cheng, Christine Guthrie
- 257-Pos** **BOARD #B12**
PROTEIN PLASTICITY AND PROTEIN-LIPID INTERACTIONS OF THE BETA-BARREL ASSEMBLY MACHINERY. **Tessa Sinnige**, Klaartje Houben, Markus Weingarth, Lindsay Baker, Rolf Boelens, Marc Baldus
- 258-Pos** **BOARD #B13**
THE STRUCTURE OF HCV MEMBRANE PROTEIN P7 IN BILAYERS BY NMR SPECTROSCOPY. **Gabriel A. Cook**, Lindsay A. Dawson, Bibhuti B. Das, Stanley J. Opella
- 259-Pos** **BOARD #B14**
STRUCTURAL AND FUNCTIONAL STUDIES OF THE OUTER MEMBRANE PROTEIN AIL FROM YERSINIA PESTIS. **Yi Ding**, Yong Yao, Lynn Miya Fujimoto, Francesca Marassi
- 260-Pos** **BOARD #B15**
STRUCTURE AND MECHANISM OF THE E3 LIGASE RBX1 IN COMPLEX WITH THE E2 ENZYME CDC34 CHARGED WITH UBIQUITIN. **Donald E. Spratt**, Pascal Mercier, Zhen-Qiang Pan, Gary S. Shaw
- 261-Pos** **BOARD #B16**
NMR STRUCTURE REFINEMENT USING STAP AND FLAT-BOTTOM POTENTIAL WITHOUT NOE DATA. **Ryu Hyo Jung**, Kim Tae-Rae, Ji Sunyoung, Lee Jinhyuk
- 262-Pos** **BOARD #B17**
STRUCTURAL AND DYNAMIC ANALYSIS OF LIPOCALIN TYPE PROSTAGLANDIN D SYNTHASE IN ITS APO FORM AND SUBSTRATE ANALOG COMPLEX FORM. **Shigeru Shimamoto**, Tadayasu Ohkubo, Kosuke Aritake, Yoshihiro Urade, Yuji Hidaka
- 263-Pos** **BOARD #B18**
INVESTIGATION INTO THE STRUCTURE OF A MUTATED FOX PROTEIN. **Jessica E. Besaw**, Valerie Booth, Christopher Rowley
- 264-Pos** **BOARD #B19**
CALCIUM-MEDIATED REVERSAL OF CAM ON THE NAV 1.2 IQ MOTIF: NESTED ANTI-PARALLEL SITES. **Mark S. Miller**, Andrew Fowler, Michael D. Feldkamp, Liping Yu, Madeline A. Shea
- 265-Pos** **BOARD #B20**
EXPRESSION, PURIFICATION AND PRELIMINARY SOLID STATE NMR EXPERIMENTS OF MYCOBACTERIUM TUBERCULOSIS FTSX MEMBRANE PROTEIN. **Cristian A. Escobar**, Timothy A. Cross
- 266-Pos** **BOARD #B21**
STRUCTURAL INSIGHTS OF LSPA, FROM MYCOBACTERIUM TUBERCULOSIS, USING SOLID STATE NMR SPECTROSCOPY. **E. Vindana Ekanayake**, Huajun Qin, Ivan Hung, Timothy A. Cross
- 267-Pos** **BOARD #B22**
STRUCTURAL STUDIES ON THE N2A-IS REGION OF TITIN. **Kanchan Sonkar**, Holly Tiffany, Matthew J. Gage
- 268-Pos** **BOARD #B23**
SINGLE MOLECULE FRET CHARACTERIZATION OF STRUCTURAL CHANGES IN ANTIBODIES INDUCED BY ENZYMATIC DEGLYCOSYLATION. Mark S. Piraino, Michael T. Kelliher, Ramiah D. Jacks, Madeline E. Gemoules, Jihad Aburas, Lily A. Arendt, James S. Coy-Dibley, **Cathrine A. Southern**
- 269-Pos** **BOARD #B24**
SINGLE-MOLECULE AND ENSEMBLE STRUCTURAL STUDY OF THE AAA⁺ ATPASE P97. **Taehyung Lee**, MinJin Kang, Eli Chapman, Ashok A. Deniz
- 270-Pos** **BOARD #B25**
STRUCTURE REFINEMENT OF THE TRANSMEMBRANE DOMAIN (TMD) OF KCNE1 PROTEIN USING DEER SPECTROSCOPY. **Indra D. Sahu**, Brett M. Kroncke, Robert M. McCarrick, Megan M. Dunagan, Rongfu Zhang, Andrew Craig, Hubbell J. Smith, Charles R. Sanders, Gary A. Lorigan

271-Pos BOARD #B26

STRUCTURAL STUDIES OF THE DOCKING COMPLEX BETWEEN CYTOCHROME P450 (CYP101) AND PUTIDAREDOXIN (PDX) BY DOUBLE ELECTRON-ELECTRON RESONANCE (DEER). **Shu-Hao Liou**, William K. Myers, R. David Britt, David B. Goodin

272-Pos BOARD #B27 EDUCATION TRAVEL AWARDEE

PROBING AND CHARACTERIZING DISTINCT CONFORMATIONAL STATES POPULATED BY INFLUENZA A M2 PROTEIN. **Sangwoo S. Kim**

273-Pos BOARD #B28

PROBING STRUCTURAL PROPERTIES OF KCNE1 MEMBRANE PROTEIN: A SITE-DIRECTED SPIN LABELING EPR STUDY. **Megan M. Dunagan**, Indra D. Sahu, Rongfu Zhang, Andrew Craig, Robert M. McCarrick, Gary A. Lorigan

274-Pos BOARD #B29

THE CONFORMATIONS OF THE DRKN SH3 DOMAIN STUDIED BY SINGLE MOLECULE FLUORESCENCE SPECTROSCOPY. **Zhenfu Zhang**, Amir Mazouchi, Andrew Chong, Julie Forman-Kay, Claudiu Gradinaru

Protein Conformation (Boards #B30–#B54)

275-Pos BOARD #B30

MODELING PROTEINS AS RESIDUE INTERACTION NETWORKS TO UNDERSTAND STRUCTURE-FUNCTION RELATIONSHIP. **Isha D. Mehta**, Brian W. Beck

276-Pos BOARD #B31

NIST/UMD BIOMOLECULAR LABELING LABORATORY (BL²). **Zvi Kelman**

277-Pos BOARD #B32

THE PROTEIN TRANSLOCASE ACTIVITY OF ANTHRAX TOXIN PROTECTIVE ANTIGEN IS STEREOSELECTIVE. **Debasis Das**

278-Pos BOARD #B33

STRUCTURAL STUDIES ON THE A. THALIANA HETEROTRIMERIC G-PROTEIN: UNDERSTANDING THE MECHANISM OF α SUBUNIT. **Hazal B. Kose**

279-Pos BOARD #B34

MOLECULAR DYNAMICS STUDY ON FLUCTUATION ANALYSIS OF MECHANO-GATING IN THE BACTERIAL MECHANOSENSITIVE CHANNEL MSCL. **Yuya Nakagawa**, Yasuyuki Sawada, Masahiro Sokabe

280-Pos BOARD #B35

MOLECULAR DYNAMICS STUDIES ON STRUCTURAL CHANGES IN NK-LYSIN AND SAPOSINS A, C, AND D. **Iwona Siuda**, Svetlana Baoukina, D. Peter Tieleman

281-Pos BOARD #B36

UNRAVELING THE ENERGY TRANSDUCTION MECHANISM OF RESILIN ELASTICITY-A COMBINATION OF COMPUTATIONAL AND EXPERIMENTAL STUDY. **Yang Yang**, Xiao Hu

282-Pos BOARD #B37

SIMPLE MODELS CHARACTERIZE THE ACTIVATION OF G PROTEIN-COUPLED RECEPTORS. **Pooja Suresh**, Nicholas Leioatts, Alan Grossfield

283-Pos BOARD #B38

UNDERSTANDING SIDE-CHAIN MOTIONS USING STATISTICAL TORSION ANGLE POTENTIAL. **GyuTae Lim**, Tae-Rae Kim, Sunyoung Ji, Jinhyuk Lee

284-Pos BOARD #B39

CONFORMATIONAL AND DYNAMIC PROPERTIES OF EXTRACELLULAR DOMAINS OF CELL ADHESION MOLECULES. Catherine M. Kelly, **Nicolae-Viorel Buchete**

285-Pos BOARD #B40

FINDING THE MISSING LINK - MODELING THE CONFORMATIONAL SPACE OF THE ACTIVE AND INACTIVE FORMS OF E. COLI RIBONUCLEOTIDE REDUCTASE. **Orly Ullman**, Christina M. Zimanyi, Catherine L. Drennan, Collin M. Stultz

286-Pos BOARD #B41

THE SUBDOMAINS OF THE TATA-BINDING PROTEIN DISPLAY DISCORDANT STRATEGIES TO ADAPT TO TEMPERATURE. **Nina Pastor**, Ángel Santiago

287-Pos BOARD #B42

TIME-RESOLVED TEMPERATURE-JUMP IR-MEASUREMENTS ON BETA-HAIRPIN PEPTIDES WITH ALTERNATE CROSS-STRAND INTERACTIONS. Alexander Popp, Ling Wu, Timothy A. Keiderling, **Karin Hauser**

288-Pos BOARD #B43

THE INTERNAL FRICTION OF PROTEINS. **Robert Deak**, Imre Derenyi

289-Pos BOARD #B44

CORRELATIONS BETWEEN BOND, BACKBONE, AND SIDE CHAIN DIHEDRAL ANGLES ENABLE CHANGES AMONG DIFFERENT DIPEPTIDE CONFIGURATIONS. **Diego Caballero**, Lynne Regan, Corey S. O'Hern

290-Pos BOARD #B45

EFFECT OF INTRACELLULAR LOOP 3 ON INTRINSIC DYNAMICS OF HUMAN β 2-ADRENERGIC RECEPTOR. Ozer Ozcan, Arzu Uyar, Pemra Doruker, **Ebru Demet Akten**

291-Pos BOARD #B46

CONFORMATIONAL SAMPLING AND STRUCTURE PREDICTION OF MULTI-LOOPS IN PROTEINS USING DISTANCE-GUIDED SEQUENTIAL CHAIN-GROWTH MONTE CARLO METHOD. **Ke Tang**, Jinfeng Zhang, Jie Liang

292-Pos BOARD #B47

STRUCTURAL PROPERTIES OF MEMBRANE INSERTED FUSION PEPTIDE FROM INFLUENZA VIRUS ANALYSED BY MOLECULAR SIMULATION. **Diana Lousa**, Bruno L. Victor, Carlos Fernandez, Cláudio M. Soares

293-Pos BOARD #B48

MODELING THE STRUCTURAL PROPERTIES OF THE TRANSMEMBRANE PEPTIDE OF INFLUENZA HEMAGGLUTININ IN A MEMBRANE BILAYER. Bruno L. Victor, António M. Baptista, **Cláudio M. Soares**

294-Pos BOARD #B49

THE AMYLOID PRECURSOR PROTEIN MAINTAINS AN IDEAL α -HELICAL CONFORMATION IN THE LIPID BILAYER. **Thomas Lemmin**, Mitko Dimitrov, Patrick Fraering, Matteo Dal Peraro

295-Pos BOARD #B50

CONFORMATION AND AGGREGATION OF PEPTIDES AT INTERFACES. **Mehmet Sayar**

296-Pos BOARD #B51
PR65A PHOSPHORYLAION REGULATES PP2A COMPLEXATION AND SIGNALING. Yongna Xing, Kumar Kotlo, R.J. Solaro, **Robert Danziger**

297-Pos BOARD #B52
RETINAL MAKES CONCERTED CONFORMATIONAL CHANGES DURING EARLY STAGES OF RHODOPSIN ACTIVATION. **Nicholas Leioatts**, Blake Mertz, Karina Martínez-Mayorga, Tod D. Romo, Michael C. Pitman, Scott E. Feller, Alan Grossfield, Michael F. Brown

298-Pos BOARD #B53
EFFICIENT PROTEIN STRUCTURE ALIGNMENT METHODS BASED ON A STRUCTURAL ALPHABET. Agnel Praveen Joseph, Jean-Christophe Gelly, Sylvain Leonard, Pierrick Craveur, Jeremy Esque, Guilhem Faure, Joseph Rebehmed, Catherine Etchebest, Narayanaswamy Srinivasan, **Alexandre G. de Brevern**

299-Pos BOARD #B54
IN SILICO ASSESSMENT OF BUNDLE ARCHITECTURES OF HCV P7 PROTEIN. **Monoj M. Kalita**, Stephen D. C. Griffin, James J. Chou, Wolfgang B. Fischer

Assemblies and Aggregates I (Boards #B55–#B80)

300-Pos BOARD #B55
A VIEW TO A KILL: T6SS-MEDIATED CELL KILLING VISUALIZED BY FLUORESCENCE MICROSCOPY. **Jacqueline Corbitt**, Michele Leroux, Joseph Mougous, Paul Wiggins

301-Pos BOARD #B56
A FRET-BASED METHOD FOR MEASUREMENT OF YEAST SEPTIN FILAMENT FORMATION IN VITRO. **Elizabeth Booth**, Eleanor Vane, Jeremy Thorner

302-Pos BOARD #B57
INVESTIGATING THE MECHANISM OF COLLAGEN SELF-ASSEMBLY WITH MICRORHEOLOGY. Marjan Shayegan, Tuba Altindal, **Nancy R. Forde**

303-Pos BOARD #B58
ATOMIC FORCE MICROSCOPY IMAGING REVEALS STRUCTURAL AND MECHANICAL PROPERTIES OF DISSOCIATED HEMOCYANINS BY TEMPERATURE. **Camilo Navarrete**, Javiera Villar, Yessenia Aguilar, Ricardo Cabrera, Nelson P. Barrera

304-Pos BOARD #B59 EDUCATION TRAVEL AWARDEE
TRIPLETTIDES SCREENING REPORT: PROLINE IS IMPORTANT FOR A β FIBRILS DEPOLYMERIZATION. **Katarina Siposova**, Man Hoang Viet, Mai Suan Li, Zuzana Bednarikova, Andrea Antosova, Truc Trang Nguyen, Zuzana Gazova

305-Pos BOARD #B60
EFFLUX TIME COURSES OF CYTOSOLIC PROTEINS FROM RABBIT SKINNED MUSCLE FIBERS REFLECT DISSOCIATION OF ENZYME COMPLEXES. **David Maughan**, Brian Carlson, Jim Vigoreaux

306-Pos BOARD #B61
PHASE DIAGRAM TO ILLUSTRATE PROTEIN AGGREGATION PROFILE AND CONDITIONS. **Bin Li**, Siqi Li, Yang Cao, Shaohua Xu

307-Pos BOARD #B62
IN VITRO INTERACTIONS BETWEEN AMYLOID BETA AND ISLET AMYLOID POLYPEPTIDE. **Leah Vandiver**

308-Pos BOARD #B63
NADH IS AN ENDOGENOUS REPORTER FOR ALPHA-SYNUCLEIN AGGREGATION IN LIVE CELLS. **Nicoletta Plotegher**, Chiara Stringari, Sohail Jahid, Enrico Gratton, Luigi Bubacco

309-Pos BOARD #B64
ASSESSING POLYGLUTAMINE CONFORMATION AND AGGREGATION WITH MOLECULAR DYNAMICS TECHNIQUES. **Riley J. Workman**, Jeffry D. Madura

310-Pos BOARD #B65
ROLE OF HYDROPHOBICITY IN THE AGGREGATION OF INTRINSICALLY DISORDERED PEPTIDES. **Agusti Emperador**

311-Pos BOARD #B66
PH REVERSIBLE CONJUGATES OF GRAPHENE OXIDE WITH PEPTIDES AND PROTEINS. **Avanish S. Parmar**, Douglas Pike, Patrick Nosker, Daniel Grisham, Nida F. Hasan, David Yin, Yuan Chen, Faith Njoku, Jenny Lockard, Vikas Nanda

312-Pos BOARD #B67
SINGLE-MOLECULE AFM FORCE SPECTROSCOPY REVEALS THE DIFFERENCE IN THE FOLDING PATTERNS BETWEEN AMYLOID β 40 AND 42 WITHIN DIMERS. **Zhengjian Lv**, Robin Roychaudhuri, Margaret M. Condron, David B. Teplow, Yuri L. Lyubchenko

313-Pos BOARD #B68
STRUCTURAL STUDIES OF SEPTIN PROTEIN ASSEMBLIES BY DIRECT STOCHASTIC OPTICAL RECONSTRUCTION MICROSCOPY. **Adriano Vissa**, Theodore Pham, William S. Trimble, Peter K. Kim, Christopher M. Yip

314-Pos BOARD #B69
MONOCLONAL ANTIBODY SELF-ASSOCIATION, CLUSTER FORMATION, AND RHEOLOGY AT HIGH CONCENTRATIONS. **Thomas Scherer**, Wayne Lilyestrom, Sandeep Yadav, Steven J. Shire

315-Pos BOARD #B70
STRUCTURAL FLUCTUATIONS AND AGGREGATIONS OF TAU PROTEINS FROM X-RAY SINGLE MOLECULE OBSERVATIONS. **Yuji C. Sasaki**, Masahiro Shimura, Yufuku Matsushita, Kouhei Ichianagi, Hiroshi Sekiguchi, Tomohiro Miyasaka, Yasuo Ihara

316-Pos BOARD #B71
SELF-ASSEMBLY OF AN AMPHIPHILIC DESIGNER-PEPTIDE INTO DOUBLE HELICAL SUPERSTRUCTURES. **Karin Kormmueller**, Ilse Letofsky-Papst, Fernando Cacho-Nerin, Gerd Leitinger, Heinz Amenitsch, Ruth Prassl

317-Pos BOARD #B72
AGGREGATION IN AL AMYLOIDOSIS. **Kathrin Andrich**, Jan Bieschke

318-Pos BOARD #B73
AGGREGATION OF THERAPEUTIC ANTIBODIES: A MULTISCALE MOLECULAR DYNAMICS APPROACH. **David Shorthouse**, Jesus Zurdo, Mark Sansom

319-Pos BOARD #B74 INTERNATIONAL TRAVEL AWARDEE
INHIBITION OF INSULIN FIBRILLATION BY A NON TOXIC PEPTIDE NK9. **Victor Banerjee**, Rajiv Kar, Kalipada Das, Subhrangsu Chatterjee, Anirban Bhunia

320-Pos BOARD #B75 EDUCATION TRAVEL AWARDEE
KINETIC ISING MODEL STUDY OF PROTEIN AGGREGATION. **Min-Yeh Tsai**, Jian-Min Yuan, Sheng-Hsien Lin

321-Pos **BOARD #B76** INTERNATIONAL TRAVEL AWARDEE
PROTEOME METASTABILITY IN HEALTH, AGING, AND DISEASE. **Prajwal Ciryam**, Gian G. Tartaglia, Richard I. Morimoto, Christopher M. Dobson, Edward P. O'Brien, Michele Vendruscolo

322-Pos **BOARD #B77**
TAU-HSP70 INTERACTION AT THE SINGLE-MOLECULE LEVEL. **Franziska Kundel**, Magnus Kjaergaard, Sarah L. Shammass, Sophie E. Jackson, David Klenerman

323-Pos **BOARD #B78**
POROSITY OF FIBRIN NETWORKS MEASURED BY MACROION FLOW. **Merrell A. Johnson**, Jennifer Slaton, Elliot D. Rosen, Horia I. Petrache

324-Pos **BOARD #B79**
DNA SEGREGATION AND PARTITIONING IN *CAULOBACTER CRESCENTUS*: SUPER-RESOLVING PROTEIN COLOCALIZATION AT THE CELL POLE. **Andreas Gahlmann**, Jerod L. Ptacin, Alexander R.S. von Diezmann, Lucy Shapiro, W.E. Moerner

325-Pos **BOARD #B80**
INTERACTION OF HUMAN ISLET AMYLOID POLYPEPTIDE WITH MODEL MEMBRANES IN THE PRESENCE OF A NOVEL OLIGOMER MODULATOR "ANLE138B".
Saravanan Manikam Sadasivam, Sergey Ryazanov, Andrei Leonov, Armin Giese, Christian Griesinger, J. Antoinette Killian

Virus Structure and Assembly (Boards #B81–#B98)

326-Pos **BOARD #B81**
ASSEMBLY OF TRANSMEMBRANE DOMAINS OF HUMAN PAPILLOMAVIRUS TYPE 16 E5 PROTEIN- A MOLECULAR DYNAMICS SIMULATION STUDY. **Dhani R. Mahato**, Wolfgang B. Fischer

327-Pos **BOARD #B82**
PROTEIN INTERACTIONS REGULATE VIRUS ASSEMBLY AND REPLICATION. **Zhenning Tan**, Nuruddin Unchwaniwala, Karolyn Pionek, Megan Maguire, Dan Loeb, Adam Zlotnick

328-Pos **BOARD #B83**
A DISULFIDE IN HBV CORE PROTEIN DIMER ALLOSTERICALLY MODIFIES CAPSID ASSEMBLY AND STABILITY. **Lisa Selzer**, Sarah Katen, Adam Zlotnick

329-Pos **BOARD #B84**
EXCEPTIONAL HETEROGENEOUS ELASTICITY AND ONE-WAY VALVE MECHANISM OF THE PHI29 HEAD-TAIL CONNECTOR. **Rajendra Kumar**, Helmut Grubmüller

330-Pos **BOARD #B85**
PROBING PROTEIN-PROTEIN INTERACTIONS IN A SINGLE VIRUS: APPLICATION TO HIV INTEGRASE OLIGOMERIZATION. Doortje Borrenberghs, Wannes Thys, Susana Rocha, Jonas Demeulemeester, Peter Dedecker, Johan Hofkens, Zeger Debyser, **Jelle Hendrix**

331-Pos **BOARD #B86**
ROLE OF M1 SELF-ORGANIZATION IN INFLUENZA VIRUS ASSEMBLY: A COMBINED RICS AND AFM STUDY. Malte Hilsch, Nadine Jungnick, Christian Sieben, Björn Goldenbogen, Edda Klipp, Andreas Herrmann, **Salvatore Chiantia**

332-Pos **BOARD #B87**
EVALUATING THE INFLUENCE OF ENVIRONMENT ON VIRUS CAPSID ASSEMBLY PATHWAYS THROUGH STOCHASTIC SIMULATION. **Gregory R. Smith**, Lu Xie, Byoungkoo Lee, Russell Schwartz

333-Pos **BOARD #B88**
TOWARD UNDERSTANDING HOW CLEAVAGE & POLYADENYLATION FACTOR 6 INTERACTS WITH THE HIV-1 CAPSID HEXAMER. **Akash Bhattacharya**, Dmitri N. Ivanov

334-Pos **BOARD #B89**
BREAKING A VIRUS: IDENTIFYING MOLECULAR LEVEL FAILURE MODES OF VIRAL CAPSID COMPRESSION THROUGH MULTI-SCALE SIMULATION TECHNIQUES.
Venkatramanan Krishnamani, Christoph Globisch, Christine Peter, Markus Deserno

335-Pos **BOARD #B90**
IN VITRO RECONSTITUTION OF MEMBRANE BUDDING BY INFLUENZA A VIRUS MATRIX PROTEIN 1. **Michael D. Vahey**, Daniel A. Fletcher

336-Pos **BOARD #B91**
NEW INSIGHTS ON THE VERSATILE ROLE OF THE CHOLESTEROL BINDING MOTIF OF THE HIV-1 GLYCOPROTEIN GP41. **Roland Schwarzer**, Andreas Herrmann, Ilya Levental, Andrea Gramatica

337-Pos **BOARD #B92**
THE HOMOPENTAMERIC RING ATPASE MOTOR OF THE BACTERIOPHAGE T4 TOLERATES ONE INACTIVE SUBUNIT. Vishal I. Kottadiel, Li Dai, Venigalla B. Rao, **Yann R. Chemla**

338-Pos **BOARD #B93**
PROTON PERMEABILITY OF HIV VIRUS LIKE PARTICLES AND VESICULAR STOMATITIS VIRUS. **Pei-I Ku**, Jeffrey Hodges, Michael L. Landesman, Peter Williams, Xiaolin Tang, Saveez Saffarian

339-Pos **BOARD #B94**
ALIX ARRIVES LATE DURING HIV-1 ASSEMBLY. **Pei-I Ku**, Michael L. Landesman, Saveez Saffarian

340-Pos **BOARD #B95**
MATHEMATICAL SIMULATION OF EARLY TRANSCRIPTION EVENTS DURING VSV INFECTION. **Xiaolin Tang**, Saveez Saffarian

341-Pos **BOARD #B96**
MECHANISMS OF SELF-ASSEMBLY AND DISSECTION OF INFLUENZA A VIRUS PROTEIN SCAFFOLD. **Oleg V. Batishchev**, Liudmila A. Shilova, Vsevolod Yu. Tashkin, Valeriy S. Sokolov, Yuri A. Chizmadzhev

342-Pos **BOARD #B97**
CHARACTERIZATION OF HIV-1 CAPSID WITH FLUORESCENCE SPECTROSCOPY AND MICROSCOPY. **Qiaoqiao Ruan**, Barbie K. Ganser-Pornillos, Joseph P. Skinner, Susan Gayda, Mark Yeager, Sergey Y. Tetin

343-Pos **BOARD #B98**
NMR STUDIES OF THE Q5A, G6S UNMYRISTYLATED FELINE IMMUNODEFICIENCY VIRUS MATRIX PROTEIN.
Vaughn R. Spurrier, Lola Brown, Michael Summers

DNA Structure and Dynamics I (Boards #B99–#B128)

344-Pos **BOARD #B99**
MECHANICAL UNFOLDING OF HUMAN TELOMERE G-QUADRUPLEX DNA PROBED BY INTEGRATED FLUORESCENCE AND MAGNETIC TWEEZERS SPECTROSCOPY. **Xi Long**, Joseph W. Parks, Clive R. Bagshaw, Michael D. Stone

345-Pos BOARD #B100
G-QUADRUPLEX DNA FOLDING AND DYNAMICS WITHIN DUPLEX DNA. **Alex Kreig**, Jacob Calvert, Ramreddy Tippana, Su-a Myong

346-Pos BOARD #B101
VALIDATION AND PHYSICAL CHARACTERIZATION OF RIBOSOMAL G-QUADRUPLEXES WITH MD SIMULATIONS. **Adam T. Green**, Samuel Cho

347-Pos BOARD #B102
G-QUADRUPLEX FOLDING DEPENDS ON ITS LOOP SIZE AND SEQUENCE: EXTREME FAST FOLDING KINETICS OBSERVED IN HUMAN TELOMERE AND ITS ISOMER. **Ramreddy Tippana**, Weikun Xiao, Sua Myong

348-Pos BOARD #B103
DNA I-MOTIF PROBED BY PHOTOACOUSTIC CALORIMETRY. **David Butcher**, Jaroslava Miksovska

349-Pos BOARD #B104
THERMODYNAMICS OF THE G-QUADRUPLEX FORMATION OF MODIFIED HUMAN TELOMERIC SEQUENCES. **Yang Li**, Robert B. Macgregor, Bitia Zamiri

350-Pos BOARD #B105
MICROHETEROGENEITY OF TELOMERIC DNA GUANINE RESIDUES: PH DEPENDENT SPECTROSCOPIC STUDIES OF FLUORESCENTLY LABELED MODEL TRINUCLEOTIDES. **Yasemin Koppalli**, Aleksander Smirnov, Jay R. Knutson, Lesley Davenport

351-Pos BOARD #B106
POLYELECTROLYTE EFFECTS IN G-QUADRUPLEXES. Byul Kim, Yuen L. Shek, **Tigran V. Chalikian**

352-Pos BOARD #B107
STRUCTURAL DYNAMICS AND POLYMORPHISM OF TELOMERIC G-QUADRUPLEX DNA STRUCTURES. Sofie L. Kragh, Søren Preus, Daniel Gudnason, Jean-Louis Mergny, **Victoria Birkedal**

353-Pos BOARD #B108
KINETICS OF TWO SLOW CONFORMATIONAL TRANSITIONS OF THE QUADRUPLEX STRUCTURE OF THE THROMBIN BINDING APTAMER AND THEIR POTASSIUM DEPENDENCE. **Harikrushan Ranpura**, Philp H. Bolton

354-Pos BOARD #B109
Z-DNA-FORMING TG REPEATS ARE DYNAMIC MECHANICAL SWITCHES SENSITIVE TO TENSION AND TORSION. Sook Ho Kim, Nam-Kyung Lee, Joon-Hwa Lee, **Seok-Cheol Hong**

355-Pos BOARD #B110
COARSE-GRAINED MODELLING OF EXTREME DNA BENDING. **Ryan M. Harrison**, A. A. Louis, Jonathan P.K. Doye

356-Pos BOARD #B111
TRANSIENT KINETICS MEASURED WITH FORCE STEPS DISCRIMINATE BETWEEN DOUBLE STRANDED DNA ELONGATION AND MELTING AND DEFINE THE REACTION ENERGISTICS. **Pasquale Bianco**, Lorenzo Bongini, Luca Melli, Vincenzo Lombardi

357-Pos BOARD #B112
DIAMINOPURINE-SUBSTITUTION MODIFY DNA ELASTICITY AND FAVORS L-HELICES. **Qing Shao**, Monica Fernandez, Sharon Owino, Yoojin Lee, Laura Finzi, David Dunlap

358-Pos BOARD #B113
BIOCHEMICAL AND BIOPHYSICAL PROPERTIES OF POSITIVELY SUPERCOILED DNA. **Andrea M. Berrido**, Andrew Chen, Yuk-Ching Tse-Dinh, Fenfei Leng

359-Pos BOARD #B114
A COMBINED NMR AND MOLECULAR DYNAMICS INVESTIGATION OF SEQUENCE CONTEXT EFFECTS ON BACKBONE DYNAMICS OF DNA. **Kiley Lawrence**

360-Pos BOARD #B115
STUDIES OF DNA BREATHING AND HELICASE MECHANISMS BY SINGLE MOLECULE (SM) FRET BETWEEN 6-MI AND CY3 IN DNA REPLICATION FORK CONSTRUCTS. **Wonbae Lee**, John P. Gillies, Huiying Ji, Carey E. Phelps, Davis Jose, Peter H. von Hippel, Andrew H. Marcus

361-Pos BOARD #B116
DETERMINING THE QUANTITATIVE DYNAMICS OF NUCLEIC ACIDS IN LIVE CELLS THROUGH RICS AND IMSD APPROACHES. **Stephen P. Mieruszynski**, Michelle A. Digman, Enrico Gratton, Mark Jones

362-Pos BOARD #B117
PHOTOPHYSICAL AND DYNAMICAL PROPERTIES OF DOUBLY LINKED CY3 - DNA CONSTRUCTS. **Ning Ma**, Elana Stennett, Marcia Levitus, Arjan van der Vaart

363-Pos BOARD #B118
ASSOCIATED ANISOTROPY DECAYS OF ETHIDIUM BROMIDE INTERACTING WITH DNA. **Rahul Chib**, Sangram Raut, Sarika Sabnis, Zygmunt Gryczynski, Ignacy Gryczynski

364-Pos BOARD #B119
COMPARING OPTICAL AND MAGNETIC TWEEZERS FOR STUDYING THE RECQ HELICASE. **Maria Marti-Prieto**, Maria Manosas, Felix Ritort

365-Pos BOARD #B120
SINGLE MOLECULE OBSERVATION OF CYCLIZATION OF SHORT DNA DUPLEX. **Teckla Akinyi**, I-Ren Lee, Taekjip Ha

366-Pos BOARD #B121
NANOIMAGING OF THE CELL NUCLEUS USING GOLD NANOPARTICLES. **Andrea Anzalone**, Chiara Stringari, Enrico Gratton

367-Pos BOARD #B122
PROMOTER REPRESSION BY STRONG DNA BENDING. **Nicole A. Becker**, Justin P. Peters, L. James Maher III

368-Pos BOARD #B123
TORSIONAL BEHAVIOR OF NUCLEOSOME ARRAYS. **Gi-Moon Nam**, Gaurav Arya

369-Pos BOARD #B124
INVESTIGATING THE CONFORMATIONAL DYNAMICS OF DNA WITH LESIONS THROUGH FLUORESCENCE-BASED TECHNIQUES AND COMPUTER SIMULATIONS. **Elana M.S. Stennett**, David L. Dotson, Elizabeth J. Denning, Oliver Beckstein, Marcia Levitus

370-Pos BOARD #B125
CHARACTERIZATION OF RIGHT-HANDED B-DNA IN STAGE 0 (IN SITU) HUMAN MELANOMA TISSUE. **Claude E. Gagna**, Peter Lambert, W. Clark Lambert

371-Pos BOARD #B126
DOUBLE-STRANDED B-DNA: PRESENCE IN HUMAN MELANOMA TISSUE (STAGE III). **Claude E. Gagna**, Muhammad Malik, Akshay Sharma, David Dursunian, Peter Lambert, W. Clark Lambert

372-Pos **BOARD #B127**
INTACT RIGHT-HANDED B-DNA: OCCURRENCE IN HUMAN MELANOMA TISSUE (STAGE I). **Muhammad W. Malik**, Claude E. Gagna, Akshay Sharma, David L. Dursunian, Varun Verma, Joseph Miglorino, Peter Lambert, W. C. Lambert

373-Pos **BOARD #B128**
UNALTERED B-DNA: DISTRIBUTION IN HUMAN MELANOMA TISSUE (STAGE II). **Akshay Sharma**, Claude E. Gagna, Muhammad Malik, David Dursunian, Peter Lambert, W. C. Lambert

Protein-Nucleic Acid Interactions I (Boards #B129–#B150)

374-Pos **BOARD #B129**
THE MECHANISM OF NUCLEOSOME SPACING BY A DIMERIC CHROMATIN REMODELING ENZYME. **John D. Leonard**, Jean-Paul Armache, Nariman Naber, Shenping Wu, Edward Pate, Roger Cooke, Yifan Cheng, Geeta J. Narlikar

375-Pos **BOARD #B130**
NUCLEOSOME POSITIONING ON LAMBDA DNA FOR SINGLE-MOLECULE ANALYSIS OF CHROMATIN REMODELING - DEVELOPMENT OF A VERSATILE LAMBDA DNA CONSTRUCT CAPABLE OF RECEPTION OF ANY DNA SEQUENCES OF INTEREST. **Mate Gyimesi**, Jody L. Plank, Jason C. Bell, James E. Graham, Christopher C. Dombrowski, Stephen C. Kowalczykowski

376-Pos **BOARD #B131**
MEASURING KINETICS OF DNA CLEAVAGE WITH SINGLE MOLECULE RESOLUTION. **Allen C. Price**, Briana Mousley, Stefano Gambino, Elsie Helou, D. Linda Song, Joseph Loparo

377-Pos **BOARD #B132**
BENDING OF SHORT DSDNA UPON BINDING OF ANABAENA SENSORY RHODOPSIN TRANSDUCER. **Doseok Kim**, Sung Hyun Kim, So Young Kim, Takkyun Ahn, Kwang-Hwan Jung

378-Pos **BOARD #B133**
DISSOCIATION FREE-ENERGY PROFILES OF SPECIFIC AND NON-SPECIFIC DNA-LAC REPRESSOR COMPLEXES: ADAPTIVE BIASING FORCE MOLECULAR DYNAMICS STUDY. Yoshiteru Yonetani, **Hidetoshi Kono**

379-Pos **BOARD #B134**
UNDERSTANDING HOW PROTEINS SHAPE DNA USING ENERGY MINIMIZATION. **Nicolas Clauvelin**, Wilma K. Olson

380-Pos **BOARD #B135**
CONFORMATIONAL CHANGES IN THE LAC REPRESSOR PROTEIN EFFECT DNA LOOP ENERGETICS AND TOPOLOGY. **Pamela J. Perez**, Nicolas Clauvelin, Grace Tam, Wilma K. Olson

381-Pos **BOARD #B136**
DETERMINATION OF FREE ENERGY PROFILES FOR POLYNUCLEOTIDES TRANSLOCATION THROUGH MUTANT α -HEMOLYSIN NANOPORES. **Annielle M. B. Silva**, Cláudio G. Rodrigues, Gustavo M. Seabra

382-Pos **BOARD #B137**
DIRECT SINGLE-MOLECULE FRET IMAGING OF THE EUKARYOTIC INITIATION FACTOR 4A REVEALS LARGE CONFORMATIONAL TRANSITIONS DURING RNA UNWINDING. **Yingjie Sun**, Amit Meller

383-Pos **BOARD #B138**
ROLE OF DEAD BOX HELICASES IN HIV-1 REV FUNCTION: A SINGLE-MOLECULE APPROACH. **Rajan Lamichhane**, David P. Millar

384-Pos **BOARD #B139**
DEAD BOX HELICASES IN RNP GRANULE. **Younghoon Kim**, Christian Eckmann, Clifford P. Brangwynne, Sua Myong

385-Pos **BOARD #B140**
RNA HELICASES ON THE MOVE. Raj Saurabh, Debjani Bagchi, Francesca Fiorini, Hervé Le Hir, Kyle Tanner, Josette Banroques, **Vincent Croquette**

386-Pos **BOARD #B141**
RECBCD FAILS TO BYPASS THE 5'-TO-3' SINGLE-STRANDED DNA GAP AFTER TRANSLOCATING ALONG INDIVIDUAL CHI-CONTAINING DUPLEX DNA. Cinya Chung, **Hung-Wen Li**

387-Pos **BOARD #B142**
SINGLE-MOLECULE IMAGING REVEALS THE TRANSLOCATION DYNAMICS OF HEPATITIS C VIRUS NS3 HELICASE. **Chang-Ting Lin**, Felix Tritschler, Kyung Suk Lee, Meigang Gu, Charles M. Rice, Taekjip Ha

388-Pos **BOARD #B143**
PCRA HELICASE AND THE MECHANISM OF ASYMMETRIC ROLLING CIRCLE DNA REPLICATION. **Lesley Southerden**, Claudia Arbore, Martin Webb

389-Pos **BOARD #B144**
ANALYSIS OF POLYMERASE-DNA INTERACTIONS AND POLYMERASE ACTIVITY WITH ELECTRICALLY ACTUATED DNA NANOLEVERS ON A CHIP. **Andreas Langer**, Michael Schraeml, Ralf Strasser, Dieter Heindl, Ulrich Rant

390-Pos **BOARD #B145**
STUDIES OF DNA GYRASE AT THE SINGLE MOLECULE LEVEL. **Kathryn H. Gunn**, Katarzyna M. Soczek, John F. Marko, Alfonso Mondragon

391-Pos **BOARD #B146**
REQUIREMENTS FOR SITE-SPECIFIC RECOMBINATION IN THE TYROSINE-FAMILY RECOMBINASE ACTIVE SITE. **Hsiu-Fang Fan**

392-Pos **BOARD #B147**
DISTRIBUTIVE AND PROCESSIVE EXONUCLEASES CHARACTERIZED BY SINGLE MOLECULE FRET. Sangmi Jee, Jungmin Yoo, Suyeon Park, **Gwangrog Lee**

393-Pos **BOARD #B148**
HUMAN REPLICATION PROTEIN A (RPA) CAN DIFFUSE ALONG SINGLE STRANDED DNA. **Binh Nguyen**, Joshua Sokoloski, Marc S. Wold, Roberto Galletto, Elliot L. Elson, Timothy M. Lohman

394-Pos **BOARD #B149**
HUMAN ORF1P - DNA INTERACTIONS CHARACTERIZED BY SINGLE MOLECULE DNA STRETCHING. **M. Nabuan Nauer**, Anthony V. Furano, Mark C. Williams

395-Pos **BOARD #B150**
INTERACTIONS BETWEEN THE SMC-COMPLEX, SPO0J AND DNA. **James A. Taylor**, Emma Gwynn, Cesar Pastrana, Fernando Moreno Herrero, Mark S. Dillingham

Chromatin and the Nucleoid (Boards #B151–#B180)

396-Pos **BOARD #B151**
THE REGULATION OF EZH2 ACTIVITY BY PHF1. **Lynne Dieckman**, Catherine Musselman

397-Pos BOARD #B152

INTERACTIONS AND STACKING IN ORDERED MONONUCLEOSOMES AND FOLDED CHROMATIN: EFFECTS OF HISTONE TAIL MODIFICATIONS.

Lars Nordenskiöld, Nikolay Korolev, Alexander P. Lyubartsev, Abdollah Allahverdi, Ying Liu, Renliang Yang, Chuan-Fa Liu, Meng He, John van Noort

398-Pos BOARD #B153

NUCLEOSOME DYNAMICS INVOLVE SPONTANEOUS FLUCTUATIONS IN THE HANDEDNESS OF TETRASOMES.

Rifka Vlijm, Mina Lee, Jan Lipfert, Alexandra Lusser, Cees Dekker, Nynke H. Dekker

399-Pos BOARD #B154

COMBINED INFLUENCE OF MULTIPLE PTMS ON NUCLEOSOME UNWRAPPING AND DNA ACCESSIBILITY.

Matthew S. Brehove, Justin A. North, Michael G. Poirier

400-Pos BOARD #B155

THE INFLUENCE OF HISTONE H3 WITH TRIMETHYLATED LYSINE 36 ON THE STABILITY OF THE NUCLEOSOME.

Matthew D. Gibson, Jovylyn Gatchalian, Catherine A. Musselman, Justin A. North, Tatiana G. Kutateladze, Michael Guy Poirier

401-Pos BOARD #B156

THE YEAST HMG PROTEIN HMO1 ALTERS NUCLEOSOME STRUCTURE. **Micah J. McCauley**, Ran Huo, Nicole Becker,

Molly Nelson Holt, Uma Muthurajan, Karolin Luger, L. James Maher, Nathan Israeloff, Mark C. Williams

402-Pos BOARD #B157

INSIGHTS INTO THE MOLECULAR MECHANISM OF THE COMBINATORIAL READOUT OF HISTONE PTMS BY BPTF.

Katayoun Varzavand, **Catherine A. Musselman**

403-Pos BOARD #B158

UBIQUITOUS NUCLEOSOME UNWRAPPING IN THE YEAST GENOME. **Razvan V. Chereji**, Alexandre V. Morozov

404-Pos BOARD #B159 MINORITY AFFAIRS TRAVEL AWARDEE

ROUTES TO DNA ACCESSIBILITY: ALTERNATIVE PATHWAYS FOR NUCLEOSOME UNWINDING. **Daniel Schlingman**,

Andrew Mack, Masha Kamenetska, Simon Mochrie, Lynne Regan

405-Pos BOARD #B160

NUCLEOSOME STABILITY IS CONTROLLED BY THE CHARGE OF ITS GLOBULAR CORE: IMPLICATIONS FOR THE BIOLOGICAL FUNCTION. **Alexey V. Onufriev**, Andrew T. Fenley, Ramu Anandakrishnan

406-Pos BOARD #B161

HOW DO NUCLEOSOMES BUNDLE DNA INTO CHROMATIN?

Nicolas Clauvelin, Javier Diaz-Montes, Jaroslaw Zola, Manish Parashar, Wilma K. Olson

407-Pos BOARD #B162

MODELING EFFECTS OF NUCLEOSOME POSITIONING IN SHORT AND LONG CHROMATIN FIBERS. Robert Schöpflin,

Oliver Müller, Christin Weinberg, Vladimir B. Teif, Karsten Rippe, **Gero Wedemann**

408-Pos BOARD #B163

THE PHYSICS OF DNA IN CONFINEMENT. **Jejoong Yoo**,

Aleksei Aksimentiev

409-Pos BOARD #B164

MECHANISM OF NUCLEOSOME REMODELING BY INO80 FROM *S. CEREVISIAE*. **Coral Y. Zhou**, Geeta J. Narlikar

410-Pos BOARD #B165

DYNAMIC REGULATION OF TRANSCRIPTION FACTORS BY NUCLEOSOME REMODELING. **Ming Li**, Payel Sen, Lola Olufemi,

Arjan Hada, Michael A. Hall, Benjamin Y. Smith, Scott Forth,

Jeffrey N. McKnight, Ashok Patel, Gregory D. Bowman,

Blaine Bartholomew, Michelle D. Wang

411-Pos BOARD #B166

HIGHER-ORDER CHROMATIN ORGANISATION BY INSULATOR PROTEINS REVEALED USING SUPER-RESOLUTION MICROSCOPY. **Mariya Georgieva**, Alessandro Valeri,

Stephanie Déjardin, Jean-Bernard Fiche, Thibaut Mutin, Marcelo Nollmann

412-Pos BOARD #B167

RECOVERING CHROMATIN CONFORMATIONS FROM CONTACT PROBABILITIES. **Dario Meluzzi**, Gaurav Arya

413-Pos BOARD #B168

NUCLEIC ACID SUPERSTRUCTURES: ASSEMBLY STORIES. **Christophe Lavelle**

414-Pos BOARD #B169

CHROMATIN AS A DYNAMIC PLATFORM FOR PROTEIN-PROTEIN INTERACTIONS. **Beat Fierz**

415-Pos BOARD #B170

TRANSPOSITION OF NATIVE CHROMATIN FOR FAST AND SENSITIVE MULTIMODAL ANALYSIS OF CHROMATIN ARCHITECTURE. Jason D. Buenrostro, Paul G. Giresi, Lisa C. Zaba,

Howard Y. Chang, **William J. Greenleaf**

416-Pos BOARD #B171

LONG DISTANCE CHROMATIN INTERACTIONS.

Mohammad Ramezani, Anirvan Sengupta

417-Pos BOARD #B172

THREE-DIMENSIONAL CHROMATIN MODEL OF α -GLOBIN GENE LOCUS IN DIFFERENTIALLY ACTIVATED STATES.

Gamze Gürsoy, Yun Xu, Amy Kenter, Jie Liang

418-Pos BOARD #B173

POPULATION PROPERTIES AND COMPLEX FOLDING BEHAVIOR OF CHROMOSOME ARISE FROM SPATIAL CONFINEMENT OF SELF-AVOIDING CHROMATIN CHAINS. **Gamze Gürsoy**, Yun Xu, Amy Kenter, Jie Liang

419-Pos BOARD #B174

GENOME ORGANIZATION IN THE NUCLEUS EXPLORED BY DYNAMIC LIVE-IMAGING METHODS. **Yuval Garini**

420-Pos BOARD #B175 EDUCATION TRAVEL AWARDEE

SHORT-TIME DYNAMICS *E. COLI* CHROMOSOMAL LOCI REVEAL A DEPENDENCE ON COORDINATE AND INDICATE THE PRESENCE OF A SPORADIC BUT UBIQUITOUS SUPER-DIFFUSIVE MOTION. **Avelino Javier**, Zhicheng Long,

Nathan J. Kuwada, Eileen Nugent, Marco Grisi, Kamin Siriawatwetchakul,

William Collins, Ilya Flyamer, Gillian Fraser, Vincenzo G. Benza,

Paul A. Wiggins, Kevin D. Dorfman, Pietro Cicuta,

Marco Cosentino Lagomarsino

421-Pos BOARD #B176

CHROMOSOME TERRITORIES REPOSITION DURING DNA DAMAGE-REPAIR RESPONSE. **Basuthkar J. Rao**

422-Pos BOARD #B177

STRUCTURE AND MECHANICAL PROPERTIES OF THE BACTERIAL CHROMOSOME IN *E. COLI*. **Nastaran Hadizadeh**,

Calin C. Guet, Reid C. Johnson, John F. Marko

423-Pos **BOARD #B178**
NUCLEOID REORGANIZATION BY THE STRESS RESPONSE
PROTEIN DPS. **Elío A. Abbondanzieri**, Natalia Vtyurina, Anne Meyer

424-Pos **BOARD #B179**
BROWNIAN DYNAMICS SIMULATIONS OF A SELF-AVOIDING
CHAIN MODEL OF A CHROMOSOME IN A SPHERICAL
CONFINEMENT. **Young-Gui Yoon**, Changbong Hyeon

425-Pos **BOARD #B180**
COARSE-GRAINED SIMULATIONS OF NUCLEOID
STRUCTURE. **Tyler M. Earnest**, Zaida Luthey-Schulten

Membrane Dynamics I (Boards #B181–#B207)

426-Pos **BOARD #B181**
SHAPE PAIRING OF CHOLESTEROL WITH OXIDIZED
PHOSPHOLIPID SPECIES IN LIPID BILAYERS. Bastien Loubet,
Piotr Jurkiewicz, Agnieszka Olzynska, Martin Hof, **Himanshu Khandelia**

427-Pos **BOARD #B182**
EXPERIMENTAL AND THEORETICAL COMPARISON OF
PRESSURE EFFECTS ON LIPID BILAYER FLUCTUATIONS.
K. J. Mallikarjunaiah, Jun Feng, Blake Mertz, Michael F. Brown

428-Pos **BOARD #B183**
SIMULATIONS OF THE RUPTURE OF LIPOSOMES NEAR SOLID
SURFACES IN THE PRESENCE OF MEMBRANE-MEMBRANE
ADHESION. Annamaria Takats-Nyeste, **Imre Derenyi**

429-Pos **BOARD #B184**
TEMPERATURE DEPENDENCE OF BILAYER STRUCTURAL
PROPERTIES STUDIED WITH MOLECULAR DYNAMICS
SIMULATIONS. **Xiaohong Zhuang**, Judah Makover, Jeffrey B. Klauda

430-Pos **BOARD #B185**
LIQUID-ORDERED PHASE FORMATION IN CHOLESTEROL-
POPC BILAYERS: ALL-ATOM MOLECULAR DYNAMICS
SIMULATIONS. **Fernando Favela-Rosales**,
Mauricio D. Carbajal-Tinoco, Iván Ortega-Blake

431-Pos **BOARD #B186**
EFFECTS OF LIPID COMPOSITION ON BIOLOGICAL
MEMBRANE ELECTROSTATICS. **Bogdan Lev**, Ronald J. Clarke,
Toby W. Allen

432-Pos **BOARD #B187**
ELECTRIC FIELD-DRIVEN WATER DIPOLES: NANOSCALE
ARCHITECTURE OF ELECTROPORATION. **Mayya Tokman**,
Jane H. Lee, Zachary A. Levine, Ming-Chak Ho, Michael E. Colvin,
P Thomas Vernier

433-Pos **BOARD #B188**
NON-EQUILIBRIUM COMPUTATION OF DIFFUSION
CONSTANTS FOR WATER, LIPIDS AND PROTEINS.
Michael Lerner, **Hoang Tran**

434-Pos **BOARD #B189**
CHARACTERIZATION OF PURE LIPID BILAYERS USING
MOLECULAR DYNAMICS SIMULATIONS.
Eder M. Davila Contreras

435-Pos **BOARD #B190** EDUCATION TRAVEL AWARDEE
MEASUREMENTS OF SOLUTE POLARIZABILITES AFFECTING
LIPID MEMBRANE INTERACTIONS. **Ryan Z. Lybarger**,
Krzysztof Szymanski, Bruce D. Ray, Horia I. Petrache

436-Pos **BOARD #B191**
EFFECT OF LIPID RECYCLING ON THE FINITE SIZE OF LIPID
RAFTS IN SYMMETRIC AND ASYMMETRIC BILAYERS.
Charissa Shiver, Eric Spangler, Mohamed Laradji

437-Pos **BOARD #B192**
SURFACE PROPERTIES AND MEMBRANE PACKING IN HYBRID
LIPOSOMES COMPOSED OF TETRAETHER AND DIESTER
LIPIDS. **Umme Ayesa**, Parkson Chong

438-Pos **BOARD #B193**
EFFECTS OF DEHYDRATION-REHYDRATION ON THE
STRUCTURAL AND FUNCTIONAL PROPERTIES OF
PULMONARY SURFACTANT. **Sonia Vazquez-Sanchez**,
Mercedes Echaide, Jesus Perez-Gil

439-Pos **BOARD #B194**
TRANSIENT EFFECT OF CALCIUM INFLUX ON PIP2
CLUSTERS AND CHOLESTEROL-STABILIZED NANO-DOMAINS
IN THE INNER PLASMA MEMBRANE LEAFLET OF INTACT
CELLS. **Weixiang Jin**, Heng Huang, Arnd Pralle

440-Pos **BOARD #B195**
CHOLESTEROL TRANSBILAYER DISTRIBUTION IN
MAMMALIAN CELLS: MECHANISMS AND FUNCTIONS.
Kevin Courtney, Xiaohui Zha

441-Pos **BOARD #B196**
PHOSPHATIDYLINOSITOL PATCHES IN A RECONSTITUTED
LIPID MEMBRANE AND ITS DYNAMICS. **Kei Takahashi**,
Nao Shimada, Taro Toyota, Satoshi Sawai

442-Pos **BOARD #B197**
ASYMMETRY DETERMINES THE EFFECT OF CERAMIDES
ON MODEL MEMBRANES. IN NATURAL MEMBRANES
TOO? **Dolores C. Carrer**, Eva Kummer, Grzegorz Chwastek,
Salvatore Chiantia, Petra Schwill

443-Pos **BOARD #B198**
CURVED FLUID MEMBRANES BEHAVE Laterally AS AN
EFFECTIVE VISCOELASTIC MEDIUM. Mohammad Rahimi,
Marino Arroyo

444-Pos **BOARD #B199**
PREDICTION OF BLOOD-BRAIN BARRIER PERMEABILITY
FROM MOLECULAR DYNAMICS SIMULATIONS.
Timothy S. Carpenter, Edmond Y. Lau, Daniel A. Kirshner,
Felice C. Lightstone

445-Pos **BOARD #B200**
ASYMMETRIC SUPPORTED LIPID BILAYER FORMED VIA
METHYL- β -CYCLODEXTRIN MEDIATED LIPID EXCHANGE:
A MEMBRANE MODEL SYSTEM TO STUDY PHASE SEPARATION
AND TRANSBILAYER LIPID MOVEMENT. **Ilaria Visco**

446-Pos **BOARD #B201**
NON-EQUILIBRIUM PHASE BEHAVIOUR IN GIANT LIPID
VESICLES FOLLOWING VERY RAPID TEMPERATURE
CHANGES. **Lucia Parolini**, Will R. Fletcher, Pietro Cicuta

447-Pos **BOARD #B202**
PROBING SIMULTANEOUSLY MEMBRANE DYNAMICS
AND PROTEIN ACTIVITY IN SUSPENDED BILAYERS IN A
MICROFLUIDIC FORMAT. **Verena C. Stimberg**, Johan G. Bomer,
Hans L. de Boer, Albert van den Berg, Séverine Le Gac

448-Pos **BOARD #B203**
PORE FORMATION IN A MEMBRANE SUBMITTED TO HIGH
VOLTAGES. INFLUENCE OF THE MEMBRANE VISCOSITY.
Clair Poignard, Aude Silve, Lars Wegner

449-Pos BOARD #B20 INTERNATIONAL TRAVEL AWARDEE
PHASOR PLOTS AND SPECTRAL PHASOR ANALYSIS OF LAURDAN AND PRODAN FOR MEMBRANE HETEROGENEITY STUDIES: NEW FRONTIERS IN MEMBRANE BIOPHYSICS. **Leonel S. Malacrida**, Arturo Briva, Carrisa M. Vetromile, Enrico Gratton, Ana Denicola, David M. Jameson

450-Pos BOARD #B205
SCANNING-APERTURE ELECTROSTATIC TRAPPING AND MANIPULATION OF SINGLE NANOPARTICLES. **Ji Tae Kim**, Vahid Sandoghdar

451-Pos BOARD #B206
CORRELATED LATERAL DIFFUSION OF LIPIDS. **Vladimir Adrien**, Gamal Rayan, Nicolas Taulier, Wladimir Urbach

452-Pos BOARD #B207 CPOW TRAVEL AWARDEE
CREATING OBSTACLE COURSES FOR RAFT PROTEINS - HOW MICROPATTERNING CAN HELP DECIPHER PLASMA MEMBRANE ORGANIZATION. **Eva Sevcsik**, Mario Brameshuber, Martin Fölser, Gerhard J. Schütz

Membrane-Active Peptides and Toxins I (Boards #B208–#B235)

453-Pos BOARD #B208 EDUCATION TRAVEL AWARDEE
THE INTERACTION BETWEEN THE ANTIMICROBIAL PEPTIDE K-HYA1 AND MODEL MEMBRANES: DISTINCT ACTION IN NEUTRAL OR NEGATIVELY CHARGED BILAYERS. **Thais A. Enoki**, Karin A. Riske, Katia R. Perez, Esteban N. Lorenzon, Eduardo M. Cilli, M. Teresa Lamy

454-Pos BOARD #B209
CHOLESTEROL INCORPORATION IN MEMBRANES ATTENUATES THE DISRUPTION ABILITY OF ANTIMICROBIAL PEPTIDE PROTEGRIN-1. **J. Michael Henderson**, Jochen Burck, Robert Lehrer, Alan J. Waring, Jaroslaw Majewski, Anne S. Ulrich, Ka Yee C. Lee

455-Pos BOARD #B210
LIPID EXTRACTING EFFECT OF DAPTOMYCIN CORRELATED TO ITS ACTION ON BACTERIAL CELL MEMBRANES. **Yen-fei Chen**, Tzu-Lin Sun, Yen Sun, Huey W. Huang

456-Pos BOARD #B211
UNDERSTANDING HOW THE ANTIMICROBIAL PEPTIDE THANATIN INTERACTS WITH THE LIPID BILAYER OF CELL WALLS USING MODEL MEMBRANES. **Émile Robert**, Matthieu Fillion, François Otis, Normand Voyer, Michèle Auger

457-Pos BOARD #B212
A NOVEL FUNCTIONAL CLASS OF PORE-FORMING PEPTIDES. **Gregory Wiedman**, Taylor Fuselier, Jing He, Peter Searson, Kalina Hristova, William C. Wimley

458-Pos BOARD #B213
PEPTIDES WITH THE SAME COMPOSITION, HYDROPHOBICITY, AND HYDROPHOBIC MOMENT BIND TO PHOSPHOLIPID BILAYERS WITH DIFFERENT AFFINITIES. **Antje Pokorny**, Melissa Cherry, Sarah Higgins, Hilary Melroy, Hee-Seung Lee

459-Pos BOARD #B214
SPECTROSCOPIC INVESTIGATIONS OF SYNTHETIC AMPHIPHILIC PEPTIDES IN INTERACTIONS WITH MODEL MEMBRANES. **Matthieu Fillion**, Maxime Goudreault, Normand Voyer, Michèle Auger

460-Pos BOARD #B215
INVESTIGATING THE ACTIVITIES OF GRAMICIDIN A IN THE PRESENCE OF IONIC LIQUIDS(ILS). **Hyunil Ryu**, Iwata Seigo, Seung-Hwan Jeong, Maruta Shinsaku, Sun Min Kim, Tae-Joon Jeon

461-Pos BOARD #B216
THE AMANTADINE-RESISTANT S31N MUTANT OF INFLUENZA A VIRUS M2 PROTEIN STABLY FORMS A DIMER ON THE LIVING CELLS. **Kenichi Kawano**

462-Pos BOARD #B217
USING SPHEROPLASTS TO STUDY PEPTIDE INTERACTIONS WITH CELL MEMBRANES. **Tzu-Lin Sun**, Yen Sun, Huey W. Huang

463-Pos BOARD #B218
HIGH-THROUGHPUT DISCOVERY OF PEPTIDE ANTIBIOTICS: A DELICATE BALANCE BETWEEN ANTIMICROBIAL POTENCY, SOLUBILITY AND TARGET SELECTIVITY. **Jing He**, Charles G. Starr, William C. Wimley

464-Pos BOARD #B219
HUMAN LACTOFERRICIN DERIVATIVES AS NEW TARGETED WEAPONS IN CANCER THERAPY. **Sabrina Riedl**, Beate Rinner, Helmut Schaidler, Karl Lohner, Dagmar Zweytick

465-Pos BOARD #B220
STRUCTURE AND GLYCAN-BINDING PROPERTIES OF THE VIBRIO VULNIFICUS HEMOLYSIN B-TREFOIL LECTIN. **Katherine Kaus**, Rich Olson

466-Pos BOARD #B221
PORE-FORMING PEPTIDE TOXINS OBTAINED FROM VARIOUS PSEUDOMONAS SP. CAUSING BROWN BLOTCH DISEASE. **Lin-Lin Mu**, Sun-Myung Lee, Young-Kee Kim

467-Pos BOARD #B222
CYTOTOXICITIES OF VARIOUS PORE-FORMING TOXINS OBTAINED FROM STRAINS OF *PSEUDOMONAS TOLAASII*. **Soo-Jin Park**, Young-Kee Kim

468-Pos BOARD #B223
INTERACTION OF AN ANTITUMOR PEPTIDE WITH LIPIDS OF THE CANCER PLASMA MEMBRANE - FORMATION OF MEMBRANE DOMAINS AND INFLUENCE OF CHOLESTEROL. **Sabrina Riedl**, Beate Rinner, Gerald Rechberger, Helmut Schaidler, Karl Lohner, **Dagmar Zweytick**

469-Pos BOARD #B224
PORE FORMATION AND DYNAMICS OF CYTOLYSIN-A ON SUPPORTED LIPID BILAYER MEMBRANES. **Ayush Agrawal**

470-Pos BOARD #B225
SOLID STATE NMR STRUCTURE-FUNCTION ANALYSIS OF THE STRESS-RESPONSE PEPTIDE TISB. **Benjamin Zimpfer**, Parvesh Wadhvani, Johannes Reichert, Sebastian Prock, Papia Sanyal, Marina Berditsch, Erik Strandberg, Jochen Buerck, Anne S. Ulrich

471-Pos BOARD #B226
PHILIP-FIRE: A HIGH-CONTRAST, INSERTION-TRIGGERED FLUORESCENT PROBE FOR TARGETING TUMORS IN VIVO. **Alexander Karabadzhak**, Lan Yao, Rachel Langenbacher, Anna Moshnikova, Ramona Adochite, Ming An, Oleg A. Andreev, Yana K. Reshetnyak, Donald M. Engelman

472-Pos BOARD #B227
MODELING MEMBRANE PROTEINS WITH SLIM, A NEW IMPLCIIT MEMBRANE MODEL. **Julia Setzler**, Carolin Seith, Martin Brieg, Wolfgang Wenzel

473-Pos BOARD #B228

MEMBRANE FUSION PEPTIDE-MEMBRANE INTERACTIONS: COMPARING SIMULATIONS TO EXPERIMENTAL DEPTH MEASUREMENTS. **Per Larsson**, Peter M. Kasson

474-Pos BOARD #B229

BENDING MODULUS DICTATES GUV RESPONSE TO STRESS. **Kejia Chen**, Steve Granick

475-Pos BOARD #B230

INVESTIGATION OF THE MECHANISM OF ANTIMICROBIAL LIPOPEPTIDES USING COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Dejun Lin**, Alan Grossfield

476-Pos BOARD #B231

MODELLING THE INTERACTIONS OF EQUINATOXIN II WITH MICELLES. **Daniel Weber**, Shenggen Yao, Gregor Anderluh, Terry P. Lybrand, Matthew T. Downton, John Wagner, Frances Separovic

477-Pos BOARD #B232

CA²⁺ INFLUX AND TYR KINASES TRIGGER BORDETTELLA CYAA ENDOCYTOSIS. CELL PHYSIOLOGY AND EXPRESSION OF THE CD11B/CD18 INTEGRIN, MAJOR DETERMINANTS OF THE ENTRY ROUTE. **Helena Ostolaza**, Kepa B. Uribe, Cesar Martin, Aitor Etxebarria, David Gonzalez-Bullon.

478-Pos BOARD #B233

TETHERING DIMERS OF VOLTAGE SENSOR TOXINS CAN SELECTIVELY AMPLIFY THEIR AFFINITY FOR KV CHANNELS. **Kenneth S. Eum**, Sebastian Fletcher-Taylor, Daniel Austin, Bruce E. Cohen, Jon T. Sack

479-Pos BOARD #B234

AN ION CHANNEL PLATFORM FOR DETECTION OF SMALL MOLECULE ANALYTES. **Young Hun Kim**, Leibniz Hang, Michael Mayer, Jerry Yang

480-Pos BOARD #B235

CONFORMATIONAL ANALYSIS OF THE FROG SKIN PEPTIDE, PLASTICIN-L1 AND ITS EFFECTS ON THE PRODUCTION OF PROINFLAMMATORY CYTOKINES BY MACROPHAGES. **Andrea C. Rinaldi**, Giorgia Manzo, Roberta Sanna, Mariano Casu, Jelena M. Pantic, Miodrag L. Lukic, J. Michael Conlon, Mariano A. Scorciapino

Membrane Structure I (Boards #B236-#B265)

481-Pos BOARD #B236

DETERGENT-FREE EXTRACTION OF MEMBRANE PROTEINS INTO NATIVE NANODISCS. APPLICATION TO THE REACTION CENTER OF *RHODOBACTER SPHAEROIDES*. **Stefan Scheidelaar**, Martijn Koorengel, David Swainsbury, Hans Meeldijk, Eefjan Breukink, Michael Jones, Rienk van Grondelle, Antoinette Killian

482-Pos BOARD #B237

PYRIDINIUM SALTS INFLUENCE ON LIPID BILAYERS. **Sergio S. Funari**, Claudio Di Vitta, Liliana Marzorati

483-Pos BOARD #B238

HIV-1 TAT MEMBRANE TRANSLOCATION PROBED BY LOW- AND WIDE-ANGLE X-RAY SCATTERING, NEUTRON SCATTERING, CD SPECTROSCOPY AND MD SIMULATIONS. **Kiyotaka Akabori**, Bradley W. Treece, Michael S. Jablin, John F. Nagle, Brian Maranville, Kun Huang, Angel E. Garcia, Stephanie Tristram-Nagle

484-Pos BOARD #B239

A SYSTEMATIC STUDY OF PHASE CHANGES INDUCED BY TRANS-MEMBRANE PEPTIDE GRAMICIDIN-A IN MULTI-COMPONENT LIPID MEMBRANES. **Ebrahim Hassan-Zadeh**, Juyang Huang

485-Pos BOARD #B240

PHYSICAL PROPERTIES OF MODEL MEMBRANES CONTAINING POPE AND PHYTOSTEROL. **Ya-Wei Hsueh**, Yen-Chun Chen

486-Pos BOARD #B241

MEASURING THE DIMERIZATION PROPENSITIES OF MUCIN1 TRANSMEMBRANE AND JUXTAMEMBRANE DOMAINS. **Edwin Li**, Christopher Moll, Bernadette Eichman, Jessica King

487-Pos BOARD #B242

EDUCATION TRAVEL AWARDEE
CHARACTERIZING THE CURVE: A MECHANISTIC STUDY OF CPLA2-MEDIATED MEMBRANE BENDING. **Katherine E. Ward**, James P. Ropa, Robert V. Stahelin

488-Pos BOARD #B243

CUBIC - INVERTED HEXAGONAL PHASE TRANSITION KINETICS IN MONOOLEIN-SUCROSE MIXTURES. Zachariah I. Strango, Caleb W. Reese, Christopher J. Ver Hoef, **Paul E. Harper**

489-Pos BOARD #B244

LIPID MEMBRANES CONTAINING PLANT STEROLS SEPARATE INTO COEXISTING LIQUID PHASES OVER BROAD TEMPERATURE AND COMPOSITIONAL RANGES. **Ranee C.L. James**, Jonathan P. Litz, Sarah L. Keller

490-Pos BOARD #B245

MEMBRANES WITH THICK, LIQUID-DISORDERED AND THIN, LIQUID-ORDERED PHASES ARE RARE. **Joan V. Bleecker**, Phillip A. Cox, Rami N. Foster, David G. Castner, Sarah L. Keller

491-Pos BOARD #B246

GENERAL ANESTHETICS LOWER CRITICAL TEMPERATURES IN PLASMA MEMBRANE VESICLES. **Ellyn J. Gray**, Matthew B. Stone, Benjamin B. Machta, Sarah L. Veatch

492-Pos BOARD #B247

PROBING SUB-MICRON CRITICAL COMPOSITION FLUCTUATIONS USING SUPER-RESOLUTION TECHNIQUES IN GIANT PLASMA MEMBRANE VESICLES. **Jason Karslake**, Matt Stone, Sarah L. Veatch

493-Pos BOARD #B248

PROBING INTERBILAYER COUPLING IN PHASE SEPARATED BILAYERS UNDER HIGH SHEAR. **Matthew C. Blosser**, Aurelia R. Honerkamp-Smith, Sarah L. Keller

494-Pos BOARD #B249

INFLUENCE OF CIS AND TRANS UNSATURATED LIPIDS ON AN INTERDIGITATED MEMBRANE. Eric A. Smith, Connor Smith, Brian Tanksley, **Phoebe K. Dea**

495-Pos BOARD #B250

THE PERMEABILITY COEFFICIENT OF BILAYER LIPID MEMBRANE FOR CATIONIC PORPHYRINS. **Anahit Torosyan**, Valeri Arakelyan, Robert Ghazaryan

496-Pos BOARD #B251

COMPARING PHASE TRANSITION TEMPERATURES OF GIANT PLASMID MEMBRANE VESICLES WITH DIFFERENT PREPARATION METHODS. **Eric M. Sink**

497-Pos BOARD #B252
 RAFT BOUNDARY STRUCTURE IS RESPONSIBLE FOR MONOLAYER DOMAINS COUPLING AND LINE ACTIVITY OF NON-BILAYER COMPONENTS. **Sergey A. Akimov**, Timur R. Galimzyanov

498-Pos BOARD #B253 EDUCATION TRAVEL AWARDEE
 PROBING CHOLESTEROL-LIPID INTERACTIONS AND CHEMICAL ACTIVITY OF CHOLESTEROL IN BILAYERS VIA CYCLODEXTRIN DEPLETION. **Jonathan P. Litz**, Thomas Portet, Sarah L. Keller

499-Pos BOARD #B254
 SOLID STATE 2H NMR STUDIES OF THE DISORDERING OF RAFT-LIKE DOMAINS BY N-3 PUFA. **Jacob J. Kinnun**, Justin A. Williams, William Stillwell, Robert Bittman, Saame Raza Shaikh, Stephen R. Wassall

500-Pos BOARD #B255
 COMPUTATIONAL STUDIES OF BLEBBING AND VESICULATION VIA WEAK ADHESION OF THE CYTOSKELETON IN AN ERYTHROCYTE MODEL. Mohamed Laradji, **Eric J. Spangler**, P.B. Sunil Kumar

501-Pos BOARD #B256
 CELL CYCLE PHASE DETERMINES CRITICAL TEMPERATURE IN PLASMA MEMBRANE VESICLES. **Erin M. Gray**, Matthew Stone, Sarah Veatch

502-Pos BOARD #B257
 MD SIMULATIONS ON ALPHA-TOCOPHEROL IN PUFA CONTAINING LIPID. **Xiaoling Leng**, Justin A. Williams, Drew Marquardt, Norbert Kučerka, John Katsaras, Jeffrey Atkinson, Thad A. Harroun, Scott Feller, Stephen R. Wassall

503-Pos BOARD #B258
 THE THERAPEUTIC ROLE OF RECOMBINANT HUMAN MG53 PROTEIN IN WOUND HEALING. **Haichang Li**, Pu Duann, Zhaobo Fan, Li Zhao, Pei-Hui Lin, Mingzhai Sun, Gejing De, Xinyu Zhou, Jianjun Guan, Jianjie Ma

504-Pos BOARD #B259
 THE UNIQUE ROLES OF HYBRID LIPIDS IN LIPID MEMBRANE DOMAIN SIZE AND ORDER. **Eda Baykal-Caglar**, Ebrahim Hassanzadeh, Mohammad Alwarawrah, Juyang Huang

505-Pos BOARD #B260
 CARDIOLIPIN LOCALISATION IN BUCKLED MEMBRANES. **Federico Elías-Wolff**

506-Pos BOARD #B261
 TOWARDS FAR-FIELD MICROSCOPIC IMAGING OF SUPPORTED LIPID BILAYER OPTICAL ANISOTROPY. **Maria Adelaide Carvalho Miranda**, Pieter A. A. De Beule

507-Pos BOARD #B262
 THE EFFECT OF MEMBRANE-TO-DOMAIN THICKNESS MISMATCH IN PHASE SEPARATION TERNARY LIPID SYSTEMS AS A FUNCTION OF VESICLE SIZE. **Natalie Krzyzanowski**, Lionel Porcar, Ursula Perez-Salas

508-Pos BOARD #B263
 NANO-BILAYER LIPID MEMBRANES HOSTED ON BIOGENIC NANOPOROUS SUBSTRATES. **Shankar Ramakrishnan**, Michael Goryll, Kai-Chun Lin, Sandwip K. Dey, B L. Ramakrishna

509-Pos BOARD #B264
 LOGARITHMIC DOMAIN GROWTH IN TERNARY MIXTURE LIPID MULTILAYER SYSTEMS. **Yicong Ma**, Sajal K. Ghosh, David DiLena, Laura Connelly, Nirav Patel, Fernando Teran Arce, Ratnesh Lal, Sunil K. Sinha

510-Pos BOARD #B265
 FURLED MEMBRANE SHEETS LEAD TO SELF-ASSEMBLED NANO- AND MICROTUBES. **Luisa Losensky**, Björn Goldenbogen, Jürgen P. Rabe, Anca Petran, Jürgen Liebscher, Gudrun Holland, Michael Laue, Andreas Herrmann, Anna Arbuzova

Protein-Lipid Interactions I (Boards #B266–#B287)

511-Pos BOARD #B266
 THE STRUCTURAL ROLE OF LIPID DOMAIN MODIFICATIONS IN ANTIMICROBIAL RESISTANCE FOR SALMONELLA ENTERICA SEROVAR TYPHIMURIUM. **Michael W. Martynowycz**, Thatyane Morimoto Nobre, Hiroshi Nikaido, David Gidalevitz

512-Pos BOARD #B267
 CHARACTERIZING MODERATELY SHORT ANTIMICROBIAL TRYPTOPHAN/ARGININE-RICH PEPTIDES. **Megan K. Wood**, Roger E. Koeppe II, Denise V. Greathouse

513-Pos BOARD #B268
 INTERACTION OF THE ANTIMICROBIAL POLYMYXIN B1 WITH THE INNER AND OUTER MEMBRANES OF E.COLI: INSIGHTS INTO THE MECHANISMS OF MEMBRANE DISRUPTION. **Nils A. Berglund**, Thomas J. Piggot, Syma Khalid

514-Pos BOARD #B269
 MEMBRANE INTERACTIONS WITH ATRA PEPTIDES. **Robin Samuel**, Barney Bishop, Susan D. Gillmor

515-Pos BOARD #B270
 MEMBRANE INSERTION POTENTIAL OF SYNTHETIC CELL PENETRATING PEPTIDES. Nabil A. Alhakamy, Anubhav Kaviratna, Cory Berkland, **Prajnaparamita Dhar**

516-Pos BOARD #B271
 MEMBRANE REGULATION AND SIGNAL TRANSDUCTION BY ANNEXIN A5. **Anne M. Rice**, Samantha Jaworski, Michael E. Fealey, Anika Rannikko, Anne Hinderliter

517-Pos BOARD #B272
 ASSEMBLING OF A PORE-FORMING TOXIN ON A MODEL MEMBRANE. **Neval Yilmaz**, Taro Yamada, Peter Greimel, Takayuki Uchihashi, Toshio Ando, Toshihide Kobayashi

518-Pos BOARD #B273
 ROLE OF M2 INFLUENZA PROTEIN ON VIRAL BUDDING AND SCISSION. **Eduardo Mendez-Villuendas**, Peter Tieleman

519-Pos BOARD #B274
 COMPARATIVE ANALYSIS OF INORGANIC PHOSPHATE BINDING IN A SYNTHETIC AND A NATIVE P-LOOP PEPTIDE USING MOLECULAR DYNAMICS SIMULATIONS. **Mathias F. Gruber**, Elizabeth Wood, Andrea Bordoni, Henrik Bohr, Per Amstrup Pedersen, Claus Hélix-Nielsen

520-Pos BOARD #B275
 COMPUTATIONAL STUDY OF TRANSMEMBRANE HELIX-HELIX INTERACTIONS IN MODEL PEPTIDES DERIVED FROM THE DESK MINIMAL SENSOR. **Moussatova Anastassia**, Wassenaar A. Tsjerk, Cybulski E. Larisa, Ballering Joost, Killian J. Antoinette, Tieleman D. Peter

521-Pos BOARD #B276
CHARGED PROTEIN-LIPID INTERACTIONS IN BILAYERS WITH WIDE-RANGING THICKNESS. **Peiran Chen**, Igor Vorobyov, Toby W. Allen

522-Pos BOARD #B277
CAPTURING SPONTANEOUS BINDING OF HUMAN ISLET AMYLOID POLYPEPTIDE TO ANIONIC MEMBRANES USING A HIGHLY MOBILE MEMBRANE MIMETIC MODEL. **Katrine K. Skeby**, Emad Tajkhorshid, Schiøtt Birgit

523-Pos BOARD #B278
MOLECULAR DYNAMICS STUDIES OF PEGYLATED ANTIMICROBIAL PEPTIDES WITH LIPID BILAYERS. **Eol Han**

524-Pos BOARD #B279
DOUBLE-BELT A NOVEL STRUCTURE OF MEMBRANE PORE. **Robert Vacha**, Daan Frenkel

525-Pos BOARD #B280
INTERACTION OF THE INWARD RECTIFIER POTASSIUM CHANNEL KIR 2.2 WITH PHOSPHATIDYL SERINE. **Mercedes Alfonso Prieto**, Lucie Delemotte, Michael L. Klein

526-Pos BOARD #B281
PERMEATION OF LIPIDATED PROTEIN IN BILAYER USING UNBIASED SIMULATIONS REVEALS SIGNATURE MOTIF FOR PROTEIN-MEMBRANE BINDING. **Lipi Thukral**, Durba Sengupta, Rajesh S. Gokhale

527-Pos BOARD #B282
STRUCTURAL BASIS OF LIPID EXCHANGE IN THE OXYSTEROL-BINDING PROTEIN HOMOLOGUE (OSH) FAMILY. **Stefano Vanni**, Joachim Moser von Filseck, Bruno Mesmin, Bruno Antony, Guillaume Drin

528-Pos BOARD #B283
STUDY OF THE MECHANISM OF ACTION OF A HYBRID PEPTIDE IN POPG:POPC BILAYERS. **Gabriel C. Da Hora**, Thereza Amélia Soares

529-Pos BOARD #B284
OLIGOMERIZATION OF HUNTINGTIN N-TERMINAL FRAGMENT ON A PHOSPHOLIPID BILAYER REVEALED BY MOLECULAR DYNAMICS SIMULATIONS. **Sebastien Cote**, Vincent Binette, Evgeniy S. Salnikov, Burkhard Bechinger, Guanghong Wei, Normand Mousseau

530-Pos BOARD #B285
DYNAMICS OF TRANSITION METAL TRANSPORTING P-TYPE ATPASES IN NATIVE MEMBRANES. **Henriette E. Autzen**, Phillip J. Stansfeld, Oleg E. Sitsel, Kaituo Wang, Gabriele Meloni, Pontus Gourdon, Mark S. P. Sansom, Poul Nissen

531-Pos BOARD #B286
COMPARING SYMMETRIC AND ASYMMETRIC BILAYER-PROTEIN INTERACTIONS USING MOLECULAR DYNAMICS. **Curtis Balusek**, James C. Gumbart

532-Pos BOARD #B287
COARSE-GRAINED SIMULATIONS OF PEPTIDE AGGREGATION ON SURFACES. **Alex Morriss-Andrews**, Joan-Emma Shea

Membrane Receptors and Signal Transduction I (Boards #B288–#B313)

533-Pos BOARD #B288
STRUCTURAL BASIS FOR MODULATION OF A GPCR BY ALLOSTERIC DRUGS. **Ron O. Dror**, Hillary F. Green, Celine Valant, David W. Borhani, James R. Valcourt, Albert C. Pan, Daniel H. Arlow, Meritxell Canals, J. Robert Lane, Raphaël Rahmani, Jonathan B. Baell, Patrick M. Sexton, Arthur Christopoulos, David E. Shaw

534-Pos BOARD #B289 EDUCATION TRAVEL AWARDEE
SPECIFIC REGULATION OF TRANSITION RATES BETWEEN ACTIVE AND INACTIVE STATES OF THE METABOTROPIC GLUTAMATE RECEPTOR DETERMINES AGONIST EFFICACY. **Linnéa Olofsson**, Suren Felekyan, Etienne Doumazane, Pauline Scholler, Ludovic Fabre, Jurriaan Zwier, Jean-Philippe Pin, Claus Seidel, Philippe Rondard, Emmanuel Margeat

535-Pos BOARD #B290
MODULATION OF EGFR DIMER STABILITY BY MANIPULATION OF PHOSPHORYLATION IN SITU. **Oana C. Coban**, Daniel R. Matthews, Simon Ameer-Beg, Daniel Rolfe, Gregory Weitsman, Florian Kampmeier, Martyn Winn, Laura Zanetti-Domingues, Marisa L. Martin-Fernandez, Tony Ng

536-Pos BOARD #B291
SINGLE-MOLECULE MICROSCOPY DECIPHERS THE RELATION BETWEEN TRAFFICKING AND SIGNALING OF THE NK1 RECEPTOR IN LIVING CELLS. **Luc Veya**, Joachim Piguet, Horst Vogel

537-Pos BOARD #B292
ACTIVATION OF THE M2 MUSCARINIC RECEPTOR AND COMPUTER-AIDED DESIGN OF RECEPTOR-SELECTIVE ALLOSTERIC DRUGS. **Yinglong Miao**, J. Andrew McCammon

538-Pos BOARD #B293
NATURE OF THE M2 MUSCARINIC RECEPTOR SIGNALING COMPLEX REVEALED BY DUAL-COLOR FCS AND FRET. **Yuchong Li**, Rabindra V. Shivnaraine, Dennis D. Fernandes, Huiqiao Ji, Fei Huang, James W. Wells, Claudiu C. Gradinaru

539-Pos BOARD #B294
G PROTEIN ACTIVATION: A DYNAMIC PROCESS. **Labe Black**, Celestine Thomas, JB Alexander Ross, Stephen R. Sprang

540-Pos BOARD #B295
SINGLE MOLECULE IMAGING REVEALS THAT ACTIVATING KINASE DOMAIN MUTATIONS REDUCE EGFR MOBILITY AND ENHANCE DIMERIZATION. **Christopher C. Valley**, Shalini T. Low-Nam, Mara P. Steinkamp, Bridget S. Wilson, Keith A. Lidke, Diane S. Lidke

541-Pos BOARD #B296
TOTAL INTERNAL REFLECTION FLUORESCENCE (TIRF) MICROSCOPY GUIDED QUANTIFICATION OF GLUT4 TRANSLOCATION FOR THE IDENTIFICATION OF INSULIN MIMETIC DRUGS. Verena Stadlbauer, Peter Lanzerstorfer, Daniela Borgmann, Jürgen Wruss, Klaus Schröder, Stephan Winkler, Otmar Höglinger, **Julian Weghuber**

542-Pos BOARD #B297
THE MEMBRANE PROXIMAL REGION OF THE HUMAN CANNABINOID RECEPTOR CB1 N-TERMINUS ALLOSTERICALLY MODULATES LIGAND AFFINITY. **Jonathan F. Fay**, David L. Farrens

543-Pos BOARD #B298
MONITORING CONFORMATIONAL CHANGES DURING AGONIST RELEASE FROM A GPCR IN REAL TIME: TRANSMEMBRANE HELIX 6 RESETS AS ALL-TRANS RETINAL IS RELEASED FROM RHODOPSIN. **Christopher T. Schafer**, Jay M. Janz, David L. Farrens

544-Pos BOARD #B299
ENGINEERING THE ENDOTHELIN A AND B RECEPTORS USING A SOLUBLE TEMPLATE FOR STRUCTURAL ANALYSIS AND SMALL MOLECULE SCREENING. **Joshua A. Weiner**, Christopher O. Audu, Kristina Seitler, Maria Pellegrini, Dale F. Mierke

545-Pos BOARD #B300
INVESTIGATING EGF RECEPTOR SIGNALING DYNAMICS WITH PATTERNED LIGAND SURFACES. **Devin Wakefield**, Amit Singhai, David Holowka, Barbara Baird

546-Pos BOARD #B301
DECIPHERING REGULATORY MECHANISM OF THE JUXTAMEMBRANE REGION IN THROMBOPOIETIN RECEPTOR ACTIVATION. **Shao-Qing Zhang**, Jing Jiang, Gozde Ulas, Yibing Wu, Wei Tong, William F. DeGrado

547-Pos BOARD #B302
FGF1 AND FGF2 INDUCED FGFR3 DIMERIZATION IN PLASMA MEMBRANE DERIVED VESICLES. **Sarvenaz Sarabipour**, Kalina Hristova

548-Pos BOARD #B303
VOLTAGE AFFECTS THE DISSOCIATION RATE CONSTANT OF THE M2 MUSCARINIC RECEPTOR. **Yair Ben Chaim**, Shimrit Bochnik, Itzhak Parnas, Hanna Parnas

549-Pos BOARD #B304
CROSS-SIGNALING BETWEEN THE METABOTROPIC GLUTAMATE 2 RECEPTOR AND THE SEROTONIN (5-HT) 2A RECEPTOR IN HEK-293 CELLS. Lia Baki, **Jason Younkin**, Jose Miguel Eltit, Miguel Fribourg, Gyu Park, Zhanna Vysotskaya, Diomedes E. Logothetis

550-Pos BOARD #B305
SINGLE PROTEOLIPOSOME ASSAY TO MONITOR OPSIN AND CANNABINOID GPCR HOMO-OLIGOMERIZATION. **Samuel M. Walsh**, Signe Mathiasen, Jonathan F. Fay, David L. Farrens, Dimitrios Stamou

551-Pos BOARD #B306
USE OF BIOLUMINESCENCE RESONANCE ENERGY TRANSFER (BRET) FOR STUDIES OF PROTEIN-PROTEIN INTERACTIONS BETWEEN THE GLUD2 RECEPTOR AND INTRACELLULAR INTERACTION PARTNERS. **Helle B. Krog**, Anders Skov Kristensen

552-Pos BOARD #B307
MULTIDIMENSIONAL SOLID-STATE NMR OF FUNCTIONAL CHEMOTAXIS RECEPTOR SIGNALING COMPLEXES. **Michael J. Harris**, Robert M. Weis, Jochem O. Struppe, Benjamin J. Wylie, Ann E. McDermott, Lynmarie K. Thompson

553-Pos BOARD #B308
MECHANISMS UNDERLYING CAMKII REGULATION OF ASTROCYTIC GLUTAMATE TRANSPORTERS. **Aarti Chawla**, Derrick Johnson, Andy Hudmon

554-Pos BOARD #B309
OPTIMIZED ZEBRAFISH APOLIPOPROTEIN A-I EXPRESSION AND PURIFICATION FOR NABBS ASSEMBLY. **Carlos A. Rico**, Thomas P. Sakmar, Thomas Huber

555-Pos BOARD #B310
VOLTAGE DEPENDENCE OF MUSCARINIC M₁-, M₃- AND M₅ RECEPTORS. **Andreas Rinne**, Juan-Carlos Mobarec, Peter Kolb, Moritz Bünemann

556-Pos BOARD #B311
A MOLECULAR-LEVEL INVESTIGATION OF THE EFFECT OF SODIUM IONS ON THE BINDING OF OPIOID LIGANDS TO THEIR RECEPTORS. **Yi Shang**, Valerie Le Rouzic, Gavril W. Pasternak, Marta Filizola

557-Pos BOARD #B312
ALLOSTERIC REGULATION OF THE EPIDERMAL GROWTH FACTOR RECEPTOR. **Atrish Bagchi**, Nicholas J. Bessman, Neo Z. Wu, Lily Raines, Zhongyuan Kan, Wenbing Hu, S. Walter Englander, Daniel J. Leahy, Mark A. Lemmon, Kathryn M. Ferguson

558-Pos BOARD #B313
BIOPHYSICAL PROPERTIES OF 2-ARACHIDONOYLGLYCEROL IN A LIPID MATRIX AND ITS BINDING TO RECOMBINANT CANNABINOID RECEPTOR CB₂. **Tomohiro Kimura**, Mihaela Mihailescu, Diane L. Lynch, Nadukkudy V. Eldho, Patricia H. Reggio, Alexei A. Yeliseev, Klaus Gawrisch

Ryanodine and IDP Receptors (Boards #B314–#B338)

559-Pos BOARD #B314
THE CARDIAC RYANODINE RECEPTOR (RYR2): INVESTIGATING MECHANISMS OF GATING AT THE SELECTIVITY FILTER. **Jahn M. Firth**, Joanne Euden, Alan J. Williams

560-Pos BOARD #B315
LOOKING FOR THE CALCIUM-BINDING SITE IN THE RYANODINE RECEPTOR'S VESTIBULE. **Janos Almassy**, Sandor Sarkozi, Istvan Jona

561-Pos BOARD #B316
LIGAND-DEPENDENT CONFORMATIONAL CHANGES IN THE CARDIAC RYANODINE RECEPTOR. **Yingjie Liu**, Xixi Tian, Ruiwu Wang, Terence Wagenknecht, Zheng Liu, Suirong Wayne Chen

562-Pos BOARD #B317
STRUCTURE-FUNCTION RELATIONSHIP OF CALCINS, A FAMILY OF HIGH-AFFINITY PEPTIDE LIGANDS OF RYANODINE RECEPTORS. **Liang Xiao**, Georgina B. Gurrola, Jing Zhang, Mario San Martin, Fernando Z. Zamudio, Lourival D. Possani, Héctor H. Valdivia

563-Pos BOARD #B318
MAPPING THE INTERACTING SITES MEDIATING TETRAMERISATION OF RYANODINE RECEPTOR AMINO-TERMINUS. Monika Seidel, **Paulina J. Stanczyk**, F Anthony Lai, Spyros Zissimopoulos

564-Pos BOARD #B319
FRET-BASED TRILATERATION OF A DOMAIN PEPTIDE BOUND WITHIN FUNCTIONAL RYANODINE RECEPTORS IN CARDIOMYOCYTES. **Bengt Svensson**, Tetsuro Oda, Florentin R. Nitu, Iustin Cornea, Donald M. Bers, David D. Thomas, Razvan L. Cornea

565-Pos BOARD #B320
EVOLUTION, STRUCTURE AND FUNCTION OF RYANODINE RECEPTOR DOMAINS. **Zhiguang Yuchi**, Filip Van Petegem

- 566-Pos BOARD #B321**
MOLECULAR MODELING AND STRUCTURAL DOCKING OF A RYANODINE RECEPTOR SPRY2 DOMAIN. Li Zhu, Ruiwu Wang, S. R. Wayne Chen, Terence Wagenknecht, **Zheng Liu**
- 567-Pos BOARD #B322**
A REGULATORY COMPONENT OF THE HUMAN RYANODINE RECEPTOR 2 N-TERMINUS. Lubomir Borko, Vladena Bauerova-Hlinkova, **Alexandra Zahradnikova**, Julius Kostan, Konrad Beck, Juraj Gasperik, Eva Hostinova, F. Anthony Lai, Jozef Sevcik
- 568-Pos BOARD #B323**
DIVERGENT EFFECTS OF DISEASE-ASSOCIATED MUTATIONS ON TYPE 2 RYANODINE RECEPTOR CHANNEL. **Nagomi Kurebayashi**, Takashi Murayama, Akira Uehara, Midori Yasukochi, Takashi Sakurai
- 569-Pos BOARD #B324**
CRYSTAL STRUCTURE OF CARDIAC RYANODINE RECEPTOR N-TERMINAL REGION CONTAINS UNIQUE ANION BINDING SITE TARGETED BY DISEASE-ASSOCIATED MUTATIONS. **Lynn Kimlicka**, Ching-Chieh Tung, Anna-Carin C. Carlsson, Paolo A. Lobo, Zhiguang Yuchi, Filip Van Petegem
- 570-Pos BOARD #B325**
ARRHYTHMOGENIC MECHANISMS IN CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA LINKED TO RYR2 LOSS-OF-FUNCTION MUTATION. **Yan-Ting Zhao**, Carmen R. Valdivia, Georgina B. Gurrola, Cong Li, Patricia P. Powers, Héctor H. Valdivia
- 571-Pos BOARD #B326**
PREVENTING RYR2-S2808 AND RYR2-S2814 PHOSPHORYLATION DOES NOT ALTER THE β -ADRENERGIC RESPONSE OF MOUSE HEARTS. **Emmanuel Camors**, Randall Loaiza, Francisco Alvarado, Yanting Zhao, Patricia Powers, Hector H. Valdivia
- 572-Pos BOARD #B327**
SUPPRESSED RYR2 FUNCTION REPRESENTS A COMMON CAUSE OF IDIOPATHIC VENTRICULAR FIBRILLATION AND SUDDEN CARDIAC DEATH. **Xiaowei Zhong**, Yijun Tang, Ruiwu Wang, Vern Hsen Tan, Yingjie Liu, Lin Zhang, Carlo Napolitano, Silvia Priori, SuiRong Wayne Chen
- 573-Pos BOARD #B328**
SUPPRESSION OF SPONTANEOUS Ca^{2+} RELEASE BY CARDIOPROTECTIVE DRUGS. **Jingqun Zhang**, Chris D. Smith, Qiang Zhou, Jianmin Xiao, Guogen Wu, Alma Nani, Thomas G. Back, Michael Fill, S.R. Wayne Chen
- 574-Pos BOARD #B329**
CRYO-EM STUDIES OF RYR1 CHANNEL IN DETERGENT-FREE AQUEOUS ENVIRONMENT. **Olga B. Popova**, Guizhen Fan, Mariah R. Baker, Joanita Jakana, Wah Chiu, Steven J. Ludtke, Irina I. Serysheva
- 575-Pos BOARD #B330**
LIGAND-INDUCED CONFORMATIONAL CHANGES IN TETRAMERIC IP3R1 REVEALED BY SINGLE-PARTICLE CRYO-EM. **Guizhen Fan**, Olga B. Popova, Steven J. Ludtke, Irina I. Serysheva
- 576-Pos BOARD #B331**
COUPLED GATING OF RYANODINE RECEPTORS: EVIDENCE FOR A ROLE OF PHYSICAL RYR-RYR INTERACTIONS. **Paula L. Diaz-Sylvester**, Jake T. Neumann, Sidney Fleischer, Julio A. Copello
- 577-Pos BOARD #B332**
PHOSPHORYLATION OF MAUROCALCINE STRONGLY MODIFIES ITS EFFECT ON TYPE 1 RYANODINE RECEPTOR. **Wei Feng**, Michel Ronjat, Yao Dong, Eloi Bahembera, Michel De Waard, Isaac N. Pessah
- 578-Pos BOARD #B333**
EFFECTS OF AMINO-TERMINAL DISEASE-ASSOCIATED MUTATIONS ON THE CICR ACTIVITY OF RYR1 CHANNEL. **Takashi Murayama**, Nagomi Kurebayashi, Toshiko Yamazawa, Hideto Oyamada, Shigeru Takemori, Katsuji Oguchi, Takashi Sakurai
- 579-Pos BOARD #B334**
FUNCTIONAL ANALYSIS OF RYANODINE RECEPTOR CARRYING MALIGNANT HYPERTHERMIA ASSOCIATED MUTATIONS. **Toshiko Yamazawa**, Takashi Murayama, Hideto Oyamada, Junji Suzuki, Kazunori Kanemaru, Nagomi Kurebayashi, Shigeru Takemori, Masamitsu Iino
- 580-Pos BOARD #B335**
MALIGNANT HYPERTHERMIA ASSOCIATED MUTATIONS IN S2-S3 LOOP OF TYPE 1 RYANODINE RECEPTOR CALCIUM CHANNEL ALTER CALCIUM DEPENDENT INACTIVATION. Angela C. Gomez, Timothy Holford, **Naohiro Yamaguchi**
- 581-Pos BOARD #B336**
RYANODINE RECEPTOR INTERACTION WITH FKBP12 IS MODULATED BY THE RYR N-TERMINUS REPEAT REGION. Polly Marino, **F. Anthony Lai**, Lynda Blayney
- 582-Pos BOARD #B337**
MODULATION OF RYANODINE RECEPTORS AND THE Ca^{2+} ATPASE OF SARCOPLASMIC RETICULUM BY ANTI-EPILEPTIC AGENTS. **Yuanzhao Lv**, Paula L. Diaz-Sylvester, Julio A. Copello
- 583-Pos BOARD #B338**
C. ELEGANS AS A MODEL TO STUDY RYANODINE RECEPTOR FUNCTION IN AGING. **Alisa Umanskaya**, Daniel Andersson, Wenjun Xie, Steven Reiken, Andrew Robert Marks
- Calcium Signaling I (Boards #B339–#B363)**
- 584-Pos BOARD #B339**
PHOSPHODIESTERASE EXPRESSION PATTERN AND ACTIVITY PARTITIONING IN LIPID RAFT AND IN NON-LIPID-RAFT MICROENVIRONMENT IN CARDIAC SINOATRIAL NODAL CELLS. Antoine Younes, **Yevgeniya Lukyanenko**, Alexey Lyashkov, Kirill Tarasov, Syevda Sirenko, Bruce Ziman, Magdalena Juhaszova, David R. Graham, Edward G. Lakatta
- 585-Pos BOARD #B340**
 Ca^{2+} CYCLING PROTEINS PHOSPHORYLATION IN ISOLATED SINOATRIAL NODAL CELLS MODULATES THE STOCHASTICITY OF SPONTANEOUS DIASTOLIC LOCAL Ca^{2+} RELEASES WHICH REGULATE THE ACTION POTENTIAL CYCLE LENGTH AND ITS BEAT-TO-BEAT VARIATION. **Dongmei Yang**, Alexey E. Lyashkov, Bruce D. Ziman, Edward G. Lakatta
- 586-Pos BOARD #B341**
COUPLED-CLOCK PACEMAKER SYSTEM BECOMES DYSFUNCTIONAL WITH AGING. Syevda Sirenko, Magdalena Juhaszova, Jie Liu, Ismayil Ahmet, **Steven J. Sollott**, Edward G. Lakatta
- 587-Pos BOARD #B342**
CONTRIBUTION OF Ca -REGULATED ION CURRENTS TO THE ACTION POTENTIAL MORPHOLOGY DURING CARDIAC ALTERNANS. **Giedrius Kanaporis**, Lothar A. Blatter

588-Pos BOARD #B343

A SMALL NUMBER OF CELLS IS SUFFICIENT TO TRIGGER A CARDIAC ARRHYTHMIA: STOCHASTIC COMPUTATIONAL STUDIES. **Aman Ullah**, Tuan M. Hoang-Trong, George S.B. Williams, Jonathan W. Lederer, Mohsin S. Jafri

589-Pos BOARD #B344

RELATIVE CONTRIBUTION OF PURKINJE FIBERS TO Ca^{2+} -DEPENDENT ARRHYTHMIAS IN A MURINE MODEL OF CPVT. **Lucia Brunello**, Bjorn C. Knollmann, Paul M. L. Janssen, Sandor Gyorke

590-Pos BOARD #B345

THE METABOLIC MODULATOR PERHEXILINE INDUCES CALCIUM-CYCLING DYSFUNCTION AND APOPTOSIS IN CARDIOMYOCYTE SYNCYTIA. Alice N. Mitchell, Ryan Preece, Karl Swann, Zaheer Yousef, **Christopher H. George**

591-Pos BOARD #B346

INTRACELLULAR FREE ZINC ION INCREASE TRIGGERS HYPERGLYCEMIA-INDUCED CARDIOMYOCYTE DYSFUNCTION THROUGH ENDOPLASMIC RETICULUM STRESS. Erkan Tuncay, Figen Amber Cicek, Aysegül Toy, **Belma Turan**

592-Pos BOARD #B347

K^+ CHANNEL-INTERACTING PROTEIN 2 DEFICIENT MICE HAVE A RATE DEPENDENT PROLONGATION OF LEFT VENTRICULAR Ca^{2+} TRANSIENTS. **Soren Grubb**, Gary L. Aistrup, Soren-Peter Olesen, Tobias Speerschneider, Kirstine Calloe, Morten B. Thomsen

593-Pos BOARD #B348

CALCIUM HANDLING IN EXPERIMENTAL MODELS OF DOXORUBICIN AND RADIATION-INDUCED CARDIOTOXICITY. **Anna Llach**, Marianne Mazevet, Virginie Monceau, Philippe Matéo, Jean-Pierre Bénitah, Marie-Catherine Vozenin, Eric Morel, Ana María Gómez

594-Pos BOARD #B349 EDUCATION TRAVEL AWARDEE

MECHANISMS OF ANTHRACYCLINE-INDUCED DYSFUNCTION OF CALCIUM HANDLING PROTEINS IN THE HEART. **Amy D. Hanna**, Alex Lam, Angela F. Dulhunty, Nicole A. Beard

595-Pos BOARD #B350

PREDICTIVE DRUG TOXICITY PROFILING USING A NEW MODE OF CALCIUM SIGNAL ANALYSIS IN HUMAN ES-DERIVED CARDIOMYOCYTES. Kimberley J. Lewis, **Sarah A. Marsh**, Christopher H. George

596-Pos BOARD #B351

A NOVEL FLUORESCENT EPAC-AGONIST REVEALS EPAC1 AND EPAC2 SUBCELLULAR LOCALIZATION IN CARDIOMYOCYTES. **Laetitia Pereira**, Jeffrey Erickson, Ju Chen, Donald M. Bers

597-Pos BOARD #B352

FUNCTIONALLY ISOLATED SARCOPLASMIC RETICULUM MODEL: INTRINSIC REGULATION OF SR Ca^{2+} RELEASE AND TETRACAINE EFFECT. Marina C. Monteiro, Rosana A. Bassani, **José W. Bassani**

598-Pos BOARD #B353

FLUORESCENCE SIGNAL KINETICS OF A NEW Ca^{2+} PROBEBOUND TO CARDIAC RYANODINE RECEPTORS POINT TO MICRO-DOMAIN DETECTION OF Ca^{2+} . Xiao-Hua Zhang, **Lars Cleemann**, Martin Morad

599-Pos BOARD #B354

CALCIUM-INDUCED REDOX MICRODIMAINS AT THE ER-MITOCHONDRIAL INTERFACE. **David M. Booth**, Balázs Enyedi, Miklós Geiszt, Péter Várnai, György Hajnóczky

600-Pos BOARD #B355

BUFFER- AND DIFFUSION-MEDIATED CALCIUM CONCENTRATION FLUCTUATIONS ACCELERATE THE STOCHASTIC DYNAMICS OF CALCIUM-TRIGGERED EVENTS. **Seth H. Weinberg**, Gregory D. Smith

601-Pos BOARD #B356

WNT-11 SIGNALING IN CARDIOMYOCYTES. **Paulina Wakula**, Gudrun Antoons, Snjezana Radulovic, Senka Ljubojevic, Michael Sereinigg, Burkert M. Pieske, Frank R. Heinzel

602-Pos BOARD #B357

INHIBITION OF THE Na^+/Ca^{2+} EXCHANGER (NCX) IMPROVES CARDIOMYOCYTE CONTRACTILE DYSFUNCTION IN A RAT MODEL WITH COMPENSATED RENAL FAILURE AND HEART FAILURE WITH PRESERVED EJECTION FRACTION. **Uwe Primessnig**, Alexander Hoell, Susanne Pfeiffer, Thomas Rau, Paulina Wakula, Burkert Pieske, Frank Heinzel

603-Pos BOARD #B358

ALTERATIONS OF NUCLEAR Ca^{2+} -DEPENDENT SIGNALING IN HEART FAILURE. **Senka Ljubojevic**, Snjezana Radulovic, Simon Sedej, Jens Kockskaemper, Burkert Pieske

604-Pos BOARD #B359

UROCORIN 2 PROTECTS AGAINST PACING-INDUCED ALTERNANS VIA PHOSPHORYLATION OF PHOSPHOLAMBAN IN CARDIAC MYOCYTES FROM NORMAL AND FAILING HEARTS. **Stefanie Walther**, Joshua N. Edwards, Florentina Pluteanu, Susanne Renz, Kurt Schmidt, Burkert Pieske, Jens Kockskaemper, Lothar A. Blatter

605-Pos BOARD #B360

NOS1AP MODULATES INTRACELLULAR Ca^{2+} IN CARDIAC MYOCYTES AND IS UP-REGULATED IN DYSTROPHIC CARDIOMYOPATHY. **Adriana V. Treuer**, Daniel R. Gonzalez

606-Pos BOARD #B361

PGZ REVERSES CARDIAC DYSFUNCTION IN DYSTROPHIC MICE. Francisco Altamirano, Juan Kolster, José Adams, **Jose R. Lopez**

607-Pos BOARD #B362

A MARKOV-STATE MODEL FOR THE REGULATION OF THE SARCOPLASMIC RETICULUM Ca^{2+} ATPASE BY PHOSPHOLAMBAN. **Peter M. Kekenus-Huskey**, Andy Edwards, Johan Hake, Anouchka Michailova, James A. McCammon, Andrew McCulloch

608-Pos BOARD #B363

OPTIMAL RETICULATED COVERAGE OF THE SARCOPLASMIC RETICULUM. **Zana A. Coulibaly**, Leighton T. Izu, Bradford E. Peercy

Cardiac, Smooth, and Skeletal Muscle Electrophysiology I (Boards #B364–#B390)

609-Pos BOARD #B364

SPECIES-SPECIFIC COMPARISON OF THE CARDIAC SODIUM/POTASSIUM PUMP BASED ON A MINIMAL BIOPHYSICAL MODEL. **Alexandre Lewalle**, Steven Niederer, Nic Smith

610-Pos BOARD #B365

INTERMITTENT EARLY AFTERDEPOLARIZATIONS CAUSED BY BISTABILITY. **Yuanfang Xie**, Zhandi Liao, Daisuke Sato, Yohannes Shiferaw, Donald M. Bers

611-Pos BOARD #B366

DIABETIC HYPERGLYCEMIA ACUTELY AFFECTS ACTION POTENTIALS AND IONIC CURRENTS THROUGH CAMKII ACTIVATION ON RAT VENTRICULAR MYOCYTES. **Zhandi Liao**, Donald M. Bers

- 612-Pos** **BOARD #B367**
 TRANSMURAL GRADIENT OF ITO AND INAK PROFOUNDLY INFLUENCE VENTRICULAR ACTION POTENTIAL DURATION. **Yunliang Zang**, Ling Xia, Ye Chen-Izu, Leighton Izu
- 613-Pos** **BOARD #B368**
 MECHANO-CHEMOTRANSDUCTION IN THE SINGLE CARDIAC MYOCYTE CONTRACTING IN 3D ELASTIC GEL. **Rafael Shimkunas**, Zhong Jian, Wenwu Xiao, Yuanpei Li, Yi-Je Chen, John Shaw, Nipavan Chiamvimonvat, Leighton T. Izu, Kit S. Lam, Ye Chen-Izu
- 614-Pos** **BOARD #B369**
 FUNCTIONAL INTERACTION WITH FILAMIN A ENHANCES ATRIAL-SPECIFIC SMALL CONDUCTANCE CA₂ ACTIVATED K⁺ CHANNEL (SK2) SURFACE MEMBRANE EXPRESSION. Sassan Rafizadeh, **Zheng Zhang**, Ryan Woltz, Hyo J. Kim, Ling Lu, Dipika Tuteja, Anil Singapuri, Amir A. Bigdeli, Sana B. Harchache, Anne A. Knowlton, Ebenezer N. Yamoah, Vladimir Yarov-Yarovsky, Nipavan Chiamvimonvat
- 615-Pos** **BOARD #B370**
 A-ACTININ2 AND FILAMIN A CYTOSKELETAL INTERACTING PROTEINS FACILITATE SK2 CHANNELS RECYCLING FROM ENDOSOMES TO THE SURFACE MEMBRANE. **Zheng Zhang**, Sassan Rafizadeh, Hyo J. Kim, Ling Lu, Rachit Anand, Sarasa Kim, Ebenezer N. Yamoah, Nipavan Chiamvimonvat
- 616-Pos** **BOARD #B371**
 CRITICAL ROLES OF SK3 CALCIUM-ACTIVATED POTASSIUM CHANNELS IN THE REPOLARIZATION OF ATRIAL MYOCYTES. **Xiao-Dong Zhang**, Valeriy Timofeyev, Ning Li, Daimin Zhang, Richard Myers, Anil Singapuri, Chris Bond, John Adelman, Deborah Lieu, Nipavan Chiamvimonvat
- 617-Pos** **BOARD #B372**
 TARGETED DELETION OF KCNE4 IMPAIRS VENTRICULAR REPOLARIZATION IN MICE. **Shawn M. Crump**, Zhaoyang Hu, Ritu Kant, Daniel I. Levy, Geoffrey W. Abbott
- 618-Pos** **BOARD #B373**
 ATRIAL AND VENTRICULAR MYOCYTES HAVE DIFFERENT ARRHYTHMOGENIC PROFILES IN RESPONSE TO OXIDATIVE STRESS AND HYPOKALEMIA. **Thao P. Nguyen**, James N. Weiss
- 619-Pos** **BOARD #B374**
 ACTIVATION OF SMALL CONDUCTANCE CALCIUM-ACTIVATED POTASSIUM CHANNELS BY SARCOPLASMIC RETICULUM CALCIUM RELEASE ATTENUATES DELAYED AFTERDEPOLARIZATIONS IN VENTRICULAR MYOCYTES. Dmitry Terentyev, Jennifer A. Rochira, Radmila Terentyeva, Karim Roder, Gideon Koren, **Weiyang Li**
- 620-Pos** **BOARD #B375**
 ACTION POTENTIAL CONDUCTION VELOCITY IS INCREASED BY RAISED INTRACELLULAR CAMP IN THE INTACT RAT HEART VIA A CAMKII MEDIATED PATHWAY. **Annabel S. Campbell**, Francis L. Burton, George S. Baillie, Godfrey L. Smith
- 621-Pos** **BOARD #B376**
 ACTION POTENTIAL SHAPE DIFFERENCES SET SPECIES-DEPENDENT β -ADRENERGIC-STIMULATION RESPONSE. **Luca Sala**, Bence Hegyi, Chiara Bartolucci, Claudia Altomare, Marcella Rocchetti, Gaspare Mostacciolo, Stefano Severi, Norbert Szentandrassy, Péter P. Nánási, Antonio Zaza
- 622-Pos** **BOARD #B377**
 DIFFERENTIAL REGULATION OF SLOW AND RAPID DELAYED RECTIFIER POTASSIUM CURRENTS BY CGMP DEPENDENT NITRIC OXIDE SIGNALLING PATHWAYS IN ISOLATED ADULT GUINEA PIG VENTRICULAR MYOCYTES. **Rachel E. Caves**, Kieran Brack, André Ng, John Mitcheson
- 623-Pos** **BOARD #B378**
 A TREK-LIKE K⁺ CHANNEL CURRENT INHIBITED BY NOREPINEPHRINE IN RAT ATRIAL MYOCYTES. Richard C. Bond, Stephanie C. Choisy, Simon M. Bryant, Jules C. Hancox, **Andrew F. James**
- 624-Pos** **BOARD #B379**
 MODULATION OF K_{2P} K⁺ LEAK CHANNEL SENSITIVITY TO CARVEDILOL BY ALTERNATIVE MRNA TRANSLATION INITIATION. Jana Kisselbach, Claudia Seyler, Patrick A. Schweizer, Hugo A. Katus, **Dierk Thomas**
- 625-Pos** **BOARD #B380**
 L-TYPE CALCIUM AND POTASSIUM CURRENTS ARE DIFFERENTLY REGULATED BY ANGIOTENSIN II IN ATRIAL AND VENTRICULAR MOUSE MYOCYTES. **Anh-Tuan Ton**, Francois Huynh, Mona Nemer, Celine Fiset
- 626-Pos** **BOARD #B381**
 NONLINEAR BEHAVIOR OF CONDUCTION IN CARDIAC TISSUE WITH HETEROGENEOUS EXPRESSION OF CONNEXIN 43. **Yann Prudat**, Jan P. Kucera
- 627-Pos** **BOARD #B382**
 IKR IMPACT ON REPOLARIZATION AND ITS VARIABILITY ASSESSED BY DYNAMIC-CLAMP. **Claudia Altomare**, Luca Sala, Chiara Bartolucci, Gaspare Mostacciolo, Stefano Severi, Antonio Zaza
- 628-Pos** **BOARD #B383**
 REDUCING OXIDATIVE STRESS AND CAMKII ACTIVITY AS AN ANTIARRHYTHMIC STRATEGY IN WOODCHUCKS IN WINTER. Hairuo Wen, Lin Yan, Raymond K. Kudej, Nadezhda Fefelova, Richard Gordan, Dorothy Vatner, Stephen Vatner, **Lai-Hua Xie**
- 629-Pos** **BOARD #B384**
 A NOVEL CARDIAC NAV1.5 CHANNEL MUTATION, L812Q, LEADS TO BRUGADA SYNDROME. **Lumin Wang**, Xiangyun Meng, Zhenghang Zhao, Dehui Xu, David Fedida, Zhuren Wang, Chen Huang
- 630-Pos** **BOARD #B385**
 MEMBRANE CAPACITANCE CHANGES DUE TO TEMPERATURE INCREASE IN RAT CARDIAC MYOCYTES. **Matej Hotka**, Ivan Zahradnik
- 631-Pos** **BOARD #B386**
 ELECTROPHYSIOLOGICAL AND STRUCTURAL LEFT VENTRICLE REMODELLING IN SPONTANEOUSLY HYPERTENSIVE RAT HEARTS: A MULTICELLULAR STUDY. **Samha Alayoubi**, Carolina Pinto Ricardo, Junaid Zaman, Priyanthi Dias, Patrizia Camelliti, Magdi H. Yacoub, Cesare Terracciano
- 632-Pos** **BOARD #B387**
 ALTERNANS IN RABBIT HEART DURING ACUTE REGIONAL ISCHEMIA: OPTICAL MAPPING AND MICROELECTRODE RECORDINGS. **Irma Martišienė**, Jonas Jurevičius, Rūta Vosyliūtė, Antanas Navalinskas, Rimantas Treinys, Regina Mačianskienė, Rimantas Benetis, Arvydas Matiukas, Arkady M. Pertsov

633-Pos BOARD #B388
EVALUATION OF OPTICAL UPSTROKE MORPHOLOGY IN THE RABBIT HEART: OPTICAL MAPPING AND TRANSMURAL MICROELECTRODE RECORDINGS. **Rūta Vosyliūtė**, Regina Mačianskienė, Irma Martišienė, Antanas Navalinskas, Rimantas Treinys, Birutė Vaidelytė, Gintautė Rutkauskaitė, Jonas Jurevičius

634-Pos BOARD #B389
MECHANISMS UNDERLYING Na^+/K^+ -ATPASE INHIBITION-INDUCED MITOCHONDRIAL DYSFUNCTION AND ABNORMAL ACTION POTENTIALS. Qince Li, **Lufang Zhou**

635-Pos BOARD #B390
INHIBITION OF MITOCHONDRIAL $\text{Na}^+/\text{Ca}^{2+}$ EXCHANGER SUPPRESSES ISCHEMIA/REPERFUSION-INDUCED REENTRY IN MONOLAYERS OF CARDIOMYOCYTES. **Soroosh Solhjoo**, Brian O'Rourke

Excitation-Contraction Coupling I (Boards #B391–#B420)

636-Pos BOARD #B391
RAPTOR ABLATION IN SKELETAL MUSCLE AFFECTS THE STRUCTURE AND FUNCTION OF THE EXCITATION-CONTRACTION COUPLING MACROMOLECULAR COMPLEX. Ruben Lopez, Barbara Mosca, Leda Bergamelli, Markus A. Ruegg, Florian C. Benzinger, Michael N. Hall, Susan Treves, **Francesco Zorzato**

637-Pos BOARD #B392
MODIFICATION OF CARDIAC RYANODINE RECEPTOR GATING BY A PEPTIDE FROM THE CENTRAL DOMAIN OF THE RYR2. Andrea Faltinova, **Alexandra Zahradnikova**

638-Pos BOARD #B393
ULTRASTRUCTURAL QUANTIFICATION OF ELECTRON-DENSE STRINGS IN THE SARCOPLASMIC RETICULUM OF RAT HEART CELLS. Lin-Lin Li, Xue-Xin Fan, **Shi-Qiang Wang**

639-Pos BOARD #B394
RESOLVING THE CALCIUM RELEASE MACHINERY OF MAMMALIAN FAST- AND SLOW-TWITCH SKELETAL MUSCLE. **Isuru D. Jayasinghe**, Michelle Munro, David Baddeley, Bradley S. Launikonis, Christian Soeller

640-Pos BOARD #B395
LETHAL EXERTIONAL STROKES IN $\text{RYR1}^{\text{Y522S/WT}}$ AND CASQ1 -NULL MICE ARE PREVENTED BY DRUGS USED TO TREAT MALIGNANT HYPERTHERMIA IN HUMANS. **Antonio Michelucci**, Alessandro De Marco, Laura Pietrangelo, Cecilia Paolini, Susan L. Hamilton, Feliciano Protasi

641-Pos BOARD #B396
CLIC-2 DETERMINES FKBP12 AND FKBP12.6 ASSOCIATION WITH RYANODINE RECEPTOR CALCIUM RELEASE CHANNELS. Gregory A. Steele, Nicole A. Beard, Philip G. Board, **Angela F. Dulhunty**

642-Pos BOARD #B397
DYAD CONTENT IS REDUCED IN CARDIAC MYOCYTES OF MICE WITH IMPAIRED CALMODULIN REGULATION OF RYR2. **Manuela Lavorato**, Huang Taiqin, Venkat Ramesh Iyer, Gerhard Meissner, Clara Franzini-Armstrong

643-Pos BOARD #B398
SILENCING RYR3 ELIMINATES PARAJUNCTIONAL FEET AND CA SPARKS IN ZEBRA FISH TAIL MYOTOMES. **Stefano Perni**, Clara Franzini-Armstrong, Stephen Hollingworth, Stephen M. Baylor

644-Pos BOARD #B399
CHEMICAL UNCOUPLING THE DHPR-RYR1 COMPLEX BY SUBSTITUTED HALOGENATED BIPHENYLS AND DIPHENYLEETHERS. **Yassaman Niknam**, Wei Feng, Gennady Cherednichenko, Yao Dong, Isaac Pessah

645-Pos BOARD #B400
ALTERED ION CHANNEL PROPERTIES OF RYANODINE RECEPTOR FROM HEART MICE LACKING CALSTABIN2. **Nathalie Saint**, Albano C. Meli, Valerie Scheuermann, Alain Lacampagne

646-Pos BOARD #B401
MODULATION OF DHPR INACTIVATION BY RYR1 ACTIVITY IN MOUSE SKELETAL MUSCLE FIBERS. Zoita Andronache, **Werner Melzer**

647-Pos BOARD #B402
 Ca^{2+} INFLUX MEDIATED BY REVERSE MODE OF $\text{Na}^+/\text{Ca}^{2+}$ EXCHANGER IS ENHANCED IN MALIGNANT HYPERTHERMIA SKELETAL MUSCLE. **Francisco Altamirano**, Jose M. Eltit, Isaac Pessah, Paul D. Allen, Jose R. Lopez

648-Pos BOARD #B403
MYOFILAMENT Ca^{2+} DESENSITIZATION IS ASSOCIATED WITH REDUCED L-TYPE Ca^{2+} CHANNEL ACTIVITY MEDIATED BY NEURONAL NITRIC OXIDE SYNTHASE IN LEFT VENTRICULAR MYOCYTES FROM MURINE HEARTS. Yue Wang, Chun Zi Jin, Sung Joon Kim, **Yin Hua Zhang**

649-Pos BOARD #B404
RGK PROTEINS INHIBIT SLOW, DEPOLARIZATION-DEPENDENT Ca^{2+} ENTRY INTO CULTURED MYOTUBES. Christin F. Romberg, Donald Beqollari, Ulises Meza, **Roger A. Bannister**

650-Pos BOARD #B405
EXPRESSION OF THE EMBRYONIC CAV1.1 SPLICE VARIANT IN ADULT MICE ALTERS EXCITATION-CONTRACTION COUPLING BUT DOES NOT CAUSE DYSTROPHIC MYOTONIA. **Nasreen Sultana**, Ariane Benedetti, Monika Sztretye, Beatrix Dienes, Peter Szentesi, Petronel Tuluc, Serena Quarta, Gerald J. Obermair, Christoph Schwarzer, Michaela Kress, Laszlo Csernoch, Bernhard E. Flucher

651-Pos BOARD #B406
THE DHPR CALCIUM CURRENT IN MAMMALIAN SKELETAL MUSCLE: PHYSIOLOGICAL NECESSITY OR TOLERATED EVOLUTIONARY REMNANT? Anamika Dayal, **Kai Schrötter**, Werner Melzer, Christoph Schwarzer, Manfred Grabner

652-Pos BOARD #B407
 Ca^{2+} UPTAKE BY THE TUBULAR (T-) SYSTEM MEMBRANE OF RAT FAST-TWITCH FIBRES. **Tanya R. Cully**, Joshua N. Edwards, Thomas R. Shannon, Bradley Launikonis

653-Pos BOARD #B408
POSSIBLE ROLE FOR THE PHOSPHORYLATED TAIL IN RETAINING CSQ2 TO SPECIFIC SITES WITHIN THE SECRETORY PATHWAY. **Cristine Smoczer**, Naama H. Sleiman, Steven Cala

654-Pos BOARD #B409
MICROTUBULE INTEGRITY IS ESSENTIAL TO JUNCTIONAL SR PROTEIN DELIVERY. **Naama H. Sleiman**, Cristine Somczer, Steven E. Cala

655-Pos BOARD #B410
PROTON FLUXES ACROSS THE TUBULAR (T-) SYSTEM MEMBRANE OF RAT FAST-TWITCH FIBRES. Bradley S. Launikonis, **Tanya R. Cully**, Laszlo Csernoch, D. George Stephenson

656-Pos BOARD #B411
MULTIPLE REGIONS OF JUNCTIN AND TRIADIN INTERACT WITH CALSEQUESTRIN 1 AND 2 IN SKELETAL MUSCLE CELLS. **Daniela Rossi**, Angela Maria Scarcella, Stefania Lorenzini, Vincenzo Sorrentino

657-Pos BOARD #B412
TEMPERATURE EFFECTS ON THE MYOPLASMIC FREE Ca^{2+} TRANSIENTS IN FDB MUSCLE FIBERS OF THE MOUSE. Alexis Ruiz, Juan Camilo Calderon, Pura Bolaños, **Carlo Caputo**

658-Pos BOARD #B413
CELLULAR MECHANISMS OF CARDIAC DEPRESSION AND RECOVERY IN ENDOTOXEMIC MICE. **Justin C. Morse**, Deborah A. Siwik, Wilson S. Colucci, Ion A. Hobai

659-Pos BOARD #B414
CONDITIONAL UP-REGULATION OF SERCA2A EXACERBATES VENTRICULAR AND ATRIAL ARRHYTHMIAS IN THE SETTING OF CATECHOLAMINERGIC POLYMORPHIC VENTRICULAR TACHYCARDIA. **Bin Liu**, Qing Lou, Florencia Velez-Cortes, Omid Sayadi, Wolfgang Dillmann, Björn Knollmann, Antonis Armoundas, Sandor Gyorke

660-Pos BOARD #B415
FRACTAL-LIKE BEHAVIOR OF THE HEART-BEAT INTERVALS IS ENCODED WITHIN INTRINSIC COMPLEXITY OF PACEMAKER CELLS RESIDING IN THE SINOATRIAL NODE AND MODULATED BY AUTONOMIC INPUT TO THE HEART. **Yael Yaniv**, Ismayil Ahmet, Liu Jie, Toni-Rose Guiriba, Yosuke Okamoto, Edward G. Lakatta

661-Pos BOARD #B416
THE MSTN-CMPT DL1ABC- MICE. A MOUSE MODEL TO STUDY MUSCLE WEAKNESS, FATIGUE AND SOCE. **Mónika Sztretye**, Nikolett Geyer, Dana AlGhaadi, Dóra Bodnár, Tamás Oláh, Beatrix Dienes, Ildikó Balatoni, Péter Szentesi, László Csernoch

662-Pos BOARD #B417
STIM1 REGULATES SARCOPLASMIC RETICULUM Ca^{2+} -ATPASE 1A (SERCA1A) IN SKELETAL MUSCLE. **Keon Jin Lee**, Changdo Hyun, Jin Seok Woo, Chang Sik Park, Do Han Kim, Eun Hui Lee

663-Pos BOARD #B418
ACCELERATED ACTIVATION OF SOCE CURRENT IN MYOTUBES FROM TWO MOUSE MODELS OF ANESTHETIC- AND HEAT-INDUCED SUDDEN DEATH. **Viktor Yarotskyy**, Feliciano Protasi, Robert T. Dirksen

664-Pos BOARD #B419
INWARD RECTIFIER POTASSIUM CHANNELS IN MAMMALIAN SKELETAL MUSCLE FIBERS. **Julio L. Vergara**, Marbella Quiñonez, Carl Yu, Marino DiFranco

665-Pos BOARD #B420
STIM1 ENHANCES SR Ca^{2+} REFILLING THROUGH ACTIVATING SERCA2A IN RAT VENTRICULAR MYOCYTES. **Guiling Zhao**, Didier X. P. Brochet, Tianyu Li, Paul Rosenberg, W. Jonathan Lederer

Voltage-gated Na Channels I (Boards #B421-#B438)

666-Pos BOARD #B421
NAVAB STRUCTURE AS A TEMPLATE TO RATIONALIZE EXPERIMENTAL DATA ON NAV1.4 BLOCK BY MU-CONOTOXINS. Vyacheslav S. Korkosh, **Boris S. Zhorov**, Denis B. Tikhonov

667-Pos BOARD #B422
EFFECTS OF THE PROTONATION STATES OF THE EEEE MOTIF OF A BACTERIAL Na^+ -CHANNEL ON CONDUCTION AND PORE STRUCTURE. **Carmen Domene**, Simone Furini

668-Pos BOARD #B423
STRUCTURE OF A PROKARYOTIC SODIUM CHANNEL PORE REVEALS ESSENTIAL GATING ELEMENTS AND AN OUTER ION BINDING SITE COMMON TO EUKARYOTIC CHANNELS. **Cristina Arrigoni**, David Shaya, Felix Findeisen, Fayal Abdermane-Ali, Gildas Loussouarn, Daniel L. Minor

669-Pos BOARD #B424
UNCOVERING THE LINKS BETWEEN CONFORMATIONAL FLEXIBILITY AND FUNCTION FOR A BACTERIAL VOLTAGE-GATED SODIUM CHANNEL. Céline Boiteux, Igor Vorobyov, **Toby W. Allen**

670-Pos BOARD #B425
STRUCTURAL MODELING OF TOXIN INTERACTIONS WITH THE HUMAN VOLTAGE-GATED SODIUM CHANNEL PORE. **Phuong T. Nguyen**, Jon T. Sack, Toby W. Allen, Vladimir Yarov-Yarovoy

671-Pos BOARD #B426
FINDING THE ROUTE OF ENTRY AND BINDING SITE OF LOCAL ANAESTHETICS IN BACTERIAL VOLTAGE GATED SODIUM CHANNELS USING MOLECULAR DYNAMICS SIMULATION. Lewis Martin, **Ben Corry**

672-Pos BOARD #B427
A NOVEL GATING MECHANISM OF THE NAVMS SELECTIVITY FILTER SUGGESTED BY MOLECULAR DYNAMICS SIMULATIONS. **Song Ke**, Anna Stary-Weinzinger

673-Pos BOARD #B428
CONGRUENT PATTERN OF ACCESSIBILITY WITHIN THE PORE OF A VOLTAGE-GATED Na^+ CHANNEL. **Kevin Oelstrom**, Baron Chanda

674-Pos BOARD #B429
CATALYSIS AND SELECTIVITY OF Na^+ PERMEATION IN BACTERIAL SODIUM CHANNEL NAVAB. **Christopher Ing**, Nilmadhab Chakrabarti, Jian Payandeh, Ning Zheng, William A. Catterall, Régis Pomès

675-Pos BOARD #B430
THE ORIGINS OF ION SELECTIVITY IN A BACTERIAL SODIUM CHANNEL REVEALED BY μs -LONG SIMULATIONS. **Celine Boiteux**, Igor Vorobyov, Toby W. Allen

676-Pos BOARD #B431
CHARACTERIZING Na^+/K^+ PERMEATION RATES THROUGH THE BACTERIAL NAVAB SODIUM CHANNEL. **Leticia Stock**, Vincenzo Carnevale, Werner Treptow, Michael L. Klein

677-Pos BOARD #B432
NEGATIVE COUNTERCHARGES AND S4 INTERACTION IN DOMAIN IV OF NAV1.4. **James R. Groome**

678-Pos BOARD #B433
MODULATION OF INACTIVATION KINETICS OF THE BACTERIAL SODIUM CHANNEL NACHBAC SUGGESTS A COMPLEX MODE OF INHIBITION BY ISOFLURANE. **Rheanna Sand**, Tamar Macharadze, Hugh Hemmings, Jr.

679-Pos BOARD #B434
PHARMACOLOGICAL PROPERTIES OF CINNAMALDEHYDE ON NACHBAC. **Divya Kesters**, Jan Tytgat, Thomas Voets, Karel Talavera, Chris Ulens

680-Pos BOARD #B435

AUTOMATED PATCH CLAMPING OF 384 CELLS AT ONCE FOR MASSIVELY PARALLEL ION CHANNEL SCREENING.

Andrea Bruggemann, Claudia Haarmann, Timo Stengel, Marius Vogel, Juergen Steindl, Max Mueller, Johannes Stiehler, Michael George, Niels Fertig

681-Pos BOARD #B436

SODIUM CHANNEL PEPTIDE NEUROTOXIN STUDIES USING A HIGH THROUGHPUT ELECTROPHYSIOLOGY PLATFORM AND VERY LONG ASSAY WINDOWS. **Xin Jiang**, Jeffrey Webber, Trisha Mitlo, Edward Verdonk, James Costantin

682-Pos BOARD #B437

SEARCHING FOR THE INTERACTION SITES OF THE BETA1 SUBUNIT WITH THE VOLTAGE-SENSING DOMAINS OF SODIUM CHANNELS USING LRET. **Tomoya Kubota**, Bobo Dang, Rocio K. Finol-Urdaneta, Jérôme J. Lacroix, Ludivine Frezza, Robert J. French, Stephen B. H. Kent, Ana M. Correa, Francisco Bezanilla

683-Pos BOARD #B438

TRACKING VOLTAGE-DEPENDENT CONFORMATIONAL CHANGES OF THE VSD IN NAV WITH LRET. **Tomoya Kubota**, Pedro Brugarolas, Bobo Dang, Rocio K. Finol-Urdaneta, Ludivine Frezza, Robert J. French, Stephen B. H. Kent, Francisco Bezanilla, Ana M. Correa

Voltage-gated Ca Channels I (Boards #B439–#B456)

684-Pos BOARD #B439

OBSERVATION OF "REMOTE KNOCK-ON", A NEW PERMEATION-ENHANCEMENT MECHANISM IN ION CHANNELS. **Dmitry G. Luchinsky**, Rodrigue Tindjong, Igor Kaufman, Peter V. E. McClintock, Igor A. Khovanov, Bob S. Eisenberg

685-Pos BOARD #B440

A MUTATIONAL AND COMPUTATIONAL STUDY OF WATER AND ION MOVEMENT THROUGH THE S6 BUNDLE-CROSSING OF CAV1.2 CHANNEL. **Roman Shirokov**

686-Pos BOARD #B441

POISSON-FERMI MODEL OF A CALCIUM CHANNEL: CORRELATIONS AND DIELECTRIC COEFFICIENT ARE COMPUTED OUTPUTS. **Bob Eisenberg**, Jinn-Liang Liu

687-Pos BOARD #B442

THE FUNCTIONAL HETEROGENEITY OF THE HUMAN $CA_v1.2$ VOLTAGE SENSORS. **Antonios Pantazis**, Nicoletta Savalli, Daniel Sigg, Alan Neely, Riccardo Olcese

688-Pos BOARD #B443

FUNCTIONAL INTERACTION BETWEEN THE N-TERMINI OF MURINE L-TYPE CALCIUM CHANNEL $CA_v1.2$ - AND β -SUBUNIT SPLICE VARIANTS. Ajay K. Singh, Elza Kuzmenkina, Jan Matthes, **Stefan Herzig**

689-Pos BOARD #B444

GATING PROPERTIES OF CAV1.3 CALCIUM CHANNELS: INSIGHT FROM ALTERNATIVE SPLICING AND HUMAN MUTATIONS. **Andreas Lieb**, Nadine Ortner, Alexandra Pinggera, Elena A. Azizan, Morris J. Brown, Petronel Tuluc, Jörg Striessnig

690-Pos BOARD #B445

HILL ANALYSIS OF ION CHANNEL ACTIVATION: THEORY AND PRACTICE. **Daniel Sigg**, Ru-Chi Shieh, Antonios Pantazis, Nicoletta Savalli, Riccardo Olcese

691-Pos BOARD #B446

DOMAIN-SPECIFIC GATING-MODIFIER TOXINS FOR VOLTAGE-GATED CALCIUM CHANNELS. **Autoosa Salari**, Vincent L. Baggett, Mirela Milesicu

692-Pos BOARD #B447

THE α_δ SUBUNIT FACILITATES $CA_v1.2$ CHANNEL ACTIVATION BY REMODELING ITS FOUR VOLTAGE SENSOR DOMAINS. **Nicoletta Savalli**, Antonios Pantazis, Daniel Sigg, Alan Neely, Riccardo Olcese

693-Pos BOARD #B448

A POPULATION DENSITY AND MOMENT-BASED APPROACH TO MODELING DOMAIN CALCIUM-MEDIATED INACTIVATION OF L-TYPE CALCIUM CHANNELS. **Xiao Wang**, Kiah Hardcastle, Seth H. Weinberg, Gregory D. Smith

694-Pos BOARD #B449

MINIMIZED CELL USAGE FOR STEM CELL-DERIVED AND PRIMARY CELLS ON AN AUTOMATED PATCH CLAMP SYSTEM. Nadine Becker, Sonja Stoelzle-Feix, Sven Goepel, David Guinot, Patrick Mumm, Claudia Haarmann, Daniela Malan, Heribert Bohlen, Eugen Kossolov, Ralf Kettenhofen, Michael George, Niels Fertig, **Andrea Bruggemann**

695-Pos BOARD #B450

TESTING FOR DIRECT INTERACTIONS BETWEEN THE DHPR AND THE RYR1 CYTOPLASMIC FOOT. **Hicham Bichraoui**, Ong Moua, Alexander Polster, Tsutomu Tanabe, Simon Papadopoulos, Kurt G. Beam

696-Pos BOARD #B451

MULTIPLE REGIONS INHIBIT EXPRESSION OF CAV1.1 CA^{2+} CHANNELS IN NON-MUSCLE CELLS. **Alexander Polster**, Tsutomu Tanabe, Ong Moua, Kurt G. Beam

697-Pos BOARD #B452

RESIDUES CRITICAL FOR VOLTAGE-SENSOR TRANSITIONS DETERMINING GATING PROPERTIES OF CAV1.1. **Petronel Tuluc**, Vladimir Yarov-Yarovoy, Bruno Benedetti, Bernhard E. Flucher

698-Pos BOARD #B453

DIFFERENTIAL STABILITY OF $CA_v\beta_{2A}$ AND $CA_v\beta_3$ IN A $CA_v1.2$ CALCIUM CHANNEL COMPLEX. **Marta Campiglio**, Felix Findeisen, Hyunil Jo, William F. DeGrado, Daniel L. Minor, Jr., Bernhard E. Flucher

699-Pos BOARD #B454

THE AMINO-TERMINI OF RGK PROTEINS DICTATE THE MODE OF L-TYPE CA^{2+} CHANNEL INHIBITION IN ADULT SKELETAL MUSCLE. **Donald Beqollari**, Christin F. Romberg, Ulises Meza, Symeon Papadopoulos, Roger A. Bannister

700-Pos BOARD #B455

PEGYLATED-CHOLESTEROL DECREASES THE AMPLITUDE AND AUGMENTS TIME- AND VOLTAGE-DEPENDENT INACTIVATION OF L-TYPE CA^{2+} CURRENT OF A7R5 CELLS FROM RAT AORTA. **Rikuo Ochi**, Sukrutha Chettimada, Sachin A. Gupte

701-Pos BOARD #B456

AKAP79/150-ANCHORED CAN AND PKA REGULATE NEURONAL L-TYPE CALCIUM CHANNEL ACTIVITY AND NFAT TRANSCRIPTIONAL SIGNALING. **Jonathan G. Murphy**, Mark L. Dell'Acqua

Voltage-gated K Channels I (Boards #B457–#B486)

702-Pos BOARD #B457

HIGH YIELD EXPRESSION OF THE HUMAN *ETHER-à-GO-GO* RELATED GENE (HERG) IN *SACCHAROMYCES CEREVISIAE*.

Karen Molback, Peter Scharff-Poulsen, Dan A. Klaerke, Per Amstrup Pedersen

703-Pos BOARD #B458 EDUCATION TRAVEL AWARDEE

EXPRESSION AND PURIFICATION OF A FUNCTIONAL HERG PORE DOMAIN FOR BIOPHYSICAL AND

ELECTROPHYSIOLOGICAL STUDIES. **Maiwenn Beaugrand**, Sumit Kalsi, Andrée E Gravel, Christopher D. Johnson, Neville Wright, Jason C Young, Maurits R. R. de Planque, Isabelle Marcotte, Philip T. F. Williamson

704-Pos BOARD #B459

EAG DOMAINS REGULATE LQT MUTANT HERG CHANNELS IN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. **Qiangni Liu**, Matthew C. Trudeau

705-Pos BOARD #B460

THE ROLE OF THE CYCLIC NUCLEOTIDE BINDING HOMOMOLOGY DOMAIN IN VOLTAGE AND CALCIUM DEPENDENT GATING OF EAG POTASSIUM CHANNELS. **Eva Loerinczi**, Avril Newman, Sophie Draycott, Frederick W. Muskett, John S. Mitcheson

706-Pos BOARD #B461

INSIGHTS INTO MOLECULAR BASIS OF HERG INHIBITION BY STUDYING A LIBRARY OF DOFETILIDE DERIVATIVES.

Priyanka Saxena, Tobias Linder, Anna Sary-Weinzinger, Adriaan P IJzerman, Eugen Timin, Gerhard Franz Ecker, Steffen Hering

707-Pos BOARD #B462

SENSITIVITY OF FLECAINIDE INHIBITION OF HERG CHANNELS TO CHANNEL INACTIVATION. **Dario Melgari**, Aziza El Harchi, Christopher E. Dempsey, Jules C. Hancox

708-Pos BOARD #B463

HIGH AFFINITY BLOCK OF HERG1 CHANNELS IS WEAKLY DEPENDENT ON INACTIVATION. **Wei Wu**

709-Pos BOARD #B464 CPOW TRAVEL AWARDEE

INVESTIGATING STEREOSELECTIVITY OF PHARMACOLOGICAL INHIBITION OF HERG CHANNELS. **Yi H. Zhang**, Aziza El Harchi, Christopher E. Dempsey, Jules C. Hancox

710-Pos BOARD #B465

REGULATION OF HERG C-TERMINAL ISOFORM EXPRESSION BY MODIFIED U1 SMALL NUCLEAR RNA. **Qiuming Gong**, Matthew R. Stump, Zhengfeng Zhou

711-Pos BOARD #B466

HERG CHANNEL VOLTAGE SENSOR MOVEMENT PRECEDES PORE OPENING. **Samuel J. Goodchild**, David Fedida

712-Pos BOARD #B467

INTERACTIONS OF EXTRACELLULAR DIVALENT IONS AND HYDROGEN WITH THE OUTER PORE OF THE CARDIAC POTASSIUM CHANNEL HERG. Chris Yoon, Scott Loeb, Peter Nilsson, **Alan Miller**

713-Pos BOARD #B468

A SALT BRIDGE LINKS CNBHD CONFORMATION TO THE GATING MACHINERY IN EAG POTASSIUM CHANNELS. **Yaxian Zhao**, Phu Tran, Joao Morais Cabral, Gail A. Robertson

714-Pos BOARD #B469

IN KCNQ1 CHANNELS, A LONG QT MUTATION INDUCES A REGULATION BY CHOLESTEROL INSTEAD OF PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE. **Fabien C. Coyan**, Mohamed-Yassine Amarouch, Fayal Abderemane Ali, Julien Piron, Jérôme Mordel, Céline S. Nicolas, Marja Steenman, Jean Mérot, Céline Marionneau, Annick Thomas, Robert Brasseur, Isabelle Baró, Gildas Loussouarn

715-Pos BOARD #B470

A PAIR OF PHENYLALANINE RESIDUES ON THE S4 AND S5 SEGMENTS CREATE A PHYSICAL AND ENERGY BARRIER FOR THE VOLTAGE SENSOR IN KCNQ1/KCNE1 CHANNEL.

Koichi Nakajo, Yoshihiro Kubo

716-Pos BOARD #B471

ENDOPLASMIC RETICULUM SAC1 4-PHOSPHATASE REDUCES PLASMA MEMBRANE KCNQ2/3 CURRENTS. **Eamonn J. Dickson**, Jill B. Jensen, Bertil Hille

717-Pos BOARD #B472

KCNQ1 EXPRESSION MODULATES HERG CURRENT BY REMOVING INACTIVATION. **Carlos G. Vanoye**, Richard C. Welch, Alfred L. George

718-Pos BOARD #B473

INTERACTION BETWEEN KCNQ1 GAIN-OF-FUNCTION RESIDUES. **Carlos G. Vanoye**, Richard C. Welch, Brett M. Kroncke, Alfred L. George, Charles R. Sanders

719-Pos BOARD #B474

MODULATION OF $K_{v2.1}$ AND $K_{v2.1/K_{v6.4}}$ CHANNELS BY AUXILIARY KCNE SUBUNITS. **Elke Bocksteins**, James S. Trimmer, Dirk J. Snyders

720-Pos BOARD #B475

A NOVEL COMPOUND TARGETING KV7.2/3 CHANNELS RELIEVES INFLAMMATORY AND NEUROPATHIC PAIN. **Asher S. Peretz**, Eti Patrigh, Polina Kornilov, Nataly Menaker, Bernard Attali

721-Pos BOARD #B476

I_{KS} ACTIVATORS SHIFT THEIR BINDING SITES IN THE KCNQ1 CHANNEL AFTER KCNE1 ASSOCIATION - IN SILICO PREDICTIONS AND EXPERIMENTAL TESTS. **Yu Xu**, Yuhong Wang, Mei Zhang, Min Jiang, Gea-Ny Tseng

722-Pos BOARD #B477

CALCIUM-INDEPENDENT POTENTIATION OF KV7.2 CURRENT DENSITY BY CALMODULIN. **Carolina Gomis-Perez**, Virginia Soldovieri, Araitz Alberdi, Paolo Ambrosino, Alessandro Alaimo, Ganeko Bernardo-Seisdedos, Pilar Areso, Maurizio Tagliatalata, Alvaro Villarroel

723-Pos BOARD #B478

KV7.2/7.3 CHANNELS ARE ENHANCED DURING STRIATAL DEVELOPMENT AND PROMOTE NEURONAL FUNCTIONAL MATURATION OF IPS CELL-DERIVED NEURONS. **Vsevolod Telezhkin**, Belinda A.N. Thompson, Monica Pardo, Gerardo Garcia-Diaz Barriga, David A. Brown, Josep M. Canals, Nicholas D. Allen, Paul J. Kemp

724-Pos BOARD #B479

TAMOXIFEN INHIBITION OF KV7.2/KV7.3 CHANNELS. **Tania Ferrer**, Iván Arael Aréchiga Figueroa, Mark S. Shapiro, Martin Tristani-Firouzi, José A. Sánchez-Chapula

725-Pos BOARD #B480 MINORITY AFFAIRS TRAVEL AWARDEE
KCNE1 SEPARATES THE MAIN VOLTAGE SENSOR MOVEMENT AND CHANNEL OPENING IN KCNQ1/KCNE1 CHANNELS.
Rene Barro-Soria, Santiago Rebolledo, Sara I. Liin, Marta E. Perez, Kevin Sampson, Robert S. Kass, H Peter Larsson

726-Pos BOARD #B481
SPECIFIC TARGETING OF KV7.1/KCNE1 CHANNEL COMPLEXES.
Eva Wrobel, Nathalie Strutz-Seeböhm, Eric Schulze-Bahr, Guiscard Seeböhm

727-Pos BOARD #B482
AN ACTIVATOR BINDING SITE IN THE GATING CHARGE PATHWAY OF KCNQ2 CHANNEL. Ping Li, Zhuxi Chen,
Huaiyu Yang, Zhaobing Gao, Hualiang Jiang, Min Li

728-Pos BOARD #B483
UNNATURAL AMINO ACID MUTAGENESIS REVEALS THE CRITICAL ROLE OF HYDROGEN BONDING FOR BINDING OF RETIGABINE IN THE PORE OF KCNQ CHANNELS.
Stephan A. Pless, Michael Yau, Jason D. Galpin, Christopher A. Ahern, Harley T. Kurata

729-Pos BOARD #B484
PHARMACOLOGICAL PROPERTIES OF HOMOMERIC KV7.4, KV7.5 AND HETEROMERIC KV7.4/7.5 CHANNELS: EFFECTS OF ICA069673 AND ML213. **Lyubov I. Brueggemann**, Jennifer M. Haick, Kenneth L. Byron

730-Pos BOARD #B485
A MODEL OF HUMAN POTASSIUM CHANNEL KCNQ1 MODULATION BY ACCESSORY PROTEIN KCNE3.
Brett M. Kroncke, Wade Van Horn, Carlos Vanoye, David Nannemann, Jens Meiler, Charles Sanders

731-Pos BOARD #B486
KCNE1 MODULATES THE SENSITIVITY OF KV7.1 TO POLYUNSATURATED FATTY ACIDS. **Sara I. Liin**, Nicole Schmitt, Johan Larsson, Frida Starck Härlin, Bo H. Bentzen, H. Peter Larsson, Fredrik Elinder

Anion Channels and Transporters (Boards #B487–#B515)

732-Pos BOARD #B487
CALCIUM-CALMODULIN DOES NOT ALTER THE ANION PERMEABILITY OF THE TMEM16A CALCIUM-ACTIVATED CHLORIDE CHANNEL. Yawei Yu, **Ai-Seon Kuan**, Tsung-Yu Chen

733-Pos BOARD #B488
SERINE 550 IS INVOLVED IN THE REGULATION OF MOUSE TMEM16A-CACCS BY CAMKII. **Normand Leblanc**, Ramon J. Ayon, Michael Wiwchar, Jaime Callilung, Cherie A. Singer, Iain A. Greenwood

734-Pos BOARD #B489
INHIBITORY ROLE OF PIP2 ON CALCIUM-ACTIVATED CHLORIDE CHANNEL ACTIVITY. **Harry A.T. Pritchard**, Anthony P. Albert, Normand Leblanc, Iain A. Greenwood

735-Pos BOARD #B490
PROBING THE TRANSMEMBRANE TOPOLOGY OF TMEM16A(A)/ANOCTAMIN-1 BY CYSTEINE SCANNING MUTAGENESIS. **Gunther Schmalzing**, Silvia Detro-Dassen, Fritz Markwardt

736-Pos BOARD #B491
ELECTROPHYSIOLOGICAL CHARACTERISATION OF TMEM16A CURRENTS IN ESOPHAGEAL SQUAMOUS CELL CARCINOMA CELLS. **Mariana Oana Popa**, Hedaythul Choudhury, Christopher Rothwell, Larry Alex Gaither, Martin Gosling, Pamela Tranter

737-Pos BOARD #B492
ELECTROPHYSIOLOGICAL PROPERTIES OF TMEM16A CALCIUM-ACTIVATED CHLORIDE CHANNELS. Ai-Seon Kuan,
Yu-Li Ni, Tsung-Yu Chen

738-Pos BOARD #B493
MONITORING SUBSTRATE-DRIVEN STRUCTURAL CHANGES IN A CLC CHLORIDE-PROTON ANTIporter WITH DOUBLE ELECTRON-ELECTRON RESONANCE SPECTROSCOPY.
Ricky C. Cheng, Philip Chang, Christina Fenollar-Ferrer, Richard A. Stein, Kristin Trone, Lucy R. Forrest, Hassane S. Mchaourab, Merritt C. Maduke

739-Pos BOARD #B494
TESTING THE LIMITS OF STOICHIOMETRIC EXCHANGE IN A CLC-TYPE TRANSPORTER. **Daniel Basilio**, Allison Vera, Alessio Accardi

740-Pos BOARD #B495
CONFORMATIONAL CHANGES REQUIRED FOR CHLORIDE ION PERMEATION IN THE CLC-EC1 EXCHANGER. **Yanyan Xu**, Chungwen Liang, Daniel Basilio, Alessio Accardi, Simon Bernèche

741-Pos BOARD #B496
TRANSPORT MECHANISM IN CLC H⁺/C⁻ EXCHANGERS.
Chungwen Liang, YanYan Xu, Simon Bernèche

742-Pos BOARD #B497
SELECTIVITY IN CLC-F FLUORIDE TRANSPORTERS: A SEARCH FOR THE KEY PLAYERS. **Ashley E. Brammer**, Randy B. Stockbridge, Christopher Miller

743-Pos BOARD #B498
A SINGLE POINT MUTATION REVEALS GATING OF THE HUMAN ENDOSOMAL CL⁻/H⁺ ANTIporter CLC-5.
Giovanni Zifarelli, Silvia De Stefano, Michael Pusch

744-Pos BOARD #B499
THE AMINO TERMINUS CONTROLS SORTING AND VOLTAGE DEPENDENCE OF CLC 3. **Raul E. Guzman Castro**, Erick Miranda Laferte, Gabriel Stölting, Christoph Fahlke

745-Pos BOARD #B500
THE CLC-3 N-TERMINUS MODULATES MEMBRANE TRAFFICKING AND TRANSPORT ACTIVITY. **Jeffrey Rohrbough**, Hong-Ngan Nguyen, Fred S. Lamb

746-Pos BOARD #B501
ROLES OF CYTOPLASMIC IONS IN LYSOSOMAL ACIDIFICATION. **Pascal Courville**, Joseph A. Mindell

747-Pos BOARD #B502
INVOLVEMENT OF BARTTIN SUBUNIT IN PHARMACOLOGICAL POTENTIATION OF CLC-K CHANNELS EXPRESSED IN XENOPUS OOCYTES. **Antonella Gradogna**, Antonella Liantonio, Paola Imbrici, Diana Conte Camerino, Michael Pusch

748-Pos BOARD #B503
REDUCED CURRENT DENSITY AND SURFACE EXPRESSION OF A CLCN1 MUTATION CAUSING DOMINANT OR RECESSIVE MYOTONIA IN COSTA RICA. **Michele Fiore**, Raul Estevez, Héctor Gaitán-Peñas, Mauricio Ezpinoza, Melissa Vásquez, Rebeca Vindas, Michael Pusch, Fernando Morales

749-Pos **BOARD #B504**
ROLE OF CANDIDATE COUNTERIONS IN CLATHRIN COATED VESICLE ACIDIFICATION. **Mary Weston**

750-Pos **BOARD #B505**
CHARACTERIZING ATP PERMEATION THROUGH THE VOLTAGE-DEPENDENT ANION CHANNEL VDAC.
Om P. Choudhary, Aviv Paz, Joshua Adelman, Jacques-Philippe Colletier, Jeff Abramson, Michael Grabe

751-Pos **BOARD #B506**
GENOMICS-AIDED STRUCTURAL MODELING OF AN ANTIPARALLEL HOMODIMERIC FLUORIDE CHANNEL.
Eugene J. Palovcak, Lucie Delemotte, Michael L. Klein, Vincenzo Carnevale

752-Pos **BOARD #B507**
MOUSE CFTR EXHIBITS MULTIPLE CHARACTERISTIC DIFFERENCES FROM HUMAN CFTR. **Guiying Cui**, Christopher Kuang, Chengyu Z. Prince, Nael A. McCarty

753-Pos **BOARD #B508**
PROBING STRUCTURE AND CONFORMATIONAL CHANGES IN THE EXTRACELLULAR LOOPS OF CFTR. **Daniel T. Infield**, Guiying Cui, Chris Kuang, Nael A. McCarty

754-Pos **BOARD #B509**
INTERACTION OF THE ISOLATED NUCLEOTIDE BINDING DOMAINS OF CFTR CHANNELS. Mark O. Palmier,
Silvia G. Bompadre

755-Pos **BOARD #B510**
NON-EQUILIBRIUM GATING OF CFTR REVEALED BY NITRATE AS CHARGE CARRIERS. **Jiunn-Tyng Yeh**, Han-I Yeh, Tzyh-Chang Hwang

756-Pos **BOARD #B511**
CHLORIDE TRANSPORT INHIBITION CAUSES CALCIUM-DEPENDENT ARRHYTHMIC ACTIVITY IN ISOPROTERENOL-TREATED RABBIT CARDIOMYOCYTES.
Shane P. Antrobus, Blake Nichols, Don M. Bers, Julie Bossuyt,
John A. Payne

757-Pos **BOARD #B512**
ANION PERMEATION THROUGH EXCITATORY AMINO ACID TRANSPORTERS. **Jan-Philipp Machtens**, Christine Lansche, Ariane Leinenweber, Petra Kilian, Birgit Begemann, Ulrich Zachariae, David Ewers, Bert L. de Groot, Rodolfo Briones, Christoph Fahlke

758-Pos **BOARD #B513**
INVESTIGATING THE STRUCTURE-FUNCTION RELATIONSHIP OF THE PHOSPHATE-SELECTIVE CHANNEL OPRP.
Niraj Modi, Iván Bárcena-Urbarri, Manjeet Bains, Roland Benz, Robert E. W. Hancock, Ulrich Kleinekathöfer

759-Pos **BOARD #B514**
DESCRIPTION OF THE STRUCTURAL DETERMINANTS OF THE HPEPT1-LIGAND INTERACTIONS. **Claire Colas**, Avner Schlessinger

760-Pos **BOARD #B515**
DYNAMICS OF CA²⁺-DEPENDENT REGULATION OF THE CARDIAC NA⁺/CA²⁺ EXCHANGER. **Lulu Chu**, Liron Boyman, George S.B. Williams, Joseph L. Greenstein, Raimond L. Winslow, W. J. Lederer, Brian Hagen

Ligand-gated Channels I (Boards #B516-#B544)

761-Pos **BOARD #B516**
A HUMAN MUTATION IN THE M4 HELIX OF GLUN2A ACCELERATES FORWARD GATING TRANSITIONS IN NMDA RECEPTORS. **Kevin K. Ogden**, Hongjie Yuan, Kasper B. Hansen, Jing Zhang, Aladair J. Gibb, Stephen F. Traynelis

762-Pos **BOARD #B517**
FUNCTIONAL CONSEQUENCES OF CYSTEINE MUTATIONS AT THE KAINATE RECEPTOR DIMER INTERFACE.
Bryan A. Daniels, Mark RP Arousseau, Maria Musgaard, George B. Dawe, Philip C. Biggin, Derek Bowie

763-Pos **BOARD #B518**
RECOVERY OF AMPA RECEPTOR GLUA1 IS MODULATE BY TARPS. **Wei Zhang**, James Howe

764-Pos **BOARD #B519**
MECHANISM OF MODULATION OF AMPA RECEPTORS BY STARGAZIN. **Anna L. Carbone**, Andrew J. Plested

765-Pos **BOARD #B520**
CHARACTERIZATION OF LIGHT-CONTROLLABLE POLYAMINE TOXIN INHIBITORS OF IONOTROPIC GLUTAMATE RECEPTORS. **Mette H. Poulsen**, Niels G. Nørager, Martin Sumser, Dirk Trauner, Kristian Strømgaard

766-Pos **BOARD #B521**
CALCIUM FLUX THROUGH AVGLUR1: A GLUTAMATE RECEPTOR WITH A POTASSIUM CHANNEL SELECTIVITY SEQUENCE. **Mark Mayer**, Suvendu Lomash

767-Pos **BOARD #B522**
ROLE OF AMINO-TERMINAL DOMAIN IN THE ASSEMBLY MECHANISM OF KAINATE-SUBTYPE GLUTAMATE RECEPTOR ION CHANNELS. **Sagar Chittori**, Janesh Kumar, Suvendu Lomash, Huaying Zhao, Peter Schuck, Mark L. Mayer

768-Pos **BOARD #B523**
INVESTIGATING HIGH AFFINITY PROTEIN SELF-ASSOCIATION BY FLUORESCENCE OPTICAL SEDIMENTATION VELOCITY ANALYTICAL ULTRACENTRIFUGATION. **Suvendu Lomash**, Huaying Zhao, Carla Glasser, Mark L. Mayer, Peter Schuck

769-Pos **BOARD #B524**
FÖRSTER RESONANCE ENERGY TRANSFER (FRET) ANALYSIS OF DUAL CFP/YFP LABELED AMPA RECEPTORS REVEALS STRUCTURAL REARRANGEMENT WITHIN THE C-TERMINAL DOMAIN DURING RECEPTOR ACTIVATION. **Linda Zachariassen**, Mila Katchan, Andrew Plested, Darryl S. Pickering, Anders S. Kristensen

770-Pos **BOARD #B525**
A COMPUTATIONAL STUDY OF LIGAND BINDING IN CHEMOSENSORY IONOTROPIC GLUTAMATE RECEPTORS. **Benoite Bargeton**, Matteo Dal Peraro, Richard Benton

771-Pos **BOARD #B526**
CHARACTERIZING THE ENERGETIC STATES OF A GLUTAMATE RECEPTOR USING UMBRELLA SAMPLING AND MICROSECOND MOLECULAR DYNAMICS SIMULATIONS. **Michael Yonkunas**, Maiti Buddhadev, Maria Kurnikova

772-Pos BOARD #B527 CPOW TRAVEL AWARDEE
DIFFERENTIAL EFFECTS OF SYNAPTIC AND EXTRASYNAPTIC NMDA RECEPTORS ON A β -INDUCED NITRIC OXIDE PRODUCTION IN CEREBROCORTICAL NEURONS.
Elena Molokanova, Mohd Waseem Akhtar, Sara Sanz-Blasco, Tomohiro Nakamura, Shu-Ichi Okamoto, Shichun Tu, Juan C. Piña-Crespo, Scott R. McKercher, Stuart A. Lipton

773-Pos BOARD #B528
INTER-SUBUNIT INTERACTIONS OF NMDA RECEPTOR AMINO-TERMINAL DOMAINS ASSOCIATED WITH ALLOSTERIC MODULATION. **Rita E. Sirrieh**, David M. MacLean, Vasanthi Jayaraman

774-Pos BOARD #B529
PROTON MEDIATED CONFORMATIONAL CHANGES IN ACID SENSING ION CHANNEL1A. **Swarna S. Ramaswamy**, David M. MacLean, Alemayehu A. Gorfe, Vasanthi Jayaraman

775-Pos BOARD #B530
INTERSUBUNIT SALT-BRIDGE FORMATION DURING GATING OF RASIC1A. **Katrin Augustinowski**, Stefan Gruender

776-Pos BOARD #B531
FINGER-THUMB INTERDOMAIN INTERACTIONS INFLUENCE ASIC1A PROTON ACTIVATION. **Aram J. Krauson**, Marcelo D. Carattino

777-Pos BOARD #B532
MODULATION OF CHICKEN ASIC1 BY 2-GUANIDINE-4-METHYLQUINAZOLINE (GMQ) IN THE ABSENCE AND PRESENCE OF PSALMOTOXIN-1. **Rachel N. Johnson**, Eric B. Gonzales

778-Pos BOARD #B533
SIGNAL TRANSMISSION WITHIN THE TRIMERIC P2X2 RECEPTOR UPON VOLTAGE- AND [ATP]- DEPENDENT GATING. **Batu Keceli**, Yoshihiro Kubo

779-Pos BOARD #B534
SUBTYPE-SPECIFIC CONTROL OF P2X RECEPTOR SIGNALING BY ATP AND MAGNESIUM. **Mufeng Li**, Emily Harnish, Shai D. Silberberg, Kenton J. Swartz

780-Pos BOARD #B535
FUNCTION OF THE SECOND TRANSMEMBRANE DOMAIN OF THE HUMAN P2X7 RECEPTOR. **Fritz Markwardt**, Anja Pippel, Michaela Stolz, Tanemasa Rahn, Günther Schmalzing

781-Pos BOARD #B536
THE SECOND TRANSMEMBRANE DOMAIN AND ADJACENT AMINO ACIDS DETERMINE APPARENT LIGAND AFFINITY OF A PEPTIDE-GATED HYDRA SODIUM CHANNEL (HYNAC). **Marc C. Assmann**, Stefan Dürrnagel, Anne Kuhn, Michael B. Schultz, Thomas W. Holstein, Stefan Gründer

782-Pos BOARD #B537
MOLECULAR MECHANISM OF LUNG OEDEMA CLEARANCE BY AP301: DEPENDENCE OF ENAC PORE FORMING SUBUNITS. **Waheed Shabbir**, Prastoo Hazemz-Scherbaum, Rosa Lemmens-Gruber

783-Pos BOARD #B538
PROTON-DEPENDENT CONFORMATIONAL DYNAMICS IN KCSA. **Dorothy M. Kim**, Igor Dikiy, David Posson, David Eliezer, Crina M. Nimigean

784-Pos BOARD #B539
CHARGED RESIDUES ON THE INTRACELLULAR INTERSUBUNIT ASSEMBLY INTERFACE CONTRIBUTE TO CALCIUM-SENSITIVITY OF BK CHANNELS. Yingxin Li, Hao-Min Pan, Qin Li, Ha Rim Kwak, **Jiusheng Yan**

785-Pos BOARD #B540
FUNCTIONAL IMPLICATIONS OF ALTERNATIVE SPLICING IN THE CALCIUM-ACTIVATED BK CHANNEL IN THE AMPULLA OF LORENZINI OF THE SKATE. Benjamin King, Ling-Fang Shi, Peter Kao, **William T. Clusin**

786-Pos BOARD #B541
STRUCTURAL AND THERMODYNAMIC CHARACTERIZATION OF THE GATING PATHWAY IN A K⁺ CHANNEL. Murali K. Bollepalli, Philip W. Fowler, Markus Rapedius, Lijun Shang, Mark S. P. Sansom, Stephen J. Tucker, **Thomas Baukrowitz**

787-Pos BOARD #B542
HCN C-TERMINAL REGION SPEEDS ACTIVATION INDEPENDENTLY OF AUTOINHIBITION. **Kaylee E. A. Magee**, Edgar C. Young

788-Pos BOARD #B543
LIPID MODULATION OF A DUAL FUNCTION TMEM16 CHANNEL/SCRAMBLASE. **Mattia Malvezzi**, Radmila Janjusevic, Anant Menon, Alessio Accardi

789-Pos BOARD #B544
YIDC ALTERS CONDUCTIVITY AND ION SELECTIVITY OF THE BACTERIAL TRANSLOCATION CHANNEL SECYEG. **Lukas Winter**, Denis Knyazev, Nicole Ollinger, Andreas Vogt, Christine Siligan, Hans Gerorg Koch, Peter Pohl

Muscle: Fiber and Molecular Mechanics and Structure I (Boards #B545–#B576)

790-Pos BOARD #B545
THE MYOSIN START-OF-POWER STROKE STATE AND HOW ACTIN BINDING DRIVES THE POWER STROKE. **Matthias Preller**, Kenneth C. Holmes

791-Pos BOARD #B546
THE MYOSIN INHIBITOR BLEBBISTATIN STABILIZES THE SUPER-RELAXED STATE IN SKELETAL MUSCLE. Clyde Wilson, Nariman Naber, Edward Pate, **Roger Cooke**

792-Pos BOARD #B547
ATTACHED MOLECULAR MOTOR IN TRAPPED SINGLE MOLECULE ASSAY AS A BI-DIMENSIONAL BROWNIAN MULTI-STABLE SYSTEM. **Lorenzo Marcucci**, Toshio Yanagida

793-Pos BOARD #B548
DIRECT OBSERVATION OF PHOSPHATE INHIBITING THE FORCE-GENERATING CAPACITY OF A MINI-ENSEMBLE OF MYOSIN MOLECULES. Sam Walcott, Matthew Turner, Mike Woodward, **Edward P. Debold**

794-Pos BOARD #B549
UNDERSTANDING THE EFFECTS OF CARDIOMYOPATHY CAUSING MUTATIONS ON HUMAN BETA CARDIAC MYOSIN BIOMECHANICAL FUNCTION. **Suman Nag**, Ruth Sommese, Jongmin Sung, Elizabeth Choe, Masataka Kawana, Carol Cho, Rebecca Taylor, Chao Liu, Shirley Sutton, Kathleen Ruppel, James Spudich

- 795-Pos** **BOARD #B550**
OPTICAL TRAPPING SHOWS A 3-FOLD INCREASE IN MYOSIN HEAD STIFFNESS BY THE FHC-MUTATION R723G IN THE β -CARDIAC MYOSIN HEAVY CHAIN. Christoph Werkman, Nils Hahn, Antonio Francino, Francesc Navarro-Lopéz, Theresia Kraft, Walter Steffen, **Bernhard Brenner**
- 796-Pos** **BOARD #B551**
POSITION OF PHENYLALANINE IN THE RELAY LOOP IS IMPORTANT FOR MYOSIN MOTOR ACTION. **Jinghua Ge**, Yaroslav V. Tkachev, Yuri E. Nesmelov
- 797-Pos** **BOARD #B552** **INTERNATIONAL TRAVEL AWARDEE**
ROLE OF THE COIL-HELIX TRANSITION WITHIN LOOP2 IN CARDIAC MYOSIN KINETICS MODULATION. **Yaroslav V. Tkachev**, Yuri E. Nesmelov
- 798-Pos** **BOARD #B553**
A KINETIC MODEL THAT EXPLAINS THE TRANSIENT AND STEADY STATE RESPONSES TO MECHANICAL AND CHEMICAL STEPS APPLIED TO Ca^{++} ACTIVATED SKINNED FIBERS FROM SKELETAL MUSCLE. **Vincenzo Lombardi**, Marco Linari, Marco Caremani, Mario Dolfi
- 799-Pos** **BOARD #B554**
KINETIC CHARACTERIZATION OF INTERACTIONS BETWEEN STABILIZED SMOOTH MUSCLE MYOSIN FILAMENTS AND ACTIN. **Brian D. Haldeman**, Richard Brizendine, Josh E. Baker, Christine R. Cremona
- 800-Pos** **BOARD #B555**
EVIDENCE FOR THE PRESENCE OF AM—ADP MYOSIN HEADS IN RIGOR MUSCLE FIBERS: ITS IMPLICATION OF THE STATE OF MYOSIN HEADS AFTER THE END OF POWERSTROKE. **Haruo Sugi**, Karina Hajar, Kazushige Kimura, Takakazu Kobayashi, Seiryu Sugiura
- 801-Pos** **BOARD #B556**
NON-LINEAR CROSS-BRIDGE ELASTICITY, ATP-INDEPENDENT DETACHMENT AND ATP-VELOCITY RELATIONSHIPS FOR SKELETAL MUSCLE ACTOMYOSIN. **Malin Persson**, Elina Bengtsson, Lasse ten Siethoff, Alf Månsson
- 802-Pos** **BOARD #B557**
NONLINEAR ELASTICITY OF A CROSSBRIDGE IN SARCOMERE LATTICE. **Boban Stojanovic**, Marina Svicevic, Richard J. Gilbert, Srboj M. Mijailovich
- 803-Pos** **BOARD #B558**
EFFECT OF NONLINEAR CROSSBRIDGE ELASTICITY ON KINETICS OF SARCOMERIC CONTRACTION. **Srboj M. Mijailovich**, Djordje Nedic, Boban Stojanovic, Michael A. Geeves
- 804-Pos** **BOARD #B559**
FLEXIBILITY WITHIN THE HEADS OF MUSCLE MYOSIN-2 MOLECULES. Neil Billington, Derek J. Reville, Stan A. Burgess, Peter D. Chantler, **Peter J. Knight**
- 805-Pos** **BOARD #B560**
NEGATIVE STAIN EM OF MYOSIN-S1 BOUND TO ACTIN AND THIN FILAMENTS IN MGATP AFTER RAPID MIXING. **Howard D. White**, Matthew L. Walker, Betty Belknap, John A. Trinick
- 806-Pos** **BOARD #B561**
PHOSPHORYLATION-INDUCED STRUCTURAL CHANGE IN CMYBP-C AFFECTS ITS THIN FILAMENT BINDING AND MODULATION OF TROPOMYOSIN POSITION. **Ji Young Mun**, James Gulick, Jeffrey Robbins, Roger Craig
- 807-Pos** **BOARD #B562**
A METHOD FOR SIMULTANEOUS IMAGING OF ISOLATED THICK FILAMENTS AND ACTIN FILAMENTS. **Albert Kalganov**, Aleksander Labuda, Dilson Rassier
- 808-Pos** **BOARD #B563**
SCHISTOSOME MUSCLES CONTAIN STRIATED MUSCLE-LIKE MYOSIN FILAMENTS IN A SMOOTH MUSCLE-LIKE ARCHITECTURE. Guidenn Sulbarán, Lorenzo Alamo, Antonio Pinto, Gustavo Marquez, Franklin Méndez, Raúl Padrón, **Roger Craig**
- 809-Pos** **BOARD #B564**
ZEBRAFISH CARDIAC MUSCLE THICK FILAMENTS; ISOLATION WITHOUT PROTEOLYTIC ENZYMES. **Maryvi Gonzalez-Sola**, Jaime Huertas-Toledo, Robert W. Kensler
- 810-Pos** **BOARD #B565**
THREE-DIMENSIONAL CONSIDERATIONS FOR X-RAY DIFFRACTION SIGNALS THAT OCCUR AHEAD OF STRETCH ACTIVATION IN INSECT FLIGHT MUSCLE. **Hiroyuki Iwamoto**, Naoto Yagi
- 811-Pos** **BOARD #B566**
MODELING POLY-LYSINE INTERACTIONS WITH MUTANT AND WILD TYPE CARDIAC MYOSIN SUBFRAGMENT-2. Nasrin Taci, James Dunn, Rahul Gupta, Sherwin Thomas, Alysha Joseph, Diana Wang, **Douglas D. Root**
- 812-Pos** **BOARD #B567**
SMALL HEAT SHOCK PROTEINS PREVENT TITIN AGGREGATION-INDUCED STIFFENING IN HUMAN MYOCYTES. Sebastian Kötter, Andreas Unger, Nazha Hamdani, Luitgard Nagel-Steger, **Wolfgang A. Linke**
- 813-Pos** **BOARD #B568**
INDIVIDUAL GLOBULAR DOMAINS AND DOMAIN UNFOLDING VISUALIZED IN OVERSTRETCHED TITIN MOLECULES. Zsolt Mártonfalvi, **Miklós S. Kellermayer**
- 814-Pos** **BOARD #B569**
INTERACTIVE PROPERTIES OF A-BAND TITIN. Sarika Khasnis, Matt L. Walker, Gaetana Spedalieri, Ghulam N. Khan, Iain Manfield, John Trinick, **Larissa Tskhovrebova**
- 815-Pos** **BOARD #B570**
TITIN VISCO-ELASTICITY MODULATED BY LIMITING IGF DOMAIN UNFOLDING AND REFOLDING. Jens Herzog, **Timothy R. Leonard**, Azim Jinha, Walter Herzog
- 816-Pos** **BOARD #B571**
AN ACTIVE ROLE FOR TITIN IN SKELETAL MUSCLE. **Krysta Powers**, Azim Jinha, Walter Herzog
- 817-Pos** **BOARD #B572**
TITIN-BASED MODULATION OF SARCOMERE STRUCTURE AS REVEALED BY EQUATORIAL X-RAY DIFFRACTION. Karen H. Hsu, Younss Ait-Mou, Pieter P. de Tombe, **Thomas C. Irving**
- 818-Pos** **BOARD #B573**
CARDIAC THIN FILAMENT STRUCTURAL MODULATION BY SARCOMERE LENGTH. **Younss Aitmou**, Karen H. Hsu, Mohit Kumar, Danuta Szczesna-Cordary, Marion L. Greaser, Tom C. Irving, Pieter P. de Tombe
- 819-Pos** **BOARD #B574**
ATOMIC-LEVEL VISUALIZATION OF SMOOTH MUSCLE ACTIVATION BY PHOSPHORYLATION OF THE MYOSIN REGULATORY LIGHT CHAIN. Brett A. Colson, **Matthew A. Mauseth**, David J. Kast, L. Michel Espinoza-Fonseca, Osha Roopnarine, David D. Thomas

820-Pos BOARD #B575
STRUCTURAL DYNAMICS OF CARDIAC MYOSIN BINDING PROTEIN-C AND ITS MYOFILAMENT BINDING PARTNERS, DETECTED BY SITE-DIRECTED SPECTROSCOPY. **Brett A. Colson**, Zachary M. James, Jennifer C. Klein, David D. Thomas

821-Pos BOARD #B576
TIME-RESOLVED FLUORESCENCE QUENCHING MEASUREMENTS TO STUDY THE STRUCTURAL DEFECTS INDUCED BY MYOSIN ESSENTIAL LIGHT CHAIN CARDIOMYOPATHY MUTATIONS IN MUSCLE FIBERS. **Osha Roopnarine**, Ryan J. Price

Actin and Actin-binding Proteins I (Boards #B577–#B593)

822-Pos BOARD #B577
COMPARING THE MECHANICAL PROPERTIES OF PLECTIN IN MYOBLASTS, KERATINOCYTES, AND ENDOTHELIAL CELLS. Achim Schilling, Pablo Lennert, Navid Bonakdar, Gerhard Wiche, Ben Fabry, **Wolfgang H. Goldmann**

823-Pos BOARD #B578
CYCLIC MECHANICAL REINFORCEMENT OF ACTIN DEPOLYMERIZATION AND POLARITY OF INTERACTION. **Hyunjung Lee**, Cheng Zhu, Suzanne G. Eskin, Larry V. McIntire

824-Pos BOARD #B579 INTERNATIONAL TRAVEL AWARDEE
IN SACCHAROMYCES CEREVISIAE A GLYCOLYTIC METABOLON IS STABILIZED BY F-ACTIN. **Daniela Araiza-Olivera**, Natalia Chiquete-Felix, Salvador Uribe-Carvajal

825-Pos BOARD #B580
FHOD1 AT EARLY INTEGRIN ADHESIONS DRIVES CELL SPREADING. **Thomas Iskratsch**, Cheng-Han Yu, Anurag Mathur, Shuaimin Liu, Virginie Stévenin, Joseph Dwyer, James Hone, Elisabeth Ehler, Michael Sheetz

826-Pos BOARD #B581
VIDEO IMAGING OF COFILIN-INDUCED ACTIN FILAMENT SEVERING BY HIGH SPEED AFM. Kien Xuan Ngo, Noriyuki Kodera, Akira Nagasaki, Toshio Ando, **Taro Q.P. Uyeda**

827-Pos BOARD #B582
ROLE OF SERUM RESPONSE FACTOR AS IN THE MECHANOTRANSDUCTION OF THE MUSCLE CELL. **Lorraine Montel**, Athanassia Sotiropoulos, Sylvie Hénon

828-Pos BOARD #B583
PRESSURE PERTURBATION OF ACTIN SUPRASTRUCTURES. **Christopher Rosin**, Roland Winter

829-Pos BOARD #B584
BIOPHYSICAL BASIS OF DRUG RESISTANCE IN EPITHELIAL OVARIAN CANCERS. **Aastha Kapoor**, Shamik Sen

830-Pos BOARD #B585
A SINGLE-CHAIN MODEL TO PREDICT BUCKLING IN ACTIVE GELS. **Jay D. Schieber**, Andres Cordoba

831-Pos BOARD #B586
METAVINCULIN INDUCED CHANGES AT THE ACTIN INTERPOTOMER CONTACTS AND THE MECHANISM OF RESULTING SEVERING. **Zeynep A. Durer**, Christina Vizcarra, Rebecca A. McGillivray, Dorit Hanein, Emil Reisler, Margot E. Quinlan

832-Pos BOARD #B587
MECHANICAL PROPERTIES OF BRANCHED ACTIN NETWORKS ASSEMBLED FROM YEAST EXTRACTS. Jessica Planade, Alphée Michelot, **Julien Heuvingsh**, Olivia du Roure

833-Pos BOARD #B588
RESPONSE OF ACTIN NETWORKS AT INTERMEDIATE DISTANCES. **Adar Sonn-Segev**

834-Pos BOARD #B589
ACTIN FILAMENT SEVERING BY VERTEBRATE COFILIN IS DRIVEN BY LINKED CATION RELEASE. **Hyeran Kang**, Michael J. Bradley, Brannon R. McCullough, Elena E. Grintsevich, Alphée Michelot, Mark Hochstrasser, Emil Reisler, Enrique M. De La Cruz

835-Pos BOARD #B590
CONTRACTILITY AND DISSIPATION IN ACTIVE ACTIN BUNDLES AND NETWORKS. **Taeyoon Kim**

836-Pos BOARD #B591
DIRECT VISUALIZATION OF TROPOMYOSIN ISOFORM BINDING TO F-ACTIN. **William M. Schmidt**, Albert Wang, Paul Leavis, William Lehman, Jeffrey R. Moore

837-Pos BOARD #B592
THE STRUCTURE OF ACTIN. **Lauren Jepsen**, Karthik Diraviyam, David Sept

838-Pos BOARD #B593
MECHANISM OF ACTIN NETWORK STABILIZATION BY CHANGES IN POLYMER FLEXIBILITY BY CALPONIN. **Eliza Morris**, Mikkel Jensen, Cynthia Gallant, Kathleen Morgan, David Weitz, Jeffrey Moore

Cytoskeletal Protein Dynamics (Boards #B594–#B623)

839-Pos BOARD #B594
MICROTUBULE ORGANIZATION IN LIVING CELLS STUDIED WITH A NEW SINGLE FILAMENT TRACKING ROUTINE. **Carla Pallavicini**, Valeria Levi, Diana E. Wetzler, Juan F. Angiolini, Lorena Benseñor, Marcelo A. Despósito, Luciana Bruno

840-Pos BOARD #B595
PROBING SINGLE PAIR PROTEIN-PROTEIN INTERACTION IN LIVE CELLS BY BIFC-PALM. **Yujie Sun**, Zhen Liu, Dong Xing

841-Pos BOARD #B596
NDC80 MICROTUBULE BINDING BUT NOT COOPERATIVITY DECREASES PROPORTIONALLY TO THE NUMBER OF PHOSPHORYLATED RESIDUES AND INDEPENDENTLY OF THEIR POSITIONS IN NDC80 TAIL. **Anatoly Zaytsev**, Jeanne E. Mick, Boris Nikashin, Evgeny Maslennikov, Fazly I. Ataullakhanov, Jennifer G. DeLuca, Ekaterina L. Grishchuk

842-Pos BOARD #B597
MULTIVALENT BINDING AND DIFFUSION OF ISOLATED KINETOCHORE PARTICLES ON MICROTUBULE LATTICE IN VITRO. **Yi Deng**, Kwaku Opoku, Charles Asbury

843-Pos BOARD #B598
IN VITRO STUDIES OF THE SPINDLE ASSEMBLY CHECKPOINT IN YEAST. **Kwaku N. Opoku**, Charles Asbury

844-Pos BOARD #B599
MECHANICAL CHARACTERIZATION OF THE YEAST CENTROSOME. **Erik C. Yusko**, Beth Graczyk, Kim Fong, Trisha Davis, Charles Asbury

845-Pos BOARD #B600
COLLECTIVE FORCE GENERATION BY MICROTUBULES AND KINETOCHORES. **Debashish Chowdhury**, Ajeet K. Sharma, Dipanwita Ghanti, Pavan Kumar

846-Pos BOARD #B601

BIOPHYSICAL MEASUREMENTS REVEAL FUSION OF SISTER KINETOCHORES DURING MEIOSIS I. **Krishna Sarangapani**, Eris Duro, Yi Deng, Kwaku Opoku, Flavia de Lima Alves, Juri Rappsilber, Qiaozhen Ye, Kevin Corbett, Sue Biggins, Adele Marston, Charles Asbury

847-Pos BOARD #B602

LIMITING CYTOPLASMIC COMPONENTS COUPLE SPINDLE SIZE TO CELL SIZE DURING EMBRYOGENESIS. **Michael D. Vahey**, Matthew C. Good, Rebecca Heald, Daniel A. Fletcher

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NOVEL KINESIN REGULATORS OF GAMMA-TURC. Zachary T. Olmsted, Timothy D. Riehlman, Andrew Colliver, Adam M. Winnie, **Janet L. Paluh**

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MEASUREMENT OF THE FORCE THAT CENTERS THE MITOTIC SPINDLE IN THE EARLY C. ELEGANS EMBRYO USING MAGNETIC TWEEZERS. **Carlos Garzon-Coral**, Horatiu Fantana, Jonathon Howard

850-Pos BOARD #B605

SINGLE-MOLECULE INVESTIGATION OF INTRAFLAGELLAR TRANSPORT DYNAMICS AT THE FLAGELLAR TIP. **Anthony P. Kovacs**, Jonathan Kessler, Huawen Lin, Je-Luen Li, Susan Dutcher, Yan Mei Wang

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THE ROLE OF CDC42 AND GIC1 IN THE REGULATION OF SEPTIN FILAMENT FORMATION AND DISSOCIATION. Yashar Sadian, Christos Gatsogiannis, Csilla Patasi, Oliver Hofnagel, Roger S. Goody, Marian Farkasovsky, **Stefan Raunser**

852-Pos BOARD #B607

FOCAL ADHESIONS ARE COMPOSED OF FILAMENTOUS SUBUNITS WHOSE LENGTH AND DYNAMICS DEPEND ON THE CELL SPREADING AREA. **Shiqiong Hu**, Yee-Han Tee, Alexandre Kabla, Alexander Bershadsky, Pascal Hersen

853-Pos BOARD #B608

CAMKII ACTOMYOSIN INTERACTIONS IN LIVE CELLS. **Shahid M. Khan**, Ianina Conte, Tom Carter, Justin E. Molloy

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MECHANICAL STRESS-DRIVEN CHANGES IN THE DYNAMICS OF CYTOSKELETAL PROTEINS. **Vasudha Srivastava**, Shantel Angstadt, Douglas N. Robinson

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DIFFERENTIAL CONTRIBUTIONS OF NONMUSCLE MYOSIN II ISOFORMS AND FUNCTIONAL DOMAINS TO STRESS FIBER MECHANICS. **Ching-Wei Chang**, Sanjay Kumar

856-Pos BOARD #B611

EFFECTS OF POLYMERIZATION AND NUCLEOTIDE IDENTITY ON THE CONFORMATIONAL DYNAMICS OF THE BACTERIAL ACTIN HOMOLOG MREB. **Alexandre Colavin**, Jen Hsin, Kerwyn Casey Huang

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SPATIO-TEMPORAL REGULATION OF MEMBRANE RECRUITMENT OF RAC1 GTPASE DURING CELLULAR POLARIZATION. **Sulagna Das**, Jingqiao Zhang, Taoferi Yin, Yi Wu, Ji Yu

858-Pos BOARD #B613

PROTEIN KINASE C - ITS ROLE IN PROTRUSION REGULATION. **Carol A. Heckman**, Jessie Weber, Jason M. Urban, Marilyn L. Cayer, Nancy S. Boudreau

859-Pos BOARD #B614

IN VITRO RECONSTITUTION OF REMODELING ACTIN ASTERS - STEPS TOWARDS A MINIMAL ACTIVE ACTOMYOSIN CORTEX. **Darius V. Koester**, Kabir Husain, Elda Iljazi, Scott Hansen, Dyche R. Mullins, Madan Rao, Satyajit Mayor

860-Pos BOARD #B615

ROLE OF CARP AS A BIO-MECHANOSENSOR. **Manuel Chiusa**, Lin Zhong, Joe Chen, David Merryman, Chee Lim

861-Pos BOARD #B616

PRIMARY CILIA RESPOND TO UNIAXIAL STRAIN BY REORIENTING AND ELONGATING ALONG THE AXIS OF STRETCH. **Hiroaki Ishikawa**, Wallace F. Marshall

862-Pos BOARD #B617

MEASURING SUB-CELLULAR RHEOLOGY IN ZEBRAFISH EMBRYOS. **Marco A. Catipovic**, Maria L. Kilfoil, Josef G. Trapani, Ashley R. Carter

863-Pos BOARD #B618

MAPPING INTERNAL STRESS OF IN VITRO CYTOSKELETAL NETWORKS WITH UV-LASER ABLATION. **Martina Lindauer**, Jona Kayser, Andreas R. Bausch

864-Pos BOARD #B619

INVESTIGATING THE RELATIONSHIP BETWEEN CELLULAR MECHANICS AND BETA AMYLOID IN ALZHEIMER'S DISEASE. **Nicole M. Shamitko-Klingensmith**, Jonathan W. Boyd, Justin Legleiter

865-Pos BOARD #B620

TIRF AND MODEL BLOOD VESSELS COMBINED TO ELUCIDATE THE ROLE OF THE CYTOSKELETON IN PLATELET ACTIVATION. Rachel N. Hanson, Sara J. Olson, Solaire Finkenstaedt-Quinn, Christy L. Haynes, **Jolene L. Johnson**

866-Pos BOARD #B621

RECONSTITUTED ACTIVE ACTIN NETWORKS IN CONFINEMENT. **Carina Pelzl**, Katharina Henneberg, Andreas R. Bausch

867-Pos BOARD #B622

FORCE-DEPENDENT MECHANICAL PROPERTIES OF DENDRITIC ACTIN NETWORKS. **Tai-De Li**, Peter Bieling, Dyche Mullins, Daniel Fletcher

868-Pos BOARD #B623

ATHERMAL FLUCTUATIONS OF PROBE PARTICLES IN ACTIVE CYTOSKELETAL NETWORK. Irwin Zaid, **Heev L. Ayade**, Daisuke Mizuno

Cell Mechanics and Motility I (Boards #B624–#B653)

869-Pos BOARD #B624

FIBROBLAST PHENOTYPE TRANSFORMATION BY COCULTURED CANCER EPITHELIAL CELLS. **Rebecca S. Stussman**, Yun Chen

870-Pos BOARD #B625

ENDOTHELIAL SURFACE PROTRUSION BY A POINT LOAD. Yong Chen, Lan Lu, Yunfeng Feng, Gregory D. Longmore, **Jin-Yu Shao**

871-Pos BOARD #B626

PROBING COLLECTIVE MIGRATION OF A COMPLEX MULTI-CELLULAR EMBRYONIC TISSUE THROUGH NOVEL 3D BIOETCHING. **Melis Hazar**, YongTae Kim, Philip R. LeDuc, Lance A. Davidson, William C. Messner

872-Pos BOARD #B627
CONTRACTILE STRESS AND MORPHOGEN DIFFUSION IN DEVELOPING CELL ASSEMBLIES. Kinjal Dasbiswas, **Sam Safran**

873-Pos BOARD #B628
PROBING MECHANOSENSITIVITY OF 3T3 FIBROBLASTS ON BIOMEMBRANE-MIMICKING CELL SUBSTRATES. **Yu-Hung Lin**, Leandro Moretti, Daniel E. Minner, Lena Lautscham, Vera Auernheimer, Wolfgang Goldmann, Ben Fabry, Christoph A. Naumann

874-Pos BOARD #B629
MODELING FOLLICLE CELL LENGTH OSCILLATIONS DURING TISSUE ELONGATION IN DROSOPHILA EGG CHAMBER. **Sarita Koride**, Li He, Ganhui Lan, Denise Montell, Sean Sun

875-Pos BOARD #B630
COUPLING UP: HOW INTERACTIONS BETWEEN CELL STRESSES AND INTRACELLULAR BIOCHEMISTRY AFFECT CELL SPREADING. **Magdalena Stolarska**, Aravind Rammohan, Srikanth Raghavan

876-Pos BOARD #B631
CALCULATING INTERCELLULAR STRESS IN A MODEL OF COLLECTIVELY MOVING CELLS. **Juliane Zimmermann**, Markus Basan, Ryan Hayes, Wouter-Jan Rappel, Eshel Ben-Jacob, Herbert Levine

877-Pos BOARD #B632
COMBINATION OF CHEMOTAXIS AND DIFFERENTIAL ADHESION LEADS TO ROBUST CELL SORTING DURING TISSUE PATTERNING. **Rui Zhen Tan**, Keng-Hwee Chiam

878-Pos BOARD #B633
CATCHING UP ON SLIP: FOCAL ADHESION COMPOSITION AND MECHANOSENSING. **Elizaveta A. Novikova**, Cornelis Storm

879-Pos BOARD #B634
INFLUENCE OF SUBSTRATE STIFFNESS AND THICKNESS ON CELL TRACTION FORCES. **Aravind R. Rammohan**, Srikanth Raghavan

880-Pos BOARD #B635
WATER POTENTIAL OF CELL MICROENVIRONMENTS MODULATES THEIR PROLIFERATION. **Maria P. McGee**, Michael Morykwas, Eleanor McCabe, Mary Kearns, Louis Argenta

881-Pos BOARD #B636
RAPID DISORGANIZATION OF MAMMARY ACINI DRIVEN BY LONG-RANGE MECHANICAL INTERACTION. **Quanming Shi**, Rajarshi Ghosh

882-Pos BOARD #B637
DORSAL ADHESION SLOWS GLIOBLASTOMA MIGRATION IN PERIVASCULAR MIMICS. **Andrew Rape**, Sanjay Kumar

883-Pos BOARD #B638
LENGTH SCALE DEPENDENT MICRO-RHEOLOGY OF CELLULARIZED TYPE I COLLAGEN GELS. **Christopher A. Jones**, Bo Sun

884-Pos BOARD #B639
INTERMEDIATE FILAMENT STRUCTURE, ASSEMBLY AND NANOMECHANICS. **Harald Herrmann**, Ueli Aebi

885-Pos BOARD #B640
THE ROLE OF CENTRAL MICROTUBULES IN THE BEATING OF EUKARYOTIC FLAGELLA, REVEALED BY HIGH-SPEED HOLOGRAPHIC MICROSCOPY. **Laurence George Wilson**, Lucy M. Carter, Sarah E. Reece

886-Pos BOARD #B641
IMPACT OF PHYSICAL BOUNDARIES ON THE MECHANICS OF COLLAGEN GELS AND MECHANOSENSATION. **Hamid Mohammadi**, Christopher McCulloch

887-Pos BOARD #B642
EXTRACTING QUANTITATIVE DATA FROM AFM INDENTATIONS ON SOFT, HETEROGENEOUS BIOMATERIALS. **Bryant L. Doss**, Jack R. Staunton, Robert Ros

888-Pos BOARD #B643
FROM RHEOLOGY TO ELASTICITY: HOW CAN WE CAPTURE THE DYNAMICAL PROPERTIES OF CELLS? **Francoise Argoul**

889-Pos BOARD #B644
CYTOSKELETAL STIFFNESS CONTROLS THE THRESHOLD OF T CELL ACTIVATION. Marc A. Bruce, **Manish J. Butte**

890-Pos BOARD #B645
COMBINED CLSM AND AFM INDENTATION REVEALS METASTATIC CANCER CELLS STIFFEN DURING RHO/ROCK CONTRACTILITY-DEPENDENT INVASION OF COLLAGEN I MATRICES. **Jack R. Staunton**, Bryant L. Doss, Robert Ros

891-Pos BOARD #B646
CELLULAR ADHESION - A KEY MECHANISM FOR COMPARTMENTALIZATION AND TUMOR SPREADING? **Steve Pawlizak**, Anatol Fritsch, Tobias Thalheim, Dave Ahrens, Josef A. Käs

892-Pos BOARD #B647
PHYSICAL LIMITS ON DIRECTIONAL MECHANOSENSING OF AMOEBOID CRAWLING CELLS. **Roland Bouffanais**, Xiaoying Zhu

893-Pos BOARD #B648
MECHANICAL CHARACTERIZATION OF HUMAN MONOCYTE DERIVED ANTIGEN PRESENTING CELLS. **Nathalie Bufi**, Armelle Bohineust, Stéphanie Dogniaux, Alain Richert, Michael Saitakis, Claire Hivroz, Atef Asnacios

894-Pos BOARD #B649
DIRECTIONAL MECHANOSENSING OF AMOEBOID CELLS. **Xiaoying Zhu**, Roland Bouffanais, Dick Yue

895-Pos BOARD #B650
MOLECULAR TATTOOING OF LIVE CELLS AND ANIMALS: SPATIAL AND TIME SPECIFIC EFFECTS OF AZIDOBLEBBISTATIN BY TWO-PHOTON MICROSCOPY. Miklos Kepiro, Boglarka Varkuti, Gyorgy Hegyi, Miklos SZ Kellermayer, **Malnasi-Csizmadia Andras**

896-Pos BOARD #B651
CELL SIZE AND SHAPE REGULATES EPITHELIAL-MYOFIBROBLAST TRANSITION. **Joseph W. O'Connor**, Esther W. Gomez

897-Pos BOARD #B652
EXPERIMENTAL MEASUREMENT AND SIMULATIONS OF THE CYTOKINETIC RING TENSION IN FISSION YEAST. **Harvey F. Chin**, Matthew R. Stachowiak, Caroline Laplante, Erdem Karatekin, Thomas D. Pollard, Ben O'Shaughnessy

898-Pos BOARD #B653
3D MODEL OF CYTOKINETIC RING ASSEMBLY IN FISSION YEAST. **Tamara C. Bidone**, Haosu Tang, Dimitrios Vavylonis

Unconventional Myosins (Boards #B654–#B669)

899-Pos BOARD #B654

THE STRUCTURE OF VERTEBRATE MYOSIN-I REVEALS NEW INSIGHTS INTO MECHANOCHEMICAL TUNING OF MYOSINS. **Michael J. Greenberg**, Henry Shuman, Adam Zwolak, Charles Sindelar, Roberto Dominguez, E. Michael Ostap

900-Pos BOARD #B655

MYOSIN-3B AND ITS LIGHT CHAINS. **Sarah M. Heissler**, Neil Billington, James R. Sellers

901-Pos BOARD #B656

DYNAMICS OF THE LEVER-ARM SWING IN MYOSIN V. **Darshan V. Trivedi**, Jonathan P. Davis, Christopher M. Yengo

902-Pos BOARD #B657

TWO MOLECULE OF TWO HEADED MYOSIN 5C ON A DNA SCAFFOLD STEPS PROCESSIVELY ALONG ACTIN FILAMENTS. **Laura Gunther**, Kenya Furuta, Jianjun Bao, Yuwen Mei, Howard White, Takeshi Sakamoto

903-Pos BOARD #B658 EDUCATION TRAVEL AWARDEE

A ROLE FOR MYOSIN VI IN RETINAL PIGMENT EPITHELIUM PHAGOCYTOSIS. **Rebekah Daniel**, Bianca Nagata, David Altman

904-Pos BOARD #B659

SINGLE MOLECULE CHARACTERIZATION OF HUMAN MYOSIN VIIA. **Osamu Sato**, Tsuyoshi Sakai, Ryosuke Tanaka, Takeomi Mizutani, Tomonobu M. Watanabe, Reiko Ikebe, Mitsuo Ikebe

905-Pos BOARD #B660

MYOSIN-10 PRODUCES ITS POWER-STROKE IN TWO PHASES AND MOVES PROCESSIVELY ALONG A SINGLE ACTIN FILAMENT UNDER LOW-LOAD. **Yasuharu Takagi**, Rachel E. Farrow, Neil Billington, Attila Nagy, Christopher Batters, Yi Yang, James R. Sellers, Justin E. Molloy

906-Pos BOARD #B661

MYOSIN X IS RECRUITED TO FOCAL ADHESION AND INDUCES FILOPODIA INITIATION. Kangmin He, **Tsuyoshi Sakai**, Tomonobu Watanabe, Mitsuo Ikebe

907-Pos BOARD #B662

DYNAMICS OF MYOSIN XI: THE FAMILY SPEED DEMON. **Deborah Y. Shroder**, Yujie Sun, Osamu Sato, Mitsuo Ikebe, Yale E. Goldman

908-Pos BOARD #B663

PURIFICATION AND CHARACTERIZATION OF MYOSIN-15, THE MOLECULAR MOTOR MUTATED IN DFNB3 HUMAN DEAFNESS. **Jonathan E. Bird**, Yasuharu Takagi, Neil Billington, Sarah M. Heissler, Thomas B. Friedman, James R. Sellers

909-Pos BOARD #B664

HUMAN MYOSIN-18B - A VERSATILE ACTIN BINDING PROTEIN. **Manuel H. Taft**, Michael B. Radke, Michal Stanczak, Claudia Thiel, Dietmar J. Manstein

910-Pos BOARD #B665

CALMODULIN AND LIPID BINDING REGULATE DIMERISATION AND MOTILITY OF MYOSIN-XXI IN LEISHMANIA. Christopher Batters, Heike Ellrich, Constanze Helbig, Katy Woodall, Christian Hundschell, Dario Brack, **Claudia Veigel**

911-Pos BOARD #B666

CLASS III MYOSIN MOTOR ACTIVITY CORRELATES WITH LOCALIZATION IN ACTIN PROTRUSIONS. Manmeet Raval, Anja Swenson, William Unrath, **Christopher M. Yengo**

912-Pos BOARD #B667

STRUCTURAL BASIS OF MYOSIN 1C Ca^{2+} REGULATION. **Stefan Munnich**, Manuel H. Taft, Salma Pathan-Chhatbar, Dietmar J. Manstein

913-Pos BOARD #B668

REMOTE CONTROL OF DIVERSE CYTOSKELETAL MOTORS USING LIGHT-ACTIVATED GEARSHIFTING. **Muneaki Nakamura**, Lu Chen, Zev Bryant

914-Pos BOARD #B669

MYOSIN LEVER ARM DIRECTS THE COLLECTIVE MOVEMENT PATTERNS OF MOTOR PROTEINS. **Rizal F. Hariadi**, Mario Cale, Sivaraj Sivaramakrishnan

Light Energy Harvesting, Trapping, and Transfer (Boards #B670–#B682)

915-Pos BOARD #B670

DYNAMIC MECHANICAL RESPONSES OF ARABIDOPSIS THYLAKOID MEMBRANES DURING PSII-SPECIFIC ILLUMINATION. **Tai-De Li**, Casper Clausen, Matthew Brooks, Patricia Grob, Gigi Kemalyan, Eva Nogales, Krishna Nyogi, Daniel Fletcher

916-Pos BOARD #B671

LIGHT-HARVESTING LIPID VESICLES INCORPORATED WITH PROTEORHODOPSINS AND PHOTOSYSTEM II; GENERATION OF PHOTO-INDUCED PROTON GRADIENTS AND EXTENDED ABSORBING LIGHT SPECTRUM. **Keel Yong Lee**, Heeyeon Kim, Se-Hwan Kim, Kwang-Hwan Jung, Tae Kyu Ahn, Kwanwoo Shin

917-Pos BOARD #B672

SIMULATION OF PHOTOSYSTEM II DYNAMICS IN THE THYLAKOID MEMBRANE. **Floris J. van Eerden**, Djurre H. de Jong, Xavier Periole, Siewert-Jan Marrink

918-Pos BOARD #B673

THE DEPENDENCE OF THE PHOTOCURRENT ON THE CONCENTRATION OF ELECTRON MEDIATOR (*PARA*-BENZOQUINONE) IN THYLAKOIDS. **Yue Yu**, Fulin Zuo, Chen-Zhong Li

919-Pos BOARD #B674

ENVIRONMENTAL EFFECTS IN THE FMO AND PE545 PHOTOSYNTHETIC COMPLEXES. Mortaza Aghtar, Johan Strümpfer, Carsten Olbrich, Klaus Schulten, **Ulrich Kleinekathöfer**

920-Pos BOARD #B675

THE FATE OF THE TRIPLET EXCITATIONS IN THE FENNA-MATTHEWS-OLSON COMPLEX AND STABILITY OF THE COMPLEX. Shigeharu Kihara, Daniel Hartzler, Gregory S. Orf, Robert E. Blankenship, **Sergei Savikhin**

921-Pos BOARD #B676

STRUCTURAL BASIS FOR THE NON-PHOTOCHEMICAL QUENCHING SWITCH OF THE GREEN ALGA CHLAMYDOMONAS REINHARDTII. **Nicoletta Liguori**, Laura M. Roy, Milena Opacic, Roberta Croce

922-Pos BOARD #B677
SINGLE-MOLECULE EXPLORATION OF THE PHOTODYNAMICS OF LHCII COMPLEXES IN SOLUTION. Gabriela S. Schlau-Cohen, **Hsiang-Yu Yang**, Michal Gwizdala, Tjaart Krüger, Pengqi Xu, Roberta Croce, Rienk van Grondelle, W. E. Moerner

923-Pos BOARD #B678
COHERENT EXCITON DYNAMICS IN PHOTOSYNTHETIC BACTERIA. **Petra E. Edlund**

924-Pos BOARD #B679
REGIOSELECTIVE REDUCTION PATHWAY OF GERANYLGERANYL MOIETY IN CHLOROPHYLL BIOSYNTHESIS. **Kota Nomura**, Tadashi Mizoguchi, Hitoshi Tamiaki

925-Pos BOARD #B680
DIRECTED ASSEMBLY OF PROTEOPOLYMER MEMBRANE ARRAYS WITH LIGHT DRIVEN TRANSPORT PERFORMANCE. Liangju Kuang, Donald Fernandes, Matthew O'Halloran, Wan Zheng, Yunjiang Jiang, Vladimir Ladizhansky, Leonid S. Brown, **Hongjun Liang**

926-Pos BOARD #B681
ELECTRONIC SPECTRUM OF THE RETINAL PROTONATED SCHIFF BASE IN THE GAS PHASE. Neville Coughlan, Brian Adamson, Katherine Catani, **Evan Bieske**

927-Pos BOARD #B682
COSIC'S RESONANT RECOGNITION MODEL FOR MACROMOLECULES CAN BE USED TO PREDICT AND MODIFY THE FLUCTUATING WAVELENGTHS OF ULTRAWEAK PHOTON EMISSIONS FROM STRESSED CANCER CELLS. **Blake T. Dotta**

Mitochondria in Cell Life and Death I (Boards #B683–#B701)

928-Pos BOARD #B683
CELL-WIDE COORDINATION OF ROS-INDUCED ROS RELEASE BY HYDROGEN PEROXIDE IN MITOCHONDRIAL NETWORKS. **Brent Millare**, Brian O'Rourke, Natalia Trayanova

929-Pos BOARD #B684
THE EFFECT OF HYPOXIC PRECONDITIONING ON INTRACELLULAR REACTIVE OXYGEN SPECIES FORMATION IN HYPOXIC SKELETAL MUSCLE. **Li Zuo**, William J. Roberts

930-Pos BOARD #B685
REDOX CYCLING AND SUPEROXIDE GENERATION MEDIATED BY MITOCHONDRIA AND NADH: IMPLICATIONS FOR PARKINSON'S DISEASE. **Nihar J. Mehta**, David Njus

931-Pos BOARD #B686
REDUCTIVE STRESS INCREASES REACTIVE OXYGEN SPECIES PRODUCTION IN CARDIAC MITOCHONDRIA: A KEY ROLE OF THIOREDOXIN REDUCTASE. Paavo Korge, **James N. Weiss**

932-Pos BOARD #B687
ALTERED MITOCHONDRIAL SUPEROXIDE PRODUCTION IN SKELETAL MUSCLE OF AN ALS MOUSE MODEL DURING THE DISEASE PROGRESSION. Chehade Karam, Jianxun Yi, Jiajie Xu, Carlo Manno, Kaitao Li, Noah Weisleder, Jianjie Ma, Heping Cheng, Han-Xiang Deng, **Jingsong Zhou**

933-Pos BOARD #B688
EXTERNALIZATION OF CARDIOLIPIN AS AN "EAT-ME" MITOPHAGEAL SIGNAL IS FACILITATED BY NDPK-D. Zhentai Huang, Yulia Y. Tyurina, Jianfei Jiang, Malgorzata Tokarska-Schlattner, Mathieu Boissan, Marie-Lise Lacombe, Raquel Epand, **Uwe Schlattner**, Richard M. Epand, Valerian E. Kagan

934-Pos BOARD #B689
NITRIC OXIDE FROM NEURONAL NO-SYNTASE INCREASES AFTER BETA-ADRENERGIC STIMULATION BUT DOES NOT CONTROL MITOCHONDRIAL RESPIRATION IN CARDIAC MYOCYTES. Michael Kohlhaas, Stefanie Bergem, Alexander Nickel, Maxie Meiser, Barbara Casadei, Ulrich Laufs, **Christoph Maack**

935-Pos BOARD #B690
TWO-PHOTON FLUORESCENCE LIFETIME IMAGING OF NATURAL COENZYMES IN LIVING CELLS AS A FUNCTION OF OXIDATIVE STRESS. **John Alfveby**, Randi Timerman, Jillian Bartusek, Dhanushka Wickramasinghe, Holly Israelson, Ahmed Heikal

936-Pos BOARD #B691
TWO-PHOTON FLUORESCENCE LIFETIME IMAGING FOR METABOLIC PROFILING OF COCHLEAR DYSFUNCTION. **Lyandysha V. Zholudeva**, Kristina G. Ward, Michael G. Nichols, Heather Jensen Smith

937-Pos BOARD #B692
ENDOGENOUS DIFFERENCES IN COCHLEAR SENSORY AND SUPPORTING CELL MITOCHONDRIAL METABOLISM BIAS FREE RADICAL PRODUCTION DURING OTOTOXIN EXPOSURE. **Heather Jensen Smith**, Danielle Desa, Christina Miller, Michael G. Nichols

938-Pos BOARD #B693
ELECTRON TRANSPORT ACTIVITY IN EMBRYONIC HEARTS REQUIRES THE FORMATION OF SUPERCOMPLEXES. **Gisela Beutner**, George A. Porter

939-Pos BOARD #B694
UNDERSTANDING THE CONTRIBUTION OF MTHSP70 TOWARDS MITOCHONDRIAL DYSFUNCTION IN PARKINSON'S DISEASE: A YEAST MODEL. **Madhuj Samaddar**, Arvind Vital Goswami, Devanjan Sinha, Jaya Purushotham, Patrick D'Silva

940-Pos BOARD #B695
AMPHIPHATIC TAIL-ANCHORING PEPTIDE IS A PROMISING THERAPEUTIC AGENT FOR CANCER TREATMENT. **Gejing De**, Jae-Kyun Ko, Peihui Lin, Pravin Kaumaya, Haichang Li, Jianjie Ma

941-Pos BOARD #B696
BLEBBISTATIN DELAYS MITOCHONDRIAL DEPOLARIZATION AND ASYSTOLE DURING MYOCARDIAL ISCHEMIA, AND PREVENTS CELL DEATH UPON REPERFUSION. **Paul W. Venable**, Katie J. Sciuto, Tyson G. Taylor, Vivek Garg, Junko Shibayama, Kenneth W. Spitzer, Alexey V. Zaitsev

942-Pos BOARD #B697
ROLE OF MITOCHONDRIA-CYTOSKELETON INTERACTIONS IN RESPIRATION REGULATION IN POST-INFARCT HEART FAILURE. **Rafaela Bagur Quetglas**

943-Pos BOARD #B698
CRITICAL EVENTS IN MYOCARDIAL ISCHEMIA/ REPERFUSION: MITOCHONDRIAL DEPOLARIZATION VERSUS SARCOLEMMA PERMEABILITY. **Katie J. Sciuto**, Paul W. Venable, Chris Hunter, Tyson G. Taylor, Vivek Garg, Junko Shibayama, Kenneth W. Spitzer, Alonso P. Moreno, Alexey V. Zaitsev

944-Pos BOARD #B699
BETA-HYDROXYBUTYRATE IMPROVES CARDIAC EXCITATION-CONTRACTION COUPLING (ECC) AND MITOCHONDRIAL FUNCTION IN TYPE-2 DIABETIC HEARTS. Isaac Philip, Stefanie Walther, Lothar A. Blatter, **Elena N. Dedkova**

945-Pos BOARD #B700 INTERNATIONAL TRAVEL AWARDEE
METABOLIC INFLEXIBILITY OF MALONYL COA DECARBOXYLASE (MCD) KNOCKOUT MICE LEADS TO CARDIAC REMODELLING AND HIGH MORTALITY DURING PERI-WEANING PERIOD. **Dunja Aksentijevic**, Debra J. Medway, Liam Sebag-Montefiore, Sevasti Zervou, Gillian Douglas, Gary D. Lopaschuk, Stefan Neubauer, Craig A. Lygate

946-Pos BOARD #B701
ANTI- AND PRO-APOPTOTIC BCL2 PROTEINS DISTRIBUTION AND METABOLIC PROFILE IN HUMAN AORTA ENDOTHELIAL CELLS BEFORE AND AFTER HYP-PDT. **Katarina Stroffekova**, Mária Maslaňáková, Lucia Balogová, Pavol Miškovský, Ružena Tkáčová

Synthetic Biology (Boards #B702–#B711)

947-Pos BOARD #B702
RECONSTITUTION OF PROTEIN OSCILLATIONS IN MICRO COMPARTMENTS. **Katja Zieske**, Petra Schwille

948-Pos BOARD #B703
SYMMETRY BREAKING AND PLASTICITY OF MIN PROTEIN OSCILLATORS IN LIVING BACTERIA SCULPTURED INTO DEFINED GEOMETRIES. **Fabai Wu**, Bas van Schie, Erwin van Rijn, Juan E. Keymer, Cees Dekker

949-Pos BOARD #B704
COMPUTATIONAL AND BIOMOLECULAR NMR GUIDED DESIGN OF PEPTIDE THERAPUTICS FOR INFLUENZA A. **Patrick Nosker**, Douglas Pike, James M. Aramini, Li-Chung Ma, Emily Grasso, Gaetano T. Montelione, Vikas Nanda

950-Pos BOARD #B705
UTILIZING A RECONFIGURED HDL PARTICLE TO TARGET AND DELIVER SIRNA TO MANTLE CELL LYMPHOMA CELLS. **Jens B. Simonsen**, Betty Su, Mistuni Ghosh, Jeniffer Beckstead, Trudy M. Forte, Robert O. Ryan

951-Pos BOARD #B706
GENETIC ENGINEERING OF MEMBRANE LIPID COMPOSITION IN E. COLI. **Itay Budin**

952-Pos BOARD #B707
CHLORIDE TRANSPORT ACROSS PLANAR LIPID BILAYERS AND CELL MEMBRANES BY STERIOD-BASED SYNTHETIC ANION TRANSPORTERS. **Hongyu Li**, Germinal Magro, Luke W. Judd, Peter R. Brotherhood, David N. Sheppard, Anthony P. Davis

953-Pos BOARD #B708
DESIGNING OF SELF-ASSEMBLED BIOMOLECULAR SYSTEM AND THE DETECTION AT THE SINGLE MOLECULE RESOLUTION. **Mitsuhiro Iwaki**, Keigo Ikezaki, Toshio Yanagida, William Shih

954-Pos BOARD #B709
EXPERIMENTAL QUANTIFICATION OF FITNESS ASSIGNED TO CELL LINEAGE PHENOTYPES. **Takashi Nozoe**, Yuichi Wakamoto

955-Pos BOARD #B710 INTERNATIONAL TRAVEL AWARDEE
IDENTIFICATION OF HEAVY METALS IN WILD PLANTS GROWN ON BATTERY WASTE. **Sarah O. Oni**

956-Pos BOARD #B711
MINING RIBOZYME-BASED INSULATORS FOR INCORPORATION INTO GENETIC NOT GATES. **Jonghyeon Shin**

Synaptic Transmission (Boards #B712–#B720)

957-Pos BOARD #B712
DYNAMIC ORGANIZATION OF PRESYNAPTIC CALCIUM CHANNELS. Romy Schneider, Ulrich Thomas, Andreas Voigt, **Martin Heine**

958-Pos BOARD #B713
A CALCIUM-INDEPENDENT OLIGOMERIZATION OF FULL-LENGTH SYNAPTOTAGMIN 1 IS MEDIATED BY ITS JUXTA-MEMBRANE LINKER. Bin Lu, Volker Kiessling, Lukas Tamm, **David Cafiso**

959-Pos BOARD #B714
MEASURING THE IMPACT OF LIPID INTERACTIONS ON THE MOBILITY AND LOCALIZATION OF SYNAPTIC PROTEINS IN LIVE SYNAPSES. **Jeremy Dittman**, Rachel Wragg, David Snead, Yongming Dong, Jihong Bai, David Eliez

960-Pos BOARD #B715
GUIDED GROWTH OF NEURONS ON MICRO-STRUCTURED SURFACES. **Julia Trahe**, Jana Hüve, Philipp Selenschik, Nataliya Glyvuk, Anne Gauthier-Kemper, Jacob Piehler, Jürgen Klingauf

961-Pos BOARD #B716
CEREBELLAR INTERNEURONS USE DENDRITIC VOLTAGE AND CALCIUM SIGNALS TO DIFFERENTIALLY EXTRACT INFORMATION FROM SYNAPTIC ACTIVITY. **Alexandra Tran-Van-Minh**, Therese Abrahamsson, Laurence Cathala, David DiGregorio

962-Pos BOARD #B717
DEFECTS IN SYNAPSE STRUCTURE AND FUNCTION IN A FLY MODEL OF FUS-RELATED ALS. **Mohammad Shahidullah**, Hong Fei, Sylvain LeMarchand, Matthew Dalva, Piera Pasinelli, Irwin B. Levitan

963-Pos BOARD #B718
UPREGULATION OF GLUTAMATERGIC RECEPTOR-CHANNELS IS ASSOCIATED WITH CROSS-MODAL REFLEXES ENCODED IN BARREL CORTEX AND PIRIFORM CORTEX. **Jin-Hui Wang**, Na Chen, Zilong Gao, Bo Wen, Chanfeng Chen, Yahui Liu

964-Pos BOARD #B719
2-PHOTON IMAGING OF EXCITATORY POTENTIALS IN DENDRITIC SPINES USING VOLTAGE-SENSITIVE DYES. **Erika A. Hoyos-Ramirez**, Corey Acker, Ping Yan, Leslie Loew

965-Pos BOARD #B720
A MULTIFUNCTIONAL PIPETTE FOR LOCALIZED DRUG ADMINISTRATION TO BRAIN SLICES. **Aikeremu Ahemaiti**, Alar Ainala, Gavin D.M. Jeffries, holger Wigström, Aldo Jesorka, Kent Jardemark

Magnetic Resonance Spectroscopy and Imaging (Boards #B721–#B730)

966-Pos BOARD #B721
OPTICAL MAGNETIC IMAGING WITH NITROGEN-VACANCY CENTERS IN DIAMOND. **Keigo Arai**, ChinmayBelthangady, Huiliang Zhang, Stephen J. DeVience, David Le Sage, David R. Glenn, Linh M. Pham, Lilah Rahn-Lee, Mikhail D. Lukin, Amir Yacoby, Arash Komeili, Ronald L. Walsworth

967-Pos BOARD #B722
 PROBING THE STRUCTURAL TOPOLOGY OF A MEMBRANE PEPTIDE IN MECHANICALLY ALIGNED LIPID BILAYERS USING BIFUNCTIONAL SPIN LABELING EPR SPECTROSCOPY. **Lauren M. Bottorf**, Lishan Liu, Indra D. Sahu, Robert McCarrick, Gary A. Lorigan

968-Pos BOARD #B723
 PROBING THE SECONDARY STRUCTURE OF MEMBRANE PROTEINS WITH THE PULSED EPR ESEEM TECHNIQUE. **Lishan Liu**, Gary Lorigan

969-Pos BOARD #B724
 SITE-DIRECTED SPIN LABELLING OF SULFITE OXIDASE USING NON NATURAL AMINO ACIDS. Aaron Hahn, Christopher Engelhard, Christian Teutloff, **Thomas Risse**

970-Pos BOARD #B725
 HIGH-RESOLUTION MEASUREMENT OF DISTANCE AND ORIENTATION IN MYOSIN: EPR OF A BIFUNCTIONAL SPIN LABEL. **Benjamin Binder**, Andrew Thompson, Ryan Mello, Rebecca Moen, David D. Thomas

971-Pos BOARD #B726
 DYNAMIC AND CONTRASTING INFORMATION BY ORIENTED-SAMPLE SOLID-STATE NMR SPECTROSCOPY OF MEMBRANE PROTEINS. **Alexander Nevzorov**, Deanna M. Tesch

972-Pos BOARD #B727
 STRUCTURE AND FUNCTION OF BACTERIAL BIOFILMS BY SOLID-STATE NMR. **Courtney Reichhardt**, Ji Youn Lim, Dave Rice, Jiunn Nick Fong, Lynette Cegelski

973-Pos BOARD #B728
 NMR STRUCTURAL STUDIES OF ANTIMICROBIAL PEPTIDES AS IN-PLANE HELIX OF MEMBRANE PROTEINS. **Yongae Kim**, Ji-Ho Jeong, Ji-Sun Kim

974-Pos BOARD #B729
 NMR ANALYSES OF THE STRUCTURE AND DYNAMICS OF KLEBSIELLA PNEUMONIAE OMPA DOMAINS AND FULL LENGTH PROTEIN. Guillaume Nars, Iordan Iordanov, Marie Renault, Olivier Saurel, Pascal Demange, **Alain Milon**

975-Pos BOARD #B730
 HIGH-RESOLUTION NMR SPECTROSCOPY REVEALS STRUCTURE OF LIPOPROTEIN FLPP3. **James D. Zook**, Nicholas Sisco, Gina Mo, Debra Hansen, Felicia Craciunescu, Brian Cherry, Kathryn Sykes, Wade Van Horn, Petra Fromme

Advances in Single-Molecule Spectroscopy I (Boards #B731–#B757)

976-Pos BOARD #B731
 A SEQUENTIAL MONTE CARLO METHOD FOR IDENTIFYING MOTION PARAMETERS FROM PARTICLE TRACKING TRAJECTORIES. **Trevor T. Ashley**, Sean B. Andersson

977-Pos BOARD #B732
 A HIGHLY SPECIFIC GOLD NANOPROBE FOR LIVE-CELL SINGLE-MOLECULE IMAGING IN CONFINED ENVIRONMENTS: INTRACELLULAR TRACKING AND LONG-TERM SINGLE INTEGRIN TRACKING IN ADHESION SITES. **Laurent Cognet**

978-Pos BOARD #B733
 LABEL-FREE, ALL-OPTICAL DETECTION, IMAGING AND NANOMETRIC TRACKING OF SINGLE PROTEINS. **Jaime Ortega Arroyo**, Joanna Andrecka, Yasuharu Takagi, James R. Sellers, Philipp Kukura

979-Pos BOARD #B734
 SIMULTANEOUS CONFOCAL BASED 3D TRACKING AND FLUORESCENCE IMAGING. **Matthew S. DeVore**, Aaron M. Keller, Cedric Cleyrat, Mary E. Phipps, Bridget S. Wilson, James H. Werner

980-Pos BOARD #B735
 PHOTOSTABLE FLUOROPHORES FOR SINGLE-MOLECULE IMAGING. **Qinsi Zheng**, Zhou Zhou, Steffen Jockusch, Roger Altman, Scott C. Blanchard

981-Pos BOARD #B736
 THE ACTIVATION DYNAMICS OF CLASS C GPCRS REVEALED BY SINGLE MOLECULE FRET. **Reza Vafabakhsh**, Joshua Levitz, Ehud Y. Isacoff

982-Pos BOARD #B737
 SINGLE-MOLECULE IMAGING OF VON WILLEBRAND FACTOR ACTIVATION BY FLOW. **Yan Jiang**, Hongxia Fu, Darren Yang, Timothy A. Springer, Wesley P. Wong

983-Pos BOARD #B738
 RECONSTRUCTING GLOBAL CONFORMATIONAL DYNAMICS OF A MULTI-DOMAIN PROTEIN. **Xun Sun**, Wei-Jen Tang, Haw Yang

984-Pos BOARD #B739 EDUCATION TRAVEL AWARDEE
 A COMBINED SINGLE MOLECULE FRET / MAGNETIC TWEEZERS INSTRUMENT TO CALIBRATE MOLECULAR TENSION - BASED FLUORESCENCE PROBES. **Yue Ding**, Carol Jurchenko, David Dunlap, Laura Finzi, Khalid Salaita

985-Pos BOARD #B740
 FARFRET: EXTENDING THE FRET RANGE IN SINGLE-MOLECULE MEASUREMENTS WITH MULTIPLE ACCEPTORS. Georg Krainer, **Andreas Hartmann**, Philip Gröger, Sandro Keller, Michael Schlierf

986-Pos BOARD #B741
 DETERMINING ACCEPTOR DYE QUANTUM YIELD FROM PULSED INTERLEAVED SINGLE-PAIR FRET MEASUREMENTS. **Gi-Ho Kim**, Tanya Baldwin, John M. Robinson

987-Pos BOARD #B742
 INFERRING QUANTITATIVE MODELS FROM NOISY BIOPHYSICAL DATA. **Steve Presse**

988-Pos BOARD #B743
 DUAL FUNCTIONING GENETIC TAGS FOR SIMULTANEOUS ISOLATION AND OBSERVATION OF FLUORESCENT COMPLEXES FROM WHOLE CELL EXTRACT. Margaret Rodgers, Joshua Paulson, **Aaron Hoskins**

989-Pos BOARD #B744
 DUAL FOCUS FLUORESCENCE CROSS-CORRELATION SPECTROSCOPY FOR THE INVESTIGATION OF BIOMOLECULE FOLDING AND BINDING IN FLOWING LIQUIDS. **Alan K. Van Orden**, Farshad Abdollah-Nia, Martin P. Gelfand, Kevin J. Whitcomb

990-Pos BOARD #B745
 A SINGLE-MOLECULE STUDY OF TOLL-LIKE RECEPTOR 4 STRUCTURE AND SIGNALING. **Sarah L. Latty**, Kristina A. Ganzinger, Lee J. Hopkins, Clare Bryant, David Klenerman

991-Pos BOARD #B746
 MAXIMIZING THE FLUORESCENCE SIGNAL AND PHOTOSTABILITY OF FLUOROPHORES BY QUENCHING DARK-STATES. **Denis Doerr**, Deborah Sandrin, Stanislav Kalinin, Ralf Kuehnemuth, Sebastian Overmann, Daniela Pfiffi, Klaus Schaper, Claus A. M. Seidel, Thomas J. J. Mueller, Andriy Chmyrov, Jerker Widengren, Brigitte A. Bier

992-Pos BOARD #B747
SCANNING FLUORESCENCE CORRELATION SPECTROSCOPY IN MITOCHONDRIA OF LIVING CELLS. **Joseph D. Unsay**, Ana J. Garcia-Saez

993-Pos BOARD #B748
PARALLEL SINGLE-MOLECULE EXCITATION SPECTROSCOPY OF GOLD NANORODS. **Sara Carozza**, John Van Noort

994-Pos BOARD #B749
SINGLE-CELL SINGLE-MOLECULE CO-IP ANALYSIS. **Ji Young Ryu**, Jihye Kim, Jiseop Bae, WonHee Lee, Tae-Young Yoon

995-Pos BOARD #B750
INVESTIGATION OF DIFFUSION IN STRUCTURED SAMPLES USING FLUORESCENCE PAIR CROSS CORRELATION. **Waldemar Schrimpf**, Paul Kühler, Theobald Lohmueller, Jochen Feldmann, Don Lamb

996-Pos BOARD #B751
USE OF CYCLIC OLEFIN POLYMER IN SINGLE MOLECULE TOTAL INTERNAL REFLECTION FLUORESCENCE MICROSCOPY. **Joseph P. Skinner**, Susan Gayda, Sergey Y. Tetin

997-Pos BOARD #B752
SIMULTANEOUS POSITION AND ORIENTATION IMAGING OF POLARIZED FLUORESCENCE FROM ROD-IN-ROD SEMICONDUCTOR NANOPARTICLES ON CYTOPLASMIC DYNEIN. **Lisa G. Lippert**, Tali Dadosh, Benjamin T. Diroll, Christopher B. Murray, Samara Reck-Peterson, Yale E. Goldman

998-Pos BOARD #B753
REVEALING MYOSIN'S POWER STROKE WITH HIGH-SPEED SCATTERING INTERFEROMETRY. **Joanna Andrecka**, Jaime Ortega-Arroyo, Yasuharu Takagi, James R. Sellers, Philipp Kukura

999-Pos BOARD #B754
NANOPARTICLE PROBES OF CELL SURFACE MOLECULE ROTATION. Dongmei Zhang, Peter W. Winter, Arieh Licht, Deborah A. Roess, Israel Pecht, **B. George Barisas**

1000-Pos BOARD #B755
FLUORESCENCE FLUCTUATION SPECTROSCOPY OF TERNARY PROTEIN INTERACTIONS IN LIVING CELLS. **Kwang Ho Hur**, Serkan Berk, Yan Chen, Joachim Mueller

1001-Pos BOARD #B756
BRIGHTNESS CHARACTERIZATION OF INTERNAL ENDOMEMBRANE PROTEINS BY Z-SCAN FLUORESCENCE FLUCTUATION SPECTROSCOPY. **Elizabeth M. Smith**, Cosmo Saunders, Yan Chen, G.W. Gant Luxton, Joachim D. Mueller

1002-Pos BOARD #B757
THE FUNCTIONAL INCORPORATION OF TYR-COUMARIN INTO PROTEINS SYNTHESIZED BY HEK293T CELLS. **Ximena Paz Steinberg Acuña**, Deny Cabezas, Jason Galpin, Romina Sepulveda, Samuel Goodchild, Danilo González, Christopher Ahern, Sebastian Brauchi

Optical Microscopy and Super Resolution Imaging I (Boards #B758–#B787)

1003-Pos BOARD #B758
WHAT EXACTLY DOES A RANDOM WALK SIMULATION SIMULATE? **Michael J. Saxton**

1004-Pos BOARD #B759
TWO-PHOTON IMAGING OF THE INTERACTION OF MTORC1 COMPONENTS USING FLUORESCENCE ENERGY TRANSFER BETWEEN GFP-EXPRESSING PROTEINS IN A SPHEROID TUMOR CELL MODEL. **Christopher D. Stubbs**, Kathrin M. Scherer, Anthony W. Parker, Eleanor C. Weston, Stanley W. Botchway

1005-Pos BOARD #B760
CORRELATIONS IN CHROMATIN MOVEMENT IN DIPLOID YEAST REVEALED BY TWO-COLOR THREE-DIMENSIONAL SINGLE-PARTICLE TRACKING USING THE DOUBLE-HELIX POINT SPREAD FUNCTION (DH-PSF) MICROSCOPE. **Mikael Backlund**, Ryan Joyner, Karsten Weis, W. E. Moerner

1006-Pos BOARD #B761
SUPERRESOLUTION IMAGING OF ENDOCYTIC STRUCTURES IN *S. CEREVISIAE*. Markus Mund, Ulf Matti, **Jonas Ries**

1007-Pos BOARD #B762
UTILISING SUPER-RESOLUTION PALM IMAGING IN FISSION YEAST. **Helen Armes**, Thomas Etheridge, Alex Herbert, David Lando, Steven F. Lee, David Klenerman, Anthony Carr

1008-Pos BOARD #B763
ARCHITECTURE AND DYNAMICS OF THE PARTITION SYSTEM OF THE F-PLASMID IN *E. COLI*. **Antoine Le Gall**

1009-Pos BOARD #B764
SUPER-RESOLUTION IMAGING IN PLANT CELLS. **Bin Dong**, Xiaocheng Yang, Shaobin Zhu, Diane Bassham, Ning Fang

1010-Pos BOARD #B765
DETERMINATION OF ARTICULAR CARTILAGE DEFORMATION USING 2-PHOTON MICROSCOPY. **Ziad Abusara**, Markus Kossel, Walter Herzog

1011-Pos BOARD #B766
3D SUPER-RESOLUTION IMAGING WITH BLINKING QUANTUM DOTS. **Yong Wang**, Gilbert Fruhwirth, En Cai, Tony Ng, Paul R. Selvin

1012-Pos BOARD #B767
ENTIRE 3-DIMENSIONAL IMAGE OF RED BLOOD CELLS USING DEFOCUSING MICROSCOPY. Paula M. S. Roma, Livia Siman, Ubirajara Agero, **Oscar N. Mesquita**

1013-Pos BOARD #B768
SUBCELLULAR LEVEL OPTICAL METABOLIC IMAGING OF INDUCED PLURIPOTENT STEM CELLS USING ENDOGENOUS FLUOROPHORE. **Rupsa Datta**, Yosuke Kurokawa, Michelle Digman, Steven C. George, Enrico Gratton

1014-Pos BOARD #B769
PULSED INTERLEAVED EXCITATION FLUCTUATION IMAGING: METHOD AND APPLICATION TO HIV-1 ASSEMBLY. **Jelle Hendrix**, Waldemar Schrimpf, Matthias Höller, Don C. Lamb

1015-Pos BOARD #B770
LIVE-CELL SUPER-RESOLUTION IMAGING OF ENDOGENOUS LIGAND-ACTIVATED PROTEIN DIMERS BY COMBINING UPAIN AND SINGLE MOLECULE FRET. **Laurent Cognet**

1016-Pos BOARD #B771 CPOW TRAVEL AWARDEE
DEVELOPMENT OF PUMP-PROBE NANOSCOPY ARCHITECTURE. **Kseniya Korobchevska**, Paolo Bianchini, Silvia Galiani, Marco Scotto d'Abbusco, Colin Sheppard, Alberto Diaspro

1017-Pos BOARD #B772
 SUPER-RESOLUTION IMAGING AND SINGLE MOLECULE TRACKING OF THE NUCLEAR PROTEIN EMERIN.
Anthony M. Fernandez, Fabien F. Pinaud

1018-Pos BOARD #B773
 VMD AS A SOFTWARE FOR VISUALIZATION AND QUANTITATIVE ANALYSIS OF SUPER RESOLUTION IMAGING AND SINGLE PARTICLE TRACKING. **Yanxin Liu**, John E. Stone, En Cai, Jingyi Fei, Sang Hak Lee, Seongjin Park, Taekjip Ha, Paul R. Selvin, Klaus Schulten

1019-Pos BOARD #B774
 SUPER RESOLUTION MAPPING OF ADHESION MOLECULES IN CONFINED CELLULAR ENVIRONMENTS USING MONOMERIC STREPTAVIDIN LIGANDS. Ingrid Chamma, Olivier Rossier, Kok Hong Lim, Isabel Gauthereau, Gregory Giannone, Sheldon Park, Daniel Choquet, Matthieu Sainlos, **Olivier R. Thoumine**

1020-Pos BOARD #B775
 DIFFUSION MAPPING IN LIVING CELLS USING CAMERA-BASED CORRELATION SPECTROSCOPY AND PHASOR ANALYSIS. **Per Niklas Hedde**, Enrico Gratton

1021-Pos BOARD #B776
 MAPPING DIFFUSION IN A LIVING CELL USING THE PHASOR APPROACH. **Suman Ranjit**, Luca Lanzano, Enrico Gratton

1022-Pos BOARD #B777
 FOCAL ADHESION AXIAL TOPOGRAPHY BY THE Z-PHASOR APPROACH IN CONFOCAL MICROSCOPY. **Enrico Gratton**, Chili Chiu

1023-Pos BOARD #B778
 QUANTITATIVE REGISTRATION AND DISTRIBUTION ANALYSIS OF MULTICOLOR 3D SUPER-RESOLUTION IMAGES OF PROTEINS REVEALS NANOSCALE SPATIAL ORGANIZATION. **Alexander R. S. von Diezmann**, Andreas Gahlmann, Jerod L. Ptasin, Lucy Shapiro, W. E. Moerner

1024-Pos BOARD #B779
 DIRECT THREE-DIMENSIONAL IMAGING WITH MULTIPLE POINT OF VIEW MICROSCOPY. **Pierre Mangeol**, Erwin JG Peterman

1025-Pos BOARD #B780
 MITOCHONDRIAL DNA NUCLEOID DISTRIBUTION AT SIMULATED PATHOLOGIES AS VISUALIZED BY 3D SUPER-RESOLUTION BIPLANE FPALM / DSTORM MICROSCOPY. Lukas Alan, Andrea Dlaskova, Tomas Spacek, Jaroslav Zelenka, Tomas Olejar, **Petr Jezek**

1026-Pos BOARD #B781
 OPTOFLUIDIC SINGLE-CELL ROTATION. **Sahradha Albert**, Thorsten Kolb, Michael Haug, Graeme Whyte

1027-Pos BOARD #B782
 POLARIZED RESOLVED SINGLE-MOLECULE LOCALIZATION-BASED SUPER-RESOLUTION FLUORESCENCE MICROSCOPY REVEALS ORIENTATION ORDER IN BIO-MOLECULAR ASSEMBLIES. **Haitham Ahmed Shaban**, Cesar A. Valades-Cruz, Julien Savatier, Serge Monneret, Herve Rigneault, Nicolas Bertaux, Sophie Brasselet

1028-Pos BOARD #B783
 MAXIMUM LIKELIHOOD ESTIMATION OF FRET EFFICIENCY. Peter Nagy, Agnes Szabo, Tímea Varadi, Tamas Kovacs, Gyula Batta, Tímea Szatmari, **Janos Szollosi**

1029-Pos BOARD #B784
 STED-RICS - A VERSATILE METHOD FOR STUDYING BIOMOLECULAR DYNAMICS IN LIVE CELLS. Per Niklas Hedde, René M. Dörlich, Rosmarie Blomley, Dietmar Gradl, Emmanuel Oppong, Andrew C. B. Cato Cato, **G. Ulrich Nienhaus**

1030-Pos BOARD #B785
 SOLVENT RELAXATION IN GOLGI MEMBRANE BY PHASOR-FLIM APPROACH. **Alireza Lajevardipour**, Amitabha Chattopadhyay, Andrew Clayton

1031-Pos BOARD #B786
 POLARIZATION-RESOLVED SHG TOWARDS COLLAGEN IMAGING. **Chiara Peres**, Francesca D'Autilia, Luca Lanzano, Paolo Bianchini, Alberto Diaspro

1032-Pos BOARD #B787 MINORITY AFFAIRS TRAVEL AWARDEE
 UNDERSTANDING THE PATHOGENICITY OF VIBRIO CHOLERAEE VIA TWO-COLOR LIVE-CELL SUPER-RESOLUTION MICROSCOPY. **Chanrith Siv**, Beth L. Haas, Andrew I. Perault, Victor J. DiRita, Julie S. Biteen

Advances in UV-VIS-IR Spectroscopy (Boards #B788–#B796)

1033-Pos BOARD #B788
 CHEMICAL ANALYSIS BELOW THE DIFFRACTION LIMIT USING INFRARED-COUPLED ATOMIC FORCE MICROSCOPY (AFM-IR). Sara Heedy, Michael Lo, **Eoghan Dillon**, Qichi Hu, Craig Prater, Roshan Shetty, Kevin Kjoller, Curtis Marcott, Alexandre Dazzi, Christopher Yip

1034-Pos BOARD #B789
 NONLINEAR SPECTRAL IMAGING OF FUNGAL METABOLISM. Helene Knaus, **Gerhard A. Blab**, Hans C. Gerritsen, Han A.B. Wösten

1035-Pos BOARD #B790
 A MICRO-PERFUSION SYSTEM FOR THE FLUORESCENCE-BASED MONITORING OF PHYSIOLOGICAL RESPONSES TO HIGH HYDROSTATIC PRESSURES. **Jeff Maltas**, Zac Long, Alison Huff, Paul Urayama

1036-Pos BOARD #B791
 FINE-GRAINED SPATIAL AND TEMPORAL RESOLUTION OF WATER AND PROTEIN CONTRIBUTIONS TO ULTRA-FAST AND SLOWER FLUORESCENCE SHIFTS FROM MD + QM SIMULATIONS. **Pedro L. Muñio**, J Nathan Scott, Patrik R. Callis

1037-Pos BOARD #B792
 HIGH THROUGHPUT TIME RESOLVED FLUORESCENCE IN A MICROPLATE READER. **Karl J. Petersen**, Joseph M. Muretta, Sutton E. Higgins, Kurt C. Peterson, Gregory D. Gillispie, David D. Thomas

1038-Pos BOARD #B793
 ELECTRONIC TRANSITION MOMENTS OF 1,3,2-BENZODIAZABOROLINE ('EXTERNAL' BN INDOLE) AND 'FUSED' BN INDOLE, CONTAINING THE 1,2-DIHYDRO-1,2-AZABORINE CORE. **Mari Saif**, Julia R. Widom, Senniao Xu, Shih-Yuan Liu, Andrew H. Marcus

1039-Pos BOARD #B794
 SENSITIVE TIME-CORRELATED SINGLE PHOTON COUNTING ENABLES EFFICIENT SINGLET OXYGEN DETECTION. Manoel Veiga, Steffen Ruettinger, Sebastian Tannert, Felix Koberling, **Christian Litwinski**, Matthias Patting, Marcus Sackrow, Michael Wahl, Rainer Erdmann

1040-Pos **BOARD #B795** INTERNATIONAL TRAVEL AWARDEE
MONITORING THE CONFORMATION AND CONCENTRATION OF DNA IN LIVE CELLS USING FOURIER TRANSFORM INFRARED SPECTROSCOPY. **Donna R. Whelan**, Keith R. Bamberg, Don McNaughton, Ljiljana Puskar, Bayden R. Wood

1041-Pos **BOARD #B796**
IONIZING RADIATION INDUCED BIOLOGICAL EFFECT ON HUMAN CELL HCT116(P53^{+/+}, P53^{-/-}) OBSERVED THROUGH SYNCHROTRON-FTIR MICROSCOPY AND IMAGING. Jingwen Yan, **Qing Huang**

Bioinformatics (Boards #B797–#B804)

1042-Pos **BOARD #B797**
FUNCTIONAL BASED ANALYSIS AND VISUALIZATION OF GENE EXPRESSION DATA FROM HEPATOCYTES GROWN ON DIFFERENT SUBSTRATES. **Shripad Joshi**, Ahmad Al-Zoubi, Aravind Rammohan, Ronald Faris

1043-Pos **BOARD #B798**
RHEOSTATS AND TOGGLE SWITCHES FOR MODIFYING PROTEIN FUNCTION. Sarah Meinhardt, Michael W. Manley, Jr, Daniel J. Parente, **Liskin Swint-Kruse**

1044-Pos **BOARD #B799**
ENHANCING B-CELL EPITOPE PREDICTIONS BY INTEGRATING PROTEIN SEQUENCE AND STRUCTURAL BIOINFORMATICS. **Steven J. Darnell**, Martin Riese, Erik G. Edlund, Frederick R. Blattner

1045-Pos **BOARD #B800**
A SEARCH FOR THE COMMON WORDS WITHIN THE VOLUMINOUS PHAGE VOCABULARY. **Gita Mahmoudabadi**

1046-Pos **BOARD #B801**
HOMCOS : A SERVER TO SEARCH AND MODEL 3D STRUCTURES OF PROTEIN-PROTEIN AND COMPOUND-PROTEIN COMPLEXES. **Takeshi Kawabata**, Haruki Nakamura, Akira Kinjo

1047-Pos **BOARD #B802**
SELECTIVE REFINEMENT AND MDR SELECTION OF NEAR-NATIVE PROTEIN STRUCTURES. **Jiong Zhang**, Jingfen Zhang, Dong Xu, Yi Shang, Ioan Kosztin

1048-Pos **BOARD #B803**
STRUCTURAL ANALYSIS OF CRIP1A BY IN SILICO APPROACHES. Pratihtha Rai, Allyn Howlett, **Sudha M. Cowsik**

1049-Pos **BOARD #B804**
PROTEIN MODEL QUALITY ASSESSMENT PREDICTION BY USING A RESIDUE SPECIFIC STATISTICAL POTENTIAL. **Marcin Pawlowski**, Andrzej Kloczkowski

Biosurface Interactions and Engineered Biosurfaces (Boards #B805–#B820)

1050-Pos **BOARD #B805**
MOLECULAR SIMULATION OF THE ADSORPTION OF AMINO ACID SIDECHAIN ANALOGS TO THE TiO₂ (100) SURFACE. **Erik G. Brandt**, Alexander Lyubartsev

1051-Pos **BOARD #B806**
NMR STUDY OF THE INTERACTION BETWEEN TI BINDING PEPTIDE AND TiO₂ NANOPARTICLES. **Yu Suzuki**, Tetsuo Asakura

1052-Pos **BOARD #B807**
FTIR-SPECTROSCOPIC ANALYSIS OF PROTEINS IN LIQUID SAMPLES. **Andreas Nabers**, Julian Ollesch, Klaus Gerwert

1053-Pos **BOARD #B808**
PROTEIN IMMOBILIZATION ON CHEMICALLY FUNCTIONALIZED GERMANIUM INVESTIGATED BY ATR-FTIR. **Jonas Schartner**, Jörn Güldenhaupt, Klaus Gerwert, Carsten Kötting

1054-Pos **BOARD #B809**
MONITORING THE KINETICS OF ENZYME IMMOBILIZATION INTO MESOPOROUS SILICA BY REAL TIME FLUORESCENCE. **Pegah Sadat Nabavi Zadeh**, Nils Carlsson, Kassam Abdel Mallak, Björn Åkerman

1055-Pos **BOARD #B810**
LAB ON A BIOMEMBRANE. **Alar Ainla**, Irep Gözen, Bodil Hakonen, Aldo Jesorka

1056-Pos **BOARD #B811** INTERNATIONAL TRAVEL AWARDEE
LIPID NANODOMAINS ON MODIFIED GOLD SURFACES - A BIOMIMETIC PLATFORM TO STUDY ELECTROACTIVE BIOMOLECULE-MEMBRANE INTERACTIONS. **Joaquim M. Trigo Marquês**, Ana S. Viana, Rodrigo F.M. de Almeida

1057-Pos **BOARD #B812**
DIRECT MEASUREMENT OF PROTEIN TRANSLOCATION ACROSS DROPLET INTERFACE BILAYERS. **Matthew A. Holden**

1058-Pos **BOARD #B813**
COBALTABISDICARBOLLIDE MACROANION IS ABLE TO DIFFUSE ACROSS THE LIPID MEMBRANE; STUDY OF KINETICS AND TRANSPORT. **Carmina Verdiá Báguena**, Antonio Alcaraz, Clara Viñas, Francesc Teixidor, Vicente M. Aguilera

1059-Pos **BOARD #B814**
EXPERIMENTAL OBSERVATION OF SURFACE CHARGE INVERSION IN A BIOLOGICAL NANOPORE IN PRESENCE OF MONOVALENT AND MULTIVALENT CATIONS. María L. López-Peris, María Queralt-Martín, Vicente M. Aguilera, **Antonio Alcaraz**

1060-Pos **BOARD #B815**
INFLUENCES ON CELLULAR ADHESION OF NANOPARTICLES UNDER BLOOD FLOW-LIKE CONDITIONS. **Ellen Broda**, Ulrich Lächelt, Frauke Mickler, Ernst Wagner, Christoph Bräuchle

1061-Pos **BOARD #B816**
SURFACE INTERACTIONS IN SUSPENSIONS OF SWIMMING CELLS. **Vasily Kantsler**, Jorn Dunkel, Raymond E. Goldstein

1062-Pos **BOARD #B817**
SELECTIVE GROWTH OF NEURAL NETWORKS ON MICRO-PATTERNED GRAPHENE. Sandeep Keshavan, Matteo Lorenzoni, Fernando Brandi, Andrea Giugni, Francesca Cella Zancchi, Bruno Torre, **Silvia Dante**

1063-Pos **BOARD #B818**
CELL-PERMISSIVE PROTEIN-RESISTANT SUBSTRATES FOR INTERROGATING NEURONAL GUIDANCE CUES. **Joshua A. Maurer**, Natalie A. LaFranzo, John T. Walker, Matthew J. Hynes

1064-Pos **BOARD #B819**
CONDUCTIVE MILIEU ON CELLULAR ELECTROMECHANICS. **Soon Gweon Hong**, Albert Kim, Philip Lee, Luke P. Lee

1065-Pos BOARD #B820
 CONTRACTILITY OF NEONATAL CARDIOMYOCYTES IS ALTERED WITH DIFFERENT DENSITIES OF LAMININ COVALENTLY ATTACHED TO MICROPOSTS. **Alexandre J. S. Ribeiro**, Kathia Zaleta-Rivera, Euan A. Ashley, Beth L. Pruitt

Micro- and Nanotechnology I (Boards #B821–#B850)

1066-Pos BOARD #B821
 FLOW INJECTION OF DNA IN NANOPORES : DIRECT OPTICAL VISUALIZATION OF A PRESSURE THRESHOLD. Thomas Auger, Jérôme Mathé, Virgile Viasnoff, Jean-Marc di Meglio, Loïc Auvray, **Fabien Montel**

1067-Pos BOARD #B822
 DESIGNING HYDROPHOBIC GATES INTO BIOMIMETIC NANOPORES. **Jemma L. Trick**, E. Jayne Wallace, Hagan Bayley, Mark S P Sansom

1068-Pos BOARD #B823
 DEVELOPING A BROADBAND AMPLIFIER FOR ANALYSIS OF DNA STRUCTURAL AND MOLECULAR CHARACTERISTICS. **Jared S. Becker**, Michael Goryll, Bertan Bakkaloglu, Josh Sloan, Josh Lambert

1069-Pos BOARD #B824
 DIFFUSION AND TRAPPING OF SINGLE PARTICLES IN PORES. **Matthew Schiel**, Zuzanna S. Siwy

1070-Pos BOARD #B825
 CONTROLLING MOTION OF DNA IN A NANOCHANNEL WITH TRANSVERSE ALTERNATING-ELECTRIC-VOLTAGES. **Binquan Luan**, Chao Wang, Ajay Royyuru, Gustavo Stolovitzky

1071-Pos BOARD #B826
 DISENTANGLING STERIC AND ELECTROSTATIC FACTORS IN NANOSCALE TRANSPORT THROUGH CONFINED SPACE. **Steven F. Buchsbaum**, Nick Mitchell, Hugh Martin, Matt Wiggin, Andre Marziali, Peter V. Coveney, Zuzanna Siwy, Stefan Howorka

1072-Pos BOARD #B827
 A SIMPLE, SINGLE-CARBON-NANOTUBE NANOFUIDIC PLATFORM FOR FUNDAMENTAL TRANSPORT STUDIES. **Shirui Guo**, Matthew Davenport, Eric Meshot, Steven Buchsbaum, Zuzanna Siwy, Francesco Fornasiero

1073-Pos BOARD #B828
 DOUBLE OCCUPANCY OF A PROTEIN PORE AS AN INTERMEDIATE STATE OF COMPETITION AT THE SINGLE MOLECULE LEVEL. Gerhard Baaken, Anne-Katrin Schuler, Marcel Hoffmann, **Jan C. Behrends**

1074-Pos BOARD #B829
 QUANTIFYING SHORT-LIVED EVENTS IN MULTI-STATE IONIC CHANNEL MEASUREMENTS. **Arvind Balijepalli**, Canute Vaz, Jessica Ettetdgui, Andrew T. Cornio, Joseph W. F. Robertson, Kin P. Cheung, Richard W. Pastor, John J. Kasianowicz

1075-Pos BOARD #B830
 FAST, LABEL-FREE FORCE SPECTROSCOPY OF HISTONE-DNA INTERACTIONS IN INDIVIDUAL NUCLEOSOMES USING NANOPORES. **Andrey Ivankin**, Spencer Carson, Shannon RM Kinney, Meni Wanunu

1076-Pos BOARD #B831
 CONTROLLING THE MECHANISM OF DNA TRANSPORT THROUGH SYNTHETIC NANOPORES. **Meni Wanunu**

1077-Pos BOARD #B832
 HYDROPHOBIC INTERACTIONS RETARD PROTEINS UPON TRANSLOCATION THROUGH SILICON NITRIDE NANOPORES. **Ruoshan Wei**, Ulrich Rant

1078-Pos BOARD #B833
 DIRECT AND SIMULTANEOUS FORCE AND CURRENT MEASUREMENTS OF SINGLE-STRANDED DNA IN SYNTHETIC NANOPORES. **Edward M. Nelson**, Hui Li, Gregory Timp

1079-Pos BOARD #B834
 OSMOTICALLY-DRIVEN TRANSPORT THROUGH CARBON NANOTUBE PORES. **Kyunghoon Kim**, Jia Geng, Ramya Tunuguntla, Caroline Ajo-Franklin, Costas P. Grigoropoulos, Aleksandr Noy

1080-Pos BOARD #B835
 CHARACTERIZING SHAPE, DIPOLE MOMENT, AND ROTATION OF SINGLE PROTEINS IN NANOPORES. **Brandon R. Bruhn**, Erik C. Yusko, Olivia Eggenberger, Ryan C. Rollings, Nathan C. Walsh, Mariya Pindrus, David Sept, Jiali Li, Devendra S. Kalonia, Michael Mayer

1081-Pos BOARD #B836
 HIGHLY VISCOUS COATINGS FROM ARCHAEA-INSPIRED LIPIDS IMPROVE SINGLE PROTEIN CHARACTERIZATION WITH NANOPORES. **Olivia M. Eggenberger**, Brandon R. Bruhn, Haiyan Liu, Geoffrey Leriche, Jerry Yang, Michael Mayer

1082-Pos BOARD #B837
 DIRECT DETECTION AND MAPPING OF DNA METHYLATION IN SINGLE MOLECULES USING NANOPORE MSPA. **Andrew H. Laszlo**, Ian M. Derrington, Henry Brinkerhoff, Kyle W. Langford, Ian C. Nova, Jenny Mae Samson, Joshua J. Bartlett, Jens H. Gundlach

1083-Pos BOARD #B838
 DISTINGUISHING PROTEIN DOMAINS AND FOLDED STATES WITH UNFOLDASE-MEDIATED NANOPORE ANALYSIS. **Jeff Nivala**, Mark Akeson

1084-Pos BOARD #B839
 SOLID-STATE NANOPORE MODIFICATIONS FOR IMPROVED RESOLUTION OF DNA TRANSLOCATIONS. **Allison H. Squires**, Amit Meller

1085-Pos BOARD #B840
 SINGLE MOLECULE INVESTIGATIONS OF THE INTERACTION OF AG⁺ WITH SINGLE CYTOSINE, METHYLCYTOSINE AND HYDROXYMETHYLCYTOSINE-CYTOSINE MISMATCHES IN A NANOPORE. **Yong Wang**, BinQuan Luan, XinYue Zhang, Brandon Ritzo, Liqun Gu

1086-Pos BOARD #B841
 TRANSLOCATION KINETICS OF DNA THROUGH NANOPORES INTERFACED WITH AGAROSE GEL. **Matthew J. Waugh**, Vincent Tabard-Cossa

1087-Pos BOARD #B842
 BINDING OF ALKALI METALS TO PORE WALLS IN NANOPORES MODULATES TRANSMEMBRANE ION CURRENT AND IONIC RECTIFICATION. **Trevor P. Gamble**, Jan F. Pietschmann, Karl Decker, Aleksei Aksimentiev, Zuzanna Siwy

1088-Pos BOARD #B843
 ELECTROOSMOSIS INDUCED PRESSURE GRADIENTS IN PORES WITH UNDULATING PORE DIAMETER. **Laura M. Innes**, Chin-Hsuan Chen, Matthew Pevarnik, Luke Theogarajan, Zuzanna Siwy

1089-Pos **BOARD #B844**
ELECTROPHORESIS AND ELECTROOSMOSIS INFLUENCE LOCAL IONIC CONCENTRATIONS AND SHAPE OF ION CURRENT PULSES IN RESISTIVE-PULSE BASED DETECTION. **Justin Menestrina**, Crystal Yang, Ivan V. Vlassiuk, Zuzanna Siwy

1090-Pos **BOARD #B845**
SOLID-STATE NANOPORE ANALYSIS OF SMALL DNA MOLECULES AS A FUNCTION OF PH. **Michael M. Marshall**, Vincent C. Henrich, Adam R. Hall

1091-Pos **BOARD #B846**
CYLINDRICAL SILICON ON INSULATOR SOLID STATE NANOPORES FOR CHARGE SELECTIVE NANOPARTICLE FILTERING. **Xiaofeng Wang**, Michael Goryll

1092-Pos **BOARD #B847**
TRACKING THE ENGRAFTMENT AND REGENERATIVE CAPABILITIES OF TRANSPLANTED LUNG STEM CELLS USING FLUORESCENT NANODIAMONDS. **Yan-Kai Tzeng**, Huan-Cheng Chang

1093-Pos **BOARD #B848**
3 DIMENSIONAL TRACKING OF BLINKING SUPPRESSED QUANTUM DOTS IN LIVE CELLS. **Aaron M. Keller**, Yagnaseni Ghosh, Mary E. Phipps, Michael H. Stewart, Diane S. Lidke, Bridget S. Wilson, Jennifer A. Hollingsworth, James H. Werner

1094-Pos **BOARD #B849**
GOLD NANOPARTICLE MODIFICATION FOR NUCLEAR TARGETING. **Celina J. Yang**, Devika B. Chithrani, Mehrnoosh Neshatian

1095-Pos **BOARD #B850**
DNA-STABILIZED SILVER NANOCCLUSERS WITH HIGH YIELD OF DARK STATE PROBED BY FLUORESCENCE SATURATION SPECTROSCOPY. Ivan L. Volkov, Pavel Yu. Serdobintsev, **Alexei I. Kononov**

Biophysics Education (Boards #B851–#B865)

1096-Pos **BOARD #B851**
“A PHYSICAL LENS ON THE CELL”: BEGINNINGS OF A FREE ONLINE BOOK ON SUB-CELLULAR BIOPHYSICAL PROCESSES FOR STUDENTS FROM HETEROGENEOUS BACKGROUNDS. **Daniel Zuckerman**

1097-Pos **BOARD #B852**
INTRODUCTORY-LEVEL COURSE ON RANDOMNESS AND ORDER IN SOFT AND BIOLOGICAL MATTER. Elon Langbeheim, Shelly Livne, Nava Schulman, Ruth Chabay, **Sam Safran**, Edit Yerushalmi

1098-Pos **BOARD #B853**
TEACHING PHYSICS AT SAN QUENTIN STATE PRISON: YEAR 2. **Troy A. Lionberger**, Diane M. Wiener, Samuel M. Leachman, Frank Chuang, Sam Tia, Cory Antonakos, Carlos J. Bustamante

1099-Pos **BOARD #B854**
BIOPHYSICS IN THE UNDERGRADUATE CURRICULUM. **Peter H. Nelson**

1100-Pos **BOARD #B855**
DEVELOPING CREATIVE LABORATORY SKILLS THROUGH STUDENT SELF-DEVELOPED ACTIVITIES. **Qing Shao**, Joseph D. Ametepé

1101-Pos **BOARD #B856**
EXCITING MINDS TO MAKE THEM SHINE: AN UNDERGRADUATE HANDS-ON TRAINING PROGRAM IN BIOPHYSICS. **Richard D. Ludescher**, Maria Corradini, Yan Wang, Andrew Draganski

1102-Pos **BOARD #B857**
BIOPHYSICS IN ORDER: AN INTERDISCIPLINARY APPROACH TO UNDERGRADUATE STUDENT ENGAGEMENT IN RESEARCH. **Diane M. Wiener**, Fernando Esquivel-Suarez, Bentley Gibson, Laura A. G. Gray, Victoria L. Templer, Leslie Taylor, David G. Lynn

1103-Pos **BOARD #B858**
AN INTEGRATED, INSTRUMENT INTENSIVE PROJECT-BASED BIOCHEMISTRY LABORATORY FOR ENHANCED STUDENT LEARNING AND RESEARCH. **Todd P. Silverstein**, Sarah R. Kirk

1104-Pos **BOARD #B859**
SUSTAINED CRYSTALLOGRAPHY SKILLS THROUGH MULTIMEDIA-SUPPORTED ACTIVE LEARNING. **Gundula Bosch**, Lauren E. Boucher, Jürgen Bosch

1105-Pos **BOARD #B860**
AN OPEN-SOURCE LIPID BILAYER SETUP FOR HANDS-ON LEARNING OF BIOPHYSICS. Vadim Shlyonsky, Freddy Dupuis, **David Gall**

1106-Pos **BOARD #B861**
UTILITY OF SYNECHOCYSTIS SP. PCC 6803 GLUTAREDOXIN A AS A PLATFORM TO STUDY HIGH-RESOLUTION MUTAGENESIS OF PROTEINS. **Roger B. Sutton**

1107-Pos **BOARD #B862**
TETHERED PARTICLE MOTION FOR UNDERGRADUATES. **Allen C. Price**, Briana Mousley, Stefano Gambino, Elsie Helou, D. Linda Song, Joseph Loparo

1108-Pos **BOARD #B863**
UNDERGRADUATE LABORATORY ON DNA FOLDING USING AFM. **Clay Contee**, Matthew Kurek, Raysa Cabrejo, Ashley R. Carter

1109-Pos **BOARD #B864**
OPEN PLANS OF A MULTI-FUNCTIONAL, LOW COST FLUORESCENCE MICROSCOPE FOR TEACHING AND RESEARCH. **Victoria H. Nguyen**, Jacquelyn Zehner, Walter Cook, Babak Sani

1110-Pos **BOARD #B865**
BIOMEDICAL IMAGING IN THE UNDERGRADUATE SCIENCE CURRICULUM. Beth A. Scalettar, **James R. Abney**

Monday, February 17, 2014

Daily Program Summary

All rooms are located in the MOSCONE CONVENTION CENTER unless noted otherwise.

MONDAY

7:30 AM–8:30 AM	Graduate Student Breakfast	Room 302
7:30 AM–5:00 PM	Registration/Exhibitor Registration	North Lobby
7:30 AM–10:00 PM	Family Room	Room 112
8:00 AM–8:45 AM	Exhibitor Presentation: FEI Company Making Correlative Experiments Easier	Room 123
8:00 AM–5:30 PM	Career Center	Room 300
8:00 AM–6:00 PM	Child Care	Marriott Marquis, Pacific H, I, J
8:00 AM–6:00 PM	Undergraduate Student Lounge	Rotunda, 300 Level
8:00 AM–10:00 PM	Poster Viewing	Hall D
8:15 AM–10:15 AM	Symposium: Molecular Basis for Regulation of Ca²⁺ Channels Co-Chairs: Amy Lee, University of Iowa, and Stephen Long, Memorial Sloan-Kettering Cancer Center ORIGIN AND MECHANISM OF MITOCHONDRIAL FLASHES. <i>Heping Cheng</i> CAV1.3 L-TYPE CALCIUM CHANNEL DYSFUNCTION IN HUMAN DISEASE. <i>Jörg Striessnig</i> REGULATION OF VOLTAGE-GATED CALCIUM CHANNEL TRAFFICKING AND FUNCTION BY AUXILIARY SUBUNITS. <i>Annette C. Dolphin</i> 3D STRUCTURES OF THE CALCIUM RELEASE-ACTIVATED CALCIUM CHANNEL ORAI. <i>Stephen B. Long</i>	Room 134
8:15 AM–10:15 AM	Symposium: Force Sensing in Muscle Co-Chairs: Mathias Gautel, King's College London, United Kingdom, and Gabriella Piazzesi, University of Florence, Italy THE ELASTICITY OF THE MYOSIN MOTOR AND MYOFILAMENTS IN THE MUSCLE SARCOMERE. <i>Gabriella Piazzesi</i> EXPERIMENTAL AND COMPUTATIONAL APPROACHES TO STUDY MYOFILAMENT STRUCTURE-FUNCTION IN NORMAL AND DISEASED MUSCLE. <i>Michael Regnier</i> EFFECTS OF TRANSMURAL REGION AND HEART FAILURE ON THE CONTRACTILE PROPERTIES OF HUMAN MYOCARDIUM. <i>Kenneth S. Campbell</i> MECHANOSIGNALING BY CYTOSKELETAL PROTEIN KINASES AND THEIR DISEASE IMPLICATIONS. <i>Mathias Gautel</i>	Room 135
8:15 AM–10:15 AM	Platform: Membrane Physical Chemistry II	Room 130/131
8:15 AM–10:15 AM	Platform: Advances in Single-Molecule Spectroscopy	Room 132/133
8:15 AM–10:15 AM	Platform: Micro- and Nanotechnology I	Room 303
8:15 AM–10:15 AM	Platform: Protein Structure, Conformation, and Solvent Interactions	Room 304
8:15 AM–10:15 AM	Platform: Membrane Pumps, Transporters, and Exchangers I	Room 305
8:15 AM–10:15 AM	Platform: DNA Replication, Recombination, and Repair	Room 306
8:30 AM–10:00 AM	Minority Affairs Committee Meeting	Room 122
9:00 AM–10:30 AM	Exhibitor Presentation: Park Systems, Inc. New Door to Live Single Cell Research	Room 123
10:00 AM–11:00 AM	Career Center Workshop: Career Open Forum/Career Q&A Session	Room 300
10:00 AM–5:00 PM	Biomolecular Discovery Dome	Hall D
10:00 AM–5:00 PM	Exhibits	Hall D
10:15 AM–11:00 AM	Coffee Break	Hall D
10:15 AM–11:15 AM	New Member Welcome Coffee	Room 302
10:45 AM–12:45 PM	Symposium: Biophysics of Personalized Medicine Co-Chairs: Donald Engelman, Yale University, and Kathleen Giacomini, University of California, San Francisco IMAGING AND TREATING TUMORS BY TARGETING THEIR ACIDITY WITH PHLIP, A PH-SENSITIVE INSERTION PEPTIDE. <i>Donald M. Engelman</i> TARGETING INFLUX TRANSPORTERS IN THE HUMAN BLOOD BRAIN BARRIER. <i>Kathleen Giacomini</i> NONINVASIVE PERSONALIZED GENOMICS. <i>Charles Cantor</i> TRANSLATING A TRILLION POINTS OF DATA INTO THERAPIES, DIAGNOSTICS, AND NEW INSIGHTS INTO DISEASE. <i>Atul J. Butte</i>	Room 134

10:45 AM–12:45 PM	<p>Symposium: Stochasticity in Cellular Processes Room 135 Co-Chairs: <i>Rachel Kuske, University of British Columbia, Canada, and Nathalie Questembert-Balaban, Hebrew University of Jerusalem, Israel</i></p> <p>ON THE STATISTICAL NATURE OF BEHAVIORAL DIVERSITY. <i>Stanislas Leibler</i> STOCHASTIC BISTABILITY AND SWITCHING IN VIRUS/IMMUNE CELL NETWORKS. <i>Elizabeth Read</i> RELIABILITY OF NOISE-INDUCED SPIKES FOR TWO TYPES OF THRESHOLD DYNAMICS. <i>Rachel Kuske</i> DETERMINISTIC VERSUS STOCHASTIC VARIABILITY IN THE MAMMALIAN CELL CYCLE. <i>Nathalie Q. Balaban</i></p>
10:45 AM–12:45 PM	<p>Symposium: Regulation of Cytoskeletal Motors Room 130/131 Co-Chairs: <i>Marileen Dogterom, AMOLF, The Netherlands, and Kazuhiro Oiwa, National Institute of Information and Communications Technology, Japan</i></p> <p>MECHANISTIC INSIGHTS OF DYNEIN MOTOR ACTION FROM ELECTRON MICROSCOPY STUDIES. <i>Stanley A. Burgess</i> RECONSTITUTION OF DYNAMIC AXONEMAL COMPLEXITY WITH USING A BOTTOM UP STRATEGY. <i>Kazuhiro Oiwa</i> DYNEIN-MEDIATED POSITIONING OF MICROTUBULE ASTERS IN 3D CONFINEMENT. <i>Marileen Dogterom</i> NEW METHODS FOR MOLECULAR MOTOR AND CELL MOTILITY RESEARCH. <i>Yale E. Goldman</i></p>
10:45 AM–12:45 PM	Platform: Mechanisms of Voltage Sensing and Gating Room 132/133
10:45 AM–12:45 PM	Platform: Member Organized Session - Mechanics at the Cell Surface Room 303
10:45 AM–12:45 PM	Platform: New Methods for Studying Dynamics in Macromolecules Room 304
10:45 AM–12:45 PM	Platform: Membrane Receptors and Signal Transduction II Room 305
10:45 AM–12:45 PM	Platform: Structure and Dynamics of RNA in Biology Room 306
11:00 AM–12:30 PM	<p>Exhibitor Presentation: Nanion Technologies Room 123 Workshop on Automated Patch Clamp: From Single Channels, Primary Cells, Action Potentials to 384 Giga-Seal Recordings in a Parallel HTS Format</p>
11:30 AM–12:30 PM	Career Center Workshop: Beyond the Bench: Preparing for Your Career Transition in the Life Sciences Room 300
11:30 AM–1:00 PM	Undergraduate Student Pizza “Breakfast” Room 308
1:00 PM–2:30 PM	<p>Exhibitor Presentation: World Precision Instruments, Inc. Room 123 Applications in Biophysics Utilizing World Precision Instrument’s (WPI) New Biofluorometer</p>
1:00 PM–3:00 PM	Graduate and Postdoc Institution Fair Hall D
1:00 PM–3:00 PM	Grant Writing Workshop: How (Not) to Write Your NIH Grant Proposal Room 307
1:30 PM–3:00 PM	Biophysics 101: X-Ray Crystallography Room 309
1:45 PM–3:00 PM	Snack Break Hall D
1:45 PM–3:45 PM	Poster Presentations and Late Posters Hall D
2:15 PM–3:45 PM	How to Get Your Scientific Paper Published Room 306
2:30 PM–3:30 PM	Career Center Workshop: Career Catalyst: Understand Who You Are to Get What You Want Room 300
2:30 PM–4:00 PM	Preparing for Promotions: Everything You Wanted to Know but Were Afraid to Ask Room 310
2:30 PM–4:00 PM	Biophysics at the National Large Facilities: Current and Future Science Possibilities Room 301
3:00 PM–4:30 PM	<p>Exhibitor Presentation: Bruker Nano Surfaces Room 123 Atomic Force Microscopy for Biological Research</p>
4:00 PM–5:00 PM	Membership Committee Meeting Room 122
4:00 PM–5:00 PM	Career Center Workshop: Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses) Room 300
4:00 PM–6:00 PM	<p>Symposium: Future of Biophysics Burroughs Wellcome Fund Symposium Room 134 Chair: <i>Robert Nakamoto, University of Virginia Health Science Center</i></p> <p>“OFF-LABEL” USES OF SEQUENCING TECHNOLOGY TO EXPLORE THE PHYSICAL GENOME. <i>William J. Greenleaf</i> SPHINGOLIPID AND CHOLESTEROL DISTRIBUTION IN THE PLASMA MEMBRANE BY HIGH-RESOLUTION SIMS. <i>Mary L. Kraft</i> THE INFLUENCE OF EXTRINSIC FLUCTUATIONS ON THE DECISION OF CELLS. <i>Elijah Roberts</i> HOW CAN LABILE BONDS LEAD TO TOUGHER NETWORKS? THE UNEXPECTED ROLE OF CROSSLINKER KINETICS IN DETERMINING CYTOSKELETAL MECHANICS. <i>Megan T. Valentine</i></p>
4:00 PM–6:00 PM	<p>Symposium: Molecular Basis of Voltage Dependence Room 135 Co-Chairs: <i>Sudha Chakrapani, Case Western Reserve University, and Eduardo Perozo, University of Chicago</i></p> <p>THERMODYNAMIC ANALYSIS OF VOLTAGE-SENSING MECHANISMS. <i>Baron Chanda</i> STRUCTURAL INVESTIGATION OF A BACTERIAL VOLTAGE-GATED SODIUM CHANNEL Na_vRh. <i>Nieng Yan</i> VOLTAGE-SENSOR DOMAIN PROTEINS: PHOSPHOINOSITIDE SIGNAL, PROTON PERMEATION AND MOLECULAR TOOLS. <i>Yasushi Okamura</i> STRUCTURAL BASIS OF VOLTAGE-DEPENDENT GATING IN CI-VSP. <i>Eduardo Perozo</i></p>

4:00 PM–6:00 PM	Platform: Calcium Signaling	Room 130/131
4:00 PM–6:00 PM	Platform: Cell Mechanics and Motility II	Room 132/133
4:00 PM–6:00 PM	Platform: Bioengineering	Room 303
4:00 PM–6:00 PM	Platform: Protein Folding and Chaperones	Room 304
4:00 PM–6:00 PM	Platform: Protein-Lipid Interactions II	Room 305
4:00 PM–6:00 PM	Platform: Computational Methods	Room 306
5:00 PM–6:30 PM	Exhibitor Presentation: HEKA Elektronik HEKA Electrophysiology Update	Room 123
7:30 PM–12:00 AM	Child Care	Marriott Marquis, Pacific H, I, J
8:00 PM–9:30 PM	Awards and National Lecture	Room 134/135
9:30 PM–12:00 AM	Annual Meeting Reception and Dance	Marriott Marquis, Yerba Buena Ballroom (Lower B2 Level)
9:30 PM–12:00 AM	Annual Meeting Reception and Quiet Room	Marriott Marquis, Golden Gate Ballroom (B2 Level)

Monday, February 17

7:30 AM–8:30 AM, ROOM 302 Graduate Student Breakfast

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 there to talk about grant activities specific to graduate students. They will also be available to answer questions about how the Committee serves graduate students in the biophysical community, and to recruit new Committee members. Limited to the first 100 attendees.

7:30 AM–5:00 PM, NORTH LOBBY Registration/Exhibitor Registration

7:30 AM–10:00 PM, ROOM 112 Family Room

8:00 AM–8:45 AM, ROOM 123 Exhibitor Presentation FEI Company

Making Correlative Experiments Easier

Fluorescence microscopy excels at labeling components of the cellular machinery with unmatched sensitivity and specificity; however, it lacks any contextual information. Providing full morphological information at the ultra-structural level is the strength of electron microscopy. If the very same sample is imaged by fluorescence and electron microscopy it is possible to merge dynamics, label specificity and nanometer resolution. Although a powerful approach, it is challenging and low-throughput.

FEI has recently introduced new solutions to overcome these experimental hurdles: CorrSight, a dedicated light microscopy system offering CLEM-specific functionality and automation of important workflow steps; MAPS, a software tool bridging the modalities to increase ease of use; and iCorr, a light microscope module integrated into the Tecnai family of transmission electron microscopes. These tools address different correlative workflows helping to optimize efficiency and data quality across the full range of CLEM experiments.

CorrSight is an innovative light microscope providing unprecedented solutions to optimal sample support for different workflows in correlative light and electron microscopy. One of its strengths is the possibility to perform live cell imaging, event-triggered fixation and subsequent processing of the sample for electron microscopy. On top of it a dedicated cryo stage allows contamination-free imaging of vitrified samples with the highest resolution.

MAPS also allows for correlation of light microscopy data captured on any light microscope with EM data acquisition on the full range of FEI SEMs / SDBs. To allow utmost flexibility in the choice of the light microscope, there is absolutely no dependence on any special hardware – correlation is carried out only on image data. Thus, existing or specialized light microscopy setups can be easily used for CLEM experiments and correlation can be carried out on any feature visible in both modalities. When coupled with CorrSight the correlation is possible without manual intervention. In order to perform correlative experiments between LM and TEM imaging FEI has developed an integrated light and electron microscope: iCorr. This tool provides fast and effortless navigation for correlative experiments.

Presenters:

Alex de Marco, Product Marketing Manager, FEI Munich GmbH
Gregor Heiss, Product Marketing Engineer, FEI Munich GmbH
Liesbeth Hekking, Applications Development Engineer, FEI Company
Matthias Langhorst, Segment Director Cell Biology Solutions, FEI Company

8:00 AM–5:30 PM, ROOM 300 Career Center

8:00 AM–6:00 PM, MARRIOTT MARQUIS, PACIFIC H, I, J Child Care

8:00 AM–6:00 PM, ROTUNDA, 300 LEVEL Undergraduate Student Lounge

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 stop by to answer questions student attendees may have about career paths and opportunities.

8:00 AM–10:00 PM, HALL D Poster Viewing

8:15 AM–10:15 AM, ROOM 134

Symposium Molecular Basis for Regulation of Ca²⁺ Channels

Co-Chairs

Amy Lee, University of Iowa

Stephen Long, Memorial Sloan-Kettering Cancer Center

1111-SYMP 8:15 AM

ORIGIN AND MECHANISM OF MITOCHONDRIAL FLASHES.

Heping Cheng, Xianhua Wang, Qi Ma, Wang Wang

1112-SYMP 8:45 AM

CAV1.3 L-TYPE CALCIUM CHANNEL DYSFUNCTION IN HUMAN DISEASE. **Jörg Striessnig**

1113-SYMP 9:15 AM

REGULATION OF VOLTAGE-GATED CALCIUM CHANNEL TRAFFICKING AND FUNCTION BY AUXILIARY SUBUNITS.

Annette C. Dolphin

1114-SYMP 9:45 AM

3D STRUCTURES OF THE CALCIUM RELEASE-ACTIVATED CALCIUM CHANNEL ORAL. **Stephen B. Long**

8:15 AM–10:15 AM, ROOM 135

Symposium Force Sensing in Muscle

Co-Chairs

Mathias Gautel, King's College London, United Kingdom

Gabriella Piazzesi, University of Florence, Italy

1115-SYMP 8:15 AM

THE ELASTICITY OF THE MYOSIN MOTOR AND MYOFILAMENTS IN THE MUSCLE SARCOMERE.

Gabriella Piazzesi, Luca Fusi, Marco Caremani, Elisabetta Brunello, Massimo Reconditi, Luca Melli, Marco Linari, Malcolm Irving, Vincenzo Lombardi

1116-SYMP 8:45 AM

EXPERIMENTAL AND COMPUTATIONAL APPROACHES TO STUDY MYOFILAMENT STRUCTURE-FUNCTION IN NORMAL AND DISEASED MUSCLE. **Michael Regnier**,

Yuanhua Cheng, Pete Kekenues-Huskey, Steffen Lindert, Andrew McCulloch

1117-SYMP **9:15 AM**
EFFECTS OF TRANSMURAL REGION AND HEART FAILURE
ON THE CONTRACTILE PROPERTIES OF HUMAN
MYOCARDIUM. **Kenneth S. Campbell**

1118-SYMP **9:45 AM**
MECHANOSIGNALING BY CYTOSKELETAL PROTEIN
KINASES AND THEIR DISEASE IMPLICATIONS. **Mathias Gautel**,
Ay Lin Kho, Alexander Alexandrovich, Diana Pippig, Hermann Gaub

8:15 AM–10:15 AM, ROOM 130/131

Platform Membrane Physical Chemistry II

Co-Chairs

Alex Smirnov, North Carolina State University
Michael Grabe, University of Pittsburgh

1119-PLAT **8:15 AM**
CURVED LIPID BILAYERS: STRUCTURE, DYNAMICS,
PHASE PROPERTIES AND SURFACE ELECTROSTATICS.
Antonin Marek, Amir Koolivand, David Song, Maxim A. Voinov,
Alex I. Smirnov

1120-PLAT **8:30 AM**
MOLECULAR ORIGINS OF THE RIPPLE PHASE. **Shachi Katira**,
Padmini Rangamani, George Oster, Berend Smit

1121-PLAT **8:45 AM** **MINORITY AFFAIRS TRAVEL AWARDEE**
INFLUENCE OF DETERGENT PROPERTIES ON THE
SOLUBILIZATION AND FUNCTION OF MEMBRANE
PROTEINS. **Ashton T. Brock**, Linda Columbus

1122-PLAT **9:00 AM**
QUANTITATIVE IMAGING OF THE ELECTROSTATIC
FIELD OF A TRANSMEMBRANE PROTEIN AT
SUBNANOMETER RESOLUTION BY THE USE OF ATOMIC
FORCE MICROSCOPY. **Moritz Pfreundschuh**

1123-PLAT **9:15 AM**
CONTINUOUS FLOW AFM IMAGING REVEALS
FLUIDITY AND TIME DEPENDENT INTERACTIONS
OF ANTIMICROBIAL DENDRIMER WITH MODEL LIPID
MEMBRANES. **Tania K. Lind**, Paulina Zielinska, Hanna P. Wacklin,
Zofia Urbanczyk-Lipkowska, Marité Cárdenas

1124-PLAT **9:30 AM**
EXPLORING CONTINUUM MODELS OF ION AND PEPTIDE
INTERACTIONS WITH THE MEMBRANE. **Naomi R. Latorraca**,
Keith M. Callenberg, Jon P. Boyle, Michael Grabe

1125-PLAT **9:45 AM**
HISTONES AND DNA COMPETE FOR BINDING
PHOSPHOINOSITIDES IN BILAYERS. **Marta G. Leite**, Jesus Sot,
Hasna Ahyauch, Noelia Fernandez-Rivero, Adelina Prado,
Felix M. Goni, Alicia Alonso

1126-PLAT **10:00 AM**
MULTI-DIMENSIONAL ANALYSIS OF FLUORESCENCE
FLUCTUATION SPECTROSCOPY OF LIPID ANCHORED
PROTEINS IN LIVE CELLS REVEAL COMPLEX
ORGANIZATION IN THE PLASMA MEMBRANE.
Hector H. Huang, Chris R. Rhodes, Katherine N. Alfieri,
John T. Groves

8:15 AM–10:15 AM, ROOM 132/133

Platform Advances in Single-Molecule Spectroscopy

Co-Chairs

Lori Goldner, University of Massachusetts Amherst
Matthew Ferguson, National Cancer Institute

1127-PLAT **8:15 AM**
SINGLE MOLECULE IMAGING IN VIVO DETERMINES
POST-TRANSCRIPTIONAL RNA PROCESSING DYNAMICS.
Matthew L. Ferguson, Antoine Coulon, Valeria de Turris,
Murali Palangat, Carson C. Chow, Daniel R. Larson

1128-PLAT **8:30 AM**
COMBINED SINGLE MOLECULE RECOGNITION IMAGING
AND FORCE SPECTROSCOPY TO STUDY THE INTERACTIONS
BETWEEN UNCOUPLING PROTEINS AND PURINE
NUCLEOTIDES. **Melanie Köhler**, Gabriel Pürstinger, Rong Zhu,
Anne Rupprecht, Hermann J. Gruber, Elena E. Pohl, Peter Hinterdorfer

1129-PLAT **8:45 AM**
SINGLE MOLECULES IN ATTOLITER DROPLETS:
A COMPARISON OF FRET FROM FREE AND CONFINED RNA.
Peker Milas, Sheema Rahmanseresht, Ben D. Gamari, Lori S. Goldner

1130-PLAT **9:00 AM**
COMBINING ACCURATE FRET AND TRACKING OF SINGLE
PROTEIN AND DNA MOLECULES IN LIVE BACTERIA.
Anne Plochowitz, Robert Crawford, Louise Aigrain, Marko Sustarsic,
Achillefs N. Kapanidis

1131-PLAT **9:15 AM**
SINGLE MOLECULE DIAGNOSTIC METHOD TO REVEAL
CANCER-RELATED EGFR SIGNALING. **Hong-Won Lee**,
Min Kwon Cha, Kihyuk Shin, Seung-Hyo Lee, Tae-Young Yoon

1132-PLAT **9:30 AM**
IMPROVED SINGLE-MOLECULE FORCE SPECTROSCOPY
USING MICRO-MACHINED CANTILEVERS. **Matthew S. Bull**,
Hongbin Li, Thomas T. Perkins

1133-PLAT **9:45 AM**
FAST SPATIOTEMPORAL CORRELATION SPECTROSCOPY
TO DETERMINE PROTEIN LATERAL DIFFUSION LAWS IN
LIVE CELL MEMBRANES. Carmine Di Rienzo, Enrico Gratton,
Fabio Beltram, **Francesco Cardarelli**

1134-PLAT **10:00 AM**
DNA Y STRUCTURE: A MULTIDIMENSIONAL SINGLE
MOLECULE ASSAY. James Inman, Ben Smith, Michael Hall,
Robert A. Forties, Michelle D. Wang

8:15 AM–10:15 AM, ROOM 303

Platform Micro- and Nanotechnology I

Co-Chairs

Young-Wook Jun, University of California, San Francisco
Bianxiao Cui, Stanford University

1135-PLAT **8:15 AM**
REGULATING SPATIOTEMPORAL DYNAMICS OF NOTCH
SIGNALING IN LIVE CELLS VIA MAGNETOPLASMONIC
NANOPROBES. Daeha Seo, Jiwook Kim, Justin Farlow, Hyunjung Lee,
Paul Alivisatos, Jinwoo Cheon, Zev Gartner, **Young-wook Jun**

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1136-PLAT **8:30 AM**
NANOCHANNEL TRAP ARRAYS FOR MONITORING SINGLE MITOCHONDRION BEHAVIOR. **Katayoun Zand**, Ted Pham, Antonio Davila Jr, Douglas C. Wallace, Peter J. Burke

1137-PLAT **8:45 AM**
NANOPLASMONIC OPTOPORATION FOR LARGE-SCALE PRECISION GENE REGULATION IN STEM CELLS. **Chi-cheng Fu**, Sahba Talebi Fard, Kyuwan Lee, SoonGweon Hong, Luke P. Lee

1138-PLAT **9:00 AM**
SINGLE CELL ELECTROPORATION AND DNA DYNAMICS: FROM BULK TO MICRO/NANOLFLUIDICS. **Pouyan E. Boukany**

1139-PLAT **9:15 AM**
AT THE NANO-BIO INTERFACE: PROBING LIVE CELLS WITH NANO SENSORS. Ziliang Lin, Wenting Zhao, Lindsey Hanson, Chong Xie, Yi Cui, **Bianxiao Cui**

1140-PLAT **9:30 AM**
SINGLE CELL RESPONSE TO PERIODIC ENVIRONMENTAL STIMULI USING A MICROFLUIDIC BIOREACTOR. **Eric M. Johnson Chavarria**, Utsav Agrawal, Melikhan Tanyeri, Thomas E. Kuhlman, Charles M. Schroeder

1141-PLAT **9:45 AM**
MOTOR-DRIVEN ASSEMBLY OF DYNAMIC, SELF-HEALING LIPID NANOTUBE NETWORKS. **George D. Bachand**, Nathan F. Bouxsein, Amanda Carroll-Portillo, Marlene Bachand, Darryl Y. Sasaki

1142-PLAT **10:00 AM**
FUNCTION AND MOVEMENT OF A DNA ACTUATOR INVESTIGATED BY SINGLE MOLECULE FRET MICROSCOPY. **Lasse L. Hildebrandt**, Zhao Zhang, Søren Preus, Kurt V. Gothelf, Victoria Birkedal

8:15 AM–10:15 AM, ROOM 304

Platform

Protein Structure, Conformation, and Solvent Interactions

Co-Chairs

Pavan Ghatty, Florida State University
Jae Yen Shin, University of California, Berkeley

1143-PLAT **8:15 AM**
STRUCTURAL AND FUNCTIONAL STUDIES OF A NOVEL RNA-BINDING SM-LIKE ARCHAEAL PROTEIN. **Peter S. Randolph**, Kanishk Jain, Cameron Mura

1144-PLAT **8:30 AM**
TRANSMEMBRANE ARCHITECTURE OF A FULL-LENGTH MONOSPANNING CYTOCHROME P450. **Thomas Tomasiak**

1145-PLAT **8:45 AM**
IN VIVO ASSEMBLY AND ARRANGEMENT OF THE DNA TRANSLOCASE SPOIIIE DURING CHROMOSOME SEGREGATION AND MEMBRANE FISSION IN *B. SUBTILIS*. **Jae Yen Shin**, Cesar Diaz, Javier Lopez, Joerg Schnitzbauer, Kit Pogliano, Carlos Bustamante

1146-PLAT **9:00 AM**
ALTERNATIVE CONFORMATIONS OF YEAST ISO-1-CYTOCHROME C: EFFECTS OF A GATEKEEPING RESIDUE ON HEME CREVICE DYNAMICS. **Levi J. McClelland**, Tung-Chung Mou, Margaret E. Jeakins-Cooley, Melisa M. Cherney, Stephen R. Sprang, Bruce E. Bowler

1147-PLAT **9:15 AM**
THE ROLE OF WATER IN DYNAMICS OF BIOMACROMOLECULES: A MUTUAL INTERPLAY! **Sheila Khodadadi**, Hailiang Zhang, Alexei P. Sokolov, Joseph E. Curtis

1148-PLAT **9:30 AM**
TRANSIENT ACCESS TO THE PROTEIN INTERIOR: SIMULATION VERSUS NMR. **Filip Persson**, Bertil Halle

1149-PLAT **9:45 AM**
PHYSIOLOGICALLY RELEVANT STRUCTURE OF ALZHEIMER'S RELATED AMYLOID PROTEIN AND THE ROLE OF EMBEDDED WATER IN ITS AMPHIPHILIC PORE. **Pavan K. Ghatty**

1150-PLAT **10:00 AM**
STRUCTURAL CHARACTERIZATION OF CADDISFLY SILK WITH SOLID-STATE NMR AND X-RAY DIFFRACTION. **J. Bennett Addison**, Warner S. Weber, Qiushi Mou, Gregory P. Holland, Jeffery L. Yarger

8:15 AM–10:15 AM, ROOM 305

Platform

Membrane Pumps, Transporters, and Exchangers I

Co-Chairs

Heather Pinkett, Northwestern University
Gary Rudnick, Yale University

1151-PLAT **8:15 AM**
ABC TRANSPORTERS IN *H. INFLUENZAE*. **Heather W. Pinkett**

1152-PLAT **8:30 AM**
MOVEMENT OF THE NUCLEOTIDE BINDING DOMAINS IN THE RECONSTITUTED ABC TRANSPORTER MSBA DURING THE ATP-HYDROLYSIS CYCLE. **Maria E. Zoghbi**, Guillermo A. Altenberg

1153-PLAT **8:45 AM**
ASYMMETRY AND CONFORMATIONAL CHANGES OF THE *E. COLI* RIBOSE ABC TRANSPORTER. **Satchal K. Erramilli**

1154-PLAT **9:00 AM**
STRUCTURAL MODEL OF THE HUMAN SODIUM-PHOSPHATE COTRANSPORTER NAPI-II. **Maria Cristina Fenollar-Ferrer**, Monica Patti, Thomas Knoepfel, Andreas Werner, Ian C. Forster, Lucy R. Forrest

1155-PLAT **9:15 AM**
CORRELATING CHARGE MOVEMENTS WITH LOCAL CONFORMATIONAL CHANGES OF A NA-COUPLED COTRANSPORTER. Monica Patti, **Ian C. Forster**

1156-PLAT **9:30 AM**
THE ROLE OF SODIUM SITES IN LEUT CONFORMATIONAL CHANGES. **Gary Rudnick**, Sotiria Tavoulari, Yuan-Wei Zhang, David DeWitt, Anu Nagarajan, Edwin Rosado, Silvia Ravera, Anna-Elisabeth Kreuder, Lucy R. Forrest, Elizabeth Rhoades

1157-PLAT **9:45 AM**
INVESTIGATING THE BACTERIAL GLUTAMATE TRANSPORTER HOMOLOG GLTPH WITH UNNATURAL AMINO ACIDS. **Paul J. Focke**, Alvin W. Annen, Francis I. Valiyaveetil

1158-PLAT **10:00 AM**
SINGLE LIPOSOMES USED TO STUDY THE ACTIVITY OF INDIVIDUAL TRANSPORTERS. Christina Lohr, Andreas Lauge Christensen, **Salome Veshaguri**, Marijonas Tutkus, Lars Iversen, Gerdi Kemmer, Dana Yaffe, Tina Zollmann, Patricia Curran, Shimon Schuldiner, Robert Tampé, Thomas Pomorski, Joseph Mindell, Dimitrios Stamou

8:15 AM–10:15 AM, ROOM 306

Platform

DNA Replication, Recombination, and Repair

Co-Chairs

Marcia Levitus, Arizona State University

Susan Tsutakawa, Lawrence Berkeley National Laboratory

1159-PLAT 8:15 AM

IDENTIFICATION OF THE TRANSLOCATION STEP OF A REPLICATIVE DNA POLYMERASE. Jose A. Morin, Francisco J. Cao, Jose M. Lázaro, Margarita Salas, Jose M. Valpuesta, Jose L. Carrascosa, **Borja Ibarra**

1160-PLAT 8:30 AM

SINGLE MOLECULE STUDIES OF DNA REPLICATION PROCESSIVITY CLAMPS. **Jennifer K. Binder**, Suman Ranjit, Manas Chakraborty, David Kanno, Lauren Douma, Linda Bloom, Marcia Levitus

1161-PLAT 8:45 AM

DEFINING THE SUPERFAMILY CONSERVED MECHANISM FOR FLAP ENDONUCLEASES FEN1 AND XPG SPECIFICITY FOR 5' FLAP DNA AND DNA BUBBLES, RESPECTIVELY, BY HYBRIDS METHODS OF CRYSTALLOGRAPHY, SAXS, EM, AND COMPUTATION. **Susan Tsutakawa**, Andrew Arvai, Altaf Sarker, Jordi Querol-Audi, David Finger, Eva Nogales, Ivaylo Ivanov, Priscilla Cooper, Jane Grasby, John Tainer

1162-PLAT 9:00 AM

ROADBLOCKS ON THE E.COLI GENOME: THE WORKINGS OF A MOLECULAR MOUSE TRAP AT THE SINGLE-MOLECULE LEVEL. **Bojk A. Berghuis**, David Dulin, Bronwen Cross, Nicholas E. Dixon, Nynke H. Dekker

1163-PLAT 9:15 AM

SLIDING, PAUSING AND BRIDGING: HOW HUMAN XRCC4 AND XLF INTERACT WITH DNA. Andrea Candelli, Gerrit Sitters, Ineke Brouwer, Stephanie Heerema, Mauro Modesti, Erwin Peterman, **Gijs J. Wuite**

1164-PLAT 9:30 AM

SINGLE DNA GLYCOSYLASE MOLECULES DIFFUSE ONE-Dimensionally AND USE A WEDGE RESIDUE TO PROBE FOR OXIDATIVELY DAMAGED BASES. **Shane Nelson**, Andrew Dunn, Susan S. Wallace, David M. Warshaw

1165-PLAT 9:45 AM

ONE ORC WITH MANY FACES. **Huilin Li**

1166-PLAT 10:00 AM

INTERACTIONS BETWEEN THE *E. COLI* SOS RESPONSE PROTEIN UMUD AND DNA POLYMERASE III ALPHA SUBUNIT HAVE IMPLICATIONS FOR REGULATING REPLICATION IN RESPONSE TO DNA DAMAGE. **Penny Beuning**, Michelle C. Silva, Philip Nevin, Kathy R. Chaurasiya, Clarissa Ruslie, Lukas Voortman, Samer Lone, Erin A. Ronayne, Mark C. Williams

8:30 AM–10:00 AM, ROOM 122

Minority Affairs Committee Meeting

9:00 AM–10:30 AM, ROOM 123

**Exhibitor Presentation
Park Systems, Inc.**

New Door to Live Single Cell Research

Atomic Force Microscopy (AFM) is a powerful measurement technique for nanoscale science. AFM is able to provide high-resolution imaging of biological structures below the optical limit, as well as the monitoring of the dynamics

in biological systems and processes under physiological conditions; however, certain limitations for AFM still exist in the field of bio-applications. In recent times, the development of another kind of scanning probe microscopy (SPM) technique, scanning ion conductance microscopy (SICM), has overcome these limitations and enabled noninvasive, nanoscale investigation of live cells. SICM applications include imaging of cell topography, monitoring of live cell dynamics, mechanical stimulation of live cells, surface patterning, and so forth.

We at Park Systems have developed AFM for advanced nanoscale metrology, which separates the z-scanner from the x-y scanner. An independent z-scanner also provides an excellent platform for developing other SPM techniques such as SICM. In addition, the platform which separates the z-scanner from x-y scanner, enables us to easily switch between an AFM and an SICM z-scanner to apply both techniques without moving samples. The common glass micropipette is used in SICM as the sensitive probe, instead of a silicon-based stylus, and can glide over live cells while maintaining an absolute non-contact imaging mode. Its electrochemical current feedback system further enhances biological sample imaging. Combining confocal fluorescence data to the SICM 3D data, using an image overlay feature, provides even more data about structure of cells as related to their membranes. These advances of convergence in instrumentation will be utilized in various kinds of biomedical research and become a new driving force for biophysics and nanobioscience.

Presenter:

Sangjoon Cho, Sr. Director of R&D, Park Systems, Inc.

10:00 AM–11:00 AM, ROOM 300

**Career Center Workshop
Career Open Forum/Career Q&A Session**

Bring your coffee and start your day with this industry-focused forum, intended to answer any/all of your questions related to your job search. Space is limited! This is your opportunity to explore the myths and realities associated with an effective job search. Come with any and all job search-related questions and we'll do our best to provide answers and guidance.

10:00 AM–5:00 PM, HALL D

Biomolecular Discovery Dome

10:00 AM–5:00 PM, HALL D

Exhibits

10:15 AM–11:00 AM, HALL D

Coffee Break

10:15 AM–11:15 AM, ROOM 302

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.

10:45 AM–12:45 PM, ROOM 134

Symposium

Biophysics of Personalized Medicine

Co-Chairs

Donald Engelman, Yale University

Kathleen Giacomini, University of California, San Francisco

1167-SYMP 10:45 AM

IMAGING AND TREATING TUMORS BY TARGETING THEIR ACIDITY WITH PHLIP, A PH-SENSITIVE INSERTION PEPTIDE. **Donald M. Engelman**, Ming An, Oleg A. Andreev, Francisco N. Barrera, Raman Bahal, Marcus W. Bosenberg, Christopher Cheng, Peter M. Glazer, Alexander Karabadzhak, Yana K. Reshetnyak, W. Mark Saltzman, Frank J. Slack, Alexander A. Svoronos, Damien Thevenin

1168-SYMP **11:15 AM**
TARGETING INFLUX TRANSPORTERS IN THE HUMAN
BLOOD BRAIN BARRIER. **Kathleen Giacomini**

1169-SYMP **11:45 AM**
NONINVASIVE PERSONALIZED GENOMICS. **Charles Cantor**

1170-SYMP **12:15 PM**
TRANSLATING A TRILLION POINTS OF DATA INTO
THERAPIES, DIAGNOSTICS, AND NEW INSIGHTS INTO
DISEASE. **Atul J. Butte**

10:45 AM–12:45 PM, ROOM 135

Symposium **Stochasticity in Cellular Processes**

Co-Chairs

Rachel Kuske, University of British Columbia, Canada
Nathalie Questembert-Balaban, Hebrew University of Jerusalem, Israel

NO ABSTRACT **10:45 AM**
ON THE STATISTICAL NATURE OF BEHAVIORAL DIVERSITY.
Stanislas Leibler

1171-SYMP **11:15 AM**
STOCHASTIC BISTABILITY AND SWITCHING IN VIRUS/
IMMUNE CELL NETWORKS. **Elizabeth Read**

1172-SYMP **11:45 AM**
RELIABILITY OF NOISE-INDUCED SPIKES FOR TWO TYPES
OF THRESHOLD DYNAMICS. **Rachel Kuske**, Na Yu, Yue Xian Li

1173-SYMP **12:15 PM**
DETERMINISTIC VERSUS STOCHASTIC VARIABILITY
IN THE MAMMALIAN CELL CYCLE. Sivan Pearl, Oded Sandler,
Oded Agam, Itamar Simon, **Nathalie Q. Balaban**

10:45 AM–12:45 PM, ROOM 130/131

Symposium **Regulation of Cytoskeletal Motors**

Co-Chairs

Marileen Dogterom, AMOLF, The Netherlands
*Kazuhiro Oiwa, National Institute of Information and Communications
Technology, Japan*

1174-SYMP **10:45 AM**
MECHANISTIC INSIGHTS OF DYNEIN MOTOR
ACTION FROM ELECTRON MICROSCOPY STUDIES.
Stanley A. Burgess, Takahide Kon, Peter J. Knight, Kazuo Sutoh

1175-SYMP **11:15 AM**
RECONSTITUTION OF DYNAMIC AXONEMAL COMPLEXITY
WITH USING A BOTTOM UP STRATEGY. **Kazuhiro Oiwa**

1176-SYMP **11:45 AM**
DYNEIN-MEDIATED POSITIONING OF MICROTUBULE
ASTERS IN 3D CONFINEMENT. Sophie Roth,
Marileen Dogterom

1177-SYMP **12:15 PM**
NEW METHODS FOR MOLECULAR MOTOR AND CELL
MOTILITY RESEARCH. Adam G. Hendricks, John F. Beausang,
John H. Lewis, Lisa Lippert, Deborah Shroder, E. Michael Ostap,
Erika L.F. Holzbaur, **Yale E. Goldman**

10:45 AM–12:45 PM, ROOM 132/133

Platform **Mechanisms of Voltage Sensing and Gating**

Co-Chairs

Simon Berneche, University of Basel, Switzerland
Brad Rothberg, Temple University School of Medicine

1178-PLAT **10:45 AM**
GATING CURRENTS OF MONOMERIC HV CHANNEL REVEALS
A PERMEATION PATHWAY COUPLED TO THE VOLTAGE
ACTIVATION. **David Baez-Nieto**, Ester Otarola, Gustavo Contreras,
Peter Larsson, Ramon Latorre, Carlos Gonzalez

1179-PLAT **11:00 AM**
THE SPECIALIZED ROLE OF THE S1 TRANSMEMBRANE
SEGMENT IN THE GATING OF THE HV1 PROTON CHANNEL.
Laetitia Mony, Thomas K. Berger, Ehud Y. Isacoff

1180-PLAT **11:15 AM**
OPTICALLY MAPPING THE MOVEMENT OF DISCRETE
GATING CHARGES IN SHAKER. **Michael F. Priest**, Francisco Bezanilla

1181-PLAT **11:30 AM**
MULTI-DIMENSIONAL FREE ENERGY LANDSCAPE OF
VOLTAGE SENSOR DOMAIN ACTIVATION. **Lucie Delemotte**,
Marina Kasimova, Vincenzo Carnevale, Michael L. Klein, Mounir Tarek

1182-PLAT **11:45 AM**
PROTEIN BACKBONE MUTAGENESIS REVEALS A NOVEL LINK
BETWEEN ION OCCUPANCY AND C-TYPE INACTIVATION IN
K⁺ CHANNELS. **Kimberly Matulef**, Alexander G. Komarov,
Francis I. Valiyaveetil

1183-PLAT **12:00 PM**
REGULATION OF ION PERMEATION IN THE SELECTIVITY
FILTER OF POTASSIUM CHANNELS. **Simon Berneche**,
Wojciech Wojtas-Niziurski, Florian Heer

1184-PLAT **12:15 PM**
INITIAL STEPS OF INACTIVATION AT THE K⁺ CHANNEL
SELECTIVITY FILTER. Andrew S. Thomson, Florian T. Heer,
Frank J. Smith, Simon Berneche, **Brad S. Rothberg**

1185-PLAT **12:30 PM**
MAPPING CONFORMATIONAL STATES IN VDAC1 CHANNEL:
COMPLEXITY OF GATING LANDSCAPE. **Sergei Noskov**,
Oscar Tejjido Hermida, Tatiana Rostovtseva, Bezrukov Sergei

10:45 AM–12:45 PM, ROOM 303

Platform: Member-Organized Session **Mechanics at the Cell Surface**

Co-chairs

Jesse Goyette, Oxford University, United Kingdom
Jun Allard, University of California, Irvine

1186-PLAT **10:45 AM**
ANTIGEN-SPECIFIC TCR-PMHC CATCH TRIGGERS T-CELL
SIGNALING BY RAPIDLY ACCUMULATING SUCCESSIVE BOND
LIFETIMES PROLONGED BY OPTIMAL FORCE. Baoyu Liu,
Wei Chen, Brian D. Evavold, **Cheng Zhu**

1187-PLAT **11:00 AM**
HOW CELLULAR GEOMETRY REGULATES TRACTION STRESSES
IN ADHERENT CELLS. **Patrick W. Oakes**, Shiladitya Banerjee,
M. Cristina Marchetti, Margaret L. Gardel

1188-PLAT **11:15 AM**
 TO ADHERE OR NOT TO ADHERE: REGULATION OF SELF-CONTACT ELIMINATION BY MEMBRANE FUSION. **Soichiro Yamada**, Grant Sumida

1189-PLAT **11:30 AM**
 MAPPING MECHANICAL PROPERTIES OF THE EXTRA CELLULAR MATRIX SURROUNDING CELLS CULTURED IN 3D. **Elliot Botvinick**, Martha Alvarez, Abhishek Kurup, Mark Keating

1190-PLAT **11:45 AM**
 MECHANICAL EXTRACTION OF ANTIGEN FROM B CELL IMMUNE SYNAPSES: A UNIQUE WAY TO SENSE LIGAND AFFINITY. **Pavel Tolar**

1191-PLAT **12:00 PM**
 GETTING THE MECHANICAL MESSAGE ACROSS CELL-CELL JUNCTIONS. **Deborah Leckband**

1192-PLAT **12:15 PM**
 FORCING IT ON: ACTIN DYNAMICS DURING LYMPHOCYTE ACTIVATION. **Arpita Upadhyaya**

1193-PLAT **12:30 PM**
 MEASURING COMPRESSIONAL RESISTANCE IN LARGE SURFACE MOLECULES. **Jesse Goyette**, Jun Allard, Omer Dushek, Anton van der Merwe

10:45 AM–12:45 PM, ROOM 304

Platform
New Methods for Studying Dynamics in Macromolecules

Co-Chairs

Giuseppe Melacini, McMaster University, Canada
Lisa Jones, Indiana University-Purdue University Indianapolis

1194-PLAT **10:45 AM**
 EVOLUTION OF A HYDROPHOBIC CORE LEADS TO FLUORESCENCE IN CANONICAL BACTERIOPHYTOCHROMES. **Shyamosree Bhattacharya**, Michele E. Auldridge, Katrina T. Forest

1195-PLAT **11:00 AM**
 INVESTIGATION OF PHONON-LIKE EXCITATIONS IN HYDRATED PROTEIN POWDERS BY NEUTRON SCATTERING. **Xiang-qiang Chu**, Utsab Shrestha, Hugh Michael O'Neill, Qiu Zhang, Alexander I. Kolesnikov, Eugene Mamontov

1196-PLAT **11:15 AM**
 ANALYSIS OF HIGH-AFFINITY PROTEIN INTERACTIONS BY FLUORESCENCE OPTICAL ANALYTICAL ULTRACENTRIFUGATION. **Huaying Zhao**, Mark L. Mayer, Peter Schuck

1197-PLAT **11:30 AM**
 IN VIVO PROTEIN FOOTPRINTING FOR THE STRUCTURAL ANALYSIS OF PROTEINS IN THEIR NATIVE ENVIRONMENT. **Lisa M. Jones**

1198-PLAT **11:45 AM**
 FINDING ORDER IN DISORDER: PROBING TRANSIENT FUNCTIONAL STATES IN THE AMYLOIDOGENIC ALZHEIMER'S A β PEPTIDE USING THE NMR CHEMICAL SHIFT COVARIANCE ANALYSIS (CHESCA). Moustafa Algamal, Julijana Milojevic, Naeimeh Jafari, Shiyuan Zhang, Rajeevan Selvaratnam, **Giuseppe Melacini**

1199-PLAT **12:00 PM**
 A TRANSFORMATION FOR THE MECHANICAL FINGERPRINTS OF COMPLEX BIOMOLECULAR INTERACTIONS. **Yaojun Zhang**, Olga K. Dudko

1200-PLAT **12:15 PM**
 LONG-RANGE CORRELATED MOTION CHANGES WITH PROTEIN-LIGAND BINDING. **Katherine A. Niessen**, Mengyang Xu, Edward Snell, Andrea Markelz

1201-PLAT **12:30 PM**
 PROTEOME-WIDE CHARACTERIZATION OF PROTEIN LOCALIZATION DYNAMICS IN ESCHERICHIA COLI. **Nathan J. Kuwada**, Paul A. Wiggins

10:45 AM–12:45 PM, ROOM 305

Platform
Membrane Receptors and Signal Transduction II

Co-Chairs

Donna Arndt-Jovin, Max Planck Institute for Biophysical Chemistry, Germany
Thomas Huber, Rockefeller University

1202-PLAT **10:45 AM**
 FLIM- FRET, A STRUCTURAL TOOL FOR ERBB RECEPTOR STUDIES IN THE LIVING CELL. **Donna J. Arndt-Jovin**, Diane S. Lidke, Alexey I. Chizhik, Narain V.R. Karedla, Thomas M. Jovin

1203-PLAT **11:00 AM**
 CLUSTERING OF H-RAS ON THE PLASMA MEMBRANE OF LIVING CELLS. **Rolf Harkes**, Thomas Schmidt

1204-PLAT **11:15 AM**
 SUPER-RESOLUTION LOCALIZATION MICROSCOPY IDENTIFIES DISTINCT STAGES OF ANTIGEN-INDUCED IGE RECEPTOR CROSS-LINKING AND IMMOBILIZATION IN RBL-2H3 MAST CELLS. **Sarah A. Shelby**, David A. Holowka, Barbara A. Baird, Sarah L. Veatch

1205-PLAT **11:30 AM**
 THE ACTIN CYTOSKELETON CONTROLS THE ACTIVATION OF INVARIANT NATURAL KILLER T CELLS BY FINE-TUNING CD1D NANOSCALE AGGREGATION ON ANTIGEN PRESENTING CELLS. **Juan Andres Torreno-Pina**

1206-PLAT **11:45 AM**
 MULTI-COLOR, SINGLE-MOLECULE FLUORESCENCE IMAGING OF GPCR SIGNALOSOMES. **Thomas Huber**, Alexandre Fürstenberg, He Tian, Hubert F. Gaertner, Oliver Hartley, Thomas P. Sakmar

1207-PLAT **12:00 PM**
 DENGUE VIRUS INFECTION MEDIATED BY DC-SIGN. **Ping Liu**, Marc R. Ridilla, Aravinda M. de Silva, Nancy L. Thompson, Ken Jacobson

1208-PLAT **12:15 PM**
 HOW TALIN HEAD DOMAIN AND SOLUBLE LIGAND CONTRIBUTE TO INTEGRIN α IIB β 3 ACTIVATION. **Mehrdad Mehrbod**, Stephen Trisno, Mohammad RK Mofrad

1209-PLAT **12:30 PM**
 SINGLE MOLECULE IMAGING OF HUMAN EPIDERMAL GROWTH FACTOR RECEPTORS. **Bettina van Lengerich**, Bo Huang, Natalia Jura

10:45 AM–12:45 PM, ROOM 306

Platform

Structure and Dynamics of RNA in Biology

Co-Chairs

Peter Cornish, University of Missouri

Edward O'Brien, Cambridge University, United Kingdom

1210-PLAT 10:45 AM

DECIPHERING RIBOSOMAL FRAMESHIFTING DYNAMICS.

Shannon Yan, Jin-Der Wen, Laura Lancaster, Harry Noller, Carlos Bustamante, Ignacio Tinoco, Jr.

1211-PLAT 11:00 AM

UNRAVELING THE MYSTERY OF RIBOSOME INDUCED RNA UNFOLDING. **Peter Cornish**, Peiwu Qin, Dongmei Yu

1212-PLAT 11:15 AM

SINGLE-MOLECULE PROFILING OF RIBOSOME TRANSLATIONAL PHENOMENA. **Jin Chen**, Alexey Petrov, Magnus Johansson, Albert Tsai, Seán E. O'Leary, Joseph D. Puglisi

1213-PLAT 11:30 AM

THE RIBOSOME USES COOPERATIVE CONFORMATIONAL CHANGES TO MAXIMIZE THE EFFICIENCY OF PROTEIN SYNTHESIS. Wei Ning, Jingyi Fei, **Ruben L. Gonzalez, Jr.**

1214-PLAT 11:45 AM

ROTATIONAL MOTIONS OF DOMAINS IN ELONGATION FACTOR G DETECTED BY SINGLE-MOLECULE POLARIZED FLUORESCENCE MICROSCOPY. **Chunlai Chen**, Xiaonan Cui, John F. Beausang, Barry S. Cooperman, Yale E. Goldman

1215-PLAT 12:00 PM

REFINING CRYSTAL STRUCTURES AGAINST CRYO-EM DATA USING MOLECULAR DYNAMICS SIMULATIONS TO OBTAIN A COMPLETE ATOMISTIC PATHWAY OF TRANSFER RNA TRANSLOCATION. Andrea C. Vaiana, Carsten Kutzner, Lars V. Bock, Christian Blau, **Helmut Grubmuller**

1216-PLAT 12:15 PM

THE EFFECT OF CODON TRANSLATION RATES ON COTRANSLATIONAL PROTEIN FOLDING MECHANISMS OF ARBITRARY COMPLEXITY. **Edward P. O'Brien**

1217-PLAT 12:30 PM

PROTEIN SYNTHESIS BY RIBOSOMES: MAPPING IN VITRO ONTO IN VIVO RATES. **Sophia Rudolf**, Michael Thommen, Marina V. Rodnina, Reinhard Lipowsky

11:00 AM–12:30 PM, ROOM 123

Exhibitor Presentation Nanion Technologies

Workshop on Automated Patch Clamp: From Single Channels, Primary Cells, Action Potentials to 384 Giga-Seal Recordings in a Parallel HTS Format

The Port-a-Patch recently turned 10 years old, 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. Recently, the Port-a-Patch technology was scaled up to eight simultaneous recordings (Patchliner), maintaining the same data quality and experimental

possibilities, and now we did it again: 384 Port-a-Patches have been shrunk to fit inside a shoebox – called the Patch Engine (PE). Two Patch Engines can be integrated per SyncroPatch 384PE platform, allowing for patch clamp-based ion channel HTS from up to 768 cells in parallel, and we will tell you more about it during this workshop.

Another topic for the workshop is the bilayer-reconstitution of ion channels and nanopores, efficiently investigated using the Orbit 16, a parallel device for formation of and recordings for up to 16 artificial bilayers at once. 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).

Welcome to our workshop and learn from live, hands-on experiments on the Port-a-Patch and Orbit 16, and let us show you how to scale up your ion channel screening project to HTS-standards!

Presenters:

Niels Fertig, CEO, Nanion Technologies

Andrea Brüggemann, CSO, Nanion Technologies

Gerhard Baaken, Ionera

11:30 AM–12:30 PM, ROOM 300

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.

11:30 AM–1:00 PM, ROOM 308

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 Gray Awardee will also give a talk at this event. Limited to the first 100 attendees.

Speaker:

Alberto Diaspro, Italian Institute of Technology

1:00 PM–2:30 PM, ROOM 123

Exhibitor Presentation World Precision Instruments, Inc.

Applications in Biophysics Utilizing World Precision Instrument's (WPI) New Biofluorometer

Introduction to WPI's New Biofluorometer with high-power LED modules. Potential applications and experimental design will be discussed in the field of Biophysics, including integration with Muscle Physiology experiments and microscopy systems for general fluorescence applications.

Presenter:

Mathias Belz, Director of Optics, World Precision Instruments, Inc.

1:00 PM–3:00 PM, HALL D

Graduate and Postdoc Institution Fair

This fair introduces students and postdoctoral candidates to colleges and universities with leading programs in biophysics. Open to all attendees.

1:00 PM–3:00 PM, ROOM 307
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:

John Bowers, Center for Scientific Review, NIH
 Jean Chin, National Institute of General Medical Sciences, NIH
 Catherine Lewis, National Institute of General Medical Sciences, NIH
 Peter Preusch, National Institute of General Medical Sciences, NIH
 Don Schneider, Center for Scientific Review, NIH

1:30 PM–3:00 PM, ROOM 309
Biophysics 101:
X-Ray Crystallography

2014 is the International Year of Crystallography, and the biophysical end of this 100-year-old field is indeed burgeoning with revolutionary results and new methodologies. Solving macromolecular structures has also now become quite feasible for a non-structural-biology lab. This year's "Biophysics 101" session includes two lectures on this topic, outlining the practice of x-ray crystallography 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:

Jim Pflugrath, Rigaku
 Charles Pemble, Duke University

1:45 PM–3:00 PM, HALL D
Snack Break

1:45 PM–3:45 PM, HALL D
Poster Presentations and Late Posters

(For a complete listing of regular Monday Poster Presentations, see page 78.)

The list of Monday Late Posters is in the Program addendum.

Posters will be on display all day long. Authors with odd-numbered boards will present from 1:45 PM–2:45 PM, and those with even-numbered boards will present from 2:45 PM–3:45 PM. Additional hours (day or evening) may be posted by the authors as desired. Paper may also be left on the board so that visitors may request an appointment.

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.

2:15 PM–3:45 PM, ROOM 306
How to Get Your Scientific Paper Published

This panel discussion, sponsored by the Publications Committee, focuses on the practical issues involved in publishing a scientific paper. The panelists have extensive experience in writing, reviewing, and editing papers, and will provide information on the 'dos and don'ts' of submitting research manuscripts. Discussions will focus on strategies to avoid common pitfalls, how to prevent and fix problems before submission, and how to respond to critiques and even rejection of a paper. Attendees are encouraged to ask questions during the session.

Moderator: Olaf Andersen, Weill Cornell Medical College

Panelists:

Katharina Gaus, University of New South Wales, Australia
 Les Loew, University of Connecticut Health Center
 Lukas Tamm, University of Virginia
 Alicia Wallace, Dartmouth Journal Services

2:30 PM–3:30 PM, ROOM 300
Career Center Workshop
Career Catalyst: Understand Who You Are to Get What You Want

Confucius said: "Learning without thought is labor lost; thought without learning is perilous." Consider investing some time in this updated self-reflection workshop to learn, think and talk about whom you are and what you want. Truly understanding yourself—your likes/ dislikes, your passions, preferences, and personality quirks – can lead not only to career success but to a happy and fulfilling life. This workshop will provide tools and techniques to help you translate self-reflection into meaningful career choices.

2:30 PM–4:00 PM, ROOM 310
Preparing for Promotions:
Everything You Wanted to Know but Were Afraid to Ask

This discussion panel, hosted by the Committee for Professional Opportunities for Women, will offer advice for those seeking advancement in their careers, whether in academia, industry, or other endeavors. Topics to be discussed include the value of mentoring and networking, how you present yourself via your CV, and why these are important to pay attention to as you seek a promotion. The panelists, who include scientists with experience in academic and non-academic institutions, will share their thoughts and advice about this important topic.

2:30 PM–4:00 PM, ROOM 301
Biophysics at the National Large Facilities:
Current and Future Science Possibilities

This session will survey a range of techniques available at the national user facilities around the country to elucidate structural information for biomolecules. The standard tools, such as macromolecular crystallography, will be included, as well as up-and-coming techniques such as LCLS-based structure determination. Attendees will also learn how researchers can access and take advantage of these facilities.

Moderators: Corie Ralston, Lawrence Berkeley National Lab, Ana Gonzalez, Stanford Linear Accelerator Center

Speakers:

Jen Bohon, National Synchrotron Light Source, Case Center for Synchrotron Biosciences
 Britt Hedman, Stanford Linear Accelerator Center
 Caralyn Larabell, University of California, San Francisco
 John Spence, Arizona State University
 Peter Zwart, Lawrence Berkeley National Laboratory

3:00 PM–4:30 PM, ROOM 123
Exhibitor Presentation
Bruker Nano Surfaces

Atomic Force Microscopy for Biological Research

Physical properties, including structures such as shape/size and mechanics such as strength/stiffness/interaction forces, play crucial roles in biological processes. Quantification of this at various length scales is necessary because of the heterogeneous/complex nature of biologics. Atomic force microscopy (AFM) is a unique research tool because of its abilities to perform measurements with both high spatial and force resolution in

fluid under physiological conditions. In this tutorial, Bruker will present theories behind AFM, bio-applications in high-speed AFM, and practical guides to quantitative mechanical measurements and analysis of biological samples ranging from a single membrane protein to a single cell. While the key experiments presented will encompass research in microbiology/pain mediation/cancer, the methodology has also been employed in other disciplines including pathogenesis/stem cell differentiation/cell signaling and more.

Presenter:

Senli Guo, Application Scientist, Bruker Nano Surfaces

4:00 PM–5:00 PM, ROOM 122

Membership Committee Meeting

4:00 PM–5:00 PM, ROOM 300

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.

4:00 PM–6:00 PM, ROOM 134

Symposium

Future of Biophysics Burroughs Wellcome Fund Symposium

Chair

Robert Nakamoto, University of Virginia Health Science Center

NO ABSTRACT 4:00 PM

“OFF-LABEL” USES OF SEQUENCING TECHNOLOGY TO EXPLORE THE PHYSICAL GENOME. **William J. Greenleaf**

NO ABSTRACT 4:30 PM

SPHINGOLIPID AND CHOLESTEROL DISTRIBUTION IN THE PLASMA MEMBRANE BY HIGH-RESOLUTION SIMS. **Mary L. Kraft**

NO ABSTRACT 5:00 PM

THE INFLUENCE OF EXTRINSIC FLUCTUATIONS ON THE DECISION OF CELLS. **Elijah Roberts**

NO ABSTRACT 5:30 PM

HOW CAN LABILE BONDS LEAD TO TOUGHER NETWORKS? THE UNEXPECTED ROLE OF CROSSLINKER KINETICS IN DETERMINING CYTOSKELETAL MECHANICS.

Megan T. Valentine

4:00 PM–6:00 PM, ROOM 135

Symposium

Molecular Basis of Voltage Dependence

Co-Chairs

*Sudha Chakrapani, Case Western Reserve University
Eduardo Perozo, University of Chicago*

1218-SYMP 4:00 PM

THERMODYNAMIC ANALYSIS OF VOLTAGE-SENSING MECHANISMS. **Baron Chanda**

1219-SYMP 4:30 PM

STRUCTURAL INVESTIGATION OF A BACTERIAL VOLTAGE-GATED SODIUM CHANNEL Na_vRH . **Nieng Yan, Xu Zhang**

1220-SYMP 5:00 PM

VOLTAGE-SENSOR DOMAIN PROTEINS: PHOSPHOINOSITIDE SIGNAL, PROTON PERMEATION AND MOLECULAR TOOLS. **Yasushi Okamura**

1221-SYMP 5:30 PM

STRUCTURAL BASIS OF VOLTAGE-DEPENDENT GATING IN CI-VSP. **Eduardo Perozo, Qufei Li, Sherry Wanderlin**

4:00 PM–6:00 PM, ROOM 130/131

Platform

Calcium Signaling

Co-Chairs

*Martin Falcke, Max Delbrück Center, Germany
Israel Sekler, Ben Gurion University, Israel*

1222-PLAT 4:00 PM

RELIABLE ENCODING OF STIMULUS INTENSITIES BY RANDOM SEQUENCES OF Ca^{2+} SPIKES. **Martin Falcke**

1223-PLAT 4:15 PM

COUPLING OF CHEMICAL AND MECHANICAL SENSING IN FIBROBLAST CELLS. **Josephine Lemborg, Bo Sun, Matthew Rogers, Howard A. Stone**

1224-PLAT 4:30 PM

Na^+ CHANNELS CONTROL METABOLISM AND GLOBAL Ca^{2+} SIGNALING BY INDUCING Na^+ AND Ca^{2+} RESPONSES THAT ARE PROPAGATING INTO THE MITOCHONDRIA OF BETA CELLS. **Israel Sekler**

1225-PLAT 4:45 PM

THE POTENTIAL FOR ANOTHER CALCIUM UPTAKE MODE IN CARDIAC MITOCHONDRIA.

Christoph A. Blomeyer, Jason N. Bazil, David F. Stowe, Ranjan K. Dash, Amadou K. Camara

1226-PLAT 5:00 PM

ULTRAFAST GENETICALLY ENCODED CALCIUM INDICATORS FOR VISUALIZING CALCIUM FLUX AND ACTION POTENTIALS. **Nordine Helassa, Elric Esposito, Tom Carter, Jonathan Bradley, David Ogden, Katalin Török**

1227-PLAT 5:15 PM

A NEW Ca^{2+} PROBE, CALSTABI-CAM, TARGETED TO RYANODINE RECEPTORS OF CARDIOMYOCYTES.

Sara Pahlavan, Yuming Yang, Caitlin Robertson, Naohiro Yamaguchi, Lars Cleemann, Martin Morad

1228-PLAT 5:30 PM

CAMKII-MEDIATED AMPLIFICATION IS ESSENTIAL TO NAADP SIGNALING IN CARDIAC MYOCYTES. **Rebecca A. Bayliss, Wee Lin, Emma Bolton, Duncan Bloor-Young, Grant C. Churchill, Antony Galione, Derek A. Terrar**

1229-PLAT 5:45 PM

CALCIUM SIGNALING INSIDE CILIA UPON MECHANICAL BENDING. Steven Su, Siew Cheng Phua, Robert DeRose,

Takanari Inoue

4:00 PM–6:00 PM, ROOM 132/133

Platform Cell Mechanics and Motility II

Co-Chairs

Jin-Sung Park, Korea Advanced Institute of Science and Technology, Korea
Pietro Cicuta, University of Cambridge, United Kingdom

1230-PLAT 4:00 PM

MECHANISMS OF THREE-DIMENSIONAL TUMOR CELL MOTILITY IN DENSE EXTRACELLULAR MATRICES.

Badriprasad Ananthanarayanan, Joanna MacKay, Gurshamnnot Singh, Ching-Wei Chang, Sanjay Kumar

1231-PLAT 4:15 PM

TRANSDUCTION CHANNELS' GATING CONTROLS FRICTION ON VIBRATING HAIR-CELL BUNDLES IN THE EAR. **Volker Bormuth**,

J r mie Barral, Jean Francois Joanny, Frank J licher, Pascal Martin

1232-PLAT 4:30 PM

EMERGENCE OF COLLECTIVE DYNAMICS IN SYSTEMS OF MOTILE CILIA. **Pietro Cicuta**, Nicolas Bruot, Jurij Kotar, Luke Debono, Dave Phillips, Stuart Box, Stephen Simpson, Simon Hanna

1233-PLAT 4:45 PM

CHARACTERIZATION OF DIFFERENT DYNAMIC MODES OF A CRAWLING *CAENORHABDITIS ELEGANS* BY DIRECT MEASUREMENT OF TRACTION FORCE. **Jin-Sung Park**,

Song Ih Ahn, Jennifer H. Shin

1234-PLAT 5:00 PM

OPTIMALITY OF FORCE TRANSMISSION IN A MOTOR-CLUTCH CELLULAR ADHESION MODEL. **Benjamin Bangasser**,

Steven Rosenfeld, David Odde

1235-PLAT 5:15 PM

FORCE SPECTRUM MICROSCOPY REVEALS ACTIVE DIFFUSIVE-LIKE FLUCTUATIONS IN LIVING CELLS.

Ming Guo, Allen Ehrlicher, Mikkel Jensen, Jeffrey Moore, Jennifer Lippincott-Schwartz, Frederick Mackintosh, David Weitz

1236-PLAT 5:30 PM

MYOSIN LIGHT CHAIN KINASE ACTIVITY REGULATES THE NUMBER OF LEADING EDGES IN ZEBRAFISH EMBRYONIC KERATOCYTES. **Sunny S. Lou**, Julie A. Theriot

1237-PLAT 5:45 PM

QUANTITATIVE SUBCELLULAR CONTROL OF CDC42, RAC1 AND RHOA GTPASES USING THE CRY2/CIBN OPTOGENETIC DIMERIZER. **Leo Valon**, Amanda Remorino, Fred Etoc, Simon De Beco, Maxime Dahan, Mathieu Coppey

4:00 PM–6:00 PM, ROOM 303

Platform Bioengineering

Co-Chairs

Elizabeth Bromley, Durham University, United Kingdom
SoonGweon Hong, University of California, Berkeley

1238-PLAT 4:00 PM

BIOMECHANICAL BASIS OF ALZHEIMER'S DISEASE AND OTHER PROTEIN MISFOLDING DISEASES: DESIGNING A NEW AFM PROBE TO STUDY AMYLOID-MEDIATED MEMBRANE DISORDERS. **Amanda K. Woodcock**, Brian Meckes, Ratnesh Lal

1239-PLAT 4:15 PM

LIGHT-POWERED BIONANOELECTRONIC DEVICES WITH BIOLOGICALLY-TUNABLE PERFORMANCE CHARACTERISTICS.

Ramya Tunuguntla, Kyunghoon Kim, Mangesh Bangar, Caroline Ajo-Franklin, Pieter Stroeve, Aleksandr Noy

1240-PLAT 4:30 PM

LIGHT DRIVEN CONFORMATIONAL SWITCHING: AN APPROACH TO CREATING DESIGNED PROTEIN MOTION.

Elizabeth Bromley, Lara Small, Asahi Cano-Marques, Dek Woolfson, Paul Curmi, Martin Zuckermann, Nancy Forde, Gerhard Blab, Heiner Linke

1241-PLAT 4:45 PM

HIGH THROUGHPUT LIVE-CELL FRET BINDING ASSAY BY FLOW CYTOMETRY. **Shin Rong Lee**, Lingjie Sang, David T. Yue

1242-PLAT 5:00 PM

QUANTIFYING CELL-SURFACE MARKER EXPRESSION THROUGH IMAGING OF TRANSIENT INTERACTIONS.

Mustafa A. H. Mir, Olivia Scheideler, Jeremy Whang, Lydia L. Sohn

1243-PLAT 5:15 PM

SORTING BACTERIUM CELLS USING CELL-IMPRINTED POLYMER THIN FILMS: FROM CONCEPT TO APPLICATIONS.

Kangning Ren, Niaz Banaei, Richard N. Zare

1244-PLAT 5:30 PM

PATIENT-SPECIFIC IPSCS-BASED LIVER-ON-A-CHIP.

SoonGweon Hong, Luke P. Lee

1245-PLAT 5:45 PM

A BIOPHYSICAL SOLUTION TO PREVENT HEMOLYSIS

[INTERFERENCES]. **Jun Ho Son**, Sang Hun Lee, Soongweon Hong, Seung-min Park, Joseph Lee, Andrea M. Dickey, Luke P. Lee

4:00 PM–6:00 PM, ROOM 304

Platform Protein Folding and Chaperones

Co-Chairs

Tania Baker, Massachusetts Institute of Technology
Susan Marqusee, University of California, Berkeley

1246-PLAT 4:00 PM

EXPERIMENTAL AND COMPUTATIONAL STUDIES ON THE DYNAMICS AND FLEXIBILITY OF PROTEIN DISULFIDE-ISOMERASE (PDI). **Robert B. Freedman**, John Blood, David Clarke, Jack Heal, Emilio Jimenez-Roldan, Rudolf Roemer, Narinder Sanghera

1247-PLAT 4:15 PM

OBSERVING AND CHARACTERIZING EARLY FOLDING INTERMEDIATES OF E. COLI RNASE H USING KINETIC AND EQUILIBRIUM APPROACHES. **Laura E. Rosen**, Sagar Kathuria, Katelyn Connell, Osman Bilsel, C. Robert Matthews, Susan Marqusee

1248-PLAT 4:30 PM

MECHANICAL PROTEIN UNFOLDING AND TRANSLOCATION BY AAA+ PROTEASES. **Adrian O. Olivares**, Juan Carlos Cordova, Stephane Calmat, Matthew J. Lang, Robert T. Sauer, Tania A. Baker

1249-PLAT 4:45 PM

THE CLXP PROTEASE EMPLOYS A NOVEL MECHANISM OF TRANSLOCATION USING A CONSTANT FREQUENCY OF PULLING BUT DIFFERENT GEARS. **Maya Sen**, Rodrigo A. Maillard, Kristofor Nyquist, Piere Rodriguez-Aliaga, Steve Press , Andreas Martin, Carlos Bustamante

1250-PLAT 5:00 PM
ATP ACTS AS SWITCH FOR TOGGLING CALRETICULIN BETWEEN ITS LECTIN AND CHAPERONE FUNCTION. **Karunesh Arora**, Charles L. Brooks III

1251-PLAT 5:15 PM
ALLOSTERIC OPENING OF THE POLYPEPTIDE-BINDING SITE WHEN AN HSP70 BINDS ATP. **Qinglian Liu**, Ruifeng Qi, Evans Sarbeng, Qun Liu, Katherine Le, Xiping Xu, Hongya Xu, Jiao Yang, Jennifer Wong, Christina Vorvis, Wayne Hendrickson, Lei Zhou

1252-PLAT 5:30 PM
STABILITY AND DYNAMICS OF ALPHA CRYSTALLIN OLIGOMERS PROBED BY FRET AND FCS REVEAL PERSISTENT OLIGOMERIZATION UNDER DILUTE CONDITIONS. Alexander H. Pearlman, Satyajee Salvi, Patricia B. O'Hara, **James A. Hebda**

1253-PLAT 5:45 PM
ENHANCED CHAPERONE CLUSTERING FACILITATES PROTEIN FOLDING IN THE ENDOPLASMIC RETICULUM OF YEAST. **Marc Griesemer**, Carissa Young, Anne S. Robinson, Linda Petzold

4:00 PM–6:00 PM, ROOM 305

Platform Protein-Lipid Interactions II

Co-Chairs

Jefferson Knight, University of Colorado, Denver
Shelli Frey, Gettysburg College

1254-PLAT 4:00 PM
MOLECULAR MECHANISMS OF HIGH-AFFINITY PHOSPHOINOSITIDE BINDING BY THE TANDEM C2 DOMAINS OF GRANUPHILIN/SLP-4. Tatyana A. Lyakhova, **Jefferson Knight**

1255-PLAT 4:15 PM
NMR OF CONDITIONAL PERIPHERAL MEMBRANE PROTEINS. Krystal A. Morales, Mikaela D. Stewart, **Tatyana I. Igumenova**

1256-PLAT 4:30 PM
THE ROLE OF PROTEIN AND MEMBRANE CONTEXT IN THE INTERACTION OF POLYGLUTAMINE PEPTIDES WITH LIPID MEMBRANES. Warren A. Campbell, **David Van Doren**, Kathleen A. Burke, Justin Legleiter, Shelli L. Frey

1257-PLAT 4:45 PM
ASSOCIATION OF α -SYNUCLEIN WITH LIPID VESICLES. STOPPED-FLOW KINETICS OF CONCERTED BINDING AND CONFORMATIONAL CHANGE. **Thomas M. Jovin**, Volodymyr V. Shvadchak, Remco Siero, Lisandro J. Falomir-Lockhart, Vinod Subramaniam

1258-PLAT 5:00 PM
FLUORINATED AROMATIC AMINO ACIDS DISTINGUISH CATION- π INTERACTIONS FROM MEMBRANE INSERTION. **Tao He**, Anne Gershenson, Jianmin Gao, Mary F. Roberts

1259-PLAT 5:15 PM
IN VITRO RECONSTITUTION OF TRANSCELLULAR TUNNELS CLOSURE. **Coline Prévost**, John Manzi, Hongxia Zhao, Pekka Lappalainen, Emmanuel Lemichez, Andrew Callan-Jones, Patricia Bassereau

1260-PLAT 5:30 PM
THE ASSEMBLY, STRUCTURE AND ACTIVATION OF INFLUENZA A M2 TRANSMEMBRANE DOMAIN DEPENDS ON LIPID MEMBRANE THICKNESS AND COMPOSITION. **Elka R. Georgieva**, Haley D. Norman, Peter P. Borbat, Jack H. Freed

1261-PLAT 5:45 PM
HSP70 ASSOCIATES WITH PHOSPHATIDYL SERINE MEMBRANES VIA THE PEPTIDE BINDING DOMAIN. **Antonio De Maio**, Gabrielle Armijo, Victor Lopez, Derek Gonzales, Jonathan Okerblom, Nelson Arispe, David M. Cauvi

4:00 PM–6:00 PM, ROOM 306

Platform Computational Methods

Co-Chairs

David Mobley, University of California, Irvine
Peter Mulligan, Stanford University

1262-PLAT 4:00 PM
BAYESIAN STRUCTURE DETERMINATION FROM SPARSE SINGLE MOLECULE X-RAY DIFFRACTION IMAGES. **Michal Walczak**, Helmut Grubmueller

1263-PLAT 4:15 PM
XMDFF: MOLECULAR DYNAMICS FLEXIBLE FITTING OF LOW-RESOLUTION X-RAY STRUCTURES. **Abhishek Singharoy**, Ryan McGreevy, Qufei Li, Jingfen Zhang, Eduardo Perozo, Klaus Schulten

1264-PLAT 4:30 PM
I-ATTRACT: A NEW FLEXIBLE DOCKING APPROACH FOR INVESTIGATING PROTEIN PROTEIN INTERACTIONS. **Christina Schindler**, Martin Zacharias

1265-PLAT 4:45 PM
PREDICTING CHARGED-LIGAND BINDING FROM MOLECULAR SIMULATIONS. **David L. Mobley**, Gabriel J. Rocklin

1266-PLAT 5:00 PM
RIBOSOMAL KINETICS AND CONCERTED MOTIONS FROM NANOSECONDS TO SECONDS. **Christian Blau**, Lars V. Bock, Gunnar F. Schröder, Iakov Davydov, Niels Fischer, Holger Stark, Marina V. Rodnina, Andrea C. Vaiana, Helmut Grubmueller

1267-PLAT 5:15 PM
ACCELERATE SAMPLING IN ATOMISTIC ENERGY LANDSCAPES USING TOPOLOGY-BASED COARSE-GRAINED MODELS. **Weihng Zhang**, Jianhan Chen

1268-PLAT 5:30 PM
ANALYSIS OF SIZE AND COMPOSITIONAL DISTRIBUTIONS OF PLEOMORPHIC ENSEMBLES ARISING FROM CLUSTERING OF MULTIVALENT BIOLOGICAL MOLECULES. **Cibele V. Falkenberg**, Michael L. Blinov, Leslie M. Loew

1269-PLAT 5:45 PM
DYNAMIC RE-DISCRETIZATION ALLOWS SIMULATION OF BIOPOLYMERS ACROSS LENGTH-SCALES. **Peter Mulligan**, Elena F. Koslover, Andrew J. Spakowitz

5:00 PM–6:30 PM, ROOM 123

Exhibitor Presentation HEKA Elektronik

HEKA Electrophysiology Update

For over 40 years, HEKA Elektronik 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 (<http://server.hekahome.de/scripts/events.php>), 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 Germany
 Jan Dolzer, Vice President Sales & Marketing, HEKA Elektronik Global
 Telly Galiatsatos, General Manager, HEKA Instruments USA

7:30 PM–12:00 AM, MARRIOTT MARQUIS, PACIFIC H, I, J
Child Care

8:00 PM–9:30 PM, ROOM 134/135
Awards and National Lecture

Chair

Francisco Bezanilla, University of Chicago, Society President

8:00 PM Presentation of Awards

8:15 PM National Lecture

1270-NATL

A JOURNEY THROUGH CELLULAR PROCESSES:
 ONE MOLECULE AT A TIME. **Carlos Bustamante**

9:30 PM–12:00 AM, MARRIOTT MARQUIS,
YERBA BUENA BALLROOM (LOWER B2 LEVEL)

Annual Meeting Reception and Dance

Registrants are invited to attend the reception following the National Lecture. Live music will accompany a dessert buffet. The cost is included in the registration fee. Badges will be required for admittance. Guest badges for this event are available for purchase during registration.

9:30 PM–12:00 AM, MARRIOTT MARQUIS,
GOLDEN GATE (B2 LEVEL)

Annual Meeting Reception and Quiet Room

Registrants are invited to attend the reception following the National Lecture. Light music will accompany a dessert buffet. The cost is included in the registration fee. Badges will be required for admittance. Guest badges for this event are available for purchase during registration.

MONDAY POSTER SESSIONS

The list of Monday Late Posters is in the Program addendum. The abstracts are available through the online itinerary planner.

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

<u>BOARD NUMBERS</u>	<u>CATEGORY</u>
B1–B26	Protein Gymnastics
B27–B56	Protein Folding and Unfolding
B57–B70	Enzyme Inhibition
B71–B87	Membrane Structure, Folding, and Design
B88–B111	Intrinsically Disordered Proteins I
B112–B127	DNA Replication and Dynamics
B128–B158	DNA Structure and Dynamics II
B159–B188	RNA Structure and Dynamics I
B189–B218	Membrane Physical Chemistry I
B219–B247	Membrane-Active Peptides and Toxins II
B248–B277	Protein-Lipid Interactions II
B278–B303	Membrane Receptors and Signal Transduction II
B304–B320	Exocytosis and Endocytosis I
B321–B326B	Nucleo-Cytoplasm Transport
B327–B347	Calcium Release Activated Calcium Channels
B348–B378	Calcium Fluxes, Sparks, and Waves I
B379–B397	Voltage-gated Na Channels II
B398–B417	Voltage-gated Ca Channels II
B418–B438	TRP Channels I
B439–B466	Ligand-gated Channels II
B467–B498	Cardiac Muscle I
B499–B524	Microtubules, Their Motors and Associated Proteins I
B525–B554	Cell Mechanics and Motility II
B555–B563	Intracellular Transport
B564–B593	Membrane Pumps, Transporters, and Exchangers I
B594–B607	Energy Transducing Membrane Protein Complexes
B608–B624	Gene Regulatory Systems: Prokaryotic and Eukaryotic
B625–B649	Computational SystemsBiology
B650–B665	Optogenetics
B666–B675	Diffractions and Scattering Techniques
B676–B706	Force Spectroscopy
B707–B730	Advances in Single-Molecule Spectroscopy II
B731–B760	Optical Microscopy and Super Resolution Imaging II
B761–B783	Molecular Dynamics I
B784–B813	Computational Methods I
B814–B843	Biosensors I
B844–B866	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 Gymnastics (Boards #B1–#B26)

- 1271-Pos BOARD #B1**
TRYPSINOGEN ACTIVATION OBSERVED IN ACCELERATED MOLECULAR DYNAMICS SIMULATIONS. **Leonardo Boechi**, J. Andrew McCammon
- 1272-Pos BOARD #B2**
CONFORMATIONAL STATES AND DYNAMICS OF NEURONAL CALCIUM SENSOR SYNAPTOTAGMIN. **Maria Bykhovskia**
- 1273-Pos BOARD #B3**
ACTIVE OUTPUT STATE OF THE SYNECHOCOCCUS KAI CIRCADIAN OSCILLATOR. **Mark Paddock**, Joseph Boyd, Susan Golden
- 1274-Pos BOARD #B4**
DETERMINATION OF THE DYNAMIC STRUCTURES OF IGG ANTIBODY BY INDIVIDUAL-PARTICLE ELECTRON TOMOGRAPHY. **Xing Zhang**, Lei Zhang, Matthew J. Rames, Gang Ren
- 1275-Pos BOARD #B5**
PULSED EPR DISTANCE MEASUREMENTS RESOLVE THE IMPACT OF SITE-SPECIFIC CALMODULIN METHIONINE OXIDATION. Megan McCarthy, Michael Olenek, Mitch Reuter, Rebecca Moen, David D. Thomas, **Jennifer C. Klein**
- 1276-Pos BOARD #B6**
OXIDATIVE STRESS MODULATES BIOACTIVITY OF LYMPHOTOXIN, BUT NOT TNF, THROUGH SITE-SPECIFIC OXIDATION OF METHIONINE RESIDUES. **Andrew K. Lewis**, Jonathan N. Sachs
- 1277-Pos BOARD #B7**
ASSESSING DYNAMIC FEATURES OF NF- κ B VIA MOLECULAR DYNAMICS SIMULATIONS AND ELASTIC NETWORK MODEL. **Arzu Uyar**, Vineet Pande, Cameron Mura, J. Andrew McCammon, Pemra Doruker, Lennart Nilsson
- 1278-Pos BOARD #B8**
CONFORMATIONAL PROPERTIES OF KINESIN'S NECK LINKER ACROSS SPECIES. **Jason Doornenbal**, Intisar Shaheed, Amanda Miguel, David Ando, Ajay Gopinathan
- 1279-Pos BOARD #B9**
CONFORMATIONAL CHANGES IN THE β SUBUNITS OF F_1F_0 -ATPASE REVEALED BY FRET MEASUREMENTS DURING THE ROTATION OF THE γ SUBUNIT. **Mitsuhiro Sugawa**, Masaru Kobayashi, Takashi Matsui, Tomoko Masaïke, Takayuki Nishizaka
- 1280-Pos BOARD #B10**
EFFECTS OF PHOSPHOMIMETIC MUTATIONS ON THE PERSISTENCE LENGTH AND THIN FILAMENT BINDING PROPERTIES OF α AND β -TROPOMYOSIN. **Greg Medlock**, Worawit Suphamungmee, An-Yue Tu, Xiaochuan (Edward) Li, Michael Regnier, Michael A. Geeves, William Lehman
- 1281-Pos BOARD #B11**
DYNAMICS IN THE TRANSMEMBRANE SEGMENT OF THE INFLUENZA A M2 PROTON CHANNEL. **Joana Paulino**, Ivan Hung, Timothy A. Cross
- 1282-Pos BOARD #B12**
ROTATION TRIGGERS NUCLEOTIDE-INDEPENDENT CONFORMATIONAL TRANSITION OF THE EMPTY BETA SUBUNIT OF F1-ATPASE. **Jacek Czub**, Milosz Wiczor, Adrian Tobiszewski, Helmut Grubmueller
- 1283-Pos BOARD #B13**
INTERDOMAIN DYNAMICS OF PHOSPHOGLYCERATE KINASE STUDIED BY SINGLE-MOLECULE FRET AND A MESOSCALE HYDRODYNAMICS SIMULATION. **Matteo Gabba**, Simon Poblete, Daryan Kempe, Antonie Schöne, Tina Züchner, Gerhard Gompper, Jörg Fitter
- 1284-Pos BOARD #B14 MINORITY AFFAIRS TRAVEL AWARDEE**
DETERMINANTS OF FIBRINOLYSIS IN SINGLE FIBRIN FIBERS. **Igal Bucay**, Steven D. Wulfe, Nathan E. Hudson, Tim O'Brien, Mike R. Falvo
- 1285-Pos BOARD #B15**
INTERNAL MOTIONS PRIME CIAP1 FOR RAPID ACTIVATION. **Aaron H. Phillips**, Allyn J. Schoeffler, Tsutomu Matsui, Thomas Weiss, Erin C. Dueber, Wayne J. Fairbrother
- 1286-Pos BOARD #B16**
THE FREE ENERGY CONTRIBUTION OF SH3 AND SH2 IN C-ABL 1B AUTOINHIBITION MECHANISM VIA A COMPUTATIONAL STRUCTURE-BASED MODEL. **Iaria Mereu**, Ludovico Sutto, Francesco L. Gervasio
- 1287-Pos BOARD #B17**
SINGLE MOLECULE OBSERVATION OF F1-ATPASE USING ARTIFICIAL SUBSTRATE AND AMINO ACID. **Ayako Yukawa**, Ryu John Iwatate, Rikiya Watanabe, Mako Kamiya, Ryota Iino, Shigehiko Hayashi, Yasuteru Urano, Hiroyuki Noji
- 1288-Pos BOARD #B18**
ACTIVATION CYCLE OF GaS PROTEIN ELUCIDATED BY ELASTIC NETWORK BASED SIMULATION. Minhyeok Kim, Youngjin Kim, Jaeboong Choi, Byeongsoo Lim, **Moon K. Kim**
- 1289-Pos BOARD #B19**
THE STATISTICAL CONFORMATION OF A HIGHLY FLEXIBLE PROTEIN: SMALL ANGLE X-RAY SCATTERING OF S. AUREUS PROTEIN A. **Jo A. Wiersma Capp**, Terrence G. Oas
- 1290-Pos BOARD #B20**
LSD1/COREST - H3-HISTONE MOLECULAR RECOGNITION: INTER-DOMAIN MOTIONS IN AN ALLOSTERIC NANOSCALE CLAMP REVEALED BY COMPUTER SIMULATIONS. **Nadeem Ahmad Vellore**, Riccardo Baron
- 1291-Pos BOARD #B21**
STRUCTURAL DYNAMICS OF THE HUMAN MRP1 DRUG TRANSPORTER REVEALED BY FLUORESCENCE RESONANCE ENERGY TRANSFER. **Surtaj H. Iram**, Seth L. Robia
- 1292-Pos BOARD #B22**
PROBING THE OUTER MEMBRANE OF PSEUDOMONAS AERUGINOSA USING MOLECULAR DYNAMICS SIMULATIONS. **Jamie Parkin**, Tim Carpenter, Syma Khalid
- 1293-Pos BOARD #B23**
UNDERSTANDING COLICIN N IMPORT INTO GRAM NEGATIVE BACTERIAL CELLS USING SMALL ANGLE NEUTRON SCATTERING. **Wanatchaporn Arunmanee**, Alexandra Solovyova, Christopher L. Johnson, Richard K. Heenan, Jeremy H. Lakey
- 1294-Pos BOARD #B24**
AFFINITIES OF SELECTIVE-SEROTONIN REUPTAKE INHIBITOR (SSRI) FOR HUMAN TRANSPORTERS: MOLECULAR MODELING AND QUANTUM CHEMICAL STUDIES. **Krishna Deepak**, Alok Jain, Ramasubbu Sankaramakrishnan

1295-Pos BOARD #B25
STRUCTURAL DIFFERENCES BETWEEN THE CLOSED AND OPEN STATES OF CHANNELRHODOPSIN-2 AS OBSERVED BY EPR SPECTROSCOPY. **Nils Krause**, Christopher Engelhard, Joachim Heberle, Ramona Schlesinger, Robert Bitl

1296-Pos BOARD #B26
ASSESSING THE TRANSPORT MECHANISM OF NEUROTRANSMITTER SODIUM SYMPORTER PROTEINS WITH MOLECULAR DYNAMICS. **Emily Benner**, Marco J. Acevedo, Jeffrey D. Madura

Protein Folding and Unfolding (Boards #B27–#B56)

1297-Pos BOARD #B27
SEQUENCE-FUNCTION RELATIONSHIPS IN ALLOSTERY MEDIATED BY DISORDER-TO-ORDER TRANSITIONS. **Christopher Eginton**, Dorothy Beckett

1298-Pos BOARD #B28
HIGH PRECISION FRET REVEALS DYNAMIC STRUCTURES IN THE DROSOPHILA SCAFFOLD PROTEIN COMPLEX STARDUST-DPATJ-DLIN-7 MEDIATED BY L27 DOMAINS. **Andreas Renner**, Suren Felekyan, Hugo Sanabria, Thomas Peulen, Claus A.M. Seidel, Elisabeth Knust

1299-Pos BOARD #B29
WIDE EXPLORATION OF OPEP PROTEIN ENERGY LANDSCAPES USING ADVANCED MONTE CARLO METHODS. **Tristan Cragolini**, Kyle H Sutherland-Cash, David Wales, Samuela Pasquali, Philippe Derreumaux

1300-Pos BOARD #B30
ORIGIN OF THE ARCHITECTURE OF BIOLOGICAL MACROMOLECULES - A MEAN-FIELD PERSPECTIVE. **Jozef A. Liwo**, Adam K. Sieradzan, Yi He, Pawel Krupa, Cezary R. Zaplewski, Andrey Krokhotin, Antti J. Niemi, Harold A. Scheraga

1301-Pos BOARD #B31
PROTEIN FLEXIBILITY AND STABILITY: THERMOPHILES KNOW BEST. **Maria Kalimeri**, Simone Melchionna, Fabio Sterpone

1302-Pos BOARD #B32
EXPLORING THE RELATION BETWEEN UNFOLDED PROTEIN ENSEMBLES, TRANSFORMATIONS BETWEEN STRUCTURES, AND REFOLDING KINETICS. **Steven Samuel Plotkin**

1303-Pos BOARD #B33
COUPLING BETWEEN PROTEIN CONFORMATION AND LOCAL UNFOLDING HIGHLIGHTS THE ROLE OF DISORDER IN PROTEIN FUNCTION AND SUGGESTS A NEW TARGET FOR TUBERCULOSIS TREATMENT. **Thomas E. Morrell**, Ilona U. Rafalska-Metcalf, Jih-Wei Chu, Haw Yang

1304-Pos BOARD #B34
COMPUTATIONAL METHODS FOR MEASURING THE FREE ENERGY OF FOLDING IN THE RIBOSOMAL EXIT TUNNEL. **Anthony Hazel**, James C. Gumbart

1305-Pos BOARD #B35
STRUCTURE AND DYNAMICS OF INTERMEDIATE PROTEIN STATES BY NMR AND SIMULATIONS. **Alfonso De Simone**

1306-Pos BOARD #B36
ELUCIDATING THE STRUCTURAL BASIS OF α -SYNUCLEIN FIBRILLATION USING SMALL CAMELID NANOBODIES. **Farah El Turk**, Giulia Tomba, Erwin De Genst, Tim Guillams, Predrag Kukic, Michele Vendruscolo, Christopher Dobson

1307-Pos BOARD #B37
INFLUENCE OF GOLD NANOPARTICLES ON THE KINETICS OF ALPHA-SYNUCLEIN AGGREGATION. Yanina D. Alvarez, **Jonathan A. Fauerbach**, Jessica V. Pellegrotti, Thomas M. Jovin, Elizabeth A. Jares-Erijman, Fernando D. Stefani

1308-Pos BOARD #B38
UNFOLDING DYNAMICS OF THE CYCLIC NUCLEOTIDE BINDING DOMAIN AND C-LINKER OF HCN CHANNELS. **Andrea Pedroni**, Anna Moroni, Andrea Alfieri, Loredana Casalis, Paolo Fabris, Vincent Torre

1309-Pos BOARD #B39
UNFOLDING THE STRUCTURE OF LEUT EMPLOYING LUMINESCENCE RESONANCE ENERGY TRANSFER. **Azmat Sohail**, Oliver Kudlacek, Markus Daerr, Peggy Stolt-Bergner, Gerhard Ecker, Michael Freissmuth, Klaus Wanner, Thomas Stockner, Walter Sandtner, Harald Sitte

1310-Pos BOARD #B40
DETERMINING THE RATE OF UNFOLDING AND REFOLDING OF FNIII DOMAINS BY LABELING BURIED CYSTEINE. **Riddhi S. Shah**, Terrence G. Oas, Harold P. Erickson

1311-Pos BOARD #B41
LOOKS CAN BE DECEIVING: A SINGLE MUTATION ON AN IG DOMAIN ALTERS DYNAMICS WHILE CONSERVING STRUCTURE. IMPLICATIONS FOR AL, A MISFOLDING DISEASE. **Gilberto Valdes-Garcia**, Roberto Carlos Maya-Martinez, Cesar Millan-Pacheco, Carlos Amero-Tello, Nina Pastor

1312-Pos BOARD #B42
SUPER-LONG, SINGLE ALPHA HELICES: A MECHANICAL UNFOLDING STUDY. **Matthew Batchelor**

1313-Pos BOARD #B43
INTERACTIONS OF UREA WITH THE FOLDED AND UNFOLDED STATES OF PROTEINS. **Yuen Lai Shek**, Ikbae Son, Tigran V. Chalikian

1314-Pos BOARD #B44
VOLUME CHANGES UPON UNFOLDING OF GLOBULAR PROTEINS: COMPUTATIONAL AND EXPERIMENTAL STUDIES. **George Makhatadze**

1315-Pos BOARD #B45
CONFORMATIONAL FLEXIBILITY AND STRUCTURE IN HIGH-PRESSURE EXCITED STATES OF APOMYOGLOBIN REVEALED BY SDS-EPR. **Michael Lerch**, Carlos López, Wayne L. Hubbell

1316-Pos BOARD #B46
SINGLE PROTEIN COMPLEXES ISOMERIZATION AND CONFORMATIONAL DYNAMICS USING TRAPPED ION MOBILITY SPECTROMETRY: FROM MS TO SECONDS. **Francisco Fernandez-Lima**

1317-Pos BOARD #B47
MINIMA AND BARRIERS ON THE PRESSURE-TEMPERATURE FREE ENERGY LANDSCAPE OF PHOSPHOGLYCERATE KINASE. **Maxim B. Prigozhin**, Shobhna Kapoor, Roland Winter, Martin Gruebele

1318-Pos BOARD #B48
ACCELERATED MONTE-CARLO SIMULATIONS FOR ALL-ATOM PROTEIN FOLDING. **Moritz Wolf**, Timo Strunk, Wolfgang Wenzel

1319-Pos BOARD #B49
THERMODYNAMIC CHARACTERIZATION OF PROTEIN FOLDING USING MONTE CARLO METHODS. **Nana M. Heilmann**, Moritz Wolf, Timo Strunk, Julia Setzler, Martin Brieg, Wolfgang Wenzel

1320-Pos BOARD #B50
MECHANISTIC EXPLANATION OF DIFFERENT UNFOLDING BEHAVIORS OBSERVED FOR TRANSMEMBRANE AND SOLUBLE β -BARREL PROTEINS. **Ulf Hensen**, Daniel J. Mueller

1321-Pos BOARD #B51
DECIPHERING FOLDING PATHWAYS OF PHAGE T4 LYSOZYME: INFLUENCE OF MULTIPLE CONFORMATIONS. **Katherina Hemmen**, Dmitro Rodnin, Daniel Rohrbeck, Soheila Rezaei Adariani, Hugo Sanabria, Claus A. M. Seidel

1322-Pos BOARD #B52
KINETIC OF LOOP FORMATION IN POLYPEPTIDES AND FREE ENERGY LANDSCAPES. **Emanuele Paci**, James Gowdy

1323-Pos BOARD #B53
VOLUME AND ENTHALPY PROFILE OF SURFACTANT-INDUCED PROTEIN FOLDING IN FERROUS CYTOCHROME-C, USING CO PHOTO-DISSOCIATION METHODS. **Tarah A. Word**, Randy W. Larsen

1324-Pos BOARD #B54
COMBINE HIGH-RESOLUTION OPTICAL TWEEZER DATA WITH PROTEIN CRYSTAL STRUCTURE TO DERIVE ENERGY, KINETICS, AND STRUCTURE OF CONFORMATIONAL STATES ALONG PROTEIN FOLDING PATHWAY. **Aleksander Rebane**, Yongli Zhang

1325-Pos BOARD #B55 EDUCATION TRAVEL AWARDEE
SUPPRESSION OF PICOSECOND DYNAMICS IN β -CASEIN UPON CALCIUM BINDING. **Stefania Perticaroli**, Jonathan D. Nickels, Georg Ehlers, Eugene Mamontov, Alexei P. Sokolov

1326-Pos BOARD #B56
PARTIAL FOLDING AND UNIQUE ATP FUNCTION IN PROTEIN PHOSPHATASE 2A LATENCY AND ACTIVATION. **Yongna Xing**

Enzyme Inhibition (Boards #B57–#B70)

1327-Pos BOARD #B57
MOLECULAR DYNAMICS OF THE DENGUE VIRUS NS3/NS2B PROTEASE IN PRESENCE OF INHIBITOR OR SUBSTRATE. **Maria Carolina P. Lima**, Gustavo de Miranda Seabra

1328-Pos BOARD #B58
DYNAMICAL NETWORK IN HIV-1 PROTEASE AND ITS MUTANTS: IMPLICATIONS ON DRUG RESISTANCE. **Rajeswari Appathurai**, Sanjib Senapati

1329-Pos BOARD #B59 MINORITY AFFAIRS TRAVEL AWARDEE
UNDERSTANDING THE MOLECULAR MECHANISM OF SYNERGISTIC INHIBITION IN THE HEPATITIS C VIRUS (HCV) POLYMERASE USING MOLECULAR DYNAMICS SIMULATIONS AND FREE ENERGY CALCULATIONS. **Jodian A. Brown**, Ian F. Thorpe

1330-Pos BOARD #B60
REGULATORY ELEMENTS OF HCV NS5B POLYMERASE - β -LOOP AND C-TERMINAL TAIL - ARE REQUIRED FOR ACTIVITY OF ALLOSTERIC THUMB SITE II INHIBITORS. **Anita Niedziela-Majka**, Sarah E. Boyce, Neeraj Tirunagari, Jason Perry, Melanie Wong, Elaine Kan, Leanna Lagpacan, Ona Barauskas, Magdeleine Magdeleine Hung, Martijn Fenaux, Todd Appleby, William J. Watkins, Uli Schmitz, Roman Sakowicz

1331-Pos BOARD #B61
COMPUTATIONAL THROMBIN INHIBITOR OPTIMIZATION. **Vytautas Gapsys**, Bert de Groot

1332-Pos BOARD #B62
PROBING THE LIGAND BINDING MECHANISM OF MNK INHIBITORS BY DOCKING AND MOLECULAR DYNAMICS SIMULATIONS. **Srinivasaraghavan Kannan**, Anders Poulsen, Haiyan Yang, Melvyn Ho, May Ann, Lohitha Rao Chennamaneni, Jeffrey Hill, Chandra S. Verma, Kassoum Nacro

1333-Pos BOARD #B63
DEVELOPMENT OF NOVEL XANTHINE OXIDASE INHIBITORS WITH RADICAL SCAVENGING PROPERTIES FOR THE PREVENTION OF REPERFUSION INJURIES. **Stefan Paula**, Taylor Kidd, Emily Hofmann, Rebekka Meeks, Reid Kline, Thuy Do, Timothy Dunn, Lili Ma

1334-Pos BOARD #B64
DATA MINING THE PDB: PHOSPHORYLATION CAN DIRECTLY INTERFERE WITH DRUG BINDING. **Kyle P. Smith**, Kathleen M. Gifford, Julian L. Klosowiak, Sarah E. Rice

1335-Pos BOARD #B65
EFFECT OF NATURAL PRODUCT EXTRACTS ON LIPOXYGENASE, CYCLOOXYGENASE, AND PROTEIN TYROSINE PHOSPHATASE 1B. **Magdalena M. Siodlak**, Sharada T. Buddha

1336-Pos BOARD #B66
STRUCTURE-THERMODYNAMICS CORRELATIONS OF FLUORINATED BENZENSULFONAMIDES AS INHIBITORS OF HUMAN CARBONIC ANHYDRASES. **Daumantas Matulis**, Joana Gylytė, Asta Zubrienė, Virginija Dudutienė, Alexey Smirnov, Lena Manakova, Saulius Gražulis

1337-Pos BOARD #B67
AN ASYMMETRIC PATTERN IN BINDING OF PROSTAGLANDIN ENDOPEROXIDE H SYNTHASES TO THEIR INHIBITORS AND ITS IMPLICATIONS FOR ENZYME CATALYSIS AND ALLOSTERIC REGULATION. **Inseok Song**

1338-Pos BOARD #B68
A NOVEL AROMATIC CARBOXYLIC ACID INHIBITS LUCIFERASE ENZYMATIC ACTIVITY IN MAMMALIAN CELLS BY ACYLATION OF AN ACTIVE REGULATORY LYSINE RESIDUE. **Madoka Nakagomi**, Koichi Shudo, Satoshi Sakamoto, Hiroshi Handa, Takeo Iwamoto, Tomokazu Matsuura

1339-Pos BOARD #B69
STRUCTURE ANALYSIS OF HISTIDINE DECARBOXYLASE IN COMPLEX WITH INHIBITORS. **Hirofumi Komori**, Yoko Nitta, Hiroshi Ueno, Yoshiki Higuchi

1340-Pos BOARD #B70
COVALENT DOCKING OF LARGE LIBRARIES FOR THE DISCOVERY OF CHEMICAL PROBES. **Nir London**, Rand M. Miller, John J. Irwin, Oliv Eidam, Lucie Gibold, Richard Bonnet, Brian K. Shoichet, Jack Taunton

Membrane Structure, Folding, and Design (Boards #B71–#B87)

1341-Pos BOARD #B71
THERMODYNAMIC AND FUNCTIONAL ANALYSIS OF CLC DIMERIZATION. **Nicholas B. Last**, Christopher Miller

1342-Pos BOARD #B72
POLAR INTERACTIONS TRUMP HYDROPHOBICITY IN STABILIZING A MEMBRANE-INTERACTING PROTEIN. **Sebastian Fiedler**, Jana Broecker, Sandro Keller

1343-Pos BOARD #B73
BUILDING AN ARTIFICIAL MEMBRANE PROTEIN: DESIGN, EXPRESSION AND CHARACTERIZATION IN MICELLES AND LIPID VESICLES. **Geetha N. Goparaju**, Bryan A. Fry, P. Leslie Dutton, Bohdana M. Discher

1344-Pos BOARD #B74
FOLDING DYNAMICS AND MOLECULAR INTERACTIONS OF OUTER MEMBRANE PROTEIN A. **Guipeun Kang**, Judy E. Kim

1345-Pos BOARD #B75
FOLDING AND LIPID MEMBRANE INTERACTIONS OF BAMD, AN ESSENTIAL COMPONENT OF THE β -BARREL ASSEMBLY MACHINE FROM ESCHERICHIA COLI. Meenakshi Sharma, Geetika J. Patel, **Jörg H. Kleinschmidt**

1346-Pos BOARD #B76
INFLUENCES OF THE HYDROPHOBIC ENVIRONMENT ON THE STRUCTURE AND FUNCTION OF MEMBRANE PROTEINS AND DEVELOPMENT OF INNOVATIVE SURFACTANTS CALLED AMPHIPOLS. **Manuela A. Zoonens**

1347-Pos BOARD #B77
MEMBRANE-ENABLED DIMERIZATION OF THE INTRINSICALLY DISORDERED CYTOPLASMIC DOMAIN OF ADAM10. **Wei Deng**, Sungyun Cho, Pin-Chuan Su, Bryan W. Berger, Renhao Li

1348-Pos BOARD #B78
DETERMINING THE STRUCTURAL TOPOLOGY OF KCNE1 IN A LIPID BILAYER USING ELECTRON PARAMAGNETIC RESONANCE (EPR) SPECTROSCOPY. **Andrew F. Craig**, Indra D. Sahu, Rongfu Zhang, Megan M. Dunagan, Andrew G. Meiberg, Corrine N. Harmon, Robert M. McCarrick, Gary A. Lorigan

1349-Pos BOARD #B79
STRUCTURE OF A THREE HELIX MEMBRANE PROTEIN FROM ORIENTED SAMPLE AND MAGIC ANGLE SPINNING NMR DATA. **Dylan T. Murray**, Ivan Hung, Timothy A. Cross

1350-Pos BOARD #B80
STRUCTURAL STUDIES OF HETEROMERIC CONNEXIN26/30 HEMICHANNELS VIA ATOMIC FORCE MICROSCOPY IMAGING. **Pamela A. Naulin**, Y Liu, A L. Harris, Jorge E. Contreras, Nelson P. Barrera

1351-Pos BOARD #B81
COMPARATIVE ANALYSIS OF FULL-LENGTH CYTOCHROMES P450 IN COMPLEXES WITH CYTOCHROME B5 IN MEMBRANE. **Irina Pogozheva**, Rui Huang, Ayyalusamy Ramamoorthy, Andrei L. Lomize

1352-Pos BOARD #B82
THEORETICAL INVESTIGATION OF TRHBN ASSOCIATION TO BIOLOGICAL MEMBRANES. Rheault Jean-François, Auger Michèle, Guertin Michel, **Lague Patrick**

1353-Pos BOARD #B83
STRUCTURE, DYNAMICS, AND RECEPTOR BINDING OF OPA PROTEINS. **Ryan H. Lo**, Daniel A. Fox, Linda Columbus

1354-Pos BOARD #B84
STRUCTURE AND FUNCTION OF THE BETA-BARREL ASSEMBLY MACHINE AND ITS ASSOCIATED CHAPERONES. **Marcelo Sousa**

1355-Pos BOARD #B85
MECHANISMS OF MEMBRANE-PROTEIN INSERTION AT THE INNER AND OUTER MEMBRANES. **James C. Gumbart**

1356-Pos BOARD #B86
HIGH PRECISION FRET ANALYSIS OF THE G-PROTEIN COUPLED RECEPTOR TGR5 IN LIVE CELLS. **Annemarie Koch**, Manuel Frohnapfel, Christoph Gertzen, Holger Gohlke, Verena Keitel, Claus A.M. Seidel

1357-Pos BOARD #B87
SINGLE-MOLECULE STUDY OF TRANSMEMBRANE PROTEIN TRANSPORT. **Krishna C. Mudumbi**, Weidong Yang

Intrinsically Disordered Proteins I (Boards #B88–#B111)

1358-Pos BOARD #B88
PROBING THE INTERACTION BETWEEN α -SYNUCLEIN AND LIPID MEMBRANES BY NMR SPECTROSCOPY. **Giuliana Fusco**, Christopher Martin Dobson

1359-Pos BOARD #B89
ASSESSING THE STRUCTURAL DYNAMICS AND MEMBRANE INTERACTIONS OF THE DISORDERED PROTEIN ALPHA-SYNUCLEIN. **Michael M. Lacy**, Vanessa C. Ducas, Anthony R. Braun, Jonathan N. Sachs, Elizabeth Rhoades

1360-Pos BOARD #B90
SITE-SPECIFIC HYDRATION DYNAMICS ILLUMINATES THE KEY STRUCTURAL FEATURES OF MEMBRANE-BOUND ALPHA-SYNUCLEIN. **Samrat Mukhopadhyay**, Neha Jain, Karishma Bhasne, M. Hemaswathi

1361-Pos BOARD #B91
DETERMINATION OF PRIMARY NUCLEATION MECHANISMS OF ALPHA-SYNUCLEIN AMYLOID AGGREGATION. **Francesco A. Aprile**, Georg Meisl, Alexander K. Buell, Patrick Flagmeier, Christopher M. Dobson, Michele Vendruscolo, Tuomas P. J. Knowles

1362-Pos BOARD #B92
OLIGOMERISATION OF ALPHA-SYNUCLEIN AT PHYSIOLOGICAL CONCENTRATIONS. **Marija Iljina**

1363-Pos BOARD #B93 INTERNATIONAL TRAVEL AWARDEE
SINGLE-MOLECULE SPECTROSCOPY REVEALS POLYMER EFFECTS OF DISORDERED PROTEINS IN CROWDED ENVIRONMENTS. **Andrea Soranno**, Iwo Koenig, Madeleine B. Borgia, Hagen Hofmann, Franziska Zosel, Daniel Nettels, Ben Schuler

1364-Pos BOARD #B94
SINGLE-MOLECULE CHARACTERISATION OF ALPHA-SYNUCLEIN OLIGOMERS. **Mathew H. Horrocks**, Steven F. Lee, Sonia Gandhi, Marija Iljina, Laura Tosatto, Christopher M. Dobson, David Klenerman

1365-Pos BOARD #B95
REPEATS IN THE ALPHA-SYNUCLEIN SEQUENCE DETERMINE ITS CONFORMATION ON MEMBRANES AND INFLUENCE AGGREGATION PROPERTIES. Volodymyr Shvadchak, **Vinod Subramaniam**

1366-Pos BOARD #B96
SINGLE MOLECULE FRET CHARACTERIZATION OF OLIGOMERS FROM ALPHA-SYNUCLEIN EARLY ONSET PARKINSON'S DISEASE MUTANTS. **Laura Tosatto**, Mathew H. Horrocks, Cremades Nunilo, Tim Williams, Mauro Dalla Serra, David Klenerman

1367-Pos **BOARD #B97**
 LONG-RANGE DISTANCE CONSTRAINTS FOR THE FIBRIL FOLD OF PARKINSON'S PROTEIN ALPHA-SYNUCLEIN.
 Maryam Hashemi Shabestari, Pravin Kumar, Ine M.J. Segers-Nolten, Mireille M.A.E. Claessens, Bart D. van Rooijen, Vinod Subramaniam,
Martina Huber

1368-Pos **BOARD #B98**
 STRUCTURE OF THE TRANSIENT, MEMBRANE-ACTIVE AMYLOID BETA OLIGOMERS IN PHYSIOLOGICAL SOLUTIONS PROBED BY A COMBINATION OF FLUORESCENCE AND SOLID STATE NMR. **Bappaditya Chandra**, Bidyut Sarkar, Venus Singh, Arghya Mandal, Muralidharan Chandrakesan, Perunthiruthy K. Madhu, Sudipta Maiti

1369-Pos **BOARD #B99**
 SYSTEMATIC CHARACTERIZATION OF WILD TYPE AND FAMILIAL ALZHEIMER'S DISEASE MUTANT A β MONOMERS THROUGH THE CONVERGENCE OF ENSEMBLES SIMULATED WITH DIFFERENT FORCE FIELDS. **David J. Rosenman**, Nicolina Clemente, Chunyu Wang, Angel E. García

1370-Pos **BOARD #B100**
 STRUCTURAL AND MECHANISTIC ANALYSES OF THE EFFECTS OF SMALL COMPOUNDS ON AMYLOID BETA SELF-ASSEMBLY. **Johnny Habchi**, Priyanka Joshi, Alessandro Spilotos, Dmitri Svergun, Michele Vendruscolo

1371-Pos **BOARD #B101** INTERNATIONAL TRAVEL AWARDEE
 DECOUPLING CONFORMATION, AGGREGATION AND FUNCTION OF AMYLOID- β MONOMERS AND OLIGOMERS: AN FCS, SERS AND AFM STUDY. **Debanjan Bhowmik**, Christina MacLaughlin, Gilbert C. Walker, Sudipta Maiti

1372-Pos **BOARD #B102**
 TRANSTHYRETIN INTERACTS WITH AMYLOID-BETA OLIGOMERS TO DELAY AMYLOID AGGREGATION.
Kanchan Garai, Xinyi Li, Evan M. Powers, Joel Buxbaum, Rohit Pappu

1373-Pos **BOARD #B103**
 AMYLIN INTERACTS WITH A β AND MAY ACCELERATE THE DEVELOPMENT OF DEMENTIA. Kaleena Jackson, Simon Xie,
Florin Despa

1374-Pos **BOARD #B104**
 MAPPING THE STRUCTURE OF TAU USING SINGLE MOLECULE FRET. **Xiaohan Li**, Elizabeth Rhoades

1375-Pos **BOARD #B105**
 EXPLORING A TWO-STEP ADSORPTION OF AN INTRINSICALLY DISORDERED PEPTIDE AT MODEL TEMPLATES.
Prajnaparamita Dhar, Jordan Hildenbrand

1376-Pos **BOARD #B106**
 INCREASED AFFINITY FOR TUBULIN IMPAIRS TAU FUNCTION. **Elizabeth Rhoades**, Shana Elbaum-Garfinkle, Garrett Cobb, Jocelyn T. Compton, Xiaohan Li

1377-Pos **BOARD #B107** EDUCATION TRAVEL AWARDEE
 STATHMIN EXISTS AS AN OLIGOMER IN SOLUTION, AS EVIDENCED BY STATIC LIGHT-SCATTERING, NATIVE GEL ELECTROPHORESIS, AND EPR SPECTROSCOPY. **Ashley J. Chui**, Katherina C. Chua, Michael D. Bridges

1378-Pos **BOARD #B108**
 GLI3/SPOP MULTIVALENT INTERACTIONS ARE CONCENTRATION-DEPENDENT. **Melissa R. Marzahn**, Tanja Mittag

1379-Pos **BOARD #B109**
 SOLVENT EFFECTS ON THE STRUCTURE AND INTERNAL DYNAMICS OF CALCITONIN GENE-RELATED PEPTIDE.
Sara M. Sizemore, Stephanie M. Cope, Anindya Roy, Giovanna Ghirlanda, Sara M. Vaiana

1380-Pos **BOARD #B110**
 MOLECULAR CROWDING STABILIZES BOTH THE INTRINSICALLY DISORDERED CALCIUM-FREE STATE AND THE FOLDED CALCIUM-BOUND STATE OF AN RTX PROTEIN: IMPLICATION FOR TOXIN SECRETION.
 Ana Cristina Sotomayor Pérez, Orso Subrini, Audrey Hessel, Daniel Ladant, **Alexandre Chenal**

1381-Pos **BOARD #B111**
 STRUCTURAL ENSEMBLES OF INTRINSICALLY DISORDERED PROTEINS DEPEND STRONGLY ON FORCE FIELD.
Sarah Rauscher, Vytautas Gapsys, Andreas Volkhardt, Christian Blau, Bert L. de Groot, Helmut Grubmüller

DNA Replication and Dynamics (Boards #B112–#B127)

1382-Pos **BOARD #B112**
 REPLICATIVE HELICASE ASSISTS DNA POLYMERASE IN BYPASSING A LESION. **Bo Sun**, James T. Inman, Benjamin Y. Smith, Yi Yang, Smita S. Patel, Michelle D. Wang

1383-Pos **BOARD #B113**
 DNA UNWINDING BY PCRA HELICASE AND REPD USING TIRF AND MAGNETIC TWEEZERS. Algirdas Toleikis, Simone Kunzelmann, Gregory I. Mashanov, Martin R. Webb, **Justin E. Molloy**

1384-Pos **BOARD #B114**
 SINGLE MOLECULE STUDY OF HIV-1 REVERSE TRANSCRIPTASE POLYMERIZATION ACTIVITY IN THE PRESENCE OF NC. **Kiran Pant**, Robert J. Gorelick, Ioulia Rouzina, Mark C. Williams

1385-Pos **BOARD #B115**
 A NOVEL FUNCTION OF THE BACTERIAL REPLICATION INITIATOR PROTEIN DNAA. **Paola E. Mera**, Virginia Kalogeraki, Lucy Shapiro

1386-Pos **BOARD #B116**
 DYNAMICS OF DSDNA BREAK, ORGANIZATION OF THE NUCLEUS BASED ON POLYMER DYNAMICS. **David Holcman**, Assaf Amitai

1387-Pos **BOARD #B117**
 DNA SECONDARY STRUCTURE FORMATION IN BACTERIAL GENE CAPTURE SYSTEMS AT SINGLE-MOLECULE RESOLUTION. Marko Swoboda, Maj Svea Grieb, Varsha Natarajan, Aleksandra Nivina, Didier Mazel, **Michael Schlierf**

1388-Pos **BOARD #B118**
 INVESTIGATING THE DYNAMICS OF THE β_2 SLIDING CLAMP IN ESCHERICHIA COLI AT THE SINGLE-CELL LEVEL UTILIZING SINGLE-MOLECULE FLUORESCENCE MICROSCOPY.
Sriram Tiruvadi Krishnan, Martin Charl Moolman, Jacob W.J. Kerssemakers, Theo van Laar, Pawel Tulinski, Rodrigo Reyes-Lamothe, David J. Sherratt, Nynke H. Dekker

1389-Pos **BOARD #B119**
 SV40 HELICASE UNWINDS DNA AGAINST FORCE.
Mariana Koeber, Zhongbo Yu, Kollol Aguan, Bojk Berghuis, David Dulin, Nynke H. Dekker

1390-Pos BOARD #B120
SIMULTANEOUS IMAGING OF LEADING- AND LAGGING-STRAND SYNTHESIS REVEALS DISTINCT OPERATIONAL MODES OF SINGLE REPLICATION MACHINES. **Karl E. Duderstadt**, Christiaan M. Punter, Arkadiusz W. Kulczyk, Charles C. Richardson, Antoine M. van Oijen

1391-Pos BOARD #B121
DOMAIN ARCHITECTURE OF RECQ HELICASE DEFINES MECHANOCHEMICAL LINKAGE VIA MULTIPARTITE INTERACTIONS WITH DNA SUBSTRATE DURING UNWINDING ACTIVITY. Gabor Harami, Yeonee Seol, Junghoon In, Kata Sarlos, Yuze Sun, Mate Martina, Keir C. Neuman, **Mihaly Kovacs**

1392-Pos BOARD #B122
VIZUALIZING REPLICATION RESTART PROCESS IN VIVO WITH SINGLE-MOLECULE SENSITIVITY. **Sarah M. Mangiameli**, Paul A. Wiggins, Houra Merrikh, Chris Merrikh

1393-Pos BOARD #B123
COMPLEX TEMPERATURE DEPENDENT EQUILIBRIA DICTATE DNA POLYMERASE EXCHANGE PROCESSES DURING SYNTHESIS. **Michael A. Trakselis**, Robert J. Bauer, Hsiang-Kai Lin, Linda Jen-Jacobson

1394-Pos BOARD #B124
MECHANISTIC STUDIES OF DNA-PROTEIN INTERACTIONS IN BACTERIOPHAGE T4 DNA REPLICATION COMPLEXES AT SINGLE-BASE RESOLUTION. **Davis Jose**, Steven E. Weitzel, Walter A. Baase, Peter H. von Hippel

1395-Pos BOARD #B125
A NOVEL FRET-BASED STRUCTURE OF DNA POLYMERASE COMPLEXED WITH KINKED GAPPED-DNA. **Timothy D. Craggs**, Marko Sustarsic, Johannes Hohlbein, Andrew Cuthbert, Nicholas Taylor, Geraint Evans, Achillefs N. Kapanidis

1396-Pos BOARD #B126
TIME-RESOLVED PLASMID COUNTING BY WAY OF TRANSCRIPTION FACTOR SEQUESTRATION. **Robert Brewster**, Franz Weinert, Rob Phillips

1397-Pos BOARD #B127
CONCENTRATION-DEPENDENT EXCHANGE OF REPLICATION PROTEIN A ON SINGLE-STRANDED DNA REVEALED BY SINGLE-MOLECULE IMAGING. **Bryan Gibb**, Ling F. Ye, Stephanie C. Gergoudis, YoungHo Kwon, Hengyao Niu, Patrick Sung, Eric C. Greene

DNA Structure and Dynamics II (Boards #B128-#B158)

1398-Pos BOARD #B128
THE EFFECTS OF BASE STACKING ON DNA FLEXIBILITY. **Lauren S. Mogil**, Justin P. Peters, Jim Maher

1399-Pos BOARD #B129
CONFORMATIONAL TRANSITION OF NANOSLIT CONFINED DNA AT LOW IONIC STRENGTHS. **JinYong Lee**, Kyubong Jo

1400-Pos BOARD #B130
PROBING SEQUENCE AND TOPOLOGICAL SPECIFICITY IN THE BINDING OF TETRA(METHYLPYRIDYL)PORPHINES TO DNAs. **Stephen A. Winkle**, Jennifer Barretta, Diane Edgar, Raul Castillo, Olga Roman, Roxana Roque, Jessica Millar, Maria Ballester

1401-Pos BOARD #B131
MOLECULAR DYNAMIC STUDIES OF Z[WC] DNA AND THE B TO Z-DNA TRANSITION. Michael G. Lerner, **Jinhee Kim**, Alexander K. Seewald

1402-Pos BOARD #B132
NANOCONFINED CIRCULAR DNA. **Mohammadreza Alizadehheidari**, Erik Werner, Charleston Noble, Lena Nyberg, Joachim Fritzsche, Bernhard Mehlig, Jonas Tegenfeldt, Tobias Ambjörnsson, Fredrik Persson, Fredrik Westerlund

1403-Pos BOARD #B133
SIMULATIONS OF CROSSLINKING EFFICIENCY AND SEQUENCE SPECIFICITY OF NITROGEN MUSTARD ANTICANCER DRUGS. **Moon Joon Park**, Michael E. Colvin

1404-Pos BOARD #B134
CHARACTERIZATION OF DNA-CTAB AGGREGATES. Kathleen Westervelt, **Pamela M. St. John**

1405-Pos BOARD #B135
SINGLE MOLECULE STUDIES OF SEQUENCE DEPENDENCE ELASTICITY IN DNA. **Julia T. Bourg**, Krishnan Raghunathan, Alan Kandinov, Joshua N. Milstein, Jens-Christian Meiners

1406-Pos BOARD #B136
MECHANICAL PROPERTIES OF DNA-LIKE POLYMERS. **Justin P. Peters**, L. James Maher III

1407-Pos BOARD #B137
INVESTIGATING THE DNA FOLDING MECHANICS OF PROTAMINE. **Ji Hoon Lee**, Robert D. Schwab, Ashley R. Carter

1408-Pos BOARD #B138
MEASURING ENERGETICS OF SHARP DNA BENDING FROM BREAKAGE KINETICS OF SMALL DNA LOOPS. **Tung T. Le**, Harold D. Kim

1409-Pos BOARD #B139
POLYETHYLENEIMINE-DNA INTERACTIONS. **T J Thomas**, Sripriya Venkiteswaran

1410-Pos BOARD #B140
ON THE CONTINUITY OF STATES BETWEEN DNA-ORDERING TRANSITIONS IN MONO- AND MULTI-VALENT SALT SOLUTIONS. **Selcuk Yasar**, Rudolf Podgornik, Adrian Parsegian

1411-Pos BOARD #B141
ON THE ORIGIN OF OVERSTRETCHING TRANSITIONS IN SINGLE- AND DOUBLE-STRANDED NUCLEIC ACIDS. **Zackary N. Scholl**, Mahir Rabbi, David Lee, Laura Manson, Hanna S-Gracz, Piotr E. Marszalek

1412-Pos BOARD #B142
STABILITY OF DNA IN HYDRATED IONIC LIQUIDS: EFFECT OF SOLVENT NANOSTRUCTURING. **Debostuti Choshdastidar**, Aneesh Chandran, Sanjib Senapati

1413-Pos BOARD #B143
SUPERCOIL DYNAMICS ALONG STRETCHED DNA BY BROWNIAN DYNAMICS. **Todd D. Lillian**, David Bell, Justin Polk

1414-Pos BOARD #B144
MODELING THE RELAXATION OF DNA SUPERCOILS. **Ikenna D. Ivenso**, Todd Lillian

1415-Pos BOARD #B145
PERSISTENCE LENGTH OF SINGLE STRANDED DNA: EFFECT OF LENGTH, SEQUENCE AND SURFACE. Ho Shin Kim, **Yaroslava G. Yingling**

1416-Pos BOARD #B146
KINETICS OF DNA THREADING INTERCALATION BY A RIGID RUTHENIUM COMPLEX DIMER. **Ali A. Almaqwashi**, Thayaparan Paramanathan, Per Lincoln, Ioulia Rouzina, Fredrik Westerlund, Mark C. Williams

1417-Pos BOARD #B147
SINGLE MOLECULE FORCE MEASUREMENTS OF DNA AND RNA HAIRPIN STRUCTURES. **Mathilde Bercy**, Ulrich Bockelmann

1418-Pos BOARD #B148
DNA-INTERCALATION KINETICS ELUCIDATED BY SINGLE-DYE FLUORESCENCE MICROSCOPY AND FORCE SPECTROSCOPY. Andreas S. Biebricher, **Ido Heller**, Erwin J. G. Peterman, Gijs J. L. Wuite

1419-Pos BOARD #B149
SIMULTANEOUS DNA STRETCHING AND INTERCALATION IN CONTINUOUS ELONGATIONAL FLOW. Joshua W. Griffiths, Mikhail M. Safranovitch, Shilpi P. Vyas, Andrew Nicholson, Gene Malkin, **Robert H. Meltzer**

1420-Pos BOARD #B150
EFFECT OF AXIAL LIGAND ON THE BINDING MODE OF M-MESO-TETRAKIS(N-METHYLPYRIDINIUM-4-YL)PORPHYRIN TO DNA AND THEIR EFFICIENCY AS AN ACCEPTOR IN DNA-MEDIATED ENERGY TRANSFER. **Seog K. Kim**, Yoon Jung Jang

1421-Pos BOARD #B151
QUANTIFYING THE DNA BINDING KINETICS OF A RUTHENIUM DIMER COMPLEX WITH A FLEXIBLE LINKER. **Meriem Bahira**, Micah McCauley, Sean Malley, Ioulia Rouzina, Fredrik Westerlund, Mark C. Williams

1422-Pos BOARD #B152
EFFECT OF IONIC STRENGTH ON END-TETHERED SSDNA MOLECULES ON GOLD SURFACES. **Maryse Dadina Nkoua Ngavouka**, Pietro Parisse, Alessandro Bosco, Loredana Casalis

1423-Pos BOARD #B153
SINGLE MOLECULE FORCE CONTROL DRIVES THE RAPID ASSEMBLY OF DNA NANOSTRUCTURE. **Wooli Bae**, Kipom Kim, Duyoung Min, Je-Kyung Ryu, Changbong Hyeon, Tae-Young Yoon

1424-Pos BOARD #B154
INTERACTION OF DNA A-TRACT OLIGOMERS WITH MONOVALENT CATIONS. **Earle Stellwagen**, Qian Dong, Nancy C. Stellwagen

1425-Pos BOARD #B155
ELASTIC TWIST DYNAMICS OF DNA. **Edward J. Banigan**, John F. Marko

1426-Pos BOARD #B156
STRONGLY BENT DNA: RECONCILING THEORY AND EXPERIMENT. **Aleksander Drozdetski**, Abhishek Mukhopadhyay, Alexey Onufriev

1427-Pos BOARD #B157
ELECTROPHORETIC MOBILITY OF DNA IS CONTROLLED BY THE SURFACE CHARGE DENSITY, NOT THE LINEAR CHARGE DENSITY AS EXPECTED FROM COUNTERION CONDENSATION THEORY. **Nancy C. Stellwagen**

1428-Pos BOARD #B158
THERMODYNAMICS AND KINETICS OF THREE DISTINCT OVERSTRETCHED DNA STRUCTURES PRODUCED BY LARGE TENSION. Xinghua Zhang, **Jie Yan**

RNA Structure and Dynamics I (Boards #B159-#B188)

1429-Pos BOARD #B159
SUGAR ALCOHOL OSMOLYTES DEMONSTRATE THE VISCOSITY DEPENDENT FOLDING KINETICS OF RNA TERTIARY STRUCTURAL MOTIFS. **Nicholas Dupuis**, David Nesbitt

1430-Pos BOARD #B160
DE NOVO FOLDING OF RNA HAIRPINS BY TEMPERATURE REPLICIA EXCHANGE. **Jacob C. Miner**, Alan A. Chen, Angel E. Garcia

1431-Pos BOARD #B161
EXPLORING THE ENERGY LANDSCAPE OF RNA: A DIRECT EVALUATION OF THE COUNTERION MEDIATED FREE ENERGY. **Paul S. Henke**, Chi H. Mak

1432-Pos BOARD #B162
L-PROLINE DESTABILIZATION OF RNA DUPLEXES IS TEMPERATURE DEPENDENT. **Jeffrey J. Schweinfus**, Ryan Menssen, Lucas Haase

1433-Pos BOARD #B163
TARGETING THE HEPATITIS C VIRUS WITH PNAS. **Damian S. McAninch**, Arunava Manna, Danith Ly, Mihaela-Rita Mihailescu

1434-Pos BOARD #B164
TIME-RESOLVED AND DYNAMIC STUDIES OF RIBOSWITCHES. **Andrew Longhini**

1435-Pos BOARD #B165
RNA STRUCTURAL REARRANGEMENTS DURING REVERSE TRANSCRIPTION INITIATION IN HIV. **Aaron Coey**, Margreth Mpossi, Elisabetta Viani-Puglisi, Joseph Puglisi

1436-Pos BOARD #B166
EXPLORING THE GENOTYPE/PHENOTYPE LANDSCAPE OF SELF-ASSEMBLING MODULES IN RNA. **Paul Zakrevsky**, Erin R. Calkins, Luc Jaeger

1437-Pos BOARD #B167
THE INFLUENCE OF THE FORM OF TRNA ON COMPLEX FORMATION WITH PORPHYRINS. **Ishkhan Vardanyan**, Yeva Dalyan

1438-Pos BOARD #B168 MINORITY AFFAIRS TRAVEL AWARDEE
STUDYING DYNAMICS AND CONFORMATIONAL CHANGES IN THE GLYCINE RIBOSWITCH USING ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY. **Jacqueline M. Esquiaqui**, Gail E. Fanucci, Jingdong Ye

1439-Pos BOARD #B169
THEORETICAL AND EXPERIMENTAL STUDY OF THE CONFORMATIONAL STRUCTURE OF HIV RNA. Xiao Fan, Yanyan Li, Yingya Liu, Po Wang, **Haitao Li**

1440-Pos BOARD #B170
EXPLOITING CO-TRANSCRIPTIONAL FOLDING AND PROCESSING OF NASCENT MESSENGER RNA FOR MODULATING SPECIFIC EXON SPLICING. **Jing Lin**, Keng Boon Wee, Zacharias Aloysius Dwi Pramono, Uttam Surana

1441-Pos BOARD #B171
STRUCTURAL POLYMORPHISM OF (CAG)_N REPEAT RNA ELUCIDATED USING SINGLE MOLECULE NANOMANIPULATION. **William T. Stephenson**, Sean Keller, Scott A. Tenenbaum, Michael Zuker, Pan T.X. Li

1442-Pos BOARD #B172
 PREDICTING THE 3D SECONDARY STRUCTURE OF RNA MOLECULES. **Mario Villada-Balbuena**, Oscar Taxilaga-Zetina, Mauricio D. Carbajal-Tinoco

1443-Pos BOARD #B173
 THE STRUCTURE OF THE DISEASE-ASSOCIATED (GGGGCC) N REPEAT FROM THE C9ORF72 GENE. **Bitu Zamiri**, Kaalak Reddy, Christopher E. Pearson, Robert B. Macgregor Jr.

1444-Pos BOARD #B174
 NMR SPECTROSCOPY OF RIBOSWITCHES USING IN VIVO LABELED RNAs. **Rachel E. Brown**, My T. Le, Andrew P. Longhini, Theodore K. Dayie

1445-Pos BOARD #B175
 MOLECULAR DETERMINANTS OF LIGAND RECOGNITION IN THE PREQ1 RIBOSWITCH: QUANTITATING THE EFFECT OF 7-AMINOMETHYL MODIFICATIONS IN A SERIES OF PREQ1 ANALOGS. Jenna M. Davison, Neilson K. Neilson, Mallory N. Pahl, **Ian T. Suydam**

1446-Pos BOARD #B176
 THE SNAKELIKE CHAIN CHARACTER OF UNSTRUCTURED RNA. **David R. Jacobson**, Dustin B. McIntosh, Omar A. Saleh

1447-Pos BOARD #B177
 COMPARING RNA KISSING INTERACTIONS AT SINGLE-MOLECULE AND ENSEMBLE LEVELS. William Stephenson, Papa Nii Asare-Okai, Scott Tenenbaum, Daniele Fabris, **Pan TX Li**

1448-Pos BOARD #B178
 COMPUTATIONAL ANALYSIS OF CO-TRANSCRIPTIONAL RIBOSWITCH FOLDING. Benjamin Lutz, Michael Faber, Abhinav Verma, Stefan Klumpp, **Alexander Schug**

1449-Pos BOARD #B179
 LINKING RNA SECONDARY STRUCTURE TO THE FREE ENERGY OF TERTIARY STRUCTURE FOLDING THROUGH COARSE-GRAINED MODELS. **Anthony M. Mustoe**, Hashim M. Al-Hashimi, Charles L. Brooks, III

1450-Pos BOARD #B180
 COARSE-GRAIN RNA FOLDING: TOWARDS MORE COMPLEX STRUCTURES. **Tristan Cragnolini**, Yoann Laurin, Philippe Derreumaux, Samuela Pasquali

1451-Pos BOARD #B181
 OBSERVATION OF GLOBAL CHANGES IN CONFORMATION OF AN RNA KISSING COMPLEX USING SINGLE-MOLECULAR-PAIR FRET. **Sheema Rahmankesht**, Peker Milas, Ben D. Gamari, Louis Parrot, Lori S. Goldner

1452-Pos BOARD #B182
 FOLDING IN HUMAN TELOMERASE RNA PSEUDOKNOTS: KINETIC AND THERMODYNAMIC STUDIES VIA SINGLE-MOLECULE FRET. Erik Holmstrom, **David Nesbitt**

1453-Pos BOARD #B183
 ROLE OF MAGNESIUM IONS AND LIGAND STACKING IN THE ADENINE RIBOSWITCH FOLDING. **Francesco Di Palma**, Francesco Colizzi, Giovanni Bussi

1454-Pos BOARD #B184
 MODELING UNPAIRING COSTS FOR FAST COMPUTATION OF THE NET BINDING FREE ENERGY OF AN OLIGO TO AN MRNA TARGET. Julian M. Hess, William K. Jannen, **Daniel P. Aalberts**

1455-Pos BOARD #B185
 TOPOLOGY OF LARGE RNA JUNCTIONS EXPLORED BY HIGH-PRECISION FRET. **Claus A.M. Seidel**, Hayk Vardanyan, Simon Sindbert, Stanislav Kalinin, Olga Doroshenko, Grzegorz Lach, Janusz M. Bujnicki, Christian Hanke, Holger Gohlke

1456-Pos BOARD #B186
 WHEN FREELY-ROTATING ISN'T ENOUGH: A STUDY OF CYANINE DYES ON RNA. Peker Milas, Ben D. Gamari, Sheema Rahmankesht, Brent Krueger, **Lori S. Goldner**

1457-Pos BOARD #B187
 SOLVENT KINETIC ISOTOPE EFFECTS ON 2'-HYDROXYL ACYLATION OF RNA. **Michael B. Jarstfer**, Mahmoud Shobair, Yishu Wang

1458-Pos BOARD #B188
 CONFORMATIONAL ENTROPY OF THE RNA PHOSPHATE-SUGAR BACKBONE. **Tyler Matossian**, Chi Mak

Membrane Physical Chemistry I (Boards #B189–#B218)

1459-Pos BOARD #B189
 EFFECTS OF OXIDIZED LIPID SPECIES ON PERMEABILITY OF GIANT UNILAMELLAR VESICLE MEMBRANES. **Kristina A. Runas**, Su Li, Noah Malmstadt

1460-Pos BOARD #B190
 THE INFLUENCE OF HYDROXYL POSITION ON OXYSTEROL/ PHOSPHOLIPID MONOLAYER PHASE BEHAVIOR: EXPERIMENTAL RESULTS AND MODEL. **Joan C. Kunz**, Eleni Beyene, Luis HB Hernandez, Ravi Tavakley, Benjamin L. Stottrup

1461-Pos BOARD #B191
 SURFACTANTS, SALT, AND PH ALTER NANOPARTICLE-MODEL CELL MEMBRANE INTERACTIONS. **Katie Brennan**, Luke Cuculis, Shelli L. Frey

1462-Pos BOARD #B192
 TRACKING THE MODULATION OF MEMBRANE STRUCTURE IN SUVs BY DSC - A COMMENT ON LIPID PHASE TRANSITION. **Chen Shen**, Beate M. Klösgen

1463-Pos BOARD #B193
 ROLE OF CONFINED WATER ON THE COMPRESSIBILITY MODULUS OF LIPID MONOLAYERS. Maria Frias, Cecilia Salcedo, Andrea Cutro, **Anibal Disalvo**

1464-Pos BOARD #B194
 ADHESION-INDUCED DOMAIN FORMATION IN MULTICOMPONENT MEMBRANES. **Jan Steinkühler**, Reinhard Lipowsky, Peter Hildebrandt, Rumiana Dimova

1465-Pos BOARD #B195
 INTERMEMBRANE FORCES AND MEMBRANE DEFORMATION OBSERVED VIA DEHYDRATION AND OSMOTIC PRESSURE. **Jacob J. Kinnun**, K. J. Mallikarjunaiah, Luis A. Palacio, Michael F. Brown, Horia I. Petrache

1466-Pos BOARD #B196
 PHENOMENOLOGICAL ELASTICITY THEORY APPROACH TO BOLALIPID MEMBRANES. **Timur R. Galimzyanov**, Petr I. Kuzmin, Sergey A. Akimov

1467-Pos BOARD #B197
 INTERACTION OF PHOSPHATIDYLINOSITOL-4,5-BISPHOSPHATE WITH POTENTIAL CLUSTERING AGENTS Ca^{2+} , Mg^{2+} , AND CHOLESTEROL. **Zachary T. Graber**, Arne Gericke, Edgar E. Kooijman

1468-Pos **BOARD #B198** INTERNATIONAL TRAVEL AWARDEE
LIPIDS AS REGULATORS OF EFFECTIVE MEMBRANE RIGIDITY.
Ksenia Chekashkina, Peter Kuzmin, Pavel Bashkirov, Vadim Frolov

1469-Pos **BOARD #B199**
ENHANCEMENT IN LIPID BILAYER PARTITIONING OF
LYSOLIPIDS AND FATTY ACIDS INDUCED BY THEIR
COMPOSITION. **Radha Ranganathan**, Jasmeet Singh

1470-Pos **BOARD #B200**
A COMPREHENSIVE STUDY OF PREFERENTIAL INTERACTION
OF CHOLESTEROL AND ITS FLUORESCENT ANALOGS
WITH DIFFERENT CLASSES OF PHOSPHOLIPIDS.
Shishir Jaikishan, Thomas K. M. Nyholm

1471-Pos **BOARD #B201**
VESICLES AND PHASE DYNAMICS: CROSS-LINKING EFFECTS.
Michael S. Kessler, Susan Gillmor

1472-Pos **BOARD #B202**
DOMAIN SIZE DISTRIBUTION IN PHASE SEPARATED
CHOLESTEROL/PHOSPHOLIPID LANGMUIR MONOLAYERS:
LINE TENSION AND TRANSITION KINETICS. Emil Eldo,
Andris Bibelnieks, Promise Okeke, Joan C. Kunz,
Benjamin L. Stottrup

1473-Pos **BOARD #B203**
BILAYER THICKNESS MISMATCH CONTROLS DOMAIN SIZE
IN MODEL MEMBRANES. **Frederick A. Heberle**, Robin S. Petruzielo,
Jianjun Pan, Paul Drazba, Norbert Kucerka, Robert F. Standaert,
Gerald W. Feigenson, John Katsaras

1474-Pos **BOARD #B204**
LIPID BILAYERS CONTAINING SPHINGOMYELINS AND
CERAMIDES OF VARYING N-ACYL LENGTHS: A GLIMPSE
INTO SPHINGOLIPID COMPLEXITY. Noemi Jimenez-Rojo,
Aritz B. Garcia-Arribas, Jesus Sot, Alicia Alonso, **Felix M Goni**

1475-Pos **BOARD #B205** MINORITY AFFAIRS TRAVEL AWARDEE
ION EXCLUSION FROM MULTILAMELLAR LIPID VESICLES.
Johnnie W. Wright, Merrell A. Johnson, Horia I. Petrache

1476-Pos **BOARD #B206**
SOLUTION POLARIZABILITY DEPENDENCE OF LIPID BILAYER
INTERACTIONS. **Merrell A. Johnson**, Heather D. Stout,
Ryan Z. Lybarger, Horia I. Petrache

1477-Pos **BOARD #B207**
THERMODYNAMIC CHARACTERIZATION OF THE
ASSOCIATION OF CHOLESTEROL WITH PHOSPHOLIPIDS
WITH VARYING DEGREES OF UNSATURATION.
Marshall J. Colville, Drake C. Mitchell

1478-Pos **BOARD #B208**
PHASE COEXISTENCE IN TERNARY LIPID MIXTURES
CONTAINING POPC AND PHYTOSTEROLS,
ERGOSTEROL OR 7-DEHYDROCHOLESTEROL.
Mehran Shaghghi, Ming-Yen Kuo, Ya-Wei Hsueh, Martin Zuckermann,
Jenifer Thewalt

1479-Pos **BOARD #B209**
PHYSICAL PROPERTIES OF INVERSE-PHOSPHOCHOLINE
LIPIDS. **Jennifer Berman**, Vincenzo Carnevale, Lucie Delemotte

1480-Pos **BOARD #B210**
BRAIN-SM/SDPC/CHOLESTEROL PHASE DIAGRAM.
Tatyana M. Konyakhina, Gerald W. Feigenson

1481-Pos **BOARD #B211**
ELECTROPORATION DYNAMICS OF GIANT VESICLES WITH
ENCAPSULATED GEL AND IN THE PRESENCE OF SALT OR
DETERGENTS. **Rafael B. Lira**, Rumiana Dimova, Karin A. Riske

1482-Pos **BOARD #B212**
THE EFFECT OF CHOLESTEROL ON THE MORPHOLOGY
OF MIXED PHOSPHATIDYLINOSITOL/PHOSPHOINOSITIDE/
PHOSPHATIDYLETHANOLAMINE MODEL MEMBRANES.
Katrice E. King, Arne Gericke

1483-Pos **BOARD #B213**
LIPID MEMBRANES AS SOLVENT FOR CARBON
NANOPARTICLES. **Jonathan Barnoud**, Giulia Rossi, Luca Monticelli

1484-Pos **BOARD #B214**
LATTICE-BASED MONTE CARLO SIMULATIONS OF LIPID
MEMBRANES: CORRESPONDENCE BETWEEN TRIANGULAR
AND SQUARE LATTICES. **Anastasiia B. Artemieva**, Petra Schwillie,
Eugene P. Petrov

1485-Pos **BOARD #B215**
MOLECULAR MODELING AND SIMULATIONS OF REVERSE
MICELLES. **Gozde Eskici**, Paul Axelsen

1486-Pos **BOARD #B216**
CURVATURE AND LIPID CLUSTERING WITHIN ASYMMETRIC
BIOLOGICALLY RELEVANT MEMBRANE MODELS.
Heidi Koldso, Mark S. P. Sansom

1487-Pos **BOARD #B217**
MULTISCALE MODELING OF FOUR COMPONENT LIPID
MIXTURES: COARSE GRAINED AND UNITED ATOM
SIMULATIONS REVEAL TRENDS IN PHASE SEPARATION.
David G. Ackerman, Gerald W. Feigenson

1488-Pos **BOARD #B218**
MOLECULAR INSIGHTS INTO ELECTROPORATION AND
ELECTROTRANSFER THROUGH MODEL CELL MEMBRANES.
Marina Kasimova, Lucie Delemotte, Andraz Polak, Damijan Miklavcic,
Maura Casciola, Francesca Apollonio, Marie Breton, Luis Mir,
Alexey Shaytan, Konstantin Shaitan, **Mounir Tarek**

Membrane-Active Peptides and Toxins II (Boards #B219–#B247)

1489-Pos **BOARD #B219**
NOVEL LIPID DYNAMICS AROUND THE CYTOLYSIN-A
MEMBRANE-PORE COMPLEX AND ITS INTERMEDIATES.
Rajat Desikan

1490-Pos **BOARD #B220**
HOW MANY AMP MOLECULES KILL A BACTERIUM?
SPECTROSCOPIC DETERMINATION OF PMAP-23 BINDING
TO E. COLI. Daniela Roversi, Vincenzo Luca, Simone Aureli,
Yoonkyung Park, Maria Luisa Mangoni, **Lorenzo Stella**

1491-Pos **BOARD #B221**
LENGTH-DEPENDENT ACTIVITY OF MEMBRANE-BOUND
CATIONIC AMPHIPATHIC ALPHA-HELICAL PEPTIDES.
Erik Strandberg, Ariadna Grau-Campistany, Parvesh Wadhvani,
Johannes Reichert, Jochen Bürck, Francisc Rabanal, Anne S. Ulrich

1492-Pos **BOARD #B222**
SOLID-STATE NMR STRUCTURE ANALYSIS OF THE SHORT
MULTIFUNCTIONAL PEPTIDE BP100 IN MEMBRANES.
Parvesh Wadhvani, Erik Strandberg, Jonas van den Berg,
Christian Mink, Jochen Buerck, Raffaele Ciriello, Anne S. Ulrich

- 1493-Pos BOARD #B223**
HOW SPOVM INTERACTS WITH LIPID BILAYERS AND BACTERIAL CELL MEMBRANES. **Yen Sun**, Huey W. Huang
- 1494-Pos BOARD #B224**
TRANSLOCATION OF CATIONIC AMPHIPATHIC PEPTIDES ACROSS THE MEMBRANES OF PURE PHOSPHOLIPID GIANT VESICLES. **Paulo F. Almeida**, Sterling Wheaten, Francis Ablan, B. Logan Spaller, Julie Trieu
- 1495-Pos BOARD #B225**
DIMER IS A MINIMAL FUNCTIONAL UNIT OF INFLUENZA A VIRUS M2 CHANNEL ON LIVING CELLS. Kenichi Kawano, Yoshiaki Yano, **Katsumi Matsuzaki**
- 1496-Pos BOARD #B226**
PROCESS OF INDUCING PORES IN MEMBRANES BY MELITTIN. **Ming-Tao Lee**, Tzu-Lin Sun, Wei-Chin Hung, Huey W. Huang
- 1497-Pos BOARD #B227**
1+1=3? CONCERTED ACTION OF MEMBRANE PERMEABILIZERS. Hiren Patel, Quang Huynh, Dominik Bärlehner, **Heiko Heerklotz**
- 1498-Pos BOARD #B228**
ANTIMICROBIAL PEPTIDES PISCIDIN 1 AND PISCIDIN 3 KINK AT A CENTRAL GLYCINE TO MAXIMIZE THEIR HYDROPHOBIC MOMENTS. **B. Scott Perrin, Jr.**, Riqiang Fu, Richard M. Venable, Ella Mihailescu, Chris V. Grant, Ye Tian, Stanley Opella, Richard W. Pastor, Myriam Cotten
- 1499-Pos BOARD #B229**
REDISTRIBUTION OF CHOLESTEROL IN MODEL LIPID MEMBRANES IN RESPONSE TO ALAMETHICIN. **Shuo Qian**, William T. Heller
- 1500-Pos BOARD #B230**
SCREENING THE INSERTION OF FAMILIES OF BIOACTIVE MICROBIAL METABOLITES INTO TETHERED BILAYER LIPID MEMBRANES (TBLMS). **Charles G. Cranfield**, Sonia Carne, Heba Alkhamici, Paul Duckworth, Ernest Lacey, Boris Martinac, Bruce Cornell
- 1501-Pos BOARD #B231**
NMR CHARACTERIZATION OF SPIDER VENOM NEUROTOXIN STRUCTURE AND INTERACTIONS WITH LIPID BILAYERS. **Xiangyan Shi**
- 1502-Pos BOARD #B232**
STRUCTURE ACTIVITY RELATIONSHIP FOR A SYNERGISTIC PAIR OF ANTIMICROBIAL PEPTIDES FROM THE MAGAININ FAMILY. **Jonathan Zerweck**, Erik Strandberg, Parvesh Wadhvani, Anne S. Ulrich
- 1503-Pos BOARD #B233**
UNVEILING THE MEMBRANE-BINDING PROPERTIES OF N-TERMINAL AND C-TERMINAL REGIONS OF G PROTEIN-COUPLED RECEPTOR KINASE 5 BY COMBINED OPTICAL SPECTROSCOPIES. **Bei Ding**, Alisa Glukhova, John J.G. Tesmer, Zhan Chen
- 1504-Pos BOARD #B234**
BAYESIAN ANALYSIS OF IMAGING FCS INVESTIGATES THE INTERACTION OF MONOMERIC HIAPP WITH LIVE CELL MEMBRANE. **Nirmalya Bag**, Syuan-Ming Guo, Aseem Mishra, Mark Bathe, Thorsten Wohland
- 1505-Pos BOARD #B235**
STRUCTURE, DYNAMICS, AND ELECTROSTATIC EFFECTS ON MEMBRANE BINDING OF NOD PEPTIDES. Mary Chely Quinones, Vyta A. Bankaitis, **Tatyana I. Smirnova**
- 1506-Pos BOARD #B236**
THE CONFORMATIONAL FLEXIBILITY OF AN INTERNAL FUSION PEPTIDE FROM SARS-COV SPIKE GLYCOPROTEIN IS MODULATED BY LIPID MEMBRANE COMPOSITION. Luis G. M. Basso, Tácio V. A. Fernandes, José F. Lima, Edson Crusca Jr., Eduardo F. Vicente, Eduardo M. Cilli, Pedro G. Pascutti, **Antonio J. Costa-Filho**
- 1507-Pos BOARD #B237**
CALCIUM CHANNEL BLOCKERS USED AS ANTI-HYPERTENSION AGENTS AFFECT THE TOXICITY OF AB PEPTIDES ON NEURONS. **Nelson Arispe**, Michael R. Williams, Isabel Rivera, Ho-pi Lin, David M. Cauvi, Antonio De Maio
- 1508-Pos BOARD #B238**
THE EFFECT OF THE HYDROPHOBIC SURFACTANT PROTEINS ON H_{II} -CURVATURE DEPENDS ON THE CYLINDRICAL RADIUS. Mariya Chavarha, Ryan W. Loney, Shankar B. Rananavare, **Stephen B. Hall**
- 1509-Pos BOARD #B239**
DENGUE VIRUS CAPSID PROTEIN DELIVERS NUCLEIC ACIDS INTRACELLULARLY. **Miguel A. Castanho**, João Freire, A. Salomé Veiga, Thaís Conceição, Wioleta Kowalczyk, Ronaldo Borges, David Andreu, Nuno Santos, Andrea Da Poian
- 1510-Pos BOARD #B240**
TOWARDS PHLIP INSERTION IN THE PLASMA MEMBRANE OF CANCER CELLS AT PHYSIOLOGICAL TUMOR ACIDITY. **Ming An**, Joab Onyango, Michael S. Chung, Raemer J. Lapid, Emma A. Gordon, Rachel Langenbacher, Syris Winge-Barnes, Rebecca A. Chandler, Donald M. Engelman, Lan Yao
- 1511-Pos BOARD #B241**
STRUCTURAL INSIGHTS INTO HUMAN HEMOKININ1 -NK1RECEPTOR INTERACTIONS. Anjali M. Ganjiwale, Priyanka Mishra, Deepak Bhatnagar, **Sudha M. Cowsik**
- 1512-Pos BOARD #B242**
PEPTIDE LIPIDATION BY ACYL TRANSFER FROM MEMBRANE LIPIDS AND LYSO-LIPIDS. Vian Ismail, Burkhard Bechinger, Jackie A. Mosely, **John M. Sanderson**
- 1513-Pos BOARD #B243**
MODIFIED LIPID CONTENT AFFECTS DAPTOMYCIN-MEMBRANE INTERACTIONS. **Evan Mintzer**, Nasim Tishbi, Rachel Leah Victor, Jennifer Herskowitz, Adi Cohen
- 1514-Pos BOARD #B244**
MEMBRANE-DEPENDENT ACTIVITY OF THE DERMICIDIN CHANNEL. **Chen Song**, Bert L. de Groot, Mark S. P. Sansom
- 1515-Pos BOARD #B245**
MODELLING THE INTERACTIONS OF EQUINATOXIN II WITH MICELLES. Daniel Weber, Shenggen Yao, Gregor Anderlüh, Terry Lybrand, Matthew Downton, John Wagner, **Frances Separovic**
- 1516-Pos BOARD #B246**
PARTITIONING CHARGED SIDE CHAINS INTO LIPID BILAYER MEMBRANES. **Martin Ulmschneider**, Nina Schiller, B A. Wallace, Gunnar von Heijne, Stephen H. White
- 1517-Pos BOARD #B247**
MEMBRANE TRANSLOCATION OF HIGHLY CHARGED ANTIMICROBIAL PEPTIDES VIA MULTI-MICROSECOND ALL-ATOM MD SIMULATIONS. **Jakob P. Ulmschneider**, Yukun Wang

Protein-Lipid Interactions II (Boards #B248–#B277)

1518-Pos BOARD #B248
ION TRANSPORT AND ELECTROCHEMICAL GRADIENTS UNDER DC AND AC SIGNALS. **Alexander S. Walls**, Merrell A. Johnson, Horia I. Petrache

1519-Pos BOARD #B249 CPOW TRAVEL AWARDEE
REGULATION OF ION CHANNEL FUNCTION BY THE HOST LIPID BILAYER EXAMINED BY A STOPPED-FLOW SPECTROFLUORIMETRIC ASSAY. **Radda Rusinova**, Dorothy M. Kim, Crina M. Nimigean, Olaf S. Andersen

1520-Pos BOARD #B250
A NEW SUPPORTED MEMBRANE SYSTEM FOR STUDYING THE LIPID EFFECTS ON A KV CHANNEL. **Hui Zheng**, Sungsoo Lee, Marc Llaguno, Michael Zhu, Donald Hilgemann, Qiu-Xing Jiang

1521-Pos BOARD #B251 INTERNATIONAL TRAVEL AWARDEE
THE ROLE OF TRP IN ARG-RICH PADDLE DOMAIN-LIPID INTERACTION. **Weihua Ye**, Sofia Unnersåle, Lena Måler

1522-Pos BOARD #B252
SOLUBILIZATION, PURIFICATION AND CHARACTERIZATION OF THE POTASSIUM CHANNEL KCSA IN ITS NATIVE LIPID ENVIRONMENT: THE POWER OF NATIVE NANODISCS. **Jonas M. Doerr**, Martijn C. Koorengel, Marre Schaefer, Stefan Scheidelaar, Tim R. Dafforn, J. Antoinette Killian

1523-Pos BOARD #B253
GUV BASED MIMICRY OF DENDRITIC SPINE MORPHOLOGY PERMITS TO TEST HYPOTHESES ON LTP AND LEARNING. **Willem Pomp**, Thomas Schmidt

1524-Pos BOARD #B254
MINIMAL VIRAL POTASSIUM CHANNELS FOR STUDYING PROTEIN/LIPID INTERACTION. **Christian J. Braun**, Indra Schroeder, Leonhard M. Henkes, Cristina Arrigoni, Stefan M. Kast, Anna Moroni, Gerhard Thiel

1525-Pos BOARD #B255
OLIGOMERIC STATES AND COOPERATIVE GATING IN CLUSTERS OF MECHANOSENSITIVE MEMBRANE PROTEINS. **Osman Kahraman**, William S. Klug, Christoph A. Haselwandler

1526-Pos BOARD #B256
MECHANISMS UNDERLYING THE UNCOUPLING OF BINDING AND GATING IN THE NICOTINIC RECEPTOR AND ITS PROKARYOTIC HOMOLOGS. **John E. Baenziger**, Peter F. Juranka, Julian A. Surujballi

1527-Pos BOARD #B257
P-GLYCOPROTEIN: PURIFICATION, INCORPORATION AND ACTIVITY IN NANODISCS. **Harmen B. Steele**, Meg Trahey, William M. Atkins, Erica L. Woodahl, J. B. Alexander Ross

1528-Pos BOARD #B258
THE EFFECT OF DETERGENT ON THE OLIGOMERIZATION OF A 7-TRANSMEMBRANE PROTEIN. **Maia Kinnebrew**, Sunyia Hussain, Nicole Schonenbach, Dr. Songi Han

1529-Pos BOARD #B259
CONTROLLED RECONSTITUTION OF INTEGRAL MEMBRANE PROTEINS BY DETERGENT EXTRACTION THROUGH CYCLODEXTRIN COMPLEXATION. Carolyn Vargas, Martin Textor, Natalia Markova, **Sandro Keller**

1530-Pos BOARD #B260
STRUCTURE-FUNCTION ANALYSES REVEAL *ARABIDOPSIS ACCELERATED-CELL-DEATH11 (ACD11)* IS A CERAMIDE-1-PHOSPHATE TRANSFER PROTEIN THAT FORMS A GLTP-FOLD. **Xiuhong Zhai**, Dharendra K. Simanshu, David Munch, Linda M. Benson, H Robert Bergen, Helen M. Pike, Lucy Malinina, John Mundy, Julian G. Molotkovsky, Dinshaw J. Patel, Rhoderick E. Brown

1531-Pos BOARD #B261
HIV-1 NEUTRALIZING ANTIBODIES AND VACCINE ANTIGEN SELECTIVELY INTERACT WITH PHASE-SEPARATED MODEL MEMBRANES. **Gregory Hardy**, Stefan Zauscher

1532-Pos BOARD #B262
SPECTROSCOPIC STUDIES OF MEMBRANE STRUCTURE AND INTERACTIONS OF α -SYNUCLEIN 71-82. **Laurie Bédard**, Émilie Morin-Michaud, Thierry Lefrève, Normand Voyer, Michèle Auger

1533-Pos BOARD #B263
CHOLESTEROL BINDING DRIVES PARTITIONING OF THE AMYLOID PRECURSOR C99 PROTEIN INTO LIQUID ORDERED MEMBRANE DOMAINS. Paul J. Barrett, Charles A. Day, Yuanli Song, Jonathan P. Schleich, **Anne K. Kenworthy**, Charles R. Sanders

1534-Pos BOARD #B264
HOW DO LIPIDS LOCALIZE IN LEWY BODIES? **Himanshu Chaudhary**, Vinod Subramaniam, Mireille Claessens

1535-Pos BOARD #B265
INTERPLAY BETWEEN AMYLOID BETA-PEPTIDE AND CHOLESTEROL IN BILAYER. **Durgesh Rai**, Divina Anunciado, Hugh O'Neill, Volker Urban, William Heller, Shuo Qian

1536-Pos BOARD #B266
MIMICKING LYSOSOMAL DEGRADATION OF α -SYNUCLEIN. **Jennifer C. Lee**, Ryan P. McGlinchey, Mercedes Vargas

1537-Pos BOARD #B267
SMALL ANGLE SCATTERING OF FIBRINOGEN POLYMERIZATION KINETICS AND OF ALPHA1 ANTITRYPSIN INTERACTIONS WITH LIPID MEMBRANES. **Luis A. Palacio**, Christopher B. Stanley, Soenke Seifert, Horia I. Petrache

1538-Pos BOARD #B268
NOVEL PROPERTIES OF THE SMURF1 C2 DOMAIN IN CELLULAR LIPID BINDING. **Jordan L. Scott**, Robert V. Stahelin

1539-Pos BOARD #B269
MEMBRANES IN FLUX: PROTEINS EFFECT ON MEMBRANE PERMEABILITY. **Katie Dunleavy**, Anika Rannikko, Anne Rice, Samantha Jaworski, Michael Fealey, Ryan Mahling, Anne Hinderliter

1540-Pos BOARD #B270
COMBINATORIAL POLARIZED TIRF-AFM STUDY OF MEMBRANE REORGANIZATION BY ALPHA-SYNUCLEIN AND HUMAN PRION PROTEIN. **Martin Kurylowicz**, Gillian Vanderlee, Daniel Ysselstein, Patrick Walsh, Jason Yau, Simon Sharpe, Jean-Christophe Rochet, Christopher M. Yip

1541-Pos BOARD #B271
SUPERRESOLUTION PLASMAEMMAL LIPID MAPPING. **Brian L. Ross**, Jin Zhang

1542-Pos BOARD #B272
SPATIAL ORGANIZATION OF ONCOGENIC RAS ON SUPPORTED MEMBRANES. **Hui Yue Monatrice Lam**, Jean K. Chung, Wan-Chen Lin, Jay T. Groves

1543-Pos BOARD #B273

THE HIDDEN ROLE OF RESIDUES IN THE RECOGNITION CENTER OF HUMAN GLYCOLIPID TRANSFER PROTEIN (GLTP). Borja Ochoa-Lizarralde, Sandra Delgado, Xiuhong Zhai, Valeria R. Samygina, Alexander N. Popov, Aintzane Cabo-Bilbao, Helen M. Pike, Julian G. Molotkovsky, Dinshaw J. Patel, Rhoderick E. Brown, **Lucy Malinina**

1544-Pos BOARD #B274

NONVESICULAR TRAFFICKING OF CERAMIDE-1-PHOSPHATE BY A LIPID TRANSFER PROTEIN THAT REGULATES EICOSANOID PRODUCTION. Dharendra K. Simanshu, Ravi Kanth Kamlekar, Dayanjan S. Wijesinghe, Xianqiong Zou, Xiuhong Zhai, Shrawan K. Mishra, Julian G. Molotkovsky, Lucy Malinina, Edward H. Hinchcliffe, Charles E. Chalfant, Dinshaw J. Patel, **Rhoderick E. Brown**

1545-Pos BOARD #B275 EDUCATION TRAVEL AWARDEE

STUDYING LIPID INTERACTIONS OF PERILIPIN 3/ TIP 47 USING PHOSPHOLIPID MONOLAYERS. **Mona Mirheydari**, Sewwandi S. Rathnayake, Simon Cocklin, Elizabeth K. Mann, Edgar E. Kooijman

1546-Pos BOARD #B276

TOWARD UNDERSTANDING THE ROLE OF AMOT80 LIPID BINDING IN CELLULAR PROLIFERATION AND MIGRATION. **Emily L. Donovan**, Ann C. Kimble-Hill, Thomas D. Hurley, Clark D. Wells

1547-Pos BOARD #B277

CATION-DEPENDENT BEHAVIOR OF CARDIOLIPIN-CONTAINING MEMBRANES AND IMPLICATIONS FOR RESPIRATORY COMPLEX II ASSEMBLY AND ACTIVITY. **Christine Schwall**, Nathan Alder

Membrane Receptors and Signal Transduction II (Boards #B278–#B303)

1548-Pos BOARD #B278

LKB1 IS A CRITICAL REGULATOR OF EARLY ATRIAL GROWTH AND ELECTROPHYSIOLOGICAL FUNCTION. **Grace E. Kim**, Jenna L. Ross, Chaoqin Xie, Xiaohong Wu, Monica Palmeri, Vlad G. Zaha, Mohammed Ashraf, Joe G. Akar, Kerry S. Russell, Fadi G. Akar, Lawrence H. Young

1549-Pos BOARD #B279

PATHOPHYSIOLOGICALLY-RELEVANT LEVELS OF ENDOGENOUS CARDIOTONIC STEROIDS INHIBIT THE CARDIAC NA/K ATPASE AND ACTIVATE ERK1/2 HYPERTROPHIC SIGNALING IN VIVO AND IN VITRO. **Davor Pavlovic**, Safa Siddiqui, Gurnoor Nagi, Lucy Newbury, William Fuller, Anne-Marie L. Seymour, Claire Sharpe, Michael J. Shattock, Dunja Aksentijevic

1550-Pos BOARD #B280

β -ADRENERGIC REGULATION OF CYCLIC AMP AND CA CURRENT AT THE T-TUBULES AND SURFACE MEMBRANE IN RAT CARDIOMYOCYTES. **Rodolphe Fischmeister**, Cristina E. Molina, Youn Kyoung Son

1551-Pos BOARD #B281

WNT SIGNALING PROMOTES PACEMAKER MYOCYTE SPECIFICATION OF DIFFERENTIATING CARDIAC PROGENITOR CELLS. **Wenbin Liang**, Elizabeth H. Kim, Jordan Mak, Eduardo Marbán, Hee Cheol Cho

1552-Pos BOARD #B282

MODULATION OF ADRENERGIC SIGNALLING BY FLAVONOIDS IN CARDIOPROTECTION. **Aleksey Zholobenko**, Eva Gabrielová, Jiří Nečas, Martin Modrianský

1553-Pos BOARD #B283

INHIBITION OF CAMP-DEPENDENT PKA ACTIVATES β -ADRENERGIC RECEPTOR STIMULATION OF CYTOSOLIC PHOSPHOLIPASE A2 VIA RAF-1/MEK/ERK AND IP3-DEPENDENT Ca^{2+} SIGNALING IN ATRIAL MYOCYTES. Malakarjuna R. Pabbidi, Gregory A. Mignery, Joshua T. Maxwell, Alan M. Samarel, **Pieter P. de Tombe**, Stephen L. Lipsius

1554-Pos BOARD #B284

CELL PROLIFERATION AND MIGRATION INDUCED BY ANGIOTENSIN-II IS MEDIATED BY ACE. **Érika C. Alvarenga**, Clarissa C. Carvalho, Jéssica S. Malta, Rodrigo M. Florentino, Carolina Batista, Paola B. Guimarães, Adriana K. Carmona, Miriam G. Jasiulionis, João B. Pesquero, Maria F. Leite

1555-Pos BOARD #B285

CAPSAICIN CAUSES VASORELAXATION OF RAT AORTA BY ACTIVATION OF CB1 RECEPTORS BUT NOT BY TRPV1 OR CB2 RECEPTORS. **Enrique Sanchez-Pastor**, Cinthia Rangel-Sandoval, Maria F. Andrade, Alejandro Elizalde, Evelyn Lopez-Dyck

1556-Pos BOARD #B286

SUPRAMOLECULAR ORGANIZATION OF ROD OUTER SEGMENT MEMBRANE: NEW RHODOPSIN DIMER INTERFACE AND INSIGHTS FROM THE β 2AR-GS COMPLEX. **Xavier Periole**, Thomas P. Sakmar, Siewert Jan Marrink, Thomas Huber

1557-Pos BOARD #B287

CARDIOPROTECTION BY CARDIAC GLYCOSIDES IS MEDIATED BY SIGNALOSOMES ACTING ON MITOCHONDRIAL P38-MAP KINASE TO OPEN MITOKATP. **Keith D. Garlid**, Anders O. Garlid

1558-Pos BOARD #B288

MONTE CARLO STUDY OF THE ASSOCIATION RATE BETWEEN TRANSDUCIN AND PHOTOACTIVATED RHODOPSIN AT DISC MEMBRANES. **Samuel A. Ramirez**, Chad Leidy

1559-Pos BOARD #B289 EDUCATION TRAVEL AWARDEE

MUTAGENESIS STUDY OF RETINAL ENTRY PATHWAY OF RHODOPSIN. **He Tian**, Kathryn M. Gunnison, Manija Kazmi, Thomas P. Sakmar, Thomas Huber

1560-Pos BOARD #B290

QUANTUM LOGIC GATE MODEL FOR G PROTEIN COUPLED RECEPTORS. **Jackson Chief Elk**

1561-Pos BOARD #B291

PREFERRED HOMO- AND HETERO-DIMERIC CONFIGURATIONS OF ALL MAJOR OPIOID RECEPTOR SUBTYPES AS PREDICTED BY SIMULATED SELF-ASSOCIATION IN EXPLICIT LIPID-WATER ENVIRONMENT. Mustafa Burak Boz, **Jennifer M. Johnston**, Marta Filizola

1562-Pos BOARD #B292

ALL-ATOM SIMULATIONS REVEAL ENSEMBLE DYNAMICS OF RHODOPSIN. **Nicholas Leioatts**, Tod D. Romo, Alan Grossfield

1563-Pos BOARD #B293

IDENTIFICATION OF AN ENDOGENOUS ALLOSTERIC MODULATOR'S BINDING SITE AT THE HUMAN CANNABINOID-1 RECEPTOR, USING THE FORCED-BIASED METROPOLIS MONTE CARLO SIMULATED ANNEALING METHOD (MMC). **Derek M. Shore**, Dow P. Hurst, Patricia H. Reggio

1564-Pos BOARD #B294
 HIGHLY ENHANCED CONFORMATIONAL SAMPLING OF THE TRANSMEMBRANE DOMAIN OF EGF RECEPTOR SHEDS LIGHT ON THE ACTIVATION MECHANISM. **Mickael G. Lelimosin**, Vittorio Limongelli, Mark S. P. Sansom

1565-Pos BOARD #B295
 DIMERIZATION OF TRANSMEMBRANE HELICES OF RECEPTOR TYROSINE KINASES: ASSESSING THE CONVERGENCE OF COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS. **Amanda Buyan**, Khairul Abd Halim, Mark S.P. Sansom

1566-Pos BOARD #B296
 ASSOCIATION OF EPHA2 RECEPTOR WITH THE MEMBRANE THROUGH ITS SECOND FIBRONECTIN DOMAIN: A BIOPHYSICAL AND COMPUTATIONAL STUDY. **Matthieu G. Chavent**, Elena Seiradake, E Yvonne Jones, Mark S. P. Sansom

1567-Pos BOARD #B297
 CATIONIC LIPID AND BACTERIAL LIPOPOLYSACCHARIDES BOTH ACTIVATE TOLL-LIKE RECEPTOR 4 PATHWAYS VIA DIFFERENT BINDING REGIONS. Caroline Lonez, Kate Irvine, Monique Gangloff, Malvina Pizzuto, Boris Schmidt, Benjamin Caroyez, Michel Vandenbranden, Clare Bryant, **Jean-Marie Ruyschaert**

1568-Pos BOARD #B298
 ACTIVATION PATHWAYS OF KINASES REVEAL INTERMEDIATE STATES AS NOVEL TARGETS FOR DRUG DESIGN. **Diwakar Shukla**, Benoit Roux, Vijay S. Pande

1569-Pos BOARD #B299
 TOWARDS THE RATIONAL DESIGN OF OPIOIDS WITH DESIRED BINDING KINETICS. **Sebastian Schneider**, Davide Provasi, Marta Filizola

1570-Pos BOARD #B300
 COMPUTATIONAL PREDICTION OF THE CLASS A GPCR ACTIVE STATE CONFORMATIONS. **Sijia S. Dong**, Ravinder Abrol, William A. Goddard III

1571-Pos BOARD #B301 CPOW TRAVEL AWARDEE
 EXPLORING THE STRUCTURE AND DYNAMICS OF ALL-ATOM MODELS FOR THE PLEXIN TRANSMEMBRANE RECEPTOR BOUND TO GTPASES AND TO LIPID BILAYER. **Liqun Zhang**, Matthias Buck

1572-Pos BOARD #B302
 TWO SEGMENTS OF THE HUMAN PIEZO1 MECHANOSENSITIVE ION CHANNEL CAN REASSEMBLE INTO A FUNCTIONAL UNIT. **Philip A. Gottlieb**, Chilman Bae, Thomas Suchyna, Frederick Sachs

1573-Pos BOARD #B303
 UNIQUE SIGNALING LOGIC WITHIN A BACTERIAL CELL CYCLE CIRCUIT. **W. Seth Childers**, Qingping Xu, Irimpan I. Mathews, Thomas H. Mann, Jimmy A. Blair, Ashley M. Deacon, Lucy Shapiro

Exocytosis and Endocytosis I (Boards #B304–#B320)

1574-Pos BOARD #B304
 MODELING NANOPARTICLE INTERNALIZATION VIA RECEPTOR-MEDIATED ENDOCYTOSIS. **Anand Banerjee**, Alexander Berezhkovskii, Ralph Nossal

1575-Pos BOARD #B305
 SELF-ASSOCIATION AND DYNAMIN BINDING OF ARC/ARG3.1. **Nicholas G. James**, Christopher E. Byers, Barbara Barylko, Joseph P. Albanesi, David M. Jameson

1576-Pos BOARD #B306
 ELUCIDATING THE MECHANICS OF CLATHRIN-MEDIATED ENDOCYTOSIS. **Ashutosh Agrawal**, Nikhil Walani, Jennifer Torres

1577-Pos BOARD #B307
 DYNAMICS OF INTRACELLULAR CLATHRIN CARRIERS. **Comert Kural**, Steeve Boulant, Tomas Kirchhausen

1578-Pos BOARD #B308
 REAL-TIME ENDOCYTOSIS IMAGING AS A RAPID ASSAY OF LIGAND-GPCR BINDING IN SINGLE CELLS. **Lianghong Zheng**, Quanfeng Zhang, Ruiyin Jiao, Rong Huang, Suhua Sun, Zuyin Chai, Mingli Li, Xi Wu, Wei Liu, Qihui Wu, Sasa Ten, Changhe Wang, Liecheng Wang, Wei Xiong, Zhuan Zhou

1579-Pos BOARD #B309
 ROLE OF INTERNALIZATION OF CELL SURFACE RECEPTORS IN REGULATION OF CELL POLARITY. **Wei Tian**, Youfang Cao, Amber Ismael, David Stone, Jie Liang

1580-Pos BOARD #B310
 MOLECULAR MECHANISMS OF ENDOCYTOSIS AND EXOCYTOSIS IN YEAST STUDIED BY HIGH-RESOLUTION MEMBRANE CAPACITANCE MEASUREMENTS. Lucia Carrillo, Gerhard Thiel, **Adam Bertl**

1581-Pos BOARD #B311
 CELLULAR SCALE BIOPHYSICAL MODELS OF MEMBRANE SCULPTING BY THE PROTEINS DURING ENDOCYTOSIS AND EXOCYTOSIS. Natesan Ramakrishnan, Ryan P. Bradley, Richard Tourdot, **Ravi Radhakrishnan**

1582-Pos BOARD #B312
 REAL-TIME MEASUREMENTS OF EXOCYTOSIS AND ENDOCYTOSIS IN C. ELEGANS NEURONS. **Yongming Dong**, Jihong Bai

1583-Pos BOARD #B313
 INTERACTION OF MUNC18C WITH SYNTAXIN4 AND THE ROLE OF MUNC18C IN EXOCYTOSIS. **Czuec Morey**, Dirk Fasshauer

1584-Pos BOARD #B314
 IN VITRO PALMITOYLATION AND OXIDATION OF THE SNARE PROTEIN SNAP-25. **Alex M. DaBell**, Ryan Reynolds, David A. Gabrielsen, James R. Cardinal, Dixon J. Woodbury

1585-Pos BOARD #B315 EDUCATION TRAVEL AWARDEE
 THE C2B DOMAIN OF SYNAPTOTAGMIN-1 AND COMPLEXIN REDUCE THE ASYNCHRONOUS RELEASE ACTIVATION. **Eduardo A. Quiroz-Manriquez**, Ramón A. Jorquera

1586-Pos BOARD #B316
 ISOFORM-SPECIFIC ROLES OF SYNAPTOTAGMINS IN EXOCYTOSIS. Tejeshwar Rao, Daniel R. Passmore, Edwin R. Chapman, **Arun Anantharam**

1587-Pos BOARD #B317
 FRICTIONAL ADDITIVITY OF LATERAL DIFFUSION ON SUPPORTED BILAYERS: INFLUENCE OF LINKER LENGTH IN SYNAPTOTAGMIN 7 C2A-C2B TANDEM DOMAINS. **Joseph K. Vasquez**, Kan Chantranuvatana, Jefferson Knight

1588-Pos BOARD #B318
 A NOVEL TARGET OF PROTEASOMAL DEGRADATION INDUCES HOMEOSTATIC PLASTICITY. **Johnny J. Saldate**, Victor A. Cazares, Arasakumar Subramani, Edward L. Stuenkel

1589-Pos BOARD #B319
A NOVEL INHIBITORY PATHWAY MODULATES THE FRACTION OF RELEASE-COMPETENT SYNAPTIC VESICLES. **Victor A. Cazares**, Arasakumar Subramani, Widmann Hoerauf, Johnny James Saldade, Edward L. Stuenkel

1590-Pos BOARD #B320
THE ROLE OF DOC2B IN DEPOLARIZATION-EVOKED AND G PROTEIN-COUPLED RECEPTOR MODULATED EXOCYTOSIS IN MOUSE CHROMAFFIN CELLS. Claudia S. Bauer, Alexander J. Groffen, **Elizabeth P. Seward**

Nucleo-Cytoplasm Transport (Boards #B321–#B326B)

1591-Pos BOARD #B321
A RAN-DEPENDENT IMPORTIN-BETA/NUP153 BARRIER IN THE NUCLEAR PORE COMPLEX. **Jeffrey H. Tang**, Alan R. Lowe, Jaime Yassif, Michael Graf, William Y. C. Huang, Jay T. Groves, Karsten Weis, Jan T. Liphardt

1592-Pos BOARD #B322
CONFORMATIONAL BEHAVIOR OF THE CONFINED FG-REPEAT DOMAINS IN THE NUCLEAR PORE. Ruhollah Moussavi-Baygi, **Mohammad R. Mofrad**

1593-Pos BOARD #B323
SIMPLE PHYSICAL CONSIDERATIONS EXPLAIN THE CONFORMATIONAL TRANSITIONS OF THE FG-NUCLEOPORINS INDUCED BY THE TRANSPORT FACTORS. **Anton Zilman**, Michael Opferman, David Jasnow, Rob Coalson

1594-Pos BOARD #B324
CHARACTERIZATION OF THE SELECTIVE BARRIER IN NUCLEAR PORE COMPLEX. **Jiong Ma**, Alexander Goryaynov, Weidong Yang

1595-Pos BOARD #B325
COMPUTATIONAL STUDY OF BINDING BETWEEN DDX3 AND HIV-1 MRNA NUCLEOCYTOPLASMIC EXPORT COMPLEX. **S. Hanif Mahboobi**

1596.1-Pos BOARD #B326A
CELLULAR METABOLISM FLUIDIZES THE GLASSY BACTERIAL CYTOPLASM. **Bradley Parry**, Ivan Surovtsev, Matthew Cabeen, Corey O'Hern, Eric Dufresne, Christine Jacobs-Wagner

1596.2-Pos BOARD #B326B CPOW TRAVEL AWARDEE
LAMIN-A IS MECHANOSENSITIVE TO MATRIX STIFFNESS AND COUPLES TO THE RETINOIC ACID PATHWAY IN DIFFERENTIATION. **Irena L. Ivanovska**, Joe Swift, Dennis E. Discher

Calcium Release Activated Calcium Channels (Boards #B327–#B347)

1597-Pos BOARD #B327
STRUCTURAL MODELING OF HEXAMERIC AND TETRAMERIC ION CONDUCTION PATHWAYS OF ORAI1 CHANNEL. **Alla Fomina**, Vladimir Yarov-Yarovoy

1598-Pos BOARD #B328
COMPLEX FUNCTION OF STIM1 IN THE ACTIVATION OF STORE-INDEPENDENT ORAI CHANNELS. **Xuexin Zhang**, Wei Zhang, José González-Cobos, Mohamed Trebak

1599-Pos BOARD #B329
DISTINCT ORAI-COUPLING DOMAINS IN STIM1 AND STIM2 DEFINE THE ORAI-ACTIVATING SITE. **Xizhuo Wang**, Youjun Wang, Yandong Zhou, Eunan Hendron, Salvatore Mancarella, Mark D. Andrade, Brad S. Rothberg, Jonathan Soboloff, Donald L. Gill

1600-Pos BOARD #B330
STIM1 CYTOSOLIC COILED-COIL INTERACTIONS IN THE RESTING AND ACTIVATED STATE. **Marc Fahrner**, Martin Muik, Rainer Schindl, Carmen Hoeglinger, Christoph Romanin

1601-Pos BOARD #B331
STIM1 BINDS TO PAIRS OF ORAI1 SUBUNITS TO OPEN THE CRAC CHANNEL. **Michelle Yen**, Ludmila A. Lokteva, Richard S. Lewis

1602-Pos BOARD #B332
MECHANISM OF ACTIVATION OF CALCIUM CHANNEL ORAI1 BY ITS REGULATORY PARTNER STIM1. **Aparna Gudlur**, Ariel Quintana, Yubin Zhou, Anjana Rao, Patrick G. Hogan

1603-Pos BOARD #B333
MECHANISM OF ACTIVATION OF STORE-OPERATED CALCIUM ENTRY BY 2-AMINOETHOXYDIPHENYL BORATE. **Yandong Zhou**, Youjun Wang, Xizhuo Wang, Lucas Occhiena, Daniel Y. Chung, Aomin Sun, Donald L. Gill

1604-Pos BOARD #B334
EXPLORING THE ROLE OF PORE WATERS AND COUNTERIONS IN THE CALCIUM RELEASE-ACTIVATED CALCIUM CHANNEL CONDUCTANCE WITH COMPUTATION. **Hao Dong**, Giacomo Fiorin, Michael L. Klein

1605-Pos BOARD #B335
PH DEPENDENCE OF ORAI1 AND ORAI3 STORE-OPERATED CURRENT. **Andriy V. Yeromin**, Olga Safrina, Michael D. Cahalan

1606-Pos BOARD #B336
DISSECTING THE MOLECULAR MECHANISM OF 2-APB-INDUCED INHIBITION OF STIM1-ORAI1 COUPLING. **Youjun Wang**, Xizhuo Wang, Yandong Zhou, Eunan Hendron, Lucas Occhiena, Ming Wei, Donald L. Gill

1607-Pos BOARD #B337
ORAI3 TM3 POINT MUTATION G158C ALTERS KINETICS OF 2-APB-INDUCED GATING BY DISULFIDE BRIDGE FORMATION WITH TM2 C101. **Anna Amcheslavsky**

1608-Pos BOARD #B338
INTERPLAY OF ORAI1-LOOP3 WITH EXTRACELLULAR CA²⁺ BINDING SITES IN LOOP1 CONTROLS CRAC CHANNEL ACTIVITY. **Irene Frischauf**, Rainer Schindl, Vasilina Zayats, Michael Deix, Anna Hochreiter, Barbora Svobodova, Rüdiger Ettrich, Christoph Romanin

1609-Pos BOARD #B339
NOVEL TRANS-MEMBRANE MUTATION SWITCHES ORAI1 TO A CONSTITUTIVELY ACTIVE AND CA²⁺ SELECTIVE CHANNEL. **Rainer Schindl**, Irene Frischauf, Vasilina Zayats, Barbora Svobodova, Michael Deix, Martin Muik, Anna Hochreiter, Rüdiger Ettrich, Christoph Romanin

1610-Pos BOARD #B340
ATOMISTIC MOLECULAR DYNAMICS SIMULATIONS OF DROSOPHILA ORAI IN A HYDRATED LIPID BILAYER. **Mona L. Wood**, Anna Amcheslavsky, Eric Wong, J. Alfredo Freites, Michael D. Cahalan, Douglas J. Tobias

1611-Pos BOARD #B341
 ORAI3 DOMINANTLY MODULATES REDOX SENSITIVITY AND REQUIRES ORAI1 TO LOCALIZE TO MICRODOMAINS OF STORE-OPERATED ACTIVATION. Dalia Alansary, Ivan Bogeski, **Barbara A. Niemeyer**

1612-Pos BOARD #B342
 ICRAC IN HUMAN PRIMARY PROSTATE EPITHELIAL CELLS. Christian Holzmann, Tatiana Kilch, Sven Kappel, Andrea Armbrüster, Volker Jung, Michael Stöckle, Ivan Bogeski, Eva C. Schwarz, **Christine Peinelt**

1613-Pos BOARD #B343
 ACTIVATION OF STIM1 BY L-GLUTAMATE RAPIDLY INHIBITS L-TYPE CALCIUM CHANNEL CURRENT IN CULTURED HIPPOCAMPAL NEURONS. **Philip J. Dittmer**, Mark L. Dell'Acqua, William A. Sather

1614-Pos BOARD #B344
 CHARACTERIZATION OF STORE-OPERATED CALCIUM CHANNELS IN PANCREATIC DUCT EPITHELIA. **Jong Bae Seo**, Mean-Hwan Kim, Bertil Hille, Duk-Su Koh

1615-Pos BOARD #B345
 CHOLESTEROL REGULATES ORAI1 FUNCTION. **Isabella Derler**, Barbara Lackner, Marc Fahrner, Peter B. Stathopoulos, Isaac Jardin, Judith Bergsmann, Mitsu Ikura, Christoph Romanin

1616-Pos BOARD #B346
 ORAI AND TRPC CHANNEL CONTRIBUTION TO CALCIUM SIGNALING IN HUMAN MAST CELLS. **Hannah Wajdner**, Jasmine Farrington, Claire Barnard, Peter T. Peachell, Elizabeth P. Seward

1617-Pos BOARD #B347
 UROTENSIN-II INDUCES VASCULAR SMOOTH MUSCLE CELL PROLIFERATION AND CREB PHOSPHORYLATION THROUGH STORE OPERATED CALCIUM ENTRY AND EGFR TRANSACTIVATION. **María Rodríguez-Moyano**, Ignacio Díaz-Carrasco, Natalia Dionisio, Javier Ávila-Medina, Eva Calderón-Sánchez, Juan Antonio Rosado, Antonio Ordóñez-Fernández, Tarik Smani

Calcium Fluxes, Sparks, and Waves I (Boards #B348–#B378)

1618-Pos BOARD #B348
 EMERGENCE AND SYNCHRONIZATION OF THE “CALCIUM CLOCK” IN A 3-DIMENSIONAL MODEL OF A SINO-ATRIAL NODE CELL WITH EXPLICIT CHANNEL GATING. **Michael Stern**, Larissa A. Maltseva, Magdalena Juhaszova, Steven J. Sollott, Edward G. Lakatta, Victor A. Maltsev

1619-Pos BOARD #B349
 SUPER-RESOLUTION MODELING OF CALCIUM RELEASE IN HEART. **Mark A. Walker**, George SB Williams, Tobias Kohl, Saleet Jafri, Stephan E. Lehnart, Joseph L. Greenstein, W J. Lederer, Raimond L. Winslow

1620-Pos BOARD #B350
 ANTI-ARRHYTHMIC BLOCK OF RYR2 BY FLECAINIDE VERSUS PRO-ARRHYTHMIC BLOCK BY TETRACAINE IN A 3D MODEL OF A CARDIAC CELL. **Derek R. Laver**, Mark B. Cannell, Mohammad S. Imtiaz

1621-Pos BOARD #B351
 ROLE OF THE INTER-RYR COUPLING IN CARDIAC INTRACELLULAR CALCIUM “CLOCK”. **Alexander M. Ryvkin**, Alexander S. Moskvina, Olga Solovyova, Vladimir S. Markhasin

1622-Pos BOARD #B352
 FORMATION OF SUBCELLULAR CALCIUM WAVES IN CARDIAC MYOCYTES: CHARACTERIZING TIMESCALES VIA MATHEMATICAL MODELING. **Michael Nivala**, Christopher Ko, James Weiss, Zhilin Qu

1623-Pos BOARD #B353
 SPATIAL IMPERFECTION ENCODES FUNCTIONAL PERFECTION: SUCCESS AND FAILURE OF CALCIUM RELEASE TO PROPAGATE REGULATE PACEMAKER CELL FUNCTION. **Victor A. Maltsev**, Anna V. Maltsev, Edward G. Lakatta, Michael D. Stern

1624-Pos BOARD #B354
 CALCIUM SIGNALING IN MUSCLE CELLS FROM A PATIENT COHORT WITH INHERITABLE MUSCLE DISEASES. Lourdes Figueroa, Carlo Manno, Joshua N. Edwards, Jianxun Yi, Jingsong Zhou, Natalia Kraeva, Sheila Riazzi, **Eduardo Ríos**

1625-Pos BOARD #B355
 CA²⁺ NANOSPARKS: JUNCTIONAL CA²⁺ DYNAMICS PROBED WITH A NEW TARGETED BIOSENSOR. **Wei Shang**, Fujian Lu, Tao Sun, Jiejia Xu, Lin-lin Li, Yanru Wang, Liangyi Chen, Xianhua Wang, Mark B. Cannell, Shi-qiang Wang, Heping Cheng

1626-Pos BOARD #B356
 ORIGIN OF ARRHYTHMOGENIC CA²⁺ WAVE IN ATRIAL MYOCYTES UNDER FLUID PRESSURE: ROLE OF DENSE, DISORIENTED RYR CLUSTERS COUPLED WITH MEMBRANE INVAGINATION. Joon-Chul Kim, Min-Jeong Son, **Sun-Hee Woo**

1627-Pos BOARD #B357
 NATURAL ALKALOID MURRAYAFOLINE-A SENSITIZES CA²⁺ RELEASE SITES VIA ADENYLATE CYCLASE AND PROTEIN KINASE C PATHWAY IN RAT VENTRICULAR MYOCYTES. **Joon-Chul Kim**, Min-Jeong Son, Sun-Hee Woo

1628-Pos BOARD #B358
 EXPLORING SR CALCIUM AND CYTOSOLIC CALCIUM WAVE DYNAMICS USING A 3D STOCHASTIC MYOCYTE MODEL. **Tuan M. Hoang-Trong**, William J. Lederer, Moshin S. Jafri

1629-Pos BOARD #B359
 ANKYRIN-B REDUCTION ENHANCES CALCIUM SPARKS VIA CAMKII. Samuel Galice, **Sanda Despa**

1630-Pos BOARD #B360
 DYNAMICS OF CALCIUM SPARKS AND SR CALCIUM LEAK DURING EXCITATION-CONTRACTION COUPLING IN MOUSE HEART CELLS. **George S. B. Williams**, Andrew P. Wescott, W. J. Lederer, M. Saleet Jafri

1631-Pos BOARD #B361
 INVESTIGATION OF ARRHYTHMOGENIC CALCIUM EVENTS BY INITIATING LOCAL CALCIUM RELEASE IN CARDIOMYOCYTES. **Brian M. Hagen**, Joseph P.Y. Kao, W. Jonathan Lederer

1632-Pos BOARD #B362
 THE ROLE OF JUNCTIONAL- AND NON-JUNCTIONAL CA RELEASE SITES IN THE GENERATION OF ABERRANT DIASTOLIC CA RELEASE IN MYOCYTES FROM POST-MYOCARDIAL INFARCTION HEARTS. **Andriy E. Belevych**, Cynthia A. Carnes, George E. Billman, Sandor Gyorke

1633-Pos BOARD #B363
 ABLATION OF MAJOR PKA AND/OR CAMKII PHOSPHORYLATION SITES IN THE RYR2 CHANNEL DIFFERENTIALLY AFFECTS THE SUSCEPTIBILITY OF MICE TO VAGOTONIC ATRIAL FIBRILLATION. **Roberto Ramos Mondragón**, Emmanuel Camors, Patricia P. Powers, Héctor H. Valdivia

1634-Pos BOARD #B364
INCREASED SERCA PUMP EXPRESSION IS ASSOCIATED WITH SLOW TERMINATION OF CALCIUM SPARKS AND DELAYED LOCAL RECOVERY IN VASCULAR SMOOTH MUSCLE CELLS OF HYPERTHYROID RATS. Miyamin J. Miranda-Saturnino, David R. de Alba-Aguayo, Martha Mercado-Morales, Agustín Guerrero-Hernández, **Angelica Rueda**

1635-Pos BOARD #B365
ULTRAFAST CALCIUM WAVE IN CULTURED VASCULAR SMOOTH MUSCLE CELLS. **Jean-Jacques Meister**, Jairo Camilo Quijano

1636-Pos BOARD #B366
ALTERED CAMKII AND ROS MICRODOMAINS FAVOR SPARKS IN ORPHANED RYR AFTER MYOCARDIAL INFARCTION. **Eef Dries**, Ilse Lenaerts, Niall Macquaide, Demetrio Santiago, Piet Claus, Karin R Sipido

1637-Pos BOARD #B367
CAMKII EXACERBATES CALCIUM WAVES DURING REPERFUSION OF ISCHEMIC HEART. Carlos A. Valverde, Alicia Mattiazzi, **Ariel L. Escobar**

1638-Pos BOARD #B368
STRETCH-DEPENDENT REGULATION OF CALCIUM SIGNALING IN HEART - WHO ARE THE KEY PLAYERS? **Benjamin L. Prosser**, Christopher W. Ward, Jaclyn P. Kerr, Guoli Shi, W. Jonathan Lederer

1639-Pos BOARD #B369
THE COUPLED-PACEMAKER CLOCK SYSTEM OF SINOATRIAL NODAL CELLS REGULATES BOTH THE ACTION POTENTIAL RATE AND RHYTHM. Yael Yaniv, Alexey E. Lyashkov, Syevda Sirenko, Yosuke Okamoto, Toni-Rose Guiriba, **Edward G. Lakatta**

1640-Pos BOARD #B370
INCREASED RISK OF ATRIAL FIBRILLATION WITH ATTENUATED ACTIVITY OF P21-ACTIVATED KINASE. **Jaime DeSantiago**, Dan J. Bare, Yunbo Ke, R. John Solaro, Boaz Avitall, Rishi Arora, Kathrin Banach

1641-Pos BOARD #B371
PRO-ARRHYTHMIC CALCIUM WAVES INDUCED BY PHOSPHODIESTERASE TYPE 4 INHIBITION UPON BETA-ADRENERGIC STIMULATION INVOLVE BOTH PKA AND CAMKII. **Pierre Bobin**, Audrey Varin, Rodolphe Fischmeister, Grégoire Vandecasteele, Jérôme Leroy

1642-Pos BOARD #B372
SERCA STIMULATION INCREASES INTRA-SR Ca^{2+} THRESHOLD FOR Ca^{2+} WAVES IN CARDIOMYOCYTES. **Miguel Fernandez-Tenorio**, Ernst Niggli

1643-Pos BOARD #B373
CALCIUM HANDLING IS ALTERED IN THE ACTC E99K TRANSGENIC MOUSE MODEL OF HYPERTROPHIC CARDIOMYOPATHY. **Christina T. Rowlands**, Steve B. Marston, Kenneth T. MacLeod

1644-Pos BOARD #B374
MULTISPOT MULTIPHOTON Ca^{2+} IMAGING IN ACUTE MYOCARDIAL SLICES OF CPVT HEARTS. **Giulia Borile**, Andrea Urbani, Claudio De Mauro, Domenico Alfieri, Jon W. Lederer, Francesco Pavone, Marco Mongillo

1645-Pos BOARD #B375
EFFECTS OF FLECAINIDE AND RANOLAZINE ON INTRACELLULAR CALCIUM HANDLING AND SARCOLEMMA SODIUM CURRENT. **Anita Alvarez-Laviada**, Markus Sikkell, Becker Al-khayatt, Ken T. MacLeod

1646-Pos BOARD #B376
ATRIAL EXCITATION-CONTRACTION COUPLING AND CA WAVE PROPAGATION IN NORMAL AND FAILING HEARTS. **Felix Hohendanner**, Lothar A. Blatter

1647-Pos BOARD #B377
STRUCTURAL AND FUNCTIONAL ARRANGEMENTS OF ATRIAL MYOCYTES THAT FACILITATE EXCITATION-CONTRACTION COUPLING. **Joshua T. Maxwell**, Felix Hohendanner, Lothar A. Blatter

1648-Pos BOARD #B378
IP3 RECEPTOR MEDIATED CA RELEASE IN ATRIAL CELLS FROM NORMAL AND FAILING HEARTS. **Felix Hohendanner**, Lothar A. Blatter

Voltage-gated Na Channels II (Boards #B379–#B397)

1649-Pos BOARD #B379
FREQUENCY-DEPENDENT INHIBITION OF SODIUM CHANNELS BY THE GENERAL ANESTHETIC ISOFLURANE. **Kerry Purtell**, Karl F. Herold, Wei Ouyang, Kevin J. Gingrich, Hugh C. Hemmings Jr.

1650-Pos BOARD #B380
PHARMACOLOGY OF HETEROLOGOUSLY EXPRESSED HUMAN $Na_v1.9$ CHANNELS. **Carlos G. Vanoye**, George R. Ehring, Alfred L. George

1651-Pos BOARD #B381
BLOCK OF NACHBAC BY CADMIUM AND LANTHANUM IONS. Sun Huang, Kevin Jia, **Robert J. French**

1652-Pos BOARD #B382
MECHANISM OF SLOW REPRIMING OF NAV CHANNELS BY LIDOCAINE. **Vaibhavkumar S. Gawali**, Péter Lukács, René Cervenka, Xaver Koenig, Lena Rubi, Karlheinz Hilber, Eugen Timin, Hannes Todt

1653-Pos BOARD #B383
FLUOXETINE BLOCKS $Na_v1.5$ CHANNELS VIA A MECHANISM SIMILAR TO THAT OF CLASS 1 ANTIARRHYTHMICS. Hugo Poulin, Olivier Theriault, Martin J. Beaulieu, **Mohamed Chahine**

1654-Pos BOARD #B384
PROTEIN-PROTEIN INTERACTIONS BASED DRUG DISCOVERY AGAINST THE VOLTAGE-GATED SODIUM CHANNEL. **Syed R. Ali**, Neli Panova, Svetla Stoilova-McPhie, Fernanda Laezza

1655-Pos BOARD #B385
SPECIFICITY OF CALMODULIN RECOGNITION OF HUMAN VOLTAGE-GATED SODIUM CHANNELS. **Dagan C. Marx**, Mark S. Miller, Liam Hovey, Kristin M. Tefft, Jesse B. Yoder, Elaine Kim, Sterling C. Martin, Michael D. Feldkamp, Madeline A. Shea

1656-Pos BOARD #B386
BLOCK OF Na^+ CURRENTS AND SUPPRESSION OF ACTION POTENTIALS IN CULTURED HIPPOCAMPAL NEURONS BY GS-458967. **Ryoko Hirakawa**, Luiz Belardinelli, Sridharan Rajamani

1657-Pos BOARD #B387
CARDIAC SODIUM CHANNEL DISPLAY COUPLED GATING. **Jerome Clatot**, Haiyan Liu, Eckhard Ficker, Isabelle Deschenes

1658-Pos BOARD #B388
THE TRPA1 AGONIST CINNAMALDEHYDE ACTS AS A LOCAL ANESTHETIC INHIBITING VOLTAGE-GATED SODIUM CHANNELS IN SENSORY NEURONS. **Brett Boonen**, Yeranddy A. Alpizar, Veronick Benoy, Ludo Van Den Bosch, Thomas Voets, Karel Talavera

1659-Pos BOARD #B389

ACIDOSIS: A POSSIBLE TRIGGER FOR BRUGADA SYNDROME ASSOCIATED ARRHYTHMIA. **Colin H. Peters**, Peter C. Ruben

1660-Pos BOARD #B390

INAL IN THE PATHOPHYSIOLOGY OF INSULIN-SECRETION: A "CARDIAC" PARADIGM IN A NEW CELL TYPE.

Riccardo Rizzetto, Marcella Rocchetti, Alice Villa, Luca Sala, Carlotta Ronchi, Isabella Molinari, Mara Ferrandi, Antonio Zaza

1661-Pos BOARD #B391

REDUCTION OF CARDIAC SODIUM CURRENT IS INDEPENDENT OF CARDIAC HYPERTROPHY IN MICE WITH CARDIAC SPECIFIC OVEREXPRESSION OF TYPE 1 ANGIOTENSIN II RECEPTOR. **Sophie Mathieu**, Nabil El Khoury, Katy Rivard, Mona Nemer, Céline Fiset

1662-Pos BOARD #B392

DIFFERENTIAL THERMOSENSITIVITY IN NAV1.5 MUTATIONS ASSOCIATED WITH LONG QT AND BRUGADA SYNDROMES. Mena Abdelsayed, **Peter C. Ruben**

1663-Pos BOARD #B393

TRAFFICKING DEFECTIVE MUTATIONS MODULATE NA_v1.5 NGLYCOSYLATION STATES. Aurelie Mercier, Romain Clement, Patrick Bois, **Aurelien Chatelier**

1664-Pos BOARD #B394

SELECTIVE INHIBITION OF LATE NA⁺ CURRENT REDUCES ARRHYTHMIC ACTIVITY IN SPONTANEOUSLY HYPERTENSIVE RAT MYOCYTES. **Nesrine El-Bizri**, Steven Nguyen, Gongxin Liu, Luiz Belardinelli, Sridharan Rajamani

1665-Pos BOARD #B395

DYNAMIC LATE NA CURRENT DURING CARDIAC ACTION POTENTIAL REVEALED BY A SPECIFIC AND POTENT INHIBITOR GS967. Zhong Jian, Balazs Horvath, Tamas Banyazs, Leighton T. Izu, Yi-Je Chen, Sridharan Rajamani, Kenneth Ginsburg, Julie Bossuyt, Donald M. Bers, Luiz Belardinelli, **Ye Chen-Izu**

1666-Pos BOARD #B396

INCREASED ACTIVITY OF NAV1.9 SODIUM CHANNELS CAUSES LOSS OF PAIN PERCEPTION. **Enrico Leipold**, R. Oliver Goral, Stefan H. Heinemann, Christian A. Hübner, Ingo Kurth

1667-Pos BOARD #B397

EPILEPSY INCREASES THE CONTRIBUTION OF TETRODOXIN-SENSITIVE CHANNELS TO THE CARDIAC SODIUM CURRENT. Michael Biet, Nathalie Morin, Sandra Duss, Nathalie Sanon, Lionel Carmant, **Robert Dumaine**

**Voltage-gated Ca Channels II
(Boards #B398–#B417)**

1668-Pos BOARD #B398

PROFILING MECHANISMS OF RGK INHIBITION ACROSS THE FAMILY OF HIGH-VOLTAGE-ACTIVATED CAV1/CAV2 CALCIUM CHANNELS. **Akil A. Puckerin**, Donald D. Chang, Henry M. Colecraft

1669-Pos BOARD #B399

LEUCINE-RICH REPEAT CONTAINING 10 (LRRC10) PROTEIN IS A NOVEL REGULATOR OF CARDIAC CAV1.2 L-TYPE CALCIUM CHANNELS. **Courtney R. Reynolds**, Li Feng, Matthew J. Brody, Lee Youngsook, Ravi C. Balijepalli

1670-Pos BOARD #B400

A UNIFIED FRAMEWORK FOR CALCIUM CHANNEL MODULATION BY CALCIUM BINDING PROTEINS. Philemon S. Yang, Manu Ben Johny, **David T. Yue**

1671-Pos BOARD #B401

C-TERMINAL MODULATION OF CAV1.3 L-TYPE CALCIUM CHANNELS MODIFIES THEIR GATING PROPERTIES IN COCHLEAR INNER HAIR CELLS. Stephanie Eckrich, Anja Scharinger, **Stefan Muenkner**, Kai Schönig, Amy Lee, Dusan Bartsch, Alexandra Koschak, Martina Sinnegger-Brauns, Dietmar Hecker, Bernhard Schick, Joerg Striessnig, Jutta Engel

1672-Pos BOARD #B402

USING EXOFACIALLY TAGGED FUNCTIONAL CAV2.2 TO INVESTIGATE THE MODULATION OF PORE SUBUNIT TRAFFICKING BY AUXILIARY CALCIUM CHANNEL SUBUNITS. **John S. Cassidy**, Annette C. Dolphin

1673-Pos BOARD #B403

CARDIOMYOCYTE ENDPOINTS DISTINGUISH NON-CANONICAL REGULATION OF THE RGK GTPASES RAD AND REM. **Donald D. Chang**, Henry M. Colecraft

1674-Pos BOARD #B404

DIFFERENTIAL CA_v2.1 AND CA_v2.3 CHANNEL INHIBITION BY BACLOFEN AND α -CONOTOXIN VC1.1 VIA GABA_B RECEPTOR ACTIVATION. **Geza Berecki**, Jeffrey R. McArthur, Hartmut Cuny, Richard J. Clark, David J. Adams

1675-Pos BOARD #B405

CALORIMETRIC AND NMR CHARACTERIZATION OF A REM2 G-DOMAIN INTERACTION WITH THE SH3-GK CORE OF THE CA²⁺ CHANNEL BETA4 SUBUNIT. **Xingfu Xu**, William A. Horne

1676-Pos BOARD #B406

A TIMOTHY SYNDROME CAUSING MUTATION PERTURBS VOLTAGE SENSOR OPERATION IN HUMAN CA_v1.2 CHANNELS. **Nicoletta Savalli**, Antonios Pantazis, Daniel Sigg, Alan Neely, Riccardo Olcese

1677-Pos BOARD #B407

THREE SPLICE VARIANTS OF THE CALCIUM CHANNEL BETA4 SUBUNIT DISPLAY DIFFERENTIAL TARGETING AND GENE REGULATION IN NEURONS. Solmaz Etemad, Gerald J. Obermair, Verena Burtscher, Daniel Bindreither, **Bernhard E. Flucher**

1678-Pos BOARD #B408

IDENTIFICATION OF A DETERMINANT OF HIGH AFFINITY CALCIUM BINDING IN THE SELECTIVITY FILTER OF A MAMMALIAN CALCIUM CHANNEL. **Felix Findeisen**, David Shaya, Fayal Abderemane-Ali, Cristina Arrigoni, Gildas Loussouarn, Daniel L. Minor, Jr.

1679-Pos BOARD #B409

FUNCTIONAL CLUSTERING OF L-TYPE CAV1.3 CHANNELS. **Claudia M. Moreno**, Rose E. Dixon, Can Yuan, Marc D. Binder, Luis F. Santana

1680-Pos BOARD #B410

CALCIUM CHANNEL α ₂ δ -1 SUBUNIT KNOCKOUT CAUSES DIABETES DUE TO IMPAIRED INSULIN RELEASE. **Petronel Tuluc**, Vincenzo Mastrolia, Mathias Drach, Sylvia M. Flucher, Erik Renström, Jörg Striessnig, Bernhard E. Flucher

1681-Pos BOARD #B411

CHEMICAL-BIOLOGICAL GENERATOR OF STEP INCREASES IN CALMODULIN REVEALS DUAL MODULATION OF L-TYPE CA²⁺ CHANNELS. **Paul Adams**, Manu Ben Johny, Ivy E. Dick, David T. Yue

1682-Pos **BOARD #B412**
RATIONAL DESIGN OF PEPTIDE MODULATORS
BI-DIRECTIONALLY TUNING CAV1.3 CHANNELS. **Min Liu**,
Nan Liu, Yaxiong Yang, Bo Yang, Xiaodong Liu

1683-Pos **BOARD #B413**
SUPER-RESOLUTION IMAGING OF CAV1.2 CHANNEL CLUSTERS.
Rose E. Dixon, Claudia M. Moreno, Can Yuan, Luis F. Santana

1684-Pos **BOARD #B414**
IS THERE A CONTRIBUTION OF BOTH CAV1.4 AND CAV1.3
L-TYPE CALCIUM CHANNELS TO RETINAL SYNAPTIC
TRANSMISSION? **Verena Burtscher**, Dagmar Knoflach,
Christof Kugler, Anja Scharinger, Martin Glösmann, Georgios Blatsios,
Andreas Janecke, Jörg Striessnig, Gerald J. Obermair, Klaus W. Schicker,
Alexandra Koschak

1685-Pos **BOARD #B415**
KNOCKOUT OF THE α, δ -1 CALCIUM CHANNEL SUBUNIT
ALTERS CALCIUM HOMEOSTASIS AND ELECTRICAL ACTIVITY
IN PANCREATIC ISLET CELLS. **Vincenzo Mastrolia**, Petronel Tuluc,
Bernhard E. Flucher

1686-Pos **BOARD #B416**
GENOTYPE-PHENOTYPE CORRELATION IN INDUCED
PLURIPOTENT STEM CELL (IPSC)DERIVED CARDIOMYOCYTES
CARRYING CALMODULIN MUTATIONS. **Marcella Rocchetti**,
Luca Sala, Carlotta Ronchi, Claudia Altomare, Manuela Mura,
Francesca Gullo, Alessandra Moretti, Massimiliano Gnechi, Lia Crotti,
Peter J. Schwartz, Antonio Zaza

1687-Pos **BOARD #B417**
AGING INCREASES CARDIAC L-TYPE CALCIUM CHAN-
NEL CURRENT OF VENTRICULAR MYOCYTES FROM MALE
HEARTS VIA A PKA-DEPENDENT MECHANISM. **Sylvain Brunet**

TRP Channels I (Boards #B418–#B438)

1688-Pos **BOARD #B418**
STEROIDAL MOLECULES AS POSSIBLE REGULATORS OF
TRPV1 CHANNELS. **Sara L. Morales-Lázaro**, Itzel Llorente,
Félix Sierra-Ramírez, Carlos M. Diaz-García, Barbara Serrano-Flores,
Marcia Hiriart, Sidney A. Simon, Tamara Rosenbaum

1689-Pos **BOARD #B419**
FUNCTIONAL AND MODELLING STUDIES OF THE
TRANSMEMBRANE REGION OF TRPM8 CHANNEL.
Shozeb M. Haider, Gabriel Bidaux, Miriam Sgobba, Loic Lemmonier,
Anne-Sophie Borowiec, Mark S P Sansom, Alex V. Zholos

1690-Pos **BOARD #B420**
CELLULAR REGULATION OF TRANSIENT RECEPTOR
POTENTIAL MELASTATIN 3 (TRPM3) CHANNEL ACTIVITY.
Balazs I. Toth, Joris Vriens, Debapriya Ghosh, Thomas Voets

1691-Pos **BOARD #B421**
NOVEL TRPM3 AGONIST - SINGLE COMPOUND OPENS
MULTIPLE ION PERMEATION PATHWAYS. Katharina Held,
Annelies Janssens, Patrick Chaltin, Thomas Voets, **Joris Vriens**

1692-Pos **BOARD #B422**
REGULATION OF THE ION CHANNEL TRPM3 BY
PHOSPHOINOSITIDES. **Doreen Badheka**, Tibor Rohacs

1693-Pos **BOARD #B423**
INHIBITION BY REDUCTION OF PIP2 ACCELERATES
INACTIVATION OF RECEPTOR-OPERATED TRPC6/7
CURRENTS. **Mori Masayuki**, Kyohei Itsuki, Yuko Imai, Hideharu Hase,
Yasushi Okamura, Ryuji Inoue

1694-Pos **BOARD #B424**
REGULATION OF TRPM8 CHANNEL ACTIVITY IN PROSTATE
CANCER BY ANDROGENS. Swapna Asuthkar, Lusine Demirkhanyan,
Xiaohui Sun, Pia Elustondo, Kiran Velpula, Evgeny Pavlov,
Eleonora Zakharian

1695-Pos **BOARD #B425**
PROPERTIES OF THE STEROID BINDING SITE OF TRPM3
CHANNELS. Florian Mohr, Christian Goecke, Anna Drews,
Oleksandr Rizun, Douglas F. Covey, Marc Behrendt, **Johannes Oberwinkler**

1696-Pos **BOARD #B426**
SINGLE-CELL NA⁺ FLUX ASSAY FOR MEASUREMENT OF
TRPM7 CHANNEL ACTIVITY. **Siham Hourani**, Pavani Beesetty,
Masayuki Matsushita, J. Ashot Kozak

1697-Pos **BOARD #B427**
PROPERTIES OF THE C-TERMINUS OF THE YVC1P TRP
CHANNEL. **Kirsten Knecht**, Michael Legregni, Lauren N. Miterko,
Julia Yanoski, Lise Thomas

1698-Pos **BOARD #B428**
PI(4,5)P2 POSITIVELY REGULATES TRANSIENT RECEPTOR
POTENTIAL VANILLOID 1 CHANNEL ACTIVATION IN PLANAR
LIPID BILAYERS. **Xiaohui Sun**, Eleonora Zakharian

1699-Pos **BOARD #B429**
THE CATION CHANNEL TRPV4 REGULATES EPITHELIAL BAR-
RIER RESPONSES TO LIPOPOLYSACCHARIDES.
Yeranddy A. Alpizar

1700-Pos **BOARD #B430**
LIPID-MEDIATED INTERACTION OF DOUBLE-KNOT TOXIN
WITH TRPV1 CHANNELS. Feng Zhang, **Dmitriy Krepkij**,
Chanhyung Bae, Vera Moiseenkova-Bell, Sonya Hanson,
Inna Gorshkova, Larry Pearce, Peter M. Blumberg, Jae Il Kim,
Kenton J. Swartz

1701-Pos **BOARD #B431**
ALLOSTERIC COUPLING BETWEEN GATE AND SELECTIVITY
FILTER IN TRPC3. **Michaela Lichtenegger**, Thomas Stockner,
Michael Poteser, Klaus Groschner

1702-Pos **BOARD #B432**
PORE MUTATIONS JUSTIFY TETRAMERIC ASSEMBLY OF
CONCATAMERIC TRPM2 CHANNEL CONSTRUCTS.
Csaba Mihalyi, László Csanády

1703-Pos **BOARD #B433**
YEAST BASED FUNCTIONAL ASSAYS FOR IDENTIFICATION
OF ACTIVATORS/INHIBITORS OF TRPV1 AND STRUCTURAL
ELEMENTS INVOLVED IN THERMOSENSING. **Lucia Carrillo**,
Daniel Degreif, Adam Bertl

1704-Pos **BOARD #B434**
TWO DISTINCT MODES OF ACTION OF TRPM8 AGONISTS.
Thomas Voets, Annelies Janssens

1705-Pos **BOARD #B435**
EVIDENCE FOR THE ROLE OF CAMKINASE II AND SYNAPSIN
I IN THE RESTORATION OF NEUROTRANSMISSION IN
BOTULINUM NEUROTOXIN A INTOXICATED NERVE
TERMINALS. Padmamalini Baskaran, **Baskaran Thyagarajan**

1706-Pos **BOARD #B436**
SPECIES-DEPENDENT EFFECTS OF MUSTARD OIL
ON TRPM8. **Annelies Janssens**, Maarten Gees, Balazs Istvan Toth,
Joris Vriens, Karel Talavera, Thomas Voets

1707-Pos BOARD #B437
 ACTIVATION AND SENSITIZATION OF THE CAPSAICIN RECEPTOR TRPV1 BY ALLYL ISOTHIOCYANATE.
 Yeranddy A. Alpizar, Maarten Gees, Brett Boonen, Alicia Sanchez, Bernd Nilius, Thomas Voets, **Karel Talavera**

1708-Pos BOARD #B438
 MOLECULAR ADAPTATIONS TO EXTREME THERMOGENESIS IN MAMMALIAN HIBERNATORS. **Willem J. Laursen**, Owen Funk, Jena Goodman, Dana K. Merriman, Nicholas T. Ingolia, Sviatoslav N. Bagriantsev, Elena O. Gracheva

Ligand-gated Channels II (Boards #B439-#B466)

1709-Pos BOARD #B439
 TRANSPORT OF ANTIBIOTICS THROUGH THE SUBSTRATE SPECIFIC OPRD CHANNEL OF PSEUDOMONAS AERUGINOSA.
Susruta Samanta, Matteo Ceccarelli

1710-Pos BOARD #B440
 EXPRESSION, PURIFICATION AND STABILIZATION OF THE MOUSE 5HT3 RECEPTOR. Gherici Hassaine, Cedric Deluz, Alexandra Graff, Christophe Moreau, Romain Wyss, Luigino Grasso, Aline Desmyter, Takashi Tomizaki, Xiao-Dan Li, Henning Stahlberg, Horst Vogel, **Hugues Nury**

1711-Pos BOARD #B441
 SUBUNIT-DEPENDENT INHIBITION OF NEURONAL NICOTINIC ACETYLCHOLINE RECEPTORS BY PHILANTHOTOXINS.
Hamid S. Kachel, Henrik Franzyk, Kristian Strømgaard, Denis B. Tikhonov, Ian R. Mellor

1712-Pos BOARD #B442
 STUDIES ON FAST NACH RECEPTOR KINETICS UTILIZING A NEW APPROACH TO ULTRA-FAST COMPOUND APPLICATIONS IN AUTOMATED PATCH CLAMP. **Timm Danker**, Elke Guenther

1713-Pos BOARD #B443
 ASYMMETRIC AGONIST SELECTIVITY OF AGONIST SITES IN ($\alpha 4\beta 2$) $2\alpha 4$ NICOTINIC ACETYLCHOLINE RECEPTORS: A KEY DETERMINANT OF AGONIST EFFICACY. **Simone Mazzaferro**, Federica Gasparri, Karina New, Constanza Alcaïno, Isabel Bermudez

1714-Pos BOARD #B444
 LINEAR FREE ENERGY RELATIONSHIPS FOR NEUROTRANSMITTER BINDING TO A NICOTINIC ACETYLCHOLINE RECEPTOR. **Prasad Purohit**, Shaweta Gupta, Iva Bruhova, Anthony Auerbach

1715-Pos BOARD #B445
 ENERGY MAPS OF ACETYLCHOLINE RECEPTOR GATING. Prasad Purohit, Shaweta Gupta, Snehal Jadey, **Anthony Auerbach**

1716-Pos BOARD #B446
 GATING PHI VALUES IN THE MUSCLE ACETYLCHOLINE RECEPTOR $\alpha 2$ - $\alpha 3$ LINKER WITH VS. WITHOUT AGONISTS. **Shaweta Gupta**, Anthony Auerbach

1717-Pos BOARD #B447
 FUNCTIONAL ASYMMETRY OF AGONIST BINDING IN FETAL AND ADULT MUSCLE ACETYLCHOLINE RECEPTORS.
Tapan K. Nayak, Shaweta Gupta, Anthony Auerbach

1718-Pos BOARD #B448
 ACIDIC SIDE-CHAIN ROTAMERS AND THEIR IMPACT ON ION CONDUCTION THROUGH THE NICOTINIC ACETYLCHOLINE RECEPTOR. **Tyler J. Harpole**, Claudio Grosman

1719-Pos BOARD #B449 EDUCATION TRAVEL AWARDEE
 NEURONAL NICOTINIC ACETYLCHOLINE RECEPTORS: THE DEVELOPMENT OF METHODS FOR PRODUCING AFFINITY-PURIFIED AND LIPID-RECONSTITUTED RECEPTORS THAT RETAIN FUNCTIONALITY. **Akash Pandhare**, Steven Riela, Michaela Jansen, Michael P. Blanton

1720-Pos BOARD #B450
 STOICHIOMETRY FOR ACTIVATION OF NEURONAL ALPHA7 NICOTINIC RECEPTORS. **Natalia Andersen**, Jeremias Corradi, Steven Sine, Cecilia B. Bouzat

1721-Pos BOARD #B451
 PROGRESSIVE ANALYSIS OF NACHR STABILITY IN THE LIPIDIC CUBIC PHASE: NACHR DETERGENT SOLUBILIZATION AND FRACTIONAL MOBILITY. **Luis F. Padilla-Morales**, Joel E. González Nieves, Claudia Lanauze, Carlos A. Báez-Págan, Orestes Quesada-González, Jose A. Lasalde-Dominicci

1722-Pos BOARD #B452
 CALCULATION OF CHOLESTEROL BINDING AFFINITY FOR PENTAMERIC LIGAND-GATED ION CHANNELS. **Reza Salari**, Jerome Henin, Grace Brannigan

1723-Pos BOARD #B453
 AGONIST RESPONSE INDUCED BY NICOTINIC ALPHA-7 AGONIST IS INHIBITED BY ANTIPSYCHOTIC DRUGS.
Kristen Frederiksen, Maja Jessen, Jonatan Fullerton Støier, Kim Dekermendjian, John Paul Redrobe, Christoffer Bundgaard, Jørgen Calí Eskildsen, Jesper Frank Bastlund

1724-Pos BOARD #B454
 THE ROLE OF THE FIFTH SUBUNIT ON SENSITIVITY OF $\alpha 4\beta 2$ -CONTAINING NICOTINIC ACETYLCHOLINE RECEPTORS TO ALLOSTERIC MODULATORS. **Constanza Alcaïno**

1725-Pos BOARD #B455
 AN INTEGRATIVE MODEL OF THE PLEIOTROPIC EFFECTS OF GENISTEIN AND CYCLOSPORINE A IN FUNCTIONAL UPREGULATION OF ALPHA 7 NACHRS. **Joseph Farley**, Mohammad Faridul Islam, Patrick Beard Schwartz, Kristi DeBoeuf, Jed Rose

1726-Pos BOARD #B456
 STRUCTURE FUNCTION STUDIES AT TWO DIFFERENT NICOTINIC ACETYLCHOLINE RECEPTOR SUBTYPES.
Michael R. Post, Henry A. Lester, Dennis A. Dougherty

1727-Pos BOARD #B457
 IDENTIFYING MOTIFS ESSENTIAL FOR SELECTIVE ACTIVATION OF NICOTINIC ACETYLCHOLINE RECEPTORS.
Christopher Marotta, Henry A. Lester, Dennis A. Dougherty

1728-Pos BOARD #B458 EDUCATION TRAVEL AWARDEE
 INSIGHTS INTO THE DISTINCTLY DIFFERENT SENSITIVITIES OF $\alpha 7$ AND $\alpha 7\beta 2$ NACHRS TO THE VOLATILE ANESTHETIC ISOFLURANE. **David D. Mowrey**, Qiang Liu, Vasyly Bondarenko, Qiang Chen, Edom Seyoum, Yan Xu, Jie Wu, Pei Tang

1729-Pos BOARD #B459
 FUNCTIONAL CHIMERAS OF THE HUMAN $\alpha 7$ ACETYLCHOLINE RECEPTOR PROVIDE INSIGHTS INTO ALLOSTERIC MODULATION. **Edom Seyoum**, Tommy S. Tillman, Yan Xu, Pei Tang

1730-Pos BOARD #B460
DIRECT INTERACTION OF RIC-3 WITH THE INTRACELLULAR DOMAIN OF EUKARYOTIC CATIONIC PENTAMERIC LIGAND-GATED ION CHANNELS. **Sita Nirupama Nishtala**, Nelli Mnatsakanyan, Michaela Jansen

1731-Pos BOARD #B461
THE PROKARYOTE LIGAND-GATED ION CHANNEL ELIC CAPTURED IN A PORE BLOCKER-BOUND CONFORMATION BY THE ALZHEIMER'S DISEASE DRUG MEMANTINE. Chris Ulens, **Radovan Spurny**, Andrew J. Thompson, Mona Alqazzaz, Sarah Debaveye, Han Lu, Kerry Price, Jose M. Villalgorido, Gary Tresadern, Gary Tresadern, Joseph W. Lynch, Joseph W. Lynch, Sarah C. R. Lummis

1732-Pos BOARD #B462
PROBING PENTAMERIC LIGAND-GATED ION CHANNELS WITH BROMOFORM REVEALS MANY INTERCONNECTED ANESTHETIC BINDING SITES. Benoist Laurent, **Samuel Murail**, Ludovic Sauguet, Marc Delarue, Marc Baaden

1733-Pos BOARD #B463
MOLECULAR INSIGHTS INTO THE GATING MECHANISM OF GLIC, A PROKARYOTIC LIGAND-GATED ION CHANNEL. **Mehrnoosh Arrar**, Iman Pouya, James Andrew McCammon, Erik Lindahl

1734-Pos BOARD #B464
LIGAND-GATED ION CHANNEL GATING KINETICS AND THE OPENING/CLOSING MECHANISM ARE SENSITIVE TO MUTATIONS ALTERING THE HYDROPHOBICITY OF THE ION CONDUCTION PORE. **Goran Klement**, Iman Pouya, Özge Yoluk, Rebecca Howard, Erik Lindahl

1735-Pos BOARD #B465
ALTERING THE OPEN VS. CLOSED STATE BALANCE OF THE GLIC LIGAND-GATED ION CHANNEL THROUGH MUTAGENESIS ENABLES MOLECULAR SIMULATION OF THE REVERSIBLE GATING PROCESS. Iman Pouya, Göran Klement, Samuel Murail, Peter Kasson, Özge Yoluk, **Erik Lindahl**

1736-Pos BOARD #B466
STRUCTURAL BASIS FOR ALLOSTERIC TRANSITIONS IN THE GLIC PENTAMERIC PROTON-GATED ION CHANNEL. **Ludovic Sauguet**, Azadeh Shahsavar, Frederic Poitevin, Christele Huon, Anais Menny, Akos Nemezc, Ahmed Haouz, Jean-Pierre Changeux, Pierre-Jean Corringer, Marc Delarue

Cardiac Muscle I (Boards #B467–#B498)

1737-Pos BOARD #B467
EFFECT OF PIMOBENDAN ON HEART FAILURE IN A MOUSE MODEL INHERITED CARDIOMYOPATHY. **Miki Nonaka**, Kengo Hayamizu, Sachio Morimoto

1738-Pos BOARD #B468
EFFECTS OF CHRONIC MYOCARDIAL INFARCTION ON CARDIAC MUSCLE PERFORMANCE AND STRUCTURE IN-VIVO AND IN-VITRO. **Christopher Toepfer**, Markus Sikkell, Valentina Caorsi, O'Neal Copeland, Iratxe Torre Martinez, Timothy West, Steve Marston, Pradeep Luther, Alexander Lyon, Kenneth Macleod, Michael Ferenczi

1739-Pos BOARD #B469
ELUCIDATING THE ROLE OF MYOSIN PSEUDO-PHOSPHORYLATION IN A NOVEL RESCUE MOUSE MODEL OF CARDIOMYOPATHY. **Priya Muthu**, Chen-Ching Yuan, Katarzyna Kazmierczak, Jingsheng Liang, Ana Isabel Rojas, Danuta Szczesna-Cordary

1740-Pos BOARD #B470
AGE-RELATED CARDIAC DYSFUNCTION IN TRANSGENIC MICE CARRYING ACTIN E99K MUTATION. **Li Wang**, Weihua Song, Andrew Messer, Steven Marston, Masataka Kawai

1741-Pos BOARD #B471
DETAILED HEMODYNAMIC CHARACTERIZATION OF ATHLETE'S HEART USING LEFT VENTRICULAR PRESSURE-VOLUME ANALYSIS IN A RAT MODEL. **Dalma Kellermayer**, Attila Oláh, Árpád Lux, Balázs Tamás Németh, László Hidi, Ede Birtalan, Mihály Ruppert, Csaba Mátyás, Béla Merkely, Tamás Radovits

1742-Pos BOARD #B472
INCORPORATION OF TROPONIN C WITH MODIFIED CA²⁺ BINDING INTO THE HEART THROUGH THE USE OF ADENO-ASSOCIATED VIRUS LEADS TO ALTERED HEART FUNCTION. Vikram Shettigar, Sean C. Little, Jianchao Zhang, Steve R. Roof, Mark T. Ziolo, Brandon J. Biesiadecki, **Jonathan P. Davis**

1743-Pos BOARD #B473
CROSSING MICE CARRYING TNT DISEASE MUTATIONS WITH OPPOSITE EFFECTS ON THE MYOFILAMENT CALCIUM SENSITIVITY PARTIALLY NORMALIZES MYOFILAMENT FUNCTION AND AMELIORATES CARDIOMYOPATHY PHENOTYPES. **Rajdeep S. Turna**, Rebecca S. Weller, Hyun-Seok Hwang, David Dweck, Ferhaan Ahmad, Sabine Huke, Björn C. Knollmann, Jose Renato Pinto

1744-Pos BOARD #B474
IMPACT OF E163R CTNT MUTATION ON CARDIAC MECHANICS AND ENERGETICS IN A MURINE MODEL. **Benedetta Tosi**, Cecilia Ferrantini, José Manuel Pioner, Claudia Ferrara, Beatrice Scellini, Nicoletta Piroddi, Salwa Abdullah, Coppini Raffaele, Sara Bardi, Jill Tardiff, Chiara Tesi, Corrado Poggesi

1745-Pos BOARD #B475
AAV6-MEDIATED OVEREXPRESSION OF RIBONUCLEOTIDE REDUCTASE (R1R2) ENHANCES 2-DEOXY-ATP CONCENTRATION IN VIVO AND IMPROVES CARDIAC FUNCTION. **Elizabeth Gay**, Sarah G. Nowakowski, Stephen C. Kolwicz, Guy L. Odom, Galina V. Flint, Rudy Stuppard, Haiwei Gu, Jeffrey S. Chamberlain, Daniel Raftery, Rong Tian, David J. Marcinek, Michael Regnier

1746-Pos BOARD #B476
TITIN-BASED PASSIVE TENSION IS INCREASED IN A TITIN AI KO MOUSE. **Rebecca Slater**, Kirk Hutchinson, Mei Methawasin, Henk L. Granzier

1747-Pos BOARD #B477
MYOCARDIAL TITIN: AN IMPORTANT MODIFIER OF CARDIAC STIFFNESS. **Nazha Hamdani**, Wolfgang A. Linke

1748-Pos BOARD #B478
A GAIN-OF-FUNCTION MUTATION IN CARDIAC MYOSIN BINDING PROTEIN-C INCREASES VISCOELASTIC LOAD AND SLOWS SHORTENING VELOCITY IN MYOCYTES FROM TRANSGENIC MICE. **Kristina L. Bezold**, Jaskiran K. Khosa, Samantha P. Harris

1749-Pos BOARD #B479
EXERCISE-INDUCED ENHANCEMENT OF CARDIAC AND SARCOMERE PERFORMANCE IS LARGER IN MALE THAN IN FEMALE MYBPC3 MUTATION HETEROZYOUS KNOCK-IN MICE. **Aref Najafi**, Saskia Schlossarek, Elza van Deel, Nikki van den Heuvel, Ahmet Güçlü, Max Goebel, Nicky Boontje, Diederik Kuster, Lucie Carrier, Jolanda Van der Velden

1750-Pos BOARD #B480

GENDER DIFFERENCES IN PASSIVE TENSION IN HYPERTROPHIC CARDIOMYOPATHY PATIENTS. **Louise L.A.M. Nijenkamp**, Jessica A. Regan, Michelle Michels, Chris dos Remedios, Carolyn H. Ho, Jolanda van der Velden

1751-Pos BOARD #B481

SEX-RELATED DIFFERENCES IN MYOSIN HEAVY CHAIN ISOFORMS OF HUMAN FAILING AND NON-FAILING ATRIA. **Peter J. Reiser**, Christine S. Moravec

1752-Pos BOARD #B482

MYOCARDIAL INFARCTION-INDUCED N-TERMINAL FRAGMENT OF CMYBP-C IMPAIRS MYOFILAMENT FUNCTION IN HUMAN LEFT VENTRICULAR MYOFIBRILS. **Namthip Witayavanitkul**, Jason Sarkey, Younss Aitmou, Diederik W.D. Kuster, Ramzi J. Khairallah, Suresh Govindan, Xin Chen, Ying Ge, Sudarsan Rajan, David F. Wiczorek, Thomas Irving, Pieter P. de Tombe, Sakthivel Sadayappan

1753-Pos BOARD #B483

BETA-ADRENERGIC RESPONSE IN HUMAN HCM MYOCARDIUM: EFFECTS OF RANOLAZINE. **Cecilia Ferrantini**, Raffaele Coppini, Benedetta Tosi, Josè Manuel Pioner, Laura Sartiani, Iacopo Olivotto, Chiara Tesi, Luiz Belardinelli, Elisabetta Cerbai, Alessandro Mugelli, Corrado Poggesi

1754-Pos BOARD #B484

DEPRESSED CONTRACTILITY AT LOW-LOAD SPONTANEOUS OSCILLATORY CONTRACTIONS IN HUMAN HYPERTROPHIC CARDIOMYOPATHY WITH MYBPC3 MUTATIONS. **Amy Li**, J. Martijn Bos, Michael J. Ackerman, Filip Braet, Murat Kekic, Shin'ichi Ishiwata, Cristobal G. dos Remedios

1755-Pos BOARD #B485

THE ROLE OF CARDIAC MYOSIN LIGHT CHAIN 2V PHOSPHORYLATION IN THE HEALTHY AND FAILING MYOCARDIUM. **Ramzi J. Khairallah**, Namthip Witayavanitkul, Mohit Kumar, Mengjie Zhang, Pieter de Tombe

1756-Pos BOARD #B486

EXISTENCE OF LENGTH-DEPENDENT MODULATION OF CROSS-BRIDGE CYCLING KINETICS IN RIGHT VENTRICLES OF NON-FAILING AND FAILING HUMAN MYOCARDIUM. **Nima Milani-Nejad**, Jonathan P. Davis, Vadim V. Fedorov, Peter J. Mohler, Ahmet Kilic, Robert S.D. Higgins, Paul M.L. Janssen

1757-Pos BOARD #B487

INCREASED CAMKII ACTIVITY IMPAIRS CONTRACTILE FUNCTION IN HUMAN HCM MYOCARDIUM. **Raffaele Coppini**, Cecilia Ferrantini, Manuel J. Pioner, Lina Yao, Peidong Fan, Benedetta Tosi, Elisabetta Cerbai, Luiz Belardinelli, Chiara Tesi, Corrado Poggesi

1758-Pos BOARD #B488

THE CARDIAC TROPONIN T R92L HCM MUTATION ALTERS CARDIAC TROPONIN I DYNAMICS AND PKA PHOSPHORYLATION POTENTIAL. **Jayant James Jayasundar**, Kenneth Brooks, Sarah Lehman, Michael R. Williams, Jil C. Tardiff

1759-Pos BOARD #B489

CONFORMATIONAL AND FUNCTIONAL EFFECTS OF PATHOGENIC MUTATIONS AT THE I-T INTERFACE OF CARDIAC TROPONIN I. **Shirin Akhter**, J. -P. Jin

1760-Pos BOARD #B490

COMPUTATIONAL PREDICTION AND EXPERIMENTAL VERIFICATION OF DIFFERENTIAL CALCIUM AFFINITY IN THIN FILAMENT MUTANTS KNOWN TO CAUSE HYPERTROPHIC CARDIOMYOPATHY. Edward P. Manning, **Sarah J. Lehman**, Steven D. Schwartz, Jil C. Tardiff

1761-Pos BOARD #B491

CA²⁺-INDUCED STRUCTURAL CHANGES IN TN: A MULTI-SITE FRET STUDY COMBINING TCSPC WITH SINGLE FILAMENT IMAGING. **Maria E. Moutsoglou**, Gi-Ho Kim, Christopher Solis-Ocampo, Steven C. Wu, John M. Robinson

1762-Pos BOARD #B492

PARTIAL ACTIVATION OF THE CARDIAC MYOFILAMENT BY CA²⁺. **Mathivanan Chinnaraj**

1763-Pos BOARD #B493

MODULATION OF THE INTERACTION BETWEEN TROPONIN I N-TERMINAL PEPTIDE AND TROPONIN C BY PHOSPHORYLATION STUDIED BY MOLECULAR DYNAMICS. Ian Gould, Andrew E. Messer, Maria Papadaki, **Steven B. Marston**

1764-Pos BOARD #B494

CARDIAC TROPONIN I A164H AND PH-DEPENDENT INOTROPY. **Anthony D. Vetter**, Brian Thompson, Joseph M. Muretta, David D. Thomas, Joseph M. Metzger

1765-Pos BOARD #B495

MOLECULAR MECHANISM OF CARDIOMYOPATHY-CAUSING MUTATIONS IN ALPHA-TROPOMYOSIN. **Tejas M. Gupte**, Farah Haque, Binnu Gangadharan, Margaret Sunitha, Suman Nag, Sowdhamini R, VijayRaghavan K, James A. Spudich, John A. Mercer

1766-Pos BOARD #B496

SKELETAL MUSCLE MYOPATHY MUTATIONS IN TROPOMYOSIN GENE TPM3 AFFECT THIN FILAMENT TRANSITIONS BETWEEN THE INACTIVE AND ACTIVE STATES. **Mohammed El-Mezgueldi**, Saeed Asiri, Widad Albishri, Kristen Nowak

1767-Pos BOARD #B497

DIRECT VISUALIZATION OF COOPERATIVE BINDING OF TROPONIN-TROPOMYOSIN TO F-ACTIN. **Christopher Solis-Ocampo**, Maria Moutsoglou, Gi-Ho Kim, John M. Robinson

1768-Pos BOARD #B498

THE ACCURACY OF CARDIAC MYOFILAMENT SIMULATIONS IS ENHANCED BY PERMITTING CALCIUM-INDEPENDENT TROPOMYOSIN TRANSITIONS. Yasser Aboelkassem, Kimberly McCabe, **Stuart G. Campbell**

Microtubules, Their Motors and Associated Proteins I (Boards #B499–#B524)

1769-Pos BOARD #B499

TUBULIN HETERODIMERS REVERSIBLY DISSOCIATE WITH MODERATE KINETICS AS DEMONSTRATED USING SEDIMENTATION VELOCITY ANALYTICAL ULTRACENTRIFUGATION. **Felipe Montecinos-Franjola**, Dan L. Sackett, Peter Schuck

1770-Pos BOARD #B500

STUDYING THE STRUCTURAL ORIGINS OF MICROTUBULE DYNAMIC INSTABILITY THROUGH COMBINING COMPUTATIONAL MODELING AND CRYOEM. **Elizabeth H. Kellogg**, Gregory M. Alushin, Gabriel C. Lander, David Baker, Eva Nogales

1771-Pos BOARD #B501
KATANIN REGULATES MICROTUBULE DYNAMIC INSTABILITY.
Megan E. Bailey, Jennifer L. Ross

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LABEL-FREE OBSERVATION OF SINGLE MICROTUBULES BY MEANS OF SHG MICROSCOPY. **Junichi Kaneshiro**, Tomohiro Shima, Yasushi Okada, Taro Ichimura, Tomonobu M. Watanabe

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MODELING THE MICROSCOPIC TO MACROSCOPIC DYNAMICS OF ACTIVELY STREAMING MICROTUBULE SUSPENSIONS. Robert Blackwell, Tony Gao, Matthew Glaser, Michael Shelley, **M. D. Betterton**

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MONITORING REAL-TIME MICROTUBULE SPOOL FORMATION IN A PDMS MICROFLUIDIC DEVICE.
Virginia VanDelinder, George D. Bachand

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CRYSTAL AND EM STRUCTURES REVEAL A MECHANISM FOR LONG-RANGE ALLOSTERIC COMMUNICATION IN THE YEAST DYNEIN MOTOR DOMAIN. **Hui-Chun Cheng**, Gira Bhabha, Ronald D. Vale

1776-Pos BOARD #B506
LOAD-SHARING MECHANISM OF CYTOPLASMIC DYNEIN.
Vladislav Belyy, Nathan L. Hendel, Ahmet Yildiz

1777-Pos BOARD #B507
THE MECHANISM OF DYNEIN'S MINUS END DIRECTIONALITY AND AN ENGINEERED PLUS END DIRECTED DYNEIN MOTOR. **Frank B. Cleary**, Helgo Schmidt, Zaw M. Htet, Thomas Bilyard, Andrew P. Carter, Ahmet Yildiz

1778-Pos BOARD #B508
SINGLE-MOLECULE STUDY OF THE COMMUNICATION BETWEEN THE TWO PRIMARY SITES OF CYTOPLASMIC DYNEIN. **Mark DeWitt**, Caroline Segura, Rosalie Lawrence, Ahmet Yildiz

1779-Pos BOARD #B509
A STRUCTURAL AND FUNCTIONAL ANALYSIS OF THE DYNEIN LIGHT INTERMEDIATE CHAIN. **Courtney M. Schroeder**, Ronald D. Vale

1780-Pos BOARD #B510
LIS1 REGULATES DYNEIN AS A MOLECULAR WEDGE.
Sirui Zou, Katerina Toropova, Anthony J. Roberts, Samara L. Reck-Peterson, Andres E. Leschziner

1781-Pos BOARD #B511
LIS1 REGULATES DYNEIN AS A MOLECULAR WEDGE.
Katerina Toropova, Sirui Zou, Anthony J. Roberts, Julie Huang, Samara L. Reck-Peterson, **Andres E. Leschziner**

1782-Pos BOARD #B512
ILLUMINATING THE COOPERATIVE ACTION OF KINESIN-II AND OSM-3-KINESIN IN THE CHEMOSENSORY CILIA OF *CAENORHABDITIS ELEGANS*. Bram Prevo, Felix Oswald, Pierre J.J. Mangeol, Jonathan M. Scholey, **Erwin J.G. Peterman**

1783-Pos BOARD #B513
BICD2 AND DYNACTIN CONVERT A NON-PROCESSION CYTOPLASMIC DYNEIN TO AN ULTRA-PROCESSION DIRECTIONAL MOTOR. **Richard J. McKenney**, Marvin E. Tanenbaum, Gira Bhabha, Ronald D. Vale

1784-Pos BOARD #B514
NEW FOLDING PATTERN OF P150 AND "ANNTENA" FOR DYNEIN BINDING. Kei Saito, Takashi Murayama, Tomonori Hata, Takuya Kobayashi, **Yoko Y. Toyoshima**

1785-Pos BOARD #B515
SLOW DYNEIN E WITH NO RETARDATION EFFECTS: IMPLICATION OF INDIRECT COOPERATION WITH FAST DYNEIN C. **Yousuke Shimizu**, Hitoshi Sakakibara, Hiroaki Kojima, Kazuhiro Oiwa

1786-Pos BOARD #B516
DIRECT MEASUREMENT OF THE PRESSURE GENERATED BY A 1D PROTEIN GAS CONFINED WITHIN MICROTUBULE OVERLAPS. **Annemarie Lüdecke**, Zdenek Lansky, Marcus Braun, Michael Schlierf, Pieter Rein ten Wolde, Marcel E. Jansen, Stefan Diez

1787-Pos BOARD #B517
ORDER FROM DISORDER: THE INTRINSICALLY DISORDERED PROTEIN TAU FACILITATES HIGHER-ORDER ASSEMBLY OF MICROTUBULES. **Peter J. Chung**, Joanna B. Deek, Chaeyon Song, Herb P. Miller, M.C. Choi, Leslie Wilson, Stuart C. Feinstein, Cyrus R. Safinya

1788-Pos BOARD #B518
SIMULATED CYTOSKELETAL COLLAPSE VIA TAU DEGRADATION IN LATE STATE ALZHEIMER'S DISEASE. **Austin Sendek**, Henry Fuller, Rajiv R. P. Singh, N. Robert Hayre, Daniel L. Cox

1789-Pos BOARD #B519
NO THROUGH TRAFFIC: MODELING TAU INHIBITION OF KINESIN MOTILITY. **Andrew R. Thompson**, Gregory J. Hoepflich, Christopher L. Berger

1790-Pos BOARD #B520
INTERPLAY BETWEEN VELOCITY AND TRAVEL DISTANCE OF KINESIN-BASED TRANSPORT IN THE PRESENCE OF TAU.
Jing Xu, Stephen J. King, Maryse Lapierre-Landry, Brian Nemeč

1791-Pos BOARD #B521
THE EFFECTS OF EB1 ON MICROTUBULE MECHANICS AND KINESIN TRANSLOCATION DEPEND ON GTP ANALOG AND THE PRESENCE OF TAXOL. **Benjamin J. Lopez**, Megan T. Valentine

1792-Pos BOARD #B522
DYNAMIC FORCE ADAPTATION OF LIPID DROPLETS IN SUB-CELLULAR TRANSPORT. **Babu Reddy Janakaloti Narayanareddy**, Preetha Anand, Steven Gross

1793-Pos BOARD #B523
PHOTOREGULATION OF MOLECULAR MOTORS USING PHOTOCROMIC NUCLEOTIDE ANALOGUE. Akihisa Iwata, **Akihisa Iwata**

1794-Pos BOARD #B524
MECHANICS OF KINESIN-CROSSLINKED MICROTUBULE NETWORKS. Yali Yang, **Megan T. Valentine**

Cell Mechanics and Motility II (Boards #B525–#B554)

1795-Pos BOARD #B525
CONSTITUTIVE ACTIVATION OF MYOSIN-DEPENDENT CONTRACTILITY SENSITIZES GLIOMA TUMOR-INITIATING CELLS TO MECHANICAL INPUTS AND REDUCES TISSUE INVASION. **Sophie Y. Wong**, Theresa A. Ulrich, Loic P. Deleyrolle, Joanna L. MacKay, Brent A. Reynolds, Sanjay Kumar

1796-Pos BOARD #B526
 SPATIOTEMPORAL TENSION DISTRIBUTION OF INDIVIDUAL STRESS FIBERS AT THE CELL-MATRIX INTERFACE.
Ching-Wei Chang, Sanjay Kumar

1797-Pos BOARD #B527
 VASCULAR SMOOTH MUSCLE CELL STIFFNESS: A NOVEL MECHANISM FOR THE INCREASED AORTIC STIFFNESS IN HYPERTENSION AND AGING. **Nancy L. Schgel**, Yi Zhu, Zhe Sun, William C. Hunter, Jerome P. Trzeciakowski, Dorothy E. Vatner, Stephen F. Vatner, Gerald A. Meininger

1798-Pos BOARD #B528
 THE CONTRIBUTION OF THE STRUCTURAL ELEMENTS OF A SINGLE PLANT CELL TO ITS MECHANICS: HOW THE PLANT CELL BECOMES ANIMAL-LIKE. **Pauline Durand-Smet**, Alain Richert, Annick Berne-Dedieu, Mohammed Bendahmane, Jean Marie Frachisse, Olivier Hamant, Arezki Boudaoud, Atef Asnacios

1799-Pos BOARD #B529
 MUSCLE-LIKE BEHAVIOUR OF NON-MUSCLE CELLS AND REAL-TIME SINGLE CELL RESPONSE TO STIFFNESS. **Atef Asnacios**

1800-Pos BOARD #B530
 DESMIN, MECHANICS AND MYOFIBRILLAR MYOPATHIES. **Elisabeth Charrier**, Atef Asnacios, Sabrina Batonnet-Pichon, Patrick Vicart, Sylvie Hénon

1801-Pos BOARD #B531
 THE CELL AS A LIQUID MOTOR: INTRINSIC MECHANOSENSITIVE PROPERTIES OF THE ACTOMYOSIN CORTEX. **Etienne Jocelyn**, Jonathan Fouchard, Démosthène Mitrossilis, Nathalie Bufi, Pauline Durand, Atef Asnacios

1802-Pos BOARD #B532 INTERNATIONAL TRAVEL AWARDEE
 THE EFFECTS OF OUT OF PLANE CURVATURE ON COLLECTIVE CELL MIGRATION. **Hannah Yevick**, Guillaume Duclos, Isabelle Bonnet, Pascal Silberzan

1803-Pos BOARD #B533
 A SLIPPING CLUTCH IN NEURONAL GROWTH CONES REVEALED BY TRANSIENT SINGLE MOLECULE INTERACTIONS BETWEEN FLOWING ACTIN AND N-CADHERIN ADHESIONS. Mikael Garcia, Cécile Leduc, Amélie Argento, Jean-Baptiste Sibarita, **Olivier R. Thoumine**

1804-Pos BOARD #B534
 MOLECULAR MECHANISMS OF CONTRACTILITY-BASED CELLULAR MECHANOSENSING. **Douglas N. Robinson**, Tianzhi Luo, Krithika Mohan, Vasudha Srivastava, Yixin Ren, Pablo Iglesias

1805-Pos BOARD #B535
 VIMENTIN AFFECTS ACTIN NETWORK PERCOLATION AND MECHANICS. **Mikkel H. Jensen**, Eliza J. Morris, David A. Weitz

1806-Pos BOARD #B536
 INTEGRIN AVIDITY AND CYTOSKELETAL REMODELING REGULATE FORCE-MEDIATED CELL DETACHMENT. **Alexander Fuhrmann**, Adam J. Engler

1807-Pos BOARD #B537
 DYNAMIC IMAGING WITH HIGH-SPEED AFM TO STUDY CELL MOVEMENT. **Norito Kotani**, Takashi Morii, Takao Okada

1808-Pos BOARD #B538
 LATERAL WAVES DURING PROTRUSION-RETRACTION CYCLES OF MIGRATING CELLS ARE PROPAGATING CRACKS. **Sathish Thiyagarajan**, Matthew Stachowiak, Giovanni Meacci, Michael Sheetz, Ben O'Shaughnessy

1809-Pos BOARD #B539
 THE ACTOMYOSIN CONTRACTILE RING REGULATES SEPTATION DURING FISSION YEAST CYTOKINESIS. **Sathish Thiyagarajan**, Zhou Zhou, Laura Munteanu, Fred Chang, Ben O'Shaughnessy

1810-Pos BOARD #B540
 LPA ACTIVATION OF A RHOA/CPKC α -MEDIATED SIGNALING PATHWAY REGULATES OUTER HAIR CELL MOTILITY BY PHOSPHORYLATING THE CYTOSKELETAL PROTEIN ADDUCIN. Channy Park, **Federico Kalinec**

1811-Pos BOARD #B541
 FMG1-B AS A EUKARYOTIC S-LAYER. **Puey Ounjai**, Kenneth H. Downing

1812-Pos BOARD #B542
 REGULATION OF ACTIN FILAMENT TURNOVER IN BRAIN TUMOR CELL MOTILITY. **Brannon R. McCullough**, David J. Odde

1813-Pos BOARD #B543
 QUANTITATIVE ANALYSIS OF CELLULAR TRACTION GENERATION AND ACTOMYOSIN DYNAMICS IN A 3D FIBRIN MATRIX. **Leanna M. Owen**, Arjun S. Adhikari, Luv Gupta, Natascha Leijnse, Alexander R. Dunn

1814-Pos BOARD #B544
 ACTOMYOSIN GENERATED TENSION COORDINATES CELL MOVEMENTS DURING EARLY ZEBRAFISH DEVELOPMENT. **Jack Chai**, Andrea Hamilton, Michael Krieg, Craig Buckley, Ingmar Riedel-Kruse, Alexander Dunn

1815-Pos BOARD #B545
 FORCE-DEPENDENT INTERACTIONS BETWEEN THE E-CADHERIN-CATENIN COMPLEX AND ACTIN FILAMENTS. **Craig D. Buckley**, Jiongyi Tan, Beth L. Pruitt, William I. Weis, W. James Nelson, Alexander R. Dunn

1816-Pos BOARD #B546
 B-SPECTRIN AND THE MECHANICAL CONTROL OF THE SENSE OF TOUCH. **Michael Krieg**, Alexander R. Dunn, Miriam B. Goodman

1817-Pos BOARD #B547
 A NEW MODEL SYSTEM TO EXPLORE THE MECHANISMS AND FUNCTIONS OF GLOBAL CORTICAL CONTRACTION WAVES IN OOCYTE AND EMBRYO CELL DIVISIONS. **Johanna Bischof**, Imre Majer, Peter Lenart

1818-Pos BOARD #B548
 BAROTAXIS IN A CONFINED NEUTROPHIL. **Harrison Prentice-Mott**, Chi-Han Chang, L. Mahadevan, Tim Mitchison, Daniel Irimia, Jagesh Shah

1819-Pos BOARD #B549
 CORTICAL AND CYTOSKELETAL STRUCTURAL NETWORK REGULATES THE THREE-DIMENSIONAL TRACTION FORCES EXERTED BY MIGRATING AMOEBOID CELLS. **Begona Alvarez-Gonzalez**, Ruedi Meili, Effie E. Bastounis, Juan C. del Alamo, Richard A. Firtel, Juan C. Lasheras

1820-Pos BOARD #B550
 BEAT FREQUENCY IS REDUCED BUT WAVEFORM SHAPE IS CONSERVED IN CHLAMYDOMONAS FLAGELLA AT HIGH VISCOSITY. **Kate Wilson**, Susan Dutcher, Philip Bayly

1821-Pos BOARD #B551
 SECOND CHANCE MECHANISM EXPLAINS DWELL TIME DISTRIBUTIONS OF MYOSIN AND DYNEIN. **Henry G. Zot**, Javier E. Hasbun, Nguyen Van Minh

1822-Pos **BOARD #B552**
THE ROLE OF THE CORTEX AND THE CYTOPLASM IN DEFORMATIONS OF THE PLASMA MEMBRANE. **Kristina Haase**, Tyler N. Shendruk, Andrew E. Pelling

1823-Pos **BOARD #B553**
MEMBRANE NANOWAVES IN SINGLE AND COLLECTIVE CELL MIGRATION. **Omar F. Zouani**, Marie-Christine Durrieu

1824-Pos **BOARD #B554**
STRESS-FIBERS DICTATE CELLULAR CURVATURE & FORCE EXERTION. **Wim Pomp**, Hedde van Hoorn, Thomas Schmidt

Intracellular Transport (Boards #B555–#B563)

1825-Pos **BOARD #B555**
MOTOR PROTEINS AND THE 2ND LAW OF THERMODYNAMICS. **Zhisong Wang**

1826-Pos **BOARD #B556**
PARA PROTEIN PATTERN FORMATION DRIVES BACTERIAL PLASMID SEGREGATION. **Ling Chin Hwang**, Anthony G. Vecchiarelli, Yong Woon Han, Michiyo Mizuuchi, Yoshie Harada, Barbara E. Funnell, Kiyoshi Mizuuchi

1827-Pos **BOARD #B557** EDUCATION TRAVEL AWARDEE
INTRAFLAGELLAR TRANSPORT INHOMOGENEITY IN CHLAMYDOMONAS IMP3 MUTANT. **Jonathan M. Kessler**, Anthony Kovacs, Huawen Lin, Susan Dutcher, Yan Mei Wang

1828-Pos **BOARD #B558**
SYNTHETIC TOOLS FOR DELINEATING MULTIPLE MOTOR FUNCTIONS IN LIVING CELLS. **Michael R. Diehl**, David S. Tsao, Eric Kumar

1829-Pos **BOARD #B559**
COOPERATIVE MECHANICS OF MULTI-MOTOR AXONAL TRANSPORT REVEALED BY NOVEL NANOMANIPULATION IN LIVE NEURONS. **Praveen D. Chowdary**, Daphne L. Che, Chong Xie, Luke Kaplan, Bianxiao Cui

1830-Pos **BOARD #B560**
CORRELATING CARGO ORIENTATION WITH MOLECULAR MOTOR ACTIVITY DURING AXONAL TRANSPORT. **Luke Kaplan**, Bianxiao Cui

1831-Pos **BOARD #B561**
DYNAMICS OF ANNEXIN A6 MODULATES ATRIAL NATRIURETIC PEPTIDE DRIVEN COUNTER-HYPERTROPHIC RESPONSES IN CARDIOMYOCYTES. **Priyam Banerjee**, Arun Bandyopadhyay

1832-Pos **BOARD #B562**
HIV-1 NEF EMPLOYS CELLULAR AUTOPHAGY MACHINERY TO DOWNREGULATE CD4. **Chih-Jung Hsu**, Jennifer Lippincott-Schwartz

1833-Pos **BOARD #B563**
BIDIRECTIONAL MICROTUBULE-BASED TRANSPORT IN AXONS. **Ludger Santen**, Maximilian Ebbinghaus, Cecile Appert-Rolland

Membrane Pumps, Transporters, and Exchangers I (Boards #B564–#B593)

1834-Pos **BOARD #B564**
SUBSTRATE BOUND OUTWARD-OPEN STATE OF THE SYMPORTER BETP: INSIGHTS INTO SODIUM AND SUBSTRATE BINDING AND COUPLING. Camilo Perez, Belinda Faust, Ahmad R. Mehdipour, Kevin A. Francesconi, **Lucy R. Forrest**, Christine Ziegler

1835-Pos **BOARD #B565**
THE BETAINE TRANSPORTER BETP—ANALYSIS OF OSMOTIC STIMULI RESPONSIBLE FOR ACTIVATION. Stanislav Maximov, Markus Becker, Camilo Perez, Christine Ziegler, **Reinhard Kraemer**

1836-Pos **BOARD #B566**
LOCK AND LOAD: KEY ROLE OF THE UNIQUE CLOSED STATE IN TRANSPORT REGULATION OF THE SODIUM-COUPLED BETAINE TRANSPORTER BETP. Caroline Koshy, Izabela Waclawska, **Christine M. Ziegler**

1837-Pos **BOARD #B567**
COMPLETE MAPPING OF SUBSTRATE TRANSLOCATION IMPLICATES THE SECONDARY BINDING SITE AND HIGHLIGHTS THE SIGNIFICANCE OF LEUT N-TERMINAL SEGMENT IN REGULATING TRANSPORT CYCLE. **Mary H. Cheng**, Ivet Bahar

1838-Pos **BOARD #B568**
ANALYZING A CONFORMATIONAL SAMPLING OF LEUT FROM ACCELERATED MOLECULAR DYNAMICS SIMULATIONS. **James R. Thomas**, Patrick C. Gedeon, Jeffrey D. Madura

1839-Pos **BOARD #B569**
DOPAMINE TRANSPORTER INHIBITION BY ORGANIC IONS & THEIR EFFECTS ON GBR12909 INHIBITION. **Kee-Hyun Choi**, Chiman Song

1840-Pos **BOARD #B570**
A QUANTITATIVE MODEL OF AMPHETAMINE ACTION ON THE SEROTONIN TRANSPORTER. **Walter Sandtner**, Diethart Schmid, Klaus Schicker, Michael Freissmuth, Harald H. Sitte

1841-Pos **BOARD #B571**
REAL TIME IMAGING OF SGLT1 LOCATION AND ACTIVITY IN MAMMALIAN CELL LINES. Chiara Ghezzi, Guillaume Calmettes, **Bernard Ribalet**, Scott John

1842-Pos **BOARD #B572**
INSIGHT INTO THE MECHANISM OF WATER PERMEATION THROUGH THE SODIUM-GALACTOSE TRANSPORTER VSGLT FROM LONG MOLECULAR DYNAMICS SIMULATIONS. **Joshua L. Adelman**, Ying Sheng, Seungho Choe, Jeff Abramson, Ernest M. Wright, Michael Grabe

1843-Pos **BOARD #B573**
ENERGETICS OF UREA PERMEATION THROUGH SODIUM-DEPENDENT GALACTOSE COTRANSPORTER VSGLT. **Pushkar Pendse**, Seungho Choe, Joshua Adelman, Jeff Abramson, Ernest Wright, John Rosenberg, Michael Grabe

1844-Pos **BOARD #B574**
SODIUM-GALACTOSE TRANSPORTER: THE FIRST STEPS OF THE TRANSPORT MECHANISM INVESTIGATED BY MOLECULAR DYNAMICS. **Ina Bisha**, Alex Rodriguez, Jacopo Sgrignani, Alessandra Magistrato, Alessandro Laio

1845-Pos **BOARD #B575**
COUPLING OF ION BINDING AND CONFORMATIONAL EQUILIBRIUM IN NA⁺-DRIVEN SECONDARY ACTIVE TRANSPORTERS. **Jing Li**, Emad Tajkhorshid

1846-Pos **BOARD #B576**
MECHANISM OF SODIUM/PROTON ANTIPORT IN NHAA. **Oliver Beckstein**, David L. Dotson, Chiara N. Lee, David Drew, Alexander D. Cameron

1847-Pos **BOARD #B577**
FUNCTIONAL EVALUATION OF NHE6 MUTATION ASSOCIATED WITH SYNDROMIC AUTISM AND TAU DEPOSITION. **Hari Prasad**, Kalyan C. Kondapalli, Nir Ben-Tal, Rajini Rao

1848-Pos BOARD #B578

THE ASPARTATE TRANSPORTER IN MOTION - COMBINING STEERED MOLECULAR DYNAMICS WITH LANTHANIDE RESONANCE ENERGY TRANSFER BASED DISTANCE MEASUREMENTS. **SanthoshKannan Venkatesan**, Azmat Sohail, Kusumika Saha, Gerhard Ecker, Thomas Stockner, Walter Sandtner, Harald Sitte

1849-Pos BOARD #B579

TRANSITION METAL FRET TO STUDY CONFORMATIONAL CHANGES IN GLUTAMATE TRANSPORTER. **Xiaoyu Wang**, Peter Larsson

1850-Pos BOARD #B580

IONIC LOCKS IN MELIBIOSE PERMEASE: SCOPE TOWARDS GLUT1 DEFICIENCY SYNDROME. **Anowarul Amin**, Abdul S. Ethayathulla, Lan Guan

1851-Pos BOARD #B581

FUNCTIONAL INHIBITION OF SUGAR TRANSPORT BY A DESIGNED NOVEL PROTEIN. **Elena B. Tikhonova**, Hariharan Parameswaran, Yue Su, Amin Anowarul, Lan Guan

1852-Pos BOARD #B582

AN INSIGHT INTO THE XYLE TRANSPORT CYCLE BY CHARACTERIZING PROTON BINDING SITE AND ITS COUPLING TO THE SUBSTRATE TRANSPORT.

Mrinal Shekhar, Giray Enkavi, Emad Tajkhorshid

1853-Pos BOARD #B583

MECHANISM OF TONB-DEPENDENT OUTER MEMBRANE TRANSPORTERS IN E. COLI MINI-CELLS AND OUTER MEMBRANE VESICLES. Shimei Gong, **Robert K. Nakamoto**

1854-Pos BOARD #B584

ALTERNATING-ACCESS MECHANISM OF THE PROTON-DRUG ANTIporter ACRB. **Claudio Anselmi**, Wenchang Zhou, K. Martin Pos, Jose D. Faraldo-Gomez

1855-Pos BOARD #B585

PHYSICS OF MULTIDRUG EFFLUX THROUGH A BIOMOLECULAR COMPLEX. **Hirokazu Mishima**, Hiraku Oshima, Satoshi Yasuda, Ken-ichi Amano, Masahiro Kinoshita

1856-Pos BOARD #B586

STRUCTURE AND FUNCTION OF A PHOSPHORYLATION-COUPLED SACCHARIDE TRANSPORTER. **Jason G. McCoy**, Sharmistha Mitra, Elena J. Levin, Hua Huang, Jumin Lee, Wonpil Im, Matthias Quick, Brian Kloss, Renato Bruni, Ming Zhou

1857-Pos BOARD #B587

FUNCTIONAL COUPLING OF A URATE-ANION EXCHANGER URAT1 AND SODIUM-DEPENDENT ANION TRANSPORTER SMCT2 ON A PDZK1 SCAFFOLD; PROPOSAL OF "TRANSPORTSOME" FOR URATE-TRANSPORT.

Shushi Nagamori, Pattama Wiriyasermkul, Yasuhiro Umemura, Noriyoshi Isozumi, Yumiko Nishinaka, Yoshikatsu Kanai

1858-Pos BOARD #B588

EXPERIMENTALLY DEFINED STRUCTURAL MODEL OF THE HUMAN PROTON-COUPLED FOLATE TRANSPORTER. **Swapneeta Date**, Michaela Jansen

1859-Pos BOARD #B589

A NON-RADIOACTIVE ENZYMIC PHOTOMETRIC ASSAY FOR GLUCOSE UPTAKE IN INSULIN-RESPONSIVE 3T3-L1 ADIPOCYTES. Qin Zhao, Jinfang Liao, **Zhenjun Diwu**

1860-Pos BOARD #B590

FUNCTION UNKNOWN NUMBER 26 (FUN26) PROTEIN FROM SACCHAROMYCES CEREVISIAE IS A NUCLEOSIDE SELECTIVE INTEGRAL MEMBRANE TRANSPORTER.

Rebba C. Boswell-Casteel, Jennifer M. Johnson, Kelli D. Duggan, Franklin A. Hays

1861-Pos BOARD #B591

LIMITATION OF LIGHT DRIVEN PROTON PUMPS AT HIGH ELECTROCHEMICAL LOAD. **Arend Vogt**, Jonas Wietek, Peter Hegemann

1862-Pos BOARD #B592

PHOTOACTIVITY OF THE LYSENIN PROTEIN. **Mathias M J Bellaiche**, Gregory Salamo, Ralph Henry, Daniel Fologea, Eric Krueger, Radwan Al Faouri

1863-Pos BOARD #B593

EDUCATION TRAVEL AWARDEE

MD SIMULATIONS REVEAL AN ALTERNATIVE PATHWAY FOR DIOXYGEN DIFFUSION IN AA3 CYTOCHROME C OXIDASES.

Ana Sofia F. Oliveira, Joao M. Damas, António M. Baptista, Cláudio M. Soares

Energy Transducing Membrane Protein Complexes (Boards #B594–#B607)

1864-Pos BOARD #B594

CRYSTAL STRUCTURE OF SYNECHOCYSTIS MUTANTS AND PLANT PHOTOSYSTEM I. **Nathan Nelson**, Yuval Mazor, Hila Toporik, Anna Borovikova, Ilanit Greenberg, Daniel Nataf

1865-Pos BOARD #B595

METHOXY DIHEDRAL ANGLES OF UBIQUINONE CONTRIBUTE MORE THAN 160 MV TO THE REDOX POTENTIAL DIFFERENCE BETWEEN THE PRIMARY (QA) AND SECONDARY (QB) QUINONES OF THE PHOTOSYNTHETIC REACTION CENTER. **Alexander T. Taguchi**, Aidas J. Mattis, Patrick J. O'Malley, Sergei A. Dikanov, Colin A. Wraight

1866-Pos BOARD #B596

CHARACTERIZATION OF 2- AND 3-METHOXY IN UBIQUINONE BINDING AND REDOX TUNING WITHIN THE PHOTOSYNTHETIC REACTION CENTER OF RHODOBACTER SPHAEROIDES.

Josh V. Vermaas, Alexander T. Taguchi, Colin A. Wraight, Emad Tajkhorshid

1867-Pos BOARD #B597

TUNING FUNCTION OF THE LIGHT-DRIVEN PROTEORHODOPSIN PROTON PUMP BY FORMATION OF OLIGOMERIC AND SURFACTANT-BASED SYNTHETIC COMPLEXES. **Sunyia Hussain**, Maia Kinnebrew, Justin P. Jahnke, Matthew Idso, Nicole S. Schonenbach, Bradley F. Chmelka, Songi Han

1868-Pos BOARD #B598

THE MITOCHONDRIAL TIM23 PROTEIN TRANSPORT COMPLEX UNDERGOES CONFORMATIONAL DYNAMICS COUPLED TO THE ENERGIZED STATE OF THE INNER MEMBRANE.

Ketan Malhotra, Murugappan Sathappa, Judith S. Landin, Arthur E. Johnson, **Nathan N. Alder**

1869-Pos BOARD #B599

EVOLUTIONARY PERSPECTIVE ON THE COUPLING MECHANISM OF COMPLEX I AND RELATED ENZYMES. Bruno C. Marreiros, Ana P. Batista, **Manuela M. Pereira**

1870-Pos BOARD #B600

WATER GATED TRANSITIONS IN PROTON PUMPING OF RESPIRATORY COMPLEX I. **Ville RI Kaila**, Marten Wikström, Gerhard Hummer

1871-Pos **BOARD #B601**
DIELECTRIC HETEROGENEITY IN THE CYTOCHROME B6F COMPLEX. **Stanislav D. Zakharov**, Saif S. Hasan, Adrien Chauvet, Valentyn Stadnytsky, Sergei Savikhin, William A. Cramer

1872-Pos **BOARD #B602**
REMOVAL OF ENDOGENOUS PHOSPHOLIPIDS OF RHODOBACTER SPHAEROIDES CYTOCHROME C OXIDASE AFFECTS THE FLEXIBILITY OF THE ENZYME. **Khadijeh S. Alnajjar**, Lawrence J. Prochaska

1873-Pos **BOARD #B603**
ENERGY TRANSFER IN A MOLECULAR MOTOR IN KRAMERS' REGIME. **Katharine J. Challis**, Michael W. Jack

1874-Pos **BOARD #B604**
MITOCHONDRIAL THERMODYNAMIC EFFICIENCY AND P/O RATIOS ARE CONTROLLED BY THE F1F0 ATP SYNTHASE C-SUBUNIT STOICHIOMETRY. **Todd P. Silverstein**

1875-Pos **BOARD #B605**
CYTOPLASMIC LOOPS OF SUBUNITS C AND A IN E. COLI F1F0 ATP SYNTHASE INTERACT TO GATE H⁺ TRANSPORT TO THE CYTOPLASM. **Robert H. Fillingame**

1876-Pos **BOARD #B606**
EXPERIMENTAL DETERMINATION OF THE ION SELECTIVITY OF AN ATP-SYNTHASE MEMBRANE ROTOR BY ISOTHERMAL TITRATION CALORIMETRY. **Vanessa Leone**, Denys Pogoryelov, Thomas Meier, Ernst Grell, José D. Faraldo-Gómez

1877-Pos **BOARD #B607**
ON THE FUNCTIONAL DIFFERENTIATION OF F- AND V-TYPE ROTARY ATPASES ATOMIC MECHANISM OF A HYBRID F/V MEMBRANE ROTOR. **Wenchang Zhou**, Doreen Matthies, Claudio Anselmi, Thomas Meier, José D. Faraldo-Gómez

Gene Regulatory Systems: Prokaryotic and Eukaryotic (Boards #B608–#B624)

1878-Pos **BOARD #B608**
MULTICOLOR TIMELAPSE LUMINESCENCE MICROSCOPY: OPTIMIZING LUCIFERASES TO TRACK FAST GENE DYNAMICS IN SINGLE YEAST CELLS. Anyimilehidi Mazo-Vargas, Heungwon Park, Mert Aydin, **Nicolas E. Buchler**

1879-Pos **BOARD #B609**
MICRORNAS REDUCE GENE EXPRESSION NOISE. **Joern Matthias Schmiedel**, Sandy Klemm, Yunnan Zheng, Apratim Sahay, Nils Bluethgen, Debora S. Marks, Alexander van Oudenaarden

1880-Pos **BOARD #B610**
DYNAMIC GENE EXPRESSION AND DESIGN PRINCIPLES OF VIRAL INFECTION PATHWAY. **Yi-Ju Chen**, Timur Zhiyentayev, David Wu, Long Cai, Rob Phillips

1881-Pos **BOARD #B611**
SUPER-RESOLUTION IMAGING OF TRANSCRIPTION IN LIVE BACTERIAL CELLS. **Mathew Stracy**, Stephan Uphoff, Federico Garza de Leon, Achillefs Kapanidis

1882-Pos **BOARD #B612**
STOCHASTICITY IN CELLULAR RESPONSE TO LIGHT-INDUCED TRANSCRIPTIONAL PERTURBATIONS. **Artem V. Melnykov**, Yanfei Jiang, Elliot L. Elson

1883-Pos **BOARD #B613**
SPATIO-TEMPORAL DYNAMICS OF PHASE VARIANTS IN EXPANDING GONOCOCCAL POPULATIONS. **Enno R. Oldewurtel**, Nadzeya Kouzel, Berenike Maier

1884-Pos **BOARD #B614**
DISSECTING THE ROLE OF FERROUS IRON IN PSEUDOMONAS AERUGINOSA GENE REGULATION. **James Boedicker**, Rob Phillips

1885-Pos **BOARD #B615**
USING A TRANSCRIPTIONAL NETWORK TO APPROACH THE MECHANISM OF FUNGAL MENINGITIS. **Christina M. Homer**, Alexi Goranov, Dan Santos, Ippolito Caradonna, Sarah Petnic, Hiten D. Madhani

1886-Pos **BOARD #B616**
ALTERING STOCHASTIC NOISE IN GENE EXPRESSION FOR HIV THERAPY. Roy D. Dar, **Leor S. Weinberger**

1887-Pos **BOARD #B617**
CORRELATING RAT BASOPHIL LEUKEMIA CELL ACTIVATION WITH INTERLEUKIN 4 RNA PRODUCTION USING SINGLE MOLECULE FLUORESCENCE IN-SITU HYBRIDIZATION, AUTOMATED SUPER-RESOLUTION MICROSCOPY, AND GPU-ENABLED IMAGE ANALYSIS. Evan Perillo, Phipps E. Mary, Jennifer S. Martinez, James H. Werner, **Douglas Shepherd**

1888-Pos **BOARD #B618**
EXTRINSIC NOISE DRIVEN PHENOTYPE SWITCHING IN A SELF-REGULATING GENE. **Michael Assaf**, Elijah Roberts, Zaida Luthey-Schulten, Nigel Goldenfeld

1889-Pos **BOARD #B619**
IMAGING CHROMOSOME STRUCTURE IN BACTERIA BY SUPER-RESOLUTION MICROSCOPY. **Long Cai**

1890-Pos **BOARD #B620**
STOCHASTIC FLUCTUATIONS LINK PROMOTER CHROMATIN STRUCTURE AND GENE EXPRESSION. **Christopher R. Brown**, Changhui Mao, Elena Falkovskaia, Melissa S. Jurica, Hinrich Boeger

1891-Pos **BOARD #B621**
STRUCTURE AND FUNCTION OF A TRANSCRIPTIONAL 'ACCELERATOR' CIRCUIT. **Roy Dar**, Cynthia Bolovan-Fritts, Melissa Teng, Brian Linhares, Michael Simpson, Leor S. Weinberger

1892-Pos **BOARD #B622**
DECIPHERING TRANSCRIPTIONAL DYNAMICS IN VIVO BY COUNTING NASCENT RNAs. **Sandeep Choubey**, Alvaro Sanchez, Jane Kondev

1893-Pos **BOARD #B623**
EXPLORING FEEDBACK REGULATION IN THE S. CEREVISIAE PKA PATHWAY. **Susan Y. Chen**

1894-Pos **BOARD #B624**
RIBOSOME PROFILING OF THE CAULOBACTER CELL-CYCLE. **Jared M. Schrader**, Gene-Wei Li, Bo Zhou, Jonathan S. Weissman, Lucy Shapiro

Computational Systems Biology (Boards #B625–#B649)

1895-Pos **BOARD #B625**
MODELLING THE MECHANICS OF THE CIRCULATION: BLOOD RHEOLOGY AND ATHEROSCLEROSIS. **Glaucia Pereira**, Rob Krams, Berend van Wachem

1896-Pos **BOARD #B626**
 STOCHASTIC DISCRETE EFFECTS IN A SIMPLE GENE CIRCUIT WITH DELAYED NEGATIVE FEEDBACK. **Eder Zavala**, Tatiana T. Marquez-Lago

1897-Pos **BOARD #B627**
 PREDICTING AND RETRODICTING FATE PATTERNS IN C. ELEGANS VULVAL DEVELOPMENT USING LOGIC PROGRAMMING. **Benjamin A. Hall**, Ethan Jackson, Alex Hajnal, Jasmin Fisher

1898-Pos **BOARD #B628**
 MODELING ELECTRICAL ACTIVITY IN INTESTINAL L-CELLS. **Michela Riz**, Morten Gram Pedersen

1899-Pos **BOARD #B629**
 INVESTIGATION OF NOVEL ZAP-70 FUNCTIONALITY IN T CELL SIGNALING PATHWAYS USING COMPUTATIONAL MODELING. **Maria P. Frushicheva**, Arthur Weiss, Arup K. Chakraborty

1900-Pos **BOARD #B630**
 ACCELERATING SYSTEMS BIOLOGY COMPUTATION: RAPID ESTIMATION OF EQUILIBRIUM AND KINETIC QUANTITIES VIA WEIGHTED ENSEMBLE SAMPLING. **Rory Donovan**

1901-Pos **BOARD #B631**
 NEGATIVE FEEDBACK AND CROSSTALK IN THE TGF- β SIGNALING PATHWAY. **Leonor Saiz**, Daniel Nicklas, Qian Mei, Victor Pantoja

1902-Pos **BOARD #B632**
 SPATIO-TEMPORAL REGULATION OF MITOTIC SPINDLE CHECKPOINTS. **Jian Liu**, Jing Chen

1903-Pos **BOARD #B633**
 THE ROLE OF COOPERATIVITY IN CELL SIGNALING. **Jianmin Sun**, Michael Grabe

1904-Pos **BOARD #B634**
 SENSITIVITY ANALYSIS AND MODEL REDUCTION APPLIED TO ADAPTING BIOLOGICAL SYSTEMS. **Rajat Bhatnagar**, Hana El-Samad

1905-Pos **BOARD #B635**
 MACROMOLECULAR CROWDING EFFECTS ON GENE REGULATION. Hiroaki Matsuda, **Gregory Putzel**, Vadim Backman, Igal Szleifer

1906-Pos **BOARD #B636**
 CROSSTALK AND THE EVOLUTION OF SPECIFICITY IN TWO-COMPONENT SIGNALING. **Michael A. Rowland**, Eric J. Deeds

1907-Pos **BOARD #B637**
 HETEROGENEOUS PROTEIN-PROTEIN INTERACTION SYSTEMS MODELED USING A NEW INTEGRATOR FOR SINGLE-PARTICLE REACTION DIFFUSION. **Margaret E. Johnson**, Gerhard Hummer

1908-Pos **BOARD #B638**
 COMPUTATIONAL MODEL FOR CELL SHAPE REGULATION THROUGH MECHANOSENSING AND MECHANICAL FEEDBACK. **Krithika Mohan**, Tianzhi Luo, Douglas N. Robinson, Pablo A. Iglesias

1909-Pos **BOARD #B639**
 STOCHASTIC MODELLING OF GENE REGULATORY MECHANISMS IN PTEN DYNAMICS: DOES SPACE MATTER? **Anna Christine Jones**, Helen Byrne, Kevin Burrage

1910-Pos **BOARD #B640**
 BACTERIAL GROWTH AND DIVISION: THEORY. **Arijit Maitra**, Ken Dill

1911-Pos **BOARD #B641**
 COMPUTATIONAL MODELING PREDICTS PHOSPHATASE OXIDATION AS AN IMPORTANT AXIS OF REDOX REGULATION IN IL-4 SIGNALING. **Gaurav Dwivedi**, Melissa L. Kemp

1912-Pos **BOARD #B642**
 MULTI-FINITE BUFFER METHOD FOR DIRECT SOLUTION OF DISCRETE CHEMICAL MASTER EQUATION. Youfang Cao, **Anna Terebus**, Jie Liang

1913-Pos **BOARD #B643**
 OPTIMIZED ENERGY DISSIPATION OF MINDE OSCILLATOR FOR SYMMETRIC CELL DIVISION. **Liping Xiong**, Ganhui Lan

1914-Pos **BOARD #B644**
 CONSTRUCTION OF A SELF-CONSISTENT LANDSCAPE FOR MULTISTABLE GENE REGULATORY CIRCUITS. **Mingyang Lu**, Jose Onuchic, Eshel Ben-Jacob

1915-Pos **BOARD #B645**
 MULTISTABILITY IN GTPASE-BASED DECISION CIRCUITS. **Bin Huang**, Mingyang Lu, Mohit Kumar Jolly, Jose Onuchic, Eshel Ben-Jacob

1916-Pos **BOARD #B646**
 MODELING METABOLIC VARIABILITY IN METHANOSARCINA ACETIVORANS. **Joseph R. Peterson**, Piyush Labhsetwar, Petra Kohler, Jeremy Ellermeier, William Metcalf, Ankur Jain, Taekjip Ha, Zaida Luthey-Schulten

1917-Pos **BOARD #B647**
 MODELING HOW EPIDERMAL HOMEOSTASIS IS ACHIEVED. **Jin Seob Kim**, Sean X. Sun

1918-Pos **BOARD #B648**
 TRADE OFFS BETWEEN ENERGY GENERATION AND MAINTENANCE DRIVE CELLULAR BIOGENESIS AT HIGH GROWTH RATES. **Mariola Szenk**, Ken Dill

1919-Pos **BOARD #B649**
 INFORMATION FLOW THROUGH CALCIUM BINDING PROTEINS. **Ji Hyun Bak**, William Bialek

Optogenetics (Boards #B650–#B665)

1920-Pos **BOARD #B650**
 INSIGHTS INTO THE CATION PERMEATION PATHWAY OF CHANNELRHODOPSIN-2. **Robert Dempski**, Ryan Richards

1921-Pos **BOARD #B651**
 EXPANDING THE VISIBLE LIGHT PHOTOSWITCH LIBRARY: A RED-SHIFTED, FAST-RELAXING AZOBENZENE PHOTOSWITCH FOR REVERSIBLE ACTIVATION OF METABOTROPIC GLUTAMATE RECEPTORS. **Michael Kienzler**, Joshua Levitz, Ehud Isacoff

1922-Pos **BOARD #B652**
 SITE-SPECIFIC TAGGING OF CHANNELRHODOPSINS WITH GENETICALLY-ENCODED AZIDO GROUPS. **Benjamin S. Krause**, Peter Hegemann, Thomas Huber, Thomas P. Sakmar

1923-Pos **BOARD #B653**
 ENCODING THE LIGHT-SENSITIVITY OF CHANNELRHODOPSIN-2. **Christian Bamann**, Thomas Sattig, Ernst Bamberg

1924-Pos **BOARD #B654**
 RESONANCE RAMAN AND LOW TEMPERATURE FTIR CHARACTERIZATION OF THE RED SHIFTED CHANNELRHODOPSIN 1 FROM CHLAMYDOMONAS AUGUSTAE. **John I. Ogren**, Daniel Russano, Sergey Mamaev, Hai Li, Jihong Wang, John L. Spudich, Kenneth J. Rothschild

1925-Pos BOARD #B655

PADO, A NOVEL FLUORESCENT VOLTAGE-SENSING PROTEIN, IDENTIFIED BY A HIGHLY CONSERVED MOTIF IN THE S2 TRANS-MEMBRANE SEGMENT. **Bok Eum Kang**, Bradley Baker, Hong Hua Piao, Arong Jung

1926-Pos BOARD #B656

LIGHT-REGULATED GABAA RECEPTORS: AN OPTOGENETIC TOOLSET FOR STUDYING NEURAL INHIBITION. **Wan-Chen Lin**, Ming-Chi Tsai, Christopher M. Davenport, Caleb M. Smith, Richard H. Kramer

1927-Pos BOARD #B657

VERSATILE OPTICAL CONTROL OF VOLTAGE-GATED SODIUM CHANNEL FUNCTION IN ENGINEERED HEK293 CELLS. **Thomas Lila**, Andrew Blatz

1928-Pos BOARD #B658

IN VIVO IMAGING OF ODOR-EVOKED RESPONSES IN THE MOUSE OLFACTORY BULB USING THE FP VOLTAGE SENSOR ARCLIGHT AND THE CALCIUM SENSOR GCAMP3. **Douglas A. Storage**, Oliver R. Braubach, Lawrence B. Cohen, Uhna Sung

1929-Pos BOARD #B659

IMPROVING OPTICAL CONTROL OF PROTEIN ACTIVITY BY LIGHT-INDUCED FLUORESCENT PROTEIN DISSOCIATION. **Linlin Fan**, Xin X. Zhou, Mariya Chavarha, Michael Z. Lin

1930-Pos BOARD #B660

LOCAL OPTICAL TEMPERATURE MEASUREMENTS AROUND MAGNETOSOMES WITHIN SINGLE BACTERIA TO STUDY SIZE AND GEOMETRY EFFECTS ON HEATING. Heng Huang, Rahul Munshi, Frank Mueller, Dirk Schueler, **Arnd Pralle**

1931-Pos BOARD #B661

INTERROGATION OF DOWNSTREAM CALCIUM RESPONSES VIA OPTOGENETIC AND MECHANICAL STIMULATION IN C. ELEGANS. **Gabriel Salzman**, Ramya Parameswaran, Joshua Riback, H. E. Acaron Ledesma, John Barrett, Corey Seacrist, Adam T. Hammond

1932-Pos BOARD #B662

NEW CONCEPTS FOR PRESYNAPTIC OPTOGENETICS. **Franziska Schneider**, Benjamin Rost, Christian Rosenmund, Peter Hegemann

1933-Pos BOARD #B663

SIMULTANEOUS OPTICAL PACING AND MEMBRANE VOLTAGE MAPPING IN CHR2-EXPRESSING NEONATAL RAT VENTRICULAR MYOCYTE CULTURES. **Qince Li**, Wei Kong, Ni Rong, Michael Rossi, Jing Qu, Vladimir G. Fast, Lufang Zhou

1934-Pos BOARD #B664

OPTOGENETIC EXCITATION OF THE PANCREATIC β -CELL. **Matthew Westacott**, Marina Pozzoli, Thomas Hraha, Richard Benninger

1935-Pos BOARD #B665

DISTINCT TARGET SELECTIVITY OF FAST-SPIKING INTERNEURONS IN THE REGULATION OF STRIATAL OUTPUT PATHWAYS. **Laurie S. Lambot**, Serge N. Schiffmann, David Gall

Diffractions and Scattering Techniques (Boards #B666–#B675)

1936-Pos BOARD #B666

SECONDARY STRUCTURE ELUCIDATION VIA X-RAY CROSS CORRELATION ANALYSIS. Thomas Lane, **Derek Mendez**, Jongmin Sung, Daniel Ratner, Herschel Watkins, Sebastian Doniach

1937-Pos BOARD #B667

DIFFUSE X-RAY SCATTERING FOR ENSEMBLE MODELING OF CRYSTALLINE PROTEINS. **Michael E. Wall**, Thomas C. Terwilliger, James S. Fraser, Paul D. Adams, Nicholas K. Sauter, Andrew VanBenschoten

1938-Pos BOARD #B668

CLASSIFICATION PROTOCOL OF PROJECTION IMAGES BY MANIFOLD: TOWARD ANALYSIS OF DYNAMICS OF PARTICLES WITH COHERENT X-RAY DIFFRACTION IMAGING. **Takashi Yoshidome**, Tomotaka Oroguchi, Masayoshi Nakasako, Mitsunori Ikeguchi

1939-Pos BOARD #B669

SIMTOEXP: SOFTWARE FOR COMPARING SIMULATIONS TO EXPERIMENTAL SCATTERING DATA. **Bryan W. Holland**, Norbert Kučerka, D. Peter Tieleman

1940-Pos BOARD #B670

CURRENT STATUS OF ABBIX BEAMLINES DEVELOPED FOR X-RAY SCATTERING AND MACROMOLECULAR CRYSTALLOGRAPHY AT NSLS-II. **Lin Yang**, Dieter K. Schneider, Martin R. Fuches, Lonny E. Berman

1941-Pos BOARD #B671

TEMPERATURE-PRESSURE PHASE BEHAVIOR OF TRIGLYCERIDES REVEALED BY SYNCHROTRON X-RAY SCATTERING STUDIES. **Mirko Erilkamp**, Christopher Rosin, Sebastian Grobely, Roland Winter

1942-Pos BOARD #B672

UNRAVELING THE HEPARIN-INDUCED PROTOFIBRIL STRUCTURE OF GAPDH. **Rosangela Itri**, Elisa M. Sales, Leandro R.S. Barbosa, Clarisa M. Torres-Bugeau, César L. Ávila, Rosana N. Chehín

1943-Pos BOARD #B673

OPTICAL SCATTERING OF LIPOSOMES SUSPENDED ABOVE A SURFACE. **Pieter A. A. De Beule**

1944-Pos BOARD #B674

THE EFFECT OF MAGNESIUM ON THE THERMODYNAMICS OF NUCLEIC ACID TERTIARY CONTACT FORMATION. **Herschel M. Watkins**, Derek Mendez, Daniel Ratner, Daniel Herschlag, Sebastian Doniach

1945-Pos BOARD #B675

ASYMMETRIC ILLUMINATION OF OPTICALLY ANISOTROPIC BEADS FOR DETECTING ROTATIONAL MOTION. **Chang Jiang**, Edgar Meyhofer

Force Spectroscopy (Boards #B676–#B706)

1946-Pos BOARD #B676

INVESTIGATING PROTEIN-PROTEIN INTERACTION NETWORKS WITH FORCE SPECTROSCOPY. **Oliver E. Farrance**, Renata Kaminska, Nicholas G. Housden, Sasha R. Derrington, Colin Kleanthous, Sheena E. Radford, David J. Brockwell

1947-Pos BOARD #B677

SINGLE MOLECULE FORCE SPECTROSCOPY REVEALS THE MOLECULAR MECHANICAL ANISOTROPY OF THE FES4 METAL CENTER IN RUBREDOXIN. Peng Zheng, **Hongbin Li**

1948-Pos BOARD #B678

FORCE SPECTROSCOPY OF TIP LINK PROTEINS: A STUDY OF INNER-EAR BIOPHYSICS. **Mounir A. Koussa**, Marcos Sotomayor, Wesley P. Wong, David P. Corey

1949-Pos BOARD #B679
 PROBING THE UNBINDING KINETICS OF DNA-H-NS-DNA PROTEIN COMPLEXES BY A HIGH-SPEED AND HIGH-THROUGHPUT SINGLE-MOLECULE PULLING ASSAY USING ATOMIC FORCE MICROSCOPY. **Yan Liang**, Marian Baclayon, Ramon van der Valk, Remus Th. Dame, Wouter H. Roos, Gijs J.L. Wuite

1950-Pos BOARD #B680
 INSTRUMENT FREE BIOMOLECULAR INTERACTION MEASUREMENT WITH DNA NANOSWITCHES. Ken Halvorsen, Mounir Koussa, **Andrew Ward**, Wesley P. Wong

1951-Pos BOARD #B681
 SIMULTANEOUS MEASUREMENT OF FORCES AND CURRENTS USING AN AFM-FET HYBRID SENSOR FOR STUDYING SINGLE BIOMOLECULAR INTERACTIONS. **Byung I. Kim**

1952-Pos BOARD #B682
 FORCES IN T CELL ANTIGEN RECOGNITION. **Enrico Klotzsch**, Gerhard J. Schütz

1953-Pos BOARD #B683
 NOVEL GENERATION OF CROSSLINKERS ALLOWS SINGLE MOLECULE FORCE SPECTROSCOPY ON OLIGOMERIC RECEPTORS. **Doris Sinwel**, Andreas Karner, Andreas Ebner, Rong Zhu, Peter Hinterdofer, Hermann J. Gruber

1954-Pos BOARD #B684
 DESIGN AND OPTIMIZATION OF A HIGH FORCE NEODYMIUM IRON BORON BASED MAGNETIC TWEEZERS DEVICE USING FINITE ELEMENT ANALYSIS. **Nicholas A. Zacchia**, Timothy Thomas, Megan T. Valentine

1955-Pos BOARD #B685
 SMAP: MANIPULATING DNA BY ULTRASOUND - SINGLE-MOLECULES GO ACOUSTIC. **Gerrit Sitters**, Douwe Kamsma, Erwin J.G. Peterman, Gijs J.L. Wuite

1956-Pos BOARD #B686
 AN AFM FORCE PULLING STUDY OF RIBOFLAVIN RECEPTOR TARGETING NANOPARTICLES. **Abigail N. Leistra**, Amanda Witte, Jong Hyun Han, Seok Ki Choi, Kumar Sinniah

1957-Pos BOARD #B687
 ATOMIC FORCE MICROSCOPY OF DNA-CTAB AGGREGATES. Adam Rimawi, **Pamela M. St. John**

1958-Pos BOARD #B688
 ENERGETICS AND KINETICS OF SNARE ZIPPERING. **Yongli Zhang**

1959-Pos BOARD #B689 INTERNATIONAL TRAVEL AWARDEE
 DENGUE VIRUS CAPSID PROTEIN INTERACTS SPECIFICALLY WITH VERY LOW-DENSITY LIPOPROTEINS. **André F. Faustino**, Filomena A. Carvalho, Ivo C. Martins, Miguel A. R. B. Castanho, Ronaldo Mohana-Borges, Fabio C. L. Almeida, Andrea T. Da Poian, Nuno C. Santos

1960-Pos BOARD #B690 EDUCATION TRAVEL AWARDEE
 CHARACTERIZING THE INTERACTION OF DESMOSOMAL CADHERINS AT SINGLE MOLECULE LEVEL. **Omer Shafraz**, Sabyasachi Rakshit, Molly Lowndes, W. James Nelson, Sanjeevi Sivasankar

1961-Pos BOARD #B691 EDUCATION TRAVEL AWARDEE
 SINGLE MOLECULE CHARACTERIZATION OF THE ROLE OF DIVALENT IONS IN PRION PROTEIN AGGREGATION. **Chi-Fu Yen**, Sanjeevi Sivasankar

1962-Pos BOARD #B692
 THE EFFECTS OF MEDICALLY RELEVANT COMPOUNDS ON THE PHYSICAL PROPERTIES OF BIOFILMS. **Nicole C. Rodgers**, Anne E. Murdaugh

1963-Pos BOARD #B693
 INCREASED CYTOSKELETAL STIFFNESS OF SCHLEMM'S CANAL ENDOTHELIAL CELLS IN GLAUCOMA. **Rocio Vargas-Pinto**, Mark Johnson

1964-Pos BOARD #B694
 CELL VISCOELASTICITY AS A FUNCTION OF SUBSTRATE STIFFNESS. **Rachel Brunetti**, Gawain Thomas, Qi Wen

1965-Pos BOARD #B695
 A SYSTEMATIC, HIGH RESOLUTION MAPPING OF THE ELASTIC MODULUS OF MOUSE CARTILAGE MATRIX. Preethi L. Chandran, Jessica Yuan, Ferenc Horkey, Edward Mertz, **Emilios K. Dimitriadis**

1966-Pos BOARD #B696
 CELL ADHESION ON SILICON NANOWIRES. Anna Murello, Laura Andolfi, Damiano Cassese, **Marco Lazzarino**

1967-Pos BOARD #B697
 CHARACTERIZATION OF MECHANOTRANSENSITIVITY OF ARTICULAR CHONDROCYTES. **Whasil Lee**, Holly Leddy, Farshid Guilak, Wolfgang Liedtke

1968-Pos BOARD #B698
 USING ATOMIC FORCE MICROSCOPY TO PROBE MICROALGAL RESPONSE. **Kristin M. Warren**, Jeremiah Mpagazehe, C. Fred Higgs, III, Philip LeDuc

1969-Pos BOARD #B699
 THE EFFECT OF DISEASE AND EXERCISE ON SINGLE FIBRIN FIBER MECHANICAL PROPERTIES. **Wei Li**, Justin Sigley, Stephen Baker, Peter Brubaker, Marlien Pieters, Christine Helms, Martin Guthold

1970-Pos BOARD #B700
 INVESTIGATING MECHANICAL PROPERTIES OF SHORT POLYMERS WITH OPTICAL TWEEZERS. **Naghmeh Rezaei**, Andrew Wieczorek, Nancy R. Forde

1971-Pos BOARD #B701
 THE EFFECTS OF HISTONE VARIANT H2A.Z ON CHROMATIN STRUCTURE AND KINETICS-A SINGLE MOLECULE OPTICAL TWEEZERS STUDY. **Masha Kamenetska**, Daniel Schlingman, Andrew H. Mack, Prateek S. Baghel, Simon G.J. Mochrie, Lynne J. Regan

1972-Pos BOARD #B702 INTERNATIONAL TRAVEL AWARDEE
 EXPERIMENTAL AND SIMULATION STUDIES ON THE MECHANICAL PROPERTIES OF SUMO PROTEINS. **Hema Chandra Kotamarthi**, Ravindra Venkatramani, Sri Rama Koti Ainavarapu

1973-Pos BOARD #B703
 DIRECT OBSERVATION OF THE TIME EVOLUTION OF A BIOMOLECULAR TRANSITION. **Andrew H. Mack**, Daniel Schlingman, Masha Kamenetska, Maxwell Birger, Lynne Regan, Simon Mochrie

1974-Pos BOARD #B704
 MECHANICALLY TIGHTENING A PROTEIN SLIPKNOT INTO A TREFOIL KNOT. **Chengzhi He**, Hongbin Li

1975-Pos BOARD #B705
 LARGE-SCALE MOLTEN-GLOBULE DYNAMICS CONTRIBUTE TO TITIN CONTRACTILITY. **Zsolt Martonfalvi**, Pasquale Bianco, Katalin Naftz, Miklos Kellermayer

1976-Pos **BOARD #B706**

HALOTAG TETHERS TO STUDY TITIN FOLDING AT THE SINGLE MOLECULE LEVEL. **Ionel Popa**, Ronen Berkovich, Jorge Alegre-Cebollada, Jaime Andres Rivas-Pardo, Julio M. Fernandez

Advances in Single-Molecule Spectroscopy II (Boards #B707–#B730)

1977-Pos **BOARD #B707**

COMPUTATIONAL ANALYSIS OF THE SINGLE MOLECULE AFM FORCE SPECTROSCOPY DATA. **Yuliang Zhang**, Yuri L. Lyubchenko

1978-Pos **BOARD #B708**

EXPLORING THE FORMATION, LIFETIME AND DISSOCIATION STATISTICS OF ACID-AMINE BONDS. **Sangeetha Raman**, Markus Valtiner

1979-Pos **BOARD #B709**

SINGLE MOLECULE FORCE SPECTROSCOPY OF CNGA1 CHANNELS "IN SITU" REVEALS MAJOR CONFORMATIONAL CHANGES UPON GATING. **Sourav Maity**, Monica Mazzolini, Paolo Fabris, Marco Lazzarino, Alejandro Valbuena, Vincent Torre

1980-Pos **BOARD #B710**

HDL-LIPID UPTAKE IS REGULATED BY ELASTIC PROPERTIES OF THE PLASMA MEMBRANE. **Birgit Plochberger**, Gerhard J. Schuetz, Clemens Röhr, Johannes Preiner, Erdinc Sezgin, Mario Brameshuber, Julian Weghuber, Stefan Wieser, Christian Rankl, Verena Ruprecht, Josef Madl, Robert Bittman, Peter Hinterdorfer, Herbert Stangl

1981-Pos **BOARD #B711**

AN ULTRASTABLE MEASUREMENT PLATFORM FOR SINGLE-MOLECULE STUDIES: SUB-NM LATERAL STABILITY OVER 1 HOUR USING A MULTIPLEXED BACK-SCATTERED DETECTION. **Robert Walder**, D. Hern Paik, Matthew S. Bull, Thomas T. Perkins

1982-Pos **BOARD #B712**

AN IMPROVED SURFACE PASSIVATION METHOD FOR SINGLE-MOLECULE STUDIES. **Boyang Hua**, Ruobo Zhou, Hajin Kim, Xinghua Shi, Ankur Jain, Digvijay Singh, Vasudha Aggarwal, Taekjip Ha

1983-Pos **BOARD #B713**

SINGLE-MOLECULE ANALYSIS OF THE ROTATION OF F1-ATPASE UNDER HIGH HYDROSTATIC PRESSURE. **Daichi Okuno**, Masayoshi Nishiyama, Hiroyuki Noji

1984-Pos **BOARD #B714**

FABRICATION AND SURFACE FUNCTIONALIZATION OF HIGHLY BIREFRINGENT PARTICLES FOR OPTICAL TORQUE WRENCH. **Seungkyu Ha**, Maarten van Oene, Richard Janissen, Nynke H. Dekker

1985-Pos **BOARD #B715**

COMBINATION OF OPTICAL TWEEZERS WITH NANOCAPILLARIES AS SYSTEM FOR ESTIMATION OF DNA/LIGAND INTERACTIONS. **Roman Bulushev**, Lorenz Steinbock, Aleksandra Radenovic

1986-Pos **BOARD #B716**

MAGNETIZATION PROPERTIES OF SUPERPARAMAGNETIC BEADS. **Maarten van Oene**, Laura E. Dickinson, Francesco Pedaci, Jan Lipfert, David Dulin, Jelmer P. Cnossen, Margreet W. Docter, Nynke H. Dekker

1987-Pos **BOARD #B717**

PROBING THE KINETICS OF A MODEL HELICASE-NUCLEASE WITH A TEMPERATURE-CONTROLLED MAGNETIC TWEEZERS. **Benjamin Gollnick**, Carolina Carrasco, Francesca Zuttion, Neville S. Gilhooly, Mark S. Dillingham, Fernando Moreno-Herrero

1988-Pos **BOARD #B718**

SINGLE MOLECULE STUDIES OF DNA-BINDING PROTEINS: DEVELOPMENT OF NEW COVALENT DNA ANCHORING TECHNIQUES FOR THE STUDY OF RUPTURE FORCES OF REPLICATION BLOCKS. **Richard Janissen**, Bojk A. Berghuis, Orkide Ordu, Max M. Wink, David Dulin, Jelmer P. Cnossen, Nynke H. Dekker

1989-Pos **BOARD #B719**

SENSING THE ASSOCIATION STATES OF SINGLE BIOMOLECULES BY MOTION ANALYSIS IN AN ELECTROKINETIC TRAP. **Quan Wang**, William E. Moerner

1990-Pos **BOARD #B720**

ON-CHIP OPTICAL MANIPULATION OF BIOMOLECULE ARRAYS WITH NM RESOLUTION. **Jun Lin**, Mohammad Soltani, Robert A. Forties, Summer N. Saraf, James T. Inman, Robert M. Fulbright, Michal Lipson, Michelle D. Wang

1991-Pos **BOARD #B721**

PIF1 REGULATES TELOMERE LENGTH BY REMOVING TELOMERASE FROM TELOMERE ENDS. **Jing-Ru Li**, Yi-Chieh Chien, Jing-er Lin, Hung-Wen Li

1992-Pos **BOARD #B722**

3D ORBITAL TRACKING OF A DNA LOCUS DURING THE PROCESS OF TRANSCRIPTION. **Paolo Annibale**, Enrico Gratton

1993-Pos **BOARD #B723**

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Molecular Dynamics I (Boards #B761–#B783)

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SIMULATIONS OF NANO-SIZED WATER DROPLETS IN THE EXTERNAL ELECTRIC FIELD. **Jane HyoJin Lee**, Mayya Tokman, Michael E. Colvin

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RATE CONSTANTS, TIME SCALES, AND FREE ENERGY LANDSCAPES IN THERMALLY ACTIVATED PROCESSES. **Peter Salamon**, Bjarne Andresen, Anca Segall, Johann Christian Schön

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GNEIMO-FIXMAN: AN ACCURATE TORSIONAL MOLECULAR DYNAMICS SIMULATION METHOD FOR STUDYING BIOMOLECULAR DYNAMICS. Saugat Kandel, Adrien B. Larsen, Jeffrey E. Wagner, Abhinandan Jain, **Nagarajan Vaidehi**

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AUTOMATED OPTIMIZATION OF POTENTIAL PARAMETERS. **Michele Di Pierro**, Ron Elber

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ADAPTIVE BIASING COMBINED WITH HAMILTONIAN REPLICA EXCHANGE TO IMPROVE UMBRELLA SAMPLING FREE ENERGY SIMULATIONS. **Fabian T. Zeller**

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QM/MM SIMULATIONS OF MG AND ZN SOLVATION. **Saleh Riahi**, Christopher N. Rowley

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SPACE-TIME CHARACTERISTICS OF THE PROTEIN THERMODYNAMIC QUANTITIES UNDER THE MOLECULAR CROWDING CONDITION OF CYTOPLASM IN EXTREMOPHILES: KIRKWOOD-BUFF APPROACH COMBINED WITH MOLECULAR DYNAMICS SIMULATION. **Isseki Yu**

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LIFTING CONSTRAINTS IN PROTEIN MOLECULAR DYNAMICS SIMULATIONS. **Timo Graen**, Helmut Grubmüller

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SIMULTANEOUS COMPUTATION OF DYNAMICAL AND EQUILIBRIUM INFORMATION USING A WEIGHTED ENSEMBLE OF TRAJECTORIES. **Ernesto Suarez**, Steven Lettieri, Matthew C. Zwier, Sundar Raman Subramanian, Lillian T. Chong, Daniel M. Zuckerman

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INFERRING STRUCTURAL ENSEMBLES FROM NOISY EXPERIMENTS AND MOLECULAR DYNAMICS: CORRECTING FORCE FIELD BIAS WITH BAYESIAN ENERGY LANDSCAPE TILTING. **Kyle Beauchamp**, Vijay Pande, Rhiju Das

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OPTIMIZATION OF COARSE-GRAINED WATER-ION INTERACTION PARAMETERS FOR BIOLOGICAL SIMULATION. **Joseph Fogarty**, See-Wing Chiu, Eric Jakobsson, Sagar Pandit

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LEARNING ABOUT TRANSITIONS: ADAPTIVE CONTROLS FOR THE MOLECULAR DYNAMICS DATABASE. Sarana Y. Nutanong, Yanif Ahmad, **Thomas B. Woolf**, I-Jeng Wang

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MANAGEMENT OF MOLECULAR SIMULATION DATA-BASE. Anand Kumar, **Yicheng Tu**, Sagar Pandit

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ST-ANALYZER: A WEB-BASED USER INTERFACE FOR SIMULATION TRAJECTORY ANALYSIS. **Jong Cheol Jeong**, Sunhwan Jo, Emilia L Wu, Yifei Qi, Viviana Monje, Min Sun Yeom, Lev Gorenstein, Feng Chen, Jeffery B. Klauda, Wonpil Im

Computational Methods I (Boards #B784–#B813)

2054-Pos BOARD #B784
MODIFIED FAST MULTIPOLE METHOD FOR COARSE-GRAINED MOLECULAR SIMULATIONS. **Mohammad Poursina**

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BIOMOLECULAR STRUCTURE REFINEMENT & PREDICTION USING DEAD-END ELIMINATION WITH A POLARIZABLE FORCE FIELD. Stephen D. LuCore, Shibo Gao, Ava M. Lynn, William T. A. Tolleson, Kyle T. Powers, Timothy D. Fenn, **Michael J. Schnieders**

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IMPROVING THE COMPUTATIONAL EFFICIENCY OF THE INDUCED-DIPOLE MODEL IN AMOEBA VIA THE 3-BODY APPROXIMATION. **Omar Demerdash**, Liam D. O'Suilleabhain, Teresa L. Head-Gordon

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MULTIPOLES AS FORCE FIELD PARAMETERS - ACCURACY AND REDUNDANCY. **Sofie Jakobsen**

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ASSESSMENT OF NONPOLAR TERMS IN IMPLICIT SOLVENT MODELS TO ESTIMATE SMALL MOLECULE HYDRATION FREE ENERGIES. **Martin Brieg**, Julia Setzler, Wolfgang Wenzel

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FREE-ENERGY CALCULATIONS FOR SEMI-FLEXIBLE MACROMOLECULES: APPLICATIONS TO DNA KNOTTING AND LOOPING. **Stefan M. Giovan**, Robert G. Scharein, Andreas Hanke, Stephen D. Levene

2061-Pos BOARD #B791
FREE ENERGY CALCULATION OF PROTEIN CONFORMATIONAL CHANGES USING PARALLEL CASCADE SELECTION MOLECULAR DYNAMICS SIMULATION AND MARKOV STATE MODEL. **Yasutaka Nishihara**, Ryuhei Harada, Akio Kitao

2062-Pos BOARD #B792 INTERNATIONAL TRAVEL AWARDEE
A COMPUTATIONAL METHOD INCLUDING PROTEIN FLEXIBILITY TO ESTIMATE AFFINITIES WITH SMALL LIGANDS. **Ariane Nunes-Alves**, Guilherme M. Arantes

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DEVELOPMENT OF EFFICIENT ENERGY FUNCTION FOR PROTEIN-SMALL MOLECULE INTERACTIONS IN MEDUSADOCK. **Praveen Nedumpully Govindan**, Feng Ding

2064-Pos BOARD #B794
CONFORMATIONAL CONTRIBUTION TO THERMODYNAMICS OF BINDING IN PROTEIN COMPLEXES THROUGH MICROSCOPIC SIMULATIONS. **Jaydeb Chakrabarti**, Amit Das, Mahua Ghosh

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STRUCTURE-BASED PREDICTORS OF RESISTANCE TO THE HIV-1 INTEGRASE INHIBITOR ELVITEGRAVIR. **Majid Masso**, Grace Chuang, Shinar Jain, Kate Hao, Iosif I. Vaisman

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ELUCIDATING EPHRIN-INDUCED INTERSECTING SIGNALING PATHWAYS IN THE NIPAH VIRUS G PROTEIN USING MACHINE LEARNING. **Mohsen Botlani**, Ralph Leighty, Sameer Varma

2067-Pos BOARD #B797
DESIGN OF DRUGLIKE SMALL MOLECULES WITH LYN-SPECIFIC BINDING. **D. S. Dalafave**

2068-Pos BOARD #B798
EFFECT OF CRYSTAL METH AND ECSTASY ENANTIOMERS ON FUNCTION OF DOPAMINE TRANSPORTERS. **Igor Zdravkovic**, Sergei Y. Noskov

2069-Pos BOARD #B799
PREDICTING DRUGGABLE SITES IN PROTEIN-PROTEIN INTERFACES USING *FINDBINDSITE*. **Hubert Li**, Vinod Kasam, Nagarajan Vaidehi

2070-Pos BOARD #B800
UNDERSTANDING THE INTERACTIONS OF THREE INTEGRINS WITH A LIBRARY OF PEPTIDES. **Matt McKenzie**, Aravind R. Rammohan

2071-Pos BOARD #B801
RE-DOCKING SCHEME TO EXPLORE DOCKING SEARCH SPACE BY USING INTERACTION PROFILES. **Nobuyuki Uchikoga**, Yuri Matsuzaki, Masahito Ohue, Takatsugu Hirokawa, Yutaka Akiyama

2072-Pos BOARD #B802
MODEL OF THE NOGO: NOGO RECEPTOR COMPLEX. **Ali Alhoshani**, Rosemarie Vithayathil, Gregory A. Weiss, Melanie J Cocco

2073-Pos BOARD #B803
BIOMOLECULAR RECOGNITION BASED ON 3D MOLECULAR THEORY OF SOLVATION. **Nikolay Blinov**, Wenjuan Huang, Dragan Nikolic, David S. Wishart, Andriy Kovalenko

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FLUCTUATION FLOODING METHOD (FFM) FOR ENHANCING CONFORMATIONAL SAMPLING OF PROTEINS. **Ryuhei Harada**

2075-Pos BOARD #B805
ACCELERATING THE MOLECULAR DYNAMICS SAMPLING OF MUTANTS: A HIERARCHICAL BAYESIAN MARKOV STATE MODEL STRATEGY. **Robert T. McGibbon**, Vijay S. Pande

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PREDICTING HLA-SPECIFIC DRUG HYPERSENSITIVITY WITH MOLECULAR DOCKING AND MOLECULAR DYNAMICS SIMULATIONS. **Xin-Qiu Yao**, Barry J. Grant

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GENERALIZED SCALABLE MULTIPLE COPY ALGORITHMS FOR BIOLOGICAL MOLECULAR DYNAMICS SIMULATIONS IN NAMD. **Wei Jiang**, James Phillips, Lei Huang, Mikolai Fajer, Yilin Meng, James C. Gumbart, Yun Luo, Klaus Schulten, Benoit Roux

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ASSESSING LIMITATIONS OF ELASTIC NETWORK MODELS IN DESCRIBING EQUILIBRIUM PROTEIN FLEXIBILITY AND EXTENSIONS TO PREDICT NON-EQUILIBRIUM UNFOLDING DYNAMICS OF PROTEINS. **Ravindra Venkatramani**, Ranja Sarkar, Hema Chandra Kotamarthi, Ainavarapu Sri Rama Koti

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STUDYING CONFORMATIONAL CHANGES OF MHP1 USING UNBIASED ALL-ATOM MOLECULAR SIMULATIONS. **Pouyan Khakbaz**, Jeffery B. Klauda

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2082-Pos **BOARD #B812**
PB-SAM, A NOVEL SOLUTION TO THE POISON-BOLTZMANN EQUATION FOR APPLICATIONS IN COARSE GRAIN DYNAMICS. **Lisa E. Felberg**

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SIMPLE METHOD FOR HYBRID ALL-ATOM AND COARSE-GRAINED MOLECULAR DYNAMICS SIMULATIONS AND ITS APPLICATIONS. **Sun Mi Choi**, Pandian Sokkar, Young Min Rhee

Biosensors I (Boards #B814–#B843)

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NANOPORE QUANTITATION OF CANCER BRAF DRIVER MUTATION FACILITATED BY A DNA INTERSTRAND MERCULOCK. Kai Tian, Xi Fang, Corbin Reagan, **Li-Qun Gu**

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CONSTRUCTING CPG SITE-SPECIFIC INTERSTRAND LOCKS FOR SINGLE-MOLECULE EPIGENETIC DETECTION IN A NANOPORE. Insoon Kang, Yong Wang, **Li-Qun Gu**, Corbin Reagan

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NOVEL NANOPORE DIELECTROPHORESIS MECHANISM FOR SELECTIVE MICRORNA DETECTION IN CLINICAL SET. Kai Tian, Brandon Fricke, **Li-Qun Gu**

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DETECTION OF SINGLE BIOPOLYMERS AT HIGH CURRENT BANDWIDTH WITH HAFNIUM OXIDE NANOPORES. **Joseph W. Larkin**, Robert Henley, David C. Bell, Tzahi Cohen-Karni, Jacob K. Rosenstein, Meni Wanunu

2088-Pos **BOARD #B818** CPOW TRAVEL AWARDEE
SOLID-STATE NANOPORE MAPPING OF DNA WITH SITE-SPECIFIC BOUND LIGANDS. **Autumn Carlsen**, Osama K. Zahid, Jan Ruzicka, Ethan W. Taylor, Adam R. Hall

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HARDWARE IMPLEMENTATION OF DENOISING ALGORITHMS FOR NANOPORE SENSING. **Brett W. Larsen**, Michael Goryll, Prasanna Sattigeri

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GRAPHENE NANOPORE WITH SELF-ALIGNED PLASMONIC OPTICAL ANTENNA. **SungWoo Nam**, Inhee Choi, Chi-cheng Fu, Kwanyo Kim, SoonGweon Hong, Yeonho Choi, Alex Zettl, Luke P. Lee

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ION CONDUCTIVITY, STRUCTURAL DYNAMICS AND THE EFFECTIVE FORCE IN DNA ORIGAMI NANOPORES. **Chen-Yu Li**, Jejoong Yoo, Aleksei Aksimentiev

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TAILORING NANOPROBES FOR SINGLE-CELL SURGERY. **Paolo Actis**, Sergiy Tokar, David Klenerman, Yuri Korchev

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SINGLE-CELL VOLTAGE MEASUREMENTS WITH A SET OF NANOPROBES. **Gordon A. Thomas**, Stephanie Maruca, Camelia Prodan, Reginald C. Farrow, Alokik Kanwal

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A COMPREHENSIVE LIVE CELL SCREENING APPROACH FOR DEVELOPING IMPROVED MICROBIAL RHODOPSIN-BASED VOLTAGE BIOSENSORS. **Yongxin Zhao**, Daniel Hochbaum, D. Jed Harrison, Adam E. Cohen, Robert E. Campbell

2095-Pos **BOARD #B825**
BIOSENSING PROPERTIES OF AU LOADED MESOPOROUS SILICA NANOSPHERES COATED WITH LIPID BILAYERS. **Rémi Veneziano**, Gaelle Derrien, Sisareuth Tan, Alain Brisson, Jean-Marie Devoisselle, Joel Chopineau, Clarence Charney

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NANOPARTICLE-MEMBRANE INTERACTIONS STUDIED WITH LIPID BILAYER ARRAYS. **Bin Lu**, Tyler Smith, Ruibin Li, Tian Xia, Andre Nel, Jacob Schmidt

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LIQUID-CRYSTAL-BASED BIOSENSOR WITHOUT ALIGNMENT SUBSTRATE. **Piotr Popov**, Elizabeth K. Mann, Antal Jakli

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RADIO-FREQUENCY TANK CIRCUIT FOR DNA SEQUENCING. **Paul V. Gwozdz**, Abhishek Bhat, Robert Blick, Arjun Seshadri, Eric Stava

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ELECTROCHEMICAL DETECTION OF ACETYLCHOLINE USING ENZYME FUNCTIONALIZED NANOPARTICLES. **Jacqueline D. Keighron**, Michael E. Kurczyk, Joakim Wigström, Ann-Sofie Cans

2100-Pos **BOARD #B830**
A SINGLE-STEP DIGITAL NUCLEIC ACID AMPLIFICATION PLATFORM BY DIGITAL PLASMA SEPARATION ON A CHIP. **Erh-Chia Yeh**, Chi-Cheng Fu Yeh, Lucy Hu, Meng-Yao Huang, Luke P. Lee

2101-Pos **BOARD #B831**
SINGLE MOLECULE DETECTION OF INSULIN AUTOANTIBODIES IN TYPE 1 DIABETES. **Juliane Beyer**, Ralf Paul, Ezio Bonifacio, Stefan Diez

2102-Pos **BOARD #B832**
NANOMATERIALS-ENHANCED ELECTROCHEMICAL BIOSENSOR FOR DETECTION OF CANCER BIOMARKERS. Bing Jin, **Hongju Mao**

2103-Pos **BOARD #B833**
ELECTRICAL PUMPING OF POTASSIUM IONS AGAINST AN EXTERNAL CONCENTRATION GRADIENT IN A BIOLOGICAL ION CHANNEL. **Maria Queralt-Martin**, Elena García-Giménez, Vicente M. Aguilera, Patricio Ramirez, Salvador Mafe, Antonio Alcaraz

2104-Pos BOARD #B834
RAPID DETECTION OF PROTEIN AGGREGATION AND INHIBITION BY DUAL FUNCTIONS OF GOLD NANOPLASMONIC PARTICLES: CATALYTIC ACTIVATOR AND OPTICAL REPORTER. **Inhee Choi**, Elizabeth Lee, Minsun Song, Luke P. Lee

2105-Pos BOARD #B835
NOVEL BIOSENSOR FOR POINT OF CARE MEDICAL DIAGNOSTICS. **Anna Wilkes**, Benjamin Evans

2106-Pos BOARD #B836
TRANSPARENT MULTI-SUCTION ELECTRODE ARRAYS FOR *IN VITRO* NEURAL NETWORK INVESTIGATIONS. **John M. Nagarah**, Daniel A. Wagenaar

2107-Pos BOARD #B837
POLYDIACETYLENE (PDA) VESICLE BASED COLORIMETRIC BIOSENSOR FOR DETECTION OF GENETICALLY MODIFIED (GM) CROPS. **Huisoo Jang**, Sungho Jung, Kong-Sik Shin, Sun Min Kim, Tae-Joon Jeon

2108-Pos BOARD #B838
PAPER-BASED INTEGRATED DIAGNOSTIC DEVICE FOR NUCLEIC ACID DETECTION OF HIV FROM BLOOD. **Fei Liu**

2109-Pos BOARD #B839
RAPID DETECTION OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS USING BUBBLE-FREE MICROFLUIDIC PCR. **Sanghun Lee**, Jun Ho Son, Luke P. Lee

2110-Pos BOARD #B840
SIMPLE DETECTION OF AMYLOID-BETA PEPTIDE FOR A DIAGNOSIS OF ALZHEIMER'S DISEASE USING PHOTO-SENSITIVE FET WITH OPTICAL FILTERING LAYER. **Kwan-Su Kim**, Ki-Bong Song

2111-Pos BOARD #B841
PHOTOCHROMIC FRET SENSORS TO MONITOR HEME PROTEIN DYNAMICS. **Halil Bayraktar**, Selen Manioglu

2112-Pos BOARD #B842
AN ENGINEERED PALETTE OF METAL ION QUENCHABLE FLUORESCENT PROTEINS. **Xiaozhen Yu**, Marie-Paule Strub, Travis J. Barnard, Nicholas Noinaj, Grzegorz Piszczek, Susan K. Buchanan, Justin W. Taraska

2113-Pos BOARD #B843
NABI, A NOVEL FRET-BASED VOLTAGE SENSOR PROTEIN. **Uhna Sung**, Masoud Allahverdizadeh, Lei Jin, Thomas Hughes, Lawrence B. Cohen, Bradley J. Baker

Biomaterials (Boards #B844–#B866)

2114-Pos BOARD #B844
ONE-DIMENSIONAL AND TWO-DIMENSIONAL ALIGNMENT OF GOLD-NANOPARTICLES COATED WITH AMYLOIDOGENIC PROTEIN OF α -SYNUCLEIN AND THEIR APPLICATIONS. **Seung R. Paik**, Jae Hyung Park, Unkyu Paik, Daekyun Lee

2115-Pos BOARD #B845
MODULAR STITCHING TO IMAGE SINGLE-MOLECULE DNA TRANSPORT. **Juan Guan**, Bo Wang, Sung Chul Bae, Steve Granick

2116-Pos BOARD #B846
ANTIBODY - CONJUGATED SUPERPARAMAGNETIC IRON OXIDE NANOPARTICLES FOR ACTIVE TARGETING OF ADENOSINE RECEPTORS. Zdenka Markova, **Marketa Havrdova**, Katerina Polakova, Jiri Tucek, Roman Kubinek, Aristides Bakandritsos, Evgenia Gerasimovskaya, Radu Moldovan, Petr Paucek, Radek Zboril

2117-Pos BOARD #B847
STOCHASTIC GATING AND MOLECULAR TRANSPORT IN CARBON NANOTUBE ION CHANNELS. **Jia Geng**, Kyunghoon Kim, Ramya Tunuguntla, Caroline Ajo-Franklin, Aleksandr Noy

2118-Pos BOARD #B848
HIGH GENERATION DENDRIMERS VIA THIOL-MICHAEL CLICK CHEMISTRY. **Stephen Frayne**, Brian Northrop

2119-Pos BOARD #B849
PRODUCTION OF SUBMICRON PDMS PARTICLES BY EMULSIFICATION OF TWO PHASES. **Yo Han Choi**, Ki-Bong Song

2120-Pos BOARD #B850
SOFT STATE POROUS JUNCTIONS BASED MICROFLUIDIC MEMBRANE REACTOR. **Jixiao Liu**, Luke P. Lee

2121-Pos BOARD #B851
BLOCK COPOLYMERS FOR RESPONSIVE, ENERGETIC NANOCOMPOSITE MEMBRANE ASSEMBLIES. **Gabriel A. Montano**, Aaron M. Collins, Yongming Tian, Nicholas G. Parra-Vasquez, Juan Duque, Tuba Sahin, Stephen K. Doorn, Jonathon S. Lindsey

2122-Pos BOARD #B852
LIVING LIQUID CRYSTALS. **Shuang Zhou**, Andrey Sokolov, Oleg D. Lavrentovich, Igor S. Aranson

2123-Pos BOARD #B853
THE EFFECT OF MATERIAL A'S CYTOTOXICITY TO A549, 293T, HEP3B CELLS. **Yong Hun Go**, Gyu Suk O, Jeong Gyun Kim, Jae Kweon Park, You Jin Hwang

2124-Pos BOARD #B854
CYTOPLASMIC STOPPED FLOW AT THE SINGLE CELL LEVEL BASED ON PHOTOSENSITIVE POLYMERSOMES. **Andreas E. Vasdekis**, Evan A. Scott, Conlin P. O'Neil, Demetri Psaltis, Jeffrey A. Hubbell

2125-Pos BOARD #B855
SELF-ASSEMBLY OF STIMULI-RESPONSIVE HYDROGEL NANOSTRUCTURES BY PEPTIDE AMPHIPHILES VIA MOLECULAR DYNAMICS SIMULATIONS. **Hung D. Nguyen**

2126-Pos BOARD #B856
LIVE CELL IMAGING WITH RAB-GTPASES ELUCIDATES INTRACELLULAR PATHWAYS OF RGD AND IRGD TAGGED CATIONIC LIPID-DNA NANOPARTICLES. **Ramsey N. Majzoub**, Kai K. Ewert, Venkata R. Kotamraju, Chia-Ling Chan, Keng S. Liang, Erkki Ruoslahti, Cyrus R. Safinya

2127-Pos BOARD #B857
BIOMIMETIC LIGHT HARVESTING IN NANOPOROUS METAL ORGANIC MATERIALS. **Randy W. Larsen**, Lukasz Wojtas, Chrsiti Whittington

2128-Pos BOARD #B858
SUPERRESOLUTION IMAGING OF THE ENTESIS UNDER MECHANICAL LOAD. Heinrich Grabmayr, **Leone Rossetti**, Josef Stolberg-Stolberg, Rainer Burgkart, Andreas R. Bausch

2129-Pos BOARD #B859
INVESTIGATION OF NANOLIPOPROTEIN PARTICLES ENTRAPPED WITHIN NANOPOROUS SILICA: A NOVEL PLATFORM FOR IMMOBILIZATION OF INTEGRAL MEMBRANE PROTEINS. **Wade F. Zeno**, Marjorie L. Longo, Subhash H. Risbud, Matthew A. Coleman

2130-Pos **BOARD #B860**
HIGH SPEED ALL OPTICAL LOGIC OPERATIONS UTILIZING
THE PROTEIN BACTERIORHODOPSIN. **László Fábán,**
Anna Mathesz, Sándor Valkai, Daniel Alexandre, Paulo V. S. Marques,
Pál Ormos, Elmar K. Wolff, András Dér

2131-Pos **BOARD #B861**
GENE EXPRESSION IN A 2D SYSTEM. **Eyal Karzbrun,**
Alexandra Tayar, Vincent Noireaux, Roy Haim Bar-ziv

2132-Pos **BOARD #B862**
DESIGNING HIGHLY TUNABLE SEMIFLEXIBLE FILAMENT
NETWORKS. **Ronald J. Pandolfi,** Lauren E. Edwards, Linda S. Hirst

2133-Pos **BOARD #B863**
STABLE PATCHY PARTICLES FROM IMMISCIBLE LIPID MIXTURES.
Dylan Bargteil, Lea-Lactitia Pontani, Martin Haase, Jasna Brujic

2134-Pos **BOARD #B864**
DETERMINING SURFACE ACTIVITY AND MEMBRANE
INTERACTIONS OF RANASPUMIN-2 AND AN ENGINEERED
DERIVATIVE, SURFACTANT RESISTING FOAM FORMATION.
Carly R. Strelez, David Wendell, **Shelli L. Frey**

2135-Pos **BOARD #B865**
RAPID FORMATION AND FLOW AROUND STAPHYLOCOCCUS
AUREUS BIOFILM STREAMERS. **Min Young Kim,** Knut Drescher,
Bonnie L. Bassler, Howard A. Stone

2136-Pos **BOARD #B866**
INTERFACIAL MUSSEL PROTEINS CHARACTERIZATION WITH
THE SURFACE FORCES APPARATUS. **Eric Danner,** Yajing Kan,
Malte Hammer, Jing Yu, Wei Wei, Jacob Israelachvili, J Herbert Waite

Tuesday, February 18, 2014

Daily Program Summary

All rooms are located in the MOSCONE CONVENTION CENTER unless noted otherwise.

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7:30 AM–5:00 PM	Registration/Information	North Lobby
7:30 AM–10:00 PM	Family Room	Room 112
8:00 AM–9:00 AM	Biophysical Society Business Meeting	Room 302
8:00 AM–4:30 PM	Poster Viewing	Hall D
8:00 AM–5:30 PM	Career Center	Room 300
8:00 AM–6:00 PM	Child Care	Marriott Marquis, Pacific H, I, J
8:00 AM–6:00 PM	Undergraduate Student Lounge	Rotunda, 300 Level
8:15 AM–10:15 AM	<p>Symposium: Biophysics in Industry: Putting Evolution in Practice Co-Chairs: <i>Kenneth Dill, Stony Brook University, and Timothy Gardner, Amyris, Inc.</i> TRANSFORMING YEAST FROM MOONSHINERS INTO OIL BARONS. <i>Timothy Gardner</i> SYNTHETIC BIOLOGY. <i>Christopher Voigt</i> HARNESSING NATURE'S DIVERSITY FOR PRODUCTION OF UNIQUE TRIGLYCERIDE OILS. <i>Peter Licari</i> PHYSICAL CONSTRAINTS ON PROTEOMES IMPOSE LIMITS TO BIOLOGICAL EVOLUTION. <i>Kenneth Dill</i></p>	Room 134
8:15 AM–10:15 AM	<p>Symposium: Mechanosensing in Eukaryotes Co-Chairs: <i>Jeffrey Holt, Harvard University & Boston Children's Hospital, and Valeria Vasquez, Stanford University</i> ZEN AND THE ART OF MECHANOSENSATION: HOW MSCS-LIKE MECHANOSENSITIVE CHANNELS HELP EUKARYOTIC CELLS AND ORGANELLES REDUCE STRESS. <i>Elizabeth Haswell</i> MAY THE FORCE BE WITH YOU: SEARCH FOR ION CHANNELS THAT RESPOND TO PRESSURE. <i>Ardem Patapoutian</i> TOUCH AS A MATTER OF FAT: THE PHOSPHOLIPIDS AND DEG/ENAC CHANNELS NEEDED FOR METAZOAN TOUCH SENSATION. <i>Miriam B. Goodman</i> TMC FUNCTION IN HAIR CELL MECHANOTRANSDUCTION. <i>Jeffrey R. Holt</i></p>	Room 135
8:15 AM–10:15 AM	Platform: Cell Mechanics and Motility III	Room 130/131
8:15 AM–10:15 AM	Platform: Intrinsically Disordered Proteins	Room 132/133
8:15 AM–10:15 AM	Platform: Membrane Pumps, Transporters, and Exchangers II	Room 303
8:15 AM–10:15 AM	Platform: Protein-Nucleic Acid Interactions II	Room 304
8:15 AM–10:15 AM	Platform: Calcium Fluxes, Sparks, and Waves	Room 305
8:15 AM–10:15 AM	Platform: Ion Channels and Disease	Room 306
9:00 AM–10:00 AM	Subgroup Chairs Meeting	Room 124
9:00 AM–10:30 AM	<p>Exhibitor Presentation: Wyatt Technology Corporation Essential Biophysical Characterization™: Molar Mass, Size, Charge and Interactions—The Light Scattering Toolbox for Biomolecules and Nanoparticles</p>	Room 123
9:30 AM–10:30 AM	Career Center Workshop: The Power of Groups: How to Help Others Help You in Your Job Search	Room 300
10:00 AM–5:00 PM	Biomolecular Discovery Dome	Hall D
10:00 AM–5:00 PM	Exhibits	Hall D
10:15 AM–11:00 AM	Coffee Break	Hall D
10:45 AM–12:45 PM	<p>Symposium: Awards Symposium Chair: <i>Francisco Bezanilla, University of Chicago, Society President</i> PHASES AND FLUCTUATIONS IN BIOLOGICAL MEMBRANES. <i>Sarah Veatch</i> MULTISCALE SIMULATIONS OF BIOLOGICAL SYSTEMS. <i>Arieh Warsbel</i> STRUCTURAL AND MECHANISTIC DIVERSITY OF ABC TRANSPORTERS. <i>Douglas C. Rees</i> ROLE OF MEMBRANE LIPIDS IN ACTIVATING G-PROTEIN-COUPLED RECEPTORS. <i>Michael F. Brown</i> DECONSTRUCTING THE PHYSICAL AND MOLECULAR BASIS OF TOUCH AND PAIN SENSATION. <i>Miriam B. Goodman</i></p>	Room 134
10:45 AM–12:45 PM	Platform: Optical Microscopy and Super Resolution Imaging II	Room 130/131
10:15 AM–12:45 PM	Platform: Voltage-gated K Channels: Mostly BK and Structure Function	Room 132/133
10:45 AM–12:45 PM	Platform: Protein Design and Folding	Room 303

10:45 AM–12:45 PM	Platform: DNA Structure and Dynamics	Room 304
10:45 AM–12:45 PM	Platform: Membrane-active Peptides and Toxins	Room 305
10:45 AM–12:45 PM	Platform: Microtubules and Motors	Room 306
11:00 AM–12:30 PM	Exhibitor Presentation: Nanion Technologies SURFE2R - Catch the Wave for Transporters Precise Measurements of Membrane Transporter Protein Activity	Room 123
12:00 PM–2:00 PM	Postdoc to Faculty Q&A: Transitions Forum and Luncheon	Room 124/125
12:30 PM–2:00 PM	Career Opportunities at Primarily Undergraduate Institutions: Finding a Job and Finding Success	Room 310
1:00 PM–2:00 PM	Networking with Minority Biophysicists: Resources and Opportunities	Room 302
1:00 PM–2:30 PM	Exhibitor Presentation: Molecular Devices, LLC Axon Electrophysiology Symposium: Getting the Most out of pCLAMP Software	Room 123
1:30 PM–2:30 PM	Science and Policy with Steven Chu	Room 304
1:45 PM–3:00 PM	Snack Break	Hall D
1:45 PM–3:45 PM	Poster Presentations and Late Posters	Hall D
2:15 PM–3:30 PM	The Basics, the Discoveries, and the Controversies: Membrane Protein Structure and Dynamics	Room 301
2:30 PM–3:30 PM	Career Center Workshop: What to Do When You Are Tired of Doing What You Are Doing: A Unique Interactive Workshop for Experienced Workers	Room 300
2:30 PM–4:30 PM	PhD Careers Beyond the Bench	Room 309
3:00 PM–4:30 PM	Exhibitor Presentation: GE Healthcare The Devil is in the Detail: The Importance of Accurate Stability and Concentration Determination in Biomolecular Interaction Analysis	Room 123
3:00 PM–5:00 PM	Education Committee Meeting	Room 122
4:00 PM–6:00 PM	Symposium: Structural Dynamics of Molecular Machines Co-Chairs: Julio Fernandez, Columbia University, and Yasmine Meroz, Harvard University POSTTRANSLATIONAL MODIFICATIONS AS MODULATORS OF MECHANICAL PROTEIN FOLDING. <i>Julio Fernandez</i> A ZOO OF SLOW DYNAMICS. <i>Yasmine Meroz</i> DIRECT MEASUREMENTS OF TRANSCRIPTION FACTOR BINDING AND DISSOCIATION AT INDIVIDUAL CHROMOSOMAL OPERATORS. <i>Johan Elf</i> ClpX, A STOCHASTIC PROTEIN UNFOLDING AND TRANSLOCATION MACHINE. <i>Robert T. Sauer</i>	Room 134
4:00 PM–6:00 PM	Symposium: Molecular Self-Assembly—from in Vitro to Cellular Systems Co-Chairs: Roy Bar-Ziv, Weizmann Institute of Science, Israel, and Suzanne Gaudet, Harvard Medical School SYMMETRY-BASED DESIGN AND STRUCTURE OF SELF-ASSEMBLING PROTEIN CAGES AND NANOMATERIALS. <i>Todd O. Yeates</i> SEQUESTERED: MOLECULAR PHYSIOLOGY OF BACTERIAL MICROCOMPARTMENTS. <i>David Savage</i> LEVERAGING CELL-TO-CELL VARIABILITY TO UNDERSTAND SIGNAL TRANSDUCTION NETWORKS. <i>Suzanne Gaudet</i> TOWARDS ARTIFICIAL CELLS IN 2D. <i>Roy Bar-Ziv</i>	Room 135
4:00 PM–6:00 PM	Symposium: Applications of Quantum Mechanics to Biophysical Problems Co-Chairs: Qiang Cui, University of Wisconsin–Madison, and Sharon Hammes-Schiffer, University of Illinois at Urbana-Champaign QM/MM METHODS: RECENT DEVELOPMENTS AND APPLICATION TO MEMBRANE PROTEINS AND MOLECULAR MOTORS. <i>Qiang Cui</i> HYDROGEN TUNNELING, ELECTROSTATICS, AND CONFORMATIONAL MOTIONS IN ENZYME CATALYSIS. <i>Sharon Hammes-Schiffer</i> USING QUANTUM MECHANICS IN BIOLOGICAL STRUCTURE REFINEMENT. <i>Kenneth M. Merz</i> CLASSICAL AND MIXED QUANTUM MECHANICAL/MOLECULAR MECHANICAL (QM/MM) SIMULATIONS OF G PROTEIN COUPLED RECEPTORS. <i>Ursula Rothlisberger</i>	Room 130/131
4:00 PM–6:00 PM	Platform: Excitation-Contraction Coupling	Room 132/133
4:00 PM–6:00 PM	Platform: Other Channels	Room 303
4:00 PM–6:00 PM	Platform: Force Spectroscopy	Room 304
4:00 PM–6:00 PM	Platform: Membrane Dynamics	Room 305
4:00 PM–6:00 PM	Platform: Muscle: Fiber and Molecular Mechanics and Structure	Room 306

<p>7:30 PM–9:30 PM</p>	<p>Workshop: Knocking Down or Turning Off: Down-Regulation of Protein Expression Chair: <i>Suzanne Scarlata, Stony Brook University</i> MOONLIGHTING PROTEINS: HOW THE LIPID-SIGNALING ENZYME PHOSPHOLIPASE C-BETA REGULATES RNA SILENCING. <i>Suzanne Scarlata</i> SLICER AND THE ARGONAUTS. <i>Leemor Joshua-Tor</i> COMPETITION BETWEEN MICRORNAS AND ITS ROLE IN POST-TRANSCRIPTIONAL REGULATION. <i>Ofer Biham</i> CHIMERIC SWITCHES: CELL-FATE DECISIONS VIA MICRORNA DEPENDENT REGULATION. <i>Herbert Levine</i></p>	<p>Room 134</p>
<p>7:30 PM–9:30 PM</p>	<p>Workshop: Applications of Supported Bilayers Co-Chairs: <i>Marjorie Longo, University of California, and Davis Khalid Salaita, Emory University</i> SUPER-RESOLUTION METHODS TO UNDERSTAND DYNAMICS AT SOFT INTERFACES. <i>Christy F. Landes</i> FLUORESCENCE-BASED TENSION PROBES TO IMAGE MECHANICS AT THE LIPID MEMBRANE. <i>Khalid Salaita</i> QUANTIFYING MEMBRANE VISCOSITY BY MONITORING THE ROTATIONAL AND TRANSLATIONAL DIFFUSION OF TRACER PARTICLES. <i>Raghuveer Parthasarathy</i> DOMAINS IN SUPPORTED BILAYERS: FROM WINEMAKING TO PROTEIN NANOPATTERNING. <i>Marjorie L. Longo</i></p>	<p>Room 135</p>
<p>7:30 PM–9:30 PM</p>	<p>Workshop: Distance Measurements by Double Electron Electron Resonance (DEER) Co-Chairs: <i>Gail Fanucci, University of Florida, and Hassane Mchaourab, Vanderbilt University</i> DEER ON NITROXIDES: EXPERIMENT AND DATA INTERPRETATION. <i>Yevhen Polyhach</i> MAPPING TRANSPORTER CONFORMATIONAL DYNAMICS USING DOUBLE ELECTRON ELECTRON SPECTROSCOPY (DEER). <i>Hassane S. Mchaourab</i> EVALUATING DEER DISTANCE PROFILES IN TERMS OF PROTEIN CONFORMATIONAL ENSEMBLES. <i>Gail E. Fanucci</i> DEER STUDIES OF MEMBRANE PROTEINS. <i>Gary A. Lorigan</i> DO SPIN LABELS TELL THE TRUTH? <i>Peter Fajer</i></p>	<p>Room 130/131</p>
<p>8:00 PM–10:00 PM</p>	<p>SOBLA (The Society for Latinoamerican Biophysicists) Meeting</p>	<p>Room 309</p>

Tuesday, February 18

7:30 AM–5:00 PM, NORTH LOBBY
Registration/Information

7:30 AM–10:00 PM, ROOM 112
Family Room

8:00 AM–9:00 AM, ROOM 302
Biophysical Society Business Meeting

The annual business meeting is open to all Society members.

8:00 AM–4:30 PM, HALL D
Poster Viewing

8:00 AM–5:30 PM, ROOM 300
Career Center

8:00 AM–6:00 PM, MARRIOTT MARQUIS, PACIFIC H, I, J
Child Care

8:00 AM–6:00 PM, ROTUNDA, 300 LEVEL
Undergraduate Student Lounge

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 stop by to answer questions student attendees may have about career paths and opportunities.

8:15 AM–10:15 AM, ROOM 134
Symposium
Biophysics in Industry:
Putting Evolution in Practice

Co-Chairs

Kenneth Dill, Stony Brook University
Timothy Gardner, Amyris, Inc.

2137-SYMP 8:15 AM
TRANSFORMING YEAST FROM MOONSHINERS INTO OIL BARONS. **Timothy Gardner**

NO ABSTRACT 8:45 AM
SYNTHETIC BIOLOGY. **Christopher Voigt**

2138-SYMP 9:15 AM
HARNESSING NATURE'S DIVERSITY FOR PRODUCTION OF UNIQUE TRIGLYCERIDE OILS. **Peter Licari**

2139-SYMP 9:45 AM
PHYSICAL CONSTRAINTS ON PROTEOMES IMPOSE LIMITS TO BIOLOGICAL EVOLUTION. **Kenneth Dill**

8:15 AM–10:15 AM, ROOM 135

Symposium Mechanosensing in Eukaryotes

Co-Chairs

Jeffrey Holt, Harvard University & Boston Children's Hospital
Valeria Vasquez, Stanford University

2140-SYMP 8:15 AM
ZEN AND THE ART OF MECHANOSENSATION: HOW MSCS-LIKE MECHANOSENSITIVE CHANNELS HELP EUKARYOTIC CELLS AND ORGANELLES REDUCE STRESS. **Elizabeth Haswell**, Kira Veley, Grigory Makshev, Margaret Wilson, Gregory Jensen, Eric Hamilton

2141-SYMP 8:45 AM
MAY THE FORCE BE WITH YOU: SEARCH FOR ION CHANNELS THAT RESPOND TO PRESSURE. **Ardem Patapoutian**

2142-SYMP 9:15 AM
TOUCH AS A MATTER OF FAT: THE PHOSPHOLIPIDS AND DEG/ENAC CHANNELS NEEDED FOR METAZOAN TOUCH SENSATION. **Miriam B. Goodman**

2143-SYMP 9:45 AM
TMC FUNCTION IN HAIR CELL MECHANOTRANSDUCTION. **Jeffrey R. Holt**

8:15 AM–10:15 AM, ROOM 130/131

Platform Cell Mechanics and Motility III

Co-Chairs

Hedde van Hoorn, Leiden University, The Netherlands
Lene Oddershede, University of Copenhagen, Denmark

2144-PLAT 8:15 AM
THE PREDOMINANT ROLE OF TENSION IN THE NANOSCALE MECHANICAL BEHAVIOR OF CELLS VISUALIZED BY A NEW IMAGING PLATFORM. Nicola Mandriota, **Ozgur Sahin**

2145-PLAT 8:30 AM
INVESTIGATING FOCAL ADHESION MECHANICS USING NANOPATTERNED MOLECULAR TENSION FLUORESCENCE MICROSCOPY (MTFM). **Yang Liu**, Rebecca Medda, Elisabetta Ada Cavalcanti-Adam, Khalid Salaita

2146-PLAT 8:45 AM
PROBING THE MECHANICAL COUPLING OF THE CELL MEMBRANE TO THE NUCLEUS WITH VERTICAL NANOPILLAR ARRAYS. **Lindsey Hanson**, Wenting Zhao, Ziliang Lin, Yi Cui, Bianxiao Cui

2147-PLAT 9:00 AM
OUTWARD MICROTUBULE-MEDIATED PUSHING FORCES DICTATE MITOSIS. **Hedde van Hoorn**, Martin de Valois, Claude Backendorf, Thomas Schmidt

2148-PLAT 9:15 AM
ANALYSIS AND MODELING OF DENDRITIC SPINE MORPHOGENESIS. **Olena Marchenko**, Charles W. Wolgemuth, Leslie M. Loew

2149-PLAT 9:30 AM
TRACTION FORCE MICROSCOPY BASED ON AN ACTIVE CABLE NETWORK MODEL. Jerome Soine, Christoph Brand, Jonathan Stricker, Patrick W. Oakes, Margaret L. Gardel, **Ulrich S. Schwarz**

2150-PLAT 9:45 AM
MIGRATION, FORCE GENERATION AND MECHANOSENSING OF CELLS IN COLLAGEN GELS. **Julian Steinwachs**, Claus Metzner, Katerina Aifantis, Ben Fabry

2151-PLAT 10:00 AM
CELL DIVISIONS CAUSE LONG-RANGE WELL-ORDERED VORTICITY PATTERNS IN ENDOTHELIAL TISSUE. *Ninna S. Rossen, Jens M. Tarp, Joachim Mathiesen, Mogens H. Jensen, Lene Oddershede*

8:15 AM–10:15 AM, ROOM 132/133

Platform
Intrinsically Disordered Proteins

Co-Chairs

Birthe Kragelund, University of Copenhagen, Denmark
Trevor Creamer, University of Kentucky

2152-PLAT 8:15 AM
PREDICTION OF THE EFFECTS OF THE VAL66MET POLYMORPHISM ON THE CONFORMATIONAL ENSEMBLE OF AN INTRINSICALLY DISORDERED PROTEIN, BRAIN-DERIVED NEUROTROPHIC FACTOR. **Ruchi Lohia**, Reza Salari, Grace Brannigan

2153-PLAT 8:30 AM
HOW DO INTERACTIONS IN CIS WITH ORDERED DOMAINS INFLUENCE SEQUENCE-ENSEMBLE RELATIONSHIPS OF INTRINSICALLY DISORDERED REGIONS? **Anuradha Mittal**, Kanchan Garai, Rohit V. Pappu

2154-PLAT 8:45 AM
THE C-TERMINAL V5 DOMAIN OF PROTEIN KINASE C α IS A MULTI-FUNCTIONAL INTRINSICALLY DISORDERED PROTEIN MODULE. **Yuan Yang**, Tatyana I. Igumenova

2155-PLAT 9:00 AM
C-TERMINAL ERK D- (AND F-LIKE) DOMAINS LINK THE NA⁺/H⁺ EXCHANGER NHE1 TO ERK2 PHOSPHORYLATION AND REGULATION VIA SCAFFOLDING. *Ruth Hendus-Altenberger, Jeff Schnell, Elena Pedraz, Jonas Marstrand Lacour, Jane Johansen, Stine F. Pedersen, Birthe B. Kragelund*

2156-PLAT 9:15 AM
SPEED DATING WITH KIX: A SINGLE DOMAIN THAT HAS MANY PARTNERS. **Sarah L. Shammass**, Jane Clarke

2157-PLAT 9:30 AM
MOLECULAR SIMULATIONS OF THE DYNAMICS OF DISORDERED PROTEINS. **W. Wendell Smith**, Po-Yi Ho, Elizabeth Rhoades, Corey O'Hern

2158-PLAT 9:45 AM
THE PROTECTION OF MEMBRANES FROM COLD-STRESS: A STRUCTURAL STUDY OF THE INTRINSICALLY DISORDERED DEHYDRIN BOUND TO MICELLES AND LIPOSOMES. **Steffen P. Graether**, Matthew Clarke, Josephine Warnica, John Atkinson, Jeffrey Madge

2159-PLAT 10:00 AM
TRANSIENT DISORDER: CALCINEURIN AS AN EXAMPLE. **Trevor P. Creamer**, Tori B. Dunlap, Erik C. Cook

8:15 AM–10:15 AM, ROOM 303

Platform
Membrane Pumps, Transporters, and Exchangers II

Co-Chairs

Hanne Poulsen, University of Aarhus, Denmark
Lei Zheng, University of Texas Houston Medical School

2160-PLAT 8:15 AM
TRANSPORT PATHWAY IN CU⁺ P-TYPE ATPASES. **Magnus Andersson**, Daniel Mattle, Oleg Sitsel, Anna Marie Nielsen, Erik Lindahl, Stephen H. White, Poul Nissen, Pontus Gourdon

2161-PLAT 8:30 AM CPOW TRAVEL AWARDEE
SOMATIC MUTATIONS IN THE NA,K-ATPASE CAN CAUSE HYPERTENSION. **Hanne Poulsen**, Elena Azizan, Poul Nissen, Morris Brown

2162-PLAT 8:45 AM
GLUTATHIONYLATION OF THE B1 SUBUNIT PREVENTS THE E1NA3 TO E2P FORWARD REACTION IN THE NA⁺, K⁺ ATPASE. **Alvaro Garcia**, Chia-Chi Liu, Ronald Clarke, Helge Rasmussen

2163-PLAT 9:00 AM
DISCOVERY OF ENZYME MODULATORS VIA HIGH-THROUGHPUT TIME-RESOLVED FRET IN LIVING CELLS. **Simon J. Gruber**, Razvan L. Cornea, Kurt C. Peterson, Gregory D. Gillispie, Seth L. Robia, David D. Thomas

2164-PLAT 9:15 AM
MOLECULAR BASIS FOR SODIUM VERSUS CALCIUM BINDING IN THE SODIUM-CALCIUM EXCHANGER. **Fabrizio Marinelli**, José D. Faraldo-Gómez

2165-PLAT 9:30 AM
STRUCTURE OF TRIMERIC CALCIUM/PROTON ANTIporter PROTEIN YFKE REVEALS THE MECHANISMS OF CALCIUM EFFLUX AND ITS PH REGULATION. **Lei Zheng**

2166-PLAT 9:45 AM
FUNCTIONAL RECONSTITUTION OF THE MITOCHONDRIAL CA²⁺/H⁺ ANTIporter LETM1. **Ming-Feng Tsai**, Christopher Miller

2167-PLAT 10:00 AM
FOLDING AND ASSOCIATION OF HUMAN UNCOUPLING PROTEIN-1 IN BIOLOGICAL MEMBRANES: EVIDENCE FOR MULTIMERIC FUNCTIONAL FORMS. **Tuan Hoang**, Matthew David Smith, Masoud Jelokhani-Niaraki

8:15 AM–10:15 AM, ROOM 304

Platform
Protein-Nucleic Acid Interactions II

Co-Chairs

Mark Williams, Northeastern University
Fredrik Westerlund, Chalmers University of Technology, Sweden

2168-PLAT 8:15 AM
PROBING PHYSICAL PROPERTIES OF A DNA-PROTEIN COMPLEX USING NANOFUIDIC CHANNELS. *Karolin Frykholm, Mohammadreza Alizadehheidari, Joachim Fritzsche, Jens Wigenius, Philip Nevin, Joshua Araya, Penny Beuning, Mauro Modesti, Fredrik Persson, Fredrik Westerlund*

2169-PLAT 8:30 AM
DYNAMICS OF NAPI-ASSISTED NUCLEOSOME ASSEMBLY IMAGED WITH HIGH-SPEED ATOMIC FORCE MICROSCOPY. **Allard Katan**, Rifka Hoogeboom-Vlijm, Alexandra Lusser, Cees Dekker

2170-PLAT 8:45 AM
CHARACTERIZING THE STRUCTURE AND FUNCTION OF THE N-TERMINUS OF SCHIZOSACCHAROMYCES POMBE CDC5, A PRE-MRNA SPLICING FACTOR. **Scott E. Collier**, Dungeng Peng, Markus Voehler, Nicholas Reiter, Melanie Ohl

2171-PLAT 9:00 AM
CONDENSATION OF DNA MEDIATED BY THE BACTERIAL CENTROMERE BINDING PROTEIN SPO0J/PARB. *Cesar L. Pastrana, James A. Taylor, Mark S. Dillingham, Fernando Moreno-Herrero*

2172-PLAT **9:15 AM** EDUCATION TRAVEL AWARDEE
ARCHITECTURAL ROLE OF HMO1 IN BENDING, BRIDGING AND COMPACTING DNA. **Divakaran Murugesapillai**, Micah J. McCauley, Ran Huo, Molly H. Nelson Holte, L. James Maher III, Nathan E. Israeloff, Mark C. Williams

2173-PLAT **9:30 AM**
DIRECT VISUALIZATION OF DNA DYNAMICS DURING THE TELOMERASE CATALYTIC CYCLE REVEALS THE FUNCTION OF A CONSERVED TELOMERASE DOMAIN.
Benjamin M. Akiyama, Michael D. Stone

2174-PLAT **9:45 AM**
TARGETING AND DEGRADATION OF VIRAL DNA BY THE CRISPR-CAS SYSTEM OF ESCHERICHIA COLI. **Sy Redding**, Samuel H. Sternberg, Prashant Bhat, Chantal K. Guegler, Megan L. Hochstrasser, Blake Wiedenheft, Jennifer A. Doudna, Eric C. Greene

2175-PLAT **10:00 AM**
SELECTIVE ACETYLATION REVEALS DISTINCT ROLES OF HISTONES H3 AND H4 IN NUCLEOSOME DYNAMICS - A FRET STUDY. **Alexander Gansen**, Katalin Toth, Lars Nordenskiöld, Jörg Langowski

8:15 AM–10:15 AM, ROOM 305

Platform Calcium Fluxes, Sparks, and Waves

Co-Chairs

Niall Macquaide, University of Glasgow, United Kingdom
Dmitry Terentyev, Brown University and Rhode Island Hospital

2176-PLAT **8:15 AM**
DECOMPOSITION OF A CALCIUM SPARK IN CARDIAC MYOCYTES. **Didier X.P. Brochet**, W. Jonathan Lederer

2177-PLAT **8:30 AM**
EXAMINATION OF SINGLE CHANNEL RYR BEHAVIOR FROM LONG-LASTING Ca^{2+} SPARKS. Cherrie HT KONG, **Mark B. Cannell**

2178-PLAT **8:45 AM**
ACTIVITY OF BOTH PKA AND CAMKII IS REQUIRED FOR MAXIMAL RYR SENSITIVITY UNDER BETA-ADRENERGIC STIMULATION. Ardo Illaste, **Eva Polakova**, Ernst Niggli, Eric A. Sobie

2179-PLAT **9:00 AM**
CRITICAL REQUIREMENTS FOR THE INITIATION OF A CARDIAC ARRHYTHMIA IN HEART: CELL NUMBER. Aman Ullah, Minh Tuan Hoang Trong, George S. B. Williams, Raimond L. Winslow, William J. Lederer, **Mohsin S. Jafri**

2180-PLAT **9:15 AM**
STRUCTURAL AND FUNCTIONAL ALTERATION OF RYR CLUSTERS AFTER REMODELING IN PERSISTENT ATRIAL FIBRILLATION. **Niall Macquaide**, Hoang-Trong M. Tuan, Jun-Ichi Hotta, Wouter Sempels, Ilse Lenaerts, Patricia Holemans, Johan Hofkens, Saleet Jafri, Rik Willems, Karin R. Sipido

2181-PLAT **9:30 AM**
SUBCELLULAR ORIGIN AND TISSUE-WIDE SYNCHRONIZATION OF ABNORMAL Ca RELEASE IN THE GENESIS OF Ca -DEPENDENT ATRIAL ARRHYTHMIA.
Qing Lou, Bin Liu, Andriy E. Belevych, Przemyslaw Radwanski, Anu Kalyanasundaram, Wolfgang H. Dillmann, Antonis A. Armoundas, Bjorn C. Knollmann, Vadim V. Fedorov, Sándor Györke

2182-PLAT **9:45 AM**
HYPERPHOSPHORYLATION OF RYRS UNDERLIES TRIGGERED ACTIVITY IN TRANSGENIC RABBIT MODEL OF LQT2 SYNDROME. **Dmitry Terentyev**, Weyian Li, Radmila Terentyeva, Leroy L. Cooper, YiChun Lu, Hitesh Jindal, Xuwen Peng, Gideon Koren

2183-PLAT **10:00 AM**
RAPID CALCIUM MODULATION IN CELLS: DIRECT INTRACELLULAR ACCESS USING NANOSTRAWs. **Alexander Xu**, Sally A. Kim, Amin Aalipour, Nicholas A. Melosh

8:15 AM–10:15 AM, ROOM 306

Platform Ion Channels and Disease

Co-Chairs

Heike Wulff, University of California, Davis
Melissa Miller, University of California, Berkeley

2184-PLAT **8:15 AM** EDUCATION TRAVEL AWARDEE
A ROBUST HIGH-THROUGHPUT ASSAY FOR THERMODYNAMIC CORRECTORS OF THE PREDOMINANT MOLECULAR DEFECT CAUSING CYSTIC FIBROSIS. **Chi Wang**, Pradeep Kota, Zhengrong Yang, Andrei Aleksandrov, Jianli An, Farhad Forouhar, Greg Boel, Nikolay Dokholyan, John Riordan, Christie Brouillette, John Hunt

2185-PLAT **8:30 AM**
CONVERTING A STIMULATORY ATP BINDING SITE TO AN INHIBITORY ONE BY THE DISEASE-ASSOCIATED MUTATION, G551D. **Wen-Ying Lin**, Kang-Yang Jih, Tzyh-Chang Hwang

2186-PLAT **8:45 AM**
INFLUENZA A BLOCKERS WITH REDUCED RESISTANCE FORMATION. Antonios Kolocouris, F. Brent Johnson, Roland Zell, Michaela Schmidtke, Francesc X. Sureda, Timothy A. Cross, David Fedida, Christina Tzitzoglaki, Harris Ioannidis, Anja Hoffman, Marta López-Querol, Anna K. Wright, Daniel Kwan, Kelly McGuire, **David D. Busath**

2187-PLAT **9:00 AM**
DUAL REGULATION OF G PROTEINS AND THE G PROTEIN-ACTIVATED POTASSIUM CHANNELS (GIRK) BY LITHIUM. Isabella Farhy Tselnicker, Vladimir Tsemakhovich, Ida Rishal, Carmen W. Dessauer, **Nathan Dascal**

2188-PLAT **9:15 AM**
THE MICROGLIAL K^+ CHANNELS KV1.3 AND KCA3.1 AS POTENTIAL THERAPEUTIC TARGETS FOR ISCHEMIC STROKE. **Heike Wulff**, Yi-Je Chen, Paul D. Jenkins, Hai Nguyen, April L. Garing, Ralf Köhler

2189-PLAT **9:30 AM**
EPILEPSY-ASSOCIATED POINT MUTATION IN THE PORE DOMAIN OF KV2.1. **Kevin R. Bersell**, Benjamin S. Jorge, Jennifer A. Kearney, Alfred L. George, Jr.

2190-PLAT **9:45 AM**
MOLECULAR DYNAMICS STUDIES OF ION PERMEATION IN HUMAN VOLTAGE-GATED PROTON CHANNEL. **Kulleperuma Kulleperuma**, Deri Morgan, Borris Musset, Susan M.E. Smith, Sindhu Rajan, Vladimir V. Cherny, Thomas E. DeCoursey, Regis Pomes

2191-PLAT **10:00 AM**
REGULATION OF CATSPER CHANNEL THROUGH NON-CONVENTIONAL LIPID SIGNALING. **Melissa R. Miller**, Yuriy Kirichok, Polina Lishko

9:00 AM–10:00 AM, ROOM 124
Subgroup Chairs Meeting

9:00 AM–10:30 AM, ROOM 123
Exhibitor Presentation
Wyatt Technology Corporation

Essential Biophysical Characterization™: Molar Mass, Size, Charge and Interactions—The Light Scattering Toolbox for Biomolecules and Nanoparticles

Wyatt Technology provides the essential tools for characterization of biomacromolecules in solution, including peptides, proteins and oligonucleotides, as well as bionanoparticles such as exosomes and VLP's. This presentation describes the light scattering instrumentation and techniques used in these analyses: coupled to liquid chromatographic separations for absolute molar mass and size distributions (SEC/FFF-MALS); microtiter plate-based, high throughput screening of size, aggregation and interactions (DLS); and the label-free, immobilization-free analysis of biomolecular interactions for affinity and absolute molecular stoichiometry (CG-MALS). A variety of examples illustrate the unique capabilities of these light scattering measurements in biophysics.

Presenters:

Chris Broomell, Applications Scientist, Wyatt Technology Corporation
 Sophia Kenrick, Application Scientist, Wyatt Technology Corporation

9:30 AM–10:30 AM, ROOM 300
Career Center Workshop
The Power of Groups: How to Help Others Help You in Your Job Search

It doesn't matter how smart or talented you are, you need help from other people to ensure ongoing success. To find a job and build a successful career, you of course need to be aware of your personal strengths but you should also understand how others can help you. As Peter Drucker, a management guru puts it: "The first secret of effectiveness is to understand the people you work with so that you can make use of their strengths." This interactive workshop will help you learn how to tap into the individual and collective wisdom present in your groups.

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

10:00 AM–5:00 PM, HALL D
Exhibits

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

10:45 AM–12:45 PM, ROOM 134
Symposium
Awards Symposium

Chair

Francisco Bezanilla, University of Chicago, Society President

2192-SYMP 10:45 AM
 PHASES AND FLUCTUATIONS IN BIOLOGICAL MEMBRANES.
Sarah Veatch

NO ABSTRACT 11:05 AM
 MULTISCALE SIMULATIONS OF BIOLOGICAL SYSTEMS.
Arieh Warshel

2193-SYMP 11:40 AM
 STRUCTURAL AND MECHANISTIC DIVERSITY OF ABC TRANSPORTERS. **Douglas C. Rees**

2194-SYMP 12:05 PM
 ROLE OF MEMBRANE LIPIDS IN ACTIVATING G-PROTEIN-COUPLED RECEPTORS. **Michael F. Brown,**
 Udeep Chawla, Suchithranga M. D. C. Perera, Andrey V. Struts

2195-SYMP 12:30 PM
 DECONSTRUCTING THE PHYSICAL AND MOLECULAR BASIS OF TOUCH AND PAIN SENSATION. **Miriam B. Goodman**

10:45 AM–12:45 PM, ROOM 130/131
Platform
Optical Microscopy and Super Resolution Imaging II

Co-Chairs

Julie Biteen, University of Michigan
Jung-Chi Liao, Columbia University

2196-PLAT 10:45 AM
 WATCHING GENE REGULATION BY SMALL RNA IN BACTERIA WITH SUPER-RESOLUTION IMAGING. **Jingyi Fei,** Digvijay Singh, Qiucen Zhang, Seongjin Park, Ido Golding, Carin K. Vanderpool, Taekjip Ha

2197-PLAT 11:00 AM
 THE TOPOLOGICAL ORGANIZATION OF THE INACTIVE X CHROMOSOME IN ITS NATIVE STATE. **Elizabeth A. Smith,** Gerry McDermott, Karen Leung, Barbara Panning, Carolyn A. Larabell, Mark A. Le Gros

2198-PLAT 11:15 AM
 OBSERVATION OF THE CHANGE OF SYNAPSES AFTER LONG-TERM POTENTIATION INDUCTION USING SUPER-RESOLUTION IMAGING. **Sang Hak Lee,** En Cai, Okunola Jeyifous, Michelle A. Baird, Michael W. Davidson, William N. Green, Paul R. Selvin

2199-PLAT 11:30 AM
 SINGLE-MOLECULE FLUORESCENCE IMAGING REVEALS MISMATCH REPAIR DYNAMICS IN LIVE BACILLUS SUBTILIS. Yi Liao, Jeremy W. Schroeder, Lyle A. Simmons, **Julie S. Biteen**

2200-PLAT 11:45 AM
 SUBDIFFRACTION IMAGING REVEALS MOLECULAR ARCHITECTURE AT THE TRANSITION ZONE OF PRIMARY CILIA. T. Tony Yang, Won-Jing Wang, Arthi Suresh, Meng-Fu Bryan Tsou, **Jung-Chi Liao**

2201-PLAT 12:00 PM
 SUPER-RESOLUTION IMAGING OF TELOMERES REVEALS THAT COMPACTION OF TELOMERIC DNA BY SHELTERIN PROTECTS CHROMOSOME TERMINI. **Jigar N. Bandaria,** Veysel Berk, Steven Chu, Ahmet Yildiz

2202-PLAT 12:15 PM
 LIVE 4D IMAGING OF THE EMBRYONIC VERTEBRATE HEART WITH TWO-PHOTON LIGHT SHEET MICROSCOPY AND SIMULTANEOUS OPTICAL PHASE STAMPING. **Thai V. Truong,** Vikas Trivedi, Le Trinh, Daniel Holland, Francesco Cutrale, John M. Choi, Scott E. Fraser

2203-PLAT 12:30 PM
 STRUCTURALLY DISTINCT CA²⁺ DOMAINS OF SPERM FLAGELLA MODULATE HYPERACTIVATED MOTILITY. **Sang-Hee Shim,** Jean-Ju Chung, Xiaowei Zhuang, David E. Clapham

10:15 AM–12:45 PM, ROOM 132/133

Platform

Voltage-gated K Channels: Mostly BK and Structure Function

Co-Chairs

Lawrence Salkoff, Washington University School of Medicine, St. Louis
Ramón Latorre, University of Valparaíso, Chile

2204-PLAT 10:15 AM
LOCATION OF BK ION PERMEATION GATE REVEALED BY CD²⁺-CYS COORDINATION IN THE BK INNER PORE REGION. **Yu Zhou**, Christopher Lingle

2205-PLAT 10:30 AM
IDENTIFICATION OF A DISCRETE ALCOHOL-SENSING SITE IN THE BK (SLO1) CHANNEL. **Anna Bukiya**, Justin Edwards, **Alex Dopico**

2206-PLAT 10:45 AM
BASELINE PROPERTIES OF SLO1 K⁺ (BK) CHANNELS WITHOUT THE GATING RING. **Yanyan Geng**, Gonzalo Budelli, Alice Butler, Celia Santi, Juan Ferreira, Lawrence Salkoff, Karl L. Magleby

2207-PLAT 11:00 AM
DIVALENT CATION-DEPENDENT MOTION OF THE BK CHANNEL GATING-RING REPORTED BY STATE DEPENDENT FRET. **Pablo Miranda**, Teresa Giraldez, Miguel Holmgren

2208-PLAT 11:15 AM
SUBSTITUTIONS AT F380 IN S6 BY SMALL HYDROPHOBIC AMINO ACIDS MAKES THE OPENING TRANSITION IN BK CHANNELS RATE LIMITING. **Willy Carrasquel-Ursulaez**, Gustavo F. Contreras, Romina Sepúlveda, Daniel Aguayo, Fernando D. Gonzalez-Nilo, Carlos González, Ramón Latorre

2209-PLAT 11:30 AM
DYNAMIC CA²⁺ SENSITIVITY OF BK CHANNELS. **Panpan Hou**, Feng Xiao, Ming Yuchi, Guohui Zhang, Ying Wu, Wei Wang, Wenping Zeng, Mingyue Ding, Zhengxing Wu, Jianming Cui, **Jiuping Ding**

2210-PLAT 11:45 AM
NMR STRUCTURAL STUDY OF THE DOMAINS OF THE KCNH CHANNELS AND ITS INSIGHT INTO CHANNEL GATING. **Congbao Kang**

2211-PLAT 12:00 PM
STRUCTURAL BASIS OF LIPID-DRIVEN CONFORMATIONAL CHANGES IN THE HYPERPOLARIZATION-ACTIVATED POTASSIUM CHANNEL MVP. **Amelia M. Randich**, Ernesto Vargas, Sherry S. Wanderling, Eduardo Perozo

10:45 AM–12:45 PM, ROOM 303

Platform

Protein Design and Folding

Co-Chairs

Daniel Hoersch, University of California, San Francisco
Dorothy Beckett, University of Maryland, College Park

2212-PLAT 10:45 AM
SMOOTH FUNCTIONAL TRANSITION ALONG A MUTATIONAL PATHWAY WITH AN ABRUPT PROTEIN FOLD SWITCH. **Christian Holzgräfe**, Stefan Wallin

2213-PLAT 11:00 AM
HYDOPHOBIC GUIDED PROTEIN FOLDING. **Alberto Perez**, Justin L. MacCallum, Ken A. Dill

2214-PLAT 11:15 AM
EXACT PARTITION FUNCTION ZEROS OF THE WAKO-SAITÔ-MUÑOZ-EATON PROTEIN MODEL. **Julian Lee**

2215-PLAT 11:30 AM
ALLOSTERIC COUPLING VIA COMMUNICATION OF DISTAL DISORDER-TO-ORDER TRANSITIONS. **Dorothy Beckett**, Christopher Eginton, Sharrol Bachas, Herschel Wade

2216-PLAT 11:45 AM
RESHAPING ANTIBODY DIVERSITY. **Damian C. Ekiert**, Feng Wang, Ian A. Wilson, Peter G. Schultz, Vaughn V. Smider

2217-PLAT 12:00 PM
COMPUTING CONFORMATIONAL ENTROPY IN ANTIBODY INTERFACES. **Pablo Gainza**, Kyle E. Roberts, Mark A. Hallen, Bruce R. Donald

2218-PLAT 12:15 PM
CONTROLLING PROTEIN BINDING SPECIFICITY BY A CONFORMATIONAL SHIFT. **Servaas Michielssens**, Jan Henning Peters, David Ban, Supriya Pratihari, Stefan Becker, Thomas Michael Sabo, Karin Giller, Lee Donghan, Christian Griesinger, Bert de Groot

2219-PLAT 12:30 PM
REPROGRAMMING AN ATP-DRIVEN BIOLOGICAL MACHINE INTO A LIGHT-GATED PROTEIN NANOCAGE. **Daniel Hoersch**, Soung-Hun Roh, Wah Chiu, Tanja Kortemmer

10:45 AM–12:45 PM, ROOM 304

Platform

DNA Structure and Dynamics

Co-Chairs

Carey Phelps, University of Oregon
Steve Meisburger, Cornell University

2220-PLAT 10:45 AM
SORTING OUT THE STRUCTURE OF SINGLE-STRANDED DNA. **Steve Meisburger**, Julie Sutton, Huimin Chen, Kurt Andresen, Lois Pollack

2221-PLAT 11:00 AM
SINGLE MOLECULE FRET STUDIES OF DNA HAIRPIN FOLDING. **Katherine Truex**, Hoi Sung Chung, William A. Eaton, John Louis

2222-PLAT 11:15 AM
FRICTION AND INTERACTIONS BETWEEN BARE DNA MOLECULES: THE ROLE OF DNA HANDEDNESS. **Graeme A. King**, Ruggero Cortini, Dominic J. Lee, Alexei A. Kornyshev, Gijs J.L. Wuite

2223-PLAT 11:30 AM
PHYSICAL MODELING OF CHROMOSOME SEGREGATION IN E. COLI REVEALS IMPACT OF FORCE AND DNA RELAXATION. **Thomas J. Lampo**, Nathan J. Kuwada, Paul A. Wiggins, Andrew J. Spakowitz

2224-PLAT 11:45 AM
MULTIPLE DYNAMIC DNA REARRANGEMENTS ARE TIGHTLY COUPLED TO DISTINCT STAGES OF HUMAN TELOMERASE CATALYSIS. **Joseph Parks**

2225-PLAT 12:00 PM
STUDIES OF T4 PRIMOSOME DNA UNWINDING BY SINGLE-MOLECULE FLUORESCENCE-DETECTED LINEAR DICHROISM. **Carey Phelps**

2226-PLAT 12:15 PM

OBSERVING TAUTOMERIZATION OF A DEOXYCYTIDINE ANALOG KP1212: MOLECULAR ORIGIN OF LETHAL MUTAGENESIS AGAINST HIV. **Chunte Sam Peng**, Carlos Baiz, Mike Reppert, Deyu Li, Bogdan I. Fedeles, Vipender Singh, John M. Essigmann, Andrei Tokmakoff

2227-PLAT 12:30 PM

DNA SEQUENCING WITH PROTEIN NANOPORES: A STORY OF STRANDS AND NUCLEOTIDES. **Syma Khalid**, Andrew T. Guy, Richard Manara, Jayne Wallace

10:45 AM–12:45 PM, ROOM 305

Platform

Membrane-Active Peptides and Toxins

Co-Chairs

Burkhard Bechinger, University of Strasbourg/CNRS, France
Shirley Schreier, University of Sao Paulo, Brazil

2228-PLAT 10:45 AM

LIPID-MEDIATED POLYPEPTIDE INTERACTIONS IN MEMBRANES: CASE STUDY ON THE SYNERGISM BETWEEN LINEAR CATIONIC ANTIMICROBIAL PEPTIDES. Evgeniy S. Salnikov, Elise Glatard, Hiba Sarrouj, Arnaud Marquette, Christopher Aisenbrey, Olivier Ouari, Paul Tordo, Frank Engelke, Fabien Aussenac, **Burkhard Bechinger**

2229-PLAT 11:00 AM

EDUCATION TRAVEL AWARDEE

MULTISCALE SIMULATIONS OF DIPHTHERIA TOXIN T-DO-DOMAIN MEMBRANE ASSOCIATION. **Jose C. Flores-Canales**, Alexey S. Ladokhin, Maria Kurnikova

2230-PLAT 11:15 AM

PEPTIDE:LIPID RATIO AND MEMBRANE SURFACE CHARGE MODULATE THE MECHANISM OF ACTION OF THE ANTIMICROBIAL PEPTIDE BP100. **Shirley Schreier**, Mariana C. Manzini, Katia R. Perez, Karin A. Riske, José C. Bozelli JR, Mario J. Politi, Ana P. Valente, Fabio C. Almeida, Hernan Chaimovich, Magali A. Rodrigues, Marcelo P. Bemquerer, Iolanda M. Cuccovia

2231-PLAT 11:30 AM

THE USE OF SURFACE PLASMON-BASED INFRARED SPECTROSCOPY TO DETECT INTERCELLULAR JUNCTIONS ALTERATIONS IN INFLAMED INTESTINAL CELLS. **Amir Bein**, Alexander Zilbershtein, Michael Golosovsky, Dan Davidov, Betty Schwartz

2232-PLAT 11:45 AM

POINT MUTATION IN THE HYDROPHOBIC REGION DRIVES SELECTIVITY AND ACTIVITY OF OP-145, A DERIVATIVE OF HUMAN CATHELICIDIN LL-37. **Nermina Malanovic**, Jan Wouter Drijfhout, Manfred Kriechbaum, Maria Schmuck, Anna de Breij, Peter Nibbering, Karl Lohner

2233-PLAT 12:00 PM

LOCALIZED PERMEABILIZATION OF E. COLI MEMBRANES BY THE ANTIMICROBIAL PEPTIDE CECROPIN A. **Nambirajan Rangarajan**, Somenath Bakshi, James Carl Weisshaar

2234-PLAT 12:15 PM

DEVELOPMENT OF FUNCTIONAL ARTIFICIAL ION CHANNELS USING PEPTIDE NANOSTRUCTURES. **Normand Voyer**, François Otis, Eric Biron, Charles Racine-Berthiaume, Michèle Auger, Kyle Hartwick, Marise Ouellet

2235-PLAT 12:30 PM

SWITCHING THE ANTIMICROBIAL ACTIVITY OF GRAMICIDIN S BY LIGHT. **Oleg Babii**, Segrii Afonin, Marina Berditsch, Sabine Reisser, Thomas Steinbrecher, Pavel Mykhailiuk, Igor Komarov, Anne S. Ulrich

10:45 AM–12:45 PM, ROOM 306

Platform

Microtubules and Motors

Co-Chairs

Jennifer Ross, University of Massachusetts, Amherst
William Hancock, Pennsylvania State University

2236-PLAT 10:45 AM

3.8 ANGSTROM RESOLUTION STRUCTURE OF MICROTUBULE BY CRYO-EM. **Rui Zhang**, Gregory Alushin, Elizabeth Kellogg, Eva Nogales

2237-PLAT 11:00 AM

TUBULIN COFACTORS FORM A MULTI-PROTEIN PLATFORMS THAT REGULATE THE SOLUBLE TUBULIN POOL AND PROMOTE MICROTUBULE POLYMERIZATION. Stanley Nithianantham, Sinh Le, Shu Ti, Elbert Seto, **Jawdat Al-Bassam**

2238-PLAT 11:15 AM

STRUCTURAL BASIS FOR NUCLEOTIDE EXCHANGE AND POWER STROKE GENERATION BY THE KINESIN MOLECULAR MOTOR. Zhiguo Shang, Roseanne Csencsits, Chen Xu, Jared C. Cochran, **Charles Vaughn Sindelar**

2239-PLAT 11:30 AM

BIMODALITY IN A SYSTEM OF ACTIVE AND PASSIVE KINESIN-1 MOTORS. **Lara Scharrel**, Rui Ma, Frank Jülicher, Stefan Diez

2240-PLAT 11:45 AM

A COMPARATIVE STUDY OF THE MAJOR BIOCHEMICAL STATES OF KINESIN-MT COMPLEX USING COMPUTATIONAL TECHNIQUES AND ALL-ATOM STRUCTURAL MODELS. **Srirupa Chakraborty**, Wenjun Zheng

2241-PLAT 12:00 PM

SELF-REGULATION OF CYTOPLASMIC DYNEIN THROUGH ITS UNCONVENTIONAL FORCE RESPONSE. **Takayuki Torisawa**, Ken'ya Furuta, Akane Furuta, Muneyoshi Ichikawa, Kei Saito, Kazuhiro Oiwa, Hiroaki Kojima, Yoko Yano Toyoshima

2242-PLAT 12:15 PM

DYNEIN'S C-TERMINAL DOMAIN PLAYS A NOVEL ROLE IN REGULATING FORCE GENERATION. Peter Höök, Matthew P. Nicholas, Sibylle Brenner, Caitlin Lazar, Sarah J. Weil, Richard B. Vallee, **Arne Gennerich**

2243-PLAT 12:30 PM

REGULATORY PROTEINS ENABLE THE KINESIN KIP2 TO OVERPOWER CYTOPLASMIC DYNEIN. **Anthony J. Roberts**, Brian S. Goodman, Samara L. Reck-Peterson

11:00 AM–12:30 PM, ROOM 123

Exhibitor Presentation Nanion Technologies

SURFE2R—Catch the Wave for Transporters.

Precise Measurements of Membrane Transporter Protein Activity

Ion transporters and pumps play an important role within general metabolism and information processing of organisms. Dysfunction and regulation of transporter proteins are related to diseases like obesity, diabetes, and hypertension, and CNS disorders such as epilepsy and depression. Hence, ion transporters have become potential targets within the drug development treating disease-related abnormalities. At present, labeling technologies and conventional patch clamp are commonly used for ion transporter screening. However, radioactive and fluorescence-based assays have limited sensitivity, and because of the limited molecule turnover per seconds of transporters and pumps compared to ion channels, the direct electrophysiological measurement of protein transporters and pumps ac-

tivity is extremely challenging. Here, we present the SURFE2R technology – an easy-to-handle, highly sensitive and very efficient screening platform for direct measurements of ion transporters and ion channels in diverse and heterologous membranes. Since 2012, Nanion offers the SURFE2R product line in two formats: SURFE2R N1 and the higher throughput platform SURFE2R N96.

The SURFE2R N1 which we will present at the workshop 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. Come to our workshop and learn from LIVE-experiments how to make measurements of transporter-protein functionality efficient and reliable!

Presenters:

Andrea Brüggemann, CSO, Nanion Technologies
Maria Barthmes, Nanion Technologies

12:00 PM–2:00 PM, ROOM 124/125

**Postdoc to Faculty Q&A:
Transitions Forum and Luncheon**

This question-and-answer luncheon, sponsored by the Committee for Professional Opportunities for Women, 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, 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:

Elizabeth Villa, Max Planck Institute of Biochemistry
Sarah Bondos, Texas A&M Health Science
Gabriel Lander, The Scripps Research Institute
David Rueda, Imperial College London
Catherine Royer, Rensselaer Polytechnic Institute

12:30 PM–2:00 PM, ROOM 310

**Career Opportunities at Primarily
Undergraduate Institutions:
Finding a Job and Finding Success**

This session, sponsored by the Education Committee, provides graduate students, postdocs, and current faculty with information and resources on career options at PUIs. Speakers are faculty members at PUIs who have been successful in their positions.

Moderator: Scott Feller, Wabash College

Speakers:

Julia Koeppel, Ursinus College
Paulo Almeida, University of North Carolina, Wilmington
Edwin Li, Saint Joseph's University

1:00 PM–2:00 PM, ROOM 302

**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.

Speaker:

Kamal Shukla, NSF, Molecular and Cellular Biosciences
Parag Chitnis, NSF

1:00 PM–2:30 PM, ROOM 123
Exhibitor Presentation
Molecular Devices, LLC

**Axon Electrophysiology Symposium: Getting the Most out of
pCLAMP Software**

pCLAMP™ is a powerful data acquisition and analysis software and is widely used for a variety of electrophysiological recordings. In the first tutorial of this workshop, Jeffrey Tang will highlight a few features used to create a customized acquisition protocol in Clampex. In the second tutorial, Burt Maertz will share tips in single-channel analysis using Clampfit. These include burst analysis, latency analysis and P(open) analysis.

Presenters:

Jeffrey Tang, Product Marketing Manager, Axon Conventional
Electrophysiology, Molecular Devices, LLC
Burt Maertz, Technical Support Specialist, Axon Conventional
Electrophysiology, Molecular Devices, LLC

1:30 PM–2:30 PM, ROOM 304

Science and Policy with Steven Chu

Steven Chu, former US Secretary of Energy, has returned to academia and Stanford University. During this session he will discuss his current research and biophysics research in general, and also reflect on science policy in the United States.

1:45 PM–3:00 PM, HALL D

Snack Break

1:45 PM–3:45 PM, HALL D

Poster Presentations and Late Posters

(For a complete listing of regular Tuesday Poster Presentations, see page 129.)

The list of Tuesday Late Posters is in the Program addendum.

Posters will be on display all day long. Authors with odd-numbered boards will present from 1:45 PM–2:45 PM, and those with even-numbered boards will present from 2:45 PM–3:45 PM. Additional hours (day or evening) may be posted by the authors as desired. Paper may also be left on the board so that visitors may request an appointment.

Posters should be mounted at 6:00 PM on Monday and 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.

2:15 PM–3:30 PM, ROOM 301

**The Basics, the Discoveries,
and the Controversies:
Membrane Protein Structure and Dynamics**

Attendees at this session will learn about super resolution microscopy techniques for studying membrane proteins and macromolecular complexes in cells, and the type of information this technique can provide a researcher. This session is sponsored by the Education Committee and is intended to introduce the most important ideas, breakthroughs, and outstanding questions of a specific field of Biophysics to help those that do not work directly in that area gain a perspective on what is known and what is unknown.

Speaker:

Bo Huang, University of California, San Francisco
*The Science of Counting: a Super-Resolution View of Membrane Protein
Dimerization*

2:30 PM–3:30 PM, ROOM 300

Career Center Workshop

What to Do When You Are Tired of Doing What You Are Doing: A Unique Interactive Workshop for Experienced Workers

Do you ever have “one of those days?” You know, the ones where you look around you and wonder how long you can keep on doing what you’ve always been doing? And how could you possibly have been doing this for so long? And what else is out there for you? This facilitated discussion will explore these and similar questions from the audience and then involve the audience in providing career tips and techniques for experienced professionals. Please come prepared to share experiences and give/get advice. We anticipate a lively discussion about choices and their consequences.

2:30 PM–4:30 PM, ROOM 309

PhD Careers Beyond the Bench

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

Speakers:

Prithwish Pal, Invivoscribe Technologies
 Peter Aldhous, University of California, Santa Cruz Science Communication Program
 Walter Ausserer, ForteBio, A Division of Pall Life Sciences

3:00 PM–4:30 PM, ROOM 123

Exhibitor Presentation GE Healthcare

The Devil is in the Detail: the Importance of Accurate Stability and Concentration Determination in Biomolecular Interaction Analysis

3:00 PM–5:00 PM, ROOM 122

Education Committee Meeting

4:00 PM–6:00 PM, ROOM 134

Symposium

Structural Dynamics of Molecular Machines

Co-Chairs

Julio Fernandez, Columbia University
Yasmine Meroz, Harvard University

2244-SYMP 4:00 PM

POSTTRANSLATIONAL MODIFICATIONS AS MODULATORS OF MECHANICAL PROTEIN FOLDING. **Julio Fernandez**

2245-SYMP 4:30 PM

A ZOO OF SLOW DYNAMICS. **Yasmine Meroz**

2246-SYMP 5:00 PM

DIRECT MEASUREMENTS OF TRANSCRIPTION FACTOR BINDING AND DISSOCIATION AT INDIVIDUAL CHROMOSOMAL OPERATORS. **Johan Elf**

2247-SYMP 5:30 PM

CLPX, A STOCHASTIC PROTEIN UNFOLDING AND TRANSLOCATION MACHINE. **Robert T. Sauer**, Ohad Yosefson, Benjamin M. Stinson, Andrew R. Nager, Steven E. Glynn, Karl R. Schmitz, Adrian O. Olivares, Harris W. Manning, Yongdae Shin, Juan C. Cordova, Matthew J. Lang, Tania A. Baker

4:00 PM–6:00 PM, ROOM 135

Symposium

Molecular Self-Assembly—from in Vitro to Cellular Systems

Co-Chairs

Roy Bar-Ziv, Weizmann Institute of Science, Israel
Suzanne Gaudet, Harvard Medical School

2248-SYMP 4:00 PM

SYMMETRY-BASED DESIGN AND STRUCTURE OF SELF-ASSEMBLING PROTEIN CAGES AND NANOMATERIALS. Yen-Ting Lai, Neil P. King, William Sheffler, Dan E. McNamara, Jacob B. Bale, David Baker, **Todd O. Yeates**

2249-SYMP 4:30 PM

SEQUESTERED: MOLECULAR PHYSIOLOGY OF BACTERIAL MICROCOMPARTMENTS. **David Savage**

2250-SYMP 5:00 PM

LEVERAGING CELL-TO-CELL VARIABILITY TO UNDERSTAND SIGNAL TRANSDUCTION NETWORKS. **Suzanne Gaudet**, Robin EC Lee

2251-SYMP 5:30 PM

TOWARDS ARTIFICIAL CELLS IN 2D. **Roy Bar-Ziv**

4:00 PM–6:00 PM, ROOM 130/131

Symposium

Applications of Quantum Mechanics to Biophysical Problems

Co-Chairs

Qiang Cui, University of Wisconsin–Madison
Sharon Hammes-Schiffer, University of Illinois at Urbana-Champaign

2252-SYMP 4:00 PM

QM/MM METHODS: RECENT DEVELOPMENTS AND APPLICATION TO MEMBRANE PROTEINS AND MOLECULAR MOTORS. **Qiang Cui**

2253-SYMP 4:30 PM

HYDROGEN TUNNELING, ELECTROSTATICS, AND CONFORMATIONAL MOTIONS IN ENZYME CATALYSIS. **Sharon Hammes-Schiffer**

2254-SYMP 5:00 PM

USING QUANTUM MECHANICS IN BIOLOGICAL STRUCTURE REFINEMENT. **Kenneth M. Merz**

2255-SYMP 5:30 PM

CLASSICAL AND MIXED QUANTUM MECHANICAL/MOLECULAR MECHANICAL (QM/MM) SIMULATIONS OF G PROTEIN COUPLED RECEPTORS. **Ursula Rothlisberger**

4:00 PM–6:00 PM, ROOM 132/133

Platform

Excitation-Contraction Coupling

Co-Chairs

Susan Treves, Basel University Hospital, Switzerland
Ole Kemi, University of Glasgow, United Kingdom

2256-PLAT 4:00 PM

BIOCHEMICAL, CELLULAR AND ELECTROPHYSIOLOGICAL CHARACTERIZATION OF HMCL-7304 A HUMAN SKELETAL MUSCLE-DERIVED CELL LINE. Ori Rokach, Nina D. Ullrich, Martin Rausch, Haiyan Zhou, Francesco Muntoni, Francesco Zorzato, **Susan Treves**

2257-PLAT 4:15 PM
STRUCTURAL AND BINDING STUDIES OF THE CAV1.1 β 1A SUBUNIT. **Marco G. Casarotto**, Yamuna Karunasekara, Shouvik Aditya, Jean Cappello, Angela F. Dulhunty, Philip G. Board, Aaron J. Oakley, Nicole C. Norris

2258-PLAT 4:30 PM
DISSECTING ROLES OF CAV1.2 (α 1C) INTRACELLULAR LOOPS IN CARDIAC EXCITATION-CONTRACTION COUPLING. **Prakash Subramanyam**, Donald D. Chang, Henry M. Colecraft

2259-PLAT 4:45 PM
PIP2 MODULATES T-TUBULE REMODELING DURING HEART FAILURE BY WORKING AS A BINDING SUBSTRATE FOR BIN1. **Neha Singh**, Suresh K. Verma, William Marszalec, Gary L. Aistrup, Raj Kishore, J Andrew Wasserstrom

2260-PLAT 5:00 PM
SPATIO-TEMPORAL RELATIONSHIP BETWEEN T-TUBULAR ELECTRICAL ACTIVITY AND Ca^{2+} RELEASE IN HEART FAILURE. **Claudia Crocini**, Raffaele Coppini, Cecilia Ferrantini, Ping Yan, Leslie M. Loew, Chiara Tesi, Elisabetta Cerbai, Corrado Poggesi, Francesco S. Pavone, Leonardo Sacconi

2261-PLAT 5:15 PM
NON-LINEAR RELATIONSHIP BETWEEN T-TUBULE REMODELING AND SR CALCIUM RELEASE IN FAILING RAT VENTRICLE. Jasleen Singh, Nikhil Bassi, Shannon Tai, Shruthi Mothkur, William Marszalec, Neha Singh, Gary L. Aistrup, **J. Andrew Wasserstrom**

2262-PLAT 5:30 PM
CARDIOMYOCYTE CALCIUM HANDLING DYSFUNCTION AT HIGH STIMULATION FREQUENCIES; INCREASE IN POST-MYOCARDIAL INFARCTION HEART FAILURE AND DECREASE BY EXERCISE TRAINING. **Ole J. Kemi**, Alex S. Johnston, Godfrey L. Smith

2263-PLAT 5:45 PM
NANOSCALE CHANGES IN THE ORGANISATION OF JUNCTIONAL PROTEINS IN JPH2 TRANSGENIC MICE. Michelle Munro, Wei Wang, David Baddeley, Xander Wehrens, **Christian Soeller**

4:00 PM–6:00 PM, ROOM 303

Platform Other Channels

Co-Chairs

Hartmut Luecke, University of California, Irvine
Andrew Battle, Griffith University, Australia

2264-PLAT 4:00 PM
A DIMERIC DUAL-TOPOLOGY MICROBIAL FLUORIDE CHANNEL. **Randy Stockbridge**, Janice L. Robertson, Ludmila Kolmakova-Partensky, Christopher Miller

2265-PLAT 4:15 PM
A REPULSION MECHANISM EXPLAINS MAGNESIUM PERMEATION AND SELECTIVITY IN CORA. **Olivier Dalmas**, Walter Sandtner, David Medovoy, Ludivine Frezza, Francisco Bezanilla, Eduardo Perozo

2266-PLAT 4:30 PM
MECHANISMS OF MOLECULAR TRANSPORT THROUGH THE PROTON-GATED UREA CHANNEL OF HELICOBACTER PYLORI. **Hartmut Luecke**, Reginald McNulty, Martin Ulmschneider, Jacob Ulmschneider

2267-PLAT 4:45 PM
MODULATION OF THE BACTERIAL MECHANOSENSITIVE CHANNEL OF SMALL CONDUCTANCE (MSCS) BY CARDIOLIPIN - ELECTROPHYSIOLOGICAL, ALANINE MUTAGENESIS AND MODELLING STUDIES. Pietro Ridone, Samantha Maguire, Boris Martinac, **Andrew R. Battle**

2268-PLAT 5:00 PM
NOVEL MUTATIONS IN THE EXTRACELLULAR CAP OF THE MAMMALIAN MECHANOSENSITIVE CHANNEL TREK-1. Paul Blount, Robin Wray, **Irene R. Iscla**

2269-PLAT 5:15 PM
OMEGA 6 POLYUNSATURATED FATTY ACID-CONTAINING PHOSPHOLIPIDS ENHANCE NEURONAL CELL MECHANICS AND TOUCH IN C. ELEGANS. **Valeria Vasquez**, Michael Krieg, Dean Lockhead, Miriam B. Goodman

2270-PLAT 5:30 PM
TOUCH ACTIVATES MECHANOSENSITIVE ION CHANNELS IN MERKEL CELLS IN VITRO. **Masashi Nakatani**, Aislyn M. Nelson, Ellen A. Lumpkin

2271-PLAT 5:45 PM
MOLECULAR MECHANISMS OF DEAFNESS MUTATIONS DISRUPTING TIP-LINK FUNCTION IN HAIR-CELL MECHANOTRANSDUCTION. **Marcos Sotomayor**, Rachele Gaudet, David P. Corey

4:00 PM–6:00 PM, ROOM 304

Platform Force Spectroscopy

Co-Chairs

Kurt Andresen, Gettysburg College
Dario Anselmetti, Bielefeld University, Germany

2272-PLAT 4:00 PM
DISULFIDE BONDS ARE ALLOSTERIC REGULATOR OF MECHANICAL STABILITY. **David Giganti**, Guillaume Stirnemann, Kevin Yan, Bruce Berne, Julio Fernandez

2273-PLAT 4:15 PM
QUANTIFYING THE RESOLUTION OF SINGLE-MOLECULE TORQUE MEASUREMENTS BY ALLAN VARIANCE. **Jan Lipfert**, Maarten van Oene, Tessa Jager, Mina Lee, Francesco Pedaci, Nynke H. Dekker

2274-PLAT 4:30 PM
COMBINED SINGLE MOLECULE FORCE AND FLUORESCENCE SPECTROSCOPY OF THE UNFOLDING AND REFOLDING OF GREEN FLUORESCENT PROTEIN. **Ziad Ganim**, Matthias Reisser, Matthias Rief

2275-PLAT 4:45 PM
VWF - COLLAGEN INTERACTIONS STUDIED WITH SINGLE MOLECULE FORCE SPECTROSCOPY. **Sandra Posch**, Tobias Obser, Maria A. Brehm, Hermann J. Gruber, Reinhard Schneppenheim, Robert Tampé, Peter Hinterdorfer

2276-PLAT 5:00 PM
RESOLVING THE MOLECULAR DETERMINANTS OF CADHERIN CATCH BOND FORMATION. **Kristine Manibog**, Hui Li, Sabyasachi Rakshit, Sanjeevi Sivasankar

2277-PLAT 5:15 PM
CATCH BOND INTERACTION BETWEEN GLYCOSAMINOGLYCANS AND CELL SURFACE SULFATASE SULF1. Alexander Harder, Ann-Kristin Moeller, Fabian Milz, Phillip Neuhaus, Volker Walhorn, Thomas Dierks, **Dario Anselmetti**

2278-PLAT 5:30 PM
QUANTITATIVE ANALYSIS OF SINGLE-MOLECULE FORCE SPECTROSCOPY DATA ON CHROMATIN FIBERS.
Kurt Andresen, He Meng, John van Noort

2279-PLAT 5:45 PM
KINETICS AND ENERGETICS OF BIOMOLECULAR FOLDING AND BINDING. **Christopher A. Pierse**, Olga Dudko

4:00 PM–6:00 PM, ROOM 305

Platform Membrane Dynamics

Co-Chairs

Himanshu Khandelia, University of Southern Denmark, Denmark
Blake Mertz, West Virginia University

2280-PLAT 4:00 PM
MECHANISM OF NUTRIENT DEPRIVATION INDUCED TRIACYLGLYCERIDE ACCUMULATION IN ALGA INDICATED BY FLUORESCENCE HYPERSPERTRAL IMAGING. **Ryan W. Davis**, Howland D.T. Jones, Jerilyn A. Timlin, Seema Singh

2281-PLAT 4:15 PM
PROBING THE CELL GROWTH-DEPENDENT SPATIAL DISTRIBUTION AND DYNAMICS OF PROTEINS INSERTED IN THE BACTERIAL OUTER MEMBRANE.

Patrice Rassam

2282-PLAT 4:30 PM INTERNATIONAL TRAVEL AWARDEE
STRAIN RATE-DEPENDENT MEMBRANE RESERVOIR- KEY TO CHONDROCYTE DEATH BY IMPACT. **Eng Kuan Moo**, Matthias Amrein, Marcelo Epstein, Mike Duvall, Noor Azuan Abu Osman, Belinda Pinguin-Murphy, Walter Herzog

2283-PLAT 4:45 PM
MICROVESICLES : WHAT'S PLASMA MADE OF? **Alain R. Brisson**, Nicolas Arraud, Romain Linares, Sisareuth Tan, Celine Gounou

2284-PLAT 5:00 PM
AREA PER LIPID OF MEMBRANES FROM NATURAL ABUNDANCE SOLID-STATE ¹³C NMR SPECTROSCOPY. **Trivikram R. Molugu**, Avigdor Leftin, Constantin Job, Michael F. Brown

2285-PLAT 5:15 PM
BINDING OF NEUROTRANSMITTERS TO LIPID MEMBRANES. **Günther H. Peters**, Mikkel Werge, Maria N. Elf-Lind, Chunhua Wang, Nicolaj Cruys-Bagger, Gustavo F. Velardez, Jesper J. Madsen, Peter Westh

2286-PLAT 5:30 PM
IN SILICO STUDIES OF ASYMMETRIC MEMBRANES PERTURBATIONS CAUSED BY DYNAMIC AGGREGATION OF A CELL-PENETRATING PEPTIDE. **Jean Helie**, Mickael Lelimosin, Charlotte M. Deane, Francesca Milletti, Mark SP Sansom

2287-PLAT 5:45 PM
RESHAPING BIOLOGICAL MEMBRANES: FROM MOLECULAR INTERACTIONS TO MACROSCOPIC MECHANICS.
Mijo Simunovic, Patricia Bassereau, Gregory A. Voth

4:00 PM–6:00 PM, ROOM 306

Platform Muscle: Fiber and Molecular Mechanics and Structure

Co-Chairs

Jorge Alegre-Cebollada, Columbia University
John Trinick, Leeds University, United Kingdom

2288-PLAT 4:00 PM
HARMONIC FORCE SPECTROSCOPY REVEALS A FORCE-VELOCITY CURVE FROM A SINGLE HUMAN BETA CARDIAC MYOSIN MOTOR. **Jongmin Sung**, Suman Nag, Christian Vestergaard, Kim Mortensen, Henrik Flyvbjerg, James Spudich

2289-PLAT 4:15 PM
THREE-Dimensionally CONSTRAINED ACTOMYOSIN MOTILITY ON OXIDE COATED SEMICONDUCTOR NANOWIRES. **Alf Mansson**, Lasse ten Siethoff, Mercy Lard, Johanna Generosi, Håkan Andersson, Heiner Linke

2290-PLAT 4:30 PM
THE MINIMAL GROUP SIZE FOR GLOBALLY COORDINATED STEPPING OF MUSCLE MYOSINS DEPENDS ON ATP HYDROLYSIS FREE ENERGY. **Lennart Hilbert**, Linda Kachmar, Michael C. Mackey, Anne-Marie Lauzon

2291-PLAT 4:45 PM
TOWARD THE REALIZATION OF A SARCOMERE-LIKE MACHINE. **Luca Melli**, Pasquale Bianco, Giulia Falorsi, Luca Salvi, Giovanna Coccano, Manuela Maffei, Dan Cojoc, Vincenzo Lombardi

2292-PLAT 5:00 PM
LARGE-SCALE MODULATION OF TITIN ELASTICITY BY S-GLUTATHIONYLATION OF CRYPTIC CYSTEINES. **Jorge Alegre-Cebollada**, Pallav Kosuri, David Giganti, Edward Eckels, Jaime Andrés Rivas-Pardo, Nazha Hamdani, Wolfgang A. Linke, Julio M. Fernández

2293-PLAT 5:15 PM
THE EFFECT OF INTERFILAMENT SPACING ON THICK FILAMENT STRUCTURE AND CALCIUM ACTIVATION IN SKELETAL MUSCLE. **Elisabetta Brunello**, Marco Caremani, Luca Fusi, Massimo Reconditi, Marco Linari, Theyenchery Narayanan, Gabriella Piazzesi, Malcolm Irving, Vincenzo Lombardi

2294-PLAT 5:30 PM
CRYO-EM OF Z-DISCS ISOLATED FROM HONEYBEE FLIGHT MUSCLE. Mara Rusu, Kenneth A. Taylor, **John Trinick**

2295-PLAT 5:45 PM
CRYO-EM STRUCTURES OF THE ACTIN:TROPOMYOSIN FILAMENT REVEAL THE MECHANISM FOR THE TRANSITION FROM C- TO M-STATE. **Duncan Sousa**, Scott Stagg, M. Elizabeth Stroupe

7:30 PM–9:30 PM, ROOM 134

Workshop Knocking Down or Turning Off: Down-Regulation of Protein Expression

Chair

Suzanne Scarlata, Stony Brook University

2296-WKSHP 7:30 PM
MOONLIGHTING PROTEINS: HOW THE LIPID-SIGNALING ENZYME PHOSPHOLIPASE C-BETA REGULATES RNA SILENCING.
Suzanne Scarlata, Finly Philip, Shriya Sahu

2297-WKSHP 8:00 PM
SLICER AND THE ARGONAUTS. Christopher R. Faehnle,
Elad Elkayam, Astrid D. Haase, Gregory J. Hannon, **Leemor Joshua-Tor**

2298-WKSHP 8:30 PM
COMPETITION BETWEEN MICRORNAs AND ITS ROLE IN
POST-TRANSCRIPTIONAL REGULATION. **Ofer Biham**

2299-WKSHP 9:00 PM
CHIMERIC SWITCHES: CELL-FATE DECISIONS VIA MICRORNA
DEPENDENT REGULATION. **Herbert Levine**

7:30 PM–9:30 PM, ROOM 135

Workshop Applications of Supported Bilayers

Co-Chairs

Marjorie Longo, University of California, Davis
Khalid Salaita, Emory University

2300-WKSHP 7:30 PM
SUPER-RESOLUTION METHODS TO UNDERSTAND
DYNAMICS AT SOFT INTERFACES. **Christy F. Landes**

2301-WKSHP 8:00 PM
FLUORESCENCE-BASED TENSION PROBES TO IMAGE
MECHANICS AT THE LIPID MEMBRANE. **Khalid Salaita**,
Yang Liu, Yun Zhang, Daniel Stabley, Carol Jurchenko, Yoshie Narui,
Yuan Yang

2302-WKSHP 8:30 PM
QUANTIFYING MEMBRANE VISCOSITY BY MONITORING THE
ROTATIONAL AND TRANSLATIONAL DIFFUSION OF TRACER
PARTICLES. **Raghuvveer Parthasarathy**

2303-WKSHP 9:00 PM
DOMAINS IN SUPPORTED BILAYERS: FROM WINEMAKING TO
PROTEIN NANOPATTERNING. **Marjorie L. Longo**

7:30 PM–9:30 PM, ROOM 130/131

Workshop Distance Measurements by Double Electron Electron Resonance (DEER)

Co-Chairs

Gail Fanucci, University of Florida
Hassane Mchaourab, Vanderbilt University

2304-WKSHP 7:30 PM
DEER ON NITROXIDES: EXPERIMENT AND DATA
INTERPRETATION. **Yevhen Polyhach**

2305-WKSHP 7:54 PM
MAPPING TRANSPORTER CONFORMATIONAL DYNAMICS
USING DOUBLE ELECTRON ELECTRON SPECTROSCOPY
(DEER). **Hassane S. Mchaourab**

2306-WKSHP 8:18 PM
EVALUATING DEER DISTANCE PROFILES IN TERMS OF
PROTEIN CONFORMATIONAL ENSEMBLES. Xi Huang,
Ian S. Mitchell de Vera, Mandy E. Blackburn, Luis Galiano, **Gail E. Fanucci**

2307-WKSHP 8:42 PM
DEER STUDIES OF MEMBRANE PROTEINS. **Gary A. Lorigan**

2308-WKSHP 9:06 PM
DO SPIN LABELS TELL THE TRUTH? **Peter Fajer**, Fajer Mikolaj,
Michael Zawrotny, Wei Yang

8:00 PM–10:00 PM, ROOM 309

SOBLA (The Society for Latinoamerican Biophysicists) Meeting

1:45 PM–3:45 PM, Hall D

TUESDAY POSTER SESSIONS

The list of Tuesday Late Posters is in the Program addendum. The abstracts are available through the online itinerary planner.

Posters should be mounted at 6:00 PM on Monday and must be removed NO LATER THAN 4:30 PM on Tuesday evening. **ALL POSTERS MUST BE REMOVED BY THIS TIME.** Posters remaining on boards after that time will be discarded. 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.

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

<u>BOARD NUMBERS</u>	<u>CATEGORY</u>
B1–B29	New Methods for Studying Dynamics in Macromolecules
B30–B58	Large-Scale Organization of Domains and Chains
B59–B85	Protein Folding and Chaperones I
B86–B119	Protein-Ligand Interactions and Enzymes
B120–B141	Intrinsically Disordered Proteins II
B142–B166	Transcription
B167–B188	Ribosome and Translation
B189–B194	RNA Structure and Dynamics II
B195–B216	Protein-Nucleic Acid Interactions II
B217–B238	Membrane Physical Chemistry II
B239–B257	Membrane Fusion I
B258–B287	Membrane Structure II
B288–B317	Protein-Lipid Interactions III
B318–B342	Membrane Receptors and Signal Transduction III
B343–B359	Exocytosis and Endocytosis II
B360–B378	Calcium Signaling II
B379–B398	Calcium Fluxes, Sparks, and Waves II
B399–B428	Voltage-gated K Channels II
B429–B447	K Channels, Other
B448–B464	Ligand-gated Channels III
B465–B493	Ion Channels and Disease I
B494–B526	Other Channels
B527–B558	Cardiac Muscle II
B559–B575	Actin and Actin-binding Proteins II
B576–B605	Cell Mechanics and Motility III
B606–B626	Bacteria Mechanics and Motility
B627–B655	Membrane Pumps, Transporters, and Exchangers II
B656–B672	Electron and Proton Transfer
B673–B688	Mitochondria in Cell Life and Death II
B689–B705	Cellular Pathways and Networks: Prokaryotic and Eukaryotic
B706–B710	Sensory Receptors
B711–B731	Electron Microscopy
B732–B761	Optical Microscopy and Super Resolution Imaging III
B762–B785	Molecular Dynamics II
B786–B794	CD and Vibrational Spectroscopy
B795–B824	Bioengineering
B825–B854	Micro- and Nanotechnology II

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

New Methods for Studying Dynamics in Macromolecules (Boards #B1–#B29)

- 2309-Pos BOARD #B1**
DEVELOPMENT OF A HIGH THROUGHPUT X-RAY FOOTPRINTING FACILITY AT THE ADVANCED LIGHT SOURCE TO STUDY THE STRUCTURE AND DYNAMICS OF COMPLEX BIOLOGICAL MACROMOLECULES. **Sayan Gupta**, Richard Celestre, Jennifer Bohon, Mark Chance, **Corie Ralston**
- 2310-Pos BOARD #B2**
SYNCHROTRON X-RAY FOOTPRINTING ON TOUR. **Jen Bohon**, Corie Ralston, Rhijuta D'Mello, Sayan Gupta, Mark R. Chance
- 2311-Pos BOARD #B3**
DEVELOPMENT OF A FLEXIBLE PLATFORM FOR STUDYING THE SINGLE MOLECULE DYNAMICS OF NUCLEIC ACID MANIPULATING ENZYMES BY TIRF MICROSCOPY. **Timothy J. Wendorff**, Thomas Murray, James M. Berger
- 2312-Pos BOARD #B4**
FUNCTIONAL DYNAMICS OF THE PACKAGING MOTOR P4 PROBED BY HYDROGEN EXCHANGE AND SIMULATION. **Gael Radou**, Emanuele Paci
- 2313-Pos BOARD #B5**
THE BLOOD PLASMA PARTICLES SIZES OSCILLATIONS OBSERVED BY DYNAMIC LIGHT SCATTERING. **Marina Maslova**, Alexander Zaritskiy, Leonid Chaykov
- 2314-Pos BOARD #B6**
GLASS IS A VIABLE SUBSTRATE FOR ATOMIC FORCE MICROSCOPY OF MEMBRANE PROTEINS. **Nagaraju Chada**, Krishna P. Sigdel, Tina R. Matin, Raghavendar Reddy Sanganna Gari, Chunfeng Mao, Linda L. Randall, Gavin M. King
- 2315-Pos BOARD #B7**
DETECTION OF PROTEIN NANOCRYSTALS BASED ON THE REVERSIBILITY OF CRYSTALLIZATION. **Katerina Dörner**, Jose Martin Garcia, Christopher Kupitz, Rebekka M. Wachter, Petra Fromme
- 2316-Pos BOARD #B8**
CHARACTERIZING THE STRUCTURE OF LIPODISQ FOR MEMBRANE PROTEIN SPECTROSCOPIC STUDIES. **Rongfu Zhang**, Indra Sahu, Andrew Craig, Raven Comer, Anna Osatuke, Gary Lorigan
- 2317-Pos BOARD #B9**
STUDYING DISTRIBUTION AND AGGREGATION OF TDP-43 IN MAMMALIAN CELLS: A COMPARISON BETWEEN FLUORESCENT PROTEIN AND TETRACYSSTEINE LABELLING STRATEGIES. **Janice S.W. Ng**, Teresa P. Barros, Elin K. Esbjörner, Leila M. Luheshi, Janet R. Kumita, Christopher M. Dobson
- 2318-Pos BOARD #B10**
OPTIMIZED INTERNALIZATION OF FLUORESCENTLY LABELED BIOMOLECULES INTO LIVE BACTERIA. **Marko Sustarsic**, Louise Aigrain, Anne Plochowitz, Timothy Craggs, Achillefs Kapanidis
- 2319-Pos BOARD #B11**
PHOTO-ACTIVATED CROSSLINKING MASS SPECTROMETRY FOR STUDYING BIOMOLECULAR INTERACTIONS. **Samuel Kim**, Jae Kyoo Lee, Hong Gil Nam, Richard N. Zare
- 2320-Pos BOARD #B12**
PROTEIN RESILIENCE AND FLUORESCENT PROTEIN RESISTANCE TO PHOTOBLEACHING. **Mengyang Xu**, Deepu K. George, Ralph Jimenez, Andrea G. Markelz
- 2321-Pos BOARD #B13**
MICROSECOND CONFORMATIONAL DYNAMICS OF CYTOCHROME C REVEALED BY TWO-DIMENSIONAL FLUORESCENCE LIFETIME CORRELATION SPECTROSCOPY. **Takuhiko Otsu**, Kunihiko Ishii, Tahei Tahara
- 2322-Pos BOARD #B14**
MEASURING PROTEIN STRUCTURAL HETEROGENEITY WITH TWO-DIMENSIONAL INFRARED SPECTROSCOPY. **Carlos R. Baiz**, Andrei Tokmakoff
- 2323-Pos BOARD #B15**
CONFORMATIONAL EQUILIBRIUM BETWEEN THE SUB STATES OF THE ACIDIC DENATURED STATE OF ACBP DETERMINED BY NMR CHEMICAL SHIFTS AND METADYNAMICS. **Carlo Camilloni**, Michele Vendruscolo
- 2324-Pos BOARD #B16**
MAPPING PROXIMITY WITHIN PROTEINS USING FLUORESCENCE SPECTROSCOPY: TYR AS WELL AS TRP CAN BE USED FOR DISTANCE-DEPENDENT FLUORESCENCE QUENCHING STUDIES. **Amber Jones-Hackathorne**
- 2325-Pos BOARD #B17**
EXPLORING STRUCTURE AND DYNAMICS OF HUMAN AQUAPORIN-1 BY SOLID-STATE NMR. Shenlin Wang, Sanaz Emami, Vladimir Ladizhansky, **Leonid S. Brown**
- 2326-Pos BOARD #B18**
NON-THERMAL INDUCTION OF CONFORAMTIONAL REARRANGMENT IN PROTEINS BY FAR-INFRARED EXCITATION. István Z. Lőrincz, Gusztav Schay, Anna Á. Rauscher, Miklos SZ Kellermayer, Michael Gensch, **Andras Malnasi-Csizmadia**
- 2327-Pos BOARD #B19**
COLLECTIVE DYNAMICS AND COHERENT NEUTRON SCATTERING IN GFP. **Jonathan D. Nickels**
- 2328-Pos BOARD #B20**
TIME-SERIES ANALYSIS OF MOLECULAR DYNAMICS: CONFORMATIONAL CHANGE AND DYNAMICS OF COLLECTIVE BEHAVIOR. **Kana Fuji**
- 2329-Pos BOARD #B21**
CALCULATION AND VISUALIZATION OF ATOMISTIC MECHANICAL STRESSES IN BIOMOLECULES. **Andrew T. Fenley**, Hari S. Muddana, Michael K. Gilson
- 2330-Pos BOARD #B22**
USING TIME-RESOLVED CHANGES IN REFLECTION INTENSITY TO TEST MECHANISTIC HYPOTHESES. **James Gowdy**, Emanuele Paci
- 2331-Pos BOARD #B23**
MULTI-SCALE SAMPLING USING TEMPERATURE ACCELERATED AND REPLICA EXCHANGE MOLECULAR DYNAMICS. **Yamamori Yu**, Akio Kitao
- 2332-Pos BOARD #B24**
THEORETICAL ANALYSIS ON STRUCTURAL STABILITY OF CLN025 USING OUR FREE-ENERGY FUNCTION. **Satoshi Yasuda**, Tomohiko Hayashi, Masahiro Kinoshita
- 2333-Pos BOARD #B25**
COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATIONS OF SILVER NANOPARTICLE-APOILIPOPROTEIN BIOCORONA. **Samuel S. Cho**

2334-Pos BOARD #B26
BIOPHYSICAL INSIGHTS OF NEUTRAL AND NON-NEUTRAL SEQUENCE VARIANTS IN THE HUMAN PROTEOME.
Brandon M. Butler, Sudhir Kumar, Sefika B. Ozkan

2335-Pos BOARD #B27
NMR-RESTRAINED PROTEIN STRUCTURE CALCULATIONS IN IMPLICIT ENVIRONMENT. Ye Tian, Charles Schwieters, Stanley J. Opella, **Francesca M. Marassi**

2336-Pos BOARD #B28
BENCHMARKING COLLECTIVE MOTION PREDICTIONS OF ELASTIC NETWORK MODELS. **Edvin Fuglebakk**, Nathalie Reuter, Konrad Hinsen

2337-Pos BOARD #B29
PRIMO-M: AN EXTENSION OF THE COARSE-GRAINED FORCE FIELD PRIMO TO THE MEMBRANE ENVIRONMENT.
Parimal Kar, Michael Feig

Large-Scale Organization of Domains and Chains (Boards #B30–#B58)

2338-Pos BOARD #B30
SINGLE MOLECULE STUDY OF RELA DURING THE STRINGENT RESPONSE IN LIVE E. COLI CELLS. **Wenting Li**, Heejun Choi, Emmanuelle Bouveret, Yan Zhang, James Weisshaar

2339-Pos BOARD #B31
THE COP9 SIGNALOSOME: ACTIVITY AND REGULATION.
Melissa Birol, Aude Echaliier, Christian Dumas, Andre Padilla, Yinshan Yang, Francois Hoh

2340-Pos BOARD #B32
THE DICER-TRBP INTERFACE STRUCTURE AND IMPLICATIONS FOR STRAND SELECTION DURING MICRORNA BIOGENESIS.
Ross C. Wilson, Jennifer A. Doudna

2341-Pos BOARD #B33
THE ASSEMBLY OF ASB9 WITH UBIQUITIN DEGRADATION SUBSTRATE CKB. **Jonathan Parnell**

2342-Pos BOARD #B34
KINETICS OF INTERACTIONS BETWEEN LOV DOMAINS FROM CHLAMYDOMONAS REINHARDTII. **Carey K. Johnson**, Kathrin Magerl, Katee Wyant, Ashley McDade, Will Newhart, David C. Arnett, Bernhard Dick

2343-Pos BOARD #B35
TOWARDS THE DYNAMICAL ORIGIN OF THE OLIGOMERIC PLASTICITY OF RNA-ASSOCIATED SM ASSEMBLIES.
Charles E. McAnany, Cameron Mura, Berk Ekmekci

2344-Pos BOARD #B36
INVESTIGATING A LINK BETWEEN COAGULATION AND INFLAMMATION: A STUDY OF COMPLEMENT COMPONENT C3 AND THE LECTIN-LIKE DOMAIN OF THROMBOMODULIN. Hongli Chen, Matthew McKay, Morgan Wambaugh, Alexander Pandelidis, Grace Soloff, **Julia Koeppe**

2345-Pos BOARD #B37
STRUCTURAL AND ENERGETIC DETERMINANTS OF ADHESIVE BINDING SPECIFICITY IN TYPE I CADHERINS: THE ROLE OF MULTIPLE CONFORMATIONS IN TUNING AFFINITIES. **Hang Song**, Zhongyu Yang, Klara Felsovalyi, Wayne Hubbell, Lawrence Shapiro, Barry Honig

2346-Pos BOARD #B38
ASSEMBLY OF PROTEIN KINASE A RIBB MACROMOLECULAR COMPLEXES. **Ping Zhang**, Jeffrey Copps, Donald Blumenthal, Susan Taylor

2347-Pos BOARD #B39
STRUCTURAL CHARACTERIZATION OF THE HISTONE MULTIMERS IN THE GAS PHASE USING ION MOBILITY MASS SPECTROMETRY AND MOLECULAR DYNAMICS SIMULATION. Kazumi Saikusa, **Sotaro Fuchigami**, Kyohei Takahashi, Yuuki Asano, Aritaka Nagadoi, Hiroaki Tachiwana, Hitoshi Kurumizaka, Mitsunori Ikeguchi, Yoshifumi Nishimura, Satoko Akashi

2348-Pos BOARD #B40
STRUCTURAL STUDIES OF CAVEOLINS-THE CAVEOLAE SCAFFOLDING MEMBRANE PROTEIN. **Yanli Zhang**, Xinyan Zhang, Sorin Luca

2349-Pos BOARD #B41
THE FUNCTION OF AMOT DIMERIZATION IN LIPID BINDING. **Maria L. Harlan**

2350-Pos BOARD #B42
MEMBRANE PERMEABILIZATION BY HOLIN LIKE PROTEINS CIDA/LRGA. **Xinyan Zhang**, Yanli Zhang, Katie McCulloch, Tina Iverson, Kenneth W. Bayles, Sorin Luca

2351-Pos BOARD #B43
STRUCTURAL CHARACTERIZATION OF A. THALIANA HETEROTRIMERIC G-PROTEINS. **Sandra Quarantini**, Hazal Busra Kose, Zehra Sayers

2352-Pos BOARD #B44
CONFORMATIONAL DYNAMICS DURING SPLICEOSOME ASSEMBLY INVESTIGATED BY SINGLE-PAIR FRET.
Lena Voith von Voithenberg, Carolina Sanchez Rico, Lisa Warner, Yun Zhang, Michael Sattler, Don C. Lamb

2353-Pos BOARD #B45 INTERNATIONAL TRAVEL AWARDEE
EISOSOMES AND PLASMA MEMBRANE DOMAIN FORMATION.
Agustina Olivera-Couto, Michelle Digman, Valentina Salzman, Milagros Mailhos, Enrico Gratton, Pablo S. Aguilar

2354-Pos BOARD #B46
ARCHITECTURE OF WHOLE-MODULE AND BIMODULAR PROTEINS FROM THE 6-DEOXYERYTHRONOLIDE B SYNTHASE. **Andrea L. Edwards**, Tsutomu Matsui, Chaitan Khosla

2355-Pos BOARD #B47
SELF-ASSEMBLY OF DEHALOPEROXIDASE-HEMOGLOBIN PROBED BY BACKBONE DYNAMICS USING NMR RELAXATION EXPERIMENTS AND MOLECULAR DYNAMICS SIMULATION. **Jing Zhao**, Mengjun Xue, Hanna Gracz, Stefan Franzen

2356-Pos BOARD #B48
STUDYING THE ROLE OF PROTEIN FLEXIBILITY IN ALLOSTERIC AND EVOLUTIONARY CHANGES AS SEEN IN PYRR PROTEIN FAMILY. **Sandhya P. Tiwari**, Tina Perica, Yasushi Kondo, Stephen McLaughlin, Annette Steward, Jane Clarke, Sarah A. Teichmann, Nathalie Reuter

2357-Pos BOARD #B49
DETERMINING THE 3D TOPOLOGIES OF HETEROMERIC PROTEIN ASSEMBLIES BY A MASS-SPECTROMETRY BASED HYBRID APPROACH. **Argyris Politis**, Carla Schmidt, Elina Tjioe, Andrej Sali, Carol V. Robinson

2358-Pos BOARD #B50
NATIVE ION MOBILITY-MASS SPECTROMETRY: FROM FLEXIBLE PROTEINS TO ION CHANNELS. **Frank Sobott**

2359-Pos BOARD #B51
HUMAN P52SHC CONFORMATIONAL BIAS AND LOCALIZATION IN C-SRC ACTIVATION. **Yuko Tsutsui**, Franklin A. Hays

2360-Pos BOARD #B52
NON-CANONICAL MODULAR DOMAIN INTERACTIONS DICTATE PKC α FUNCTION. **Carter J. Swanson**, Michael Ritt, William Wang, Michael Lang, John J. Tesmer, Margaret Westfall, Sivaraj Sivaramakrishnan

2361-Pos BOARD #B53
THE HISTIDINE BUTTON DICTATES THE CONFORMATION OF THE PH-SENSITIVE REGION OF TROPONIN I. **Sandra E. Pineda-Sanabria**, Ian M. Robertson, Peter C. Holmes, Brian D. Sykes

2362-Pos BOARD #B54
PURIFICATION AND STRUCTURAL ANALYSIS OF THE ANTI-VIRAL PROTEIN BST-2. **Kelly E. Du Pont**, Christopher E. Berndsen

2363-Pos BOARD #B55
PROBING G PROTEIN-COUPLED RECEPTOR DIMERISATION BY FRET AND DEER. **Patricia M. Dijkman**, Alan D. Goddard, Oliver K. Castell, Mark I. Wallace, Anthony Watts

2364-Pos BOARD #B56
TUG-OF-WAR BETWEEN THERMODYNAMIC STABILITY AND ACTIN-BINDING FUNCTION OF TANDEM CALPONIN-HOMOLOGY DOMAINS. Swati Bandi, Surinder Singh, Geoffrey Armstrong, **Krishna Mallela**

2365-Pos BOARD #B57
CHARACTERIZATION OF HUMAN, MOUSE, AND FROG RHODOPSIN MICRODOMAINS WITHIN NATIVE DISC MEMBRANES. **Allison M. Whited-Holt**, Paul S.-H. Park

2366-Pos BOARD #B58
RECONSTITUTION OF THE 26S PROTEASOME REVEALS FUNCTIONAL ASYMMETRIES IN ITS HETEROHEXAMERIC AAA+ UNFOLDASE. **Robyn Beckwith**, Evan Worden, Eric Estrin, Andreas Martin

Protein Folding and Chaperones I (Boards #B59–#B85)

2367-Pos BOARD #B59
CROWD CONTROL: EFFECTS OF MACROMOLECULAR CROWDING ON EARLY EVENTS IN PROTEIN FOLDING. **Eefei Chen**, Vanessa Feng, Zachary Fong, Brian Rastian, Alex P. Rowe, Robert A. Goldbeck, David S. Klinger

2368-Pos BOARD #B60
VALIDATION OF THE CONSERVATION AND ROBUSTNESS OF FOLDING INITIATION SITES IN EVOLUTIONARILY RELATED PROTEINS. **Masanari Matsuoka**, Takeshi Kikuchi

2369-Pos BOARD #B61
STRUCTURAL AND FUNCTIONAL INTERACTIONS BETWEEN HSP90 AND THE CHOLERA TOXIN A1 SUBUNIT. **Helen Burress**, Michael Taylor, Tuhina Banerjee, Carly Bader, Suren A. Tatulian, Ken Teter

2370-Pos BOARD #B62
CONTEXT-DEPENDENT FOLDING: SEQUENCE-ENCODED STRATEGIES FOR STABILIZING A PROTEIN SUBDOMAIN IN ISOLATION. **Sabriya N. Rosemond**, Kambiz H. Hamadani, Jamie H.D. Cate, Susan Marqusee

2371-Pos BOARD #B63
DENATURANT PROBES QUANTIFY THE PREFERENTIAL BURIAL OF AMIDE SURFACE IN FORMING THE KEY TRANSITION STATE AND EARLY INTERMEDIATES IN PROTEIN FOLDING. **Rituparna Sengupta**, Emily J. Guinn, Wayne S. Kontur, Oleg V. Tsodikov, Irina Shkel, M. Thomas Record Jr.

2372-Pos BOARD #B64
ALTERATION OF THE CYTOCHROME C FOLDING PATHWAY IN SOLUTION AND WITHIN SOL-GEL GLASSES BY ADDITION OF HOFMEISTER SALTS. **Eric S. Peterson**, Sean J. Steinke

2373-Pos BOARD #B65
PROTEIN-FOLDING STUDIES USING HYBRID TIRF SMFRET-MAGNETIC TWEEZERS. **Samuel M. Leachman**, Christian A. M. Wilson, Susan Marqusee, Carlos Bustamante

2374-Pos BOARD #B66
DETERMINING SOLUTE EFFECTS ON PROTEIN FOLDING USING SINGLE MOLECULE FORCE SPECTROSCOPY. **Emily Guinn**, Bharat Jagannathan, Susan Marqusee

2375-Pos BOARD #B67
EXPLORING THE COMPLEX ENERGY LANDSCAPE OF PROTEIN UNFOLDING UNDER FORCE. **Bharat Jagannathan**, Susan Marqusee

2376-Pos BOARD #B68
IS REFOLDING OF LYSOZYME TEMPLATE-DRIVEN. **Sushanth Kumar**, T.K.S Kumar

2377-Pos BOARD #B69
HIGH THROUGHPUT SCREENING OF FORMULATIONS TO OPTIMIZE THE THERMAL STABILITY OF THERAPEUTIC MONOCLONAL ANTIBODY. **Elaine Kan**, Anita Niedziela-Majka, Perry Weissburg, Scott Sellers, Roman Sakowicz

2378-Pos BOARD #B70
CONFORMATIONAL ANALYSIS OF ACTH/MELANOCORTIN PRECURSOR PROTEIN. **Yuji Hidaka**, Tadafumi Konogami, Shigeru Shimamoto

2379-Pos BOARD #B71
CONTRIBUTION OF METHIONINE OXIDATION TO AMYLOID FIBRIL FORMATION BY APOLIPOPROTEIN A-I. Gary Kwan Leung Chan, Andrzej Witkowski, Donald L. Gantz, Shobini Jayaraman, **Giorgio Cavigliolo**

2380-Pos BOARD #B72 INTERNATIONAL TRAVEL AWARDEE
USE OF FCS TO STUDY PROTEIN DENATURATION AND AGGREGATION. Moupriya Nag, Kallol Bera, **Soumen Basak**

2381-Pos BOARD #B73 EDUCATION TRAVEL AWARDEE
AMYLOID- β 42 AGGREGATION ON CELLULAR MEMBRANES FACILITATES ITS CELLULAR UPTAKE. **Sha Jin**, Andreas Herrmann, Jan Bieschke

2382-Pos BOARD #B74
CLARIFYING THE INTERSECTION BETWEEN ALPHA-CRYSTALLIN B FUNCTION AND OLIGOMERIZATION BY ALTERING AGGREGATION CONDITIONS. Raysa Cabrejo, James Hebda, **Patricia B. O'Hara**

2383-Pos BOARD #B75
N-TERMINAL DOMAIN OF LUCIFERASE CONTROLS MISFOLDING AVOIDANCE. **Zackary N. Scholl**, Weitao Yang, Piotr E. Marszalek

2384-Pos BOARD #B76
SUBSTRATE-INDUCED UNFOLDING OF PROTEIN DISULFIDE ISOMERASE DISPLACES THE CHOLERA TOXIN A1 SUBUNIT FROM ITS HOLOTOXIN. **Michael Taylor**, Tuhina Banerjee, Supriyo Ray, Helen Burress, Suren A. Tatulian, Ken Teter

2385-Pos BOARD #B77
POSITIVELY CHARGED REDOX AGENTS ACCELERATE DISULFIDE COUPLED PROTEIN FOLDING. **Takeyoshi Nakanishi**, Masaki Okumura, Shigeru Shimamoto, Yuji Hidaka

2386-Pos BOARD #B78
REGULATION OF DISULFIDE COUPLED FOLDING OF DE NOVO DESIGNED PRECURSOR PROTEIN. **Shiori Fukumoto**, Yuichiro Yoshida, Takuma Maekawa, Masaki Okumura, Hiroshi Yamaguchi, Shigeru Shimamoto, Yuji Hidaka

2387-Pos BOARD #B79
REVISITING STRUCTURAL HIERARCHY: A FLUORESCENCE INVESTIGATION OF UNFOLDING OF AN OLIGOMERIC PROTEIN. **Aritra Chowdhury**, Aparajita Choudhury, Victor Banerjee, Rajat Banerjee, Kali Pada Das

2388-Pos BOARD #B80
KNOTTING A PROTEIN IN EXPLICIT SOLVENT. **Joanna I. Sulkowska**, Jeffrey K. Noel, José N. Onuchic

2389-Pos BOARD #B81
THE MOLTEN GLOBULE STATE OF MALTOSE BINDING PROTEIN: DEER MEASUREMENTS AT PH 3. Mohammed Chakour, Jörg Reichenwallner, Benjamin Selmke, Chen Chen, Sandra Theison, Rasha Chakraborty, S. Indu, Rhagavan Varadarajan, Dariush Hinderberger, **Wolfgang E. Trommer**

2390-Pos BOARD #B82
CONFORMATIONAL DYNAMICS OF A FAST FOLDING CYTOCHROME CAPTURED BY TIME-RESOLVED SPECTROSCOPY. **Nicole Bouley Ford**, Dong Woo Shin, Harry B. Gray, Jay R. Winkler

2391-Pos BOARD #B83
ROLES OF HYDROPHOBIC INTERACTIONS AND HYDROGEN BONDS IN BETA-SHEET FORMATION. **Cristiano L. Dias**

2392-Pos BOARD #B84
THE ANALYSIS OF THE CONSERVATION OF FOLDING CORES AMONG HIGHLY DIVERSE PROTEINS IN THE LYSOZYME SUPERFAMILY. **Michirou Kabata**, Takeshi Kikuchi

2393-Pos BOARD #B85
COILED-COIL PROBES CAPTURE MECHANICAL UNFOLDING PATHWAYS OF INDIVIDUAL PROTEINS. **Qing Li**, Piotr E. Marszalek

Protein-Ligand Interactions and Enzymes (Boards #B86–#B119)

2394-Pos BOARD #B86
ISOMERIZATION AND AUTOLYSIS AT SPECIFIC AMINO ACID RESIDUES OF THE TAU PROTEIN AND ITS RELATIONS TO ALZHEIMER'S DISEASE. **Madeleine Lu**, Thomas A. Shaler

2395-Pos BOARD #B87
COUPLING EVOLUTIONARY INFORMATION WITH FUNCTIONAL DYNAMICS TO REENGINEER THE OLIGOSACCHARIDE SPECIFICITY OF CVN WITH BP-DOCK. **Ashini Bolia**

2396-Pos BOARD #B88
DE NOVO DESIGN OF ANTI-INFLAMMATORY PEPTIDES FOR TREATING PATIENTS WITH SEVERE SEPSIS. Yi Chung, Je-Wen Liou, **Hao-Jen Hsu**

2397-Pos BOARD #B89
MOLECULAR DETERMINANTS OF SUBSTRATE SPECIFICITY IN TYPE VII SECRETION SYSTEMS. **Dustin Dovala**, Oren S. Rosenberg, Jeffery S. Cox

2398-Pos BOARD #B90
STRUCTURAL BASIS FOR ARSENATE-PHOSPHATE DISCRIMINATION. Elizabeth Wood, Mathias F. Gruber, Andrea Bordoni, **Claus H. Nielsen**

2399-Pos BOARD #B91
VARIATION IN THE BINDING POCKET OF AN INHIBITOR OF THE BACTERIAL DIVISION PROTEIN FTSZ ACROSS GENOTYPES, NUCLEOTIDE STATES, AND SPECIES. **Amanda V. Miguel**, Jen Hsin, Tianyun Liu, Grace Tang, Russ B. Altman, Kerwyn C. Huang

2400-Pos BOARD #B92
MIXED-RESOLUTION MONTE CARLO: APPLICATION TO FLEXIBLE DOCKING OF THE ESTROGEN RECEPTOR. **Rohith Palli**, Sundar R. Subramanian, Daniel M. Zuckerman

2401-Pos BOARD #B93
MORUSIN FROM *MORUS AUSTRALIS* ROOTS INHIBITS 12-O-TETRADECANOYLPHORBOL-13-ACETATE INDUCED TRANSFORMATION OF EPIDERMAL JB6 CELLS. Tsui-Hwa Tseng, Wei-Chia Chung, Wes Lee, **Yean-Jang Lee**

2402-Pos BOARD #B94
LIGAND BINDING PROPERTIES OF TWO DIFFERENT GLOBIN DOMAINS AND THE NATIVE HEMOGLOBIN OF ARTEMIA SALINA; A COMPARISON STUDY. **Heshmat Akbari Borhani**, Luc Moens, Mehran Habibi-Rezaei, Sylvia Dewilde

2403-Pos BOARD #B95
FUNCTIONAL MODULATION IN A TYPICAL ALLOSTERIC PROTEIN REVISITED - BEYOND "T" AND "R". **Antonio Tsuneshige**, Kohei Sugawara, Kenji Kanaori

2404-Pos BOARD #B96
COMBINING WATER PERCOLATION ANALYSIS AND MOLECULAR DYNAMICS SIMULATIONS FOR PROTEIN-PROTEIN BINDING INTERFACE PREDICTION. **Sandeep Patel**, Di Cui, Shuching Ou

2405-Pos BOARD #B97
THERMODYNAMICS OF INTERFACIAL CHANGES IN A PROTEIN-PROTEIN COMPLEX. **Mahua Ghosh**, Amit Das, Jaydeb Chakrabarti

2406-Pos BOARD #B98
THE SECA DIMER INTERFACE. **Andy J. Wowor**, Yuetian Yan, Sarah M. Auclair, Dongmei Yu, Michael L. Gross, Debra A. Kendall, James L. Cole

2407-Pos BOARD #B99
COMBINATORIAL INHIBITION IN PDZ CONTAINING SCAFFOLD PROTEINS. **James McCann**, Ucheor B. Choi, Mark E. Bowen

2408-Pos BOARD #B100
STRUCTURAL ANALYSIS OF INTEGRIN $\beta 3$ BINDING TO THE SH3 DOMAIN OF SRC KINASE. **Priya Katyal**, Robbins Puthenveetil, Olga Vinogradova

2409-Pos BOARD #B101
STUDY OF INTERACTION BETWEEN THE NUCLEAR PROTEINS: REVERBa/N-COR BY FLUORESCENCE ANISOTROPY AND NUMBER AND BRIGHTNESS (N&B). **Anais Vaisière**

2410-Pos BOARD #B102
WATER DYNAMICS AT PROTEIN-PROTEIN INTERFACE: MOLECULAR DYNAMIC STUDY OF VIRUS-HOST RECEPTOR COMPLEXES. **Priyanka Dutta**, Dr. Sameer Varma

2411-Pos BOARD #B103
A NON-ACTIVE SITE SET DOMAIN SURFACE THAT IS CRUCIAL FOR DI-METHYLATION OF HISTONE H3 LYSINE 4 BY THE MIXED LINEAGE LEUKEMIA-1 (MLL1) CORE COMPLEX. **Stephen A. Shinsky**, Michael Hu, Valarie E. Vought, Michael S. Cosgrove

2412-Pos BOARD #B104
IDENTIFICATION OF PROTEIN-PROTEIN-INTERACTION (PPI) INHIBITORS AND STABILIZERS FOR ANTIMALARIAL DRUG DEVELOPMENT USING SPR. Lauren E. Boucher, Adelaide U.P. Hain, Alexia S. Miller, Daisy D. Colon Lopez, **Jürgen Bosch**

2413-Pos BOARD #B105
NEW MICROCALORIMETRIC METHODS FOR MEASURING ULTRATIGHT PROTEIN-LIGAND INTERACTIONS. **Georg Krainer**, Jana Broecker, Carolyn Vargas, Sandro Keller

2414-Pos BOARD #B106
RU(II)BIS(2,2' BIPYRIDINE)L COMPLEXES AS PHOTORELEASE AGENTS FOR BIOACTIVE MOLECULES: PHOTOTHERMAL STUDIES OF LIGAND RELEASE. **Randy W. Larsen**, Aleksandra Karolak, Tarah A. Word, M. Trent Kemp, Christi L. Whittington, H. Lee Woodcock, Arjan van der Vaart

2415-Pos BOARD #B107
"THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS"- HIT SELECTION AND THE POWER OF RTHOGONALITY. **Paul E. Belcher**, Markku Hämäläinen, Natalia Markova

2416-Pos BOARD #B108
'CLICKABLE'-PHOTOACTIVE PROPOFOL ANALOGUE FOR THE IDENTIFICATION OF ANESTHETIC TARGETS. **Kellie A. Woll**, Benika Pinch Pinch, William P. Dailey, Roderic G. Eckenhoff

2417-Pos BOARD #B109
EXPLORING ANESTHETIC BINDING ON VOLTAGE-GATED CATION CHANNELS. **Caio S. Souza**, Juliana M. Hosoume, Manuel Covarrubias, Werner Treptow

2418-Pos BOARD #B110
NUDT9H INTERACTIONS IN THE TETRAMERIC TRPM2 ION CHANNEL. **Iordan Iordanov**, Laszlo Csanady

2419-Pos BOARD #B111
MAPPING OF NETRIN-1 BINDING TO ITS DEPENDENCE RECEPTORS. **Markus Meier**, Trushar R. Patel, Denise Nikodemus, Raphael Reuten, Manuel Koch, Jörg Stetefeld

2420-Pos BOARD #B112
MOLECULAR INTERACTION BETWEEN PPTI AND SHAKV1.1 POTASSIUM CHANNEL EXPLORED BY DOCKING AND MOLECULAR DYNAMICS SIMULATION. Davood Zaeifi, **Mehriar Amininasab**

2421-Pos BOARD #B113
ELUCIDATING TIME COURSE OF STRUCTURAL CHANGES LEADING TO RECEPTOR-LIGAND COMPLEX FORMATION WITH TRANSIENT-EPR. **Shatanik Mukherjee**, Reinhard Seifert, Heinz-Jürgen Steinhoff, Daniel Klose, U. Benjamin Kaupp

2422-Pos BOARD #B114
EXPLORING THE BINDING SITE OF THE G PROTEIN-COUPLED RECEPTOR GPR119 MODEL USING A PAIR OF DIASTEREOMERS WITH OPPOSING ACTION. Evangelia Kotsikorou, **Shane M. Askar**

2423-Pos BOARD #B115
A COMPARISON OF 3D CONFORMATIONS OF ENDOTHELIN-1 ANALOGS TO FIND THE PHARMACOPHORE MODEL REQUIRED FOR ENDOTHELIN RECEPTOR LIGAND ACTIVITY. **Benson Ma**, Takeshi Kawabata, Narutoshi Kamiya, Haruki Nakamura

2424-Pos BOARD #B116
DIMERIZATION OF FGFR3 IN LIVING CELLS. **Deo R. Singh**, Chris King, Jesse Placone, Qingqing Cao, Praveen Ghosh, Kalina Hristova

2425-Pos BOARD #B117 EDUCATION TRAVEL AWARDEE
PROBING THE INTERACTIONS BETWEEN U24 FROM HHV-6A/7 AND FYN-SH3 OR WW DOMAIN PROTEINS. **Yurou Sang**, Rui Zhang, Suzana K. Straus

2426-Pos BOARD #B118
PEPTIDE NMR STUDIES OF CX26 INTERDOMAIN INTERACTIONS AND THEIR REGULATION BY TAURINE. Jennifer L. Kopanic, Jorge E. Contreras, **Andrew L. Harris**, Paul L. Sorgen

2427-Pos BOARD #B119
DESIGN AND SYNTHESIS OF A NOVEL PHOTOCROMIC HDAC INHIBITOR AND ITS PHOTO REVERSIBLE INHIBITORY EFFECT. **Haruka Fujio**, Shinsaku Maruta, Keiko Tanaka, Kazunori Kondo

Intrinsically Disordered Proteins II (Boards #B120–#B141)

2428-Pos BOARD #B120
MD SIMULATIONS OF INTRINSICALLY DISORDERED PROTEINS WITH REPLIC-AVERAGED CHEMICAL SHIFT RESTRAINTS. **Biao Fu**, Predrag Kukic, Carlo Camilloni, Michele Vendruscolo

2429-Pos BOARD #B121
MOLECULAR DYNAMICS STUDIES OF TAU MONOMER AND DIMER CONFORMATIONS. **Natalie Hall**, Natha R. Hayre, Rajiv Singh, Daniel Cox

2430-Pos BOARD #B122
MOLECULAR MECHANISM OF INTERFACIAL ADSORPTION OF DISORDERED CYTOPLASMIC TAIL OF IMMUNE RECEPTORS TO MEMBRANE. **Cesar A. Lopez Bautista**, Anurag Sethi, Jianhui Tian, Byron Goldstein, Bridget Wilson, Gnanakaran S

2431-Pos BOARD #B123
THE EFFECT OF PROLINE CIS TRANS ISOMERIZATION ON P53 MDM2 BINDING. **Yingqian Zhan**, F. Marty Ytreberg

2432-Pos BOARD #B124
COARSE GRAIN MODELS HIGHLIGHT THE IMPORTANCE OF FLEXIBLE DISORDERED LINKERS AS DETERMINANTS OF THE PHASE BEHAVIOR IN POLYVALENT PROTEINS. **Tyler S. Harmon**, Michael K. Rosen, Rohit V. Pappu

2433-Pos BOARD #B125
COMPUTATIONAL CHARACTERIZATION OF THE DISORDERED ENSEMBLES OF VASOPRESSIN AND OXYTOCIN. Paul S. Nerenberg, **Eugene Yedvabny**, K. Aurelia Ball, Clare So, Teresa Head-Gordon

2434-Pos BOARD #B126
UNDERSTANDING THE EVOLUTION OF DYNAMICS FOR AN INTRINSICALLY DISORDERED PROTEIN. **Daniel R. LaPorte**, F. Marty Ytreberg

2435-Pos BOARD #B127
THE MECHANISM OF AMYLOID- β 42 FIBRIL ELONGATION. **Thomas Gurry**, Collin M. Stultz

2436-Pos BOARD #B128
DIFFERENCES IN DYNAMICS AND STABILITY OF THE WILD TYPE BETA-AMYLOID A β 1-40, AND Δ E22-A β 1-39 (JAPANESE) MUTANT PROTOfIBRIL STRUCTURES, A MOLECULAR DYNAMICS STUDY. **Kipp W. Johnson**, Tobin R. Sosnick, Karl F. Freed, Esmael J. Haddadian

2437-Pos BOARD #B129
MODELS OF LENGTH DEPENDENT BEHAVIOR IN POLYGLUTAMINE BASED ON IMPROVED SIMULATION METHODS. **Natha R. Hayre**

2438-Pos BOARD #B130
INFLUENCE OF DESOLVATION BARRIERS IN COUPLED FOLDING AND BINDING KINETICS OF PKID-KIX. Talant Ruzmetov, **John J. Portman**

2439-Pos BOARD #B131
DIFFERENT ROLES OF BACKBONE-ORIGINATED AND NATIVE-CONTACT-ORIGINATED FLEXIBILITIES OF AN INTRINSICALLY DISORDERED PROTEIN IN FAST BINDING AND UNBINDING. **Koji Umezawa**, Jun Ohnuki, Junichi Higo, Mitsunori Takano

2440-Pos BOARD #B132
THE IMPACT OF MOLECULAR DYNAMICS METHODS ON THE ACCURACY OF SIMULATIONS OF THE DISORDERED PROTEIN SIC1. **Erik W. Martin**, Tanja Mittag

2441-Pos BOARD #B133
ROLE OF INTRINSIC HELICITY WITHIN N-TERMINAL FLANKING SEQUENCES ON HUNTINGTIN AGGREGATION MECHANISMS. **Kiersten M. Ruff**, Kanchan Garai, Rohit V. Pappu

2442-Pos BOARD #B134
CORRELATION OF HELICAL PROPENSITY IN AMYLIN SEQUENCES WITH KNOWN AGGREGATION PROPENSITY. **Gül H. Zerze**, Cayla Miller, Jeetain Mittal

2443-Pos BOARD #B135 EDUCATION TRAVEL AWARDEE
TAU(273-284): A MOLECULAR DYNAMICS STUDY OF INTRINSICALLY DISORDERED PROTEIN CONFORMATIONS IN THE PRESENCE OF OSMOLYTES. **Zachary A. Levine**, Luca Larini, Joan-Emma Shea

2444-Pos BOARD #B136
PROTEIN FOLDING AND COLLAPSE: THERMODYNAMICS OF AGGREGATION OF GLY₅ VS CONCENTRATION IN SOLUTION. **Deepti Karandur**, Ka-Yiu Wong, B Montgomery Pettitt

2445-Pos BOARD #B137
PARSING THE CONTRIBUTIONS OF POLYPEPTIDE BACKBONES AND SIDECHAINS TO DENATURATION IN CONCENTRATED AQUEOUS SOLUTIONS OF UREA AND GUANIDINIUM CHLORIDE. **Alex S. Holehouse**, Nicholas Lyle, Andreas Vitalis, Devarajan Thirumalai, Rohit V. Pappu

2446-Pos BOARD #B138
THE STRUCTURE OF THE β -CASEIN PHOSPHOPEPTIDE CONSISTS OF TWO INDEPENDENT INTRINSICALLY DISORDERED DOMAINS. **Muhammad A. Naqvi**, Sarah Rauscher, Régis Pomès, Dérick Rousseau

2447-Pos BOARD #B139
MD SIMULATION TRAJECTORIES OF MULTIPLE INTRINSICALLY DISORDERED PROTEINS REVEAL ORDER TO DISORDER TRANSITIONS THAT BEAR FUNCTIONAL SIGNIFICANCE. Tasneem Ali, Mattaparthi Venkata Satish Kumar, Saurabh Basu, **Rajaram Swaminathan**

2448-Pos BOARD #B140
PHYSICAL BIOINFORMATICS APPLIED TO INTRINSICALLY DISORDERED NUCLEOPORIN SEQUENCES REVEALS UNIVERSAL FUNCTIONAL FEATURES. **David Ando**, Michael Colvin, Michael Rexach, Ajay Gopinathan

2449-Pos BOARD #B141
EXTENSIVE USE OF HOST-MIMICKING MOTIFS SUPPORTS COMPLEX REGULATION OF VIRAL PROTEINS. **Tzachi Hagai**, Raul Andino, Madan M. Babu, Ariel Azia

Transcription (Boards #B142–#B166)

2450-Pos BOARD #B142
MECHANISM OF TRANSCRIPTIONAL BURSTING IN BACTERIA. **Shasha Chong**, Chongyi Chen, Hao Ge, X. Sunney Xie

2451-Pos BOARD #B143
WATCHING THE RNA POLYMERASE TRANSCRIPTION BY TIME-DEPENDENT SOAK-TRIGGER-FREEZE X-RAY CRYSTALLOGRAPHY. **Katsuhiko Murakami**

2452-Pos BOARD #B144
STRUCTURAL AND DYNAMIC REGULATION OF TFIID-MEDIATED TRANSCRIPTION INITIATION COMPLEX ASSEMBLY BY THE TUMOR SUPPRESSOR P53 PROTEIN. Anna Piasecka, Lihua Song, Michael Cianfrocco, Vincent Wong, Shenglong Wang, Joseph Hargitai, William Rice, Eva Nogales, Robert A. Coleman, **Wei-Li Liu**

2453-Pos BOARD #B145
SINGLE MOLECULE PROBING OF P53'S ABILITY TO DYNAMICALLY REGULATE CHROMATIN STRUCTURE. Vincent Wong, Yu-Jen Chen, Charles Kenworthy, Lihua Song, Gina Dailey, Wei-Li Liu, **Robert A. Coleman**

2454-Pos BOARD #B146
SUBSTANTIAL NUCLEOTIDE SELECTION PRIOR TO FULL INSERTION OF THE NUCLEOTIDE IN T7 RNA POLYMERASE ELONGATION. **Baogen Duan**, Shaogui Wu, Yu Jin

2455-Pos BOARD #B147
COMPLETE DISSECTION OF TRANSCRIPTION ELONGATION REVEALS SLOW TRANSLOCATION OF RNA POLYMERASE II IN A LINEAR RATCHET MECHANISM. **Manchuta Dangkulwanich**, Toyotaka Ishibashi, Shixin Liu, Maria L. Kireeva, Lucyna Lubkowska, Mikhail Kahlev, Carlos J. Bustamante

2456-Pos BOARD #B148
LOCALIZATION AND TRACKING OF SINGLE RNA POLYMERASE MOLECULES IN LIVE E. COLI. **Somenath Bakshi**, James Weisshaar

2457-Pos BOARD #B149
NEXT GENERATION SEQUENCING-BASED PARALLEL ANALYSIS OF MELTING KINETICS OF 4096 VARIANTS OF A BACTERIAL PROMOTER. Ewa Heyduk, **Tomasz Heyduk**

2458-Pos **BOARD #B150**
 DIRECT ASSESSMENT OF TRANSCRIPTION FIDELITY BY RNA SEQUENCING. **Masahiko Imashimizu**, Taku Oshima, Hiroki Takahashi, Lucyna Lubkowska, Mikhail Kashlev

2459-Pos **BOARD #B151**
 TFIIF AND TFIIS ENHANCE THE MECHANICAL PERSISTENCE OF TRANSCRIPT ELONGATION BY RNA POLYMERASE II. **Volker Schweikhard**, Cong A. Meng, Kenji Murakami, Craig D. Kaplan, Roger D. Kornberg, Steven M. Block

2460-Pos **BOARD #B152**
 CARD REGULATION OF MYCOBACTERIAL TRANSCRIPTION INITIATION. **Jayan Rammohan**, Ashley Garner, Ana Ruiz-Manzano, Christina Stallings, Eric Galburt

2461-Pos **BOARD #B153**
 PHOTOPHYSICAL PROPERTIES OF THE SPINACH-DFHBI RNA APTAMER-FLUOROGEN COMPLEX AND ITS APPLICATIONS TO LIVE CELL IMAGING WITH IMPROVED FLUORESCENCE SIGNAL. **Kyu Young Han**, Benjamin J. Leslie, Jingyi Fei, Jichuan Zhang, Taekjip Ha

2462-Pos **BOARD #B154**
 IDENTIFICATION AND ANALYSIS OF THE TRANSCRIPTIONAL REGULATORY NETWORKS GOVERNING MECHANOSENSITIVE CHANNELS IN E. COLI. **Stephanie Barnes**, Daniel Jones, Nathan Belliveau, Sushant Sundaresh, Justin Kinney, Rob Phillips

2463-Pos **BOARD #B155**
 COOPERATIVITY AND INTERACTION ENERGY THRESHOLD EFFECTS IN RECOGNITION OF THE -10 PROMOTER ELEMENT BY BACTERIAL RNA POLYMERASE. **Vladimir Mekler**, Konstantin Severinov

2464-Pos **BOARD #B156** CPOW TRAVEL AWARDEE
 SUPER-RESOLUTION FLUORESCENCE MICROSCOPY OF TRANSCRIPTION SITES IN E. COLI. **Ulrike Endesfelder**, Kieran Finan, Seamus Holden, Peter R. Cook, Achillefs N. Kapanidis, Mike Heilemann

2465-Pos **BOARD #B157**
 CHARACTERIZATION OF TRANSCRIPTION INITIATION INTERMEDIATES IN ESCHERICHIA COLI RNA POLYMERASE BY FLUORESCENCE. **Raashi Sreenivasan**, Sara Heitkamp, Michael Capp, Irina Artsimovitch, Thomas Record

2466-Pos **BOARD #B158**
 ACTIVATING THE PROKARYOTIC LEU-500 PROMOTER BY TRANSIENT, DYNAMIC DNA SUPERCOILING IN ESCHERICHIA COLI. Xiaoduo Zhi, Catherine Perez, Samantha Dages, Kelley Dages, Steve Eichelbaum, John Makemson, **Fenfei Leng**

2467-Pos **BOARD #B159**
 NUCLEOTIDE STRUCTURAL POLYMORPHISMS FORMED BY GGGGCC REPEATS CAUSE C9ORF72 ABORTIVE TRANSCRIPTION AND NUCLEOLAR STRESS. **Aaron R. Haeusler**

2468-Pos **BOARD #B160**
 MECHANICAL STRAIN GENERATED BY RNA POLYMERASE DURING TRANSCRIPTION INITIATION CAN DRIVE STRUCTURAL CHANGES IN DNA TOPOLOGY THAT RELIEVE REPRESSION. **Troy A. Lionberger**, Ankit Vahia, Andrew D. Hirsh, Maryna Taranova, Ioan Andricioaei, Noel C. Perkins, Edgar Meyhöfer, Craig T. Martin

2469-Pos **BOARD #B161**
 SEQUENCE-SPECIFIC RNAP-DNA INTERACTIONS IN TRANSCRIPTION INITIATION AND ELONGATION: CORE RECOGNITION ELEMENT (CRE). **Hanif Vahedian-Movahed**, Yu Zhang, Richard H. Ebright

2470-Pos **BOARD #B162**
 TOWARD A GENERAL MECHANISM FOR TRANSCRIPTION INITIATION. **Emily Ruff**, Dmitri Svetlov, Noah Bown, Trenton Persing, Stephanie Chong-Macias, Amanda Drennan, Irina Artsimovitch, M. Thomas Record, Jr.

2471-Pos **BOARD #B163**
 PROMOTER ARCHITECTURE DICTATES VARIABILITY IN GENE EXPRESSION. **Daniel L. Jones**, Robert Brewster, Rob Phillips

2472-Pos **BOARD #B164** EDUCATION TRAVEL AWARDEE
 SINGLE MOLECULE INVESTIGATION OF RNA POLYMERASE I USING MULTIPLEXED TETHERED PARTICLE MOTION. **Suleyman Ucuncuoglu**, David A. Schneider, David D. Dunlap, Laura Finzi

2473-Pos **BOARD #B165**
 THE TRANSCRIPTION FACTOR TITRATION EFFECT DICTATES LEVEL OF GENE EXPRESSION. **Franz M. Weinert**, Robert C. Brewster, Hernan G. Garcia, Linda Song, Mattias Rydenfelt, Rob Phillips

2474-Pos **BOARD #B166**
 INHIBITION OF TUMOR CELL GROWTH THROUGH THE ENVIRONMENTAL EPIGENETIC REGULATION AT 2ATA ELEVATED PRESSURE (EP) IN H460 LUNG CANCER CELLS. **EunJeong Cha**, Eunil Lee, Gwang Ic Son

**Ribosome and Translation
 (Boards #B167–#B188)**

2475-Pos **BOARD #B167**
 CRITICAL DECODING STEP IN THE RIBOSOME REVEALED BY DYNAMICAL NETWORK ANALYSIS. **Rezvan Shahoei**, Klaus Schulten

2476-Pos **BOARD #B168**
 EXCLUDED VOLUME OF EF-TU GREATLY REDUCES THE BARRIER TO ACCOMMODATION FOR AA-TRNA IN THE RIBOSOME. **Jeffrey K. Noel**, Paul Whitford

2477-Pos **BOARD #B169**
 TRANSLATION IN THE RNA WORLD: INSIGHT FROM THE PROTO-RIBOSOME MODEL. **Ke Chen**, Bo Wang, Jingyi Fei, Zaida Luthey-Schulten

2478-Pos **BOARD #B170**
 EF-G:A-SITE TRNA DISTANCE CHANGES DURING TRANSLOCATION. **Rong Shen**, Chunlai Chen, Yale E. Goldman, Barry S. Cooperman

2479-Pos **BOARD #B171**
 THE RIBOSOMAL PRE STATE IN STALLED VS. ACTIVELY TRANSLATING RIBOSOMES. **Ryan M. Jamiolkowski**, Chunlai Chen, Barry S. Cooperman, Yale E. Goldman

2480-Pos **BOARD #B172**
 AN MRNA DOWNSTREAM STRUCTURE PROMOTES FRAMESHIFTING BY DESTABILIZING THE HYBRID STATE AND IMPEDING THE EF-G DRIVEN TRANSLOCATION PROCESS. **Hee-Kyung Kim**, Fei Liu, Jingyi Fei, Ruben L. Gonzalez Jr, Carlos Bustamante, Ignacio Tinoco Jr

2481-Pos BOARD #B173
INVESTIGATING RIBOSOME CONFORMATIONS WITH MULTI-RESOLUTION MODELING. **Alex Tek**, Yang Chen, Maria Selmer, Samuel C. Flores

2482-Pos BOARD #B174
INFLUENCE OF DOWNSTREAM DNA/RNA STRUCTURE ON INTERSUBUNIT ROTATION OF THE RIBOSOME. **Dongmei Yu**, Peiwu Qin, Peter Cornish

2483-Pos BOARD #B175
EXPLORING THE RIBOSOME HELICASE ACTIVITY IN CONTEXT OF FRAMESHIFTING USING SINGLE-MOLECULE TECHNIQUES. **Bassem Shebl**, Peter V. Cornish

2484-Pos BOARD #B176
THE MRNA SECONDARY STRUCTURE IMPACT ON TRANSLATION OF THE KCNH2 CHANNEL PROTEIN. **Marika L. Osterbur**, So Yeon Kim, Thomas V. McDonald

2485-Pos BOARD #B177
CONCERTED INTERACTIONS BETWEEN RIBOSOMAL SUBUNITS ALLOW FOR LARGE-SCALE ROTATIONS. **Lars V. Bock**, Christian Blau, Andrea C. Vaiana, Helmut Grubmuller

2486-Pos BOARD #B178
SIMULATING THE PULLING OF STALLED ELONGATED PEPTIDE FROM THE RIBOSOME BY THE TRANSLOCON. **Anna Rychkova**, Shayantani Mukherjee, Ram P. Bora, Arieh Warshel

2487-Pos BOARD #B179 EDUCATION TRAVEL AWARDEE
STRUCTURE OF THE MAMMALIAN RIBOSOMAL 43S PREINITIATION COMPLEX BOUND TO THE SCANNING FACTOR DHX29. **Yaser Hashem**, Amedee des Georges, Vidya Dhote, Robert Langlois, Hstau Y. Liao, Robert A. Grassucci, Christopher U. T. Hellen, Tatyana V. Pestova, Joachim Frank

2488-Pos BOARD #B180
IDENTIFICATION OF RIBOSOME BIOGENESIS FACTORS REGULATED BY NUCLEOLAR AAA-ATPASE NVL2. **Masami Nagahama**, Nobuhiro Hiraishi, Yo-ichi Ishida

2489-Pos BOARD #B181
THE CRYO-EM STRUCTURE OF THE RIBOSOME BOUND TO BIPA. **Danny N. Ho**, Ala Shaqra, Wen Li, Megan A. deLivron, Gil Dionne, Ning Gao, Victoria L. Robinson, Joachim Frank

2490-Pos BOARD #B182
QUANTIFYING THE SPATIAL ORGANIZATION OF BACTERIAL RIBOSOMES USING THREE-DIMENSIONAL SUPER-RESOLUTION MICROSCOPY. **Marissa Lee**, Jared Schrader, Gene-Wei Li, Jonathan Weissman, Harley McAdams, Lucy Shapiro, W. E. Moerner

2491-Pos BOARD #B183
ELUCIDATING RIBOSOMAL TRANSLOCATION WITH INTERNAL COORDINATE FLEXIBLE FITTING. **Samuel C. Flores**

2492-Pos BOARD #B184
SINGLE MOLECULE TRACKING OF ELONGATION FACTOR TU (EF-TU) IN LIVE E. COLI. **Heejun Choi**, James C. Weisshaar

2493-Pos BOARD #B185
STUDY OF POLYRIBOSOMAL EFFECTS ON FRAMESHIFTING. **Hao-Che Wang**, Te-Pao Chung, Ching-Huang Lin, Jin-Der Wen

2494-Pos BOARD #B186
CHARACTERIZATION OF RIBOSOMAL BYPASSING THROUGH A 50-NT MRNA UNTRANSLATED GAP. **Kai-Chun Chang**, Yao-Wei Jheng, Jin-Der Wen

2495-Pos BOARD #B187
RAPID AND STABLE TRANSFER RNA TRANSLOCATION THROUGH THE RIBOSOME ENSURED BY SPECIFIC CONTACT MECHANISMS. **Lars V. Bock**, Christian Blau, Gunnar F. Schröder, Iakov Davydov, Niels Fischer, Holger Stark, Marina V. Rodnina, **Andrea C. Vaiana**, Helmut Grubmuller

2496-Pos BOARD #B188
TRANSLATIONAL TRAITS OF NON-SMALL-CELL LUNG CARCINOMA WITH DRUG RESISTANCES BY DUAL MRNA AND PROTEIN QUANTIFICATION AT THE SINGLE CELL LEVEL. **Seung-min Park**, Luke P. Lee

RNA Structure and Dynamics II (Boards #B189–#B194)

2497-Pos BOARD #B189
CONSTRUCTION AND CHARACTERIZATION OF “SPINACH” ARRAY FOR MRNA LIVE CELL IMAGING. **Jichuan Zhang**, Jingyi Fei, Benjamin J. Leslie, Kyu Young Han, Thomas E. Kuhlman, Taekjip Ha

2498-Pos BOARD #B190
TRANSCRIPTIONAL NOISE AND CELL CYCLE REGULATION - A SINGLE MRNA MOLECULE APPROACH. **Lotte Teufel**, Aouefa Amoussouvi, Gabriele Schreiber, Edda Klipp, Andreas Herrmann

2499-Pos BOARD #B191
A NEW APPROACH TO MODEL AND DIRECTLY CONTROL CO-TRANSCRIPTIONAL RNA FOLDING. **Craig T. Martin**, Aruni P.K.K. Karunanayake Mudiyansele

2500-Pos BOARD #B192
TRACKING OF NATIVE VIRAL RNA OF ENVELOPED VIRUSES IN LIVING HOST CELLS. **Matthias Schade**, Felix Hövelmann, Hannah Sabeth Sperber, Peter Witkowski, Oliver Seitz, Andreas Herrmann

2501-Pos BOARD #B193
SINGLE MOLECULE CHARACTERIZATION OF PRE-MRNA DYNAMICS THROUGHOUT SPLICEOSOME ASSEMBLY AND CATALYSIS. **Matthew L. Kahlscheuer**, Mario Blanco, Nils Walter

2502-Pos BOARD #B194
RNA CROSSLINKING AND CLICK CHEMISTRY WITH PLATINUM COMPOUNDS. **Victoria J. DeRose**, Kory Plakos, Barbara L. Golden, Jonathan White, Maire Osborn, Alan Moghaddam

Protein-Nucleic Acid Interactions II (Boards #B195–#B216)

2503-Pos BOARD #B195
UNDERSTANDING THE ROLE OF RNA IN DRIVING THE CLUSTERING OF HIV GAG MOLECULES USING COARSE-GRAINED MOLECULAR DYNAMICS MODELS. **Anand Srivastava**, Gregory A. Voth

2504-Pos BOARD #B196
STRUCTURAL BASIS FOR THE MECHANO-CHEMICAL COUPLING AND INTER-SUBUNIT COORDINATION OF RING ATPASE. **Sara Tafoya**, Gheorghie Chistol, Shixin Liu, Paul Jardine, Shelley Grimes, Carlos Bustamante

2505-Pos BOARD #B197
STRUCTURAL AND BIOCHEMICAL STUDIES OF THE RNA-ASSOCIATED SM PROTEIN SUPERFAMILY. **Cameron Mura**

2506-Pos **BOARD #B198**
 DIRECT, HIGH-THROUGHPUT MEASUREMENT OF QUANTITATIVE RNA AFFINITY LANDSCAPES. Jason D. Buenrostro, Lauren Chircus, Carlos L. Araya, Curtis Layton, **William J. Greenleaf**

2507-Pos **BOARD #B199**
 ENGINEERING INHIBITOR SPECIFICITY IN THE DEAD-BOX PROTEIN FAMILY. **Kendall Condon**, Stephen Floor, Jennifer Doudna

2508-Pos **BOARD #B200**
 CHARACTERIZATION OF BRR2 HELICASE ACTIVITY ON THE U4/U6 SNRNAs. **Sarah Ledoux**, Christine Guthrie

2509-Pos **BOARD #B201**
 DEVELOPMENT OF AN SMFRET ASSAY TO MONITOR SPLICEOSOME ACTIVATION IN BUDDING YEAST. **Megan Mayerle**, John Abelson, Christine Guthrie

2510-Pos **BOARD #B202**
 RECONSTITUTION AND SINGLE MOLECULE CHARACTERIZATION OF YEAST SPLICEOSOMAL E COMPLEX. **Sarah Hansen**, Margaret Rodgers, Ross Laurent, Yuliang Sun, Mark Scalf, Lloyd Smith, Aaron Hoskins

2511-Pos **BOARD #B203**
 WEAK INTERACTIONS BETWEEN RISC AND MRNA PROMOTE OPTIMAL TARGETING IN RNA INTERFERENCE. **Stanley Dinesh Chandradoss**, Ian MacRae, Chirlmin Joo

2512-Pos **BOARD #B204**
 A CONSERVED MECHANISM OF RNA SUBSTRATE RECOGNITION AND CLEAVAGE BY FUNGAL DICERS. **Mary Anne Kidwell**, Jessica M. Chan, Jennifer A. Doudna

2513-Pos **BOARD #B205** **MINORITY AFFAIRS TRAVEL AWARDEE**
 THE TRANSPORTATION POTENTIAL OF HUMAN SERUM ALBUMIN FOR MIR106A. **Jeremiah Babcock**, Lorenzo Brancalion

2514-Pos **BOARD #B206**
 UNSATURATED FATTY ACID REGULATION OF ARAC/XYLS TRANSCRIPTION FACTORS. **Jessica Day**, Gabriela Kovacicikova, Ronald K. Taylor, F. Jon Kull

2515-Pos **BOARD #B207**
 MECHANISTIC DIVERSITY IN DNA SITE DISCRIMINATION BY STRUCTURALLY HOMOLOGOUS ETS-FAMILY TRANSCRIPTION FACTORS. **Miles H. Linde**, Ana Tolic, Manoj M. Munde, W. David Wilson, Gregory M. K. Poon

2516-Pos **BOARD #B208**
 SMALL-ANGLE X-RAY SCATTERING STUDY FOR CONFORMATIONAL CHANGES OF UNUSUAL TRANSCRIPTION FACTOR AT THE OPERATOR. **Walid Al-Zyoud**, Rob Hynson, Anthony Duff, Thomas Sobey, Lawrence Lee, Dali Liu, Till Böcking

2517-Pos **BOARD #B209**
 FIDELITY CONTROL OF A NON-PROOFREADING POLYMERASE STUDIED FROM KINETICS TO MOLECULAR DYNAMICS. **Jin Yu**

2518-Pos **BOARD #B210** **INTERNATIONAL TRAVEL AWARDEE**
 GENOME-WIDE ORGANIZATION OF EUKARYOTIC PRE-INITIATION COMPLEX IS INFLUENCED BY NON-CONSENSUS PROTEIN-DNA BINDING. **Ariel Afek**, David B. Lukatsky

2519-Pos **BOARD #B211**
 SPECIFIC DNA SEQUENCE SEARCH DYNAMICS OF P53 AND EFFECT OF ACETYLATION OF ITS C-TERMINAL DOMAIN: MULTI-SCALE SIMULATION STUDY. **Tsuyoshi Terakawa**, Junichi Higo, Shoji Takada

2520-Pos **BOARD #B212**
 A GRIPPING NEW MECHANISM OF DRUG RESISTANCE IN HIV-1 REVERSE TRANSCRIPTASE. Grant Schauer, Nic Sluis-Cremer, **Sanford Leuba**

2521-Pos **BOARD #B213**
 TUNABLE REGULATION OF THE SERCA/PHOSPHOLAMBAN COMPLEX BY SINGLE-STRANDED DNA SEQUENCES. **Kailey J. Soller**, Raffaello Verardi, Michael Bowser, Gianluigi Veglia

2522-Pos **BOARD #B214**
 KINESIN KIF1 ACTIVELY TRANSPORTS DOUBLE-STRANDED DNA IN EUKARYOTIC CELLS. Francesca Farina, Cédric Delevoye, Marie Dutreix, Maria Quanz, **Giovanni Cappello**

2523-Pos **BOARD #B215**
 DNA BINDING OF PORPHYRIN CONJUGATES: CHARACTERISTICS AND CONSEQUENCES. **Ádám Orosz**, Gábor Mező, Levente Herényi, Zsuzsa Majer, Gabriella Csik

2524-Pos **BOARD #B216**
 A SINGLE MOLECULE STUDY OF GENE SILENCING BY HNS PROTEIN DNA INTERACTIONS. **Haowei Wang**, Grace Tong, William Willey Navarre, Joshua Milstein

Membrane Physical Chemistry II (Boards #B217–#B238)

2525-Pos **BOARD #B217**
 INTERACTION PROFILES OF AMINO ACID SIDE-CHAIN ANALOG PAIRS WITHIN MEMBRANE ENVIRONMENTS. **Vahid Mirjalili**, Michael Feig

2526-Pos **BOARD #B218**
 ROOM-TEMPERATURE IONIC LIQUIDS INTERACTING WITH A PHOSPHOLIPID BILAYER: A COMPREHENSIVE NEUTRON SCATTERING AND MOLECULAR DYNAMICS STUDY. **Antonio Benedetto**, Miguel A. Gonzalez, Pietro Ballone

2527-Pos **BOARD #B219**
 THE DISTRIBUTIONS AND ORIENTATIONS OF RETINOIDS IN RETINAL MEMBRANES STUDIED WITH ALL-ATOM MOLECULAR DYNAMICS SIMULATIONS. **Jinju Lu**, Igor Vorobyov, Toby W. Allen

2528-Pos **BOARD #B220**
 CORRELATIONS OF SPECIFIC IONIC EFFECTS USING ION CHANNELS AND SURFACE CHARGE MEASUREMENTS. **Torri C. Roark**, Oscar Tejjido Hermida, Tatiana K. Rostovtseva, Philip A. Gunnev, Horia I. Petrache, Sergey M. Bezrukov

2529-Pos **BOARD #B221**
 MOLECULAR COMPETITION BETWEEN LARGE AND SMALL POLYETHYLENE-GLYCOLS (PEGs) PARTITIONING INTO OMPC PORIN CHANNELS. **M. Alphan Aksoyoglu**, Philip Gunnev, V. Adrian Parsegian

2530-Pos **BOARD #B222**
 CHARGING THE QUANTUM CAPACITANCE OF GRAPHENE WITH A SINGLE BIOLOGICAL ION CHANNEL. **Peter J. Burke**

2531-Pos **BOARD #B223**
 IMMOBILIZATION OF GM1 CAUSES PINNING AND ANOMALOUS DIFFUSION OF CHOLERA TOXIN BOUND GM1 ACROSS A BILAYER MEMBRANE. **Gabrielle de Wit**, Katelyn M. Spillane, Jaime Ortega-Arroyo, Philipp Kukura

2532-Pos BOARD #B224

INCORPORATION OF INTEGRAL MEMBRANE PROTEINS IN GIANT LIPID VESICLES BY SWELLING FROM A PROTEIN-LOADED HYDROGEL. Jesper S. Hansen, James R. Thompson, Noah Malmstadt

2533-Pos BOARD #B225

MECHANICS OF F-ACTIN-MEMBRANE COMPOSITES INVESTIGATED BY ATOMIC FORCE MICROSCOPY. Corinna Kramer, Daniela Morick, Ingo Mey, Claudia Steinem

2534-Pos BOARD #B226

USING HYDRODYNAMIC FLOW TO CONCENTRATE MEMBRANE-ASSOCIATED PROTEINS IN FREE FLUID LIPID BILAYERS. Aurelia R. Honerkamp-Smith, Peter Jonsson, Raymond E. Goldstein

2535-Pos BOARD #B227

INTEGRINS AND UROKINASE RECEPTORS SHOW DISTINCT MECHANISMS OF PROTEIN SEQUESTRATION IN RAFT-MIMICKING LIPID MIXTURES: INFLUENCE OF BILAYER ASYMMETRY, LIGAND BINDING, AND CHOLESTEROL CONTENT. Yifan Ge, Noor Hussain, Amanda P. Siegel, Rainer Jordan, Christoph A. Naumann

2536-Pos BOARD #B228

MONOLAYER SPONTANEOUS CURVATURE OF RAFT-FORMING MEMBRANE LIPIDS. Benjamin Kollmitzer, Peter Heftberger, Michael Rappolt, Georg Pabst

2537-Pos BOARD #B229

HYBRID AND NONHYBRID LIPIDS EXERT COMMON EFFECTS ON MEMBRANE RAFT SIZE AND MORPHOLOGY. Milka Doktorova, Frederick A. Heberle, Shih Lin Goh, Robert F. Standaert, John Katsaras, Gerald W. Feigenson

2538-Pos BOARD #B230

CHARACTERIZATION OF PHOSPHATIDYLCHOLINE/TWEEN-80 MODEL MEMBRANES FOR THE NMR STUDY OF MEMBRANE INTERACTIONS. Andrée E. Gravel, Alexandre A. Arnold, Isabelle Marcotte

2539-Pos BOARD #B231

KINETIC STUDY OF PHOTO-INDUCED LIPID OXIDATION IN GIANT UNILAMELLAR VESICLES. Shalene Sankhagowit, Noah Malmstadt

2540-Pos BOARD #B232

SOLUBILIZATION OF GIANT VESICLES COMPOSED OF ERYTHROCYTE LIPID EXTRACTS AND OF TERNARY LIPID MIXTURES BY TRITON X-100. Bruna R. Casadei, Amanda C. Caritá, Cleyton C. Domingues, Eneida de Paula, Karin A. Riske

2541-Pos BOARD #B233

TMFRET TO STUDY SHORT-RANGE INTERACTIONS AT THE MEMBRANE. Elizabeth A. Manrao, Alexey J. Merz, William N. Zagotta, Sharona E. Gordon

2542-Pos BOARD #B234

MOLECULAR GRADIENTS BY COLLIDING SPREADING PHOSPHOLIPID BILAYERS. Katherine N. Liu, Jose Cortez, Babak Sanii

2543-Pos BOARD #B235

ON DEMAND CONTROL OF LIPID COMPOSITION IN INDIVIDUAL BILAYERS. John S. H. Danial, Brid Cronin, Chandini Mallick, Mark I. Wallace

2544-Pos BOARD #B236

ELECTRO-MECHANICAL COUPLING IN CHARGED LIPOSOME SUSPENSIONS. Joel A. Cohen, Ming Tzo Wei, H. Daniel Ou-Yang

2545-Pos BOARD #B237

IMAGING THE FORMATION OF SINGLE ELECTROPORES IN DROPLET INTERFACE BILAYERS USING OPTICAL SINGLE CHANNEL RECORDING. Jason T. Sengel, Brid Cronin, Mark I. Wallace

2546-Pos BOARD #B238

MEASUREMENT OF TRANSMEMBRANE VOLTAGE USING THE FLUORESCENT SENSITIVE DYE ANNINE-6. Aude Silve, Sarah Rocke, Ralf Sträßner, Wolfgang Frey

Membrane Fusion I (Boards #B239–#B257)

2547-Pos BOARD #B239

EXPERIMENTAL INVESTIGATIONS OF SINGLE LIPOSOME TO SUPPORTED BILAYER BINDING EVENTS. Andrew Ballast, Noah Kastelowitz, Hubert Yin, Kathrin Spendier

2548-Pos BOARD #B240

PEPTIDE NANO-CAPSULES WITH LIPID VESICLE LIKE CHARACTERISTICS. Pinakin Sukthankar, Susan K. Whitaker, L. Adriana Avila, Jian Gao, John M. Tomich

2549-Pos BOARD #B241

LIPID SPLAY IN THE PRESENCE OF FUSOGENIC PEPTIDES. Christoph Kutzner, Christian Lothar Ried, Dieter Langosch

2550-Pos BOARD #B242

ALTERNATE SPLICING OF DYSFERLIN C2A CONFERS CA²⁺-DEPENDENT AND CA²⁺-INDEPENDENT BINDING FOR MEMBRANE REPAIR. Kerry Fuson

2551-Pos BOARD #B243

INOSITOL PYROPHOSPHATES INHIBIT SYNAPTOTAGMIN-DEPENDENT EXOCYTOSIS. Tae Sun Lee, Joo-Young Lee, Yoosoo Yang, Seulgi Lee, Young-ran Kim, Byoungjae Kong, Yong Seok Jho, Dae-Hyuk Kweon, Yeon-Kyun Shin, Tae-Young Yoon, Seyun Kim

2552-Pos BOARD #B244

C2B DOMAIN IN SYNAPTOTAGMIN I INDUCES MEMBRANE BENDING ONLY AFTER CONFORMATIONAL CHANGE. Zhe Wu, Schulten Klaus

2553-Pos BOARD #B245

MITOFUSIN PROTEINS TETHER PROTEOLIPOSOMES AS SHOWN BY CRYO-EM. Jeanne Morin-Leisk, Jenny Hinshaw

2554-Pos BOARD #B246

ROLE OF MODEL PROTEINS ON MEMBRANE FUSION. Hemant K. Kashyap, Michael L. Klein, Giacomo Fiorin

2555-Pos BOARD #B247

WAITING TIMES FOR FUSION DEPEND ON THE NUMBER OF SNARES AT THE FUSION SITE. Hakhamanesh Mostafavi, Benjamin S. Stratton, Jason M. Warner, Erdem Karatekin, Ben O'Shaughnessy

2556-Pos BOARD #B248

FIELD THEORETIC APPROACH FOR THE ENERGETICS OF STALK FORMATION. Rolf Ryham, Thomas Klotz, Lihan Yao, Fredric S. Cohen

2557-Pos BOARD #B249

VARIABLE AND CONCERTED COOPERATIVITY IN SNARE-MEDIATED MEMBRANE FUSION. Alex Kreutzberger, Javier M. Hernandez, Volker Kiessling, Lukas K. Tamm, Reinhard Jahn

2558-Pos **BOARD #B250**
THE SNARE MOTIF OF MEMBRANE-ANCHORED SYNAPTOBREVIN EXHIBITS AN AQUEOUS-INTERFACIAL PARTITIONING THAT IS MODULATED BY MEMBRANE CURVATURE. **Binyong Liang**, Damian Dawidowski, Jeffrey F. Ellena, Lukas K. Tamm, David S. Cafiso

2559-Pos **BOARD #B251**
PRE-FUSION STRUCTURE OF SYNTAXIN 1A SUGGESTS PATHWAY FOR FOLDING INTO NEURONAL TRANS-SNARE COMPLEX FUSION INTERMEDIATE. **Volker Kiessling**, Binyong Liang, Lukas K. Tamm

2560-Pos **BOARD #B252**
COMPLEXIN-1 ENHANCES THE ON-RATE OF VESICLE DOCKING VIA SIMULTANEOUS SNARE AND MEMBRANE INTERACTIONS. **Jijie Diao**, Daniel J. Cipriano, Axel T. Brunger

2561-Pos **BOARD #B253**
QUANTITATIVE MOLECULAR MODELING OF MEMBRANE CURVATURE INDUCTION BY AN AMPHIPATHIC HELIX. **Alexander J. Sodt**, Richard W. Pastor

2562-Pos **BOARD #B254**
DIRECT DETECTION OF RECONSTITUTED, SNARE-MEDIATED FUSION PORE DYNAMICS. **Zhenyong Wu**, Erdem Karatekin

2563-Pos **BOARD #B255**
INTERFERENCE OF ZIPPERING OF SNARE COMPLEXES BY ALPHA-SNAP ARREST FUSION OF CHROMAFFIN GRANULE. **Yongsoo Park**, Wensi Vennekate, Halenur Yavuz, Reinhard Jahn

2564-Pos **BOARD #B256** EDUCATION TRAVEL AWARDEE
COMPARATIVE STUDY OF THE SNARES ZIPPERING WITH SINGLE MOLECULE RESOLUTION. **Sylvain Zorman**, Frederic Pincet, James E. Rothman, Yongli Zhang

2565-Pos **BOARD #B257**
TOWARDS ARTIFICIAL MEMBRANE FUSION: EK-PEPTIDES, THE COILED-COIL ZIPPER. Martin van Son, Tingting Zheng, Pravin Kumar, Dayenne Valdink, Jan Raap, Alexander Kros, **Martina Huber**

Membrane Structure II (Boards #B258–#B287)

2566-Pos **BOARD #B258**
THE ROLE OF PHOSPHOINOSITOL LIPIDS IN AMOT MEMBRANE ASSOCIATION. **Ann C. Kimble-Hill**, Merrell Johnson, Millicent A. Firestone, Horia Petrache, Thomas D. Hurley, Clark D. Wells, Soenke Seifert

2567-Pos **BOARD #B259**
MYRISTOYLATION RESTRICTS ORIENTATION OF GRASP ON MEMBRANES AND IS CRITICAL FOR MEMBRANE TETHERING. Frank Heinrich, Hirsh Nanda, Haw Zan Goh, Collin Bachert, Adam D. Linstedt, **Mathias Lösche**

2568-Pos **BOARD #B260**
INTERACTION BETWEEN HOST DEFENCE PEPTIDES AND MYCOBACTERIAL MEMBRANES. Christian Nehls, Niels Denkert, Sam Willcocks, André Beerlink, Ulrich Schaible, **Thomas Gutschmann**

2569-Pos **BOARD #B261** INTERNATIONAL TRAVEL AWARDEE
REFINING ANALYSIS OF MEMBRANE PENETRATION WITH DEPTH-DEPENDENT FLUORESCENCE QUENCHING AND MOLECULAR DYNAMICS SIMULATIONS. **Alexander Kyrychenko**, Mykola V. Rodnin, Douglas J. Tobias, Alexey S. Ladokhin

2570-Pos **BOARD #B262**
STRUCTURAL PLASTICITY IN THE TOPOLOGY OF MEMBRANE-SPANNING DOMAIN OF HIV-1 GP41. Alexander Kyrychenko, Jing He, William C. Wimley, **Alexey S. Ladokhin**

2571-Pos **BOARD #B263** EDUCATION TRAVEL AWARDEE
EFFECTS OF FLUORESCENT PROBES ON LIPID MEMBRANE PHYSICAL PROPERTIES. **Sherry S. W. Leung**, Jonathan R. Brewer, Jenifer Thewalt, Luis Bagatolli

2572-Pos **BOARD #B264**
CHEMICAL STRESS AND THE CELL ENVELOPE: THE PHOSPHOLIPID FRACTION. **Samuel Furse**, Anton I. de Kroon, J. Antoinette Killian

2573-Pos **BOARD #B265**
PROFILING THE DIELECTRIC CONSTANT AT THE MEMBRANE-PEPTIDE INTERFACE USING IONIZABLE EPR PROBES. **Matthew Donohue**, Maxim A. Voynov, Alex I. Smirnov, Tatyana I. Smirnova

2574-Pos **BOARD #B266**
SCREENING THE DYNAMICS OF MEMBRANE CONSTITUENTS IN INTACT MICROALGAL CELLS BY SOLID-STATE NMR. Alexandre A. Arnold, Bertrand Genard, Andre L.D.A.G. Da Silva, Réjean Tremblay, Dror E. Warschawski, Francesca Zito, **Isabelle Marcotte**

2575-Pos **BOARD #B267**
DOCOSAHEXAENOIC ACID AFFECTS GEL PHASE BY INCREASING TILT ANGLE. **Chai Lor**, Linda S. Hirst

2576-Pos **BOARD #B268**
LIPOPOLYSACCHARIDE INDUCED DYNAMIC LIPID ORGANIZATIONS: LIPID TUBULES, MEMBRANE PERFORATIONS AND MULTI-LAMELLAR STACKING. **Peter G. Adams**, Kirstie Swingle, Loreen Lamoureux, Harshini Mukundan, Gabriel A. Montaña

2577-Pos **BOARD #B269**
LIPID TILT REGULATES RIPPLE PHASE BEHAVIOR IN LIPID BILAYER. **Padmini Rangamani**, Shachi Katira, Berend Smit, George Oster

2578-Pos **BOARD #B270**
MACROSCOPIC PHASE SEPARATION, MODULATED PHASES, AND MICROEMULSIONS: A UNIFIED PICTURE OF RAFTS. **Roie Shlomovitz**, Lutz Maibaum, Michael Schick

2579-Pos **BOARD #B271**
THE STRUCTURAL BASIS OF CHOLESTEROL ACCESSIBILITY IN MEMBRANES. **Brett N. Olsen**, Agata A. Bielska, Tiffany Lee, Michael D. Daily, Douglas F. Covey, Paul H. Schlesinger, Nathan A. Baker, Daniel S. Ory

2580-Pos **BOARD #B272**
KEEPING ORDER WHILE MOVING FAST: ERGOSTEROL PAIRS LEAD TO DYNAMIC NETWORKS IN LIPID MEMBRANES. Juan M. Vanegas, **Roland Faller**, Marjorie L. Longo

2581-Pos **BOARD #B273**
MULTI-COLOR, LIVE SUPER-RESOLUTION MICROSCOPY REVEALS THE TIMESCALE AND POTENTIAL OF MEAN FORCE FOR CO-CLUSTERING BETWEEN THE B CELL RECEPTOR AND LYN KINASE. **Matthew B. Stone**, Sarah L. Veatch

2582-Pos **BOARD #B274**
THE EFFECT OF ECTOINS ON THE STRUCTURAL ORGANIZATION OF THE TEAR FLUID MONOLAYER. **Hans Joachim Galla**, Mridula Dwivedi

2583-Pos BOARD #B275
LIPID ORDER INVESTIGATIONS COMBINED WITH GENERALIZED POLARIZATION PROVIDE DEEPER INSIGHTS INTO PLASMA MEMBRANE ARCHITECTURE OF LIVE CELLS. **Alla Kress**, Julien Savatier, Xiao Wang, Patrick Ferrand, Sophie Brasselet

2584-Pos BOARD #B276
SPIN LABELS DETECT THE COEXISTENCE OF TWO LIPID DOMAINS ALONG THE ANOMALOUS GEL-FLUID TRANSITION OF ANIONIC DMPG BILAYERS. Diogo V.S. Pellegrina, Evandro L. Duarte, **M. Teresa Lamy**

2585-Pos BOARD #B277 INTERNATIONAL TRAVEL AWARDEE
PROTEIN PARTITIONING IN LIQUID-ORDERED (LO) / LIQUID-DISORDERED (LD) DOMAINS DEPENDS ON LIPID COMPOSITION AND PROTEIN SHAPE. **Benjamin Kollmitzer**, Peter Heftberger, Michael Rappolt, George Khelashvili, Daniel Harries, Georg Pabst

2586-Pos BOARD #B278
PERTURBATION OF PLASMA MEMBRANE PHYSICAL PROPERTIES BY ENDOGENOUS AND EXOGENOUS MEDIATORS AFFECTS CELL FUNCTION. **Kandice R. Levental**, Ilya Levental

2587-Pos BOARD #B279 EDUCATION TRAVEL AWARDEE
SIZE AND ACYLATION INFLUENCE THE LATERAL MOBILITY OF PLASMA MEMBRANE PROTEINS IN LIVE CELLS. **Elin Edwald**, Sarah L. Veatch

2588-Pos BOARD #B280
INDUCTION OF ENDOPLASMIC RETICULUM-PLASMA MEMBRANE CONTACTS IS A NON-CONDUCTING FUNCTION OF THE KV2.1 VOLTAGE-GATED POTASSIUM CHANNEL. **Philip D. Fox**, Diego Krapf, Michael M. Tamkun

2589-Pos BOARD #B281 EDUCATION TRAVEL AWARDEE
DIRECT IMAGING OF MOBILE NANODOMAINS IN THE LIVE CELL PLASMA MEMBRANE BY USING A TWO-COLOR PHOTOBLEACHING APPROACH. **Mario Brameshuber**, Christina Manner, Martin Fuerst, Eva Sevcsik, Gerhard J. Schuetz

2590-Pos BOARD #B282
LONG-TERM LIVE OBSERVATION OF MEMBRANE PROTEIN INTERACTION WITH LIPID NANODOMAINS SHOW DEPENDENCE ON CELL CYCLE AND TIME AFTER TRANSFECTION. **Muhammed F. Simsek**, Arnd Pralle

2591-Pos BOARD #B283
CHARACTERIZING THE CELL SURFACE STRUCTURE AND ANTIBODY RECOGNITION FORCES ON INTACT MICROBIAL CELLS USING SCANNING PROBE MICROSCOPY. **Yoo Jin Oh**, Gerhard Sekot, Memed Duman, Lilia Chtcheglova, Paul Messner, Herwig Peterlik, Christina Schäffer, Peter Hinterdorfer

2592-Pos BOARD #B284
SPECIFIC ROLE OF GLYCOLIPIDS IN THE REGULAR STACKING OF MEMBRANES RECONSTITUTED FROM THYLAKOID LIPID EXTRACTS. **Bruno Demé**, Céline Cataye, Maryse Block, Éric Maréchal, Juliette Jouhet

2593-Pos BOARD #B285
QUANTITATIVE DIELECTRIC MEASUREMENTS OF BIOMEMBRANES AND OXIDES IN ELECTROLYTE SOLUTIONS AT HIGH FREQUENCIES. **Georg Gramse**, Aurora Dols-Pérez, Martin Andrew Edwards, Laura Fumagalli, Gabriel Gomila

2594-Pos BOARD #B286
DYNAMICS OF BILAYER INTERACTIONS AT THE AIR-WATER INTERFACE. Michael Martynowycz, Andrey Ivankin, **David Gidalevitz**

2595-Pos BOARD #B287
TEMPERATURE DEPENDENCE OF LO/LD DOMAIN THICKNESS AND ELASTICITY BY GLOBAL SAXS DATA ANALYSIS. **Peter Heftberger**, Benjamin Kollmitzer, Alexander Rieder, Heinz Amenitsch, Michael Rappolt, Georg Pabst

Protein-Lipid Interactions III (Boards #B288–#B317)

2596-Pos BOARD #B288
CHARACTERIZATION OF MAPCHO BICELLES—MODEL MEMBRANES FOR THE NMR STUDY OF MEMBRANE PROTEINS AND PEPTIDES. **Maiwenn Beaugrand**, Alexandre A. Arnold, Philip T. F. Williamson, Isabelle Marcotte

2597-Pos BOARD #B289
FLUORESCENCE MEASUREMENTS OF AROMATIC AMINO ACIDS IN THE PRESENCE OF LIPID MEMBRANES. **Sirine Khelifi**, Merrell A. Johnson, Bruce D. Ray, Horia I. Petrache

2598-Pos BOARD #B290
SINGLE MOLECULE STUDIES OF PKC α ACTIVATION MECHANISM ON MEMBRANE SURFACES. **Brian P. Ziemba**, Joseph J. Falke

2599-Pos BOARD #B291
THE EBOLA VIRUS MATRIX PROTEIN BENDS BIOLOGICAL MEMBRANES. **Smita P. Soni**, Robert V. Stahelin

2600-Pos BOARD #B292 EDUCATION TRAVEL AWARDEE
PALMITOYLATION AS A KEY FACTOR TO UNDERSTAND SP-C-LIPID INTERACTIONS IN THE LUNG SURFACTANT SYSTEM. **Nuria Roldan**, Erik Goormaghtigh, Jesus Perez-Gil, Begoña Garcia-Alvarez

2601-Pos BOARD #B293
CLARIFYING THE ROLES OF CARDIOLIPIN. **Sanja Pöyry**, Oana Cramariuc, Pekka Postila, Karol Kaszuba, Marcin Sarewicz, Artur Osyczka, Tomasz Rog, Ilpo Vattulainen

2602-Pos BOARD #B294
FLUORESCENCE CORRELATION SPECTROSCOPY REVEALS ADDITIONAL INFORMATION ON PROTEIN INSERTIONS INTO PHOSPHOLIPID MONOLAYERS. **Jan Auerswald**, Annette Meister, Sebastian Daum, Kirsten Bacia

2603-Pos BOARD #B295
MEMBRANE PHOSPHOINOSITIDE TURNOVER BY VOLTAGE SENSING PHOSPHATASES. **Dongil Keum**, Byung-Chang Suh

2604-Pos BOARD #B296
TOWARD UNDERSTANDING THE ROLE OF AMOT130 LIPID BINDING IN CELLULAR PROLIFERATION AND MIGRATION. **Mai T. Khuu**, Ann C. Kimble-Hill

2605-Pos BOARD #B297
CHARACTERIZING PULMONARY SURFACTANT PEPTIDE AND LIPID INTERACTIONS WITH VARIOUS SPECTROSCOPIC TECHNIQUES. **Otonye Braide**, Ishana Shetty, Joanna R. Long, Gail E. Fanucci

- 2606-Pos BOARD #B298**
HUMAN GUANYLATE-BINDING PROTEIN 1 TETHERS GIANT UNILAMELLAR VESICLES IN A NUCLEOTIDE-DEPENDENT MANNER. **Sergii Shydlovskiy**, Annika Hohendahl, Gerrit J.K. Praefcke, Aurélien Roux, Christian Herrmann
- 2607-Pos BOARD #B299**
TRANSMEMBRANE DOMAINS OF BACTERIAL CELL DIVISION PROTEINS FTSB AND FTSL FORM A STABLE HIGH-ORDER OLIGOMER - A FRET STUDY. **Ambalika S. Khadria**, Alessandro Senes
- 2608-Pos BOARD #B300**
GENERAL ANESTHETICS DO NOT ALTER LIPID BILAYER PROPERTIES AT CLINICALLY RELEVANT CONCENTRATIONS. **Karl F. Herold**, William Lee, R. Lea Sanford, Olaf S. Andersen, Hugh C. Hemmings Jr.
- 2609-Pos BOARD #B301**
ARF1 INDUCED MEMBRANE REMODELING AND MORPHOLOGICAL CHANGES STUDIED BY CRYO-EM, CONFOCAL MICROSCOPY AND LANGMUIR FILM BALANCE. **Sebastian Daum**, Annette Meister, Kirsten Bacia
- 2610-Pos BOARD #B302**
THE DYNAMICS OF P-REX 2 MEMBRANE AND PROTEIN INTERACTIONS. **Anne-Marie Bryant**, Rakesh Kumar Harishchandra, Alonzo H. Ross, Arne Gericke
- 2611-Pos BOARD #B303**
THE EFFECT OF HYDROPHOBIC MATCHING BETWEEN LIPIDS AND TRANSMEMBRANE PEPTIDES ON STEROL BILAYER AFFINITY. Kristian Ijäs, **Max Lönnfors**, Thomas K.M. Nyholm
- 2612-Pos BOARD #B304 INTERNATIONAL TRAVEL AWARDEE**
FUNCTIONAL AND STRUCTURAL CHARACTERIZATION OF PULMONARY SURFACTANT PROTEIN SP-C IN NANODISCS: A NANOTECHNOLOGICAL APPROACH. Nuria Roldan, Jesus Perez-Gil, **Begoña Garcia-Alvarez**
- 2613-Pos BOARD #B305**
SOLID-STATE NMR AND FTIR STUDY OF A NEURONAL CALCIUM SENSOR (NCS) PROTEIN, RECOVERIN. **Kim Potvin-Fournier**, Audrey Picard-Lafond, Melanie Schneider, Geneviève Valois-Paillard, Thierry Lefèvre, Philippe Calvez, Line Cantin, Christian Saless, Michèle Auger
- 2614-Pos BOARD #B306**
PROBING S100A12 INTERACTIONS WITH MODEL MEMBRANES. **Jose Luiz S. Lopes**, Assuero F. Garcia, Antonio J. Costa-Filho, BA Wallace, Ana Paula U. Araujo
- 2615-Pos BOARD #B307**
LIPID SELECTIVITY IN LIPID EFFLUX INDUCED BY PROTEINS AND PEPTIDES. **Michel Lafleur**, Alexandre Therrien
- 2616-Pos BOARD #B308**
ELUCIDATING LIPID DOMAINS FUNCTION BY COMBINATORIAL SCREENING OF PROTEIN-LIPIDS INTERACTIONS. **Roy Ziblat**
- 2617-Pos BOARD #B309**
DIRECT VISUALIZATION AND QUANTIFICATION OF DOC2B-MEDIATED MEMBRANE FUSION. **Ineke Brouwer**, Asiya Giniatullina, Niels Laurens, Alexander J. Groffen, Gijis J.L. Wuite
- 2618-Pos BOARD #B310**
THE ROLE OF SALT IN MITOCHONDRIA: RETURNING CYTOCHROME C TO ITS NATIVE STATE AFTER ITS DISSOCIATION FROM CARDIOLIPIN CONTAINING MEMBRANES. **Leah Pandiscia**, Reinhard Schweitzer-Stenner
- 2619-Pos BOARD #B311**
RI-DOM, A CELL-PENETRATING PEPTIDE. INTERACTION WITH DNA AND MEMBRANES. **Joachim Seelig**, Gabriela Québatte, Eric Kitas
- 2620-Pos BOARD #B312**
INTERACTIONS OF THE KINDLIN FAMILY PLECKSTRIN HOMOLOGY DOMAINS WITH MODEL MEMBRANES CONTAINING ZWITTERIONIC LIPIDS AND PHOSPHATIDYL INOSITOL PHOSPHATES. **Antreas C. Kalli**, Iain D. Campbell, Mark S.P. Sansom
- 2621-Pos BOARD #B313 INTERNATIONAL TRAVEL AWARDEE**
CELL MEMBRANE COMPOSITION AFFECTS GPCR AGGREGATION. **Ramon Guixà-González**, Matti Javanainen, Hector Martinez-Seara, Maricel Gómez-Soler, Joan Carles Domingo, Ilpo Vattulainen, Francisco Ciruela, Jana Selent
- 2622-Pos BOARD #B314**
NEW MEASUREMENTS OF LUNG SURFACTANT INTERFACIAL TENSION WITH MICROPIPETTE MANIPULATION TECHNIQUE. **Koji Kinoshita**, Kasper Glud, David Needham
- 2623-Pos BOARD #B315**
PHOSPHATIDYL SERINE AND FACTOR VA REGULATE FACTOR XA STRUCTURE. Kinshuk Raj Srivasatava, Rinku Majumder, William H. Kane, Mary Ann Quinn-Allen, **Barry R. Lentz**
- 2624-Pos BOARD #B316**
SHORT CHAIN LIPIDS MAINTAIN ADENOSINE A2AR LIGAND BINDING IN THE ABSENCE OF CHOLESTEROL. **Andrea N. Naranjo**, John Katsaras, Anne S. Robinson
- 2625-Pos BOARD #B317**
SIMULTANEOUS IMAGING OF SINGLE-MOLECULE AND BULK LOCALIZATION OF PTEN. **Seiya Fukushima**, Satomi Matsuoka, Masahiro Ueda

Membrane Receptors and Signal Transduction III (Boards #B318–#B342)

- 2626-Pos BOARD #B318**
PROTEOMIC IMAGING OF PLASMA MEMBRANES OF ANTIGEN-ACTIVATED B LYMPHOCYTES. **Brad L. Busse**, Ludmila Bezrukov, Jinmin Lee, Paul S. Blank, Susan Pierce, Joshua Zimmerberg
- 2627-Pos BOARD #B319**
T-CELL RECEPTOR-CD3 SIGNALING COMPLEX EXTRACELLULAR INTERACTIONS CHARACTERIZED BY GENETIC INCORPORATION OF UNNATURAL AMINO ACID PHOTO-CROSS-LINKERS. **Wenjuan Wang**, Tianqi Li, Michelle Krogsgaard
- 2628-Pos BOARD #B320**
THE MOLECULAR MECHANISMS OF GRADIENT SENSING BY CXCR4. **Elena Beletkaia**, Susanne Fenz, Ewa Snaar-Jagalska, Pancras Hogendoorn, Thomas Schmidt
- 2629-Pos BOARD #B321**
SINGLE MOLECULE OBSERVATION OF TCR SIGNALING COMPLEXES IN LIVING T CELLS. **Jenny J. Lin**, Geoffrey P. O'Donoghue, Rafal M. Pielak, Jay T. Groves
- 2630-Pos BOARD #B322**
EXPLORING THE SPATIO-MECHANOSENSITIVITY OF EPH RECEPTOR IN STEM CELLS. **Meimei Dong**, Dawn Spelke, Samuel J. Lord, David V. Schaffer, Jay T. Groves

2631-Pos BOARD #B323
 PROBING EPHA2 SIGNALING IN THE CONTEXT OF INTEGRIN ADHESION USING A HYBRID OF FLUID LIPID BILAYERS AND IMMOBILIZED RGD PATTERNS. **Zhongwen Chen**, Cheng-Han Yu, Kabir H. Biswas, Ronen Zaidel-Bar, Jay T. Groves

2632-Pos BOARD #B324
 SINGLE MOLECULE MEASUREMENTS OF TCR TRIGGERING IN SELF-REACTIVE T CELLS. **Katherine N. Alfieri**, Jay T. Groves

2633-Pos BOARD #B325
 BIOPHYSICAL PROPERTIES OF IMMUNE RECEPTOR PROTEINS AT THE MEMBRANE INTERFACE. **Daniel R. Scott**, C. Alejandro Velikovskiy, Roy A. Mariuzza, John P. Marino, Susan Krueger, Hirsh Nanda

2634-Pos BOARD #B326
 DYNAMIC BEHAVIOR OF TCR MICROCLUSTERS ON A LIVE CELL INVESTIGATED BY A GOLD NANOPARTICLE ARRAY. **Hiroyuki Kai**, Nina Caculitan, Eulanca Liu, Nicole Fay, Yan Yu, Theobald Lohmüller, Jay T. Groves

2635-Pos BOARD #B327
 INVESTIGATION OF TCR TRIGGERING MECHANISM WITH MEMBRANE ANCHORED FAB' FRAGMENTS. **Michael P. Coyle**, Geoffrey P. O'Donoghue, Rafal M. Pielak, Jenny J. Lin, Jay T. Groves

2636-Pos BOARD #B328
 T CELL COSTIMULATORY RESPONSE AND RECEPTOR DYNAMICS DETERMINED BY LIGAND ENGAGEMENT. **Nicole C. Fay**, Katherine Alfieri, Hiro Kai, Jay Groves

2637-Pos BOARD #B329
 FCεR1 SIGNAL PROPAGATION IS REGULATED THROUGH TRANSIENT BINDING OF SYK. **Samantha L. Schwartz**, Cheryl A. Telmer, Mara P. Steinkamp, Marcel P. Bruchez, Keith A. Lidke, Diane S. Lidke

2638-Pos BOARD #B330
 SHEAR FLOW REGULATES OSTEOGENIC DIFFERENTIATION OF MESENCHYMAL STEM CELLS THROUGH TRPM7-MEDIATED OSTERIX PATHWAY. **Yi-Shiuan Liu**, Chin-Ching Huang, Meng-Hua Yen, Oscar K. Lee

2639-Pos BOARD #B331
 PROFILING OF TARGET GENES THAT REGULATE EP-INDUCED GROWTH INHIBITION OF H460 THROUGH THE TRANSCRIPTIONAL AND PROTEOMIC ANALYSIS. **Joonhee Kim**, Eunil Lee, Eunjeong Cha, Eunyong Hong

2640-Pos BOARD #B332
 ACTIVE PATTERNING OF CELL SURFACE MOLECULES FROM NANOSCALE CLUSTERS TO MESOSCALE MEMBRANE MOSAICS DICTATED BY DYNAMIC ACTIN. **Suvrajit Saha**, Amit Das, Anirban Polley, Madan Rao, Satyajit Mayor

2641-Pos BOARD #B333
 CORTICAL MICROTUBULES SHAPE GPCR SPATIOTEMPORAL MEMBRANE ORGANIZATION AND SIGNALING. **Alessandra Cambi**

2642-Pos BOARD #B334
 NANOARCHITECTURE OF INTEGRIN RECEPTOR CLUSTERS ON VERY SOFT SUBSTRATES. **Rishita Changede**, Felix Margadant, Michael P. Sheetz

2643-Pos BOARD #B335
 ALLOSTERIC REGULATION BY COMPONENTS OF A CRITICAL MEMBRANE. **Benjamin B. Machta**

2644-Pos BOARD #B336
 EXCITABILITY OF GUANYLATE CYCLASE SIGNALING PATHWAY MEDIATING CHEMOTAXIS. **Yuki Tanabe**, Masahiro Ueda

2645-Pos BOARD #B337
 INVESTIGATING PHOSPHATIDYLINOSITOL 3,4-BISPHOSPHATE 3-PHOSPHATASE ACTIVITY OF CI-VSP IN XENOPUS LAEVIS OOCYTES AND CHO CELLS USING FLUORESCENT PHOSPHOINOSITIDE PROBES. **Svenja Mertelmeyer**, Angeliki Mavrantoni, Dominik Oliver, **Christian R. Halaszovich**

2646-Pos BOARD #B338 INTERNATIONAL TRAVEL AWARDEE
 IN-SITU DESCRIPTION OF THE ROLE OF PTDINS(3,4,5)P₃ AND PTDSE ON PDK1 REGULATION IN HUMAN CANCER CELLS BY ADVANCED QUANTITATIVE MICROSCOPY. **Gloria de las Heras**, Veronique Calleja, Banafshe Larjani, Jose Requejo-Isidro

2647-Pos BOARD #B339
 HER2 OVEREXPRESSION INDUCES MEMBRANE DEFORMATION THAT INCREASES CELL MOTILITY. **Inhee Chung**, Mike Reichelt, Don Dowbenko, Ira Mellman, Mark Sliwkowski

2648-Pos BOARD #B340
 CD44-BASED ADHESION AND MECHANOTRANSDUCTIVE SIGNALING ON ENGINEERED HYALURONIC ACID MATRICES. **Yushan Kim**, Sanjay Kumar

2649-Pos BOARD #B341
 REGULATION OF THE HER3/ERBB3 PSEUDOKINASE DOMAIN BY AN ATP-COMPETITIVE INHIBITOR. **Peter Littlefield**, Mark M. Moasser, **Natalia Jura**

2650-Pos BOARD #B342
 ARCHAZOLID-B PROVIDES ALTERNATIVE THERAPY FOR TRASTUZUMAB-RESISTANT ERBB2 POSITIVE BREAST CANCER. **Tamás Lajtos**, László Simon, Angelika M. Vollmar, János Szöllösi, György Vereb

Exocytosis and Endocytosis II (Boards #B343-#B359)

2651-Pos BOARD #B343
 RESCUE OF DOPAMINE RELEASE AND BEHAVIOR BY TRANSPLANTED NEURAL STEM CELLS IN A RAT MODEL OF PARKINSONISM. **Xinjiang Kang**, Huadong Xu, Li Zhou, Panli Zuo, Zijun Deng, Bing Liu, Bin Liu, Li Wang, Haiqian Dou, Feipeng Zhu, Changhe Wang, Shirong Wang, Wenlin Li, Kang Zhang, **Zhuan Zhou**

2652-Pos BOARD #B344
 FISB MEDIATED MEMBRANE FISSION DURING SPORULATION IN BACILLUS SUBTILIS. **Martha Braun**, Christopher Daniel Rodrigues, Thierry Doan, Jeff Coleman, David Rudner, Erdem Karatekin

2653-Pos BOARD #B345
 FRET BASED THERMODYNAMICS AND KINETICS INVESTIGATION OF ENDOPHILIN DIMERIZATION. **Zhiming Chen**, Ken Chang, Benjamin R. Capraro, Chih-Jung Hsu, Tobias Baumgart

2654-Pos BOARD #B346
 ENDOPHILIN RAPIDLY BENDS MEMBRANES TO PROMOTE ENDOCYTOSIS. **Kumud R. Poudel**, Jihong Bai

2655-Pos BOARD #B347
 ENDOCYTOSIS OF LIPOSOMES CONTAINING SULFO-CEREBROSIDES BY AN ASTROCYTOMAL CELL LINE: IS IT A CHARGE MEDIATED PROCESS OR DOES IT INVOLVE A SPECIFIC RECEPTOR? **Elizabeth Suesca**, Nathalia Bustamante, Natalia Bolaños, John Mario González, Chad Leidy

2656-Pos BOARD #B348
A MOLECULAR VIEW OF LIPID DROPLET FORMATION.
Shachi Katira, Berend Smit

2657-Pos BOARD #B349
INTERACTION OF MODEL LIPID VESICLES WITH ALVEOLAR MACROPHAGES. **Robinah K. Maasa**, Matthew J. Justice, Daniela N. Petrusca, Horia I. Petrache

2658-Pos BOARD #B350
AVAILABILITY OF PIP₃ AT THE PLASMA MEMBRANE REGULATES SECRETION IN PC12 CELLS. **David Richards**

2659-Pos BOARD #B351
COMPARISON OF THREE ALGORITHMS FOR DETECTION OF AMPEROMETRIC SPIKES RESULTING FROM QUANTAL EXOCYTOSIS. **Supriya Balaji Ramachandran**, Kevin D. Gillis

2660-Pos BOARD #B352
NEUROSENSOR 521: A FLUORESCENT SENSOR FOR SELECTIVE LABELING OF NOREPINEPHRINE-CONTAINING VESICLES. **Xin A. Liu**, Kenneth S. Hettie, Kevin D. Gillis, Timothy E. Glass

2661-Pos BOARD #B353
DARKFIELD IMAGING OF PLATELET CYTOSKELETON-GRANULE INTERACTIONS. **Solaire Finkenstaedt-Quinn**, Christy L. Haynes

2662-Pos BOARD #B354
DIRECT MEASUREMENT OF SECRETORY VESICLE-PLASMA MEMBRANE TETHERING INTERACTIONS BY CORRELATED AFM FORCE-CLAMP AND TIRF MICROSCOPY. **Mark C. Harris**, Christopher Umbach, Manfred Lindau

2663-Pos BOARD #B355
THE ROLE OF DENSE CORE NANOPARTICLES IN REGULATION OF NEURONAL COMMUNICATION. **Hoda Mashadi Fathali**, Jacqueline Keighron, Ann-Sofie Cans

2664-Pos BOARD #B356
FUSION PROPERTIES OF GLIOTRANSMITTER VESICLES IN ASTROCYTES. **Alenka Guček**, Jernej Jorgačevski, Priyanka Singh, Claudia Geisler, Boštjan Rituper, Nina Vardjan, Marko Krefit, Alexander Egner, Stefan W. Hell, Robert Zorec

2665-Pos BOARD #B357
PHORBOL ESTER-STIMULATED VWF SECRETION FROM HUMAN UMBILICAL VEIN ENDOTHELIAL CELLS. Ruben Bierings, Nicola Hellen, Laura Knipe, Ianina Conte, Ana-Violeta Fonseca, Matthew J. Hannah, **Tom Carter**

2666-Pos BOARD #B358
CA²⁺ HAS A PERMISSIVE EFFECT ON GLYCOLYTIC OSCILLATIONS IN PANCREATIC BETA CELLS. **Matthew J. Merrins**, Leslie S. Satin

2667-Pos BOARD #B359
EHD3 MEDIATES INTEGRAL MEMBRANE PROTEIN TRAFFICKING AND MAINTAIN ELECTRICAL EXCITABILITY AND ADRENERGIC RESPONSIVENESS IN THE HEART. **Jerry Curran**, Sean Little, Mike Makara, Xianqiong Wu, Iulia Polina, Patrick J. Wright, Bin Liu, Sandor Gyorke, Thomas J. Hund, Peter J. Mohler

Calcium Signaling II (Boards #B360–#B378)

2668-Pos BOARD #B360
AN ACIDIC SEQUENCE IN NEUROGRANIN IS REQUIRED TO MODULATE CA²⁺ BINDING TO CALMODULIN. **John A. Putkey**, Xu Wang, Laurel Hoffman, M. Neal Waxham

2669-Pos BOARD #B361
PREDICTING CALMODULIN BINDING SITES VIA CANONICAL MOTIF CLUSTERING. **William R. Kobertz**, Karen Mruk, Brian M. Farley, Alan W. Ritacco

2670-Pos BOARD #B362
THERMODYNAMIC ANALYSIS OF CALMODULIN RECOGNITION OF THE ION CHANNEL RYANODINE RECEPTOR. **Adina M. Kilpatrick**, Amanda E. Marwitz, Kristin M. Tefft, Lisa D. Weaver, Madeline A. Shea

2671-Pos BOARD #B363
IN FAILING CARDIOMYOCYTES, CAM-RYR2 DISSOCIATION LEADS TO DEFECTIVE DOMAIN INTERACTION AND CHANNEL DESTABILIZATION. **Tetsuro Oda**, Yi Yang, Florentin R. Nitu, Bradley R. Fruen, Ye Chen-Izu, Razvan L. Cornea, Donald M. Bers

2672-Pos BOARD #B364
INHIBITION OF RYR2 FROM FAILING AND NON-FAILING HUMAN HEARTS BY CALMODULIN. **Kafa D. Walweel**, Dirk F. vanHelden, Mohammad S. Imtiaz, Cris Dos Remedios, Peter Molenaar, Derek R. Laver

2673-Pos BOARD #B365
STRUCTURE-FUNCTION RELATIONSHIPS OF M124Q CALMODULIN, A MUTANT THAT MIMICS OXIDATIVE INSULTS. **Sarah E. Nelson**, Florentin Nitu, Razvan Cornea, David D. Thomas, Gianluigi Veglia

2674-Pos BOARD #B366
MECHANISMS UNDERLYING COOPERATIVITY IN CAMKII AUTOPHOSPHORYLATION AND SUBSTRATE PHOSPHORYLATION. **Derrick E. Johnson**, Jingwei Meng, Andy Hudmon

2675-Pos BOARD #B367
MOLECULAR MECHANISM OF DREAM -PRESENILIN-1 INTERACTIONS. **Khoa Pham**, Jaroslava Miksovska

2676-Pos BOARD #B368
THERMODYNAMIC IMPACT OF THE UNSTRUCTURED LINKER REGION ON THE SYNAPTOTAGMIN I C2A DOMAIN. **Ryan W. Mahling**, Michael E. Fealey, Jacob W. Gauer, K. Jean Lohese, Troy Hendrickson, R. Bryan Sutton, Anne Hinderliter

2677-Pos BOARD #B369
INFRARED RADIATION ACTIVATES MITOCHONDRIAL CALCIUM CYCLING IN NEURONS. Vicente Lumbreras, **Suhrud Rajguru**

2678-Pos BOARD #B370
CELLULAR MECHANISMS OF OXYGEN SENSING IN ASTROCYTES. **Plamena R. Angelova**, Andrey Y. Abramov, Alexander V. Gourine

2679-Pos BOARD #B371
ALPHA-SYNUCLEIN MODULATES [CA²⁺]_i OF NEURONS AND ASTROCYTES THAT TRIGGER CELL DEATH. **Plamena R. Strohm**, Marthe H R Ludtmann, Nicholas W. Wood, David Klenerman, Sonia Gandhi, Andrey Y. Abramov

2680-Pos BOARD #B372
PARVALBUMIN TUNES SPIKE-TIMING AND EFFERENT SHORT-TERM PLASTICITY IN STRIATAL FAST SPIKING INTERNEURONS. David Orduz, Patrick Bishop, Beat Schwaller, Serge N. Schiffmann, **David Gall**

2681-Pos BOARD #B373
FRACTIONAL BINDING: A MOLECULAR ANALOG-TO-DIGITAL CONVERTER IN CA²⁺ REGULATED VESICLE DIFFERENTIATION. **Dimitrios Stamou**, Kadla Rosholm, Ian Allen, Sune Christensen, Nicky Ehrlich, Jannik Larsen, Vadym Tkatch

2682-Pos BOARD #B374
CALCIUM AND CAMP DYNAMICS IN PITUITARY LACTOTROPHS.
Larissa M. Ikenouye, Colette Crane, Joseph K. Angleson

2683-Pos BOARD #B375
NON-LINEAR SIGNAL PROPAGATION THROUGH
MULTICELLULAR CHAINS. **Garrett Potter**

2684-Pos BOARD #B376
THE NETWORK CHARACTERISTICS AND SPATIAL-TEMPORAL
DYNAMICS OF COLLECTIVE CHEMOSENSING. **Bo Sun**,
Howard Stone, Guillaume Duclos

2685-Pos BOARD #B377
EPITHELIAL Ca^{2+} MODEL PREDICTION: SURAMIN ENHANCES
P2Y2 RECEPTOR DESENSITIZATION BY ACCELERATING
THEIR PHOSPHORYLATION RATE. **Iina Vainio**,
Amna Abu Khamidakh, Michelangelo Paci, Heli Skottman,
Kati Juuti-Uusitalo, Jari Hyttinen, Soile Nymark

2686-Pos BOARD #B378
CALCIUM RELEASE FROM ACIDIC STORES MODULATE FLUID
AND PROTEIN SECRETION IN THE SALIVARY GLAND.
David R. Giovannucci, Sumit Bhattacharya, Prince Ampem,
Ramadan Ali, Katherine A. Wall, James T. Slama

Calcium Fluxes, Sparks, and Waves II (Boards #B379–#B398)

2687-Pos BOARD #B379
LATENCY TO THE ONSET OF CALCIUM WAVES IN CARDIAC
MYOCYTES IS PREDICTED BY CRITICALITY THEORY.
Christopher Y. Ko, Michael Nivala, Zhilin Qu, James N. Weiss

2688-Pos BOARD #B380
CONTRIBUTIONS OF I(F) AND SARCOPLASMIC RETICULUM
 Ca^{2+} IN THE CONTROL OF SPONTANEOUS CARDIAC
BEATING RATE IN MOUSE AND GUINEA-PIG. **Islom Nazarov**,
Wee Khang Lin, Qiong Xiao, Derek A. Terrar

2689-Pos BOARD #B381
DOXORUBICIN STIMULATES THE Na^{+}/Ca^{2+} EXCHANGER IN
VENTRICULAR CARDIOMYOCYTES. **Rosana A. Bassani**,
Alexandre P. Corrado, José W. Bassani

2690-Pos BOARD #B382
LOCAL CALCIUM DYNAMICS STABILIZE NCX CURRENT IN AN
INTEGRATED CALCIUM CYCLING AND MEMBRANE MODEL.
Anna Maltsev, Yael Yaniv, Michael Stern, Edward Lakatta, Victor Maltsev

2691-Pos BOARD #B383
DEPOLARIZATION OF CARDIAC MEMBRANE POTENTIAL
PROMOTES CALCIUM WAVES. **Daisuke Sato**, Donald M. Bers

2692-Pos BOARD #B384
OBSERVING THE DYNAMICS OF LUMINAL AND CYTOSOLIC
CALCIUM DURING IP3R-MEDIATED CALCIUM SIGNALS.
Lucia Lopez, Lorena Sigaut, Silvina Ponce Dawson

2693-Pos BOARD #B385
INSP₃R ACTIVATION FACILITATES Ca^{2+} WAVE PROPAGATION
IN VENTRICULAR MYOCYTES. D. Caroline Egger, Marcel Wullschleger,
Hanneke Okkenhaug, H. Llewelyn Roderick, **Marcel Egger**

2694-Pos BOARD #B386
CHARACTERIZATION OF CALCIUM RELEASE EVENTS EVOKED
BY INSP₃R ACTIVATION IN INTACT AND PERMEABILIZED ATRIAL
MYOCYTES. **Marcel Wullschleger**, Ardo Illaste, Ernst Niggli, Marcel Egger

2695-Pos BOARD #B387
EXTRACTING DETAILED Ca^{2+} SIGNALING INFORMATION
FROM NOISY CONFOCAL IMAGES. **Ardo Illaste**, Marcel Wullschleger,
Miguel Fernandez - Tenorio, Marcel Egger, Ernst Niggli

2696-Pos BOARD #B388
INCREASED ACCURACY OF CALCIUM SPARK PARAMETER
DETECTION USING HIGH-SPEED CONFOCAL MICROSCOPY.
János Vincze, László Z. Szabó, Beatrix Dienes, Péter Szentesi, László Csernoch

2697-Pos BOARD #B389
AUTOMATED DETECTION AND ANALYSIS OF Ca^{2+}
SPARKS IN X-Y IMAGE STACKS USING A NOVEL
ALGORITHM IMPLEMENTED WITHIN THE OPEN-SOURCE
IMAGE ANALYSIS PLATFORM, IMAGEJ. Elliot M. Steele,
Derek S. Steele

2698-Pos BOARD #B390
QUANTITATIVE ANALYSIS OF CALCIUM SPIKES
IN NOISY FLUORESCENT BACKGROUND. Radoslav Janicek,
Matej Hotka, Alexandra Zahradnikova, Jr, Ivan Zahradnik,
Alexandra Zahradnikova

2699-Pos BOARD #B391
SPARKLAB²: A STATISTICALLY BASED PROGRAM
TO DETECT 2D SPARKS. APPLICATION TO SMOOTH MUSCLE.
Jose L. Puglisi, Manuel Navedo, Donald M. Bers, Leighton T. Izu

2700-Pos BOARD #B392
A CHLORIDE CHANNEL BLOCKER PREVENTS
INORGANIC PHOSPHATE ACCUMULATION AND ITS
EFFECTS IN THE SARCOPLASMIC RETICULUM OF FROG
PERMEABILIZED SKELETAL MUSCLE FIBERS. **Juan José Ferreira**,
Germán Pequera, Bradley Launikonis, Eduardo Ríos, Gustavo Brum

2701-Pos BOARD #B393
THE MBOAT FAMILY PROTEIN MITSUGUMIN 56 CONTRIBUTES
TO POSTNATAL MATURATION IN THE MUSCLE SARCOPLASMIC
RETICULUM. **Bo Van**, Miyuki Nishi, Shinji Komazaki, Ki Ho Park,
Daiju Yamazaki, Jianjie Ma, Hiroshi Takeshima

2702-Pos BOARD #B394
NON-HYPERTENSIVE DOSIS OF LEPTIN INDUCE CARDIAC
DYSFUNCTION AND ALTERED CALCIUM HANDLING IN
MICE. **Carmen Delgado**, Nieves Gomez-Hurtado,
Alejandro Dominguez-Rodriguez A, Philipe Mateo, Rafael Aizpun, J
ean Pierre Benitah, Ana Maria Gomez

2703-Pos BOARD #B395
MODELING MITOCHONDRIAL CALCIUM DYNAMICS IN
HEART. **Andrew P. Wescott**, W. J. Lederer, George S. B. Williams

2704-Pos BOARD #B396
PROPERTIES OF CALCIUM TRANSIENTS IN CARDIOMYO-
CYTES WITH IMPAIRED INSULIN SIGNALING. **Anders Peter
Larsen**, Kenneth W. Spitzer

2705-Pos BOARD #B397
SEALING OF CARDIAC T-TUBULES LEADS TO INFLUX
OF TRAPPED EXTRACELLULAR Ca^{2+} . Ian Moench,
Anatoli N. Lopatin

2706-Pos BOARD #B398
ROS IN CARDIAC CALCIUM SIGNALING. **Moradeke A. Bamgboye**,
W J. Lederer

Voltage-gated K Channels II (Boards #B399–#B428)

- 2707-Pos** BOARD #B399
CALCIUM-ACTIVATED K CHANNEL REGULATES CELL VIABILITY IN HYPERKALEMIC AND HYPOKALEMIC CONDITIONS: IMPLICATION IN THE NEUROMUSCULAR DISORDERS. **Domenico Tricarico**, Antonietta Mele, Sara Calzolaro, Giulia Maria Camerino, Diana Conte
- 2708-Pos** BOARD #B400
STOCHASTIC MODELING OF Ca^{2+} -CHANNEL / BKCA-CHANNEL COMPLEXES. **Daniel H. Cox**
- 2709-Pos** BOARD #B401
THE CYTOCHROME C-LIKE DOMAIN OF THE HUMAN BK CHANNEL. **Taleh Yusifov**, Roshni V. Madhvani, Riccardo Olcese
- 2710-Pos** BOARD #B402
ENZYMATIC ACTIVITY OF THE HUMAN BK CHANNEL: A FUNCTION BEYOND ELECTRICAL SIGNALING. **Taleh Yusifov**, Nicoletta Savalli, Antonios Pantazis, Riccardo Olcese
- 2711-Pos** BOARD #B403
BK $\beta 1$ TRANSMEMBRANE REGIONS CRITICALLY CONTROL THE CHARACTERISTIC PHENOTYPE OF $\beta 1$ -CONTAINING BK CHANNEL CURRENTS. **Guruprasad Kuntamallappanavar**, Anna N. Bukiya, Alex M. Dopico
- 2712-Pos** BOARD #B404
PHOSPHORYLATION OF A CONSTITUTIVE SERINE (S642) IN BK CHANNEL VARIANTS CONTAINING THE ALTERNATE EXON 'SRKR' ALTERS CURRENT PROPERTIES. Joshua P. Whitt, Chris Shelley, **Andrea L. Meredith**
- 2713-Pos** BOARD #B405
UNCOVERING MITO BK_{CA} CHANNEL MITOCHONDRIAL TRANSLOCATION MECHANISMS. **Jin Zhang**, Zhu Zhang, Enrico Stefani, Ligia Toro
- 2714-Pos** BOARD #B406
PROTEOMIC ANALYSIS IDENTIFIES MAXIK CHANNEL INTRACELLULAR PARTNERS FROM HUMAN CORONARY ARTERY. **Min Li**, Zhu Zhang, Jure Marijic, Enrico Stefani, Ligia Toro
- 2715-Pos** BOARD #B407
ALL-OR-NONE EFFECT OF γ_1 AUXILIARY SUBUNIT ON BK CHANNEL GATING. **Vivian Gonzalez-Perez**, Xiao-Ming Xia, Christopher Lingle
- 2716-Pos** BOARD #B408
CYTOSOLIC ACTIVATION DYNAMICS IN THE KV CHANNEL PROBED BY A FLUORESCENT UNNATURAL AMINO ACID. **Tanja Kalstrup**, Rikard Blunck
- 2717-Pos** BOARD #B409
OFFSETTING THE ELECTRIC FIELD SENSED BY K_V CHANNELS THROUGH RESIDUE SUBSTITUTIONS ON TOP OF S1. Evelyn Martinez-Morales, **Alain J. Labro**, Dirk J. Snyders
- 2718-Pos** BOARD #B410
ALLOSTERIC COUPLING OF THE INNER ACTIVATION GATE TO THE OUTER PORE OF A POTASSIUM CHANNEL. **Chris Peters**, David Fedida, Eric Accili
- 2719-Pos** BOARD #B411
ENHANCEMENT OF C-TYPE INACTIVATION BY EXTERNAL Ca^{2+} AND La^{3+} . **Clay M. Armstrong**
- 2720-Pos** BOARD #B412
SHAKER KV CHANNEL'S SUGAR REMOTION IN REAL-TIME. **Angelica M. Lopez-Rodriguez**, Gaurav Venkataraman, Miguel Holmgren
- 2721-Pos** BOARD #B413
LOCKING THE OPEN STATE OF A VOLTAGE-DEPENDENT CONCATEMER POTASSIUM CHANNEL WITH METAL BRIDGES. **Angel A. de la Cruz Landrau**, Miguel Holmgren
- 2722-Pos** BOARD #B414
MUTATIONS IN THE CAVITY AFFECT THE RATE OF SLOW INACTIVATION IN SHAKER K^+ CHANNELS. Tibor G. Szanto, Orsolya Szilagyi, Florina Zakany, **Gyorgy Panyi**
- 2723-Pos** BOARD #B415
VOLTAGE SENSOR DOMAIN MUTATIONS INVOLVED IN THE KV1.2 CHANNEL ACTIVATION VIA MD SIMULATIONS. **Cristiano Amaral**
- 2724-Pos** BOARD #B416
ATOMISTIC MODELING OF ION CONDUCTION THROUGH VOLTAGE-SENSING DOMAINS. Mona L. Wood, **J. Alfredo Freitas**, Francesco Tombola, Stephen H. White, Douglas J. Tobias
- 2725-Pos** BOARD #B417
CAUTION IS NEEDED IN INTERPRETATION OF ARG α CYS MUTATION + MTS REACTION IN THE S4 TRANSMEMBRANE SEGMENT OF A VOLTAGE SENSING DOMAIN (VSD) OF A VOLTAGE GATED CHANNEL: RESULTS OF QUANTUM CALCULATIONS. Alisher M. Kariev, **Michael E. Green**
- 2726-Pos** BOARD #B418
QUANTUM CALCULATIONS SHOW HOW THE WATER AT THE GATE OF THE VOLTAGE GATED KV1.2 CHANNEL PLAYS A MAJOR ROLE IN DETERMINING CONDUCTION THROUGH THE GATE. **Alisher M. Kariev**, Philipa Njau, Michael E. Green
- 2727-Pos** BOARD #B419
TURNING A SMALL INTO LARGE CONDUCTANCE K-CHANNEL - HOW FAR CAN WE GO? **Ignacio Diaz-Franulic**, Nieves Navarro, Fernando Gonzalez-Nilo, Romina V. Sepulveda, David Naranjo
- 2728-Pos** BOARD #B420
AMINO ACID SUBSTITUTIONS FOR T75 IN KCSA ALTER ION SELECTIVITY. Melia Tabbakhian, Van Ngo, Stephan Haas, **Robert Farley**
- 2729-Pos** BOARD #B421
ION PERMEATION EFFICIENCY THROUGH POTASSIUM CHANNELS. **David A. Kopfer**, Chen Song, Ulrich Zachariae, Bert L. de Groot
- 2730-Pos** BOARD #B422
STRATEGIES TO ACHIEVE SELECTIVE CONDUCTANCE IN K- AND NA- SELECTIVE ION CHANNELS. **Yibo Wang**, Chunfeng Zhao, Sergei Yu. Noskov
- 2731-Pos** BOARD #B423
INSIGHTS INTO THE ION PERMEATION PROCESS OF HIGH AND LOW CONDUCTANCE K-CHANNELS USING NON-EQUILIBRIUM MOLECULAR DYNAMICS. **Fernando D. Gonzalez-Nilo**, Romina Sepulveda, David Naranjo, Daniel Aguayo, Ingrid Araya, Ignacio Varas, Felipe Bravo, Ignacio Diaz-Franulic, Valeria Marquez-Miranda
- 2732-Pos** BOARD #B424
2D IR AS AN EXPERIMENTAL PROBE OF ION-INDUCED STRUCTURAL CHANGES IN KCSA. **Paul Stevenson**, Christoph Götz, Carlos R. Baiz, Alipasha Vaziri, Andrei Tokmakoff

2733-Pos BOARD #B425

ROLE PLAYED BY THE GLUTAMATE 71 AND ASPARTATE 80 CARBOXYL-CARBOXYLATE INTERACTION IN KCSA C-TYPE INACTIVATION GATING. **Beatriz A. Velez**, D. Marien Cortes, Luis G. Cuello

2734-Pos BOARD #B426

ION-SELECTIVITY FILTER INTERACTIONS IN KCSA FROM 1D 87RB+ NMR. **Raymond E. Hulse**, Joseph R. Sachleben, Eduardo Perozo

2735-Pos BOARD #B427

ROLE OF METHYL-INDUCED POLARIZATION IN ION BINDING. **Mariana Rossi**, Alexandre Tkatchenko, Susan B. Rempé, Sameer Varma

2736-Pos BOARD #B428

DENSITY FUNCTIONAL STUDIES OF RUBIDIUM HYDRATION TO PROBE THE ANALOGY BETWEEN RB⁺ AND K⁺ IN K CHANNELS. Dubravko Sabo, Dian Jiao, Sameer Varma, Lawrence Pratt, **Susan Rempé**

K Channels, Other (Boards #B429–#B447)

2737-Pos BOARD #B429

NERVE GROWTH FACTOR SENSITIZES SUPERIOR CERVICAL GANGLION NEURONS TO BRADYKININ. **Oscar Vivas**, Martin Kruse, Bertil Hille

2738-Pos BOARD #B430

POSTNATAL DEVELOPMENT OF K_v CURRENTS IN CULTURED SMALL MOUSE DORSAL ROOT GANGLION (DRG) NEURONS. **Glenn Regnier**, Elke Bocksteins, Gerda Van de Vijver, Dirk J. Snyders, Pierre-Paul van Bogaert

2739-Pos BOARD #B431

CHARACTERIZATION OF THE SLO1 CHANNEL AS A PRINCIPAL POTASSIUM CHANNEL OF HUMAN SPERM. **Nadja Mannowetz**, Natasha M. Naidoo, Seung-A S. Choo, James F. Smith, Gunther Wennemuth, Polina V. Lishko

2740-Pos BOARD #B432

MODULATION OF SARCOLEMAL ATP-SENSITIVE POTASSIUM CHANNELS BY ATRIAL NATRIURETIC PEPTIDE IN VENTRICULAR CARDIOMYOCYTES. Dai-Min Zhang, **Yu-Fung Lin**

2741-Pos BOARD #B433

AN INTRAMOLECULAR INTERACTION CONTROLS A RATE-LIMITING STEP IN ATP-DEPENDENT GATING OF KIR6.2 CHANNELS. Roger S. Zhang, Jordan Wright, Stephan A. Pless, John-Jose Nunez, Robin Y. Kim, Runying Yang, Christopher A. Ahern, **Harley T. Kurata**

2742-Pos BOARD #B434

RESCUE MECHANISMS FOR LOSS OF FUNCTION MUTATIONS HIGHLIGHT ESSENTIAL RESIDUES AT THE KIR6.2 CHANNEL DOMAIN INTERFACE. Jenny BW Li, **Robin Y. Kim**, Runying Yang, Harley T. Kurata

2743-Pos BOARD #B435

MECHANISM OF CARBAMAZEPINE MEDIATED RESCUE OF TRAFFICKING DEFECTIVE MUTANT KATP CHANNELS. **Prasanna Devaraneni**, Qing Zhou, Erik Olson, Show-Ling Shyng

2744-Pos BOARD #B436

MICROSCOPIC MECHANISMS UNDERLYING INACTIVATION IN THE KCSA AND MTHK K⁺ CHANNELS. **Florian T. Heer**, Andrew S. Thomson, Brad S. Rothberg, Simon Bernèche

2745-Pos BOARD #B437

STRUCTURAL MODELING OF KCA3.1 CHANNEL INTERACTION WITH SMALL MOLECULES. **Vladimir Yarov-Yarovoy**, Heike Wulff

2746-Pos BOARD #B438

DEVELOPMENT OF A QPATCH AUTOMATED ELECTROPHYSIOLOGY ASSAY FOR IDENTIFYING KCA3.1 INHIBITORS AND ACTIVATORS. **Brandon M. Brown**, David P. Jenkins, Weifeng Yu, Lars D. Løjkner, Heike Wulff

2747-Pos BOARD #B439

DIVERSITY IN THE PHARMACOLOGICAL PROFILE OF HETEROTETRAMERIC K_{v2/Kv3} CHANNELS FOR CHANNEL BLOCKERS. **Jeroen I. Stas**, Elke Bocksteins, Alain J. Labro, Dirk J. Snyders

2748-Pos BOARD #B440

SUBUNIT COMPOSITION DETERMINES Gβγ ACTIVATION OF SINGLE GIRK CHANNELS. **Daniel Yakubovich**, Nathan Dascal

2749-Pos BOARD #B441

G-PROTEIN ACTIVATED INWARDLY RECTIFYING POTASSIUM CHANNELS CONTROL MOTILITY OF BREAST CANCER CELLS. **Simin Rezanian**, Chouyang Li, Sarah Kammerer, Astrid Gorischek, Trevor Devaney, Amir Hassan Zarnani, Thomas Bauernhofer, Wolfgang Schreibmayer

2750-Pos BOARD #B442

MAXIMAL ACTIVITY OF KCSA, KIRBAC1.1 AND KIR2.1 CHANNELS ARE DIFFERENTIALLY REGULATED BY MEMBRANE THICKNESS. **Benoit Mondou**, Louis Sasseville, Jean-Louis Schwartz, Jurgen Sygusch, Nazzareno D'Avanzo

2751-Pos BOARD #B443

ACTIVATION OF SLACK CHANNELS ALTERS THEIR INTERACTIONS WITH THE PP1 TARGETING PROTEIN PHACTR1. **Matthew R. Fleming**, Leonard K. Kaczmarek

2752-Pos BOARD #B444

EFFECTS OF E-LXA4 ON KV AND KIR RECORDED FROM BONE MARROW MOUSE MACROPHAGES. **Alicia de la Cruz**, Cristina Moreno, Alvaro Macias, Angela Prieto, Teresa Gonzalez, Carmen Valenzuela

2753-Pos BOARD #B445

EFFECTS OF CL888 ON KV4.3, KV4.3/KCHIP2C AND KV4.3/KCHIP3 CHANNELS. **Angela Prieto**, Pilar Cercos, Alicia de la Cruz, Teresa Gonzalez, Marta Gutierrez-Rodriguez, Jose-Ramon Naranjo, Carmen Valenzuela

2754-Pos BOARD #B446

EQUILIBRIUM ION BINDING PROPERTIES OF POTASSIUM-SELECTIVE AND NON-SELECTIVE CATION CHANNELS. **Steve Lockless**, Shian Liu

2755-Pos BOARD #B447

IRREVERSIBLE BINDING OF CA²⁺ CHANNEL β SUBUNIT TO α1B REVEALED BY CHEMICALLY-INDUCIBLE DIMERIZATION SYSTEM. **Jun-Hee Yeon**, Byung-Chang Suh

Ligand-gated Channels III (Boards #B448–#B464)

2756-Pos BOARD #B448 EDUCATION TRAVEL AWARDEE

ALCOHOL MODULATION OF A EUKARYOTIC LIGAND-GATED ION CHANNEL OF KNOWN STRUCTURE. **Erika Riederer**, Ozge Yoluk, James Trudell, Erik Lindahl, Adron Harris, Rebecca Howard

2757-Pos BOARD #B449
EXTRACELLULAR CONTRIBUTIONS TO ALCOHOL MODULATION OF PENTAMERIC LIGAND-GATED ION CHANNELS. **Amber Plante**

2758-Pos BOARD #B450
ACTIVATION MECHANISM OF ELIC BY PROPYLAMINE. Alessandro Marabelli, Remigijus Lape, **Lucia Sivilotti**

2759-Pos BOARD #B451
PROKARYOTIC CYS-LOOP RECEPTOR HOMOLOGS AS MECHANISTIC MODELS FOR CHANNEL FUNCTION. **Matthew Rienzo**, Oliver S. Shafaat, Harry B. Gray, Sarah C. R. Lummis, Dennis A. Dougherty

2760-Pos BOARD #B452
BIOCHEMICAL AND FUNCTIONAL CHARACTERIZATION OF A NOVEL PROKARYOTE LIGAND-GATED ION CHANNEL CLIC. **Mieke Nys**, Radovan Spurny, Zander Claes, Chris Ulens

2761-Pos BOARD #B453
UTILIZING NON-EQUILIBRIUM METHODS TO PROBE THE EFFECTS OF GENERAL ANESTHETICS ON LIGAND-GATED ION CHANNEL DYNAMICS. **Mark J. Arcario**, Emad Tajkhorshid

2762-Pos BOARD #B454
LOOSE PACKING OF THE EXTRACELLULAR DOMAIN CORE OF PENTAMERIC LIGAND-GATED ION CHANNELS IS IMPORTANT FOR FAST ACTIVATION AND DESENSITIZATION. **Cosma D. Dellisanti**, Cynthia Czajkowski

2763-Pos BOARD #B455
CONSTRUCTION AND CHARACTERIZATION OF A FUNCTIONAL GLIC-GABA_ρ LIGAND-GATED ION CHANNEL CHIMERA. **Borna Ghosh**, Varun Tiwari, Cynthia Czajkowski

2764-Pos BOARD #B456
ALLOSTERIC MODULATION OF GABA-A RECEPTORS BY DIFFERENT DRUGS. **Borna Ghosh**, Tzu-Wei Tsao, Cynthia Czajkowski

2765-Pos BOARD #B457
MECHANISM OF INHIBITION OF RECOMBINANT GABAA RECEPTORS BY PENTYLENETETRAZOLE AND ITS ALLEVIATION BY ANTICONVULSANTS. Akimasa Iijima, **Yongli Chen**

2766-Pos BOARD #B458
γ-AMINO BUTYRIC ACID INDUCED CONFORMATIONAL CHANGE IN GABAAR MEASURED BY PULSED ELECTRON PARAMAGNETIC RESONANCE. Yinghui Zhang, Youssef Jounaidi, Jessica L. Sarver, Xiaojuan Zhou, David S. Cafiso, **Keith W. Miller**

2767-Pos BOARD #B459
MOLECULAR CLONING OF A GABA RECEPTOR SUBUNIT FROM CRAYFISH AND VOLTAGE-CLAMP ANALYSIS OF HOMO-OLIGOMERIC RECEPTOR EXPRESSED IN HEK CELLS. **Eric N. Jiménez-Vázquez**, Juan M. Arias, Ubaldo García

2768-Pos BOARD #B460
CONTRIBUTION OF STRUCTURAL ELEMENTS TO ACTIVATION AND ALLOSTERIC MODULATION IN AN ANIONIC LIGAND-GATED ION CHANNEL. **Ozge Yoluk**, Erika A. Riederer, Magnus Andersson, Goran Klement, James R. Trudell, Edward J. Bertaccini, Rebecca J. Howard, Erik Lindahl

2769-Pos BOARD #B461
INTERACTION OF THE GLYCINE RECEPTOR ALPHA 1 BINDING SITE WITH PARTIAL AGONISTS. **Timo Greiner**, Elliot Hurdiss, Rilei Yu, Remigijus Lape, Philip C. Biggin, Lucia G. Sivilotti

2770-Pos BOARD #B462
TOWARDS UNDERSTANDING THE INTERACTION OF AGONISTS WITH THE HUMAN ALPHA1 GLYCINE RECEPTOR. **Rilei Yu**

2771-Pos BOARD #B463
TOWARDS STRUCTURAL AND FUNCTIONAL DETERMINATION OF A NON-DESENSITIZING α1 GLYCINE RECEPTOR. **Rathna J. Veeramachaneni**, Chelsea Donelan, Michael Cascio

2772-Pos BOARD #B464
METHODS FOR IDENTIFICATION OF STATE-DEPENDENT CROSSLINKS FOR STRUCTURAL DETERMINATION OF MEMBRANE PROTEINS. **Chelsea A. Donelan**, Rathna Veeramachaneni, Andrew Davic, Michael Cascio

Ion Channels and Disease I (Boards #B465–#B493)

2773-Pos BOARD #B465
LEARNING THE KINETICS OF AMYLOID β PORE IN ALZHEIMER'S DISEASE PATHOLOGY. **Ghanim Ullah**, Angelo Demuro, Ian Parker, John E. Pearson

2774-Pos BOARD #B466
INVESTIGATING HOW Aβ AND αSYNUCLEIN OLIGOMERS INITIALLY DAMAGE NEURONAL CELLS. **Anna Drews**

2775-Pos BOARD #B467
ACUTE EFFECTS OF β-AMYLOID (1-42) OLIGOMERS ON RAT PYRAMIDAL ENTORHINAL NEURONS. Miguel Cuaxospa, Rosana Fiorentino, **Ubaldo Garcia**

2776-Pos BOARD #B468
DISREGULATION OF CALCIUM HOMEOSTASIS CONNECTED WITH FAMILIAL ALZHEIMER'S DISEASE. **Maria Ryazantseva**, Ksenia Skobeleva, Elena Kaznachejeva

2777-Pos BOARD #B469
TAU PROTEIN FORMS ION CHANNELS. Rustam Azimov, **Bruce L. Kagan**

2778-Pos BOARD #B470 EDUCATION TRAVEL AWARDEE
ALTERATIONS IN IONIC CURRENTS AND GAP JUNCTIONAL COUPLING BY PAN-HISTONE DEACETYLASE INHIBITION. **Dakshesh Patel**

2779-Pos BOARD #B471
SELF-ASSEMBLY OF THE VIRAL CHANNEL FORMING PROTEIN VPU OF HIV-1 USING COARSE-GRAINING MOLECULAR DYNAMICS SIMULATIONS. **Meng-Han Lin**, Wolfgang B. Fischer

2780-Pos BOARD #B472
ION-TRAPPING IN HCV P7 HEXAMERIC BUNDLES - A MOLECULAR DYNAMICS SIMULATION STUDY. **Wolfgang B. Fischer**, Yi-Ting Wang

2781-Pos BOARD #B473
STRUCTURE AND INHIBITION OF THE M2 PROTON CHANNEL FROM THE INFLUENZA A VIRUS. **Jun Wang**, Yibing Wu, William F. DeGrado

2782-Pos BOARD #B474
MECHANO-SENSITIVE ION CHANNELS (MSCS) PROVIDE HUMAN BREAST CANCER CELLS WITH A SENSORIUM FOR MECHANICAL STRESS. **Chouyang Li**, Simin Rezanian, Sarah Kammerer, Astrid Gorischek, Thomas Bauernhofer, Wolfgang Schreiber

2783-Pos BOARD #B475
 DIMINAZENE INTERACTION WITH ASIC1A CHANNELS.
Bogdan P. Amuzescu, Thomas Knott, Olaf Scheel, Dan Mihailescu, Maria Mernea

2784-Pos BOARD #B476
 EFFECTS OF DISEASE-ASSOCIATED MUTATIONS ON THE CONFORMATIONS OF GABA(A) RECEPTORS. **Sruthi Murlidaran**, Reza Salari, Grace Brannigan

2785-Pos BOARD #B477
 PROTEIN KINASE C-THETA CONTROLS THE CLC-1 CHLORIDE CHANNEL FUNCTION AND SKELETAL MUSCLE PHENOTYPE: A BIOPHYSICAL AND GENE EXPRESSION STUDY IN PKC-THETA NULL MICE. **Giulia M. Camerino**, Michela De Bellis, Maria Cannone, Antonella Liantonio, Kejla Musaraj, Jean-Francois Desaphy, Luca Madaro, Marina Bouchè, Sabata Pierno

2786-Pos BOARD #B478
 BLOCKING KCa1.1 CHANNELS INHIBITS THE PATHOGENIC FEATURES OF FIBROBLAST-LIKE SYNIOCYTES AND TREATS RAT MODELS OF RHEUMATOID ARTHRITIS. Mark R. Tanner, Xueyou Hu, Redwan Huq, Teresina Laragione, Rajeev B. Tajhya, Frank T. Horrigan, Percio S. Gulko, **Christine Beeton**

2787-Pos BOARD #B479
 THE FUNCTIONAL SWITCH IN POTASSIUM CHANNELS IN MYOTONIC DYSTROPHY TYPE 1 IMPAIRS PROLIFERATION, MIGRATION AND FUSION DURING MYOGENESIS. **Rajeev B. Tajhya**, Xueyou Hu, Mark R. Tanner, Lubov Timchenko, Christine Beeton

2788-Pos BOARD #B480
 ALTERED GATING OF KV1.3 CHANNELS OF T LYMPHOCYTES IN SMITH-LEMLI-OPITZ SYNDROME. **Andras Balajthy**, Sandor Somodi, Maria Peter, Zoltan Petho, Laszlo Vigh, Gyorgy Panyi, Peter Hajdu

2789-Pos BOARD #B481
 LOCALIZATION OF THE *PLASMODIUM FALCIPARUM* K⁺ CHANNEL, PFKCH1. **Matias Martin**, Mark Luciani, Anders Hay-Schmidt, Peter Ellekvist, Dan A. Klaerke

2790-Pos BOARD #B482
 MALIGNANT LYMPHOBLASTS IN T CELL ACUTE LYMPHOBLASTIC LEUKEMIA EXPRESS HIGH LEVELS OF KV1.3. **Eva Groessinger**, Lukas Weiss, Mingyi Chen, Heike Wulff, Richard Greil, Hubert Kerschbaum

2791-Pos BOARD #B483
 MARGATOXIN IS A NONSELECTIVE INHIBITOR OF KV1.3 CHANNELS - A COMPREHENSIVE STUDY. **Adam Bartok**, Agnes Toth, Peter Hajdu, Zoltan Varga, Gyorgy Panyi

2792-Pos BOARD #B484
 MECHANISMS OF ATP-SENSITIVE POTASSIUM CHANNEL OVERACTIVITY IN CANTU MUTANTS. **Paige Cooper**, Monica Sala-Rabanal, Colin Nichols

2793-Pos BOARD #B485
 TWO-PORE-DOMAIN TASK-1 POTASSIUM CHANNELS MODULATE PANCREATIC ISLET GLUCAGON SECRETION. Prasanna Dadi, Brooke Luo, **David Jacobson**

2794-Pos BOARD #B486
 CLONING OF EQUINE KCNH2 AND KCNQ1 AS THE BASIS FOR DIAGNOSING LONG QT SYNDROME IN HORSES. **Philip J. Pedersen**, Jon B. Flak, Rikke Buhl, Dan A. Klaerke

2795-Pos BOARD #B487 CPOW TRAVEL AWARDEE
 ISOGENIC SETS OF HUMAN PLURIPOTENT STEM CELLS AS MODEL OF LQT2 SYNDROME. **Simona Casini**, Milena Bellin, Richard P. Davis, Cristina D' Aniello, Jessica Haas, Dorien Ward-van Oostwaard, Leon G. J. Tertoolen, Karl-Ludwig Laugwitz, Alessandra Moretti, Christine L. Mummery

2796-Pos BOARD #B488
 DYNAMIC ACTION POTENTIAL CLAMP INVESTIGATION OF PRO-ARRHYTHMIC RISK OF DRUGS BINDING TO HERG POTASSIUM CHANNELS. **Stefan A. Mann**, Jamie I. Vandenberg

2797-Pos BOARD #B489
 CA²⁺ SENSITIVITY OF L-TYPE CALCIUM CHANNEL INACTIVATION PROBED BY CA²⁺ PHOTOUNCAGING—WINDOW ONTO CALMODULINOPATHIES. **Worawan Limpitikul**, David T. Yue

2798-Pos BOARD #B490
 TRAFFICKING-DEFECTIVE KIR6.1 (KATP) MUTATIONS IN SUDDEN INFANT DEATH SYNDROME. **Bi-Hua Tan**, Rou-Mu Hu, Blaise Peterson, Sinisa Dovat, Michael J. Ackerman, Jonathan C. Makielski, Chunhua Song

2799-Pos BOARD #B491
 HUMAN INDUCED PLURIPOTENT STEM CELL DERIVED CARDIOMYOCYTES (HIPS-CM'S): AN EXPRESSION MODEL SYSTEM FOR INVESTIGATING CARDIAC CHANNELOPATHIES. **Ravi Vaidyanathan**, John Kyle, Deborah L. Capes, Timothy J. Kamp, Craig T. January, Lee L. Eckhardt, Jonathan C. Makielski

2800-Pos BOARD #B492
 INTERLEUKIN 1B MODULATES THE VENTRICULAR L-TYPE CALCIUM CURRENT THROUGH ROS SIGNALLING. **Nabil El Khoury**, Sophie Mathieu, Céline Fiset

2801-Pos BOARD #B493
 A NOVEL NA_v1.1 MUTATION L1613P ASSOCIATED WITH FAMILIAL HEMIPLEGIC MIGRAINE. **Chunxiang Fan**, Frank Lehmann-Horn, Karin Jurkat-Rott

**Other Channels
 (Boards #B494–#B526)**

2802-Pos BOARD #B494 CPOW TRAVEL AWARDEE
 A LACK OF SIGNIFICANT LIPID INTERACTIONS IN THE OPEN STATE OF MSCS IMPLIES A JACK-IN-THE-BOX TYPE CHANNEL GATING MECHANISM. **Hannah R. Malcolm**, Paul Blount, Joshua A. Maurer

2803-Pos BOARD #B495
 FOLLOWING THE GLOBAL STRUCTURAL CHANGES OF AN ION CHANNEL DURING ITS GATING BY USING A NOVEL MASS SPECTROMETRY APPROACH. **Duygu Yilmaz**, Albert Konijnenberg, Helgi Ingólfsson, Anna Dimitrova, Siewert J. Marrink, Frank Sobott, Armağan Koçer

2804-Pos BOARD #B496
 THE RATE OF OSMOTIC SHOCK DETERMINES BACTERIAL SURVIVAL. **Heun Jin Lee**, Maja Bialecka-Fornal, Rob Phillips

2805-Pos BOARD #B497
 GATING MECHANISM OF MECHANOSENSITIVE ION CHANNELS STUDIED BY CONTINUUM MECHANICS. Navid Bavi, Takeshi Nomura, Qinghua Qin, **Boris Martinac**

- 2806-Pos BOARD #B498**
PORE PROPERTIES OF THE HUMAN PIEZO1 CHANNEL BASED ON CATION PERMEATION. **Radhakrishnan Gnanasambandam**, Chilman Bae, Philip A. Gottlieb, Frederick Sachs
- 2807-Pos BOARD #B499**
EFFECT OF INFLAMMATORY MEDIATORS ON CYTOSKELETAL STRESS AND ENDOGENOUS MECHANOSENSITIVE CURRENTS IN DORSAL ROOT GANGLION NEURONS. **Radhakrishnan Gnanasambandam**, Frederick Sachs, Thomas Suchyna
- 2808-Pos BOARD #B500**
RESONANCE OF AMPHOTERICIN B CHANNEL ACTIVITY IN LIPIDIC MEMBRANES. **Karla S. Récamier**, Javier González-Damián, Iván Ortega-Blake
- 2809-Pos BOARD #B501**
MOLECULAR DYNAMICS SIMULATION STUDY OF GRAMICIDIN LIKE CHANNEL. Shima Arasteh, Mohammad Hosein Karimi-Jafari, **Bahram Goliaei**
- 2810-Pos BOARD #B502**
GATING BY PROTEOLYSIS: HOW PANNEKXIN-1 IS MAINTAINED CLOSED BY ITS C-TERMINAL GATING PEPTIDE. **David H. Hackos**, Michelle Dourado
- 2811-Pos BOARD #B503**
COMPUTATIONAL STUDIES OF MOLECULAR PERMEATION THROUGH CONNEXIN26 CHANNELS. **Yun Luo**, Angelo R. Rossi, Taekyung Kwon, Thaddeus A. Bargiello, Andrew L. Harris
- 2812-Pos BOARD #B504**
ON THE USE OF CHEMICAL MODIFICATION TO DETERMINE CONNEXIN HEMICHANNEL TOPOLOGY AND FUNCTION. Tong Xuhui, William Lopez, Wafaa A. Ayad, Yu Liu, Angelica Lopez-Rodriguez, Andrew L. Harris, **Jorge E. Contreras**
- 2813-Pos BOARD #B505**
INVESTIGATION OF ION PERMEATION THROUGH THE CX26 HEMICHANNEL. **Marina Kasimova**, Alexey Shaytan, Konstantin Shaitan, Mounir Tarek
- 2814-Pos BOARD #B506**
THE RESIDUES IN THE FIRST EXTRACELLULAR DOMAIN PLAY AN IMPORTANT ROLE IN TRANSJUNCTIONAL-VOLTAGE DEPENDENT GATING AND UNITARY CONDUCTANCE OF CX50 GAP JUNCTION CHANNELS. **Xiaoling Tong**, Donglin Bai
- 2815-Pos BOARD #B507**
ROLE OF ANTIBIOTIC SIDE CHAINS IN UPTAKE THROUGH OMPST1 CHANNEL FROM PROVIDENCIA STUARTII. **Harsha Bajaj**, Jacques-Philippe Colletier, Jean-Marie Pagès, Matteo Ceccarelli, Mathias Winterhalter
- 2816-Pos BOARD #B508**
ANTIBIOTIC TRANSPORT THROUGH PORINS. **Harsha Bajaj**, Matteo Ceccarelli, Kozhinjampara Radhakrishnan Mahendran, Chloe E. James, Jean-Marie Pagès, Mathias Winterhalter
- 2817-Pos BOARD #B509**
CHARACTERIZATION OF A CYANOBACTERIAL OUTER MEMBRANE PROTEIN: AN E. COLI TOLC HOMOLOGUE FROM SYNECHOCYSTIS SP. PCC 6803. **Rachna Agarwal**, Stanislav D. Zakharov, S. Saif Hasan, Julian P. Whitelegge, William A. Cramer
- 2818-Pos BOARD #B510**
ELECTROPHYSIOLOGICAL ANALYSIS OF PAPC MUTANTS PROVIDES INSIGHTS INTO THE MECHANISM OF PLUG DISPLACEMENT. **Thieng Pham**, Nadine S. Henderson, Gilles Phan, Ender Volkan, Scott Hultgren, Gabriel Waksman, David G. Thanassi, Anne H. Delcour
- 2819-Pos BOARD #B511**
RECOMBINANT PRODUCTION OF HUMAN AQUAPORIN-1 TO AN EXCEPTIONAL HIGH MEMBRANE DENSITY IN SACCHAROMYCES CEREVISIAE. **Julie Bomholt**, Claus Hélix-Nielsen, Peter Scharff-Poulsen, Per Amstrup Pedersen
- 2820-Pos BOARD #B512**
AQUAPORIN TRAFFICKING AS A SPECIFIC REGULATORY MECHANISM TO ADJUST MEMBRANE WATER PERMEABILITY. **Gabriela Amodeo**, Yaneff Agustin, Jozefkowicz Cintia, Marquez Mercedes, Vitali Victoria, Scochera Florencia, Alleva Karina
- 2821-Pos BOARD #B513**
SELECTIVITY FILTER SCANNING OF THE HUMAN VOLTAGE GATED PROTON CHANNEL HHV1. **Deri Morgan**, Boris Musset, Vladimir V. Cherny, Susan M.E. Smith, Kethika Kulleperuma, Sindhu Rajan, Régis Pomès, Thomas E. DeCoursey
- 2822-Pos BOARD #B514**
THE PERMEATION PATHWAY MECHANISM IN CIONA INTESTINALIS HV CHANNEL. **Ester Otarola**, David E. Baez-Nieto, Gustavo Contreras, Osvaldo Yañez, Karen Castillo, Peter Larsson, Ramon Latorre, Carlos Gonzalez
- 2823-Pos BOARD #B515**
MECHANISM OF NON-SELECTIVITY IN NAK CHANNEL. **Van Ngo**, Haina Wu, Stephan Haas, Robert Farley
- 2824-Pos BOARD #B516**
STATISTICS OF SIMULATED ION CHANNELS. **Prashant Srinivasan**, Rishabh Kumar, Luis A. Palacio, Horia I. Petrache
- 2825-Pos BOARD #B517**
SCREENING FOR INFLUX THROUGH MEMBRANE PROTEINS ON THE SINGLE-MOLECULE LEVEL USING AN AUTOMATED AND PARALLEL LIPID BILAYER PLATFORM. **Mohamed Kreir**, Matthias Beckler, Astrid Seifert, Conrad Weichbrodt, Gerhard Baaken, Bert Van Den Berg, Jan C. Behrends, Niels Fertig
- 2826-Pos BOARD #B518**
MOLECULAR DYNAMICS SIMULATION OF FAST WATER TRANSPORT THROUGH AQUAPORIN-MIMIC NANPORES. Dai Tang, **Daejoong Kim**
- 2827-Pos BOARD #B519**
1/F FLUCTUATIONS OF AMINO ACIDS GENERATE NON-POISSON WATER TRANSPORTATION IN AQP1. **Eiji Yamamoto**, Takuma Akimoto, Yoshinori Hirano, Masato Yasui, Kenji Yasuoka
- 2828-Pos BOARD #B520**
THERMODYNAMICS OF WATER ENTRY IN AQUAPORINS. **Amir Barati Farimani**, Emad Tajkhorshid, Narayana Aluru
- 2829-Pos BOARD #B521**
ION TRANSPORT MODELLING FOR QUALITY ASSESSMENT OF TRANSMEMBRANE PROTEIN STRUCTURES. **Monika Kurczyńska**, Witold Dyrka, Bogumił M. Konopka, Małgorzata Kotulska

2830-Pos BOARD #B522
 BIOPHYSICAL PROPERTIES OF CX40 MUTANTS LINKED TO ATRIAL FIBRILLATION. **Virgis Valiunas**, Ana Santa Cruz, Laima Valiuniene, Gulistan Mese, Thomas W. White, Peter R. Brink

2831-Pos BOARD #B523 INTERNATIONAL TRAVEL AWARDEE
 THE MITOCHONDRIAL PERMEABILITY TRANSITION IN SACCHAROMYCES CEREVISIAE IS CONTROLLED BY HEXOSE PHOSPHATES FROM THE GLYCOLYTIC PATHWAY.
Monica Rosas-Lemus, Natalia Chiquete-Felix, Salvador Uribe-Carvajal

2832-Pos BOARD #B524
 ANO1 - A CANDIDATE FOR ANGIOTENSIN-II-ACTIVATED CALCIUM DEPENDENT CHLORIDE CHANNEL IN HUMAN ATRIAL FIBROBLASTS. Antoun El Chemaly, Caroline Norez, Christophe Magaud, Aurelien Chatelier, **Patrick Bois**

2833-Pos BOARD #B525
 EMERGING ELECTROPHYSIOLOGY OF FACULTATIVE BACTERIAL PATHOGENS. **Ian Rowe**, Vladislav Belyy, Andriy Anishkin, Herman Sintim, Anwar Huq, Sergei Sukharev

2834-Pos BOARD #B526
 THE COUPLING OF TENSION AND CROWDING SENSING IN THE BACTERIAL CHANNEL MSCS. Andriy Anishkin, Ian Rowe, **Sergei Sukharev**

Cardiac Muscle II (Boards #B527–#B558)

2835-Pos BOARD #B527
 THERMAL ACTIVATION OF CARDIAC THIN FILAMENTS INDUCES CONTRACTION WITHOUT INTRACELLULAR Ca^{2+} CHANGES: STUDIES WITH CARDIOMYOCYTES AND AN *IN VITRO* MOTILITY ASSAY. **Kotaro Oyama**, Shuya Ishii, Tomomi Arai, Seine A. Shintani, Hideki Itoh, Norio Fukuda, Madoka Suzuki, Shin'ichi Ishiwata

2836-Pos BOARD #B528
 FASTER CROSS-BRIDGE RELAXATION RATES CORRELATE WITH INCREASED TENSION COST IN HCM WITH THE R403Q *MYH7* MUTATION. Rosalie Witjas-Paalberends, Claudia Ferrara, Beatrice Scellini, Judith Montag, Ger Stienen, Theresia Kraft, Michelle Michels, Carolyn Ho, Corrado Poggesi, **Jolanda van der Velden**

2837-Pos BOARD #B529
 THE R403Q MUTATION ALTERS ISOMETRIC AND ENERGETIC PROPERTIES IN 2 MONTH MICE. **Camille Birch**, John Konhilas

2838-Pos BOARD #B530
 THE HCM MUTATION R453C IN THE HUMAN BETA MYOSIN MOTOR DOMAIN ALTERS THE ATP-BINDING AND HYDROLYSIS STEPS. Marieke Bloemink, John Deacon, Stephen Langer, Carlos Vera, Ariana Combs, Leslie Leinwand, **Michael A. Geeves**

2839-Pos BOARD #B531
 SPECTROSCOPIC SYSTEM FOR CHARACTERIZATION OF HUMAN β -CARDIAC MYOSIN. **Anja M. Swenson**, Donald A. Winkelmann, Christopher M. Yengo

2840-Pos BOARD #B532
 DIFFERENCES IN ACTIVATION AND RELAXATION KINETICS OF HUMAN FETAL SKELETAL AND CARDIAC MYOFIBRILS. **Alice Ward Racca**, Anita E. Beck, Michael J. Bamshad, Michael Regnier

2841-Pos BOARD #B533
 IMPROVED LOADED IN VITRO MOTILITY ASSAY AND ACTIN FILAMENT TRACKING SOFTWARE DELINEATES THE EFFECT OF HYPERTROPHIC AND DILATED CARDIOMYOPATHY MUTATIONS ON THE POWER OUTPUT OF CARDIAC MYOSIN. **Tural Aksel**, Masataka Kawana, Arjun Adhikari, Shirley Sutton, Kathleen Ruppel, James Spudich

2842-Pos BOARD #B534
 MODULATION OF THE CARDIAC SARCOMERE BY A SMALL MOLECULE AGENT MYK0000461: A POTENTIAL THERAPEUTIC FOR THE TREATMENT OF GENETIC HYPERTROPHIC CARDIOMYOPATHIES. **Hector M. Rodriguez**, Stephanie Whitman-Cox, Raja Kawas, Yonghong Song, Arvinder Sran, Johan Oslob

2843-Pos BOARD #B535
 BIOPHYSICAL ANALYSIS OF THE PUTATIVE HEART FAILURE DRUG OMECANTIV MECARBIL. **Joseph M. Muretta**, Ewa Prochniewicz, David D. Thomas

2844-Pos BOARD #B536
 IMPACT OF REGULATORY LIGHT CHAIN PHOSPHORYLATION ON THE STIFFNESS OF α AND β MYOSIN. Gerrie P. Farman, **Jeffery R. Moore**

2845-Pos BOARD #B537
 THE EFFECT OF MYOSIN REGULATORY LIGHT CHAIN PHOSPHORYLATION ON N47K MUTANT MYOSIN MECHANICS. **Anastasia Karabina**, Priya Muthu, Katarzyna Kazmierczak, Danuta Szczesna-Cordary, Jeffrey Moore

2846-Pos BOARD #B538
 VENTRICULAR MYOSIN MODIFIES IN VITRO STEP-SIZE WHEN PHOSPHORYLATED. **Yihua Wang**, Katalin Ajtai, Thomas P. Burghardt

2847-Pos BOARD #B539
 A13T MUTATION IN THE REGULATORY LIGHT CHAIN ASSOCIATED WITH CARDIAC HYPERTROPHY IMPOSES DIFFERENCES IN KINETICS OF HEALTHY AND DISEASED VENTRICLES. **Janhavi Nagwekar**, Divya Duggal, Krishna Midde, Priya Muthu, W Huang, Rafal Fudala, Ignacy Gryczynski, Zygmunt Gryczynski, Danuta Szczesna-Cordary, Julian Borejdo

2848-Pos BOARD #B540
 THE K104E MUTATION OF THE MYOSIN REGULATORY LIGHT CHAIN ALTERS KINETICS AND DISTRIBUTION OF ORIENTATIONS OF CROSS-BRIDGES IN TRANSGENIC CARDIAC MYOFIBRILS. **Divya Duggal**, Janhavi Nagwekar, Ryan Rich, W Huang, Krishna Midde, Rafal Fudala, Ignacy Gryczynski, D Szczesna-Cordary, Julian Borejdo

2849-Pos BOARD #B541
 MEASURING WORK LOOPS IN INTACT ISOLATED CARDIAC MYOCYTES BY CONTROLLING PRE- AND AFTERLOAD USING A NEW GENERATION FORCE TRANSDUCER. **Michiel Helmes**, Ernst J. Bree, Davide Iannuzzi, Jolanda van der Velden

2850-Pos BOARD #B542
 TEMPERATURE AND TRANSMURAL REGION INFLUENCE FUNCTIONAL MEASUREMENTS IN UNLOADED LEFT VENTRICULAR CARDIOMYOCYTES. **Charles S. Chung**, Kenneth S. Campbell

2851-Pos BOARD #B543
 A NOVEL METHOD FOR ISOLATING AND CULTURING HUMAN CARDIOMYOCYTES FROM CRYOPRESERVED TISSUES. **Carmine Gentile**, Bernard Kuehn, Michael J. Davies, Cristobal G. dos Remedios

2852-Pos BOARD #B544
PHYSIOLOGICAL CONTRACTILITY OF CARDIOMYOCYTES IN THE WALL OF MOUSE AND RAT AZYGOS VEIN. **Rong Liu**, Han-Zhong Feng, J.-P. Jin

2853-Pos BOARD #B545
ZEBRAFISH HEART AS A MODEL SYSTEM TO STUDY STRUCTURE-FUNCTION RELATIONSHIPS. **Alexey V. Dvornikov**, Sukriti Dewan, Olga V. Alekhina, F Bryan Pickett, Pieter P. de Tombe

2854-Pos BOARD #B546
MOLECULAR AND FUNCTIONAL CHARACTERIZATION OF UNIFORM-SIZED BEATING EMBRYOID BODIES AND CARDIOMYOCYTES FROM HUMAN EMBRYONIC AND INDUCED PLURIPOTENT STEM CELLS. Martin Pesl, Acimovic Ivana, Jan Pribyl, Renata Hezova, Aleksandra Vilotic, Franck Aimond, Jeremy Fauconnier, Jan Vrbsky, Peter Kruzliak, Peter Skladal, Tomas Kara, Vladimir Rotrekl, Alain Lacampagne, Petr Dvorak, **Albano C. Meli**

2855-Pos BOARD #B547
ASSESSING THE CONTRACTILITY OF HUMAN IPS DERIVED CARDIOMYOCYTES WITH ARRAYS OF MICROPOSTS. **Marita L. Rodriguez**, Brandon T. Graham, Lil M. Pabon, Sangyoon J. Han, Charles E. Murry, Nathan J. Sniadecki

2856-Pos BOARD #B548
MECHANICAL ANALYSIS OF SINGLE MYOCYTE CONTRACTION IN A 3D ELASTIC MATRIX. **John Shaw**, Leighton Izu, Ye Chen-Izu

2857-Pos BOARD #B549
LOCALIZED NITRIC OXIDE SIGNALING MEDIATES CARDIAC MECHANO-CHEMOTRANSDUCTION. Zhong Jian, Huilan Han, Tieqiao Zhang, Jose Puglisi, Leighton T. Izu, John Shaw, Yi-Je Chen, Rafael Shmunkunas, Nipavan Chiamvimonvat, Donald M. Bers, Kit S. Lam, **Ye Chen-Izu**

2858-Pos BOARD #B550
CARDIOMYOPATHY CTNT MUTATION IN PATIENT DERIVED CARDIOMYOCYTES FROM INDUCED PLURIPOTENT STEM CELLS AFFECTS SARCOMERE STRUCTURE AND FUNCTION. **Kathleen M. Broughton**, Veronica Sanchez-Freire, Joseph C. Wu, Beata M. Wolska, Ross J. Solaro, Brenda Russell

2859-Pos BOARD #B551
CONTRACTILE STRUCTURE-FUNCTION OF PARVALBUMIN'S EF-HAND METAL ION BINDING LOOP IN ISOLATED ADULT CARDIAC MYOCYTES. **Michelle L. Asp**, Joseph M. Metzger

2860-Pos BOARD #B552
PHOSPHOLAMBAN AND SARCOLIPIN PENTAMERS NATURALLY ASSOCIATE WITH THE SARCOPLASMIC RETICULUM CALCIUM PUMP. John Paul Glaves, Przemek Gorski, Joseph Primeau, Catharine Trieber, **Howard S. Young**

2861-Pos BOARD #B553
PHOSPHOLAMBAN C-TERMINAL TRUNCATIONS INCLUDING HEART FAILURE MUTATION L39STOP DECREASE MEMBRANE LOCALIZATION AND OLIGOMERIZATION AND ALTER THE STRUCTURE OF THE PLB-SERCA COMPLEX. **Neha Abrol**, Nikolai Smolin, Delaine K. Ceholski, Howard S. Young, Seth L. Robia

2862-Pos BOARD #B554
FLUORESCENCE RESONANCE ENERGY TRANSFER REVEALS THAT SERCA DIMERIZES AND FORMS A COMPLEX WITH PHOSPHOLAMBAN IN A 2:1 STOICHIOMETRY. **Daniel Blackwell**, Seth L. Robia

2863-Pos BOARD #B555
CLINICAL TRIALS OF GENE THERAPY FOR HEART FAILURE: QUANTITATION OF THE CARDIAC CALCIUM PUMP BY IMMUNOCHEMISTRY. **Holly R. Langer**, Joseph M. Autry, Brock Carlson, Margaret Gadek, David D. Thomas

2864-Pos BOARD #B556
SARCOPLASMIC RETICULUM-INDEPENDENT CONTRACTILE FUNCTION IN SERCA2 ABLATED HEARTS. **Frazer I. Heinis**, Joseph M. Metzger

2865-Pos BOARD #B557
SIMULTANEOUS IMAGING OF LOCAL CALCIUM AND SINGLE SARCOMERE LENGTH IN RAT NEONATAL CARDIOMYOCYTES VIA EXPRESSION OF CAMELEON-NANO IN Z-DISCS. **Seiichi Tsukamoto**, Kotaro Oyama, Seine A. Shintani, Norio Fukuda, Shin'ichi Ishiwata

2866-Pos BOARD #B558
REAL-TIME INTRACELLULAR CALCIUM IMAGING IN THE HEART. **Erisa Hirokawa**, Kotaro Oyama, Takako Terui, Togo Shimozawa, Shin'ichi Ishiwata, Norio Fukuda

Actin and Actin-binding Proteins II (Boards #B559–#B575)

2867-Pos BOARD #B559
STRUCTURAL ANALYSIS OF INTRINSICALLY DISORDERED PROTEIN (IDP): TRIOBP. Laura K. Gunther, Jianjun Bao, Kavitha Thirumurugan, Shin-ichiro Kitajiri, **Takeshi Sakamoto**

2868-Pos BOARD #B560
MYOSIN II DOES IT ALL: ASSEMBLY, REMODELING, AND DISASSEMBLY OF ACTIN NETWORKS ARE GOVERNED BY MYOSIN II ACTIVITY. **Yaron Ideses**, Anne Bernheim, Adar Sonn, Yael Roichman

2869-Pos BOARD #B561
REGULATION OF ACTIN DYNAMICS BY TROPOMYOSIN. **Sofia Yu. Khaitlina**, Horst Hinssen

2870-Pos BOARD #B562
REGULATION OF NONMUSCLE MYOSIN II BY TROPOMYOSIN ISOFORMS. **Bipasha Barua**, Attila Nagy, James R. Sellers, Sarah E. Hitchcock-DeGregori

2871-Pos BOARD #B563
GEOMETRICAL AND MECHANICAL PROPERTIES CONTROL ACTIN FILAMENT ORGANIZATION. **Gaëlle Letort**, Antonio Politi, Hajer Ennomani, Manuel Thery, Francois Nedelec, Laurent Blanchoin

2872-Pos BOARD #B564
THE ROLE OF CALDESMON AND ITS PHOSPHORYLATION BY ERK ON THE BINDING FORCE OF UNPHOSPHORYLATED MYOSIN TO ACTIN. **Horia N. Roman**, Nedjma B. Zitouni, Linda Kachmar, Apolinary Sobieszek, Anne-Marie Lauzon

2873-Pos BOARD #B565
ACTOMYOSIN REGULATION BY TM5NM1, A NON-MUSCLE ISOFORM OF TROPOMYOSIN. **Bipasha Barua**, Gioia Kennedy, Parry Mendapara, Ravi Shah

2874-Pos BOARD #B566
COFILIN BINDING TO GLOBULAR AND FILAMENTOUS ACTIN. Joo-Mee Hwang, Yaxin Lu, Murat Kekic, Deepak Chhabra, Peter Fajer, **Brett D. Hambly**

2875-Pos BOARD #B567
FUNCTIONAL DIFFERENCES OF UNBOUND AND WEAKLY BOUND XB STATES IN THE CARDIAC MYOFILAMENT.
Bing Sun, Maria E. Moutsoglou, John M. Robinson

2876-Pos BOARD #B568
BINDING OF NUCLEOCAPSID DOMAIN OF HIV GAG PROTEIN TO ACTIN. **Albina Orlova**, Steve L. Alam, Wes Sundquist, Edward H. Egelman

2877-Pos BOARD #B569
DO CARDIAC ACTIN MUTATIONS LEAD TO ALTERED MUSCLE CONTRACTILITY? Marissa Dahari, Fan Bai, Masataka Kawai, **John F. Dawson**

2878-Pos BOARD #B570
DIRECT MEASUREMENT OF THERMODYNAMIC PARAMETERS OF COFILIN-ACTIN FILAMENT INTERACTIONS AT THE SINGLE MOLECULE LEVEL. **Kimihide Hayakawa**, Shotaro Sakakibara, Hitoshi Tatsumi, Masahiro Sokabe

2879-Pos BOARD #B571
SIMULTANEOUS TRACKING OF MULTIPLE MYOSINS IN SUB-DIFFRACTION SCALE BASED ON SPECTRAL DIVISION. Taishi Kakizuka, **Taro Ichimura**, Hideaki Fujita, Tomonobu M. Watanabe

2880-Pos BOARD #B572
FUNCTIONAL CHARACTERIZATION OF DISEASE-RELATED HUMAN β -ACTIN MUTANTS. **Nikolas Hundt**, Mirco Müller, Olga Swolski, Dietmar J. Manstein

2881-Pos BOARD #B573
STRUCTURAL AND FUNCTIONAL CHARACTERIZATION OF NONMUSCLE MYOSIN-2B IN THE PRESENCE OF REGULATED ACTIN FILAMENTS. **Salma Pathan-Chhatbar**, Stefan Münnich, Nikolas Hundt, Manuel Taft, Dietmar Manstein

2882-Pos BOARD #B574
MAPPING ANILLIN-ACTIN INTERACTIONS. Louis-Philippe Picard, Silvana Jananji, Gilles Hickson, **Vitold E. Galkin**

2883-Pos BOARD #B575
DREBRIN IS A LEAKY CAPPER OF ACTIN FILAMENTS MODULATING THE EFFECTS OF FORMINS. **Elena E. Grintsevich**, Pinar S. Gurel, Henry N. Higgs, Emil Reisler

Cell Mechanics and Motility III (Boards #B576–#B605)

2884-Pos BOARD #B576
ON THE MECHANISM OF DUROTAXIS IN MOTILE CELLS. **Maryam Riaz**, Marie Versaevel, Sylvain Gabriele

2885-Pos BOARD #B577
NEURON SUB-COMPARTMENTS EXHIBIT OPPOSITE RHEOLOGICAL AND MECHANOSENSITIVE PROPERTIES. **Sylvain Gabriele**

2886-Pos BOARD #B578
LAMINS REGULATE CELL TRAFFICKING AND LINEAGE MATURATION OF HEMATOPOIETIC CELLS. **Dennis E. Discher**, Joe Swift, Kyle Spinler, Jae-Won Shin

2887-Pos BOARD #B579
EXTRACELLULAR MATRIX ELASTICITY DETERMINES STEM CELL FATE THROUGH STRETCH-ACTIVATED ION CHANNELS. **Medha M. Pathak**, Jamison L. Nourse, Truc Tran, Janahan Arulmoli, Lisa A. Flanagan, Francesco Tombola

2888-Pos BOARD #B580
EFFECT OF GENERAL ANESTHETICS AND ALCOHOLS ON PRESTIN (SLC26A5) FUNCTION. **Guillaume Duret**, Robert Raphael

2889-Pos BOARD #B581
THEORETICAL AND EXPERIMENTAL FRAMEWORK OF NEURITE RESPONSE TO CHEMICAL GRADIENTS IN 3D MATRICES. **Parthasarathy Srinivasan**, Ioannis K. Zervantonakis, Chandrasekhar R. Kothapalli

2890-Pos BOARD #B582
SINGLE-MOLECULE ANALYSIS OF LFA-1/ICAM-1 BINDING IN LYMPHOCYTE. **Naoyuki Kondo**, Yoshihiro Ueda, Tatsuo Kinashi

2891-Pos BOARD #B583
BAYESIAN ANALYSIS DISTINGUISHES BROWNIAN MOTION FROM MOTOR-DRIVEN TRANSPORT WITHIN ORGANELLE TRAJECTORIES. **George Holzwarth**, Amanda M. Smelser, Matthew J. Martin

2892-Pos BOARD #B584
MISMATCH REPAIR PROTEIN MOBILITY IN HUMAN CANCER CELLS. **Keith D. Bonin**, Justin Sigley, Martin Guthold, Karin Scarpinato, John Jarzen

2893-Pos BOARD #B585
CHROMATIN MECHANICALLY BUFFERS CYTOSKELETAL FORCES AT THE NUCLEAR ENVELOPE. **Megan C. King**

2894-Pos BOARD #B586
QUANTIFICATION OF DIRECTIONAL MIGRATION BY A CHARACTERISTIC DIRECTIONALITY TIME. **Alex J. Loosley**, Xian M. O'Brien, Jonathan S. Reichner, Jay X. Tang

2895-Pos BOARD #B587
IMPACT OF CELL SHAPE ON CELL MIGRATION BEHAVIOR ON ELASTIC SUBSTRATE. **Baohua Ji**

2896-Pos BOARD #B588
TWO-COMPONENT DISSIPATIVE PARTICLE DYNAMICS MODEL OF RED BLOOD CELLS. **Zhangli Peng**, Igor V. Pivkin, Xuejin Li, George E. Karniadakis, Ming Dao

2897-Pos BOARD #B589
INSIGHTS INTO CYTOPLASMIC RHEOLOGY GAINED FROM MODELING CELLULAR BLEBBING. **Wanda Strychalski**, Robert D. Guy

2898-Pos BOARD #B590
MYOSIN II FUNCTIONS AS A DIRECT MECHANOSENSOR FOR INTERCELLULAR INVASION DURING CELL-CELL FUSION. Ji Hoon Kim, Yixin Ren, Shuo Li, Yee Kee, Guofeng Zhang, Douglas Robinson, **Elizabeth Chen**

2899-Pos BOARD #B591
ELECTROMECHANICAL MODEL FOR EUKARYOTIC CELLS. **Florence H. Yellin**, Brenda Farrell, Varun KAC Sreenivasan, Sean X. Sun

2900-Pos BOARD #B592
MOLECULAR MECHANISMS UNDERLYING THE INSIDE-OUT SIGNALING THROUGH FOCAL ADHESIONS. **Hengameh Shams**, Mohammad R. K. Mofrad

2901-Pos BOARD #B593
QUANTITATIVE DETERMINATION OF CELL WALL MECHANICAL PROPERTIES USING MICROFLUIDICS. Amir Sanati Nezhad, Muthukumaran Packirisamy, **Anja Geitmann**

2902-Pos BOARD #B594
ASSESSING THE INFLUENCE OF ELECTRIC CUES AND CONDUCTIVITY ON POLLEN TUBE GROWTH VIA LAB-ON-A-CHIP TECHNOLOGY. **Carlos G. Agudelo**, Muthukumaran Packirisamy, Anja Geitmann

2903-Pos BOARD #B595
KERATINS SIGNIFICANTLY CONTRIBUTE TO CELL STIFFNESS AND IMPACT INVASIVE BEHAVIOR. **Josef A. Käs**, Anatol Fritsch, Kristin Seltmann, Thomas Magin

2904-Pos BOARD #B596
DRY MASS AND CELL CYCLE FOLLOW-UP FROM QUANTITATIVE PHASE IMAGING. **Julien Savatier**, Sherazade Aknoun, Pierre Bon, Lamiae Abdeladim, Benoit Wattellier, Serge Monneret

2905-Pos BOARD #B597
HOW EMBRYONIC CARTILAGE GROWS: INSIGHTS GAINED FROM QUANTITATIVE LIVE IMAGING. **Vikas Trivedi**, Yuwei Li, Thai V. Truong, David Koos, Chuong Cheng-Ming, Rex Moats, Scott E. Fraser

2906-Pos BOARD #B598
OPTICAL MEASUREMENT OF BIOMECHANICAL PROPERTIES OF HUMAN RED BLOOD CELL USING DIGITAL HOLOGRAPHIC MICROSCOPY: MALARIA AND SICKLE CELL DISEASES. Youngchan Kim, HeeSu Byun, **YongKeun Park**

2907-Pos BOARD #B599
THE NANOSCALE ORGANIZATION OF FOCAL ADHESION SIGNALING COMPLEXES CAN REFLECT CHANGES IN CELLULAR CONTRACTILITY AND MOTILITY. **Matthew G. Rubashkin**, Christopher Dufort, Patrick Oakes, Matthew Paszek, Guanqing Ou, Johnathan Lakins, Michael Davidson, Margaret Gardel, Valerie Weaver

2908-Pos BOARD #B600
MICRORHEOLOGY INSIDE CANCER CELLS ON MICROPATTERNED SUBSTRATES. **Kalpna Mandal**, Timo Betz, Bruno Goud, Jean-Baptiste Manneville

2909-Pos BOARD #B601
THE ACTIVATION OF DIRECTIONAL STEM CELL MOTILITY BY GREEN LIGHT-EMITTING DIODE IRRADIATION. Wei-Kee Ong, How-Foo Chen, Oscar Lee, Shu Chien, **Jennifer Ho**

2910-Pos BOARD #B602
TOWARDS A MECHANISTIC UNDERSTANDING OF CELLULAR UPTAKE. **Sabyasachi Dasgupta**, Thorsten Auth, Gerhard Gompper

2911-Pos BOARD #B603
MECHANOCHEMICAL MODEL OF ENDOCYTOSIS IN YEAST. **Anders E. Carlsson**, Philip V. Bayly

2912-Pos BOARD #B604
NUCLEAR DEFORMABILITY IS CRITICALLY DEPENDENT ON LAMIN A/B. **Janina R. Lange**, Michael Haug, Thorsten Kolb, Sahratha Albert, Graeme Whyte, Ben Fabry

2913-Pos BOARD #B605
CONTRACTILE FORCES DURING ECM RIGIDITY SENSING ARE REGULATED BY TROPOMYOSIN-1. **Haguy Wolfenson**, Shuaimin Liu, Saba Ghassemi, Giovanni Meacci, James Hone, Michael P. Sheetz

Bacteria Mechanics and Motility (Boards #B606–#B626)

2914-Pos BOARD #B606
CURVATURE-DEPENDENT LOCALIZATION OF THE BACTERIAL CYTOSKELETON DRIVES DE NOVO MORPHOGENESIS IN ESCHERICHIA COLI. **Gabriel H. Billings**, Nikolay Ouzounov, Tristan Ursell, Joshua W. Shaevitz, Zemer Gitai, Kerwyn Casey Huang

2915-Pos BOARD #B607
THE BACTERIAL BRAIN: STRUCTURE AND DYNAMICS OF A BACTERIAL CHEMORECEPTOR ARRAY. **Christopher K. Cassidy**

2916-Pos BOARD #B608
ELASTICITY MEDIATED INTERACTIONS OF MOTILE BACTERIA WITH ANISOTROPIC VISCOELASTIC MEDIUM. **Rishi R. Trivedi**

2917-Pos BOARD #B609
RHEOLOGICAL BEHAVIOR OF A SUSPENSION OF ESCHERICHIA COLI WITH VARYING MOTOR CHARACTERISTICS. **Richa Karmakar**, Mahesh S. Tirumkudulu, K. V. Venkatesh

2918-Pos BOARD #B610
STABILIZING AND CONTROLLING SWIMMING BACTERIA: SHAPING A TURBULENT SUSPENSION INTO A FERROMAGNETIC STATE. **Hugo Wioland**, Francis G. Woodhouse, Jörn Dunkel, Enkeleida Lushi, Raymond E. Goldstein

2919-Pos BOARD #B611
STEPPING DYNAMICS OF THE BACTERIAL FLAGELLAR MOTOR. **Ashley L. Nord**, Bradley C. Steel, Richard M. Berry

2920-Pos BOARD #B612
QUANTITATION OF CELL WALL GROWTH SUGGESTS FEEDBACK MECHANISMS THAT ROBUSTLY BUILD ROD-LIKE BACTERIA. **Tristan Ursell**, Kerwyn Casey Huang

2921-Pos BOARD #B613
SURVIVING A BUMPY RIDE IN THE OROPHARYNX: BACTERIAL PILI AS NANO-SEATBELTS THAT DISSIPATE MECHANICAL ENERGY. **Daniel Echelman**, Jorge Alegre-Cebollada, Georgia Squyres, Carmelu Fernandez, Chungyu Chang, Hung Ton-That, Julio Fernandez

2922-Pos BOARD #B614
PRESSURE-SPEED RELATIONSHIP OF THE SODIUM-DRIVEN FLAGELLAR MOTOR OF VIBRIO ALGINOLYTICUS. **Masayoshi Nishiyama**, Yoshiki Shimoda, Yoshifumi Kimura, Masahide Terazima, Michio Homma, Seiji Kojima

2923-Pos BOARD #B615
MOTILITY ENHANCEMENT THROUGH SURFACE MODIFICATION IS SUFFICIENT FOR EMERGENT BEHAVIORS DURING PHOTOTAXIS. **Rosanna Man Wah Chau**, Devaki Bhaya, Kerwyn Casey Huang

2924-Pos BOARD #B616
HIGH THROUGHPUT 3D PALM IMAGING ELUCIDATES MECHANISMS OF BACTERIAL CELL DIVISION. Seamus Holden, Thomas Pengo, Karin Miebom, Justine Collier, **Suliana Manley**

2925-Pos BOARD #B617
ROLE OF CELL WALL HYDROLASES IN *STAPHYLOCOCCUS AUREUS* CELL DIVISION. **Xiaoxue Zhou**, David K. Halladin, Enriquet R. Rojas, Julie A. Theriot

2926-Pos BOARD #B618
 RESOLVING A FUNCTION FOR BACTERIAL CELL SHAPE: CURVATURE ENHANCES CAULOBACTER CRESCENTUS SURFACE COLONIZATION. **Alexandre Persat**, Howard A. Stone, Zemer Gitai

2927-Pos BOARD #B619
 SPATIOTEMPORAL EVOLUTION OF ERYTHEMA MIGRANS, THE HALLMARK RASH OF LYME DISEASE. **Dhruv K. Vign**

2928-Pos BOARD #B620
 CHRONIC WOUND HEALING AND WOUNDBED-BIOFILM INTERACTIONS IN SILICO. **M vandeVen**

2929-Pos BOARD #B621
 BIOCHEMICAL AND STRUCTURAL CHARACTERIZATION OF AN ARCHAEOAL FLAGELLA. **Nicole L. Poweleit**, Peng Ge, Rachel Loo, Z. Hong Zhou, Robert Gunsalus

2930-Pos BOARD #B622
 ESCAPING FROM SWARMS. **Katherine Copenhagen**, David Quint, Ajay Gopinathan

2931-Pos BOARD #B623
 POST-TRANSCRIPTIONAL AND POST-TRANSLATIONAL CONTROL OF THE FLAGELLAR REGULON RESCUES MOTILITY OF A SALMONELLA ENTERICA TYPE III EXPORT FLIO MUTANT. **Clive S. Barker**, Irina V. Meshcheryakova, Tomoharu Inoue, Fadel A. Samatey

2932-Pos BOARD #B624
 S. AUREUS ADAPT TO GROWTH CONDITIONS BY CHANGING MEMBRANE ORDER. Maria I. Perez, Steven M. Trier, Adriana Bernal, Juan Camilo Vargas, Cornelia Herrfurth, Ivo Feussner, John Mario Gonzalez, **Chad Leidy**

2933-Pos BOARD #B625
 LONG-TERM VISUALIZATION OF MICRO VORTICES IN *BACILLUS SUBTILIS* BACTERIAL BIOFILM ON AGAR PLATE USING PARTICLE IMAGE VELOCIMETRY. **Kyunghoon Kim**, Jung Kyung Kim

2934-Pos BOARD #B626
 NON-GAUSS AETHERMAL FLUCTUATIONS IN BACTERIAL BATH. **Masato Aridome**, Takashi Kurihara, Heev Ayade, Irwin Zaid, Daisuke Mizuno

Membrane Pumps, Transporters, and Exchangers II (Boards #B627-#B655)

2935-Pos BOARD #B627 INTERNATIONAL TRAVEL AWARDEE
 REGULATION OF THE CARDIAC SODIUM/CALCIUM EXCHANGER BY PROTEIN PALMITOYLATION. **Louise Reilly**, Donald W. Hilgemann, Michael L J Ashford, William Fuller

2936-Pos BOARD #B628
 THE HUMAN RED BLOOD CELL K^+/CA^{2+} EXCHANGER: EFFECT OF INTERNAL PH. Maryant Paredes, Angeles Zambrano-Arnone, **Jesus G. Romero**

2937-Pos BOARD #B629
 FUNCTIONAL CHARACTERIZATION OF BACTERIAL NCX BY SURFACE SUPPORTED MEMBRANE TECHNOLOGY. **Maria Barthmes**, Jun Liao, Christian Wahl-Schott, Youxing Jiang, Andrea Brüggemann

2938-Pos BOARD #B630
 FOUR HISTIDINES ACCOUNT FOR THE INHIBITORY EFFECT OF PROTONS ON THE CARDIAC NA^+-CA^{2+} EXCHANGER. **Michela Ottolia**, Scott John, Joshua I. Goldhaber

2939-Pos BOARD #B631
 MITOFERRIN-2 (MFRN2) REGULATES THE ELECTROGENIC MITOCHONDRIAL CALCIUM UNIPORTER AND INTERACTS PHYSICALLY WITH MCU. Anna-Liisa Nieminen, Justin Schwartz, Hsin-I Hung, E Riley Blocker, Monika Gooz, **John J. Lemasters**

2940-Pos BOARD #B632 INTERNATIONAL TRAVEL AWARDEE
 K^+ TRANSLOCATION BY THE GIANT AXON OF THE HUMBOLDT SQUID NA^+/K^+ ATPASE. **Juan P. Castillo**, Daniel Basilio, Ramon Latorre, Francisco Bezanilla, Miguel Holmgren

2941-Pos BOARD #B633
 CONFORMATIONAL REARRANGEMENTS OF THE NA^+/K^+ ATPASE DURING NA^+ OCCLUSION/DEOCCLUSION TRANSITIONS ASSESSED BY SITE-DIRECTED FLUORESCENCE. **Jorge E. Sánchez-Rodríguez**, Pablo Miranda-Fernández, Miguel Holmgren, Francisco Bezanilla

2942-Pos BOARD #B634
 STATE-DEPENDENT MOVEMENT BETWEEN THE FIRST AND LAST EXTERNAL LOOPS OF THE NA^+/K^+ PUMP α SUBUNIT. Sukanyalakshmi Chebrolu, Hongtao Ma, **Pablo Artigas**

2943-Pos BOARD #B635
 SINGLE-MOLECULE MEASUREMENTS TO INVESTIGATE THE NEGATIVE COOPERATIVITY IN NA^+/K^+ -ATPASE. **Sushi Madhira**, Promod R. Pratap, Don C. Lamb

2944-Pos BOARD #B636
 THE MOLECULAR MECHANISM OF NA^+ , K^+ -ATPASE MALFUNCTION IN MUTATIONS CHARACTERISTIC FOR ADRENAL HYPERTENSION. **Wojciech Kopec**, Bastien Loubet, Hanne Poulsen, Himanshu Khandelia

2945-Pos BOARD #B637
 GLUTATHIONYLATION OF THE $NA^+ K^+$ PUMP. Wojciech Kopec, Bastien Loubet, **Himanshu Khandelia**

2946-Pos BOARD #B638
 SUPERINHIBITORY PHOSPHOLEMMAN MUTANTS AS POTENTIAL THERAPEUTICS FOR HEART FAILURE. **Ryan Himes**, Julie Bossuyt, Donald M. Bers, Seth L. Robia

2947-Pos BOARD #B639
 MOLECULAR DYNAMICS SIMULATIONS HELPS TO RATIONALIZE COPB MUTATIONS AND THEIR RELATIONSHIPS TO WILSON DISEASE. Samuel Jayakanthan, Megan M. McEvoy, **Thomas B. Woolf**

2948-Pos BOARD #B640
 PEPTIDE-BASED APPROACH TO STUDY CYTOSOLIC DOMAIN INTERACTIONS IN A BACTERIAL COPPER-TRANSPORTING ATPASE. **Ahmed Sayed**, Yixin Zhang, Karim Fahmy

2949-Pos BOARD #B641
 CONFORMATIONAL TRANSITIONS IN ATP-DRIVEN CALCIUM PUMP SERCA. **Avishek Das**, Benoit Roux

2950-Pos BOARD #B642
 PROTONATION-DEPENDENT STRUCTURAL TRANSITIONS OF THE CALCIUM PUMP STUDIED BY MICROSECOND MOLECULAR DYNAMICS SIMULATIONS. **L. Michel Espinoza-Fonseca**, David D. Thomas

2951-Pos BOARD #B643
 ENVIRONMENTAL INFLUENCES ON STATES: MOLECULAR DYNAMICS SIMULATIONS OF SERCA. **Anu Nagarajan**, Thomas B. Woolf

2952-Pos BOARD #B644
 MULTIFREQUENCY EPR DETECTS ORIENTATION OF CALCIUM TRANSPORT PROTEINS IN LIPID BICELLES.
Jesse E. McCaffrey, Zachary M. James, Christine B. Karim, David D. Thomas

2953-Pos BOARD #B645
 THE MECHANISM OF UNCOUPLING ATP HYDROLYSIS AND CALCIUM TRANSPORT IN SERCA BY SARCOLIPIN.
Alysha A. Dicke, Kaustubh R. Mote, Gianluigi Veglia

2954-Pos BOARD #B646
 SARCOLIPIN REGULATION OF SERCA IS DISTINCT FROM PHOSPHOLAMBAN. **Sanjaya K. Sahoo**, Sana A. Shaikh, Danesh H. Sopariwala, Naresh C. Bal, Muthu Periasamy

2955-Pos BOARD #B647
 SOLID-STATE NMR STRUCTURES OF PHOSPHOLAMBAN OR SARCOLIPIN BOUND TO CALCIUM ATPASE (SERCA) REVEAL THE MODE OF INHIBITION. **Vitaly V. Vostrikov**, Kaustubh R. Mote, Martin Gustavsson, Gopinath Tata, Alessandro Cembran, Gianluigi Veglia

2956-Pos BOARD #B648
 MOLECULAR DYNAMICS SIMULATION OF SERCA AND PLB OLIGOMERS. **Nikolai Smolin**, Neha Abrol, Seth L. Robia

2957-Pos BOARD #B649
 SUPER-INHIBITORY PHOSPHOLAMBAN MUTANTS COMPETITIVELY DISPLACE WILD-TYPE PHOSPHOLAMBAN FROM THE CALCIUM-FREE CARDIAC CALCIUM PUMP.
Zhenhui Chen

2958-Pos BOARD #B650
 DISTINCT FUNCTIONAL EFFECTS OF PHOSPHOLAMBAN PHOSPHORYLATION STATES. **Naa-Adjeley D. Ablorh**, Xiaoqiong Dong, Zachary M. James, Holly R. Langer, David D. Thomas, Christine B. Karim

2959-Pos BOARD #B651
 PHOSPHORYLATION ALTERS THE TRANSMEMBRANE BINDING INTERFACE BETWEEN PHOSPHOLAMBAN AND SERCA.
Zachary M. James, Jesse E. McCaffrey, Kurt D. Torgersen, Christine B. Karim, David D. Thomas

2960-Pos BOARD #B652
 REGULATORY MECHANISM OF SERCA-PLB COMPLEX DETERMINED BY FRET. **Xiaoqiong Dong**, David D. Thomas

2961-Pos BOARD #B653
 POLYAMINES DEPOLARIZE THE MEMBRANE AND INITIATE A CROSS-TALK BETWEEN PLASMA MEMBRANE Ca^{2+} AND H^{+} PUMPS. **Igor Pottosin**, Ana María Velarde-Buendía, Jayakumar Bose, Anja T. Fuglsang, Sergey Shabala

2962-Pos BOARD #B654
 STRUCTURE/FUNCTION ANALYSIS OF THE UBIQUITOUS SECRETORY PATHWAY Ca^{2+} PUMP SPCA1A.
Ilse Vandecaetsbeek, Jialin Chen, Susanne Smaardijk, Jan Eggemont, Peter Vangheluwe

2963-Pos BOARD #B655
 ORIENTAL PLANT ALKANNA ORIENTALIS EXTRACTS EFFECTS ON ENTEROCOCCAL MEMBRANE-ASSOCIATED PROPERTIES. **Anna Poladyan**, Zaruhi Vardanyan, Margarit Petrosyan, Armen Trchounian

Electron and Proton Transfer (Boards #B656–#B672)

2964-Pos BOARD #B656
 BRIDGING A GAP BETWEEN CYTOCHROME BC1 COMPLEX STRUCTURE AND FUNCTION. **Pekka A. Postila**, Oana Cramariuc, Sanja Pöyry, Karol Kaszuba, Ilpo Vattulainen, Marcin Sarewicz, Artur Osyczka, Tomasz Róg

2965-Pos BOARD #B657
 ACCURATE SIMULATION OF UBIQUINONE PARTITION AND DIFFUSION IN A BACTERIAL-LIKE MEMBRANE MODEL: TOWARDS RELIABLE ESTIMATES OF THE ENERGETICS INVOLVED IN THE Q-CYCLE MECHANISM OF CYTOCHROME BC1. **Vanesa V. Galassi**, João P. V. Camargo da Silva, Guilherme Menegon Arantes

2966-Pos BOARD #B658
 COMPUTATIONAL STUDIES OF ELECTRON TUNNELING IN RESPIRATORY COMPLEX III. **Muhammad A. Hagra**, Tomoyuki Hayashi, Alexei A. Stuchebrukhov

2967-Pos BOARD #B659
 THE ROLES OF THE HIGHLY CONSERVED AMINO ACID RESIDUES VAL236 AND GLY232 IN THE LIGAND CHANNEL OF Ba_3 CYTOCHROME C OXIDASE FROM *THERMUS THERMOPHILUS*. **Chie Funatogawa**, Yang Li, Ying Chen, Istvan Szundi, James A. Fee, C. David Stout, Olof Einarsdóttir

2968-Pos BOARD #B660
 SPECTROSCOPIC INVESTIGATION OF THE ROLES OF F282 AND W172 IN THE LIGAND PATHWAY OF Aa_3 CYTOCHROME C OXIDASE FROM *RHODOBACTER SPHAEROIDES*.
Jennifer A. Cassano, Sylvia Choi, Terra Villa Gawboy, Robert B. Gennis, Olof Einarsdóttir

2969-Pos BOARD #B661
 STUDY OF A RESPIRATORY SUPERCOMPLEX FROM THE LOW GC FIRMICUTE *GEOBACILLUS STEAROTHERMOPHILUS*.
Lucie Bergdoll, Frauke Baymann, Daniel Picot

2970-Pos BOARD #B662
 ENHANCING ELECTRON TRANSFER FROM PHOTOSYNTHETIC REACTION CENTERS TO ELECTRODES BY EXPOSING QUINONE BINDING POCKET. **Chang Sun**, Colin A. Wraight

2971-Pos BOARD #B663
 MIDPOINT POTENTIAL OF THE INTERPOLYPEPTIDE [4FE-4S] CLUSTER FX IN REACTION CENTERS FROM HELIOBACTERIUM MODESTICALDUM. **Bryan Ferlez**

2972-Pos BOARD #B664
 ELECTRIC FIELD ASYMMETRY IN THE PHOTOSYNTHETIC REACTION CENTER? **Miguel Saggiu**, Steven G. Boxer

2973-Pos BOARD #B665
 CU-TO-CU ELECTRON TUNNELING IN COPPER MONOOXYGENASES. **Agostino Migliore**, David N. Beratan

2974-Pos BOARD #B666
 EXPONENTIAL DISTANCE DECAY OF ELECTRON TRANSFER RATES WITHOUT TUNNELING: A FLICKERING RESONANCE MODEL FOR TRANSPORT. **David N. Beratan**

2975-Pos BOARD #B667
 SQUEEZING OR STRETCHING MOLECULES AS A POSSIBLE WAY TO FACILITATE ELECTRON TRANSFER. **Helen G. Hansma**

2976-Pos BOARD #B668
 INTERPROTEIN ELECTRON TRANSFER WITH PROTEIN MAQUETTES. **Bryan A. Fry**, Geetha Goparaju, Christopher M. Moser, P Leslie Dutton, Bohdana M. Discher

2977-Pos BOARD #B669
 QUANTUM DELOCALIZATION OF PROTONS IN THE KETOSTEROID ISOMERASE ACTIVE SITE. **Lu Wang**, Stephen D. Fried, Yufan Wu, Steven G. Boxer, Thomas E. Markland

2978-Pos BOARD #B670
 FEMTOSECOND 2D-IR SPECTROELECTROCHEMISTRY OF BIOMOLECULES. **Youssef El Khoury**, Luuk, J.G., W VanWilderen, Jens Bredenbeck

2979-Pos BOARD #B671
 MODELING H-BONDING AND PROTONATION STATES OF MEMBRANE BURIED ARG-TYR PAIRS. **Andrew Banyikwa**, Alan G. Goos, Mark S. Braiman

2980-Pos BOARD #B672
 ROLES FOR PROTONS IN LIVING MEMBRANES: CARDIOLIPIN. **Thomas Haines**

Mitochondria in Cell Life and Death II (Boards #B673–#B688)

2981-Pos BOARD #B673
 INVESTIGATING TOM40 STRUCTURE AND FUNCTION RELATIONSHIP USING SINGLE CHANNEL ANALYSIS. Daniel Jacobs, Adam J. Kuszak, Susan K. Buchanan, Sergey M. Bezrukov, Tatiana K. Rostovtseva, **Philip A. Gurnev**

2982-Pos BOARD #B674
 ALPHA-SYNUCLEIN INDUCES MITOCHONDRIAL DYSFUNCTION LEADING TO A HIGHER SUSCEPTIBILITY OF PTP OPENING. **Marthe HR Ludtmann**, Plamena R. Angelova, Sonia Gandhi, David Kleneman, Michael Devine, Nicholas W. Wood, Andrey Y. Abramov

2983-Pos BOARD #B675
 FUNCTIONAL, STRUCTURAL, AND COMPUTATIONAL APPROACHES TO THE MOLECULAR MECHANISM OF VDAC GATING. **Oscar Tejjido Hermida**, Sergei Yu Noskov, Rachna Ujwal, Jeff Abramson, Matthew T. Eddy, Robert G. Griffin, Sergey M. Bezrukov, Tatiana K. Rostovtseva

2984-Pos BOARD #B676
 PARKINSON DISEASE-ASSOCIATED PROTEIN ALPHA-SYNUCLEIN BLOCKS VDAC PROVIDING NEW INSIGHTS INTO MITOCHONDRIAL TOXICITY. **Tatiana K. Rostovtseva**, Philip A. Gurnev, Thai Leong Yap, Jennifer C. Lee, Sergey M. Bezrukov

2985-Pos BOARD #B677
 ANTAGONISTS OF THE INHIBITORY EFFECT OF FREE TUBULIN ON VDAC INDUCE OXIDATIVE STRESS AND MITOCHONDRIAL DYSFUNCTION. David N. DeHart, Monika Gooz, Tatiana K. Rostovtseva, Kely L. Sheldon, John J. Lemasters, **Eduardo N. Maldonado**

2986-Pos BOARD #B678
 TRANSIENT MITOCHONDRIAL PERMEABILITY TRANSITION PORE OPENING IN CARDIAC MYOCYTES DURING SR CA RELEASE. **Xiyuan Lu**, Donald Bers

2987-Pos BOARD #B679
 SPERMINE SELECTIVELY INHIBITS HIGH-CONDUCTANCE BUT NOT LOW-CONDUCTANCE MODE OF THE MITOCHONDRIAL PERMEABILITY TRANSITION PORE (MPTP). **Pia A. Elustondo**, Evgeny V. Pavlov

2988-Pos BOARD #B680
 CONTROL OF MITOCHONDRIAL CA²⁺ UPTAKE THRESHOLD VIA THE MICU1:MCU RATIO. Tünde Golenár, **György Csordás**, Gergő Szanda, Cynthia Moffat, Erin L. Seifert, András Spät, György Hajnóczky

2989-Pos BOARD #B681
 REGULATION OF MITOCHONDRIAL OUTER AND INNER MEMBRANE FUSION COUPLING. **David Weaver**, Xingguo Liu, Gyorgy Hajnoczky

2990-Pos BOARD #B682
 MITOCHONDRIAL DYNAMICS IN NEONATAL AND ADULT CARDIOMYOCYTES. **Veronica Eisner**, Ryan Cupo, Csordas Gyorgy, Lan Cheng, Walter Koch, Gyorgy Hajnoczky

2991-Pos BOARD #B683
 PURINE NUCLEOTIDES SIMILARLY REGULATE UNCOUPLING PROTEIN 3 AND 1. **Gabriel Pürstinger**, Anne Rupprecht, Melanie Köhler, Peter Hinterdorfer, Elena E. Pohl

2992-Pos BOARD #B684
 QUANTIFICATION OF MITOCHONDRIAL UCP3 EXPRESSION IN MOUSE TISSUES. **Karolina E. Hilse**, Anne Rupprecht, Anastasia Kalinovich, Irina G. Shabalina, Elena E. Pohl

2993-Pos BOARD #B685
 MITOCHONDRIAL UNCOUPLING AND THERMOGENESIS IN BEIGE FAT. **Ambre M. Bertholet**

2994-Pos BOARD #B686
 UCP2 OVEREXPRESSION WORSENS MITOCHONDRIAL DYSFUNCTION AND ACCELERATES DISEASE PROGRESSION IN A MOUSE MODEL OF AMYOTROPHIC LATERAL SCLEROSIS. **Pablo M. Peixoto**, Hyun-Jeong Kim, Giovanni Manfredi

2995-Pos BOARD #B687
 UCP2 MODULATES MITOCHONDRIAL CALCIUM UNIPORTER. **Lukas Jaroslaw Motloch**, Robert Larbig, Tina Gebing, Sara Reda, Stephanie Weichselbaumer, Daniela Kokoschinegg, Astrid Schwaiger, Martin Wolny, Uta C. Hoppe

2996-Pos BOARD #B688
 UCP2 MODULATES CELLULAR EXCITATION CONTRACTION COUPLING VIA MITOCHONDRIAL CALCIUM UPTAKE. **Robert K. Larbig**, Lukas J. Motloch, Tina Gebing, Sara Reda, Eva Deininger, Astrid Schwaiger, Martin Wolny, Uta C. Hoppe

Cellular Pathways and Networks: Prokaryotic and Eukaryotic (Boards #B689–#B705)

2997-Pos BOARD #B689
 REGULATORY FEEDBACK PROGRAMS IN THE APOPTOTIC DECISION-MAKING OF HER2-POSITIVE BREAST CANCER CELLS IN RESPONSE TO HER2 INHIBITION. Christina Sutera, Mercedes A. Duran-Paez, Elizabeth Haughney, Azad Guwca, Marc R. Birtwistle, **Marc Y. Fink**

2998-Pos BOARD #B690
TEMPORAL REGULATION OF ERK ACTIVITY BY LIGHT REVEALS A MEMORY EFFECT IN PC12 CELL NEURITE OUTGROWTH. **Kai Zhang**, Liting Duan, Qunxiang Ong, Ziliang Lin, Pooja Mahendra Varman, Kijung Sung, Bianxiao Cui

2999-Pos BOARD #B691
USING OPTICALLY REVERSIBLE SPATIAL MUTATIONS TO DISSECT THE ASYMMETRIC DEVELOPMENTAL PROGRAM OF A BACTERIUM. **Keren Lasker**, Aaron Abraham, W. Seth Childers, Lucy Shapiro

3000-Pos BOARD #B692
RECONSTITUTION OF THE ENVZ/OMPR BACTERIAL SIGNALING SYSTEM USING SUPPORTED LIPID BILAYERS. **Yong Hwee Foo**, Kabir Hassan Biswas, Jay Groves, Linda J Kenney

3001-Pos BOARD #B693
TOWARD A SPATIALLY-RESOLVED MODEL OF METABOLISM IN DENSE BACTERIAL COLONIES. **John A. Cole**, Zaida Luthey-Schulten

3002-Pos BOARD #B694
SINGLE-MOLECULE SUPER-RESOLUTION IMAGING OF TCPP DYNAMICS IN VIBRIO CHOLERAEE IN RESPONSE TO VIRULENCE PATHWAY DEACTIVATION BY INCREASED CELL DENSITY. **David J. Rowland**, Hannah Tuson, Victor DiRita, Julie S. Biteen

3003-Pos BOARD #B695
GROWING YEAST INTO CYLINDRICAL COLONIES. **Clément Vulin**, Pascal Hersen

3004-Pos BOARD #B696
UNRAVELLING THE SIZE SENSING MECHANISM IN BUDDING YEAST. **Kurt M. Schmoller**, Jonathan J. Turner, Jan M. Skotheim

3005-Pos BOARD #B697
INFLUENCE OF EXTRACELLULAR MATRIX STIFFNESS ON MICRO-RNA EXPRESSION IN HUMAN TRABECULAR MESHWORK CELLS. Thomas Wecker, Hong Han, Susanne Kneitz, Franz Grehn, **Günther Schlunck**

3006-Pos BOARD #B698
CONTROL OF CELL EXCITABILITY THROUGH MICROTUBULE NETWORK. **Takuma Degawa**, Satomi Matsuoka, masahiro ueda

3007-Pos BOARD #B699
ESTRADIOL ACTIVATES AMPK THROUGH INTERACTION WITH ESTROGEN RECEPTOR BETA. **Yulia Lipovka**, John P. Konhilas

3008-Pos BOARD #B700
SIMULATIONS OF THE STRUCTURAL SWITCH IN PKM2 MEDIATING THE WARBURG EFFECT IN CANCER. Michael E. Colvin, **Fabian V. Filipp**

3009-Pos BOARD #B701
PUTATIVE PROGRAMMED CELL DEATH PATHWAY OF THE MALARIA PARASITE AND THE ROLE OF CYTOCHROME C. Patrick Finneran, Nicholas Darinzo, **Judith H. Prieto**

3010-Pos BOARD #B702
A COMPUTATIONAL MODEL OF ASTROCYTE POTASSIUM BUFFERING AND BIDIRECTIONAL SIGNALING IN THE NEUROVASCULAR UNIT. **Alexandra E. Witthoft**, Jessica A. Filosa, George E. Karniadakis

3011-Pos BOARD #B703
MEMBRANE PATTERNS CARRY ONTOGENETIC INFORMATION THAT IS SPECIFIED INDEPENDENTLY OF DNA. **Jonathan Wells**

3012-Pos BOARD #B704
EXPRESSION AND PURIFICATION OF A GRAS DOMAIN OF RICE GRAS PROTEIN, SLR1, SUITABLE FOR STRUCTURAL ANALYSIS. **Tomomi Sato**, Yohei Miyanoiri, Mitsuhiro Takeda, Rie Mitani, Ko Hirano, Masatsune Kainosho, Makoto Matsuoka, Hiroaki Kato, Miyako Ueguchi-Tanaka

3013-Pos BOARD #B705
BUILT-IN REGULATORY MECHANISMS AND ACTIVE SITE PLASTICITY OPEN THE DOOR FOR ENGINEERING THE STYRENE CATABOLIC PATHWAY. **George T. Gassner**, Sophia Chu, Lisa Cox, Nonye Okonokwo, Juan Pena, Andrew Skinner, Phu Truong, Kristine Vilaneuava, Alessesadro Maggi

Sensory Receptors (Boards #B706–#B710)

3014-Pos BOARD #B706
MECHANICAL AMPLIFICATION BY NON-OSCILLATING SACCULAR HAIR CELL BUNDLES. **Yuttana Roongthumskul**, Dolores Bozovic

3015-Pos BOARD #B707
BARRIERS IN THE BRAIN: MORPHOLOGY AND CONFINEMENT AS BARRIER FOR LATERAL DIFFUSION IN DENDRITIC SPINES. **Remy Kusters**, Cornelis Storm

3016-Pos BOARD #B708
CHARACTERIZATION OF CALCIUM CURRENT AND EXOCYTOSIS IN ZEBRAFISH LATERAL LINE HAIR CELLS DURING DEVELOPMENT. **Caixia Lv**, Joseph Santos-Sacchi, David Zenisek

3017-Pos BOARD #B709
MAGNETIC FIELD EFFECTS ON GEOTACTIC RESPONSES IN DROSOPHILA MELANOGASTER. **Timothy Ma**

3018-Pos BOARD #B710
THE CLONING AND EXPRESSION OF WHOOPING CRANE PHOTOPIGMENTS. **Ifeolu Akinnola**, Elelbin Ortiz, Devyani Ujla, Robert McCready, Evan Cameron, Alexandra Kingston, Megan Porter, Thomas Cronin, Phyllis Robinson

Electron Microscopy (Boards #B711–#B731)

3019-Pos BOARD #B711 INTERNATIONAL TRAVEL AWARDEE
QUANTITATIVELY IMAGING STABLE ISOTOPES AT SUBCELLULAR LEVEL WITH CORRELATIVE ELECTRON MICROSCOPY AND NANOSIMS ANALYSIS. **Haibo Jiang**, Elena Favaro, Chris N. Goulbourne, David J.P. Ferguson, Stephen G. Young, Adrian L. Harris, Chris R. M. Grovenor

3020-Pos BOARD #B712
A TIME-RESOLVED CRYO-EM STUDY OF RIBOSOME SUBUNIT ASSOCIATION BY MIXING-SPRAYING. **Bo Chen**, Ming Sun, Bingxin Shen, Zonghuan Lu, David Barnard, Toh-Ming Lu, Ruben Gonzalez, Joachim Frank

3021-Pos BOARD #B713
VISUALIZING BIOLOGICAL SAMPLES IN LIQUID SOLUTION BY ELECTRON MICROSCOPY. **Gang Ren**, Lei Zhang, Zhuoyang Lu, Bo Peng, Ed Wong, Dongsheng Lei, Meng Zhang, Matthew J. Rames

3022-Pos BOARD #B714
CRYO-EM STUDIES OF DRP1 SELF-ASSEMBLY PROVIDE INSIGHTS INTO THE MECHANISM OF MITOCHONDRIAL FISSION. Frances JD Alvarez, Christopher A. Francy, **Jason A. Mears**

3023-Pos BOARD #B715
CRYO-TOMOGRAPHY OF VITRIFIED BACTERIAL AND HUMAN CELLS BY SCANNING TRANSMISSION ELECTRON MICROSCOPY. **Sharon G. Wolf**, Lothar Houben, Michael Elbaum

3024-Pos BOARD #B716
COMPRESSED SENSING METHODS FOR ELECTRON TOMOGRAPHY OF CELLULAR STRUCTURE. Matthew D. Guay, Wojciech Czaja, **Richard D. Leapman**

3025-Pos BOARD #B717
HELICAL ORGANIZATION OF COAGULATION FACTOR VIII ON LIPID NANOTUBES. **Svetla Stoilova-McPhie**, Jaimy Miller, Daniela Dalm, Kirill Grushin

3026-Pos BOARD #B718
ANSWERING REAL BIOLOGICAL QUESTIONS BY COMBINING CRYO-TEM, XRD AND NMR. **Eric Hnath**, Marc Storms, Jeff Lengyel, Thomas Wohlfarth

3027-Pos BOARD #B719
ZERNIKE PHASE-CONTRAST ELECTRON TOMOGRAPHY OF MICROTUBULE-RELATED COMPLEXES IN AXONEMES. **Haixin Sui**, Radostin Danev, Rebecca Fisher, Jie He, Chyongere Hsie, Michael Marko

3028-Pos BOARD #B720
FLEXIBLE FABs IN THE REFINEMENT OF COMPLEXES BY SINGLE-PARTICLE TRANSMISSION ELECTRON MICROSCOPY. **Ryan MB Hoffman**, Andrew B. Ward

3029-Pos BOARD #B721
RESOLVING THE STRUCTURAL BASIS OF FACTOR VIII ACTIVATION. **Daniela Dalm**, Kirill Grushin, Alexey Y. Koyfman, Jaimy Miller, Svetla Stoilova-McPhie

3030-Pos BOARD #B722
OPENING WINDOWS INTO THE CELL: FOCUSED-ION-BEAM MILLING FOR CRYO-ELECTRON TOMOGRAPHY. **Elizabeth Villa**, Miroslava Schaffer, Jürgen M. Plitzko, Wolfgang Baumeister

3031-Pos BOARD #B723
CRYO-EM ATOMIC MODEL OF BROME MOSAIC VIRUS DERIVED FROM DIRECT ELECTRON DETECTION IMAGES AND A REAL-SPACE MODEL OPTIMIZATION PROTOCOL. **Zhao Wang**, Corey Hryc, Benjamin Bammes, Pavel Afonine, Joanita Jakana, Dong-Hua Chen, Xiangang Liu, Matthew L. Baker, Cheng Kao, Steve J. Ludtke, Michael F. Schmid, Paul Adams, Wah Chiu

3032-Pos BOARD #B724
STRUCTURAL VISUALIZATION OF MITOTIC CYCLE BY THREE-DIMENSIONAL FOCUSED ION BEAM-SCANNING ELECTRON MICROSCOPE (FIB-SEM) WITH NANOSCALE RESOLUTION AT WHOLE CELL LEVEL. Rina Nagai, Keisuke Ohta, **Atsuko H. Iwane**

3033-Pos BOARD #B725
OVERCOMING PATCH-POTENTIAL EFFECTS ON THE SURFACES OF TEM PHASE-CONTRAST DEVICES. **Robert M. Glaeser**

3034-Pos BOARD #B726
SUBSTRATE EFFECTS ON STRUCTURAL STUDIES USING CRYO-EM. **Lige Tonggu**, Ligu Wang

3035-Pos BOARD #B727
A FIRST LOOK INTO THE 3D STRUCTURE OF THE TRPV2 CHANNEL BY SINGLE-PARTICLE CRYO-EM. **Guizhen Fan**, Jennifer Gonzalez, Olga B. Popova, Theodore G. Wensel, Irina I. Serysheva

3036-Pos BOARD #B728
A CRYO-EM STRUCTURE OF A MINIMAL TRANSLATION INITIATION SYSTEM: DELETION IN SELF-SUFFICIENT IRES PREVENTS TRANSLOCATION. **Amy Jobe**, Marisa D. Ruehle, Jeffrey S. Kieft, Joachim Frank

3037-Pos BOARD #B729
SERIAL BLOCK-FACE SCANNING ELECTRON MICROSCOPY FOR NANOSCALE CHARACTERIZATION OF TISSUE ULTRASTRUCTURE. Charlotte R. Pfeifer, Andre Shomorony, Guofeng Zhang, Maria A. Aronova, **Richard D. Leapman**

3038-Pos BOARD #B730
EXAMINING DRP1 CONFORMATIONAL CHANGES AND DOMAIN INTERACTIONS IN THE MITOCHONDRIAL FISSION COMPLEX USING CRYO-EM. **Christopher A. Francy**, Chris Frölich, Oliver Daumke, Jason A. Mears

3039-Pos BOARD #B731
STRUCTURE DETERMINATION OF SMALL MACROMOLECULAR COMPLEXES BY CRYO-ELECTRON MICROSCOPY. Alberto Bartesaghi, **Jason Pierson**, Prashant Rao, Soojay Banerjee, Mario Borgnia, Lingbo Yu, Lesley Earl, Michael Alink, Jacqueline Milne, Sriram Subramaniam

Optical Microscopy and Super Resolution Imaging III (Boards #B732–#B761)

3040-Pos BOARD #B732
EXPLOITING BINDING KINETICS OF FLUOROGEN ACTIVATING PEPTIDES TO ENHANCE PHOTOSTABILITY: APPLICATIONS TO LIVE CELL SINGLE MOLECULE IMAGING. **Saumya Saurabh**, Victor R. Mann, Lauren E. Beck, Ming Zhang, Andrea Costello, Marcel P. Bruchez

3041-Pos BOARD #B733
QUANTITATIVE RETARDANCE IMAGING USING QUADRI-WAVE LATERAL SHEARING INTERFEROMETRY (QWLSI). **Sherzade Aknoun**, Pierre Bon, Julien Savatier, Benoit Wattellier, Serge Monneret

3042-Pos BOARD #B734
QUANTIFICATION OF COLOCALISATION; CO-OCCURRENCE, CORRELATION, EMPTY VOXELS, REGIONS OF INTEREST AND THRESHOLDING. Jeremy Adler, **Ingela Parmryd**

3043-Pos BOARD #B735
NANOSCALE PROTEIN DIFFUSION BY STED-BASED SPATIOTEMPORAL FLUORESCENCE CORRELATION SPECTROSCOPY. **Paolo Bianchini**, Francesco Cardarelli, Mariagrazia Di Luca, Alberto Diaspro, Ranieri Bizzarri

3044-Pos BOARD #B736
MOUSE RETINA IMAGING BY MEANS OF INVERTED SELECTIVE PLANE ILLUMINATION MICROSCOPY (ISPIM). **Zeno Lavagnino**, Francesca Cella Zancchi, Luca Lanzanò, Alberto Diaspro

3045-Pos BOARD #B737
TOMOGRAPHIC INCOHERENT PHASE IMAGING, A DIFFRACTION TOMOGRAPHY ALTERNATIVE. Sherzade Aknoun, **Benoit Wattellier**, Pierre Bon, Serge Monneret

- 3046-Pos** **BOARD #B738**
ACCURATE HIGH THROUGHPUT BRIGHT FIELD BEAD TRACKING USING GPU HARDWARE. **Jelmer Cnossen**, David Dulin, Nynke H. Dekker
- 3047-Pos** **BOARD #B739**
SUPER-RESOLUTION MICROSCOPY OF CELLS EXPRESSING RHABDOVIRUS PROTEINS. **Toby D M Bell**, Donna R. Whelan, Aaron Brice, Gregory W. Moseley
- 3048-Pos** **BOARD #B740**
INVESTIGATION OF HYBRID LIPID-POLYMER GUVS BY FLUORESCENCE CORRELATION SPECTROSCOPY. **Jan Ebenhan**, Stefan Werner, Matthias Schulz, Wolfgang Binder, Kirsten Bacia
- 3049-Pos** **BOARD #B741**
TEMPORAL FOCUSING, LINE AND POINT-SCANNING TWO-PHOTON FLUORESCENCE MICROSCOPY FOR IN VIVO IMAGING: A COMPARATIVE STUDY OF SIGNAL LEVELS AND BLEACHING RATES. **Jules Girard**, Erwin JG Peterman
- 3050-Pos** **BOARD #B742**
REAL-TIME MONITORING OF MRNA DECAY IN LIVING CELLS. **Kohki Okabe**, Yoshie Harada, Takashi Funatsu
- 3051-Pos** **BOARD #B743**
SINGLE-BACTERIAL PROFILING AND IDENTIFICATION BASED ON QUANTITATIVE PHASE IMAGING. **YoungJu Jo**, Jaehwang Jung, Hyunjoo Park, YongKeun Park
- 3052-Pos** **BOARD #B744**
ANALYSIS OF HETEROGENEOUS NADH FLUORESCENCE IN LIVE CELLS DURING HYPOXIA. **Vinod Jyothikumar**, Ammasi Periasamy
- 3053-Pos** **BOARD #B745** EDUCATION TRAVEL AWARDEE
MEASURING LIGAND-RECEPTOR BINDING RATES WITH K-SPACE IMAGE CORRELATION SPECTROSCOPY: THEORY AND EXPERIMENTAL APPLICATIONS. **Hugo B. Brandao**, Hussain Sangji, Elvis Pandzic, Susanne Bechstedt, Gary J. Brouhard, Paul W. Wiseman
- 3054-Pos** **BOARD #B746**
A NEW EFFICIENT IMPLEMENTATION OF 2PE-STED MICROSCOPY. **Iván Coto Hernández**, Paolo Bianchini, Chiara Peres, Gustavo De Miguel, Alberto Diaspro, Giuseppe Vicidomini
- 3055-Pos** **BOARD #B747**
DUAL COLOR STED MICROSCOPY WITH ULTRAFast PHOTON COUNTING. **Yong Wu**, Xundong Wu, Rong Lu, Ligia Toro, Enrico Stefani
- 3056-Pos** **BOARD #B748**
EFFICIENT ROI SELECTION FOR MULTI-EMITTER FITTING APPROACHES IN SINGLE-MOLECULE SUPER-RESOLUTION MICROSCOPY. **David Baddeley**
- 3057-Pos** **BOARD #B749**
HIGHLY EFFICIENT HIV-1 ENTRY MEDIATED BY NONSPECIFIC VIRION-CELL INTERACTIONS QUANTIFIED BY REAL-TIME SINGLE PARTICLE IMAGING. **Michael C. DeSantis**, Jamie L. Austin, Wei Cheng
- 3058-Pos** **BOARD #B750**
DEVELOPMENT OF STABLE SMALL QUANTUM DOTS FOR AMPA RECEPTOR TRACKING AT NEURONAL SYNAPSES. **En Cai**, Pinghua Ge, Sang Hak Lee, Yong Wang, Okunola Jeyifous, Sung Jun Lim, Andrew M. Smith, William N. Green, Paul R. Selvin
- 3059-Pos** **BOARD #B751**
THERMODYNAMICALLY DRIVEN BLINKING FOR SUPER-RESOLUTION MICROSCOPY. **Susan Gayda**, Richard Haack, Joseph P. Skinner, Qiaoqiao Ruan, Richard J. Himmelsbach, Sergey Y. Tetin
- 3060-Pos** **BOARD #B752**
MULTIPLY IMAGING OF OSTEOCYTES IN BONE. **LeAnn M. Tiede-Lewis**, Yixia Xie, Sarah E. Dallas
- 3061-Pos** **BOARD #B753**
STRUCTURAL STUDIES BY CORRELATIVE STOCHASTIC OPTICAL RECONSTRUCTION MICROSCOPY AND ELECTRON MICROSCOPY. **Dppry Kim**, Miriam Bujny, Xiaowei Zhuang
- 3062-Pos** **BOARD #B754**
4D MULTIPLY FUNCTIONAL IMAGING IN DEEP TISSUE. **Ming Zhao**, Xiaoyang Wan, Weibin Zhou, Leilei Peng
- 3063-Pos** **BOARD #B755**
DESIGN AND IMPLEMENTATION OF 3D FOCUS STABILIZATION FOR FLUORESCENCE MICROSCOPY. **Karl Bellve**, Clive Standley, Lawrence Lifshitz, Kevin Fogarty
- 3064-Pos** **BOARD #B756**
OPTICALLY MODULATED FLUORESCENT PROTEINS ENHANCE SENSITIVITY IN LIVE CELL IMAGING. **Amy E. Jablonski**, Irina Issaeva, Yen-Cheng Chen, Jung-Cheng Hsiang, Russell B. Vegh, Pritha Bagchi, Bettina Bommarius, Andreas S. Bommarius, Laren M. Tolbert, Christoph J. Fahrni, Robert M. Dickson
- 3065-Pos** **BOARD #B757**
MECHANISMS OF MULTIPHOTON BLEACHING OF RED FLUORESCENT PROTEINS. **Mikhail Drobizhev**, Caleb Stoltzfus, Thomas Hughes, Igor Topol, Lauren M. Barnett, Geoffrey R. Wicks, Aleksander Rebane
- 3066-Pos** **BOARD #B758**
QUANTITATIVE IMAGING OF PROTEIN SECRETIONS FROM SINGLE CELLS IN REAL TIME. **Marc Raphael**, Joseph Christodoulides, James Delehanty, James Long, Jeff Byers
- 3067-Pos** **BOARD #B759**
A FLUORESCENCE APPROACH TO DISCRIMINATION OF AGGREGATED AMYLOID PROTEINS. **Kevin J. Cao**, Kristyna Elbel, Christina Sigurdson, Emmanuel Theodorakis, Jerry Yang
- 3068-Pos** **BOARD #B760**
LIVE SYNAPTIC MAPPING OF VERTEBRATE WHOLE BRAIN WITH LIGHT SHEET MICROSCOPY AND ENDOGENOUSLY LABELED SYNAPSIN-2B PROTEIN. **Andrey Andreev**, John M. Choi, Le A. Trinh, Thai V. Truong, Scott E. Fraser
- 3069-Pos** **BOARD #B761**
A MULTI-EMITTER LOCALIZATION COMPARISON OF 3D SUPERRESOLUTION IMAGING MODALITIES. **Sheng Liu**, Keith A. Lidke

Molecular Dynamics II (Boards #B762–#B785)

- 3070-Pos** **BOARD #B762**
DEVELOPMENT OF AN ALL-ATOM/COARSE GRAIN, MIXED RESOLUTION MODEL FOR PROTEINS AND THEIR ENVIRONMENT. Jianing Li, Amanda Jonsson, Sven Jakobtorweihen, Mee Y. Shelley, Gregory A. Voth, Ramy Farid, **John C. Shelley**

3071-Pos BOARD #B763

IDENTIFYING LOCAL REGIONS OF ORDER AND DISORDER IN FG-NUCLEOPORINS AND PARTIALLY DISORDERED PROTEINS USING MOLECULAR DYNAMICS SIMULATIONS.

Timothy G. Connolly, David Ando, Robert L. Wang, Ajay Gopinathan, Shawn D. Newsam, Michael E. Colvin

3072-Pos BOARD #B764

HOW STRUCTURAL FLUCTUATIONS OF THE ATP POCKET INFLUENCE THE CATALYTIC CYCLE OF FAK. **Florian Herzog**, Vogel Viola

3073-Pos BOARD #B765

MOLECULAR DYNAMICS SIMULATIONS OF LASER-INDUCED AND PH-INDUCED UNFOLDING IN β -LACTOGLOBULIN AT DIFFERENT HYDRATION LEVELS. **James E. Parker**,

Aaron F. Hoffman, Robert J. Thomas, Lorenzo Brancalone

3074-Pos BOARD #B766

IN SILICO DYNAMICS OF CARBON MONOXIDE IN THE ACTIVE SITE POCKET OF NITROGENASE. **Leland B. Gee**, Igor Leontyev, Stephen P. Cramer

3075-Pos BOARD #B767

STUDYING THE EFFECTS OF METHIONINE OXIDATION ON HUMAN FIBRIN WITH MULTISCALE SIMULATIONS.

Patrick R. Burney, Jim Pfaendtner

3076-Pos BOARD #B768

DATABASE GUIDED EXPLORATION TO DETERMINE NATIVE LIGANDS FOR ORPHANED ODORANT RECEPTORS.

Sarana Nutanong, Kyle Wong, Yanif Ahmad, Jen Pluznick, Blythe Shepard, **Thomas B. Woolf**

3077-Pos BOARD #B769

PROBING DIFFUSIVE AND ENERGETIC ASPECTS OF RIBOSOME FUNCTION. Jeff K. Noel, Vitor B.P. Leite, Jorge Chahine, **Paul C. Whitford**

3078-Pos BOARD #B770

PROTEIN-LIGAND BINDING SIMULATION WITH THE MARTINI COARSE-GRAINED FORCE FIELD. **Tatsuki Negami**,

Kentaro Shimizu, Tohru Terada

3079-Pos BOARD #B771

LOCAL DYNAMICS OF FRET DYES IN AN INTRINSICALLY DISORDERED PROTEIN STUDIED BY MD SIMULATIONS.

Reinhard Klement, Helmut Grubmueller

3080-Pos BOARD #B772

COMPARISON OF SIDE-CHAIN MOTION OF CALBINDIN D-9K IN ITS FOUR CALCIUM BINDING STATES BY MOLECULAR DYNAMICS SIMULATION. **Mahendra B. Thapa**, Mark Rance

3081-Pos BOARD #B773

AN ALLOSTERIC SIGNALING PATHWAY OF HUMAN 3-PHOSPHOGLYCERATE KINASE. Zoltan Palmay, Christian Seifert, Frauke Gräter, **Erika Balog**

3082-Pos BOARD #B774

ENHANCED SAMPLING OF THE CATALYTIC DOMAIN OF THE ADENYL CYCLASE CYAA FROM BORDETELLA PERTUSSIS. **Isidro Cortes Ciriano**, Guillaume Bouvier, Michael Nilges, Luca Maragliano, Therese E Malliavin

3083-Pos BOARD #B775

SYNTHESIS AND MODELING OF NOVEL α -AMINOALKYLPHOSPHONATE ESTER DERIVATIVES AS POTENT INHIBITORS OF PROSTATE-SPECIFIC ANTIGEN; A COMPARISON STUDY. **Arben Kojtari**, Haifeng Ji

3084-Pos BOARD #B776

MOLECULAR DYNAMICS STUDIES: THE EFFECT OF PHOSPHORYLATION IN SACCHARIDE TRANSPORTER SYSTEM.

Jumin Lee, Wonpil Im

3085-Pos BOARD #B777

COMPARISON OF METRICS OF INTER-STRUCTURE DISTANCE WHEN APPLIED TO MOLECULAR DYNAMICS SIMULATIONS OF INTRINSICALLY DISORDERED PROTEINS. **Robert L. Wang**,

Timothy G. Connolly, Joshua L. Phillips, Amanda V. Miguel, Ajay Gopinathan, Shawn D. Newsam, Michael E. Colvin

3086-Pos BOARD #B778

MOLECULAR DYNAMICS-BASED PREDICTIONS OF THE STRUCTURAL AND FUNCTIONAL DIFFERENCES BETWEEN THE CARDIAC AND NOVEL SLOW-SKELETAL ISOFORMS OF ZEBRAFISH TROPONIN C. **Charles M. Stevens**, Christine E. Genge, Cindy Li, Glen F. Tibbits

3087-Pos BOARD #B779

HIGH PRESSURE EFFECT ON A HELICAL PEPTIDE STUDIED BY SIMULATED TEMPERING MOLECULAR DYNAMICS SIMULATIONS. **Yoshiharu Mori**, Hisashi Okumura

3088-Pos BOARD #B780

CONSTANT DOMAIN OF FAB FRAGMENT AFFECTS ANTIGEN BINDING OF ANTIBODIES: MOLECULAR DYNAMICS STUDY. **Keiko Shinoda**, Hideaki Fujitani

3089-Pos BOARD #B781

A SMALL CHEMICAL MIMICKING ACTIN BINDING TO MYOSIN AND PUTATIVE STRUCTURAL CHANGES OF MYOSIN MOLECULE UPON LIGAND BINDING. **Takayuki Miyanishi**, IO Omotuyi, Taku Yamaguchi

3090-Pos BOARD #B782

FREE ENERGY SIMULATIONS FOR THE CONFORMATIONAL CHANGE OF THE $\alpha\beta$ SUBUNITS IN F_1 -ATPASE AFTER THE ATP HYDROLYSIS. **Yuko Ito**, Mitsunori Ikeguchi

3091-Pos BOARD #B783

MOLECULAR DYNAMICS STUDY OF CONSERVED WATER MOLECULES IN PRPC AND PATHOLOGICAL POINT MUTATION T188R. **Katsufumi Tomobe**, Eiji Yamamoto, Takuma Akimoto, Masato Yasui, Kenji Yasuoka

3092-Pos BOARD #B784

CHARACTERISATION OF THE PRION PROTEIN OLIGOMERISATION BY MD SIMULATIONS AND SMALL ANGLE X-RAY SCATTERING. **Nesrine Chakroun**, Stéphanie Prigent, Human Rezaei, Marc Malfois, Cécile A. Dreiss

3093-Pos BOARD #B785

ACCELERATE LATERAL EQUILIBRATION IN MIXED LIPID BILAYERS USING REPLICA EXCHANGE WITH SOLUTE TEMPERING. **Kun Huang**, Angel E. Garcia

CD and Vibrational Spectroscopy (Boards #B786–#B794)

3094-Pos BOARD #B786

ION-PROTEIN INTERACTION IN CHANNEL AND PUMP PROTEINS STUDIED BY FTIR SPECTROSCOPY. **Yuji Furutani**

3095-Pos BOARD #B787

MEASURING PROTEIN DYNAMICS AND MECHANISM USING INFRARED SPECTROSCOPY. **Curtis W. Meuse**

3096-Pos BOARD #B788

A NOVEL MICROFLUIDIC MIXER UTILIZING INFRARED IMAGING SPECTROSCOPY WITH A SUBMILLISECOND MIXING TIME. **Drew P. Kise**

3097-Pos BOARD #B789

ULTRA FAST RAMAN HYPERSPECTRAL IMAGING USING BRAGG TUNABLE FILTERS AND A HIGH PERFORMANCE EMCCD CAMERA. **Félix Thouin**, Frédéric Leblond, Richard Martel, Marc Verhaegen, Olivier Daigle

3098-Pos BOARD #B790

DIFFERENCE FT-IR STUDIES ON THE EFFECTS OF BUFFERS ON NUCLEOTIDE BINDING TO RECA. **Joshua Temple**

3099-Pos BOARD #B791

FT-IR SPECTROSCOPY AND DENSITY FUNCTIONAL THEORY CALCULATIONS OF CARBON-13 ISOTOPOLOGUES OF THE HELICAL PEPTIDE Z-AIB(6)-OTBU. **Matthew A. Kubasik**, Timothy Zeko, Steven F. Hannigan, Timothy Jacisin

3100-Pos BOARD #B792

ULTRAFAST WATER DYNAMICS IN BACTERIORHODOPSIN. Philipp Alt, Miriam Colindres-Rojas, **Rolf Diller**

3101-Pos BOARD #B793

A NEW METHOD FOR ANALYSIS OF TEMPERATURE DEPENDENT IR AMIDE I SPECTRA OF PEPTIDES AND PROTEINS. **Jan Kubelka**

3102-Pos BOARD #B794

COMPUTING THEORETICAL CIRCULAR DICHROISM OF PROTEINS USING THE DIPOLE INTERACTION MODEL (DINAMO) WITH A UNITED ATOM APPROACH. **Rahul Nori**, Igor V. Uporov, Neville Y. Forlemu, Yvonne E. Bongfen, Tsvetan Aleksandrov, Kathryn A. Thomasson

Bioengineering (Boards #B795–#B824)

3103-Pos BOARD #B795

PHOTOREGULATION OF SMALL G PROTEIN KRAS USING PHOTOCROMIC MOLECULES. **Seigo Iwata**, Shinsaku Maruta

3104-Pos BOARD #B796

STRUCTURAL COMPLEMENTATION OF THE CATALYTIC DOMAIN OF PSEUDOMONAS EXOTOXIN A. Erin L. Bolland, Crystal M. Van Dyken, Rachel M. Duckett, Andrew J. McCluskey, **Gregory M. Poon**

3105-Pos BOARD #B797

FIBRIN FIBERS: BLOCKING THE B:B KNOB-POCKET INTERACTION. **Stephen Baker**, Ashley Carson-Brown, Martin Guthold, Thomas Barker

3106-Pos BOARD #B798

PRINCIPLES FOR THE RATIONAL DESIGN OF ALLOSTERICALLY COOPERATIVE BIOMOLECULAR RECEPTORS. **Anna J. Simon**, Alexis Vallée-Bélisle, Francesco Ricci, Herschel M. Watkins, Kevin W. Plaxco

3107-Pos BOARD #B799

NECKING AND FAILURE OF CONSTRAINED CONTRACTILE 3D MICROTISSUES INDUCED BY CELL DERIVED TENSION. **Vivek B. Shenoy**, Hailong Wang, Alexander A. Svoronos, Thomas Boudou, Jeffrey R. Morgan, Christopher S. Chen

3108-Pos BOARD #B800

THE ROLE OF EXTRACELLULAR ENVIRONMENT IN REGULATION OF CELLULAR RESPONSE TO ELECTRIC FIELD. **Toloo Taghian**, Abdul Q. Sheikh, Daria Narmoneva, Andrei Kogan

3109-Pos BOARD #B801

ORBITAL SHAKING PROMOTED VASCULAR ELASTOGENESIS IN CULTURED RAT AORTIC SMOOTH MUSCLE CELLS. **Ryosuke Shiraishi**, Kiyotaka Iwasaki, Takashi Aida, Shumpei Saito, Nur Khatijah Mohd Zin, Shinji Takeoka, Mitsuo Umezumi, Susumu Minamisawa

3110-Pos BOARD #B802

DYNAMICS OF BIO-INSPIRED PRESSURE GENERATION. **Thomas B. H. Schroeder**, Brandon R. Bruhn, Suyi Li, Yazan N. Billeh, K. W. Wang, Michael Mayer

3111-Pos BOARD #B803

CELLULAR FATE DECISION BY AUTOCRINE AND PARACRINE IN TUMOR. **SoonGweon Hong**, Luke Lee

3112-Pos BOARD #B804

NUMERICAL MODELING OF NANOPARTICLES DOSAGE IN ISOLATED AND SUBCUTANEOUS TUMORS. **Wan-I Chang**, Win-Li Lin, Tzyy-Leng Horng, Cheng-Ying Chou

3113-Pos BOARD #B805

APPLICATION OF CUP SHAPED SUPERPARAMAGNETIC HEMISPHERES FOR SIZE SELECTIVE CELL PURIFICATION. **Hyonchol Kim**, Hideyuki Terazono, Hiroyuki Takei, Kenji Yasuda

3114-Pos BOARD #B806

MOLECULAR DYNAMICS STUDY OF SELF-ASSEMBLED LIPID NANO-PARTICLES FOR DRUG DELIVERY. **Dmitri Rozmanov**, Peter Tieleman

3115-Pos BOARD #B807

MOLECULAR THEORY OF PROTEIN SORPTION ON WEAK POLYELECTROLYTE GEL-MODIFIED CHARGED SURFACE. **Claudio F. Nambuena**, Gabriel Longo, Igal Szelefer

3116-Pos BOARD #B808

ANTIBODY-BASED MAGNETIC NANOPARTICLE IMMUNOASSAY FOR QUANTIFICATION OF SALIVARY BETA-AMYLOID PEPTIDES. **Chang-Beom Kim**, Ki-Bong Song

3117-Pos BOARD #B809

SYNTHESIS OF GRAPHENE-BASED NANOMATERIALS FOR BIOSENSING. **Yong Ju Yun**, Ki-bong Song

3118-Pos BOARD #B810

SELECTIVE NUCLEIC ACID CAPTURE WITH SHIELDED COVALENT PROBES. **Jeffrey Vieregg**, Niles A. Pierce

3119-Pos BOARD #B811

POLYETHYLENIMINE: EXPERIMENTAL AND SIMULATION STUDY OF POLYMER BIOPHYSICS DURING PH BUFFERING. Bria J. Rice, Tasneem Abdus-Shakur, Kimberly A. Curtis, Jeffrey B. Klauda, Richard M. Venable, Richard W. Pastor, **Preethi L. Chandran**

3120-Pos BOARD #B812

SYNTHETIC MEMBRANE CURVATURE-INDUCING DNA ORIGAMI SCAFFOLDS. **Henri G. Franquelim**, Veikko Linko, Aleksander Czogalla, Hendrik Dietz, Petra Schwillie

3121-Pos BOARD #B813

ON-CHIP FAST PLASMONIC DETECTION OF SINGLE MOLECULE MIRNA FOR CANCER DIAGNOSIS. **Julian A. Diaz**

- 3122-Pos BOARD #B814**
ENHANCING PORTABLE ULTRASOUND MACHINE FOR DETECTING BREAST MASSES IN ULTRASOUND BREAST IMAGES. **Farzan Khatib**, Firouzeh Ghafourian Nasab
- 3123-Pos BOARD #B815**
INTEGRATING SYNTHETIC CELLS AND FLEXIBLE ELECTRONICS FOR THE CONTROL OF BIO-OPTO-FLUIDIC MATERIALS. **Kyle Justus**, Saumya Saurabh, Marcel Bruchez, Carmel Majidi, Philip LeDuc, Cheemeng Tan
- 3124-Pos BOARD #B816**
SHAPE EVOLUTION OF MULTICELLULAR SYSTEMS; APPLICATION TO TISSUE ENGINEERING. **Ashkan Shafiee**, Matthew McCune, Ioan Kosztin, Gabor Forgacs
- 3125-Pos BOARD #B817**
DEVELOPMENT OF A LIQUID FORMULATION FOR PROTEINS FOR LONG TIME STORAGE. **Rupert Tscheliessnig**, Rene Ueberbacher, Monika Mueller, Herwig Peterlik, Alois Jungbauer
- 3126-Pos BOARD #B818**
AN ON-CHIP PCR APPROACH ENABLING CANCER DIAGNOSIS. **Andrew F. Sabour**, Seung-min Park, Jun Ho Son, Luke P. Lee
- 3127-Pos BOARD #B819**
LIPID CRYSTALS MECHANICALLY STIMULATE ADJACENT EXTRACELLULAR MATRIX IN ADVANCED ATHEROSCLEROTIC PLAQUES. Eun-Soo Lee, Joohyun Park, Sang-Won Lee, Junhee Hahn, Haea Lee, Soo-Won Chae, **Se-Hwa Kim**
- 3128-Pos BOARD #B820**
MONITORING DIABETIC WOUND HEALING WITH A DIELECTRIC PROBE. **Christopher E. Bassey**, Samuel Cowell
- 3129-Pos BOARD #B821**
ARRAY MICROSCOPE FOR HIGH THROUGHPUT STIFFNESS CHARACTERIZATION OF CANCER BIOLOGY. **Lukas D. Osborne**, Jeremy Cribb, Leandra Vicci, E. Tim O'Brien, Joe Hsiao, Russell Taylor, Richard Superfine
- 3130-Pos BOARD #B822 INTERNATIONAL TRAVEL AWARDEE**
POWER, DIRECTION, AND SYNCHRONY - MECHANICAL PROBLEMS AND SOLUTIONS FROM JUMPING LEAFHOPPER INSECTS. **Gregory P. Sutton**
- 3131-Pos BOARD #B823**
COMPUTATIONAL MODEL OF PASSIVE DIFFUSION ACROSS THE RETINAL PIGMENT EPITHELIUM. **Aapo Tervonen**, Iina Vainio, Soile Nymark, Jari Hyttinen
- 3132-Pos BOARD #B824**
GUIDANCE OF MOLECULAR SHUTTLE MOVEMENTS DRIVEN BY KINESIN MOTOR: A SIMULATION STUDY. Yuki Ishigure, **Takahiro Nitta**

Micro- and Nanotechnology II (Boards #B825–#B854)

- 3133-Pos BOARD #B825**
STUDIES ON INTRACELLULAR DELIVERY OF THIOL-CAPPED CDTE NANOCRYSTALS MEDIATED BY LIPOSOMES IN MESENCHYMAL STEM CELLS. **Maria B. Seabra**, Mong-Jen Chen, Ahmed S. Elshikha, Sihong Song, Vivaldo Moura Neto, Adriana Fontes, Beate S. Santos, Guenther Hochhaus
- 3134-Pos BOARD #B826**

- FLUORESCENCE CORRELATION SPECTROSCOPY OF METHANE-BURN CARBON NANODOTS. **Jan Karolin**, Rachel Taylor, Chris Geddes
- 3135-Pos BOARD #B827**
QUARTZ NANOPIPETTES FOR THE STUDY OF PROTEIN-PROTEIN INTERACTION. **Purushottam Tiwari**, Yesim Darici, Xuewen Wang, Jin He
- 3136-Pos BOARD #B828 INTERNATIONAL TRAVEL AWARDEE**
STRUCTURAL AND DYNAMICAL PROPERTIES OF MONOCLONAL ANTIBODIES IMMOBILIZED ON CNTS: A COMPUTATIONAL STUDY. **Federica De Leo**, Jacopo Sgrignani, Alessandra Magistrato, Davide Bonifazi
- 3137-Pos BOARD #B829**
REDUCED CONCENTRATION LIMIT OF NUCLEIC ACID BIOSENSOR BY UTILIZING LONG DNA. **Leyla Esfandiari**, Michael Lorenzini, Gayane Kochryan, Harold G. Monbouquette, Jacob J. Schmidt
- 3138-Pos BOARD #B830**
QUASY AUTONOMOUS MICROROBOTS DRIVEN BY LIGHT. László Oroszi, András Búzás, András Déz, Péter Galajda, Lóránd Kelemen, Anna Mathesz, Tamás Vicsek, Gaszton Vizsnyiczai, **Pal Ormos**
- 3139-Pos BOARD #B831**
MODELING EVAPORATION IN AQUEOUS NANODROPLETS. Brian J. Bennion, Richard A. London, Stefan P. Hau-Riege, **Daniel Barsky**
- 3140-Pos BOARD #B832**
MICROFLUIDIC SOLUTION ISOLATED PUMPING (μ SIP). **Jixiao Liu**, Debkishore Mitra, John R. Waldeisen, Richard H. Henrikson, Luke P. Lee
- 3141-Pos BOARD #B833**
CONFINED ILLUMINATION THROUGH APERTURELESS AND NANO-STRUCTURED TAPERED OPTICAL FIBRES. **Marco Lazzarino**, Monica Mazzolini, Laura Andolfi, Remo Proietti, Salvatore Tuccio, Enzo Di Fabrizio, Johannes Treu, Gert Rapp, Vincent Torre
- 3142-Pos BOARD #B834**
SEPARATION OF PROTEINS AND NANOPARTICLES BY CHARGE AND SIZE WITH A TUNABLE SEMICONDUCTOR MEMBRANE. I-ning Amy Jou, Dmitriy V. Melnikov, Anna Nadtochiy, **Maria Gracheva**
- 3143-Pos BOARD #B835**
SINGLE MOLECULE EZYMOLOGY WITH ELECTRONIC CIRCUITS. **Yongki Choi**, Patrick Sims, Tivoli Olsen, Tolga Gul, Bard Corso, Mariam Iftikhar, Gregory Weiss, Philip Collins
- 3144-Pos BOARD #B836**
POLYELECTROLYTE MICROCAPSULE BASED ASSAY FOR MONITORING BIOTECHNOLOGICAL PROCESSES IN VITRO AND IN VIVO. **Tatiana Kolesnikova**, Cindy Kroll, Sujit Verma, Gerd Klöck, Sebastian Springer, Mathias Winterhalter
- 3145-Pos BOARD #B837**
EFFICIENCY STUDIES IN SUPERCRITICAL FLUID CHROMATOGRAPHY: IMPORTANCE OF THERMAL DIFFUSIVITY NEAR THE CRITICAL POINT. **Shawn C. Helmueller**, Donald P. Poe

- 3146-Pos** **BOARD #B838**
A KINESIN DRIVEN ENZYME LINKED IMMUNOSORBANT ASSAY (ELISA) FOR ULTRA LOW PROTEIN DETECTION APPLICATIONS. **Jenna Campbell**, Dibyadeep Paul, Katsuo Kurabayashi, Edgar Meyhofer
- 3147-Pos** **BOARD #B839**
MIMICKING APOPTOSIS USING ASYMMETRIC LIPOSOMES: A THERAPEUTIC APPROACH AGAINST HIV-1 INFECTION. **Andrea Gramatica**, Roberto A. Petazzi, Maik J. Lehmann, Joanna Ziomkowska, Andreas Herrmann, Salvatore Chiantia
- 3148-Pos** **BOARD #B840**
NOVEL METHOD FOR HIGH THROUGHPUT FORMATION OF LIPID MEMBRANE ARRAYS. **Naoki Soga**, Rikiya Watanabe, Hiroyuki Noji
- 3149-Pos** **BOARD #B841**
FORMATION OF A GEL-SUPPORTED LIPID MEMBRANE ARRAY ON A MICROPATTERNED SUBSTRATE. **Aya Tanaka**, Hiroshi Nakashima, Yoshiaki Kashimura, Koji Sumitomo
- 3150-Pos** **BOARD #B842**
PARALLEL RECONSTITUTION OF BACTERIAL TOXINS, PORINS AND ION CHANNELS INTO SUSPENDED LIPID MEMBRANE MICROARRAYS FOR HIGH-THROUGHPUT ELECTROPHYSIOLOGY. **Ekaterina Zaitseva**, Liviu Movileanu, Bert van den Berg, Frank Bernhard, Christopher Hein, Gerhard Baaken, Jan C. Behrends
- 3151-Pos** **BOARD #B843**
A MINIATURIZED SINGLE CHANNEL AMPLIFIER FOR VARIOUS DIFFERENT ELECTROPHYSIOLOGY SETUP. **Federico Thei**, Michele Rossi, Marco Bennati, Marco Crescentini, Marco Tartagni
- 3152-Pos** **BOARD #B844**
DESIGN PRINCIPLES FOR NANOPARTICLES ENVELOPED BY A POLYMER-TETHERED LIPID MEMBRANE COAT. **Markus Deserno**, Mingyang Hu
- 3153-Pos** **BOARD #B845**
NANOPARTICLE LAYER FORMATION, STRUCTURE AND INTERACTIONS WITH MODEL MEMBRANES. **Kaisa E. Lilja**, Maiju Pykönen
- 3154-Pos** **BOARD #B846**
CELLULAR BINDING OF CHARGED NANOPARTICLE-PROTEIN COMPLEXES. **Candace C. Fleischer**, Christine K. Payne
- 3155-Pos** **BOARD #B847**
PROBING OSTEOARTHRITIS BIOMARKERS WITH MAGNETIC NANOPARTICLES. **Elena G. Yarmola**, Zachary A. Kaufman, David P. Arnold, Yash Shah, Bettina Kozissnik, Alexandra Garraud, Jon P. Dobson, Kyle D. Allen
- 3156-Pos** **BOARD #B848**
MAGNETIC NANOPARTICLE DELIVERY SYSTEM FOR MUCUS LAYER PENETRATION. **Kathrin Spendier**, William Townend, Evangelos Economou, Joshua Baptist, Robert Camley, Hong W. Chu, Zbigniew Celinski
- 3157-Pos** **BOARD #B849**
GATE CONTROL OF MESOPOROUS SILICA WITH α -SYNUCLEIN-COATED AU NANOPARTICLES VIA PARTICLES-ON-A-PARTICLE ASSEMBLY. **Daekyun Lee**, Je Won Hong, Seung R. Paik
- 3158-Pos** **BOARD #B850**
CONTROLLED SOLID-STATE SYNTHESIS OF MRI EFFECTIVE SUPERPARAMAGNETIC MAGHEMITE NANOPARTICLES FROM IRON(II) ACETATE. Katerina Polakova, Jiri Pechousek, Jiri Tucek, Jan Filip, **Roman Kubinek**, Radek Zboril, Petr Paucek
- 3159-Pos** **BOARD #B851**
EFFECT OF NANOPARTICLES IN TOP CONSUMERS. **Karin Mattsson**, Lars Anders Hansson, Sara Linse, Anders Malmendal, Tommy Cedervall
- 3160-Pos** **BOARD #B852**
METHANE CARBON NANODOTS: SYNTHESIS, CHARACTERIZATION, AND SINGLET OXYGEN PRODUCTION. **Rachel Taylor**, Chris Geddes
- 3161-Pos** **BOARD #B853**
ADVANCED SPIM MICROSCOPY TOWARDS THE STUDY OF NANOPARTICLE UPTAKE CONSEQUENCE ON SMALL ORGANISMS. **Marta d'Amora**, Francesca Cella Zancchi, Zeno Lavagnino, Gaser Nagah Abdelrasoul, Francesca Pennacchietti, Alberto Diaspro
- 3162-Pos** **BOARD #B854**
GENE DELIVERY TO CANCER CELLS WITH METAFECTENE AND ITS DERIVATIVES: NANOPARTICLE TRACKING ANALYSIS OF LIPOPLEXES. Senait Gebremedhin, Stephen Koons, William Bernt, **Nejat Düzgünes**

Wednesday, February 19, 2014

Daily Program Summary

All rooms are located in the MOSCONE CONVENTION CENTER unless noted otherwise.

8:00 AM–11:00 AM	New Council Meeting	Room 124
8:00 AM–12:00 PM	Career Center	Room 300
8:00 AM–12:00 PM	Undergraduate Student Lounge	Rotunda, 300 Level
8:00 AM–3:00 PM	Child Care	Marriott Marquis, Pacific H, I, J
8:00 AM–3:00 PM	Poster Viewing	Hall D
8:00 AM–3:30 PM	Family Room	Room 112
8:15 AM–10:15 AM	<p>Symposium: Myosin Motors in Vitro and in Cells Co-Chairs: <i>Michelle Peckham, University of Leeds, United Kingdom, and Margaret Titus, University of Minnesota</i></p> <p>UNRAVELLING THE PROPERTIES OF SINGLE α-HELICAL DOMAINS IN MYOSIN AND OTHER PROTEINS. <i>Michelle Peckham</i> MYTH-FERM MYOSINS HAVE ROLES IN REGULATING ACTIN POLYMERIZATION. <i>Margaret Titus</i> DIRECTED ACTIN ASSEMBLY AND CONTRACTILITY. <i>Laurent Blanchoin</i> HOW ACTIN FILAMENT ELONGATORS PAVE THE ROAD FOR MYOSIN. <i>Jan Faix</i></p>	Room 134
8:15 AM–10:15 AM	<p>Symposium: Biophysics of Genetic Switches Co-Chairs: <i>Laura Finzi, Emory University, and Ido Golding, Baylor College of Medicine</i></p> <p>A QUANTITATIVE NARRATIVE FOR THE LIFE CYCLE OF BACTERIOPHAGE LAMBDA. <i>Ido Golding</i> LONG-RANGE DNA LOOPING IN THE LAMBDA GENETIC SWITCH. <i>Keith Shearwin</i> GENETIC SWITCHES AND TRANSCRIPTIONAL REGULATION: INSIGHTS FROM SINGLE MOLECULES. <i>Laura Finzi</i> AN INTEGRATED SYSTEM CONTROLS THE GENETIC CIRCUITRY THAT DRIVES A BACTERIAL CELL CYCLE. <i>Lucille Shapiro</i></p>	Room 135
8:15 AM–10:15 AM	Platform: Ion Channel Regulatory Mechanisms	Room 130/131
8:15 AM–10:15 AM	Platform: Neurons: Modeling, Synaptic Transmission, and Optogenetics	Room 132/133
8:15 AM–10:15 AM	Platform: Cardiac, Smooth, and Skeletal Muscle Electrophysiology	Room 303
8:15 AM–10:15 AM	Platform: Micro- and Nanotechnology II	Room 304
8:15 AM–10:15 AM	Platform: Membrane Structure	Room 305
8:15 AM–10:15 AM	Platform: Dynamics of Ligand Binding and Coupled Motions	Room 306
9:00 AM–1:00 PM	Biomolecular Discovery Dome	Hall D
10:30 AM–11:15 AM	Coffee Break	Hall D
10:30 AM–12:30 PM	Poster Presentations and Late Posters	Hall D
10:30 AM–12:30 PM	Meet the Speakers/Meet the Editors	Hall D
12:30 PM–3:00 PM	Publications Committee Meeting	Room 122
1:00 PM–3:00 PM	<p>Symposium: Structures of Membrane Fusion Co-Chairs: <i>Erica Ollmann Saphire, The Scripps Research Institute, and David Weliky, Michigan State University</i></p> <p>SOLID-STATE NMR STRUCTURAL MEASUREMENTS AND MODELS OF THE HIV AND INFLUENZA FUSION PROTEINS IN MEMBRANES. <i>David P. Weliky</i> MEMBRANE DYNAMICS AND LIPID INTERACTIONS OF INFLUENZA FUSION PROTEINS. <i>Peter Kasson</i> HOW SNARE ASSEMBLY AND FOLDING MAY DRIVE MEMBRANE FUSION. <i>Lukas K. Tamm</i> STRUCTURAL REARRANGEMENT OF THE EBOLA VIRUS VP40 PROTEIN BEGETS MULTIPLE FUNCTIONS IN THE VIRUS LIFE CYCLE. <i>Erica Ollmann Saphire</i></p>	Room 134
1:00 PM–3:00 PM	<p>Symposium: Biophysics of Cell Division and Spatial Relationships Co-Chairs: <i>Sue Biggins, Fred Hutchinson Cancer Research Center and Wallace Marshall, University of California, San Francisco</i></p> <p>DIRECT EVIDENCE FOR SISTER KINETOCHORE FUSION IN MEIOSIS I. <i>Susan Biggins</i> INTRINSIC AND EXTRINSIC NOISE IN THE FLAGELLAR LENGTH CONTROL SYSTEM. <i>Wallace Marshall</i> CYTOSKELETAL ASSEMBLY UNDER CONFINEMENT. <i>Daniel Fletcher</i> A CELL'S LIFE UNDER CONFINEMENT: GROWTH, DIVISION AND MIGRATION WHEN SPACE IS LIMITED. <i>Matthieu Piel</i></p>	Room 135

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1:00 PM–3:00 PM	Platform: TRP Channels	Room 130/131
1:00 PM–3:00 PM	Platform: Molecular Dynamics II	Room 132/133
1:00 PM–3:00 PM	Platform: Ligand-gated Channels II	Room 303
1:00 PM–3:00 PM	Platform: Computational Systems Biology and Cellular Network	Room 304
1:00 PM–3:00 PM	Platform: Cardiac Muscle II	Room 305
1:00 PM–3:00 PM	Platform: Structure, Dynamics, and Allostery in Drug Target Interactions	Room 306

Wednesday, February 19

8:00 AM–11:00 AM, ROOM 124
New Council Meeting

8:00 AM–12:00 PM, ROOM 300
Career Center

8:00 AM–12:00 PM, ROTUNDA, 300 LEVEL
Undergraduate Student Lounge

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 stop by to answer questions student attendees may have about career paths and opportunities.

8:00 AM–3:00 PM, MARRIOTT MARQUIS, PACIFIC H, I, J
Child Care

8:00 AM–3:00 PM, HALL D
Poster Viewing

8:00 AM–3:30 PM, ROOM 112
Family Room

8:15 AM–10:15 AM, ROOM 134
Symposium

Myosin Motors in Vitro and in Cells

Co-Chairs

Michelle Peckham, University of Leeds, United Kingdom
Margaret Titus, University of Minnesota

3163-SYMP 8:15 AM
UNRAVELLING THE PROPERTIES OF SINGLE α -HELICAL DOMAINS IN MYOSIN AND OTHER PROTEINS. Marcin Wolny, Matthew Batchelor, Francine Parker, Thomas Baboolal, Gregory Mashanov, Justin Molloy, Emanuele Paci, Lorna Dougan, Peter J. Knight, **Michelle Peckham**

3164-SYMP 8:45 AM
MYTH-FERM MYOSINS HAVE ROLES IN REGULATING ACTIN POLYMERIZATION. Karl J. Petersen, Laura M. Breshears, Anne Heun, Gant W.G. Luxton, **Margaret Titus**

3165-SYMP 9:15 AM
DIRECTED ACTIN ASSEMBLY AND CONTRACTILITY.
Laurent Blanchoin

NO ABSTRACT 9:45 AM
HOW ACTIN FILAMENT ELONGATORS PAVE THE ROAD FOR MYOSIN. **Jan Faix**

8:15 AM–10:15 AM, ROOM 135
Symposium

Biophysics of Genetic Switches

Co-Chairs

Laura Finzi, Emory University
Ido Golding, Baylor College of Medicine

3166-SYMP 8:15 AM
A QUANTITATIVE NARRATIVE FOR THE LIFE CYCLE OF BACTERIOPHAGE LAMBDA. **Ido Golding**

3167-SYMP 8:45 AM
LONG-RANGE DNA LOOPING IN THE LAMBDA GENETIC SWITCH. **Keith Shearwin**, Lun Cui, Iain Murchland, Ian B. Dodd

3168-SYMP 9:15 AM
GENETIC SWITCHES AND TRANSCRIPTIONAL REGULATION: INSIGHTS FROM SINGLE MOLECULES. **Laura Finzi**

NO ABSTRACT 9:45 AM
AN INTEGRATED SYSTEM CONTROLS THE GENETIC CIRCUITRY THAT DRIVES A BACTERIAL CELL CYCLE. **Lucille Shapiro**

8:15 AM–10:15 AM, ROOM 130/131
Platform

Ion Channel Regulatory Mechanisms

Chair

Mark Shapiro, University of Texas Health Science Center at San Antonio

3169-PLAT 8:15 AM
CFTR CLUSTERING AND TETHERING IN CERAMIDE-PLATFORMS IN RESPONSE TO POST-INFECTION PKC STIMULATION.
Asmahan AbuArish, Elvis Pandzic, Paul W. Wiseman, John W. Hanrahan

3170-PLAT 8:30 AM
ORAI1 PORE MUTATIONS AND CALCIUM-DEPENDENT INACTIVATION. **Franklin M. Mullins**, Michelle Yen, Richard S. Lewis

3171-PLAT 8:45 AM
CONSERVATION OF CALMODULIN REGULATION ACROSS SODIUM AND CALCIUM CHANNELS. **Manu Ben Johny**, Philemon S. Yang, Jacqueline Niu, Wanjun Yang, Rosy Joshi-Mukherjee, David T. Yue

3172-PLAT 9:00 AM
DISCOVERY AND CHARACTERIZATION OF A DISTINCT CYCLIC NUCLEOTIDE BINDING POCKET IN HCN CHANNELS.
Anna Moroni, Marco Lolicato, Annalisa Bucchi, Cristina Arrigoni, Stefano Zucca, Marco Nardini, Katie Simmons, Marco Aquila, Frank Schwede, Gerhard Thiel, Martino Bolognesi, Dario DiFrancesco

3173-PLAT 9:15 AM
MEMBRANE ASYMMETRY: KEY TO PHOSPHOINOSITIDE (4,5)-BISPHOSPHATE REGULATION OF TRPV1.
Anastasiia Stratiievska, Eric N. Senning, Marcus D. D. Collins, Carmen A. A. Ufret-Vincenty, Sharona E. Gordon

3174-PLAT 9:30 AM
USE-DEPENDENT ACTIVATION OF KV1.2 CHANNEL COMPLEXES.
Victoria Baronas, Brandon McGuinness, Yury Y. Vilin, Robin Kim, Runying Yang, Harley T. Kurata

3175-PLAT 9:45 AM
FUNCTIONAL COUPLING IN NOCICEPTIVE SENSORY NEURONS BETWEEN IP3 RECEPTORS AND THE CALCIUM-ACTIVATED ANO1 (TMEM16A) CHLORIDE CHANNEL. Xin Jin, Shihab Shah, Yani Liu, Huiran Zhang, Meredith Lees, Zhaojun Fu, Jonathan D. Lippiat, David J. Beech, Asipu Sivaprasadarao, Stephen A. Baldwin, Hailin Zhang, **Nikita Gamber**

3176-PLAT 10:00 AM
ION CHANNEL - ION CHANNEL INTERACTION AT ATOMIC RESOLUTION. Elwin van der Cruisjen, Koen Visscher, João Rodrigues, Alexandre Bonvin, Marc Baldus, **Markus Weingarth**

8:15 AM–10:15 AM, ROOM 132/133

Platform

Neurons: Modeling, Synaptic Transmission, and Optogenetics

Co-Chairs

Guido Zampighi, University of California, Los Angeles, School of Medicine
Neda Najafinobar, Chalmers University of Technology, Sweden

3177-PLAT 8:15 AM
USING A CELL MODEL TO STUDY THE EFFECT OF CHOLESTEROL ON EXOCYTOSIS. **Neda Najafinobar**, Lisa Mellander, Mike E. Kurczyk, Ann Sofie Cans

3178-PLAT 8:30 AM
BDNF MODULATES PRESYNAPTIC FUNCTIONS AT A CENTRAL SYNAPSE. **Maryna Baydyuk**, Xinsheng Wu, Jiansong Sheng, Liming He, Ling-Gang Wu

3179-PLAT 8:45 AM
SYNAPSES BETWEEN INTERNEURONS IN THE RAT CEREBRAL CORTEX AT 2NM RESOLUTION AND IN THREE-DIMENSIONS. **Guido A. Zampighi**, Julio Vergara

3180-PLAT 9:00 AM
SYP1 ACTS AS A CLEARANCE FACTOR FOR SYB2 AT THE PRESYNAPSE. **Anne Gauthier-Kemper**, Rajit Rajappa, Martin Wiemhöfer, Cora S. Thiel, Jana Hüve, Jürgen Klingauf

3181-PLAT 9:15 AM
SINGLE MOLECULE MOTION MAPS OF OPEN AND DESENSITIZATION STATES OF NICOTINIC ACETYLCHOLINE RECEPTORS. **Hiroshi Sekiguchi**, Maki Tokue, Yuri Nishino, Kouhei Ichiyangi, Naoto Yagi, Atsuo Miyazawa, Tai Kubo, Yuji C. Sasaki

3182-PLAT 9:30 AM
PHOTOSWITCHING HCN CHANNELS IN DEGENERATED RETINA NEURONS. **Vadim E. Degtyar**, Ivan Tochitsky, Caleb Smith, Richard H. Kramer

3183-PLAT 9:45 AM EDUCATION TRAVEL AWARDEE
DEVELOPMENT OF A RED GENETICALLY-ENCODED VOLTAGE INDICATOR AND ITS USE WITH CHANNELRHODOPSIN FOR ALL-OPTICAL ELECTROPHYSIOLOGY. **Ahmed S. Abdelfattah**, Jelena Platisa, Yongxin Zhao, Vincent A. Pieribone, Robert E. Campbell

3184-PLAT 10:00 AM
OPTOGENETIC STIMULATION OF CHANNELRHODOPSIN-2 EXPRESSING NEURONS FLIPS CORTICAL NETWORKS FROM LOW TO HIGH ACTIVITY STATE. **Parijat Sengupta**, Lindsay Fague

8:15 AM–10:15 AM, ROOM 303

Platform

Cardiac, Smooth, and Skeletal Muscle Electrophysiology

Co-Chairs

Glenna Bett, State University of New York
Gil Bub, University of Oxford, United Kingdom

3185-PLAT 8:15 AM
MYOCYTE STRETCH SLOWS CARDIAC CONDUCTION BY A CAVEOLAE-DEPENDENT INCREASE IN SARCOLEMMA CAPACITANCE. **Emily Pfeiffer**, Adam Wright, Andrew Edwards, Jennifer Stowe, Katie McNall, Justin Tan, Hemal Patel, Jeffrey Omens, Andrew McCulloch

3186-PLAT 8:30 AM
ELECTRICAL PROPAGATION OF THREE-DIMENSIONAL ENGINEERED HEARTS USING DECELLULARIZED EXTRACELLULAR MATRIX. **Haruyo Yasui**, Jong-Kook Lee, Akira Yoshida, Teruki Yokoyama, Junichi Nakai, Issei Komuro

3187-PLAT 8:45 AM
SPATIOTEMPORAL TRANSITIONS IN CARDIAC NEURONAL CO-CULTURES. Rebecca AB Burton, Guy Stephens, Amy Sharkey, Sam Bilton, Hege Larsen, Holger Kramer, Carla Schmidt, Claudia Molina, Dan Li, Gary Mirams, Carol Robinson, David Paterson, **Gil Bub**

3188-PLAT 9:00 AM
VOLTAGE AND CALCIUM COUPLING IN THE GENESIS OF CARDIAC AFTERDEPOLARIZATIONS. **Zhen Song**, Alain Karma, Hrayr S. Karagueuzian, James N. Weiss, Zhilin Qu

3189-PLAT 9:15 AM EDUCATION TRAVEL AWARDEE
CORRELATION BETWEEN VENTRICULAR REPOLARISATION PATTERNS AND T-WAVE GENERATION IN ISOLATED RABBIT HEARTS USING PANORAMIC IMAGING. **Andrew Allan**, Godfrey Smith, Francis Burton

3190-PLAT 9:30 AM
ENHANCED DIFFERENTIATION OF STEM CELL DERIVED CARDIAC MYOCYTES BY ELECTRONIC EXPRESSION OF IK1 REVEALS AN ATRIAL-SPECIFIC KV1.5-LIKE CURRENT. Aaron D. Kaplan, Agnieszka Lis, Thomas R. Cimato, Emmanuel S. Tzanakakis, Qinlian Zhou, Michael J. Morales, Randall L. Rasmusson, **Glenna C L Bett**

3191-PLAT 9:45 AM
PLB DRIVES THE KINETICS OF THE CA²⁺ CLOCK IN MOUSE ISOLATED SINOATRIAL NODAL CELLS AND THE INTRINSIC HEART RATE IN VIVO. **Syevda Sirenko**, Ismayil Ahmet, Edward G. Lakatta

3192-PLAT 10:00 AM
BURST PACEMAKER ACTIVITY IN NCX1 KNOCKOUT MICE: IS IT FUNNY CURRENT? **Angelo Giovanni Torrente**, Audrey Zaini, Ashley Rosenberg, Rui Zhang, Jeanney Kang, Kenneth D. Philipson, Joshua I. Goldhaber

8:15 AM–10:15 AM, ROOM 304

Platform

Micro- and Nanotechnology II

Co-Chairs

Stefan Howorka, University College London, United Kingdom
Ian Derrington, University of Washington

3193-PLAT 8:15 AM
MEMBRANE-SPANNING DNA NANOPORES. BIOMIMETIC CHEMICAL STRUCTURES FOR SINGLE-MOLECULE RESEARCH AND NANOTECHNOLOGY. Jonathan R. Burns, Kerstin Göpfrich, James W. Wood, Vivek V. Thacker, Ulrich F. Keyser, Eugen Stulz, **Stefan Howorka**

3194-PLAT 8:30 AM
OPTICAL AND ELECTRICAL ANALYSIS OF SUSPENDED LIPID BILAYER MICROARRAYS FORMED BY MECHANICAL LIQUID SPREADING ON HORIZONTAL PLANAR MICROELECTRODE CAVITY ARRAYS. Juan Miguel Del Rio Martinez, **Gerhard Baaken**, Jan C. Behrends

3195-PLAT 8:45 AM
MULTIPLY MICROFLUIDIC DEVICE FOR PARALLEL ELECTROPHYSIOLOGICAL MEASUREMENTS ON INDEPENDENT PLANAR LIPID BILAYERS. **Alexander Prokofyev**, Verena Stimberg, Johan Bommer, Hans de Boer, Albert van den Berg, Séverine Le Gac

3196-PLAT **9:00 AM** EDUCATION TRAVEL AWARDEE
ELECTROFORMATION OF UNIFORMLY SIZED GIANT LIPOSOMES WITH FUNCTIONAL MEMBRANE PROTEINS. **You Jung Kang**, Harrison S. Wostein, Sheereen Majd

3197-PLAT **9:15 AM**
DNA SENSING WITH THE MSPA NANOPORE USING VARIABLE VOLTAGE. **Ian M. Derrington**, Kyle W. Langford, Andrew H. Laszlo, Elizabeth Manrao, Henry Brinkerhoff, Jacquelyn E. Blum, Jens H. Gundlach

3198-PLAT **9:30 AM**
SHRINKING NANOCAPILLARIES TO LOW NOISE NANOPORES FOR SINGLE MOLECULE DETECTION. **Lorenz J. Steinbock**, Swati Krishnan, Roman Bulushev, Aleksandra Radenovic

3199-PLAT **9:45 AM**
NOVEL QUANTUM DOT PROBES FOR SINGLE-MOLECULE BIOPHYSICS. **Sara M. Wichner**, Mark A. DeWitt, Bruce E. Cohen, Ahmet Yildiz

3200-PLAT **10:00 AM**
SPLIT-FP CONJUGATED METAL NANOPARTICLE RAMAN NANOPROBES FOR ULTRA-SENSITIVE MOLECULAR DETECTION. **Tugba Koker**, Fabien Pinaud

8:15 AM–10:15 AM, ROOM 305

**Platform
Membrane Structure**

Co-Chairs

Edward Lyman, University of Delaware
Gerhard Groebner, Umeå University, Sweden

3201-PLAT **8:15 AM**
SUPERRESOLUTION MICROSCOPY REVEALS NANOMETER-SCALE REORGANIZATION OF MG53 ASSOCIATED WITH MEMBRANE REPAIR. **Mingzhai Sun**, Jiaqing Huang, Kristyn Gumpfer, Gejing De, Matthew Sermersheim, Pei-Hui Lin, Haichang Li, Pu Duann, Jianjie Ma

3202-PLAT **8:30 AM**
INVESTIGATING THE CELL MEMBRANE VIA SINGLE PARTICLE TRACKING, BAYESIAN INFERENCE AND HYDRODYNAMIC FORCE APPLICATION. **Maximilian U. Richly**, Silvan Türkcan, Cedric Bouzigues, Michel R. Popoff, Jean-Baptiste Masson, Jean-Marc Allain, Antignoni Alexandrou

3203-PLAT **8:45 AM**
THE MOLECULAR STRUCTURE OF THE LIQUID ORDERED PHASE. **Edward R. Lyman**, Alex Sodt, Klaus Gawrisch, Richard Pastor

3204-PLAT **9:00 AM**
A LIPID BOUND ACTIN MESHWORK ORGANIZES LIQUID PHASE SEPARATION IN MODEL MEMBRANES. **Alf Honigmann**, Sina Sadeghi, Keller Jan, Stefan W. Hell, Christian Eggeling, Richard Vink

3205-PLAT **9:15 AM**
THE IMPACT OF OXIDIZED PHOSPHOLIPIDS ON LIPID MEMBRANES: CONSEQUENCES FOR MITOCHONDRIAL APOPTOSIS. Martin Lidman, Sarka Pokorna, Marcus Wallgren, Martin Hof, **Gerhard Gröbner**

3206-PLAT **9:30 AM** EDUCATION TRAVEL AWARDEE
G-PROTEIN-COUPLED RECEPTOR ACTIVATION INVESTIGATED USING SMALL-ANGLE NEUTRON SCATTERING.

Suchithranga M. D. C. Perera, Utsab Shrestha, Udeep Chawla, Andrey V. Struts, Shuo Qian, Michael F. Brown, Xiang-Qiang Chu

3207-PLAT **9:45 AM**
MEMPROTMD: MEMBRANE PROTEIN STRUCTURES AND SIMULATIONS. **Phillip J. Stansfeld**, Mark S. P. Sansom

3208-PLAT **10:00 AM**
STRUCTURES OF BLOOD COAGULATION FACTOR VIII IN SOLUTION AND MEMBRANE-BOUND. **Alexey Y. Koyfman**, Jaimy L. Miller, Daniela Dalm, Kirill Grushin, Svetla Stoilova-McPhee

8:15 AM–10:15 AM, ROOM 306

**Platform
Dynamics of Ligand Binding
and Coupled Motions**

Co-Chairs

Vanessa Ortiz, Columbia University
Jiahui Tian, Oak Ridge National Laboratory

3209-PLAT **8:15 AM**
MAPPING ALLOSTERIC COMMUNICATION PIPELINES IN GPCRS FROM MICROSECOND TIMESCALE MOLECULAR DYNAMICS SIMULATIONS. **Supriyo Bhattacharya**, Nagarajan Vaidehi

3210-PLAT **8:30 AM**
MOLECULAR DYNAMICS SIMULATIONS OF THE CATALYTIC SUBUNIT OF PROTEIN KINASE A REVEAL NEW INSIGHT INTO THE CATALYTIC PROCESS. **Jianhui Tian**, Loukas Petridis, William T. Heller

3211-PLAT **8:45 AM**
OXYGEN-AFFINITY OF HEMOGLOBIN IS REGULATED BY EFFECTOR-LINKED DYNAMIC MODULATIONS OF HIGH-FREQUENCY THERMAL FLUCTUATIONS. **Takashi Yonetani**

3212-PLAT **9:00 AM**
DISCOVERING AND MANIPULATING PROTEIN CONFORMATIONAL HETEROGENEITY AND FUNCTION. **Daniel Keedy**, Henry van den Bedem, Justin Rettenmaier, James Wells, James Fraser

3213-PLAT **9:15 AM**
DETERMINATION OF THE INDIVIDUAL ROLES OF THE LINKER RESIDUES IN THE INTER-DOMAIN MOTIONS OF CALMODULIN USING NMR CHEMICAL SHIFTS. **Predrag Kukic**, Carlo Camilloni, Andrea Cavalli, Michele Vendruscolo

3214-PLAT **9:30 AM**
THE ROLE OF PROTEIN DYNAMICS IN CALMODULIN TARGET RECOGNITION. **Laurel Hoffman**, Xu Wang, Margaret S. Cheung, John A. Putkey, M. Neal Waxham

3215-PLAT **9:45 AM**
INSIGHTS INTO ALLOSTERY FROM THE LOCAL ELASTIC CONSTANTS OF A PROTEIN. Andre A. S. T. Ribeiro, **Vanessa Ortiz**

3216-PLAT **10:00 AM**
A SUBSTRATE CHANNEL IN NITROGENASE REVEALED BY A MOLECULAR DYNAMICS APPROACH. **Dayle M. Smith**, Simone Raugeri, Karamatullah Danyal, Lance Seefeldt

9:00 AM–1:00 PM, HALL D

Biomolecular Discovery Dome

10:30 AM–11:15 AM, HALL D

Coffee Break

10:30 AM–12:30 PM, HALL D

Poster Presentations and Late Posters

(For a complete listing of regular Wednesday Poster Presentations, see page 173.)

The list of Wednesday Late Posters is in the Program addendum.

Posters will be on display from 8:00 AM–3:00 PM. Authors with odd-numbered boards will present from 10:30 AM–11:30 AM, and those with even-numbered boards will present from 11:30 AM–12:30 PM. Additional hours may be posted by the authors as desired. Paper may also be left on the board so that visitors may request an appointment.

Posters should be mounted beginning at 7:00 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.

10:30 AM–12:30 PM, HALL D

Meet the Speakers/Meet the Editors

All attendees are invited to take advantage of this opportunity to meet the speakers and *Biophysical Journal* editors who are the leading experts in their field, to ask questions, and to foster interactions and collaborations. Attend the session for a chance to win a Kindle Paperwhite.

12:30 PM–3:00 PM, ROOM 122

Publications Committee Meeting

1:00 PM–3:00 PM, ROOM 134

Symposium

Structures of Membrane Fusion

Co-Chairs

Erica Ollmann Saphire, The Scripps Research Institute
David Weliky, Michigan State University

3217-SYMP 1:00 PM
SOLID-STATE NMR STRUCTURAL MEASUREMENTS AND MODELS OF THE HIV AND INFLUENZA FUSION PROTEINS IN MEMBRANES. **David P. Weliky**

3218-SYMP 1:30 PM
MEMBRANE DYNAMICS AND LIPID INTERACTIONS OF INFLUENZA FUSION PROTEINS. **Peter Kasson**

3219-SYMP 2:00 PM
HOW SNARE ASSEMBLY AND FOLDING MAY DRIVE MEMBRANE FUSION. **Lukas K. Tamm**

3220-SYMP 2:30 PM
STRUCTURAL REARRANGEMENT OF THE EBOLA VIRUS VP40 PROTEIN BEGETS MULTIPLE FUNCTIONS IN THE VIRUS LIFE CYCLE. **Erica Ollmann Saphire, Zachary A. Bornholdt, Dafna M. Abelson, Peter Halfmann, Takeshi Noda, Malcolm Wood, Yoshihiro Kawaoka**

1:00 PM–3:00 PM, ROOM 135

Symposium

Biophysics of Cell Division and Spatial Relationships

Co-Chairs

Sue Biggins, Fred Hutchinson Cancer Research Center
Wallace Marshall, University of California, San Francisco

3221-SYMP 1:00 PM
DIRECT EVIDENCE FOR SISTER KINETOCHORE FUSION IN MEIOSIS I. **Susan Biggins, Krishna Sarangapani, Eris Duro, Yi Deng, Kwaku Opoku, Flavia de Lima Alves, Juri Rappsilber, Adele Marston, Charles Asbury**

3222-SYMP 1:30 PM
INTRINSIC AND EXTRINSIC NOISE IN THE FLAGELLAR LENGTH CONTROL SYSTEM. **Wallace Marshall**

3223-SYMP 2:00 PM
CYTOSKELETAL ASSEMBLY UNDER CONFINEMENT. **Daniel Fletcher**

3224-SYMP 2:30 PM
A CELL'S LIFE UNDER CONFINEMENT: GROWTH, DIVISION AND MIGRATION WHEN SPACE IS LIMITED. **Matthieu Piel**

1:00 PM–3:00 PM, ROOM 130/131

Platform TRP Channels

Co-Chairs

Marcus Collins, University of Washington
Vera Moiseenkova-Bell, Case Western Reserve University

3225-PLAT 1:00 PM
MOLECULAR MECHANISM OF TRPV2 TRAFFICKING IN SENSORY NEURONS. **Matthew R. Cohen, Kevin W. Huynh, Daniel Cawley, Vera Y. Moiseenkova-Bell**

3226-PLAT 1:15 PM
DIRECT RECORDING AND MOLECULAR IDENTIFICATION OF THE CALCIUM CHANNEL OF PRIMARY CILIA. **Paul G. DeCaen, Markus Delling, David E. Clapham**

3227-PLAT 1:30 PM
SOLUBLE PHOSPHOINOSITIDE PHYSICAL CHEMISTRY AND THE INTERPRETATION OF TRPV1 POTENTIATION. **Marcus D. Collins, Sharona E. Gordon**

3228-PLAT 1:45 PM
STORE-OPERATED Ca^{2+} ENTRY CHANNELS REGULATE CELL GROWTH AND MIGRATION IN HUMAN CARDIAC C-KIT⁺ PROGENITOR CELLS. Hui Che, **Gui-Rong Li**

3229-PLAT 2:00 PM
GLYCOSYLATION OF TRPM4 AND TRPM5 CHANNELS: MOLECULAR DETERMINANTS AND FUNCTIONAL ASPECTS. **Ninda R.M. Syam, Jean-Sebastien Rougier, Hugues Abriel**

3230-PLAT 2:15 PM
PROTON ACTIVATION OF TRPV1 CHANNELS. **Bo Hyun Lee, Jie Zheng**

3231-PLAT 2:30 PM
SINGLE-POINT MUTATIONS IN ANKYRIN REPEAT SIX MAKE MOUSE TRPA1 SENSITIVE TO HOT TEMPERATURES. **Sairam V. Jabba, Raman Goyal, Hans Moldenhauer, Breanna Kalmeta, Michael Bandell, Ramon Latorre, Ardem Patapoutian, Jorg Grandl**

3232-PLAT 2:45 PM
EFFECTS OF A NON-HYDROLYZABLE ADP-RIBOSE ANALOG ON THE GATING OF THE TRPM2 CHANNEL. **Balázs Tóth, Jordan Jordanov, László Csanády**

1:00 PM–3:00 PM, ROOM 132/133

Platform Molecular Dynamics II

Co-Chairs

*Emad Tajkhorship, University of Illinois at Urbana-Champaign
Pengfei Tian, Niels Bohr Institute, Denmark*

3233-PLAT 1:00 PM
TRANSCRIPTION FACTOR BINDING AND SLIDING STUDIED USING MICROSCOPIC AND MESOSCOPIC MODELS.
Anel Mahmutovic

3234-PLAT 1:15 PM
SIMULATION OF THE CONFORMATIONAL TRANSITION PATHWAY FOR THE ACTIVATION OF FULL-LENGTH C-SRC KINASE USING THE STRING METHOD. **Mikolai Fajer**, Yilin Meng, Benoit Roux

3235-PLAT 1:30 PM
EXPLORING PKA VALUES FOR BURIED RESIDUES IN MEMBRANE BILAYERS USING CONSTANT PH MOLECULAR DYNAMICS SIMULATIONS. **Afra Panahi**, Charles L. Brooks, III

3236-PLAT 1:45 PM
ROBUST ESTIMATION OF DIFFUSION-OPTIMIZED ENSEMBLES FOR ENHANCED SAMPLING. **Pengfei Tian**, Sigurður Jónsson, Jesper Ferkinghoff-Borg, Sergei Krivov, Kresten Lindorff-Larsen, Wouter Boomsma

3237-PLAT 2:00 PM
DRIVEN ADAPTIVE-BIAS SCHEME: A HYBRID FREE ENERGY METHOD FOR BIOMOLECULAR SYSTEMS WITH COMPLEX ENERGY LANDSCAPES. **Mahmoud Moradi**, Emad Tajkhorshid

3238-PLAT 2:15 PM
GOING BACKWARD: AN EFFICIENT MULTISCALE APPROACH USING REVERSE TRANSFORMATION. **Tsjerk A. Wassenaar**, Kristyna Pluhackova, Rainer Böckmann, Siewert J. Marrink, D. Peter Tieleman

3239-PLAT 2:30 PM
MIXING AND MATCHING SIMULATIONS AT DIFFERENT RESOLUTIONS. **Manuel N. Melo**, Nicolae Goga, Alexander de Vries, Herman Berendsen

3240-PLAT 2:45 PM
CAVEOLIN IN BILAYERS: CAN THE INTRAMEMBRANE U-SHAPED CONFORMATION REALLY EXIST. **Huan Rui**, Kyle T. Root, Jinwoo Lee, Kerney Jebrell Glover, Wonpil Im

1:00 PM–3:00 PM, ROOM 303

Platform Ligand-gated Channels II

Co-Chairs

*Marc Delarue, Institut Pasteur, France
Crina Nimigean, Weill Cornell Medical College*

3241-PLAT 1:00 PM EDUCATION TRAVEL AWARDEE
COORDINATED MOVEMENTS DURING ASIC1A ACTIVITY.
Gaetano Bonifacio, Claudia Suenaga Ielli, Stephan Kellenberger

3242-PLAT 1:15 PM
OPTOCHEMICAL CONTROL OF ENGINEERED TRIMERIC P2X RECEPTORS AND ACID-SENSING ION CHANNELS.
Liam E. Browne, João P. M. Nunes, Joan Sim, Vijay Chudasama, Laricia Bragg, Stephen Caddick, R. Alan North

3243-PLAT 1:30 PM
X-RAY STRUCTURES OF THE OPEN AND RESTING FORMS OF THE SAME BACTERIAL PENTAMERIC LIGAND-GATED ION CHANNEL. Ludovic Sauguet, Azadeh Shahsavari, Frederic Poitevin, Christele Huon, Anais Menny, Akos Nemezc, Ahmed Haouz, Jean-Pierre Changeux, Pierre-Jean Corringer, **Marc Delarue**

3244-PLAT 1:45 PM
STRUCTURAL BASIS FOR ALLOSTERIC COUPLING AT THE MEMBRANE-PROTEIN INTERFACE IN GLIC. Phanindra Velisetty, Sreevatsa V. Chalamalasetti, **Sudha Chakrapani**

3245-PLAT 2:00 PM
CALCIUM-DEPENDENT GATING IN MTHK K⁺ CHANNELS OCCURS AT THE SELECTIVITY FILTER. **David J. Posson**, Radda Rusinova, Olaf S. Andersen, Crina M. Nimigean

3246-PLAT 2:15 PM
CLOSED STATE COUPLED C-TYPE INACTIVATION IN BK CHANNELS. **Jiusheng Yan**, Wei Wang, Richard W. Aldrich

3247-PLAT 2:30 PM
TPC1 IS A PROTON PERMEABLE CHANNEL THAT CAN BE INDEPENDENTLY ACTIVATED BY CYTOSOLIC CALCIUM OR NAADP. **Samantha J. Pitt**, Andy Lam, Antony Galione, Rebecca Sitsapesan

3248-PLAT 2:45 PM
SKA-111, A POSITIVE KCA CHANNEL GATING MODULATOR WITH SELECTIVITY FOR KCA3.1. **Nichole T. Coleman**, Brandon M. Brown, Aida O. Viguera, Ralf Köhler, Heike Wulff

1:00 PM–3:00 PM, ROOM 304

Platform Computational Systems Biology and Cellular Network

Co-Chairs

*Carlos Lopez, Vanderbilt University School of Medicine
Eric Deeds, University of Kansas*

3249-PLAT 1:00 PM
INTEGRATED 3D SIMULATION OF CARDIOMYOCYTE REVEALED THE DISTINCT FUNCTIONAL CHARACTERISTICS BETWEEN SUBSARCOLEMMA AND INTERFIBRILLAR MITOCHONDRIA. **Asuka Hatano**, Jun-ichi Okada, Takumi Washio, Toshiaki Hisada, Seiryō Sugiura

3250-PLAT 1:15 PM
PYSB: A MODELING FRAMEWORK TO EXPLORE BIOCHEMICAL SIGNALING PROCESSES AND CELL-DECISIONS. **Carlos F. Lopez**, Shawn P. Garbett

3251-PLAT 1:30 PM
THE EVOLUTION OF CROSSTALK IN SIGNALING NETWORKS.
Eric J. Deeds, Michael A. Rowland

3252-PLAT 1:45 PM
COMPUTATIONAL MODELING OF BIOFILM STRUCTURE AND FUNCTIONS WITH BACTERIA MOTILITY FEATURE AND EXPERIMENT VALIDATION. **Jia Zhao**, Qi Wang

3253-PLAT 2:00 PM
IDENTIFYING ACTIVE NEURONS FROM IN VIVO 2-PHOTON CALCIUM IMAGING OF THE BRAIN VIA PIXEL CORRELATION ANALYSIS AND REGION-GROWING SEGMENTATION.
Jean-Francois Desjardins, Loïs S. Miraucourt, Edward S. Ruthazer, Paul W. Wiseman

3254-PLAT 2:15 PM
OVERCOMING REVERSE RATE DEPENDENCE IN VENTRICULAR CELL MODELS. **Megan A. Cummins**, Pavan Dalal, Marco Bugana, Stefano Severi, Eric Sobie

3255-PLAT 2:30 PM
ELUCIDATING METABOLIC VARIABILITY IN ISOGENIC MICROBIAL POPULATIONS ARISING DUE TO NOISE IN PROTEIN EXPRESSION. **Piyush Labhsetwar**, John Cole, Nathan Price, Zaida Luthy-Schulten

3256-PLAT 2:45 PM
COMPUTATIONAL MODELING OF GRANULOMA FORMATION IN TUBERCULOSIS YIELDS INSIGHTS INTO BOTH INFECTION AND TREATMENT. Nicholas A. Cilfone, Elsie Pienaar, Denise E. Kirschner, **Jennifer J. Linderman**

1:00 PM–3:00 PM, ROOM 305

Platform Cardiac Muscle II

Co-Chairs

Satish Rao, Icahn School of Medicine at Mount Sinai
Steven Wu, South Dakota State University

3257-PLAT 1:00 PM
E-C COUPLING ALTERATIONS AND SPONTANEOUS ACTIVITY IN MICE CARRYING CARDIAC TROPONIN T MUTATIONS. **José Manuel Pioneer**, Raffaele Coppini, Cecilia Ferrantini, Benedetta Tosi, Luca Mazzoni, Rachel Moore, Elisabetta Cerbai, Alessandro Mugelli, Jil Tardiff, Chiara Tesi, Corrado Poggesi

3258-PLAT 1:15 PM
FAMILIAL HYPERTROPHIC CARDIOMYOPATHY: UNEQUAL EXPRESSION OF MUTANT AND WILDTYPE MYOSIN IN INDIVIDUAL MYOCYTES AS TRIGGER FOR FUNCTIONAL IMPAIRMENT OF THE HEART? **Judith Montag**, Snigdha Tripathi, Jan Köhler, Dunda E. Sebastian, Benjamin Seebohm, Dejan List, Matinmehr Faramarz, Andreas Perrot, Özcelik Celim, Antonio Francino, Francisco Navarro-Lopéz, William J. McKenna, Jolanda van der Velden, Bernhard Brenner, Kraft Theresia

3259-PLAT 1:30 PM
MULTI-SCALE BIOMECHANICS IN A MARFAN SYNDROME MODEL OF DILATED CARDIOMYOPATHY. **Satish Rao**, Emily Chiu, Jason R. Cook, Jia-Jye Lee, Ludovic Bénard, Roger J. Hajjar, Francesco Ramirez, Kevin D. Costa

3260-PLAT 1:45 PM
EFFECTS OF NITROSYLATION ON CARDIAC MYOFILAMENT PROTEINS. **Steven C. Wu**, Maria E. Moutsoglou, John M. Robinson

3261-PLAT 2:00 PM
SARCOMERE LENGTH-VENTRICULAR FILLING PRESSURE RELATIONSHIP IN THE PERFUSED MURINE HEART VISUALIZED WITH 2-PHOTON FLUORESCENCE MICROSCOPY. Michael E. Nance, Charmain A. Fernando, Anne K. Gibson, Laurin M. Hanft, Steven S. Segal, Kerry S. McDonald, **Timothy L. Domeier**

3262-PLAT 2:15 PM
REAL-TIME IMAGING OF SARCOMERE DYNAMICS IN THE MOUSE HEART IN VIVO. **Fuyu Kobirumaki-Shimozawa**, Kotaro Oyama, Akari Mizuno, Takako Terui, Togo Shimozawa, Takashi Ohki, Shin'ichi Ishiwata, Norio Fukuda

3263-PLAT 2:30 PM
END SYSTOLIC STRAIN RATE, NOT AFTERLOAD, CONTROLS MYOCARDIAL RELAXATION. **Charles S. Chung**, Kenneth S. Campbell

3264-PLAT 2:45 PM
EXPERIMENTALLY INCREASING TITIN COMPLIANCE IN A NOVEL MOUSE MODEL ATTENUATES THE FRANK-STARLING MECHANISM BUT HAS A BENEFICIAL EFFECT ON DIASTOLE. **Mei Methawasin**, Kirk R. Hutchinson, Eun-Jeong Lee, John E. Smith III, Chandra Saripalli, Carlos G. Hidalgo, Henk L. Granzier

1:00 PM–3:00 PM, ROOM 306

Platform Structure, Dynamics, and Allostery in Drug Target Interactions

Co-Chairs

Iris Antes, Technical University of Munich, Germany
Roman Agafonov, Brandeis University

3265-PLAT 1:00 PM
FLEXIBLE CDOCKER: DEVELOPMENT AND APPLICATION OF A PSEUDO-EXPLICIT STRUCTURE-BASED DOCKING METHOD WITHIN CHARMM. **Jessica K. Gagnon**, Sean M. Law, Charles L. Brooks III

3266-PLAT 1:15 PM
HOW ENZYMES ACCESS CAGED SUBSTRATES? UNDERSTANDING TARGETED HYDROLYSIS OF CYCLIC AMP BY PHOSPHODIESTERASE-PROTEIN KINASE A INTERACTIONS. **Nikhil K. Tulsian**, Srinath Krishnamurthy, Ganesh S. Anand

3267-PLAT 1:30 PM
CRYSTALLOGRAPHIC STRUCTURE OF A SMALL MOLECULE SIRT1 ACTIVATOR/ENZYME COMPLEX. **Han Dai**, Huizhen Zhao, Yong Jiang, Sharon M. Sweitzer, Beth Pietrak, Benjamin Schwartz, William Miller, Erding Hu, James L. Ellis

3268-PLAT 1:45 PM
A CONSERVED WATER-MEDIATED HYDROGEN BOND NETWORK UNDERLIES SELECTIVITY OF THE KINASE INHIBITOR BOSUTINIB. **Nicholas M. Levinson**, Steven G. Boxer

3269-PLAT 2:00 PM
MOLECULAR MECHANISMS UNDERLYING THE CLINICAL SUCCESS OF THE CANCER DRUG GLEEVEC. **Roman V. Agafonov**, Chris Wilson, Renee Otten, Vanessa Buosi, Dorothee Kern

3270-PLAT 2:15 PM
FINDING HIDDEN ALLOSTERIC SITES IN PROTEINS. **Gregory R. Bowman**, Phillip L. Geissler, Susan Marqusee

3271-PLAT 2:30 PM
COMPUTATIONAL PREDICTION OF PROTEIN-PEPTIDE BINDING. **Iris Antes**, Manuel Glaser, Atanas Patronov

3272-PLAT 2:45 PM EDUCATION TRAVEL AWARDEE
RASTERING THE INFLUENZA VIRUS SURFACE WITH MOLECULAR RULERS AND NANOPARTICLES TO DESIGN OPTIMAL MULTIVALENT INHIBITORS. **Daniel Lauster**, Victor Bandler, Henry Memczak, Sumati Bhatia, Christian Sieben, Walter Stöcklein, Oliver Seitz, Rainer Haag, Andreas Herrmann

WEDNESDAY POSTER SESSIONS

The list of Wednesday Late Posters is in the Program addendum. The abstracts are available through the online itinerary planner.

Posters should be mounted between 7:00 AM and 8:00 AM on Wednesday and removed by 3:00 PM. Poster numbers shown refer to the program order of abstracts as they appear in the online Abstracts Issue. Board numbers indicate where boards are located in the Exhibit Hall.

ODD-NUMBERED BOARDS 10:30 AM–11:30 AM
EVEN-NUMBERED BOARDS 11:30 AM–12:30 PM

<u>BOARD NUMBERS</u>	<u>CATEGORY</u>
B1–B30	Correlated Motions in Proteins
B31–B55	Protein Design, Prediction, and Evolution
B56–B84	Dynamics of Ligand Binding
B85–B114	Protein-Solvent Interactions: Water, Ions, Lipids, and Crowding
B115–B142	Protein Folding and Chaperones II
B143–B171	Enzyme Function and Regulation
B172–B201	Assemblies and Aggregates II
B202–B220	Intrinsically Disordered Proteins III
B221–B239	DNA Recombination and Repair
B240–B250	DNA Structure and Dynamics III
B251–B273	Protein-Nucleic Acid Interactions III
B274–B290	Membrane Physical Chemistry III
B291–B309	Membrane Dynamics II
B310–B321	Membrane Fusion II
B322–B331	Membrane Structure III
B332–B361	Protein-Lipid Interactions IV
B362–B374	Membrane Receptors and Signal Transduction IV
B375–B385	Cardiac, Smooth, and Skeletal Muscle Electrophysiology II
B386–B410	Muscle Regulation
B411–B433	Excitation-Contraction Coupling II
B434–B453	Biopolymers in Vivo
B454–B475	Voltage-gated K Channels III
B476–B504	Mechanisms of Voltage Sensing and Gating
B505–B534	Ion Channel Regulatory Mechanisms
B535–B557	TRP Channels II
B558–B570	Cyclic Nucleotide-gated Channels
B571–B578	Intracellular Channels
B579–B589	Ion Channels and Disease II
B590–B621	Muscle: Fiber and Molecular Mechanics and Structure II
B622–B652	Cardiac Muscle III
B653–B682	Microtubules, Their Motors, and Associated Proteins II
B683–B709	Cell Mechanics and Motility IV
B710–B721	Membrane Pumps, Transporters, and Exchangers III
B722–B725	Intracellular Interactions
B726–B741	Neuronal Systems and Modeling
B742–B748	Optical Microscopy and Super Resolution Imaging IV
B749–B765	Scanning Probe Microscopy
B766–B784	Molecular Dynamics III
B785–B816	Computational Methods II
B817–B821	Biosensors II
B822–B830	Micro- and Nanotechnology III

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.

Correlated Motions in Proteins (Boards #B1–#B30)

- 3273-Pos** BOARD #B1
DISTINCT DYNAMIC SIGNATURES OF AMYLOIDOGENIC INSULIN REVEALED BY NEUTRON SPIN ECHO SPECTROSCOPY. **Claus Czeslik**, Mirko Erlkamp, Roland Winter
- 3274-Pos** BOARD #B2
GSATOOLS: ANALYSIS OF ALLOSTERIC COMMUNICATION AND FUNCTIONAL LOCAL MOTIONS USING A STRUCTURAL ALPHABET. **Alessandro Pandini**, Arianna Fornili, Franca Fraternali, Jens Kleinjung
- 3275-Pos** BOARD #B3
RECAPTURING THE CORRELATED MOTIONS OF PROTEIN BY USING COARSE GRAINED MODELS. **Yan Lu**, Freddie R. Salsbury, Jr
- 3276-Pos** BOARD #B4
MODULATION OF ACTIVE SITE PICOSECOND DYNAMICS IN MUTANT FORMS OF A THERMOPHILIC ALCOHOL DEHYDROGENASE (HT-ADH). **Corey W. Meadows**, Judith P. Klinman
- 3277-Pos** BOARD #B5
ATP BINDING INDUCED CONFORMATIONAL CHANGE IN RECQ HELICASE. **Maria Mills**, Keir Neuman
- 3278-Pos** BOARD #B6
THERMODYNAMIC BASIS OF THE ALLOSTERIC ACTIVATION OF PROTEIN KINASE A. **Jonggul Kim**, Frank Chao, Gianluigi Veglia
- 3279-Pos** BOARD #B7
PROBING ALLOSTERIC MECHANISMS OF UTROPHIN AND DYSTROPHIN ACTIN-BINDING DOMAINS, USING THERMAL DENATURATION. **Michael E. Fealey**, Jonathan Crain, Anne Hinderliter, David D. Thomas
- 3280-Pos** BOARD #B8
TEMPERATURE DEPENDENCE OF THE PROTEIN-CHROMOPHORE HYDROGEN BOND DYNAMICS IN THE FAR-RED FLUORESCENT PROTEIN MPLUM. **Chola K. Regmi**, Prem P. Chapagain, Bernard S. Gerstman
- 3281-Pos** BOARD #B9
DYNAMICS OF NEUROTOXIN II PROVIDES ADAPTIVITY OF ITS FUNCTIONAL SITES. **Dmitry M. Lesovoy**, Svetlana B. Nolde, Eduard V. Bocharov, Ekaterina N. Lyukmanova, Dmitry A. Dolgikh, Mikhail P. Kirpichnikov, Alexander S. Arseniev
- 3282-Pos** BOARD #B10 EDUCATION TRAVEL AWARDEE
THE DYNAMIC FUNCTIONAL CONSEQUENCES OF THE THROMBIN-THROMBOMODULIN INTERACTION. **Lindsey D. Handley**, Kyle N. Stearns, Elizabeth A. Komives
- 3283-Pos** BOARD #B11
COMPUTATIONAL SIMULATIONS REVEAL HOW CALMODULIN METHIONINE OXIDATION TRIGGERS LARGE-SCALE CHANGES IN STRUCTURAL DYNAMICS. **Michael Olenek**, David D. Thomas, Jennifer C. Klein
- 3284-Pos** BOARD #B12
ALLOSTERIC EFFECTORS HAVE AN ASYMMETRIC EFFECT ON THE COMPRESSIBILITY OF HEMOGLOBIN SUBUNITS. **Gusztav Schay**, Andras Kaposi, Miklos Kellermayer, Laszlo Smeller, Levente Herenyi, Krisztian Szigeti, Judit Fidy
- 3285-Pos** BOARD #B13
SUPERVISED LEARNING ON MARKOV STATES AS A METHOD FOR GAINING INSIGHT INTO PROTEIN ALLOSTERY. **Mohammad M. Sultan**
- 3286-Pos** BOARD #B14
ALLOSTERIC MODULATION OF CADHERIN AFFINITY. **Nitesh Shashikanth**, Jillian Newhall, Yuliya Petrova, Barry M. Gumbiner, Deborah Leckband
- 3287-Pos** BOARD #B15
SECTOR ANALYSIS OF PROTEIN BASED ON MOLECULAR DYNAMICS SIMULATIONS: ROLE OF ATOMIC FLUCTUATIONS IN SINGLE DOMAIN ALLOSTERISM. **Lakhani Bharat**, Beveridge L. David
- 3288-Pos** BOARD #B16 EDUCATION TRAVEL AWARDEE
DYNAMIC BEHAVIOR OF OLIGOMERIC INORGANIC PYROPHOSPHATASE (IPPASE) STUDIED BY QUASIELASTIC NEUTRON SCATTERING. **Utsab R. Shrestha**, Kurt VanDelinder, Manavalan Gajapathy, John Copley, Juscelino Leao, Joseph D. Ng, Xiang-Qiang Chu
- 3289-Pos** BOARD #B17
ALLOSTERIC REGULATION OF PROTEIN KINASE ENZYMES VIA AN ELECTROSTATIC SWITCH THAT MODULATES ACTIVE SITE DYNAMICS. **Matthew A. Young**, Douglas M. Jacobsen, Zhao-Qin Bao
- 3290-Pos** BOARD #B18
A NETWORK OF “MOLECULAR-SWITCHES” CONTROL THE ACTIVATION OF KEY BACTERIAL SIGNALING PROTEIN. **Dan Vanatta**
- 3291-Pos** BOARD #B19
COARSE-GRAINED MODELING OF THE DYNAMICS AND ALLOSTERIC MODULATION OF HRAS PROTEIN. **Abhijeet Kapoor**, Alex Travasset
- 3292-Pos** BOARD #B20
REDISTRIBUTION OF FLEXIBILITY IN STABILIZING ANTIBODY FRAGMENT MUTANTS FOLLOWS LE CHATELIER'S PRINCIPLE. Tong Li, Malgorzata B. Tracka, Shahid Uddin, Jose Casas-Finet, **Donald J. Jacobs**, Dennis R. Livesay
- 3293-Pos** BOARD #B21 EDUCATION TRAVEL AWARDEE
GENERALIZED MODEL-FREE SPECTRAL DENSITY ANALYSIS APPLIED TO RHODOPSIN ACTIVATION IN MEMBRANES. **Xiaolin Xu**, Andrey V. Struts, K. J. Mallikarjunaiah, Michael F. Brown
- 3294-Pos** BOARD #B22
CONFORMATIONAL MOTION IN GENE REGULATORY PROTEINS. **David V. Svintradze**
- 3295-Pos** BOARD #B23
DIFFERENCES IN TROPONIN C DYNAMICS BETWEEN CARDIAC AND SKELETAL MUSCLE - A MOLECULAR DYNAMICS PERSPECTIVE. **Steffen Lindert**, Andy McCammon
- 3296-Pos** BOARD #B24
THE ROLE OF CONFORMATIONAL FLEXIBILITY IN INHIBITOR BINDING AND SUBSTRATE RECOGNITION FOR CYP119. **Xiaoxiao Shi**, Shu-Hao Liou, R.David Britt, David B. Goodin
- 3297-Pos** BOARD #B25
CONFORMATIONAL CHANGES IN PROTEIN BINDING PROCESSES. **Béla Voß**, Helmut Grubmüller

3298-Pos BOARD #B26
A MODEL FOR ALLOSTERIC CONTROL OF PORE OPENING BY SUBSTRATE BINDING IN THE EUTL MICROCOMPARTMENT SHELL PROTEIN. **Michael C. Thompson**, Sunny Chun, Todd O. Yeates

3299-Pos BOARD #B27
COVARIANCE RATION ANALYSIS OF MOLECULAR DYNAMICS TRAJECTORIES OF HIV-1 REVERSE TRANSCRIPTASE. **James Seckler**, Serdal Kirmizialtin, Kenneth A. Johnson, Alan Grossfield

3300-Pos BOARD #B28
SPECTROSCOPIC ANALYSIS OF CHANNELRHODOPSIN AND ITS CHROMOPHORE. **Vera Muders**, Silke Kerruth, Victor Lorenz-Fonfria, Joachim Heberle, Ramona Schlesinger

3301-Pos BOARD #B29
BORDETTELLA PERTUSSIS ADENYLATE CYCLASE TOXIN: POTENTIAL MODULATOR OF CALMODULIN METAL-BINDING PROPERTIES. **Tzvia I. Cuperman**, Erich J. Goebel, Huaqun Zhang, Natosha L. Finley

3302-Pos BOARD #B30
IMODS: FAST EXPLORATION OF MACROMOLECULAR COLLECTIVE MOTIONS. Jose Ramón López-Blanco, Erney Ramirez, Santiago Garcia, **Pablo Chacon**

Protein Design, Prediction, and Evolution (Boards #B31–#B55)

3303-Pos BOARD #B31
RATIONAL STRUCTURE-BASED DESIGN OF PLN MUTANTS TO OPTIMIZE DEPHOSPHORYLATION AND TUNE SERCA FUNCTION. Choua Xiong, Adedolapo Ojoawo, Gianluigi Veglia, **Kim N. Ha**

3304-Pos BOARD #B32
PROTEIN-CHROMOPHORE INTERACTIONS IN GREEN FLUORESCENT PROTEIN (GFP) STUDIED BY SPLIT PROTEIN RECONSTITUTION. **Luke M. Oltrogge**, Steven G. Boxer

3305-Pos BOARD #B33
SIDE CHAIN ENTROPY IN ENZYMES AND ITS ROLE IN CATALYSIS. **Asmit Bhowmick**

3306-Pos BOARD #B34
RATIONALIZING DIRECTED EVOLUTION THROUGH PROTEIN DYNAMICS. **Saurabh Belsare**

3307-Pos BOARD #B35
UNDERSTANDING THE STRUCTURAL DETERMINANTS FOR THE STABILITY OF HUMAN FIBROBLAST GROWTH FACTOR. **Rachael A. Pellegrino**, Rebecca Kerr, T.K.S. Kumar

3308-Pos BOARD #B36
IS THERE A BETA-PEPTIDE EQUIVALENT OF THE ALPHA-HELIX? **Carsten Baldauf**, Franziska Schubert, Kevin Pagel, Stephan Warnke, Mariana Rossi, Mario Salwiczek, Beate Koksche, Gert von Helden, Volker Blum

3309-Pos BOARD #B37
NOVEL COMPUTATIONAL METHODS TO DESIGN PROTEIN-PROTEIN INTERACTIONS. **Alice Qinhua Zhou**, Corey S. O'Hern, Lynne Regan

3310-Pos BOARD #B38
FROM AMINOMUTASES TO AMMONIA LYASES: A PROTEIN ENGINEERING STUDY. **Marcelo F. Masman**, Matthew M. Heberling, Dick B. Janssen

3311-Pos BOARD #B39
SIMPLE RULES IMPOSED ON A PRIMITIVE CUBIC LATTICE ROBUSTLY GENERATE STRUCTURES THAT MIMIC FEATURES OF REAL PROTEINS. Deniz Turgut, Osman B. Okan, Aravind Rammohan, Angel E. Garcia, **Rahmi Ozisik**

3312-Pos BOARD #B40
INFERRING PROTEIN STRUCTURES FROM SPARSE AND AMBIGUOUS DATA. **Justin L. MacCallum**, Alberto Perez, Kenneth A. Dill

3313-Pos BOARD #B41
SIMULATION STUDY OF SOLUBLE TOXIC OLIGOMERIC STRUCTURES OF AMYLOID-BETA. **Sukanya Sasmal**, Timothy Balmorez, K. Aurelia Ball, Teresa Head-Gordon

3314-Pos BOARD #B42
COMPUTER SIMULATIONS FOR PREDICTING MEMBRANE PROTEIN STRUCTURES WITH THE REPLIC-EXCHANGE METHODS AND IMPLICIT MEMBRANE MODEL OF A RESTRICTED CONFIGURATIONAL SPACE. **Ryo Urano**, Yuko Okamoto

3315-Pos BOARD #B43
TOWARD A GLOBAL VIEW OF THE CONFORMATIONAL LANDSCAPE OF THE HUMAN KINOME. **Daniel L. Parton**, Diwakar Shukla, Yutong Zhao, Vijay S. Pande, John D. Chodera

3316-Pos BOARD #B44
DOCKING BENCHMARK SET OF PROTEIN MODELS. **Ivan Anishchanka**, Petras J. Kundrotas, Alexander V. Tuzikov, Ilya A. Vakser

3317-Pos BOARD #B45
STRUCTURAL SIMILARITY IN MODELING OF HOMODIMERS. **Petras Kundrotas**, Ilya Vakser, Joël Janin

3318-Pos BOARD #B46
THREE-DIMENSIONAL STRUCTURE OF THE 54-KDA SUBUNIT OF THE CHLOROPLAST SIGNAL RECOGNITION PARTICLE USING MOLECULAR MODELING. **Rory Henderson**, Mercedes Furr, Srinivas Jayanthi, Alicia Brown, Robyn Goforth, Ralph Henry, T.K.S. Kumar

3319-Pos BOARD #B47
A MOLECULAR DYNAMICS SIMULATION STUDY OF OUTER MEMBRANE PHOSPHOLIPASE A (OMPLA) STRUCTURE AND DYNAMICS IN AN ASYMMETRIC LIPOPOLYSACCHARIDE MEMBRANE. **Emilia L. Wu**, Patrick J. Fleming, Jeffery B. Klauda, Karen G. Fleming, Wonpil Im

3320-Pos BOARD #B48
MODULAR PLATFORM FOR BIOMOLECULAR MODELING AND SIMULATIONS. **Dominik Gront**

3321-Pos BOARD #B49
A GLOBAL MACHINE LEARNING BASED SCORING FUNCTION FOR PROTEIN STRUCTURE PREDICTION. Eshel Faraggi, **Andrzej Kloczkowski**

3322-Pos BOARD #B50
NEW INSIGHTS ON THE MECHANISM OF ACTION OF ICE-BINDING PROTEINS. **Ran Drori**, Yeliz Celik, Peter L. Davies, Ido Braslavsky

3323-Pos BOARD #B51
CAN A PROTEIN'S EVOLUTIONARY FATE BE PREDICTED FROM ITS STRUCTURE? **Amy I. Gilson**, Eugene I. Shakhnovich

3324-Pos BOARD #B52
PROBING AN ANCIENT PROTEIN'S DYNAMICS WITH NMR. **Marc S. Hoemberger**, Christopher G. Wilson, Dorothee Kern

3325-Pos BOARD #B53
EXPLORING THE ENERGY LANDSCAPE THROUGH ANCESTRAL PROTEINS. **Shion An**, Kathryn M. Hart, Susan Marqusee

3326-Pos BOARD #B54
THE EFFECTIVE TEMPERATURE OF MUTATIONS: A GENERAL MECHANISM FOR THE CONGRUENT EVOLUTION OF ROBUSTNESS. **Gergely J. Szöllösi**, Imre Derényi

3327-Pos BOARD #B55
MOONLIGHTING PROTEINS. **Constance Jeffery**, Matt Mani, Vaishak Ambler, Chang Chen

Dynamics of Ligand Binding (Boards #B56–#B84)

3328-Pos BOARD #B56
THIOL LABELING REVEALS PRESENCE OF CRYPTIC BINDING SITES IN BETA-LACTAMASE. **Eric Bolin**, Brendan Maguire, Gregory Bowman, Susan Marqusee

3329-Pos BOARD #B57
STRUCTURAL DYNAMICS STUDIES OF FATTY ACID BINDING PROTEIN-4 BY SOLUTION NMR SPECTROSCOPY. Adedolapo Ojoawo, **Choua Xiong**, Kim N. Ha

3330-Pos BOARD #B58 MINORITY AFFAIRS TRAVEL AWARDEE
INSIGHTS INTO THE CYCLIC NUCLEOTIDE SELECTIVITY MECHANISM OF CYCLIC GMP DEPENDENT PROTEIN KINASE II. **James Campbell**, Gilbert Huang, Albert Reger, Todd Link, John Ladbury, Choel Kim

3331-Pos BOARD #B59
EFFECTS OF LIGAND BINDING ON THE RIGIDITY AND MOBILITY OF PROTEINS: AN EXPERIMENTAL AND COMPUTATIONAL APPROACH. **Jack Heal**, Claudia Blindauer, Robert B. Freedman, Rudolf Roemer

3332-Pos BOARD #B60
BRIDGING SIMULATIONS AND CALORIMETRY: COMPUTATIONAL STUDIES OF BINDING THERMODYNAMICS AND ENTROPY-ENTHALPY TRANSDUCTION. **Michael K. Gilson**, Andrew T. Fenley, Hari Muddana

3333-Pos BOARD #B61
DIFFERENTIAL RESPONSES OF MSH2/6 AND DAMAGED DNA PROBED BY MOLECULAR DYNAMICS. **Freddie R. Salsbury, Jr.**, Lacramioara Negureanu

3334-Pos BOARD #B62
ATOMIC RESOLUTION MECHANISM OF CD44-HYALURONAN PROTEIN-CARBOHYDRATE BINDING. Christina E. Faller, Amanda J. Favreau, **Olgun Guvench**

3335-Pos BOARD #B63
A MOLECULAR DYNAMICS INVESTIGATION OF THE BACTERIAL CIS-PRENYL TRANSFERASES: PERSPECTIVES ON CONFORMATIONAL FLEXIBILITY AND CHAIN ELONGATION MECHANISMS. **Meekyung O. Kim**, Ferran Feixas-Gerones, Eric Oldfield, J. Andrew McCammon

3336-Pos BOARD #B64
STUDY OF THE DYNAMIC AND THERMODYNAMIC CALCIUM INDUCED TRANSITION IN THE DOWNSTREAM REGULATORY ELEMENT ANTAGONIST MODULATOR (DREAM) USING PHOTOTHERMAL BEAM DEFLECTION (PBD). **Walter G. Gonzalez**, Jaroslava Miksovská

3337-Pos BOARD #B65
SOLID-STATE NMR CHARACTERIZATION OF S31N M2 TRANSMEMBRANE DOMAIN BOUND TO NOVEL ADAMANTANES WITH PERSISTENT *IN VITRO* EFFICACY. **Anna K. Wright**, Ivan Hung, Christina Tzitzoglaki, Harris Ioannidis, David D. Busath, Antonios Kolocouris, Timothy A. Cross

3338-Pos BOARD #B66
SINGLE MOLECULE FRET STUDIES OF THE NMDA RECEPTOR USING UNNATURAL AMINO ACIDS. **Drew Dolino**, David Cooper, Swarna Ramaswamy, Christy Landes, Vasanthi Jayaraman

3339-Pos BOARD #B67
HEME-TRANSFER MECHANISM OF STRUCTURALLY SIMILAR ISD NEAT DOMAINS OF STAPHYLOCOCCUS AUREUS EXHIBITING DIFFERENT AFFINITIES FOR HEME. **Yoshitaka Moriwaki**, Tohru Terada, Jose M. M. Caaveiro, Yousuke Takaoka, Itaru Hamachi, Kouhei Tsumoto, Kentaro Shimizu

3340-Pos BOARD #B68
EXPLORING HOW PHOSPHORYLATION INFLUENCES C-I INTERACTION AND CALCIUM SENSITIVITY OF TROPONIN BY MOLECULAR DYNAMICS SIMULATIONS. **Yuanhua Cheng**, Steffen Lindert, Peter Kekenyes-Huskey, Vijay S. Rao, Paul R. Rosevear, J. Andrew McCammon, Andrew McCulloch, Michael Regnier

3341-Pos BOARD #B69
A COMPLETE CONFIGURATIONAL ENSEMBLE APPROACH TO EXPAND LSD1/COREST DRUGGABILITY. **James C. Robertson**, Nate C. Hurley, Julie M. Kneller, Nadeem A. Vellore, Andrea Mattevi, Riccardo Baron

3342-Pos BOARD #B70
THE ACIDIC RESIDUES OF THE I_kB α PEST SEQUENCE ARE RESPONSIBLE FOR “STRIPPING” NF κ B FROM DNA. **Holly E. Dembinski**, Elizabeth A. Komives

3343-Pos BOARD #B71
STRUCTURAL BASIS FOR CA²⁺ SELECTIVITY OF A VOLTAGE-GATED CALCIUM CHANNEL. **Lin Tang**, Tamer M. Gamal El-Din, Jian Payandeh, Gilbert Q. Martinez, Teresa M. Heard, Todd Scheuer, Ning Zheng, William A. Catterall

3344-Pos BOARD #B72
STRUCTURAL AND DYNAMIC FEATURES UNDERLIE THE SWITCH OF LIGAND BINDING SPECIFICITY IN A TIAM1 PDZ DOMAIN MUTANT. **Ernesto J. Fuentes**, Xu Liu, David C. Speckhard, Tyson R. Shepherd

3345-Pos BOARD #B73 INTERNATIONAL TRAVEL AWARDEE
TRANSTHYRETIN INDUCED AMYLOIDOSIS INTERACTIONS, MECHANISMS AND POTENT DRUGS DESIGN. **Rafal Jakubowski**, Piotr Skrzyniarz, Lukasz Peplowski, Wieslaw Nowak

3346-Pos BOARD #B74
A TEMPERATURE JUMP RELAXATION STUDY OF DYNAMICS OF THERMOPHILIC LACTATE DEHYDROGENASE FROM TH. MARITIMA. **Huo-Lei Peng**, Hua Deng, Robert Callender

3347-Pos BOARD #B75
STRUCTURAL AND FUNCTIONAL BASIS OF TOLLIP ASSOCIATION TO THE ENDOSOMAL ADAPTOR PROTEIN TOM1. **Mary K. Brannon**, Shuyan Xiao, Geoffrey Armstrong, Kristen Fread, Carla V. Finkielstein, Daniel G. S. Capelluto

3348-Pos BOARD #B76
MODELING AND EXPERIMENTAL STUDY OF NHERF1 PDZ DOMAIN SPECIFICITY. **Tatyana Mamonova**, Alessandro Bisello, Peter A. Friedman

3349-Pos BOARD #B77
MOLECULAR BASIS OF PHOSPHATIDYLINOSITOL 4,5-BISPHOSPHATE RECOGNITION BY THE ADAPTOR PROTEIN TIRAP. **Xiaolin Zhao**, Shuyan Xiao, Daniel G. S. Capelluto

3350-Pos BOARD #B78
PROBING THE ORIGIN OF STRUCTURAL STABILITY OF SINGLE AND DOUBLE STAPLED P53 PEPTIDE ANALOGS BOUND TO MDM2. **Udayan Mohanty**

3351-Pos BOARD #B79
DYNAMICS OF MULTIFUNCTIONAL DEHALOPEROXIDASE HEMOGLOBIN. **Stefan Franzen**, Jing Zhao, Hanna Gracz

3352-Pos BOARD #B80
IN SEARCH OF RAS INHIBITORS. **Alemayehu A. Gorfe**

3353-Pos BOARD #B81 CPOW TRAVEL AWARDEE
LIGAND BINDING SITE IDENTIFICATION IN MEMBRANE-BOUND ONCOGENIC K-RAS. **Priyanka Prakash**, Alemayehu A. Gorfe

3354-Pos BOARD #B82
THE PROMINENCE OF THE LIGAND PEPTIDE CARBOXYL TERMINUS IN THE MHC CLASS I MOLECULES STABILITY AND AFFINITY. **Esam T. Abulrous**, Sunil Kumar Saini, Venkat Raman Ramnarayan, Martin Zacharias, Sebastian Springer

3355-Pos BOARD #B83
MECHANISTIC INSIGHTS OF β -LACTAMASES EVOLUTION. **Taisong Zou**, Valeria A. Risso, Jose A. Gavira, Jose M. Sanchez-Ruiz, Sefika B. Ozkan

3356-Pos BOARD #B84
VISUALIZING STRUCTURES, DYNAMICS AND FUNCTION OF ENZYMES. **Hugo Sanabria**, Dmitro Rodnin, Mark Fleissner, Stanislav Kalinin, Suren Felekyan, Katherina Hemmen, Thomas Peulen, Felix Koberling, Ralk Kühnemuth, Holger Gohlke, Wayne Hubbell, Claus A.M. Seidel

Protein-Solvent Interactions: Water, Ions, Lipids, and Crowding (Boards #B85–#B114)

3357-Pos BOARD #B85
SOLUTE PERMEATION IN AQUAPORIN CHANNELS. **Shreyas S. Kaptan**, Bernd de Groot

3358-Pos BOARD #B86
THE DIPOLAR SOLVENT MODEL AND ITS APPLICATIONS TO THE STRUCTURAL ANALYSIS OF LOW-(SAXS) AND HIGH-(CRYSTALLOGRAPHY) RESOLUTION X-RAY DATA. **Frederic Poitevin**, Ludovic Sauguet, Samuel Murail, Marc Baaden, Pierre-Jean Corringer, Patrice Koehl, Henri Orland, Marc Delarue

3359-Pos BOARD #B87
CRUCIAL IMPORTANCE OF PROTEIN-SOLVENT MANY-BODY CORRELATION FOR SOLVENT-ENTROPY EFFECT IN STRUCTURAL STABILITY OF A PROTEIN. **Hiraku Oshima**, Masahiro Kinoshita

3360-Pos BOARD #B88
PROTEIN-WATER INTERFACIAL TENSION DRIVES HOFMEISTER EFFECTS. Ferenc Bogár, Zoltán Násztor, Ferenc Bartha, Balázs Leitgeb, László Fábrián, **Andras Der**

3361-Pos BOARD #B89
MOBILITY OF WATER IN A CONFINED PROTEINACEOUS ENVIRONMENT. Andreas Horner, Florian Zocher, Nicole Ollinger, Johannes Preiner, **Peter Pohl**

3362-Pos BOARD #B90
MOLECULAR DYNAMICS SIMULATIONS OF DYNEIN MOTOR DOMAIN IN EXPLICIT WATER. **Narutoshi Kamiya**, Tadaaki Mashimo, Yu Takano, Takahide Kon, Genji Kurisu, Haruki Nakamura

3363-Pos BOARD #B91
INCORPORATING EXPLICITLY TREATED SURFACE WATER PRODUCES BETTER ALIGNMENTS BETWEEN EXPERIMENTAL AND PREDICTED ANISOTROPIC B-FACTORS. **Lei Zhou**, Qinglian Liu

3364-Pos BOARD #B92
SOLVENT DEPENDENT SHIFT OF FLUORESCENCE PROPERTIES OF FLUORESCENT PROTEINS. **Hideaki Konishi**

3365-Pos BOARD #B93 EDUCATION TRAVEL AWARDEE
INFLUENCE OF HOFMEISTER SALTS ON THE STRUCTURE, AGGREGATION, AND UNFOLDING OF RECA. **Taylor P. Light**, Karen M. Corbett, Michael A. Metrick, Gina MacDonald

3366-Pos BOARD #B94
MODELING THE EFFECTS OF HYDROGEN-BOND DISRUPTING SOLVENTS ON THE STRUCTURE OF MODEL PEPTIDE ANTIBIOTICS. **Melissa W. Anderson**, Kevin P. Larsen, Theodore L. Savage, Adrienne P. Loh

3367-Pos BOARD #B95
SPIN-LABEL ESR STUDY OF THE PROTEIN DOMAIN MOTION AND STABILITY IN THE PRESENCE OF CROWDING EFFECTS. **Chia-Jung Tsai**

3368-Pos BOARD #B96
THE EFFECT OF MOLECULAR CROWDING ON THE STABILITY OF PEPTIDES. **Alan van Giessen**, Barsha Dash

3369-Pos BOARD #B97
THE PH AND CONCENTRATION DEPENDENCE OF PROTEIN-PROTEIN INTERACTIONS, CONFORMATION, AND VISCOSITY IN CROWDED PROTEIN SOLUTIONS. **Prasad Sarangapani**, Ronald L. Jones, Steven Hudson, Jai A. Pathak

3370-Pos BOARD #B98
ALL-ATOM MOLECULAR DYNAMIC SIMULATIONS OF PULMONARY SURFACTANT PROTEIN SP-B INTERACTING WITH LIPID BILAYERS. **Mohammad Hassan Khatami**, Ivan Saika-Voivod, Valerie Booth

3371-Pos BOARD #B99
MEMBRANE PROPERTIES AFFECT OPENING BEHAVIORS OF THE BACTERIAL MECHANOSENSITIVE CHANNEL MSCL: MOLECULAR DYNAMICS STUDY. **Hiroki Katsuta**, YASUYUKI SAWADA, Masahiro Sokabe

3372-Pos BOARD #B100
MOLECULAR DYNAMICS ANALYSIS ON THE ROLE OF THE N-TERMINAL DOMAIN IN MECHANO-GATING OF E-COLI MECHANOSENSITIVE CHANNEL MSCL. **Yasuyuki Sawada**, Masahiro Sokabe

3373-Pos BOARD #B101
CONTINUUM ELECTROSTATIC APPROACH FOR EVALUATING MEMBRANE PROTEIN POSITIONS IN MEMBRANE. Sunit Fuklang, Chirayut Supunyabut, **Pornthep Sompornpisut**

3374-Pos BOARD #B102
PROTEIN-PROTEIN AND PROTEIN-MEMBRANE INTERACTIONS REGARDING THE ERBB2/TRASTUZUMAB-FAB COMPLEXES. A COARSE-GRAINED MOLECULAR DYNAMICS DESCRIPTION. **Juan F. Franco-Gonzalez**, Victor Cruz, Javier Ramos, Javier Martinez-Salazar

3375-Pos BOARD #B103
 INVESTIGATING INFLUENZA A M2-CHOLESTEROL INTERACTIONS BY ORIENTED SAMPLE MAGNETIC RESONANCE. **Matthew Elkins**, Kathleen P. Howard

3376-Pos BOARD #B104
 NEW INSIGHTS INTO THE MECHANISM OF ACTION OF THE ANTIMICROBIAL PEPTIDE AUREIN 1.2. ISOTHERMAL TITRATION CALORIMETRY AND CONFOCAL MICROSCOPY STUDIES. **Eduardo M. Cilli**, Esteban Nicolas Lorenzon, Karin A. Riske

3377-Pos BOARD #B105
 HOW PEGYLATION STABILIZES A PROTEIN. **Shu-Han Chao**, Joshua Price, Aleksei Aksimentiev, Martin Gruebele

3378-Pos BOARD #B106
 UNDERSTANDING THE STRUCTURAL DETERMINANTS OF THE EXTREME THERMAL STABILITY OF RUBREDOXIN. **Karina Sanders**, Srinivas Jayanthi, T.K.S. Kumar

3379-Pos BOARD #B107
 STABILIZATION EFFECTS OF DISULFIDE BONDS AND DIMERIZATION ON CXCL7. **Christopher Singer**, Charles Herring, Elena Ermakova, Bulat Khairutdinov, Yuri Zuev, Donald Jacobs, Irina Nesmelova

3380-Pos BOARD #B108
 EFFECTS OF TRYPTOPHAN MUTATION ON THE THERMAL STABILITY AND CATALYTIC ACTIVITY OF COLD-ADAPTED ESTERASE AT AMBIENT TEMPERATURES. **Sei-Heon Jang**, Jerusha Boyineni, Junyoung Kim, ChangWoo Lee

3381-Pos BOARD #B109
 THERMODYNAMIC STABILITY OF AN AGING PROTEOME. **Adam M. R. de Graff**, Michael Hazoglou, Ken A. Dill

3382-Pos BOARD #B110
 INVESTIGATION OF SMART RESPONSES OF HUMAN SERUM ALBUMIN IN FEVER CONDITION: AN IN VITRO APPROACH. **Mostafa Rezaei-Tavirani**, Reza Vafaei, Mona Zamanian-Azodi

3383-Pos BOARD #B111
 CHARACTERIZATION OF FGF-1 MUTANT, K126D. **Taylor Ghahremani**

3384-Pos BOARD #B112
 BIOPHYSICAL CHARACTERIZATION OF THERAPEUTIC PROTEINS FOR EARLY PREDICTION OF MANUFACTURABILITY. **Nesrine Chakroun**, David Hilton, Paul A. Daldy

3385-Pos BOARD #B113
 THE HEAT RELEASED BY A CHEMICAL REACTION LOCALLY ENHANCED THE ENZYME DIFFUSION. **Clement Riedel**, Christian W.A. Wilson, Kambiz Hamadani, Kostas Tsekouras, Susan Marqusee, Steve Presse, Carlos Bustamante

3386-Pos BOARD #B114
 LIPID DISEQUILIBRIUM DESTABILIZED A SUBSET OF MEMBRANE PROTEINS. **Guillaume Thibault**

Protein Folding and Chaperones II (Boards #B115–#B142)

3387-Pos BOARD #B115
 DRIVING FORCES FOR PROTEIN SECRETION ACROSS THE BACTERIAL OUTER MEMBRANE. **Igor Drobnak**, Patricia L. Clark

3388-Pos BOARD #B116
 IDENTIFICATION OF PROTEIN-PROTEIN INTERACTIONS BETWEEN THE TATB AND TATC SUBUNITS OF THE TWIN-ARGININE TRANSLOCASE SYSTEM AND THE REDOX ENZYME MATURATION PROTEIN CHAPERONES. **Lalita Kuzniatsova**, Raymond J. Turner

3389-Pos BOARD #B117
 DETERMINING THE SORTING PATHWAYS OF MULTI-SPANNING INNER MEMBRANE PROTEINS OF THE MITOCHONDRIA IN VIVO. **Kwangjin Park**, Hyun Kim

3390-Pos BOARD #B118
 TRACKING FOLDING EVENTS DURING THE CELL-FREE EXPRESSION OF BACTERIORHODOPSIN INTO NANODISCS BY SEIRAS. **Axel Baumann**, Kenichi Ataka, Silke Kerruth, Jörg Fitter, Joachim Heberle, Georg Bueldt, Ramona Schlesinger

3391-Pos BOARD #B119
 ROLE OF ENVIRONMENT IN PROTEIN FOLDING. **Sai Janani Ganesan**, Joel Schneider, Robert Blumenthal, Silvina Matysiak

3392-Pos BOARD #B120
 INVESTIGATING THE RESIDUES THAT ARE RESPONSIBLE FOR PH DEPENDENT ACTIVITY OF THE ATPASE DOMAIN OF DNAK. **Gizem Dinler Doganay**, Umut Gunsul, Bulent Balta

3393-Pos BOARD #B121
 EFFECTS OF NEUTRAL, CAPPED ENDS VERSUS CHARGED ENDS ON THE FOLDING OF THE TRP-CAGE MINIPROTEIN. **Charles A. English**, Angel E. Garcia

3394-Pos BOARD #B122 INTERNATIONAL TRAVEL AWARDEE
 FORCED UNFOLDING OF PERIPLASMIC BINDING PROTEINS (PBPS) FOLLOWS KINETIC PARTITIONING. **Hema Chandra Kotamarthi**, Satya Narayan, **Sri Rama Koti Ainavarapu**

3395-Pos BOARD #B123
 IMPAIRED-UPS CAN BE COMPENSATED BY ACTIVATION OF AUTOPHAGY IN NEURODEGENERATIVE DISEASES. **Rituraj Pal**, Michela Palmieri, Marco Sardiello, George G. Rodney

3396-Pos BOARD #B124
 CROWDING EFFECTS ON THE TEMPERATURE AND PRESSURE DEPENDENT STRUCTURE, STABILITY AND FOLDING KINETICS OF *STAPHYLOCOCCAL NUCLEASE*. **Roland Winter**

3397-Pos BOARD #B125
 NANOSECOND DYNAMICS OF CALMODULIN AND RIBOSOME-BOUND NASCENT CHAINS STUDIED BY TIME-RESOLVED FLUORESCENCE ANISOTROPY. **Daryan Kempe**, Paraskevas Lamprou, Alexandros Katranidis, Georg Büldt, Jörg Fitter

3398-Pos BOARD #B126
 REFINED FOLDING MECHANISM OF A HELIX-TURN-HELIX MOTIF. **Ginka S. Kubelka**, Jan Kubelka

3399-Pos BOARD #B127
 EVIDENCE FOR THE FORMATION OF DRY AND WET MOLTEN GLOBULES DURING UNFOLDING PROCESS OF A SMALL PROTEIN. **Guruswamy Krishnamoorthy**

3400-Pos BOARD #B128
 VOLUME OF HSP90 LIGAND BINDING AND THE UNFOLDING PHASE DIAGRAM AS A FUNCTION OF PRESSURE AND TEMPERATURE. **Joana Gylte**

Enzyme Function and Regulation (Boards #B143–#B171)

- 3401-Pos** BOARD #B129
ORIGIN OF ENTHALPIC DEPLETION FORCES. **Liel Sapir**, Daniel Harries
- 3402-Pos** BOARD #B130
STATISTICAL MECHANICAL MODELS FOR ANALYZING THE SITE-SPECIFIC FOLDING OF HELIX-TURN-HELIX MOTIFS. **Jason K. Lai**, Jan Kubelka
- 3403-Pos** BOARD #B131
TOWARDS A TEST OF THE AGGREGATION HYPOTHESIS IN HUNTINGTON'S DISEASE USING β -HAIRPIN ENHANCING MOTIFS. **Sascha Rode**, Kenneth Drombosky, Ronald Wetzel
- 3404-Pos** BOARD #B132
SALT EFFECTS ON FOLDING OF A HELICAL MINI PROTEIN VILLIN HEADPIECE SUBDOMAIN HP36 STUDIED BY GENERALIZED-ENSEMBLE SIMULATIONS. **Takao Yoda**, Yuji Sugita, Yuko Okamoto
- 3405-Pos** BOARD #B133
SIMULATION MODEL OF PROTEIN TRANSPORT AND STABILIZATION BY GROEL/ES. **Apichart Linhananta**
- 3406-Pos** BOARD #B134
NON LOCAL INTERACTIONS ARE ESSENTIAL ELEMENTS OF THE INITIATION AND GUIDANCE OF THE FOLDING PATHWAY OF PROTEINS. **Elisha Haas**, Tomer Orevi, Gil Rahamim, Dan Amir
- 3407-Pos** BOARD #B135
COMPUTATIONAL STUDIES OF THE FORMATION OF PEROXIREDOXIN DIMERS. **Jiajie Xiao**, Freddie R. Salsbury
- 3408-Pos** BOARD #B136
INVESTIGATING CHARACTERISTICS OF FOLDING CORES FROM ANALYSES OF FOLDING MECHANISMS ON MULTI-TRANSITION PROTEINS BY MEANS OF A COARSE-GRAINED GO MODEL. **Masatake Sugita**, Takeshi Kikuchi
- 3409-Pos** BOARD #B137
EFFECTS OF ENERGETIC HETEROGENEITY ON PROTEIN FOLDING DYNAMICS ACROSS MANY NON-HOMOLOGOUS PROTEINS. **Claude Sinner**, Benjamin Lutz, Abhinav Verma, Alexander Schug
- 3410-Pos** BOARD #B138
AROMATIC AMINO ACIDS PROMOTE PEPTIDE FOLDING BY REDUCING BACKBONE HYDRATION. **Olivier Bignucolo**, Stephan Grzesiek, Simon Berneche
- 3411-Pos** BOARD #B139
PH DEPENDENT CONFORMATIONAL CHANGE OF HEPICIDIN AND ITS PRECURSOR PROTEIN, PRO-HEPICIDIN. **Kana Ohshige**, Shigeru Shimamoto, Yuji Hidaka
- 3412-Pos** BOARD #B140
MYOSIN UNC-45 CHAPERONE: THE ROLE OF ITS DOMAINS IN THE INTERACTION WITH THE MYOSIN MOTOR DOMAIN. **Paul Bujalowski**, Paul Nicholls, Jose Barral, Andres Oberhauser
- 3413-Pos** BOARD #B141
POLY-(R)-3-HYDROXYBUTYRATE-MODIFIED PROTEINS. **Rosetta N. Reusch**
- 3414-Pos** BOARD #B142
GFP VARIANTS WITH ALTERNATIVE STRANDS: PROTEASE SENSOR DESIGN AND THEIR THERMODYNAMIC ANALYSIS. **Keunbong Do**, Steven G. Boxer

- 3415-Pos** BOARD #B143
STEERED MOLECULAR DYNAMICS SIMULATIONS OF NAD UNBINDING FROM GAPDH AND LDH. **Tsvetan Aleksandrov**, Igor V. Uporov, Rahul Nori, Kathryn A. Thomasson
- 3416-Pos** BOARD #B144
COMPUTATIONAL AND EXPERIMENTAL STUDY OF KETOREDUCTASE ENANTIOSELECTIVITY. **Elizabeth Noey**, Jiyong Park, K.N. Houk
- 3417-Pos** BOARD #B145
IN SUPPORT OF NITRIC OXIDE DIOXYGENASE FUNCTION: ALGAL HEMOGLOBINS AND THEIR REDUCTION PARTNERS. **Manish Shandilya**, Amit Kumar, Sheetal Uppal, Suneel Kateriya, Suman Kundu
- 3418-Pos** BOARD #B146 EDUCATION TRAVEL AWARDEE
MAPPING THE SUBSTRATE BINDING SITES OF THE INTEGRAL MEMBRANE METHYLTRANSFERASE ICMT BY MUTATIONAL ANALYSIS. **Melinda M. Diver**, Stephen B. Long
- 3419-Pos** BOARD #B147
REGULATION OF CREATINE KINASE BY ASB9. **Deepa Balasubramaniam**, Jamie Schiffer, Elizabeth Komives
- 3420-Pos** BOARD #B148
UNDERSTANDING FUNCTIONAL EVOLUTION IN THE ALKALINE PHOSPHATASE SUPERFAMILY. **Alexandre H. Barrozo**, Alexandra Pires Carvalho
- 3421-Pos** BOARD #B149 MINORITY AFFAIRS TRAVEL AWARDEE
DID CLASS 1 AND CLASS 2 AMINOACYL TRNA SYNTHETASES DESCEND FROM GENETICALLY COMPLIMENTARY, CATALYTICALLY ACTIVE ATP-BINDING MOTIFS? **Mariel Jimenez**, Tishan Williams, A. Katiria González-Rivera, Li Li, Ozgün Erdogan, Charles W. Carter, Jr.
- 3422-Pos** BOARD #B150
ANALYSES OF THE INTERACTION BETWEEN LIPOCALIN-TYPE PROSTAGLANDIN D SYNTHASE AND SUBSTRATE OR PRODUCT. **Yutaro Fukuda**, Takahiro Maruno, Yuji Kobayashi, Tadayasu Ohkubo, Kosuke Aritake, Yoshihiro Urade, Yuji Hidaka, Shigeru Shimamoto
- 3423-Pos** BOARD #B151
THE EVOLUTIONARY CONSTRAINTS IMPOSED ON TYROSINE HYDROXYLATION BY ITS BEGINNINGS AS A PHENYLALANINE HYDROXYLASE; STUDIES OF THE POLYPEPTIDE LOOP DETERMINING THE SUBSTRATE SPECIFICITY. **Ewa Nowara**
- 3424-Pos** BOARD #B152
STRUCTURAL AND FUNCTIONAL BASIS FOR SUBSTRATE SPECIFICITY AND CATALYSIS OF LEVAN FRUCTOTRANSFERASE. **Sangkee Rhee**, Jinseo Park
- 3425-Pos** BOARD #B153
CO RECOMBINATION IN HUMAN IDO AND TDO - A COMPARISON. **Karin Nienhaus**, G. Ulrich Nienhaus
- 3426-Pos** BOARD #B154
MOLECULAR DYNAMICS SIMULATIONS OF THE PROTON TRANSFER REACTION BETWEEN THE CATALYTIC RESIDUES IN HTLV-I PROTEASE. **Shuhua Ma**, Natalie Petrillo, Kimberly Vogt

3427-Pos BOARD #B155
EVIDENCE FOR FUNCTIONAL ROLE OF C-H...S HYDROGEN BOND IN ENZYME CATALYSIS AND SUBSTRATE SPECIFICITY: TYPE 1 METHIONINE AMINOPEPTIDASE. **Anthony Addlagatta**, Ravikumar Reddi

3428-Pos BOARD #B156
MONITORING CONFORMATIONAL CHANGES THAT OCCUR TO BLOOD COAGULANT PROTHROMBIN AS IT IS ACTIVATED TO THROMBIN. **Muriel Maurer**, Marina Malovichko

3429-Pos BOARD #B157
CHARACTERIZATION OF PROTEASES DERIVED FROM *NEPHILA CLAVATA*. **Mitsutoshi Fujiwara**, Mitsuhiro Miyazawa, Shigeru Shimamoto, Yuji Hidaka

3430-Pos BOARD #B158
STRUCTURAL AND COMPUTATIONAL STUDIES OF THE STAPHYLOCOCCUS AUREUS SORTASE B-SUBSTRATE COMPLEX PROVIDE NEW INSIGHT INTO THE MECHANISM OF SORTASE TRANSPEPTIDASES. **Alex W. Jacobitz**, Jeff Wereszczynski, Sung Wook Yi, Brendan R. Amer, Grace L. Huang, Angelyn V. Nguyen, Michael R. Sawaya, Michael E. Jung, J Andrew McCammon, Robert T. Clubb

3431-Pos BOARD #B159
THE ROLE OF CONFORMATIONAL COLLAPSE IN ENZYMIC CATALYSIS. **Robert Callender**, Huo-Lei Peng, Hua Deng, Brian Dyer

3432-Pos BOARD #B160
THE ROLE OF SUBSTRATE UNBINDING IN MICHAELIS-MENTEN ENZYMIC REACTIONS. **Shlomi Reuveni**, Michael Urbakh, Joseph Klafter

3433-Pos BOARD #B161
APPLYING OSMOTIC STRESS REVEALS TWO MODES OF ENZYME INHIBITION. Oksana Yavorska, **John K. Chik**

3434-Pos BOARD #B162
PLACEHOLDER MECHANISM OF CATALYZED OXIDATIVE FOLDING IS CONSERVED ACROSS MULTIPLE DOMAINS OF LIFE. **Thomas B. Kahn**, Julio M. Fernandez, Raul Perez-Jimenez

3435-Pos BOARD #B163
KINETICS OF SEQUENTIAL ENZYME REACTIONS AND ELECTROSTATIC CHANNELING. **Changsun Eun**, Peter M. Kekenus-Huskey, Vincent T. Metzger, J. Andrew McCammon

3436-Pos BOARD #B164
SINGLE MOLECULE FORCE SPECTROSCOPY REVEALS FORCE-ENHANCED BINDING OF CALCIUM IONS BY GELSOLIN. Chunmei Lv, Xiang Gao, Wenfei Li, Robert Robinson, Meng Qin, Leslie Burtnick, Hao Zhou, **Yi Cao**, Wei Wang

3437-Pos BOARD #B165
SYNAPTOTAGMIN LINKER: TUNING OF COOPERATIVITY IN CALCIUM ION BINDING. **Troy A. Hendrickson**, Jacob W. Gauer, Ryan Mahling, Komemba J. Lohese, Michael E. Fealey, R. Bryan Sutton, Anne Hinderliter

3438-Pos BOARD #B166
MOLECULAR DYNAMICS-BASED PREDICTIONS OF THE STRUCTURAL AND FUNCTIONAL EFFECTS OF DISEASE-CAUSING CARDIAC TROPONIN MUTATIONS. **Bairam Lotfalismasi**, Charles M. Stevens, Glen F. Tibbits

3439-Pos BOARD #B167
DETERMINANTS OF PREFERENTIAL BINDING OF APO CALMODULIN TO THE IQ MOTIF OF NEURONAL SODIUM CHANNEL NAV1.2. **Liam Hovey**, Mark S. Miller, Dagan C. Marx, Kristin M. Tefft, Elaine Kim, Jesse B. Yoder, Madeline A. Shea

3440-Pos BOARD #B168
CALCIUM-MEDIATED REGULATION OF CALCINEURIN BY A DYNAMIC DUO OF EF-HAND PROTEINS. **Madeline A. Shea**, Sean A. Klein, Susan E. O'Donnell, Brett C. Waite, Jesse B. Yoder

3441-Pos BOARD #B169
FLUORESCENCE POLARIZATION AND FLUCTUATION ANALYSIS REVEALS COVERT CHANGES IN CAMKII HOLOENZYME ORGANIZATION TRIGGERED BY CALMODULIN AND CAMKIIN-TIDE. **Tuan A. Nguyen**, Jithesh V. Veetil, Pabak Sarkar, Steven S. Vogel

3442-Pos BOARD #B170
POSITIVE COOPERATIVITY AND T286 AUTOPHOSPHORYLATION IS OBSERVED IN A DIMERIC MUTANT OF CALCIUM-CALMODULIN DEPENDENT PROTEIN KINASE II (CAMKII). **Pabak Sarkar**, Kaitlin Davis, Henry L. Puhl III, Jithesh V. Veetil, Tuan A. Nguyen, Steven S. Vogel

3443-Pos BOARD #B171
CHARACTERIZATION OF CALCIUM-CALMODULIN KINASE II INHIBITOR PROTEIN (CAMKIIN) BY FLUORESCENCE POLARIZATION AND FLUCTUATION ANALYSIS. **Jithesh V. Veetil**, Kaitlin Davis, Henry L. Puhl III, Tuan A. Nguyen, Pabak Sarkar, Steven S. Vogel

Assemblies and Aggregates II (Boards #B172–#B201)

3444-Pos BOARD #B172
TWO-DIMENSIONAL INFRARED SPECTROSCOPY AND ELECTRON MICROSCOPY OF SEEDED AND NON-SEEDED AMYLOID β PEPTIDE FIBRILS. Jianqiang Ma, **Hiroaki Komatsu**, Paul H. Axelsen

3445-Pos BOARD #B173
A NEW QUANTITATIVE BEAD AGGREGATION ASSAY FOR DETERMINING THE ASSOCIATION RATES OF PROTEIN-PROTEIN INTERACTIONS. **Nagamani Vunnam**, Natalie René Phongam, Ashton Walters, Nathan Hammer, Susan Pedigo

3446-Pos BOARD #B174
STRUCTURAL AND HYDRATION PROPERTIES OF HUNTINGTIN AGGREGATES DETERMINED BY SMALL-ANGLE NEUTRON SCATTERING. **Christopher B. Stanley**, Tatiana Perevozchikova, Helen P. McWilliams-Koepfen, Valerie Berthelot

3447-Pos BOARD #B175
ENHANCEMENT, EQUAL FLUORESCENCE EFFICIENCY, AND QUENCHING IN THE INTERPRETATION OF FLUORESCENCE ANISOTROPY DATA. Zahra Zolmajd-Haghighi, **Quentin Hanley**

3448-Pos BOARD #B176 EDUCATION TRAVEL AWARDEE
CHARGE CROWDING PROMOTES SELF-ASSEMBLY OF COLLAGEN HETROTRIMERS. **Nida F. Hasan**, Avani S. Parmar, Mihir Joshi, Patrick Nosker, Vikas Nanda

3449-Pos BOARD #B177
UREA, GUANIDINE HYDROCHLORIDE AND 2,2,2-TRIFLUOROETHANOL CAN CHANGE THE AMYLOID FIBRIL FORMATION OF MODEL PROTEINS: A SPECTROSCOPIC STUDY. **Leandro R S Barbosa**

- 3450-Pos BOARD #B178**
THE OLIGOMERIC STATE OF HUMAN ALPHA-DEFENSIN 1 IN SOLUTION. **Grzegorz Piszczek**
- 3451-Pos BOARD #B179**
AGGREGATION OF TRANSFORMING GROWTH FACTOR BETA INDUCED PROTEIN STUDIED BY PROTEIN-PROTEIN DOCKING. **Ole J. Andersen**, Heidi Koldso, Birgit Schiøtt
- 3452-Pos BOARD #B180**
STABLE AMYLOID OLIGOMERS CAN SEED FIBRIL GROWTH NEAR PHYSIOLOGICAL CONDITIONS. **Mentor Mulaj**, Tatiana Miti, Joseph Foley, Martin Muschol
- 3453-Pos BOARD #B181**
PHASE BOUNDARIES FOR FIBRIL AND METASTABLE OLIGOMER FORMATION OF LYSOZYME. **Tatiana Miti**, Mentor Mulaj, Joseph Foley, Martin Muschol
- 3454-Pos BOARD #B182**
POLYGLUTAMINE FLANKING REGIONS IN HUNTINGTIN HIGHLIGHT KEY STRUCTURAL INTERMEDIATES RELEVANT FOR MOLECULAR CHAPERONE INTERACTION AND HUNTINGTON'S DISEASE PATHOGENESIS. **Koning Shen**, Barbara Calamini, Donald Lo, Judith Frydman
- 3455-Pos BOARD #B183**
KINETICS OF THE INTERCONVERSION BETWEEN TWO PHYSIOLOGICALLY IMPORTANT COPPER-BOUND AMYLOID-BETA SPECIES. **Thomas Branch**, Mauricio Barahona, Liming Ying
- 3456-Pos BOARD #B184**
INSIGHTS INTO THE INHIBITION MECHANISM OF BIOMOLECULAR SELF-ASSEMBLY FROM CHEMICAL KINETICS. **Paolo Arosio**, Michele Vendruscolo, Christopher M. Dobson, Tuomas P.J. Knowles
- 3457-Pos BOARD #B185**
FILAMENT ASSEMBLY BY PHOSPHOFRUCTOKINASE-1, THE GATEKEEPER OF GLYCOLYSIS. **Bradley Webb**, Larry Ackerman, Diane Barber
- 3458-Pos BOARD #B186**
AMYLOID β -PROTEIN: THE INFLUENCE OF INTRINSIC AND EXTRINSIC FACTORS ON FIBRIL FORMATION. **Risto Cukalevski**, Xiaoting Yang, Samuel Cohen, Barry Boland, Birgitta Frohm, Eva Thulin, Dominic Walsh, Tuomas Knowles, Sara Linse
- 3459-Pos BOARD #B187**
HIV-TAT PROTEIN ENHANCES AMYLOID BETA PEPTIDE AGGREGATION. **Alina Popescu Hategan**, Joseph Steiner, Emilios K. Dimitriadis, Avindra Nath
- 3460-Pos BOARD #B188**
THE AGGREGATION-PRONE MUTANT HUNTINGTIN PROTEIN IN A CELLULAR CONTEXT - APPROACHES BY SUPER-RESOLUTION IMAGING. **Steffen J. Sahl**, Willianne I M Vonk, Lucien E. Weiss, Lana Lau, Judith Frydman, W. E. Moerner
- 3461-Pos BOARD #B189 CPOW TRAVEL AWARDEE**
NANOSCALE ASSEMBLY OF PROTEINS INTO AMYLOID OLIGOMERS, PORES AND FIBRILS. **Mily Bhattacharya**, Neha Jain, Priyanka Dogra, Vijit Dalal, Dominic Narang, Pushpender K. Sharma, Soumyadyuti Samai, Samrat Mukhopadhyay
- 3462-Pos BOARD #B190 INTERNATIONAL TRAVEL AWARDEE**
ATOMISTIC SIMULATIONS LEND MECHANISTIC INSIGHTS INTO PLAUSIBLE WAYS OF PERTURBING THE NUCLEATION THERMODYNAMICS OF THE FULL-LENGTH $\alpha\beta$ PEPTIDE. Asis K. Jana, **Neelanjana Sengupta**
- 3463-Pos BOARD #B191**
THE FORMATION OF HIGHER ORDER STRUCTURES BY THE NEURONAL PROTEIN ALPHA-SYNUCLEIN: SELF-ASSEMBLY OVER MULTIPLE LENGTH SCALES. **Slav Semerdzhiev**, Mireille Claessens, Vinod Subramaniam
- 3464-Pos BOARD #B192**
STRUCTURAL BASIS FOR THE PRION-LIKE MAVS FILAMENTS IN ANTIVIRAL INNATE IMMUNITY. **Hui Xu**, Xiaojing He, Hui Zheng, Lily Huang, Fajian Hou, Zhiheng Yu, Michael J. de la Cruz, Brian Borkowski, Xuewu Zhang, Zhijian J. Chen, Qiu-xing Jiang
- 3465-Pos BOARD #B193**
AMYLOIDS: CONNECTING FROM SINGLE FIBRIL MECHANICS TO MACROSCOPIC RHEOLOGY. **Corianne C. van den Akker**, Jeanette Nguyen, Michael Schleegeer, Krassimir P. Velikov, Mischa Bonn, Gijse H. Koenderink
- 3466-Pos BOARD #B194**
RECOGNITION OF AMYLOIDOGENIC SEGMENTS BASED ON SITE SPECIFIC AMINOACID PAIRWISE CORRELATIONS. Pawel Gasior, **Malgorzata Kotulska**
- 3467-Pos BOARD #B195**
ELONGATION OF MURINE PRION PROTEIN AMYLOID-LIKE FIBRILS: EFFECT OF TEMPERATURE AND DENATURANT CONCENTRATION. Katarzyna Milto, Ksenija Michailova, **Vytautas Smirnovas**
- 3468-Pos BOARD #B196**
PYROGLUTAMYLATED AMYLOID-BETA PEPTIDE REVERSES CROSS BETA-SHEETS BY A PRION-LIKE MECHANISM. Jason O. Matos, Greg Goldblatt, **Suren A. Tatulian**
- 3469-Pos BOARD #B197**
COLLAGEN SINGLE FIBRIL ELASTIC MODULUS MEASUREMENT TECHNIQUE. **Pavel Dutov**, Jay D. Schieber, Olga Antipova, Sameer Varma, Joseph Orgel
- 3470-Pos BOARD #B198**
EVOLUTIONARY EXCURSIONS IN QUATERNARY STRUCTURE SPACE. **Joseph A. Marsh**, Sebastian E. Ahnert, Sarah A. Teichmann
- 3471-Pos BOARD #B199**
DEFINING PROTEIN COMPLEXES THAT MEDIATE BACTERIAL CHEMOTAXIS BY PULSED DIPOLAR ESR SPECTROSCOPY. Brian R. Crane, Peter P. Borbat, **Jack H. Freed**
- 3472-Pos BOARD #B200**
INTERACTION OF BETA-SHEETS TO FORM AGGREGATES AND FIBRILS. THEORETICAL AND EXPERIMENTAL SPECTROSCOPIC STUDIES OF PEPTIDE IR AND VCD SPECTRA. Heng Chi, William R. W. Welch, Jan Kubelka, Jiri Kessler, Petr Bour, **Timothy A. Keiderling**
- 3473-Pos BOARD #B201**
DESTABILIZING AMYLOID FIBRILS BY SELECTIVE SEQUENCE MUTATIONS ENABLED BY COMPUTATIONAL ASSEMBLY OF POLYMORPHIC STRUCTURES. **Mohamed R. Smaoui**, Jerome Waldispuhl

Intrinsically Disordered Proteins III (Boards #B202–#B220)

- 3474-Pos** **BOARD #B202**
MULTIPLE RECOGNITION MOTIFS PROVIDE RIGIDITY TO STABILIZE LC8 COMPLEXES. **Afua Nyarko**, Yujuan Song, Elisar Barbar
- 3475-Pos** **BOARD #B203**
CONFORMATIONAL ALLOSTERY IN NUCLEAR RECEPTOR/COREGULATOR TRANSCRIPTIONAL COMPLEXES. Ian M. S. De Vera, **Douglas J. Kojetin**
- 3476-Pos** **BOARD #B204**
ARE SPIDER SILK PROTEINS A NEW CLASS OF INTRINSICALLY DISORDERED PROTEINS? Dian Xu, Jeffrey L. Yarger, **Gregory P. Holland**
- 3477-Pos** **BOARD #B205**
IMPLICATIONS OF ORDER DISORDER TRANSITIONS IN THE ANDROGEN RECEPTOR FOR THE ONSET AND TREATMENT OF LATE STAGE PROSTATE CANCER. Eva De Mol, Christopher Phang, Robert B. Fenwick, Mariana Masin, Anna Montaner, Carlos Bertoni, **Xavier Salvatella**
- 3478-Pos** **BOARD #B206**
THE INTRINSICALLY DISORDERED PHOTOSYSTEM II SUBUNIT, PSBO, IS A SENSOR FOR THE HYDROGEN BONDING NETWORK IN THE OXYGEN EVOLVING COMPLEX. Adam R. Offenbacher, Brandon C. Polander, **Bridgette A. Barry**
- 3479-Pos** **BOARD #B207**
THE INTRINSICALLY DISORDERED CYTOPLASMIC DOMAIN OF THE T-CELL RECEPTOR ZETA SUBUNIT DOES NOT FORM DISORDERED DIMERS. **Tanja Mittag**, Amanda Nourse
- 3480-Pos** **BOARD #B208**
MAPPING RESIDUAL STRUCTURE IN DISORDERED PROTEIN ENSEMBLES WITH MILLISECOND H/D EXCHANGE MASS SPECTROMETRY. **David D. Weis**
- 3481-Pos** **BOARD #B209**
STRUCTURE AND INTERNAL DYNAMICS OF CALCITONIN FAMILY PEPTIDES: IMPLICATIONS FOR AMYLOID FORMATION. Stephanie M. Cope, Sara M. Sizemore, Anindya Roy, Giovanna Ghirlanda, **Sara M. Vaiana**
- 3482-Pos** **BOARD #B210** EDUCATION TRAVEL AWARDEE
ENANTIOSPECIFIC RECOGNITION OF THE INTRINSICALLY DISORDERED C-MYC ONCOPROTEIN BY SMALL MOLECULES. **Kaitlyn P. Gerhart**, Steven J. Metallo
- 3483-Pos** **BOARD #B211**
CHARACTERIZATION OF THE INTRINSICALLY DISORDERED REGION OF THE SOLUBLE GUANYLATE CYCLASE ALPHA-1 SUBUNIT. **Candice V. Benally**, Parul Singh, Matthew J. Gage
- 3484-Pos** **BOARD #B212**
THE STRUCTURAL AND KINETIC ENSEMBLE OF ASB9'S N-TERMINUS AND ITS ROLE IN SUBSTRATE RECOGNITION. **Jamie Schiffer**, Deepa Balasubramaniam, Jonathan Parnell

3485-Pos **BOARD #B213**
SEQUENCE ANALYSIS AND BIOPHYSICAL CHARACTERIZATION REVEALS THE PRESENCE OF A LONG DISORDERED REGION IN THE CAPA MEMBRANE PROTEIN FROM *F. TULARENSIS*. **Jose M. Martin**, Debra T. Hansen, Andrey Loskutov, Mark D. Robida, Felicia M. Craciunescu, Kathryn Sykes, Rebekka M. Wachter, Petra Fromme, James P. Allen

3486-Pos **BOARD #B214**
STRUCTURAL BASIS OF MULTIPLE SEQUENTIAL LC8 SITES: INSIGHTS FROM INTERACTIONS OF LC8 WITH PAC11. **Jing Jie**, Elisar Barbar

3487-Pos **BOARD #B215**
COMBINING NMR AND COMPUTER SIMULATIONS TO EVALUATE CDC25B PROTEIN FLEXIBILITY. **Raphael S. Sayegh**, Fabio K. Tamaki, Sandro R. Marana, Roberto K. Salinas, Guilherme M. Arantes

3488-Pos **BOARD #B216**
HOW ELECTROSTATICS INFLUENCES THE CONFORMATIONAL DISORDER AND DYNAMICS OF THE SIC1 PROTEIN: A SINGLE-MOLECULE STUDY. Baoxu Liu, Veronika Csizmok, Patrick Farber, Julie Forman-Kay, **Claudiu C. Gradinaru**

3489-Pos **BOARD #B217**
ENTHALPY-ENTROPY COMPENSATION AND ISOEQUILIBRIA IMPLICATE SOLVATION AS THE DRIVING FORCE FOR AMINO ACID CONFORMATIONAL PROPENSITY. **Siobhan Toal**, Daniel Verbaro, Reinhard Schweitzer-Stenner

3490-Pos **BOARD #B218**
NEAREST NEIGHBOR INTERACTIONS ATTENUATE INTRINSIC AMINO ACID CONFORMATIONAL PREFERENCES: A COMBINED VIBRATIONAL AND NMR STUDY. **Siobhan Toal**, Reinhard Schweitzer-Stenner, Karin Rybka, Harold Schwalbe

3491-Pos **BOARD #B219**
ELECTROSTATICS-DEPENDENT SHAPE OF THE INTRINSICALLY-DISORDERED PROTEIN SIC1. **Gregory W. Gomes**, Baoxu Liu, Patrick Farber, Veronika Csizmok, Julie Forman-Kay, Claudiu C. Gradinaru

3492-Pos **BOARD #B220**
DEVELOPMENT OF INTRINSICALLY DISORDERED PROTEIN BRUSHES AS SMART BIOMATERIALS. **Nithya Srinivasan**, Maniraj Bhagawati, Badriprasad Ananthanarayanan, Sanjay Kumar

DNA Recombination and Repair (Boards #B221–#B239)

3493-Pos **BOARD #B221**
A COMPUTATIONAL STUDY ON THE ROLE OF A METHIONINE AT A DISCRIMINATOR SITE OF CYCLOBUTANE-PYRIMIDINE-DIMER PHOTOLYASE. **Ryuma Sato**, Hirotaka Kitoh-Nishioka, Tsutomu Kawatsu, Kei Yura, Koji Ando, Takahisa Yamato

3494-Pos **BOARD #B222**
STRUCTURAL CHARACTERIZATION OF HEAVY METAL TOXICITY IN A HUMAN DNA REPAIR GLYCOSYLASE. Trevor Gokey, Bo Hang, **Anton Guliaev**

3495-Pos **BOARD #B223** MINORITY AFFAIRS TRAVEL AWARDEE
SMALL MOLECULE INHIBITORS OF INTERACTION BETWEEN ERCC1 AND XPA. **Liezl E. Francisco**, Dmytro Kovalskyy, Nikolaos Biris, Zhonghua Wang, Alex Taylor, P. John Hart, Dmitri Ivanov

3496-Pos BOARD #B224

SINGLE-MOLECULE VISUALIZATION OF RUVB ORIGOMER FOR CHARACTERIZING A AAA⁺ CLASS HEXAMERIC ATPASE WITH ZERO-MODE WAVEGUIDES. **Takuma Iwasa**, Yong-Woon Han, Hiroaki Yokota, Ryuji Yokokawa, Teruo Ono, Ryo Hiramatsu, Yoshie Harada

3497-Pos BOARD #B225

DYNAMICS OF DNA DAMAGE RECOGNITION BY NUCLEOTIDE EXCISION REPAIR PROTEIN XPC. **Yogambigai Velmurugu**, Xuejing Chen, Jung-Hyun Min, Anjum Ansari

3498-Pos BOARD #B226

ATOMISTIC STUDIES SUPPORT A DETAILED MODEL OF RECA MEDIATED HOMOLOG RECOGNITION AND STRAND EXCHANGE. **Darren Yang**, Chantal Prevost, Mara Prentiss

3499-Pos BOARD #B227

INVESTIGATION OF THE DRUG LIKE MOLECULE BINDING TO DNA SINGLE STRAND BREAKS USING IMPROVED HYDROXYL RADICAL CLEAVAGE METHODOLOGY. **Shu Zhang**, Philip H. Bolton

3500-Pos BOARD #B228

GLOBAL AND LOCAL CONFORMATION OF MISMATCHED DUPLEX DNA UPON MSH2-MSH6 BINDING STUDIED BY STEADY-STATE AND TIME-RESOLVED FLUORESCENCE. **Yan Li**, Manju Hingorani, Ishita Mukerji

3501-Pos BOARD #B229

STRUCTURALLY DISTINCT COMPLEXES OF UBIQUITIN AND SUMO-MODIFIED PCNA LEAD TO DISTINCT DNA DAMAGE RESPONSE PATHWAYS. Susan Tsutakawa, Chunli Yan, Xiaojun Xu, Bret Freudenthal, Christopher Weinacht, Zhihao Zhuang, Todd Washington, **Ivaylo Ivanov**

3502-Pos BOARD #B230

INVESTIGATING CRE-RECOMBINASE-MEDIATED DNA LOOPING USING FRET. **Massa J. Shoura**, Stephen D. Levene

3503-Pos BOARD #B231

DNA BENDING AND DISCRIMINATION OF MISMATCHES BY MUTS AND HUMAN HOMOLOGS. **Michael Feig**, Monika Sharma, Alexander Predeus, Shayantani Mukherjee, Nicholas Kovacs

3504-Pos BOARD #B232

SINGLE MOLECULE DYNAMICS GOVERNING THE INITIATION OF V(D)J RECOMBINATION. **Geoffrey Lovely**, Martin Linden, Pradeep Ramesh, David Schatz, David Baltimore, Rob Phillips

3505-Pos BOARD #B233

SUBSTRATE INTERACTIONS OF A HUMAN DNA ALKYLTRANSFERASE. **Michael G. Fried**, Manana Melikishvili, Lance M. Hellman

3506-Pos BOARD #B234

WATCHING AID SCANNING SINGLE STRANDED AND TRANSCRIBED DNA WITH SINGLE MOLECULE RESOLUTION. Gayan Senavirathne, Jeff Bertram, Malgorzata Jaszczur, Phuong Pham, Chi Mak, Myron F. Goodman, **David Rueda**

3507-Pos BOARD #B235

NICKING SINGLE DNA MOLECULES TO STUDY INITIATION OF MISMATCH REPAIR. **Jordan Monnet**, Audrey Quessada-Vial, Nicolaas Hermans, Evan Graves, Herrie H.K. Winterwerp, Peter Friedhoff, Titia K. Sixma, Joyce H.G. Lebbink, Terence R. Strick

3508-Pos BOARD #B236

USING NANOFUIDIC CHANNELS TO PROBE THE DYNAMICS OF RAD51-DNA FILAMENTS. **Louise Helena Fornander**, Fredrik Persson, Joachim Fritzsche, Joshua Araya, Philip Nevin, Penny Beuning, Mauro Modesti, Karolin Frykholm, Fredrik Westerlund

3509-Pos BOARD #B237

A SINGLE-STRAND ANNEALING PROTEIN CLAMPS DNA TO DETECT HOMOLOGY. Marcel Ander, Sivaraman Subramaniam, Karim Fahmy, A. Francis Stewart, **Erik Schäffer**

3510-Pos BOARD #B238

KINETIC ANALYSIS OF INTERACTIONS BETWEEN MUTS, MUTL AND DNA DURING INITIATION OF DNA MISMATCH REPAIR. **Anushi Sharma**, Manju Hingorani

3511-Pos BOARD #B239

BUILDING A BETTER ENGINE: STIMULATION OF SINGLE MOLECULES OF SGS1 BY RPA AND TOP3-RMI1. **Jason C. Bell**, Cejka Petr, Kowalczykowski C. Stephen

DNA Structure and Dynamics III (Boards #B240–#B250)

3512-Pos BOARD #B240

CONSTRUCTION AND CHARACTERIZATION OF CY3- OR CY5-CONJUGATED HAIRPIN PYRROLE/IMIDAZOLE POLYAMIDES BINDING TO DNA IN THE NUCLEOSOME. **Yong-Woon Han**, Tomoko Matsumoto, Hiroaki Yokota, Yasuo Tsunaka, Gengo Kashiwazaki, Hironobu Morinaga, Kaori Hashiya, Toshikazu Bando, Hiroshi Sugiyama, Yoshie Harada

3513-Pos BOARD #B241

EXTRACTION OF CONVENTIONAL TWO-STATE MELTING TEMPERATURE FROM DNA OLIGOMERS WITH SIGNIFICANT PREMELTING BEHAVIOR. **Eric W. Hall**, Gregory W. Faris

3514-Pos BOARD #B242

TARGETING OF A DNA PSEUDOKNOT IS HINDERED DUE TO FORMATION OF BASE-TRIPLET STACKS. **Calliste Reiling**, Luis A. Marky

3515-Pos BOARD #B243

SINGLE-MOLECULE FRET DETECTS INTERMEDIATES AND FAST DYNAMICS OF DNA HOLLIDAY JUNCTIONS. Alessandro Valeri, Suren Felekyan, Stanislav Kalinin, Markus Richert, Stefan Marawske, Enno Schweinberger, **Ralf Kuehnemuth**, Claus A. M. Seidel

3516-Pos BOARD #B244

FLUORESCENCE APPROACH TO STUDY BASE FLIPPING IN THE DNA REPAIR MECHANISM OF T4 ENDONUCLEASE V. Matthew R. Vander-Schuur, Ricardo Martin, **Elvin A. Aleman**

3517-Pos BOARD #B245

'AT' CONTENT AS A DETERMINANT OF THE CHROMOSOME STRUCTURE. **Hajin Kim**, Jejoong Yoo, Aleksei Aksimentiev, Taekjip Ha

3518-Pos BOARD #B246

CONFORMATIONS OF P53 RESPONSE ELEMENTS IN SOLUTION DEDUCED USING SITE-DIRECTED SPIN LABELING AND MONTE CARLO SAMPLING. Xiaojun Zhang, Ana Carolina Dantas Machado, Remo Rohs, **Peter Qin**

3519-Pos BOARD #B247

UNIVERSAL BEHAVIOR OF DNA ESCAPE, DRIFT, AND DIFFUSION IN NANOPORES. **David P. Hoogerheide**, Jene A. Golovchenko

3520-Pos **BOARD #B248**
SYNCHRONOUS OPTICAL AND ELECTRICAL MEASUREMENTS OF SINGLE DNA MOLECULES TRANSLLOCATING THROUGH A SOLID STATE NANOPORE. **Jose A. Bustamante**, Nick Yelle, Tabard-Cossa Vincent

3521-Pos **BOARD #B249**
DNA DENATURATION-SUPERCOILING TRANSITION AT THERMOPHILIC TEMPERATURES. **Eric Galburt**, Eric Tomko, Tom Stump, Ana Ruiz Manzano

3522-Pos **BOARD #B250**
IN SITU STRUCTURE AND DYNAMICS OF DNA ORIGAMI DETERMINED THROUGH MOLECULAR DYNAMICS SIMULATIONS. **Jejoong Yoo**, Aleksei Aksimentiev

Protein-Nucleic Acid Interactions III (Boards #B251–#B273)

3523-Pos **BOARD #B251**
TARGET RECOGNITION AND DEGRADATION BY AN ADAPTIVE BACTERIAL IMMUNE SYSTEM. **Megan L. Hochstrasser**, David W. Taylor, Prashant Bhat, Chantal K. Guegler, Jennifer A. Doudna

3524-Pos **BOARD #B252**
DNA INTERROGATION BY THE CRISPR RNA-GUIDED ENDONUCLEASE CAS9. **Samuel H. Sternberg**, Sy Redding, Martin Jinek, Eric C. Greene, Jennifer A. Doudna

3525-Pos **BOARD #B253**
STRUCTURAL BASIS FOR FOREIGN DNA INTEGRATION IN CRISPR ADAPTIVE IMMUNITY. **James K. Nunez**, Jennifer A. Doudna

3526-Pos **BOARD #B254** EDUCATION TRAVEL AWARDEE
A BIOPHYSICAL STUDY OF THE G-QUADRUPLEX-INSULIN INTERACTION. **Nicole L. Michmerhuizen**, Margaret A. Van Winkle, Kumar Sinniah

3527-Pos **BOARD #B255**
ADAR2: TOWARDS A STRUCTURAL AND KINETIC UNDERSTANDING OF RNA EDITING. **Andrew D. Kehr**, Mark R. Macbeth, Gordon S. Rule

3528-Pos **BOARD #B256**
ACTIVATION OF PKR BY STEM-LOOP RNAs WITH FLANKING SSRNA TAILS. **Christopher B. Mayo**, C. Jason Wong, James L. Cole

3529-Pos **BOARD #B257**
DOUBLE-STRAND RNA BINDING PROTEIN PROFILING. **Xinlei Wang**

3530-Pos **BOARD #B258**
THERMODYNAMIC AND STRUCTURAL STUDIES OF PDX1 BINDING TO ELEMENTS FROM NATURAL PROMOTERS AND NEAR-CONSENSUS SITES. **Monique Bastidas**, Scott A. Showalter

3531-Pos **BOARD #B259**
ANALYSIS OF PKR DIMERIZATION BY RESONANCE ENERGY TRANSFER. **Bushra Husain**, Michael Bruno, James L. Cole

3532-Pos **BOARD #B260**
MECHANISMS OF TRF1/TRF2 BINDING PROPERTIES AND DNA SEQUENCE RECOGNITION AS STUDIED BY MOLECULAR DYNAMICS. **Milosz Wieczor**, Pawel Wityk, Adrian Tobiszewski, Jacek Czub

3533-Pos **BOARD #B261**
STATISTICAL THERMODYNAMICS FOR BINDING OF AN RNA APTAMER AND A PARTIAL PEPTIDE OF A PRION PROTEIN. **Tomohiko Hayashi**, Hiraku Oshima, Tsukasa Mashima, Takashi Nagata, Masato Katahira, Masahiro Kinoshita

3534-Pos **BOARD #B262** CPOW TRAVEL AWARDEE
HOT-SPOTS DETECTION - APPLICATION TO A VARIETY OF DIFFERENT PROTEIN-BASED SYSTEMS. Rui Ramos, Joao Martins, Antonio Pimenta, **Irina Moreira**

3535-Pos **BOARD #B263**
STRUCTURAL DESIGN AND VALIDATION OF LINKERS FOR ZINC FINGER PROTEINS. **Priya Anand**, Alexander Schug, Wolfgang Wenzel

3536-Pos **BOARD #B264**
THE INCREASED AFFINITY AND DECREASED SELECTIVITY OF THE HPV6 E2 Δ LL MUTANT STEMS FROM A DECREASE IN DNA BENDING IN THE MUTANT COMPLEX. **Geoffrey M. Gray**, Arjan van der Vaart

3537-Pos **BOARD #B265**
SINGLE-MOLECULE VIEW ON THE DUALITY OF MICRORNA URIDYLATION. **Luuk Loeff**, Minju Ha, Boseon Kim, Kyu-Hyeon Yeom, Dharendra K. Simanshu, Dinshaw J. Patel, Narry V. Kim, Chirlmin Joo

3538-Pos **BOARD #B266**
SINGLE MOLECULE DNA STRETCHING STUDIES OF DNA INTERCALATION. **Ioulia Rouzina**

3539-Pos **BOARD #B267**
NUCLEIC ACID BINDING KINETICS OF HIV-1 NUCLEOCAPSID PROTEINS FROM SINGLE MOLECULE DNA STRETCHING. **Jialin Li**, Robert Gorelick, Ioulia Rouzina, Mark Williams

3540-Pos **BOARD #B268**
PARTIAL UNWRAPPING OF SSB FROM SSDNA FACILITATES RECA FILAMENT FORMATION. **Sukrit Suksombat**, Alexander G. Kozlov, Timothy M. Lohman, Yann R. Chemla

3541-Pos **BOARD #B269**
THE FORCE DEPENDENT PROTEIN-DNA STRUCTURE OF H-NS. **Samuel Yoshua**, Haowei Wang, Nanak Singh, Josh Milstein

3542-Pos **BOARD #B270**
ENZYMATIC REACTIONS IN NANO-CONFINED DNA MONOLAYERS. **Pietro Parisse**, Chiara Rotella, Jashmini Deka, Matteo Castronovo, Giacinto Scoles, Loredana Casalis

3543-Pos **BOARD #B271**
SNAP: SOFTWARE FOR ANALYZING STRUCTURES OF NUCLEIC ACID-PROTEIN COMPLEXES. **Xiang-Jun Lu**, Wilma K. Olson, Harmen J. Bussemaker

3544-Pos **BOARD #B272**
A PROTEIN-RNA KNOWLEDGE-BASED POTENTIAL FOR SCORING AND REFINEMENT. **Adelene YL Sim**, Adrien Guilhot-Gaudeffroy, Chandra Verma, Peter Minary, Julie Bernauer

3545-Pos **BOARD #B273**
ON-CHIP ANALYSIS OF INTERMITTENT MOLECULAR ENCOUNTERS IN NUCLEASE DIGESTION OF SPECIFIC DNA SEQUENCE. **Daisuke Onoshima**, Noritada Kaji, Manabu Tokeshi, Yoshinobu Baba

Membrane Physical Chemistry III (Boards #B274–#B290)

3546-Pos BOARD #B274
RAPID DETERMINATION OF GEOMETRY AND ELASTIC CONSTANTS OF LIPID NANOTUBES. **Pavel Bashkirov**, Anna Shnyrova, Ksenia Chekashkina, Eva Rodriguez Hortelano, Petr Kuzmin, Vadim Frolov

3547-Pos BOARD #B275
INTERACTION OF DIGITONIN AND CHOLATE WITH COMPLEX MEMBRANES. **Helen Y. Fan**, Dar'ya S. Redka, Heiko Heerklotz

3548-Pos BOARD #B276
MEMBRANE LEAKAGE AND ANTIMICROBIAL ACTION OF POLYMERS AND SURFACTANTS. **Sara G. Hovakeemian**, Runhui Liu, Samuel H. Gellman, Heiko Heerklotz

3549-Pos BOARD #B277
INFLUENCE OF CHOLESTEROL MICROSTRUCTURES ON FLUCTUATION SPIKES IN NYSTATIN CHANNEL CURRENTS IN PHOSPHOLIPID/CHOLESTEROL BILAYERS. **Carl S. Helrich**, Dennis R. Chavez

3550-Pos BOARD #B278
OPTIMIZING DRUG RELEASE: BILAYER TO INVERTED HEXAGONAL PHASE TRANSITION OF CATIONIC XTC2 AND ANIONIC DSPS LIPID SYSTEM IS INFLUENCED BY PH, TEMPERATURE, AND SALT CONCENTRATION.
Siyun (Linda) Wang, Ismail M. Hafez, Jason Wang, Mo Ashtari, D. Peter Tieleman, Pieter R. Cullis, Jenifer L. Thewalt

3551-Pos BOARD #B279
MODELLING OF THE INTERACTION BETWEEN CATIONIC LIPID DLIN-KC2-DMA (XTC2) AND ANIONIC LIPID DISTEAROYLPHOSPHATIDYLSERINE (DSPS).
Mohammad Ashtari, D. Peter Tieleman, Linda Wang, Jenifer Thewalt, Peter R. Cullis

3552-Pos BOARD #B280
INTERACTION OF MEFLUQUINE HYDROCHLORIDE WITH CELL MEMBRANES MODELS STUDIED WITH TENSIOMETRY AND VIBRATIONAL SPECTROSCOPY. Thiago Eichi Goto,
Luciano Caseli

3553-Pos BOARD #B281
EFFECT OF PHOSPHOLIPID CHARGES AND SPACING ON KINETICS OF LAURDAN AND PATMAN EQUILIBRATION WITH PHOSPHOLIPID MEMBRANES. **Morgan Schwab**, Elizabeth Gibbons, Michael Murri, Amy Gravner, John D. Bell

3554-Pos BOARD #B282
INTERACTION OF SEMIFLEXIBLE FILAMENTOUS VIRUS PARTICLES WITH FREESTANDING LIPID MEMBRANES. Anastasiia B. Artemieva, Petra Schwille, **Eugene P. Petrov**

3555-Pos BOARD #B283
DIFFUSION AND FREEZING TRANSITION OF ROD-LIKE DNA ORIGAMI ON FREESTANDING LIPID MEMBRANES.
Eugene P. Petrov, Aleksander Czogalla, Dominik J. Kauert, Ralf Seidel, Petra Schwille

3556-Pos BOARD #B284
STRUCTURE AND DYNAMICS OF LENS LIPID MEMBRANES DERIVED FROM A SINGLE PORCINE DONOR: HIGH FIELD EPR STUDY. **Laxman Mainali**, Jason W. Sidabras, Theodore G. Camenisch, Marija Raguz, James S. Hyde, Witold Subczynski

3557-Pos BOARD #B285
PHOSPHOLIPID-CHOLESTEROL BILAYERS, CHOLESTEROL BILAYER DOMAINS, AND CHOLESTEROL CRYSTALS WERE DETECTED IN LIPID DISPERSION PREPARED FROM LIPIDS EXTRACTED FROM LENS NUCLEUS OF OLD HUMAN DONORS. **Laxman Mainali**, Marija Raguz, William J. O'Brien, Witold K. Subczynski

3558-Pos BOARD #B286
BE CAREFUL WHEN CHOOSING YOUR DYE LABEL: COMMERCIAL, WATER-SOLUBLE FLUOROPHORES OFTEN INTERACT WITH LIPID BILAYERS. **Robert J. Rawle**, Laura D. Hughes, Steven G. Boxer

3559-Pos BOARD #B287
HYDRATION AND TEMPERATURE-INDUCED PHOSPHOLIPID PHASE TRANSITIONS AND THEIR INFLUENCE ON DESICCATION TOLERANCE OF THE NEMATODE CAENORHABDITIS ELEGANS. **Sawsan E. Abusharkh**, Cihan Erkut, Teymuraz Kurzchalia, Karim Fahmy

3560-Pos BOARD #B288
PHYSICAL ASPECTS OF THE CUT-OFF EFFECT OF N-ALCOHOLS IN PURE LIPID MEMBRANES.
Francisco J. Sierra-Valdez, J. C. Ruiz-Suárez

3561-Pos BOARD #B289
INTERACTION OF NOVOBIOCIN WITH SALMONELLA SP OUTER MEMBRANE. **Thatyane M. Nobre**, Michael Martynowycz, Tonya Kuhl, David Gidalevitz, Hiroshi Nikaido

3562-Pos BOARD #B290
SIZE, MORPHOLOGY, AND MIRNA ABUNDANCE OF CELL-SECRETED MICROVESICLES. **Michael E. Paulaitis**, Kitty Agarwal

Membrane Dynamics II (Boards #B291–#B309)

3563-Pos BOARD #B291
COMPOSITIONAL INTERFACE DYNAMICS WITHIN SYMMETRIC AND ASYMMETRIC PLANAR LIPID BILAYER MEMBRANES. **Tao Han**, Mikko P. Haataja

3564-Pos BOARD #B292
DYNAMIC IMPLICIT SOLVENT COARSE GRAINED MODELS OF LIPID BILAYER MEMBRANES: FLUCTUATING HYDRODYNAMICS THERMOSTATS. **Paul J. Atzberger**

3565-Pos BOARD #B293
DISSECTING THE ROLES OF MEMBRANE CURVATURE, LIPID RAFT FORMATION AND PROTEIN-LIPID INTERACTIONS IN THE CLUSTERING OF RAS. **Philip W. Fowler**, Mark S P Sansom

3566-Pos BOARD #B294
MOLECULAR DYNAMICS SIMULATIONS OF LIPID-LINKED OLIGOSACCHARIDES IN LIPID BILAYERS. **Nathan R. Kern**, Emilia L. Wu, Sunhwan Jo, Kenno Vanommeslaeghe, Wonpil Im

3567-Pos BOARD #B295
POTENTIAL OF MEAN FORCE CALCULATIONS FOR NILE RED IN LIPID BILAYERS. **Gurpreet Singh**, D. Peter Tieleman

3568-Pos BOARD #B296
SURFACE-TENSION REPLICA-EXCHANGE MOLECULAR DYNAMICS METHOD FOR EFFICIENT CONFORMATIONAL SAMPLING OF BIOLOGICAL MEMBRANE SYSTEMS.
Takaharu Mori, Jaewoon Jung, Yuji Sugita

3569-Pos **BOARD #B297**

WHAT HAPPENS FOR STEROL DYNAMICS WHEN CHOLESTEROL IS ENZYMATIALLY OXIDIZED?

Moutusianna, Sini Mokka, Matti Javanainen, Tomasz Rog, Maarit Neuvonen, Elina Ikonen, Ilpo Vattulainen

3570-Pos **BOARD #B298**

DEVELOPMENT OF COARSE-GRAINED MARTINI MODEL FOR NUCLEIC ACID STRUCTURES. **Parisa Akhshi**, Jaakko Uusitalo, Helgi Ingolfsson, Siewert-Jan Marrink, D. Peter Tieleman

3571-Pos **BOARD #B299**

LYSOLIPID CONCENTRATION EFFECT ON THE PROPERTIES OF A MEMBRANE USING MOLECULAR DYNAMICS.

J. David Orjuela, Chad Leidy, Günther H. Peters, Gilles P. Pieffet

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THE ABUNDANCE OF ERGOSTEROL IN CANDIDA SPECIES DOES NOT INFLUENCE FLUCONAZOLE SENSITIVITY.

Gayatri Suresh Kumar

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ARE LOCAL ANESTHETICS AND GENERAL ANESTHETICS DIFFERENT? **Henrike Sasse-Middelhoff**, Karis Zecchi,

Thomas Heimburg

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BIOPHYSICAL STUDY OF BABESIA INFECTED RED BLOOD CELL USING DIFFRACTION PHASE MICROSCOPY. **HyunJoo Park**, YongKeun Park

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ACTIVE REGULATION OF CELLULAR MEMBRANE TENSION.

Jiixiang Tao, Sean X. Sun

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KINETIC MECHANISM OF PHASE SEPARATION IN STRATUM CORNEUM MODELS BY IR SPECTROSCOPY.

Richard Mendelsohn, Ibrahim Selevany, Guangru Mao, M. Catherine Mack Correa, Russel M. Walters, David J. Moore, Carol R. Flach

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FLIP-FLOPS OF LIPIDS IN THE ABSENCE OF ATP: ROLE OF MEMBRANE PROTEINS. Tuomo Nieminen, Matti Javanainen, Reinis Danne, Tomasz Rog, Andrei A. Gurtovenko, **Ilpo Vattulainen**

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ACTIN FILAMENTS ATTACHMENT TO THE PLASMA MEMBRANE CAUSE THE FORMATION OF ORDERED LIPID DOMAINS IN LIVE CELLS. **Parham Ashrafzadeh**, Jelena Dinic,

Ingela Parmryd

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STUDY OF PROTEIN DIFFUSION IN DEFECTIVE ERYTHROCYTE MEMBRANE. He Li, **George Lykotrafitis**

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DYNAMIC BEHAVIOR OF THE ACTIVE AND INACTIVE STATE OF ADENOSINE A2A RECEPTORS. **Sangbae Lee**,

Supriyo Bhattacharya, Nagarajan Vaidehi

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PROTEIN-INDUCED MEMBRANE SHAPE INSTABILITY: DYNAMICS AND MEMBRANE TENSION DEPENDENCE.

Zheng Shi, Tobias Baumgart

Membrane Fusion II (Boards #B310–#B321)

3582-Pos **BOARD #B310**

INSIGHTS INTO THE LATERAL ORGANIZATION AND MOLECULAR ORDER OF LIPID MIXTURES THAT MIMIC THE HIV-1 MEMBRANE BY MULTIPHOTON FLUORESCENCE MICROSCOPY. **Nerea Huarte**, Pablo Carravilla, José L. Nieva, Jose Requejo-Isidro

3583-Pos **BOARD #B311**

CELL-CELL FUSION MEDIATED BY THE FUSION PROTEIN OF EBOLA VIRUS. **Ruben M. Markosyan**, Shan Lu Liu, Fredric S. Cohen

3584-Pos **BOARD #B312**

INVESTIGATION OF CALCEIN FOR REPORTING CONTENT MIXING DURING VIRAL MEMBRANE FUSION EXPERIMENTS.

Laura Wessels, Keith Weninger

3585-Pos **BOARD #B313**

MECHANISM OF ACTION OF FLUFIRVITIDE, A PEPTIDE INHIBITOR OF INFLUENZA VIRUS INFECTION. **Hussain Badani**,

Robert F. Garry, Thomas G. Voss, Russell B. Wilson, William C. Wimley

3586-Pos **BOARD #B314**

INFLUENZA FUSION PEPTIDE AND TRANSMEMBRANE DOMAIN INTERACTION INDUCES DISTINCT DOMAINS IN LIPID BILAYERS. **Alex Liqi Lai**, Jack H. Freed

3587-Pos **BOARD #B315**

INFLUENZA MEMBRANE FUSION AS VIEWED FROM THE STRUCTURE AND DYNAMICS OF THE FULL-LENGTH

HEMAGGLUTININ FUSION DOMAIN. **Justin L. Lorieau**,

John M. Louis, Charles D. Schwieters, Ad Bax

3588-Pos **BOARD #B316**

BIOPHYSICAL STUDY OF THE DEPENDENCE OF FUSION OF DENGUE VIRUS WITH HOST MEMBRANES ON LIPID

COMPOSITION. Briana C. Vernon, Sadie La Bauve,

David M. Rogers, Bryan Carson, Cathryn M. Siegrist,

Edward Moczydlowski, Frank Heinrich, Bulent Akgun, Sushil Satija,

Aihua Zheng, Margaret C. Kielian, **Michael S. Kent**

3589-Pos **BOARD #B317**

THE VIRAL RESTRICTION FACTOR IFITM3 PROMOTES HEMIFUSION BUT BLOCKS FULL FUSION OF INFLUENZA

VIRUS. **Tanay M. Desai**, Mariana Marin, Christopher R. Chin,

George Savidis, Abraham L. Brass, Gregory B. Melikyan

3590-Pos **BOARD #B318**

NEW BROAD-SPECTRUM VIRAL FUSION INHIBITORS ACT BY DELETERIOUS EFFECT ON THE VIRAL MEMBRANE

THROUGH THE PRODUCTION SINGLET OXYGEN

MOLECULES. **Axel Hollmann**, Marcelo T. Augusto, Sonia Gonçalves,

Frederic Vigant, Miguel A.R.B. Castanho, Benhur Lee, Nuno C. Santos

3591-Pos **BOARD #B319**

GP41 ECTODOMAIN DISSOCIATES AND FORMS A STABLE MONOMER ON PHOSPHOLIPID VESICLES AND DETERGENT

MICELLES: IMPLICATION FOR THE HIV-1 ENV-MEDIATED

MEMBRANE FUSION. **Julien Roche**, John M. Louis, Ad Bax

3592-Pos **BOARD #B320**

SINGLE-MOLECULE MANIPULATION OF GP41 FOLDING INVOLVED IN HIV INFECTION AND DRUG RESISTANCE.

Junyi Jiao, Yongli Zhang

3593-Pos BOARD #B321
THE GP41 SEQUENCE CONNECTING MPER AND TM DOMAINS CONSTITUTES A DISTINCT HIV-1 "FUSION PEPTIDE" TARGETED BY NEUTRALIZING ANTIBODIES. **Beatriz Apellaniz**, Soraya Serrano, Nerea Huarte, Cármen Domene, M. Ángeles Jiménez, José L. Nieva

Membrane Structure III (Boards #B322–#B331)

3594-Pos BOARD #B322
CRITICAL STRETCHING AND PORES IN BOLALIPID MEMBRANE FROM FLEXIBLE STRING MODEL. **Sergei I. Mukhin**, Boris B. Khefets

3595-Pos BOARD #B323
LIPID MEMBRANES AS NON-LINEAR CAPACITORS. **Lars D. Mosgaard**, Karis A. Zecchi, Thomas Heimburg

3596-Pos BOARD #B324
MONOLAYER-BILAYER TRANSFORMATIONS WITH PHASE COEXISTENCE. **Svetlana Baoukina**, Dmitri Rozmanov, Eduardo Mendez-Villuendas, D. Peter Tieleman

3597-Pos BOARD #B325
BUCKLING GEL-PHASE MEMBRANES IS A WAY TO MEASURE THEIR MEAN BENDING REGIDITY. **Patrick M. Diggins**, Mingyang Hu, Markus Deserno

3598-Pos BOARD #B326
CHARACTERISATION OF COEXISTING LIQUID PHASES IN MIXTURES OF DIPALMITOYLPHOSPHATIDYLCHOLINE AND CHOLESTEROL. **Matti Javanainen**, Hector Martinez-Seara, Ilpo Vattulainen

3599-Pos BOARD #B327
EXTRACTING STRUCTURAL AND MECHANICAL PROPERTIES OF LIPID VESICLES FROM MOLECULAR DYNAMICS SIMULATIONS. **Anthony R. Braun**, Jonathan N. Sachs

3600-Pos BOARD #B328
MOLECULAR DYNAMIC STUDIES ON ORGANELLE-SPECIFIC YEAST MEMBRANE MODELS AND AMPHIPATHIC LIPID PACKING SENSOR MOTIF BINDING MECHANISM. **Viviana Monje-Galvan**, Jeffery B. Klauda

3601-Pos BOARD #B329
MOLECULAR DYNAMICS SIMULATIONS OF 4-COMPONENT MEMBRANES WITH NOVEL CATIONIC LIPIDS YIELD INSIGHT INTO APOE BINDING. **Bradley P. Feuston**, Steven Colletti, Christopher Culberson, Marian Gindy, Kenneth Koeplinger, Mathew Stanton

3602-Pos BOARD #B330
WHAT DID WE LEARN FROM MODEL MEMBRANE STUDIES ON BIOLOGICAL MEMBRANES. **Dov A. Lichtenberg**

3603-Pos BOARD #B331
MOLECULAR-LEVEL ORGANIZATION OF THE TEAR FILM LIPID LAYER: A MOLECULAR DYNAMICS SIMULATION STUDY. Alicja Wizert, D. Robert Iskander, Pavel Jungwirth, **Lukasz Cwiklik**

Protein-Lipid Interactions IV (Boards #B332–#B361)

3604-Pos BOARD #B332 INTERNATIONAL TRAVEL AWARDEE
TO BE OR NOT TO BE IN MEMBRANE DOMAINS: TRANSBILAYER ASYMMETRY AND SPHINGOMYELIN-DEPENDENT PREFERENTIAL PARTITIONING OF THE ACETYLCHOLINE RECEPTOR. **Vanesa L. Perillo**, D. Alejandro Peñalva, Marta I. Aveldaño, Francisco J. Barrantes, Silvia S. Antollini

3605-Pos BOARD #B333
FORMATION OF GIANT UNILAMELLAR VESICLES CONTAINING ACTIVE PROTEINS. **Isabelle Motta**, Vladimir Adrien, Andrea Gohlke, Pincet Frederic

3606-Pos BOARD #B334
INFLUENCE OF A CENTRAL TRYPTOPHAN AND OF CHOLESTEROL ON THE PROPERTIES OF DEFINED TRANSMEMBRANE HELICAL PEPTIDES. Vasupradha Suresh Kumar, Bethany P. Doss, Denise V. Greathouse, **Roger E. Koeppe II**

3607-Pos BOARD #B335
REGULATION OF K-RAS MEMBRANE ASSOCIATION: CALMODULIN VERSUS PDE δ . **Katrin Weise**, Benjamin Sperlich, Shobhna Kapoor, Gemma Triola, Herbert Waldmann, Roland Winter

3608-Pos BOARD #B336
INFLUENCE OF GLUTAMIC ACID RESIDUES ON THE PROPERTIES OF MODEL MEMBRANE-SPANNING HELICES. **Venkatesan Rajagopalan**, Denise V. Greathouse, Roger E. Koeppe II

3609-Pos BOARD #B337
INFLUENCE OF PH AND HISTIDINE RESIDUES ON MEMBRANE-SPANNING HELICAL PEPTIDES. **Ashley N. Martfeld**, Denise V. Greathouse, Roger E. Koeppe II

3610-Pos BOARD #B338
MOLECULAR INSIGHT FOR THE EFFECT OF LIPID RAFT ON THROMBOSPONDIN-1 AND CALRETICULIN INTERACTIONS. Lingyun Wang, Joanne Murphy-Ullrich, **Yuhua Song**

3611-Pos BOARD #B339 EDUCATION TRAVEL AWARDEE
ANALYSIS OF THE MOLECULAR ORGANIZATION OF LIPOPROTEIN-ASSOCIATED APOLIPOPROTEIN E, AN ANTI-ATHEROGENIC PROTEIN. **Shweta Kothari**, Sea H. Kim, Arti B. Patel, John K. Bielicki, Vasanthy Narayanaswami

3612-Pos BOARD #B340
DUAL-COLOR FLUORESCENCE CROSS-CORRELATION SPECTROSCOPY OF RECONSTITUTED PROTEIN-MEMBRANE SYSTEMS. Daniela Kruger, Stefan Werner, Sebastian Daum, Jan Auerswald, Peter Simeonov, Caroline Haupt, Mikio Tanabe, **Kirsten Bacia**

3613-Pos BOARD #B341
DIVALENT CATION- AND CHOLESTEROL-INDUCED PERTURBATION IN LIPID LATERAL ORGANIZATIONS AND POLYPHOSPHOINOSITIDE-PROTEIN INTERACTIONS. **Yu-Hsiu Wang**, Paul A. Janmey

3614-Pos BOARD #B342
DYNAMIC ASSOCIATION AND DISSOCIATION OF THE TUMOR SUPPRESSOR PTEN TO MODEL MEMBRANES. **Brittany M. Neumann**, Rakesh K. Harishchandra, Michelangela A. Yusif, Mathias Losche, Alonzo H. Ross, Arne Gericke

3615-Pos BOARD #B343
A TALE OF TWO DOMAINS: DIFFERENT ROLES OF C1A AND C1B DOMAINS IN PKC INTERACTIONS WITH MEMBRANES.
Jianing Li

3616-Pos BOARD #B344
DEFINING THE ROLES OF VARIOUS LYSINES AND ARGININES IN AMOT LIPID BINDING. **LeCelia Hall**

3617-Pos BOARD #B345
HOW MEMBRANE CURVATURE DRIVES THE UP-CONCENTRATION OF N-RAS PROTEINS TO ORDERED LIPID DOMAINS : CORRELATION OF IN VIVO AND IN VITRO EXPERIMENTS WITH MEAN FIELD THEORY CALCULATIONS AND COARSE GRAIN SIMULATIONS. **Nikos S. Hatzakis**, Jannik Larsen, Martin B. Jensen, Vikram K. Bhatia, Søren L. Pedersen, Heidi Koldsoe, Philip Fowler, Mark J. Uline, Igal G. Szleifer, Thomas Bjornholm, Mark Sansom, Knud J. Jensen, Dimitrios Stamou

3618-Pos BOARD #B346
SENSING AND STIFFENING OF TUBULAR MEMBRANES BY THE SYNDAPIN 1 FBAR. Pradeep Ramesh, Younes F. Baroji, Nader S. Reihani, Dimitrios Stamou, Lene B. Oddershede,
Poul M. Bendix

3619-Pos BOARD #B347
SYMMETRY AND STABILITY OF MEMBRANE PROTEIN LATTICES. **Osman Kahraman**, Peter D. Koch, William S. Klug, Christoph A. Haselwandter

3620-Pos BOARD #B348
REGULATION OF NEURON BRANCHING BY THE INTERACTION OF NEUROLIGIN C-TERMINUS DOMAIN WITH PIP2. Qinyu Zhang, Victor Didier Perez-Meza, John Hawkins, Mayte Pisabarro,
Sophie Pautot

3621-Pos BOARD #B349
EFFECT OF PROTEIN-INDUCED SPONTANEOUS CURVATURE ON MEMBRANE SURFACE TENSION. **Padmini Rangamani**, Kranthi K. Mandadapu, George Oster

3622-Pos BOARD #B350
OLIGOMERIZATION OF H-RAS ON MEMBRANE SURFACES. **Wan-Chen Lin**, Lars Iversen, Hsiung-Lin Tu, Sune M. Christensen, Scott D. Hansen, William Y. C. Hwang, Jay T. Groves

3623-Pos BOARD #B351
CHOLESTEROL-GPCR (B2AR) INTERACTION IN LIPIDIC CUBIC PHASE: INSIGHT FROM 13C NMR. **Deborah L. Gater**, Olivier Saurel, Jordan Jordanov, Wei Liu, Vadim Cherezov, Alain Milon

3624-Pos BOARD #B352
QUANTITATIVE ANALYSIS OF LIGAND-INDUCED SUPRAMOLECULAR CLUSTERING OF DEATH RECEPTOR 5 IN JURKAT CELLS. **Andrew K. Lewis**, Christopher C. Valley, Anthony R. Braun, Jonathan N. Sachs

3625-Pos BOARD #B353
STRUCTURAL DETERMINANTS OF PROTEIN ASSOCIATION WITH MEMBRANE RAFTS AND CONSEQUENCES OF RAFT MISLOCALIZATION. **Ilya Levental**, Kandice Levental, Blanca B. Diaz-Aguilar

3626-Pos BOARD #B354
RHODOPSIN CROWDING IN MODEL LIPID BILAYERS - FUNCTIONAL IMPLICATIONS. **Olivier Soubias**, John K. Northup, Kirk G. Hines, Walter E. Teague, Klaus Gawrisch

3627-Pos BOARD #B355
INVESTIGATION OF LIPID BILAYER EFFECTS ON RHODOPSIN ACTIVATION USING UV-VISIBLE AND FTIR SPECTROSCOPY.
Udeep Chawla, Blake Mertz, Eglolf Ritter, Franz Bartl, Michael F. Brown

3628-Pos BOARD #B356
REVEALING TRANSIENT INTERACTIONS BETWEEN PHOSPHATIDYLINOSITOL-SPECIFIC PHOSPHOLIPASE C AND PHOSPHATIDYLCHOLINE-RICH LIPID VESICLES. **Boqian Yang**, Mary F. Roberts, Anne Gershenson

3629-Pos BOARD #B357 EDUCATION TRAVEL AWARDEE
INTERPLAY OF MEMBRANE LIPIDS DIFFERENTIALLY AFFECTS LIPID BINDING OF PHOSPHATIDIC ACID EFFECTORS.
Priya Putta, Johanna M. Rankenberg, Christa Testerink, Edgar E. Kooijman

3630-Pos BOARD #B358
THE PROTEIN THAT HELD BACK THE DYE: ANNEXIN'S EFFECT ON MEMBRANE PERMEABILITY. **Anika M. Rannikko**, Katie Dunleavy, Anne Rice, Ryan Mahling, Michael Fealey, Samantha Jaworski, Anne Hinderliter

3631-Pos BOARD #B359
MEMBRANE INSERTION PATHWAY OF THE APOPTOTIC REPRESSOR BCL-XL: HOW (DIS)SIMILAR IS IT TO THAT OF DIPHTHERIA TOXIN T-DOMAIN? **Mauricio Vargas-Uribe**, Alexey S. Ladokhin

3632-Pos BOARD #B360
DO ACIDIC RESIDUES IN TH8-TH9 PLAY A ROLE IN TRANSMEMBRANE INSERTION OF THE DIPHTHERIA TOXIN T-DOMAIN? **Chiranjib Ghatak**, Mykola V. Rodnin, Karin Öjemalm, Aurora Holgado, Mauricio Vargas-Uribe, IngMarie Nilsson, Gunnar von Heijne, Alexey S. Ladokhin

3633-Pos BOARD #B361
CRUCIAL ROLE OF H322 IN THE FOLDING OF DIPHTHERIA TOXIN T-DOMAIN INTO THE OPEN-CHANNEL STATE. **Mauricio Vargas-Uribe**, **Mykola V. Rodnin**, Paul Kienker, Alan Finkelstein, Alexey S. Ladokhin

Membrane Receptors and Signal Transduction IV (Boards #B362–#B374)

3634-Pos BOARD #B362
ACTIVATION OF INHIBITORY G PROTEIN CATALYZED BY GPCR: MOLECULAR DYNAMICS SIMULATIONS OF THE ACTIVATED CANNABINOID CB2 RECEPTOR / Ga11β1γ2 PROTEIN COMPLEX. **Jagjeet Singh**, Diane Lynch, Alan Grossfield, Nicholas Leioatts, Michael Pitman, Patricia Reggio

3635-Pos BOARD #B363
RESOLVIN D1, A TRIHYDROXYLATED DHA DERIVATIVE, DISPLAYS ANTI-HYPERREACTIVE EFFECTS ON HUMAN PULMONARY ARTERIES. **Roddy Hiram**, Edmond Rizcallah, Chantal Sirois, Caroline Morin, Eric Rousseau

3636-Pos BOARD #B364
QUANTITATIVE ANALYSIS OF RECEPTORS AND SECOND MESSENGERS INTERACTIONS IN PANCREATIC BETA CELL. **Leonid E. Fridlyand**, Louis H. Philipson

3637-Pos BOARD #B365
ROLE OF AKAPS IN BCAM/LU RECEPTOR ACTIVATION ON NORMAL AND SICKLE ERYTHROCYTES. Jamie Maciaszek, Biree Andemariam, **George Lykotrafitis**

3638-Pos BOARD #B366 EDUCATION TRAVEL AWARDEE
 THE CELLULAR CONTENT OF NON-ERYTHROID SPECTRINS AND ANKYRINS IS MODULATED BY EXTERNAL FORCES.
Eleni K. Degaga, Martin B. Forstner

3639-Pos BOARD #B367
 SPATIO-TEMPORAL DYNAMICS OF SH2 DOMAIN RECRUITMENT DURING EPIDERMAL GROWTH FACTOR (EGF) RECEPTOR ACTIVATION. **Dongmyung Oh**, Mari Ogiue-Ikeda, Joshua A. Jadwin, Kazuya Machida, Bruce J. Mayer, Ji Yu

3640-Pos BOARD #B368
 DOWNSTREAM TARGETS OF DOPAMINE RECEPTOR D3 ACTIVATION IN THE MOUSE PANCREATIC β -CELLS.
Alessandro Ustione, David A. Jacobson, David W. Piston

3641-Pos BOARD #B369
 FLUORESCENCE FLUCTUATION SPECTROSCOPY TO DETECT INTERACTIONS BETWEEN DOPAMINE RECEPTORS AND CALCIUM CHANNEL IN PANCREATIC B-CELLS.
Brittany Caldwell, Alessandro Ustione, David Piston

3642-Pos BOARD #B370
 A LIVE CELL TIRF-MICROSCOPY BASED SCREENING ASSAY FOR FAST ANALYSIS OF RECEPTOR TYROSINE KINASE MODULATORS. **Peter Lanzerstorfer**, Shin-Ichiro Takahashi, Otmar Höglinger, Julian Weghuber

3643-Pos BOARD #B371
 THE FRET SIGNATURES OF NON-INTERACTING PROTEINS IN CELLULAR MEMBRANES. **Christopher R. King**, Sarvenaz Sarabipour, Patrick Byrne, Daniel Leahy, Kalina Hristova

3644-Pos BOARD #B372
 RESOLVING THE BRASSINOSTEROIDS SIGNAL TRANSDUCTION MECHANISMS BY SINGLE-MOLECULE ASSAYS. Song Song, Haijiao Wang, Xue-Lu Wang, **Yan-Wen Tan**

3645-Pos BOARD #B373
 FAST AND LOCAL MECHANOTRANSDUCTION CONTROL VIA MAGNETIC NANOPARTICLES : MECHANICAL STIMULATION OF AUDITORY CELLS. **Michael Lévy**, Jae-Hyun Lee, Albert Kao, Ji-wook Kim, Seung-hyun Noh, Yung Ji Choi, Dolores Bozovic, Jinwoo Cheon

3646-Pos BOARD #B374
 ROLE OF CALCIUM SIGNALING IN ENDOTHELIAL BARRIER FUNCTION. **Judith A. Stolwijk**, Christian W. Renken, Mohamed Trebak

Cardiac, Smooth, and Skeletal Muscle Electrophysiology II (Boards #B375–#B385)

3647-Pos BOARD #B375
 OPTIMIZING RATE CORRECTION OF FIELD POTENTIAL DURATION, A BIOMARKER FOR QT RISK ASSESSMENT, IN HUMAN IPSC-CARDIOMYOCYTES. **Greg Luerman**, Carlos Obejero-Paz, Arthur M. Brown, Andrew Bruening-Wright

3648-Pos BOARD #B376
 COMBINE USE OF INTRACELLULAR CALCIUM AND SARCOLEMMA VOLTAGE MEASUREMENTS TO DISTINGUISH MIXED CHANNEL EFFECTS IN HUMAN INDUCED PLURIPOTENT STEM CELLS DERIVED CARDIOMYOCYTES (HIPSC-CMS).
Maria P. Hortigon-Vinagre, Emma L. Low, Iffath A. Ghouri, Robert Wallis, Francis L. Burton, Margaret A. Craig, Blake D. Anson, Godfrey L. Smith

3649-Pos BOARD #B377
 MULTIPARAMETRIC ONE-COLOR ASSAYS FOR FUNCTIONAL ASSESSMENT OF CARDIOMYOCYTES. **Alex Savtchenko**, Manuel Ruidiaz, Evan W. Miller, Wesley McKeithan, Susanne Heynen-Genel, Mark Mercola

3650-Pos BOARD #B378
 A NOVEL APPROACH FOR EVALUATION OF DRUG-INDUCED QT PROLONGATION USING HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES. **Min Li**, Yasunari Kanda, Yuko Sekino, Tetsushi Furukawa, Junko Kurokawa

3651-Pos BOARD #B379
 RANOLAZINE REDUCES ARRHYTHMOGENIC CALCIUM WAVES IN VENTRICULAR CARDIOMYOCYTES.
Becker M. Al-khayatt, Markus B. Sikkell, Anita A. Laviada, Hung-Yen Ke, Christina Rowlands, Kenneth T. Macleod

3652-Pos BOARD #B380
 AUTOMATED ACTION POTENTIAL RECORDING IN STEM CELL-DERIVED CARDIOMYOCYTES FOR PROARRHYTHMIA ASSESSMENT. **Liudmila Polonchuk**, Fabian Häusermann, Franz Schuler, Thomas Singer, Rubén Alvarez-Sanchez

3653-Pos BOARD #B381
 COMPUTATIONAL INVESTIGATION INTO FEMALE SUSCEPTIBILITY TO AROUSAL INDUCED ARRHYTHMIAS IN LONG-QT SYNDROME TYPE 2. **Pei-Chi Yang**, Robert D. Harvey, Colleen E. Clancy

3654-Pos BOARD #B382
 COMPUTATIONAL ANALYSIS OF EXTRACELLULAR CALCIUM EFFECT ON ACTION POTENTIAL DURATION. **Elisa Passini**, Stefano Severi

3655-Pos BOARD #B383
 THE REDUCED REPOLARIZATION RESERVE ENHANCES THE LQT1 EFFECTS IN HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES: A SIMULATION STUDY. Michelangelo Paci, **Jari Hyttinen**, Stefano Severi

3656-Pos BOARD #B384
 HOW “FUNNY” IS THE CARDIAC PACEMAKER?
 A QUANTITATIVE ANALYSIS BASED ON DYNAMIC CLAMP RECORDINGS. Enrico Ravagli, Annalisa Bucchi, Chiara Bartolucci, Mirko Baruscotti, Dario DiFrancesco, **Stefano Severi**

3657-Pos BOARD #B385
 A MECHANISTIC ANALYSIS OF VARIABILITY BETWEEN VENTRICULAR CARDIOMYOCYTES. **Ryan A. Devenyi**, Eric A. Sobie

Muscle Regulation (Boards #B386–#B410)

3658-Pos BOARD #B386
 DCM MUTATIONS IN TROPOMYOSIN INDUCE LOSS OF THERMAL STABILITY WHEN THE MUTATION IS PRESENT IN A SINGLE CHAIN OF THE TM DIMER. Miro Janc, **Michael A. Geeves**

3659-Pos BOARD #B387
 DISEASE CAUSING TROPONIN C MUTATIONS HAVE VARIED EFFECTS ON ACTIN REGULATORY STATES. Tamatha Baxley, Jose R. Pinto, **Joseph M. Chalovich**

3660-Pos BOARD #B388
 TRUNCATION OF THE MOBILE DOMAIN OF CARDIAC TROPONIN I RESULTS IN BIPHASIC CALCIUM-DEPENDENT THIN FILAMENT ACTIVATION. **Daniel C. Rieck**, Zhiqun Zhou, King-Lun Li, R. John Solaro, Wen-ji Dong

- 3661-Pos BOARD #B389**
PHOSPHORYLATION OF CARDIAC TROPONIN I AT TYROSINE 26 DECREASES THIN FILAMENT CALCIUM SENSITIVITY.
Hussam Salhi
- 3662-Pos BOARD #B390**
EFFECT OF AMINO ACID CHANGES IN A TROPONIN I FHC HOTSPOT ON PROTEIN:PROTEIN BINDING AND CALCIUM SENSITIVITY OF FORCE DEVELOPMENT. Ziyou Cui, Jennifer Gilda, Gaya Gomes, **Aldrin V. Gomes**
- 3663-Pos BOARD #B391**
IN VIVO ANALYSIS OF TROPONIN C KNOCK-IN (A8V) MICE: EVIDENCE THAT TNNC1 IS A HYPERTROPHIC CARDIOMYOPATHY SUSCEPTIBILITY GENE.
Adriano S. Martins, Michelle S. Parvatiyar, Radjeep Turna, Crystal Dawn Badger, Brittany Griffin, Diego Zorio, Milica Vukmirovic, Marcos A. Sanchez-Gonzalez, David Dweck, Edda L. Ruiz, Jingsheng Liang, Yincai Wang, J. M. Overton, Jose Renato Pinto
- 3664-Pos BOARD #B392**
IN VITRO AND IN SITU STRUCTURE AND FUNCTION OF THE CARDIAC TROPONIN C FAMILIAL HYPERTROPHIC CARDIOMYOPATHY-LINKED MUTATION, L29Q. **Ian M. Robertson**, Ivanka Sevrieva, Monica X. Li, Malcolm Irving, Yin-Biao Sun, Brian D. Sykes
- 3665-Pos BOARD #B393**
TROPONIN I SER-150 PHOSPHORYLATION SUSTAINS TROPONIN CA²⁺ SENSITIVITY IN AN ACIDIC ENVIRONMENT.
Benjamin R. Nixon, Shane D. Walton, Jonathan P. Davis, Brandon J. Biesiadecki
- 3666-Pos BOARD #B394**
DEFICIENCY OF SLOW SKELETAL MUSCLE TROPONIN T CAUSES ATROPHY OF TYPE I SLOW FIBERS AND DECREASES TOLERANCE TO FATIGUE. **Bin Wei**, Yingru Lu, J.P. Jin
- 3667-Pos BOARD #B395**
ATTENUATING THE DEPRESSIVE EFFECT OF ACIDOSIS WITH MUTATIONS IN TROPONIN AND WITH 2-DEOXY-ATP.
Thomas J. Longyear, Matthew A. Turner, Brandon J. Biesiadecki, Joseph Lopez, Jonathan P. Davis, Edward P. Debold
- 3668-Pos BOARD #B396**
THE EFFECT OF TRUNCATED TROPONIN COMPONENTS ON ACTIVATION OF LETHOCERUS FLIGHT MUSCLE.
Belinda Bullard, Bogos Agianian, Gian-Felice de Nicola, Annalisa Pastore, Kevin Leonard
- 3669-Pos BOARD #B397**
CHANGES IN THE ORIENTATION OF THE MYOSIN LIGHT CHAIN DOMAIN (LCD) ASSOCIATED WITH THICK FILAMENT-BASED REGULATION OF SKELETAL MUSCLE.
Luca Fusi, Zhe Huang, Malcolm Irving
- 3670-Pos BOARD #B398**
PHOSPHOLEMMAN-DEPENDENT REGULATION OF NA/K-ATPASE MODULATES CONSTRICTION AND RELAXATION IN AORTIC SMOOTH MUSCLE.
Andrii Boguslavskyi, William Fuller, Michael J. Shattock
- 3671-Pos BOARD #B399**
CARBONIC ANHYDRASE III CONTRIBUTES TO FATIGUE TOLERANCE AND RECOVERY OF SKELETAL MUSCLE.
Han-Zhong Feng, Jian-Ping Jin
- 3672-Pos BOARD #B400**
PROTEIN-PROTEIN INTERACTIONS IN SKELETAL MUSCLE CALCIUM TRANSPORT REGULATION. **Joseph M. Autry**, Michael D. Schaid, Kurt C. Peterson, David D. Thomas
- 3673-Pos BOARD #B401**
FLUORESCENCE COMES OF AGE: MEASURING ANGSTROM-LEVEL DISTANCE CHANGES WITHIN SINGLE FILAMENTS OF REGULATED ACTIN. **John M. Robinson**, Maria E. Moutsoglou, Christopher Solis Ocampo, Gi-Ho Kim
- 3674-Pos BOARD #B402**
ROLE OF THE ESSENTIAL LIGHT CHAIN IN THE ACTIVATION OF SMOOTH MUSCLE MYOSIN BY REGULATORY LIGHT CHAIN PHOSPHORYLATION. **Kenneth A. Taylor**, Michael Feig, Charles L. Brooks, III, Patricia M. Fagnant, Susan Lowey, Kathleen M. Trybus
- 3675-Pos BOARD #B403**
DEPENDENCE OF THE RATE OF PHOSPHATE DISSOCIATION FROM ACTOMYOSIN-ADP-PI UPON THE ALKALI LIGHT CHAINS IN SKELETAL MUSCLE MYOSIN. **David H. Heeley**, Betty Belknap, Howard D. White
- 3676-Pos BOARD #B404**
THE MECHANISM OF HCM-RELATED MUTATION R21C ON THE MODULATION OF C-I INTERACTIONS AND CONTRACTILE KINETICS. **Yuanhua Cheng**, Vijay S. Rao, Maria V. Razumova, An-yue Tu, Luping Xie, Zhaoxiong (Charles) Luo, J. Andrew McCammon, Andrew McCulloch, Michael Regnier
- 3677-Pos BOARD #B405**
ACTIN-ACTIVATED ATPASE AND ACTIN SLIDING VELOCITIES ARE SIMILARLY INFLUENCED BY ACTIN-MYOSIN BINDING KINETICS. **Travis J. Stewart**, Samuel P. Dugan, Andrew Manfra, Steven Bonzell, Christine R. Cremona, Josh E. Baker
- 3678-Pos BOARD #B406**
EFFECTS OF EMD57033 AND EGCG ON MODULATION OF CA²⁺-SENSITIVITY BY PKA PHOSPHORYLATION.
Andrew E. Messer, Mary Papadaki, Steven B. Marston
- 3679-Pos BOARD #B407**
OPTOGENETIC STIMULATION OF SKELETAL MUSCLES.
Tobias Brüggmann, Tobias van Bremen, Thorsten Send, Frank Holst, Andreas Schröck, Philipp Sasse
- 3680-Pos BOARD #B408**
TARGETING NRF2 ACTIVATION MODULATES X-ROS SIGNALING IN DYSTROPHIC SKELETAL MUSCLE.
Christopher W. Ward, Jaclyn P. Kerr, Ponvijay Kombairaju, Thomas E. Sussan, Stephen J.P. Pratt, Richard M. Lovering, Ramzi Khairallah, Shyam Biswal
- 3681-Pos BOARD #B409**
MICROTUBULE NETWORK DENSITY TUNES BOTH STRETCH AND CONTRACTION ACTIVATED X-ROS.
Jaclyn P. Kerr, Benjamin L. Prosser, Guoli Shi, Natalia Becerra, W. Jonathan Lederer, Roberto Raiteri, Christopher W. Ward
- 3682-Pos BOARD #B410**
NIFEDIPINE TREATMENT IMPROVES MUSCLE FUNCTION IN MDX MICE. **Francisco Altamirano**, Denisse Valladares, Carlos Henriquez-Olguin, Mariana Casas, Jose R. Lopez, Paul D. Allen, Enrique Jaimovich

Excitation-Contraction Coupling II (Boards #B411–#B433)

- 3683-Pos** BOARD #B411
TRIC-A PREVENTS STORE-OVERLOAD INDUCED CALCIUM RELEASE THROUGH INTERACTION WITH THE CARDIAC RYANODINE RECEPTOR. **Xinyu Zhou**, Ki Ho Park, Pei-hui Lin, Mingzhai Sun, Zui Pan, Miyuki Nishi, S.R. Wayne Chen, Hiroshi Takeshima
- 3684-Pos** BOARD #B412
NADPH OXIDASE-INDUCED OXIDATIVE STRESS IMPAIRS AUTOPHAGY IN *DYSTROPHIC SKELETAL MUSCLE*. Rituraj Pal, James A. Loehr, Shumin Li, Michela Palmieri, Marco Sardiello, **George G. Rodney**
- 3685-Pos** BOARD #B413 INTERNATIONAL TRAVEL AWARDEE
LOCAL REDOX MODIFICATIONS IN SKELETAL MUSCLE DIFFERENTIALLY AFFECT SARCOPLASMIC RETICULUM CALCIUM RELEASE AND MUSCLE FORCE GENERATION. **Arthur J. Cheng**, Joseph D. Bruton, Håkan Westerblad, Johanna T. Lanner
- 3686-Pos** BOARD #B414
STRETCH-DEPENDENT SUB-CELLULAR CA²⁺ SIGNALING IN ATRIAL MYOCYTES. **Maura Greiser**, Benjamin L. Prosser, Ramzi Khairallah, Chris W. Ward, W. Jon Lederer
- 3687-Pos** BOARD #B415
AMELIORATION OF ISCHEMIA-REPERFUSION INDUCED MUSCLE INJURY BY THE RECOMBINANT HUMAN MG53 PROTEIN. **Hua Zhu**, Janet L. Roe, Ki Ho Park, Tao Tan, Pei-hui Lin, Jianjie Ma, Thomas J. Walters
- 3688-Pos** BOARD #B416
THE CATHEPSIN-L INHIBITOR CAA0225 IMPROVES CARDIAC FUNCTION DURING ISCHAEMIA-REPERFUSION. **Weihong He**, Douglas McCarroll, Elspeth B. Elliott, Christopher M. Loughrey
- 3689-Pos** BOARD #B417
ALTERED CA HOMEOSTASIS AND CA ALTERNANS IN LEFT ATRIAL MYOCYTES OF SPONTANEOUSLY HYPERTENSIVE RATS. **Cornelia F. Pluteanu**, Judit Preisenberger, Johannes Heß, Yulia Nikonova, Jelena Plackic, Jens Kockskämper
- 3690-Pos** BOARD #B418
ALTERED INTRACELLULAR CALCIUM ION REGULATION PLAYS IMPORTANT ROLE IN HIGH CARBOHYDRATE INTAKE INDUCED MYOCARDIAL REMODELING. Esmā N. Okatan, Aysegül Toy, **Belma Turan**
- 3691-Pos** BOARD #B419
NNOS-DEFICIENT LUMBRIC MUSCLES EXHIBIT NORMAL FATIGUE RESISTANCE AND CALCIUM HANDLING. **Wallace G. Kerrick**, Justin M. Percival
- 3692-Pos** BOARD #B420
CARDIAC SELECTIVE MODULATOR OF HUMAN MYOSIN FOR THE TREATMENT OF GENETIC HYPERTROPHIC CARDIOMYOPATHY. **Haben T. Ghermazien**, Yonghong Song, Christopher P. Willits, Arvinder S. Sran, Robert L. Anderson, Hector M. Rodriguez, Johan Oslob
- 3693-Pos** BOARD #B421
NOD-1 STIMULATION INDUCES CARDIAC DYSFUNCTION AND CALCIUM HANDLING IMPAIRMENT IN A MICE MODEL. **María Fernandez Velasco**

- 3694-Pos** BOARD #B422
ANGIOPOIETIN 1 ENHANCES THE PROLIFERATION AND DIFFERENTIATION OF SKELETAL MYOBLASTS. **Eun Hui Lee**, Jin Seok Woo, Ji-Hye Hwang, Jae-Hyeong Park, Chung-Hyun Cho
- 3695-Pos** BOARD #B423
CYTOSOLIC CA BUFFERING OF HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES AND ADULT RABBIT VENTRICULAR CARDIOMYOCYTES. **Dmytro Kryshnal**, Hyun Seok Hwang, Verónica Sánchez-Freire, Joseph C. Wu, Björn C. Knollmann
- 3696-Pos** BOARD #B424
DIRECT CONTACT BETWEEN HUMAN CARDIAC FIBROBLASTS AND HUMAN INDUCED PLURIPOTENT STEM CELL-DERIVED CARDIOMYOCYTES COUNTERACTS CHANGES IN CALCIUM CYCLING INDUCED BY SOLUBLE MEDIATORS. **Christopher Kane**, Nicola Hellen, Tatiana Trantidou, Patrizia Camelliti, Cesare Terracciano
- 3697-Pos** BOARD #B425
A NOVEL COMPUTATIONAL MODEL OF MOUSE MYOCYTE ELECTROPHYSIOLOGY TO ASSESS THE SYNERGY BETWEEN NA LOADING AND CAMKII. **Stefano Morotti**, Andrew G. Edwards, Andrew D. McCulloch, Donald M. Bers, Eleonora Grandi
- 3698-Pos** BOARD #B426 INTERNATIONAL TRAVEL AWARDEE
CONTRIBUTION OF THE MECHANICAL LOADS TO SUSCEPTIBILITY TO ARRHYTHMIA IN SUBENDOCARDIAL AND SUBEPICARDIAL VENTRICULAR MYOCYTES. **Anastasia Vasilyeva**, Olga Solovyova, Vladimir Semenovich Markhasin
- 3699-Pos** BOARD #B427
INTRA-MYOCARDIAL SLOW FORCE RESPONSE IN HETEROGENEOUS MYOCARDIUM. **Olga Solovyova**, Pavel Kononov, Elena Lobova, Vladimir S. Markhasin
- 3700-Pos** BOARD #B428
NEW METHOD FOR DETERMINING THE TOTAL CALCIUM CONTENT OF TISSUE APPLIED TO WHOLE SKELETAL MUSCLES FROM MICE WITH AND WITHOUT CALSEQUESTRIN KNOCKED OUT. **Sandrine A. Kake-Guena**, Cedric R.H. Lamboley, Patrice Bouchard, Jerome Frenette, Eric Rousseau, Robert T. Dirksen, Feliciano Protasi, Paul C. Pape
- 3701-Pos** BOARD #B429
OPTOGENETIC CONTROL OF SKELETAL MUSCLE EXCITABILITY. **Marino Di Franco**, Marbella Quiñonez, Julio Vergara
- 3702-Pos** BOARD #B430
IMPEDANCE ANALYSIS OF STEM CELL-DERIVED CARDIOMYOCYTES FOR SAFETY SCREENING AND DRUG DISCOVERY. Sonja Stoelzle-Feix, David Guinot, Matthias Beckler, Tobias Schwarzenberger, Ulrich Thomas, Leo Doerr, Peter Prinzen, Johannes Stiehler, Andrea Bruggemann, Michael George, **Niels Fertig**
- 3703-Pos** BOARD #B431
IMPROVED TECHNOLOGY FOR FOCUSED-ION-BEAM THINNING OF TISSUE FOR CRYO-ELECTRON TOMOGRAPHY. APPLICATION TO TRIAD JUNCTIONS. **Terence Wagenknecht**, Chyong-ere Hsieh, Gregory Kischenko, Clara Franzini-Armstrong, Michael Marko
- 3704-Pos** BOARD #B432
CRUDE OIL IMPAIRS CARDIAC EXCITATION-CONTRACTION COUPLING IN FISH. **Fabien Brette**, Caroline Cros, Ben Machado, John P. Incardona, Nathaniel L. Scholz, Barbara A. Block

3705-Pos **BOARD #B433**
MECHANISMS OF STRETCH-ACTIVATED REACTIVE OXYGEN MODULATION OF EXCITATION-CONTRACTION COUPLING: COMPUTATIONAL STUDIES. **Sarita Limbu**, Tuan M. Hoang-Trong, Benjamin L. Prosser, George S.B. Williams, William J. Lederer, Mohsin S. Jafri

Biopolymers in Vivo (Boards #B434–#B453)

3706-Pos **BOARD #B434**
A FAST, HIGH-THROUGHPUT, AND HIGHLY SENSITIVE ANALYSIS OF BACTERIAL CELL WALLS USING ULTRA PERFORMANCE LIQUID CHROMATOGRAPHY. **Samantha Desmarais**, Miguel de Pedro, Kerwyn Casey Huang

3707-Pos **BOARD #B435**
A CONFORMATIONAL LANDSCAPE FOR ALGINATE SECRETION ACROSS THE OUTER MEMBRANE OF PSEUDOMONAS AERUGINOSA. **Sarah L. Rouse**, Martin Caffrey, Mark S.P. Sansom

3708-Pos **BOARD #B436**
SINGLE MICROBE TRAP AND RELEASE USING SUB-MICROFLUIDICS: METHODS AND APPLICATIONS IN BIOPOLYMER TRAFFICKING. **Andreas E. Vasdekis**, Gregory N. Stephanopoulos

3709-Pos **BOARD #B437**
A SEA-CUCUMBER DERIVED NOVEL PROTEIN THAT SOFTENS THE CELL-DISRUPTED CATCH CONNECTIVE TISSUE THROUGH INHIBITING THE INTERACTION BETWEEN COLLAGEN FIBRILS. **Yasuhiro Takehana**, Akira Yamada, Masaki Tamori, Tatsuo Motokawa

3710-Pos **BOARD #B438**
CONNECTIVE TISSUES IN ECHINODERM ANIMALS THAT CAN REVERSIBLY CHANGE THEIR STIFFNESS AND THEIR STIFFENING PROTEIN FACTORS. **Akira Yamada**, Yasuhiro Takehana, Masaki Tamori, Tatsuo Motokawa

3711-Pos **BOARD #B439**
DIFFUSION DISCREPANCY BETWEEN STROMA OF TUMOR AND NORMAL TISSUES. **Yun Chen**, Michael A. Tangrea, Avi Z. Rosenberg, Qiang Du, Michael A. Emmert-Buck

3712-Pos **BOARD #B440**
EFFECT OF OLIGOSACCHARIDE MODIFIED MATERIAL X ON VIABILITY OF HUMAN CANCER CELL LINES. **Gyu Suk O**, Yong Hun Go, Jeong Gyun Kim, Jae Kweon Park, You Jin Hwang

3713-Pos **BOARD #B441**
CYTOTOXIC EFFECTS OF SUBSTANCE A OBTAINED FROM OLIGOSACCHARIDES ON HUMAN LUNG CANCER CELL LINE, A549. **Jeong Gyun Kim**, Gyu Suk O, Yong Hun Go, Jae Kwoon Park, You Jin Hwang

3714-Pos **BOARD #B442**
IN VIVO STUDIES OF ACTIVE PROCESSES IN THE ESCHERICHIA COLI NUCLEOID. **Rudra P. Kafle**, Jens-Christian Meiners, Thaije Gompa

3715-Pos **BOARD #B443**
THE ENERGETIC CONTRIBUTION OF WATER IN THE BINDING OF RIBONUCLEASE A AND UMP. **Jennifer M. Le**, Daryl K. Eggers

3716-Pos **BOARD #B444**
SIZE, STOICHIOMETRY, AND ORGANIZATION OF SOLUBLE LC3-ASSOCIATED COMPLEXES. **Lewis J. Kraft**, Tuan A. Nguyen, Steven S. Vogel, Anne K. Kenworthy

3717-Pos **BOARD #B445**
HOMEOSTASIS OF THE CELLULAR ACTIN CORTEX. **Marco Fritzsche**, Christoph Erlenkämper, Guillaume T. Charras, Karsten Kruse, Christian Eggeling

3718-Pos **BOARD #B446**
STRUCTURAL TRANSITIONS OF MEMBRANE-BOUND CHIRAL BIOPOLYMERS. **David A. Quint**, Greg M. Grason, Ajay Gopinathan

3719-Pos **BOARD #B447**
IN VIVO ORIENTATION OF SINGLE MYOSINS IN A ZEBRAFISH EMBRYO. Xiaojing Sun, Stephen C. Ekker, Eric A. Shelden, Naoko Takubo, Yihua Wang, **Thomas P. Burghardt**

3720-Pos **BOARD #B448**
PROTEIN RECOGNITION AND SELECTION THROUGH CONFORMATIONAL AND MUTUALLY INDUCED FIT. **Margaret Cheung**, Qian Wang, Pengzhi Zhang, Laurel Hoffman, Dirar Homouz, Yin Liu, M Neal Waxham

3721-Pos **BOARD #B449**
PROTEIN FOLDING AND AGGREGATION - FROM CROWDED ENVIRONMENTS INTO THE CELL. **Simon Ebbinghaus**

3722-Pos **BOARD #B450**
WHAT KIND OF MICROVISCOSITY DOES A MOLECULE EXPERIENCE DURING ITS ROTATIONAL AND TRANSLATIONAL DIFFUSION IN CROWDED ENVIRONMENTS? Chang Thao, Randi Timerman, Robb Welty, Dhanushka Wickramasinghe, **Ahmed Heikal**

3723-Pos **BOARD #B451**
MACROMOLECULAR CROWDING EFFECTS ON THE MULTISCALE DIFFUSION OF SINGLE MOLECULES. **Erin D. Sheets**, Robb Welty, Ahmed A. Heikal

3724-Pos **BOARD #B452** EDUCATION TRAVEL AWARDEE
PROTEIN STABILITY IN LIVING CELLS. **William B. Monteith**, Gary J. Pielak

3725-Pos **BOARD #B453**
AUC IN SERUM USING THE AVIV-FDS AND SEDANAL GLOBAL DIRECT BOUNDARY FITTING. **John J. Correia**, Daniel F. Lyons, Walter Stafford, Peter Sherwood

Voltage-gated K Channels III (Boards #B454–#B475)

3726-Pos **BOARD #B454**
SCREENING OF NOVEL MODULATORS FOR BK_{CA} CHANNEL BY THE CELL-BASED ASSAY PLATFORM EMPLOYING A HYPERACTIVE MUTANT CHANNEL. **Byoung-Cheol Lee**, Sojung Lee, Chul-Seung Park

3727-Pos **BOARD #B455**
DOUBLE ELECTRON-ELECTRON RESONANCE STUDIES OF LIGAND INDUCED REARRANGEMENTS OF HCN CHANNELS. **Hannah A. DeBerg**, Michael C. Puljung, William N. Zagotta, Stefan Stoll

3728-Pos BOARD #B456
 THE MOLECULAR BASIS OF KCNH CHANNEL REGULATION BY THE EAG DOMAIN. **Yoni Haitin**, Anne E. Carlson, William N. Zagotta

3729-Pos BOARD #B457
 ROSETTA STRUCTURAL MODELING OF TARANTULA TOXIN BINDING TO VOLTAGE SENSORS. **Drew C. Tilley**, Rayan Kaakati, Vladimir Yarov-Yarovoy, Jon T. Sack

3730-Pos BOARD #B458
 COMMON INTERACTION SURFACES FOR TARANTULA TOXINS TARGETING KV AND ASIC CHANNELS. Maryam Zamanian, Chanhyung Bae, Drew Tilley, **Kanchan Gupta**, Jon Sack, Vladimir Yarov-Yarovoy, Jae Il Kim, Kenton Swartz

3731-Pos BOARD #B459
 BINDING STRUCTURE & DYNAMICS FOR TOXINS MODIFYING THE GATING MECHANISM OF KV CHANNELS. **Anders Gabrielsson**, Sara Liin, Fredrik Elinder, Erik Lindahl

3732-Pos BOARD #B460
 EXPRESSION OF DIFFERENT SUBUNITS OF THE CALCIUM-REGULATED BK CHANNEL IN RAT BRAIN AND ITS PUTATIVE CYTOPROTECTIVE PROPERTIES. **Bartlomiej S. Augustynek**, Anna Kajma-Olszewska, Wolfram S. Kunz, Adam Szewczyk

3733-Pos BOARD #B461
 CALCIUM DEPENDENT STOICHIOMETRIES OF AN SK2 INTRACELLULAR DOMAIN/CALMODULIN COMPLEX. **David B. Halling**, Sophia A. Kenrick, Richard W. Aldrich

3734-Pos BOARD #B462
 EXAMINING PROTEIN, LIPID AND WATER DISTRIBUTION IN LIPID MEMBRANES WITH POTASSIUM CHANNEL KCSA. **Ella Mihailescu**, Joseph Blasic, David Worcester

3735-Pos BOARD #B463
 INFLUENCE OF LIPID BILAYER THICKNESS ON ION CHANNELS USING SINGLE-CHANNEL VOLTAGE-CLAMP FLUORESCENCE IMAGING. **Hugo McGuire**, Rikard Blunck

3736-Pos BOARD #B464
 MOLECULAR CHARACTERIZATION OF THE BINDING OF POLYUNSATURATED FATTY ACIDS TO A VOLTAGE-GATED POTASSIUM CHANNEL. **Sammy Yazdi**, Magnus Andersson, Fredrik Elinder, Matthias Stein, Erik Lindahl

3737-Pos BOARD #B465
 A NON-CANONICAL DI-ACIDIC SIGNAL AT THE C-TERMINAL OF K_v1.3 DETERMINES ANTEROGRADE TRAFFICKING AND SURFACE EXPRESSION. Ramón Martínez-Mármol, Mireia Pérez-Verdaguer, Sara R. Roig, Albert Vallejo-Gracia, Pelagia Gotsi, Antonio Serrano-Albarrás, M^a Isabel Bahamonde, Antonio Ferrer-Montiel, Gregorio Fernández-Ballester, Núria Comes, **Antonio Felipe**

3738-Pos BOARD #B466
 KV1.3-BLOCKING PEPTIDES FROM PARASITIC WORMS EXHIBIT IMMUNOMODULATORY FUNCTION. **Hai M. Nguyen**, Sandeep Chhabra, Shih Chieh Chang, Redwan U. Huq, Mark R. Tanner, Luz M. Londono, Mariel Gindin, Peter J. Hotez, Biswaranjan Mohanty, Shawn P. Iadonato, George A. Gutman, Christine Beeton, Michael W. Pennington, Raymond S. Norton, K. George Chandy

3739-Pos BOARD #B467
 BIOPHYSICAL CHARACTERIZATION OF THE POTASSIUM CHANNEL KV1.3 IN B CELLS FROM PATIENTS AFFECTED BY CHRONIC LYMPHOCYTIC LEUKEMIA. **Luigi Leanza**, Federica Frezzato, Livio Trentin, Gianpietro Semenzato, Mario Zoratti, Ildikò Szabò

3740-Pos BOARD #B468 INTERNATIONAL TRAVEL AWARDEE
 THE SH3-BINDING DOMAIN OF KV1.3 CHANNELS IS REQUIRED FOR THEIR CONTACTIN-CONVEYED COUPLING TO ACTIN. **Orsolya Szilágyi**, Geoffrey V. Martin, Peter Hajdu, Ameet Chimote, Koichi Takimoto, Laura Conforti

3741-Pos BOARD #B469
 ROLE OF KV1.3 POTASSIUM CHANNELS IN AUDITORY FUNCTION. **Lynda El-Hassar**, Lei Song, Vali R. Gazula, Dashakumar Navaratnam, Joseph Santos-Sacchi, Leornard Kaczmarek

3742-Pos BOARD #B470
 EXPLORING THE EFFECT OF GAMBIEROL ON THE GATING MACHINERY OF KV3.1 CHANNELS. **Ivan Kopljar**, Alessandro Grottesi, Jon D. Rainier, Jan Tytgat, Alain J. Labro, Dirk J. Snyders

3743-Pos BOARD #B471
 REGULATION OF K_v1.5 CHANNEL DENSITY IN THE RAT ATRIA. **Elise Balse**, Camille S.M. Barbier, Catherine A. Eichel, Catherine Rucker-Martin, Hannah E. Boycott, Florent Louault, Alain Coulombe, Stephane N. Hatem

3744-Pos BOARD #B472
 HAMMOND ENERGY SHIFTS REVEAL SEQUENCE OF CONFORMATIONAL CHANGES IN N- AND C-TYPE INACTIVATION OF KV1.4. Hong Guo, Agnieszka Lis, Glenna CL Bett, **Randall L. Rasmusson**

3745-Pos BOARD #B473
 MODELING EXCITABILITY IN MECHANOSENSORY NEURONS WITH MS CATION AND MS KV CHANNELS. **Catherine E. Morris**, Bela Joos

3746-Pos BOARD #B474
 SHEAR-STRESS TRIGGERED VOLTAGE-GATED KV1.5 CHANNELS EXOCYTOSIS IS ALTERED IN OVERLOADED ATRIA. **Hannah E. Boycott**, Camille S.M. Barbier, Catherine A. Eichel, Florent Louault, Gilles Dilanian, Alain Coulombe, Stephane N. Hatem

3747-Pos BOARD #B475
 KCND2 MUTATION ASSOCIATED WITH AUTISM AND EPILEPSY IMPAIRS INACTIVATION GATING IN KV4.2 K⁺ CHANNELS. **Meng-chin A. Lin**, Hane Lee, Harley I. Kornblum, Stanley F. Nelson, Diane M. Papazian

Mechanisms of Voltage Sensing and Gating (Boards #B476–#B504)

3748-Pos BOARD #B476
 GENERALIZED INTERACTION ENERGY ANALYSIS OF INTERSUBUNIT LINKAGE IN SHAKER POTASSIUM CHANNELS. Sandipan Chowdhury, **Benjamin M. Haehnel**, Baron Chanda

3749-Pos BOARD #B477
 STATE-DEPENDENT LIPID INTERACTIONS COUPLE THE CONFORMATIONS OF THE VOLTAGE-SENSING AND PORE-GATE DOMAINS. **Mark A. Zaydman**, Marina Kasimova, Zachary Beller, Kelli Delaloye, Jingyi Shi, Jonathan R. Silva, Mounir Tarek, Jianmin Cui

- 3750-Pos BOARD #B478**
 PROBING MECHANISMS THROUGH WHICH DRUGS AFFECT VOLTAGE-SENSITIVE GATING. **Zachary Beller**, Mark Zaydman, Jianmin Cui
- 3751-Pos BOARD #B479**
 SINGLE MOLECULE FLUORESCENCE OF AN S4-BASED VOLTAGE SENSOR. **Jeremy S. Treger**, Michael F. Priest, Tomoya Kubota, Ludivine Frezza, Francisco Bezanilla
- 3752-Pos BOARD #B480**
 EFFECTS OF DECREASED HYDROPHOBICITY ABOVE R1 IN S4-BASED VOLTAGE SENSORS. **João L. Carvalho-de-Souza**, Jerome J. Lacroix, Francisco Bezanilla
- 3753-Pos BOARD #B481**
 GENETICALLY-ENCODED FLUORESCENT VOLTAGE SENSORS CAPABLE OF RESOLVING A 6MV DEPOLARIZATION. **Arong Jung**
- 3754-Pos BOARD #B482**
 THE EFFECT OF INTERHELICAL LOOP LENGTH AND COMPOSITION ON THE ELECTROSTATIC INTERACTIONS OF THE VOLTAGE SENSOR DOMAIN OF JSHAK1. Nazlee Sharmin, Matthias Ostermaier, **Warren J. Gallin**
- 3755-Pos BOARD #B483**
 DIRECT EVIDENCE OF CONFORMATIONAL CHANGES ASSOCIATED WITH VOLTAGE-GATING IN A VOLTAGE SENSOR PROTEIN BY TIME-RESOLVED X-RAY/NEUTRON INTERFEROMETRY. **J. K. Blasie**, A Tronin, J W. Strzalka, I Kuzmenko, D Worcester, V Lauter, J A. Freitas, D J. Tobias
- 3756-Pos BOARD #B484**
 NETWORKS OF COEVOLVING RESIDUES IN VOLTAGE SENSOR DOMAINS. **Vincenzo Carnevale**, Eugene Palovcak, Lucie Delemotte, Michael Klein
- 3757-Pos BOARD #B485**
 A STRUCTURE BASED COURSE-GRAINING PHYSICAL MODELING OF THE VOLTAGE ACTIVATED KV1.2 CHANNEL - SIMULATING AND ANALYZING THE FAST GATING CURRENT. **Ilsoo Kim**, Arieh Warshel
- 3758-Pos BOARD #B486**
 ROLE OF CHARGED RESIDUES IN THE REGULATION OF VOLTAGE SENSOR MOVEMENT IN HERG K⁺ CHANNELS. **Yue Wu**, Ying Dou, David Fedida
- 3759-Pos BOARD #B487**
 THE N-TERMINUS OF AUXILIARY BETA SUBUNIT IS INVOLVED IN THE MODULATION OF VOLTAGE SENSOR BK PORE-FORMING ALPHA SUBUNIT. **Karen Castillo**
- 3760-Pos BOARD #B488**
 WHOLE-CELL GATING-CHARGE MEASUREMENTS FOR ANALYSIS OF ALLOSTERIC DOMAIN COUPLING IN HSLO1 BK CHANNELS. **Guido Gessner**, Katharina Held, Toshinori Hoshi, Stefan H. Heinemann
- 3761-Pos BOARD #B489**
 PROBING THE VOLTAGE GATED PROTON CHANNEL HV1 WITH FRET. **Victor De la Rosa**, Gisela E. Rangel-Yescas, Ernesto Ladron-de-Guevara, Leon D. Islas
- 3762-Pos BOARD #B490**
 THE ACTIVATION KINETICS OF THE VOLTAGE-GATED PROTON CHANNEL IS DRASTICALLY ACCELERATED BY UNSATURATED FATTY ACIDS. **Akira Kawanabe**, Yasushi Okamura
- 3763-Pos BOARD #B491**
 ELECTROSTATIC INTERACTIONS IN THE CLOSED AND OPEN STATES OF VOLTAGE-GATED PROTON CHANNELS. **Feng Qiu**, Adam Chamberlin, Sergei Noskov, H. Peter Larsson
- 3764-Pos BOARD #B492**
 ON THE LOCATION OF BINDING SITES OF 2-GUANIDINOBENZIMIDAZOLE IN THE VOLTAGE-GATED PROTON CHANNEL. **Adam C. Chamberlin**, Feng Qiu, Sergei Noskov, Peter Larsson
- 3765-Pos BOARD #B493**
 INHIBITION OF VOLTAGE-GATED HV1 CHANNEL BY GUANIDINE DERIVATIVES. **Liang Hong**, Iris Kim, Francesco Tombola
- 3766-Pos BOARD #B494**
 EXPLORING CONFORMATIONAL REARRANGEMENTS IN A NOVEL VOLTAGE-SENSING PROTEIN. **Ferenc Papp**, Erika Babikow, Jaime Smith, Tsg-Hui Chang, Kenton J. Swartz
- 3767-Pos BOARD #B495**
 THE RESTING STATE OF HUMAN PROTON CHANNEL FROM FUNCTIONAL AND STRUCTURAL DETERMINATIONS. **Qufei Li**, Sherry Wanderling, Eduardo Perozo
- 3768-Pos BOARD #B496**
 ELECTROMECHANICAL COUPLING IN GATING OF THE HV1 VOLTAGE SENSOR IS REVEALED BY RESTING-STATE CURRENTS IN AN S4 ARG TO HIS MUTATION (R205H). **I. Scott Ramsey**, Aaron L. Randolph
- 3769-Pos BOARD #B497**
 LONG ALPHA-HELICES PROJECTING FROM THE MEMBRANE AS THE DIMER INTERFACE IN THE VOLTAGE-GATED H⁺ CHANNEL. **Yuichiro Fujiwara**, Tatsuki Kurokawa, Yasushi Okamura
- 3770-Pos BOARD #B498**
 PH SENSITIVITY OF VOLTAGE SENSING DOMAIN RELAXATION. **Carlos A. Villalba-Galea**
- 3771-Pos BOARD #B499**
 GATING-COUPLED CLUSTERING-DISPERSION DYNAMICS OF THE KCSA POTASSIUM CHANNEL IN A LIPID MEMBRANE. **Ayumi Sumino**, Daisuke Yamamoto, Masayuki Iwamoto, Takehisa Dewa, Shigetoshi Oiki
- 3772-Pos BOARD #B500**
 TOWARDS THE INCORPORATION OF FUNCTIONAL ION CHANNEL PROTEINS IN TETHERED MEMBRANES. **David P. Hoogerheide**, Amit Vaish, Tatiana Rostovtseva, Adam Kuszak, Sergey Bezrukov, Susan Krueger, Hirsh Nanda
- 3773-Pos BOARD #B501**
 A NOVEL MECHANISM OF VOLTAGE SENSING AND GATING IN K2P POTASSIUM CHANNELS. **Marcus Schewe**, Markus Rapedius, Ehsan Nematian-Ardestani, Thomas Linke, Klaus Benndorf, Stephen J. Tucker, Thomas Baukrowitz
- 3774-Pos BOARD #B502**
 SHIFTING THE GATING EQUILIBRIUM OF A POTASSIUM CHANNEL VIA HYDROPHOBIC MISMATCH. **Dylan O. Burdette**, Adrian Gross
- 3775-Pos BOARD #B503**
 CORRELATED SINGLE-MOLECULE SPECTROSCOPY AND PATCH-CLAMP STUDIES OF VOLTAGE GATED ION CHANNEL ACTIVATION DYNAMICS IN LIVING CELLS. Dibyendu Sasmal, **H. Peter Lu**

3776-Pos BOARD #B504
VOLTAGE GATED LIPID ION CHANNELS. Andreas Blicher,
Thomas Heimbürg

Ion Channel Regulatory Mechanisms (Boards #B505–#B534)

3777-Pos BOARD #B505
RECRUITMENT OF G $\beta\gamma$ CONTROLS THE BASAL ACTIVITY OF GIRK CHANNELS: CRUCIAL ROLE OF DISTAL C-TERMINUS OF GIRK1. Uri Kahanovitch

3778-Pos BOARD #B506
REQUIREMENT FOR AN ACTIVATED G PROTEIN α (G α) SUBUNIT FOR G $\beta\gamma$ ACTIVATION OF A PURIFIED MAMMALIAN GIRK1 CHANNEL RECONSTITUTED IN PLANAR LIPID BILAYERS. Edgar Leal-Pinto, Junghoon Ha, Takeharu Kawano, Miao Zhang, Qiong-Yao Tang, Yacob Gomez-Llorente, Jose Chavez, Iban Ubarretxena, Diomedes E. Logothetis

3779-Pos BOARD #B507
CHOLESTEROL REGULATION OF ATRIAL GIRK CHANNELS. Anna N. Bukiya, Catherine V. Osborn, Peter T. Toth, Gregory Kowalsky, Lia Baki, Myung J. Oh, Irena Levitan, Avia Rosenhouse-Dantsker

3780-Pos BOARD #B508
IDENTIFICATION OF NOVEL CHOLESTEROL BINDING REGIONS IN THE TRANSMEMBRANE DOMAIN OF KIR2.1. Avia Rosenhouse-Dantsker, Sergei Noskov, Serdar Durdagi, Diomedes E. Logothetis, Irena Levitan

3781-Pos BOARD #B509
UNIQUE ANIONIC PHOSPHOLIPID BINDING SITE AND GATING MECHANISM IN KIR2.1 INWARD RECTIFIER CHANNELS. Sun Joo Lee, Shizhen Wang, William Borschel, Sarah Heyman, Jacob Gyore, Colin G. Nichols

3782-Pos BOARD #B510
STRUCTURAL DYNAMICS UNDERLYING PIP2 MODULATION OF KIR CHANNELS REVEALED BY SINGLE MOLECULE FRET. Shizhen Wang, Reza Vafabakhsh, William Borschel, Taekjip Ha, Colin G. Nichols

3783-Pos BOARD #B511
ACTIVITY OF ROMK CHANNEL IS REGULATED BY PPAR γ IN THE XENOPUS OOCYTES. Siham Ait-Benichou, Ahmed Chraïbi

3784-Pos BOARD #B512
ENHANCEMENT OF CURRENT THROUGH TREK1 TWO PORE DOMAIN CHANNELS BY FLUFENAMIC ACID. Ehab Al-Moubarak, Alistair Mathie

3785-Pos BOARD #B513
REGULATION OF SK CHANNEL SPATIAL DISTRIBUTION BY TONIC PKA. Krithika Abiraman, Anastasios Tzingounis, George Lykotraftis

3786-Pos BOARD #B514
EVIDENCE FOR THE INTERACTION OF ENDOPHILIN 3 WITH THE SK3 CHANNELS IN PC12 CELLS. Malika Janbein, Stephan Grissmer

3787-Pos BOARD #B515
STRUCTURAL DETERMINANTS OF THE BK CHANNEL γ -SUBUNITS' MODULATORY POTENCY. Qin Li, Yingxin Li, Ha Rim Kwak, Jiusheng Yan

3788-Pos BOARD #B516
A POINT MUTATION THAT IMPAIRS THE OMEGA-3 FATTY ACID SENSITIVITY OF HUMAN SLO1 BK CHANNELS. Toshinori Hoshi, Rong Xu, Shangwei Hou, Stefan H. Heinemann, Yutao Tian

3789-Pos BOARD #B517
CALCIUM AND PIP2 INTERPLAY REGULATES BK CHANNEL ACTIVITY VIA THE RCK1 GATING RING. Qiong-Yao Tang, Zhe Zhang, Xuan-Yu Meng, Meng Cui, Diomedes E. Logothetis

3790-Pos BOARD #B518
PIP2-CHANNEL INTERACTION AS A CRITICAL ELEMENT IN REGULATION OF SK CHANNEL ACTIVITY. Miao Zhang, Meng Cui, Xuan-Yu Meng, Ji-Fang Zhang, Diomedes E. Logothetis

3791-Pos BOARD #B519
DYNAMIC PIP2-IKS INTERACTIONS MEDIATE CARDIAC RATE ADAPTATION. Mark A. Zaydman, Yang Li, Zachary Beller, Dick Wu, Haoyang Rong, Jonathan R. Silva, Kelli Delaloye, Jingyi Shi, Ira Cohen, Jianmin Cui

3792-Pos BOARD #B520
ANGIOTENSIN II MODULATES I_{Ks} BY MULTIPLE MECHANISMS WITH VARYING OUTCOMES. Yuhong Wang, Min Jiang, Mei Zhang, Dona Occhipinti, Tseng Gea-Ny

3793-Pos BOARD #B521
NOVEL ROLE FOR KCHIP2 AS A TRANSCRIPTIONAL REGULATOR OF CARDIAC GENES. Drew M. Nassal, Haiyan Liu, Xiaoping Wan, Eckhard Ficker, Isabelle Deschenes

3794-Pos BOARD #B522
BIOCHEMICAL ASSAYS OF CAM AND PIP2 INTERACTIONS WITH KCNQ CHANNEL DOMAINS. Crystal R. Archer, Pamela A. Reed, Mark S. Shapiro

3795-Pos BOARD #B523
USE OF A VOLTAGE-SENSITIVE PHOSPHATASE HIGHLIGHTS TWO PIP2-BINDING SITES IN THE C-TERMINUS OF KCNQ3 CHANNELS. Frank S. Choveau, Mark S. Shapiro

3796-Pos BOARD #B524
PHOSPHOINOSITIDE REGULATION OF THE MECHANOSENSITIVE PIEZO CHANNELS. Istvan Borbïro, Doreen Badheka, Tibor Rohacs

3797-Pos BOARD #B525
LINOLENIC AND LINOLEIC ACID INDUCE THE OPENING OF CONNEXIN 43, 46 AND 50 HEMICHANNEL IN HUMAN HELA CELLS. Vania A. Figueroa, Mauricio A. Retamal

3798-Pos BOARD #B526
ENHANCING THE ATPASE ACTIVITY OF THE CYSTIC FIBROSIS TRANSMEMBRANE CONDUCTANCE REGULATOR CFTR IN LIVE CELLS REDUCES CHLORIDE FLUX. Anna Seelig, Matthias Zwick

3799-Pos BOARD #B527
MECHANISM OF CLCA1-MEDIATED CACC ACTIVATION IN CHRONIC LUNG DISEASES. Zeynep Yurtsever, Monica Sala-Rabanal, Colin G. Nichols, Tom J. Brett

3800-Pos BOARD #B528
THE MAGUK SCAFFOLDING PROTEIN CASK REGULATES TMEM16A CHANNEL FUNCTION BY PHOSPHORYLATION. Kuai Yu, Jinqiu Zhu, Yuanyuan Cui, H. Criss Hartzell

3801-Pos BOARD #B529
MODULATION OF THE VOLTAGE-GATED PROTON CHANNEL HV1 BY SMALL GATING-MODIFIER LIGANDS. **Bosmat Refaeli**, Polina Kornilov, Asher Peretz, Bernard Attali

3802-Pos BOARD #B530
ROLE OF A PH SENSITIVE SITE IN ENAC NA⁺ SELF-INHIBITION. **Ossama B. Kashlan**, Brandon M. Blobner, Zachary Zuzek, Michael A. Tolino, Thomas R. Kleyman

3803-Pos BOARD #B531
VDAC-KINASE ELECTROGENIC COMPLEXES AS DIRECT GENERATORS OF MITOCHONDRIAL MEMBRANE POTENTIALS. **Victor V. Lemeshko**

3804-Pos BOARD #B532
CHARACTERIZATION OF THE INTRINSIC VOLTAGE-DEPENDENT GATING MECHANISM OF CALHM ION CHANNELS. **Jessica Tanis**, Zhongming Ma, J. Kevin Foskett

3805-Pos BOARD #B533
NAVIGATING THE TERRA INCOGNITA OF MALE FERTILITY: SPERM ION CHANNELS AND THEIR FUNCTION. **Polina V. Lishko**, Melissa R. Miller, Nadja Mannowetz, Natasha M. Naidoo, Seung-A S. Choo, James F. Smith

3806-Pos BOARD #B534
INITIAL FUNCTIONAL AND STRUCTURAL ANALYSIS OF PLANT MECHANOSENSITIVE CHANNEL MSL10. **Grigory Makshev**, Kira Veley, Elizabeth Haswell

TRP Channels II (Boards #B535–#B557)

3807-Pos BOARD #B535
ROLE OF POLYPHOSPHATE IN CANCER CELL PROLIFERATION. **Lusine Demirkhanyan**, Pia Elustondo, Evgeny Pavlov, Eleonora Zakharian

3808-Pos BOARD #B536
UPREGULATION OF TRPM7-LIKE CURRENT IN ISCHEMIA DAMAGED HUMAN ATRIAL CARDIOMYOCYTES. **Mante Almanaityte**, Irma Martisiene, Vida Gendviliene, Regina Macianskiene

3809-Pos BOARD #B537
DEVELOPMENT OF TRPC ASSAYS ON AUTOMATED ELECTROPHYSIOLOGY PLATFORMS. **Mark J. McPate**, Gurdip Bhalay, Sian Fairbrother, Martin Gosling, Paul J. Groot-Kormelink, Rebecca Lane, Toby Kent, Michiel Van Diepen, J. Martin Verkuyl, Pamela Tranter

3810-Pos BOARD #B538
A NEW CLASS OF ANALGESICS EXERTS A DUAL MODULATION ON TRPA1 AND TRPV1 CHANNELS. **Roberta Gualdani**, Oscar Francesconi, Barbara Richichi, Maria Rosa Moncelli

3811-Pos BOARD #B539
TRPM3 - A PROMISING TARGET FOR ANALGESIC TREATMENT. **Katharina Held**, Sílvia João Pinto, Sara Kerselaers, Katrien De Clercq, Patrick Chaltin, Thomas Voets, Joris Vriens

3812-Pos BOARD #B540
EXTRACELLULAR LOOPS ARE ESSENTIAL FOR THE ASSEMBLY AND FUNCTION OF TRPP/PKD COMPLEXES. Zahra Salehi-Najafabadi, Clarissa Lam, G M Mahmud Arif Pavel, Parul Kashyap, **Yong Yu**

3813-Pos BOARD #B541
NICOTINIC ACID ACTIVATES THE CAPSAICIN RECEPTOR TRPV1 - A POTENTIAL MECHANISM FOR CUTANEOUS FLUSHING. **Linlin Ma**, Bo Hyun Lee, Rongrong Mao, Anping Cai, Yunfang Jia, Heather Clifton, Saul Schaefer, Lin Xu, Jie Zheng

3814-Pos BOARD #B542
EFFECTS OF TRPM7 INHIBITORS ON PHYSIOLOGICAL MG²⁺ INFLUX IN RAT VENTRICULAR MYOCYTES. **Michiko Tashiro**, Hana Inoue, Masato Konishi

3815-Pos BOARD #B543
LOCALIZATION AND ROLE OF TRANSIENT RECEPTOR POTENTIAL CATION CHANNELS IN RABBIT VENTRICULAR MYOCYTES. Qinghua Hu, McNary G. Thomas, **Frank B. Sachse**

3816-Pos BOARD #B544
SINGLE MOLECULE OPTICAL RECORDINGS OF TRPV1 MOBILITY AND ACTIVITY. **Eric Senning**, Sharona E. Gordon

3817-Pos BOARD #B545
TRPC3 MODULATES ASSOCIATION OF ORAI1 WITH IMMUNOPHILIN FKBP12 AND ORAI-MEDIATED CA²⁺-TRANSCRIPTION COUPLING IN MAST CELLS. **Michael Poteser**, Bernhard Doleschal, Michaela Scherthaner, Hannes Schleifer, Katrin Tieber, Irene Frischauf, Christoph Romanain, Klaus Groschner

3818-Pos BOARD #B546
CA²⁺ FACILITATES TRPC4 ACTIVATION BY GI/O SIGNALING IN BOTH CALMODULIN DEPENDENT AND INDEPENDENT MANNER. **Dhananjay Thakur**, Michael X. Zhu

3819-Pos BOARD #B547
EXPLORING THE ARCHITECTURE OF THE OUTER PORE OF THE TRPV1 CHANNEL WITH DOUBLE-KNOT TOXIN. **Andrés Jara-Oseguera**, Chanhuyng Bae, Feng Zhang, Tsg-Hui Chang, Jae Il Kim, Kenton J. Swartz

3820-Pos BOARD #B548
ALLOSTERIC COUPLING AND THERMAL ACTIVATION IN TRP CHANNELS. **Leon D. Islas**, Andres Jara-Oseguera

3821-Pos BOARD #B549
TOWARD THE MECHANISM OF CAPSAICIN BINDING TO TRPV1 IN A LIPID BILAYER VIA ATOMISTIC SIMULATION. **Sonya M. Hanson**, Simon Newstead, Kenton J. Swartz, Mark S.P. Sansom

3822-Pos BOARD #B550
BIOPHYSICAL CHARACTERIZATION OF THE TRPM8 VOLTAGE-SENSING DOMAIN. **Wade D. Van Horn**, Parthasarathi Rath, Nicholas Sisco

3823-Pos BOARD #B551
CRYSTAL STRUCTURE OF THE N-TERMINAL ANKYRIN REPEAT DOMAIN OF TRPV3 REVEALS UNIQUE CONFORMATION OF FINGER 3 LOOP CRITICAL FOR CHANNEL FUNCTION. Di-Jing Shi, Sheng Ye, Xu Cao, Rongguang Zhang, **KeWei Wang**

3824-Pos BOARD #B552
A STRUCTURAL FRAMEWORK FOR THE POLYMODAL PAIN SENSOR TRPV1. **Fan Yang**, Vladimir Yarov-Yarovoy, Jie Zheng

3825-Pos BOARD #B553
CONFORMATIONAL PLASTICITY OF TRPV1 ANKYRIN REPEAT DOMAIN IN COMPLEX WITH CYSTEINE REACTIVE AGONIST ALLICIN. **Ernesto Ladron de Guevara**, Jorge Romero-Estrada, Margarita Romero-Avila, Gisela Rangel, Leon D. Islas

3826-Pos BOARD #B554 MINORITY AFFAIRS TRAVEL AWARDEE
REGULATION OF TRPV1 BY PHOSPHOINOSITIDES AND OTHER NEGATIVELY CHARGED LIPIDS. **Jan-Michael Rives**, Viktor Lukacs, Xiaohui Sun, Eleonora Zakharian, Tibor Rohacs

3827-Pos BOARD #B555
STRUCTURAL CHARACTERIZATION OF DOUBLE-KNOT TOXIN, AN ACTIVATOR OF TRPV1 CHANNELS. **Chanhyung Bae**, Dmitriy V. Krepiy, Jeet Kalia, Jaehyun Kim, Jae Il Kim, Kenton J. Swartz

3828-Pos BOARD #B556
TRPV1 MEASURED IN LIPID BILAYERS. **Viksita Vijayvergiya**, Shiv Acharya, Anthony Farina, Jason Poulos, Jacob Schmidt

3829-Pos BOARD #B557
STRUCTURAL INSIGHT INTO THE ASSEMBLY OF TRPV CHANNELS. **Kevin Huynh**, Matthew Cohen, Sudha Chakrapani, Heather Holdaway, Phoebe Stewart, Vera Moiseenkova-Bell

Cyclic Nucleotide-gated Channels (Boards #B558–#B570)

3830-Pos BOARD #B558
STATE DEPENDENT AND SITE DIRECTED PHOTODYNAMIC TRANSFORMATION OF HCN2 CHANNEL BY SINGLET OXYGEN. Weihua Gao, Zhuocheng Su, Qinglian Liu, **Lei Zhou**

3831-Pos BOARD #B559
TWO SEPARATE SITES COMPETE FOR SINGLET OXYGEN IN THE PHOTODYNAMIC MODIFICATION OF HCN CHANNELS. **Weihua Gao**, Zhuocheng Su, Qinglian Liu, Lei Zhou

3832-Pos BOARD #B560
DIFFERENT EFFECTS OF ALKALINE PHOSPHATASE ON HCN4 CHANNELS IN CHO VERSUS HEK CELLS. Julie Juchno, Joshua R. St. Clair, **Cathy Proenza**

3833-Pos BOARD #B561
THE AUXILIARY SUBUNIT TRIP8B INHIBITS THE BINDING OF CAMP TO HCN2 CHANNELS THROUGH AN ALLOSTERIC MECHANISM. Andrea C. Saponaro, Manolis Matzapetakis, Bina Santoro, Sofia R. Pauleta, **Anna Moroni**

3834-Pos BOARD #B562
MECHANISM OF IONIC PERMEATION IN THE MIMICS OF CNG CHANNELS: A STRUCTURAL, FUNCTIONAL AND COMPUTATIONAL ANALYSIS. Luisa M. R. Napolitano, Ina Bisha, **Manuel Arcangeletti**, Arin Marchesi, Matteo De March, Silvia Onesti, Alessandro Laio, Vincent Torre

3835-Pos BOARD #B563
ARCHITECTURE OF THE HCN SELECTIVITY FILTER AND CONTROL OF CATION PERMEATION. Vincenzo Macri, Damiano Angoli, **Eric Accili**

3836-Pos BOARD #B564
OPENING AND CLOSING OF THE HCN2 CHANNEL PORE IS VOLTAGE-INDEPENDENT. Leo Kim, Wai Wong, Li Yue-Xian, **Eric Accili**

3837-Pos BOARD #B565
ISOFORM-DEPENDENT CHOLESTEROL REGULATION OF HCN CHANNELS. **Oliver Furst**, Michael Morin, Nazzareno D'Avanzo

3838-Pos BOARD #B566
IVABRADINE REDUCES ALPHA-SMOOTH MUSCLE ACTIN EXPRESSION, PROLIFERATION AND COLLAGEN PRODUCTION IN HUMAN CARDIAC FIBROBLASTS. **Priyanthi Dias**, Manoraj Navaratnarajah, Samha Alayoubi, Christopher Kane, Leanne E. Felkin, James E. Cartledge, Nirmitha Jayaratne, Najma Latif, Magdi H. Yacoub, Cesare M. Terracciano

3839-Pos BOARD #B567
DO ACIDIC RESIDUES IN THE TRI-ASP MOTIF OF THE CNGA3 S2 DOMAIN FORM REQUIRED PAIRINGS WITH POSITIVE RESIDUES OF THE S1-S4 BUNDLE? EVIDENCE FROM DAY-BLIND DOGS AND INSIGHTS FROM A MOLECULAR MODEL OF CNGA3 S1-S6 WITH MD SIMULATIONS. **Naoto Tanaka**, Lucie Delemotte, Michael L. Klein, András M. Komáromy, Jacqueline C. Tanaka

3840-Pos BOARD #B568
HYPERPOLARIZATION-ACTIVATED AND CYCLIC NUCLEOTIDE-GATED CHANNELS (HCN) ARE MODULATED BY NITRIC OXIDE IN MAGNOCELLULAR NEURONS OF THE SUPRAOPTIC NUCLEUS OF RATS. **Melina P. Silva**, Wamberto Antonio Varanda

3841-Pos BOARD #B569
IDENTIFICATION OF A PSEUDOTETRAMERIC K⁺-SELECTIVE CNG CHANNEL IN *AMPHIOXUS*. **Sylvia Fechner**, Wolfgang Bönick, Luis Alvarez, Eberhard Krause, Enrico Nasi, U. Benjamin Kaupp, Reinhard Seifert

3842-Pos BOARD #B570
A FAMILY OF HCN CHANNEL HOMOLOGS IN BACTERIA. Jana Kusch, Marijke Brams, **Chris Ulens**

Intracellular Channels (Boards #B571–#B578)

3843-Pos BOARD #B571
FUNCTIONAL COUPLING OF THE MITOCHONDRIAL BKCA CHANNEL TO THE RESPIRATORY CHAIN. **Piotr Bednarczyk**, Detlef Siemen, Adam Szewczyk

3844-Pos BOARD #B572
ELECTROPHYSIOLOGICAL CHARACTERIZATION OF THE ACTIVITY AND REGULATION OF THE MITOCHONDRIAL CALCIUM UNIPORTER. **Vanessa Checchetto**, Enrico Teardo, Diego De Stefani, Maria Patron, Anna Raffaello, Ildikò Szabò, Rosario Rizzuto

3845-Pos BOARD #B573
THE OPEN STATE OF HUMAN VDAC ISOFORMS COMPARED THROUGH MD SIMULATIONS. **Giuseppe F. Amodeo**, Mariano A. Scorciapino, Vito De Pinto, Matteo Ceccarelli

3846-Pos BOARD #B574
MARKOV CHAIN MONTE CARLO MODEL ANALYSIS OF CARDIAC MITOCHONDRIAL VDAC1 KINETICS. Shivendra G. Tewari, Bradley J. Otto, Qunli Cheng, YiFan Zhou, Ranjan K. Dash, **Wai-Meng Kwok**

3847-Pos BOARD #B575
A LYSOSOMAL ATP-SENSITIVE SODIUM CHANNEL AND ITS REGULATION BY METABOLISM. Chunlei Cang, **Dejian Ren**

3848-Pos BOARD #B576
A THYLAKOID-LOCATED TWO-PORE K⁺ CHANNEL CONTROLS PHOTOSYNTHETIC LIGHT UTILIZATION IN PLANTS. **Enrico Teardo**

3849-Pos BOARD #B577
PURIFIED FUNCTIONAL HUMAN CONNEXIN 26 HEMICHANNELS EXPRESSED IN E. COLI. **Mariana Fiori**, Marien D. Cortes, Mauricio A. Retamal, Shrinivasan Krishnan, Luis Reuss, Guillermo A. Altenberg, Luis G. Cuello

3850-Pos BOARD #B578
PHOSPHOLAMBAN IS A CATION SELECTIVE ION CHANNEL.
Serena Smeazzetto, Maria Rosa Moncelli, Gerhard Thiel

Ion Channels and Disease II (Boards #B579–#B589)

3851-Pos BOARD #B579
TRPM4 GENETIC VARIANTS IN PATIENTS WITH CONGENITAL ATRIO-VENTRICULAR BLOCK. Ninda Syam, Stephanie Chatel, Jean-Sebastien Rougier, Valentin Sottas, Alban Baruteau, Vincent Probst, Jean-Jacques Schott, **Hugues Abriel**

3852-Pos BOARD #B580
THE CONTRIBUTION OF STORE OPERATED AND STORE INDEPENDENT CALCIUM ENTRY TO MIGRATION IN A MODEL OF NEUROENDOCRINE CANCER. **Priyodarshan Goswamee**, Sukhmit Kaur, David R. Giovannucci

3853-Pos BOARD #B581
INHIBITION OF MITOCHONDRIAL $\text{Na}^+/\text{Ca}^{2+}$ EXCHANGER PREVENTS STRESS-INDUCED ARRHYTHMIA IN THE ISOLATED GUINEA PIG FAILING HEART. **Ting Liu**, Deepankar Demazumder, Brian O'Rourke

3854-Pos BOARD #B582
IDENTIFICATION AND FUNCTIONAL ROLE OF CALPAIN CLEAVAGE SITE IN $\text{Na}^+/\text{Ca}^{2+}$ EXCHANGER 1 (NCX1). **Kjetil Hodne**, Pimthanya Wanichawan, Tandekile L. Hafver, Jan M. Aronsen, Ida G. Lunde, Marianne Lunde, Heidi Kvaløy, Theis Tønnessen, Ivar Sjaastad, William E. Louch, Ole M. Sejersted, Cathrine R. Carlsson

3855-Pos BOARD #B583
NA/K ATPASE FUNCTION DECLINES BEFORE CHANGES TO CALCIUM HANDLING IN A GUINEA-PIG MODEL OF PROGRESSIVE HEART FAILURE. **Hung-Yen Ke**, Thomas P. Collins, Anita Alvarez-Laviada, Christina Rowlands, Kenneth T. MacLeod

3856-Pos BOARD #B584
IMPAIRED BONE FORMATION IN *TRIC-B*-KNOCKOUT MICE. **Chengzhu Zhao**, Daiju Yamazaki, Fumiyo Aoyama, Tsunaki Iida, Miyuki Nishi, Akira Sawaguchi, Hiroshi Takeshima

3857-Pos BOARD #B585
 H^+ INHIBITS TRIC-B CHANNELS DERIVED FROM MOUSE TRIC-A KNOCKOUT TISSUE. **Fiona O'Brien**, Elisa Venturi, Elena Galfrè, Antoni Matyjaszkiewicz, Daiju Yamazaki, Miyuki Nishi, Hiroshi Takeshima, Rebecca Sitsapesan

3858-Pos BOARD #B586
ION CHANNELS CONTROLLING RESTING MEMBRANE POTENTIAL OF NOCICEPTIVE DRG NEURON SOMATA. Xiaona Du, Han Hao, **Sylvain Gigout**, Dongyang Huang, Yuehui Yang, Jinlong Qi, Li Li, Caixue Wang, Hailin Zhang, Nikita Gamper

3859-Pos BOARD #B587
CRITICAL BEHAVIOR IN THE PANCREATIC ISLET DEPENDS ON THE BALANCE BETWEEN CELLULAR EXCITABILITY AND ELECTRICAL COUPLING. Thomas H. Hraha, Matthew J. Westacott, Marina Pozzoli, **Richard KP Benninger**

3860-Pos BOARD #B588
QUBE - HIGH THROUGHPUT SCREENING WITH GENUINE ELECTROPHYSIOLOGY. Anders Lindqvist, Søren Friis, Rasmus B. Jacobsen, Emma Olander, Hervør L. Olsen, Kristina M. Christensen, Mette T. Christensen, Peder Skafte-Pedersen, Lasse Homann, Anders Hyldgård, **Mads P.G Korsgaard**, Morten R. Sunesen

3861-Pos BOARD #B589
CURRENT CLAMP OF STEM CELL DERIVED CARDIOMYOCYTES ON QPATCH. Soren Friis, Emma Olander, Kristina Christensen, **Richard Kondo**, Morten Sunesen

Muscle: Fiber and Molecular Mechanics and Structure II (Boards #B590–#B621)

3862-Pos BOARD #B590
AN EXAMINATION OF SARCOMERE LENGTH NON-UNIFORMITIES IN ACTIVELY STRETCHED MUSCLE MYOFIBRILS. **Kaleena R. Johnston**, Azim Jinha, Walter Herzog

3863-Pos BOARD #B591
DOES CALCIUM SENSITIVITY INCREASE AFTER ACTIVE STRETCH IN SKINNED MUSCLE FIBRES? **Venus Joumaa**, Walter Herzog

3864-Pos BOARD #B592
THIXOTROPY OF MUSCLE FIBERS PROBED WITH SINUSOIDAL OSCILLATIONS. **David Altman**, Fabio C. Minozzo, Dilson E. Rassier

3865-Pos BOARD #B593
HOP SKIP AND JUMP; BUT HOW? **Michael A. Ferenczi**, Sergey Y. Bershtsky, Natalia A. Koubassova, Galina V. Kopylova, Manuel Fernandez, Theyencheri Narayanan, Andrey K. Tsureyan

3866-Pos BOARD #B594
ACTIVE AND PASSIVE FAILURE OF PERMEABILIZED MUSCLE FIBRES FROM THE RABBIT PSOAS. **Brandon Hisey**, Venus Joumaa, Walter Herzog

3867-Pos BOARD #B595
MEMBRANE-SEALANT COPOLYMERS CONFER PROTECTION TO DYSTROPHIC SKELETAL MUSCLE IN VITRO AND IN VIVO. **Evelyne M. Houang**, Karen Haman, Frank Bates, Dawn A. Lowe, Joseph M. Metzger

3868-Pos BOARD #B596
ENZYMATIC DISSOCIATION MAKES SKELETAL MUSCLE FIBERS SUSCEPTIBLE TO OSMOTIC STRESS AND MORE PRONE TO MITOCHONDRIAL CALCIUM UPTAKE. **Håkan Westerblad**, Andres Hernández, Arthur J. Cheng, Joseph D. Bruton

3869-Pos BOARD #B597
HUMAN DIAPHRAGM SINGLE FIBER FUNCTION AFTER UNILATERAL PHRENIC NERVE STIMULATION DURING MECHANICAL VENTILATION. **Bumsoo Ahn**, Daniel Martin, Tomas Martin, Tom Beaver, Barbara Smith, Shakeel Ahmed, Leonardo F. Ferreira

3870-Pos BOARD #B598
RANDOM MYOSIN LOSS ALONG THICK-FILAMENTS INCREASES MYOSIN ATTACHMENT TIME AND THE PROPORTION OF BOUND MYOSIN HEADS TO MITIGATE FORCE DECLINE IN SKELETAL MUSCLE. **Bertrand CW Tanner**, Mark McNabb, Bradley M. Palmer, Michael J. Toth, Mark S. Miller

3871-Pos BOARD #B599
MOLECULAR CHAPERONE MEDIATED INHIBITION OF THE MYOSIN POWER STROKE MAY BE CRITICAL FOR SARCOMERE ASSEMBLY. **Paul Nicholls**, Paul Bujalowski, Darren Boehning, Jose Barral, Andres Oberhauser

3872-Pos BOARD #B600
LOCALIZATION AND BINDING PARTNERS OF SESTD1 IN SKELETAL MUSCLES. **Akira Hanashima**, Sumiko Kimura, Takashi Murayama

3873-Pos BOARD #B601

THE ROLE OF MYOPALLADIN IN SKELETAL MUSCLE. Marco Caremani, Daniel L. Yamamoto, Vincenzo Nigro, Vincenzo Lombardi, Marie Louise Bang, **Marco Linari**

3874-Pos BOARD #B602

TRIADIN FUNCTION IN SARCOPLASMIC RETICULUM STRUCTURE. Alexis Osseni, Oriana Sarrault, Julien Fauré, Anne Fourest-Lieuvin, **Isabelle Marty**

3875-Pos BOARD #B603

IN VITRO SMOOTH MUSCLE HYPERCONTRACTILITY INDUCED BY CD4⁺ T CELLS IS TRANSIENT. **Oleg S. Matusovsky**, Emily M. Nakada, Linda Kachmar, Elizabeth D. Fixman, Anne-Marie Lauzon

3876-Pos BOARD #B604

THE INTERACTION OF AMP-ACTIVATED PROTEIN KINASE AND ITS UPSTREAM ACTIVATOR, LKB1/MO25/STRAD, MODIFIES CONTRACTILE FUNCTION IN RAT CARDIAC TRABECULAE. **Samantha Behunin**, John P. Konhilas

3877-Pos BOARD #B605

LKB1 AND MO25 DEMONSTRATE SIGNIFICANT INTERACTION WITH MYOFILAMENT PROTEINS. **Marissa A. Lopez-Pier**, John P. Konhilas, Samantha M. Behunin

3878-Pos BOARD #B606

A MOLECULAR SIMULATION STUDY TO INVESTIGATE ACTIN FILAMENT ELONGATION MECHANISM. **Nobuhiko Wakai**, Yasutaka Nishihara, Kazuhiro Takemura, Takashi Fujii, Keiichi Namba, Akio Kitao

3879-Pos BOARD #B607

X-RAY DIFFRACTION PATTERN OF NON-UNIFORMLY STRETCHED ACTIN FILAMENT. **Momcilo Prodanovic**, Thomas C. Irving, Robert McOwen, Srboj M. Mijailovich

3880-Pos BOARD #B608

ADDING REGULATION TO CROSS-BRIDGE MUSCLE MODELS. **Sam Walcott**

3881-Pos BOARD #B609

THE STRUCTURAL DYNAMICS OF ALPHA-TROPOMYOSIN ON F-ACTIN SHAPE THE OVERLAP COMPLEX BETWEEN ADJACENT TROPOMYOSIN MOLECULES. **William Lehman**, Xiaochuan Li, Marek Orzechowski, Stefan Fischer

3882-Pos BOARD #B610

MYOSIN BINDING TO HUMAN CARDIAC THIN FILAMENTS CONTAINING TROPOMYOSIN CARRYING DCM & HCM MUTATIONS; FITTING OF COMPLEX BINDING TRANSIENTS. **Marina Svicevic**, Srboj M. Mijailovich, Miro Janco, Michael A. Geeves

3883-Pos BOARD #B611

MG²⁺ DEPENDENT MODULATION OF STRIATED MUSCLE MYOSIN ATPASE BY THIN FILAMENT COMPONENTS. **Minae Kobayashi**, Ben Ramirez

3884-Pos BOARD #B612

KINETIC AND STRUCTURAL CHARACTERIZATION OF CALCIUM SENSITIZER ACTION ON THIN FILAMENT FUNCTION USING FRET. **William D. Schlecht**, Wenji Dong, King Lun Li

3885-Pos BOARD #B613

MONITORING CARDIAC TROPONIN STRUCTURAL CHANGES USING IN-SITU TIME-RESOLVED FRET: IMPLICATIONS ON THE REGULATORY ROLES OF CROSS-BRIDGES AND SARCOMERE LENGTH. **King-Lun Li**, Daniel C. Rieck, R. John Solaro, Wen-Ji Dong

3886-Pos BOARD #B614

CA²⁺-REGULATORY FUNCTION OF THE INHIBITORY PEPTIDE REGION OF CARDIAC TROPONIN I IS AIDED BY THE C-TERMINUS OF CARDIAC TROPONIN T: EFFECTS OF FHC MUTATIONS CTNI R145G AND CTNT R278C, ALONE AND IN COMBINATION, ON FILAMENT SLIDING. **Brenda Schoffstall**, Nicolas M. Brunet, Goran Mihajlović, P. Bryant Chase

3887-Pos BOARD #B615

IMPACT OF TROPONIN-I PHOSPHORYLATION ON HUMAN CARDIAC MYOFILAMENT FUNCTION. **Karen H. Hsu**, Menjie Zhang, Namthip Witayavanitkul, Thomas C. Irving, Pieter P. de Tombe

3888-Pos BOARD #B616

THE R144W MUTATION IN MOUSE CARDIAC TROPONIN T ATTENUATES CROSSBRIDGE RECRUITMENT AND DETACHMENT KINETICS. **Sampath K. Gollapudi**, Murali Chandra

3889-Pos BOARD #B617

EFFECTS OF PSEUDOPHOSPHORYLATION OF RAT CARDIAC TROPONIN T RESIDUE 204 ARE DIFFERENTLY AFFECTED BY α - AND β -MYOSIN HEAVY CHAIN ISOFORMS. **John Jeshurun Michael**, Sampath K. Gollapudi, Murali Chandra

3890-Pos BOARD #B618

FORCE-SARCOMERE LENGTH RELATIONS IN PATIENTS WITH THIN FILAMENT MYOPATHY CAUSED BY MUTATIONS IN NEB, ACTA1, TPM2 AND TPM3. **Josine M. de Winter**, Barbara Joureau, Coen AC Ottenheijm

3891-Pos BOARD #B619

PROLONGED RELAXATION KINETICS IN DISTAL ARTHROGRIPOSIS SKELETAL MUSCLE MYOFIBRILS WITH A MYH3 R672C MUTATION. **Alice Ward Racca**, Anita E. Beck, Michael J. Bamshad, Michael Regnier

3892-Pos BOARD #B620

FUNCTIONAL EFFECTS OF THE β -MYOSIN MUTATION ARG453CYS IN FAMILIAL HYPERTROPHIC CARDIOMYOPATHY. **Theresa Kraft**, Judith Montag, Julia Rose, Dejan List, William J. McKenna, Bernhard Brenner

3893-Pos BOARD #B621

THE STRUCTURE-FUNCTION ANALYSIS OF MYOSIN PSEUDO-PHOSPHORYLATION IN MOUSE MODEL OF FHC. **Chen-Ching Yuan**, Priya Muthu, Rosemeire Kanashiro-Takeuchi, Jingsheng Liang, Ana I. Rojas, Katarzyna Kazmierczak, Joshua M. Hare, Thomas Irving, Danuta Szczesna-Cordary

Cardiac Muscle III (Boards #B622–#B652)

3894-Pos BOARD #B622

ANALYSIS OF THE INNER AND OUTER ENVIRONMENT OF SARCOLEMMA IN CARDIAC MUSCLE CELLS. **Zuzana Nichtová**, Marta Novotová, Ivan Zahradník

3895-Pos BOARD #B623

BRIDGING INTEGRATOR 1 (BIN1)-INDUCED T-TUBULE FORMATION IN CARDIOMYOCYTES. **David B. Lipssett**, Neha Singh, Michael Frisk, Jan Magnus Aronsen, Ole M. Sejersted, Ivar Sjaastad, J. Andrew Wasserstrom, Geir Christensen, William E. Louch

3896-Pos BOARD #B624

BIN-1 EXPRESSION IN NORMAL RAT CARDIAC MYOCYTES AND IN MYOCYTES WITH REDUCED T-TUBULE DENSITY DUE TO CELL CULTURE OR HEART FAILURE. **Hannah M. Kirton**, Matthew Hardy, Edward White, Derek Steele

- 3897-Pos BOARD #B625**
INVOLVEMENT OF TRPC IN THE SLOW FORCE RESPONSE OBSERVED IN MOUSE VENTRICULAR MYOCYTES.
Yohei Yamaguchi, Toshiyuki Kaneko, Keiji Naruse, Gentaro Iribe
- 3898-Pos BOARD #B626**
HYPERCHOLESTEROLEMIA PROTECTS AGAINST ISCHEMIA-INDUCED VENTRICULAR TACHYCARDIA AND VENTRICULAR FIBRILLATION. **Antonius Baartscheer**, Cees A. Schumacher, Marieke W. Veldkamp, Arie O. Verkerk, Ruben Coronel
- 3899-Pos BOARD #B627**
APICO-BASAL GRADIENT OF REPOLARIZATION OVER THE LEFT VENTRICLE DETERMINES ARRHYTHMIA SUSCEPTIBILITY IN MICE. **Morten B. Thomsen**, Tobias Speerschnieder, Søren Grubb, Søren-Peter Olesen, Kirstine Calloe
- 3900-Pos BOARD #B628**
EFFECT OF DIFFERENT CURRENTS AND EXTRACELLULAR POTASSIUM ION CONCENTRATION ON ANODAL EXCITATION OF CARDIAC TISSUE. **Sunil M. Kandel**, Bradley J. Roth
- 3901-Pos BOARD #B629**
EXAMINATION OF THE HEAT-STRESS RELATIONSHIP OF RAT CARDIAC TRABECULAE USING AN IMPROVED MUSCLE CALORIMETER. **Callum M. Johnston**, June-Chiew Han, Bryan P. Ruddy, Poul M.F. Nielsen, Andrew J. Taberner
- 3902-Pos BOARD #B630**
SARCOMERE LENGTH NANOMETRY IN CARDIOMYOCYTES EXPRESSED WITH α -ACTININ-ACGFP IN Z-DISCS. **Seine A. Shintani**, Kotaro Oyama, Takashi Ohki, Shin'ichi Ishiwata, Norio Fukuda
- 3903-Pos BOARD #B631**
DETERMINING THE MOLECULAR MECHANISMS THAT LINK A TITIN MUTATION TO CARDIOMYOPATHY. **Brian Anderson**, Julius Bogomolovas, Siegfried Labeit, Henk Granzier
- 3904-Pos BOARD #B632**
CARDIAC MYOFILAMENT SARCOMERE SHORTENING IS FASTER AND EXHIBITS GREATER SHORTENING-INDUCED COOPERATIVE DEACTIVATION AFTER PKA TREATMENT. **Laurin M. Hanft**, Kerry S. McDonald
- 3905-Pos BOARD #B633**
THE EFFECT OF α -ACTIN MUTANT E361G ON FORCE GENERATION AND CROSS-BRIDGE KINETICS IN THIN-FILAMENT RECONSTITUTED BOVINE CARDIAC MUSCLE FIBERS. Fan Bai, Hannah M. Caster, John F. Dawson, **Masataka Kawai**
- 3906-Pos BOARD #B634**
THE ACTC A295S MUTATION INCREASES HEART AND SKELETAL MUSCLE CONTRACTILE ACTIVITY IN DROSOPHILA MODELS OF HYPERTROPHIC CARDIOMYOPATHY. Meera C. Viswanathan, Bernadette M. Glasheen, Kaylyn Bell, Douglas M. Swank, **Anthony Cammarato**
- 3907-Pos BOARD #B635**
DCM-CAUSING MUTATION E361G IN ACTIN UNCOUPLES MYOFIBRIL Ca^{2+} SENSITIVITY FROM PROTEIN PHOSPHORYLATION. Petr G. Vikhorev, Ross Wilkinson, Weihua Song, O'Neal Copeland, Michael A. Ferenczi, **Steven B. Marston**
- 3908-Pos BOARD #B636**
SARCOMERE NEUTRALIZATION THERAPY IN HCM/RCM: THERAPEUTIC APPLICATION OF THE CALCIUM DESENSITIZER W7 TO REMEDIATE HYPER-CALCIUM SENSITIVE DISEASE STATES. **Brian R. Thompson**, Joshua Martindale, Joseph M. Metzger
- 3909-Pos BOARD #B637**
FUNCTIONAL ADAPTATIONS TO CARDIAC TROPONIN I PHOSPHOMIMETIC SUBSTITUTIONS. **Sarah E. Lang**, Margaret V. Westfall
- 3910-Pos BOARD #B638 CPOW TRAVEL AWARDEE**
MYOSIN HEAVY CHAIN ISOFORM SWITCHING IN SKELETAL MUSCLES IN AN A8V-TROPONIN C HYPERTROPHIC CARDIOMYOPATHY KNOCK-IN MOUSE MODEL. **Milica Vukmirovic**, Marcos A. Sanchez-Gonzalez, Edda Ruiz, Eric Krivensky, David Dweck, Jose R. Pinto
- 3911-Pos BOARD #B639**
CARDIAC MYOSIN BINDING PROTEIN-C PHOSPHORYLATION AND SARCOMERE FUNCTION. **Mohit Kumar**, Suresh Govindan, Sakthivel Sadayappan, Pieter P de Tombe
- 3912-Pos BOARD #B640**
EFFECT OF A HIGH-SALT DIET ON THE MECHANO-ENERGETICS OF LEFT VENTRICULAR TRABECULAE ISOLATED FROM DAHL SALT-SENSITIVE RATS. **Kenneth Tran**, June-Chiew Han, Carolyn J. Barrett, Andrew J. Taberner, Denis S. Loiselle, Edmund J. Crampin
- 3913-Pos BOARD #B641**
OXYGEN CONSUMPTION OF BROWN ADIPOSE TISSUE (BAT) AND SKELETAL MUSCLE IS INVERSELY RELATED. Cecilie Sjøland, Jan Magnus Aronsen, Madelene Ericsson, Hong Qu, Øyvind Ellingsen, Ivar Sjaastad, Geir Christensen, Kristin B. Andersson, **Per K. Lunde**, Ole M. Sejersted
- 3914-Pos BOARD #B642**
OPTOGENETIC G_s ACTIVATION IN CARDIOMYOCYTES ENHANCES PACEMAKER ACTIVITY. **Philipp Makowka**, Tobias Bruegmann, Thomas Beiert, Philipp Sasse
- 3915-Pos BOARD #B643**
COMPARTMENTATION OF CAMP SIGNALING IN COMPLEX AND SIMPLE CELLS. **Shailesh R. Agarwal**, Pei-Chi Yang, Colleen Clancy, Robert Harvey
- 3916-Pos BOARD #B644**
UPREGULATION OF $\alpha 1$ -ADRENERGIC INOTROPY IN FAILING RIGHT VENTRICLE (RV) IS MEDIATED BY THE $\alpha 1A$ SUBTYPE. **Patrick M. Cowley**, Om Makwana, Audrey N. Chang, Paul C. Simpson, James T. Stull, Anthony J. Baker
- 3917-Pos BOARD #B645**
CARDIAC-SPECIFIC OVEREXPRESSION OF FOXO AFFORDS PROTECTION AGAINST AGE-ASSOCIATED DECLINE IN CARDIAC PERFORMANCE IN THE DROSOPHILA MODEL. **Anna Blice-Baum**, Guarav Kaushik, Meera C. Viswanathan, Rolf Bodmer, Adam J. Engler, Anthony Cammarato
- 3918-Pos BOARD #B646**
MYOSIN STORAGE MYOPATHY MUTATIONS DISRUPT MYOFIBRILLAR ASSEMBLY/ STABILITY AND CAUSE PROGRESSIVE MUSCLE DEGENERATION IN A DROSOPHILA MODEL. **Meera Cozhimuttam Viswanathan**, William A. Kronert, Girish C. Melkani, Anthony Cammarato, Sanford I. Bernstein
- 3919-Pos BOARD #B647**
EFFECTS OF FHC-RELATED TROPONIN T MUTATIONS ON PROTEASOME ACTIVITY AND HALF-LIFE OF TROPONIN T. **Jennifer E. Gilda**, Ziyu Cui, Aldrin V. Gomes
- 3920-Pos BOARD #B648**
MIRNA-448 IS A PRECURSOR OF ROS-DERIVED DYSTROPHIC CARDIOMYOPATHY. Sergii Kyrychenko, Viktoriia Kyrychenko, Yoshiyuki Ikeda, Junichi Sadoshima, **Natalia Shirokova**

3921-Pos BOARD #B649
VINCULIN-MEDIATED CYTOSKELETAL REMODELING MODULATES CARDIAC MORPHOLOGY AND CONTRACTILE FUNCTION DURING AGEING. **Gaurav Kaushik**, Alice Spenlehauer, Ayla Sessions, Danielle Pohl, Adriana Trujillo, Sanford I. Bernstein, Rolf Bodmer, Anthony Cammarato, Adam J. Engler

3922-Pos BOARD #B650
NOVEL LOCATIONS; FAMILIAR FUNCTIONS: OBSCURIN AT THE CARDIAC INTERCALATED DISC. **Maegen A. Ackermann**, Nicole A. Perry, Aikaterini Kontrogianni-Konstantopoulos

3923-Pos BOARD #B651
ACETYLATION AND PHOSPHORYLATION POST-TRANSLATIONAL MODIFICATIONS OF THE CAPZ BETA1 SUBUNIT REGULATE FRAP DYNAMICS LEADING TO MYOCYTE HYPER-TROPHY. **Ying-Hsi Lin**, Chad M. Warren, Brenda Russell

3924-Pos BOARD #B652
ACTIN CARBOXYLATION IS HIGHER IN HUMAN HYPERTROPHIC CARDIOMYOPATHY DUE TO MYH7 MUTATIONS. **Rosalie Witjas-Paalberends**, Marcella Canton, Michelle Michels, Carolyn Ho, Corrado Poggesi, Fabio di Lisa, Jolanda van der Velden

Microtubules, Their Motors, and Associated Proteins II (Boards #B653–#B682)

3925-Pos BOARD #B653
STRUCTURAL KINETICS OF THE MITOTIC KINESIN EG5. Joseph Muretta, William Behnke Parks, Karl Petersen, Adeline Goulet, Carolyn Moores, David D. Thomas, **Steven Rosenfeld**

3926-Pos BOARD #B654
STRUCTURAL BASIS FOR THE ASSEMBLY OF KINESIN-5 INTO BIPOLAR ANTI-PARALLEL TETRAMERS. Jessica Scholey, **Stanley Nithianantham**, Jonathan M. Scholey, Jawdat Al-Bassam

3927-Pos BOARD #B655
KINESIN-5 MOTILITY IS REGULATED BY THE RESIDUE CHEMISTRY OF LOOP-5. **Rebecca S. Buckley**, Victoria Dauphin, Thomas M. Huckaba, Sunyoung Kim

3928-Pos BOARD #B656
A CHIMERIC KINESIN-5 MOTOR TRACKS PLUS-ENDS OF MICROTUBULES. **Yalei Chen**, William O. Hancock

3929-Pos BOARD #B657
CUT7-DRIVEN MICROTUBULE SLIDING REVERSES DIRECTION DEPENDING ON MOTOR DENSITY. Mishan Britto, Kanwal Zehra, Adeline Goulet, Carolyn Moores, **Robert A. Cross**

3930-Pos BOARD #B658
SRC PHOSPHORYLATION REGULATES THE HUMAN KINESIN-5, EG5, AND DISRUPTS THE BINDING OF EG5 INHIBITORS. **Kathleen M. Gifford**, Joshua S. Waitzman, Taylor A. Poor, Barbara Mann, Melissa C. Gonzalez, Pat Wadsworth, Sarah E. Rice

3931-Pos BOARD #B659
ALLOSTERIC L5-DIRECTED INHIBITORS OF KINESIN-5 CAN CONTROL DIFFERENT BIOCHEMICAL INTERMEDIATES. **Minmin Luo**, Sunyoung Kim

3932-Pos BOARD #B660
PHOTO-REVERSIBLE INHIBITION OF MITOTIC KINESIN EG5 BY PHOTOCROMIC STLC ANALOGUES COMPOSED OF AZOBENZENE. **Kanako Tohyama**, Kumiko Ishikawa, Shinsaku Maruta

3933-Pos BOARD #B661
PHOTO-REGULATION OF KINESIN EG5 ATPASE AND MOTOR ACTIVITY USING NOVEL PHOTOCROMIC INHIBITOR COMPOSED OF SPIROPYRAN AND CYSTEINE. **Kei Sadakane**, Kumiko Ishikawa, Kanako Tohyama, Banri Yamanoha, Shinsaku Maruta

3934-Pos BOARD #B662
TRANSDUCER RESIDUES ARE THERMODYNAMICALLY COUPLED IN THE KINESIN-5 MOTOR DOMAIN. **Jessica Richard**, Hoang Nguyen, Elizabeth Kim, Sunyoung Kim

3935-Pos BOARD #B663
PHOTO-REGULATION OF MITOSIS KINESIN KIF18A USING PHOTOCROMIC INHIBITOR. **Seo Hideo**, Kumiko Ishikawa, Shinsaku Maruta

3936-Pos BOARD #B664
PHOTOCNTROL OF MITOTIC KINESIN EG5 BY INCORPORATING OF PHOTOCROMIC MOLECULE INTO THE FUNCTIONAL LOOP L5. **Kumiko Ishikawa**, Yuhki Tamura, Shinsaku Maruta

3937-Pos BOARD #B665
THE KINESIN-1 GATING MECHANISM STUDIED BY PRE-STEADY STATE KINETICS. **Erik Jonsson**, Ronald D. Vale

3938-Pos BOARD #B666
ENHANCED TRANSVERSE MOTION OF MULTIPLE KINESIN MOTOR CONFIGURATIONS VIA A DIFFUSIVE WEAKLY BOUND STATE. **David Ando**, Jing Xu, Ajay Gopinathan

3939-Pos BOARD #B667
KINESIN-2'S NECK-LINKER IS CRITICAL TO NAVIGATING OBSTACLES ON THE MICROTUBULE SURFACE MORE EFFICIENTLY THAN KINESIN-1. **Christopher L. Berger**, Gregory J. Hoepflich, Andrew R. Thompson, William O. Hancock

3940-Pos BOARD #B668
STRAIN-BASED MECHANISM OF KINESIN ATPASE. **Wonmuk Hwang**, Matthew J. Lang, Martin Karplus

3941-Pos BOARD #B669
DEVELOPMENT OF MOLECULAR SHUTTLE REGULATED BY EXTERNAL STIMULATION UTILIZING KINESIN ATP DRIVEN MOTOR. **Naozumi Numata**, Kazunori Kondo, Shinsaku Maruta

3942-Pos BOARD #B670
COLLECTIVE MOTIONS AND DYNAMICAL COUPLINGS IN THE KINESIN MOTOR DOMAIN. **Guido Scarabelli**, Barry J. Grant

3943-Pos BOARD #B671
INTRODUCING A KINESIN-INSPIRED NANOMOTOR CONCEPT. **Martin J. Zuckermann**, Elizabeth H.C. Bromley, Christopher N. Angstmann, Gerhard A. Blab, Nancy R. Forde, Heiner Linke, Paul M.G. Curmi

3944-Pos BOARD #B672
SIMULATIONS OF NECK-LINKER MODIFIED AND ONE HEAD LOADED KINESINS. **Norbert Orgován**, Imre Derényi

3945-Pos BOARD #B673
STRAIN-DEPENDENT REGULATION OF THE KINESIN-1'S CATALYTIC ACTIVITY AS STUDIED BY DISULFIDE-CROSSLINKING OF THE NECK LINKER. **Yamato Niitani**, Erik Jonsson, Ronald D. Vale, Michio Tomishige

3946-Pos BOARD #B674
KINESIN MOTILITY ON MICROTUBULE BUNDLES. **Leslie Conway**, Jennifer L. Ross

3947-Pos BOARD #B675
THE MECHANISM OF DETERMINING THE DIRECTIONALITY OF NCD. **Masahiko Yamagishi**, Yoko Toyoshima, Junichiro Yajima

3948-Pos BOARD #B676
AUTOMATED, LONG-DISTANCE MICROTUBULE TRACKING IN GLIDING ASSAYS. Amber C. Betzold, Ashley R. Coenen, Daniel T. Thoresen, **Douglas S. Martin**

3949-Pos BOARD #B677
COOPERATIVE EFFECTS IN TRANSPORT SYSTEMS DRIVEN BY DIFFUSIVELY ANCHORED MOTORS. **Rahul Grover**

3950-Pos BOARD #B678
SINGLE MOTOR RANDOM WALKS ON MICROTUBULE BUNDLES. **Michael W. Gramlich**, L. Conway, S.M. Ali Tabei, Jennifer L. Ross

3951-Pos BOARD #B679
KINESIN MOTION IN THE PRESENCE OF OBSTACLES ON MICROTUBULES. **Woochul Nam**, Bogdan I. Epureanu

3952-Pos BOARD #B680
EXPERIMENTAL AND COMPUTATIONAL INVESTIGATIONS INTO COOPERATIVE CARGO TRANSPORT BY MIXTURES OF KINESINS FROM DIFFERENT FAMILIES. **Göker Arpağ**, Shankar Shastry, William O. Hancock, Erkan Tuzel

3953-Pos BOARD #B681
THE RICE KINESIN OSKCH1 IS A DYNAMIC CROSS-LINKER OF ACTIN FILAMENTS AND MICROTUBULES. **Wilhelm J. Walter**, Fereshteh Rafeian, Stefan Diez

3954-Pos BOARD #B682
MEASUREMENTS OF SINGLE FLUORESCENT MOTOR PROTEINS: THE RIGHT WAY. **Felix Ruhn**, Linda Kloß, Stefan Diez

Cell Mechanics and Motility IV (Boards #B683–#B709)

3955-Pos BOARD #B683
BLEB FORMATION IN A HELA CELL INDUCED BY TEMPERATURE GRADIENT. **Tomomi Arai**, Akira Isaka, Kotaro Oyama, Hideki Itoh, Yusuke Seto, Madoka Suzuki, Shin'ichi Ishiwata

3956-Pos BOARD #B684
ACTIN BUNDLE STABILIZATION DURING CELL SPREADING ON MICROPATTERNED SUBSTRATES. **Jean-Jacques Meister**, Josiane Smith-Clerc, Benoît Vianay

3957-Pos BOARD #B685
EVALUATING TENSION IN ACTOMYOSIN BUNDLES AT THE CELL PERIPHERY. **Jean-Jacques Meister**, Céline Labouesse, Niccolò Piacentini, Benoit Vianay

3958-Pos BOARD #B686
'HUM'-CORRECTED COMPARISON OF VISCOELASTIC PROPERTIES OF NORMAL, TUMORIGENIC, AND METASTATIC BREAST CELLS. **Amanda M. Smelser**, Adam P. O'Dell, Scott Smyre, Jed C. Macosko, George Holzwarth

3959-Pos BOARD #B687
REGULATION FOR PHOSPHATIDYLINOSITOL LIPIDS SIGNALING SYSTEM BY TALIN. **Shinichi Yamazaki**, Satomi Matsuoka, Masatsune Tsujioka, Masahiro Ueda

3960-Pos BOARD #B688
MECHANICAL PROPERTIES OF VIMENTIN INTERMEDIATE FILAMENT NETWORKS. **Huayin Wu**, Mikkel Jensen, Ming Guo, David A. Weitz

3961-Pos BOARD #B689
B CELL RECEPTOR CLUSTERING AND SIGNALING ACTIVATION ARE MODULATED BY PHYSICAL PARAMETERS OF THE SURFACE. **Christina M. Ketchum**, Heather Miller, Wenxia Song, Xiaoyu Sun, John Fourkas, Arpita Upadhyaya

3962-Pos BOARD #B690
THE ACTIN CROSSLINKING PROTEIN PALLADIN MODULATES FORCE GENERATION AND MECHANICAL SENSING OF TUMOR ASSOCIATED FIBROBLASTS. **Mikheil Azatov**, Silvia Goicoechea, Carol Otey, Rosa Hwang, Arpita Upadhyaya

3963-Pos BOARD #B691
MECHANICAL STRESS IN ACTININ AND ACTIN IN STEM CELLS. **Fanjie Meng**, Jun Guo, Frederick Sachs

3964-Pos BOARD #B692
SINGLE MOLECULE MECHANO-MEMORY. **Isaac T.S. Li**, Taekjip Ha, Yann R. Chemla

3965-Pos BOARD #B693
DNA-BASED "DIGITAL" TENSION PROBES WITH PN SENSITIVITY REVEAL EARLY CELL ADHESION MECHANICS AT THE SINGLE MOLECULE LEVEL. **Yun Zhang**, Khalid Salaita

3966-Pos BOARD #B694
BUCKLING OF A PHYSICALLY-CONSTRAINED GROWING EPITHELIUM. **Anastasiya Trushko**, Aurélien Roux

3967-Pos BOARD #B695
MITOTIC CELL SHAPE - RNA INTERFERENCE SCREENING FOR GENES INVOLVED IN MECHANICS USING ATOMIC FORCE MICROSCOPY. **Cédric J. Cattin**, Martin P. Stewart, Yusuke Toyoda, Ina Poser, Frank Buchholz, Anthony A. Hyman, Daniel J. Müller

3968-Pos BOARD #B696
MEASURING ACTOMYOSIN FUNCTION IN A LIVING ARASITE USING A LASER TRAP. Rachel V. Stadler, Lauren A. White, Brian P. Helmke, Ke Hu, **William H. Guilford**

3969-Pos BOARD #B697
PROBING FORCES ON NEWLY GENERATED SPINDLE MICROTUBULE MINUS-ENDS. **Christina L. Hueschen**, Mary W. Elting, Dylan B. Udy, Sophie Dumont

3970-Pos BOARD #B698
CHANGES IN MECHANICAL PROPERTIES OF ACTIN FILAMENTS OF ASTROCYTES AFTER INVASION BY TRYPANOSOMA CRUZI. **Gerson F. Cote-Flórez**, Juan Camilo Vargas-Zambrano, John Mario González, Manu Forero-Shelton

3971-Pos BOARD #B699
SINGLE CELL MEASUREMENTS OF INTRACELLULAR SIGNALLING, AND MOTILITY, IN MACROPHAGE CELLS SENSING A BACTERIAL INFECTION. **Eugenia Cammarota**, Jiro Sakai, Clare Bryant, Pietro Cicuta

3972-Pos BOARD #B700
TRACTION STRESS DYNAMICS DURING CHEMOTACTIC AMOEBOID CELL MIGRATION. **Effie Bastounis**, Reudi Meili, Begoña Álvarez-González, Juan Carlos del Álamo, Juan Lasheras, Richard Firtel

3973-Pos BOARD #B701

OPTIMAL COOPERATIVE SEARCHING USING PURELY REPULSIVE INTERACTIONS. **Noriyuki Tani**, David Quint, Ajay Gopinathan

3974-Pos BOARD #B702

ELASTIC MODULI OF CELLS UNDERGOING NEOPLASTIC TRANSFORMATION. **Xinyi Guo**, Martin Guthold, Keith Bonin

3975-Pos BOARD #B703

MAPPING LOCAL NANOSCALE CHANGES IN CELL TENSION AND STIFFNESS BY COMBINATORIAL MICROSCOPIES. **Amy M. Won**, Liang Zhang, Nikta Fay, Jeffrey L. Wrana, Nelly Pante, Christopher M. Yip

3976-Pos BOARD #B704

MECHANICAL GATING PROPERTIES OF MSCL IN MAMMALIAN CELLS. **Johanna Heureaux**, Victoria Murray, Di Chen, Cheri X. Deng, Allen P. Liu

3977-Pos BOARD #B705

COHERENT CELL ROTATION IN CONFLUENT MONOLAYER SHEETS. **Bo Li**, Sean Sun

3978-Pos BOARD #B706

CHARACTERISTICS OF MECHANICALLY-CONDITIONED, SUBSTRATE-FREE CARDIAC CELL SHEETS. Qi Wei, **Hayden Huang**

3979-Pos BOARD #B707

NANOINDENTATION DERIVED MECHANICAL PROPERTIES OF THE CORNEASCLERAL RIM OF THE HUMAN EYE. **Philipp Eberwein**, Jiri Nohava, Guenther Schlunck, Michael Swain

3980-Pos BOARD #B708

LIGHT-MODULATED CELL ADHESION TO CONTROL CELL AND TISSUE MORPHOGENESIS. **Jeffrey van Haren**, Torsten Wittmann

3981-Pos BOARD #B709

NEUTROPHIL ROLLING ON PATCHES OF SELECTIN. **Alex C. Szatmary**

Membrane Pumps, Transporters, and Exchangers III (Boards #B710–#B721)

3982-Pos BOARD #B710

CHARACTERIZING CONFORMATIONAL ENSEMBLE AND FREE ENERGY LANDSCAPE OF ABC EXPORTERS USING A NOVEL SYSTEM-SPECIFIC SAMPLING APPROACH. **Mahmoud Moradi**, Emad Tajkhorshid

3983-Pos BOARD #B711

INVESTIGATING THE DOMAINS' MOTIONS OF AN ASYMMETRIC ABC TRANSPORTER. **Valentina Corradi**, Gurpreet Singh, Markus Seeger, D. Peter Tieleman

3984-Pos BOARD #B712

MULTIPLE MEMBRANE-COMPATIBLE CONFORMATIONS OF AN SUBSTRATE-BINDING COMPONENT OF ECF TRANSPORTERS. **Po-Chao Wen**, Emad Tajkhorshid

3985-Pos BOARD #B713

EPR SPECTROSCOPY OF MOLB₂C₂-A REVEALS MECHANISM OF TRANSPORT FOR A TYPE II MOLYBDATE IMPORTER. **Austin J. Rice**, Frances J.D. Alvarez, Amy L. Davidson, Heather W. Pinkett

3986-Pos BOARD #B714

COMBINING IN VITRO WITH IN SILICO STUDIES TO OBTAIN INSIGHTS INTO SUBSTRATE RELEASING STATE OF THE MULTIDRUG RESISTANCE PROTEIN P-GLYCOPROTEIN. **Thomas Stockner**, Yaprak Doenmez Cakil, Chiba Peter

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REFINED STRUCTURES OF MOUSE P-GLYCOPROTEIN. **Stephen G. Aller**, Jingzhi Li, Kimberly Jaimes

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PROBING DRUG-BINDING PATHWAYS IN P-GLYCOPROTEIN WITH ENSEMBLE DOCKING. **Sundarapandian Thangapandian**, Emad Tajkhorshid

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FUNCTIONAL ASSAY FOR CHARACTERIZING HUMAN P-GLYCOPROTEIN TRANSPORT USING THE PORE FORMING PEPTIDE GRAMICIDIN A. **Haiyan Liu**, David Sept, Khyati Kapoor, Suresh V. Ambudkar, Michael Mayer

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PLANT VDAC SELECTIVITY AND VOLTAGE-DEPENDENCE ARE UNCOUPLED. Hayet SAIDANI, Eva-Maria KRAMMER, Martine Prevost, **Fabrice Homble**

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VDAC3 INTERACTOMIC ANALYSIS. Angela Messina, Francesca Guarino, Simona Reina, Andrea Magri, Claudia Fichera, Loredana Leggio, **Vito De Pinto**

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CHEMICAL STRUCTURES AND TRANSIT KINETICS OF CARBAPENEMS TRANSLOCATING THROUGH E. COLI OMPC. **Que-Tien Tran**, Robert Pearlstein, Sarah Williams, John Reilly, Thomas Krucker, Gul Erdemli

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NOVEL VIABILITY LOSS PROCESS INDUCED BY ELECTRIC FIELDS IS OBSERVED IN THE EXTREMOPHILIC DEINOCOCCUS RADIODURANS EXPOSED TO GAMMA RADIATION. **Joao DT Arruda-Neto**

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UNRAVELLING THE IMPACT OF OBSTACLES IN DIFFUSION AND KINETICS OF AN ENZYME CATALYSED REACTION. **Marcio Duarte Albasini Mourao**, Doree Kreitman, Santiago Schnell

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GROWTH AND MOTILITY OF GUT COMMENSAL ESCHERICHIA COLI IN HEALTH AND DISEASE. **Astghik Z. Pepoyan**, Marine H. Balayan, Anahit M. Manvelyan, Vardan V. Tsaturyan

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INFORMATION TRANSMISSION THROUGH PANCREATIC BETA CELL SIGNALING PATHWAYS. **Amicia D. Elliott**, Tomasz S. Tkaczyk, David W. Piston

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TARGETING SINGLE CELL NETWORKS FOR GENE EXPRESSION USING MECHANICAL STAMPING. **Rajib Schubert**
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OPTICAL SENSING OF ACTION POTENTIALS IN SEMICONDUCTOR MICROTUBES USING IN(AL)GAAS QUANTUM WELLS. **Aune Koitmäe**, Jann Harberts, Gabriele Loers, Cornelius S. Bausch, Daniel Diedrich, David Sonnenberg, Christian Heyn, Wolfgang Hansen, Robert H. Blick
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A NEW ASSAY TO QUANTIFY THE CONNECT-ABILITY OF NEURONS AND THE NEURITE EXTENSIONS. **Alessia Petrelli**, Davide De Pietri Tonelli, Luca Berdondini, Silvia Dante
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THE NEUROCHIP: A NEW MULTIELECTRODE DEVICE FOR STIMULATING AND RECORDING FROM CULTURED NEURONS. **Khawaja Moeen Haroon**
- 4003-Pos** BOARD #B731
OLFACTORY SEARCHES WITH LIMITED SPACE PERCEPTION. **Jean-Baptiste Masson**
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THE COMPLEXITY OF LARVAL CLASS IV SENSORY NEURONS IN DROSOPHILA IS ACCOUNTED FOR BY A SET OF STATISTICAL BRANCHING RULES. Hugo Bowne-Anderson, **Sujoy Ganguly**, Xin Liang, Romain Pszczolinski, Özlem Demir, Jonathon Howard
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STATISTICAL CONSTRAINTS ON DENDRITIC BRANCHING MORPHOLOGY IN DROSOPHILA CLASS IV SENSORY NEURONS. **Xin Liang**, Romain Pszczolinski, Sujoy Ganguly, Hugo Bowne-Anderson, Özlem Demir, Jonathon Howard
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MISMATCH BETWEEN THE RESTING MEMBRANE POTENTIAL AND THE VOLTAGE AT MAXIMUM AMPLIFICATION IN OUTER HAIR CELLS (OHCS) OF MAMMALIAN COCHLEA. **Varun K. A. Sreenivasan**, Christian Corbitt, Federica Farinelli, William E. Brownell, Brenda Farrell
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REMODELING OF THE POSTSYNAPTIC DENSITY: A MACROMOLECULAR SIGNALING COMPLEX. **Madeline M. Farley**, M Neal Waxham
- 4008-Pos** BOARD #B736
ACTION POTENTIAL COLLISION IN NERVES. **Rima Budvytyte**, Alfredo Gonzalez-Perez, Lars Mosgaard, Thomas Heimburg
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MODELING AND SIMULATIONS OF BIOMECHANICAL SYMPTOMS OF PARKINSON'S DISEASE. B Manasa, **Jesus Dolores**, Sachin Goyal, Harish Palanhandalam-Madapusi

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MEMRISTOR NEURAL MODEL FOR ALZHEIMER DISEASE. **Mauro Poggio**, Luke P. Lee
- 4011-Pos** BOARD #B739
DEVELOPMENT OF MODULARITY IN THE NEURAL ACTIVITY OF CHILDREN'S BRAINS. **Man Chen**, Michael W. Deem
- 4012-Pos** BOARD #B740
FEATURE DETECTION AND ORIENTATION TUNING IN THE DROSOPHILA CENTRAL BRAIN. **Johannes D. Seelig**, Vivek Jayaraman
- 4013-Pos** BOARD #B741
PRESTIN LATERAL MOBILITY AND SELF-ASSOCIATION IN OUTER HAIR CELLS. **Guillaume Duret**, Jing Guo, Frederick Pereira, Robert Raphael
- ### Optical Microscopy and Super Resolution Imaging IV (Boards #B742–#B748)
- 4014-Pos** BOARD #B742
MEASUREMENT OF THE POINT- AND LINE-SPREAD FUNCTIONS ENABLES DECONVOLUTION IN BRIGHT FIELD LIGHT MICROSCOPY. **Carmen N. Hernandez Candia**, Braulio Gutierrez Medina
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FAST BINDING KINETICS OF RNA APTAMERS MEASURED USING A NOVEL MICROFLUIDIC MIXER. **Alexander L. Van Slyke**, Juan Wang, Avtar Singh, Lois Pollack, Warren R. Zipfel
- 4016-Pos** BOARD #B744
DEVELOPMENT OF A SLOW-SWITCHING DRONPA VARIANT FOR 2-COLOR SUPER RESOLUTION IMAGING OF DRP1 DURING MITOCHONDRIAL FISSION. **Sang-Hyuk Lee**, Alyssa Rosenbloom, JaeYen Shin, Carlos Bustamante
- 4017-Pos** BOARD #B745
WIDE-FIELD BACKGROUND FREE IMAGING BY MAGNETIC MODULATION OF NANODIAMOND LUMINESCENCE. **Ambika Bumb**, Susanta K. Sarkar, Xufeng Wu, Kem A. Sochacki, Peter Kellman, Martin W. Brechbiel, Keir C. Neuman
- 4018-Pos** BOARD #B746
A SPECTRAL PHASOR PERSPECTIVE IN ZEBRAFISH MUSCLE DEVELOPMENT. **Francesco Cutrale**, Vikas Trivedi, Le Trinh, Thai Truong, Scott Fraser
- 4019-Pos** BOARD #B747
QUANTIFYING PROTEIN CONFORMATION HETEROGENEITY IN LIVE CELLS BY FOURIER LIFETIME EXCITATION-EMISSION MATRIX SPECTROSCOPY. **Yu Li**, Ming Zhao, Xiaoyang Wan, Weibin Zhou, Leilei Peng
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FUNDAMENTAL AND PRACTICAL LIMITS FOR THE LOCALIZATION PRECISION IN THE PRESENCE OF SHOT NOISE FROM OTHER EMITTERS. **Ingmar Schoen**, Viola Vogel
- ### Scanning Probe Microscopy (Boards #B749–#B765)
- 4021-Pos** BOARD #B749
BREAKING THE SINGLE-MOLECULE LIMIT IN BIOLOGICAL IMAGING. **Duckhoe Kim**, Ozgur Sahin

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THREE-DIMENSIONAL ATOMIC FORCE MICROSCOPY:
INTERACTION FORCE VECTOR BY DIRECT OBSERVATION OF
TIP TRAJECTORY. **Krishna P. Sigdel**, Justin S. Grayer, Gavin M. King

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HIGH-SPEED ATOMIC FORCE MICROSCOPY: INTEGRATION
WITH OPTICAL MICROSCOPY AND HIGH-SPEED FORCE
SPECTROSCOPY. **Simon Scheuring**, Felix Rico, Adai Colom,
Ignacio Casuso

4024-Pos BOARD #B752 EDUCATION TRAVEL AWARDEE
HIGH-SPEED HOPPING PROBE SCANNING ION
CONDUCTANCE MICROSCOPY. **A. Catalina Vélez-Ortega**,
Oleg Belov, Pavel Novak, Samir A. Rawashdeh, Ghanshyam P. Sinha,
Yuri E. Korchev, Gregory I. Frolenkov

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COMPRESSED SENSING BASED ATOMIC FORCE MICROSCOPY.
Brian D. Maxwell, Sean B. Andersson

4026-Pos BOARD #B754
A NOVEL PLATFORM FOR SIMULTANEOUS MECHANICAL
STIMULATION AND CHARACTERIZATION OF SINGLE CELLS
BASED ON DIELECTRIC ELASTOMERS AND ATOMIC FORCE
MICROSCOPY. **Roberto Raiteri**, Natalia Becerra, Mariateresa Tedesco,
Christopher Ward, Federico Carpi, Gabriele Frediani, Pasquale Vena

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HIGH RESOLUTION MASS SPECTROMETRIC IMAGING FOR
SINGLE CELL METABOLIC ANALYSIS. **Jae Kyo Lee**, Samuel Kim,
Hong Gil Nam, Richard N. Zare

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ATOMIC FORCE MICROSCOPY REVEALS THE STRUCTURE
AND DYNAMICS OF THE CELL CORTEX. **Frederic Eghiaian**,
Simon Scheuring

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NANOPIPET BASED NANOPROBES FOR SINGLE-CELL
ANALYSIS. **Yuri E. Korchev**, Paolo Actis, Sergiy Tokar, Pavel Novak,
Andrew Shevchuck, David Klenerman, Elena V. Sviderskaya

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RNA ISOLATION FROM SINGLE LIVING CELLS USING
AFM. May Tom-Moy, **Kristin B. Bernick**, Paige Anderson,
Carolina Caffaro, Alice Yamada

4031-Pos BOARD #B759
THE EFFECTS OF MARINE BACTERIA ON BARITE GROWTH
AND MORPHOLOGY. **Amy L. Sullivan**, Anne E. Murdaugh

4032-Pos BOARD #B760 INTERNATIONAL TRAVEL AWARDEE
STUDY SUB-MEMBRANE STRUCTURE AND CORRESPONDING
FUNCTIONS OF CONDUCTIVE BACTERIA CABLE BY SPMS.
Shuai Zhang, Zaixing Jiang, Flemming Besenbacher, Mingdong Dong

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STRUCTURAL DYNAMICS OF PROTEASOME: AFM
PERSPECTIVE. **Pawel A. Osmulski**, Senli Guo, Przemyslaw Karpowicz,
Maria Gaczynska

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ATOMIC FORCE MICROSCOPY AND PARTICLE CLUSTERING
REVEAL ALTERED PHOTOSYSTEM II ORGANIZATION IN THE
SUPPRESSOR OF QUENCHING 1 MUTANT OF ARABIDOPSIS.
Bibiana Onoa, Anna Schneider, Mathew Brooks, Patricia Grob,
Eva Nogales, Phillip Geissler, Krishna K. Niyogi, Carlos J. Bustamante

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TUNABLE BINDING REACTIONS ON DNA ORIGAMI
NANOSTRUCTURES. **Bin Li**

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ANTIBODY ADSORPTION OVER GRAPHENE: AN ATOMISTIC
MD AND MF-AFM STUDY. **Guilherme Vilhena**, A. C. Dumitru,
Elena T. Herruzo, Jesus I. Mendieta-Moreno, Pedro A. Serena,
Ricardo Garcia, Ruben Perez

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MOLECULAR MECHANISMS OF MISFOLDING OF AMYLOID
PEPTIDES. **Yuri L. Lyubchenko**

Molecular Dynamics III (Boards #B766–#B784)

4038-Pos BOARD #B766
ALL-ATOM SIMULATION AND CONTINUUM ELASTIC
THEORY OF GRAMICIDIN A IN BINARY COMPONENT
LIPID BILAYERS. **Andrew H. Beaven**, Alexander J. Sodt,
Denise V. Greathouse, Roger E. Koeppe II, Richard W. Pastor,
Olaf S. Andersen, Wonpil Im

4039-Pos BOARD #B767
MOLECULAR MODELING OF PACLITAXEL INTERACTING
WITH MEMBRANES. **Myungshim Kang**, Sharon Loverde

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MECHANISM OF CX26-G45E DEAFNESS MUTANT
DYSREGULATION EXPLORED BY MOLECULAR DYNAMICS
SIMULATIONS. **Michael Purdy**, Mark Yeager

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DRUG EXTRUSION PROCESS OF MATE MULTIDRUG EFFLUX
TRANSPORTER REVEALED BY MOLECULAR DYNAMICS
SIMULATIONS. **Wataru Nishima**, Yoshiki Tanaka, Ryuichiro Ishitani,
Osamu Nureki, Yuji Sugita

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EXPLORING THE ELASTIC PROPERTIES OF BILAYER
MEMBRANES USING MOLECULAR DYNAMICS SIMULATIONS.
Gilles Pieffet, Alonso Botero, Günther H. Peters, Manu Forero-Shelton,
Chad Leidy

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A MOLECULAR DYNAMICS SIMULATION STUDY OF
LIPID-LINKED PEPTIDOGLYCAN PRECURSORS IN LIPID
BILAYERS. **Wonpil Im**

4044-Pos BOARD #B772
UNDERSTANDING MILTEFOSINE-MEMBRANE INTERACTIONS
USING MOLECULAR DYNAMICS SIMULATIONS.
Matheus Malta de Sa, Vishnu Sresht, Daniel Blankschtein,
Carlotia Oliveira Rangel Yagui

4045-Pos BOARD #B773
NMR-BASED EXPLICIT ENSEMBLE DYNAMICS SIMULATIONS
OF MEMBRANE PROTEIN. **Xi Cheng**, Wonpil Im

4046-Pos BOARD #B774
AMPHOTERICIN B VERSUS A REDUCED TOXICITY
CHEMICAL ANALOG IN AQUEOUS AND LIPID MEDIA:
AN MD COMPARATIVE STUDY. **Marcel I. Espinosa-Caballero**,
Xavier Periole, Alex de Vries, M. Cristina Vargas-González,
Siewert J. Marrink, Iván Ortega-Blake, Mauricio Carrillo-Tripp

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EFFECTS OF DIACYLGLYCEROLS (DAGS) AND ARACHIDONIC ACID (AA) ON THE PHYSICAL PROPERTIES OF MODEL LIPID BILAYERS: A MOLECULAR DYNAMICS SIMULATIONS STUDY. **Ioannis Beis**, Matti Weckström, André Juffer, Marja Hyvönen

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MOLECULAR DYNAMICS SIMULATIONS OF COLLOIDS IN SINGLE SOLID-STATE NANOPORES. **Nazar Ileri**, Matthew Davenport, Sonia E. Letant, Joseph W. Tringe

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EXPLORING DYNAMIC EVENTS OF BACTERIAL MICROCOMPARTMENT SHELL PORES. **Sunny Chun**, Jiyong Park, Michael C. Thompson, Changsun Eun, J Andrew McCammon, Kendall N. Houk, Todd O. Yeates

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ALL-ATOMS MD SIMULATION OF PROTEIN TRANSLOCATION THROUGH α -HEMOLYSIN NANOPORE: IMPLICATIONS FOR PROTEIN SEQUENCE/STRUCTURAL ANALYSES. **Daniele Di Marino**, Anna Tramontano, Mauro Chinappi

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COARSE-GRAINED MODELING OF DNA-VESICLE SYSTEMS WITH THE MARTINI FORCE FIELD. **Jaakko Uusitalo**, Helgi I. Ingólfsson, Parisa Akhshi, D. Peter Tieleman, Bert Poolman, Andreas Herrmann, Siewert J. Marrink

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REFINEMENT OF MULTISITE ION MODEL THROUGH SIMULATION OF OSMOTIC PRESSURE: APPLICATIONS ON ION-MEDIATED CALCULATIONS OF SSRNA. **Akansha Saxena**, Angel E. Garcia

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A MOLECULAR DYNAMICS SIMULATION STUDY ON THE EFFECT OF ENDOGENOUS MOLECULES ON SIRNA POLYPLEXES. **Deniz Meneksedag**, Tian Tang, Hasan Uludag

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NOVEL COARSE-GRAINED MODEL FOR MOLECULAR DYNAMICS SIMULATIONS OF DNA. **Aleksandra Karolak**, Arjan van der Vaart

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INVESTIGATING THE FOLDING DYNAMICS OF RNA PSEUDOKNOT STRUCTURAL MOTIF VIA MASSIVELY PARALLEL MOLECULAR DYNAMICS. **Amethyst Radcliffe**, Samantha Cao, Benjamin Pham, Phuc La, Richard Wang, Eric Sorin

4056-Pos **BOARD #B784**
HIERARCHICAL FOLDING OF THE RRNA IN THE EARLY ASSEMBLY OF THE E. COLI RIBOSOMAL SMALL SUBUNIT. **Jonathan Lai**, Ke Chen, Hajin Kim, Taejkip Ha, Zaida Luthey-Schulten

Computational Methods II (Boards #B785–#B816)

4057-Pos **BOARD #B785**
LIGAND BINDING PATHWAYS AND TRANSITIONS IN A GLUTAMATE RECEPTOR. **Alvin Yu**, Albert Lau

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A THERMODYNAMIC DISCRIMINATION OF EFFICACY OF GPCR LIGANDS USING ABSOLUTE BINDING FREE ENERGY CALCULATIONS. **Hui Sun Lee**, Wonpil Im

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SIMULATING CURRENT-VOLTAGE RELATIONSHIPS FOR A SIMPLE ION CHANNEL WITH ALL-ATOM RESOLUTION USING THE WEIGHTED ENSEMBLE METHOD. **Joshua L. Adelman**, Michael Grabe

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PRINCIPAL COMPONENT ANALYSIS OF GLUTAMATE RECEPTOR LIGAND BINDING DOMAINS. **John Belcher**, Yongneng Yao, Anthony J. Berger, Mark L. Mayer, Albert Lau

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QUANTITATIVE CHARACTERIZATION OF MEMBRANE PROTEIN-LIPID INTERACTIONS. **Soohyung Park**, Wonpil Im

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EFFECT OF SEROTONIN ON MEMBRANES PROPERTIES STUDIED BY MOLECULAR DYNAMICS SIMULATIONS. Hubert Santuz, Slim Azouzi, Pascal Amireault, **Catherine Etchebest**

4063-Pos **BOARD #B791** INTERNATIONAL TRAVEL AWARDEE
ANALYSIS OF MEMBRANE TRANSLOCATION SIMULATIONS USING DIMENSIONALITY REDUCTION. **Begum Alaybeyoglu**, Elif Ozkirimli

4064-Pos **BOARD #B792**
COMPUTATIONAL APPROACHES TO UNDERSTANDING THE ROLE OF OXIDIZED TRI-ACYLGLYCEROLS IN SUPPRESSION OF ANTIGEN CROSS-PRESENTATION IN CANCER. **Dariusz Mohammadyani**, Vladimir A. Tyurin, Andrew A. Amoscato, Dmitry I. Gabrilovich, Judith Klein-Seetharaman, Valerian E. Kagan

4065-Pos **BOARD #B793**
A SOFTWARE PLATFORM FOR FINITE ELEMENT SIMULATION OF ION PERMEATION IN ION CHANNEL SYSTEMS. **Benzhuo Lu**

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HETEROGENEITY OF THREADLIKE SHAPE OF DNA-STABILIZED SILVER FLUORESCENT CLUSTERS. **Ruslan R. Ramazanov**, Alexei I. Kononov

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IN SILICO SINGLE-MOLECULE MANIPULATION OF CHROMATIN FIBRES WITH GAME ENGINES. Pascal Carrivain, Maria Barbi, **Jean-Marc Victor**

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INTERPOLATION OF POTENTIAL ENERGY SURFACES FOR NONADIABATIC SIMULATIONS OF BIOLOGICAL SYSTEMS. **Jae Woo Park**, Young Min Rhee

4069-Pos **BOARD #B797**
MIXED QUANTUM-CLASSICAL STUDY OF THE NONADIABATIC DYNAMICS IN PHOTOSYNTHETIC SYSTEMS. **Hyun Woo Kim**, Young Min Rhee

4070-Pos **BOARD #B798**
COMPUTATIONAL STUDIES OF THE CATALYTIC MECHANISM OF THE STAPHYLOCOCCUS AUREUS SORTASE A ENZYME. **Pooja Shrestha**, Jeff Wereszczynski

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INVESTIGATIONS OF MODEL PROTON-COUPLED ELECTRON TRANSFER REACTIONS FROM A MIXED QUANTUM-CLASSICAL LIOUVILLE PERSPECTIVE. Farnaz Shakib, **Gabriel Hanna**

4072-Pos BOARD #B800

NEW INSIGHTS ON INTERACTIONS OF A QUANTUM VIBRATION WITH AN ENVIRONMENT OF HYDROGEN-BONDED GROUPS FROM THE MIXED QUANTUM-CLASSICAL LIOUVILLE APPROACH.

Holly Freedman, Gabriel Hanna

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PHOSPHORYL TRANSFER TRANSITION STATE COMPUTATIONALLY MODELED BY MGF3(-) IN THE ONCOGENETICALLY INDICATED GTPASE PROTEIN RHOA AND ITS ACTIVATING PROTEIN RHOA.GAP. **Whitney F. Kellett**, Nigel G J Richards

4074-Pos BOARD #B802

QUANTITATIVE INTERPRETATION OF CHEMICAL SHIFTS ENABLES MAPPING PROTEINS CONFORMATIONAL LANDSCAPE. **Alessandro Cembran**, Gianluigi Veglia

4075-Pos BOARD #B803

ELECTRONIC STRUCTURE STUDY OF CERTAIN RHIZOFERRIN ANALOGS AND ITS FERRIC-ION COMPLEXES. **Archana Dubey**, Olle Heinonen

4076-Pos BOARD #B804

A QUANTITATIVE METHOD TO TRACK PROTEIN TRANSLOCATION BETWEEN INTRACELLULAR COMPARTMENTS IN REAL-TIME IN LIVE CELLS USING WEIGHTED LOCAL VARIANCE IMAGE ANALYSIS.

Guillaume Calmettes, James N. Weiss

4077-Pos BOARD #B805

EXTRACTING FUNCTIONAL INFORMATION FROM SINGLE PARTICLE TRAJECTORIES. **Benjamin Regner**, Daniel Tartakovsky, Terrence Sejnowski

4078-Pos BOARD #B806

TRACKING INHOMOGENEOUSLY DISTRIBUTED PARTICLES. **Javier Mazzaferrri**, Stephane Lefrancois, Santiago Costantino

4079-Pos BOARD #B807

DYNAMIC QUANTIFICATION OF ANTIGEN MOLECULES ON CELLS WITH FLOW CYTOMETRY. **Darya Yu. Orlova**, Aaron B. Kantor, Andrei V. Chernyshev, David R. Parks, Wayne A. Moore, Leonore A. Herzenberg

4080-Pos BOARD #B808

BRIDGING THE GAP BETWEEN PALM AND QDOTS SINGLE PARTICLE TRACKING USING BAYESIAN INFERENCE AND THE GILLESPIE SCHEME. **Jean-Baptiste Masson**, Mohamed el Beheiry, Charlotte Salvatico, Marianne Renner, Christian G. Specht, Antoine Triller, Maxime Dahan

4081-Pos BOARD #B809

HIGH DENSITY SINGLE PARTICLE TRACKING WITH VARIOUS PROBES. **Peter K. Relich**, Keith A. Lidke

4082-Pos BOARD #B810

CELL ADHESION SENSITIVITY TO CELL SIZE AND SURFACE RECEPTOR DENSITIES. **Srikanth Raghavan**, Shripad Joshi, Alexander Dawson-Eli, Aravind R. Rammohan, Matthew E. McKenzie, Ramakrishnan Natesan, Ravi Radhakrishnan

4083-Pos BOARD #B811

GAME ON, SCIENCE - HOW VIDEO GAME TECHNOLOGY MAY HELP BIOPHYSICISTS TACKLE VISUALIZATION CHALLENGES. Alexandre Kouyoumdjian, Erwan Ortie, Alex Tek, Aurélien Pluot, Eric Henon, Matthieu Chavent, **Marc Baaden**

4084-Pos BOARD #B812

LOOS: A TOOL FOR MAKING NEW TOOLS FOR ANALYZING MOLECULAR SIMULATIONS. **Tod D. Romo**, Alan Grossfield

4085-Pos BOARD #B813

CHARMM-GUI PACE CG BUILDER FOR SOLUTION, MICELLE, BILAYER AND VESICLE SIMULATIONS. **Yifei Qi**, Xi Cheng, Wei Han, Sunhwan Jo, Benoit Roux, Klaus Schulten, Wonpil Im

4086-Pos BOARD #B814

CALCULATOR FOR MUTUAL INFORMATION BETWEEN A DISCRETE AND A CONTINUOUS DATA SET. **Brian Ross**

4087-Pos BOARD #B815

REAL VALUED SEQUENCE ALIGNMENT USING ADAPTED SMITH WATERMAN ALGORITHMS. **Henry Brinkerhoff**, Brian Ross, Ian M. Derrington, Andrew H. Laszlo, Jens H. Gundlach

4088-Pos BOARD #B816

SINCE THE DNA MOLECULE RETURNS FROM THE TRANSCRIPTIONAL PROCESS EXACTLY AS IT WAS BEFORE THE PROCESS, THE DNA→PROTEIN PRODUCTION CAN BE SEEN AS A SERIES OF EIGENVALUE PROBLEMS.

Svetlana Aroutiounian

Biosensors II (Boards #B817–#B821)**4089-Pos BOARD #B817**

FROM ONE, MANY: MODIFIED FLUOROGENS INTERACT WITH A FLUOROGEN ACTIVATING PROTEIN FOR MULTICOLOR CELL LABELING. **Jianjun He**, Christopher Pratt, Marcel P. Bruchez

4090-Pos BOARD #B818

MUTE-KARS: SILENT KINASE ACTIVITY REPORTERS USEFUL FOR CO-IMAGING. **Gary Mo**, Jin Zhang

4091-Pos BOARD #B819

DESIGNING A THERMOSTABLE SWITCH-BASED BIOSENSOR. **Teraya Donaldson**, Jonathan D. Dattelbaum

4092-Pos BOARD #B820

THE TWO-PHOTON BAZOOKA: A NEW WAY OF OPTICALLY SCREENING RANDOMLY MUTAGENIZED LIBRARIES OF FLUORESCENT PROTEINS. **Lauren M. Barnett**, Caleb Stoltzfus, Geoffrey Wicks, Mikhail Drobizhev, Alexandr Mikhailov, Aleksander Rebane, Thomas E. Hughes

4093-Pos BOARD #B821

MODULAR DESIGN OF A TANDEM DYE TUNES THE PHOTOPHYSICAL PROPERTIES OF A BIOSENSOR. **Matharishwan Naganbabu**, Saumya Saurabh, Marcel Bruchez

Micro- and Nanotechnology III (Boards #B822–#B830)**4094-Pos BOARD #B822**

CHEMICAL CELL TO CELL COMMUNICATION ON BIOMINERALIZED NANOPORE SUBSTRATES FOR SINGLE CELL ANALYSIS. **Abhishek J. Dharan**, Kai-Chun Lin, Patti Senechal-Willis, Laimonas Kelbauskas, Deirdre Meldrum, Michael Goryll

4095-Pos BOARD #B823

HIGH-THROUGHPUT SCREENING OF T CELL CYTOTOXIC EVENTS BY BIOMASS PROFILING. **Thomas A. Zangle**, Daina Burnes, Colleen Mathis, Owen N. Witte, Michael A. Teitell

4096-Pos **BOARD #B824**
PARALLEL MAGNETIC TWEEZERS FOR PULLING CNS AXONS
TOWARDS A SOURCE OF REPELLENT FACTORS. **Gil Lee**,
Devrim Kilinc, Agata Blasiak

4097-Pos **BOARD #B825**
BIOLOGICAL COMPATIBILITY OF ELECTROMANIPULATION
MEDIA. Anthony J. Asmar, **Ahmet C. Sabuncu**, Mark A. Levenstein,
Michael W. Stacey, Ali Beskok

4098-Pos **BOARD #B826**
INHERENTLY FLUORESCENT NANOWIRES FOR CELLULAR
MECHANOSENSING. **Karl Adolfsson**, Henrik Persson, Zhen Li,
Stina Oredsson, Udo Häcker, Magnus T. Borgström, Christelle N. Prinz

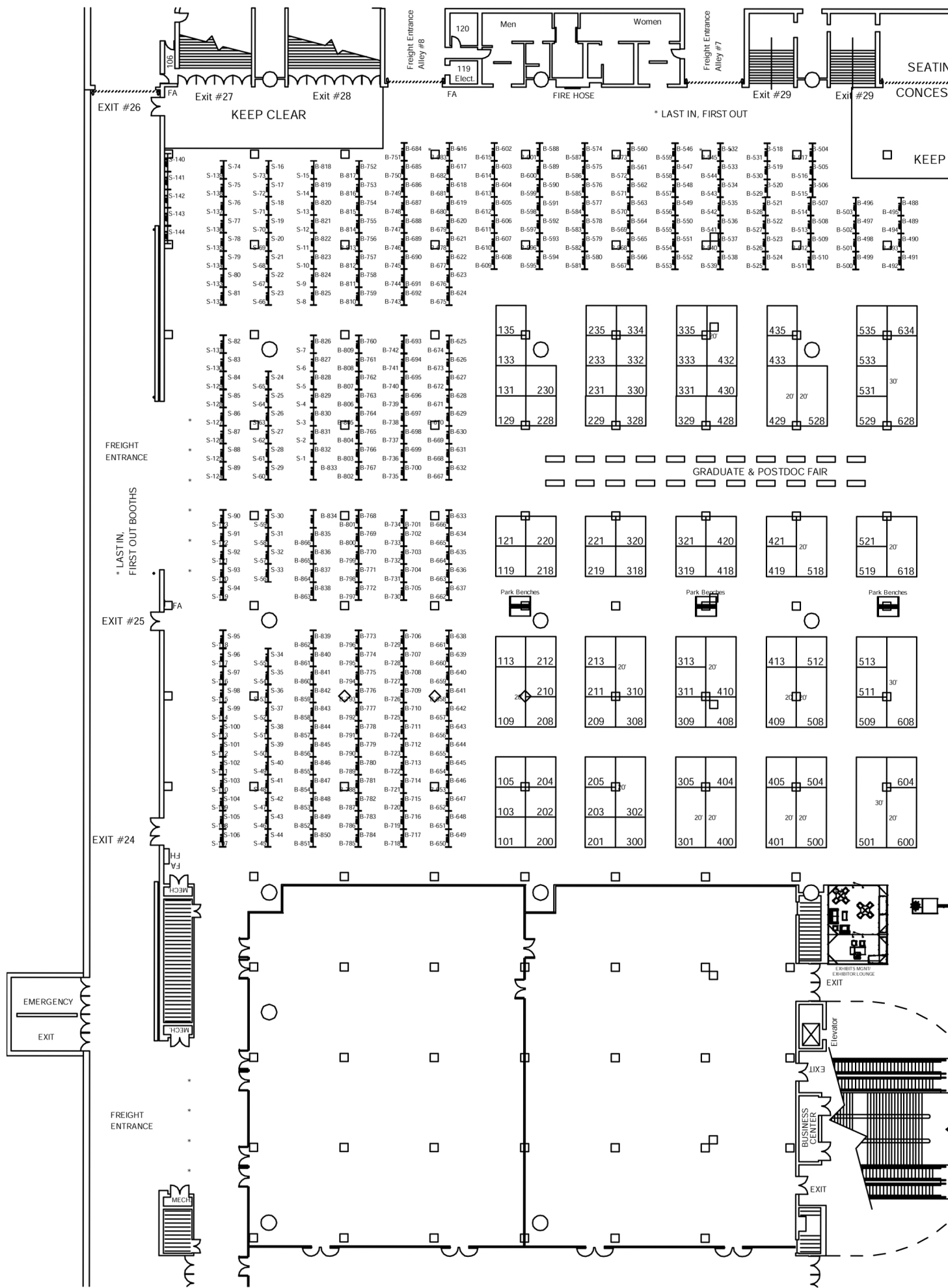
4099-Pos **BOARD #B827**
CMOS ELECTROCHEMICAL SENSING PLATFORM FOR
SPATIALLY RESOLVED DETECTION OF REDOX-ACTIVE
METABOLITES RELEASED BY MULTICELLULAR FILMS.
Daniel L. Bellin, Hassan Sakhtah, Jacob K. Rosenstein, Peter M. Levine,
Jordan Thimot, Kevin Emmett, Lars E. P. Dietrich, Kenneth L. Shepard

4100-Pos **BOARD #B828**
AN INTEGRATED LIVER- AND HEART-ON-A-CHIP
PLATFORM. **Alireza Salmanzadeh**, Luke P. Lee

4101-Pos **BOARD #B829**
HIGH-THROUGHPUT SINGLE-CELL ANALYSIS DEVICE FOR
FOLLOWING SIMULTANEOUS INTRACELLULAR SIGNALING
EVENTS. **Amin A. Banaeiyan**, Doryaneh Ahmadpour,
Caroline B. Adiels, Mattias Goksör

4102-Pos **BOARD #B830**
BIOPHYSICS OF ELECTROCHEMICAL CELL LYSIS OF
MALARIA PARASITE. **Brian N. Kim**, Luke P. Lee

Notes



EXIT #26

Exit #27

Exit #28

Exit #29

Exit #29

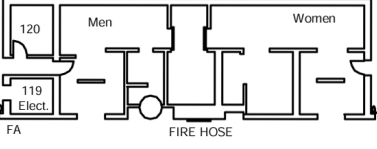
KEEP CLEAR

* LAST IN, FIRST OUT

SEATING
CONCES

KEEP

Freight Entrance
Alley #8



Freight Entrance
Alley #7

FREIGHT ENTRANCE

* LAST IN,
FIRST OUT BOOTHS

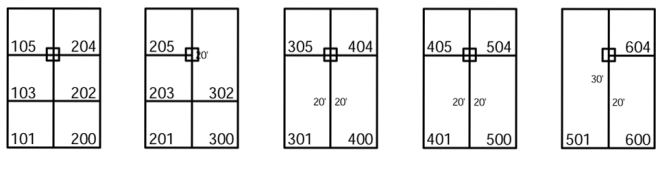
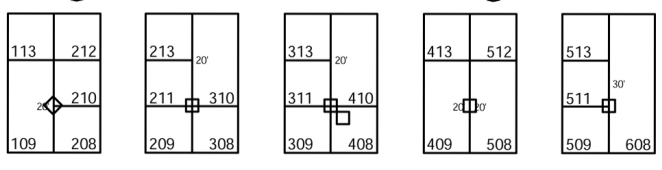
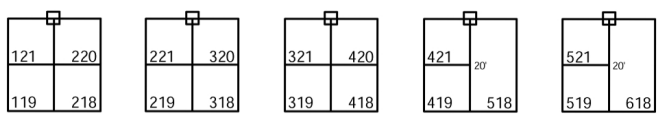
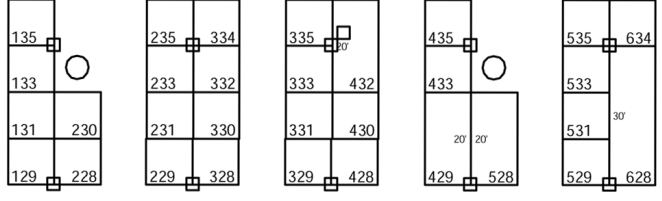
EXIT #25

EXIT #24

EMERGENCY
EXIT

FREIGHT ENTRANCE

GRADUATE & POSTDOC FAIR

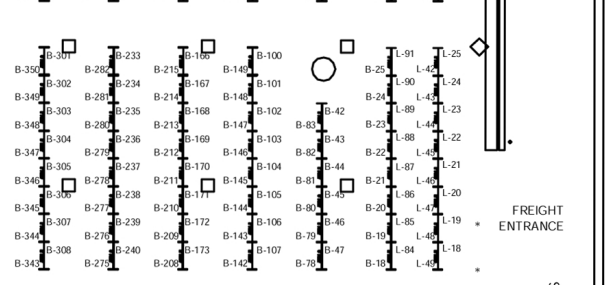
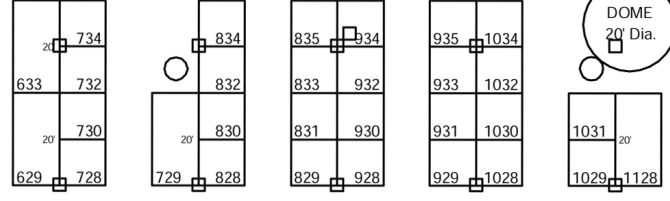
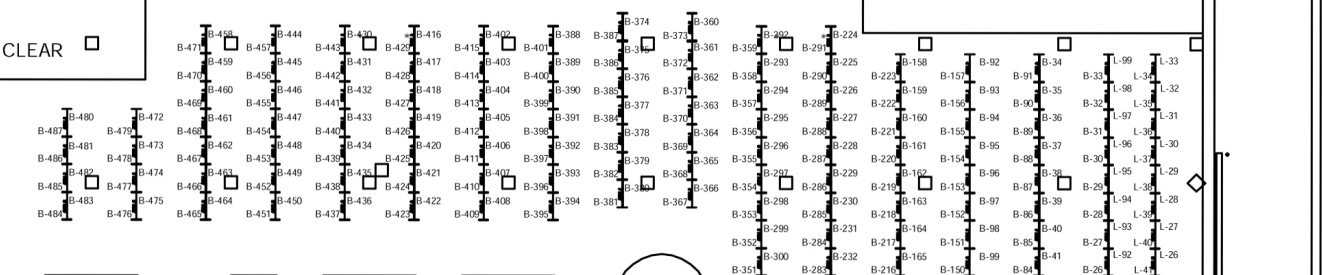
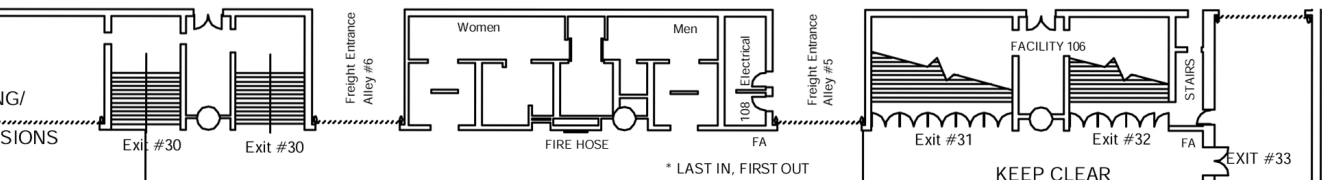


EXHIBITS MGMT
EXHIBITOR LOUNGE

Elevator

BUSINESS CENTER

EXIT



GRADUATE & POSTDOC FAIR

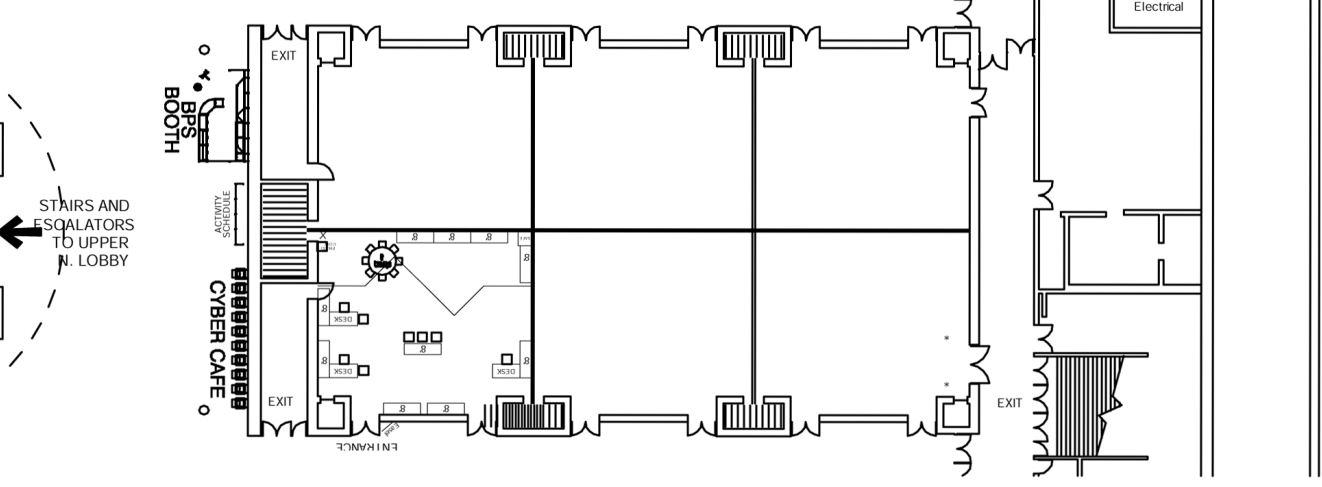
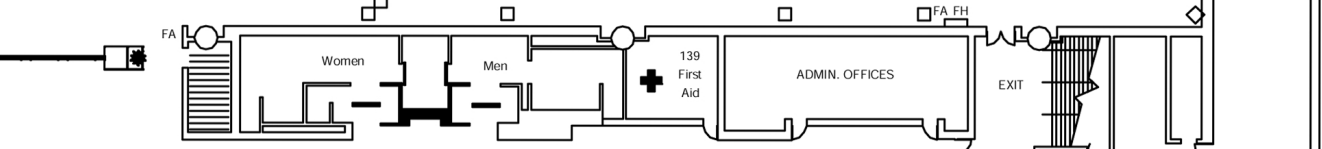
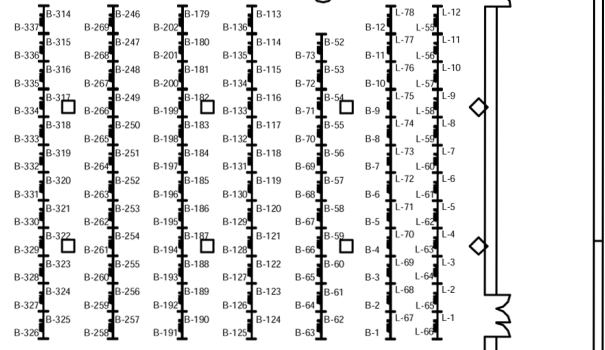
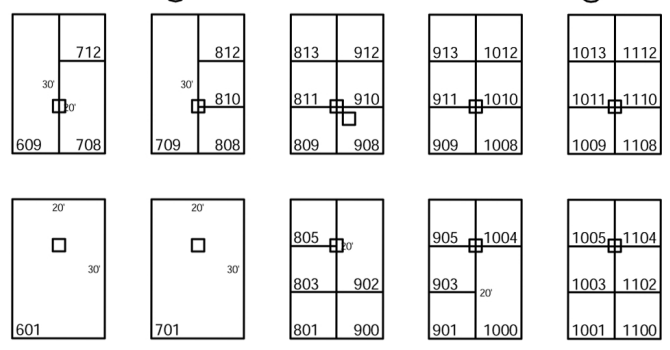
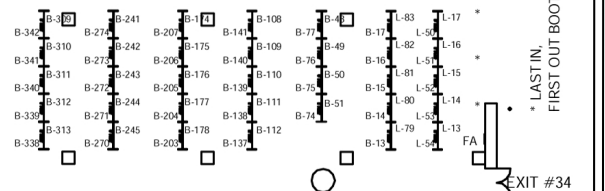
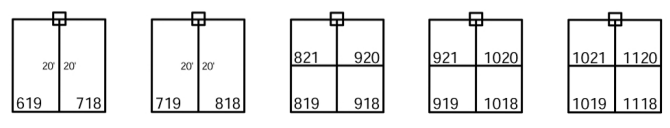


Exhibit Dates and Times

Sunday, February 16, 10:00 AM–5:00 PM

Monday, February 17, 10:00 AM–5:00 PM

Tuesday, February 18, 10:00 AM–5:00 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 18. The drawing will take place on Tuesday, February 18 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 Room 123 of the Moscone Center.

(See pages 214–217 for detailed abstracts.)

Sunday, February 16

8:00 AM–8:45 AM

FEI Company

9:00 AM–10:30 AM

**ForteBio, A Division
of Pall Life Sciences**

11:00 AM–12:30 PM

Molecular Devices, LLC

1:00 PM–2:30 PM

KinTek

3:00 PM–4:30 PM

Nanosurf, Inc.

5:00 PM–6:30 PM

**Asylum Research, an Oxford
Instruments Company**

7:00 PM–8:30 PM

FEI Company

Monday, February 17

8:00 AM–8:45 AM

FEI Company

9:00 AM–10:30 AM

Park Systems, Inc.

11:00 AM–12:30 PM

Nanon Technologies

1:00 PM–2:30 PM

**World Precision
Instruments, Inc.**

3:00 PM–4:30 PM

Bruker Nano Surfaces

5:00 PM–6:30 PM

HEKA Elektronik

Tuesday, February 18

9:00 AM–10:30 AM

**Wyatt Technology
Corporation**

11:00 AM–12:30 PM

Nanon Technologies

1:00 PM–2:30 PM

Molecular Devices, LLC

3:00 PM–4:30 PM

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NanoTemper Technologies, Inc.
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Photon Technology International, Inc.
Sutter Instrument
World Precision Instruments, Inc.
Wyatt Technology Corporation

**As of December 10, 2013*

Exhibitor Presentations

Room 123 of the Moscone Center

Sunday, February 16

8:00 AM–8:45 AM

FEI Company

High End Microscope Platform for Multimodal Live Cell Imaging

See page 13 for session description.

Presenters

Meike Pedersen, Product Marketing Manager, FEI Munich GmbH
Tilman Franke, Product Marketing Manager, FEI Munich GmbH
Gregor Heiss, Product Marketing Engineer, FEI Munich GmbH

9:00 AM–10:30 AM

Forte Bio, A Division of Pall Life Sciences

Developing Assays for Kinetic Characterization on the BLItz System

See page 16 for session description.

11:00 AM–12:30 PM

Molecular Devices, LLC

Investigating Use-Dependent Inhibition of Ion Channels on Automated Electrophysiology Systems including the IonWorks Barracuda® Instrument and the IonFlux™ Benchtop Reader

Use-dependent inhibition of ion channels by potential drug candidates is an important aspect to investigate for many drug classes. Use-dependent drugs specifically target ion channels in cells that are more electrically active. For example, a drug targeting pain that is more potent to Na⁺ channels in neurons actively firing action potentials is a better drug candidate. Data will be presented to demonstrate the ability of automated electrophysiology systems to study the use-dependence block of Na⁺ channel targets. Tetracaine, lidocaine, and TTX exhibit very different behavior in terms of their use-dependent blockage. We will demonstrate the ability of the instrumentation 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. Data from a separate study will also be presented that demonstrate blockage and enhancement of NaV1.5 currents by various peptide toxins. Both sets of 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

1:00 PM–2:30 PM

KinTek

New Advances in Fitting Kinetic and Equilibrium Data by Simulation

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 the need to derive equations; however, it also requires an understanding of the kinetics and critical thought to avoid overly complex models.

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-too-common errors in conventional fitting. Moreover, data are fit to derive rate constants directly defining steps in a model. New advances in the software allow fitting kinetic data from single molecule experiments and families of curves can be fit simultaneously 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). Moreover, all experiments can be fit simultaneously.

Presenters

Kenneth A. Johnson, President, KinTek Corporation
Roger Williams, Professor of Biochemistry, University of Texas at Austin

3:00 PM–4:30 PM

Nanosurf, Inc.

Development of Automation and Nanofluidics to Extend Applications of Atomic Force Microscopy

In an effort to extend the range of atomic force microscope (AFM) applications, we have developed automation routines for nanomechanical analysis of large uneven samples and incorporated nanofluidics for nanomanipulation experiments.

We will present details of a method that has been developed to compensate for the Z-range limitation and to automate the data collection over large sample areas. To compensate for large surface corrugations on biologically relevant samples, customized hardware and software algorithms for automated leveling have been developed and implemented. This method consists of a patented vertical alignment system, which is activated whenever the Z piezo reaches its limit (i.e., max. extension or max. retraction). This method allows for AFM investigation to proceed uninterrupted and error-free over corrugated surfaces.

FluidFM combines the positional accuracy and force sensitivity of AFM with the unique possibilities of nanofluidics to provide a whole new level of control and possibilities in nanomanipulations and analysis. The FluidFM system includes a fully integrated AFM, pressure controller and hollow microfabricated cantilevers. The integrative nature of its touchscreen-based control software brings together optical, force, pressure, and position control in one place. The entire system is easy to use and allows objects and experimental settings to be manipulated via on-screen interactions. Moving a sample or indicating measurement positions has never been more intuitive. Details of several different applications of FluidFM in cell biology will be presented including pick and place of single cells, single cell force spectroscopy, cellular injection and micropatterning under liquids.

Presenters

Saju Nettikadan, General Manager, Nanosurf, Inc.
Brent Lapointe, Research Associate, Biozentrum and the Swiss Nanoscience Institute, University of Basel

5:00 PM–6:30 PM

Asylum Research, an Oxford Instruments Company

New blueDrive™ Photothermal Excitation for Superior AFM Tapping Mode Imaging

Asylum Research, an Oxford Instruments company, will introduce its new blueDrive Photothermal Excitation capabilities exclusively available on Cypher™, the highest resolution fast scanning AFM. blueDrive significantly enhances the performance of tapping mode imaging with more simple, stable and quantitative operation, and providing extremely clean tunes in both air and water. Typically, a piezoacoustic excitation has been used to drive the cantilever oscillation. Though piezo drive is favored for design simplicity, the response of the cantilever is often far from ideal, causing users to spend countless time selecting a clean cantilever tune. Asylum's blueDrive excitation mechanism produces an almost perfect response by directly exciting the cantilever photothermally with a blue laser. blueDrive is ideal for high resolution imaging of biological samples in fluid including proteins, lipids and nucleic acids, as well as force measurements and nanomechanics. In this presentation, we will explain how blueDrive works, how it achieves simple cantilever tunes, and show real world results for biophysics applications.

Presenter

Nick Geisse, Applications Scientist, Asylum Research, an Oxford Instruments Company

7:00 PM–8:30 PM

FEI Company

Cryo-TEM: A New Era for 3D Structural Analysis of Protein Complexes

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 three 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.

Presenters

Marc Storms, Marketing Manager, Life Sciences, FEI Company
Jeff Lengyel, Product Marketing Manager, FEI Company
Eric Hnath, Product Marketing Manager, Structural Biology, FEI Company
Thomas Wohlfarth, Director, Structural Biology Businesses, FEI Company

Monday, February 17

8:00 AM–8:45 AM

FEI Company

A Fully Automated Imaging System for Correlative Light and Electron Microscopy

See page 66 for session description.

Presenters

Alex de Marco, Product Marketing Manager, FEI Munich GmbH
Gregor Heiss, Product Marketing Engineer, FEI Munich GmbH
Liesbeth Hekking, Applications Development Engineer, FEI Company
Matthias Langhorst, Segment Director of Cell Biology Solutions, FEI Company

9:00AM–10:30AM

Park Systems, Inc.

New Door to Live Single Cell Research

Atomic Force Microscopy (AFM) is a powerful measurement technique for nanoscale science. AFM is able to provide high-resolution imaging of biological structures below the optical limit as well as the monitoring of the dynamics in biological systems and processes under physiological conditions; however, certain limitations for AFM still exist in the field of bio-applications. In recent times, the development of another kind of scanning probe microscopy (SPM) technique, scanning ion conductance microscopy (SICM), has overcome these limitations and enabled noninvasive, nanoscale investigation of live cells. SICM applications include imaging of cell topography, monitoring of live cell dynamics, mechanical stimulation of live cells, surface patterning, and so forth.

We at Park Systems have developed AFM for advanced nanoscale metrology, which separates the z-scanner from the x-y scanner. An independent z-scanner also provides an excellent platform for developing other SPM techniques such as SICM. In addition, the platform which separates the z-scanner from x-y scanner, enables us to easily switch between an AFM and an SICM z-scanner to apply both techniques without moving samples. The common glass micropipette is used in SICM as the sensitive probe, instead of a silicon-based stylus, and can glide over live cells while maintaining an absolute non-contact imaging mode. Its electrochemical current feedback system further enhances biological sample imaging. Combining confocal fluorescence data to the SICM 3D data, using an image overlay feature, provides even more data about structure of cells as related to their membranes.

These advances of convergence in instrumentation will be utilized in various kinds of biomedical research and become a new driving force for biophysics and nanobioscience.

Presenter

Sangjoon Cho, Senior Director of Research & Development,
Park Systems, Inc.

11:00 AM–12:30 PM

Nanion Technologies

Workshop on Automated Patch Clamp: From Single Channels, Primary Cells, Action Potentials to 384 giga-seal Recordings in a Parallel HTS Format

The Port-a-Patch recently turned 10 years old, 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. Recently, the Port-a-Patch technology was scaled up to eight simultaneous recordings (Patchliner), maintaining the same data quality and experimental possibilities, and now we did it again: 384 Port-a-Patches have been shrunk to fit inside a shoebox – called the Patch Engine (PE). Two Patch Engines can be integrated per SyncroPatch 384PE platform, allowing for patch clamp-based ion channel HTS from up to 768 cells in parallel, and we will tell you more about it during this workshop.

Another topic for the workshop is the bilayer-reconstitution of ion channels and nanopores, efficiently investigated using the Orbit 16, a parallel device for formation of and recordings for up to 16 artificial bilayers at once. 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).

Welcome to our workshop and learn from live, hands-on experiments on the Port-a-Patch and Orbit 16, and let us show you how to scale up your ion channel screening project to HTS-standards!

Presenters

Niels Fertig, CEO, Nanion Technologies
Andrea Brüggemann, CSO, Nanion Technologies
Gerhard Baaken, Ionera

1:00 PM–2:30 PM

World Precision Instruments, Inc.

Applications in Biophysics Utilizing World Precision Instrument's (WPI) New Biofluorometer

Introduction to WPI's New Biofluorometer with high-power LED modules. Potential applications and experimental design will be discussed in the field of Biophysics, including integration with Muscle Physiology experiments and microscopy systems for general fluorescence applications.

Presenter

Mathias Belz, Director of Optics, World Precision Instruments, Inc.

3:00 PM–4:30 PM

Bruker Nano Surfaces

Atomic Force Microscopy for Biological Research

Physical properties including structures such as shape/size and mechanics such as strength/stiffness/ interaction forces play crucial roles in biological processes. Quantification of this at various length scales is necessary because of the heterogeneous/complex nature of biologics. Atomic force microscopy (AFM) is a unique research tool because of its abilities to perform measurements with both high spatial and force resolution in fluid under physiological conditions. In this tutorial, Bruker will present theories behind AFM, bio-applications in high-speed AFM, and practical guides to quantitative mechanical measurements and analysis of biological samples ranging from a single membrane protein to a single cell. While the key experiments presented will encompass research in microbiology/pain mediation/cancer, the methodology has also been employed in other disciplines including pathogenesis/stem cell differentiation/cell signaling and more.

Presenter

Senli Guo, Application Scientist, Bruker Nano Surfaces

5:00 PM–6:30 PM

HEKA Elektronik

HEKA Electrophysiology Update

For over 40 years, HEKA Elektronik 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 (<http://server.hekahome.de/scripts/events.php>), 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
Jan Dolzer, Vice President Sales & Marketing, HEKA Elektronik
Global
Telly Galiatsatos, General Manager, HEKA Instruments

Tuesday, February 18

9:00 AM–10:30 AM

Wyatt Technology Corporation

Essential Biophysical Characterization™: Molar Mass, Size, Charge and Interactions—The Light Scattering Toolbox for Biomolecules and Nanoparticles

Wyatt Technology provides the essential tools for characterization of biomacromolecules in solution, including peptides, proteins and oligonucleotides as well as bionanoparticles such as exosomes and VLP's. This presentation describes the light scattering instrumentation and techniques used in these analyses: coupled to liquid chromatographic separations for absolute molar mass and size distributions (SEC/FFF-MALS); microtiter plate-based, high throughput screening of size, aggregation and interactions (DLS); and the label-free, immobilization-free analysis of biomolecular interactions for affinity and absolute molecular stoichiometry (CG-MALS). A variety of examples illustrate the unique capabilities of these light scattering measurements in biophysics.

Presenters

Chris Broomell, Applications Scientist
Sophia Kenrick, Application Scientist, Wyatt Technology Corporation

11:00 AM–12:30 PM

Nanion Technologies

SURFE2R—Catch the Wave for Transporters

Precise Measurements of Membrane Transporter Protein Activity

Ion transporters and pumps play an important role within general metabolism and information processing of organisms. Dysfunction and -regulation of transporter proteins are related to diseases like obesity, diabetes, hypertension, and CNS disorders such as epilepsy and depression. Hence, ion transporters have become potential targets within the drug development treating disease-related abnormalities. At present, labeling technologies and conventional patch clamp are commonly used for ion transporter screening. However, radioactive and fluorescence-based assays have limited sensitivity, and because of the limited molecule turnover per seconds of transporters and pumps compared to ion channels, the direct electrophysiological measurement of protein transporters and pumps activity is extremely challenging.

Here, we present the SURFE2R technology—an easy-to-handle, highly sensitive and very efficient screening platform for direct measurements of ion transporters and ion channels in diverse and heterologous membranes. Since 2012, Nanion offers the SURFE2R product line in two formats: SURFE2R N1 and the higher throughput platform SURFE2R N96.

The SURFE2R N1 which we will present at the workshop 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. Come to our workshop and learn from LIVE-experiments how to make measurements of transporter-protein functionality efficient and reliable!

Presenters:

Andrea Brüggemann, CSO, Nanion Technologies
Maria Barthmes, Nanion Technologies

1:00 PM–2:30 PM

Molecular Devices, LLC

Axon Electrophysiology Symposium: Getting the Most out of pCLAMP Software

pCLAMP™ is a powerful data acquisition and analysis software and is widely used for a variety of electrophysiological recordings. In the first tutorial of this workshop, Jeffrey Tang will highlight a few features used to create a customized acquisition protocol in Clampex. In the second tutorial, Burt Maertz will share tips in single-channel analysis using Clampfit. These include burst analysis, latency analysis and P(open) analysis

Presenters

Jeffrey Tang, Product Marketing Manager, Axon Conventional Electrophysiology, Molecular Devices, LLC.
Burt Maertz, Technical Support Specialist, Axon Conventional Electrophysiology, Molecular Devices, LLC.

3:00 PM–4:30 PM

GE Healthcare

The Devil is in the Detail: the Importance of Accurate Stability and Concentration Determination in Biomolecular Interaction Analysis

See Addendum for session description.

2014 Thematic Meetings

Modeling of Biomolecular Systems Interactions, Dynamics, and Allostery

Istanbul, Turkey
September 10–14, 2014
Abstract Deadline: May 5

Significance of Knotted Structures for Function of Proteins and Nucleic Acids

Warsaw, Poland
September 17–21, 2014
Abstract Deadline: May 12

Disordered Motifs and Domains in Cell Control

Dublin, Ireland
October 11–15, 2014
Abstract Deadline: June 2

Exhibitor List

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
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3T Analytik
Gartenstrasse 100
Tuttlingen, BW 78532
Germany
www.3t-analytik.de

3T Analytik manufactures a novel quartz crystal microbalance (QCM) for real time insights into molecular interactions, biofilms, and adherent cells. The qCell T has been designed for operational ease featuring a small volume flow cell on a high precision Peltier temperature control system, thermostated sample holder and pump for liquid handling.

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on page XII.**

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Agilent is a leader in molecular spectroscopy solutions. UV solutions include high performance Cary 4000; Cary Eclipse fluorescence spectrometer; Cary 630 FTIR for IR liquid analysis. Also the 6000AFM integrates the capabilities of an atomic force microscope with an inverted light microscope and the compact 8500FE-SEM optimized for low-voltage imaging.

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Germany
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Multi Channel Systems focuses on the development of precision measuring equipment for electrophysiological research. We provide solutions for extracellular recordings with microelectrode arrays in vitro and in vivo as well as a system for automated PatchClamp. Moreover, we offer devices for automatic injection and intracellular recording of oocyte ion channels.

Nanion Technologies 628

675 US Highway One
North Bruswick, NJ 08902
www.nanion.de

Nanion Technologies is one of the leading providers of automated patch clamp systems. Nanion's products offer the entire experimental range from single channel recordings to HTS-compatible screening from up to 768 cells in parallel. Allowing 20,000 data points per day, the new product SyncroPatch 384PE is unrivalled for high throughput, high quality, ion channel recordings. Additionally, Nanion provides efficient platforms for transporter protein activity measurements, the SURFE2R, and impedance-recordings from intact cardiomyocyte networks, CardioExcyte 96. Visit us to learn more about our exciting product families, and to find out how to take your ion channel projects to the next level!

Nanosurf, Inc. 809

300 Trade Center, Suite 5450
Woburn, MA 01801
www.nanosurf.com

Nanosurf, a leading provider of easy-to-use atomic force microscopes (AFM), introduces two new products: an automated AFM for Nanomechanical analysis and an AFM that incorporates nanofluidic probes for fluid handling at picoliter volumes. Come by our booth to discuss our newest products including the LensAFM, FluidFM, and ARTIDIS system.

NEW New 2014 Exhibitor

NanoTemper Technologies, Inc.

1001 Bayhill Drive, Suite 200
San Bruno, CA 94066

www.nanotemper-technologies.com

NanoTemper Technologies GmbH develops, produces, and markets innovative, high quality instruments for bio-medical research. The products are based on NanoTemper's unique and proprietary technology MicroScale Thermophoresis (MST) used for the analysis of biomolecular interactions. NanoTemper offers the Monolith NT series instruments for MST measurements with fluorescent label and label-free.

Narishige International USA, Inc.

1710 Hempstead Turnpike
East Meadow, NY 11554
usa.narishige-group.com

Narishige offers the latest and most unique micromanipulation instruments available in the market. On display will be Patch Clamp Recording Micromanipulators, Isolation Systems, Microforages and Pipette Pullers. The compact and more affordable YOU Manipulators will also be on display. Narishige specializes in custom-made products upon request.

NEW Navitar

200 Commerce Drive
Rochester, NY 14623
www.navitar.com

Navitar designs and manufactures custom and off-the-shelf imaging and laser optics systems for biotech and medical applications such as flow cytometry, DNA sequencing, in vitro fertilization, stem cell research and fMRI. Choose from a wide variety of modular microscopy components designed to maximize your results.

NeoBiosystems, Inc.

1407 Heckman Way
San Jose, CA 95129
www.neobiosystems.com

NeoBiosystems designs and manufactures bioscience-related instruments and software, including computer-controlled systems for patch clamp and two-electrode voltage clamps. These automated systems are less expensive than the traditional method, and can reach high success rates in making gig ohm seals, even for beginners.

413 Neuroscience Tools

1650 Des Peres Road, Suite 135
St. Louis, MO 63131-1899
www.neurosciencetools.com

Neuroscience Tools presents the first completely digital Patch Clamp Amplifier. This is a game changer! Other companies digitize data, and have on-screen control panels, but we use feedback of the analog signal to clamp the cell. Only Patch Clamp One allows digital processing of the clamping signal, prior to feedback to the cell. This opens up a world of easy dynamic clamping, single electrode intermittent clamping. Voltage, current, or dynamic clamping can switch without transients.

Nikon Instruments, Inc.

1300 Walt Whitman Road
Melville, NY 11747
www.nikoninstruments.com

Nikon Instruments Inc. will debut all-new state-of-the-art laser systems as well as a new family of application-based laser illumination modalities for the Ti research microscope, enabling limitless power and flexibility. Additionally showcasing NiE motorized, fixed-stage microscope with AIR-MP Multiphoton Confocal system, and the latest NIS-Elements imaging software.

npi electronic

Bauhofring 16
Tamm D-71732
Germany
www.npielectronic.com

npi electronic develops and produces equipment for research in physiological and pharmacological research sciences, including patch and voltage clamp, extracellular and intracellular amplifiers, stimulus isolators, voltammetric-amperometric amplifiers, filters, µm-range drug application systems, temperature controllers and amplifiers for electroporation and transfection. npi electronic are experts in microelectrode and patch clamp techniques.

803



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433

OLIS, Inc.

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401

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www.olympusamerica.com

Olympus America Scientific Equipment Group provides innovative microscope imaging solutions for researchers, doctors, clinicians and educators. Olympus microscope systems offer unsurpassed optics, superior construction and system versatility to meet the ever-changing needs of microscopists, paving the way for future advances in life science.

633

NEW New 2014 Exhibitor



Optical Building Blocks Corporation 601

PO Box 186
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Birmingham, NJ 08011
www.obbcorp.com

Optical Building Blocks Corporation is built on 34 years of pioneering industry experience in Electro-optical instrumentation. OBB designs, manufactures and markets proprietary light sources, monochromators, detectors, light-based components for microscopes and bench-top fluorescence systems used globally in medical, healthcare, industrial process, quality control and environmental science laboratories and research facilities.

Pacer Scientific 512

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PACER SCIENTIFIC is a manufacturers' representative specializing in the sale of research instrumentation and software for the biosciences. Pacer Scientific represents a wide range of quality products manufactured by some of the leading companies in the biosciences field -- AMP Instruments, Brownlee Instruments, Molecular Devices/Axon, Sutter Instrument Company and others.

Park Systems, Inc. 429

3040 Olcott Street
Santa Clara, CA 95054
www.parkafm.com

Park Systems is a world leading manufacturer of atomic force microscopy (AFM) systems with a complete range of products for researchers and industry engineers in biological science, materials research, semi-conductor and storage industries. Park's AFM provides the highest data accuracy, superior productivity, and lowest operating cost. Please visit www.parkafm.com for more information.

PCO-TECH, Inc. 805

6930 Metroplex Drive
Romulus, NY 48174
www.pco-tech.com

PCO-TECH, Inc. is a world leading manufacturer of high speed and high performance CCD and sCMOS cameras systems.

NEW Peptides International 928

11621 Electron Drive
Louisville, KY 40299
www.pepnet.com

Peptides International manufactures and distributes a wide variety of high-purity, biologically active peptides and related products that are used in research worldwide. We also offer custom peptide synthesis services to fulfill the most exacting specifications. Peptides International is passionate about purity, demanding excellence throughout its line of products and services.

NEW Phasics 213

XTEC BAT 404, Campus de l'Ecole
Polytechnique
Palaiseau 91120
France
www.phasics.fr

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Photometrics 619

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Tucson, AZ 85706
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Canada
www.photon-control.com

Photon Control, Inc. provides precision measurement solutions; specializing in OEM manufacturing, UV/VIS/NIR spectroscopy products, fiber optic temperature sensors and more. Photon Control's team of optical, mechanical and electrical engineers have many years of experience in creating solutions through product design & precision manufacturing processes, to successfully solve your measurement challenges.



Photon Technology International, Inc. 601

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PTI is a leading manufacturer of state-of-the-art fluorescence instrumentation widely used for research, medicine, materials science and related disciplines. Products include complete systems for fluorescence spectroscopy UV-VIS-NIR, measurement of fluorescence and phosphorescent lifetimes, fluorescence microscopy and imaging, as well as various optical modules: light sources, monochromators, and microscope accessories.

Physics Today 903

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College Park, MD 20740
www.physicstoday.org

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NEW New 2014 Exhibitor

Physik Instrumente (PI) 409

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PicoQuant Photonics North America, Inc. 432

9 Trinity Drive
West Springfield, MA 01089
www.picoquant.com

PicoQuant is a research and development company in the field of optoelectronics based in Berlin, Germany. The product line includes pulsed diode lasers, photon counting instrumentation, fluorescence lifetime spectrometers, time-resolved confocal microscopes, and FLIM and FCS upgrade kits for laser scanning microscopes.

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Princeton Instruments 329

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Princeton Instruments designs and manufactures high-performance CCD, ICCD, emICCD, EMCCD cameras and spectrographs for biological research and OEM communities. We take pride in partnering with our customers to solve their most challenging requirements. Ask about our IsoPlane aberration-free imaging spectrograph where more photons end up in the peak, increasing the height and effective signal-to-noise ratio (SNR). IsoPlane has been involved in groundbreaking research in biomedical imaging. New products include PI-MAX4 the world's first emICCD camera that delivers single-photon sensitivity and sub-nanosecond time resolution. PI-MAX4 applications include fluorescence lifetime imaging microscopy (FLIM) and planar laser induced fluorescence (PLIF) among others.

QImaging 618

19535 56th Avenue, Suite 101
Surrey, BC V3S 6K3
Canada
www.qimaging.com

QImaging introduces optiMOS, the new Scientific CMOS camera and CCD alternative. Optimized for microscopy, optiMOS eliminates compromise between speed, resolution & sensitivity. Study cell dynamics with 10x greater temporal resolution by streaming 100 FPS with 2.1 Mega Pixels. The affordable solution, optiMOS is available for \$9,950 USD. Visit booth 618.

Quantum Northwest, Inc. 408

22910 E. Appleway Avenue, Suite 4
Liberty Lake, WA 99019
www.qnw.com

Quantum Northwest manufactures Peltier-based temperature-controlled cuvette holders for UV/Vis, fluorescence, CD and other spectroscopies. The qpod 2e may be used with fiber optic spectrometers. The FLASH 300 may be used for transient absorbance, flash photolysis and other laser-based measurements. We also build custom instruments from cell holders to complete spectrometers.

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NEW New 2014 Exhibitor

Reichert Technologies 830
—Life Sciences

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www.reichertspr.com

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Research Institute 1012
of Biomolecule Metrology

807-133 Enokido
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Japan
www.ribm.co.jp/equipment/sub_nex.html

We exhibit a High-Speed Atomic Force Microscope (HS-AFM), developed by Prof. Ando from Kanazawa University. The HS-AFM is the only AFM in the world which can obtain real-time movies with a nanometer-scale resolution; behaviors of swaying soft-molecules in a solution can be captured without blurring and losing their activities.

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NEW New 2014 Exhibitor

**Royal Society Publishing****Royal Society Publishing** 911

6-9 Carlton House Terrace
London SW1Y 5AG
United Kingdom
www.rsif.royalsocietypublishing.org

Royal Society Publishing publishes two cross-disciplinary journals—*Journal of the Royal Society Interface* and *Interface Focus*—both of which regularly publish content in the area of biophysics. *Interface* (rsif.royalsocietypublishing.org), edited by Professor Leslie Dutton from the University of Pennsylvania, publishes individual research and review articles. It offers rapidity, visibility and high quality peer-review. With an Impact Factor of 4.402, it is ranked fifth in the ISI Multidisciplinary Sciences category. *Interface Focus* (rsfs.royalsocietypublishing.org), launched in January 2011 and edited by Professor Denis Noble from the University of Oxford, publishes cross-disciplinary themed issues on topical issues of science. For more information on our journals, please come and have a chat with our representative Dr. Tim Holt at booth number 911. Alternatively, visit our website royalsocietypublishing.org or browse our biophysics subject collection at: royalsocietypublishing.org/cgi/collection/biophysics.

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Seahorse Bioscience 113

16 Esquire Road
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 www.siskiyou.com

Siskiyou Corporation manufactures micromanipulators, motion control devices, tissue slicers, translation stages, probe clamps, construction hardware, adjustable platforms, tilt tables, and other laboratory equipment for microbiological research and general experimenting. Siskiyou Corporation carries a full line of micromanipulators: coarse manual, Huxley style, hydraulic and motorized.

Society for Neuroscience 933
 1121 14th Street NW, Suite 1010
 Washington, DC 20005
 www.sfn.org

The Society for Neuroscience (SfN) is a non-profit membership organization of nearly 42,000 scientists and physicians who study the brain and nervous system. The Society publishes *The Journal of Neuroscience* weekly—the most cited journal in neuroscience. Stop by our booth to pick up a free copy.

Sophion Bioscience 508
 Baltorpvej 154
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 Denmark
 www.sophion.com

In 2001, Sophion Bioscience introduced the world's first automated patch clamp system, the QPatch, and it was launched commercially in 2004. Today, systems can be found in laboratories worldwide. With our latest product, the Qube, we have taken automated patch clamp to a new level. We now provide state-of-the-art automated patch clamp systems for medium to high throughput. With QPatch and Qube we offer uncompromised data quality in a user-friendly set up from assay development to data analysis. Our focus is customer support which includes technical, biological, and application solutions. We provide 24 hour global service and support.

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 www.stanfordphotonics.com

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Strain Measurement Devices is a manufacturer of strain gauges, load cells, pressure sensors, air-in-line sensors, ultrasonic flow sensors, liquid level sensors and precision scales.

NEW New 2014 Exhibitor

Are you a Wikipedia connoisseur?

Learn about the Society's Wiki-Editing Contest at the kick off session on Sunday at 2:15 PM.

(See page 20 for details)



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Japan
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ProCube Biotechnology Center markets ProCube's custom recombinant protein production service using a patented baculovirus in a living insect host. ProCube simultaneously produces 100's of proteins and has the problem-solving experience of producing over 6,000 proteins. ProCube's low-risk, guaranteed protein service provides customers peace of mind when ordering. Booth 218.

Collect tickets from exhibitors in the Exhibit Hall and then enter to win an iPad Air! Drop your tickets off at the Society Booth by 3:00 PM on Tuesday!

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Newton, NJ 07860
www.thorlabs.com

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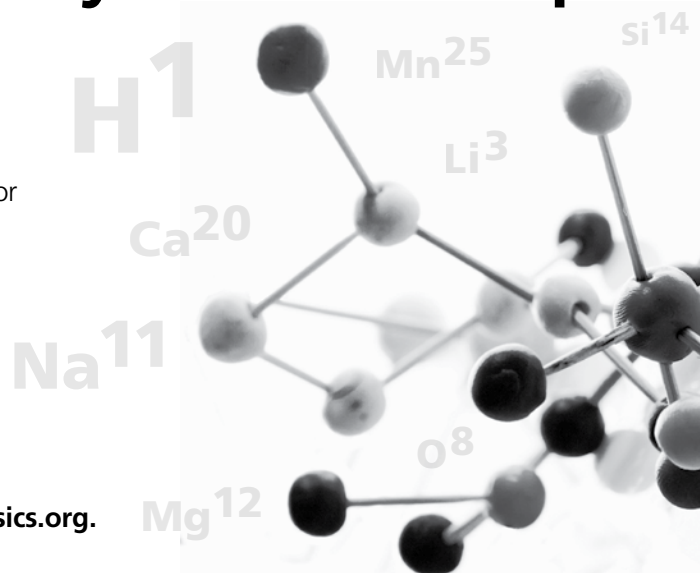
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Product Categories

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
3-D Visualization		Alomone Labs	1118	Seahorse Bioscience	113
Bitplane, Inc.	320	CEDARLANE	834	Semrock	420
FEI Company	729	Dynamic Biosensors	305	Sysmex Corporation	218
Fondazione Istituto Italiano di Tecnologia	221	GenScript USA, Inc.	119	Wyatt Technology Corporation	828
Vutara, Inc.	919	NanoTemper Technologies, Inc.	413		
		Sysmex Corporation	218		
AFM/NSOM/Confocal Microscopes		Antibody Microarray Products		Cameras	
Agilent Technologies	302	TIRF Labs	1029	Andor Technology	318
Asylum Research, an Oxford Instruments Company	708			BaySpec, Inc.	829
BaySpec, Inc.	829	Atomic Force Microscopes		Carl Zeiss Microscopy, LLC	301
Boston Electronics Corporation	105	Agilent Technologies	302	Electron Microscopy Sciences	309
Bruker BioSpin	608	Anasys Instruments	311	Finger Lakes Instrumentation, LLC	212
Bruker Nano Surfaces	608	Asylum Research, an Oxford Instruments Company	708	Hamamatsu Corporation	519
Fondazione Istituto Italiano di Tecnologia	221	Bruker BioSpin	608	IonOptix	528
ISS, Inc.	400	Bruker Nano Surfaces	608	Mightex Systems	811
Mad City Labs, Inc.	609	Luigs & Neumann GmbH	321	Nüvü Cameras	433
Minus K Technology, Inc.	812	Mad City Labs, Inc.	609	Olympus America, Inc.	633
Olympus America, Inc.	633	MicroSurfaces, Inc.	133	Phasics	213
Park Systems, Inc.	429	Minus K Technology, Inc.	812	Photometrics	619
Research Institute of Biomolecule Metrology	1012	Park Systems, Inc.	429	Princeton Instruments	329
TIRF Labs	1029			QImaging	618
		Automated Temperature/Titration Filter Fluorometer		Stanford Photonics, Inc.	421
		Optical Building Blocks Corporation	601	Thorlabs, Inc.	701
Amperometry/Voltammetry Instrumentation		Biochemical Reagents		Cell Biology Products	
eDAQ, Inc.	308	Alomone Labs	1118	AAT Bioquest	404
		Gene Tools, LLC	313	Alomone Labs	1118
Amphipols		GenScript USA, Inc.	119	CEDARLANE	834
Anatrace	513	MicroSurfaces, Inc.	133	ChanTest Corporation	835
		Peptides International	928	Chroma Technology	410
				Electron Microscopy Sciences	309
Amplifiers		Biochemicals		FEI Company	729
Alpha MED Scientific, Inc.	103	AAT Bioquest	404	Mightex Systems	811
HEKA Elektronik	129	Alomone Labs	1118	Neuroscience Tools	803
Multi Channel Systems	818	Avanti Polar Lipids, Inc.	709	Vutara, Inc.	919
NeoBiosystems, Inc.	135	Gene Tools, LLC	313		
Neuroscience Tools	803	Peptides International	928	Cell Culture Apparatus	
npi electronic	821			IonOptix	528
Pacer Scientific	512	Biotechnology		Cell Culture Media	
Warner Instruments	1128	Bruker BioSpin	608	Ecocyte Bioscience	328
World Precision Instruments, Inc.	719	Bruker Nano Surfaces	608		
		ChanTest Corporation	835	Centrifuges	
Analytical/Testing Services		Cobolt AB	419	Aviv Biomedical, Inc.	831
Avanti Polar Lipids, Inc.	709	Dynamic Biosensors	305	Chromatography	
ChanTest Corporation	835	Fondazione Istituto Italiano di Tecnologia	221	eDAQ, Inc.	308
Peptides International	928	ForteBio, A Division of Pall Life Sciences	405	Rainin Instrument, LLC	335
TA Instruments	300	Gene Tools, LLC	313	Wyatt Technology Corporation	828
		Hellma USA	319		
Antibodies		NanoTemper Technologies, Inc.	413	Circular Dichroism Spectrometer	
3T Analytik	220	Navitar	801	Aviv Biomedical, Inc.	831
AAT Bioquest	404			Bio-Logic USA	604
				JASCO	718
				OLIS, Inc.	401

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
Circular Dichroism Spectroscopy		KinTek	500	Narishige International USA, Inc.	734
Aviv Biomedical, Inc.	831	Stanford Photonics, Inc.	421	NeoBiosystems, Inc.	135
Bio-Logic USA	604			Neuroscience Tools	803
Hellma USA	319	Detergents		Sensapex	121
JASCO	718	Anatrace	513	Warner Instruments	1128
OLIS, Inc.	401	Avanti Polar Lipids, Inc.	709		
Computational Chemistry Software		Digitizers		Electrophysiology Equipment	
BRANDEL	219	HEKA Elektronik	129	Alpha MED Scientific, Inc.	103
KinTek	500	Molecular Devices, LLC	600	Aurora Scientific, Inc.	535
		Neuroscience Tools	803	AutoMate Scientific	101
Computers, Hardware & Software		Drug Discovery		Cell MicroControls	529
Aurora Scientific, Inc.	535	Alpha MED Scientific, Inc.	103	Ecocyte Bioscience	328
IonOptix	528	ChanTest Corporation	835	HEKA Elektronik	129
KinTek	500	Dynamic Biosensors	305	Ionovation	131
		ForteBio, A Division of Pall Life Sciences	405	Luigs & Neumann GmbH	321
		GE Healthcare	109	Molecular Devices, LLC	600
		GenScript USA, Inc.	119	NeoBiosystems, Inc.	135
		Hamamatsu Corporation	519	Nikon Instruments, Inc.	518
		NanoTemper Technologies, Inc.	413	Pacer Scientific	512
		Sysmex Corporation	218	Scientifica	629
				Sutter Instrument Company	501
				Thorlabs, Inc.	701
				Warner Instruments	1128
				World Precision Instruments, Inc.	719
Crystallization Utilities		Electromechanical Instrumentation		Electrophysiology Software	
Anatrace	513	3T Analytik	220	Alpha MED Scientific, Inc.	103
		eDAQ, Inc.	308	HEKA Elektronik	129
		Luigs & Neumann GmbH	321	Ionovation	131
		Multi Channel Systems	818	Molecular Devices, LLC	600
		npi electronic	821	Nanion Technologies	628
				NeoBiosystems, Inc.	135
Crystallography		Electrophoresis Equipment		Environmental Chambers	
Anatrace	513	eDAQ, Inc.	308	Tokai Hit Co. Ltd.	808
BRANDEL	219	Multi Channel Systems	818		
CEDARLANE	834	npi electronic	821	Filter Wheels	
GE Healthcare	109	Wyatt Technology Corporation	828	Finger Lakes Instrumentation, LLC	212
NanoTemper Technologies, Inc.	413			Sutter Instrument Company	501
TA Instruments	300				
Custom Synthesis		Electrophysiological Data Acquisition		Flash Lamps	
Anatrace	513	Alembic Instruments, Inc.	418	Hamamatsu Corporation	519
GenScript USA, Inc.	119	Alpha MED Scientific, Inc.	103	Rapp OptoElectronic GmbH	504
Peptides International	928	AutoMate Scientific	101		
		Ecocyte Bioscience	328	Fluid Flow Chambers	
		HEKA Elektronik	129	ALA Scientific Instruments, Inc.	819
		Ionovation	131	Avalance Biotech	732
		Nanion Technologies	628	Cell MicroControls	529
Data Acquisition		Electrophysiological Instruments		Fluorescence Anisotropy	
Alembic Instruments, Inc.	418	ALA Scientific Instruments, Inc.	819	Bio-Logic USA	604
eDAQ, Inc.	308	Alembic Instruments, Inc.	418	Boston Electronics Corporation	105
HEKA Elektronik	129	Alpha MED Scientific, Inc.	103	ISS, Inc.	400
IonOptix	528	Avalance Biotech	732	JASCO	718
Multi Channel Systems	818	HEKA Elektronik	129	KinTek	500
Neuroscience Tools	803	Ionovation	131	OLIS, Inc.	401
Stanford Photonics, Inc.	421	Mightex Systems	811	Photon Technology International, Inc.	601
		Nanion Technologies	28	TgK Scientific Ltd.	435
Data Analysis					
eDAQ, Inc.	308				
IonOptix	528				
PicoQuant Photonics North America, Inc.	432				
Data Analysis Software					
Aurora Scientific, Inc.	535				
Bitplane, Inc.	320				
BRANDEL	219				
eDAQ, Inc.	308				

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
Fluorescence Correlation Spectroscopy		Glass Capillary Tubing		Image Analyzers, Ratiometric Dyes	
Boston Electronics Corporation	105	Sutter Instrument Company	501	AAT Bioquest	404
Bruker Nano Surfaces	608	World Precision Instruments, Inc.	719	Stanford Photonics, Inc.	421
ISS, Inc.	400	Glassware		Image Intensifiers	
Laboratory for Fluorescence Dynamics	712	World Precision Instruments, Inc.	719	Hamamatsu Corporation	519
PicoQuant Photonics North America, Inc.	432	Image Acquisition Systems		PCO-TECH, Inc.	805
Fluorescence Image Analysis Equipment		Aurora Scientific, Inc.	535	Stanford Photonics, Inc.	421
Aurora Scientific, Inc.	535	Azure Biosystems	209	Image Stabilization	
Boston Electronics Corporation	105	FEI Company	729	Mad City Labs, Inc.	609
Bruker Nano Surfaces	608	Finger Lakes Instrumentation, LLC	212	Minus K Technology, Inc.	812
ISS, Inc.	400	Laboratory for Fluorescence Dynamics	712	Imaging Chambers	
Laboratory for Fluorescence Dynamics	712	MicroSurfaces, Inc.	133	Stanford Photonics, Inc.	421
Mad City Labs, Inc.	609	Molecular Devices, LLC	600	Tokai Hit Co. Ltd.	808
Photometrics	619	Nüvü Cameras	433	Warner Instruments	1128
QImaging	618	PCO-TECH, Inc.	805	Imaging, Spectral	
TIRF Labs	1029	Phasics	213	BaySpec, Inc.	829
Vutara, Inc.	919	Photometrics	619	Fondazione Istituto Italiano di Tecnologia	221
Fluorescence Lifetime Imaging		QImaging	618	Princeton Instruments	329
Boston Electronics Corporation	105	Stanford Photonics, Inc.	421	Imaging Systems	
Bruker Nano Surfaces	608	Image Analysis		FEI Company	729
FEI Company	729	Azure Biosystems	209	Finger Lakes Instrumentation, LLC	212
ISS, Inc.	400	CRC Press/Taylor & Francis Group	918	GE Healthcare	109
Laboratory for Fluorescence Dynamics	712	PCO-TECH, Inc.	805	Laboratory for Fluorescence Dynamics	712
Mad City Labs, Inc.	609	Phasics	213	Mightex Systems	811
Nüvü Cameras	433	Image Analysis, High Resolution		Navitar	801
Optical Building Blocks Corporation	601	Bruker BioSpin	608	Nikon Instruments, Inc.	518
PicoQuant Photonics North America, Inc.	432	Bruker Nano Surfaces	608	Olympus America, Inc.	633
Stanford Photonics, Inc.	421	Nüvü Cameras	433	PCO-TECH, Inc.	805
Fluorescent Filters		Stanford Photonics, Inc.	421	Phasics	213
Chroma Technology	410	Image Analysis Software		Photometrics	619
CRC Press/Taylor & Francis Group	918	Aurora Scientific, Inc.	535	QImaging	618
Laboratory for Fluorescence Dynamics	712	Bitplane, Inc.	320	Scientifica	629
Photon Technology International, Inc.	601	Carl Zeiss Microscopy, LLC	301	Stanford Photonics, Inc.	421
Semrock	420	Laboratory for Fluorescence Dynamics	712	Thorlabs, Inc.	701
Fluorescent Probes		Molecular Devices, LLC	600	Vutara, Inc.	919
AAT Bioquest	404	Nüvü Cameras	433	Immunochemicals	
Hellma USA	319	PCO-TECH, Inc.	805	CEDARLANE	834
PicoQuant Photonics North America, Inc.	432	Image Analyzers, FISH Applications		Peptides International	928
Fluorometers		Stanford Photonics, Inc.	421	Incubators	
Aviv Biomedical, Inc.	831	Image Analyzers, High Resolution		Tokai Hit Co. Ltd.	808
BaySpec, Inc.	829	GE Healthcare	109	Infrared Spectroscopy	
IonOptix	528	Nüvü Cameras	433	Agilent Technologies	302
ISS, Inc.	400	Stanford Photonics, Inc.	421	Anasys Instruments	311
JASCO	718	Image Analyzers, High Speed		Photon Technology International, Inc.	601
KinTek	500	Nüvü Cameras	433	TgK Scientific Ltd.	435
OLIS, Inc.	401	PCO-TECH, Inc.	805		
Photon Technology International, Inc.	601	Stanford Photonics, Inc.	421		
Quantum Northwest, Inc.	408				
World Precision Instruments, Inc.	719				

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
Interferometers		Chroma Technology	410	Liquid Chromatography Instruments	
Phasics	213	Cobolt AB	419	Rainin Instrument, LLC	335
Ion Channels		F1000Research	905	Wyatt Technology Corporation	828
Alomone Labs	1118	FEI Company	729	Luminometers	
ChanTest Corporation	835	Fondazione Istituto Italiano di Tecnologia	405	Optical Building Blocks Corporation	601
Ecocyte Bioscience	328	ForteBio, A Division of Pall Life Sciences	109	Magnetic Stirrers	
eDAQ, Inc.	308	GE Healthcare	1021	Hellma USA	319
HEKA Elektronik	129	Human Frontier Science Program (HFSP)	811	Micro Environmental Control	
Ionovation	131	Mightex Systems	801	Avalance Biotech	732
Molecular Devices, LLC	600	Navitar	633	World Precision Instruments, Inc.	719
Nanion Technologies	628	Olympus America, Inc.	432	Microcalorimetry Systems	
Sophion Bioscience	508	PicoQuant Photonics	830	GE Healthcare	109
Sysmex Corporation	218	Reichert Technologies—Life Sciences	420	TA Instruments	300
Isotope-Labeled Compounds		Semrock	218	Microdissecting Instruments	
Peptides International	928	Sysmex Corporation	701	World Precision Instruments, Inc.	719
Label Free Sensing		Thorlabs, Inc.	919	Microelectrode Holders	
3T Analytik	220	Vutara, Inc.	728	ALA Scientific Instruments, Inc.	819
Dynamic Biosensors	305	Light Sheet Microscopy	301	Narishige International USA, Inc.	734
GE Healthcare	109	ASI/Applied Scientific Instrumentation	221	Warner Instruments	1128
MicroSurfaces, Inc.	133	Carl Zeiss Microscopy, LLC	609	World Precision Instruments, Inc.	719
Nanion Technologies	628	Fondazione Istituto Italiano di Tecnologia	619	Microelectrodes	
NanoTemper Technologies, Inc.	413	Mad City Labs, Inc.	1029	Alpha MED Scientific, Inc.	103
TA Instruments	300	Photometrics	Microforges		
Laboratory Apparatus & Equipment		TIRF Labs	819	ALA Scientific Instruments, Inc.	819
3T Analytik	220	Light Sources	301	Narishige International USA, Inc.	734
Aviv Biomedical, Inc.	831	89 North	419	World Precision Instruments, Inc.	719
BRANDEL	219	ALA Scientific Instruments, Inc.	519	Microinjectors	
Electron Microscopy Sciences	309	Carl Zeiss Microscopy, LLC	319	ASI/Applied Scientific Instrumentation	728
MicroSurfaces, Inc.	133	Cobolt AB	528	Avalance Biotech	732
Rainin Instrument, LLC	335	Hamamatsu Corporation	400	Narishige International USA, Inc.	734
Seahorse Bioscience	113	Hellma USA	811	Sutter Instrument Company	501
Siskiyou Corporation	813	IonOptix	633	World Precision Instruments, Inc.	719
TA Instruments	300	ISS, Inc.	601	Micromanipulators	
Langmuir Troughs		Mightex Systems	512	ASI/Applied Scientific Instrumentation	728
KSV NIMA	1019	Olympus America, Inc.	929	AutoMate Scientific	101
Lasers		Optical Building Blocks Corporation	504	Luigs & Neumann GmbH	321
Cobolt AB	419	Pacer Scientific	813	Narishige International USA, Inc.	734
Fondazione Istituto Italiano di Tecnologia	221	Photon Control, Inc.	518	NeoBiosystems, Inc.	135
PicoQuant Photonics	432	Rapp OptoElectronic GmbH	512	Nikon Instruments, Inc.	518
North America, Inc.		Siskiyou Corporation	504	Pacer Scientific	512
RPMC Laser, Inc.	201	Sutter Instrument Company	501	Physik Instrumente (PI)	409
Life Sciences		Lipids		Piezosystem Jena	310
89 North	410	3T Analytik	220	Scientifica	629
Alomone Labs	1118	Alomone Labs	1118	Sensapex	121
Andor Technology	318	Anatrace	513		
Aviv Biomedical, Inc.	831	Avanti Polar Lipids, Inc.	709		
Biochemical Journal	909	Ionovation	131		
Bitplane, Inc.	320	Liposome Preparation Equipment			
		Avanti Polar Lipids, Inc.	709		

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
Siskiyou Corporation	813	Luigs & Neumann GmbH	321	Nanopositioning Systems	
Sutter Instrument Company	501	Mad City Labs, Inc.	609	ASI/Applied Scientific Instrumentation	728
Warner Instruments	1128	Narishige International USA, Inc.	734	Mad City Labs, Inc.	609
World Precision Instruments, Inc.	719	Nikon Instruments, Inc.	518	Physik Instrumente (PI)	409
		Physik Instrumente (PI)	409	Piezosystem Jena	310
Micropipette Pullers		Piezosystem Jena	310	Sensapex	121
AutoMate Scientific	101	Scientifica	629		
Narishige International USA, Inc.	734	Siskiyou Corporation	813	Near-Field Scanning Optical Microscopes (NSOM)	
Pacer Scientific	512	Sutter Instrument Company	501	Mad City Labs, Inc.	609
Siskiyou Corporation	813			Minus K Technology, Inc.	812
Sutter Instrument Company	501	Microscopes			
		ALA Scientific Instruments, Inc.	819	Particle Sizing	
Micropipettes		Andor Technology	318	Dynamic Biosensors	305
Avalance Biotech	732	ASI/Applied Scientific Instrumentation	728	Wyatt Technology Corporation	828
Rainin Instrument, LLC	335	Asylum Research, an Oxford Instruments company	708		
		Bruker BioSpin	608	Patch Clamp Instrumentation	
Micropositioners		Carl Zeiss Microscopy, LLC	301	Alembic Instruments, Inc.	418
ASI/Applied Scientific Instrumentation	728	Electron Microscopy Sciences	309	AutoMate Scientific	101
GE Healthcare	109	FEI Company	729	Cell MicroControls	529
Mad City Labs, Inc.	609	GE Healthcare	109	eDAQ, Inc.	308
NeoBiosystems, Inc.	135	ISS, Inc.	400	Luigs & Neumann GmbH	321
Physik Instrumente (PI)	409	Laboratory for Fluorescence Dynamics	712	Molecular Devices, LLC	600
Sensapex	121	Mad City Labs, Inc.	609	Multi Channel Systems	818
Sutter Instrument Company	501	MicroSurfaces, Inc.	133	Nanon Technologies	628
		Nanosurf, Inc.	809	Narishige International USA, Inc.	734
Microscope Accessories		Nikon Instruments, Inc.	518	NeoBiosystems, Inc.	135
89 North	410	Olympus America, Inc.	633	Neuroscience Tools	803
ASI/Applied Scientific Instrumentation	728	Phasics	213	npi electronic	821
Avalance Biotech	732	PicoQuant Photonics North America, Inc.	432	Pacer Scientific	512
Carl Zeiss Microscopy, LLC	301	Rapp OptoElectronic GmbH	504	Park Systems, Inc.	429
Cell MicroControls	529	Scientifica	629	Scientifica	629
Chroma Technology	410	Sutter Instrument Company	501	Sensapex	121
Cobolt AB	419	Thorlabs, Inc.	701	Sophion Bioscience	508
FEI Company	729	Vutara, Inc.	919	Sutter Instrument Company	501
Ionovation	131			Perfusion Stepper System	
ISS, Inc.	400	Microscopy Chambers		Warner Instruments	1128
Mad City Labs, Inc.	609	ASI/Applied Scientific Instrumentation	728	Perfusion Systems	
Minus K Technology, Inc.	812	Cell MicroControls	529	ALA Scientific Instruments, Inc.	819
Nanosurf, Inc.	809	GE Healthcare	109	AutoMate Scientific	101
Nikon Instruments, Inc.	518	TIRF Labs	1029	Avalance Biotech	732
Olympus America, Inc.	633	World Precision Instruments, Inc.	719	BRANDEL	219
Optical Building Blocks Corporation	601			CEDARLANE	834
Pacer Scientific	512	Microtomes		Cell MicroControls	529
Rapp OptoElectronic GmbH	504	Electron Microscopy Sciences	309	Ecocyte Bioscience	328
Scientifica	629			Pharmaceutical Development Equipment	
Semrock	420	AAT Bioquest	404	3T Analytik	220
TIRF Labs	1029	CEDARLANE	834	Cobolt AB	419
Tokai Hit Co. Ltd.	808	ChanTest Corporation	835	Dynamic Biosensors	305
		GenScript USA, Inc.	119		
Microscope Drift Correction		Vutara, Inc.	919	Photometers	
ASI/Applied Scientific Instrumentation	728			Optical Building Blocks Corporation	601
Mad City Labs, Inc.	609	Molecular Biology Products		Rapp OptoElectronic GmbH	504
		AAT Bioquest	404	Wyatt Technology Corporation	828
Microscope Stages		CEDARLANE	834		
ASI/Applied Scientific Instrumentation	728	ChanTest Corporation	835		
Carl Zeiss Microscopy, LLC	301	GenScript USA, Inc.	119		
GE Healthcare	109	Vutara, Inc.	919		
		Monochromators			
		Optical Building Blocks Corporation	601		
		Princeton Instruments	329		

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
Piezo Lens Positioners		ForteBio, A Division of Pall Life Sciences	405	Nanosurf, Inc.	809
ASI/Applied Scientific Instrumentation	728	GE Healthcare	109	Park Systems, Inc.	429
Mad City Labs, Inc.	609	TA Instruments	300	Research Institute of Biomolecule Metrology	1012
Physik Instrumente (PI)	409				
Piezo Scanning Stages		Publications		Scientific CMOS Cameras	
ASI/Applied Scientific Instrumentation	728	AIP Publishing, LLC	511	Andor Technology	318
Mad City Labs, Inc.	609	Biochemical Journal	909	Hamamatsu Corporation	519
Physik Instrumente (PI)	409	Cambridge University Press	912	Mightex Systems	811
		Cell Press	1001	Photometrics	619
		F1000Research	905	QImaging	618
		Journal of General Physiology	1004	Stanford Photonics, Inc.	421
		Garland Science	920		
		Physics Today	903	Scientific Software	
		PLOS	901	Bitplane, Inc.	320
Piezo Stages		Royal Society Publishing	911	Olympus America, Inc.	633
ASI/Applied Scientific Instrumentation	728	Society for Neuroscience	933	Thomson Reuters EndNote	1120
Mad City Labs, Inc.	609	Springer	902		
Nikon Instruments, Inc.	518	The Physiological Society	935		
Physik Instrumente (PI)	409	Wiley	900	Screening, High-Throughput	
Sensapex	121			AAT Bioquest	404
		Pumps		Ecocyte Bioscience	328
		BRANDEL	219	GenScript USA, Inc.	119
		World Precision Instruments, Inc.	719	Mad City Labs, Inc.	609
Pipettes		Quartz Crystal Microbalance		Multi Channel Systems	818
Avalance Biotech	732	3T Analytik	220	Nanion Technologies	628
Rainin Instrument, LLC	335			NanoTemper Technologies, Inc.	413
Siskiyou Corporation	813			Sysmex Corporation	218
		Reagents		Sensors	
Probes		Alomone Labs	1118	Andor Technology	318
AAT Bioquest	404	Avanti Polar Lipids, Inc.	709	Dynamic Biosensors	305
Hellma USA	319	CEDARLANE	834	Hamamatsu Corporation	519
Nanosurf, Inc.	809	ChanTest Corporation	835	MicroSurfaces, Inc.	133
		Gene Tools, LLC	313	Photon Control, Inc.	929
		GenScript USA, Inc.	119	Strain Measurement Devices, Inc.	810
		Molecular Devices, LLC	600		
		Peptides International	928	Shutters	
		Seahorse Bioscience	113	Sutter Instrument Company	501
Protein Binding Studies		Recording Chambers		Solid State Lasers	
3T Analytik	220	Cell MicroControls	529	Cobolt AB	419
BRANDEL	219	Ecocyte Bioscience	328		
Dynamic Biosensors	305	Luigs & Neumann GmbH	321	Spectrofluorometers	
ForteBio, A Division of Pall Life Sciences	405			BaySpec, Inc.	829
GE Healthcare	109	Rheometers/Viscometers		ISS, Inc.	400
JASCO	718	KSV NIMA	1019	JASCO	718
NanoTemper Technologies, Inc.	413	TA Instruments	300	KinTek	500
Reichert Technologies—Life Sciences	830			MicroSurfaces, Inc.	133
Sysmex Corporation	218	Scanning Probe Microscopes		OLIS, Inc.	401
TA Instruments	300	Agilent Technologies	302	Photon Technology International, Inc.	601
		Anasys Instruments	311	TgK Scientific Ltd.	435
		Asylum Research, an Oxford Instruments Company	708	TIRF Labs	1029
		Bruker BioSpin	608		
Protein Expression		Bruker Nano Surfaces	608	Spectrometers	
CEDARLANE	834	Mad City Labs, Inc.	609	Agilent Technologies	302
ForteBio, A Division of Pall Life Sciences	405	Minus K Technology, Inc.	812	Andor Technology	318
GE Healthcare	109			BaySpec, Inc.	829
GenScript USA, Inc.	119				
JASCO	718				
Sysmex Corporation	218				
Protein Purification Systems					
GE Healthcare	109				
Rainin Instrument, LLC	335				
Protein Structure Data					
Anatrace	513				
Dynamic Biosensors	305				

Company Name	Booth Number	Company Name	Booth Number	Company Name	Booth Number
Bio-Logic USA	604	Stimulus Isolators		Tissue Embedding Equipment/ Media	
Extrel CMS	428	Ecocyte Bioscience	328	Electron Microscopy Sciences	309
Hellma USA	319	Multi Channel Systems	818		
KSV NIMA	1019	npi electronic	821		
Mightex Systems	811	World Precision Instruments, Inc.	719		
Optical Building Blocks Corporation	601			Tissue Processors/ Sectioners	
Photon Control, Inc.	929	Stopped-Flow Spectroscopy		Electron Microscopy Sciences	309
PicoQuant Photonics	432	Aviv Biomedical, Inc.	831	Siskiyou Corporation	813
North America, Inc.		Bio-Logic USA	604		
Princeton Instruments	329	JASCO	718		
Quantum Northwest, Inc.	408	KinTek	500		
TgK Scientific Ltd.	435	OLIS, Inc.	401		
		Photon Technology International, Inc.	601	UV Spectroscopy	
Spectrophotometer Light Sources		TgK Scientific Ltd.	435	Agilent Technologies	302
Hellma USA	319			Bio-Logic USA	604
KinTek	500	Substrates		Hellma USA	319
Photon Control, Inc.	929	Peptides International	928	OLIS, Inc.	401
		Seahorse Bioscience	113	Photon Control, Inc.	929
				Princeton Instruments	329
Spectrophotometers				Quantum Northwest, Inc.	408
Aviv Biomedical, Inc.	831	Super Resolution (SR) Microscopy		TgK Scientific Ltd.	435
BaySpec, Inc.	829	ASI/Applied Scientific Instrumentation	728		
Bio-Logic USA	604	Bitplane, Inc.	320	Vibration Isolation Systems	
OLIS, Inc.	401	Carl Zeiss Microscopy, LLC	301	AutoMate Scientific	101
Photon Control, Inc.	929	Chroma Technology	410	Minus K Technology, Inc.	812
Photon Technology International, Inc.	601	Cobolt AB	419		
TgK Scientific Ltd.	435	Fondazione Istituto Italiano di Tecnologia	221	Video Microscopy Systems	
		GE Healthcare	109	Navitar	801
Spectroscopy Accessories		ISS, Inc.	400	Nüvü Cameras	433
Andor Technology	318	Mad City Labs, Inc.	609	Photometrics	619
BaySpec, Inc.	829	Photometrics	619	QImaging	618
ISS, Inc.	400	QImaging	618		
OLIS, Inc.	401	Vutara, Inc.	919	Visible Spectroscopy	
Photon Control, Inc.	929			Hellma USA	319
Quantum Northwest, Inc.	408	Surgical Instruments		OLIS, Inc.	401
Thorlabs, Inc.	701	Electron Microscopy Sciences	309	Photon Control, Inc.	929
		World Precision Instruments, Inc.	719	Photon Technology International, Inc.	601
				TgK Scientific Ltd.	435
Sphingolipids		TCSPC Components			
Anatrace	513	Boston Electronics Corporation	105	Voltage Clamp Instrumentation	
Avanti Polar Lipids, Inc.	709	ISS, Inc.	400	Alembic Instruments, Inc.	418
				eDAQ, Inc.	308
Stand Alone Stopped- Flow Unit				Ionovation	131
Bio-Logic USA	604	Temperature Controllers		NeoBiosystems, Inc.	135
OLIS, Inc.	401	ALA Scientific Instruments, Inc.	819	Neuroscience Tools	803
		Aurora Scientific, Inc.	535	npi electronic	821
Sterols		AutoMate Scientific	101	Scientifica	629
Avanti Polar Lipids, Inc.	709	Cell MicroControls	529		
		Nanon Technologies	628	X-ray Imaging Equipment	
Stimulators		npi electronic	821	Andor Technology	318
Aurora Scientific, Inc.	535	Quantum Northwest, Inc.	408	Hamamatsu Corporation	519
BRANDEL	219	Tokai Hit Co. Ltd.	808	Princeton Instruments	329
IonOptix	528	Warner Instruments	1128	Stanford Photonics, Inc.	421
Multi Channel Systems	818	World Precision Instruments, Inc.	719		
npi electronic	821			Zeta Potential	
Pacer Scientific	512	Tensiometers		Wyatt Technology Corporation	828
World Precision Instruments, Inc.	719	KSV NIMA	1019		

Exhibitor List and Booth Numbers

Booth Number/Exhibitor	Booth Number/Exhibitor	Booth Number/Exhibitor
101 AutoMate Scientific	410 Chroma Technology	734 Narishige International USA, Inc.
103 Alpha MED Scientific, Inc.	413 NanoTemper Technologies, Inc.	801 Navitar NEW
105 Boston Electronics Corporation	418 Alembic Instruments, Inc.	803 Neuroscience Tools
109 GE Healthcare	419 Cobolt AB	805 PCO-TECH, Inc.
113 Seahorse Bioscience	420 Semrock	808 Tokai Hit Co. Ltd.
119 GenScript USA, Inc. NEW	421 Stanford Photonics, Inc.	809 Nanosurf, Inc.
121 Sensapex NEW	428 Extrel CMS	810 Strain Measurement Devices, Inc. NEW
129 HEKA Elektronik	429 Park Systems, Inc.	811 Mightex Systems NEW
131 Ionovation	432 PicoQuant Photonics North America, Inc.	812 Minus K Technology, Inc.
133 MicroSurfaces, Inc.	433 Nuvu Cameras	813 Siskiyou Corporation
135 NeoBiosystems, Inc.	435 TgK Scientific Ltd.	818 Multi Channel Systems
201 RPMC Laser, Inc. NEW	500 KinTek	819 ALA Scientific Instruments, Inc.
208 Advansta, Inc. NEW	501 Sutter Instrument Company	821 npi electronic
209 Azure Biosystems NEW	504 Rapp OptoElectronic GmbH	828 Wyatt Technology Corporation
212 Finger Lakes Instrumentation, LLC NEW	508 Sophion Bioscience	829 BaySpec, Inc. NEW
213 Phasics NEW	509 Biolin Scientific	830 Reichert Technologies—Life Sciences
218 Sysmex Corporation NEW	511 AIP Publishing, LLC	831 Aviv Biomedical, Inc.
219 BRANDEL	512 Pacer Scientific	834 CEDARLANE
220 3T Analytik	513 Anatrace	835 ChanTest Corporation
221 Fondazione Istituto Italiano di Tecnologia NEW	518 Nikon Instruments, Inc.	900 Wiley
231 Myotronic UG NEW	519 Hamamatsu Corporation	901 PLOS NEW
300 TA Instruments	528 IonOptix	902 Springer
301 Carl Zeiss Microscopy, LLC	529 Cell MicroControls	903 Physics Today
302 Agilent Technologies	535 Aurora Scientific, Inc.	905 F1000Research NEW
305 Dynamic Biosensors NEW	600 Molecular Devices, LLC	908 On the Avenue Marketing
308 eDAQ, Inc.	601 Optical Building Blocks Corporation	909 Biochemical Journal
309 Electron Microscopy Sciences	601 Photon Technology International	911 Royal Society Publishing
310 Piezosystem Jena	604 Bio-Logic USA	912 Cambridge University Press
311 Anasys Instruments NEW	608 Bruker BioSpin	918 CRC Press/Taylor & Francis Group
313 Gene Tools, LLC	609 Mad City Labs, Inc.	919 Vutura, Inc.
318 Andor Technology	618 QImaging	920 Garland Science
319 Hellma USA	619 Photometrics	928 Peptides International NEW
320 Bitplane, Inc.	628 Nanion Technologies	929 Photon Control, Inc. NEW
321 Luigs & Neumann GmbH	629 Scientifica	933 Society for Neuroscience
328 Ecocyte Bioscience	633 Olympus America, Inc.	935 The Physiological Society
329 Princeton Instruments	701 Thorlabs, Inc.	1001 Cell Press
334 Applied Photophysics Ltd.	708 Asylum Research, an Oxford Instruments Company	1004 Journal of General Physiology
335 Rainin Instrument, LLC NEW	709 Avanti Polar Lipids, Inc.	1012 Research Institute of Biomolecule Metrology
400 ISS, Inc.	712 Laboratory for Fluorescence Dynamics	1019 KSV NIMA
401 Olis, Inc.	718 JASCO	1021 Human Frontier Science Program (HFSP) NEW
404 AAT Bioquest	719 World Precision Instruments, Inc.	1028 Biosearch Technologies, Inc.
405 ForteBio, A Division of Pall Life Sciences	728 ASI/Applied Scientific Instrumentation	1029 TIRF Labs
408 Quantum Northwest, Inc.	729 FEI Company	1118 Alomone Labs
409 Physik Instrumente (PI)	732 Avalance Biotech NEW	1120 Thomson Reuters EndNote
410 89 North		1128 Warner Instruments

Author Index

A

- A. Banaeiyan, A., 4101-Pos
Aalberts, D. P., 1454-Pos
Aalipour, A., 2183-Plat
Abbandonato, G., 139-Plat
Abbondanzieri, E. A., 423-Pos
Abbott, G. W., 617-Pos
Abd Halim, K., 1565-Pos
Abdeladim, L., 2904-Pos
Abdelfattah, A. S., 3183-Plat
Abdelrasoul, G. N., 3161-Pos
Abdelsayed, M., 1662-Pos
Abderemane Ali, F., 714-Pos
Abderemane-Ali, F., 1678-Pos
Abdermane-Ali, F., 668-Pos
Abdollah-Nia, F., 989-Pos
Abdullah, S., 1744-Pos
Abdus-Shakur, T., 3119-Pos
Abelein, A., 217-Plat
Abelson, D. M., 3220-Symp
Abelson, J., 2509-Pos
Abiraman, K., 3785-Pos
Ablan, F., 1494-Pos
Ablorh, N. D., 2958-Pos
Abney, J. R., 1110-Pos
Aboelkassem, Y., 1768-Pos
Abraham, A., 2999-Pos
Abrahamsson, T., 961-Pos
Abramczyk, B. M., 91-Plat
Abramov, A. Y., 2678-Pos,
2679-Pos, 2982-Pos
Abramson, J., 750-Pos,
1842-Pos, 1843-Pos,
2983-Pos
Abriel, H., 3229-Plat,
3851-Pos
Abrol, N., 2861-Pos,
2956-Pos
Abrol, R., 1570-Pos
Abu Khamidakh, A.,
2685-Pos
Abu Osman, N., 2282-Plat
Abualrous, E. T., 3354-Pos
AbuArish, A., 3169-Plat
Aburas, J., 268-Pos
Abusara, Z., 1010-Pos
Abusharkh, S. E., 3559-Pos
Acaron Ledesma, H. E.,
1931-Pos
Accardi, A., 739-Pos,
740-Pos, 788-Pos
Accili, E., 2718-Pos,
3835-Pos, 3836-Pos
Acevedo, M. J., 1296-Pos
Acharya, S., 3828-Pos
Acker, C., 964-Pos
Ackerman, D. G., 1487-Pos
Ackerman, L., 3457-Pos
Ackerman, M. J., 1754-Pos,
2798-Pos
Ackermann, M. A., 3922-Pos
Actis, P., 2092-Pos,
4029-Pos
Adamo, C., 2029-Pos
Adams, D. J., 1674-Pos
Adams, E. J., 105-Plat
Adams, J., 606-Pos
Adams, P., 1681-Pos,
3031-Pos
Adams, P. D., 190-Symp,
1937-Pos
Adams, P. G., 2576-Pos
Adams, P. J., 59-Subg
Adamson, B., 926-Pos
Addison, J., 1150-Plat
Addlagatta, A., 3427-Pos
Adelman, J., 616-Pos,
750-Pos, 1843-Pos
Adelman, J. L., 1842-Pos,
4059-Pos
Adhikari, A., 2841-Pos
Adhikari, A. S., 1813-Pos
Aditya, S., 2257-Plat
Adler, J., 3042-Pos
Adochite, R., 471-Pos
Adolfsson, K., 4098-Pos
Adrien, V., 451-Pos,
3605-Pos
Aebi, U., 884-Pos
Afek, A., 2518-Pos
Afonin, S., 2235-Plat
Afonine, P., 3031-Pos
Afonine, P. V., 190-Symp
Agafonov, R. V., 3269-Plat
Agam, O., 1173-Symp
Agarrd, D., 256-Pos
Agarwal, K., 3562-Pos
Agarwal, R., 2817-Pos
Agarwal, S. R., 3915-Pos
Agero, U., 1012-Pos
Aggarwal, V., 1982-Pos
Aghhtar, M., 919-Pos
Agianian, B., 3668-Pos
Agrawal, A., 469-Pos,
1576-Pos
Agrawal, U., 1140-Plat
Aguan, K., 1389-Pos
Aguayo, D., 2208-Plat,
2731-Pos
Agudelo, C. G., 2902-Pos
Aguilar, P. S., 2353-Pos
Aguilar, Y., 303-Pos
Aguillella, V. M., 1058-Pos,
1059-Pos, 2103-Pos
Agustin, Y., 2820-Pos
Ahemaiti, A., 965-Pos
Ahern, C., 1002-Pos
Ahern, C. A., 728-Pos,
2741-Pos
Ahmad, F., 1743-Pos
Ahmad, Y., 2051-Pos,
3076-Pos
Ahmadpour, D., 4101-Pos
Ahmed, S., 3869-Pos
Ahmet, I., 586-Pos, 660-Pos,
3191-Plat
Ahn, B., 3869-Pos
Ahn, S., 1233-Plat
Ahn, T., 377-Pos, 916-Pos
Ahnert, S. E., 3470-Pos
Ahrens, D., 891-Pos
Ahsan, A., 227-Plat
Ahyayauch, H., 1125-Plat
Aida, T., 3109-Pos
Aifantis, K., 2150-Plat
Aigrain, L., 1130-Plat,
2318-Pos
Aimond, F., 2854-Pos
Ainavarapu, S., 1972-Pos,
3394-Pos
Ainla, A., 965-Pos, 1055-Pos
Aisenbrey, C., 2228-Plat
Aistrup, G. L., 592-Pos,
2259-Plat, 2261-Plat
Ait-Benichou, S., 3783-Pos
Aitmou, Y., 818-Pos,
1752-Pos
Ait-Mou, Y., 817-Pos
Aizpun, R., 2702-Pos
Ajo-Franklin, C., 1079-Pos,
1239-Plat, 2117-Pos
Ajo-Franklin, C. M., 36-Subg
Ajtai, K., 2846-Pos
Akabori, K., 483-Pos
Akar, F. G., 1548-Pos
Akar, J. G., 1548-Pos
Akashi, S., 2347-Pos
Akbari Borhani, H.,
2402-Pos
Åkerman, B., 1054-Pos
Akeson, M., 1083-Pos
Akgun, B., 3588-Pos
Akhshi, P., 3570-Pos,
4051-Pos
Akhtar, M., 772-Pos
Akhter, S., 1759-Pos
Akimoto, T., 2827-Pos,
3091-Pos
Akimov, S. A., 497-Pos,
1466-Pos
Akin, E. J., 200-Plat
Akinola, L., 3018-Pos
Akinyi, T., 365-Pos
Akiyama, B. M., 2173-Plat
Akiyama, Y., 2071-Pos
Aknoun, S., 2904-Pos,
3041-Pos, 3045-Pos
Aksel, T., 2841-Pos
Aksentijevic, D., 945-Pos,
1549-Pos
Aksimentiev, A., 408-Pos,
1087-Pos, 2091-Pos,
3377-Pos, 3517-Pos,
3522-Pos
Aksoyoglu, M. A., 2529-Pos
Aktren, E. d., 290-Pos
Al Faouri, R., 1862-Pos
Alaimo, A., 722-Pos
Alam, S. L., 2876-Pos
Alamo, L., 808-Pos
Alan, L., 1025-Pos
Alansary, D., 1611-Pos
Alavian, K. N., 19-Subg
Alaybeyoglu, B., 4063-Pos
Alayoubi, S., 631-Pos,
3838-Pos
Albanesi, J. P., 1575-Pos
Albasini Mourao, M.,
3995-Pos
Al-Bassam, J., 2237-Plat,
3926-Pos
Alberdi, A., 722-Pos
Albert, A. P., 734-Pos
Albert, S., 1026-Pos,
2912-Pos
Albishri, W., 1766-Pos
Albrecht, T., 109-Plat,
110-Plat
Alcaino, C., 1713-Pos,
1724-Pos
Alcaraz, A., 1058-Pos,
1059-Pos, 2103-Pos
Alder, N., 1547-Pos
Alder, N. N., 1868-Pos
Aldrich, R. W., 3246-Plat,
3733-Pos
Alegre-Cebollada, J.,
1976-Pos, 2292-Plat,
2921-Pos
Alekhina, O. V., 2853-Pos
Aleksandrov, A., 2184-Plat
Aleksandrov, T., 3102-Pos,
3415-Pos
Aleman, E. A., 3516-Pos
Alexander, L. T., 108-Plat
Alexandre, D., 2130-Pos
Alexandrou, A., 3202-Plat
Alexandrovich, A., 1118-Symp
Alfieri, A., 1308-Pos
Alfieri, D., 1644-Pos
Alfieri, K., 2636-Pos
Alfieri, K. N., 1126-Plat,
2632-Pos
Alfonso Prieto, M., 525-Pos
Alfveby, J., 935-Pos
Algamal, M., 1198-Plat
AlGhaadi, D., 661-Pos
Alhakamy, N., 515-Pos
Al-Hashimi, H. M.,
1449-Pos
Alhoshani, A., 2072-Pos
Ali, R., 2686-Pos
Ali, S. R., 1654-Pos
Ali, T., 2447-Pos
Alink, M., 3039-Pos
Alivisatos, P., 1135-Plat
Alizadehheidari, M.,
1402-Pos, 2168-Plat
Alkhamici, H., 1500-Pos
Al-khayatt, B., 1645-Pos,
Al-khayatt, B. M., 3651-Pos
Allahverdi, A., 397-Pos
Allahverdzadeh, M.,
2113-Pos
Allain, J., 3202-Plat
Allan, A., 3189-Plat
Allard, J., 1193-Plat
Allen, I., 2681-Pos
Allen, J. P., 3485-Pos
Allen, K. D., 3155-Pos
Allen, M. J., 5-Subg
Allen, N. D., 723-Pos
Allen, P. D., 647-Pos,
3682-Pos
Allen, T. W., 431-Pos,
521-Pos, 669-Pos,
670-Pos, 675-Pos, 2527-Pos
Aller, S. G., 3987-Pos
Almanaiyte, M., 3808-Pos
Almaqwash, A. A., 1416-Pos
Almassy, J., 560-Pos
Almeida, F. C., 1959-Pos,
2230-Plat
Almeida, P. F., 1494-Pos
Almo, S., 150-Plat
Al-Moubarak, E., 3784-Pos
Alnajjar, K. S., 1872-Pos
Aloni, S., 2029-Pos
Alonso, A., 1125-Plat,
1474-Pos
Alpizar, Y., 1699-Pos
Alpizar, Y. A., 1658-Pos,
1707-Pos
Alqassim, S. S., 251-Pos
Alqazzaz, M., 1731-Pos
Alt, P., 3100-Pos
Altafini, C., 117-Plat
Altamirano, F., 606-Pos,
647-Pos, 3682-Pos
Altenberg, G. A., 1152-Plat,
3849-Pos
Alttindal, T., 302-Pos
Altman, D., 903-Pos,
3864-Pos
Altman, R., 88-Plat, 980-Pos
Altman, R. B., 2399-Pos
Altomare, C., 621-Pos,
627-Pos, 1686-Pos
Aluru, N., 2828-Pos
Alushin, G., 2236-Plat

- Alushin, G. M., 1770-Pos
 Aluvila, S., 157-Plat
 Alvarado, F., 571-Pos
 Alvarenga, É. C., 1554-Pos
 Alvarez, F. J., 3022-Pos,
 3985-Pos
 Alvarez, L., 3841-Pos
 Alvarez, M., 1189-Plat
 Alvarez, Y. D., 1307-Pos
 Alvarez-Gonzalez, B.,
 1819-Pos
 Álvarez-González, B.,
 3972-Pos
 Alvarez-Laviada, A.,
 1645-Pos, 3855-Pos
 Alvarez-Sanchez, R., 3652-Pos
 Alwarawrah, M., 504-Pos
 Al-Zoubi, A., 1042-Pos
 Al-Zyouid, W., 2516-Pos
 Amano, K., 1855-Pos
 Amaral, C., 2723-Pos
 Amaraouch, M., 714-Pos
 Ambjörnsson, T., 1402-Pos
 Amblee, V., 3327-Pos
 Ambrosino, P., 722-Pos
 Ambudkar, S. V., 3989-Pos
 Amcheslavsky, A., 1607-Pos,
 1610-Pos
 Ameer-Beg, S., 535-Pos
 Amenitsch, H., 316-Pos,
 2595-Pos
 Amer, B. R., 3430-Pos
 Amero-Tello, C., 1311-Pos
 Ametepé, J. D., 1100-Pos
 Amin, A., 1850-Pos
 Amininasab, M., 2420-Pos
 Amir, D., 3406-Pos
 Amireault, P., 4062-Pos
 Amitai, A., 1386-Pos
 Amodaj, N., 2012-Pos
 Amodeo, G., 2820-Pos
 Amodeo, G. F., 3845-Pos
 Amoscato, A. A., 4064-Pos
 Amoussouvi, A., 2498-Pos
 Ampem, P., 2686-Pos
 Amrein, M., 2282-Plat
 Amstad, E., 229-Plat
 Amstrup Pedersen, P.,
 2819-Pos
 Amuzescu, B. P., 2783-Pos
 Amzel, L. M., 251-Pos
 An, J., 2184-Plat
 An, M., 471-Pos,
 1167-Symp, 1510-Pos
 An, S., 3325-Pos
 Anand, G. S., 3266-Plat
 Anand, P., 1792-Pos,
 3535-Pos
 Anand, R., 615-Pos
 Anandakrishnan, R., 405-Pos
 Ananthanarayanan, B.,
 1230-Plat, 3492-Pos
 Anantharam, A., 171-Plat,
 1586-Pos
 Anastassiia, M., 520-Pos
 Andemariam, B., 3637-Pos
 Ander, M., 3509-Pos
 Anderluh, G., 476-Pos,
 1515-Pos
 Andersen, B., 138-Plat
 Andersen, N., 1720-Pos
 Andersen, O. J., 3451-Pos
 Andersen, O. S., 1519-Pos,
 2608-Pos, 3245-Plat,
 4038-Pos
 Anderson, B., 3903-Pos
 Anderson, M. W., 3366-Pos
 Anderson, P., 4030-Pos
 Anderson, R. L., 3692-Pos
 Andersson, D., 583-Pos
 Andersson, H., 2289-Plat
 Andersson, K. B., 3913-Pos
 Andersson, M., 2160-Plat,
 2768-Pos, 3736-Pos
 Andersson, S. B., 976-Pos,
 4025-Pos
 Andino, R., 2449-Pos
 Ando, D., 1278-Pos,
 2448-Pos, 3071-Pos,
 3938-Pos
 Ando, K., 3493-Pos
 Ando, T., 517-Pos, 826-Pos
 Andolfi, L., 117-Plat,
 1966-Pos, 3141-Pos
 Andrade, M. F., 1555-Pos
 Andrade, M., 1599-Pos
 Andras, M., 895-Pos
 Andrecka, J., 978-Pos,
 998-Pos
 Andreev, A., 3068-Pos
 Andreev, O. A., 471-Pos,
 1167-Symp
 Andresen, B., 2037-Pos
 Andresen, K., 2220-Plat,
 2278-Plat
 Andreu, D., 1509-Pos
 Andrich, K., 317-Pos
 Andricioaei, I., 2468-Pos
 Andronache, Z., 646-Pos
 Angelova, P. R., 2678-Pos,
 2982-Pos
 Angiolini, J. F., 839-Pos
 Angleson, J. K., 2682-Pos
 Angoli, D., 3835-Pos
 Angstadt, S., 854-Pos
 Angstmann, C. N., 3943-Pos
 Anishchanka, I., 3316-Pos
 Anishkin, A., 2833-Pos,
 2834-Pos
 Ann, M., 1332-Pos
 Annen, A. W., 1157-Plat
 Annibale, P., 1992-Pos
 Anowarul, A., 1851-Pos
 Ansari, A., 3497-Pos
 Anselmetti, D., 2277-Plat
 Anselmi, C., 1854-Pos,
 1877-Pos
 Anson, B. D., 3648-Pos
 Antes, I., 3271-Plat
 Antipova, O., 3469-Pos
 Antoinette, K. J., 520-Pos
 Antollini, S. S., 3604-Pos
 Antonakos, C., 1098-Pos
 Antonny, B., 527-Pos
 Antoons, G., 601-Pos
 Antosova, A., 304-Pos
 Antrosbus, S. P., 756-Pos
 Anunciado, D., , 1535-Pos
 Anzalone, A., 366-Pos
 Aoyama, F., 3856-Pos
 Apellaniz, B., 3593-Pos
 Apollonio, F., 1488-Pos
 Appathurai, R., 1328-Pos
 Appert-Rolland, C., 1833-Pos
 Appleby, T., 1330-Pos
 Aprile, F. A., 1361-Pos
 Aquila, M., 3172-Plat
 Arai, K., 966-Pos
 Arai, T., 2835-Pos, 3955-Pos
 Araiza-Olivera, D., 824-Pos
 Arakelyan, V., 495-Pos
 Aramini, J. M., 949-Pos
 Aranson, I. S., 2122-Pos
 Arantes, G. M., 2062-Pos,
 3487-Pos
 Arasteh, S., 2809-Pos
 Araujo, A. U., 2614-Pos
 Araya, C. L., 2506-Pos
 Araya, I., 2731-Pos
 Araya, J., 2168-Plat, 3508-Pos
 Arbore, C., 388-Pos
 Arbuzova, A., 510-Pos
 Arcangeletti, M., 3834-Pos
 Arcario, M. J., 2761-Pos
 Arce, F. T., 509-Pos
 Archer, C. R., 3794-Pos
 Aréchiga Figueroa, I. A.,
 724-Pos
 Arendt, L. A., 268-Pos
 Areso, P., 722-Pos
 Argenta, L., 880-Pos
 Argento, A., 1803-Pos
 Argoul, F., 888-Pos
 Arias, J. M., 2767-Pos
 Aridome, M., 2934-Pos
 Arif Pavel, G., 3812-Pos
 Arispe, N., 1261-Plat,
 1507-Pos
 Aritake, K., 262-Pos, 3422-Pos
 Arlow, D. H., 533-Pos
 Armache, J., 374-Pos
 Armbrüster, A., 1612-Pos
 Armes, H., 1007-Pos
 Armijo, G., 1261-Plat
 Armoundas, A., 659-Pos
 Armoundas, A. A., 2181-Plat
 Armstrong, C. M., 2719-Pos
 Armstrong, G., 2364-Pos,
 3347-Pos
 Armstrong, R. N., 250-Pos
 Arnez, C., 153-Plat,
 208-Plat
 Arndt-Jovin, D. J., 1202-Plat
 Arnett, D. C., 2342-Pos
 Arnold, A., 2596-Pos
 Arnold, A. A., 2538-Pos,
 2574-Pos
 Arnold, D. P., 3155-Pos
 Aronova, M. A., 3037-Pos
 Aronsen, J., 3895-Pos
 Aronsen, J. M., 3854-Pos,
 3913-Pos
 Arora, K., 1250-Plat
 Arora, R., 1640-Pos
 Arosio, P., 3456-Pos
 Aroutiounian, S., 4088-Pos
 Arpağ, G., 3952-Pos
 Arrar, M., 1733-Pos
 Arraud, N., 2283-Plat
 Arriaga, L. R., 229-Plat
 Arrigoni, C., 668-Pos,
 1524-Pos, 1678-Pos,
 3172-Plat
 Arrondo, J. R., 215-Plat
 Arroyo, M., 443-Pos
 Arruda-Neto, J. D., 3994-Pos
 Arseniev, A. S., 3281-Pos
 Artemieva, A. B., 1484-Pos,
 3554-Pos
 Artigas, P., 2942-Pos
 Artsimovitch, I., 2465-Pos,
 2470-Pos
 Arulmoli, J., 2887-Pos
 Arunmanee, W., 1293-Pos
 Arvai, A., 1161-Plat
 Arya, G., 368-Pos, 412-Pos
 Asakura, T., 1051-Pos
 Asano, Y., 2347-Pos
 Asare-Okai, P., 1447-Pos
 Asaro, A. B., 202-Plat
 Asbury, C., 842-Pos,
 843-Pos, 844-Pos,
 846-Pos, 3221-Symp
 Ashford, M. L., 2935-Pos
 Ashley, E. A., 1065-Pos
 Ashley, T. T., 976-Pos
 Ashraf, M., 1548-Pos
 Ashrafzadeh, P., 3578-Pos
 Ashtari, M., 3550-Pos,
 3551-Pos
 Asiri, S., 1766-Pos
 Askar, S. M., 2422-Pos
 Asmar, A. J., 4097-Pos
 Asnacios, A., 893-Pos,
 1798-Pos, 1799-Pos,
 1800-Pos, 1801-Pos
 Asp, M. L., 2859-Pos
 Assaf, M., 1888-Pos
 Assmann, M. C., 781-Pos
 Asuthkar, S., 1694-Pos
 Ataka, K., 3390-Pos
 Ataullakhanov, F. I., 841-Pos
 Atkins, W. M., 1527-Pos
 Atkinson, J., 226-Plat,
 502-Pos, 2158-Plat
 Attali, B., 720-Pos, 3801-Pos
 Atzberger, P. J., 3564-Pos
 Auclair, S. M., 2406-Pos
 Audu, C. O., 544-Pos
 Auerbach, A., 1714-Pos,
 1715-Pos, 1716-Pos,
 1717-Pos
 Auernheimer, V., 873-Pos
 Auerswald, J., 2602-Pos,
 3612-Pos
 Auger, M., 456-Pos,
 459-Pos, 1532-Pos,
 2234-Plat, 2613-Pos
 Auger, T., 1066-Pos
 Augustinowski, K., 775-Pos
 Augusto, M. T., 3590-Pos
 Augustynek, B., , 21-Subg
 Augustynek, B. S., 3732-Pos
 Auldridge, M. E., 1194-Plat
 Aureli, S., 1490-Pos
 Auroousseau, M. R., 762-Pos
 Aussenac, F., 2228-Plat
 Austin, D., 478-Pos
 Austin, J. L., 3057-Pos
 Auth, T., 2910-Pos
 Autry, J. M., 2863-Pos,
 3672-Pos
 Autzen, H. E., 530-Pos
 Auvray, L., 1066-Pos
 Aveladaño, M. I., 3604-Pos
 Ávila, C., 1942-Pos
 Ávila, L., 2548-Pos
 Ávila-Medina, J., 1617-Pos
 Avitall, B., 1640-Pos
 Axelrod, D., 171-Plat
 Axelsen, P., 1485-Pos,
 3444-Pos
 Ayad, W. A., 2812-Pos
 Ayade, H., 2934-Pos
 Ayade, H. L., 868-Pos
 Aydin, M., 1878-Pos
 Ayesa, U., 437-Pos
 Ayon, R. J., 733-Pos
 Azatov, M., 3962-Pos
 Azia, A., 2449-Pos
 Azimov, R., 2777-Pos
 Azizan, E., 2161-Plat
 Azizan, E. A., 689-Pos
 Azouzi, S., 4062-Pos

B

- B. Adiels, C., 4101-Pos
 Baaden, M., 1732-Pos,
 3358-Pos, 4083-Pos
 Baaken, G., 1073-Pos,
 2825-Pos, 3150-Pos,
 3194-Plat
 Baartscheer, A., 3898-Pos
 Baase, W. A., 1394-Pos
 Baba, Y., 3545-Pos
 Babcock, J., 2513-Pos
 Babii, O., 2235-Plat
 Babikow, E., 3766-Pos
 Baboolal, T., 3163-Symp

Babu Reddy, J., 43-Subg
 Babu, M. M., 2449-Pos
 Bachand, G. D., 1141-Plat,
 1774-Pos
 Bachand, M., 1141-Plat
 Bachas, S., 2215-Plat
 Bachert, C., 2567-Pos
 Bacia, K., 2602-Pos, 2609-Pos,
 3048-Pos, 3612-Pos
 Back, T., 573-Pos
 Backendorf, C., 2147-Plat
 Backlund, M., 1005-Pos
 Backman, V., 1905-Pos
 Baclayon, M., 1949-Pos
 Badani, H., 3585-Pos
 Baddeley, D., 639-Pos,
 2021-Pos, 2263-Plat,
 3056-Pos
 Bader, C., 2369-Pos
 Badger, C. D., 3663-Pos
 Badheka, D., 1692-Pos,
 3796-Pos
 Bae, C., 1572-Pos, 1700-Pos,
 2806-Pos, 3819-Pos,
 3827-Pos
 Bae, J., 994-Pos
 Bae, S., 2115-Pos
 Bae, W., 1423-Pos
 Baell, J. B., 533-Pos
 Baenziger, J. E., 1526-Pos
 Baez-Nieto, D., 1178-Plat
 Baez-Nieto, D. E., 2822-Pos
 Báez-Págan, C. A., 1721-Pos
 Bag, N., 1504-Pos
 Bagatolli, L., 2571-Pos
 Bagchi, A., 557-Pos
 Bagchi, D., 385-Pos
 Bagchi, P., 3064-Pos
 Baggett, V. L., 691-Pos
 Baghel, P. S., 1971-Pos
 Bagnéris, C., 198-Plat
 Bagriantsev, S. N., 1708-Pos
 Bagshaw, C. R., 344-Pos
 Bagur Quetglas, R., 942-Pos
 Bahal, R., 1167-Symp
 Bahamonde, M., 3737-Pos
 Bahar, I., 1837-Pos
 Bahembera, E., 577-Pos
 Bahira, M., 1421-Pos
 Bahrami, A., 109-Plat
 Bai, D., 2814-Pos
 Bai, F., 2877-Pos, 3905-Pos
 Bai, J., 959-Pos, 1582-Pos,
 2654-Pos
 Bailey, M. E., 1771-Pos
 Baillie, G. S., 620-Pos
 Bain, A. J., 2009-Pos
 Bains, M., 758-Pos
 Baird, B., 545-Pos
 Baird, B. A., 1204-Plat
 Baird, M. A., 2198-Plat
 Baiz, C., 2226-Plat
 Baiz, C. R., 2322-Pos,
 2732-Pos
 Bajaj, H., 2815-Pos, 2816-Pos
 Bak, J., 1919-Pos
 Bakandritsos, A., 2116-Pos
 Baker, A. J., 3916-Pos
 Baker, B., 1925-Pos
 Baker, B. J., 2113-Pos
 Baker, D., 190-Symp,
 1770-Pos, 2248-Symp
 Baker, J. E., 799-Pos,
 3677-Pos
 Baker, L., 257-Pos
 Baker, M., 3031-Pos
 Baker, M. R., 574-Pos
 Baker, N. A., 2579-Pos
 Baker, S., 1969-Pos,
 3105-Pos
 Baker, T. A., 1248-Plat,
 2247-Symp
 Baki, L., 549-Pos, 3779-Pos
 Bakkaloglu, B., 1068-Pos
 Bakshi, S., 2233-Plat,
 2456-Pos
 Bal, N. C., 2954-Pos
 Balaban, N. Q., 1173-Symp
 Balaji Ramachandran, S.,
 2659-Pos
 Balajthy, A., 2788-Pos
 Balasubramaniam, D.,
 3419-Pos, 3484-Pos
 Balasubramanian, M.,
 51-Subg
 Balatoni, I., 661-Pos
 Balayan, M. H., 3996-Pos
 Baldauf, C., 3308-Pos
 Baldus, M., 257-Pos,
 3176-Plat
 Baldwin, A. J., 194-Symp
 Baldwin, S. A., 3175-Plat
 Baldwin, T., 986-Pos
 Bale, J. B., 2248-Symp
 Balijepalli, A., 1074-Pos
 Balijepalli, R. C., 1669-Pos
 Ball, K., 2433-Pos, 3313-Pos
 Ballast, A., 2547-Pos
 Ballester, M., 1400-Pos
 Ballone, P., 2526-Pos
 Balmorez, T., 3313-Pos
 Balog, E., 3081-Pos
 Balogová, L., 946-Pos
 Balse, E., 3743-Pos
 Balta, B., 3392-Pos
 Baltazar, C. S., 209-Plat
 Baltimore, D., 3504-Pos
 Balusek, C., 531-Pos
 Bamann, C., 1923-Pos
 Bamberg, E., 1923-Pos
 Bamberg, K. R., 1040-Pos
 Bamgboye, M. A., 2706-Pos
 Bammes, B., 3031-Pos
 Bamshad, M. J., 2840-Pos,
 3891-Pos
 Ban, D., 2218-Plat
 Ban, J., 235-Plat
 Banach, K., 1640-Pos
 Banaei, N., 1243-Plat
 Bandaria, J. N., 2201-Plat
 Bandell, M., 3231-Plat
 Bandi, S., 2364-Pos
 Bandlow, V., 3272-Plat
 Bando, T., 3512-Pos
 Bandyopadhyay, A., 1831-Pos
 Barral, J., 1231-Plat,
 3412-Pos, 3871-Pos
 Barrantes, F. J., 3604-Pos
 Barrera, F. N., 1167-Symp
 Barrera, N., 303-Pos
 Barrera, N. P., 1350-Pos
 Barrett, C. J., 3912-Pos
 Barrett, J., 1931-Pos
 Barrett, P. J., 1533-Pos
 Barretta, J., 1400-Pos
 Barros, T. P., 2317-Pos
 Barro-Soria, R., 725-Pos
 Barrozo, A. H., 3420-Pos
 Barry, B. A., 3478-Pos
 Barsky, D., 3139-Pos
 Bartsaghi, A., 3039-Pos
 Bartha, F., 3360-Pos
 Barthmes, M., 2937-Pos
 Bartholomew, B., 410-Pos
 Bartl, F., 3627-Pos
 Bartl, F. J., 206-Plat
 Bartlett, J. J., 1082-Pos
 Bartok, A., 2791-Pos
 Bartolucci, C., 621-Pos,
 627-Pos, 3656-Pos
 Bartsch, D., 1671-Pos
 Bartusek, J., 935-Pos
 Barua, B., 2870-Pos,
 2873-Pos
 Baruscotti, M., 3656-Pos
 Baruteau, A., 3851-Pos
 Barylko, B., 1575-Pos
 Bar-Ziv, R., 2251-Symp
 Bar-ziv, R. H., 2131-Pos
 Basak, S., 2380-Pos
 Basan, M., 876-Pos
 Bashkirov, P., 1468-Pos,
 3546-Pos
 Basilio, D., 739-Pos,
 740-Pos, 2940-Pos
 Baskaran, P., 1705-Pos
 Bassani, J. W., 597-Pos,
 2689-Pos
 Bassani, R. A., 597-Pos,
 2689-Pos
 Bassereau, P., 1259-Plat,
 2287-Plat
 Bassey, C. E., 3128-Pos
 Bassham, D., 1009-Pos
 Bassi, N., 2261-Plat
 Bassik, M. C., 220-Plat
 Bassler, B. L., 2135-Pos
 Basso, L. G., 1506-Pos
 Bastidas, M., 3530-Pos
 Bastlund, J. F., 1723-Pos
 Bastounis, E., 3972-Pos
 Bastounis, E. E., 1819-Pos
 Basu, S., 2447-Pos
 Batchelor, M., 1312-Pos,
 3163-Symp
 Bates, F., 3867-Pos
 Bathe, M., 1504-Pos
 Batishchev, O. V., 341-Pos
 Batista, A. P., 1869-Pos
 Batista, C., 1554-Pos
 Batonnet-Pichon, S.,
 1800-Pos
 Batta, G., 1028-Pos
 Batters, C., 905-Pos, 910-Pos
 Battisti, A., 139-Plat
 Battle, A. R., 2267-Plat
 Bauer, C. S., 1590-Pos
 Bauer, D. L., 1993-Pos
 Bauer, R. J., 1393-Pos
 Bauernhofer, T., 2749-Pos,
 2782-Pos
 Bauerova-Hlinkova, V.,
 567-Pos
 Baukrowitz, T., 786-Pos,
 3773-Pos
 Baumann, A., 3390-Pos
 Baumeister, W., 3030-Pos
 Baumgart, T., 2653-Pos,
 3581-Pos
 Bausch, A. R., 863-Pos,
 866-Pos, 2128-Pos
 Bausch, C., 4000-Pos
 Bavi, N., 2805-Pos
 Bax, A., 3587-Pos, 3591-Pos
 Baxley, T., 3659-Pos
 Baydyuk, M., 3178-Plat
 Baykal-caglar, E., 504-Pos
 Bayles, K. W., 2350-Pos
 Bayley, H., 108-Plat,
 1067-Pos
 Bayliss, R. A., 1228-Plat
 Baylon, J., 85-Plat
 Baylor, S. M., 643-Pos
 Bayly, P., 1820-Pos
 Bayly, P. V., 2911-Pos
 Baymann, F., 2969-Pos
 Bayraktar, H., 2111-Pos
 Bazil, J. N., 1225-Plat
 Beam, K. G., 695-Pos,
 696-Pos
 Beard, N. A., 594-Pos,
 641-Pos
 Beauchamp, K., 2048-Pos
 Beaugrand, M., 703-Pos,
 2596-Pos
 Beaulieu, M. J., 1653-Pos
 Beausang, J. F., 1177-Symp,
 1214-Plat
 Beaven, A. H., 4038-Pos
 Beaver, T., 3869-Pos
 Becerra, N., 3681-Pos,
 4026-Pos
 Bechinger, B., 529-Pos,
 1512-Pos, 2228-Plat
 Bechstedt, S., 3053-Pos
 Beck, A. E., 2840-Pos,
 3891-Pos

- Beck, B. W., 275-Pos
 Beck, K., 567-Pos
 Beck, L. E., 3040-Pos
 Becker, J. S., 1068-Pos
 Becker, K., 22-Subg
 Becker, M., 1835-Pos
 Becker, N., 401-Pos, 694-Pos
 Becker, N. A., 367-Pos
 Becker, S., 2218-Plat
 Beckermann, T. M., 199-Plat
 Beckett, D., 1297-Pos,
 2215-Plat
 Beckler, M., 2825-Pos,
 3702-Pos
 Beckstead, J., 950-Pos
 Beckstein, O., 369-Pos,
 1846-Pos
 Beckwith, R., 149-Plat,
 2366-Pos
 Bédard, L., 1532-Pos
 Bednaarczyk, P., 21-Subg
 Bednarczyk, P., 3843-Pos
 Bednarikova, Z., 304-Pos
 Beech, D. J., 3175-Plat
 Beerlink, A., 2568-Pos
 Beesetty, P., 1696-Pos
 Beeton, C., 2786-Pos,
 2787-Pos, 3738-Pos
 Begemann, B., 757-Pos
 Behnke Parks, W., 3925-Pos
 Behrends, J. C., 1073-Pos,
 2825-Pos, 3150-Pos,
 3194-Plat
 Behrendt, M., 1695-Pos
 Behunin, S., 3876-Pos
 Behunin, S. M., 3877-Pos
 Beicker, K. N., 233-Plat
 Beiert, T., 3914-Pos
 Bein, A., 2231-Plat
 Beis, I., 4047-Pos
 Belardinelli, L., 1656-Pos,
 1664-Pos, 1665-Pos,
 1753-Pos, 1757-Pos
 Belcher, J., 162-Plat, 4060-Pos
 Belcher, P. E., 2415-Pos
 Beletkaia, E., 2628-Pos
 Belevych, A. E., 1632-Pos,
 2181-Plat
 Belknap, B., 805-Pos,
 3675-Pos
 Bell, D., 1413-Pos
 Bell, D. C., 2087-Pos
 Bell, J. C., 375-Pos, 3511-Pos
 Bell, J. D., 3553-Pos
 Bell, K., 3906-Pos
 Bell, T. D., 3047-Pos
 Bellaiche, M. M., 1862-Pos
 Beller, Z., 3749-Pos,
 3750-Pos, 3791-Pos
 Bellin, D. L., 4099-Pos
 Bellin, M., 2795-Pos
 Belliveau, N., 2462-Pos
 Bellve, K., 3063-Pos
 Belov, O., 4024-Pos
 Belsare, S., 3306-Pos
 Belthangady, C., 966-Pos
 Beltram, F., 139-Plat,
 1133-Plat
 Belyy, V., 1776-Pos,
 2833-Pos
 Bemquerer, M. P., 2230-Plat
 Ben Chaim, Y., 548-Pos
 Ben Johnny, M., 59-Subg,
 1670-Pos, 1681-Pos,
 3171-Plat
 Benally, C. V., 3483-Pos
 Bénard, L., 3259-Plat
 Bendahmane, M., 1798-Pos
 Bendix, P. M., 3618-Pos
 Benedetti, A., 650-Pos
 Benedetti, B., 697-Pos
 Benedetto, A., 2526-Pos
 Benesch, J. L., 4-Subg
 Benetis, R., 632-Pos
 Bengtsson, E., 801-Pos
 Benitah, J., 2702-Pos
 Bénitah, J., 593-Pos
 Benítez, R., 2008-Pos
 Ben-Jacob, E., 876-Pos,
 1914-Pos, 1915-Pos
 Bennati, M., 3151-Pos
 Benndorf, K., 3773-Pos
 Benner, E., 1296-Pos
 Benninger, R., 1934-Pos
 Benninger, R. K., 3859-Pos
 Bennion, B. J., 3139-Pos
 Benoy, V., 1658-Pos
 Benseñor, L., 839-Pos
 Benson, L. M., 1530-Pos
 Ben-Tal, N., 1847-Pos
 Benton, R., 770-Pos
 Bentzen, B. H., 731-Pos
 Bentzinger, F. C., 636-Pos
 Benz, R., 758-Pos
 Benza, V. G., 420-Pos
 Beqollari, D., 649-Pos,
 699-Pos
 Bera, K., 2380-Pos
 Beratan, D. N., 2973-Pos,
 2974-Pos
 Bercy, M., 1417-Pos
 Berditsch, M., 470-Pos,
 2235-Plat
 Berdondini, L., 4001-Pos
 Berecki, G., 1674-Pos
 Berendsen, H., 3239-Plat
 Berendsen, H. J., 208-Plat
 Berezhevskii, A., 1574-Pos
 Bergamelli, L., 636-Pos
 Bergdoll, L., 2969-Pos
 Bergem, S., 934-Pos
 Bergen, H., 1530-Pos
 Berger, A., 162-Plat
 Berger, A. J., 4060-Pos
 Berger, B. W., 1347-Pos
 Berger, C. L., 1789-Pos,
 3939-Pos
 Berger, J. M., 2311-Pos
 Berger, T. K., 1179-Plat
 Berghuis, B., 1389-Pos
 Berghuis, B. A., 1162-Plat,
 1988-Pos
 Berglund, N. A., 513-Pos
 Bergsmann, J., 1615-Pos
 Berk, S., 1000-Pos
 Berk, V., 2201-Plat
 Berkland, C., 515-Pos
 Berkovich, R., 1976-Pos
 Berman, J., 1479-Pos
 Berman, L. E., 1940-Pos
 Bermudez, I., 1713-Pos
 Bernal, A., 2932-Pos
 Bernardi, P., 18-Subg
 Bernardo-Seisdedos, G.,
 722-Pos
 Bernauer, J., 3544-Pos
 Berndsen, C. E., 2362-Pos
 Bernèche, S., 2744-Pos
 Berne, B., 2272-Plat
 Berneche, S., 1183-Plat,
 1184-Plat, 3410-Pos
 Bernèche, S., 740-Pos,
 741-Pos
 Berne-Dedieu, A., 1798-Pos
 Bernhard, F., 3150-Pos
 Bernheim, A., 2868-Pos
 Bernick, K. B., 4030-Pos
 Bernstein, S. I., 248-Pos,
 3918-Pos, 3921-Pos
 Bernt, W., 3162-Pos
 Berrido, A. M., 358-Pos
 Berry, R. M., 2919-Pos
 Bers, D., 2986-Pos
 Bers, D. M., 564-Pos,
 596-Pos, 610-Pos, 611-Pos,
 756-Pos, 1665-Pos,
 2671-Pos, 2691-Pos,
 2699-Pos, 2857-Pos,
 2946-Pos, 3697-Pos
 Bersell, K. R., 2189-Plat
 Bershadsky, A., 852-Pos
 Bershadsky, A. D., 82-Symp
 Bershtitsky, S. Y., 3865-Pos
 Bertaccini, E., 2768-Pos
 Bertaux, N., 1027-Pos
 Berthelier, V., 3446-Pos
 Bertholet, A. M., 2993-Pos
 Bertl, A., 1580-Pos, 1703-Pos
 Bertoncini, C., 3477-Pos
 Bertram, J., 3506-Pos
 Besaw, J. E., 263-Pos
 Besenbacher, F., 4032-Pos
 Beskok, A., 4097-Pos
 Bessman, N. J., 557-Pos
 Bett, G. C., 3190-Plat,
 3744-Pos
 Betterton, M., 1773-Pos
 Betz, T., 2908-Pos
 Betzold, A. C., 3948-Pos
 Beuning, P., 1166-Plat,
 2168-Plat, 3508-Pos
 Beutner, G., 19-Subg, 938-Pos
 Bewersdorf, J., 37-Subg
 Beyene, E., 1460-Pos
 Beyer, J., 2101-Pos
 Bezanilla, F., 99-Plat,
 682-Pos, 683-Pos,
 1180-Plat, 2265-Plat,
 2940-Pos, 2941-Pos,
 3751-Pos, 3752-Pos,
 3998-Pos
 Bezold, K. L., 1748-Pos
 Bezrukov, L., 2626-Pos
 Bezrukov, S., 3772-Pos
 Bezrukov, S. M.,
 2528-Pos, 2981-Pos,
 2983-Pos, 2984-Pos
 Bhabha, G., 68-Subg,
 1775-Pos, 1783-Pos
 Bhadriraju, K., 141-Plat
 Bhagawati, M., 3492-Pos
 Bhalay, G., 3809-Pos
 Bharat, L., 3287-Pos
 Bharill, S., 122-Plat
 Bhasne, K., 1360-Pos
 Bhat, A., 2098-Pos
 Bhat, P., 2174-Plat,
 3523-Pos
 Bhatia, S., 3272-Plat
 Bhatia, V. K., 3617-Pos
 Bhatnagar, D., 1511-Pos
 Bhatnagar, R., 1904-Pos
 Bhattacharya, A., 333-Pos
 Bhattacharya, M., 3461-Pos
 Bhattacharya, S., 1194-Plat,
 2686-Pos, 3209-Plat,
 3580-Pos
 Bhattacharyya, I., 166-Plat
 Bhaya, D., 2923-Pos
 Bhowmick, A., 3305-Pos
 Bhowmik, D., 1371-Pos
 Bhunia, A., 319-Pos
 Bialecka-Fornal, M.,
 2804-Pos
 Bialek, W., 1919-Pos
 Bianchet, M. A., 251-Pos
 Bianchini, P., 1016-Pos,
 1031-Pos, 3043-Pos,
 3054-Pos
 Bianco, P., 356-Pos,
 1975-Pos, 2291-Plat
 Bibelnicks, A., 1472-Pos
 Bichraoui, H., 695-Pos
 Bidaux, G., 1689-Pos
 Bidone, T. C., 898-Pos
 Biebricher, A. S., 1418-Pos
 Bielicki, J. K., 3611-Pos
 Bieling, P., 867-Pos
 Bielska, A. A., 2579-Pos
 Bier, B., 991-Pos
 Bierings, R., 2665-Pos
 Bieschke, J., 317-Pos,
 2381-Pos
 Biesiadecki, B. J., 1742-Pos,
 3665-Pos, 3667-Pos
 Bieske, E., 926-Pos
 Biet, M., 1667-Pos
 Bigdeli, A. A., 614-Pos
 Biggin, P. C., 90-Plat,
 161-Plat, 762-Pos,
 2769-Pos
 Biggins, S., 846-Pos,
 3221-Symp
 Bignucolo, O., 3410-Pos
 Biham, O., 2298-Wkshp
 Billeh, Y. N., 3110-Pos
 Billings, G. H., 2914-Pos
 Billington, N., 804-Pos,
 900-Pos, 905-Pos,
 Billman, G. E., 1632-Pos
 Bilsel, O., 1247-Plat
 Bhabha, G., 68-Subg
 Bilyard, T., 1777-Pos
 Binder, B., 970-Pos
 Binder, J. K., 1160-Plat
 Binder, M. D., 1679-Pos
 Binder, W., 3048-Pos
 Bindreither, D., 1677-Pos
 Binette, V., 529-Pos
 Birch, C., 2837-Pos
 Birger, M., 1973-Pos
 Birgit, S., 522-Pos
 Biris, N., 3495-Pos
 Birkedal, V., 352-Pos,
 1142-Plat
 Birkenfeld, A. L., 78-Symp
 Birol, M., 2339-Pos
 Biron, E., 2234-Plat
 Birtalan, E., 1741-Pos
 Birtwistle, M. R., 2997-Pos
 Bischak, C. G., 2029-Pos
 Bischof, J., 1817-Pos
 Bischope, P., 2680-Pos
 Bisello, A., 3348-Pos
 Bisha, I., 1844-Pos, 3834-Pos
 Bishop, B., 514-Pos
 Biswal, S., 3680-Pos
 Biswas, K. H., 2631-Pos
 Biteen, J. S., 1032-Pos,
 2004-Pos, 2006-Pos,
 2010-Pos, 2199-Plat,
 3002-Pos
 Bittl, R., 1295-Pos
 Bittman, R., 499-Pos, 1980-
 Pos
 Bittner, M. A., 171-Plat
 Bizzarri, R., 139-Plat,
 3043-Pos
 Bjornholm, T., 3617-Pos
 Blab, G., 1240-Plat
 Blab, G. A., 1034-Pos,
 3943-Pos
 Black, L., 539-Pos
 Blackburn, M. E.,
 2306-Wkshp
 Blackwell, D., 2862-Pos
 Blackwell, R., 1773-Pos
 Blair, J. A., 1573-Pos
 Blanchard, S. C., 980-Pos
 Blanchoin, L., 2871-Pos,
 3165-Symp

Blanco, M., 2501-Pos
 Blank, P. S., 2626-Pos
 Blankenship, R. E., 920-Pos
 Blankschtein, D., 4044-Pos
 Blanton, M. P., 1719-Pos
 Blasiak, A., 4096-Pos
 Blasic, J., 3734-Pos
 Blasié, J. K., 3755-Pos
 Blatsios, G., 1684-Pos
 Blatter, L. A., 587-Pos,
 604-Pos, 944-Pos,
 1646-Pos, 1647-Pos,
 1648-Pos
 Blattner, F. R., 1044-Pos
 Blatz, A., 1927-Pos
 Blau, C., 1215-Plat,
 1266-Plat, 1381-Pos,
 2485-Pos, 2495-Pos
 Blayney, L., 581-Pos
 Bleecker, J. V., 490-Pos
 Blice-Baum, A., 3917-Pos
 Blicher, A., 3776-Pos
 Blick, R., 2098-Pos, 4000-Pos
 Blindauer, C., 3331-Pos
 Blinov, M. L., 1268-Plat
 Blinov, N., 2073-Pos
 Blobner, B. M., 3802-Pos
 Block, B. A., 3704-Pos
 Block, M., 2592-Pos
 Block, S. M., 2459-Pos
 Blocker, E. R., 2939-Pos
 Bloemink, M., 2838-Pos
 Blomeyer, C. A., 1225-Plat
 Blomley, R., 1029-Pos
 Blood, J., 1246-Plat
 Bloom, L., 1160-Plat
 Bloor-Young, D., 1228-Plat
 Blosser, M. C., 493-Pos
 Blosser, T., 131-Plat
 Blount, P., 2268-Plat,
 2802-Pos
 Bluethgen, N., 1879-Pos
 Blum, B., 91-Plat
 Blum, J. E., 3197-Plat
 Blum, V., 3308-Pos
 Blumberg, P. M., 1700-Pos
 Blumenthal, D., , 2346-Pos
 Blumenthal, R., 3391-Pos
 Blunck, R., , 96-Plat,
 166-Plat, 2716-Pos,
 3735-Pos
 Board, P. G., 641-Pos,
 2257-Plat
 Bobin, P., 1641-Pos
 Bocharov, E. V., 3281-Pos
 Bochnik, S., 548-Pos
 Bock, L. V., 1215-Plat,
 1266-Plat, 2485-Pos,
 2495-Pos
 Bockelmann, U., 1417-Pos
 Böcking, T., 2516-Pos
 Böckmann, R., 3238-Plat
 Bocksteins, E., 719-Pos,
 2738-Pos, 2747-Pos
 Bodmer, R., 3917-Pos,
 3921-Pos
 Bodnár, D., 661-Pos
 Boechi, L., 1271-Pos
 Boedicker, J., 1884-Pos
 Boeger, H., 1890-Pos
 Boehning, D., 3871-Pos
 Boel, G., 2184-Plat
 Boelens, R., 257-Pos
 Bogár, F., 3360-Pos
 Bogdanov, M., 7-Subg
 Bogeski, I., 1611-Pos,
 1612-Pos
 Bogomolovas, J., 3903-Pos
 Boguslavskiy, A., 3670-Pos
 Bohineust, A., 893-Pos
 Bohlen, H., 694-Pos
 Bohon, J., 2309-Pos,
 2310-Pos
 Bohr, H., , 519-Pos
 Bois, P., , 1663-Pos, 2832-Pos
 Boissan, M., 933-Pos
 Boiteux, C., 669-Pos, 675-Pos
 Boland, B., 3458-Pos
 Boland, E. L., 3104-Pos
 Bolaños, N., 2655-Pos
 Bolaños, P., 657-Pos
 Bolia, A., 2395-Pos
 Bolin, E., 3328-Pos
 Bolleballi, M. K., 786-Pos
 Bolognesi, M., 3172-Plat
 Bolovan-Fritts, C., 1891-Pos
 Bolton, E., 1228-Plat
 Bolton, P. H., 353-Pos,
 3499-Pos
 Bomer, J., 3195-Plat
 Bomer, J. G., 447-Pos
 Bomholt, J., 2819-Pos
 Bommarius, A. S., 3064-Pos
 Bommarius, B., 3064-Pos
 Bompadre, S. G., 754-Pos
 Bon, P., 2904-Pos, 3041-Pos,
 3045-Pos
 Bonakdar, N., 822-Pos
 Bond, C., 616-Pos
 Bond, R. C., 623-Pos
 Bondar, A., 101-Plat
 Bondar, M., 101-Plat
 Bondarenko, V., 1728-Pos
 Bongfen, Y. E., 3102-Pos
 Bongini, L., 356-Pos
 Bonifacio, E., 2101-Pos
 Bonifacio, G., 3241-Plat
 Bonifazi, D., 3136-Pos
 Bönigk, W., 3841-Pos
 Bonin, K., 3974-Pos
 Bonin, K. D., 2892-Pos
 Bonn, M., 3465-Pos
 Bonnet, I., 1802-Pos
 Bonnet, R., 1340-Pos
 Bonvin, A., 3176-Plat
 Bonvin, A. M., 148-Plat
 Bonzell, S., 3677-Pos
 Boomsma, W., 3236-Plat
 Boonen, B., 1658-Pos,
 1707-Pos
 Boontje, N., 1749-Pos
 Booth, D., 256-Pos
 Booth, D. M., 599-Pos
 Booth, E., 301-Pos
 Booth, V., 263-Pos, 3370-Pos
 Bora, R. P., 2486-Pos
 Borbat, P. P., 1260-Plat,
 3471-Pos
 Borbiro, I., 3796-Pos
 Bordoni, A., , 519-Pos,
 2398-Pos
 Borejdo, J., 183-Plat,
 2847-Pos, 2848-Pos
 Borges, R., 1509-Pos
 Borgia, M. B., 1363-Pos
 Borgmann, D., 541-Pos
 Borgnia, M., 3039-Pos
 Borgström, M. T., 4098-Pos
 Borhani, D. W., 533-Pos
 Boissan, G., 1644-Pos
 Borko, L., 567-Pos
 Borkowski, B., 3464-Pos
 Bormuth, V., 1231-Plat
 Bornholdt, Z. A., 3220-Symp
 Borovikova, A., 1864-Pos
 Borowiec, A., 1689-Pos
 Borrenberghs, D., 330-Pos
 Borschel, W., 3781-Pos,
 3782-Pos
 Bos, J., 1754-Pos
 Bosch, G., 1104-Pos
 Bosch, J., 1104-Pos, 2412-Pos
 Bosco, A., 1422-Pos
 Bose, J., 2961-Pos
 Bosenberg, M. W.,
 1167-Symp
 Bosmans, F., 201-Plat,
 203-Plat
 Bossuyt, J., 756-Pos,
 1665-Pos, 2946-Pos
 Boswell-Casteel, R. C.,
 1860-Pos
 Botchway, S. W., 1004-Pos
 Botero, A., 4042-Pos
 Botlani, M., 2066-Pos
 Bottorf, L. M., 967-Pos
 Botvinick, E., 1189-Plat
 Bouchard, P., 3700-Pos
 Bouchbinder, E., 230-Plat
 Bouchè, M., 2785-Pos
 Boucher, L. E., 1104-Pos,
 2412-Pos
 Boudaoud, A., 1798-Pos
 Boudou, T., 3107-Pos
 Boudreau, N. S., 858-Pos
 Bouffanais, R., 892-Pos,
 894-Pos
 Boukany, P. E., 1138-Plat
 Boulant, S., 1577-Pos
 Bour, P., 3472-Pos
 Bourg, J. T., 1405-Pos
 Bouveret, E., 2338-Pos
 Bouvier, G., 147-Plat,
 3082-Pos
 Bouxsein, N. F., 1141-Plat
 Bouzat, C. B., 1720-Pos
 Bouzigues, C., 3202-Plat
 Bowen, M., 31-Subg
 Bowen, M. E., 2407-Pos
 Bowie, D., 762-Pos
 Bowler, B. E., 1146-Plat
 Bowman, G., 88-Plat,
 3328-Pos
 Bowman, G. D., 410-Pos
 Bowman, G. R., 3270-Plat
 Bown, N., 2470-Pos
 Bowne-Anderson, H.,
 4004-Pos, 4005-Pos
 Bowser, M., 2521-Pos
 Box, S., 1232-Plat
 Boxer, S. G., 222-Plat,
 2033-Pos, 2972-Pos,
 2977-Pos, 3268-Plat,
 3304-Pos, 3414-Pos,
 3558-Pos
 Boyce, S. E., 1330-Pos
 Boycott, H. E., 3743-Pos,
 3746-Pos
 Boyd, J., 1273-Pos
 Boyd, J. W., 864-Pos
 Boyineni, J., 3380-Pos
 Boyle, J. P., 1124-Plat
 Boyman, L., 760-Pos
 Boz, M., 1561-Pos
 Bozelli JR, J. C., 2230-Plat
 Bozovic, D., 3014-Pos,
 3645-Pos
 Brack, D., 910-Pos
 Brack, K., 622-Pos
 Bradley, J., 1226-Plat
 Bradley, M. J., 834-Pos
 Bradley, R. P., 1581-Pos
 Braet, F., 1754-Pos
 Bragg, L., 3242-Plat
 Braide, O., 2605-Pos
 Braiman, M. S., 2979-Pos
 Brameshuber, M., 452-Pos,
 1980-Pos, 2589-Pos
 Brammer, A. E., 742-Pos
 Brams, M., 3842-Pos
 Brancalion, L., 2513-Pos,
 3073-Pos
 Branch, T., 214-Plat,
 3455-Pos
 Brand, C., 2149-Plat
 Brandao, H. B., 3053-Pos
 Brandi, F., 1062-Pos
 Brandt, E. G., 1050-Pos
 Brangwynne, C. P., 384-Pos
 Brannigan, G., 1722-Pos,
 2152-Plat, 2784-Pos
 Brannon, M. K., 3347-Pos
 Braslavsky, I., 3322-Pos
 Brass, A. L., 3589-Pos
 Brasselet, S., 1027-Pos,
 2583-Pos
 Brasseur, R., 714-Pos
 Braubach, O. R., 1928-Pos
 Brauchi, S., 1002-Pos
 Bräuchle, C., 136-Plat,
 1060-Pos
 Bräuer, A. U., 159-Plat
 Braun, A. R., 1359-Pos,
 3599-Pos, 3624-Pos
 Braun, C. J., 1524-Pos
 Braun, M., 1786-Pos,
 2652-Pos
 Bravo, F., 2731-Pos
 Brechbiel, M. W., 4017-Pos
 Bredenbeck, J., 2978-Pos
 Breel, E. J., 2849-Pos
 Brehm, M. A., 2275-Plat
 Brehove, M. S., 399-Pos
 Brennan, K., 1461-Pos
 Brenner, B., 795-Pos,
 3258-Plat, 3892-Pos
 Brenner, S., 2242-Plat
 Breshears, L. M., 3164-Symp
 Breton, M., 1488-Pos
 Brett, T. J., 3799-Pos
 Brette, F., 3704-Pos
 Breukink, E., 481-Pos
 Brewer, J. R., 2571-Pos
 Brewster, R., 1396-Pos,
 2471-Pos
 Brewster, R. C., 2473-Pos
 Brice, A., 3047-Pos
 Bridges, M. D., 1377-Pos
 Brieg, M., 472-Pos,
 1319-Pos, 2058-Pos
 Briels, W. J., 174-Plat
 Brink, P. R., 2830-Pos
 Brinkerhoff, H., 1082-Pos,
 3197-Plat, 4087-Pos
 Briones, R., 757-Pos
 Brisson, A., 2095-Pos
 Brisson, A. R., 2283-Plat
 Britt, D., 151-Plat
 Britt, R., 271-Pos, 3296-Pos
 Britto, M., 3929-Pos
 Briva, A., 449-Pos
 Brizendine, R., 799-Pos
 Brochet, D., 665-Pos,
 Brochet, D. X., 2176-Plat
 Brock, A. T., 1121-Plat
 Brockwell, D. J., 1946-Pos
 Broda, E., 1060-Pos
 Brody, M. J., 1669-Pos
 Broecker, J., 1342-Pos,
 2413-Pos
 Bromley, E., 1240-Plat
 Bromley, E. H., 3943-Pos
 Brooks III, C. L., 1250-Plat,
 3265-Plat
 Brooks, III, C. L., 1449-Pos,
 3235-Plat, 3674-Pos
 Brooks, K., 1758-Pos
 Brooks, M., 915-Pos,
 4034-Pos
 Brotherhood, P. R., 952-Pos

- Broughton, K. M., 2858-Pos
 Brouhard, G. J., 3053-Pos
 Brouillette, C., 2184-Plat
 Brouns, S., 131-Plat
 Brouwer, I., 1163-Plat, 2617-Pos
 Brown, A., 3318-Pos
 Brown, A. M., 3647-Pos
 Brown, B. M., 2746-Pos, 3248-Plat
 Brown, C. R., 1890-Pos
 Brown, D. A., 723-Pos
 Brown, J. A., 1329-Pos
 Brown, J. H., 205-Plat
 Brown, K., 200-Plat
 Brown, L., 343-Pos
 Brown, L. S., 925-Pos, 2325-Pos
 Brown, M., 87-Plat, 2161-Plat
 Brown, M. F., 297-Pos, 427-Pos, 1465-Pos, 2194-Symp, 2284-Plat, 3206-Plat, 3293-Pos, 3627-Pos
 Brown, M. J., 689-Pos
 Brown, R. E., 1444-Pos, 1530-Pos, 1543-Pos, 1544-Pos
 Browne, L. E., 3242-Plat
 Brownell, W. E., 4006-Pos
 Brubaker, P., 1969-Pos
 Bruce, M. A., 889-Pos
 Bruchez, M., 3123-Pos, 4093-Pos
 Bruchez, M. P., 2637-Pos, 3040-Pos, 4089-Pos
 Brueggemann, L. I., 729-Pos
 Bruegmann, T., 3914-Pos
 Bruening-Wright, A., 3647-Pos
 Brugarolas, P., 683-Pos
 Bruggemann, A., 680-Pos, 694-Pos, 3702-Pos
 Brüggemann, A., 2937-Pos
 Brügmann, T., 3679-Pos
 Bruhn, B. R., 1080-Pos, 1081-Pos, 3110-Pos
 Bruhova, I., 1714-Pos
 Brujic, J., 2133-Pos
 Brum, G., 2700-Pos
 Brunello, E., 1115-Symp, 2293-Plat
 Brunello, L., 589-Pos
 Brunet, N. M., 3886-Pos
 Brunet, S., 1687-Pos
 Brunetti, R., 1964-Pos
 Brunger, A., 73-Subg
 Brunger, A. T., 190-Symp, 2560-Pos
 Bruni, R., 1856-Pos
 Bruno, L., 839-Pos
 Bruno, M., 3531-Pos
 Bruot, N., 1232-Plat
 Bruton, J. D., 3685-Pos, 3868-Pos
 Bryant, A., 2610-Pos
 Bryant, C., 990-Pos, 1567-Pos, 3971-Pos
 Bryant, S. M., 623-Pos
 Bryant, Z., 913-Pos
 Bryson, J., 91-Plat
 Bub, G., 3187-Plat
 Bubacco, L., 308-Pos
 Bucay, I., 1284-Pos
 Bucchi, A., 3172-Plat, 3656-Pos
 Buchanan, S. K., 2112-Pos, 2981-Pos
 Bucher, D., 207-Plat
 Buchete, N., 284-Pos
 Buchholz, F., 3967-Pos
 Buchholz, J., 2002-Pos
 Buchler, N. E., 1878-Pos
 Buchoux, S., 2034-Pos
 Buchsbaum, S., 1072-Pos
 Buchsbaum, S. F., 1071-Pos
 Buck, M., 1571-Pos
 Buckley, C., 1814-Pos
 Buckley, C. D., 1815-Pos
 Buckley, R. S., 3927-Pos
 Buddha, S. T., 1335-Pos
 Buddhadev, M., 771-Pos
 Budelli, G., 2206-Plat
 Budin, I., 951-Pos
 Budvyryte, R., 4008-Pos
 Bueldt, G., 3390-Pos
 Buell, A. K., 1361-Pos
 Buenostro, J. D., 415-Pos, 2506-Pos
 Buerck, J., 470-Pos, 1492-Pos
 Bufi, N., 893-Pos, 1801-Pos
 Bugana, M., 3254-Plat
 Bugge, K., 123-Plat
 Buhl, R., 2794-Pos
 Bujalowski, P., 3412-Pos, 3871-Pos
 Bujnicki, J. M., 1455-Pos
 Bujny, M., 3061-Pos
 Bukiya, A., 2205-Plat
 Bukiya, A. N., 2711-Pos, 3779-Pos
 Büldt, G., 3397-Pos
 Bull, M. S., 1132-Plat, 1981-Pos
 Bullard, B., 3668-Pos
 Bulushev, R., 1985-Pos, 3198-Plat
 Bumb, A., 4017-Pos
 Bundgaard, C., 1723-Pos
 Bünemann, M., 555-Pos
 Buosi, V., 3269-Plat
 Burchell, V., 18-Subg
 Burck, J., 454-Pos
 Bürck, J., 1491-Pos
 Burdette, D. O., 3774-Pos
 Burel, S., 205-Plat
 Burgess, S. A., 804-Pos, 1174-Symp
 Burghardt, T. P., 2846-Pos, 3719-Pos
 Burgkart, R., 2128-Pos
 Burke, K. A., 1256-Plat
 Burke, P. J., 1136-Plat, 2530-Pos
 Burnes, D., 4095-Pos
 Burney, P. R., 3075-Pos
 Burns, J. R., 3193-Plat
 Burrage, K., 1909-Pos
 Burress, H., 2369-Pos, 2384-Pos
 Burtnick, L., 3436-Pos
 Burton, F., 3189-Plat
 Burton, F. L., 620-Pos, 3648-Pos
 Burton, R. A., 3187-Plat
 Burtscher, V., 1677-Pos, 1684-Pos
 Busath, D. D., 2186-Plat, 3337-Pos
 Busse, B. L., 2626-Pos
 Bussemaker, H. J., 3543-Pos
 Bussi, G., 1453-Pos
 Bustamante, C., 125-Plat, 143-Plat, 1098-Pos, 1145-Plat, 1210-Plat, 1249-Plat, 1270-Natl, 2455-Pos, 2373-Pos, 2480-Pos, 2504-Pos, 3385-Pos, 4016-Pos, 4034-Pos
 Bustamante, J. A., 3520-Pos
 Bustamante, N., 2655-Pos
 Butcher, D., 348-Pos
 Butler, A., 2206-Plat
 Butler, B. M., 2334-Pos
 Butler, S., 2023-Pos
 Butte, A. J., 1170-Symp
 Butte, M. J., 889-Pos
 Buxbaum, J., 1372-Pos
 Buyan, A., 1565-Pos
 Búzás, A., 3138-Pos
 Byers, C. E., 1575-Pos
 Byers, J., 3066-Pos
 Bykhovskia, M., 1272-Pos
 Byrne, H., 1909-Pos
 Byrne, P., 3643-Pos
 Byron, K. L., 729-Pos
 Byun, H., 2906-Pos
- C**
- Caaveiro, J. M., 3339-Pos
 Caballero, D., 289-Pos
 Cabeen, M., 1596.1-Pos
 Cabezas, D., 1002-Pos
 Cabo-Bilbao, A., 1543-Pos
 Cabrejo, R., 1108-Pos, 2382-Pos
 Cabrera, R., 303-Pos
 Cacho-Nerin, F., 316-Pos
 Caculitan, N., 2634-Pos
 Caddick, S., 3242-Plat
 Caffaro, C., 4030-Pos
 Caffrey, M., 3707-Pos
 Cafiso, D., 958-Pos
 Cafiso, D. S., 2558-Pos, 2766-Pos
 Cahalan, M. D., 1605-Pos, 1610-Pos
 Cai, A., 3813-Pos
 Cai, E., 1011-Pos, 1018-Pos, 2198-Plat, 3058-Pos
 Cai, L., 1880-Pos, 1889-Pos
 Cala, S., 653-Pos
 Cala, S. E., 654-Pos
 Calamini, B., 3454-Pos
 Calderon, J., 657-Pos
 Calderón-Sánchez, E., 1617-Pos
 Caldwell, B., 3641-Pos
 Caldwell, J. T., 248-Pos
 Cale, M., 914-Pos
 Calejo, A. C., 69-Subg
 Calkins, E. R., 1436-Pos
 Callahan, K. M., 204-Plat
 Callan-Jones, A., 1259-Plat
 Calleja, V., 2646-Pos
 Callenberg, K. M., 1124-Plat
 Callender, R., 3346-Pos, 3431-Pos
 Callilung, J., 733-Pos
 Callis, P. R., 1036-Pos
 Calloe, K., 592-Pos, 3899-Pos
 Calmat, S., 1248-Plat
 Calmettes, G., 1841-Pos, 4076-Pos
 Calvert, J., 345-Pos
 Calvez, P., 2613-Pos
 Calzolaro, S., 2707-Pos
 Camara, A. K., 1225-Plat
 Cambi, A., 118-Plat, 2641-Pos
 Camelliti, P., 631-Pos, 3696-Pos
 Camenisch, T. G., 3556-Pos
 Camerino, G., 2707-Pos
 Camerino, G. M., 2785-Pos
 Cameron, A. D., 1846-Pos
 Cameron, E., 3018-Pos
 Cameron, E. A., 2004-Pos
 Camilloni, C., 2323-Pos, 2428-Pos, 3213-Plat
 Camley, R., 3156-Pos
 Cammarato, A., 3906-Pos, 3917-Pos, 3918-Pos, 3921-Pos
 Cammarota, E., 3971-Pos
 Camors, E., 571-Pos, 1633-Pos
 Campbell, A. S., 620-Pos
 Campbell, I. D., 2620-Pos
 Campbell, J., 3146-Pos, 3330-Pos
 Campbell, K. S., 1117-Symp, 2850-Pos, 3263-Plat
 Campbell, R. E., 2094-Pos, 3183-Plat
 Campbell, S. G., 1768-Pos
 Campbell, W. A., 1256-Plat
 Camphausen, R., 91-Plat
 Campiglio, M., 698-Pos
 Campos, F. V., 99-Plat
 Campos, M., 147-Plat
 Canale, C., 2001-Pos
 Canals, J. M., 723-Pos
 Canals, M., 533-Pos
 Candelli, A., 1163-Plat
 Cang, C., 3847-Pos
 Cannell, M. B., 1620-Pos, 1625-Pos, 2177-Plat
 Cannone, M., 2785-Pos
 Cano-Marques, A., 1240-Plat
 Cans, A., 2099-Pos, 2663-Pos, 3177-Plat
 Cantin, L., 2613-Pos
 Canton, M., 3924-Pos
 Cantor, C., 1169-Symp
 Cao, F. J., 1159-Plat
 Cao, K. D., 105-Plat
 Cao, K. J., 3067-Pos
 Cao, Q., 2424-Pos
 Cao, S., 4055-Pos
 Cao, X., 3823-Pos
 Cao, Y., 306-Pos, 1579-Pos, 1912-Pos, 3436-Pos
 Caorsi, V., 1738-Pos
 Capelluto, D. G., 3347-Pos, 3349-Pos
 Capes, D. L., 2799-Pos
 Capitanio, M., 124-Plat
 Caplow, M., 186-Symp
 Capp, M., 2465-Pos
 Cappello, G., 231-Plat, 2522-Pos
 Cappello, J., 2257-Plat
 Capraro, B. R., 2653-Pos
 Caputo, C., 657-Pos
 Caradonna, I., 1885-Pos
 Carattino, M. D., 776-Pos
 Carbajal-Tinoco, M., 430-Pos, 1442-Pos
 Carbone, A. L., 764-Pos
 Cardarelli, F., 139-Plat, 1133-Plat, 3043-Pos
 Cárdenas, M., 1123-Plat
 Cardinal, J. R., 1584-Pos
 Caremani, M., 798-Pos, 1115-Symp, 2293-Plat, 3873-Pos
 Caritá, A. C., 2540-Pos
 Carlsen, A., 2088-Pos
 Carlson, A. E., 3728-Pos
 Carlson, B., 305-Pos, 2863-Pos
 Carlson, C. R., 3854-Pos
 Carlsson, A. C., 569-Pos
 Carlsson, A. E., 2911-Pos

Carlsson, N., 1054-Pos
 Carmant, L., 1667-Pos
 Carmona, A. K., 1554-Pos
 Carne, S., 1500-Pos
 Carnes, C. A., 1632-Pos
 Carnevale, V., 676-Pos,
 751-Pos, 1181-Plat,
 1479-Pos, 3756-Pos
 Caroyez, B., 1567-Pos
 Carozza, S., 993-Pos
 Carpenter, T., 1292-Pos
 Carpenter, T. S., , 444-Pos
 Carpi, F., 4026-Pos
 Carr, A., 1007-Pos
 Carraro, M., 18-Subg
 Carrasco, C., 1987-Pos
 Carrascosa, J. L., 1159-Plat
 Carrasquel-Ursulaez, W.,
 2208-Plat
 Carravilla, P., 3582-Pos
 Carrer, D. C., 442-Pos
 Carrier, L., 1749-Pos
 Carrillo, L., 1580-Pos,
 1703-Pos
 Carrillo-Tripp, M., 4046-Pos
 Carrivain, P., 4067-Pos
 Carroll-Portillo, A.,
 1141-Plat
 Carson, B., 3588-Pos
 Carson, S., 1075-Pos
 Carson-Brown, A., 3105-Pos
 Carter, A. P., 1777-Pos
 Carter, A. R., 862-Pos, 1108-
 Pos, 1407-Pos
 Carter, Jr., C. W., 3421-Pos
 Carter, L. M., 885-Pos
 Carter, T., 853-Pos,
 1226-Plat, 2665-Pos
 Cartledge, J. E., 3838-Pos
 Carvalho Miranda, M.,
 506-Pos
 Carvalho, A. P., 3420-Pos
 Carvalho, C. C., 1554-Pos
 Carvalho, F. A., 1959-Pos
 Carvalho-de-Souza, J. L.,
 3752-Pos
 Casadei, B., 934-Pos
 Casadei, B. R., 2540-Pos
 Casalis, L., 1308-Pos, 1422-
 Pos, 3542-Pos
 Casarotto, M. G., 2257-Plat
 Casas, M., 3682-Pos
 Casas-Finet, J., 3292-Pos
 Cascio, M., 2771-Pos,
 2772-Pos
 Casciola, M., 1488-Pos
 Caseli, L., 3552-Pos
 Casini, S., 2795-Pos
 Cassano, J. A., 2968-Pos
 Cassese, D., 1966-Pos
 Cassidy, C. K., 2915-Pos
 Cassidy, J. S., 1672-Pos
 Castanho, M. A., 1509-Pos,
 1959-Pos, 3590-Pos
 Castell, O. K., 2363-Pos
 Caster, H. M., 3905-Pos
 Castillo, J., 2940-Pos
 Castillo, K., 2822-Pos,
 3759-Pos
 Castillo, R., 1400-Pos
 Castner, D. G., 490-Pos
 Castronovo, M., 3542-Pos
 Casu, M., 480-Pos
 Casuso, I., 4023-Pos
 Catani, K., 926-Pos
 Cataye, C., 2592-Pos
 Cate, J. H., 191-Symp,
 2370-Pos
 Cathala, L., 961-Pos
 Catipovic, M. A., 862-Pos
 Cato, A., 1029-Pos
 Catterall, W. A., 674-Pos,
 3343-Pos
 Cattin, C. J., 3967-Pos
 Cauvi, D., 1261-Plat,
 1507-Pos
 Cavalcanti-Adam, E. A.,
 2145-Plat
 Cavalli, A., 3213-Plat
 Caves, R. E., 622-Pos
 Cavigiolio, G., 2379-Pos
 Cawley, D., 3225-Plat
 Cayer, M. L., 858-Pos
 Cazares, V. A., 1588-Pos,
 1589-Pos
 Ceccarelli, M., 1709-Pos,
 2815-Pos, 2816-Pos,
 3845-Pos
 Cedervall, T., 3159-Pos
 Cegelski, L., 972-Pos
 Ceholski, D. K., 2861-Pos
 Celestre, R., 2309-Pos
 Celik, Y., 3322-Pos
 Celikkol, B., 118-Plat
 Celim, Ö., 3258-Plat
 Celinski, Z., 3156-Pos
 Cella Zanacchi, F., 1062-Pos,
 3044-Pos, 3161-Pos
 Cembran, A., 2955-Pos,
 4074-Pos
 Cerbai, E., 1753-Pos,
 1757-Pos, 2260-Plat,
 3257-Plat
 Cercos, P., 2753-Pos
 Cervenka, R., 1652-Pos
 Cha, E., 2474-Pos, 2639-Pos
 Cha, M., 1131-Plat
 Chabay, R., 1097-Pos
 Chacko, J. V., 2001-Pos
 Chacon, P., 3302-Pos
 Chada, N., 2314-Pos
 Chae, S., 3127-Pos
 Chahine, J., 3077-Pos
 Chahine, M., 1653-Pos
 Chai, J., 1814-Pos
 Chai, Z., 1578-Pos
 Chaimovich, H., 2230-Plat
 Chakour, M., 2389-Pos
 Chakrabarti, J., 2064-Pos,
 2405-Pos
 Chakrabarti, N., 674-Pos
 Chakraborty, R., 2389-Pos
 Chakraborty, A. K., 1899-Pos
 Chakraborty, M., 221-Plat,
 1160-Plat
 Chakraborty, S., 2240-Plat
 Chakrapani, S., , 3244-Plat,
 3829-Pos
 Chakravarthy, S., 156-Plat
 Chakraborty, N., 3092-Pos,
 3384-Pos
 Chalamalasetti, S. V.,
 3244-Plat
 Chalfant, C. E., 1544-Pos
 Chalikian, T. V., 351-Pos,
 1313-Pos
 Challis, K. J., 1873-Pos
 Chalovich, J. M., 3659-Pos
 Chaltin, P., 1691-Pos,
 3811-Pos
 Chamberlain, J. S., 1745-Pos
 Chamberlin, A., 3763-Pos
 Chamberlin, A. C., 3764-Pos
 Chamma, I., 1019-Pos
 Chan, C., 2126-Pos
 Chan, G. K., 2379-Pos
 Chan, J. M., 2512-Pos
 Chance, M., 2309-Pos
 Chance, M. R., 2310-Pos
 Chanda, B., 673-Pos,
 1218-Symp, 3748-Pos
 Chandler, R. A., 1510-Pos
 Chandra, B., 1368-Pos
 Chandra, M., 3888-Pos,
 3889-Pos
 Chandradoss, S., 2511-Pos
 Chandrasekaran, M., 1368-Pos
 Chandran, A., 1412-Pos
 Chandran, P. L., , 3119-Pos
 Chandry, K., 3738-Pos
 Chang, A., 234-Plat
 Chang, A. N., 3916-Pos
 Chang, C., 855-Pos,
 1230-Plat, 1796-Pos,
 1818-Pos, 2921-Pos
 Chang, D. D., 1668-Pos,
 1673-Pos, 2258-Plat
 Chang, F., 1809-Pos
 Chang, H., 1092-Pos
 Chang, H. Y., 415-Pos
 Chang, K., 2494-Pos,
 2653-Pos
 Chang, P., 738-Pos
 Chang, S., 3738-Pos
 Chang, T., 1997-Pos,
 3766-Pos, 3819-Pos
 Chang, W., , 3112-Pos
 Chang, Y., 151-Plat
 Changede, R., 2642-Pos
 Changeux, J., 1736-Pos,
 3243-Plat
 Chantler, P. D., 804-Pos
 Chantranuvatana, K., 1587-Pos
 Chao, F., 3278-Pos
 Chao, L., 228-Plat
 Chao, S., 3377-Pos
 Chapagain, P. P., 3280-Pos
 Chapman, E., 269-Pos
 Chapman, E. R., 1586-Pos
 Chappie, J. S., 173-Plat
 Charney, C., 2095-Pos
 Charpentier, F., 205-Plat
 Charras, G. T., 3717-Pos
 Charrier, E., 1800-Pos
 Chase, P., 3886-Pos
 Chatel, S., 3851-Pos
 Chatelier, A., , 1663-Pos,
 2832-Pos
 Chatterjee, S., 319-Pos
 Chattopadhyay, A., 1030-Pos
 Chau, R., 2923-Pos
 Chaudhary, H., 1534-Pos
 Chaurasiya, K. R., 1166-Plat
 Chauvet, A., 1871-Pos
 Chavarha, M., 1508-Pos,
 1929-Pos
 Chavent, M., 4083-Pos
 Chavent, M. G., 1566-Pos
 Chavez, D. R., 3549-Pos
 Chavez, J., 3778-Pos
 Chawla, A., 553-Pos
 Chawla, U., 2194-Symp,
 3206-Plat, 3627-Pos
 Chaykov, L., 2313-Pos
 Che, D. L., , 1829-Pos
 Che, H., 3228-Plat
 Chebli, M., 164-Plat
 Chebrou, S., 2942-Pos
 Checchetto, V., 3844-Pos
 Chehin, R., 1942-Pos
 Chekashkina, K., 1468-Pos,
 3546-Pos
 Cheley, S., 108-Plat
 Chemla, Y. R., 337-Pos,
 3540-Pos, 3964-Pos
 Chen, A., 358-Pos
 Chen, A. A., 1430-Pos
 Chen, B., , 142-Plat,
 3020-Pos
 Chen, C., 105-Plat,
 963-Pos, 1088-Pos,
 1214-Plat, 2389-Pos,
 2450-Pos, 2478-Pos,
 2479-Pos, 3327-Pos
 Chen, C. S., 3107-Pos
 Chen, D., 3031-Pos, 3976-Pos
 Chen, E., 2367-Pos, 2898-Pos
 Chen, F., 2053-Pos
 Chen, H., 2030-Pos,
 2220-Plat, 2344-Pos,
 2909-Pos
 Chen, J., 596-Pos, 860-Pos,
 1212-Plat, 1267-Plat,
 1902-Pos, 2962-Pos
 Chen, K., 474-Pos,
 2477-Pos, 4056-Pos
 Chen, L., 913-Pos, 1625-Pos
 Chen, M., 2790-Pos,
 3133-Pos, 4011-Pos
 Chen, N., 963-Pos
 Chen, P., 521-Pos
 Chen, Q., 1728-Pos
 Chen, S., 566-Pos, 573-Pos,
 3683-Pos
 Chen, S. W., 561-Pos,
 572-Pos, 2008-Pos
 Chen, S. Y., 1893-Pos
 Chen, T., 732-Pos, 737-Pos
 Chen, W., 1186-Plat
 Chen, X., 1752-Pos,
 3497-Pos
 Chen, Y., 311-Pos, 455-Pos,
 485-Pos, 613-Pos,
 869-Pos, 870-Pos,
 1000-Pos, 1001-Pos,
 1665-Pos, 1880-Pos,
 2188-Plat, 2453-Pos,
 2481-Pos, 2765-Pos,
 2857-Pos, 2967-Pos,
 3064-Pos, 3711-Pos,
 3928-Pos
 Chen, Z., 727-Pos,
 1503-Pos, 2631-Pos,
 2653-Pos, 2957-Pos
 Chen, Z. J., 3464-Pos
 Chenal, A., 107-Plat,
 1380-Pos
 Cheng, A. J., 3685-Pos,
 3868-Pos
 Cheng, C., 1167-Symp
 Cheng, D., 168-Plat
 Cheng, H., 68-Subg,
 932-Pos, 1111-Symp,
 1625-Pos, 1775-Pos
 Cheng, L., 91-Plat, 2990-Pos
 Cheng, M. H., 1837-Pos
 Cheng, Q., 3846-Pos
 Cheng, R. C., 738-Pos
 Cheng, W., 3057-Pos
 Cheng, X., 4045-Pos,
 4085-Pos
 Cheng, Y., 256-Pos, 374-Pos,
 1116-Symp, 3340-Pos,
 3676-Pos
 Cheng-Ming, C., 2905-Pos
 Chen-Izu, Y., 612-Pos,
 613-Pos, 1665-Pos,
 2671-Pos, 2856-Pos,
 2857-Pos
 Chennamaneni, L., 1332-Pos
 Cheon, J., 1135-Plat,
 3645-Pos
 Cherednichenko, G., 644-Pos
 Chereji, R. V., 403-Pos
 Cherezov, V., 3623-Pos
 Cherney, M. M., 1146-Plat
 Cherny, V. V., 2190-Plat,
 2821-Pos
 Chernyshev, A. V., 4079-Pos
 Cherry, B., 975-Pos

Cherry, M., 458-Pos
Chettimada, S., 700-Pos
Cheung, K. P., 1074-Pos
Cheung, M., 3720-Pos
Cheung, M. S., 3214-Plat
Chhabra, D., 2874-Pos
Chhabra, S., 3738-Pos
Chi, H., 3472-Pos
Chiam, K., 877-Pos
Chiamvimonvat, N., 613-Pos, 614-Pos, 615-Pos, 616-Pos, 2857-Pos
Chiang, P., 228-Plat
Chiantia, S., 331-Pos, 442-Pos, 3147-Pos
Chib, R., 363-Pos, 2023-Pos
Chief Elk, J., 1560-Pos
Chien, S., 2909-Pos
Chien, Y., 1991-Pos
Chik, J. K., 3433-Pos
Childers, W., 2999-Pos
Childers, W. S., 1573-Pos
Chimote, A., 3740-Pos
Chin, C. R., 3589-Pos
Chin, H. F., 897-Pos
Chinappi, M., 4050-Pos
Chinnaraj, M., 1762-Pos
Chiquete-Felix, N., 824-Pos, 2831-Pos
Chircus, L., 2506-Pos
Chistol, G., 125-Plat, 2504-Pos
Chithrani, D. B., 1094-Pos
Chittori, S., 767-Pos
Chiu, C., 1022-Pos
Chiu, E., 3259-Plat
Chiu, S., 2049-Pos
Chiu, W., 574-Pos, 2219-Plat, 3031-Pos
Chiusa, M., 860-Pos
Chizhik, A. I., 1202-Plat
Chizmadzhev, Y. A., 341-Pos
Chmelka, B. F., 1867-Pos
Chmyrov, A., 991-Pos
Cho, C., 794-Pos, 3694-Pos
Cho, H., 1551-Pos
Cho, S., 346-Pos, 1347-Pos
Cho, S. S., 2333-Pos
Chodera, J., 2035-Pos
Chodera, J. D., 2031-Pos, 3315-Pos
Choe, E., 794-Pos
Choe, S., 1842-Pos, 1843-Pos
Choi, H., 2338-Pos, 2492-Pos
Choi, I., 2090-Pos, 2104-Pos
Choi, J., 1288-Pos, 3068-Pos
Choi, J. M., 2202-Plat, 3068-Pos
Choi, K., 1839-Pos
Choi, M., 1787-Pos
Choi, S., 2968-Pos
Choi, S. K., 1956-Pos
Choi, S. M., 2083-Pos
Choi, U. B., 2407-Pos
Choi, Y., 2090-Pos, 2119-Pos, 3143-Pos, 3645-Pos
Choisy, S. C., 623-Pos
Chong, A., 84-Plat, 274-Pos
Chong, L. T., 2047-Pos
Chong, P., 437-Pos
Chong, S., 2450-Pos
Chong-Macias, S., 2470-Pos
Choo, S. S., 2739-Pos, 3805-Pos
Chopineau, J., 107-Plat, 2095-Pos
Choquet, D., 1019-Pos
Chou, C., 3112-Pos
Chou, J. J., 299-Pos
Choubey, S., 1892-Pos
Choudhary, O. P., 750-Pos
Choudhury, A., 2387-Pos
Choudhury, H., 736-Pos
Choveau, F. S., 3795-Pos
Chow, C. C., 1127-Plat
Chowdary, P. D., 1829-Pos
Chowdhary, J., 239-Wkshp
Chowdhury, A., 2387-Pos
Chowdhury, D., 845-Pos
Chowdhury, S., 3748-Pos
Chraibi, A., 3783-Pos
Christensen, A. L., 1158-Plat
Christensen, G., 3895-Pos, 3913-Pos
Christensen, K., 3861-Pos
Christensen, K. M., 3860-Pos
Christensen, M. T., 3860-Pos
Christensen, S., 2681-Pos
Christensen, S. M., 3622-Pos
Christian, S., 129-Plat
Christiansen, G., 217-Plat
Christodoulides, J., 3066-Pos
Christopoulos, A., 533-Pos
Chrtcheglova, L., 2591-Pos
Chu, H. W., 3156-Pos
Chu, J., 1303-Pos
Chu, L., 760-Pos
Chu, S., 2201-Plat, 3013-Pos
Chu, X., 1195-Plat, 3206-Plat, 3288-Pos
Chua, K. C., 1377-Pos
Chuang, F., 1098-Pos
Chuang, G., 2065-Pos
Chudasama, V., 3242-Plat
Chui, A. J., 1377-Pos
Chun, S., 3298-Pos, 4049-Pos
Chung, B. C., 89-Plat
Chung, C., 386-Pos
Chung, C. S., 2850-Pos, 3263-Plat
Chung, D. Y., 1603-Pos
Chung, H., 243-Wkshp, 2221-Plat
Chung, I., 2647-Pos
Chung, J., 2203-Plat
Chung, J. K., 1542-Pos
Chung, M. S., 1510-Pos
Chung, P. J., 1787-Pos
Chung, T., 2493-Pos
Chung, W., 2401-Pos
Chung, Y., 2396-Pos
Churchill, G. C., 1228-Plat
Chwastek, G., 442-Pos
Cianfrocco, M., 2452-Pos
Cicek, F. A., 591-Pos
Cicuta, P., 420-Pos, 446-Pos, 1232-Plat, 3971-Pos
Cilfone, N. A., 3256-Plat
Cilli, E. M., 453-Pos, 1506-Pos, 3376-Pos
Cimato, T. R., 3190-Plat
Cintia, J., 2820-Pos
Cipriano, D. J., 2560-Pos
Ciriello, R., 1492-Pos
Ciruela, F., 2621-Pos
Ciryam, P., 321-Pos
Ciuba, M. A., 2027-Pos
Claes, Z., 2760-Pos
Claessens, M., 1534-Pos, 3463-Pos
Claessens, M. M., 1367-Pos
Clancy, C., 3915-Pos
Clancy, C. E., 3653-Pos
Clapham, D. E., 198-Plat, 2203-Plat, 3226-Plat
Clark, P. L., 3387-Pos
Clark, R. J., 1674-Pos
Clarke, D., 1246-Plat
Clarke, J., 25-Subg, 2156-Plat, 2356-Pos
Clarke, M., 2158-Plat
Clarke, R., 2162-Plat
Clarke, R. J., 431-Pos
Clarkson, J. D., 2029-Pos
Clatot, J., 1657-Pos
Claus, P., 1636-Pos
Clausen, C., 915-Pos
Claussen, J. C., 148-Plat
Clauvelin, N., 379-Pos, 380-Pos, 406-Pos
Clayton, A., 1030-Pos
Cleary, F. B., 1777-Pos
Cleemann, L., 598-Pos, 1227-Plat
Clement, R., 1663-Pos
Clemente, N., 1369-Pos
Cleyrat, C., 979-Pos
Clifton, H., 3813-Pos
Clubb, R. T., 3430-Pos
Clusin, W. T., 785-Pos
Cnossen, J., 3046-Pos
Cnossen, J. P., 1986-Pos, 1988-Pos
Coalson, R., 1593-Pos
Coban, O. C., 535-Pos
Cobb, G., 1376-Pos
Cocco, M., 2072-Pos
Coceano, G., 2291-Plat
Cochran, J. C., 2238-Plat
Cocklin, S., 1545-Pos
Coenen, A. R., 3948-Pos
Coey, A., 1435-Pos
Cogdell, R. J., 154-Plat
Cognet, L., 977-Pos, 1015-Pos
Cohen, A., 1513-Pos
Cohen, A. E., 2094-Pos
Cohen, B. E., 478-Pos, 3199-Plat
Cohen, F. S., 2556-Pos, 3583-Pos
Cohen, I., 3791-Pos
Cohen, J. A., 2544-Pos
Cohen, L. B., 1928-Pos, 2113-Pos
Cohen, M., 3829-Pos
Cohen, M. R., 3225-Plat
Cohen, S., 3458-Pos
Cohen-Karni, T., 2087-Pos
Cojoc, D., 2291-Plat
Colas, C., 759-Pos
Colavin, A., 856-Pos
Cole, J., 3255-Plat
Cole, J. A., 3001-Pos
Cole, J. L., 2406-Pos, 3528-Pos, 3531-Pos
Colecraft, H. M., 56-Subg, 1668-Pos, 1673-Pos, 2258-Plat
Coleman, J., 2652-Pos
Coleman, M. A., 2129-Pos
Coleman, N. T., 3248-Plat
Coleman, R. A., 2452-Pos, 2453-Pos
Colindres-Rojas, M., 3100-Pos
Colizzi, F., 1453-Pos
Colletier, J., 750-Pos, 2815-Pos
Colletti, S., 3601-Pos
Collier, J., 2924-Pos
Collier, S. E., 2170-Plat
Collins, A. M., 2121-Pos
Collins, M. D., 3173-Plat, 3227-Plat
Collins, P., 3143-Pos
Collins, T. P., 3855-Pos
Collins, W., 420-Pos
Colliver, A., 848-Pos
Colom, A., 4023-Pos
Colon Lopez, D. D., 2412-Pos
Colson, B. A., 819-Pos, 820-Pos
Colucci, W. S., 658-Pos
Columbus, L., 1121-Plat, 1353-Pos
Colville, M. J., 1477-Pos
Colvin, M., 2448-Pos
Colvin, M. E., 432-Pos, 1403-Pos, 2036-Pos, 3008-Pos, 3071-Pos, 3085-Pos
Combs, A., 2838-Pos
Comer, R., 2316-Pos
Comes, N., 3737-Pos
Compton, J. T., 1376-Pos
Conceição, T., 1509-Pos
Condon, K., 2507-Pos
Condron, M. M., 312-Pos
Conforti, L., 3740-Pos
Conlon, J. M., 480-Pos
Connell, K., 1247-Plat
Connelly, L., 509-Pos
Connolly, T. G., 3071-Pos, 3085-Pos
Conte Camerino, D., 747-Pos
Conte, D., 2707-Pos
Conte, L., 853-Pos, 2665-Pos
Contee, C., 1108-Pos
Contreras, G., 1178-Plat, 2822-Pos
Contreras, G. F., 2208-Plat
Contreras, J. E., 1350-Pos, 2426-Pos, 2812-Pos
Conway, L., 3946-Pos, 3950-Pos
Cook, E. C., 2159-Plat
Cook, G. A., 258-Pos
Cook, J. R., 3259-Plat
Cook, P., 250-Pos
Cook, P. R., 2464-Pos
Cook, W., 1109-Pos
Cooke, R., 374-Pos, 791-Pos
Cooley, J. W., 87-Plat
Cooper, D., 3338-Pos
Cooper, L. L., 2182-Plat
Cooper, P., 1161-Plat, 2792-Pos
Cooperman, B. S., 1214-Plat, 2478-Pos, 2479-Pos
Cope, S. M., 1379-Pos, 3481-Pos
Copeland, O., 1738-Pos, 3907-Pos
Copello, J. A., 576-Pos, 582-Pos
Copenhagen, K., 2930-Pos
Copley, J., 3288-Pos
Coppay, M., 1237-Plat
Coppini, R., 1753-Pos, 1757-Pos, 2260-Plat, 3257-Plat
Coppys, J., 2346-Pos
Corbett, K., 846-Pos
Corbett, K. M., 3365-Pos
Corbett, M. J., 91-Plat
Corbitt, C., 4006-Pos
Corbitt, J., 300-Pos
Cordoba, A., 830-Pos
Cordova, J. C., 2247-Symp

- Cordvoa, J., 1248-Plat
Corey, D. P., 1948-Pos, 2271-Plat
Cornea, I., 564-Pos
Cornea, R., 2673-Pos
Cornea, R. L., 564-Pos, 2163-Plat, 2671-Pos
Cornell, B., 1500-Pos
Cornio, A. T., 1074-Pos
Cornish, P., 1211-Plat, 2482-Pos
Cornish, P. V., 2483-Pos
Coronel, R., 3898-Pos
Corradi, J., 1720-Pos
Corradi, V., 3983-Pos
Corradini, M., 1101-Pos
Corrado, A. P., 2689-Pos
Correa, A. M., 682-Pos, 683-Pos
Correia, J. J., 3725-Pos
Corringer, P., 1736-Pos, 3243-Plat, 3358-Pos
Corry, B., 671-Pos
Corso, B., 3143-Pos
Cortes Ciriano, I., 3082-Pos
Cortes, D., 97-Plat, 2733-Pos
Cortes, M. D., 3849-Pos
Cortez, J., 2542-Pos
Cortini, R., 2222-Plat
Cosentino Lagomarsino, M., 420-Pos
Cosgrove, M. S., 2411-Pos
Costa, K. D., 3259-Plat
Costa-Filho, A. J., 1506-Pos, 2614-Pos
Costantin, J., 681-Pos
Costantino, S., 4078-Pos
Costello, A., 3040-Pos
Cote, S., 529-Pos
Cote-Flórez, G. F., 3970-Pos
Coto Hernández, I., 3054-Pos
Cotten, M., 1498-Pos
Coughlan, N., 926-Pos
Coulibaly, Z. A., 608-Pos
Coulombe, A., 3743-Pos, 3746-Pos
Coulon, A., 1127-Plat
Courtney, K., 440-Pos
Courville, P., 746-Pos
Covarrubias, M., 93-Plat, 2417-Pos
Coveney, P. V., 1071-Pos
Covey, D. F., 1695-Pos, 2579-Pos
Cowell, S., 3128-Pos
Cowley, P. M., 3916-Pos
Cowsik, S. M., 1048-Pos, 1511-Pos
Cox, D., 2429-Pos
Cox, D. H., 2708-Pos
Cox, D. L., 1788-Pos
Cox, J. S., 2397-Pos
Cox, L., 3013-Pos
Cox, P. A., 490-Pos
Coyan, F., 205-Plat
Coyan, F. C., 714-Pos
Coy-Dibley, J. S., 268-Pos
Coyle, M. P., 2635-Pos
Cozhimuttam Viswanathan, M., 3918-Pos
Craciunescu, F., 975-Pos
Craciunescu, F. M., 3485-Pos
Craggs, T., 2318-Pos
Craggs, T. D., 1395-Pos
Cragolini, T., 1299-Pos, 1450-Pos
Craig, A., 270-Pos, 273-Pos, 2316-Pos
Craig, A. F., 1348-Pos
CRAIG, M. A., 3648-Pos
Craig, R., 806-Pos, 808-Pos
Crain, J., 3279-Pos
Cramariuc, O., 2601-Pos, 2964-Pos
Cramer, S. P., 3074-Pos
Cramer, W. A., 1871-Pos, 2817-Pos
Crampin, E. J., 3912-Pos
Crane, B. R., 3471-Pos
Crane, C., 2682-Pos
Cranfield, C. G., 1500-Pos
Craveur, P., 298-Pos
Crawford, R., 1130-Plat
Creamer, T. P., 2159-Plat
Creath, K., 2020-Pos
Cremona, C. R., 799-Pos, 3677-Pos
Crescentini, M., 3151-Pos
Cribb, J., 3129-Pos
Critchelow, C. J., 254-Pos
Croce, R., 921-Pos, 922-Pos
Crocini, C., 2260-Plat
Cronin, B., 2543-Pos, 2545-Pos
Cronin, T., 3018-Pos
Crooks, G. E., 2031-Pos
Crooks, J. E., 105-Plat
Croquette, V., 385-Pos
Cros, C., 3704-Pos
Crosignani, V., 138-Plat
Cross*, T. A., 266-Pos
Cross, B., 1162-Plat
Cross, R. A., 3929-Pos
Cross, T. A., 265-Pos, 1281-Pos, 1349-Pos, 2186-Plat, 3337-Pos
Crotti, L., 1686-Pos
Cruite, J., 247-Pos
Crump, S. M., 617-Pos
Crusca Jr., E., 1506-Pos
Cruys-Bagger, N., 2285-Plat
Cruz, V., 3374-Pos
Csanady, L., 2418-Pos
Csanády, L., 1702-Pos, 3232-Plat
Csencsits, R., 2238-Plat
Csernoch, L., 650-Pos, 655-Pos, 661-Pos, 2696-Pos
Csík, G., 2523-Pos
Csizmok, V., 3488-Pos, 3491-Pos
Csordás, G., 2988-Pos
Cuaxospa, M., 2775-Pos
Cuccovia, I. M., 2230-Plat
Cuculis, L., 1461-Pos
Cuello, L. G., 97-Plat, 2733-Pos, 3849-Pos
Cueva, J. G., 2012-Pos
Cui, B., 172-Plat, 1139-Plat, 1829-Pos, 1830-Pos, 2146-Plat, 2998-Pos
Cui, D., 2404-Pos
Cui, G., 752-Pos, 753-Pos
Cui, J., 202-Plat, 2209-Plat, 3749-Pos, 3750-Pos, 3791-Pos
Cui, L., 3167-Symp
Cui, M., 3789-Pos, 3790-Pos
Cui, Q., 2252-Symp
Cui, X., 1214-Plat
Cui, Y., 172-Plat, 1139-Plat, 2146-Plat, 3800-Pos
Cui, Z., 3662-Pos, 3919-Pos
Cukalewski, R., 3458-Pos
Culberson, C., 3601-Pos
Culley, S., 2009-Pos
Cullis, P., 3551-Pos
Cullis, P. R., 3550-Pos
Cully, T. R., 652-Pos, 655-Pos
Cummins, M. A., 3254-Plat
Cuny, H., 1674-Pos
Cuperman, T. I., 3301-Pos
Cupo, R., 2990-Pos
Curmi, P., 1240-Plat
Curmi, P. M., 3943-Pos
Curran, J., 2667-Pos
Curran, P., 1158-Plat
Curtis, J. E., 1147-Plat
Curtis, K. A., 3119-Pos
Cuthbert, A., 1395-Pos
Cutrale, F., 2202-Plat, 4018-Pos
Cutro, A., 1463-Pos
Cwiklik, L., 3603-Pos
Czaja, W., 3024-Pos
Czajkowski, C., 2762-Pos, 2764-Pos
Czaplewski, C. R., 1300-Pos
Czeslik, C., 3273-Pos
Czogalla, A., 3120-Pos, 3555-Pos
Czub, J., 1282-Pos, 3532-Pos
Da Hora, G. C., 528-Pos
Da Poian, A. T., 1959-Pos
Da Silva, A. L., 2574-Pos
DaBell, A. M., 1584-Pos
Dadi, P., 2793-Pos
Dadosh, T., 997-Pos
Daerr, M., 1309-Pos
Dafforn, T. R., 1522-Pos
Dages, K., 2466-Pos
Dages, S., 2466-Pos
Dahan, M., 1237-Plat, 4080-Pos
Dahari, M., 2877-Pos
Dai, H., 3267-Plat
Dai, J., 160-Plat
Dai, L., 337-Pos
Daigle, O., 3097-Pos
Dailey, G., 2453-Pos
Dailey, W. P., 2416-Pos
Daily, M. D., 2579-Pos
Dal Peraro, M., 294-Pos, 770-Pos
Dalafave, D. S., 2067-Pos
Dalal, P., 3254-Plat
Dalal, V., 3461-Pos
Daldy, P., 3384-Pos
Dalla Serra, M., 1366-Pos
Dallas, S. E., 3060-Pos
Dalm, D., 3025-Pos, 3029-Pos, 3208-Plat
Dalmas, O., 2265-Plat
Dalva, M., 962-Pos
Dalyan, Y., 1437-Pos
Damas, J. M., 1863-Pos
Dame, R. T., 1949-Pos
d'Amora, M., 3161-Pos
Danev, R., 3027-Pos
Dang, B., 682-Pos, 683-Pos
Dangkulwanich, M., 2455-Pos
Danial, J. S., 2543-Pos
Daniel, M., 160-Plat
Daniel, R., 903-Pos
Daniels, B. A., 762-Pos
Danielsson, J., 217-Plat
Danker, T., 1712-Pos
Danne, R., 3577-Pos
Danner, E., 2136-Pos
Dantas Machado, A., 3518-Pos
Dante, S., 1062-Pos, 4001-Pos
Danuser, G., 81-Symp
Danyal, K., 3216-Plat
Danziger, R., 296-Pos
Dao, M., 2896-Pos
Dar, R., 1891-Pos
Dar, R. D., 1886-Pos
Darici, Y., 3135-Pos
Darinzio, N., 3009-Pos
Darnell, S. J., 1044-Pos
Das, A., 2064-Pos, 2405-Pos, 2640-Pos, 2949-Pos
Das, B. B., 258-Pos
Das, D., 277-Pos
Das, K., 319-Pos
Das, K. P., 2387-Pos
Das, R., 2048-Pos
Das, S., 201-Plat, 203-Plat, 857-Pos
Dasari, S., 6-Subg
Dasbiswas, K., 872-Pos
Dascal, N., 2187-Plat, 2748-Pos
Dasgupta, S., 2910-Pos
Dash, B., 3368-Pos
Dash, R. K., 1225-Plat, 3846-Pos
Date, S., 1858-Pos
Datta, R., 1013-Pos
Datta, S. S., 229-Plat
Dattelbaum, J. D., 4091-Pos
Daum, S., 2602-Pos, 2609-Pos, 3612-Pos
Daumke, O., 164-Plat, 3038-Pos
Dauphin, V., 3927-Pos
D'Autilia, F., 1031-Pos
D'Avanzo, N., 2750-Pos, 3837-Pos
Davenport, C. M., 1926-Pos
Davenport, L., 350-Pos
Davenport, M., 1072-Pos, 4048-Pos
Davic, A., 2772-Pos
David, B. L., 3287-Pos
Davidov, D., 2231-Plat
Davidson, A. L., 3985-Pos
Davidson, L. A., 871-Pos
Davidson, M., 2907-Pos
Davidson, M. W., 2198-Plat
Davies, M. J., 2851-Pos
Davies, P. L., 3322-Pos
Davila Contreras, E. M., 434-Pos
Davila Jr, A., 1136-Plat
Davis, A. P., 952-Pos
Davis, B., 211-Plat
Davis, J. P., 901-Pos, 1742-Pos, 1756-Pos, 3665-Pos, 3667-Pos
Davis, K., 155-Plat, 3442-Pos, 3443-Pos
Davis, R. P., 2795-Pos
Davis, R. W., 2280-Plat
Davis, T., 844-Pos
Davison, J. M., 1445-Pos
Davydov, I., 1266-Plat, 2495-Pos
Dawe, G. B., 762-Pos
Dawidowski, D., 2558-Pos
Dawson, J. F., 2877-Pos, 3905-Pos
Dawson, L. A., 258-Pos
Dawson-Eli, A., 4082-Pos
Day, C. A., 1533-Pos
Day, J., 2514-Pos
Dayal, A., 651-Pos

D

- D' Aniello, C., 2795-Pos
D. Faraldo-Gómez, J., 1877-Pos

- Dayie, T. K., 1444-Pos
Dazzi, A., 1033-Pos
de Alba-Aguayo, D. R., 1634-Pos
de Almeida, R. F., 1056-Pos
De Beco, S., 1237-Plat
De Bellis, M., 2785-Pos
De Beule, P., 506-Pos
De Beule, P. A., 1943-Pos
de Boer, H., 3195-Plat
de Boer, H. L., 447-Pos
de Breij, A., 2232-Plat
de Brevern, A. G., 298-Pos
De Cabo, R., 78-Symp
De Clercq, K., 3811-Pos
De Genst, E., 1306-Pos
de Ghellinck, A., 225-Plat
de Graff, A. M., 3381-Pos
de Groot, B., 1331-Pos, 2218-Plat, 3357-Pos
de Groot, B. L., 757-Pos, 1381-Pos, 1514-Pos, 2729-Pos
de Jong, A. M., 236-Plat
de Jong, D. H., 917-Pos
de Kroon, A. I., 2572-Pos
De la Arada, I., 215-Plat
de la Cruz Landrau, A. A., 2721-Pos
de la Cruz, A., 2752-Pos, 2753-Pos
De La Cruz, E. M., 834-Pos
de la Cruz, M. J., 3464-Pos
De la Rosa, V., 3761-Pos
de las Heras, G., 2646-Pos
De Leo, F., 3136-Pos
de Lima Alves, F., 846-Pos, 3221-Symp
De Maio, A., 1261-Plat, 1507-Pos
De March, M., 3834-Pos
De Marco, A., 640-Pos
De Mauro, C., 1644-Pos
De Miguel, G., 3054-Pos
De Mol, E., 3477-Pos
de Nicola, G., 3668-Pos
de Paula, E., 2540-Pos
de Pedro, M., 3706-Pos
De Pietri Tonelli, D., 4001-Pos
De Pinto, V., 3845-Pos, 3992-Pos
de Planque, M., 703-Pos
de Silva, A. M., 1207-Plat
De Simone, A., 1305-Pos
De Stefani, D., 3844-Pos
De Stefano, S., 743-Pos
de Tombe, P., 1755-Pos, 3911-Pos
de Tombe, P. P., 817-Pos, 1553-Pos, 1752-Pos, 2853-Pos, 3887-Pos
de Turrís, V., 1127-Plat
de Valois, M., 2147-Plat
De Vera, I. M., 3475-Pos
de Vera, I. S., 2306-Wkshp
de Vries, A., 3239-Plat, 4046-Pos
de Winter, J. M., 3890-Pos
de Wit, G., 2531-Pos
De, G., 503-Pos, 940-Pos, 3201-Plat
Dea, P. K., 494-Pos
Deacon, A. M., 1573-Pos
Deacon, J., 2838-Pos
Deak, R., 288-Pos
Deane, C. M., 2286-Plat
Debaveye, S., 1731-Pos
DeBerg, H. A., 3727-Pos
DeBoeuf, K., 1725-Pos
Debold, E. P., 793-Pos, 3667-Pos
Debono, L., 1232-Plat
Debyser, Z., 330-Pos
DeCaen, P. G., 198-Plat, 3226-Plat
Decker, K., 1087-Pos
DeCoursey, T. E., 2190-Plat, 2821-Pos
dedecker, P., 330-Pos
Dedkova, E. N., 944-Pos
Deeds, E. J., 1906-Pos, 3251-Plat
Deek, J. B., 1787-Pos
Deem, M. W., 4011-Pos
Deepak, K., 1294-Pos
Degaga, E. K., 3638-Pos
Degawa, T., 3006-Pos
DeGrado, W. F., 546-Pos, 698-Pos, 2781-Pos
Degreif, D., 1703-Pos
Degtyar, V. E., 3182-Plat
DeHart, D. N., 2985-Pos
Deighan, M., 210-Plat
Deininger, E., 2996-Pos
Deix, M., 1608-Pos, 1609-Pos
Déjardin, S., 411-Pos
Deka, J., 3542-Pos
Dekermendjian, K., 1723-Pos
Dekker, C., 131-Plat, 398-Pos, 948-Pos, 1994-Pos, 2169-Plat
Dekker, N. H., 398-Pos, 1162-Plat, 1388-Pos, 1389-Pos, 1984-Pos, 1986-Pos, 1988-Pos, 2273-Plat, 3046-Pos
del Alamo, J. C., 1819-Pos, 3972-Pos
Del Rio Martinez, J. M., 3194-Plat
del Val, C., 101-Plat
Delaloye, K., 3749-Pos, 3791-Pos
Delarue, M., 231-Plat, 1732-Pos, 1736-Pos, 3243-Plat, 3358-Pos
Delcour, A. H., 2818-Pos
Delehanty, J., 3066-Pos
Delemotte, L., 3839-Pos
Delemotte, L., 525-Pos, 751-Pos, 1181-Plat, 1479-Pos, 1488-Pos, 3756-Pos
Delevoeye, C., 2522-Pos
Deleyrolle, L. P., 1795-Pos
Delgado, C., 2702-Pos
Delgado, S., 1543-Pos
deLivron, M. A., 2489-Pos
Della Pietra, A., 91-Plat
Dell'Acqua, M. L., 701-Pos, 1613-Pos
Delling, M., 3226-Plat
Dellisanti, C. D., 2762-Pos
DeLuca, J. G., 841-Pos
Deluz, C., 1710-Pos
Demange, P., 974-Pos
Demazumder, D., 3853-Pos
Dembinski, H. E., 3342-Pos
Demé, B., 2592-Pos
Demerdash, O., 2056-Pos
Demeulemeester, J., 330-Pos
Demir, Ö., 4004-Pos, 4005-Pos
Demirkhanyan, L., 1694-Pos, 3807-Pos
Dempsey, C. E., 707-Pos, 709-Pos
Dempski, R., 1920-Pos
Demuro, A., 2773-Pos
den Otter, W. K., 174-Plat
Deng, C. X., 3976-Pos
Deng, H., 932-Pos, 3346-Pos, 3431-Pos
Deng, W., 1347-Pos
Deng, Y., 842-Pos, 846-Pos, 3221-Symp
Deng, Z., 2651-Pos
Denicola, A., 449-Pos
Deniz, A. A., 269-Pos
Denkert, N., 2568-Pos
Denning, E. J., 369-Pos
Dennis, E. A., 207-Plat
Der, A., 3360-Pos
Dér, A., 2130-Pos, 3138-Pos
Derenyi, I., 288-Pos, 428-Pos, 3944-Pos
Derler, I., 1615-Pos
DeRose, R., 1229-Plat
DeRose, V. J., 2502-Pos
Derreumaux, P., 1299-Pos, 1450-Pos
Derrien, G., 2095-Pos
Derrington, I. M., 1082-Pos, 3197-Plat, 4087-Pos
Derrington, S. R., 1946-Pos
des Georges, A., 2487-Pos
Desa, D., 937-Pos
Desai, T. M., 3589-Pos
DeSantiago, J., 1640-Pos
DeSantis, M. C., 3057-Pos
Desaphy, J., 2785-Pos
Deschenes, I., 1657-Pos, 3793-Pos
Deserno, M., 334-Pos, 3152-Pos, 3597-Pos
Desikan, R., 1489-Pos
Desjardins, J., 3253-Plat
Desmarais, S., 3706-Pos
Desmyter, A., 1710-Pos
Despa, F., 1373-Pos
Despa, S., 1629-Pos
Despósito, M. A., 839-Pos
Dessauer, C. W., 2187-Plat
deTombe, P. P., 818-Pos
Detro-Dassen, S., 735-Pos
Devaney, T., 2749-Pos
Devaraneni, P., 2743-Pos
Devenyi, R. A., 3657-Pos
DeVience, S. J., 966-Pos
Devine, M., 2982-Pos
Devoisselle, J., 107-Plat, 2095-Pos
DeVore, M. S., 979-Pos
Dewa, T., 3771-Pos
Dewan, S., 2853-Pos
Dewilde, S., 2402-Pos
DeWitt, D., 1156-Plat
DeWitt, M., 1778-Pos
DeWitt, M. A., 3199-Plat
Dey, S. K., 508-Pos
Dhar, P., 515-Pos, 1375-Pos
Dharan, A. J., 4094-Pos
Dhote, V., 2487-Pos
Di Fabrizio, E., 117-Plat, 3141-Pos
Di Franco, M., 3701-Pos
di Lisa, F., 3924-Pos
Di Luca, M., 3043-Pos
Di Marino, D., 4050-Pos
di Meglio, J., 1066-Pos
Di Palma, F., 1453-Pos
Di Paolo, D., 119-Plat
Di Pierro, M., 2039-Pos
Di Rienzo, C., 1133-Plat
Di Vitta, C., 482-Pos
Diao, J., 2560-Pos
Dias, C. L., 2391-Pos
Dias, P., 631-Pos, 3838-Pos
Diaspro, A., 1016-Pos, 1031-Pos, 2001-Pos, 2019-Pos, 3043-Pos, 3044-Pos, 3054-Pos, 3161-Pos
Diaz, C., 1145-Plat
Diaz, J. A., 3121-Pos
Diaz-Aguilar, B. B., 3625-Pos
Díaz-Carrasco, I., 1617-Pos
Díaz-Franulic, I., 2727-Pos, 2731-Pos
Diaz-García, C. M., 1688-Pos
Diaz-Montes, J., 406-Pos
Diaz-Sylvester, P. L., 576-Pos, 582-Pos
Dick, B., 2342-Pos
Dick, I. E., 1681-Pos
Dicke, A. A., 2953-Pos
Dickey, A. M., 1245-Plat
Dickinson, L. E., 1986-Pos
Dickson, E. J., 716-Pos
Dickson, R. M., 3064-Pos
Dieckman, L., 396-Pos
Diedrich, D., 4000-Pos
Diehl, M. R., 1828-Pos
Dienes, B., 650-Pos, 661-Pos, 2696-Pos
Dierks, T., 2277-Plat
Dietrich, L. E., 4099-Pos
Dietz, H., 3120-Pos
Diez, S., 1786-Pos, 2101-Pos, 2239-Plat, 3953-Pos, 3954-Pos
DiFrancesco, D., 3172-Plat, 3656-Pos
DiFranco, M., 664-Pos
Diggins, P. M., 3597-Pos
Digman, M., 1013-Pos, 2018-Pos, 2353-Pos
Digman, M. A., 361-Pos, 2030-Pos
DiGregorio, D., 961-Pos
Dijkman, P. M., 2363-Pos
Dikanov, S. A., 1865-Pos
Dikiy, I., 783-Pos
Dilanian, G., 3746-Pos
DiLena, D., 509-Pos
Dill, K., 1910-Pos, 1918-Pos, 2139-Symp
Dill, K. A., 2213-Plat, 3312-Pos, 3381-Pos
Diller, R., 3100-Pos
Dillingham, M. S., 395-Pos, 1987-Pos, 2171-Plat
Dillmann, W., 659-Pos
Dillmann, W. H., 2181-Plat
Dillon, E., 1033-Pos
DiMaio, F., 190-Symp
Dimitriadis, E. K., 3459-Pos
Dimitrov, M., 294-Pos
Dimitrova, A., 2803-Pos
Dimova, R., 12-Subg, 1464-Pos, 1481-Pos
Ding, B., 1503-Pos
Ding, F., 2063-Pos
Ding, F. V., 186-Symp
Ding, J., 2209-Plat
Ding, M., 2209-Plat
Ding, Y., 259-Pos, 984-Pos
Dinic, J., 3578-Pos
Dinler Doganay, G., 3392-Pos
Dionisio, N., 1617-Pos
Dionne, G., 2489-Pos
Diraviyam, K., 837-Pos
DiRita, V., 3002-Pos
DiRita, V. J., 1032-Pos, 2010-Pos

- Dirksen, R. T., 663-Pos, 3700-Pos
 Diroll, B. T., 997-Pos
 Disalvo, A., 1463-Pos
 Discher, B. M., 1343-Pos, 2976-Pos
 Discher, D. E., 53-Subg, 1596.2-Pos, 2886-Pos
 Dittman, J., 959-Pos
 Dittmer, P. J., 1613-Pos
 Diver, M. M., 3418-Pos
 Divwu, Z., 1859-Pos
 Dixon, N. E., 1162-Plat
 Dixon, R. E., 1679-Pos, 1683-Pos
 Dlaskova, A., 1025-Pos
 D'Mello, R., 2310-Pos
 Do, K., 3414-Pos
 Do, T., 1333-Pos
 Doan, T., 2652-Pos
 Dobson, C., 1306-Pos
 Dobson, C. M., 321-Pos, 1358-Pos, 1361-Pos, 1364-Pos, 2317-Pos, 3456-Pos
 Dobson, J. P., 3155-Pos
 Docter, M. W., 1986-Pos
 Dodd, I. B., 3167-Symp
 Doenmez Cakil, Y., 3986-Pos
 Doerr, D., 991-Pos
 Doerr, J. M., 1522-Pos
 Doerr, L., 3702-Pos
 Dogan, A., 6-Subg
 Dogic, Z., 66-Subg
 Dogniaux, S., 893-Pos
 Dogra, P., 3461-Pos
 Dogterom, M., 1176-Symp
 Dokholyan, N., , 2184-Plat
 Dokholyan, N. V., 186-Symp
 Doktorova, M., 2537-Pos
 Doleschal, B., 3817-Pos
 Dolfi, M., 798-Pos
 Dolgikh, D. A., 3281-Pos
 Dolino, D., 3338-Pos
 Dolores, J., 4009-Pos
 Dolphin, A. C., 1113-Symp, 1672-Pos
 Dols-Pérez, A., 2593-Pos
 Dombrowski, C. C., 375-Pos
 Domeier, T. L., 3261-Plat
 Domene, C., 667-Pos, 3593-Pos
 Domingo, J., 2621-Pos
 Domingues, C. C., 2540-Pos
 Dominguez, R., 64-Subg, 899-Pos
 Dominguez-Rodriguez A, A., 2702-Pos
 Donald, B. R., 2217-Plat
 Donaldson, T., 4091-Pos
 Donelan, C., 2771-Pos
 Donelan, C. A., 2772-Pos
 Dong, B., 1009-Pos
 Dong, H., 1604-Pos
 Dong, M., 2630-Pos, 4032-Pos
 Dong, Q., 1424-Pos
 Dong, S. S., 1570-Pos
 Dong, W., 3660-Pos, 3884-Pos, 3885-Pos
 Dong, X., 2958-Pos, 2960-Pos
 Dong, Y., 577-Pos, 644-Pos, 959-Pos, 1582-Pos
 Donghan, L., 2218-Plat
 Doniach, S., 1936-Pos, 1944-Pos
 Donohue, M., 2573-Pos
 Donovan, E. L., 1546-Pos
 Donovan, R., 1900-Pos
 Doorn, S. K., 2121-Pos
 Doornenbal, J., 1278-Pos
 Dopico, A., 2205-Plat
 Dopico, A. M., 2711-Pos
 Dorfman, K. D., 420-Pos
 Doris, E. A., 2028-Pos
 Dörlich, R., 1029-Pos
 Dörner, K., 2315-Pos
 Doroshenko, O., 1455-Pos
 Doruker, P., 290-Pos, 1277-Pos
 dos Remedios, C., 1750-Pos, 2672-Pos
 dos Remedios, C. G., 1754-Pos, 2851-Pos
 Doss, B. L., 887-Pos, 890-Pos
 Doss, B. P., 3606-Pos
 Dotson, D. L., 369-Pos, 1846-Pos
 Dotta, B. T., 927-Pos
 Dou, H., 2651-Pos
 Dou, Y., 3758-Pos
 Doudna, J., 2507-Pos
 Doudna, J. A., 2174-Plat, 2340-Pos, 2512-Pos, 3523-Pos, 3524-Pos, 3525-Pos
 Dougan, L., 3163-Symp
 Dougherty, D. A., 1726-Pos, 1727-Pos, 2759-Pos
 Douglas, G., 945-Pos
 Douma, L., 1160-Plat
 Doumazane, E., 534-Pos
 Dourado, M., 2810-Pos
 Dovala, D., 2397-Pos
 Dovat, S., 2798-Pos
 Dowbenko, D., 2647-Pos
 Dowhan, W., 7-Subg
 Downing, K. H., 1811-Pos
 Downton, M., 1515-Pos
 Downton, M. T., 476-Pos
 Doye, J. P., 355-Pos
 Doyle, M. L., 91-Plat
 Drach, M., 1680-Pos
 Draganski, A., 1101-Pos
 Draycott, S., 705-Pos
 Drazba, P., 1473-Pos
 Dreiss, C. A., 3092-Pos
 Drennan, A., 2470-Pos
 Drennan, C. L., 285-Pos
 Drescher, K., 2135-Pos
 Drew, D., 1846-Pos
 Drews, A., 1695-Pos, 2774-Pos
 Dries, E., 1636-Pos
 Drijfhout, J., 2232-Plat
 Drin, G., 527-Pos
 Drobizhev, M., 3065-Pos, 4092-Pos
 Drobnak, I., 3387-Pos
 Drombosky, K., 3403-Pos
 Dror, R. O., 533-Pos
 Drori, R., 3322-Pos
 Drozdetski, A., 1426-Pos
 D'Silva, P., 939-Pos
 Du Pont, K. E., 2362-Pos
 du Roure, O., 832-Pos
 Du, Q., 3711-Pos
 Du, W., 168-Plat
 Du, X., 3858-Pos
 Duan, B., 2454-Pos
 Duan, L., 2998-Pos
 Duann, P., 503-Pos, 3201-Plat
 Duarte, E. L., 2584-Pos
 Dubey, A., 4075-Pos
 Ducas, V. C., 1359-Pos
 Duckett, R. M., 3104-Pos
 Duckworth, P., 1500-Pos
 Duclos, G., 1802-Pos, 2684-Pos
 Duderstadt, K. E., 1390-Pos
 Dudko, O., 2279-Plat
 Dudko, O. K., 1199-Plat
 Dudutienė, V., 1336-Pos
 Dueber, E. C., 1285-Pos
 Duerr, K., 167-Plat
 Duff, A., 2516-Pos
 Dufort, C., 2907-Pos
 Dufresne, E., 1596.1-Pos
 Dugan, S. P., 3677-Pos
 Duggal, D., 183-Plat, 2847-Pos, 2848-Pos
 Duggan, K. D., 1860-Pos
 Dulhunty, A. F., 594-Pos, 641-Pos, 2257-Plat
 Dulin, D., 1162-Plat, 1389-Pos, 1986-Pos, 1988-Pos, 3046-Pos
 Dumaine, R., 1667-Pos
 Duman, M., 2591-Pos
 Dumas, C., 2339-Pos
 Dumitru, A. C., 4036-Pos
 Dumont, S., 63-Subg, 3969-Pos
 Dunagan, M. M., 270-Pos, 273-Pos, 1348-Pos
 Dunkel, J., 1061-Pos, 2918-Pos
 Dunlap, D., 357-Pos, 984-Pos
 Dunlap, D. D., 2472-Pos
 Dunlap, T. B., 2159-Plat
 Dunleavy, K., 1539-Pos, 3630-Pos
 Dunn, A., 1164-Plat, 1814-Pos
 Dunn, A. R., 234-Plat, 1813-Pos, 1815-Pos, 1816-Pos
 Dunn, J., 811-Pos
 Dunn, T., 1333-Pos
 Dupuis, F., 1105-Pos
 Dupuis, N., 1429-Pos
 Duque, J., 2121-Pos
 Durand, P., 1801-Pos
 Durand-Smet, P., 1798-Pos
 Duran-Paez, M. A., 2997-Pos
 Durdagi, S., 94-Plat, 3780-Pos
 Durer, Z. A., 831-Pos
 Duret, G., 2888-Pos, 4013-Pos
 Duro, E., 846-Pos, 3221-Symp
 Durrieu, M., 1823-Pos
 Dürrnagel, S., 781-Pos
 Dursunian, D., 371-Pos, 373-Pos
 Dursunian, D. L., 372-Pos
 Dushek, O., 1193-Plat
 Duss, S., 1667-Pos
 Dutcher, S., 850-Pos, 1820-Pos, 1827-Pos
 Dutov, P., 3469-Pos
 Dutreix, M., 2522-Pos
 Dutta, P., 2410-Pos
 Dutton, P., 1343-Pos
 Dutton, P. L., 2976-Pos
 Duvall, M., 2282-Plat
 Düzgünes, N., 3162-Pos
 Dvorak, P., 2854-Pos
 Dvornikov, A. S., 2018-Pos
 Dvornikov, A. V., 2853-Pos
 Dweck, D., 1743-Pos, 3663-Pos, 3910-Pos
 Dwivedi, G., 1911-Pos
 Dwivedi, M., 2582-Pos
 Dwyer, J., 825-Pos
 Dyer, B., 3431-Pos
 Dyrka, W., 2829-Pos
- E**
- E. James, C., 2816-Pos
 E.Kurczy, M., 3177-Plat
 Earl, L., 3039-Pos
 Earnest, T. M., 425-Pos
 Eastman, P., 2035-Pos
 Eaton, W. A., 2221-Plat
 Ebbinghaus, M., 1833-Pos
 Ebbinghaus, S., 3721-Pos
 Ebenhan, J., 3048-Pos
 Eberwein, P., 3979-Pos
 Ebner, A., 1953-Pos
 Ebright, R. H., 2469-Pos
 Echaide, M., 438-Pos
 Echalié, A., 2339-Pos
 Echelman, D., 2921-Pos
 Eckels, E., 2292-Plat
 Eckenhoff, R. G., 2416-Pos
 Ecker, G., 706-Pos, 1309-Pos, 1848-Pos
 Eckhardt, L. L., 2799-Pos
 Eckmann, C., 384-Pos
 Eckrich, S., 1671-Pos
 Economou, E., 3156-Pos
 Eddy, M. T., 2983-Pos
 Edgar, D., 1400-Pos
 Edholm, O., 2032-Pos
 Edlund, P. E., 923-Pos
 Edlunde, E. G., 1044-Pos
 Edwald, E., 2587-Pos
 Edwards, A., 607-Pos, 3185-Plat
 Edwards, A. G., 3697-Pos
 Edwards, A. L., 2354-Pos
 Edwards, J., 2205-Plat
 Edwards, J. N., 604-Pos, 652-Pos, 1624-Pos
 Edwards, L. E., 2132-Pos
 Edwards, M. A., 2593-Pos
 Egelman, E. H., 147-Plat, 2876-Pos
 Eggeling, C., 3204-Plat, 3717-Pos
 Eggenberger, O., 1080-Pos
 Eggenberger, O. M., 1081-Pos
 Egger, D. C., 2693-Pos
 Egger, M., 2693-Pos, 2694-Pos, 2695-Pos
 Eggermont, J., 2962-Pos
 Eggers, D. K., 3715-Pos
 Eghiaian, F., 4028-Pos
 Eginton, C., 1297-Pos, 2215-Plat
 Egner, A., 2664-Pos
 Ehler, E., 825-Pos
 Ehlers, G., 1325-Pos
 Ehring, G. R., 1650-Pos
 Ehrlich, N., 2681-Pos
 Ehrlicher, A., 1235-Plat
 El Harchi, A., 709-Pos
 Eichel, C. A., 3743-Pos, 3746-Pos
 Eichelbaum, S., 2466-Pos
 Eichman, B., 486-Pos
 Eidam, O., 1340-Pos
 Einarsdóttir, O., 2967-Pos
 Einarsdóttir, O., 2968-Pos
 Eisenberg, B., 686-Pos
 Eisenberg, B. S., 684-Pos
 Eisner, V., 2990-Pos
 Ekanayake, E., 266-Pos
 Ekiert, D. C., 2216-Plat
 Ekker, S. C., 3719-Pos

- Ekmekci, B., 2343-Pos
 Ekpenyong, A., 232-Plat
 el Beheiry, M., 4080-Pos
 El Chemaly, A., 2832-Pos
 El Harchi, A., 707-Pos
 El Khoury, N., 1661-Pos, 2800-Pos
 EL Khoury, Y., 2978-Pos
 El Turk, F., 1306-Pos
 Elbaum, M., 3023-Pos
 Elbaum-Garfinkle, S., 1376-Pos
 Elbel, K., 3067-Pos
 Elber, R., 42-Subg, 2039-Pos
 El-Bizri, N., 1664-Pos
 Eldho, N. V., 558-Pos
 El-Din, T. M., 3343-Pos
 Eldo, E., 1472-Pos
 Eldstrom, J., 98-Plat
 Elf, J., 2246-Symp
 Elf-Lind, M. N., 2285-Plat
 Elgeti, M., 206-Plat
 El-Hassar, L., 3741-Pos
 Elías-Wolff, F., 505-Pos
 Eliezer, D., 783-Pos, 959-Pos
 Elinder, F., 731-Pos, 3731-Pos, 3736-Pos
 Elizalde, A., 1555-Pos
 Elkayam, E., 2297-Wkshp
 Elkins, M., 3375-Pos
 Ellekvist, P., 2789-Pos
 Ellena, J. F., 2558-Pos
 Ellermeier, J., 1916-Pos
 Ellingsen, Ø., 3913-Pos
 Elliot, H., 81-Symp
 Elliott, A. D., 3997-Pos
 Elliott, E. B., 3688-Pos
 Elliott, J. T., 141-Plat
 Ellis, J. L., 3267-Plat
 Ellrich, H., 910-Pos
 El-Mezgueldi, M., 1766-Pos
 El-Samad, H., 1904-Pos
 Elshikha, A. S., 3133-Pos
 Elson, E. L., 393-Pos, 1882-Pos
 Elting, M. W., 63-Subg, 3969-Pos
 Eltit, J. M., 549-Pos, 647-Pos
 Elustondo, P., 1694-Pos, 3807-Pos
 Elustondo, P. A., 2987-Pos
 Emami, S., 2325-Pos
 Emmert-Buck, M. A., 3711-Pos
 Emmett, K., 4099-Pos
 Emperador, A., 310-Pos
 Endesfelder, U., 2014-Pos, 2464-Pos
 Engel, J., 1671-Pos
 Engelhard, C., 969-Pos, 1295-Pos
 Engelke, F., 2228-Plat
 Engelman, D. M., 471-Pos, 1167-Symp, 1510-Pos
 Englander, S., 2-Subg, 557-Pos
 Engler, A. J., 1806-Pos, 3917-Pos, 3921-Pos
 English, C. A., 3393-Pos
 Enkavi, G., 1852-Pos
 Ennomani, H., 2871-Pos
 Enoki, T. A., 453-Pos
 Enyedi, B., 599-Pos
 Epand, R., 933-Pos
 Epand, R. M., 933-Pos
 Epstein, M., 2282-Plat
 Epureanu, B. I., 3951-Pos
 Ercolini, E., 235-Plat
 Erdemli, G., 3993-Pos
 Erdmann, R., 1039-Pos, 2007-Pos
 Erdogan, O., 3421-Pos
 Erickson, H. P., 1310-Pos
 Erickson, J., 596-Pos
 Ericsson, M., 3913-Pos
 Erkut, C., 3559-Pos
 Erlenkämper, C., 3717-Pos
 Erikkamp, M., 1941-Pos, 3273-Pos
 Ermakova, E., 3379-Pos
 Erramilli, S. K., 1153-Plat
 Esbjörner, E. K., 2317-Pos
 Escobar, A. L., 1637-Pos
 Escobar, C. A., 265-Pos
 Esfandiari, L., 3137-Pos
 Eskici, G., 1485-Pos
 Eskildsen, J. C., 1723-Pos
 Eskin, S. G., 823-Pos
 Espinosa-Caballero, M. I., 4046-Pos
 Espinoza-Fonseca, L., 819-Pos, 2950-Pos
 Esposito, E., 1226-Plat
 Esque, J., 298-Pos
 Esquiaqui, J. M., 1438-Pos
 Esquivel-Suarez, F., 1102-Pos
 Essigmann, J. M., 2226-Plat
 Estevez, R., 748-Pos
 Estrada, L. C., 2011-Pos
 Estrin, E., 149-Plat, 2366-Pos
 Etchebest, C., 298-Pos, 4062-Pos
 Etemad, S., 1677-Pos
 Ethayathulla, A. S., 1850-Pos
 Etheridge, T., 1007-Pos
 Etoc, F., 1237-Plat
 Etson, C. M., 130-Plat
 Ettedgui, J., 1074-Pos
 Ettrich, R., 1608-Pos, 1609-Pos
 Etxebarria, A., 477-Pos
 Etzminger, K., 252-Pos
 Euden, J., 559-Pos
 Eum, K. S., 478-Pos
 Eun, C., 3435-Pos, 4049-Pos
 Evans, B., 2105-Pos
 Evans, G., 1395-Pos
 Evans, M., 214-Plat
 Evavold, B. D., 1186-Plat
 Ewers, D., 757-Pos
 Ewert, K. K., 2126-Pos
 Ezpinoza, M., 748-Pos
F
 Faber, M., 1448-Pos
 Fábíán, L., 2130-Pos, 3360-Pos
 Fabre, L., 534-Pos
 Fabris, D., 1447-Pos
 Fabris, P., 235-Plat, 1308-Pos, 1979-Pos
 Fabry, B., 822-Pos, 873-Pos, 2150-Plat, 2912-Pos
 Facchetti, G., 117-Plat
 Faehnle, C. R., 2297-Wkshp
 Faelber, K., 164-Plat
 Fagnant, P. M., 3674-Pos
 Fague, L., 3184-Plat
 Fahlke, C., 744-Pos, 757-Pos
 Fahmy, K., 2948-Pos, 3509-Pos, 3559-Pos
 Fahrner, M., 1600-Pos, 1615-Pos
 Fahrni, C. J., 3064-Pos
 Fairbrother, S., 3809-Pos
 Fairbrother, W. J., 1285-Pos
 Fajer, M., , 2077-Pos, 3234-Plat
 Fajer, P., , 2308-Wkshp, 2874-Pos
 Falcke, M., 1222-Plat
 Falke, J. J., 2598-Pos
 Falkenberg, C. V., 1268-Plat
 Falkovskaia, E., 1890-Pos
 Faller, C. E., 3334-Pos
 Faller, R., 2580-Pos
 Falomir-Lockhart, L. J., 1257-Plat
 Falorsi, G., 2291-Plat
 Faltinova, A., 637-Pos
 Falvo, M. R., 233-Plat, 1284-Pos
 Fan, C., 2801-Pos
 Fan, G., 574-Pos, 575-Pos, 3035-Pos
 Fan, H., 391-Pos
 Fan, H. Y., 3547-Pos
 Fan, L., 1929-Pos
 Fan, P., 1757-Pos
 Fan, X., 638-Pos, 1439-Pos
 Fan, Z., 503-Pos
 Fang, N., 1009-Pos
 Fang, Q., 140-Plat
 Fang, S., 173-Plat
 Fang, X., 2084-Pos
 Fantana, H., 849-Pos
 Fanucci, G. E., 1438-Pos, 2306-Wkshp, 2605-Pos
 Faraggi, E., 3321-Pos
 Faraldo-Gómez, J., 2164-Plat
 Faraldo-Gomez, J. D., 1854-Pos
 Faraldo-Gómez, J. D., 1876-Pos
 Faramarz, M., 3258-Plat
 Farber, P., 84-Plat, 194-Symp, 3488-Pos, 3491-Pos
 Fard, S. T., 1137-Plat
 Farhy Tselnickner, I., 2187-Plat
 Farid, R., 3070-Pos
 Farina, A., 3828-Pos
 Farina, F., 2522-Pos
 Farinelli, F., 4006-Pos
 Faris, G. W., 3513-Pos
 Faris, R., 1042-Pos
 Farkasovsky, M., 851-Pos
 Farley, B. M., 2669-Pos
 Farley, J., 1725-Pos
 Farley, M. M., 4007-Pos
 Farley, R., 2728-Pos, 2823-Pos
 Farlow, J., 1135-Plat
 Farman, G. P., 181-Plat, 2844-Pos
 Farrance, O. E., 1946-Pos
 Farrell, B., 2899-Pos, 4006-Pos
 Farrens, D. L., 542-Pos, 543-Pos, 550-Pos
 Farrington, J., 1616-Pos
 Farrow, R. C., 2093-Pos
 Farrow, R. E., 905-Pos
 Fass, O. Z., 179-Plat
 Fasshauer, D., 1583-Pos
 Fast, V. G., 1933-Pos
 Fauconnier, J., 2854-Pos
 Fauerbach, J. A., 1307-Pos
 Faure, E., 96-Plat
 Faure, G., 298-Pos
 Fauré, J., 3874-Pos
 Faust, B., 1834-Pos
 Faustino, A. F., 1959-Pos
 Favaro, E., 3019-Pos
 Favela-Rosales, F., 430-Pos
 Favreau, A. J., 3334-Pos
 Fay, J. F., 542-Pos, 550-Pos
 Fay, N., 2634-Pos, 3975-Pos
 Fay, N. C., 2636-Pos
 Fealey, M., 1539-Pos, 3630-Pos
 Fealey, M. E., 516-Pos, 2676-Pos, 3279-Pos, 3437-Pos
 Fechner, S., 3841-Pos
 Fedeles, B. I., 2226-Plat
 Fedida, D., 98-Plat, 629-Pos, 711-Pos, 2186-Plat, 2718-Pos, 3758-Pos
 Fedorov, V. V., 1756-Pos, 2181-Plat
 Fee, J. A., 2967-Pos
 Fefelova, N., 628-Pos
 Fei, H., 962-Pos
 Fei, J., 1018-Pos, 1213-Plat, 2196-Plat, 2461-Pos, 2477-Pos, 2480-Pos, 2497-Pos
 Feig, M., 2337-Pos, 2525-Pos, 3503-Pos, 3674-Pos
 Feigensohn, G. W., 1473-Pos, 1480-Pos, 1487-Pos, 2537-Pos
 Feinstein, S. C., 1787-Pos
 Feixas-Gerones, F., 3335-Pos
 Felberg, L. E., 2082-Pos
 Feld, G. K., 246-Pos
 Feldkamp, M. D., 264-Pos, 1655-Pos
 Feldmann, J., 34-Subg, 995-Pos
 Felekyan, S., 534-Pos, 1298-Pos, 2016-Pos, 3356-Pos, 3515-Pos
 Felipe, A., 3737-Pos
 Felkin, L. E., 3838-Pos
 Feller, S., 502-Pos
 Feller, S. E., 100-Plat, 297-Pos
 Felsővalyi, K., 2345-Pos
 Fenaux, M., 1330-Pos
 Feng, H., 2852-Pos, 3671-Pos
 Feng, J., 427-Pos
 Feng, L., 1669-Pos
 Feng, V., 2367-Pos
 Feng, W., 577-Pos, 644-Pos
 Feng, Y., 870-Pos
 Fenley, A. T., 405-Pos, 2329-Pos, 3332-Pos
 Fenn, T. D., 2055-Pos
 Fenollar-Ferrer, C., 738-Pos
 Fenollar-Ferrer, M., 1154-Plat
 Fenwick, R. B., 3477-Pos
 Fenz, S., 2628-Pos
 Ferenci, M., 1738-Pos
 Ferenczi, M. A., 3865-Pos, 3907-Pos
 Ferguson, D. J., 3019-Pos
 Ferguson, K. M., 557-Pos
 Ferguson, M. L., 1127-Plat
 Ferguson-Miller, S., 86-Plat
 Ferkinghoff-Borg, J., 3236-Plat
 Ferlez, B., 2971-Pos
 Fernandes, D., 925-Pos
 Fernandes, D. D., 538-Pos
 Fernandes, T. V., 1506-Pos
 Fernandez - Tenorio, M., 2695-Pos
 Fernandez velasco, M., 3693-Pos
 Fernandez, A. M., 1017-Pos
 Fernandez, C., 292-Pos, 2921-Pos
 Fernandez, J., 2244-Symp, 2272-Plat, 2921-Pos

Fernandez, J. M., 1976-Pos, 3434-Pos
 Fernández, J. M., 2292-Plat
 Fernandez, M., 357-Pos, 3865-Pos
 Fernández-Ballester, G., 3737-Pos
 Fernandez-Lima, F., 1316-Pos
 Fernandez-Martinez, J., 150-Plat
 Fernandez-Rivero, N., 1125-Plat
 Fernandez-Tenorio, M., 1642-Pos
 Fernando, C. A., 3261-Plat
 Ferrand, P., 2583-Pos
 Ferrandi, M., 1660-Pos
 Ferrantini, C., 1744-Pos, 1753-Pos, 1757-Pos, 2260-Plat, 3257-Plat
 Ferrara, C., 1744-Pos, 2836-Pos
 Ferreira, J., 2206-Plat
 Ferreira, J. J., 2700-Pos
 Ferreira, L. F., 3869-Pos
 Ferreira, T., 223-Plat
 Ferrer, T., 724-Pos
 Ferrer-Montiel, A., 3737-Pos
 Fertig, N., 680-Pos, 694-Pos, 2825-Pos, 3702-Pos
 Feussner, I., 2932-Pos
 Feuston, B. P., 3601-Pos
 Fiche, J., 411-Pos
 Fichera, C., 3992-Pos
 Ficker, E., 1657-Pos, 3793-Pos
 Fidy, J., 3284-Pos
 Fiedler, S., 1342-Pos
 Fierz, B., 414-Pos
 Figdor, C. G., 118-Plat
 Figueroa, L., 1624-Pos
 Figueroa, V. A., 3797-Pos
 Filip, J., 3158-Pos
 Filipp, F. V., 3008-Pos
 Filizola, M., 556-Pos, 1561-Pos, 1569-Pos
 Fill, M., 573-Pos
 Fillingame, R. H., 1875-Pos
 Fillion, M., 456-Pos, 459-Pos
 Filosa, J. A., 3010-Pos
 Finan, K., 2464-Pos
 Findeisen, F., 668-Pos, 698-Pos, 1678-Pos
 Fineberg, J. D., 93-Plat
 Finger, D., 1161-Plat
 Fink, M. Y., 2997-Pos
 Finkelstein, A., 3633-Pos
 Finkenstaedt-Quinn, S., 865-Pos, 2661-Pos
 Finkielstein, C. V., 3347-Pos
 Finley, N. L., 3301-Pos
 Finneran, P., 3009-Pos
 Finol-Urdaneta, R. K., 682-Pos, 683-Pos
 Finzi, L., 357-Pos, 984-Pos, 2472-Pos, 3168-Symp
 Fiore, M., 748-Pos
 Fiorentino, R., 2775-Pos
 Fiori, M., 3849-Pos
 Fiorin, G., 1604-Pos, 2554-Pos
 Fiorini, F., 385-Pos
 Firestone, M. A., 2566-Pos
 Firtel, R., 3972-Pos
 Firtel, R. A., 1819-Pos
 Firth, J. M., 559-Pos
 Fischer, F., 111-Plat
 Fischer, N., 1266-Plat, 2495-Pos
 Fischer, S., 3881-Pos
 Fischer, W. B., 299-Pos, 326-Pos, 2779-Pos, 2780-Pos
 Fischmeister, R., 1550-Pos, 1641-Pos
 Fiset, C., 625-Pos, 1661-Pos, 2800-Pos
 Fisher, J., 1897-Pos
 Fisher, R., 3027-Pos
 Fitter, J., 1283-Pos, 3390-Pos, 3397-Pos
 Fixman, E. D., 3875-Pos
 Flach, C. R., 3576-Pos
 Flagmeier, P., 1361-Pos
 Flak, J. B., 2794-Pos
 Flanagan, L. A., 2887-Pos
 Flašker, A., 69-Subg
 Fleischer, C. C., 3154-Pos
 Fleischer, S., 576-Pos
 Fleissner, M., 3356-Pos
 Fleming, K. G., 3319-Pos
 Fleming, M. R., 2751-Pos
 Fleming, P. J., 3319-Pos
 Fletcher, D., 867-Pos, 915-Pos, 3223-Symp
 Fletcher, D. A., 335-Pos, 847-Pos
 Fletcher, W. R., 446-Pos
 Fletcher-Taylor, S., 478-Pos
 Flint, G. V., 1745-Pos
 Floor, S., 2507-Pos
 Florencia, S., 2820-Pos
 Florentino, R. M., 1554-Pos
 Flores, S. C., 2481-Pos, 2491-Pos
 Flores-Canales, J. C., 2229-Plat
 Flucher, B. E., 650-Pos, 697-Pos, 698-Pos, 1677-Pos, 1680-Pos, 1685-Pos
 Flucher, S. M., 1680-Pos
 Flyamer, I., 420-Pos
 Flyvbjerg, H., 1993-Pos, 2288-Plat
 Focia, P., 156-Plat
 Focke, P. J., 1157-Plat
 Fogarty, J., 2049-Pos
 Fogarty, K., 3063-Pos
 Foley, J., 3452-Pos, 3453-Pos
 Folegea, D., 1862-Pos
 Fölser, M., 452-Pos
 Fomina, A., 1597-Pos
 Fong, J., 972-Pos
 Fong, K., 844-Pos
 Fong, Z., 2367-Pos
 Fonseca, A., 2665-Pos
 Fontes, A., 3133-Pos
 Foo, Y., 3000-Pos
 Ford, N. B., 2390-Pos
 Forde, N., 1240-Plat
 Forde, N. R., 302-Pos, 1970-Pos, 3943-Pos
 Forero-Shelton, M., 3970-Pos, 4042-Pos
 Forest, K. T., 1194-Plat
 Forgacs, G., 3124-Pos
 Forlemu, N. Y., 3102-Pos
 Forman-Kay, J., 274-Pos, 3488-Pos, 3491-Pos
 Forman-Kay, J. D., 84-Plat, 194-Symp
 Fornander, L. H., 3508-Pos
 Fornasiero, F., 1072-Pos
 Fornili, A., 182-Plat, 3274-Pos
 Forouhar, F., 2184-Plat
 Forrest, L. R., 738-Pos, 1154-Plat, 1156-Plat, 1834-Pos
 Forster, I. C., 1154-Plat, 1155-Plat
 Forstner, M. B., 3638-Pos
 Forte, M., 18-Subg
 Forte, T. M., 950-Pos
 Forth, S., 410-Pos
 Forties, R. A., 1134-Plat, 1990-Pos
 Foskett, J., 3804-Pos
 Foster, R. N., 490-Pos
 Fouchard, J., 1801-Pos
 Fourest-Lieuvain, A., 3874-Pos
 Fourkas, J., 3961-Pos
 Fowler, A., 264-Pos
 Fowler, P., 3617-Pos
 Fowler, P. W., 786-Pos, 3565-Pos
 Fox, D. A., 1353-Pos
 Fox, P. D., 2588-Pos
 Frachisse, J., 1798-Pos
 Fraering, P., 294-Pos
 Fragneto, G., 225-Plat
 Francesconi, K. A., 1834-Pos
 Francesconi, O., 3810-Pos
 Francetic, O., 147-Plat
 Francino, A., 795-Pos, 3258-Plat
 Francisco, L. E., 3495-Pos
 Franco-Gonzalez, J. F., 3374-Pos
 Francy, C. A., 3022-Pos, 3038-Pos
 Frank, J., 2487-Pos, 2489-Pos, 3020-Pos, 3036-Pos
 Franquelim, H. G., 3120-Pos
 Franzen, S., 2355-Pos, 3351-Pos
 Franzini-Armstrong, C., 642-Pos, 643-Pos, 3703-Pos
 Franzyk, H., 1711-Pos
 Fraser, G., 420-Pos
 Fraser, J., 3212-Plat
 Fraser, J. S., 1937-Pos
 Fraser, S., 4018-Pos
 Fraser, S. E., 2202-Plat, 2905-Pos, 3068-Pos
 Fraternali, F., 182-Plat, 3274-Pos
 Frayne, S., 2118-Pos
 Fread, K., 3347-Pos
 Frederic, P., 3605-Pos
 Frederiksen, K., 1723-Pos
 Frediani, G., 4026-Pos
 Freed, J. H., 1260-Plat, 3471-Pos, 3586-Pos
 Freed, K. F., 2436-Pos
 Freedman, H., 4072-Pos
 Freedman, R. B., 1246-Plat, 3331-Pos
 Freire, J., 1509-Pos
 Freissmuth, M., 1309-Pos, 1840-Pos
 Freites, J., 1610-Pos, 2724-Pos
 Freites, J. A., 3755-Pos
 French, R. J., 682-Pos, 683-Pos, 1651-Pos
 Frenette, J., 3700-Pos
 Frenkel, D., 524-Pos
 Freudenthal, B., 3501-Pos
 Frey, S. L., 1256-Plat, 1461-Pos, 2134-Pos
 Frey, W., 2546-Pos
 Freymann, D., 156-Plat
 Frezza, L., 682-Pos, 683-Pos, 2265-Plat, 3751-Pos
 Frezzato, F., 22-Subg, 3739-Pos
 Frias, M., 1463-Pos
 Fribourg, M., 549-Pos
 Fricke, B., 2086-Pos
 Fridlyand, L. E., 3636-Pos
 Fried, M. G., 3505-Pos
 Fried, S. D., 2033-Pos, 2977-Pos
 Friedhoff, P., 3507-Pos
 Friedman, P. A., 3348-Pos
 Friis, S., 3860-Pos, 3861-Pos
 Frischauf, I., 1608-Pos, 1609-Pos, 3817-Pos
 Frisk, M., 3895-Pos
 Fritsch, A., 891-Pos, 2903-Pos
 Fritzsche, J., 1402-Pos, 2168-Plat, 3508-Pos
 Fritzsche, M., 3717-Pos
 Frohm, B., 3458-Pos
 Frohnapfel, M., 1356-Pos
 Frolenkov, G., 4024-Pos
 Frölich, C., 3038-Pos
 Frolov, V., 1468-Pos, 3546-Pos
 Fromme, P., 975-Pos, 2315-Pos, 3485-Pos
 Fruen, B. R., 2671-Pos
 Fruhwirth, G., 1011-Pos
 Frushicheva, M. P., 1899-Pos
 Fry, B. A., 1343-Pos, 2976-Pos
 Frydman, J., 3454-Pos, 3460-Pos
 Frykholm, K., 2168-Plat, 3508-Pos
 Fu, B., 2428-Pos
 Fu, C., 1137-Plat, 2090-Pos
 Fu, H., 982-Pos
 Fu, R., 1498-Pos
 Fu, Z., 3175-Plat
 Fuches, M. R., 1940-Pos
 Fuchigami, S., 2347-Pos
 Fudala, R., 2023-Pos, 2847-Pos, 2848-Pos
 Fuentes, E. J., 3344-Pos
 Fuerst, M., 2589-Pos
 Fuerstenberg, A., 2014-Pos
 Fuglebakk, E., 2336-Pos
 Fuglsang, A. T., 2961-Pos
 Fuhrmann, A., 1806-Pos
 Fujii, K., 2328-Pos
 Fujii, T., 3878-Pos
 Fujimoto, L. M., 259-Pos
 Fujio, H., 2427-Pos
 Fujita, H., 112-Plat, 2879-Pos
 Fujitani, H., 3088-Pos
 Fujiwara, M., 3429-Pos
 Fujiwara, Y., 3769-Pos
 Fuklang, S., 3373-Pos
 Fukuda, N., 2835-Pos, 2865-Pos, 2866-Pos, 3262-Plat, 3902-Pos
 Fukuda, Y., 3422-Pos
 Fukumoto, S., 2386-Pos
 Fukushima, S., 2625-Pos
 Fulbright, R. M., 1990-Pos
 Fuller, H., 1788-Pos
 fuller, W., 1549-Pos, 2935-Pos, 3670-Pos
 Fumagalli, L., 2593-Pos
 Funari, S. S., 482-Pos
 Funatogawa, C., 2967-Pos
 Funatsu, T., 2003-Pos, 3050-Pos
 Funk, O., 1708-Pos
 Funnell, B. E., 1826-Pos
 Furano, A. V., 394-Pos
 Furini, S., 667-Pos
 Furlan, G., 121-Plat
 Furr, M., 3318-Pos
 Furse, S., 2572-Pos
 Fürst, O., 3837-Pos
 Fürstenberg, A., 1206-Plat

- Furukawa, T., 3650-Pos
 Furuta, A., 2241-Plat
 Furuta, K., 902-Pos, 2241-Plat
 Furutani, Y., 3094-Pos
 Fusco, G., 1358-Pos
 Fuselier, T., 457-Pos
 Fusi, L., 1115-Symp,
 2293-Plat, 3669-Pos
 Fuson, K., 2550-Pos
- G**
- Gabba, M., 1283-Pos
 Gabriel, M., 2011-Pos
 Gabriela, G., 136-Plat
 Gabriele, S., 2884-Pos,
 2885-Pos
 Gabrielová, E., 1552-Pos
 Gabrielsen, D. A., 1584-Pos
 Gabriellson, A., 3731-Pos
 Gabrilovich, D. I., 4064-Pos
 Gaczynska, M., 4033-Pos
 Gadek, M., 2863-Pos
 Gaertner, H. F., 1206-Plat
 Gage, M. J., 267-Pos,
 3483-Pos
 Gagna, C. E., 370-Pos,
 371-Pos, 372-Pos, 373-Pos
 Gagnon, J. K., 3265-Plat
 Gahlmann, A., 324-Pos,
 1023-Pos
 Gainza, P., 2217-Plat
 Gaitán-Peñas, H., 748-Pos
 Gaither, L. A., 736-Pos
 Gajapathy, M., 3288-Pos
 Galajda, P., 3138-Pos
 Galassi, V. V., 2965-Pos
 Galbur, E., 2460-Pos,
 3521-Pos
 Galfrè, E., 3857-Pos
 Galiani, S., 1016-Pos
 Galiano, L., 2306-Wkshp
 Galice, S., 1629-Pos
 Galimzyanov, T. R.,
 497-Pos, 1466-Pos
 Galione, A., 1228-Plat,
 3247-Plat
 Galkin, V. E., 2882-Pos
 Gall, D., 1105-Pos,
 1935-Pos, 2680-Pos
 Galla, H., 2582-Pos
 Gallant, C., 838-Pos
 Galletto, R., 393-Pos
 Gallin, W. J., 3754-Pos
 Galpin, J., 1002-Pos
 Galpin, J. D., 728-Pos
 Gamari, B. D., 1129-Plat,
 1451-Pos, 1456-Pos
 Gambino, S., 376-Pos,
 1107-Pos
 Gamble, T. P., 1087-Pos
 Gamper, N., 3175-Plat,
 3858-Pos
 Gandhi, S., 1364-Pos,
 2679-Pos, 2982-Pos
- Ganesan, S., 3391-Pos
 Gangadharan, B., 1765-Pos
 Gangloff, M., 1567-Pos
 Ganguly, K., 3990-Pos
 Ganguly, S., 4004-Pos,
 4005-Pos
 Ganim, Z., 2274-Plat
 Ganjiwale, A. M., 1511-Pos
 Gansen, A., 2175-Plat
 Ganser-Pornillos, B. K.,
 342-Pos
 Gantz, D. L., 2379-Pos
 Ganzinger, K. A., 990-Pos
 Gao, J., 1258-Plat, 2548-Pos
 Gao, N., 2489-Pos
 Gao, S., 2055-Pos
 Gao, T., 1773-Pos
 Gao, W., 3830-Pos,
 3831-Pos
 Gao, X., 3436-Pos
 Gao, Z., 727-Pos, 963-Pos
 Gapsys, V., 1331-Pos,
 1381-Pos
 Garai, K., 1372-Pos,
 2153-Plat, 2441-Pos
 Garbett, S. P., 3250-Plat
 Garcia, A., 2162-Plat
 Garcia, A. E., 483-Pos,
 1430-Pos, 3093-Pos,
 3311-Pos, 4052-Pos
 García, A. E., 1369-Pos,
 3393-Pos
 Garcia, A. F., 2614-Pos
 Garcia, H. G., 2473-Pos
 Garcia, M., 1803-Pos
 Garcia, R., 4036-Pos
 Garcia, S., 3302-Pos
 Garcia, U., 2775-Pos
 García, U., 2767-Pos
 Garcia-Alvarez, B.,
 2600-Pos, 2612-Pos
 Garcia-Arribas, A. B.,
 1474-Pos
 Garcia-Diaz Barriga, G.,
 723-Pos
 García-Giménez, E.,
 2103-Pos
 Garcia-Saez, A. J., 9-Subg,
 992-Pos
 Gardel, M., 2907-Pos
 Gardel, M. L., 1187-Plat,
 2149-Plat
 Gardner, T., 2137-Symp
 Garg, V., 941-Pos, 943-Pos
 Garing, A. L., 2188-Plat
 Garini, Y., 126-Plat, 419-Pos
 Garlid, A. O., 1557-Pos
 Garlid, K. D., 1557-Pos
 Garner, A., 2460-Pos
 Garraud, A., 3155-Pos
 Garry, R. F., 3585-Pos
 Gartner, Z., 1135-Plat
 Garza de Leon, F., 1881-Pos
 Garzon-Coral, C., 849-Pos
- Gasior, P., 3466-Pos
 Gasparri, F., 1713-Pos
 Gasperik, J., 567-Pos
 Gassner, G. T., 3013-Pos
 Gatchalian, J., 400-Pos
 Gater, D. L., 3623-Pos
 Gatsogiannis, C., 851-Pos
 Gaub, H., 1118-Symp
 Gaudet, R., 2271-Plat
 Gaudet, S., 2250-Symp
 Gauer, J. W., 2676-Pos,
 3437-Pos
 Gautel, M., 180-Plat,
 1118-Symp
 Gauthereau, I., 1019-Pos
 Gauthier-Kemper, A.,
 960-Pos, 3180-Plat
 Gavira, J. A., 3355-Pos
 Gawali, V. S., 1652-Pos
 Gawrisch, K., 558-Pos,
 3203-Plat, 3626-Pos
 Gay, E., 1745-Pos
 Gayda, S., 342-Pos, 996-Pos,
 3059-Pos
 Gazova, Z., 304-Pos
 Gazula, V. R., 3741-Pos
 Ge, H., 2450-Pos
 Ge, J., 796-Pos
 Ge, P., 2929-Pos, 3058-Pos
 Ge, Y., 1752-Pos, 2535-Pos
 Gea-Ny, T., 3792-Pos
 Gebing, T., 2995-Pos,
 2996-Pos
 Gebremedhin, S., 3162-Pos
 Geddes, C., 3134-Pos,
 3160-Pos
 Gedeon, P. C., 1838-Pos
 Gee, L. B., 3074-Pos
 Gees, M., 1706-Pos,
 1707-Pos
 Geeves, M. A., 803-Pos,
 1280-Pos, 2838-Pos,
 3658-Pos, 3882-Pos
 Geiger, B., 230-Plat
 Geisler, C., 2664-Pos
 Geissler, P., 4034-Pos
 Geissler, P. L., 3270-Plat
 Geiszt, M., 599-Pos
 Geitmann, A., 2901-Pos,
 2902-Pos
 Gelfand, M. P., 989-Pos
 Gellman, S. H., 3548-Pos
 Gelly, J., 298-Pos
 Gemoules, M. E., 268-Pos
 Genard, B., 2574-Pos
 Gendviliene, V., 3808-Pos
 Genesio, J., 2289-Plat
 Geng, J., 1079-Pos, 2117-Pos
 Geng, Y., 2206-Plat
 Genge, C. E., 3086-Pos
 Gennerich, A., 2242-Plat
 Gennis, R. B., 2968-Pos
 Gensch, M., 2326-Pos
 Gentile, C., 2851-Pos
- George, A. L., 199-Plat,
 717-Pos, 718-Pos,
 1650-Pos
 George, C. H., 590-Pos,
 595-Pos
 George, D. K., 2320-Pos
 George, Jr., A. L., 2189-Plat
 George, M., 680-Pos,
 694-Pos, 3702-Pos
 George, S. C., 1013-Pos
 Georgieva, E. R., 1260-Plat
 Georgieva, M., 411-Pos
 Gerasimovskaya, E.,
 2116-Pos
 Gergoudis, S. C., 1397-Pos
 Gerhart, K. P., 3482-Pos
 Gericke, A., 8-Subg,
 1467-Pos, 1482-Pos,
 2610-Pos, 3614-Pos
 Gerritsen, H. C., 1034-Pos
 Gershenson, A., 1258-Plat,
 3628-Pos
 Gerstman, B. S., 3280-Pos
 Gertzen, C., 1356-Pos
 Gervasio, F., 1286-Pos
 Gerwert, K., 1052-Pos,
 1053-Pos
 Gessner, G., 3760-Pos
 Geyer, N., 661-Pos
 Geyfman, M., 138-Plat
 Ghafourian Nasab, F.,
 3122-Pos
 Ghahremani, T., 3383-Pos
 Ghanti, D., 845-Pos
 Ghassemi, S., 2913-Pos
 Ghatak, C., 3632-Pos
 Ghatty, P. K., 1149-Plat
 Ghazaryan, R., 495-Pos
 Ghermazien, H. T.,
 3692-Pos
 Ghezzi, C., 1841-Pos
 Ghirlanda, G., 1379-Pos,
 3481-Pos
 Ghisi, V., 164-Plat
 Ghosh, B., 2763-Pos,
 2764-Pos
 Ghosh, D., 1690-Pos
 Ghosh, M., 950-Pos, 2064-
 Pos, 2405-Pos
 Ghosh, P., 2424-Pos
 Ghosh, R., 881-Pos
 Ghosh, S. K., 509-Pos
 Ghosh, Y., 1093-Pos
 Ghoshdastidar, D., 1412-Pos
 Ghouri, I. A., 3648-Pos
 Giacomini, K., 1168-Symp
 Giannone, G., 1019-Pos
 Gibb, A. J., 761-Pos
 Gibb, B., 1397-Pos
 Gibbons, E., 3553-Pos
 Gibold, L., 1340-Pos
 Gibson, A. K., 3261-Plat
 Gibson, B., 1102-Pos
 Gibson, M. D., 400-Pos
- Gidalevitz, D., 511-Pos,
 2594-Pos, 3561-Pos
 Giese, A., 325-Pos
 Gifford, K. M., 1334-Pos,
 3930-Pos
 Giganti, D., 2272-Plat,
 2292-Plat
 Gigout, S., 3858-Pos
 Gilbert, R. J., 802-Pos
 Gilchrist, J., 203-Plat
 Gilchrist, J. M., 201-Plat
 Gilda, J., 3662-Pos
 Gilda, J. E., 3919-Pos
 Gilhooly, N. S., 1987-Pos
 Gill, D., 1599-Pos
 Gill, D. L., 1603-Pos,
 1606-Pos
 Giller, K., 2218-Plat
 Gillespie, R., 89-Plat
 Gillies, J. P., 360-Pos
 Gillis, K. D., 2659-Pos,
 3332-Pos
 Gillispie, G. D., 1037-Pos,
 2163-Plat
 Gillmor, S., 1471-Pos
 Gillmor, S. D., 514-Pos
 Gilson, A. I., 3323-Pos
 Gilson, M. K., 2329-Pos,
 3332-Pos
 Gindin, M., 3738-Pos
 Gindy, M., 3601-Pos
 Gingrich, K. J., 1649-Pos
 Giniatullina, A., 2617-Pos
 Ginsberg, N. S., 2029-Pos
 Ginsburg, K., 1665-Pos
 Giorgio, V., 18-Subg
 Giovan, S. M., 2060-Pos
 Giovannucci, D. R.,
 2686-Pos, 3852-Pos
 Giraldez, T., 2207-Plat
 Girard, J., 3049-Pos
 Giresi, P. G., 415-Pos
 Gitai, Z., 2914-Pos,
 2926-Pos
 Giugni, A., 1062-Pos
 Glaeser, R. M., 3033-Pos
 Glaser, M., 1773-Pos,
 3271-Plat
 Glasheen, B. M., 3906-Pos
 Glass, T. E., 2660-Pos
 Glass, T. R., 91-Plat
 Glasser, C., 768-Pos
 Glattard, E., 2228-Plat
 Graves, J., 2860-Pos
 Glazer, P. M., 1167-Symp
 Glenn, D. R., 966-Pos
 Globisch, C., 334-Pos
 Glösmann, M., 1684-Pos
 Glover, K., 3240-Plat
 Glud, K., 2622-Pos
 Glukhova, A., 1503-Pos
 Glynn, S. E., 2247-Symp
 Glyvuk, N., 960-Pos
 Gnanakaran, S., 3990-Pos

Gnanasambandam, R., 2806-Pos, 2807-Pos
Gnecchi, M., 1686-Pos
Go, Y., 2123-Pos, 3712-Pos, 3713-Pos
Goddard III, W. A., 1570-Pos
Goddard, A. D., 2363-Pos
Goebel, E. J., 3301-Pos
Goebel, M., 1749-Pos
Goecke, C., 1695-Pos
Goepel, S., 694-Pos
Goffin, V., 123-Plat
Goforth, R., 3318-Pos
Goga, N., 3239-Plat
Goh, H., 2567-Pos
Goh, S. L., 2537-Pos
Gohlke, A., 3605-Pos
Gohlke, H., 1356-Pos, 1455-Pos, 3356-Pos
Goicoechea, S., 3962-Pos
Gokey, T., 3494-Pos
Gokhale, R. S., 526-Pos
Goksör, M., 4101-Pos
Goldbeck, R. A., 2367-Pos
Goldblatt, G., 3468-Pos
Golden, B. L., 2502-Pos
Golden, S., 1273-Pos
Goldenbogen, B., 331-Pos, 510-Pos
Goldenfeld, N., 1888-Pos
Goldhaber, J. I., 2938-Pos, 3192-Plat
Golding, I., 2196-Plat, 3166-Symp
Goldman, Y. E., 64-Subg, 907-Pos, 997-Pos, 1177-Symp, 1214-Plat, 2478-Pos, 2479-Pos
Goldmann, W., 873-Pos
Goldmann, W. H., 822-Pos
Goldner, L. S., 1129-Plat, 1451-Pos, 1456-Pos
Goldstein, B., 2430-Pos
Goldstein, G., 2020-Pos
Goldstein, R. E., 1061-Pos, 2534-Pos, 2918-Pos
Golenár, T., 2988-Pos
Goliaei, B., 2809-Pos
Gollapudi, S. K., 3888-Pos, 3889-Pos
Gollnick, B., 1987-Pos
Golosovsky, M., 2231-Plat
Golovchenko, J. A., 3519-Pos
Gomes, A. V., 3662-Pos, 3919-Pos
Gomes, G., 3662-Pos
Gomes, G. W., 3491-Pos
Gomez, A., 2702-Pos
Gómez, A., 593-Pos
Gomez, A. C., 580-Pos
Gomez, E. W., 896-Pos
Gomez-Hurtado, N., 2702-Pos
Gomez-Llorente, Y., 3778-Pos
Gómez-Soler, M., 2621-Pos
Gomila, G., 2593-Pos
Gomis-Perez, C., 722-Pos
Gompa, T., 3714-Pos
Gompper, G., 1283-Pos, 2910-Pos
Gonçalves, S., 3590-Pos
Gong, Q., 710-Pos
Gong, S., 1853-Pos
Gong, Z., 105-Plat
Goni, F., 1474-Pos
Goni, F. M., 1125-Plat
Gonzales, D., 1261-Plat
Gonzales, E. B., 777-Pos
Gonzalez Jr, R. L., 2480-Pos
González Nieves, J. E., 1721-Pos
Gonzalez, C., 1178-Plat, 2822-Pos
González, C., 2208-Plat
González, D., 1002-Pos
Gonzalez, D. R., 605-Pos
Gonzalez, J., 2932-Pos, 3035-Pos
González, J., 2655-Pos
González, J. M., 3970-Pos
Gonzalez, Jr., R. L., 1213-Plat
Gonzalez, M. A., 2526-Pos
Gonzalez, M. C., 3930-Pos
Gonzalez, R., 3020-Pos
Gonzalez, T., 2752-Pos, 2753-Pos
Gonzalez, W. G., 3336-Pos
Gonzalez-Bullon, D., 477-Pos
González-Cobos, J., 1598-Pos
González-Damián, J., 2808-Pos
Gonzalez-Nilo, F., 2727-Pos
Gonzalez-Nilo, F. D., 2208-Plat, 2731-Pos
Gonzalez-Perez, A., 4008-Pos
Gonzalez-Perez, V., 2715-Pos
González-Rivera, A., 3421-Pos
Gonzalez-Sola, M., 809-Pos
Good, M. C., 847-Pos
Goodchild, S., 1002-Pos
Goodchild, S. J., 711-Pos
Goodin, D. B., 271-Pos, 3296-Pos
Goodman, B. S., 2243-Plat
Goodman, J., 1708-Pos
Goodman, M., 250-Pos, ,
Goodman, M. B., 1816-Pos, 2142-Symp, 2195-Symp, 2269-Plat
Goodman, M. F., 3506-Pos
Goody, R. S., 851-Pos
Goormaghtigh, E., 2600-Pos
Goos, A. G., 2979-Pos
Goos, M., 2939-Pos, 2985-Pos
Goparaju, G., 2976-Pos
Goparaju, G. N., 1343-Pos
Göpfrich, K., 3193-Plat
Gopich, I. V., 242-Wkshp
Gopinathan, A., 1278-Pos, 2448-Pos, 2930-Pos, 3071-Pos, 3085-Pos, 3718-Pos, 3938-Pos, 3973-Pos
Goral, R., 1666-Pos
Goranov, A., 1885-Pos
Gordan, R., 628-Pos
Gordon, E. A., 1510-Pos
Gordon, S. E., 2541-Pos, 3173-Plat, 3227-Plat, 3816-Pos
Gorelick, R., 3539-Pos
Gorelick, R. J., 1384-Pos
Gorenstein, L., 2053-Pos
Gorfe, A. A., 774-Pos, 3352-Pos, 3353-Pos
Gorischek, A., 2749-Pos, 2782-Pos
Gorshkova, I., 1700-Pos
Gorski, P., 2860-Pos
Goryaynov, A., 1594-Pos
Goryll, M., 508-Pos, 1068-Pos, 1091-Pos, 2089-Pos, 4094-Pos
Gosling, M., 736-Pos, 3809-Pos
Goswamee, P., 3852-Pos
Goswami, A. V., 939-Pos
Gothelf, K. V., 1142-Plat
Goto, T. E., 3552-Pos
Gotsi, P., 3737-Pos
Gottlieb, P. A., 1572-Pos, 2806-Pos
Götz, C., 2732-Pos
Gouaux, E., 167-Plat
Goud, B., 2908-Pos
Goudreault, M., 459-Pos
Goulbourne, C. N., 3019-Pos
Gould, I., 1763-Pos
Goulet, A., 65-Subg, 3925-Pos, 3929-Pos
Gounou, C., 2283-Plat
Gourdon, P., 530-Pos, 2160-Plat
Gourine, A. V., 2678-Pos
Govindan, S., 1752-Pos, 3911-Pos
Gowdy, J., 1322-Pos, 2330-Pos
Goyal, R., 3231-Plat
Goyal, S., 4009-Pos
Goyette, J., 1193-Plat
Gözen, I., 1055-Pos
Grabe, M., 750-Pos, 1124-Plat, 1842-Pos, 1843-Pos, 1903-Pos, 4059-Pos
Graber, Z. T., 1467-Pos
Grabmayr, H., 2128-Pos
Grabner, M., , , 651-Pos
Gracheva, E. O., 1708-Pos
Gracheva, M., 3142-Pos
Gracz, H., 2355-Pos, 3351-Pos
Graczyk, B., 844-Pos
Gradinaru, C., 274-Pos
Gradinaru, C. C., 538-Pos, 3488-Pos, 3491-Pos
Gradl, D., 1029-Pos
Gradogna, A., 747-Pos
Graen, T., 2046-Pos
Graether, S. P., 2158-Plat
Graf, M., 1591-Pos
Graff, A., 1710-Pos
Graham, B. T., 2855-Pos
Graham, D. R., 584-Pos
Graham, J. E., 375-Pos
Gramatica, A., 336-Pos, 3147-Pos
Gramlich, M. W., 3950-Pos
Gramse, G., 2593-Pos
Grandi, E., 3697-Pos
Grandl, J., 3231-Plat
Granick, S., 474-Pos, 2115-Pos
Grant, B. J., 2050-Pos, 2076-Pos, 3942-Pos
Grant, C. V., 1498-Pos
Grant, T., 254-Pos
Granzier, H., , 3903-Pos
Granzier, H. L., 1746-Pos, 3264-Plat
Grasby, J., 1161-Plat
Graslund, A., 217-Plat
Grason, G. M., 3718-Pos
Grasso, E., 949-Pos
Grasso, L., 1710-Pos
Grassucci, R. A., 2487-Pos
Gräter, F., 3081-Pos
Gratton, E., 138-Plat, 308-Pos, 361-Pos, 366-Pos, 449-Pos, 1013-Pos, 1020-Pos, 1021-Pos, 1022-Pos, 1133-Plat, 1992-Pos, 2005-Pos, 2011-Pos, 2018-Pos, 2030-Pos, 2353-Pos
Graul-Campistany, A., 1491-Pos
Gravel, A., 703-Pos
Gravel, A. E., 2538-Pos
Graves, E., 3507-Pos
Gravner, A., 3553-Pos
Gray, E. J., 491-Pos
Gray, E. M., 501-Pos
Gray, G. M., 3536-Pos
Gray, H. B., 2390-Pos, 2759-Pos
Gray, L. A., 1102-Pos
Grayer, J. S., 4022-Pos
Grażulis, S., 1336-Pos
Greaser, M. L., 818-Pos
Greathouse, D. V., 512-Pos, 3606-Pos, 3608-Pos, 3609-Pos, 4038-Pos
Green, A. T., 346-Pos
Green, H. F., 533-Pos
Green, M. E., 2725-Pos, 2726-Pos
Green, W. N., 2198-Plat, 3058-Pos
Greenberg, I., 1864-Pos
Greenberg, M. J., 64-Subg, 899-Pos
Greene, E. C., 1397-Pos, 2174-Plat, 3524-Pos
Greenleaf, W. J., 415-Pos, 2506-Pos
Greenstein, J. L., 760-Pos, 1619-Pos
Greenwood, I. A., 733-Pos, 734-Pos
Grehn, F., 3005-Pos
Greil, R., 2790-Pos
Greimel, P., 517-Pos
Greiner, T., 2769-Pos
Greiser, M., 3686-Pos
Grell, E., 1876-Pos
Grieb, M., 1387-Pos
Griesemer, M., 1253-Plat
Griesinger, C., 325-Pos, 2218-Plat
Griffin, B., 3663-Pos
Griffin, R. G., 2983-Pos
Griffin, S. D., 299-Pos
Griffis, J. W., 1419-Pos
Grigoropoulos, C. P., 1079-Pos
Grimes, S., 2504-Pos
Grinspan, L., 179-Plat
Grintsevich, E. E., 834-Pos, 2883-Pos
Grisham, D., 311-Pos
Grishchuk, E. L., 841-Pos
Grisi, M., 420-Pos
Grissmer, S., 3786-Pos
Grob, P., 915-Pos, 4034-Pos
Grobelyny, S., 1941-Pos
Gröbner, G., 3205-Plat
Groessinger, E., 2790-Pos
Groffen, A. J., 1590-Pos, 2617-Pos
Gröger, P., 985-Pos
Gronenborn, A. M., 146-Plat
Gront, D., 3320-Pos
Groome, J. R., 677-Pos
Groot-Kormelink, P. J., 3809-Pos
Groschner, K., 1701-Pos, 3817-Pos
Grosman, C., 1718-Pos
Gross, A., 3774-Pos
Gross, M. L., 2406-Pos
Gross, S., 65-Subg, 1792-Pos
Gross, S. P., 43-Subg

- Grossfield, A., 282-Pos, 297-Pos, 475-Pos, 1562-Pos, 3299-Pos, 3634-Pos, 4084-Pos
 Grottesi, A., 3742-Pos
 Grovenor, C. R., 3019-Pos
 Grover, R., 3949-Pos
 Groves, J., 2636-Pos, 3000-Pos
 Groves, J. T., 116-Plat, 1126-Plat, 1542-Pos, 1591-Pos, 2629-Pos, 2630-Pos, 2631-Pos, 2632-Pos, 2634-Pos, 2635-Pos, 3622-Pos
 Grubb, S., 592-Pos, 3899-Pos
 Gruber, H. J., 1128-Plat, 1953-Pos, 2275-Plat
 Gruber, M. F., 519-Pos, 2398-Pos
 Gruber, S. J., 2163-Plat
 Grubmueller, H., 1262-Plat, 1282-Pos, 3079-Pos, 1215-Plat, 1266-Plat, 2485-Pos, 2495-Pos 206-Plat, 329-Pos, 1381-Pos, 2046-Pos, 3297-Pos
 Gruebele, M., 1317-Pos, 3377-Pos
 Gruender, S., 775-Pos
 Gründer, S., 781-Pos
 Grunwald, M., 137-Plat
 Grushin, K., 3025-Pos, 3029-Pos, 3208-Plat
 Gryczynski, I., 363-Pos, 2023-Pos, 2847-Pos, 2848-Pos
 Gryczynski, Z., 363-Pos, 2023-Pos, 2847-Pos
 Grzesiek, S., 3410-Pos
 Guček, A., 69-Subg, 2664-Pos
 Gu, H., 1745-Pos
 Gu, L., 1085-Pos, 2084-Pos, 2085-Pos, 2086-Pos
 Gu, M., 387-Pos, 1999-Pos
 Gualdani, R., 3810-Pos
 Guan, J., 503-Pos, 2115-Pos
 Guan, L., 1850-Pos, 1851-Pos
 Guan, Z., 89-Plat
 Guarino, F., 3992-Pos
 Guay, M. D., 3024-Pos
 Guck, J., 232-Plat
 Güçlü, A., 1749-Pos
 Gucwa, A., 2997-Pos
 Gudlur, A., 1602-Pos
 Gudnason, D., 352-Pos
 Guegler, C. K., 2174-Plat, 3523-Pos
 Guenther, E., 1712-Pos
 Guerrero-Hernández, A., 1634-Pos
 Guet, C. C., 422-Pos
 Guilak, F., 1967-Pos
 Guilford, W. H., 3968-Pos
 Guillhot-Gaudeffroy, A., 3544-Pos
 Guillams, T., 1306-Pos
 Williams, T., 1366-Pos
 Guimarães, P. B., 1554-Pos
 Guinn, E., 2374-Pos
 Guinn, E. J., 2371-Pos
 Guinot, D., 694-Pos, 3702-Pos
 Guiriba, T., 660-Pos, 1639-Pos
 Guixà-González, R., 2621-Pos
 Gul, T., 3143-Pos
 Gulbins, E., 22-Subg
 Guldenhaupt, J., 1053-Pos
 Guliaev, A., 3494-Pos
 Gulick, J., 806-Pos
 Gulko, P. S., 2786-Pos
 Gullo, F., 1686-Pos
 Gumbart, J. C., 213-Plat, 531-Pos, 1304-Pos, 1355-Pos, 2077-Pos
 Gumbiner, B. M., 3286-Pos
 Gumpfer, K., 3201-Plat
 Gundlach, J. H., 1082-Pos, 3197-Plat, 4087-Pos
 Gunn, K. H., 254-Pos, 390-Pos
 Gunnison, K. M., 1559-Pos
 Gunsalus, R., 2929-Pos
 Günsel, U., 3392-Pos
 Gunther, L., 902-Pos
 Gunther, L. K., 2867-Pos
 Guo, H., 3744-Pos
 Guo, J., 3963-Pos, 4013-Pos
 Guo, M., 1235-Plat, 3960-Pos
 Guo, S., 1072-Pos, 1504-Pos, 4033-Pos
 Guo, X., 3974-Pos
 Gupta, G., 3990-Pos
 Gupta, L., 1813-Pos
 Gupta, R., 811-Pos
 Gupta, S., 1714-Pos, 1715-Pos, 1716-Pos, 1717-Pos, 2309-Pos, 2310-Pos
 Gupte, S. A., 700-Pos
 Gupte, T. M., 1765-Pos
 Gurel, P. S., 2883-Pos
 Gurnev, P., 2529-Pos
 Gurnev, P. A., 2528-Pos, 2981-Pos, 2984-Pos
 Gurrola, G. B., 562-Pos, 570-Pos
 Gurry, T., 2435-Pos
 Gürsoy, G., 417-Pos, 418-Pos
 Gurtovenko, A. A., 3577-Pos
 Gustavsson, M., 2955-Pos
 Guthold, M., 1969-Pos, 2892-Pos, 3105-Pos, 3974-Pos
 Guthrie, C., 256-Pos, 2508-Pos, 2509-Pos
 Gutierrez Medina, B., 4014-Pos
 Gutierrez-Rodriguez, M., 2753-Pos
 Gutman, G. A., 3738-Pos
 Gutschmann, T., 2568-Pos
 Guvench, O., 3334-Pos
 Guy, A. T., 2227-Plat
 Guy, R. D., 2897-Pos
 Guzman Castro, R. E., 744-Pos
 Gwizdala, M., 922-Pos
 Gwozdz, P. V., 2098-Pos
 Gwynn, E., 395-Pos
 Gyimesi, M., 375-Pos
 Gylyté, J., 1336-Pos
 Gylyte, J., 3400-Pos
 Gyore, J., 3781-Pos
 Gyorgy, C., 2990-Pos
 Gyorko, S., 589-Pos, 659-Pos, 1632-Pos, 2667-Pos
 Györke, S., 2181-Plat
- H**
- Ha, J., 3778-Pos
 Ha, K. N., 3303-Pos, 3329-Pos
 Ha, M., 3537-Pos
 Ha, S., 1984-Pos
 Ha, T., 365-Pos, 387-Pos, 1018-Pos, 1916-Pos, 1982-Pos, 1999-Pos, 2196-Plat, 2461-Pos, 2497-Pos, 3517-Pos, 3782-Pos, 3964-Pos, 4056-Pos
 Haack, R., 3059-Pos
 Haag, R., 3272-Plat
 Haarmann, C., 680-Pos, 694-Pos
 Haas, B. L., 1032-Pos, 2010-Pos
 Haas, E., 3406-Pos
 Haas, J., 2795-Pos
 Haas, S., 2728-Pos, 2823-Pos
 Haase, A. D., 2297-Wkshp
 Haase, K., 1822-Pos
 Haase, L., 1432-Pos
 Haase, M., 2133-Pos
 Haataja, M. P., 3563-Pos
 Habchi, J., 1370-Pos
 Habibi-Rezaei, M., 2402-Pos
 Häcker, U., 4098-Pos
 Hackos, D. H., 2810-Pos
 Hada, A., 410-Pos
 Haddadian, E. J., 2436-Pos
 Hadzadeh, N., 422-Pos
 Haehnel, B. M., 3748-Pos
 Haertel, R., 2007-Pos
 Haeusler, A. R., 2467-Pos
 Hafez, I. M., 3550-Pos
 Hafi, N., 137-Plat
 Hafver, T. L., 3854-Pos
 Hagai, T., 2449-Pos
 Hagen, B., 760-Pos
 Hagen, B. M., 1631-Pos
 Hagra, M. A., 2966-Pos
 Hahn, A., 969-Pos
 Hahn, J., 3127-Pos
 Hahn, N., 795-Pos
 Haick, J. M., 729-Pos
 Haider, S. M., 1689-Pos
 Hain, A. U., 2412-Pos
 Haines, T., 2980-Pos
 Haitin, Y., 3728-Pos
 Hajdu, K., 800-Pos
 Hajdu, P., 2788-Pos, 2791-Pos, 3740-Pos
 Hajjar, R. J., 3259-Plat
 Hajnal, A., 1897-Pos
 Hajnoczky, G., 2989-Pos, 2990-Pos
 Hajnóczky, G., 599-Pos, 2988-Pos
 Hake, J., 607-Pos
 Hakonen, B., 1055-Pos
 Halaszovich, C. R., 2645-Pos
 Haldeman, B. D., 799-Pos
 Halfmann, P., 3220-Symp
 Hall, A. R., 1090-Pos, 2088-Pos
 Hall, B. A., 1897-Pos
 Hall, E. W., 3513-Pos
 Hall, L., 3616-Pos
 Hall, M., 1134-Plat
 Hall, M. A., 410-Pos
 Hall, M. N., 636-Pos
 Hall, N., 2429-Pos
 Hall, S. B., 1508-Pos
 Halladin, D. K., 2925-Pos
 Halle, B., 1148-Plat
 Hallen, M. A., 2217-Plat
 Halling, D. B., 3733-Pos
 Halter, M., 141-Plat
 Halvorsen, K., 1950-Pos
 Hamachi, I., 3339-Pos
 Hamadani, K., 3385-Pos
 Hamadani, K. H., 2370-Pos
 Hämäläinen, M., 2415-Pos
 Haman, K., 3867-Pos
 Hamant, O., 1798-Pos
 Hambly, B. D., 2874-Pos
 Hamdani, N., 812-Pos, 1747-Pos, 2292-Plat
 Hamilton, A., 1814-Pos
 Hamilton, E., 2140-Symp
 Hamilton, S. L., 640-Pos
 Hammer, M., 2136-Pos
 Hammer, N., 250-Pos, 3445-Pos
 Hammes-Schiffer, S., 2253-Symp
 Hammond, A. T., 1931-Pos
 Han, D., 1528-Pos
 Han, E., 523-Pos
 Han, H., 2857-Pos, 3005-Pos
 Han, J., 3901-Pos, 3912-Pos
 Han, J. H., 1956-Pos
 Han, K., 2461-Pos, 2497-Pos
 Han, S., 1867-Pos
 Han, S. J., 2855-Pos
 Han, T., 3563-Pos
 Han, W., 4085-Pos
 Han, Y., 3496-Pos, 3512-Pos
 Han, Y. W., 1826-Pos
 Hanagata, N., 121-Plat
 Hanashima, A., 3872-Pos
 Hancock, R., 758-Pos
 Hancock, W. O., 3928-Pos, 3939-Pos, 3952-Pos
 Hancox, J. C., 623-Pos, 707-Pos, 709-Pos
 Handa, H., 1338-Pos
 Handley, L. D., 3282-Pos
 Hanein, D., 106-Plat, 831-Pos
 Hanft, L. M., 3261-Plat, 3904-Pos
 Hang, B., 3494-Pos
 Hang, L., 479-Pos
 Hanke, A., 2060-Pos
 Hanke, C., 1455-Pos
 Hanley, Q., 3447-Pos
 Hanna, A. D., 594-Pos
 Hanna, G., 4071-Pos, 4072-Pos
 Hanna, S., 1232-Plat
 Hannah, M. J., 2665-Pos
 Hannigan, S. F., 3099-Pos
 Hannon, G. J., 2297-Wkshp
 Hanrahan, J. W., 3169-Plat
 Hansen, A., 95-Plat
 Hansen, D., 975-Pos
 Hansen, D. T., 3485-Pos
 Hansen, J. S., 2532-Pos
 Hansen, K. B., 761-Pos
 Hansen, S., 859-Pos, 2510-Pos
 Hansen, S. D., 3622-Pos
 Hansen, W., 4000-Pos
 Hansma, H. G., 2975-Pos
 Hanson, L., 172-Plat, 1139-Plat, 2146-Plat
 Hanson, R. N., 865-Pos
 Hanson, S., 1700-Pos
 Hanson, S. M., 3821-Pos
 Hansson, L., 3159-Pos
 Hao, H., 3858-Pos
 Hao, K., 2065-Pos
 Haouz, A., 1736-Pos, 3243-Plat
 Haque, F., 1765-Pos
 Harada, R., 2061-Pos, 2074-Pos
 Harada, Y., 1826-Pos, 3050-Pos, 3496-Pos, 3512-Pos
 Harami, G., 1391-Pos
 Harberts, J., 4000-Pos

Harchache, S. B., 614-Pos
 Hardcastle, K., 693-Pos
 Harder, A., 2277-Plat
 Harder, E., 239-Wkshp
 Hardy, G., 1531-Pos
 Hardy, M., 3896-Pos
 Hare, J. M., 3893-Pos
 Hargitai, J., 2452-Pos
 Hariadi, R. F., 914-Pos
 Harishchandra, R., 2610-Pos
 Harishchandra, R. K., 3614-Pos
 Harke, B., 2001-Pos
 Harkes, R., 1203-Plat
 Harlan, M. L., 2349-Pos
 Harmon, C. N., 1348-Pos
 Harmon, T. S., 2432-Pos
 Harnish, E., 779-Pos
 Haroon, K. M., 4002-Pos
 Harp, J., 250-Pos
 Harper, P. E., 488-Pos
 Harpole, T. J., 1718-Pos
 Harries, D., 2585-Pos, 3401-Pos
 Harrington, L., 108-Plat
 Harris, A., 2756-Pos
 Harris, A. L., 1350-Pos, 2426-Pos, 2811-Pos, 2812-Pos, 3019-Pos
 Harris, M. C., 2662-Pos
 Harris, M. J., 552-Pos
 Harris, S. P., 1748-Pos
 Harrison, D. J., 2094-Pos
 Harrison, R. M., 355-Pos
 Harroun, T. A., 226-Plat, 502-Pos
 Hart, K. M., 3325-Pos
 Hart, P., 3495-Pos
 Hartley, O., 1206-Plat
 Hartmann, A., 985-Pos
 Hartwich, T. M., 2021-Pos
 Hartwick, K., 2234-Plat
 Hartzell, H., 3800-Pos
 Hartzler, D., 920-Pos
 Harvey, R., 3915-Pos
 Harvey, R. D., 3653-Pos
 Hasan, N. F., 311-Pos, 3448-Pos
 Hasan, S. S., 1871-Pos, 2817-Pos
 Hasbun, J. E., 1821-Pos
 Hase, H., 1693-Pos
 Haselwandter, C. A., 1525-Pos, 3619-Pos
 Hashem, Y., 2487-Pos
 Hashemi Shabestari, M., 1367-Pos
 Hashiya, K., 3512-Pos
 Hassaine, G., 1710-Pos
 Hassan Biswas, K., 3000-Pos
 Hassanzadeh, E., 504-Pos
 Hassan-Zadeh, E., 484-Pos
 Haswell, E., 2140-Symp, 3806-Pos
 Hata, T., 1784-Pos
 Hatano, A., 3249-Plat
 Hatcher, S. V., 91-Plat
 Hatem, S. N., 3743-Pos, 3746-Pos
 Hattab, G., 253-Pos
 Hatzakis, N. S., 3617-Pos
 Haug, M., 1026-Pos, 2912-Pos
 Haughney, E., 2997-Pos
 Haupt, C., 3612-Pos
 Hau-Riege, S. P., 3139-Pos
 Hauser, K., 287-Pos
 Häusermann, F., 3652-Pos
 Havrdova, M., 2116-Pos
 Hawkins, J., 3620-Pos
 Hayakawa, K., 2878-Pos
 Hayamizu, K., 1737-Pos
 Hayashi, S., 1287-Pos
 Hayashi, T., 2332-Pos, 2966-Pos, 3533-Pos
 Hayes, R., 876-Pos
 Haynes, C. L., 865-Pos, 2661-Pos
 Hayre, N., 1788-Pos
 Hayre, N. R., 2429-Pos, 2437-Pos
 Hays, F. A., 1860-Pos, 2359-Pos
 Hay-Schmidt, A., 2789-Pos
 Hazar, M., 871-Pos
 Hazel, A., 1304-Pos
 Hazemz-Scherbaum, P., 782-Pos
 Hazoglou, M., 3381-Pos
 He, C., 1974-Pos
 He, J., 457-Pos, 463-Pos, 2570-Pos, 3027-Pos, 3135-Pos, 4089-Pos
 He, K., 906-Pos
 He, L., 874-Pos, 3178-Plat
 He, M., 397-Pos
 He, T., 1258-Plat
 He, W., 3688-Pos
 He, X., 3464-Pos
 He, Y., 256-Pos, 1300-Pos
 Head-Gordon, T., 241-Wkshp, 2035-Pos, 2433-Pos, 3313-Pos
 Head-Gordon, T. L., 2056-Pos
 Heal, J., 1246-Plat, 3331-Pos
 Heald, R., 847-Pos
 Heaner Jr, D. P., 252-Pos
 Heard, T. M., 3343-Pos
 Hebda, J., 2382-Pos
 Hebda, J. A., 1252-Plat
 Heberle, F. A., 1473-Pos, 2537-Pos
 Heberle, J., 1295-Pos, 3300-Pos, 3390-Pos
 Heberling, M. M., 3310-Pos
 Heck, M., 206-Plat
 Hecker, D., 1671-Pos
 Heckman, C. A., 858-Pos
 Hedde, P., 1020-Pos, 1029-Pos
 Heedy, S., 1033-Pos
 Heeley, D. H., 3675-Pos
 Heenan, R. K., 1293-Pos
 Heer, F., 1183-Plat
 Heer, F. T., 1184-Plat, 2744-Pos
 Heerema, S., 1163-Plat
 Heerklotz, H., 1497-Pos, 3547-Pos, 3548-Pos
 Heffern, C. T., 105-Plat
 Heftberger, P., 2536-Pos, 2585-Pos, 2595-Pos
 Hegemann, P., 1861-Pos, 1922-Pos, 1932-Pos
 Hegyi, B., 621-Pos
 Hegyi, G., 895-Pos
 Heifetz, A., 90-Plat
 Heijne, G. v., 3632-Pos
 Heikal, A., 935-Pos, 3722-Pos
 Heikal, A. A., 3723-Pos
 Heilemann, M., 2014-Pos, 2464-Pos
 Heilmann, N. M., 1319-Pos
 Heimbürg, T., 3573-Pos, 3595-Pos, 3776-Pos, 4008-Pos
 Hein, C., 3150-Pos
 Heindl, D., 389-Pos
 Heine, M., 957-Pos
 Heinemann, S. H., 1666-Pos, 3760-Pos, 3788-Pos
 Heinis, F. I., 2864-Pos
 Heinonen, O., 4075-Pos
 Heinrich, F., 103-Plat, 2567-Pos, 3588-Pos
 Heinzl, F., 602-Pos
 Heinzl, F. R., 601-Pos
 Heissler, S. M., 900-Pos
 Heitkamp, S., 2465-Pos
 Helassa, N., 1226-Plat
 Helbig, C., 910-Pos
 Held, K., 1691-Pos, 3760-Pos, 3811-Pos
 Helfand, S., 78-Symp
 Helie, J., 2286-Plat
 Hélix-Nielsen, C., 519-Pos, 2819-Pos
 Hell, S. W., 2664-Pos, 3204-Plat
 Hellen, C. U., 2487-Pos
 Hellen, N., 2665-Pos, 3696-Pos
 Heller, I., 1418-Pos
 Heller, W., 1535-Pos
 Heller, W. T., 1499-Pos, 3210-Plat
 Hellman, L. M., 3505-Pos
 Helmes, M., 2849-Pos
 Helmke, B. P., 3968-Pos
 Helms, C., 1969-Pos
 Helmueller, S. C., 3145-Pos
 Helou, E., 376-Pos, 1107-Pos
 Helrich, C. S., 3549-Pos
 Hemaswathi, M., 1360-Pos
 Hemmen, K., 1321-Pos, 3356-Pos
 Hemmings Jr., H. C., 1649-Pos, 2608-Pos
 Hemmings, Jr., H., 678-Pos
 Hendel, N. L., 1776-Pos
 Henderson, J., 454-Pos
 Henderson, J. M., 105-Plat
 Henderson, J. N., 221-Plat
 Henderson, N. S., 2818-Pos
 Henderson, R., 3318-Pos
 Hendricks, A. G., 1177-Symp
 Hendrickson, T., 2676-Pos
 Hendrickson, T. A., 3437-Pos
 Hendrickson, W., 1251-Plat
 Hendrix, J., 330-Pos, 1014-Pos
 Hendron, E., 1599-Pos, 1606-Pos
 Hendus-Altenberger, R., 2155-Plat
 Henin, J., 1722-Pos
 Henke, P. S., 1431-Pos
 Henkes, L. M., 1524-Pos
 Henley, R., 2087-Pos
 Henneberg, K., 866-Pos
 Henon, E., 4083-Pos
 Hénon, S., 827-Pos, 1800-Pos
 Henrich, V. C., 1090-Pos
 Henrikson, R. H., 3140-Pos
 Henriquez-Olguin, C., 3682-Pos
 Henry, R., 1862-Pos, 3318-Pos
 Hensen, U., 1320-Pos
 Herbert, A., 1007-Pos
 Herenyi, L., 3284-Pos
 Herényi, L., 2523-Pos
 Hering, S., 706-Pos
 Hermans, N., 3507-Pos
 Hernandez Candia, C. N., 4014-Pos
 Hernández, A., 3868-Pos
 Hernandez, J. M., 2557-Pos
 Hernandez, L. H., 1460-Pos
 Herold, K. F., 1649-Pos, 2608-Pos
 Herrfurth, C., 2932-Pos
 Herring, C., 3379-Pos
 Herrmann, A., 129-Plat, 331-Pos, 336-Pos, 510-Pos, 2381-Pos, 2498-Pos, 2500-Pos, 3147-Pos, 3272-Plat, 4051-Pos
 Herrmann, C., 2606-Pos
 Herrmann, H., 884-Pos
 Herruzo, E. T., 4036-Pos
 Herschlag, D., 1944-Pos
 Hersen, P., 852-Pos, 3003-Pos
 Herskowitz, J., 1513-Pos
 Herzenberg, L. A., 4079-Pos
 Herzig, S., 688-Pos
 Herzog, F., 3072-Pos
 Herzog, J., 815-Pos
 Herzog, W., 815-Pos, 816-Pos, 1010-Pos, 2282-Plat, 3862-Pos, 3863-Pos, 3866-Pos
 Heß, J., 3689-Pos
 Hess, J. M., 1454-Pos
 Hess, S., 103-Plat
 Hessel, A., 1380-Pos
 Hetherington, C. L., 2029-Pos
 Hettie, K. S., 2660-Pos
 Heun, A., 3164-Symp
 Heureaux, J., 3976-Pos
 Heuvigh, J., 832-Pos
 Heyduk, E., 2457-Pos
 Heyduk, T., 2457-Pos
 Heyman, J. A., 173-Plat
 Heyman, S., 3781-Pos
 Heyn, C., 4000-Pos
 Heynen-Genel, S., 3649-Pos
 Hezova, R., 2854-Pos
 Hickson, G., 2882-Pos
 Hidaka, Y., 262-Pos, 2378-Pos, 2385-Pos, 2386-Pos, 3411-Pos, 3422-Pos, 3429-Pos
 Hidalgo, C. G., 3264-Plat
 Hideo, S., 3935-Pos
 Hidi, L., 1741-Pos
 Hiess, F., 2008-Pos
 Higgins, R. S., 1756-Pos
 Higgins, S., 458-Pos
 Higgins, S. E., 1037-Pos
 Higgs, H. N., 2883-Pos
 Higgs, III, C., 1968-Pos
 Higo, J., 2439-Pos, 2519-Pos
 Higuchi, Y., 1339-Pos
 Hilber, K., 1652-Pos
 Hilbert, L., 2290-Plat
 Hildebrand, P. W., 206-Plat
 Hildebrandt, L. L., 1142-Plat
 Hildebrandt, P., 1464-Pos
 Hildenbrand, J., 1375-Pos
 Hilgemann, D., 1520-Pos
 Hilgemann, D. W., 2935-Pos
 Hill, J., 1332-Pos
 Hille, B., 716-Pos, 1614-Pos, 2737-Pos
 Hilsch, M., 331-Pos
 Hilse, K. E., 159-Plat, 2992-Pos
 Hilton, D., 3384-Pos
 Himes, R., 2946-Pos
 Himmelsbach, R. J., 3059-Pos

Hinchcliffe, E. H., 1544-Pos
Hinderberger, D., 2389-Pos
Hinderliter, A., 516-Pos,
1539-Pos, 2676-Pos,
3279-Pos, 3437-Pos,
3630-Pos
Hines, K. G., 3626-Pos
Hingorani, M., 3500-Pos,
3510-Pos
Hinsen, K., 2336-Pos
Hinshaw, J., 2553-Pos
Hinshaw, J. E., 173-Plat
Hinszen, H., 2869-Pos
Hinterdofer, P., 1953-Pos
Hinterdofer, P., 1128-Plat,
1980-Pos, 2275-Plat,
2591-Pos, 2991-Pos
Hippel, P. H., 360-Pos
Hiraishi, N., 2488-Pos
Hirakawa, R., 1656-Pos
Hiram, R., 3635-Pos
Hiramatsu, R., 3496-Pos
Hirano, K., 3012-Pos
Hirano, Y., 2827-Pos
Hiriart, M., 1688-Pos
Hirokawa, E., 2866-Pos
Hirokawa, T., 2071-Pos
Hirschey, M., 23-Subg
Hirsh, A. D., 2468-Pos
Hirst, L. S., 2132-Pos,
2575-Pos
Hisada, T., 3249-Plat
Hisey, B., 3866-Pos
Hitchcock-DeGregori, S. E.,
2870-Pos
Hivroz, C., 893-Pos
Hnath, E., 3026-Pos
Ho, C., 2836-Pos, 3924-Pos
Ho, C. H., 1750-Pos
Ho, D. N., 2489-Pos
Ho, J., 2909-Pos
Ho, M., 432-Pos, 1332-Pos
Ho, P., 2157-Plat
Hoang Trong, M., 2179-Plat
Hoang, T., 2167-Plat
Hoang-Trong, T. M.,
588-Pos, 1628-Pos,
3705-Pos
Hobai, I. A., 658-Pos
Hochbaum, D., 2094-Pos
Hochhaus, G., 3133-Pos
Hochreiter, A., 1608-Pos,
1609-Pos
Hochstrasser, M., 834-Pos
Hochstrasser, M. L.,
2174-Plat, 3523-Pos
Hodges, J., 338-Pos
Hodne, K., 3854-Pos
Hoeglinger, C., 1600-Pos
Hoell, A., 602-Pos
Hoemberger, M. S.,
3324-Pos
Hoeprich, G. J., 1789-Pos,
3939-Pos
Hoerauf, W., 1589-Pos
Hoersch, D., 2219-Plat
Hof, M., 426-Pos, 3205-Plat
Hoffman, A., 2186-Plat
Hoffman, A. F., 3073-Pos
Hoffman, L., 2668-Pos,
3214-Plat, 3720-Pos
Hoffman, R. M., 3028-Pos
Hoffmann, M., 1073-Pos
Hofkens, J., 330-Pos,
2180-Plat
Hofmann, E., 1333-Pos
Hofmann, H., 1363-Pos
Hofmann, K. P., 206-Plat
Hofnagel, O., 851-Pos
Hogan, P. G., 1602-Pos
Hogendoorn, P., 2628-Pos
Höglinger, O., 541-Pos,
3642-Pos
Hoh, F., 2339-Pos
Hohendahl, A., 2606-Pos
Hohendanner, F., 1646-Pos,
1647-Pos, 1648-Pos
Hohlbein, J., 1395-Pos
Holcman, D., 1386-Pos
Holdaway, H., 3829-Pos
Holden, M. A., 1057-Pos
Holden, S., 2464-Pos,
2924-Pos
Holehouse, A. S., 2445-Pos
Holemans, P., 2180-Plat
Holford, T., 580-Pos
Holgado, A., 3632-Pos
Holland, B. W., 1939-Pos
Holland, D., 2202-Plat
Holland, G., 510-Pos
Holland, G. P., , 1150-Plat,
3476-Pos
Höllner, M., 1014-Pos
Hollingsworth, J. A.,
1093-Pos
Hollingworth, S., 643-Pos
Hollmann, A., 3590-Pos
Holmes, K. C., 790-Pos
Holmes, P. C., 2361-Pos
Holmgren, M., 2207-Plat,
, 2721-Pos, 2940-Pos,
2941-Pos
Holmstrom, E., 1452-Pos
Holowka, D., 545-Pos
Holowka, D. A., 1204-Plat
Holst, F., 3679-Pos
Holstein, T. W., 781-Pos
Holt, J. R., 2143-Symp
Holz, R. W., 171-Plat
Holzbaur, E. L., 1177-Symp
Holzgräfe, C., 2212-Plat
Holzmann, C., 1612-Pos
Holzwarth, G., 2891-Pos,
3958-Pos
Homann, L., 3860-Pos
Hombler, F., 3991-Pos
Homer, C. M., 1885-Pos
Homma, M., 2922-Pos
Homouz, D., 3720-Pos
Hone, J., 825-Pos, 2913-Pos
Honerkamp-Smith, A. R.,
493-Pos, 2534-Pos
Hong, E., 2639-Pos
Hong, J., 89-Plat,
249-Pos, 3157-Pos
Hong, L., 3765-Pos
Hong, M., 74-Subg
Hong, S., 354-Pos,
1064-Pos, 1137-Plat,
1244-Plat, 1245-Plat,
2090-Pos, 3111-Pos
Hong-Geller, E., 2000-Pos
Honig, B., 2345-Pos
Honigmann, A., 3204-Plat
Hoogeboom-Vlijm, R.,
2169-Plat
Hoogerheide, D. P.,
3519-Pos, 3772-Pos
Höök, P., 2242-Plat
Hopkins, L. J., 990-Pos
Hoppe, MD, U. C.,
2996-Pos
Hoppe, U., 2995-Pos
Horne, W. A., 1675-Pos
Horner, A., 3361-Pos
Hornig, T., 3112-Pos
Horrigan, F. T., 2786-Pos
Horrocks, M. H., 1364-Pos,
1366-Pos
Hortelano, E. R., 3546-Pos
Hortigon-Vinagre, M. P.,
3648-Pos
Horvath, B., 1665-Pos
Hoshi, T., 58-Subg,
3760-Pos, 3788-Pos
Hoskins, A., 988-Pos,
2510-Pos
Hosoume, J. M., 2417-Pos
Hostinova, E., 567-Pos
Hotez, P. J., 3738-Pos
Hotka, M., 630-Pos,
2698-Pos
Hotta, J., 2180-Plat
Hou, F., 3464-Pos
Hou, P., 2209-Plat
Hou, S., 3788-Pos
Houang, E. M., 3867-Pos
Houben, K., 257-Pos
Houben, L., 3023-Pos
Houk, K., 3416-Pos
Houk, K. N., 4049-Pos
Hourani, S., 1696-Pos
Housden, N. G., 1946-Pos
Hovakeemian, S. G.,
3548-Pos
Hövelmann, F., 2500-Pos
Hove-Madsen, L., 2008-Pos
Hovey, L., 1655-Pos,
3439-Pos
Hovis, J., 222-Plat
Howard, J., 849-Pos,
4004-Pos, 4005-Pos
Howard, K. P., 3375-Pos
Howard, R., 1734-Pos,
2756-Pos, 2768-Pos
Howe, J., 763-Pos
Howlett, A., 1048-Pos
Howorka, S., 1071-Pos,
3193-Plat
Hoyos-Ramirez, E. A.,
964-Pos
Hraha, T., 1934-Pos
Hraha, T. H., 3859-Pos
Hristova, K., 457-Pos,
547-Pos, 2424-Pos,
3643-Pos
Hryc, C., 3031-Pos
Hsiang, J., 3064-Pos
Hsiao, J., 3129-Pos
Hsie, C., 3027-Pos
Hsieh, C., , 3703-Pos
Hsin, J., 856-Pos, 2399-Pos
Hsu, C., 1832-Pos,
2653-Pos
Hsu, H., 2396-Pos
Hsu, K. H., 817-Pos,
818-Pos, 3887-Pos
Hsueh, Y., 485-Pos,
1478-Pos
Htet, Z. M., 1777-Pos
Hu, E., 3267-Plat
Hu, K., 3968-Pos
Hu, L., 61-Subg, 2100-Pos
Hu, M., 2411-Pos,
3152-Pos, 3597-Pos
Hu, Q., 1033-Pos, 3815-Pos
Hu, R., 2798-Pos
Hu, S., 852-Pos
Hu, W., 557-Pos, 2015-Pos
Hu, X., 281-Pos, 2786-Pos,
2787-Pos
Hu, Z., 617-Pos
Hua, B., 1982-Pos
Huang, B., 142-Plat,
1209-Plat, 1915-Pos,
2026-Pos
Huang, C., 629-Pos,
2638-Pos
Huang, D., 3858-Pos
Huang, F., 538-Pos
Huang, G., 3330-Pos
Huang, G. L., 3430-Pos
Huang, H., 439-Pos,
462-Pos, 1496-Pos,
1856-Pos, 1930-Pos,
3978-Pos
Huang, H. H., 1126-Plat
Huang, H. W., 455-Pos,
1493-Pos
Huang, J., 484-Pos, 504-
Pos, 1781-Pos, 3201-Plat
Huang, K., 483-Pos,
2923-Pos, 3093-Pos,
Huang, K. C., 856-Pos,
2399-Pos, 2914-Pos,
2920-Pos, 3706-Pos
Huang, L., 121-Plat,
239-Wkshp, 2077-Pos,
3464-Pos
Huang, M., 2100-Pos
Huang, Q., 1041-Pos
Huang, R., 1351-Pos,
1578-Pos
Huang, S., 1651-Pos
Huang, T., 1997-Pos
Huang, W., 183-Plat,
2073-Pos, 2847-Pos,
2848-Pos
Huang, W. Y., 1591-Pos
Huang, X., 2306-Wkshp
Huang, Z., 933-Pos,
3669-Pos
Huarte, N., 3582-Pos,
3593-Pos
Hubbell, J. A., 2124-Pos
Hubbell, W., 2345-Pos,
3356-Pos
Hubbell, W. L., 1315-Pos
Huber, M., 1367-Pos,
2565-Pos
Huber, T., 554-Pos,
1206-Plat, 1556-Pos,
1559-Pos, 1922-Pos
Hübner, C. A., 1666-Pos
Huckaba, T. M., 3927-Pos
Hudmon, A., 553-Pos,
2674-Pos
Hudson, N. E., 1284-Pos
Hudson, R., 84-Plat
Hudson, S., 3369-Pos
Huertas-Toledo, J., 809-Pos
Hueschen, C. L., , 63-Subg,
3969-Pos
Huff, A., 1035-Pos
Hugel, T., 245-Wkshp
Hughes, L. D., 3558-Pos
Hughes, T., 2113-Pos,
3065-Pos
Hughes, T. E., 4092-Pos
Huke, S., 1743-Pos
Hulse, R. E., 2734-Pos
Hultgren, S., 2818-Pos
Hummer, G., 1870-Pos,
1907-Pos
Hund, T. J., 2667-Pos
Hundscheil, C., 910-Pos
Hundt, N., 2880-Pos,
2881-Pos
Hung, H., 2939-Pos
Hung, I., 266-Pos, 1281-Pos,
1349-Pos, 3337-Pos
Hung, L., 190-Symp
Hung, W., 1496-Pos
Hunt, J., 2184-Plat
Hunter, C., 943-Pos
Hunter, W. C., 1797-Pos
Huo, R., 401-Pos, 2172-Plat
Huon, C., 1736-Pos,
3243-Plat
Huq, A., 2833-Pos

- Huq, R., 2786-Pos
Huq, R. U., 3738-Pos
Hur, K., 1000-Pos
Hurdiss, E., 2769-Pos
Hurley, N. C., 3341-Pos
Hurley, T. D., 1546-Pos, 2566-Pos
Hurst, D. P., 1563-Pos
Husain, B., 3531-Pos
Husain, K., 859-Pos
Hussain, N., 2535-Pos
Hussain, S., 1528-Pos, 1867-Pos
Hutchinson, K., , 1746-Pos
Hutchinson, K. R., 3264-Plat
Hüve, J., 960-Pos, 3180-Plat
Huxford, T., 248-Pos
Huynh, F., 625-Pos
Huynh, K., 3829-Pos
Huynh, K. W., 3225-Plat
Huynh, Q., 1497-Pos
Hwang, H., 1743-Pos, 3695-Pos
Hwang, J., 2874-Pos, 3694-Pos
Hwang, L. C., 1826-Pos
Hwang, R., 3962-Pos
Hwang, T., 755-Pos, 2185-Plat
Hwang, W., 3940-Pos
Hwang, W. Y., 3622-Pos
Hwang, Y., 2123-Pos, 3712-Pos, 3713-Pos
Hyde, C. H., 99-Plat
Hyde, J. S., 3556-Pos
Hyeon, C., 424-Pos, 1423-Pos
Hyldegård, A., 3860-Pos
Hyman, A. A., 3967-Pos
Hynes, M. J., 1063-Pos
Hynson, R., 2516-Pos
Hyo Jung, R., 261-Pos
Hytinen, J., 2685-Pos, 3131-Pos, 3655-Pos
Hyun, C., 662-Pos
Hyun, J., 252-Pos
Hyvönen, M., 4047-Pos
- I
Iadonato, S. P., 3738-Pos
Iannuzzi, D., 2849-Pos
Ibarra, B., 1159-Plat
Ichikawa, M., 2241-Plat
Ichimura, T., 112-Plat, 1772-Pos, 2879-Pos
Ichiyanagi, K., 315-Pos, 3181-Plat
Ideses, Y., 2868-Pos
Idso, M., 1867-Pos
Iezzi, R., 3998-Pos
Ifikhar, M., 3143-Pos
Iglesias, P., 1804-Pos, 1908-Pos
Igumenova, T. I., 1255-Plat, 2154-Plat
Ihara, Y., 315-Pos
Iida, T., 3856-Pos
Iijima, A., 2765-Pos
Iino, M., 579-Pos
Iino, R., 1287-Pos
Ijäs, K., 2611-Pos
Ijzerman, A., 706-Pos
Ikebe, J., 2042-Pos
Ikebe, M., 904-Pos, 906-Pos, 907-Pos
Ikebe, R., 904-Pos
Ikeda, Y., 3920-Pos
Ikeguchi, M., , 1938-Pos, 2347-Pos, 3090-Pos
Ikenouye, L. M., 2682-Pos
Ikezaki, K., 953-Pos
Ikonen, E., 3569-Pos
Ikura, M., 1615-Pos
Ileri, N., 4048-Pos
Ilie, I. M., 174-Plat
Iljazi, E., 859-Pos
Iljina, M., 1362-Pos, 1364-Pos
Illaste, A., 2178-Plat, 2694-Pos, 2695-Pos
Im, W., 1856-Pos, 2053-Pos, 3084-Pos, 3240-Plat, 3319-Pos, 3566-Pos, 4038-Pos, 4043-Pos, 4045-Pos, 4058-Pos, 4061-Pos, 4085-Pos
Imada, K., 112-Plat
Imai, Y., 1693-Pos
Imashimizu, M., 2458-Pos
Imbrici, P., 747-Pos
Imperial, L., 5-Subg
Imtiaz, M. b., 161-Plat
Imtiaz, M. S., 1620-Pos, 2672-Pos
In, J., 1391-Pos
Incardona, J. P., 3704-Pos
Indu, S., 2389-Pos
Infield, D. T., , 753-Pos
Ing, C., 674-Pos
Ingólfsson, H., 3570-Pos
Ingólfsson, H., 2803-Pos
Ingólfsson, H. I., 208-Plat, 4051-Pos
Ingolia, N. T., 1708-Pos
Inman, J., 1134-Plat
Inman, J. T., 1382-Pos, 1990-Pos
Innes, L. M., 1088-Pos
Inoue, H., 3814-Pos
Inoue, R., 1693-Pos
Inoue, T., 1229-Plat, 2931-Pos
Ioannidis, H., 2186-Plat, 3337-Pos
Iordanov, I., 974-Pos, 2418-Pos, 3232-Plat, 3623-Pos
Iram, S. H., 1291-Pos
Iribe, G., 3897-Pos
Irimia, D., 1818-Pos
Irmscher, M., 236-Plat
Irvine, K., 1567-Pos
Irving, M., 180-Plat, 1115-Symp, 2293-Plat, 3664-Pos, 3669-Pos
Irving, T., 1752-Pos, 3893-Pos
Irving, T. C., 183-Plat, 817-Pos, 818-Pos, 3879-Pos, 3887-Pos
Irwin, J. J., 1340-Pos
Isacoff, E., 1921-Pos
Isacoff, E. Y., 122-Plat, 165-Plat, 981-Pos, 1179-Plat
Isaka, A., 3955-Pos
Iscla, I. R., 2268-Plat
Ishibashi, T., 2455-Pos
Ishida, Y., 2488-Pos
Ishigure, Y., 3132-Pos
Ishii, K., 2321-Pos
Ishii, S., 2835-Pos
Ishikawa, H., 861-Pos
Ishikawa, K., 3932-Pos, 3933-Pos, 3935-Pos, 3936-Pos
Ishitani, R., 4041-Pos
Ishiwata, S., 1754-Pos, 2835-Pos, 2865-Pos, 2866-Pos, 3262-Plat, 3902-Pos, 3955-Pos
Iskander, T., 3603-Pos
Iskratsch, T., 825-Pos
Islam, M. F., 1725-Pos
Islas, L. D., 3761-Pos, 3820-Pos, 3825-Pos
Ismael, A., 1579-Pos
Ismail, V., 1512-Pos
Isom, L., 60-Subg
Isozumi, N., 1857-Pos
Israelachvili, J., 2136-Pos
Israeloff, N., 401-Pos, 2172-Plat
Israelson, H., 935-Pos
Issaeva, I., 3064-Pos
Ito, Y., 3090-Pos
Itoh, H., 2835-Pos, 3955-Pos
Itri, R., 1942-Pos
Itsuki, K., 1693-Pos
Ivana, A., 2854-Pos
Ivankin, A., 1075-Pos, 2594-Pos
Ivanov, D., 3495-Pos
Ivanov, D. N., 333-Pos
Ivanov, I., 1161-Plat, 3501-Pos
Ivanovska, I. L., 1596.2-Pos
Ivenso, I. D., 1414-Pos
Iversen, L., 1158-Plat, 3622-Pos
Iverson, T., 2350-Pos
Iwaki, M., 953-Pos
Iwamoto, H., 810-Pos
Iwamoto, M., 3771-Pos
Iwamoto, T., 1338-Pos
Iwane, A. H., 3032-Pos
Iwasa, T., 3496-Pos
Iwasaki, K., 3109-Pos
Iwata, A., 1793-Pos
Iwata, S., 3103-Pos
Iwatate, R. J., 1287-Pos
Izu, L., 612-Pos, 2856-Pos
Izu, L. T., 608-Pos, 613-Pos, 1665-Pos, 2699-Pos, 2857-Pos
- J
Jabba, S. V., 3231-Plat
Jablin, M. S., 483-Pos
Jablonski, A. E., 3064-Pos
Jacchetti, E., 139-Plat
Jacisin, T., 3099-Pos
Jack, M. W., 1873-Pos
Jacks, R. D., 268-Pos
Jackson, E., 1897-Pos
Jackson, K., 1373-Pos
Jackson, S. E., 322-Pos
Jacobitz, A. W., 3430-Pos
Jacobs, D., 2981-Pos, 3379-Pos
Jacobs, D. J., 3292-Pos
Jacobsen, D. M., 3289-Pos
Jacobsen, R. B., 3860-Pos
Jacobson, D., 2793-Pos
Jacobson, D. A., 3640-Pos
Jacobson, D. R., 1446-Pos
Jacobson, K., 1207-Plat
Jacobs-Wagner, C., 1596.1-Pos
Jadey, S., 1715-Pos
Jadwin, J. A., 3639-Pos
Jaeger, L., 134-Symp, 1436-Pos
Jafari, N., 1198-Plat
Jafri, M., 1630-Pos
Jafri, M. S., 588-Pos, 1628-Pos, 2179-Plat, 3705-Pos
Jafri, S., 1619-Pos, 2180-Plat
Jagannathan, B., 2374-Pos, 2375-Pos
Jager, T., 2273-Plat
Jagessar, K., 250-Pos
Jahid, S., 308-Pos, 2018-Pos
Jahn, R., 2557-Pos, 2563-Pos
Jahnke, J. P., 1867-Pos
Jaikishan, S., 1470-Pos
Jaimes, K., 3987-Pos
Jaimovich, E., 3682-Pos
Jain, A., 1294-Pos, 1916-Pos, 1982-Pos, 2038-Pos
Jain, K., 1143-Plat
Jain, N., 1360-Pos, 3461-Pos
Jain, S., 2065-Pos
Jakana, J., 574-Pos, 3031-Pos
Jaki, A., 2097-Pos
Jakobsen, S., 2057-Pos
Jakobsson, E., 2049-Pos
Jakobtorweihen, S., 3070-Pos
Jakubowski, R., 3345-Pos
Jämbeck, J. P., 104-Plat
James, A. F., 623-Pos
James, N. G., 1575-Pos
James, R. C., 489-Pos
James, Z. M., , 820-Pos, 2952-Pos, 2958-Pos, 2959-Pos
Jameson, D. M., , 449-Pos, 1575-Pos
Jamiolkowski, R. M., 2479-Pos
Jan, K., 3204-Plat
Jana, A. K., 3462-Pos
Janakaloti Narayanareddy, B., 1792-Pos
Jananji, S., 2882-Pos
Janbein, M., 3786-Pos
Janc, M., 3658-Pos
Janco, M., 3882-Pos
Janecke, A., 1684-Pos
Jang, H., 2107-Pos
Jang, S., 3380-Pos
Jang, Y., 1420-Pos
Janicek, R., 2698-Pos
Janin, J., 3317-Pos
Janissen, R., 1984-Pos, 1988-Pos
Janjusevic, R., 788-Pos
Janmey, P. A., 3613-Pos
Jannen, W. K., 1454-Pos
Jansen, M., , 1719-Pos, 1730-Pos, 1858-Pos
Jansen, M. E., 1786-Pos
Janssen, D. B., 3310-Pos
Janssen, P. M., 589-Pos, 1756-Pos
Janssens, A., 1691-Pos, 1704-Pos, 1706-Pos
January, C. T., 2799-Pos
Janz, J. M., 543-Pos
Jara-Oseguera, A., 3819-Pos, 3820-Pos
Jardemark, K., 965-Pos
Jardin, I., 1615-Pos
Jardine, P., 2504-Pos
Jares-Erijman, E. A., 1307-Pos
Jarstfer, M. B., 1457-Pos
Jarzen, J., 2892-Pos
Jasiulionis, M. G., 1554-Pos
Jasnow, D., 1593-Pos
Jaszczur, M., 3506-Pos
Javanainen, M., 2621-Pos, 3569-Pos, 3577-Pos, 3598-Pos
Javer, A., 420-Pos
Jaworski, S., 516-Pos, 1539-Pos, 3630-Pos

- Jayakanthan, S., 2947-Pos
 Jayanthi, S., 3318-Pos, 3378-Pos
 Jayaraman, S., 2379-Pos
 Jayaraman, V., 773-Pos, 774-Pos, 3338-Pos, 4012-Pos
 Jayaratne, N., 3838-Pos
 Jayasinghe, I. D., 639-Pos
 Jayasundar, J., 1758-Pos
 Jayasundar, J. J., 179-Plat
 Jeakins-Cooley, M. E., 1146-Plat
 Jean-François, R., 1352-Pos
 Jee, S., 392-Pos
 Jeffery, C., 3327-Pos
 Jeffries, G. D., 965-Pos
 Jelokhani-Niaraki, M., 2167-Plat
 Jen-Jacobson, L., 1393-Pos
 Jenkins, D. P., 2746-Pos
 Jenkins, P. D., 2188-Plat
 Jennifer, D. E., 84-Plat
 Jensen Smith, H., 936-Pos, 937-Pos
 Jensen, G., 2140-Symp
 Jensen, G. V., 217-Plat
 Jensen, J. B., 716-Pos
 Jensen, K. J., 3617-Pos
 Jensen, M., 838-Pos, 1235-Plat, 3960-Pos
 Jensen, M. B., 3617-Pos
 Jensen, M. H., 1805-Pos, 2151-Plat
 Jensen, M. Ø., 75-Subg
 Jeon, T., 460-Pos, 2107-Pos
 Jeong, J., 973-Pos, 2053-Pos
 Jeong, S., 460-Pos
 Jepsen, L., 837-Pos
 Jervis, D., 194-Symp
 Jesorka, A., 965-Pos, 1055-Pos
 Jessen, M., 1723-Pos
 Jeyifous, O., 2198-Plat, 3058-Pos
 Jezek, P., 1025-Pos
 Jheng, Y., 2494-Pos
 Jho, Y., 2551-Pos
 Ji, B., 2895-Pos
 Ji, H., 360-Pos, 538-Pos, 3083-Pos
 Ji, S., 283-Pos
 Jia, K., 1651-Pos
 Jia, Y., 3813-Pos
 Jian, Z., 613-Pos, 1665-Pos, 2857-Pos
 Jiang, C., 1945-Pos
 Jiang, H., 727-Pos, 3019-Pos
 Jiang, J., 546-Pos, 933-Pos
 Jiang, M., 721-Pos, 3792-Pos
 Jiang, Q., 1520-Pos, 3464-Pos
 Jiang, W., 2077-Pos
 Jiang, X., 681-Pos
 Jiang, Y., 925-Pos, 982-Pos, 1882-Pos, 2937-Pos, 3267-Plat
 Jiang, Z., 103-Plat, 4032-Pos
 Jiao, D., 2736-Pos
 Jiao, J., 3592-Pos
 Jiao, R., 1578-Pos
 Jie, J., 3486-Pos
 Jie, L., 660-Pos
 Jih, K., 2185-Plat
 Jiji, R. D., 87-Plat
 Jimenez, M., 3421-Pos
 Jiménez, M., 3593-Pos
 Jimenez, R., 2320-Pos
 Jimenez-Rojo, N., 1474-Pos
 Jimenez-Roldan, E., 1246-Plat
 Jiménez-Vázquez, E. N., 2767-Pos
 Jin, B., 2102-Pos
 Jin, C., 648-Pos
 Jin, J., 1759-Pos, 2852-Pos, 3666-Pos, 3671-Pos
 Jin, L., 2113-Pos
 Jin, S., 2381-Pos
 Jin, W., 439-Pos
 Jin, X., 3175-Plat
 Jin, Y., 2454-Pos
 Jindal, H., 2182-Plat
 Jinek, M., 3524-Pos
 Jinha, A., 815-Pos, 816-Pos, 3862-Pos
 Jinhyuk, L., 261-Pos
 Jo, H., 698-Pos
 Jo, K., 1399-Pos
 Jo, S., 2053-Pos, 3566-Pos, 4085-Pos
 Jo, Y., 3051-Pos
 Joanny, J., 231-Plat, 1231-Plat
 Job, C., 2284-Plat
 Jobe, A., 3036-Pos
 Jocelyn, E., 1801-Pos
 Jockusch, S., 980-Pos
 Johansen, J., 2155-Plat
 Johansson, M., 1212-Plat
 John, S., 1841-Pos, 2938-Pos
 Johnson Chavarria, E. M., 1140-Plat
 Johnson, A. E., 1868-Pos
 Johnson, C., 703-Pos
 Johnson, C. K., 2342-Pos
 Johnson, C. L., 1293-Pos
 Johnson, D., 553-Pos
 Johnson, D. E., 2674-Pos
 Johnson, F. B., 2186-Plat
 Johnson, J. L., 252-Pos, 865-Pos
 Johnson, J. M., 1860-Pos
 Johnson, K. A., 3299-Pos
 Johnson, K. W., 2436-Pos
 Johnson, M., 1963-Pos, 2566-Pos
 Johnson, M. A., 323-Pos, 1475-Pos, 1476-Pos, 1518-Pos, 2597-Pos
 Johnson, M. E., 1907-Pos
 Johnson, R. C., 422-Pos
 Johnson, R. N., 777-Pos
 Johnson, S., 127-Plat
 Johnston, A. S., 2262-Plat
 Johnston, C. M., 3901-Pos
 Johnston, J. M., 1561-Pos
 Johnston, K. R., 3862-Pos
 Jolmes, F., 129-Plat
 Jona, I., 560-Pos
 Jonas, E., 19-Subg
 Jones, A. C., 1909-Pos
 Jones, C. A., 883-Pos
 Jones, D., 2462-Pos
 Jones, D. L., 2471-Pos
 Jones, E. Y., 1566-Pos
 Jones, H. D., 2280-Plat
 Jones, L. M., 1-Subg, 1197-Plat
 Jones, M., 361-Pos, 481-Pos
 Jones, R. L., 3369-Pos
 Jones-Hackathorne, A., 2324-Pos
 Jonsson, A., 3070-Pos
 Jonsson, E., 3937-Pos, 3945-Pos
 Jonsson, P., 2534-Pos
 Jónsson, S., 3236-Plat
 Joo, C., 131-Plat, 2511-Pos, 3537-Pos
 Joos, B., 3745-Pos
 Joost, B., 520-Pos
 Jordan, R., 2535-Pos
 Jorgačevski, J., 69-Subg, 2664-Pos
 Jorge, B. S., 2189-Plat
 Jorquera, R. A., 1585-Pos
 Jose, D., 360-Pos, 1394-Pos
 Joseph, A., 298-Pos, 811-Pos
 Joshi, M., 3448-Pos
 Joshi, P., 1370-Pos
 Joshi, S., 1042-Pos, 4082-Pos
 Joshi-Mukherjee, R., 3171-Plat
 Joshua-Tor, L., 2297-Wkshp
 Jou, I., 3142-Pos
 Jouhet, J., 2592-Pos
 Joumaa, V., 3863-Pos, 3866-Pos
 Jounaidi, Y., 2766-Pos
 Joureau, B., 3890-Pos
 Jovin, T. M., 1202-Plat, 1257-Plat, 1307-Pos
 Joyner, R., 1005-Pos
 Juchno, J., 3832-Pos
 Judd, L. W., 952-Pos
 Juffer, A., 4047-Pos
 Juhaszova, M., 584-Pos, 586-Pos, 1618-Pos
 Julicher, F., 83-Symp
 Jülicher, F., 1231-Plat, 2239-Plat
 Julien, O., 220-Plat
 Jun, Y., 65-Subg, 1135-Plat
 Jung, A., 1925-Pos, 3753-Pos
 Jung, J., 3051-Pos, 3568-Pos
 Jung, K., 377-Pos, 916-Pos
 Jung, M. E., 3430-Pos
 Jung, S., 2107-Pos
 Jung, V., 1612-Pos
 Jungbauer, A., 3125-Pos
 Jungnick, N., 331-Pos
 Jungwirth, P., 3603-Pos
 Jura, N., 1209-Plat, 2649-Pos
 Juranka, P. F., 4526-Pos
 Jurchenko, C., 984-Pos, 2301-Wkshp
 Jurevičius, J., 632-Pos, 633-Pos
 Jurica, M. S., 1890-Pos
 Jurkat-Rott, K., 2801-Pos
 Jurkiewicz, P., 426-Pos
 Justice, M. J., 2657-Pos
 Justus, K., 3123-Pos
 Juuti-Uusitalo, K., 2685-Pos
 Jyothikumar, V., 3052-Pos
- K**
- K, V., 1765-Pos
 Kaakati, R., 3729-Pos
 Kabata, M., 2392-Pos
 Kabla, A., 852-Pos
 KAC Sreenivasan, V., 2899-Pos
 Kachel, H. S., 1711-Pos
 Kachmar, L., 2290-Plat, 2872-Pos, 3875-Pos
 Kaczmarek, L., 3741-Pos
 Kaczmarek, L. K., 2751-Pos
 Kafle, R. P., 3714-Pos
 Kagan, B. L., 2777-Pos
 Kagan, V. E., 933-Pos, 4064-Pos
 Kahanovitch, U., 3777-Pos
 Kahlev, M., 2455-Pos
 Kahlscheuer, M. L., 2501-Pos
 Kahn, T. B., 3434-Pos
 Kahraman, O., 1525-Pos, 3619-Pos
 Kai, H., 2634-Pos, 2636-Pos
 Kaila, V. R., 1870-Pos
 Kainosho, M., 3012-Pos
 Kaiser, W., 111-Plat
 Kaizuka, Y., 121-Plat
 Kaji, N., 3545-Pos
 Kajma-Olszewska, A., 3732-Pos
 Kake-Guena, S. A., 3700-Pos
 Kakizuka, T., 2879-Pos
 Kalganov, A., 807-Pos
 Kalia, J., 3827-Pos
 Kalia, M., 148-Plat
 Kalimeri, M., 1301-Pos
 Kalinec, F., 1810-Pos
 Kalinin, S., 991-Pos, 1455-Pos, 2016-Pos, 3356-Pos, 3515-Pos
 Kalinovich, A., 2992-Pos
 Kalita, M. M., 299-Pos
 Kalli, A. C., 2620-Pos
 Kalmeta, B., 3231-Plat
 Kalogeraki, V., 1385-Pos
 Kalonia, D. S., 1080-Pos
 Kalsi, S., 703-Pos
 Kalstrup, T., 2716-Pos
 Kalyanasundaram, A., 2181-Plat
 Kalyoncu, S., 252-Pos
 Kamenetska, M., 404-Pos, 1971-Pos, 1973-Pos
 Kaminska, R., 1946-Pos
 Kamiya, M., 1287-Pos
 Kamiya, N., 2423-Pos, 3362-Pos
 Kamiyama, D., 142-Plat
 Kamler, P., 1544-Pos
 Kammerer, S., 2749-Pos, 2782-Pos
 Kamp, T. J., 2799-Pos
 Kampmann, M., 220-Plat
 Kampmeier, F., 535-Pos
 Kampourakis, T., 180-Plat
 Kamsma, D., 1955-Pos
 Kan, E., 1330-Pos, 2377-Pos
 Kan, Y., 2136-Pos
 Kan, Z., 557-Pos
 Kanai, Y., 1857-Pos
 Kanaori, K., 2403-Pos
 Kanaporis, G., 587-Pos
 Kanashiro-Takeuchi, R., 3893-Pos
 Kanda, Y., 3650-Pos
 Kandel, S., 2038-Pos
 Kandel, S. M., 3900-Pos
 Kandinov, A., 1405-Pos
 Kane, C., 3696-Pos, 3838-Pos
 Kane, W. H., 2623-Pos
 Kaneko, T., 3897-Pos
 Kanemaru, K., 579-Pos
 Kaneshiro, J., 1772-Pos
 Kang, B., 1925-Pos
 Kang, C., 2210-Plat
 Kang, G., 1344-Pos
 Kang, H., 834-Pos
 Kang, I., 2085-Pos
 Kang, J., 3192-Plat
 Kang, M., 269-Pos, 4039-Pos
 Kang, X., 2651-Pos
 Kang, Y., 3196-Plat
 Kang, J. S., 118-Plat
 Kannan, S., 1332-Pos
 Kanno, D., 1160-Plat
 Kant, R., 617-Pos
 Kantor, A. B., 4079-Pos
 Kantsler, V., 1061-Pos
 Kanwal, A., 2093-Pos
 Kao, A., 3645-Pos

Kao, C., 3031-Pos
 Kao, J. P., 1631-Pos
 Kao, P., 785-Pos
 Kapanidis, A., 244-Wkshp,
 1881-Pos, 2318-Pos
 Kapanidis, A. N., 1130-Plat,
 1395-Pos, 2464-Pos
 Kaplan, A. D., 3190-Plat
 Kaplan, C. D., 2459-Pos
 Kaplan, L., 1829-Pos,
 1830-Pos
 Kapoor, A., 829-Pos,
 3291-Pos
 Kapoor, K., 3989-Pos
 Kapoor, S., 1317-Pos,
 3607-Pos
 Kaposi, A., 3284-Pos
 Kappel, S., 1612-Pos
 Kaptan, S. S., 3357-Pos
 Kar, P., 2337-Pos
 Kar, R., 319-Pos
 Kara, T., 2854-Pos
 Karabadzah, A., 471-Pos,
 1167-Symp
 Karabina, A., 2845-Pos
 Karagueuzian, H. S.,
 3188-Plat
 Karam, C., 932-Pos
 Karandur, D., 2444-Pos
 Karatekin, E., 170-Plat,
 897-Pos, 2555-Pos,
 2562-Pos, 2652-Pos
 Karedla, N. V., 1202-Plat
 Kariev, A. M., 2725-Pos,
 2726-Pos
 Karim, C. B., 2952-Pos,
 2958-Pos, 2959-Pos
 Karimi-Jafari, M., 2809-Pos
 Karina, A., 2820-Pos
 Karma, A., 3188-Plat
 Karmakar, R., 2917-Pos
 Karner, A., 1953-Pos
 Karniadakis, G. E.,
 2896-Pos, 3010-Pos
 Karolak, A., 2414-Pos,
 4054-Pos
 Karolin, J., 3134-Pos
 Karpenko, V. V., 1995-Pos
 Karplus, M., 3940-Pos
 Karpowicz, P., 4033-Pos
 Karslake, J., 492-Pos
 Karunanayake
 Mudiyansele, A. P.,
 2499-Pos
 Karunasekara, Y., 2257-Plat
 Karunatilaka, K. S., 2004-Pos
 Karzbrun, E., 2131-Pos
 Käs, J. A., 891-Pos, 2903-Pos
 Kasam, V., 2069-Pos
 Kashimura, Y., 3149-Pos
 Kashiwazaki, G., 3512-Pos
 Kashlan, O. B., 3802-Pos
 Kashlev, M., 2458-Pos
 Kashyap, H. K., 2554-Pos
 Kashyap, P., 3812-Pos
 Kasianowicz, J. J., 1074-Pos
 Kasimova, M., 1181-Plat,
 1488-Pos, 2813-Pos,
 3749-Pos
 Kasper, R., 142-Plat
 Kaspersen, J. D., 217-Plat
 Kass, R. S., 725-Pos
 Kasson, P., 1735-Pos,
 3218-Symp
 Kasson, P. M., 473-Pos
 Kast, D. J., 819-Pos
 Kast, S. M., 1524-Pos
 Kastelowitz, N., 2547-Pos
 Kaszuba, K., 2601-Pos,
 2964-Pos
 Katahira, M., 3533-Pos
 Katan, A., 2169-Plat
 Kataoka, C., 121-Plat
 Katchan, M., 769-Pos
 Katen, S., 328-Pos
 Kateriya, S., 3417-Pos
 Kathuria, S., 1247-Plat
 Katira, S., 1120-Plat,
 2577-Pos, 2656-Pos
 Kato, H., 3012-Pos
 Katranidis, A., 3397-Pos
 Katsaras, J., 15-Subg, 226-Plat,
 502-Pos, 1473-Pos,
 2537-Pos, 2624-Pos
 Katsuta, H., 3371-Pos
 Katus, H. A., 624-Pos
 Karyal, P., 2408-Pos
 Kauert, D. J., 3555-Pos
 Kaufman, I., 684-Pos
 Kaufman, Z. A., 3155-Pos
 Kaumaya, P., 940-Pos
 Kaupp, U., 2421-Pos,
 3841-Pos
 KAUR, S., 3852-Pos
 Kaus, K., 465-Pos
 Kaushik, G., 3917-Pos,
 3921-Pos
 Kaviratna, A., 515-Pos
 Kawabata, T., 1046-Pos,
 2423-Pos
 Kawai, M., 1740-Pos,
 2877-Pos, 3905-Pos
 Kawana, M., 794-Pos,
 2841-Pos
 Kawanabe, A., 3762-Pos
 Kawano, K., 461-Pos,
 1495-Pos
 Kawano, T., 3778-Pos
 Kawaoka, Y., 3220-Symp
 Kawas, R., 2842-Pos
 Kawatsu, T., 3493-Pos
 Kayser, J., 863-Pos
 Kaz, D. M., 2029-Pos
 Kazi, R., 160-Plat
 Kazmi, M., 1559-Pos
 Kazmierczak, K., 181-Plat,
 183-Plat, 1739-Pos,
 2845-Pos, 3893-Pos
 Kaznacheyeva, E., 2776-Pos
 Ke, H., 3651-Pos, 3855-Pos
 Ke, S., 672-Pos
 Ke, Y., 1640-Pos
 Kearney, J. A., 2189-Plat
 Kearns, M., 880-Pos
 Keating, M., 1189-Plat
 Keceli, B., 778-Pos
 Kee, Y., 2898-Pos
 Keedy, D., 3212-Plat
 Kehr, A. D., 3527-Pos
 Keiderling, T. A., 287-Pos,
 3472-Pos
 Keighron, J., 2099-Pos,
 2663-Pos
 Keitel, V., 1356-Pos
 Keithly, M., 250-Pos
 Kekenos-Huskey, P.,
 1116-Symp, 2059-Pos,
 3340-Pos
 Kekenos-Huskey, P. M.,
 607-Pos, 3435-Pos
 Kekic, M., 1754-Pos, 2874-Pos
 Kelbauskas, L., 4094-Pos
 Kelemen, L., 3138-Pos
 Kellenberger, S., 3241-Plat
 Keller, A. M., 979-Pos,
 1093-Pos
 Keller, S., , 985-Pos,
 1342-Pos, 1441-Pos,
 1529-Pos, 2413-Pos
 Keller, S. L., , 489-Pos,
 490-Pos, 493-Pos, 498-Pos
 Kellermayer, D., 1741-Pos
 Kellermayer, M., 1975-Pos,
 3284-Pos
 Kellermayer, M. S., 813-Pos,
 895-Pos, 2326-Pos
 Kellett, W. F., 4073-Pos
 Kelliher, M. T., 268-Pos
 Kellman, P., 4017-Pos
 Kellogg, E., 2236-Plat
 Kellogg, E. H., 1770-Pos
 Kelly, C. M., 284-Pos
 Kelman, Z., 276-Pos
 Kemalyan, G., 915-Pos
 Kemi, O. J., 2262-Plat
 Kemmer, G., 1158-Plat
 Kemp, M. L., 1911-Pos
 Kemp, M. T., 2414-Pos
 Kemp, P. J., 723-Pos
 Kempe, D., 1283-Pos,
 3397-Pos
 Kendall, D. A., 2406-Pos
 Kennedy, G., 2873-Pos
 Kenney, L., 3000-Pos
 Kenrick, S. A., 3733-Pos
 Kensler, R. W., 809-Pos
 Kent, M. S., 3588-Pos
 Kent, S. B., 682-Pos, 683-Pos
 Kent, T., 3809-Pos
 Kenter, A., 417-Pos, 418-Pos
 Kenworthy, A. K., 1533-Pos,
 3716-Pos
 Kenworthy, C., 2453-Pos
 Kepiro, M., 895-Pos
 Kerby, J., 151-Plat
 Kern, D., 3269-Plat,
 3324-Pos
 Kern, N. R., 3566-Pos
 Kerr, J. P., 1638-Pos,
 3680-Pos, 3681-Pos
 Kerr, R., 3307-Pos
 Kerrick, W. G., 3691-Pos
 Kerruth, S., 3300-Pos,
 3390-Pos
 Kerschbaum, H., 2790-Pos
 Kerselaers, S., 3811-Pos
 Kerssemakers, J. W.,
 1388-Pos
 Keshavan, S., 1062-Pos
 Kessler, J., 850-Pos, 3472-Pos
 Kessler, J. M., 1827-Pos
 Kessler, M. S., 1471-Pos
 Kesters, D., 679-Pos
 Ketchum, C. M., 3961-Pos
 Kettenhofen, R., 694-Pos
 Keum, D., 2603-Pos
 Keymer, J. E., 948-Pos
 Keyser, U. F., 3193-Plat
 Khadria, A. S., 2607-Pos
 Khairallah, R., 3680-Pos,
 3686-Pos
 Khairallah, R. J., 1752-Pos,
 1755-Pos
 Khairutdinov, B., 3379-Pos
 Khaitlina, S. Y., 2869-Pos
 Khakbaz, P., 2079-Pos
 Khalid, S., , 513-Pos,
 1292-Pos, 2227-Plat
 Khan, G. N., 814-Pos
 Khan, S. M., 853-Pos
 Khandelia, H., 102-Plat,
 426-Pos, 2944-Pos,
 2945-Pos
 Khasnis, S., 814-Pos
 Khatami, M., 3370-Pos
 Khatib, F., 3122-Pos
 Khelashvili, G., 2585-Pos
 Khelifi, S., 2597-Pos
 Kheyfets, B. B., 3594-Pos
 Kho, A., 1118-Symp
 khodadadi, S., 1147-Plat
 Khosa, J. K., 1748-Pos
 Khosla, C., 2354-Pos
 Khovanov, I. A., 684-Pos
 Khuu, M. T., 2604-Pos
 Kidd, T., 1333-Pos
 Kidwell, M., 2512-Pos
 Kieft, J. S., 3036-Pos
 Kielian, M. C., 3588-Pos
 Kienker, P., 3633-Pos
 Kienzler, M., 1921-Pos
 Kiessling, V., 958-Pos,
 2557-Pos, 2559-Pos
 Kihara, S., 920-Pos
 Kikuchi, T., 2368-Pos,
 2392-Pos, 3408-Pos
 Kilch, T., 1612-Pos
 Kilfoil, M. L., 862-Pos
 Kilian, P., 757-Pos
 Kilic, A., 1756-Pos
 Kilinc, D., 4096-Pos
 Killian, A., 481-Pos
 Killian, J., , 325-Pos,
 1522-Pos, 2572-Pos
 Kilpatrick, A. M., 2670-Pos
 Kim, A., 1064-Pos
 Kim, B., 351-Pos, 3537-Pos
 Kim, B. I., 1951-Pos
 Kim, B. N., 4102-Pos
 Kim, C., 3116-Pos,
 3330-Pos
 Kim, D., 237-Plat, 377-Pos,
 662-Pos, 2826-Pos,
 3061-Pos, 4021-Pos
 Kim, D. M., 783-Pos,
 1519-Pos
 Kim, E., 106-Plat, 1655-Pos,
 3439-Pos, 3934-Pos
 Kim, E. H., 1551-Pos
 Kim, G., 986-Pos,
 1761-Pos, 1767-Pos,
 3673-Pos
 Kim, G. E., 1548-Pos
 Kim, H., 916-Pos,
 1415-Pos, 1982-Pos,
 2480-Pos, 2994-Pos,
 3113-Pos, 3389-Pos,
 3517-Pos, 4056-Pos,
 4069-Pos
 Kim, H. D., 1408-Pos
 Kim, H. J., 614-Pos,
 615-Pos
 Kim, I., 3757-Pos,
 3765-Pos
 Kim, J., 184-Symp, 450-Pos,
 973-Pos, 994-Pos,
 1135-Plat, 1401-Pos,
 1626-Pos, 1627-Pos,
 1700-Pos, 1917-Pos,
 2123-Pos, 2639-Pos,
 2898-Pos, 2933-Pos,
 3278-Pos, 3380-Pos,
 3645-Pos, 3712-Pos,
 3713-Pos, 3819-Pos,
 3827-Pos, 3827-Pos
 Kim, J. E., 1344-Pos
 Kim, K., , 1079-Pos,
 1239-Plat, 1423-Pos,
 2090-Pos, 2110-Pos,
 2117-Pos, 2933-Pos
 Kim, L., 3836-Pos
 Kim, M., 1288-Pos,
 1614-Pos, 2135-Pos
 Kim, M. K., 1288-Pos
 Kim, M. O., 3335-Pos
 Kim, N. V., 3537-Pos
 Kim, P. K., 313-Pos
 Kim, R., 3174-Plat
 Kim, R. Y., 2741-Pos,
 2742-Pos

- Kim, S., 150-Plat, 229-Plat, 354-Pos, 377-Pos, 377-Pos, 460-Pos, 615-Pos, 648-Pos, 916-Pos, 2107-Pos, 2319-Pos, 2484-Pos, 2551-Pos, 3127-Pos, 3927-Pos, 3931-Pos, 3934-Pos, 4027-Pos
- Kim, S. A., 2183-Plat
- Kim, S. H., 3611-Pos
- Kim, S. K., 1420-Pos
- Kim, S. S., 272-Pos
- Kim, T., 283-Pos, 835-Pos
- Kim, Y., 384-Pos, 466-Pos, 467-Pos, 479-Pos, 871-Pos, 973-Pos, 1288-Pos, 2551-Pos, 2648-Pos, 2906-Pos
- Kimble-Hill, A. C., 1546-Pos, 2566-Pos, 2604-Pos
- Kimlicka, L., 569-Pos
- Kimura, K., 800-Pos
- Kimura, S., 3872-Pos
- Kimura, T., 558-Pos
- Kimura, Y., 2922-Pos
- Kinashi, T., 2890-Pos
- King, B., 785-Pos
- King, C., 2424-Pos
- King, C. R., 3643-Pos
- King, G. A., 2222-Plat
- King, G. M., 2314-Pos, 4022-Pos
- King, J., 486-Pos
- King, J. A., 218-Plat
- King, K. E., 1482-Pos
- King, M. C., 2893-Pos
- King, N. P., 2248-Symp
- King, S. J., 1790-Pos
- Kingston, A., 3018-Pos
- Kinjo, A., 1046-Pos
- Kinnebrew, M., 1528-Pos, 1867-Pos
- Kinney, J., 2462-Pos
- Kinney, S. R., 1075-Pos
- Kinnun, J. J., 226-Plat, 499-Pos, 1465-Pos
- Kinoshita, K., 2622-Pos
- Kinoshita, M., 1855-Pos, 2332-Pos, 3359-Pos, 3533-Pos
- Kirchhausen, T., 1577-Pos
- Kireeva, M. L., 2455-Pos
- Kirichok, Y., 2191-Plat
- Kirk, S. R., 1103-Pos
- Kirmizialtin, S., 212-Plat, 3299-Pos
- Kirpichnikov, M. P., 3281-Pos
- Kirschner, D. E., 3256-Plat
- Kirshner, D. A., 444-Pos
- Kirton, H. M., 3896-Pos
- Kischenko, G., 3703-Pos
- Kise, D. P., 3096-Pos
- Kishore, R., 2259-Plat
- Kisselbach, J., 624-Pos
- Kitajiri, S., 2867-Pos
- Kitao, A., 2061-Pos, 2331-Pos, 3878-Pos
- Kitas, E., 2619-Pos
- Kitoh-Nishioka, H., 3493-Pos
- Kjaergaard, M., 322-Pos
- Kjoller, K., 1033-Pos
- Klaerke, D. A., 702-Pos, 2789-Pos, 2794-Pos
- Klafter, J., 3432-Pos
- Klauda, J., 2053-Pos
- Klauda, J. B., 429-Pos, 2079-Pos, 3119-Pos, 3319-Pos, 3600-Pos
- Klaus, S., 2552-Pos
- Kleanthous, C., 1946-Pos
- Klehs, K., 2014-Pos
- Klein PhD, M. L., 3839-Pos
- Klein, J. C., 820-Pos, 1275-Pos, 3283-Pos
- Klein, M., 3756-Pos
- Klein, M. L., 525-Pos, 676-Pos, 751-Pos, 1181-Plat, 1604-Pos, 2554-Pos
- Klein, S. A., 3440-Pos
- Kleinekathöfer, U., 758-Pos, 919-Pos
- Kleinjung, J., 3274-Pos
- Kleinschmidt, J. H., 1345-Pos
- Klein-Seetharaman, J., 4064-Pos
- Klement, G., 1734-Pos, 1735-Pos, 2768-Pos
- Klement, R., 3079-Pos
- Klemm, S., 1879-Pos
- Klemme, D., 2007-Pos
- Kleneman, D., 2982-Pos
- Klenerman, D., 35-Subg, 322-Pos, 990-Pos, 1007-Pos, 1364-Pos, 1366-Pos, 2092-Pos, 2679-Pos, 4029-Pos
- Kleyman, T. R., 3802-Pos
- Kliger, D. S., 2367-Pos
- Kline, R., 1333-Pos
- Klingauf, J., 960-Pos, 3180-Plat
- Klinman, J. P., 3276-Pos
- Klipp, E., 331-Pos, 2498-Pos
- Klippenstein, V., 163-Plat
- Klück, G., 3144-Pos
- Kloczkowski, A., 1049-Pos, 3321-Pos
- Klose, D., 2421-Pos
- Klösgen, B. M., 225-Plat, 1462-Pos
- Klosowiak, J., 156-Plat
- Klosowiak, J. L., 1334-Pos
- Kloss, B., 1856-Pos
- Kloß, L., 3954-Pos
- Klotz, T., 2556-Pos
- Klotzsch, E., 1952-Pos
- Klug, W. S., 1525-Pos, 3619-Pos
- Klumpp, S., 67-Subg, 1448-Pos
- Knapp, S., 108-Plat
- Knaus, H., 1034-Pos
- Knecht, K., 1697-Pos
- Kneitz, S., 3005-Pos
- Kneller, J. M., 3341-Pos
- Knight, J., 1254-Plat, 1587-Pos
- Knight, P. J., 804-Pos, 1174-Symp, 3163-Symp
- Knipe, L., 2665-Pos
- Knoepfel, T., 1154-Plat
- Knoflach, D., 1684-Pos
- Knollmann, B., 659-Pos
- Knollmann, B. C., 589-Pos, 1743-Pos, 2181-Plat, 3695-Pos
- Knott, T., 2783-Pos
- Knowles, A., 177-Plat
- Knowles, T., 3458-Pos
- Knowles, T. P., 1361-Pos, 3456-Pos
- Knowlton, A. A., 614-Pos
- Knust, E., 1298-Pos
- Knutson, J. R., 350-Pos
- Knyazev, D., 789-Pos
- Ko, C., 1622-Pos
- Ko, C. Y., 2687-Pos
- Ko, J., 940-Pos
- Kobayashi, M., 1279-Pos, 3883-Pos
- Kobayashi, T., 517-Pos, 800-Pos, 1784-Pos
- Kobayashi, Y., 3422-Pos
- Koberling, F., 1039-Pos, 3356-Pos
- Kobertz, W. R., 2669-Pos
- Kobirumaki-Shimozawa, F., 3262-Plat
- Koçer, A., 208-Plat, 2803-Pos
- Koch, A., 1356-Pos
- Koch, H., 789-Pos
- Koch, M., 2419-Pos
- Koch, P. D., 3619-Pos
- Koch, W., 2990-Pos
- Kochryan, G., 3137-Pos
- Kockskaemper, J., 603-Pos, 604-Pos
- Kockskämper, J., 3689-Pos
- Kodera, N., 826-Pos
- Kodger, T. E., 229-Plat
- Koerber, M., 1389-Pos
- Koehl, P., 3358-Pos
- Koenderink, G. H., 3465-Pos
- Koenig, I., 1363-Pos
- Koenig, M., 2007-Pos
- Koenig, X., 1652-Pos
- Koepflinger, K., 3601-Pos
- Koeppe II, R. E., 512-Pos, 3606-Pos, 3608-Pos, 3609-Pos, 4038-Pos
- Koeppe, J., 2344-Pos
- Koester, D. V., 859-Pos
- Kogan, A., 3108-Pos
- Koh, D., 1614-Pos
- Koh, H., 128-Plat
- Koharudin, L., 146-Plat
- Kohl, T., 1619-Pos
- Köhler, J., 3258-Plat
- Köhler, M., 1128-Plat, 2991-Pos
- Kohler, P., 1916-Pos
- Köhler, R., 2188-Plat, 3248-Plat
- Kohlhaas, M., 934-Pos
- Kohlhoff, K., 88-Plat
- Koitmäe, A., 4000-Pos
- Kojetin, D. J., 3475-Pos
- Kojima, H., 1785-Pos, 2241-Plat
- Kojima, S., 2922-Pos
- Kojtari, A., 3083-Pos
- Kokate, R., 2023-Pos
- Koker, T., 3200-Plat
- Kokoschinegg, D., 2995-Pos
- Koksch, B., 3308-Pos
- Kolb, P., 555-Pos
- Kolb, T., 1026-Pos, 2912-Pos
- Koldsø, H., 1486-Pos, 3451-Pos
- Koldsoe, H., 3617-Pos
- Kolesnikov, A. I., 1195-Plat
- Kolesnikova, T., 3144-Pos
- Kollmitzer, B., 2536-Pos, 2585-Pos, 2595-Pos
- Kolmakova-Partensky, L., 2264-Plat
- Kolocouris, A., 2186-Plat, 3337-Pos
- Kolster, J., 606-Pos
- Kolwicz, S. C., 1745-Pos
- Komáromy PhD, A. M., 3839-Pos
- Komarov, A. G., 1182-Plat
- Komarov, I., 2235-Plat
- Komatsu, H., 3444-Pos
- Komazaki, S., 2701-Pos
- Kombairaju, P., 3680-Pos
- Komeili, A., 966-Pos
- Komives, E., 3419-Pos
- Komives, E. A., 3282-Pos, 3342-Pos
- Komori, H., 1339-Pos
- Komuro, I., 3186-Plat
- Kon, T., 1174-Symp, 3362-Pos
- Kondapalli, K. C., 1847-Pos
- Kondev, J., 1892-Pos
- Kondo, K., 2427-Pos, 3941-Pos
- Kondo, N., 2890-Pos
- Kondo, R., 3861-Pos
- Kondo, Y., 2356-Pos
- Konermann, L., 3-Subg
- Kong, B., 2551-Pos
- Kong, C. H., 2177-Plat
- Kong, W., 1933-Pos
- Konhilas, J., 2837-Pos, 3007-Pos
- Konhilas, J. P., 3876-Pos, 3877-Pos
- Konijnenberg, A., 2803-Pos
- Konishi, H., 3364-Pos
- Konishi, M., 3814-Pos
- Kono, H., 378-Pos, 2042-Pos
- Konogami, T., 2378-Pos
- Kononov, A. I., 1095-Pos, 1995-Pos, 4066-Pos
- Konopka, B. M., 2829-Pos
- Konovarov, P., 3699-Pos
- Kontrogiani-Konstantopoulos, A., 3922-Pos
- Kontur, W. S., 2371-Pos
- Konyakhina, T. M., 1480-Pos
- Kooijman, E. E., 1467-Pos, 1545-Pos, 3629-Pos
- Koolivand, A., 1119-Plat
- Koons, S., 3162-Pos
- Koorengel, M., 481-Pos
- Koorengel, M. C., 1522-Pos
- Koos, D., 2905-Pos
- Kopanic, J. L., 2426-Pos
- Kopec, W., 102-Plat, 2944-Pos, 2945-Pos
- Kopfer, D. A., 2729-Pos
- Kopkalli, Y., 350-Pos
- Kopljär, I., 3742-Pos
- Kopylova, G. V., 3865-Pos
- Korchev, Y., 2092-Pos, 4024-Pos
- Korchev, Y. E., 4029-Pos
- Koren, G., 619-Pos, 2182-Plat
- Korge, P., 931-Pos
- Koride, S., 874-Pos
- Korkosh, V. S., 666-Pos
- Kornberg, R. D., 2459-Pos
- Kornblum, H. I., 3747-Pos
- Kornilov, P., 720-Pos, 3801-Pos
- Kormmueller, K., 316-Pos
- Kornyshev, A. A., 2222-Plat
- Korobchevskaya, K., 1016-Pos
- Korolev, N., 397-Pos
- Koropatkin, N. M., 2004-Pos
- Korsgaard, M. P., 3860-Pos
- Korte, M., 137-Plat
- Kortemme, T., 2219-Plat
- Koschak, A., 1671-Pos, 1684-Pos

- Kose, H., 2351-Pos
Kose, H. B., 278-Pos
Koshy, C., 1836-Pos
Koslover, E. F., 1269-Plat
Kossel, M., 1010-Pos
Kossolov, E., 694-Pos
Kostan, J., 567-Pos
Kosuri, P., 2292-Plat
Kosztin, I., 1047-Pos,
3124-Pos
Kota, P., 2184-Plat
Kotamarthi, H., 1972-Pos,
3394-Pos
Kotamarthi, H. C., 2078-Pos
Kotamraju, V. R., 2126-Pos
Kotani, N., 1807-Pos
Kotar, J., 1232-Plat
Kothapalli, C. R., 2889-Pos
Kothari, S., 3611-Pos
Kotlo, K., 296-Pos
Kotsikorou, E., 2422-Pos
Kottadiel, V. I., 337-Pos
Kötter, S., 812-Pos
Kötting, C., 1053-Pos
Kotulska, M., 2829-Pos,
3466-Pos
Koubassova, N. A., 3865-Pos
Koussa, M., 1950-Pos
Koussa, M. A., 1948-Pos
Kouyoumdjian, A., 4083-Pos
Kouzel, N., 1883-Pos
Kovacicova, G., , 2514-Pos
Kovacs, A., 1827-Pos
Kovacs, A. P., 850-Pos
Kovacs, M., , 1391-Pos
Kovacs, N., 3503-Pos
Kovacs, T., 1028-Pos
Kovalenko, A., 2073-Pos
Kovalskyy, D., 3495-Pos
Kowalczyk, W., 1509-Pos
Kowalczykowski, S. C.,
375-Pos
Kowalsky, G., 3779-Pos
Kowlessur, D., 178-Plat
Koyfman, A. Y., 3029-Pos,
3208-Plat
Kozak, J., 1696-Pos
Kozissnik, B., 3155-Pos
Kozlov, A. G., 3540-Pos
Kraemer, R., 1835-Pos
Kraeva, N., 1624-Pos
Kraft, L. J., 3716-Pos
Kraft, T., 795-Pos,
2836-Pos, 3892-Pos
Kragelund, B. B., 123-Plat,
2155-Plat
Kragh, S. L., 352-Pos
Krainer, G., 985-Pos,
2413-Pos
Kramer, C., 2533-Pos
Kramer, H., 3187-Plat
Kramer, R. H., 1926-Pos,
3182-Plat
Krammer, E., , 3991-Pos
Krams, R., 1895-Pos
Krapf, D., 175-Plat,
200-Plat, 2588-Pos
Krause, B. S., 1922-Pos
Krause, E., 3841-Pos
Krause, N., 1295-Pos
Krauson, A. J., 776-Pos
Krefl, M., 69-Subg,
2664-Pos
Kreig, A., 345-Pos
Kreir, M., 2825-Pos
Kreitman, D., 3995-Pos
Krepiak, D., 1700-Pos
Krepiak, D. V., 3827-Pos
Kress, A., 2583-Pos
Kress, H., 236-Plat
Kress, M., 650-Pos
Kreuder, A., 1156-Plat
Kreutzberger, A., 2557-Pos
Kriechbaum, M., 2232-Plat
Krieg, M., 1814-Pos,
1816-Pos, 2269-Plat
Krieger, J., 2002-Pos
Krishnamani, V., 334-Pos
Krishnamoorthy, G.,
3399-Pos
Krishnamurthy, S., 3266-Plat
Krishnan, S., 3198-Plat,
3849-Pos
Kristensen, A., 1993-Pos
Kristensen, A. S., 551-Pos,
769-Pos
Krivensky, E., 3910-Pos
Krivos, S., 3236-Plat
Kriwacki, R., 29-Subg
Krog, H. B., 551-Pos
Krogsgaard, M., 2627-Pos
Krokhotin, A., 1300-Pos
Kroll, C., 3144-Pos
Kroncke, B. M., 270-Pos,
718-Pos, 730-Pos
Kronert, W. A., 3918-Pos
Kros, A., 2565-Pos
Krucker, T., 3993-Pos
Krueger, B., 1456-Pos
Krueger, E., 1862-Pos
Krueger, S., 2633-Pos,
3772-Pos
Kruger, D., 3612-Pos
Krüger, T., 922-Pos
Krupa, P., 1300-Pos
Kruse, K., 3717-Pos
Kruse, M., 2737-Pos
Kruzliak, P., 2854-Pos
Kryshtal, D., 3695-Pos
Krzyzanowski, N., 507-Pos
Kučerka, N., 502-Pos,
1939-Pos
Ku, P., 338-Pos, 339-Pos
Kuan, A., 732-Pos, 737-Pos
Kuang, C., 752-Pos, 753-Pos
Kuang, L., 925-Pos
Kubasik, M. A., 3099-Pos
Kubelka, G. S., 3398-Pos
Kubelka, J., 3101-Pos,
3398-Pos, 3402-Pos,
3472-Pos
Kubinek, R., 2116-Pos,
3158-Pos
Kubo, T., 3181-Plat
Kubo, Y., 715-Pos, 778-Pos
Kubota, T., 682-Pos,
683-Pos, 3751-Pos
Kucera, J. P., 626-Pos
Kucerka, N., 226-Plat,
1473-Pos
Kudej, R. K., 628-Pos
Kudlacek, O., 1309-Pos
Kuehn, B., 2851-Pos
Kuehnemuth, R., 991-Pos,
3515-Pos
Kugler, C., 1684-Pos
Kuhl, T., 3561-Pos
Kühler, P., 995-Pos
Kuhlman, T. E., 1140-Plat,
2497-Pos
Kuhn, A., 781-Pos
Kühnemuth, R., 2016-Pos,
3356-Pos
Kukic, P., 1306-Pos,
2428-Pos, 3213-Plat
Kukura, P., 978-Pos,
998-Pos, 1996-Pos,
2531-Pos
Kulczyk, A. W., 1390-Pos
Kull, F., 247-Pos
Kull, F. J., 2514-Pos
Kulleperuma, K., 2190-Plat,
2821-Pos
Kumar Jolly, M., 1915-Pos
Kumar, A., 2052-Pos, 3417-
Pos
Kumar, E., 1828-Pos
Kumar, J., , 767-Pos
Kumar, K., 222-Plat
Kumar, M., 818-Pos,
1755-Pos, 3911-Pos
Kumar, M. V., 2447-Pos
Kumar, N., 208-Plat
Kumar, P., 845-Pos,
1367-Pos, 2565-Pos
Kumar, R., 329-Pos,
2824-Pos
Kumar, S., 855-Pos,
882-Pos, 1230-Plat,
1795-Pos, 1796-Pos,
2334-Pos, 2376-Pos,
2648-Pos, 3492-Pos
Kumar, T., 2376-Pos,
3307-Pos, 3318-Pos,
3378-Pos
Kumar, V., 138-Plat
Kumar, V. S., 3606-Pos
Kumita, J. R., 2317-Pos
Kummer, E., 442-Pos
Kundel, F., 322-Pos
Kundrotas, P., 3317-Pos
Kundrotas, P. J., 3316-Pos
Kundu, S., 3417-Pos
Kunic, J. D., 199-Plat
Kuntamallappanavar, G.,
2711-Pos
Kunz, J. C., 1460-Pos,
1472-Pos
Kunz, W. S., 3732-Pos
Kunzelmann, S., 1383-Pos
Kuo, M., 1478-Pos
Kupitz, C., 2315-Pos
Kurabayashi, K., 3146-Pos
Kural, C., 1577-Pos
Kurata, H. T., 728-Pos,
2741-Pos, 2742-Pos,
3174-Plat
Kurczyńska, M., 2829-Pos
Kurczy, M., 2099-Pos
Kurebayashi, N., 568-Pos,
578-Pos, 579-Pos
Kurek, M., 1108-Pos
Kuriata, A., , 221-Plat
Kurihara, T., 2934-Pos
Kurusu, G., 3362-Pos
Kurnikova, M., , 771-Pos,
2229-Plat
Kurokawa, J., 3650-Pos
Kurokawa, T., 3769-Pos
Kurokawa, Y., 1013-Pos
Kurth, I., 1666-Pos
Kurtin, P. J., 6-Subg
Kurumizaka, H., 2347-Pos
Kurup, A., 1189-Plat
Kurylowicz, M., 1540-Pos
Kurzhalia, T., 3559-Pos
Kusch, J., 3842-Pos
Kuske, R., 1172-Symp
Kuster, D., 1749-Pos
Kuster, D. W., 1752-Pos
Kusters, R., 3015-Pos
Kuszak, A., 3772-Pos
Kuszak, A. J., 2981-Pos
Kutateladze, T. G., 400-Pos
Kutzner, C., 1215-Plat,
2549-Pos
Kuwada, N. J., 420-Pos,
1201-Plat, 2223-Plat
Kuzmenkina, E., 688-Pos
Kuzmenko, I., 3755-Pos
Kuzmin, P., 1468-Pos,
3546-Pos
Kuzmin, P. I., 1466-Pos
Kuzniatsova, L., 3388-Pos
Kvaløy, H., 3854-Pos
Kwak, H., 784-Pos,
3787-Pos
Kwan, D., 2186-Plat
Kweon, D., , 2551-Pos
Kwok, W., 3846-Pos
Kwon, D., 89-Plat
Kwon, T., , 2811-Pos
Kwon, Y., 1397-Pos
Kyle, J., 2799-Pos
Kyrychenko, A., 2569-Pos,
2570-Pos
Kyrychenko, S., 3920-Pos
Kyrychenko, V., 3920-Pos

L

- Lőrincz, I. Z., 2326-Pos
La Bauve, S., 3588-Pos
La, P., 4055-Pos
Labeit, S., 3903-Pos
Labhsetwar, P., 1916-Pos,
3255-Plat
Labouesse, C., 3957-Pos
Labro, A. J., 2717-Pos,
2747-Pos, 3742-Pos
Labuda, A., 807-Pos
Lacampagne, A., 645-Pos,
2854-Pos
Lacey, E., 1500-Pos
Lach, G., 1455-Pos
Lächelt, U., 1060-Pos
Lackner, B., 1615-Pos
Lacombe, M., 933-Pos
Lacroix, J. J., 99-Plat,
682-Pos, 3752-Pos
Lacy, M. M., 1359-Pos
Ladant, D., , 107-Plat,
1380-Pos
Ladbury, J., 3330-Pos
Ladizhansky, V., 925-Pos,
2325-Pos
Ladokhin, A. S., 2229-Plat,
2569-Pos, 2570-Pos,
3631-Pos, 3632-Pos,
3633-Pos
Ladron de Guevara, E.,
3825-Pos
Ladron-de-Guevara, E.,
3761-Pos
Laezza, F., 1654-Pos
Lafleur, M., 2615-Pos
LaFranzo, N. A., 1063-Pos
Lagpacan, L., 1330-Pos
Lai, A. L., 3586-Pos
Lai, F., 567-Pos, 581-Pos
Lai, F. A., 563-Pos
Lai, J., 4056-Pos
Lai, J. K., 3402-Pos
Lai, Y., 2248-Symp
Laio, A., 1844-Pos, 3834-Pos
Lajevardipour, A., 1030-Pos
Lajtos, T., 2650-Pos
Lakadamyali, M., 49-Subg
Lakatta, E., 2690-Pos
Lakatta, E. G., 584-Pos,
585-Pos, 586-Pos,
660-Pos, 1618-Pos,
1623-Pos, 1639-Pos,
3191-Plat
Lakey, J. H., 1293-Pos
Lal, R., 509-Pos, 1238-Plat
Lam, A., 594-Pos, 3247-Plat
Lam, C., 3812-Pos
Lam, E., 109-Plat, 110-Plat
Lam, H., 1542-Pos

- Lam, K. S., 613-Pos, 2857-Pos
Lamb, D., 995-Pos, 2352-Pos
Lamb, D. C., 136-Plat, 1014-Pos, 2943-Pos
Lamb, F. S., 745-Pos
Lambert, J., 1068-Pos
Lambert, P., 370-Pos, 371-Pos, 372-Pos, 373-Pos
Lambert, W. C., 370-Pos, 371-Pos, 372-Pos, 373-Pos
Lamboley, C. R., 3700-Pos
Lambot, L. S., 1935-Pos
Lamichhane, R., 383-Pos
Lamoureux, L., 2576-Pos
Lampo, T. J., 2223-Plat
Lamprou, P., 3397-Pos
Lamy, M., 453-Pos, 2584-Pos
Lan, G., , 874-Pos, 1913-Pos
Lanauze, C., 1721-Pos
Lancaster, L., 1210-Plat
Landahl, E., 156-Plat
Lander, G., 149-Plat
Lander, G. C., 1770-Pos
Landes, C., 3338-Pos
Landes, C. F., 2300-Wkshp
Landesman, M., 339-Pos
Landesman, M. L., 338-Pos
Landin, J. S., 1868-Pos
Lando, D., 1007-Pos
Lane, J. R., 533-Pos
Lane, R., 3809-Pos
Lane, T., 1936-Pos,
Lang, M., 2360-Pos
Lang, M. J., 1248-Plat, 2247-Symp, 3940-Pos
Lang, S. E., 3909-Pos
Langbeheim, E., 1097-Pos
Lange, J. R., 2912-Pos
Langenbacher, R., 471-Pos, 1510-Pos
Langer, A., 389-Pos
Langer, H. R., , 2863-Pos, 2958-Pos
Langer, S., 2838-Pos
Langford, K. W., 1082-Pos, 3197-Plat
Langlois, R., 2487-Pos
Langosch, D., 2549-Pos
Langowski, J., 2002-Pos, 2175-Plat
Lanner, J. T., 3685-Pos
Lansche, C., 757-Pos
Lansky, Z., 1786-Pos
Lanzano, L., 1021-Pos, 2001-Pos
Lanzano, L., 2005-Pos
Lanzano, L., 1031-Pos, 3044-Pos
Lanzerstorfer, P., 541-Pos, 3642-Pos
Lape, R., , 2758-Pos, 2769-Pos
Lapid, R. J., 1510-Pos
Lapierre-Landry, M., 1790-Pos
Laplante, C., 897-Pos
LaPorte, D. R., 2434-Pos
Lappalainen, P., 1259-Plat
Larabell, C. A., 2197-Plat
Laradji, M., 436-Pos, 500-Pos
Laragione, T., 2786-Pos
Larbig, MD, R. K., 2996-Pos
Larbig, R., 2995-Pos
Lard, M., 2289-Plat
Larijani, B., 10-Subg, 2646-Pos
Larini, L., 2443-Pos
Larisa, C. E., 520-Pos
Larkin, J. W., 2087-Pos
Larsen, A., 2704-Pos
Larsen, A. B., 2038-Pos
Larsen, B. W., 2089-Pos
Larsen, H., 3187-Plat
Larsen, J., 2681-Pos, 3617-Pos
Larsen, K. P., 3366-Pos
Larsen, R. W., 1323-Pos, 2127-Pos, 2414-Pos
Larson, D. R., 1127-Plat
Larsson, H., 731-Pos, 3763-Pos
Larsson, H. P., 725-Pos
Larsson, J., 731-Pos
Larsson, P., 473-Pos, 1178-Plat, 1849-Pos, 2822-Pos, 3764-Pos
Lasalde-Dominicci, J. A., 1721-Pos
Lasheras, J., 3972-Pos
Lasheras, J. C., 1819-Pos
Lasker, K., 2999-Pos
Laskowski, M., , 21-Subg
Last, N. B., 1341-Pos
Laszlo, A. H., 1082-Pos, 3197-Plat, 4087-Pos
Latif, N., 3838-Pos
Latorraca, N. R., 1124-Plat
Latorre, R., 1178-Plat, 2208-Plat, 2822-Pos, 2940-Pos, 3231-Plat
Latty, S. L., 990-Pos
Lau, A., 4057-Pos, 4060-Pos
Lau, A. Y., 162-Plat, 164-Plat
Lau, E. Y., 444-Pos
Lau, L., 3460-Pos
Laue, M., 510-Pos
Laufs, U., 934-Pos
Laugwitz, K., 2795-Pos
Launikonis, B., 652-Pos, 2700-Pos
Launikonis, B. S., 639-Pos, 655-Pos
Laurens, N., 2617-Pos
Laurent, B., 1732-Pos
Laurent, R., 2510-Pos
Laurin, Y., 1450-Pos
Lauritsen, K., 2007-Pos
Laursen, W. J., 1708-Pos
Lauster, D., 3272-Plat
Lauter, V., 3755-Pos
Lautscham, L., 873-Pos
Lauzon, A., 2290-Plat, 2872-Pos, 3875-Pos
Lavagnino, Z., 3044-Pos, 3161-Pos
Lavelle, C., 413-Pos
Laver, D. R., 1620-Pos, 2672-Pos
Laviada, A. A., 3651-Pos
Lavorato, M., 642-Pos
Lavrentovich, O. D., 2122-Pos
Law, R. J., 90-Plat
Law, S. M., 3265-Plat
Lawrence, E., 91-Plat
Lawrence, K., 359-Pos
Lawrence, R., 1778-Pos
Lawrenz, M., 88-Plat
Layton, C., 2506-Pos
Lazar, C., 2242-Plat
Lázaro, J. M., 1159-Plat
Lazrove, E., 19-Subg
Lazzarino, M., 117-Plat, 1966-Pos, 1979-Pos, 3141-Pos
Le Gac, S., 447-Pos, 3195-Plat
Le Gall, A., 1008-Pos
Le Gros, M. A., 2197-Plat
Le Hir, H., 385-Pos
Le Sage, D., 966-Pos
Le, J. M., 3715-Pos
Le, K., 1251-Plat
Le, M. T., 1444-Pos
Le, S., 2237-Plat
Le, T. T., 1408-Pos
Leachman, S. M., 1098-Pos, 2373-Pos
Leahy, D., 3643-Pos
Leahy, D. J., 557-Pos
Leake, M., 152-Plat
Leal-Pinto, E., 3778-Pos
Leanza, L., 22-Subg, 3739-Pos
Leao, J., 3288-Pos
Leapman, R. D., 3024-Pos, 3037-Pos
Leavis, P., 836-Pos
Lebbink, J. H., 3507-Pos
Leblanc, N., 733-Pos, 734-Pos
Leblond, F., 3097-Pos
Leckband, D., 1191-Plat, 3286-Pos
Leddy, H., 1967-Pos
Lederer, J. W., 588-Pos, 1644-Pos,
Lederer, W., 665-Pos, 1630-Pos, 1638-Pos, 2703-Pos, 3686-Pos
Lederer, W. J., 760-Pos, 1619-Pos, 1628-Pos, 1631-Pos, 2176-Plat, 2179-Plat, 2706-Pos, 3681-Pos, 3705-Pos
Ledoux, S., 2508-Pos
Leduc, C., 1803-Pos
LeDuc, P., 1968-Pos, 3123-Pos
LeDuc, P. R., 871-Pos
Lee, A., 143-Plat, 1671-Pos
Lee, B., 332-Pos, 3230-Plat, 3590-Pos, 3726-Pos, 3813-Pos
Lee, C., 3380-Pos
Lee, C. N., 1846-Pos
Lee, D., 1411-Pos, 2114-Pos, 3157-Pos
Lee, D. J., 2222-Plat
Lee, E., 662-Pos, 2104-Pos, 2474-Pos, 2639-Pos, 3127-Pos, 3264-Plat, 3694-Pos
Lee, G., 392-Pos, 4096-Pos
Lee, H., 458-Pos, 823-Pos, 1131-Plat, 1135-Plat, 3127-Pos, 3747-Pos, 4058-Pos
Lee, H. J., 2804-Pos
Lee, I., 365-Pos
Lee, J., 283-Pos, 354-Pos, 1245-Plat, 1399-Pos, 1407-Pos, 1856-Pos, 2036-Pos, 2214-Plat, 2319-Pos, 2551-Pos, 2626-Pos, 3084-Pos, 3186-Plat, 3240-Plat, 3259-Plat, 3645-Pos, 4027-Pos
Lee, J. C., 103-Plat, 1536-Pos, 2984-Pos
Lee, J. H., 432-Pos
Lee, K., 387-Pos, 662-Pos, 916-Pos, 1137-Plat, 1999-Pos
Lee, K. C., 105-Plat, 454-Pos
Lee, L., 2516-Pos, 3111-Pos
Lee, L. P., 1064-Pos, 1137-Plat, 1244-Plat, 1245-Plat, 2090-Pos, 2100-Pos, 2104-Pos, 2109-Pos, 2120-Pos, 2496-Pos, 3126-Pos, 3140-Pos, 4010-Pos, 4100-Pos, 4102-Pos
Lee, M., 398-Pos, 1496-Pos, 2273-Plat, 2490-Pos
Lee, N., 354-Pos
Lee, O., 2909-Pos
Lee, O. K., 2638-Pos
Lee, P., 1064-Pos
Lee, R. E., 2250-Symp
Lee, S., 89-Plat, 143-Plat, 466-Pos, 1018-Pos, 1131-Plat, 1241-Plat, 1245-Plat, 1520-Pos, 2109-Pos, 2198-Plat, 2551-Pos, 3058-Pos, 3127-Pos, 3580-Pos, 3726-Pos, 3781-Pos, 4016-Pos
Lee, S. F., 1007-Pos, 1364-Pos, 2014-Pos
Lee, T., 269-Pos, 2551-Pos, 2579-Pos
Lee, W., 360-Pos, 994-Pos, 1967-Pos, 2401-Pos, 2608-Pos
Lee, Y., 357-Pos, 2401-Pos
Lees, M., 3175-Plat
Lefèvre, T., 2613-Pos
Lefrancois, S., 4078-Pos
Lefrèvre, T., 1532-Pos
Leftin, A., 2284-Plat
Leggio, L., 3992-Pos
Legleiter, J., 864-Pos, 1256-Plat
Legregni, M., 1697-Pos
Lehman, S., 1758-Pos
Lehman, S. J., 1760-Pos
Lehman, W., 836-Pos, 1280-Pos, 3881-Pos
Lehmann, M. J., 3147-Pos
Lehmann-Horn, F., 2801-Pos
Lehnart, S. E., 1619-Pos
Lehrer, R., 454-Pos
Lei, D., 3021-Pos
Leidy, C., 1558-Pos, 2655-Pos, 2932-Pos, 3571-Pos, 4042-Pos
Leighty, R., 2066-Pos
Leijnse, N., 1813-Pos
Leinenweber, A., 757-Pos
Leinwand, L., 2838-Pos
Leoatts, N., 282-Pos, 297-Pos, 1562-Pos, 3634-Pos
Leipold, E., 1666-Pos
Leistra, A. N., 1956-Pos
Leite, M. F., 1554-Pos
Leite, V. B., 3077-Pos
Leitgeb, B., 3360-Pos
Leitinger, G., 316-Pos
Lelimosin, M., 2286-Plat
Lelimosin, M. G., 1564-Pos
LeMarchand, S., 962-Pos
Lemasters, J. J., 2939-Pos, 2985-Pos
Lemborg, J., 1223-Plat
Lemeshko, V. V., 3803-Pos
Lemichez, E., 1259-Plat
Lemke, E. A., 196-Symp
Lemmens-Gruber, R., 782-Pos
Lemmin, T., 294-Pos

Lemmon, M. A., 557-Pos
 Lemmonier, L., 1689-Pos
 Lenaerts, I., 1636-Pos, 2180-Plat
 Lenart, P., 1817-Pos
 Leng, F., 358-Pos, 2466-Pos
 Leng, X., 502-Pos
 Lengyel, J., 3026-Pos
 Lennert, P., 822-Pos
 Lentz, B. R., 2623-Pos
 Lenzi, D., 2012-Pos
 Leonard, J. D., 374-Pos
 Leonard, K., 3668-Pos
 Leonard, S., 298-Pos
 Leonard, T. R., 815-Pos
 Leone, V., 1876-Pos
 Leonov, A., 325-Pos
 Leontyev, I., 3074-Pos
 Lerch, M., 1315-Pos
 Leriche, G., 1081-Pos
 Lerner, M., 433-Pos
 Lerner, M. G., 1401-Pos
 Leroux, M., 300-Pos
 Leroy, J., 1641-Pos
 Leschziner, A. E., 1780-Pos, 1781-Pos
 Leslie, B. J., 2461-Pos, 2497-Pos
 Lesovoy, D. M., 3281-Pos
 Lester, H. A., 1726-Pos, 1727-Pos
 Letant, S. E., 4048-Pos
 Lete, M. G., 1125-Plat
 Letofsky-Papst, I., 316-Pos
 Letort, G., 2871-Pos
 Lettieri, S., 2047-Pos
 Leuba, S., 2520-Pos
 Leung, K., 2197-Plat
 Leung, S. S., 2571-Pos
 Lev, B., 431-Pos
 Levene, S. D., 2060-Pos, 3502-Pos
 Levenstein, M. A., 4097-Pos
 Levental, I., 336-Pos, 2586-Pos, 3625-Pos
 Levental, K., 3625-Pos
 Levental, K. R., 2586-Pos
 Levi, V., 839-Pos
 Levin, E. J., 1856-Pos
 Levine, H., 876-Pos, 2299-Wkshp
 Levine, P. M., 4099-Pos
 Levine, Z. A., 432-Pos, 2443-Pos
 Levinson, N. M., 3268-Plat
 Levitan, I., 3779-Pos, 3780-Pos
 Levitan, I. B., 962-Pos
 Levitus, M., 221-Plat, 362-Pos, 369-Pos, 1160-Plat, 2027-Pos
 Levitz, J., 122-Plat, 981-Pos, 1921-Pos
 Levy, D. I., 617-Pos
 Lévy, M., 3645-Pos
 Lew, M. D., 2015-Pos
 Lewalle, A., 609-Pos
 Lewis, A. K., 1276-Pos, 3624-Pos
 Lewis, J. H., 1177-Symp
 Lewis, K. J., 595-Pos
 Lewis, R. S., 1601-Pos, 3170-Plat
 Li, A., 1754-Pos
 Li, B., 306-Pos, 2059-Pos, 3977-Pos, 4035-Pos
 Li, C., 570-Pos, 918-Pos, 2091-Pos, 2749-Pos, 2782-Pos, 3086-Pos
 Li, D., 2226-Plat, 3187-Plat
 Li, E., 486-Pos
 Li, F., 86-Plat
 Li, G., , 1894-Pos, 2490-Pos, 3228-Plat
 Li, H., 239-Wkshp, 386-Pos, 503-Pos, 940-Pos, 952-Pos, 1078-Pos, 1132-Plat, 1165-Plat, 1439-Pos, 1924-Pos, 1947-Pos, 1974-Pos, 1991-Pos, 1997-Pos, 2069-Pos, 2276-Plat, 3201-Plat, 3579-Pos
 Li, I. T., 3964-Pos
 Li, J., , 850-Pos, 1080-Pos, 1845-Pos, 1991-Pos, 3070-Pos, 3539-Pos, 3615-Pos, 3987-Pos
 Li, J. B., 2742-Pos
 Li, K., 932-Pos, 3660-Pos, 3884-Pos, 3885-Pos
 Li, L., , 638-Pos, 1625-Pos, 3421-Pos, 3858-Pos
 Li, M., 304-Pos, 410-Pos, 727-Pos, 779-Pos, 1578-Pos, 2714-Pos, 3650-Pos
 Li, M. X., 3664-Pos
 Li, N., 616-Pos, 2000-Pos
 Li, P., 727-Pos
 Li, P. T., 1441-Pos, 1447-Pos
 Li, Q., 634-Pos, 784-Pos, 1221-Symp, 1263-Plat, 1933-Pos, 2393-Pos, 3767-Pos, 3787-Pos
 Li, R., 1347-Pos, 2096-Pos
 Li, S., 306-Pos, 1459-Pos, 2898-Pos, 3110-Pos, 3684-Pos
 Li, T., 665-Pos, 867-Pos, 915-Pos, 2627-Pos, 3292-Pos
 Li, W., 619-Pos, 1969-Pos, 2182-Plat, 2338-Pos, 2489-Pos, 2651-Pos, 3436-Pos
 Li, X., 1280-Pos, 1372-Pos, 1374-Pos, 1376-Pos, 1710-Pos, 2896-Pos, 3881-Pos
 Li, Y., , 349-Pos, 538-Pos, 613-Pos, 784-Pos, 1172-Symp, 1439-Pos, 2905-Pos, 2967-Pos, 3500-Pos, 3787-Pos, 3791-Pos, 4019-Pos
 Li, Z., 4098-Pos
 Liang, B., , 2558-Pos, 2559-Pos
 Liang, C., 740-Pos, 741-Pos
 Liang, H., 925-Pos
 Liang, J., 183-Plat, 291-Pos, 417-Pos, 418-Pos, 1579-Pos, 1739-Pos, 1912-Pos, 3663-Pos, 3893-Pos
 Liang, K. S., 2126-Pos
 Liang, W., 1551-Pos
 Liang, X., 4004-Pos, 4005-Pos
 Liang, Y., 1949-Pos
 Liantonio, A., 747-Pos, 2785-Pos
 Liao, H. Y., 2487-Pos
 Liao, J., 1859-Pos, 2200-Plat, 2937-Pos
 Liao, Y., 2006-Pos, 2199-Plat
 Liao, Z., 610-Pos, 611-Pos
 Licari, P., , 2138-Symp
 Licht, A., 999-Pos
 Lichtenberg, D. A., 3602-Pos
 Lichtenegger, M., , 1701-Pos
 Lichti, C. F., 205-Plat
 Lidke, D. S., 540-Pos, 1093-Pos, 1202-Plat, 2637-Pos
 Lidke, K. A., 540-Pos, 2637-Pos, 3069-Pos, 4081-Pos
 Lidman, M., 3205-Plat
 Lieb, A., 689-Pos
 Lieberman, R. L., 252-Pos
 Liebscher, J., 510-Pos
 Liedl, T., 135-Symp
 Liedtke, W., 1967-Pos
 Lieu, D., 616-Pos
 Lifshitz, L., 3063-Pos
 Light, T. P., 3365-Pos
 Lightstone, F. C., 444-Pos
 Liguori, N., 921-Pos
 Liin, S., 3731-Pos
 Liin, S. I., 725-Pos, 731-Pos
 Lila, T., 1927-Pos
 Lilja, K. E., 3153-Pos
 Lillian, T., 1414-Pos
 Lillian, T. D., 1413-Pos
 Lilyestrom, W., 314-Pos
 Lim, B., 1288-Pos
 Lim, C., 860-Pos
 Lim, G., 283-Pos
 Lim, J., 972-Pos
 Lim, K., 1019-Pos
 Lim, S., 3058-Pos
 Lima, J. F., 1506-Pos
 Lima, M. P., 1327-Pos
 Limbu, S., 3705-Pos
 Limongelli, V., 1564-Pos
 Limpitikul, W., 2797-Pos
 Lin, B., 105-Plat
 Lin, C., 387-Pos, 1999-Pos, 2493-Pos
 Lin, D., 475-Pos
 Lin, H., 850-Pos, 1393-Pos, 1507-Pos, 1827-Pos
 Lin, J., 1440-Pos, 1990-Pos, 1991-Pos
 Lin, J. J., 116-Plat, 2629-Pos, 2635-Pos
 Lin, K., 508-Pos, 4094-Pos
 Lin, M., , 2779-Pos
 Lin, M. A., 3747-Pos
 Lin, M. Z., 1929-Pos
 Lin, P., 503-Pos, 940-Pos, 3201-Plat, 3683-Pos, 3687-Pos
 Lin, S., 320-Pos
 Lin, T., 64-Subg
 Lin, W., 1228-Plat, 1542-Pos, 1926-Pos, 2185-Plat, 2688-Pos, 3112-Pos, 3622-Pos
 Lin, Y., , 873-Pos, 2740-Pos, 3923-Pos
 Lin, Z., 172-Plat, 1139-Plat, 2146-Plat, 2998-Pos
 Linares, R., 2283-Plat
 Linari, M., 798-Pos, 1115-Symp, 2293-Plat, 3873-Pos
 Lincoln, P., 1416-Pos
 Lind, T. K., 1123-Plat
 Lindahl, E., 1733-Pos, 1734-Pos, 1735-Pos, 2160-Plat, 2756-Pos, 2768-Pos, 3731-Pos, 3736-Pos
 Lindau, M., 140-Plat, 169-Plat, 2662-Pos
 Lindauer, M., 863-Pos
 Linde, M. H., 2515-Pos
 Linden, M., 3504-Pos
 Lindén, M., 127-Plat
 Linder, T., 706-Pos
 Linderman, J. J., 3256-Plat
 Lindert, S., 1116-Symp, 3295-Pos, 3340-Pos
 Lindner, M., 126-Plat
 Lindorff-Larsen, K., 123-Plat, 3236-Plat
 Lindqvist, A., 3860-Pos
 Lindsey, J. S., 2121-Pos
 Lingle, C., 2204-Plat, 2715-Pos
 Linhananta, A., 3405-Pos
 Linhares, B., 1891-Pos
 Link, T., 3330-Pos
 Linke, H., 1240-Plat, 2289-Plat, 3943-Pos
 Linke, T., 3773-Pos
 Linke, W. A., 812-Pos, 1747-Pos, 2292-Plat
 Linko, V., 3120-Pos
 Linse, S., 3159-Pos, 3458-Pos
 Linstedt, A. D., 2567-Pos
 Lionberger, T. A., 1098-Pos, 2468-Pos
 Liou, J., 2396-Pos
 Liou, S., 271-Pos, 3296-Pos
 Lipfert, J., 398-Pos, 1986-Pos, 2273-Plat
 Liphardt, J. T., 1591-Pos
 Lipovka, Y., 3007-Pos
 Lipowsky, R., 1217-Plat, 1464-Pos
 Lippe, G., 18-Subg
 Lippert, L., 1177-Symp
 Lippert, L. G., 997-Pos
 Lippiat, J. D., 3175-Plat
 Lippincott-Schwartz, J., 1235-Plat, 1832-Pos
 Lipsett, D. B., 3895-Pos
 Lipsius, S. L., 1553-Pos
 Lipson, M., 1990-Pos
 Lipton, S. A., 772-Pos
 Lira, R. B., 1481-Pos
 Lis, A., 3190-Plat, 3744-Pos
 Lis, J., 2022-Pos
 Lishko, P., 2191-Plat
 Lishko, P. V., 2739-Pos, 3805-Pos
 List, D., 3258-Plat, 3892-Pos
 Little, S., 2667-Pos
 Little, S. C., 1742-Pos
 Littlefield, P., 2649-Pos
 Litwinski, C., 1039-Pos
 Litz, J. P., 489-Pos, 498-Pos
 Liu, A. P., 3976-Pos
 Liu, B., 659-Pos, 1186-Plat, 2181-Plat, 2651-Pos, 2651-Pos, 2667-Pos, 3488-Pos, 3491-Pos
 Liu, C., 397-Pos, 794-Pos, 2162-Plat
 Liu, D., 2516-Pos
 Liu, E., 2634-Pos
 Liu, F., 2108-Pos, 2480-Pos
 Liu, G., 1664-Pos
 Liu, H., 1081-Pos, 1657-Pos, 3793-Pos, 3989-Pos
 Liu, J., 586-Pos, 686-Pos, 1902-Pos, 2120-Pos, 3140-Pos
 Liu, K. N., 2542-Pos
 Liu, L., 146-Plat, 967-Pos, 968-Pos
 Liu, M., 1682-Pos
 Liu, N., 125-Plat, 1682-Pos

- Liu, P., 1207-Plat
Liu, Q., 704-Pos, 1251-Plat, 1251-Plat, 1728-Pos, 3363-Pos, 3830-Pos, 3831-Pos
Liu, R., 2852-Pos, 3548-Pos
Liu, S., 825-Pos, 1038-Pos, 2455-Pos, 2504-Pos, 2754-Pos, 2913-Pos, 3069-Pos, 3583-Pos
Liu, T., 2399-Pos, 3853-Pos
Liu, W., 1578-Pos, 2452-Pos, 2453-Pos, 3623-Pos
Liu, X., 1682-Pos, 2989-Pos, 3031-Pos, 3344-Pos
Liu, X. A., 2660-Pos
Liu, Y., 397-Pos, 561-Pos, 572-Pos, 963-Pos, 1018-Pos, 1350-Pos, 1439-Pos, 2145-Plat, 2301-Wkshp, 2638-Pos, 2812-Pos, 3175-Plat, 3720-Pos
Liu, Z., 561-Pos, 566-Pos, 840-Pos
Livesay, D. R., 3292-Pos
Livne, A., 230-Plat
Livne, S., 1097-Pos
LiWang, A., 151-Plat
Liwo, J. A., 1300-Pos
Ljubojevic, S., 601-Pos, 603-Pos
Llach, A., 593-Pos
Llaguno, M., 1520-Pos
Llorente, I., 1688-Pos
Lo, D., 3454-Pos
Lo, M., 1033-Pos
Lo, R. H., 1353-Pos
Loaiza, R., 571-Pos
Lobo, P. A., 569-Pos
Lobova, E., 3699-Pos
Lockard, J., 311-Pos
Lockhead, D., 2269-Plat
Lockless, S., 2754-Pos
Loeb, D., 327-Pos
Loeb, S., 712-Pos
Loeff, L., 131-Plat, 3537-Pos
Loehr, J. A., 3684-Pos
Loerinczi, E., 705-Pos
Loers, G., 4000-Pos
Loew, L., 964-Pos
Loew, L. M., 1268-Plat, 2148-Plat, 2260-Plat
Logothetis, D. E., 549-Pos, 3778-Pos, 3780-Pos, 3789-Pos, 3790-Pos
Loh, A. P., 3366-Pos
Lohese, K., 2676-Pos
Lohese, K. J., 3437-Pos
Lohia, R., 2152-Plat
Lohman, T. M., 393-Pos, 3540-Pos
Lohmueller, T., 995-Pos
Lohmüller, T., 2634-Pos
Lohner, K., 464-Pos, 468-Pos, 2232-Plat
Lohr, C., 1158-Plat
Loiselle, D. S., 3912-Pos
Løjkner, L. D., 2746-Pos
Lokteva, L. A., 1601-Pos
Lolicato, M., 3172-Plat
Lomash, S., 766-Pos, 767-Pos, 768-Pos
Lombardi, V., 356-Pos, 798-Pos, 1115-Symp, 2291-Plat, 2293-Plat, 3873-Pos
Lomize, A. L., 1351-Pos
London, N., 1340-Pos
London, R. A., 3139-Pos
Londono, L. M., 3738-Pos
Lone, S., 1166-Plat
Loney, R. W., 1508-Pos
Lonez, C., 1567-Pos
Long, J., 3066-Pos
Long, J. R., 2605-Pos
Long, S. B., 1114-Symp, 3418-Pos
Long, X., 344-Pos
Long, Z., 420-Pos, 1035-Pos
Longhini, A., 1434-Pos
Longhini, A. P., 1444-Pos
Longmore, G. D., 870-Pos
Longo, G., 3115-Pos
Longo, M. L., 2129-Pos, 2303-Wkshp, 2580-Pos
Longyear, T. J., 3667-Pos
Lönnfors, M., 2611-Pos
Loo, R., 2929-Pos
Loosley, A. J., 2894-Pos
Loparo, J., 376-Pos, 1107-Pos
Lopaschuk, G. D., 945-Pos
Lopatin, A. N., 2705-Pos
Lopes, J. S., 2614-Pos
Lopes, P. E., 239-Wkshp
Lopez Bautista, C. A., 2430-Pos
Lopez, B. J., 1791-Pos
López, C., 1315-Pos
Lopez, C. F., 3250-Plat
Lopez, J., 1145-Plat, 3667-Pos
Lopez, J. R., 606-Pos, 647-Pos, 3682-Pos
Lopez, L., 2692-Pos
Lopez, R., 636-Pos
Lopez, V., 1261-Plat
Lopez, W., 2812-Pos
López-Blanco, J., 3302-Pos
Lopez-Dyck, E., 1555-Pos
López-Peris, M. L., 1059-Pos
Lopez-Pier, M. A., 3877-Pos
López-Querol, M., 2186-Plat
Lopez-Rodriguez, A., 2812-Pos
Lor, C., 2575-Pos
Lord, S. J., 2630-Pos
Lorenz-Fonfria, V., 3300-Pos
Lorenzini, M., 3137-Pos
Lorenzini, S., 656-Pos
Lorenzon, E. N., 453-Pos, 3376-Pos
Lorenzoni, M., 1062-Pos
Lorieau, J. L., 3587-Pos
Lorigan, G., 968-Pos, 2316-Pos
Lorigan, G. A., 270-Pos, 273-Pos, 967-Pos, 1348-Pos, 2307-Wkshp
Losche, M., 3614-Pos
Lösche, M., 2567-Pos
Losensky, J., 510-Pos
Loskutov, A., 3485-Pos
Lotfalismasi, B., 3438-Pos
Lou, Q., 659-Pos, 2181-Plat
Lou, S. S., 1236-Plat
Louault, F., 3743-Pos, 3746-Pos
Loubet, B., 102-Plat, 426-Pos, 2944-Pos, 2945-Pos
Louch, W. E., 3854-Pos, 3895-Pos
Loughrey, C. M., 3688-Pos
Louis, A. A., 355-Pos
Louis, J., 2221-Plat
Louis, J. M., 3587-Pos, 3591-Pos
Lousa, D., 292-Pos
Loussouarn, G., 668-Pos, 714-Pos, 1678-Pos
Lovely, G., 3504-Pos
Loverde, S., 4039-Pos
Lovering, R. M., 3680-Pos
Low, E. L., 3648-Pos
Lowe, A. R., 1591-Pos
Lowe, D. A., 3867-Pos
Lowe, S., 3674-Pos
Low-Nam, S. T., 540-Pos
Lowndes, M., 1960-Pos
Lozano, M. M., 222-Plat
Lu, B., 958-Pos, 2096-Pos, 4065-Pos
Lu, F., 1625-Pos
Lu, H., 1731-Pos, 3775-Pos
Lu, J., 2527-Pos
Lu, L., 614-Pos, 615-Pos, 870-Pos
Lu, M., 1914-Pos, 1915-Pos, 2394-Pos
Lu, R., 3055-Pos
Lu, T., 3020-Pos
Lu, X., 2986-Pos, 3543-Pos
Lu, Y., 2182-Plat, 2874-Pos, 3275-Pos, 3666-Pos
Lu, Z., 3020-Pos, 3021-Pos
Luan, B., 1070-Pos, 1085-Pos
Lubkowska, L., 2455-Pos, 2458-Pos
Luca, S., 2348-Pos, 2350-Pos
Luca, V., 1490-Pos
Luchinsky, D. G., 684-Pos
Luciani, M., 2789-Pos
LuCore, S. D., 2055-Pos
Lüdecke, A., 1786-Pos
Ludescher, R. D., 1101-Pos
Ludtke, S., 3031-Pos
Ludtke, S. J., 574-Pos, 575-Pos
Ludtmann, M. H., 2679-Pos, 2982-Pos
Luecke, H., 2266-Plat
Luerman, G., 3647-Pos
Luger, K., 401-Pos
Luheshi, L. M., 2317-Pos
Lukács, P., 1652-Pos
Lukacs, V., 3826-Pos
Lukatsky, D. B., 2518-Pos
Lukic, M. L., 480-Pos
Lukin, M. D., 966-Pos
Lukyjanenko, Y., 584-Pos
Lumbreras, V., 2677-Pos
Lummiss, S. C., 1731-Pos, 2759-Pos
Lumpkin, E. A., 2270-Plat
Lunde, I. G., 3854-Pos
Lunde, M., 3854-Pos
Lunde, P. K., 3913-Pos
Luo, B., 2793-Pos
Luo, M., 3931-Pos
Luo, T., 1804-Pos, 1908-Pos
Luo, Y., , 2077-Pos, 2811-Pos
Luo, Z., 3676-Pos
Lushi, E., 2918-Pos
Lusser, A., 398-Pos, 2169-Plat
Luther, P., 1738-Pos
Luthey-Schulten, Z., 425-Pos, 1888-Pos, 1916-Pos, 2477-Pos, 3001-Pos, 3255-Plat, 4056-Pos
Lutz, B., 1448-Pos, 3409-Pos
Lux, Á., 1741-Pos
Luxton, G., 1001-Pos
Luxton, G. W., 3164-Symp
Lv, C., 3016-Pos, 3436-Pos
Lv, P., 168-Plat
Lv, Y., 582-Pos
Lv, Z., 312-Pos
Ly, D., 1433-Pos
Lyakhova, T. A., 1254-Plat
Lyashkov, A., 584-Pos
Lyashkov, A. E., 585-Pos, 1639-Pos
Lybarger, R. Z., 435-Pos, 1476-Pos
Lybrand, T., 1515-Pos
Lybrand, T. P., 476-Pos
Lygate, C. A., 945-Pos
Lykotrafitis, G., 3579-Pos, 3637-Pos, 3785-Pos
Lyle, N., 2445-Pos
Lyman, E. R., 3203-Plat
Lynch, D., 3634-Pos
Lynch, D. L., 558-Pos
Lynch, J. W., 1731-Pos
Lynn, A. M., 2055-Pos
Lynn, D. G., 1102-Pos
Lyon, A., 1738-Pos
Lyons, D. F., 3725-Pos
Lyubartsev, A., 1050-Pos
Lyubartsev, A. P., 104-Plat, 397-Pos
Lyubchenko, Y. L., 312-Pos, 1977-Pos, 4037-Pos
Lyukmanova, E. N., 3281-Pos

M

- Mačianskienė, R., 632-Pos, 633-Pos
Ma, B., 2423-Pos
Ma, H., 2942-Pos
Ma, J., 503-Pos, 932-Pos, 940-Pos, 1594-Pos, 2701-Pos, 3201-Plat, 3444-Pos, 3687-Pos
Ma, L., , 949-Pos, 1333-Pos, 3813-Pos
Ma, N., 362-Pos
Ma, Q., 1111-Symp, 2016-Pos
Ma, R., 2239-Plat
Ma, S., 3426-Pos
Ma, T., 3017-Pos
Ma, Y., 509-Pos
Ma, Z., 3804-Pos
Maack, C., 934-Pos
Maasa, R. K., 2657-Pos
Macbeth, M. R., 3527-Pos
MacCallum, J. L., 2213-Plat, 3312-Pos
MacDonald, G., 3365-Pos
Macgregor Jr, R., 1443-Pos
Macgregor, R. B., 349-Pos
Machado, B., 3704-Pos
Macharadze, T., 678-Pos
Machida, K., 3639-Pos
Machiyama, H., 112-Plat
Machta, B. B., 491-Pos, 2643-Pos
Machtens, J., 757-Pos
Macianskiene, R., 3808-Pos
Macias, A., 2752-Pos
Maciaszek, J., 3637-Pos
Mack Correa, M., 3576-Pos
Mack, A., 404-Pos
Mack, A. H., 1971-Pos, 1973-Pos
MacKay, J., 1230-Plat
MacKay, J. L., 1795-Pos
MacKerell, A., 238-Wkshp

MacKerell, Jr., A. D., 239-Wkshp
Mackey, M. C., 2290-Plat
Mackie, K., 5-Subg
Mackintosh, F., 1235-Plat
MacLaughlin, C., 1371-Pos
MacLean, D. M., 773-Pos, 774-Pos
MacLeod, K., 1738-Pos
MacLeod, K. T., 1643-Pos, 1645-Pos, 3651-Pos, 3855-Pos
Macosko, J. C., 3958-Pos
Macquaide, N., 1636-Pos, 2180-Plat
MacRae, I., 2511-Pos
Macri, V., 3835-Pos
Madaro, L., 2785-Pos
Madge, J., 2158-Plat
Madhani, H. D., 1885-Pos
Madhira, S., 2943-Pos
Madhu, P., 1368-Pos
Madhvani, R. V., 2709-Pos
Madl, J., 1980-Pos
Madsen, J. J., 2285-Plat
Maduke, M. C., 738-Pos
Madura, J. D., 309-Pos, 1296-Pos, 1838-Pos
Maekawa, T., 2386-Pos
Mafé, S., 2103-Pos
Maffei, M., 2291-Plat
Magaud, C., 2832-Pos
Magdeleine Hung, M., 1330-Pos
Magee, K. E., 787-Pos
Magerl, K., 2342-Pos
Maggi, A., 3013-Pos
Magin, T., 2903-Pos
Magistrato, A., 1844-Pos, 3136-Pos
Magleby, K. L., 2206-Plat
Magri, A., 3992-Pos
Magro, G., 952-Pos
Maguire, B., 3328-Pos
Maguire, M., 327-Pos
Maguire, S., 2267-Plat
Mahadevan, L., 1818-Pos
Mahato, D. R., 326-Pos
Mahboobi, S., 1595-Pos
Mahendran, K. R., 2816-Pos
Maher III, L., 367-Pos, 1406-Pos, 2172-Plat
Maher, J., 1398-Pos
Maher, L., 401-Pos
Mahling, R., 1539-Pos, 3437-Pos, 3630-Pos
Mahling, R. W., 2676-Pos
Mahmoudabadi, G., 1045-Pos
Mahmutovic, A., 3233-Plat
Maibaum, L., 2578-Pos
Maier, B., 1883-Pos
Maier, L. M., 205-Plat
Mailhos, M., 2353-Pos
Maillard, R. A., 1249-Plat
Mainali, L., 3556-Pos, 3557-Pos
Maiti, S., 1368-Pos, 1371-Pos
Maitra, A., 1910-Pos
Maity, S., 1979-Pos
Majd, S., 3196-Plat
Majer, L., 1817-Pos
Majer, Z., 2523-Pos
Majewski, J., 454-Pos
Majidi, C., 3123-Pos
Major, J., 65-Subg
Majumder, R., 2623-Pos
Majzoub, R. N., 2126-Pos
Mak, C., 1458-Pos, 3506-Pos
Mak, C. H., 1431-Pos
Mak, J., 1551-Pos
Makara, M., 2667-Pos
Makemson, J., 2466-Pos
Makhataдзе, G., 1314-Pos
Makielski, J. C., 2798-Pos, 2799-Pos
Makover, J., 429-Pos
Makowka, P., 3914-Pos
Maksaev, G., 2140-Symp, 3806-Pos
Makwana, O., 3916-Pos
Malacrida, L. S., 449-Pos
Malan, D., 694-Pos
Malanovic, N., 2232-Plat
Malcolm, H. R., 2802-Pos
Maldonado, E. N., 2985-Pos
Mäler, L., 1521-Pos
Malfois, M., 3092-Pos
Malhotra, K., 1868-Pos
Malik, M., 371-Pos, 373-Pos
Malik, M. W., 372-Pos
Malinina, L., 1530-Pos, 1543-Pos, 1544-Pos
Maliwal, B., 2023-Pos
Malkin, G., 1419-Pos
Malkus, S., 2014-Pos
Mallak, K. A., 1054-Pos
Mallela, K., 2364-Pos
Malley, S., 1421-Pos
Malliavin, T., 3082-Pos
Mallick, C., 2543-Pos
Mallikarjunaiah, K., 427-Pos, 1465-Pos
Mallikarjunaiah, K. J., 3293-Pos
Malmendal, A., 3159-Pos
Malmstadt, N., 1459-Pos, 2532-Pos, 2539-Pos
Malnasi-Csizmadia, A., 2326-Pos
Malovichko, M., 3428-Pos
Malta de Sa, M., 4044-Pos
Malta, J. S., 1554-Pos
Maltas, J., 1035-Pos
Maltsev, A., 2690-Pos
Maltsev, A. V., 1623-Pos
Maltsev, V., 2690-Pos
Maltsev, V. A., 1618-Pos, 1623-Pos
Maltseva, L. A., 1618-Pos
Malvezzi, M., 788-Pos
Mamaev, S., 1924-Pos
Mamonova, T., 3348-Pos
Mamontov, E., 1195-Plat, 1325-Pos
Managò, A., 22-Subg
Manakova, L., 1336-Pos
Manara, R., 2227-Plat
Manasa, B., 4009-Pos
Mancarella, S., 1599-Pos
Mancusso, R., 77-Symp
Mandadapu, K. K., 3621-Pos
Mandal, A., 1368-Pos
mandal, K., 2908-Pos
Mandal, T., 157-Plat
Mandriota, N., 2144-Plat
Manfield, I., 814-Pos
Manfra, A., 3677-Pos
Manfredi, G., 2994-Pos
Mangeol, P., 1024-Pos
Mangeol, P. J., 1782-Pos
Mangiameli, S. M., 1392-Pos
Mangoni, M., 1490-Pos
Mani, M., 3327-Pos
Manibog, K., 2276-Plat
Manikam Sadasivam, S., 325-Pos
Manioglu, S., 2111-Pos
Manley, Jr, M. W., 1043-Pos
Manley, S., 2924-Pos
Mann, B., 3930-Pos
Mann, E. K., 1545-Pos, 2097-Pos
Mann, S. A., 2796-Pos
Mann, T. H., 1573-Pos
Mann, V. R., 3040-Pos
Manna, A., 1433-Pos
Manna, M., 3569-Pos
Manner, C., 2589-Pos
Manneville, J., 2908-Pos
Manning, E. P., 1760-Pos
Manning, H. W., 2247-Symp
Manno, C., 932-Pos, 1624-Pos
Mannowetz, N., 2739-Pos, 3805-Pos
Manosas, M., 364-Pos
Manrao, E., 3197-Plat
Manrao, E. A., 2541-Pos
Manson, L., 1411-Pos
Mansson, A., 2289-Plat
Månsson, A., 801-Pos
Manstein, D., 2881-Pos
Manstein, D. J., 909-Pos, 912-Pos, 2880-Pos
Manvelyan, A. M., 3996-Pos
Manzi, J., 1259-Plat
Manzini, M. C., 2230-Plat
Manzo, G., 480-Pos
Mao, C., 1890-Pos, 2314-Pos
Mao, G., 3576-Pos
Mao, H., 2102-Pos
Mao, R., 3813-Pos
Marabelli, A., 2758-Pos
Maragliano, L., 3082-Pos
Marana, S. R., 3487-Pos
Maranville, B., 483-Pos
Marassi, F., 259-Pos
Marassi, F. M., 2335-Pos
Marawske, S., 3515-Pos
Marbán, E., 1551-Pos
Marchenko, O., 2148-Plat
Marchesi, A., 3834-Pos
Marchetti, M., 1187-Plat
Marcinek, D. J., 1745-Pos
Marcott, C., 1033-Pos
Marcotte, I., 703-Pos, 2538-Pos, 2574-Pos, 2596-Pos
Marcucci, L., 792-Pos
Marcus, A. H., 360-Pos, 1038-Pos
Maréchal, É., 2592-Pos
Marek, A., 1119-Plat
Margadant, F., 2642-Pos
Margeat, E., 534-Pos
Marie, R. M., 1993-Pos
Marijic, J., 2714-Pos
Marin, M., 3589-Pos
Marinelli, F., 2164-Plat
Marino, J. P., 2633-Pos
Marino, P., 581-Pos
Marionneau, C., 205-Plat, 714-Pos
Mariuzza, R. A., 2633-Pos
Markelz, A., 1200-Plat, 2320-Pos
Markhasin, V. S., 1621-Pos, 3698-Pos, 3699-Pos
Markland, T. E., 2977-Pos
Marko, J. F., 390-Pos, 422-Pos, 1425-Pos
Marko, M., 3027-Pos, 3703-Pos
Markosyan, R. M., 3583-Pos
Markova, N., 1529-Pos, 2415-Pos
Markova, Z., 2116-Pos
Marks, A. R., 583-Pos
Marks, D. S., 1879-Pos
Markwardt, F., 735-Pos, 780-Pos
Marky, L. A., 3514-Pos
Marotta, C., 1727-Pos
Marquardt, D., 226-Plat, 502-Pos
Marques, P. V., 2130-Pos
Marquette, A., 2228-Plat
Marquez, G., 808-Pos
Marquez-Lago, T. T., 1896-Pos
Marquez-Miranda, V., 2731-Pos
Marqusee, S., 1247-Plat, 2370-Pos, 2373-Pos, 2374-Pos, 2375-Pos, 3270-Plat, 3325-Pos, 3328-Pos, 3385-Pos
Marreiros, B. C., 1869-Pos
Marrink, S., 153-Plat, 917-Pos, 1556-Pos, 2803-Pos, 3570-Pos
Marrink, S. J., 208-Plat, 3238-Plat, 4046-Pos, 4051-Pos
Marsh, J. A., 3470-Pos
Marsh, R. J., 2009-Pos
Marsh, S. A., 595-Pos
Marshall, M. M., 1090-Pos
Marshall, W., 3222-Symp
Marshall, W. F., 861-Pos
Marston, A., 846-Pos, 3221-Symp
Marston, S., 1738-Pos, 1740-Pos
Marston, S. B., 1643-Pos, 1763-Pos, 3678-Pos, 3907-Pos
Marstrand Lacour, J., 2155-Plat
Marszalec, W., 2259-Plat, 2261-Plat
Marszalek, P. E., 1411-Pos, 2383-Pos, 2393-Pos
Martel, R., 3097-Pos
Martens, E. C., 2004-Pos
Martfeld, A. N., 3609-Pos
Marti, X., 2029-Pos
Martin Garcia, J., 2315-Pos
Martin, A., 149-Plat, 1249-Plat, 2366-Pos
Martin, C., 477-Pos
Martin, C. T., 2468-Pos, 2499-Pos
Martin, D., 3869-Pos
Martin, D. S., 3948-Pos
Martin, E. W., 2440-Pos
Martin, G. V., 3740-Pos
Martin, H., 1071-Pos
Martin, J. M., 3485-Pos
Martin, L., 671-Pos
Martin, M., 2789-Pos
Martin, M. J., 2891-Pos
Martin, M. S., 562-Pos
Martin, P., 1231-Plat
Martin, R., 3516-Pos
Martin, S. C., 1655-Pos
Martin, T., 3869-Pos
Martina, M., 1391-Pos
Martinac, B., 1500-Pos, 2267-Plat, 2805-Pos
Martindale, J., 3908-Pos
Martinez, G. Q., 3343-Pos
Martinez, J. S., 1887-Pos
Martinez, T. J., 2035-Pos

- Martínez-Mármol, R., 3737-Pos
Martínez-Mayorga, K., 297-Pos
Martínez-Morales, E., 2717-Pos
Martínez-Salazar, J., 3374-Pos
Martínez-Seara, H., 2621-Pos, 3598-Pos
Martin-Fernandez, M. L., 535-Pos
Martins, A. S., 3663-Pos
Martins, I. C., 1959-Pos
Martins, J., 3534-Pos
Marti-Prieto, M., 364-Pos
Martišienė, I., 632-Pos, 633-Pos
Martisiene, I., 3808-Pos
Martonfalvi, Z., 1975-Pos
Mártonfalvi, Z., 813-Pos
Marty, I., 3874-Pos
Martynowycz, M., 2594-Pos, 3561-Pos
Martynowycz, M. W., 511-Pos
Maruca, S., 2093-Pos
Maruno, T., 3422-Pos
Maruta, S., 2427-Pos, 3103-Pos, 3932-Pos, 3933-Pos, 3935-Pos, 3936-Pos, 3941-Pos
Marwitz, A. E., 2670-Pos
Marx, D. C., 1655-Pos, 3439-Pos
Mary, P. E., 1887-Pos
Marzahn, M. R., 1378-Pos
Marziali, A., 1071-Pos
Marzorati, L., 482-Pos
Masaike, T., 1279-Pos
Masayuki, M., 1693-Pos
Mashadi Fathali, H., 2663-Pos
Mashanov, G., 3163-Symp
Mashanov, G. I., 1383-Pos
Mashima, T., 3533-Pos
Mashimo, T., 3362-Pos
Masin, M., 3477-Pos
Maslaňáková, M., 946-Pos
Maslennikov, E., 841-Pos
Maslova, M., 2313-Pos
Masman, M. F., 3310-Pos
Masso, M., 2065-Pos
Masson, J., 200-Plat, 3202-Plat, 4003-Pos, 4080-Pos
Mastrolia, V., 1680-Pos, 1685-Pos
Mateo, P., 2702-Pos
Matéo, P., 593-Pos
Mathé, J., 1066-Pos
Mathesz, A., 2130-Pos, 3138-Pos
Mathews, I. I., 1573-Pos
Mathiasen, S., 550-Pos
Mathie, A., 3784-Pos
Mathiesen, J., 2151-Plat
Mathieu, S., 1661-Pos, 2800-Pos
Mathis, C., 4095-Pos
Mathur, A., 825-Pos
Matin, T. R., 2314-Pos
Matiukas, A., 632-Pos
Matos, J. O., 3468-Pos
Matossian, T., 1458-Pos
Matson, J. S., 2010-Pos
Matsuda, H., 1905-Pos
Matsui, T., 1279-Pos, 1285-Pos, 2354-Pos
Matsumoto, T., 3512-Pos
Matsuoka, M., 2368-Pos, 3012-Pos
Matsuoka, S., 2625-Pos, 3006-Pos, 3959-Pos
Matsushita, M., 1696-Pos
Matsushita, Y., 315-Pos
Matsuura, T., 1338-Pos
Matsuzaki, K., 1495-Pos
Matsuzaki, Y., 2071-Pos
Mattevi, A., 3341-Pos
Matthes, J., 688-Pos
Matthews, C., 1247-Plat
Matthews, D. R., 535-Pos
Matthies, D., 1877-Pos
Matti, U., 1006-Pos
Mattiazzi, A., 1637-Pos
Mattis, A. J., 1865-Pos
Mattle, D., 2160-Plat
Mattsson, K., 3159-Pos
Matulef, K., 1182-Plat
Matulis, D., 1336-Pos
Matusovsky, O. S., 3875-Pos
Mátyás, C., 1741-Pos
Matyjaszkiewicz, A., 3857-Pos
Matysiak, S., 3391-Pos
Matyskiela, M., 149-Plat
Matzapetakis, M., 3833-Pos
Maughan, D., 305-Pos
Maurer, J. A., 1063-Pos, 2802-Pos
Maurer, M., 3428-Pos
Maurice, Y., 98-Plat
Mauseth, M. A., 819-Pos
Mavrantoni, A., 2645-Pos
Maximov, S., 1835-Pos
Maxwell, B. D., 4025-Pos
Maxwell, J. T., 1553-Pos, 1647-Pos
Maya-Martínez, R., 1311-Pos
Mayer, B. J., 3639-Pos
Mayer, M., 479-Pos, 766-Pos, 1080-Pos, 1081-Pos, 3110-Pos, 3989-Pos
Mayer, M. L., 162-Plat, 767-Pos, 768-Pos, 1196-Plat, 4060-Pos
Mayerle, M., 2509-Pos
Maynard, J. A., 252-Pos
Mayo, C. B., 3528-Pos
Mayor, S., 859-Pos, 2640-Pos
Mazel, D., 1387-Pos
Mazevet, M., 593-Pos
Mazor, Y., 1864-Pos
Mazouchi, A., 274-Pos
Mazo-Vargas, A., 1878-Pos
Mazzafferri, J., 4078-Pos
Mazzafferro, S., 1713-Pos
Mazzolini, M., 117-Plat, 1979-Pos, 3141-Pos
Mazzoni, L., 3257-Plat
McAdams, H., 2490-Pos
McAnany, C. E., 2343-Pos
McAninch, D. S., 1433-Pos
McArthur, J. R., 1674-Pos
McCabe, E., 880-Pos
McCabe, K., 1768-Pos
McCaffrey, J. E., 2952-Pos, 2959-Pos
McCammon, A., 3295-Pos
McCammon, J., 1271-Pos, 1277-Pos, 2059-Pos, 3335-Pos, 3340-Pos, 3435-Pos, 3676-Pos
McCammon, J. A., 207-Plat, 537-Pos, 607-Pos, 1733-Pos, 3430-Pos, 4049-Pos
McCann, J., 2407-Pos
McCarrick, R., 967-Pos
McCarrick, R. M., 270-Pos, 273-Pos, 1348-Pos
McCarroll, D., 3688-Pos
McCarthy, M., 1275-Pos
McCarty, N. A., 752-Pos, 753-Pos
McCauley, M., 1421-Pos, 2172-Plat
McCauley, M. J., 401-Pos
McClelland, L. J., 1146-Plat
McClintock, P. V., 684-Pos
McCluskey, A. J., 3104-Pos
McConnell, M. T., 179-Plat
McCoy, J. G., 1856-Pos
McCready, R., 3018-Pos
McCulloch, A., 607-Pos, 1116-Symp, 3185-Plat, 3340-Pos, 3676-Pos
McCulloch, A. D., 3697-Pos
McCulloch, C., 886-Pos
McCulloch, K., 2350-Pos
McCullough, B. R., 834-Pos, 1812-Pos
McCune, M., 3124-Pos
McDade, A., 2342-Pos
McDermott, A. E., 552-Pos
McDermott, G., 2197-Plat
McDonagh, T., 91-Plat
McDonald, K. S., 3261-Plat, 3904-Pos
McDonald, T. V., 2484-Pos
McEvoy, M. M., 2947-Pos
McGee, M. P., 880-Pos
McGibbon, R. T., 2075-Pos
McGillivray, R. A., 831-Pos
McGlinchey, R. P., 103-Plat, 1536-Pos
McGreevy, R., 1263-Plat
McGuinness, B., 3174-Plat
McGuire, H., 3735-Pos
McGuire, K., 2186-Plat
Mchaourab, H. S., 738-Pos, 2305-Wkshp
McIntire, L. V., 823-Pos
McIntosh, D. B., 1446-Pos
McKay, M., 2344-Pos
McKeithan, W., 3649-Pos
McKenna, W. J., 3258-Plat, 3892-Pos
McKenney, R., 68-Subg
McKenney, R. J., 1783-Pos
McKenzie, M., 2070-Pos
McKenzie, M. E., 4082-Pos
McKercher, S. R., 772-Pos
McKnight, J. N., 410-Pos
McLaughlin, S., 2356-Pos
McNabb, M., 3870-Pos
McNall, K., 3185-Plat
McNamara, D. E., 2248-Symp
McNaughton, D., 1040-Pos
McNulty, R., 2266-Plat
McOwen, R., 3879-Pos
McPate, M. J., 3809-Pos
McWilliams-Koeppen, H. P., 3446-Pos
Meacci, G., 1808-Pos, 2913-Pos
Meadows, C. W., 3276-Pos
Mears, J. A., 3022-Pos, 3038-Pos
Meckes, B., 1238-Plat
Medda, R., 2145-Plat
Medlock, G., 1280-Pos
Medovoy, D., 2265-Plat
Medway, D. J., 945-Pos
Meeks, R., 1333-Pos
Meeldijk, H., 481-Pos
Mehdipour, A. R., 1834-Pos
Mehlig, B., 1402-Pos
Mehrbod, M., 1208-Plat
Mehta, I. D., 275-Pos
Mehta, N. J., 930-Pos
Mei, Q., 1901-Pos
Mei, Y., 902-Pos
Meiberg, A. G., 1348-Pos
Meier, M., 2419-Pos
Meier, T., 1876-Pos, 1877-Pos
Meiler, J., 730-Pos
Meili, R., 1819-Pos, 3972-Pos
Meiners, J., 1405-Pos, 3714-Pos
Meinhardt, S., 1043-Pos
Meininger, G. A., 1797-Pos
Meisburger, S., 2220-Plat
Meiser, M., 934-Pos
Meisl, G., 1361-Pos
Meissner, G., 642-Pos
Meister, A., 2602-Pos, 2609-Pos
Meister, J., 1635-Pos, 3956-Pos, 3957-Pos
Mekhdjian, A. H., 234-Plat
Mekler, V., 2463-Pos
Melacini, G., 1198-Plat
Melchionna, S., 1301-Pos
Meldrum, D., 4094-Pos
Mele, A., 2707-Pos
Melgari, D., 707-Pos
Meli, A. C., 645-Pos, 2854-Pos
Melikishvili, M., 3505-Pos
Melikyan, G. B., 3589-Pos
Melkani, G., 248-Pos
Melkani, G. C., 3918-Pos
Mellander, L., 3177-Plat
Meller, A., 382-Pos, 1084-Pos
Melli, L., 356-Pos, 1115-Symp, 2291-Plat
Mellman, I., 2647-Pos
Mello, R., 970-Pos
Mellor, I. R., 1711-Pos
Melnikov, D. V., 3142-Pos
Melnikov, A. V., 1882-Pos
Melo, M. N., 3239-Plat
Meloni, G., 530-Pos
Melosh, N. A., 2183-Plat
Melroy, H., 458-Pos
Meltzer, R. H., 1419-Pos
Meluzzi, D., 412-Pos
Melzer, W., 646-Pos, 651-Pos
Memczak, H., 3272-Plat
Menaker, N., 720-Pos
Mendapara, P., 2873-Pos
Mendelsohn, R., 3576-Pos
Mendez, D., 1936-Pos, 1944-Pos
Méndez, F., 808-Pos
Mendez-Villuendas, E., 518-Pos, 3596-Pos
Mendieta-Moreno, J. I., 4036-Pos
Menegon Arantes, G., 2965-Pos
Meneksedag, D., 4053-Pos
Menestrina, J., 1089-Pos
Meng, C. A., 2459-Pos
Meng, F., 3963-Pos
Meng, H., 2278-Plat
Meng, J., 2674-Pos
Meng, X., 629-Pos, 3789-Pos, 3790-Pos
Meng, Y., 2077-Pos, 3234-Plat
Menny, A., 1736-Pos, 3243-Plat
Menon, A., 788-Pos
Menssen, R., 1432-Pos

- Mera, P. E., 1385-Pos
Mercado-Morales, M., 1634-Pos
Mercedes, M., 2820-Pos
Mercer, J. A., 1765-Pos
Mercier, A., 1663-Pos
Mercier, P., 260-Pos
Mercola, M., 3649-Pos
Meredith, A. L., 2712-Pos
Mereu, I., 1286-Pos
Mergny, J., 352-Pos
Merkely, B., 1741-Pos
Mernea, M., 2783-Pos
Meron, M., 105-Plat
Mérot, J., 714-Pos
Meroz, Y., 2245-Symp
Merrikkh, C., 1392-Pos
Merrikkh, H., 1392-Pos
Merriman, D. K., 1708-Pos
Merrins, M. J., 2666-Pos
Merryman, D., 860-Pos
Mertelmeyer, S., 2645-Pos
Mertz, B., 297-Pos, 427-Pos, 3627-Pos
Merz, A. J., 2541-Pos
Merz, K. M., 2254-Symp
Mese, G., 2830-Pos
Meshcheryakova, I. V., 2931-Pos
Meshot, E., 1072-Pos
Mesmin, B., 527-Pos
Mesquita, O. N., 1012-Pos
Messer, A., 1740-Pos
Messer, A. E., 1763-Pos, 3678-Pos
Messina, A., 3992-Pos
Messner, P., 2591-Pos
Messner, W. C., 871-Pos
Metallo, S. J., 3482-Pos
Metcalf, W., 1916-Pos
Methawasim, M., 1746-Pos, 3264-Plat
Metrick, M. A., 3365-Pos
Metzger, J. M., 1764-Pos, 2859-Pos, 2864-Pos, 3867-Pos, 3908-Pos
Metzger, V. T., 3435-Pos
Metzner, C., 2150-Plat
Meuse, C. W., 3095-Pos
Mey, I., 2533-Pos
Meyer, A., 423-Pos
Meyhofer, E., 1945-Pos, 3146-Pos
Meyhöfer, E., 2468-Pos
Mező, G., 2523-Pos
Meza, U., 649-Pos, 699-Pos
Miao, Y., 537-Pos
Michael, J. J., 3889-Pos
Michailova, A., 607-Pos
Michailova, K., 3467-Pos
Michel, G., 1352-Pos
Michèle, A., 1352-Pos
Michelot, A., 832-Pos, 834-Pos
Michels, M., 1750-Pos, 2836-Pos, 3924-Pos
Michelucci, A., 640-Pos
Micheva-Viteva, S., 2000-Pos
Michielssens, S., 2218-Plat
Michmerhuizen, N. L., 3526-Pos
Mick, J. E., 841-Pos
Mickler, F., 1060-Pos
Midde, K., 2847-Pos, 2848-Pos
Miebom, K., 2924-Pos
Mielack, C., 101-Plat
Mierke, D. F., 544-Pos
Mieruszynski, S. P., 361-Pos
Migliore, A., 2973-Pos
Migliorino, J., 372-Pos
Mignery, G. A., 1553-Pos
Miguel, A., 1278-Pos
Miguel, A. V., 2399-Pos, 3085-Pos
Mihailescu, D., 2783-Pos
Mihailescu, E., 1498-Pos, 3734-Pos
Mihailescu, M., 558-Pos, 1433-Pos
Mihajlović, G., 3886-Pos
Mihalyi, C., 1702-Pos
Mijailovich, S. M., 802-Pos, 803-Pos, 3879-Pos, 3882-Pos
Mikhailov, A., 4092-Pos
Miklavcic, D., 1488-Pos
Mikolai, F., 2308-Wkshp
Miksovska, J., 348-Pos, 2675-Pos, 3336-Pos
Milani-Nejad, N., 1756-Pos
Milas, P., 1129-Plat, 1451-Pos, 1456-Pos
Milenkovic, L., 120-Plat
Milescu, M., 691-Pos
Millan-Pacheco, C., 1311-Pos
Millar, D. P., 383-Pos
Millar, J., 1400-Pos
Millare, B., 928-Pos
Miller, A., 712-Pos
Miller, A. S., 2412-Pos
Miller, C., 742-Pos, 937-Pos, 1341-Pos, 2166-Plat, 2264-Plat, 2442-Pos
Miller, E. W., 3649-Pos
Miller, H., 3961-Pos
Miller, H. P., 1787-Pos
Miller, J., 3025-Pos, 3029-Pos
Miller, J. L., 3208-Plat
Miller, K. W., 2766-Pos
Miller, M. R., 2191-Plat, 3805-Pos
Miller, M. S., 264-Pos, 1655-Pos, 3439-Pos, 3870-Pos
Miller, R. M., 1340-Pos
Miller, W., 3267-Plat
Milletti, F., 2286-Plat
Milne, J., 3039-Pos
Milojevic, J., 1198-Plat
Milon, A., 974-Pos, 3623-Pos
Milstein, J., 2524-Pos, 3541-Pos
Milstein, J. N., 1405-Pos
Milto, K., 3467-Pos
Milz, F., 2277-Plat
Min, D., 1423-Pos
Min, J., 3497-Pos
Minamisawa, S., 3109-Pos
Minary, P., 3544-Pos
Mindell, J., 1158-Plat
Mindell, J. A., 746-Pos
Miner, J. C., 1430-Pos
Mink, C., 1492-Pos
Minner, D. E., 873-Pos
Minor, D. L., 668-Pos
Minor, Jr., D. L., 698-Pos, 1678-Pos
Minowa, T., 121-Plat
Minozzo, F. C., 3864-Pos
Mintzer, E., 1513-Pos
Mir, K. U., 1993-Pos
Mir, L., 1488-Pos
Mir, M. A., 1242-Plat
Mirams, G., 3187-Plat
Miranda Laferte, E., 744-Pos
Miranda, P., 2207-Plat
Miranda-Fernández, P., 2941-Pos
Miranda-Saturnino, M. J., 1634-Pos
Miranker, A. D., 216-Plat
Miracourt, L. S., 3253-Plat
Mirheydari, M., 1545-Pos
Mirjalili, V., 2525-Pos
Miroux, B., 253-Pos
Mísgeld, T., 136-Plat
Mishima, H., 1855-Pos
Mishra, A., 1504-Pos
Mishra, P., 1511-Pos
Mishra, S. K., 1544-Pos
Miškovský, P., 946-Pos
Mitani, R., 3012-Pos
Mitchell, A. N., 590-Pos
Mitchell, D. C., 1477-Pos
Mitchell, N., 1071-Pos
Mitcheson, J., 622-Pos
Mitcheson, J. S., 705-Pos
Mitchison, T., 1818-Pos
Miterko, L. N., 1697-Pos
Mití, T., 3452-Pos, 3453-Pos
Mitro, T., 681-Pos
Mitra, D., 3140-Pos
Mitra, S., 1856-Pos
Mitrossilis, D., 1801-Pos
Mitsutake, A., 2044-Pos
Mittag, T., 1378-Pos, 2440-Pos, 3479-Pos
Mittal, A., 2153-Plat
Mittal, J., 2442-Pos
Miyaniishi, T., 3089-Pos
Miyanoiri, Y., 3012-Pos
Miyasaka, T., 315-Pos
Miyazawa, A., 3181-Plat
Miyazawa, M., 3429-Pos
Mizoguchi, T., 924-Pos
Mizuno, A., 3262-Plat
Mizuno, D., 868-Pos, 2934-Pos
Mizutani, T., 904-Pos
Mizuuchi, K., 1826-Pos
Mizuuchi, M., 1826-Pos
Mnatsakanyan, N., 1730-Pos
Mo, G., 975-Pos, 4090-Pos
Moasser, M. M., 2649-Pos
Moats, R., 2905-Pos
Mobarec, J., 555-Pos
Mobley, D. L., 1265-Plat
Mochrie, S., 404-Pos, 1973-Pos
Mochrie, S. G., 1971-Pos
Moczydlowski, E., 3588-Pos
Modesti, M., 1163-Plat, 2168-Plat, 3508-Pos
Modi, N., 758-Pos
Modrianský, M., 1552-Pos
Moeller, A., 2277-Plat
Moen, R., 970-Pos, 1275-Pos
Moench, I., 2705-Pos
Moens, L., 2402-Pos
Moerner, W., 154-Plat, 324-Pos, 1005-Pos, 2015-Pos, 2490-Pos
Moerner, W. E., 120-Plat, 922-Pos, 1023-Pos, 1989-Pos, 3460-Pos
Moffat, C., 2988-Pos
Mofrad, M. R., 1208-Plat, 1592-Pos, 2900-Pos
Moghaddam, A., 2502-Pos
Mogil, L. S., 1398-Pos
Mohammadi, H., 886-Pos
Mohammadyani, D., 4064-Pos
Mohan, K., 1804-Pos, 1908-Pos
Mohana-Borges, R., 1959-Pos
Mohanty, B., 3738-Pos
Mohanty, U., 3350-Pos
Mohd Zin, N., 3109-Pos
Mohler, P. J., 1756-Pos, 2667-Pos
Mohr, F., 1695-Pos
Moiseenkova-Bell, V., 1700-Pos, 3829-Pos
Moiseenkova-Bell, V. Y., 3225-Plat
Mokkila, S., 3569-Pos
Molbaek, K., 702-Pos
Moldenhauer, H., 3231-Plat
Moldovan, R., 2116-Pos
Moldzio, R., 159-Plat
Molenaar, P., 2672-Pos
Molina, C., 3187-Plat
Molina, C. E., 1550-Pos
Molinari, I., 1660-Pos
Moll, C., 486-Pos
Molloy, J., 3163-Symp
Molloy, J. E., 853-Pos, 905-Pos, 1383-Pos
Molokanova, E., 772-Pos
Molotkovsky, J. G., 1530-Pos, 1543-Pos, 1544-Pos
Molugu, T. R., 2284-Plat
Monbouquette, H. G., 3137-Pos
Monceau, V., 593-Pos
Moncelli, M., 3810-Pos, 3850-Pos
Moncoq, K., 253-Pos
Mondou, B., 2750-Pos
Mondragon, A., 254-Pos, 390-Pos
Mongillo, M., 1644-Pos
Monico, C., 124-Plat
Monje, V., 2053-Pos
Monje-Galvan, V., 3600-Pos
Monneret, S., 1027-Pos, 2904-Pos, 3041-Pos, 3045-Pos
Monnet, J., 3507-Pos
Monroy, F., 229-Plat
Montag, J., 2836-Pos, 3258-Plat, 3892-Pos
Montaner, A., 3477-Pos
Montano, G. A., 2121-Pos
Montaño, G. A., 2576-Pos
Montecinos-Franjola, F., 1769-Pos
Monteiro, M. C., 597-Pos
Monteith, W. B., 3724-Pos
Montel, F., 231-Plat, 1066-Pos
Montel, L., 827-Pos
Montelione, G. T., 949-Pos
Montell, D., 874-Pos
Monticelli, L., 1483-Pos
Mony, L., 1179-Plat
Moo, E., 2282-Plat
Moolman, M. C., 1388-Pos
Moore, D. J., 3576-Pos
Moore, E. D., 2008-Pos
Moore, J., 838-Pos, 1235-Plat, 2845-Pos
Moore, J. R., 181-Plat, 836-Pos, 2844-Pos
Moore, R., 3257-Plat
Moore, W. A., 4079-Pos
Moores, C., 3925-Pos, 3929-Pos
Moore, C. A., 65-Subg
Morad, M., 598-Pos, 1227-Plat
Moradi, M., 3237-Plat, 3982-Pos

- Morais Cabral, J., 713-Pos
 Morales, F., 748-Pos
 Morales, I. A., 252-Pos
 Morales, K. A., 1255-Plat
 Morales, M. J., 3190-Plat
 Morales-Lázaro, S. L., 1688-Pos
 Moran, S. D., 219-Plat
 Moravec, C. S., 1751-Pos
 Mordel, J., 714-Pos
 Moreau, C., 1710-Pos
 Moreira, I., 3534-Pos
 Morel, E., 593-Pos
 Moreno Herrero, F., 395-Pos
 Moreno, A. P., 943-Pos
 Moreno, C., 2752-Pos
 Moreno, C. M., 1679-Pos, 1683-Pos
 Moreno-Herrero, F., 1987-Pos, 2171-Plat
 Moretti, A., 1686-Pos, 2795-Pos
 Moretti, L., 873-Pos
 Morey, C., 1583-Pos
 Morgan, D., 2190-Plat, 2821-Pos
 Morgan, J. R., 3107-Pos
 Morgan, K., 838-Pos
 Mori, T., 3568-Pos
 Mori, Y., 3087-Pos
 Morick, D., 2533-Pos
 Morii, T., 1807-Pos
 Morikawa, T. J., 112-Plat
 Morimatsu, M., 234-Plat
 Morimoto Nobre, T., 511-Pos
 Morimoto, R., 187-Symp
 Morimoto, R. I., 321-Pos
 Morimoto, S., 1737-Pos
 Morin, C., 3635-Pos
 Morin, J. A., 1159-Plat
 Morin, M., 3837-Pos
 Morin, N., 1667-Pos
 Morinaga, H., 3512-Pos
 Morin-Leisk, J., 2553-Pos
 Morin-Michaud, É., 1532-Pos
 Moriwaki, Y., 3339-Pos
 Moroni, A., 1308-Pos, 1524-Pos, 3172-Plat, 3833-Pos
 Morotti, S., 3697-Pos
 Morozov, A. V., 403-Pos
 Morrell, T. E., 1303-Pos
 Morris, C. E., 3745-Pos
 Morris, E., 838-Pos
 Morris, E. J., 1805-Pos
 Morris, G., 90-Plat
 Morriss-Andrews, A., 532-Pos
 Morse, J. C., 658-Pos
 Mortensen, K., 2288-Plat
 Morykwias, M., 880-Pos
 Mosca, B., 636-Pos
 Moseley, G. W., 3047-Pos
 Mosely, J. A., 1512-Pos
 Moser von Filseck, J., 527-Pos
 Moser, C. M., 2976-Pos
 Mosgaard, L., 4008-Pos
 Mosgaard, L. D., 3595-Pos
 Moshnikova, A., 471-Pos
 Moskvin, A. S., 1621-Pos
 Moss, F. R., 222-Plat
 Mostacciolo, G., 621-Pos, 627-Pos
 Mostafavi, H., 2555-Pos
 Mote, K. R., 2953-Pos, 2955-Pos
 Mothkur, S., 2261-Plat
 Motloch, L., 2995-Pos
 Motloch, MD, L. J., 2996-Pos
 Motokawa, T., 3709-Pos, 3710-Pos
 Motta, I., 3605-Pos
 Mou, Q., 1150-Plat
 Mou, T., 1146-Plat
 Moua, O., 695-Pos, 696-Pos
 Mouannes Kozaili, J., 178-Plat
 Mouchlis, V. D., 207-Plat
 Mougous, J., 300-Pos
 Mousley, B., 376-Pos, 1107-Pos
 Moussavi-Baygi, R., 1592-Pos
 Mousseau, N., 529-Pos
 Moutsoglou, M., 1767-Pos
 Moutsoglou, M. E., 1761-Pos, 2875-Pos, 3260-Plat, 3673-Pos
 Movileanu, L., 3150-Pos
 Mowrey, D. D., 1728-Pos
 Mpagazehe, J., 1968-Pos
 Mposs, M., 1435-Pos
 Mruk, K., 2669-Pos
 Mu, L., 466-Pos
 Muddana, H., 3332-Pos
 Muddana, H. S., 2329-Pos
 Muders, V., 3300-Pos
 Mudumbi, K. C., 1357-Pos
 Mueller, D. J., 1320-Pos
 Mueller, F., 1930-Pos
 Mueller, J., 1000-Pos
 Mueller, J. D., 1001-Pos
 Mueller, M., 680-Pos, 3125-Pos
 Mueller, T., 991-Pos
 Muenkner, S., 1671-Pos
 Mugelli, A., 1753-Pos, 3257-Plat
 Muik, M., 1600-Pos, 1609-Pos
 Muño, P. L., 1036-Pos
 Mukerji, I., 3500-Pos
 Mukherjee, S., 145-Plat, 2421-Pos, 2486-Pos, 3503-Pos
 Mukhin, S. I., 3594-Pos
 Mukhopadhyay, A., 1426-Pos
 Mukhopadhyay, S., 1360-Pos, 3461-Pos
 Mukundan, H., 2576-Pos
 Mulaj, M., 3452-Pos, 3453-Pos
 Müller, D. J., 3967-Pos
 Müller, M., 2880-Pos
 Müller, O., 407-Pos
 Mulligan, P., 1269-Plat
 Mullins, D., 867-Pos
 Mullins, D. R., 859-Pos
 Mullins, F. M., 3170-Plat
 Mumm, P., 694-Pos
 Mummery, C. L., 2795-Pos
 Mun, J., 806-Pos
 Munch, D., 1530-Pos
 Mund, M., 1006-Pos
 Munde, M. M., 2515-Pos
 Mundy, J., 1530-Pos
 Munk, A., 137-Plat
 Munnich, S., 912-Pos
 Münnich, S., 2881-Pos
 Munro, M., 639-Pos, 2263-Plat
 Munshi, R., 1930-Pos
 Munsky, B., 2000-Pos
 Munteanu, L., 1809-Pos
 Muntoni, F., 2256-Plat
 Mura, C., 1143-Plat, 1277-Pos, 2343-Pos, 2505-Pos
 Mura, M., 1686-Pos
 Murail, S., 1732-Pos, 1735-Pos, 3358-Pos
 Murakami, K., 2451-Pos, 2459-Pos
 Murayama, T., 568-Pos, 578-Pos, 579-Pos, 1784-Pos, 3872-Pos
 Murchland, I., 3167-Symp
 Murdaugh, A. E., 1962-Pos, 4031-Pos
 Murello, A., 1966-Pos
 Muretta, J., 3925-Pos
 Muretta, J. M., 1037-Pos, 1764-Pos, 2843-Pos
 Murlidaran, S., 2784-Pos
 Murphy, J. G., 701-Pos
 Murphy-Ullrich, J., 3610-Pos
 Murray, C. B., 997-Pos
 Murray, C. I., 98-Plat
 Murray, D. T., 1349-Pos
 Murray, T., 2311-Pos
 Murray, V., 3976-Pos
 Murri, M., 3553-Pos
 Murry, C. E., 2855-Pos
 Murugesapillai, D., 2172-Plat
 Musaraj, K., 2785-Pos
 Muschol, M., 3452-Pos, 3453-Pos
 Musgaard, M., 161-Plat, 762-Pos
 Muskett, F. W., 705-Pos
 Musselman, C., 396-Pos
 Musselman, C. A., 400-Pos, 402-Pos
 Musset, B., 2190-Plat, 2821-Pos
 Mustoe, A. M., 1449-Pos
 Mutha, P., 181-Plat
 Muthu, P., 183-Plat, 1739-Pos, 2845-Pos, 2847-Pos, 3893-Pos
 Muthurajan, U., 401-Pos
 Mutin, T., 411-Pos
 Myers, R., 616-Pos
 Myers, W. K., 151-Plat, 271-Pos
 Mykhailiuk, P., 2235-Plat
 Myong, S., 128-Plat, 345-Pos, 347-Pos, 384-Pos
- N**
- Nabavi Zadeh, P. S., 1054-Pos
 Naber, N., 374-Pos, 791-Pos
 Nabers, A., 1052-Pos
 Nachury, M., 62-Subg
 Nacro, K., 1332-Pos
 Nadtochiy, A., 3142-Pos
 Naftz, K., 1975-Pos
 Nag, M., 2380-Pos
 Nag, S., 794-Pos, 1765-Pos, 2288-Plat
 Nagadoi, A., 2347-Pos
 Nagahama, M., 2488-Pos
 Nagai, R., 3032-Pos
 Nagai, T., 112-Plat
 Nagamori, S., 1857-Pos
 Naganbabu, M., 4093-Pos
 Nagarah, J. M., 2106-Pos
 Nagarajan, A., 1156-Plat, 2951-Pos
 Nagasaki, A., 826-Pos
 Nagata, B., 903-Pos
 Nagata, T., 3533-Pos
 Nagel-Steger, L., 812-Pos
 Nager, A. R., 2247-Symp
 Nagi, G., 1549-Pos
 Nagle, J. F., 483-Pos
 Nagwekar, J., 2847-Pos, 2848-Pos
 Nagy, A., 905-Pos, 2870-Pos
 Nagy, P., 1028-Pos
 Naidoo, N. M., 2739-Pos, 3805-Pos
 Najafi, A., 1749-Pos
 Najafinobar, N., 3177-Plat
 Nakada, E. M., 3875-Pos
 Nakagawa, Y., 279-Pos
 Nakagomi, M., 1338-Pos
 Nakai, J., 3186-Plat
 Nakajo, K., 715-Pos
 Nakamoto, R. K., 1853-Pos
 Nakamura, H., 1046-Pos, 2423-Pos, 3362-Pos
 Nakamura, M., 913-Pos
 Nakamura, T., 772-Pos
 Nakanishi, T., 2385-Pos
 Nakasako, M., 1938-Pos
 Nakashima, H., 3149-Pos
 Nakatani, M., 2270-Plat
 Nam, G., 368-Pos
 Nam, H., 2319-Pos, 4027-Pos
 Nam, S., 2090-Pos
 Nam, W., 3951-Pos
 Namba, K., 3878-Pos
 Nánási, P. P., 621-Pos
 Nance, M. E., 3261-Plat
 Nanda, H., 2567-Pos, 2633-Pos, 3772-Pos
 Nanda, V., 311-Pos, 949-Pos, 3448-Pos
 Nani, A., 573-Pos
 Nannemann, D., 730-Pos
 Napolitano, C., 572-Pos
 Napolitano, L. M., 3834-Pos
 Naqvi, M. A., 2446-Pos
 Narambuena, C. F., 3115-Pos
 Narang, D., 3461-Pos
 Naranjo, A. N., 2624-Pos
 Naranjo, D., 2727-Pos, 2731-Pos
 Naranjo, J., 2753-Pos
 Narayan, S., 3394-Pos
 Narayanan, T., 2293-Plat, 3865-Pos
 Narayanaswami, V., 3611-Pos
 Nardini, M., 3172-Plat
 Narlikar, G. J., 374-Pos, 409-Pos
 Narmoneva, D., 3108-Pos
 Nars, G., 974-Pos
 Narui, Y., 2301-Wkshp
 Naruse, K., 3897-Pos
 Nasi, E., 3841-Pos
 Nassal, D. M., 3793-Pos
 Násztor, Z., 3360-Pos
 Nataf, D., 1864-Pos
 Natarajan, V., 1387-Pos
 Natesan, R., 4082-Pos
 Nath, A., 3459-Pos
 Nauffer, M., 394-Pos
 Naulin, P. A., 1350-Pos
 Naumann, C. A., 873-Pos, 2535-Pos
 Navalinskas, A., 632-Pos, 633-Pos
 Navaratnam, D., 3741-Pos
 Navaratnarajah, M., 3838-Pos
 Navarre, W. W., 2524-Pos
 Navarrete, C., 303-Pos
 Navarro, N., 2727-Pos
 Navarro-López, F., 795-Pos, 3258-Plat
 Navedo, M., 2699-Pos

- Nayak, T. K., 1717-Pos
 Naylor, C. E., 198-Plat
 Nazarov, I., 2688-Pos
 Nečas, J., 1552-Pos
 Nedelec, F., 2871-Pos
 Nedic, D., 803-Pos
 Nedumpully Govindan, P., 2063-Pos
 Needham, D., 2622-Pos
 Neely, A., 687-Pos, 692-Pos, 1676-Pos
 Negami, T., 3078-Pos
 Negureanu, L., 3333-Pos
 Nehls, C., 2568-Pos
 Neilson, N. K., 1445-Pos
 Nel, A., 2096-Pos
 Nelson Holt, M., 401-Pos
 Nelson Holte, M., 2172-Plat
 Nelson, A. M., 2270-Plat
 Nelson, E. M., 1078-Pos
 Nelson, N., 1864-Pos
 Nelson, P. H., 1099-Pos
 Nelson, S., 1164-Plat
 Nelson, S. E., 2673-Pos
 Nelson, S. F., 3747-Pos
 Nelson, W., 1815-Pos, 1960-Pos
 Nematian-Ardestani, E., 3773-Pos
 Nemeč, B., 1790-Pos
 Nemeč, A., 1736-Pos, 3243-Plat
 Nemer, M., 625-Pos, 1661-Pos
 Németh, B., 1741-Pos
 Nerbonne, J. M., 205-Plat
 Nerenberg, P. S., 2040-Pos, 2433-Pos
 Nesbitt, D., 1429-Pos, 1452-Pos
 Neshatian, M., 1094-Pos
 Nesselov, Y. E., 796-Pos, 797-Pos
 Nesmelova, I., 3379-Pos
 Neto, V. M., 3133-Pos
 Nettel, D., 1363-Pos
 Neubauer, S., 945-Pos
 Neuhaus, P., 2277-Plat
 Neuman, K. C., 1391-Pos, 4017-Pos
 Neumann, B. M., 3614-Pos
 Neumann, J. T., 576-Pos
 Neuvonen, M., 3569-Pos
 Nevin, P., 1166-Plat, 2168-Plat, 3508-Pos
 Nevzorov, A., 971-Pos
 New, K., 1713-Pos
 Newbury, L., 1549-Pos
 Newhall, J., 3286-Pos
 Newhart, W., 2342-Pos
 Newman, A., 705-Pos
 Newsam, S. D., 3071-Pos, 3085-Pos
 Newstead, S., 3821-Pos
 Ng, A., 622-Pos
 Ng, J. D., 3288-Pos
 Ng, J. S., 2317-Pos
 Ng, T., 535-Pos, 1011-Pos
 Ngatchou-Weiss, A., 171-Plat
 Ngo, K. X., 826-Pos
 Ngo, V., 2728-Pos, 2823-Pos
 Nguyen, A. V., 3430-Pos
 Nguyen, B., 393-Pos
 Nguyen, H., 745-Pos, 2188-Plat, 3934-Pos
 Nguyen, H. D., 2125-Pos
 Nguyen, H. M., 3738-Pos
 Nguyen, J., 3465-Pos
 Nguyen, P. T., 670-Pos
 Nguyen, S., 1664-Pos
 Nguyen, T., 304-Pos
 Nguyen, T. A., 3441-Pos, 3442-Pos, 3443-Pos, 3716-Pos
 Nguyen, T. P., 618-Pos
 Nguyen, V. H., 1109-Pos
 Ni, Y., 737-Pos
 Nibbering, P., 2232-Plat
 Nicholas, M. P., 2242-Plat
 Nicholls, P., 3412-Pos, 3871-Pos
 Nichols, B., 756-Pos
 Nichols, C., 2792-Pos
 Nichols, C. G., 202-Plat, 3781-Pos, 3782-Pos, 3799-Pos
 Nichols, M. G., 936-Pos, 937-Pos
 Nicholson, A., 1419-Pos
 Nichtová, Z., 3894-Pos
 Nickel, A., 934-Pos
 Nickels, J. D., 1325-Pos, 2327-Pos
 Nicklas, D., 1901-Pos
 Nicolas, C. S., 714-Pos
 Niederer, S., 609-Pos
 Niedziela-Majka, A., 1330-Pos, 2377-Pos
 Nielsen, A., 2160-Plat
 Nielsen, C. H., 2398-Pos
 Nielsen, P. M., 3901-Pos
 Nielsen, S. B., 217-Plat
 Niemeyer, B. A., 1611-Pos
 Niemi, A. J., 1300-Pos
 Nieminen, A., 2939-Pos
 Nieminen, T., 3577-Pos
 Nienhaus, G., 1029-Pos, 3425-Pos
 Nienhaus, K., 3425-Pos
 Niessen, K. A., 1200-Plat
 Nieto, J., 215-Plat
 Nieva, J., 3582-Pos
 Nieva, J. L., 3593-Pos
 Niggli, E., 1642-Pos, 2178-Plat, 2694-Pos, 2695-Pos
 Nigro, V., 3873-Pos
 Niitani, Y., 3945-Pos
 Nijenkamp, L. L., 1750-Pos
 Nikaido, H., 511-Pos, 3561-Pos
 Nikashin, B., 841-Pos
 Niknam, Y., 644-Pos
 Nikodemus, D., 2419-Pos
 Nikolaitchik, O. A., 2015-Pos
 Nikolic, D., 2073-Pos
 Nikonova, Y., 3689-Pos
 Nilges, M., 147-Plat, 3082-Pos
 Nilius, B., 1707-Pos
 Nilsson, I., 3632-Pos
 Nilsson, L., 1277-Pos
 Nilsson, P., 712-Pos
 Nimgean, C. M., 783-Pos, 1519-Pos, 3245-Plat
 Ning, W., 1213-Plat
 Nir, G., 126-Plat
 Nishi, M., 2701-Pos, 3683-Pos, 3856-Pos, 3857-Pos
 Nishihara, Y., 2061-Pos, 3878-Pos
 Nishima, W., 4041-Pos
 Nishimura, Y., 2347-Pos
 Nishinaka, Y., 1857-Pos
 Nishino, Y., 3181-Plat
 Nishiyama, M., 1983-Pos, 2922-Pos
 Nishizaka, T., 1279-Pos
 Nishitani, S., 1730-Pos
 Nissen, P., 530-Pos, 2160-Plat, 2161-Plat
 Nithianantham, S., 2237-Plat, 3926-Pos
 Nitta, T., 3132-Pos
 Nitta, Y., 1339-Pos
 Nitu, F., 2673-Pos
 Nitu, F. R., 564-Pos, 2671-Pos
 Niu, H., 1397-Pos
 Niu, J., 3171-Plat
 Nivala, J., 1083-Pos
 Nivala, M., 1622-Pos, 2687-Pos
 Nivaskumar, M., 147-Plat
 Nivina, A., 1387-Pos
 Nixon, B. R., 3665-Pos
 Niyogi, K. K., 4034-Pos
 Njau, P., 2726-Pos
 Njoku, F., 311-Pos
 Njus, D., 930-Pos
 Nkoua Ngavouka, M., 1422-Pos
 Noble, C., 1402-Pos
 Nobre, T. M., 3561-Pos
 Noda, T., 3220-Symp
 Noel, J. K., 2388-Pos, 2476-Pos, 3077-Pos
 Noey, E., 3416-Pos
 Nogales, E., 915-Pos, 1161-Plat, 1770-Pos, 2236-Plat, 2452-Pos, 4034-Pos
 Noh, S., 3645-Pos
 Nohava, J., 3979-Pos
 Noinaj, N., 2112-Pos
 Noireaux, V., 2131-Pos
 Noji, H., 144-Plat, 1287-Pos, 1983-Pos, 3148-Pos
 Nolde, S. B., 3281-Pos
 Noller, H., 1210-Plat
 Nollmann, M., 411-Pos
 Nomura, K., 924-Pos
 Nomura, T., 2805-Pos
 Nonaka, M., 1737-Pos
 Noort, J., 397-Pos
 Nørager, N. G., 765-Pos
 Nord, A. L., 2919-Pos
 Nordenskiöld, L., 397-Pos, 2175-Plat
 Norez, C., 2832-Pos
 Nori, R., 3102-Pos, 3415-Pos
 Norman, H. D., 1260-Plat
 Norris, N. C., 2257-Plat
 North, J. A., 399-Pos, 400-Pos
 North, R., 3242-Plat
 Northrop, B., 2118-Pos
 Northrup, J. K., 3626-Pos
 Norton, R. S., 3738-Pos
 Nosker, P., 311-Pos, 949-Pos, 3448-Pos
 Noskov, S., 1185-Plat, 3763-Pos, 3764-Pos, 3780-Pos
 Noskov, S. Y., 94-Plat, 2068-Pos, 2730-Pos, 2983-Pos
 Nossal, R., 1574-Pos
 Nott, T. J., 194-Symp
 Nourse, A., 3479-Pos
 Nourse, J. L., 2887-Pos
 Nova, I. C., 1082-Pos
 Novak, P., 4024-Pos, 4029-Pos
 Novikova, E. A., 878-Pos
 Novotová, M., 3894-Pos
 Nowak, K., 1766-Pos
 Nowak, W., 3345-Pos
 Nowakowski, S. G., 1745-Pos
 Nowara, E., 3423-Pos
 Noy, A., 1079-Pos, 1239-Plat, 2117-Pos
 Nozoe, T., 954-Pos
 Nugent, E., 420-Pos
 Numata, N., 3941-Pos
 Nunes, J. P., 3242-Plat
 Nunes-Alves, A., 2062-Pos
 Nunez, J., 2741-Pos
 Nunez, J. K., 3525-Pos
 Nunilo, C., 1366-Pos
 Nureki, O., 4041-Pos
 Nury, H., 1710-Pos
 Nutanong, S., 3076-Pos
 Nutanong, S. Y., 2051-Pos
 Nuttall, P., 110-Plat
 Nyarko, A., 3474-Pos
 Nyati, M., 227-Plat
 Nyberg, L., 1402-Pos
 Nyholm, T. K., 1470-Pos, 2611-Pos
 Nymark, S., 2685-Pos, 3131-Pos
 Nyogi, K., 915-Pos
 Nyquist, K., 149-Plat, 1249-Plat
 Nys, M., 2760-Pos
- ## O
- O, G., 2123-Pos, 3712-Pos, 3713-Pos
 O'Brien, T. E., 233-Plat
 O'Brien, W. J., 3557-Pos
 O'Donoghue, G. P., 2629-Pos, 2635-Pos
 O'Halloran, M., 925-Pos
 O'Neill, H. M., 1195-Plat
 Oakes, P., 2907-Pos
 Oakes, P. W., 1187-Plat, 2149-Plat
 Oakley, A. J., 2257-Plat
 Oas, T. G., 1289-Pos, 1310-Pos
 Obejero-Paz, C., 3647-Pos
 Oberhauser, A., 3412-Pos, 3871-Pos
 Obermair, G. J., 650-Pos, 1677-Pos, 1684-Pos
 Oberwinkler, J., 1695-Pos
 O'Brien, E., 3129-Pos
 O'Brien, E. P., 321-Pos, 1216-Plat
 O'Brien, F., 3857-Pos
 O'Brien, T., 1284-Pos
 O'Brien, X. M., 2894-Pos
 Obser, T., 2275-Plat
 Occhiena, L., 1603-Pos, 1606-Pos
 Occhipinti, D., 3792-Pos
 Ochi, R., 700-Pos
 Ochoa-Lizarralde, B., 1543-Pos
 O'Connor, J. W., 896-Pos
 Oda, T., 564-Pos, 2671-Pos
 Odde, D., 1234-Plat
 Odde, D. J., 1812-Pos
 Oddershede, L., 2151-Plat
 Oddershede, L. B., 3618-Pos
 O'Dell, A. P., 3958-Pos
 Odom, G. L., 1745-Pos
 O'Donnell, S. E., 3440-Pos
 O'Donoghue, G. P., 116-Plat
 Oelstrom, K., 673-Pos
 Offenbacher, A. R., 3478-Pos
 Ogdén, D., 1226-Plat
 Ogden, K. K., 761-Pos
 Ogiue-Ikeda, M., 3639-Pos
 Ogletree, D. F., 2029-Pos
 Ogren, J. I., 1924-Pos

- Oguchi, K., 578-Pos
 Oh, D., 3639-Pos
 Oh, K., 157-Plat
 Oh, M. J., 3779-Pos
 Oh, Y., 2591-Pos
 O'Hara, P. B., 1252-Plat, 2382-Pos
 O'Hern, C., 1596.1-Pos, 2157-Plat
 O'Hern, C. S., 289-Pos, 3309-Pos
 Ohi, M., 2170-Plat
 Ohki, T., 3262-Plat, 3902-Pos
 Ohkubo, T., 262-Pos, 3422-Pos
 Ohnuki, J., 2439-Pos
 Ohshige, K., 3411-Pos
 Ohta, K., 3032-Pos
 Ohue, M., 2071-Pos
 Oiki, S., 3771-Pos
 Oiwa, K., 1175-Symp, 1785-Pos, 2241-Plat
 Öjemalm, K., 3632-Pos
 Ojoawo, A., 3303-Pos, 3329-Pos
 Okabe, K., 2003-Pos, 3050-Pos
 Okada, J., 3249-Plat
 Okada, T., 1807-Pos
 Okada, Y., 1772-Pos
 Okamoto, K., 112-Plat
 Okamoto, S., 772-Pos
 Okamoto, Y., 660-Pos, 1639-Pos, 3314-Pos, 3404-Pos
 Okamura, Y., 1220-Symp, 1693-Pos, 3762-Pos, 3769-Pos
 Okan, O. B., 3311-Pos
 Okatan, E. N., 3690-Pos
 Okeke, P., 1472-Pos
 Okerblom, J., 1261-Plat
 Okkenhaug, H., 2693-Pos
 Okonokwo, N., 3013-Pos
 Okumura, H., 3087-Pos
 Okumura, M., 2385-Pos, 2386-Pos
 Okuno, D., 1983-Pos
 Oláh, A., 1741-Pos
 Oláh, T., 661-Pos
 Olander, E., 3860-Pos, 3861-Pos
 Olbrich, C., 919-Pos
 Olcese, R., 687-Pos, 690-Pos, 692-Pos, 1676-Pos, 2709-Pos, 2710-Pos
 Oldewurtel, E. R., 1883-Pos
 Oldfield, E., 3335-Pos
 O'Leary, S. E., 1212-Plat
 Olejar, T., 1025-Pos
 Olenek, M., 1275-Pos, 3283-Pos
 Olesen, S., 592-Pos, 3899-Pos
 Olivares, A. O., 1248-Plat, 2247-Symp
 Oliveira Rangel Yagui, C., 4044-Pos
 Oliveira, A. F., 1863-Pos
 Oliver, D., 2645-Pos
 Olivera-Couto, A., 2353-Pos
 Olivotto, I., 1753-Pos
 Ollesch, J., 1052-Pos
 Ollila, S. O., 223-Plat
 Ollinger, N., 789-Pos, 3361-Pos
 Olmsted, Z. T., 848-Pos
 Olofsson, L., 534-Pos
 Olsen, B. N., 2579-Pos
 Olsen, H. L., 3860-Pos
 Olsen, T., 3143-Pos
 Olson, E., 2743-Pos
 Olson, R., 465-Pos
 Olson, S. J., 865-Pos
 Olson, W. K., 379-Pos, 380-Pos, 406-Pos, 3543-Pos
 Olszewska, A., 21-Subg
 Oltrogge, L. M., 3304-Pos
 Olufemi, L., 410-Pos
 Olzyska, A., 426-Pos
 O'Malley, P. J., 1865-Pos
 Omens, J., 3185-Plat
 Omotuyi, I., 3089-Pos
 O'Neil, C. P., 2124-Pos
 O'Neill, H., 1535-Pos
 Onesti, S., 3834-Pos
 Ong, Q., 2998-Pos
 Ong, W., 2026-Pos, 2909-Pos
 Oni, S. O., 955-Pos
 Ono, T., 3496-Pos
 Onoa, B., 4034-Pos
 Onoshima, D., 3545-Pos
 Onuchic, J., 1914-Pos, 1915-Pos
 Onuchic, J. N., 2388-Pos
 Onufriev, A., 1426-Pos
 Onufriev, A. V., 405-Pos
 Onyango, J., 1510-Pos
 Opacic, M., 921-Pos
 Opella, S., 1498-Pos
 Opella, S. J., 258-Pos, 2335-Pos
 Opferman, M., 1593-Pos
 Opoku, K., 842-Pos, 846-Pos, 3221-Symp
 Opoku, K. N., 843-Pos
 Oppong, E., 1029-Pos
 Ordóñez-Fernández, A., 1617-Pos
 Ordu, O., 1988-Pos
 Orduz, D., 2680-Pos
 Oredsson, S., 4098-Pos
 Orevi, T., 3406-Pos
 Orf, G. S., 920-Pos
 Orgel, J., 3469-Pos
 Orgován, N., 3944-Pos
 Orjuela, J., 3571-Pos
 Orland, H., 3358-Pos
 Orlova, A., 2876-Pos
 Orlova, D. Y., 4079-Pos
 Ormos, P., 2130-Pos, 3138-Pos
 Oroguchi, T., 1938-Pos
 Orosz, Á., 2523-Pos
 Oroszi, L., 3138-Pos
 O'Rourke, B., 635-Pos, 928-Pos, 3853-Pos
 Ortega Arroyo, J., 978-Pos
 Ortega-Arroyo, J., 998-Pos, 2531-Pos
 Ortega-Blake, I., 430-Pos, 2808-Pos, 4046-Pos
 Ortie, E., 4083-Pos
 Ortiz, E., 3018-Pos
 Ortiz, V., 3215-Plat
 Ortner, N., 689-Pos
 Ory, D. S., 2579-Pos
 Orzechowski, M., 3881-Pos
 Osatuke, A., 2316-Pos
 Osborn, C. V., 3779-Pos
 Osborn, M., 2502-Pos
 Osborne, L. D., 3129-Pos
 O'Shaughnessy, B., 170-Plat, 897-Pos, 1808-Pos, 1809-Pos, 2555-Pos
 Oshima, H., 1855-Pos, 3359-Pos, 3533-Pos
 Oshima, T., 2458-Pos
 Oslob, J., 2842-Pos, 3692-Pos
 Osmulski, P. A., 4033-Pos
 Osseni, A., 3874-Pos
 Ostap, E., 899-Pos
 Ostap, E. M., 64-Subg, 1177-Symp
 Oster, G., 1120-Plat, 2577-Pos, 3621-Pos
 Osterbur, M. L., 2484-Pos
 Ostermaier, M., 3754-Pos
 Ostolaza, H., 477-Pos
 O'Suilleabhain, L. D., 2056-Pos
 Oswald, F., 1782-Pos
 Osyczka, A., 2601-Pos, 2964-Pos
 Otarola, E., 1178-Plat, 2822-Pos
 Otey, C., 3962-Pos
 Otis, F., 456-Pos, 2234-Plat
 Otosu, T., 2321-Pos
 Otten, R., 3269-Plat
 Ottenheim, C. A., 3890-Pos
 Otto, B. J., 3846-Pos
 Ottolia, M., 2938-Pos
 Otzen, D. E., 217-Plat
 Ou, G., 2907-Pos
 Ou, S., 2404-Pos
 Ouari, O., 2228-Plat
 Ouellet, M., 2234-Plat
 Ounjai, P., 1811-Pos
 Ou-Yang, H., 2544-Pos
 Ouyang, W., 1649-Pos
 Ouzounov, N., 2914-Pos
 Overmann, S., 991-Pos
 Overton, J. M., 3663-Pos
 Owen, L. M., 1813-Pos
 Owino, S., 357-Pos
 Oyama, K., 2835-Pos, 2865-Pos, 2866-Pos, 3262-Plat, 3902-Pos, 3955-Pos
 Oyamada, H., 578-Pos, 579-Pos
 Ozcan, O., 290-Pos
 Ozer, A., 2022-Pos
 Ozisik, R., 3311-Pos
 Ozkan, S. B., 2334-Pos, 3355-Pos
 Ozkirimli, E., 4063-Pos

P

 Pabbidi, M. R., 1553-Pos
 Pabon, L. M., 2855-Pos
 Pabst, G., 2536-Pos, 2585-Pos, 2595-Pos
 Paci, E., 1322-Pos, 2312-Pos, 2330-Pos, 3163-Symp
 Paci, M., 2685-Pos, 3655-Pos
 Packirisamy, M., 2901-Pos, 2902-Pos
 Paddock, M., 1273-Pos
 Padilla, A., 2339-Pos
 Padilla-Morales, L. F., 1721-Pos
 Padrón, R., 808-Pos
 Pagel, K., 3308-Pos
 Pagès, J., 2815-Pos, 2816-Pos
 Pagliarini, D., 24-Subg
 Pahl, M. N., 1445-Pos
 Pahlavan, S., 1227-Plat
 Pai, J. C., 252-Pos
 Paik, D., 1981-Pos
 Paik, D. H., 1998-Pos
 Paik, S., 2114-Pos, 3157-Pos
 Paik, U., 2114-Pos
 Pajor, A. M., 76-Symp
 Pal, R., 3395-Pos, 3684-Pos
 Palacio, L. A., 1465-Pos, 1537-Pos, 2824-Pos
 Palangat, M., 1127-Plat
 Palanthandalam-Madapusi, H., 4009-Pos
 Pallavicini, C., 839-Pos
 Palli, R., 2081-Pos, 2400-Pos
 Palmai, Z., 3081-Pos
 Palmer, B. M., 3870-Pos
 Palmeri, M., 1548-Pos
 Palmier, M. O., 754-Pos
 Palmieri, M., 3395-Pos, 3684-Pos
 Palovcak, E., 3756-Pos
 Palovcak, E. J., 751-Pos
 Paluh, J. L., 848-Pos
 Pan, A. C., 533-Pos
 Pan, H., 784-Pos
 Pan, J., 1473-Pos
 Pan, Z., 260-Pos, 3683-Pos
 Panahi, A., 3235-Plat
 Pande, V., 88-Plat, 240-Wkshp, 1277-Pos, 2048-Pos
 Pande, V. S., 1568-Pos, 2033-Pos, 2035-Pos, 2075-Pos, 3315-Pos
 Pandelidis, A., 2344-Pos
 Pandhare, A., 1719-Pos
 Pandini, A., 3274-Pos
 Pandiscia, L., 2618-Pos
 Pandit, S., 2049-Pos, 2052-Pos
 Pandolfi, R. J., 2132-Pos
 Pandzic, E., 3053-Pos, 3169-Plat
 Panettieri, S., 139-Plat
 Panning, B., 2197-Plat
 Panova, N., 1654-Pos
 Pant, K., 1384-Pos
 Pantazis, A., 687-Pos, 690-Pos, 692-Pos, 1676-Pos, 2710-Pos
 Pante, N., 3975-Pos
 Pantic, J. M., 480-Pos
 Pantoja, V., 1901-Pos
 Panyi, G., 2722-Pos, 2788-Pos, 2791-Pos
 Paolini, C., 640-Pos
 Papadakis, M., 1763-Pos, 3678-Pos
 Papadopoulos, S., 695-Pos, 699-Pos
 Papazian, D. M., 3747-Pos
 Pape, P. C., 3700-Pos
 Papp, F., 3766-Pos
 Pappu, R., 32-Subg, 1372-Pos
 Pappu, R. V., 2153-Plat, 2432-Pos, 2441-Pos, 2445-Pos
 Paramanathan, T., 1416-Pos
 Parameswaran, H., 1851-Pos
 Parameswaran, R., 1931-Pos
 Parashar, M., 406-Pos
 Pardo, M., 723-Pos
 Paredes, M., 2936-Pos
 Parente, D. J., 1043-Pos
 Parisse, P., 1422-Pos, 3542-Pos
 Park, C., 662-Pos, 1810-Pos, 3726-Pos
 Park, G., 549-Pos
 Park, H., 19-Subg, 1878-Pos, 3051-Pos, 3574-Pos

Park, J., 1233-Plat, 2114-Pos, 2123-Pos, 3127-Pos, 3416-Pos, 3424-Pos, 3694-Pos, 3712-Pos, 3713-Pos, 4049-Pos
 Park, J. W., 4068-Pos
 Park, K., 2701-Pos, 3389-Pos, 3683-Pos, 3687-Pos
 Park, M. J., 1403-Pos
 Park, P. S., 2365-Pos
 Park, S., 392-Pos, 467-Pos, 1018-Pos, 1019-Pos, 1245-Plat, 2196-Plat, 2496-Pos, 3126-Pos, 4061-Pos
 Park, Y., 1490-Pos, 2563-Pos, 2906-Pos, 3051-Pos, 3574-Pos
 Parker, A. W., 1004-Pos
 Parker, F., 3163-Symp
 Parker, I., 2773-Pos
 Parker, J. E., 3073-Pos
 Parkin, J., 1292-Pos
 Parks, D. R., 4079-Pos
 Parks, J., 2224-Plat
 Parks, J. W., 344-Pos
 Parmar, A. S., 311-Pos, 3448-Pos
 Parmryd, I., 3042-Pos, 3578-Pos
 Parnas, H., 548-Pos
 Parnas, I., 548-Pos
 Parnell, J., 2341-Pos, 3484-Pos
 Parolini, L., 446-Pos
 Parra-Vasquez, N. G., 2121-Pos
 Parrot, L., 1451-Pos
 Parry, B., 1596.1-Pos
 Parsegian, A., 1410-Pos
 Parsegian, V. A., 2529-Pos
 Parthasarathy, R., 2302-Wkshp
 Parton, D. L., 3315-Pos
 Parvatiyar, M. S., 3663-Pos
 Pascutti, P. G., 1506-Pos
 Pasinelli, P., 962-Pos
 Pasquali, S., 1299-Pos, 1450-Pos
 Passini, E., 3654-Pos
 Passmore, D. R., 1586-Pos
 Pasternak, G. W., 556-Pos
 Pastor, N., 286-Pos, 1311-Pos
 Pastor, R., 3203-Plat
 Pastor, R. W., 1074-Pos, 1498-Pos, 2561-Pos, 3119-Pos, 4038-Pos
 Pastore, A., 3668-Pos
 Pastrana, C., 395-Pos
 Pastrana, C. L., 2171-Plat
 Paszek, M., 2907-Pos
 Patapoutian, A., 2141-Symp, 3231-Plat
 Patasi, C., 851-Pos
 Pate, E., 374-Pos, 791-Pos
 Patel, A., 410-Pos
 Patel, A. B., 3611-Pos
 Patel, D., 2778-Pos
 Patel, D. J., 1530-Pos, 1543-Pos, 1544-Pos, 3537-Pos
 Patel, G. J., 1345-Pos
 Patel, H., 1497-Pos, 3185-Plat
 Patel, N., 509-Pos
 Patel, S., 2404-Pos
 Patel, S. S., 1382-Pos
 Patel, T. R., 2419-Pos
 Paterson, D., 3187-Plat
 Pathak, J. A., 3369-Pos
 Pathak, M. M., 2887-Pos
 Pathan-Chhatbar, S., 912-Pos, 2881-Pos
 Patrich, E., 720-Pos
 Patrick, L., 1352-Pos
 Patron, M., 3844-Pos
 Patronov, A., 3271-Plat
 Patterson, M., 94-Plat
 Patti, M., 1154-Plat, 1155-Plat
 Patting, M., 1039-Pos
 Paucek, P., 2116-Pos, 3158-Pos
 Paul, D., 3146-Pos
 Paul, R., 2101-Pos
 Paula, S., 1333-Pos
 Paulaitis, M. E., 3562-Pos
 Pauleta, S. R., 3833-Pos
 Paulino, J., 1281-Pos
 Paulson, J., 988-Pos
 Pautot, S., 3620-Pos
 Pavlov, E., 1694-Pos, 3807-Pos
 Pavlov, E. V., 2987-Pos
 Pavlova, A., 213-Plat
 Pavlovic, D., 1549-Pos
 Pavone, F., 124-Plat, 1644-Pos
 Pavone, F. S., 2260-Plat
 Pawlizak, S., 891-Pos
 Pawlowski, M., 1049-Pos
 Payandeh, J., 674-Pos, 3343-Pos
 Payne, C. K., , 3154-Pos
 Payne, J. A., 756-Pos
 Paz, A., 750-Pos
 Peachell, P. T., 1616-Pos
 Pearce, L., 1700-Pos
 Pearl, S., 1173-Symp
 Pearlman, A. H., 1252-Plat
 Pearlstein, R., 3993-Pos
 Pearson, C. E., 1443-Pos
 Pearson, J. E., 2773-Pos
 Pechousek, J., 3158-Pos
 Pecht, I., 999-Pos
 Peckham, M., 3163-Symp
 Pedaci, F., 1986-Pos, 2273-Plat
 Pedersen, J. N., 1993-Pos
 Pedersen, J. S., 217-Plat
 Pedersen, M. G., 1898-Pos
 Pedersen, P. A., 519-Pos, 702-Pos
 Pedersen, P. J., 2794-Pos
 Pedersen, S. F., 2155-Plat
 Pedersen, S. L., 3617-Pos
 Pedigo, S., 3445-Pos
 Pedraz, E., 2155-Plat
 Pedroni, A., 1308-Pos
 Peercy, B. E., 608-Pos
 Peimelt, C., 1612-Pos
 Peixoto, P. M., 2994-Pos
 Pellegrina, D. V., 2584-Pos
 Pellegrini, M., 544-Pos
 Pellegrino, R. A., 3307-Pos
 Pellegrotti, J. V., 1307-Pos
 Pelling, A. E., 1822-Pos
 Pelzl, C., 866-Pos
 Pena, J., 3013-Pos
 Peñalva, D., 3604-Pos
 Pendse, P., 1843-Pos
 Peng, B., 3021-Pos
 Peng, C., 2226-Plat
 Peng, D., 2170-Plat
 Peng, H., 3346-Pos, 3431-Pos
 Peng, L., 3062-Pos, 4019-Pos
 Peng, P., 228-Plat
 Peng, X., 2182-Plat
 Peng, Z., 2896-Pos
 Pengo, T., 2924-Pos
 Pennacchietti, F., 3161-Pos
 Pennington, M. W., 3738-Pos
 Peplowski, L., 3345-Pos
 Pepoyan, A. Z., 3996-Pos
 Pequera, G., 2700-Pos
 Perault, A. I., 1032-Pos
 Percival, J. M., 3691-Pos
 Pereira, F., 4013-Pos
 Pereira, G., 1895-Pos
 Pereira, L., 596-Pos
 Pereira, M. M., 1869-Pos
 Perera, S. M., 2194-Symp, 3206-Plat
 Peres, C., 1031-Pos, 3054-Pos
 Peretz, A., 3801-Pos
 Peretz, A. S., 720-Pos
 Perevozchikova, T., 3446-Pos
 Perez, A., 2213-Plat, 3312-Pos
 Perez, C., 1834-Pos, 1835-Pos, 2466-Pos
 Perez, K. R., 453-Pos, 2230-Plat
 Perez, M. E., 725-Pos
 Perez, M. I., 2932-Pos
 Perez, P. J., 380-Pos
 Perez, R., 4036-Pos
 Perez-Gil, J., 438-Pos, 2600-Pos, 2612-Pos
 Perez-Jimenez, R., 3434-Pos
 Perez-Meza, V. D., 3620-Pos
 Perez-Salas, U., 507-Pos
 Pérez-Verdaguer, M., 3737-Pos
 Periasamy, A., 3052-Pos
 Periasamy, M., 2954-Pos
 Perica, T., 2356-Pos
 Perillo, E., 1887-Pos
 Perillo, V. L., 3604-Pos
 Periolo, X., 153-Plat, 917-Pos, 1556-Pos, 4046-Pos
 Perkins, N. C., 2468-Pos
 Perkins, T. T., 1132-Plat, 1981-Pos, 1998-Pos
 Perni, S., 643-Pos
 Pernus, A., 2002-Pos
 Perozo, E., 97-Plat, 1221-Symp, 1263-Plat, 2211-Plat, 2265-Plat, 2734-Pos, 3767-Pos
 Perrin, Jr., B., 1498-Pos
 Perrot, A., 3258-Plat
 Perry, J., 1330-Pos
 Perry, N. A., 3922-Pos
 Persat, A., 2926-Pos
 Persing, T., 2470-Pos
 Persson, F., 1148-Plat, 1402-Pos, 2168-Plat, 3508-Pos
 Persson, H., 4098-Pos
 Persson, M., 801-Pos
 Peticaroli, S., 1325-Pos
 Pertsov, A. M., 632-Pos
 Pesl, M., 2854-Pos
 Pesquero, J. B., 1554-Pos
 Pessah, I., 644-Pos, 647-Pos
 Pessah, I. N., 577-Pos
 Pessino, V., 2026-Pos
 Pestova, T. V., 2487-Pos
 Petazzi, R. A., 3147-Pos
 Peter, C., 334-Pos, 3986-Pos
 Peter, M., 2788-Pos
 Peter, T. D., 520-Pos
 Peterlik, H., 2591-Pos, 3125-Pos
 Peterman, E., 1163-Plat
 Peterman, E. J., 1024-Pos, 1418-Pos, 1782-Pos, 1955-Pos, 3049-Pos
 Peters, C., 2718-Pos
 Peters, C. H., 1659-Pos
 Peters, G. H., 2285-Plat, 3571-Pos, 4042-Pos
 Peters, J., 2218-Plat
 Peters, J. P., 367-Pos, 1398-Pos, 1406-Pos
 Petersen, K., 3925-Pos
 Petersen, K. J., 1037-Pos, 3164-Symp
 Peterson, A. W., 141-Plat
 Peterson, B., 2798-Pos
 Peterson, E. S., 2372-Pos
 Peterson, J. R., 1916-Pos
 Peterson, K. C., 1037-Pos, 2163-Plat, 3672-Pos
 Petho, Z., 2788-Pos
 Petnic, S., 1885-Pos
 Petr, C., 3511-Pos
 Petrasche, H., 2566-Pos
 Petrasche, H. I., 323-Pos, 435-Pos, 1465-Pos, 1475-Pos, 1476-Pos, 1518-Pos, 1537-Pos, 2528-Pos, 2597-Pos, 2657-Pos, 2824-Pos
 Petran, A., 510-Pos
 Petrelli, A., 4001-Pos
 Petridis, L., 3210-Plat
 Petrillo, N., 3426-Pos
 Petronilli, V., 18-Subg
 Petrosyan, M., 2963-Pos
 Petrov, A., 1212-Plat
 Petrov, E. P., 1484-Pos, 3554-Pos, 3555-Pos
 Petrova, Y., 3286-Pos
 Petrusca, D. N., 2657-Pos
 Petruzielo, R. S., 1473-Pos
 Petsalakis, E., 194-Symp
 Petsko, G. A., 193-Symp
 Pettitt, B. M., 2444-Pos
 Petzold, L., 1253-Plat
 Peulen, T., 1298-Pos, 3356-Pos
 Pevarnik, M., 1088-Pos
 Pfaendtner, J., 210-Plat, 3075-Pos
 Pfeifer, C. R., 3037-Pos
 Pfeiffer, E., 3185-Plat
 Pefl, M., 602-Pos
 Pffiff, D., 991-Pos
 Pfreundschuh, M., 1122-Plat
 Pfuhl, M., 182-Plat
 Pham, B., 4055-Pos
 Pham, K., 2675-Pos
 Pham, L. M., 966-Pos
 Pham, P., 3506-Pos
 Pham, T., 313-Pos, 1136-Plat, 2818-Pos
 Phan, G., 2818-Pos
 Phang, C., 3477-Pos
 Phelps, C., 2225-Plat
 Phelps, C. E., 360-Pos
 Philip, F., 2296-Wkshp
 Philip, I., 944-Pos
 Philipson, K. D., 3192-Plat
 Philipson, L. H., 3636-Pos
 Phillips, A. H., 1285-Pos
 Phillips, D., 1232-Plat
 Phillips, J., 150-Plat, 2077-Pos
 Phillips, J. L., 3085-Pos, 3990-Pos
 Phillips, R., 127-Plat, 1396-Pos, 1880-Pos, 1884-Pos, 2462-Pos, 2471-Pos, 2473-Pos, 2804-Pos, 3504-Pos

Phipps, M. E., 979-Pos, 1093-Pos
 Phua, S., 1229-Plat
 Piacentini, N., 3957-Pos
 Piao, H., 1925-Pos
 Piasecka, A., 2452-Pos
 Piazzesi, G., 1115-Symp, 2293-Plat
 Picard, L., 2882-Pos
 Picard-Lafond, A., 2613-Pos
 Pickering, D. S., 769-Pos
 Pickett, F. B., 2853-Pos
 Picot, D., 2969-Pos
 Pieffet, G., 4042-Pos
 Pieffet, G. P., 3571-Pos
 Piehler, J., 960-Pos
 Piel, M., 3224-Symp
 Pielak, G. J., 3724-Pos
 Pielak, R., 116-Plat
 Pielak, R. M., 2629-Pos, 2635-Pos
 Pienaar, E., 3256-Plat
 Pierce, N. A., 3118-Pos
 Pierce, S., 2626-Pos
 Pieribone, V. A., 3183-Plat
 Pierno, S., 2785-Pos
 Pierse, C. A., 2279-Plat
 Pierson, J., 3039-Pos
 Pieske, B., 602-Pos, 603-Pos, 604-Pos
 Pieske, B. M., 601-Pos
 Pieters, M., 1969-Pos
 Pietrak, B., 3267-Plat
 Pietrangelo, L., 640-Pos
 Pietschmann, J. F., 1087-Pos
 Piggot, T. J., 513-Pos
 Piguet, J., 536-Pos
 Pike, D., 311-Pos, 949-Pos
 Pike, H. M., 1530-Pos, 1543-Pos
 Piliarik, M., 115-Plat
 Pimenta, A., 3534-Pos
 Pin, J., 534-Pos
 Piña-Crespo, J. C., 772-Pos
 Pinaud, F., 2013-Pos, 3200-Plat
 Pinaud, F. F., 1017-Pos
 Pincet, F., 2564-Pos
 Pinch, B., 2416-Pos
 Pindrus, M., 1080-Pos
 Pineda-Sanabria, S. E., 2361-Pos
 Pinggera, A., 689-Pos
 Pinguan-Murphy, B., 2282-Plat
 Pinkett, H. W., 1151-Plat, 3985-Pos
 Pinto Ricardo, C., 631-Pos
 Pinto, A., 808-Pos
 Pinto, J. R., 1743-Pos, 3659-Pos, 3663-Pos, 3910-Pos
 Pinto, S. J., 3811-Pos
 Pionek, K., 327-Pos
 Pioner, J., 1744-Pos, 1753-Pos, 3257-Plat
 Pioner, M. J., 1757-Pos
 Pippel, A., 780-Pos
 Pippig, D., 1118-Symp
 Piraino, M. S., 268-Pos
 Piroddi, N., 1744-Pos
 Piron, J., 714-Pos
 Pisabarro, M., 3620-Pos
 Piston, D., 3641-Pos
 Piston, D. W., 3640-Pos, 3997-Pos
 Piszczek, G., 2112-Pos, 3450-Pos
 Pitman, M., 3634-Pos
 Pitman, M. C., 297-Pos
 Pitt, S. J., 3247-Plat
 Pivkin, I. V., 2896-Pos
 Pizzuto, M., 1567-Pos
 Plackic, J., 3689-Pos
 Placone, J., 2424-Pos
 Plakos, K., 2502-Pos
 Planade, J., 832-Pos
 Plank, J. L., 375-Pos
 Plant, A. L., 141-Plat
 Plante, A., 2757-Pos
 Platisa, J., 3183-Plat
 Plaxco, K. W., 3106-Pos
 Plesa, C., 1994-Pos
 Pless, S. A., 728-Pos, 2741-Pos
 Plested, A., 769-Pos
 Plested, A. J., 163-Plat, 164-Plat, 764-Pos
 Plitzko, J. M., 3030-Pos
 Plochberger, B., 1980-Pos
 Plochowitz, A., 1130-Plat, 2318-Pos
 Plotegher, N., 308-Pos
 Plotkin, S. S., 1302-Pos
 Pluhackova, K., 3238-Plat
 Pluot, A., 4083-Pos
 Pluteanu, C. F., 3689-Pos
 Pluteanu, F., 604-Pos
 Pluznick, J., 3076-Pos
 Poblete, S., 1283-Pos
 Podgornik, R., 1410-Pos
 Poe, D. P., 3145-Pos
 Poggese, C., 1744-Pos, 1753-Pos, 1757-Pos, 2260-Plat, 2836-Pos, 3257-Plat, 3924-Pos
 Poggio, M., 4010-Pos
 Pogliano, K., 1145-Plat
 Pogoryelov, D., 1876-Pos
 Pogozeva, I., 1351-Pos
 Pohl, D., 3921-Pos
 Pohl, E. E., 159-Plat, 1128-Plat, 2991-Pos, 2992-Pos
 Pohl, P., 789-Pos, 3361-Pos
 Poian, A., 1509-Pos
 Poignard, C., 448-Pos
 Poirier, M. G., 399-Pos, 400-Pos
 Poitevin, F., 1736-Pos, 3243-Plat, 3358-Pos
 Pokorna, S., 3205-Plat
 Pokorny, A., 458-Pos
 Poladyan, A., 2963-Pos
 Polak, A., 1488-Pos
 Polakova, E., 2178-Plat
 Polakova, K., 2116-Pos, 3158-Pos
 Polander, B. C., 3478-Pos
 Polina, I., 2667-Pos
 Politi, A., 2871-Pos
 Politi, M. J., 2230-Plat
 Politis, A., 2357-Pos
 Polk, J., 1413-Pos
 Pollack, L., 2220-Plat, 4015-Pos
 Pollard, T. D., 897-Pos
 Polley, A., 2640-Pos
 Polonchuk, L., 3652-Pos
 Polster, A., 695-Pos, 696-Pos
 Polyhach, Y., 2304-Wkshp
 Pomes, R., 2190-Plat
 Pomès, R., 195-Symp, 674-Pos, 2446-Pos, 2821-Pos
 Pomorski, T., 1158-Plat
 Pomp, W., 1523-Pos, 1824-Pos
 Ponce Dawson, S., 2692-Pos
 Ponder, J., 2035-Pos
 Pontani, L., 2133-Pos
 Poolman, B., 4051-Pos
 Poon, G. M., 2515-Pos, 3104-Pos
 Poor, T. A., 3930-Pos
 Popa, I., 1976-Pos
 Popa, M., 736-Pos
 Popescu Hategan, A., 3459-Pos
 Popoff, M. R., 3202-Plat
 Popov, A. N., 1543-Pos
 Popov, P., 2097-Pos
 Popova, O. B., 574-Pos, 575-Pos, 3035-Pos
 Popp, A., 287-Pos
 Porcar, L., 507-Pos
 Porter, G. A., 938-Pos
 Porter, Jr., G. A., 19-Subg
 Porter, M., 3018-Pos
 Portet, T., 498-Pos
 Portman, J. J., 2438-Pos
 Pos, K., 1854-Pos
 Posch, S., 2275-Plat
 Poser, I., 3967-Pos
 Possani, L. D., 562-Pos
 Posson, D., 783-Pos
 Posson, D. J., 3245-Plat
 Post, M. R., 1726-Pos
 Postila, P., 2601-Pos
 Postila, P. A., 2964-Pos
 Poteser, M., 1701-Pos, 3817-Pos
 Potet, F., 199-Plat
 Potter, G., 2683-Pos
 Pottosin, I., 2961-Pos
 Potvin-Fournier, K., 2613-Pos
 Poudel, K. R., 2654-Pos
 Poulin, H., 1653-Pos
 Poulos, J., 3828-Pos
 Poulsen, A., 1332-Pos
 Poulsen, H., 2161-Plat, 2944-Pos
 Poulsen, M. H., 765-Pos
 Poursina, M., 2054-Pos
 Pouya, L., 1733-Pos, 1734-Pos, 1735-Pos
 Poweleit, N. L., 2929-Pos
 Powers, E. M., 1372-Pos
 Powers, K., 816-Pos
 Powers, K. T., 2055-Pos
 Powers, P., 571-Pos
 Powers, P. P., 570-Pos, 1633-Pos
 Pöyry, S., 2601-Pos, 2964-Pos
 Pozzoli, M., 1934-Pos, 3859-Pos
 Prado, A., 1125-Plat
 Praefcke, G. J., 2606-Pos
 Prakash, P., 3353-Pos
 Pralle, A., 439-Pos, 1930-Pos, 2590-Pos
 Pramono, Z. A., 1440-Pos
 Prasad, A., 247-Pos
 Prasad, H., 1847-Pos
 Prassl, R., 316-Pos
 Pratap, P. R., 2943-Pos
 Prater, C., 1033-Pos
 Pratihari, S., 2218-Plat
 Pratt, C., 4089-Pos
 Pratt, L., 2736-Pos
 Pratt, S. J., 3680-Pos
 Pratz, G., 2025-Pos
 Precht, J. T., 2029-Pos
 Predeus, A., 3503-Pos
 Preece, R., 590-Pos
 Preiner, J., 1980-Pos, 3361-Pos
 Preisenberger, J., 3689-Pos
 Preller, M., 790-Pos
 Prentice-Mott, H., 1818-Pos
 Prentiss, M., 3498-Pos
 Presse, S., 987-Pos, 3385-Pos
 Pressé, S., 1249-Plat
 Preus, S., 352-Pos, 1142-Plat
 Prevo, B., 1782-Pos
 Prevost, C., 3498-Pos
 Prévost, C., 1259-Plat
 Prevost, M., 3991-Pos
 Pribyl, J., 2854-Pos
 Price, A. C., 376-Pos, 1107-Pos
 Price, J., 3377-Pos
 Price, K., 1731-Pos
 Price, N., 3255-Plat
 Price, R. J., 821-Pos
 Priest, M. F., 1180-Plat, 3751-Pos, 3998-Pos
 Prieto, A., 2752-Pos, 2753-Pos
 Prieto, J. H., 3009-Pos
 Prigent, S., 3092-Pos
 Prigozhin, M. B., 1317-Pos
 Primeau, J., 2860-Pos
 Primessnig, U., 602-Pos
 Prince, C. Z., 752-Pos
 Prins, M. W., 236-Plat
 Prinz, C. N., 4098-Pos
 Prinzen, P., 3702-Pos
 Priori, S., 572-Pos
 Pritchard, H. A., 734-Pos
 Probst, V., 3851-Pos
 Prochaska, L. J., 1872-Pos
 Prochniewicz, E., 2843-Pos
 Prock, S., 470-Pos
 Proctor, E. A., 186-Symp
 Prodan, C., 2093-Pos
 Prodanovic, M., 3879-Pos
 Proenza, C., 3832-Pos
 Proietti Zaccaria, R., 117-Plat
 Proietti, R., 3141-Pos
 Prokofyev, A., 3195-Plat
 Prosser, B. L., 1638-Pos, 3681-Pos, 3686-Pos, 3705-Pos
 Prost, J., 231-Plat
 Protasi, F., 640-Pos, 663-Pos, 3700-Pos
 Provasi, D., 1569-Pos
 Prudat, Y., 626-Pos
 Pruiitt, B. L., 1065-Pos, 1815-Pos
 Pryde, D., 198-Plat
 Psaltis, D., 2124-Pos
 Pszczolinski, R., 4004-Pos, 4005-Pos
 Ptacin, J. L., 324-Pos, 1023-Pos
 Puckerin, A. A., 1668-Pos
 Puglisi, J., 1435-Pos, 2857-Pos
 Puglisi, J. D., 1212-Plat
 Puglisi, J. L., 2699-Pos
 Puhl III, H. L., 3442-Pos, 3443-Pos
 Puljung, M. C., 3727-Pos
 Punter, C. M., 1390-Pos
 Purdy, M., 4040-Pos
 Purohit, P., 1714-Pos, 1715-Pos
 Pürstinger, G., 1128-Plat, 2991-Pos
 Purttel, K., 1649-Pos
 Purushotham, J., 939-Pos
 Pusch, M., 743-Pos, 747-Pos, 748-Pos
 Pushkar, Y., 155-Plat
 Puskar, L., 1040-Pos

Puthenveetil, R., 2408-Pos
Putkey, J. A., 2668-Pos,
3214-Plat
Putta, P., 3629-Pos
Putzel, G., 1905-Pos
Pykönen, M., 3153-Pos

Q

Qi, J., 3858-Pos
Qi, R., 1251-Plat
Qi, Y., 2053-Pos, 4085-Pos
Qian, S., , 1499-Pos,
1535-Pos, 3206-Plat
Qin, H., 266-Pos
Qin, M., 3436-Pos
Qin, P., 1211-Plat, 2482-Pos,
3518-Pos
Qin, Q., 2805-Pos
Qiu, F., 3763-Pos
Qu, H., 3913-Pos
Qu, J., 1933-Pos
Qu, Z., 1622-Pos, 2687-Pos,
3188-Plat
Quanz, M., 2522-Pos
Quarantini, S., 2351-Pos
Quarta, S., 650-Pos
Québatte, G., 2619-Pos
Queralt-Martin, M., 2103-Pos
Queralt-Martín, M.,
1059-Pos
Querol-Audi, J., 1161-Plat
Quesada-González, O.,
1721-Pos
Quessada-Vial, A., 3507-Pos
Qui, F., 3764-Pos
Quick, M., 1856-Pos
Quijano, J., 1635-Pos
Quinlan, M. E., 831-Pos
Quinn-Allen, M., 2623-Pos
Quinones, M., 1505-Pos
Quiñonez, M., 664-Pos,
3701-Pos
Quint, D., 2930-Pos,
3973-Pos
Quint, D. A., 3718-Pos
Quintana, A., 1602-Pos
Quiroz-Manriquez, E. A.,
1585-Pos

R

R, F. A., 81-Symp
R, S., 1765-Pos
Raap, J., 2565-Pos
Rabanal, F., 1491-Pos
Rabbi, M., 1411-Pos
Rabe, J. P., 510-Pos
Racca, A. W., 2840-Pos,
3891-Pos
Racine-Berthiaume, C.,
2234-Plat
Radcliffe, A., 4055-Pos
Radenovic, A., 1985-Pos,
3198-Plat

Radford, S. E., 1946-Pos
Radhakrishnan, R., 1581-Pos,
4082-Pos
Radke, M. B., 909-Pos
Radou, G., 2312-Pos
Radovits, T., 1741-Pos
Radulovic, S., 601-Pos,
603-Pos
Radwanski, P., 2181-Plat
Rafalska-Metcalf, I. U.,
1303-Pos
Raffaele, C., 1744-Pos
Raffaello, A., 3844-Pos
Rafieian, F., 3953-Pos
Rafizadeh, S., 614-Pos,
615-Pos
Raftery, D., 1745-Pos
Raghavan, S., 875-Pos,
879-Pos, 4082-Pos
Raghunathan, K., 227-Plat,
1405-Pos
Raguz, M., 3556-Pos,
3557-Pos
Rahamim, G., 3406-Pos
Rahimi, M., 443-Pos
Rahmani, R., 533-Pos
Rahmanseresht, S., 1129-Plat,
1451-Pos, 1456-Pos
Rahn, T., 780-Pos
Rahn-Lee, L., 966-Pos
Rai, D., 1535-Pos
Rai, P., 1048-Pos
Raines, L., 557-Pos
Rainier, J. D., 3742-Pos
Raiteri, R., 3681-Pos,
4026-Pos
Rajagopalan, V., 3608-Pos
Rajamani, S., 1656-Pos,
1664-Pos, 1665-Pos
Rajan, S., 1752-Pos,
2190-Plat, 2821-Pos
Rajappa, R., 3180-Plat
Rajguru, S., 2677-Pos
Rakshit, S., 1960-Pos,
2276-Plat
Ralston, C., 2309-Pos,
2310-Pos
Ramakrishna, B. L., 508-Pos
Ramakrishnan, N., 1581-Pos
Ramakrishnan, S., 508-Pos
Ramamoorthy, A., 1351-Pos
Raman, S., 1978-Pos
Ramaswamy, S., 3338-Pos
Ramaswamy, S. S., 774-Pos
Ramazanov, R. R., 4066-Pos
Rames, M. J., 255-Pos,
1274-Pos, 3021-Pos
Ramesh Iyer, V., 642-Pos
Ramesh, P., 3504-Pos,
3618-Pos
Ramesh, R., 2029-Pos
Ramezani, M., 416-Pos
Ramirez, B., 3883-Pos
Ramirez, E., 3302-Pos

Ramirez, F., 3259-Plat
Ramirez, P., 2103-Pos
Ramirez, S. A., 1558-Pos
Rammohan, A., 875-Pos,
1042-Pos, 3311-Pos
Rammohan, A. R., 879-Pos,
2070-Pos, 4082-Pos
Rammohan, J., 2460-Pos
Rammurayan, V., 3354-Pos
Ramos Mondragón, R.,
1633-Pos
Ramos, J., 3374-Pos
Ramos, R., 3534-Pos
Ramsey, I., 3768-Pos
Rananavare, S. B., 1508-Pos
Rance, M., 3080-Pos
Randall, L. L., 2314-Pos
Randich, A. M., 2211-Plat
Randolph, A. L., 3768-Pos
Randolph, P. S., 1143-Plat
Rangamani, P., 1120-Plat,
2577-Pos, 3621-Pos
Ranganathan, R., 1469-Pos
Rangarajan, N., 2233-Plat
Rangel, G., 3825-Pos
Rangel-Sandoval, C.,
1555-Pos
Rangel-Yescas, G. E.,
3761-Pos
Ranjit, S., 1021-Pos, 1160-Plat
Rankenberg, J. M., 3629-Pos
Rankl, C., 1980-Pos
Rannikko, A., 516-Pos,
1539-Pos
Rannikko, A. M., 3630-Pos
Ranpura, H., 353-Pos
Rant, U., 111-Plat, 389-Pos,
1077-Pos
Rao, A., 1602-Pos
Rao, B. J., 421-Pos
Rao, M., 859-Pos, 2640-Pos
Rao, P., , 3039-Pos
Rao, R., , 1847-Pos
Rao, S., 3259-Plat
Rao, T., 1586-Pos
Rao, V., 3340-Pos, 3676-Pos
Rao, V. B., 337-Pos
Rape, A., 882-Pos
Rapedius, M., 786-Pos,
3773-Pos
Raphael, M., 3066-Pos
Raphael, R., 2888-Pos,
4013-Pos
Rapp, G., 117-Plat,
3141-Pos
Rappel, W., 876-Pos
Rappolt, M., 2536-Pos,
2585-Pos, 2595-Pos
Rappsilber, J., 846-Pos,
3221-Symp
Rasmussen, H., 2162-Plat
Rasmussen, K. H., 1993-Pos
Rasmusson, R. L., 3190-Plat,
3744-Pos

Rassam, P., 2281-Plat
Rassier, D., 807-Pos
Rassier, D. E., 3864-Pos
Rastian, B., 2367-Pos
Rath, P., 3822-Pos
Rathnayake, S. S., 1545-Pos
Ratner, D., 1936-Pos,
1944-Pos
Rau, T., 602-Pos
Raugei, S., 3216-Plat
Raunser, S., 851-Pos
Rausch, M., 2256-Plat
Rauscher, A. Á., 2326-Pos
Rauscher, S., 1381-Pos,
2446-Pos
Raut, S., 363-Pos, 2023-Pos
Ravagli, E., 3656-Pos
Raval, M., 911-Pos
Ravera, S., 1156-Plat
Rawashdeh, S., 4024-Pos
Rawle, R. J., 3558-Pos
Ray, B. D., 435-Pos,
2597-Pos
Ray, D., 227-Plat
Ray, S., 2384-Pos
Rayan, G., 451-Pos
Raychaudhuri, A., 247-Pos
Raychaudhuri, S., 247-Pos
Razumova, M., 3676-Pos
Read, E., 1171-Symp
Read, R. J., 190-Symp
Reagan, C., 2084-Pos,
2085-Pos
Rebane, A., 1324-Pos,
3065-Pos, 4092-Pos
Rebehmed, J., 298-Pos
Rebolledo, S., 725-Pos
Récamier, K. S., 2808-Pos
Rechberger, G., 468-Pos
Reck-Peterson, S., 997-Pos
Reck-Peterson, S. L., 1780-
Pos, 1781-Pos, 2243-Plat
Reconditi, M., 1115-Symp,
2293-Plat
Record Jr., M., 2371-Pos
Record, Jr., M., 2470-Pos
Record, T., 2465-Pos
Reda, MD, S., 2996-Pos
Reda, S., 2995-Pos
Reddi, R., 3427-Pos
Redding, S., 2174-Plat,
3524-Pos
Reddy, K., 1443-Pos
Redka, D. S., 3547-Pos
Redler, R. L., 186-Symp
Redrobe, J., 1723-Pos
Reece, S. E., 885-Pos
Reed, J. C., 106-Plat
Reed, P. A., 3794-Pos
Reenan, R. A., 78-Symp
Rees, D. C., 2193-Symp
Reese, C. W., 488-Pos
Refaeli, B., 3801-Pos
Regan, J. A., 1750-Pos

Regan, L., 289-Pos, 404-Pos,
1973-Pos, 3309-Pos
Regan, L. J., 1971-Pos
Reger, A., 3330-Pos
Reggio, P., 3634-Pos
Reggio, P. H., 558-Pos,
1563-Pos
Regmi, C. K., 3280-Pos
Regner, B., 4077-Pos
Regnier, G., 2738-Pos
Regnier, M., 1116-Symp,
1280-Pos, 1745-Pos,
2840-Pos, 3340-Pos,
3676-Pos, 3891-Pos
Reichelt, M., 2647-Pos
Reichenwallner, J., 2389-Pos
Reichert, J., 470-Pos,
1491-Pos
Reichhardt, C., 972-Pos
Reichner, J. S., 2894-Pos
Reihani, N. S., 3618-Pos
Reiken, S., , 583-Pos
Reiling, C., 3514-Pos
Reilly, J., 3993-Pos
Reilly, L., 2935-Pos
Reina, S., 3992-Pos
Reiner, A., 165-Plat
Reiser, P. J., 1751-Pos
Reisler, E., 831-Pos,
834-Pos, 2883-Pos
Reisser, M., 2274-Plat
Reisser, S., 2235-Plat
Reiter, N., 2170-Plat
Relich, P. K., 4081-Pos
Remorino, A., 1237-Plat
Rempe, S., , 2736-Pos
Rempe, S. B., 2735-Pos
Ren, D., 3847-Pos
Ren, G., 255-Pos, 1274-Pos,
3021-Pos
Ren, K., 1243-Plat
Ren, P., 2035-Pos
Ren, Y., 1804-Pos, 2898-Pos
Renault, M., 974-Pos
René Phngam, N.,
3445-Pos
Renken, C. W., 3646-Pos
Renner, A., 1298-Pos
Renner, M., 4080-Pos
Renström, E., 1680-Pos
Renz, S., 604-Pos
Reppert, M., 2226-Plat
Requejo-Isidro, J., 2646-Pos,
3582-Pos
Reshetnyak, Y. K., 471-Pos,
1167-Symp
Restle, T., 148-Plat
Retamal, M. A., 3797-Pos,
3849-Pos
Rettenmaier, J., 3212-Plat
Reusch, R. N., 3413-Pos
Reuss, L., 3849-Pos
Reuten, R., 2419-Pos
Reuter, M., , 1275-Pos

- Reuter, N., 2336-Pos, 2356-Pos
 Reuveni, S., 3432-Pos
 Revill, D. J., 804-Pos
 Rexach, M., 2448-Pos
 Reyes-Lamothe, R., 1388-Pos
 Reynolds, B. A., 1795-Pos
 Reynolds, C. R., 1669-Pos
 Reynolds, R., 1584-Pos
 Rezaei Adariani, S., 1321-Pos
 Rezaei, H., 3092-Pos
 Rezaei, N., 1970-Pos
 Rezaei-Tavirani, M., 3382-Pos
 Rezania, S., 2749-Pos, 2782-Pos
 Rhee, S., 3424-Pos
 Rhee, Y. M., 2083-Pos, 4068-Pos, 4069-Pos
 Rheingold, A. L., 220-Plat
 Rhoades, E., 1156-Plat, 1359-Pos, 1374-Pos, 1376-Pos, 2157-Plat
 Rhodes, C. R., 1126-Plat
 Riahi, S., 224-Plat, 2043-Pos
 Riaz, M., 2884-Pos
 Riaz, S., 1624-Pos
 Riback, J., 1931-Pos
 Ribalet, B., 1841-Pos
 Ribeiro, A. A., 3215-Plat
 Ribeiro, A. J., 1065-Pos
 Ricci, F., 3106-Pos
 Rice, A., 1539-Pos, 3630-Pos
 Rice, A. J., 3985-Pos
 Rice, A. M., 516-Pos
 Rice, B. J., 3119-Pos
 Rice, C., 387-Pos
 Rice, C. M., 1999-Pos
 Rice, D., 972-Pos
 Rice, S., 156-Plat
 Rice, S. E., 1334-Pos, 3930-Pos
 Rice, W., 150-Plat, 2452-Pos
 Rich, R., 2023-Pos, 2848-Pos
 Richard, J., 3934-Pos
 Richards, D., 2658-Pos
 Richards, N. G., 4073-Pos
 Richards, R., 1920-Pos
 Richardson, C. C., 1390-Pos
 Richardson, J. S., 188-Symp
 Richert, A., 893-Pos, 1798-Pos
 Richert, M., 3515-Pos
 Richichi, B., 3810-Pos
 Richly, M. U., 3202-Plat
 Rico, C. A., 554-Pos
 Rico, F., 4023-Pos
 Ridilla, M. R., 1207-Plat
 Ridone, P., 2267-Plat
 Rieck, D. C., 3660-Pos, 3885-Pos
 Ried, C. L., 2549-Pos
 Riedel, C., 3385-Pos
 Riedel-Kruse, I., 1814-Pos
 Rieder, A., 2595-Pos
 Riederer, E., 2756-Pos, 2768-Pos
 Riedl, S., 464-Pos, 468-Pos
 Rief, M., 2274-Plat
 Riehlman, T. D., 848-Pos
 Riela, S., 1719-Pos
 Rienzo, M., 2759-Pos
 Ries, J., 1006-Pos
 Riese, M., 1044-Pos
 Rigneault, H., 1027-Pos
 Rimawi, A., 1957-Pos
 Rinaldi, A. C., 480-Pos
 Rinne, A., 555-Pos
 Rinner, B., 464-Pos, 468-Pos
 Riordan, J., 2184-Plat
 Ríos, E., 1624-Pos, 2700-Pos
 Rippe, K., 407-Pos
 Risbud, S. H., 2129-Pos
 Rishal, I., 2187-Plat
 Riske, K. A., 453-Pos, 1481-Pos, 2230-Plat, 2540-Pos, 3376-Pos
 Risse, T., 969-Pos
 Risso, V. A., 3355-Pos
 Ritacco, A. W., 2669-Pos
 Ritort, F., 364-Pos
 Ritt, M., 2360-Pos
 Ritter, E., 3627-Pos
 Rituper, B., 69-Subg, 2664-Pos
 Ritzo, B., 1085-Pos
 Rivard, K., 1661-Pos
 Rivas-Pardo, J., 2292-Plat
 Rivas-Pardo, J. A., 1976-Pos
 Rivera, I., 1507-Pos
 Rives, J., 3826-Pos
 Riz, M., 1898-Pos
 Rizcallah, E., 3635-Pos
 Rizun, O., 1695-Pos
 Rizzetto, R., 1660-Pos
 Rizzuto, R., 3844-Pos
 Roark, M., 100-Plat
 Roark, T. C., 2528-Pos
 Robbins, J., 806-Pos
 Robert, É., 456-Pos
 Roberts, A. J., 1780-Pos, 1781-Pos, 2243-Plat
 Roberts, E., 1888-Pos
 Roberts, K. E., 2217-Plat
 Roberts, M. F., 1258-Plat, 3628-Pos
 Roberts, W. J., 929-Pos
 Robertson, C., 1227-Plat
 Robertson, G. A., 713-Pos
 Robertson, I. M., 2361-Pos, 3664-Pos
 Robertson, J. C., 3341-Pos
 Robertson, J. L., 2264-Plat
 Robertson, J. W., 1074-Pos
 Robia, S. L., 1291-Pos, 2163-Plat, 2861-Pos, 2862-Pos, 2946-Pos, 2956-Pos
 Robida, M. D., 3485-Pos
 Robinson, A. S., 1253-Plat, 2624-Pos
 Robinson, C., , 3187-Plat
 Robinson, C. V., 2357-Pos
 Robinson, D., 1908-Pos, 2898-Pos
 Robinson, D. N., 854-Pos, 1804-Pos
 Robinson, J. M., 986-Pos, 1761-Pos, 1767-Pos, 2875-Pos, 3260-Plat, 3673-Pos
 Robinson, P., , 3018-Pos
 Robinson, R., 3436-Pos
 Robinson, V. L., 2489-Pos
 Rocchetti, M., 621-Pos, 1660-Pos, 1686-Pos
 Rocha, S., 330-Pos
 Roche, J., 3591-Pos
 Rochet, J., 1540-Pos
 Rochira, J. A., 619-Pos
 Rocke, S., 2546-Pos
 Rocklin, G. J., 1265-Plat
 Rode, S., 3403-Pos
 Roder, K., 619-Pos
 Roderick, H. L., 2693-Pos
 Rodgers, M., 988-Pos, 2510-Pos
 Rodgers, N. C., 1962-Pos
 Rodney, G. G., 3395-Pos, 3684-Pos
 Rodnin, D., 1321-Pos, 3356-Pos
 Rodnin, M. V., 2569-Pos, 3632-Pos, 3633-Pos
 Rodnina, M. V., 1217-Plat, 1266-Plat, 2495-Pos
 Rodrigues, C., 2652-Pos
 Rodrigues, C. G., 381-Pos
 Rodrigues, J., 3176-Plat
 Rodrigues, M. A., 2230-Plat
 Rodriguez, A., 1844-Pos
 Rodriguez, H. M., 2842-Pos, 3692-Pos
 Rodriguez, M. L., 2855-Pos
 Rodriguez-Aliaga, P., 1249-Plat
 Rodríguez-Moyano, M., 1617-Pos
 Roe, J. L., 3687-Pos
 Roemer, R., 1246-Plat, 3331-Pos
 Roess, D. A., 999-Pos
 Rog, T., 2601-Pos, 3569-Pos, 3577-Pos
 Róg, T., 2964-Pos
 Rogers, D. M., 3588-Pos
 Rogers, M., 1223-Plat
 Roh, S., 2219-Plat
 Rohacs, T., 1692-Pos, 3796-Pos, 3826-Pos
 Rohrbeck, D., 1321-Pos
 Rohrbough, J., 745-Pos
 Röhr, C., 1980-Pos
 Rohs, R., 3518-Pos
 Roichman, Y., 2868-Pos
 Roig, S. R., 3737-Pos
 Rojas, A. I., 183-Plat, 1739-Pos, 3893-Pos
 Rojas, E. R., 2925-Pos
 Rokach, O., 2256-Plat
 Roldan, N., 2600-Pos, 2612-Pos
 Rolfe, D., 535-Pos
 Rollings, R. C., 1080-Pos
 Roma, P. S., 1012-Pos
 Roman, H. N., 2872-Pos
 Roman, O., 1400-Pos
 Romanain, C., 3817-Pos
 Romanin, C., 1600-Pos, 1608-Pos, 1609-Pos, 1615-Pos
 Romberg, C. F., 649-Pos, 699-Pos
 Romero, J. G., 2936-Pos
 Romero-Avila, M., 3825-Pos
 Romero-Estrada, J., 3825-Pos
 Romo, T. D., 297-Pos, 1562-Pos, 4084-Pos
 Ronayne, E. A., 1166-Plat
 Ronchi, C., 1660-Pos, 1686-Pos
 Rondard, P., 534-Pos
 Rong, H., 3791-Pos
 Rong, N., 1933-Pos
 Ronjat, M., 577-Pos
 Roof, S. R., 1742-Pos
 Roongthumskul, Y., 3014-Pos
 Roopnarine, O., 819-Pos, 821-Pos
 Roos, W. H., 1949-Pos
 Root, D. D., 811-Pos
 Root, K., 3240-Plat
 Ropa, J. P., 487-Pos
 Roque, R., 1400-Pos
 Ros, R., 887-Pos, 890-Pos
 Rosado, E., 1156-Plat
 Rosado, J., 1617-Pos
 Rosas-Lemus, M., 2831-Pos
 Rose, A. S., 206-Plat
 Rose, J., 1725-Pos, 3892-Pos
 Rosemond, S. N., 2370-Pos
 Rosen, E. D., 323-Pos
 Rosen, L. E., 1247-Plat
 Rosen, M. K., 197-Symp, 2432-Pos
 Rosenbaum, T., 1688-Pos
 Rosenberg, A., 3192-Plat
 Rosenberg, A. Z., 3711-Pos
 Rosenberg, J., 1843-Pos
 Rosenberg, O. S., 2397-Pos
 Rosenberg, P., 665-Pos
 Rosenbloom, A., 4016-Pos
 Rosenbloom, A. B., 143-Plat
 Rosenfeld, S., 65-Subg, 1234-Plat, 3925-Pos
 Rosenhouse-Dantsker, A., 3779-Pos, 3780-Pos
 Rosenman, D. J., 1369-Pos
 Rosenmund, C., 1932-Pos
 Rosenstein, J. K., 2087-Pos, 4099-Pos
 Rosenthal, P., 254-Pos
 Rosevear, P., 3340-Pos
 Rosholm, K., 2681-Pos
 Rosin, C., 828-Pos, 1941-Pos
 Roskens, V. A., 1998-Pos
 Ross, A., 2610-Pos
 Ross, A. H., 3614-Pos
 Ross, B., 4086-Pos, 4087-Pos
 Ross, B. L., 1541-Pos
 Ross, J., 539-Pos, 1527-Pos
 Ross, J. L., 1548-Pos, 1771-Pos, 3946-Pos, 3950-Pos
 Rossen, N. S., 2151-Plat
 Rossetti, L., 2128-Pos
 Rossi, A. R., 2811-Pos
 rossi, C., 107-Plat
 Rossi, D., 656-Pos
 Rossi, G., 1483-Pos
 Rossi, M., 1933-Pos, 2735-Pos, 3151-Pos, 3308-Pos
 Rossier, O., 1019-Pos
 Rost, B., 1932-Pos
 Rostkova, E., 182-Plat
 Rostovtseva, T., 1185-Plat, 3772-Pos
 Rostovtseva, T. K., 2528-Pos, 2981-Pos, 2983-Pos, 2984-Pos, 2985-Pos
 Rotella, C., 3542-Pos
 Roth, B. J., 3900-Pos
 Roth, S., 1176-Symp
 Roth, T. L., 120-Plat
 Rothberg, B., 1599-Pos
 Rothberg, B. S., 1184-Plat, 2744-Pos
 Rothlisberger, U., 2255-Symp
 Rothman, J. E., 2564-Pos
 Rothschild, K. J., 1924-Pos
 Rothwell, C., 736-Pos
 Rotrekl, V., 2854-Pos
 Rougier, J., 3229-Plat, 3851-Pos
 Rouse, S. L., 3707-Pos
 Rousseau, D., 2446-Pos
 Rousseau, E., 3635-Pos, 3700-Pos
 Rout, M., 150-Plat
 Roux, A., 2606-Pos, 3966-Pos
 Roux, B., 105-Plat, 204-Plat, 239-Wkshp, 1568-Pos, 2077-Pos, 2949-Pos, 3234-Plat, 4085-Pos
 Rouzic, V. L., 556-Pos

- Rouzina, I., 1384-Pos,
1416-Pos, 1421-Pos,
3538-Pos, 3539-Pos
- Roversi, D., 1490-Pos
- Rowe, A. P., 2367-Pos
- Rowe, I., 2833-Pos,
2834-Pos
- Rowland, D. J., 3002-Pos
- Rowland, M. A., 1906-Pos,
3251-Plat
- Rowlands, C., 3651-Pos,
3855-Pos
- Rowlands, C. T., 1643-Pos
- Rowley, C., 263-Pos
- Rowley, C. N., 224-Plat,
2043-Pos
- Roy, A., 1379-Pos, 3481-Pos
- Roy, L. M., 921-Pos
- Roychaudhuri, R., 312-Pos
- Royyuru, A., 1070-Pos
- Rozmanov, D., 3114-Pos,
3596-Pos
- Ruan, Q., 342-Pos,
3059-Pos
- Rubashkin, M. G., 2907-Pos
- Ruben, P. C., 1659-Pos,
1662-Pos
- Rubi, L., 1652-Pos
- Rubio, M., 216-Plat
- Rucker-Martin, C., 3743-Pos
- Ruddy, B. P., 3901-Pos
- Rudner, D., 2652-Pos
- Rudnick, G., 1156-Plat
- Rudorf, S., 1217-Plat
- Rueda, A., 1634-Pos
- Rueda, D., 3506-Pos
- Ruegg, M. A., 636-Pos
- Ruehle, M. D., 3036-Pos
- Ruettinger, S., 1039-Pos
- Ruff, E., 2470-Pos
- Ruff, K. M., 2441-Pos
- Ruhnaw, F., 3954-Pos
- Rui, H., 3240-Plat
- Ruidiaz, M., 3649-Pos
- Ruitenbergh, J. W., 1994-Pos
- Ruiz Manzano, A., 3521-Pos
- Ruiz, A., 657-Pos
- Ruiz, E., 3910-Pos
- Ruiz, E. L., 3663-Pos
- Ruiz-Manzano, A., 2460-Pos
- Ruiz-Suárez, J. C., 3560-Pos
- Rule, G. S., 3527-Pos
- Runas, K. A., 1459-Pos
- Ruoslahti, E., 2126-Pos
- Ruppel, K., 794-Pos,
2841-Pos
- Ruppert, M., 1741-Pos
- Rupprecht, A., 159-Plat,
1128-Plat, 2991-Pos,
2992-Pos
- Ruprecht, V., 1980-Pos
- Rusinova, R., 1519-Pos,
3245-Plat
- Ruslie, C., 1166-Plat
- Russano, D., 1924-Pos
- Russell, B., 2858-Pos,
3923-Pos
- Russell, K. S., 1548-Pos
- Rusu, M., 2294-Plat
- Ruthazer, E. S., 3253-Plat
- Rutkauskaitė, G., 633-Pos
- Ruysschaert, J., 1567-Pos
- Ruzická, J., 2088-Pos
- Ruzmetov, T., 2438-Pos
- Ryan, R. O., 950-Pos
- Ryazanov, S., 325-Pos
- Ryazantseva, M., 2776-Pos
- Rybka, K., 3490-Pos
- Rychkova, A., 2486-Pos
- Rydenfelt, M., 2473-Pos
- Ryham, R., 2556-Pos
- Ryseck, R., 91-Plat
- Ryu, H., 460-Pos
- Ryu, J., 994-Pos, 1423-Pos
- Ryvkin, A. M., 1621-Pos
- S**
- S, G., 2430-Pos
- S. Salnikov, E., 529-Pos
- Sabnis, S., 363-Pos
- Sabo, D., 2736-Pos
- Sabo, T., 2218-Plat
- Sabour, A. F., 3126-Pos
- Sabuncu, A. C., 4097-Pos
- Sacchetti, S., 19-Subg
- Sacconi, L., 2260-Plat
- Sachleben, J. R., 2734-Pos
- Sachs, F., 1572-Pos,
2806-Pos, 2807-Pos,
3963-Pos
- Sachs, J. N., 1276-Pos,
1359-Pos, 3599-Pos,
3624-Pos
- Sachse, F. B., 3815-Pos
- Sack, J. T., 478-Pos,
670-Pos, 3729-Pos
- Sackett, D. L., 1769-Pos
- Sackrow, M., 1039-Pos
- Sadakane, K., 3933-Pos
- Sadayappan, S., 1752-Pos,
3911-Pos
- Sadegh, S., 200-Plat
- Sadeghi, S., 3204-Plat
- Sadian, Y., 851-Pos
- Sadoshima, J., 3920-Pos
- Saffarian, S., 338-Pos,
339-Pos, 340-Pos
- Safinya, C. R., 1787-Pos,
2126-Pos
- Safran, S., 872-Pos,
1097-Pos
- Safranovitch, M. M.,
1419-Pos
- Safrina, O., 1605-Pos
- Saggu, M., 2972-Pos
- Saha, K., 1848-Pos
- Saha, S., 2640-Pos
- Sahay, A., 1879-Pos
- Sahin, O., 2144-Plat,
4021-Pos
- Sahin, T., 2121-Pos
- Sahl, S. J., 120-Plat,
3460-Pos
- Sahoo, S. K., 2954-Pos
- Sahu, I., 2316-Pos
- Sahu, I. D., 270-Pos,
273-Pos, 967-Pos,
1348-Pos
- Sahu, S., 2296-Wkshp
- Saidani, H., , 3991-Pos
- Saif, M., 1038-Pos
- Saika-Voivod, I., 3370-Pos
- Saikusa, K., 2347-Pos
- Saini, S., 3354-Pos
- Sainlos, M., 1019-Pos
- Saint, N., 645-Pos
- Saitakis, M., 893-Pos
- Saito, K., 1784-Pos,
2241-Plat
- Saito, S., 3109-Pos
- Saiz, L., 1901-Pos
- Sakai, J., 3971-Pos
- Sakai, T., 904-Pos, 906-Pos
- Sakakibara, H., 1785-Pos
- Sakakibara, S., 2878-Pos
- Sakamoto, A., 2003-Pos
- Sakamoto, S., 1338-Pos
- Sakamoto, T., 902-Pos,
2867-Pos
- Sakhtah, H., 4099-Pos
- Sakmar, T. P., 554-Pos,
1206-Plat, 1556-Pos,
1559-Pos, 1922-Pos
- Sakowicz, R., 1330-Pos,
2377-Pos
- Sakuraba, S., 2042-Pos
- Sakurai, T., 568-Pos, 578-
Pos
- Sala, L., 621-Pos, 627-Pos,
1660-Pos, 1686-Pos
- Salaita, K., 984-Pos,
2145-Plat, 2301-Wkshp,
3965-Pos
- Salamo, G., 1862-Pos
- Salamon, P., 2037-Pos
- Sala-Rabanal, M., 2792-Pos,
3799-Pos
- Salari, A., 691-Pos
- Salari, R., 1722-Pos,
2152-Plat, 2784-Pos
- Salas, M., 1159-Plat
- Salazar, H. P., 164-Plat
- Salcedo, C., 1463-Pos
- Saldade, J. J., 1588-Pos,
1589-Pos
- Salditt, T., 16-Subg
- Saleh, O. A., 1446-Pos
- Salehi-Najafabadi, Z.,
3812-Pos
- Sales, E., 1942-Pos
- Salesse, C., 2613-Pos
- Salhi, H., 3661-Pos
- Sali, A., 150-Plat, 2357-Pos
- Salinas, R. K., 3487-Pos
- Salkoff, L., 2206-Plat
- Salmanzadeh, A., 4100-Pos
- Salnikov, E. S., 2228-Plat
- Salsbury, F. R., 3407-Pos
- Salsbury, Jr, F., 3275-Pos
- Salsbury, Jr, F. R., 3333-Pos
- Saltzman, W., 1167-Symp
- Salvatella, X., 3477-Pos
- Salvatico, C., 4080-Pos
- Salvi, L., 2291-Plat
- Salvi, S., 1252-Plat
- Salvucci, M. E., 221-Plat
- Salwiczek, M., 3308-Pos
- Salzman, G., 1931-Pos
- Salzman, V., 2353-Pos
- Samaddar, M., 939-Pos
- Samai, S., 3461-Pos
- Samanta, S., 1709-Pos
- Samarel, A. M., 1553-Pos
- Samatey, F. A., 2931-Pos
- Sampathkumar, P., 150-Plat
- Sampson, K., 725-Pos
- Samson, J., 1082-Pos
- Samuel, R., 514-Pos
- Samuel, V. T., 78-Symp
- Samyгина, V. R., 1543-Pos
- Sanabria, H., 1298-Pos,
1321-Pos, 3356-Pos
- Sanati Nezhad, A., 2901-Pos
- Sanbonmatsu, K. Y., 212-Plat
- Sanchez Rico, C., 2352-Pos
- Sanchez, A., 1707-Pos,
1892-Pos
- Sánchez-Chapula, J., 724-Pos
- Sanchez-Freire, V., 2858-Pos
- Sánchez-Freire, V., 3695-Pos
- Sanchez-Gonzalez, M. A.,
3663-Pos, 3910-Pos
- Sanchez-Pastor, E., 1555-Pos
- Sánchez-Rodríguez, J. E.,
2941-Pos
- Sanchez-Ruiz, J. M.,
3355-Pos
- Sand, R., 678-Pos
- Sanders, C., 730-Pos
- Sanders, C. R., 270-Pos,
718-Pos, 1533-Pos
- Sanders, K., 3378-Pos
- Sanderson, J. M., 1512-Pos
- Sandler, O., 1173-Symp
- Sandoghdar, V., 115-Plat,
450-Pos
- Sandrin, D., 991-Pos
- Sandtner, W., 1309-Pos,
1840-Pos, 1848-Pos,
2265-Plat
- Sanford, R., 2608-Pos
- Sang, L., 1241-Plat
- Sang, Y., 2425-Pos
- Sanganna Gari, R., 2314-Pos
- Sanghera, N., 1246-Plat
- Sangji, H., 3053-Pos
- Sanguinetti, M. C., 95-Plat
- Sanii, B., 1109-Pos, 2542-Pos
- Sankaramakrishnan, R.,
1294-Pos
- Sankhagowit, S., 2539-Pos
- Sanna, R., 480-Pos
- Sanon, N., 1667-Pos
- Sansom, M., 318-Pos,
3617-Pos
- Sansom, M. S., 530-Pos,
786-Pos, 1067-Pos, 1486-
Pos, 1514-Pos, 1564-Pos,
1565-Pos, 1566-Pos, 1689-
Pos, 2286-Plat, 2620-Pos,
3207-Plat, 3565-Pos,
3707-Pos, 3821-Pos
- Santa Cruz, A., 2830-Pos
- Santana, L. F., 1679-Pos,
1683-Pos
- Santen, L., 1833-Pos
- Santi, C., 2206-Plat
- Santiago, Á., 286-Pos
- Santiago, D., 1636-Pos
- Santoro, B., 61-Subg,
3833-Pos
- Santos, B. S., 3133-Pos
- Santos, D., 1885-Pos
- Santos, N., 1509-Pos
- Santos, N. C., 1959-Pos,
3590-Pos
- Santos-Sacchi, J., 3016-Pos,
3741-Pos
- Santuz, H., 4062-Pos
- Sanyal, P., 470-Pos
- Sanz-Blasco, S., 772-Pos
- Saphire, E. O., , 3220-Symp
- Sapir, L., 3401-Pos
- Saponaro, A. C., 3833-Pos
- Sarabipour, S., 547-Pos,
3643-Pos
- Saraf, S. N., 1990-Pos
- Sarangapani, K., 846-Pos,
3221-Symp
- Sarangapani, P., 3369-Pos
- Sarberg, E., 1251-Plat
- Sardiello, M., 3395-Pos,
3684-Pos
- Sarewicz, M., 2601-Pos,
2964-Pos
- Saripalli, C., 3264-Plat
- Sarkar, B., 1368-Pos
- Sarkar, P., 3441-Pos,
3442-Pos, 3443-Pos
- Sarkar, R., 2078-Pos
- Sarkar, S. K., 4017-Pos
- Sarker, A., 1161-Plat
- Sarkey, J., 1752-Pos
- Sarkozi, S., 560-Pos
- Sarlos, K., 1391-Pos
- Sarrault, O., 3874-Pos
- Sarrouj, H., 2228-Plat
- Sartiani, L., 1753-Pos
- Sarver, J. L., 2766-Pos

Sasaki, D. Y., 1141-Plat
 Sasaki, Y. C., 315-Pos,
 3181-Plat
 Sasmal, D., 3775-Pos
 Sasmal, S., 3313-Pos
 Sasse, P., 3679-Pos,
 3914-Pos
 Sasse-Middelhoff, H.,
 3573-Pos
 Sasseville, L., 2750-Pos
 Sathappa, M., 1868-Pos
 Sather, W. A., 1613-Pos
 Satija, S., 3588-Pos
 Satin, L. S., 2666-Pos
 Sato, D., 610-Pos, 2691-Pos
 Sato, O., 904-Pos, 907-Pos
 Sato, R., 3493-Pos
 Sato, T., 3012-Pos
 Sattig, T., 1923-Pos
 Sattiger, P., 2089-Pos
 Sattler, M., 2352-Pos
 Sauer, R. T., 1248-Plat,
 2247-Symp
 Sauguet, L., 1732-Pos,
 1736-Pos, 3243-Plat,
 3358-Pos
 Saunders, C., 1001-Pos
 Saurabh, R., 385-Pos
 Saurabh, S., 3040-Pos,
 3123-Pos, 4093-Pos
 Saurel, O., 974-Pos,
 3623-Pos
 Sauter, N. K., 1937-Pos
 Savage, D., 2249-Symp
 Savage, T. L., 3366-Pos
 Savalli, N., 687-Pos, 690-
 Pos, 692-Pos, 1676-Pos,
 2710-Pos
 Savatier, J., 1027-Pos,
 2583-Pos, 2904-Pos,
 3041-Pos
 Savidis, G., 3589-Pos
 Savikhin, S., 920-Pos,
 1871-Pos
 Savtchenko, A., , 3649-Pos
 Sawada, Y., 279-Pos,
 3371-Pos, 3372-Pos
 Sawaguchi, A., 3856-Pos
 Sawai, S., 441-Pos
 Sawaya, M. R., 3430-Pos
 Saxena, A., 4052-Pos
 Saxena, P., 706-Pos
 Saxton, M. J., 1003-Pos
 Sayadi, O., 659-Pos
 Sayar, M., 295-Pos
 Sayed, A., 2948-Pos
 Sayegh, R. S., 3487-Pos
 Sayers, Z., 2351-Pos
 Sayyad, W. A., 235-Plat
 Scalettar, B. A., 1110-Pos
 Scalf, M., 2510-Pos
 Scarabelli, G., 2050-Pos,
 3942-Pos
 Scarcella, A., 656-Pos
 Scarlata, S., 2296-Wkshp
 Scarpinato, K., 2892-Pos
 Scellini, B., 1744-Pos,
 2836-Pos
 Schade, M., 2500-Pos
 Schaefer, M., 1522-Pos
 Schaefer, S., 3813-Pos
 Schafer, C. T., 543-Pos
 Schäffer, C., 2591-Pos
 Schaffer, D. V., 2630-Pos
 Schäffer, E., 3509-Pos
 Schaffer, M., 3030-Pos
 Schaible, U., 2568-Pos
 Schaid, M. D., 3672-Pos
 Schaidler, H., 464-Pos,
 468-Pos
 Schaper, K., 991-Pos
 Scharein, R. G., 2060-Pos
 Scharff-Poulsen, P., 702-Pos,
 2819-Pos
 Scharinger, A., 1671-Pos,
 1684-Pos
 Scharrel, L., 2239-Plat
 Schartner, J., 1053-Pos
 Schatz, D., 3504-Pos
 Schauer, G., 2520-Pos
 Schay, G., 2326-Pos,
 3284-Pos
 Scheel, O., 2783-Pos
 Scheerer, P., 206-Plat
 Scheidelaar, S., 481-Pos,
 1522-Pos
 Scheideler, O., 1242-Plat
 Scheraga, H. A., 1300-Pos
 Scherer, K. M., 1004-Pos
 Scherer, T., 314-Pos
 Schernthaner, M., 3817-Pos
 Scheuer, T., 3343-Pos
 Scheuermann, V., 645-Pos
 Scheuring, S., 4023-Pos,
 4028-Pos
 Schewe, M., 3773-Pos
 Schick, B., 1671-Pos
 Schick, M., 2578-Pos
 Schicker, K., 1840-Pos
 Schicker, K. W., 1684-Pos
 Schieber, J. D., 830-Pos,
 3469-Pos
 Schiel, M., 1069-Pos
 Schiffer, J., 3419-Pos,
 3484-Pos
 Schiffmann, S. N.,
 1935-Pos, 2680-Pos
 Schiller, N., 1516-Pos
 Schilling, A., 822-Pos
 Schindl, R., 1600-Pos,
 1608-Pos, 1609-Pos
 Schindler, C., 1264-Plat
 Schiott, B., 3451-Pos
 Schlattner, U., 933-Pos
 Schlau-Cohen, G. S.,
 154-Plat, 922-Pos
 Schleich, J. P., 1533-Pos
 Schlecht, W. D., 3884-Pos
 Schleegeer, M., 3465-Pos
 Schleifer, H., 3817-Pos
 Schlesinger, P. H., 2579-Pos
 Schlesinger, R., 1295-Pos,
 3300-Pos, 3390-Pos
 Schlessinger, A., 759-Pos
 Schlierf, M., 985-Pos,
 1387-Pos, 1786-Pos
 Schlingman, D., 404-Pos,
 1971-Pos, 1973-Pos
 Schlom, D. G., 2029-Pos
 Schlossarek, S., 1749-Pos
 Schlossman, M., 105-Plat
 Schlunck, G., 3005-Pos,
 3979-Pos
 Schmalzing, G., 735-Pos,
 780-Pos
 Schmid, D., 1840-Pos
 Schmid, M., 3031-Pos
 Schmidt, B., 1567-Pos
 Schmidt, C., 2357-Pos,
 3187-Plat
 Schmidt, H., 1777-Pos
 Schmidt, J., 2096-Pos,
 3828-Pos
 Schmidt, J. J., 3137-Pos
 Schmidt, K., 604-Pos
 Schmidt, T., 1203-Plat,
 1523-Pos, 1824-Pos,
 2147-Plat, 2628-Pos
 Schmidt, W. M., 836-Pos
 Schmidtke, M., 2186-Plat
 Schmiedel, J. M., 1879-Pos
 Schmitt, N., 731-Pos
 Schmitz, K. R., 2247-Symp
 Schmitz, U., 1330-Pos
 Schmoller, K. M., 3004-Pos
 Schmuck, M., 2232-Plat
 Schneeweis, L. A., 91-Plat
 Schneider, A., 4034-Pos
 Schneider, D. A., 2472-Pos
 Schneider, D. K., 1940-Pos
 Schneider, F., 1932-Pos
 Schneider, J., 3391-Pos
 Schneider, M., 2613-Pos
 Schneider, R., 957-Pos
 Schneider, S., 1569-Pos
 Schnell, J., 2155-Plat
 Schnell, S., 185-Symp,
 3995-Pos
 Schneppenheim, R., 2275-Plat
 Schnieders, M. J., 2055-Pos
 Schnitzbauer, J., 142-Plat,
 1145-Plat
 Schoeffler, A. J., 1285-Pos
 Schoen, I., 4020-Pos
 Schoenau, T., 2007-Pos
 Schoffstall, B., 3886-Pos
 Schöley, J., 3926-Pos
 Schöley, J. M., 1782-Pos,
 3926-Pos
 Scholl, Z. N., 1411-Pos,
 2383-Pos
 Scholler, P., 534-Pos
 Scholz, N. L., 3704-Pos
 Schön, J. C., 2037-Pos
 Schöne, A., 1283-Pos
 Schonenbach, N., 1528-Pos
 Schonenbach, N. S.,
 1867-Pos
 Schöning, K., 1671-Pos
 Schöpflin, R., 407-Pos
 Schott, J., 3851-Pos
 Schrader, J., 2490-Pos
 Schrader, J. M., 1894-Pos
 Schraeml, M., 389-Pos
 Schreiber, G., 2498-Pos
 Schreibmayer, W., 2749-Pos,
 2782-Pos
 Schreier, S., , 2230-Plat
 Schrimpf, W., 995-Pos,
 1014-Pos
 Schröck, A., 3679-Pos
 Schröder, G. F., 1266-Plat,
 2495-Pos
 Schröder, K., 541-Pos
 Schroeder, C., 68-Subg
 Schroeder, C. M., 1140-Plat,
 1779-Pos
 Schroeder, I., 1524-Pos
 Schroeder, J. W., 2199-Plat
 Schroeder, T. B., 3110-Pos
 Schrötter, K., , , 651-Pos
 Schubert, A. R., 202-Plat
 Schubert, F., 3308-Pos
 Schubert, R., 3999-Pos
 Schuck, P., 767-Pos, 768-
 Pos, 1196-Plat, 1769-Pos
 Schueler, D., 1930-Pos
 Schuetz, G. J., 1980-Pos,
 2589-Pos
 Schug, A., 1448-Pos,
 3409-Pos, 3535-Pos
 Schuldiner, S., 1158-Plat
 Schuler, A., 1073-Pos
 Schuler, B., 1363-Pos
 Schuler, F., 3652-Pos
 Schulman, N., 1097-Pos
 Schulten, K., 128-Plat,
 919-Pos, 1018-Pos,
 1263-Plat, 2077-Pos,
 2475-Pos, 4085-Pos
 Schultz, M. B., 781-Pos
 Schultz, P. G., 2216-Plat
 Schulz, M., 3048-Pos
 Schulze-Bahr, E., 726-Pos
 Schumacher, C. A., 3898-Pos
 Schütz, G. J., 452-Pos,
 1952-Pos
 Schwab, M., 3553-Pos
 Schwab, R. D., 1407-Pos
 Schwaiger, A., 2995-Pos
 Schwaiger, PhD, A., 2996-Pos
 Schwalbe, H., 3490-Pos
 Schwall, C., 1547-Pos
 Schwaller, B., 2680-Pos
 Schwartz, B., 179-Plat,
 2231-Plat, 3267-Plat
 Schwartz, J., 2750-Pos,
 2939-Pos
 Schwartz, P. B., 1725-Pos
 Schwartz, P. J., 1686-Pos
 Schwartz, R., 332-Pos
 Schwartz, S., 176-Plat
 Schwartz, S. D., 1760-Pos
 Schwartz, S. L., 2637-Pos
 Schwarz, E. C., 1612-Pos
 Schwarz, U. S., 2149-Plat
 Schwarzenberger, T.,
 3702-Pos
 Schwarzer, C., , 650-Pos,
 651-Pos
 Schwarzer, R., 336-Pos
 Schwede, F., 3172-Plat
 Schweikhard, V., 2459-Pos
 Schweinberger, E., 3515-Pos
 Schweitzer-Stenner, R.,
 2618-Pos, 3489-Pos,
 3490-Pos
 Schweizer, P. A., 624-Pos
 Schwieters, C., 2335-Pos
 Schwieters, C. D., 3587-Pos
 Schwill, P., 442-Pos,
 947-Pos, 1484-Pos,
 3120-Pos, 3554-Pos,
 3555-Pos
 Schwinefus, J. J., 1432-Pos
 Sciuto, K. J., 941-Pos,
 943-Pos
 Scoles, G., 3542-Pos
 Scorciapino, M. A., 480-Pos,
 3845-Pos
 Scott, D. R., 2633-Pos
 Scott, E. A., 2124-Pos
 Scott, J. L., 1538-Pos
 Scott, J. N., 1036-Pos
 Scott, M. P., 120-Plat
 Scotto d'Abbusco, M.,
 1016-Pos
 Scriven, D. R., 2008-Pos
 Seabra, G. d., 1327-Pos
 Seabra, G. M., , 381-Pos
 Seabra, M. B., 3133-Pos
 Seacrist, C., 1931-Pos
 Searson, P., 457-Pos
 Sebag-Montefiore, L.,
 945-Pos
 Sebastian, D. E., 3258-Plat
 Seckler, J., 3299-Pos
 Sedej, S., 603-Pos
 Seebohm, B., 3258-Plat
 Seebohm, G., 726-Pos
 Seefeldt, L., 3216-Plat
 Seeger, M., 3983-Pos
 Seelig, A., 3798-Pos
 Seelig, J., 2619-Pos
 Seelig, J. D., 4012-Pos
 Seewald, A. K., 1401-Pos
 Segal, S. S., 3261-Plat
 Segall, A., 2037-Pos
 Segers-Nolten, I. M.,
 1367-Pos

Segura, C., 1778-Pos
 Sehgel, N. L., 1797-Pos
 Seidel, C., 534-Pos, 991-Pos
 Seidel, C. A., 1298-Pos, 1321-Pos, 1356-Pos, 1455-Pos, 2016-Pos, 3356-Pos, 3515-Pos
 Seidel, M., 563-Pos
 Seidel, R., 3555-Pos
 Seifert, A., 2825-Pos
 Seifert, C., 3081-Pos
 Seifert, E. L., 2988-Pos
 Seifert, R., 2421-Pos, 3841-Pos
 Seifert, S., 1537-Pos, 2566-Pos
 Seigo, I., 460-Pos
 Seiler, A. E., 159-Plat
 Seiradake, E., 1566-Pos
 Seith, C., 472-Pos
 Seitler, K., 544-Pos
 Seitz, O., 2500-Pos, 3272-Plat
 Sejersted, O. M., 3854-Pos, 3895-Pos, 3913-Pos
 Sejnowski, T., 4077-Pos
 Sekiguchi, H., 315-Pos, 3181-Plat
 Sekino, Y., 3650-Pos
 Sekler, I., 1224-Plat
 Sekot, G., 2591-Pos
 Selenschik, P., 960-Pos
 Selent, J., 2621-Pos
 Selevany, I., 3576-Pos
 Sellers, J. R., 900-Pos, 905-Pos, 978-Pos, 998-Pos, 2870-Pos
 Sellers, S., 2377-Pos
 Selmer, M., 2481-Pos
 Selmke, B., 2389-Pos
 Seltmann, K., 2903-Pos
 Selvaratnam, R., 1198-Plat
 Selvin, P. R., 1011-Pos, 1018-Pos, 2198-Plat, 3058-Pos
 Selzer, L., 328-Pos
 Semenzato, G., 22-Subg, 3739-Pos
 Semerdzhiev, S., 3463-Pos
 Sempels, W., 2180-Plat
 Sen, M., 1249-Plat
 Sen, P., 410-Pos
 Sen, S., 829-Pos
 Senapati, S., 1328-Pos, 1412-Pos
 Senavirathne, G., 3506-Pos
 Send, T., 3679-Pos
 Sendek, A., 1788-Pos
 Senechal-Willis, P., 4094-Pos
 Senes, A., 2607-Pos
 Sengel, J. T., 2545-Pos
 Sengupta, A., 416-Pos
 Sengupta, D., 526-Pos
 Sengupta, N., 3462-Pos
 Sengupta, P., 3184-Plat
 Sengupta, R., 2371-Pos
 Senning, E., 3816-Pos
 Senning, E. N., 3173-Plat
 Seo, D., 1135-Plat
 Seo, J., 1614-Pos
 Seol, Y., 1391-Pos
 Separovic, F., 476-Pos, 1515-Pos
 Sept, D., 837-Pos, 1080-Pos, 3989-Pos
 Sepulveda, R., 1002-Pos, 2731-Pos
 Sepúlveda, R., 2208-Plat
 Sepulveda, R. V., 2727-Pos
 Serdobintsev, P. Y., 1095-Pos
 Serebryany, E., 218-Plat
 Sereinigg, M., 601-Pos
 Serena, P. A., 4036-Pos
 Sergei, B., 1185-Plat
 Sermersheim, M., 3201-Plat
 Serrano, S., 3593-Pos
 Serrano-Albarrás, A., 3737-Pos
 Serrano-Flores, B., 1688-Pos
 Serysheva, I. I., 574-Pos, 575-Pos, 3035-Pos
 Seshadri, A., 2098-Pos
 Sessions, A., 3921-Pos
 Sethi, A., 2430-Pos
 Seto, E., 2237-Plat
 Seto, Y., 3955-Pos
 Setzler, J., 472-Pos, 1319-Pos, 2058-Pos
 Sevcik, J., 567-Pos
 Sevcik, E., 452-Pos, 2589-Pos
 Severi, S., 621-Pos, 627-Pos, 3254-Plat, 3654-Pos, 3655-Pos, 3656-Pos
 Severinov, K., 2463-Pos
 Sevrieva, I., 177-Plat, 3664-Pos
 Seward, E. P., 1590-Pos, 1616-Pos
 Sexton, P. M., 533-Pos
 Seyler, C., 624-Pos
 Seymour, A. L., 1549-Pos
 Seyoum, E., 1728-Pos, 1729-Pos
 Sezgin, E., 1980-Pos
 Sferrazza, M., 225-Plat
 Sgobba, M., 1689-Pos
 S-Grac, H., 1411-Pos
 Sgrignani, J., 1844-Pos, 3136-Pos
 Shabala, S., 2961-Pos
 Shabalina, I. G., 2992-Pos
 Shaban, H. A., 1027-Pos
 Shabbir, W., 782-Pos
 Shaevitz, J. W., 2914-Pos
 Shafaat, O. S., 2759-Pos
 Shaftee, A., 3124-Pos
 Shafraz, O., 1960-Pos
 Shaghghi, M., 1478-Pos
 Shah, J., 1818-Pos
 Shah, R., 2873-Pos
 Shah, R. S., 1310-Pos
 Shah, S., 3175-Plat
 Shah, Y., 3155-Pos
 Shaheed, I., 1278-Pos
 Shahidullah, M., 962-Pos
 Shahoei, R., 2475-Pos
 Shahsavar, A., 1736-Pos, 3243-Plat
 Shaikh, S., 499-Pos
 Shaikh, S. A., 2954-Pos
 Shaitan, K., 1488-Pos, 2813-Pos
 Shakhnovich, E. I., 3323-Pos
 Shakib, F., 4071-Pos
 Shaler, T. A., 2394-Pos
 Shamitko-Klingensmith, N. M., 864-Pos
 Shammass, S. L., 322-Pos, 2156-Plat
 Shams, H., 2900-Pos
 Shandilya, M., 3417-Pos
 Shang, L., 786-Pos
 Shang, W., 1625-Pos
 Shang, Y., 556-Pos, 1047-Pos
 Shang, Z., 2238-Plat
 Shannon, T. R., 652-Pos
 Shao, J., 870-Pos
 Shao, Q., 357-Pos, 1100-Pos
 Shapiro, L., 324-Pos, 1023-Pos, 1385-Pos, 1573-Pos, 1894-Pos, 2345-Pos, 2490-Pos, 2999-Pos
 Shapiro, M. G., 114-Plat
 Shapiro, M. S., 57-Subg, 724-Pos, 3794-Pos, 3795-Pos
 Shaqra, A., 2489-Pos
 Sharkey, A., 3187-Plat
 Sharma, A., 371-Pos, 372-Pos, 373-Pos, 845-Pos, 3510-Pos
 Sharma, M., 1345-Pos, 3503-Pos
 Sharma, N., 55-Subg
 Sharma, P. K., 3461-Pos
 Sharma, S., 169-Plat
 Sharmin, N., 3754-Pos
 Sharpe, C., 1549-Pos
 Sharpe, S., 1540-Pos
 Shashikanth, N., 3286-Pos
 Shastry, S., 3952-Pos
 Shattock, M. J., 1549-Pos, 3670-Pos
 Shaw, D. E., 533-Pos
 Shaw, G. S., 260-Pos
 Shaw, J., 613-Pos, 2856-Pos, 2857-Pos
 Shaya, D., 668-Pos, 1678-Pos
 Shayegan, M., 302-Pos
 Shaytan, A., 1488-Pos, 2813-Pos
 Shea, J., 532-Pos, 2443-Pos
 Shea, M. A., 264-Pos, 1655-Pos, 2670-Pos, 3439-Pos, 3440-Pos
 Shearwin, K., 3167-Symp
 Shebl, B., 2483-Pos
 Sheets, E. D., 3723-Pos
 Sheetz, M., 80-Symp, 825-Pos, 1808-Pos
 Sheetz, M. P., 2642-Pos, 2913-Pos
 Sheffler, W., 2248-Symp
 Sheikh, A. Q., 3108-Pos
 Shek, Y., 1313-Pos
 Shek, Y. L., 351-Pos
 Shekhar, M., 1852-Pos
 Shelby, S. A., 1204-Plat
 Sheldon, E. A., 3719-Pos
 Sheldon, K. L., 2985-Pos
 Shelley, C., 2712-Pos
 Shelley, J. C., 3070-Pos
 Shelley, M., 1773-Pos
 Shelley, M. Y., 3070-Pos
 Shen, B., 3020-Pos
 Shen, C., 225-Plat, 1462-Pos
 Shen, K., 3454-Pos
 Shen, R., 2478-Pos
 Shendruk, T. N., 1822-Pos
 Sheng, J., 3178-Plat
 Sheng, Y., 1842-Pos
 Shenoy, V. B., 3107-Pos
 Shepard, B., 3076-Pos
 Shepard, K. L., 4099-Pos
 Shepherd, D., 1887-Pos, 2000-Pos
 Shepherd, T. R., 3344-Pos
 Sheppard, C., 1016-Pos
 Sheppard, D. N., 952-Pos
 Sherratt, D. J., 1388-Pos
 Sherwood, P., 3725-Pos
 Shettigar, V., 1742-Pos
 Shetty, I., 2605-Pos
 Shetty, R., 1033-Pos
 Sheu, S., 158-Plat
 Shevchuck, A., 4029-Pos
 Shi, D., 3823-Pos
 Shi, G., 1638-Pos, 3681-Pos
 Shi, J., 3749-Pos, 3791-Pos
 Shi, L., 785-Pos
 Shi, Q., 881-Pos
 Shi, X., 142-Plat, 1501-Pos, 1982-Pos, 3296-Pos
 Shi, Z., 3581-Pos
 Shibayama, J., 941-Pos, 943-Pos
 Shieh, R., 690-Pos
 Shiferaw, Y., 610-Pos
 Shigematsu, H., 167-Plat
 Shih, W., 953-Pos
 Shilova, L. A., 341-Pos
 Shim, S., 2203-Plat
 Shima, T., 1772-Pos
 Shimada, N., 441-Pos
 Shimamoto, S., 262-Pos, 2378-Pos, 2385-Pos, 2386-Pos, 3411-Pos, 3422-Pos, 3429-Pos
 Shimizu, K., 3078-Pos, 3339-Pos
 Shimizu, Y., 1785-Pos
 Shimkunas, R., 613-Pos, 2857-Pos
 Shimoda, Y., 2922-Pos
 Shimozawa, T., 2866-Pos, 3262-Plat
 Shimura, M., 315-Pos
 Shin, D., 2390-Pos
 Shin, J., 956-Pos, 1145-Plat, 1233-Plat, 2886-Pos, 4016-Pos
 Shin, K., 916-Pos, 1131-Plat, 2107-Pos
 Shin, Y., 2247-Symp, 2551-Pos
 Shinoda, K., 3088-Pos
 Shinsaku, M., 460-Pos
 Shinsky, S. A., 2411-Pos
 Shintani, S. A., 2835-Pos, 2865-Pos, 3902-Pos
 Shiraishi, R., 3109-Pos
 Shire, S. J., 314-Pos
 Shirokov, R., 685-Pos
 Shirokova, N., 3920-Pos
 Shiver, C., 436-Pos
 Shivnaraine, R. V., 538-Pos
 Shkel, I., 2371-Pos
 Shlomovitz, R., 2578-Pos
 Shepherd, D., 1887-Pos, 2105-Pos
 Shnyrova, A., 13-Subg, 3546-Pos
 Shobair, M., 1457-Pos
 Shoichet, B. K., 1340-Pos
 Shomorony, A., 3037-Pos
 Shore, D. M., 1563-Pos
 Shorthouse, D., 318-Pos
 Shoura, M. J., 3502-Pos
 Showalter, S. A., 3530-Pos
 Shrestha, P., 4070-Pos
 Shrestha, U., 1195-Plat, 3206-Plat
 Shrestha, U. R., 3288-Pos
 Schroder, D., 1177-Symp
 Schroder, D. Y., 907-Pos
 Shudo, K., 1338-Pos
 Shukla, D., 88-Plat, 1568-Pos, 3315-Pos
 Shulman, G. I., 78-Symp, 79-Symp
 Shuman, H., 64-Subg, 899-Pos
 Shumilov, D., 2023-Pos
 Shvadchak, V., 1365-Pos
 Shvadchak, V. V., 1257-Plat
 Shydlovskiy, S., 2606-Pos
 Shyng, S., 2743-Pos

Sibarita, J., 1803-Pos
Sidabras, J. W., 3556-Pos
Siddiqui, S., 1549-Pos
Sieben, C., 331-Pos, 3272-Plat
Siegel, A. P., 2535-Pos
Siegelbaum, S. A., 61-Subg
Siegrist, C. M., 3588-Pos
Siemen, D., 3843-Pos
Sieradzan, A. K., 1300-Pos
Siero, R., 1257-Plat
Sierra-Ramírez, F., 1688-Pos
Sierra-Valdez, F. J., 3560-Pos
Sigaut, L., 2692-Pos
Sigdel, K. P., 2314-Pos, 4022-Pos
Sigg, D., 687-Pos, 690-Pos, 692-Pos, 1676-Pos
Sigley, J., 1969-Pos, 2892-Pos
Signore, G., 139-Plat
Sigurdson, C., 3067-Pos
Sigworth, F. J., 167-Plat
Sikkel, M., 1645-Pos, 1738-Pos
Sikkel, M. B., 3651-Pos
Silberberg, S. D., 779-Pos
Silberzan, P., 1802-Pos
Šileikytė, J., 18-Subg
Siligan, C., 789-Pos
Silva, A. M., 381-Pos
Silva, J. R., 202-Plat, 3749-Pos, 3791-Pos
Silva, M. C., 1166-Plat
Silva, M. P., 3840-Pos
Silve, A., 448-Pos, 2546-Pos
Silverstein, T. P., 1103-Pos, 1874-Pos
Sim, A. Y., 3544-Pos
Sim, J., 3242-Plat
Siman, L., 1012-Pos
Simanshu, D. K., 1530-Pos, 1544-Pos, 3537-Pos
Simeonov, P., 3612-Pos
Simmons, K., 3172-Plat
Simmons, L. A., 2006-Pos, 2199-Plat
Simon, A. J., 3106-Pos
Simon, I., 1173-Symp
Simon, L., 2650-Pos
Simon, R., 2016-Pos
Simon, S. A., 1688-Pos
Simonsen, J. B., 950-Pos
Simpson, M., 1891-Pos
Simpson, P. C., 3916-Pos
Simpson, S., 1232-Plat
Sims, P., 3143-Pos
Simsek, M. F., 2590-Pos
Simunovic, M., 2287-Plat
Sindbert, S., 1455-Pos
Sindelar, C., 899-Pos
Sindelar, C. V., 64-Subg, 2238-Plat
Sine, S., 1720-Pos
Singapuri, A., 614-Pos, 616-Pos
Singer, C., 3379-Pos
Singer, C. A., 733-Pos
Singer, R. H., 2017-Pos
Singer, T., 3652-Pos
Singh, A., 2022-Pos, 2028-Pos, 4015-Pos
Singh, A. K., 688-Pos
Singh, A. P., 2002-Pos
Singh, D., 1982-Pos, 2196-Plat
Singh, D. R., 2424-Pos
Singh, G., 1230-Plat, 3567-Pos, 3983-Pos
Singh, J., 1469-Pos, 2261-Plat, 3634-Pos
Singh, N., 2259-Plat, 2261-Plat, 3541-Pos, 3895-Pos
Singh, P., 2664-Pos, 3483-Pos
Singh, R., 2429-Pos
Singh, R. R., 1788-Pos
Singh, S., 2280-Plat, 2364-Pos
Singh, V., 1368-Pos, 2226-Plat
Singhai, A., 545-Pos
Singharoy, A., 1263-Plat
Sinha, D., 939-Pos
Sinha, G., 4024-Pos
Sinha, S. K., 509-Pos
Sink, E. M., 496-Pos
Sinnegger-Brauns, M., 1671-Pos
Sinner, C., 3409-Pos
Sinniah, K., 1956-Pos, 3526-Pos
Sinnige, T., 257-Pos
Sintim, H., 2833-Pos
Sinwel, D., 1953-Pos
Siodlak, M. M., 1335-Pos
Sipido, K., 1636-Pos
Sipido, K. R., 2180-Plat
Siposova, K., 304-Pos
Sirenko, S., 584-Pos, 586-Pos, 1639-Pos, 3191-Plat
Siriwatetchakul, K., 420-Pos
Sirois, C., 3635-Pos
Sirrieh, R. E., 773-Pos
Sisco, N., 975-Pos, 3822-Pos
Sitsapesan, R., 3247-Plat, 3857-Pos
Sitsel, O., 2160-Plat
Sitsel, O. E., 530-Pos
Sitte, H., 1309-Pos, 1848-Pos
Sitte, H. H., 1840-Pos
Sitters, G., 1163-Plat, 1955-Pos
Sittner, D., 159-Plat
Siuda, I., 280-Pos
Siv, C., 1032-Pos
Sivak, D. A., 2031-Pos
Sivaprasadarao, A., 3175-Plat
Sivaramakrishnan, S., 914-Pos, 2360-Pos
Sivasankar, S., 1960-Pos, 1961-Pos, 2276-Plat
Sivilotti, L., 2758-Pos
Sivilotti, L. G., 2769-Pos
Siwik, D. A., 658-Pos
Siwy, Z., 1071-Pos, 1072-Pos, 1087-Pos, 1088-Pos, 1089-Pos
Siwy, Z. S., 1069-Pos
Sixma, T. K., 3507-Pos
Sizemore, S. M., 1379-Pos, 3481-Pos
Sjaastad, I., 3854-Pos, 3895-Pos, 3913-Pos
Själänd, C., 3913-Pos
Skaar, E., 250-Pos
Skafte-Pedersen, P., 3860-Pos
Skeby, K. K., 522-Pos
Skinner, A., 3013-Pos
Skinner, J. P., 342-Pos, 996-Pos, 3059-Pos
Skjærven, L., 2050-Pos
Skldal, P., 2854-Pos
Skobeleva, K., 2776-Pos
Skotheim, J. M., 3004-Pos
Skottman, H., 2685-Pos
Skrzyniarz, P., 3345-Pos
Slack, F. J., 1167-Symp
Slack, M., 90-Plat
Slama, J. T., 2686-Pos
Slater, R., 1746-Pos
Slaton, J., 323-Pos
Sleiman, N. H., 653-Pos, 654-Pos
Sliwkowski, M., 2647-Pos
Sloan, J., 1068-Pos
Sluis-Cremer, N., 2520-Pos
Smaardijk, S., 2962-Pos
Small, L., 1240-Plat
Smari, T., 1617-Pos
Smaoui, M. R., 3473-Pos
Smeazzetto, S., 3850-Pos
Smeller, L., 3284-Pos
Smelser, A. M., 2891-Pos, 3958-Pos
Smider, V. V., 2216-Plat
Smirnov, A., 350-Pos, 1336-Pos
Smirnov, A. I., 1119-Plat, 2573-Pos
Smirnova, T. I., 1505-Pos, 2573-Pos
Smirnovas, V., 3467-Pos
Smit, B., 1120-Plat, 2577-Pos, 2656-Pos
Smith III, J. E., 3264-Plat
Smith, A. M., 3058-Pos
Smith, B., 1134-Plat, 3869-Pos
Smith, B. Y., 410-Pos, 1382-Pos
Smith, C., 494-Pos, 573-Pos, 3182-Plat
Smith, C. M., 1926-Pos
Smith, D. M., 3216-Plat
Smith, E. A., 494-Pos, 2197-Plat
Smith, E. M., 1001-Pos
Smith, F. J., 1184-Plat
Smith, G., 3189-Plat
Smith, G. D., 600-Pos, 693-Pos
Smith, G. L., 620-Pos, 2262-Plat, 3648-Pos
Smith, G. R., 332-Pos
Smith, H. J., 270-Pos
Smith, J., 3766-Pos
Smith, J. F., 2739-Pos, 3805-Pos
Smith, K. P., 1334-Pos
Smith, L., 2510-Pos
Smith, M. D., 2167-Plat
Smith, N., 609-Pos
Smith, S., 2190-Plat
Smith, S. M., 2821-Pos
Smith, T., 2096-Pos
Smith, W., 2157-Plat
Smith-Clerc, J., 3956-Pos
Smoczer, C., 653-Pos
Smolin, N., 2861-Pos, 2956-Pos
Smolke, C., 132-Symp
Smorodchenko, A., 159-Plat
Smyre, S., 3958-Pos
Snaar-Jagalska, E., 2628-Pos
Snead, D., 959-Pos
Snell, E., 1200-Plat
Sniadecki, N. J., 2855-Pos
Snyder, R., 100-Plat
Snyders, D. J., 719-Pos, 2717-Pos, 2738-Pos, 2747-Pos, 3742-Pos
So, C., 2433-Pos
Soares, C. M., 209-Plat, 292-Pos, 293-Pos, 1863-Pos
Soares, T. A., 528-Pos
Sobey, T., 2516-Pos
Sobie, E., 3254-Plat
Sobie, E. A., 2178-Plat, 3657-Pos
Sobieszek, A., 2872-Pos
Soboloff, J., 1599-Pos
Sobott, F., 2358-Pos, 2803-Pos
Sochacki, K. A., 4017-Pos
Soczek, K. M., 254-Pos, 390-Pos
Sodt, A., 3203-Plat
Sodt, A. J., 2561-Pos, 4038-Pos
Soeller, C., 639-Pos, 2021-Pos, 2263-Plat
Soga, N., 3148-Pos
Sohail, A., 1309-Pos, 1848-Pos
Sohn, L. L., 1242-Plat
Soine, J., 2149-Plat
Sokabe, M., 279-Pos, 2878-Pos, 3371-Pos, 3372-Pos
Sokkar, P., 2083-Pos
Sokoloski, J., 393-Pos
Sokolov, A., 2122-Pos
Sokolov, A. P., 1147-Plat, 1325-Pos
Sokolov, V. S., 341-Pos
Solaro, R., 296-Pos, 3660-Pos, 3885-Pos
Solaro, R. J., 1640-Pos, 2858-Pos
Soldovieri, V., 722-Pos
Solhjoo, S., 635-Pos
Solis Ocampo, C., 3673-Pos
Solis-Ocampo, C., 1761-Pos, 1767-Pos
Soller, K. J., 2521-Pos
Sollott, S. J., 586-Pos, 1618-Pos
Soloff, G., 2344-Pos
Solovyova, A., 1293-Pos
Solovyova, O., 1621-Pos, 3698-Pos, 3699-Pos
Soltani, M., 1990-Pos
Somczar, C., 654-Pos
Sommesse, R., 794-Pos
Somodi, S., 2788-Pos
Sompompisut, P., 3373-Pos
Somssich, M., 2016-Pos
Son, G., 2474-Pos
Son, I., 1313-Pos
Son, J., 1245-Plat, 2109-Pos, 3126-Pos
Son, M., 1626-Pos, 1627-Pos
Son, Y., 1550-Pos
Song, A., 2028-Pos
Song, C., 1514-Pos, 1787-Pos, 1839-Pos, 2729-Pos, 2798-Pos
Song, D., 376-Pos, 1107-Pos, 1119-Plat
Song, E., 168-Plat
Song, H., 2345-Pos
Song, I., 1337-Pos
Song, K., 2110-Pos, 2119-Pos, 3116-Pos, 3117-Pos
Song, L., 2452-Pos, 2453-Pos, 2473-Pos, 3741-Pos
Song, M., 2104-Pos
Song, S., 3133-Pos, 3644-Pos
Song, W., 1740-Pos, 3907-Pos, 3961-Pos
Song, Y., 1533-Pos, 2842-Pos, 3474-Pos, 3610-Pos, 3692-Pos
Song, Z., 3188-Plat
Soni, S. P., 2599-Pos

Sonkar, K., 267-Pos
 Sonn, A., 2868-Pos
 Sonnenberg, D., 4000-Pos
 Sonn-Segev, A., 833-Pos
 Sopariwala, D. H., 2954-Pos
 Soranno, A., 1363-Pos
 Sorgen, P. L., 2426-Pos
 Sorin, E., 4055-Pos
 Sorrentino, V., 656-Pos
 Sosnick, T. R., 2436-Pos
 Sot, J., 1125-Plat, 1474-Pos
 Sotiropoulos, A., 827-Pos
 Sotomayor Pérez, A., 1380-Pos
 Sotomayor, M., 1948-Pos, 2271-Plat
 Sottas, V., 3851-Pos
 Soubias, O., 3626-Pos
 Sousa, D., 2295-Plat
 Sousa, M., 1354-Pos
 Southall, J., 154-Plat
 Southerden, L., 388-Pos
 Southern, C. A., 268-Pos
 Souza, C. S., 2417-Pos
 Sowole, M. A., 3-Subg
 Spacek, T., 1025-Pos
 Spahn, C., 2014-Pos
 Spakowitz, A. J., 1269-Plat, 2223-Plat
 Spaller, B., 1494-Pos
 Spangler, E., 436-Pos
 Spangler, E. J., 500-Pos
 Spät, A., 2988-Pos
 Specht, C., 4080-Pos
 Speckhard, D. C., 3344-Pos
 Spedaleri, G., 814-Pos
 Speerschneider, T., 592-Pos, 3899-Pos
 Spelke, D., 2630-Pos
 Spence, J., 192-Symp
 Spendier, K., 2547-Pos, 3156-Pos
 Spenlehauer, A., 3921-Pos
 Sperber, H. S., 2500-Pos
 Sperlich, B., 3607-Pos
 Spillane, K. M., 2531-Pos
 Spilotros, A., 1370-Pos
 Spinler, K., 2886-Pos
 Spiriti, J. M., 2080-Pos
 Spitzer, K. W., 941-Pos, 943-Pos, 2704-Pos
 Sprang, S. R., 539-Pos, 1146-Plat
 Spratt, D. E., 260-Pos
 Springer, S., 3144-Pos, 3354-Pos
 Springer, T. A., 982-Pos
 Spudich, J., 794-Pos, 2288-Plat, 2841-Pos
 Spudich, J. A., 1765-Pos
 Spudich, J. L., 1924-Pos
 Spurmy, R., 1731-Pos, 2760-Pos
 Spurrier, V. R., 343-Pos
 Squires, A. H., 1084-Pos
 Squyres, G., 2921-Pos
 Sran, A., 2842-Pos
 Sran, A. S., 3692-Pos
 Sreenivasan, R., 2465-Pos
 Sreenivasan, V. K., 4006-Pos
 Sresht, V., 4044-Pos
 Sri Rama Koti, A., 2078-Pos
 Srinivasan, N., 298-Pos, 3492-Pos
 Srinivasan, P., 2824-Pos, 2889-Pos
 Srivastava, K. R., 2623-Pos
 Srivastava, A., 2503-Pos
 Srivastava, V., 854-Pos, 1804-Pos
 St. Clair, J. R., 3832-Pos
 St. John, P. M., 1404-Pos, 1957-Pos
 Stabley, D., 2301-Wkshp
 Stacey, M. W., 4097-Pos
 Stachowiak, M., 1808-Pos
 Stachowiak, M. R., 897-Pos
 Stadlbauer, V., 541-Pos
 Stadler, R. V., 3968-Pos
 Stadnytsky, V., 1871-Pos
 Stafford, W., 3725-Pos
 Stagg, S., 2295-Plat
 Stahelin, R. V., 11-Subg, 487-Pos, 1538-Pos, 2599-Pos
 Stahl, Y., 2016-Pos
 Stahlberg, H., 1710-Pos
 Stallings, C., 2460-Pos
 Stamou, D., 550-Pos, 1158-Plat, 2681-Pos, 3617-Pos, 3618-Pos
 Stanciauskas, R., 2013-Pos
 Stanczak, M., 909-Pos
 Stanczyk, P. J., 563-Pos
 Standaert, R. F., 1473-Pos, 2537-Pos
 Standley, C., 3063-Pos
 Stangl, H., 1980-Pos
 Stanley, C. B., 1537-Pos, 3446-Pos
 Stansfeld, P. J., 530-Pos, 3207-Plat
 Stanton, M., 3601-Pos
 Starck Härlin, F., 731-Pos
 Stark, H., 1266-Plat, 2495-Pos
 Starr, C. G., 463-Pos
 Stary-Weinzinger, A., 672-Pos, 706-Pos
 Stas, J. I., 2747-Pos
 Stathopoulos, P. B., 1615-Pos
 Staunton, J. R., 887-Pos, 890-Pos
 Stava, E., 2098-Pos
 Stearns, K. N., 3282-Pos
 Steck, J. K., 2040-Pos
 Steck, T. L., 105-Plat
 Steel, B. C., 2919-Pos
 Steele, D., 3896-Pos
 Steele, D. S., 2697-Pos
 Steele, E. M., 2697-Pos
 Steele, G. A., 641-Pos
 Steele, H. B., 1527-Pos
 Steenman, M., 714-Pos
 Stefani, E., 2713-Pos, 2714-Pos, 3055-Pos
 Stefani, F. D., 1307-Pos
 Steffen, W., 795-Pos
 Stein, M., 3736-Pos
 Stein, P., 225-Plat
 Stein, R. A., 738-Pos
 Steinberg Acuña, X. P., 1002-Pos
 Steinbock, L., 1985-Pos
 Steinbock, L. J., 3198-Plat
 Steinbrecher, T., 2235-Plat
 Steindl, J., 680-Pos
 Steinem, C., 2533-Pos
 Steiner, J., 3459-Pos
 Steinhoff, H., 2421-Pos
 Steinkamp, M. P., 540-Pos, 2637-Pos
 Steinke, S. J., 2372-Pos
 Steinkühler, J., 1464-Pos
 Steinwachs, J., 2150-Plat
 Stella, L., 1490-Pos
 Stellwagen, E., 1424-Pos
 Stellwagen, N. C., 1424-Pos, 1427-Pos
 Stengel, T., 680-Pos
 Stennett, E., 362-Pos
 Stennett, E. M., 369-Pos, 2027-Pos
 Stephanopoulos, G. N., 3708-Pos
 Stephen, K. C., 3511-Pos
 Stephens, G., 3187-Plat
 Stephenson, D., 655-Pos
 Stephenson, W., 1447-Pos
 Stephenson, W. T., 1441-Pos
 Stern, M., 1618-Pos, 2690-Pos
 Stern, M. D., 1623-Pos
 Sternberg, S. H., 2174-Plat, 3524-Pos
 Sterpone, F., 1301-Pos
 Stetefeld, J., 2419-Pos
 Stévenin, V., 825-Pos
 Stevens, C. M., 3086-Pos, 3438-Pos
 Stevenson, P., 2732-Pos
 Steward, A., 2356-Pos
 Stewart, A. F., 3509-Pos
 Stewart, M. D., 1255-Plat
 Stewart, M. H., 1093-Pos
 Stewart, M. P., 3967-Pos
 Stewart, P., 3829-Pos
 Stewart, T. J., 3677-Pos
 Stiehler, J., 680-Pos, 3702-Pos
 Stienen, G., 2836-Pos
 Stillwell, W., 499-Pos
 Stimberg, V., 3195-Plat
 Stimberg, V. C., 447-Pos
 Stinson, B. M., 2247-Symp
 Stirnemann, G., 2272-Plat
 Stock, L., 676-Pos
 Stockbridge, R., 2264-Plat
 Stockbridge, R. B., 742-Pos
 Stöckle, M., 1612-Pos
 Ströcklein, W., 3272-Plat
 Stockner, T., 1309-Pos, 1701-Pos, 1848-Pos, 3986-Pos
 Stoelzle-Feix, S., 694-Pos, 3702-Pos
 Stoier, J. F., 1723-Pos
 Stoilova-McPhie, S., 1654-Pos, 3025-Pos, 3029-Pos, 3208-Plat
 Stojanovic, B., 802-Pos, 803-Pos
 Stolarska, M., 875-Pos
 Stolberg-Stolberg, J., 2128-Pos
 Stoll, S., 3727-Pos
 Stolovitzky, G., 1070-Pos
 Stolt-Bergner, P., 1309-Pos
 Ströltzing, G., 744-Pos
 Stoltzfus, C., 3065-Pos, 4092-Pos
 Stolvijk, J. A., 3646-Pos
 Stolz, M., 780-Pos
 Stone, D., 1579-Pos
 Stone, H., 2684-Pos
 Stone, H. A., 1223-Plat, 2135-Pos, 2926-Pos
 Stone, J. E., 1018-Pos
 Stone, M., 492-Pos, 501-Pos
 Stone, M. B., 491-Pos, 2581-Pos
 Stone, M. D., 344-Pos, 2173-Plat
 Storace, D. A., 1928-Pos
 Storm, C., 878-Pos, 3015-Pos
 Storms, M., 3026-Pos
 Storti, B., 139-Plat
 Stottrup, B. L., 1460-Pos, 1472-Pos
 Stout, C., 2967-Pos
 Stout, H. D., 1476-Pos
 Stowe, D. F., 1225-Plat
 Stowe, J., 3185-Plat
 Stracy, M., 1881-Pos
 Strandberg, E., 470-Pos, 1491-Pos, 1492-Pos, 1502-Pos
 Strango, Z. I., 488-Pos
 Strasser, R., 111-Plat, 389-Pos
 Sträßner, R., 2546-Pos
 Stratiievskaya, A., 3173-Plat
 Stratton, B. S., 170-Plat, 2555-Pos
 Straus, S. K., 2425-Pos
 Strelez, C. R., 2134-Pos
 Strick, T. R., 3507-Pos
 Stricker, J., 2149-Plat
 Striessnig, J., 689-Pos, 1112-Symp, 1671-Pos, 1680-Pos, 1684-Pos
 Stringari, C., 138-Plat, 308-Pos, 366-Pos
 Stroeve, P., 1239-Plat
 Stroffekova, K., 946-Pos
 Stroh, P. R., 2679-Pos
 Strømgaard, K., 765-Pos, 1711-Pos
 Stroupe, M., 2295-Plat
 Strub, M., 2112-Pos
 Strümpfer, J., 919-Pos
 Strunk, T., 1318-Pos, 1319-Pos
 Struppe, J. O., 552-Pos
 Struts, A. V., 2194-Symp, 3206-Plat, 3293-Pos
 Strutz-Seebohm, N., 726-Pos
 Strychalski, W., 2897-Pos
 Strzalka, J. W., 3755-Pos
 Stubbs, C. D., 1004-Pos
 Stuchebrukhov, A. A., 2966-Pos
 Stuenkel, E. L., 1588-Pos, 1589-Pos
 Stull, J. T., 3916-Pos
 Stultz, C. M., 285-Pos, 2435-Pos
 Stulz, E., 3193-Plat
 Stump, M. R., 710-Pos
 Stump, T., 3521-Pos
 Stuppard, R., 1745-Pos
 Stussman, R. S., 869-Pos
 Su, B., 950-Pos
 Su, P., 1347-Pos
 Su, S., 1229-Plat
 Su, Y., 1851-Pos
 Su, Z., 3830-Pos, 3831-Pos
 Suarez, E., 2047-Pos
 Subczynski, W., 3556-Pos
 Subczynski, W. K., 3557-Pos
 Subramani, A., 1588-Pos, 1589-Pos
 Subramaniam, S., 3039-Pos, 3509-Pos
 Subramaniam, V., 118-Plat, 1257-Plat, 1365-Pos, 1367-Pos, 1534-Pos, 3463-Pos
 Subramanian, S., 2081-Pos
 Subramanian, S. R., 2047-Pos, 2400-Pos
 Subramanyam, P., 2258-Plat
 Subrini, O., 1380-Pos
 Succo, P., 247-Pos
 Suchyna, T., 1572-Pos, 2807-Pos
 Suenaga Ielli, C., 3241-Plat
 Suesca, E., 2655-Pos
 Sugawa, M., 1279-Pos
 Sugawara, K., 2003-Pos, 2403-Pos
 Sugi, H., 800-Pos

- Sugita, M., 3408-Pos
 Sugita, Y., 3404-Pos,
 3568-Pos, 4041-Pos
 Sugiura, S., 800-Pos,
 3249-Plat
 Sugiyama, H., 38-Subg,
 3512-Pos
 Suh, B., 2603-Pos,
 2755-Pos
 Sui, H., 3027-Pos
 Sukharev, S., 2833-Pos,
 2834-Pos
 Suksombat, S., 3540-Pos
 Sukthankar, P., 2548-Pos
 Sulbarán, G., 808-Pos
 Sulikowska, J. I., 2388-Pos
 Sullivan, A. L., 4031-Pos
 Sultan, M. M., 3285-Pos
 Sultana, N., 650-Pos
 Sumida, G., 1188-Plat
 Sumino, A., 3771-Pos
 Sumitomo, K., 3149-Pos
 Summers, M., 343-Pos
 Sumser, M., 765-Pos
 Sun, A., 1603-Pos
 Sun, B., 883-Pos,
 1223-Plat, 1382-Pos,
 2684-Pos, 2875-Pos
 Sun, C., 2970-Pos
 Sun, J., 1903-Pos
 Sun, M., 503-Pos, 3020-Pos,
 3201-Plat, 3683-Pos
 Sun, S., 874-Pos, 1578-Pos,
 3977-Pos
 Sun, S. X., 1917-Pos,
 2899-Pos, 3575-Pos
 Sun, T., 455-Pos, 462-Pos,
 1496-Pos, 1625-Pos
 Sun, X., 983-Pos, 1694-Pos,
 1698-Pos, 3719-Pos,
 3826-Pos, 3961-Pos
 Sun, Y., 177-Plat, 180-Plat,
 382-Pos, 455-Pos, 462-Pos,
 840-Pos, 907-Pos,
 1391-Pos, 1493-Pos,
 2510-Pos, 3664-Pos
 Sun, Z., 1797-Pos
 Sunborger, A., 173-Plat
 Sundaresh, S., 2462-Pos
 Sundquist, W., 2876-Pos
 Sunesen, M., 3861-Pos
 Sunesen, M. R., 3860-Pos
 Sung, J., 794-Pos, 1936-Pos,
 2288-Plat
 Sung, K., 2998-Pos
 Sung, P., 1397-Pos
 Sung, U., 1928-Pos, 2113-Pos
 Sunil Kumar, P., 500-Pos
 Sunitha, M., 1765-Pos
 Sunyoung, J., 261-Pos
 Superfine, R., 233-Plat,
 3129-Pos
 Suphamongmee, W.,
 1280-Pos
 Supunyabut, C., 3373-Pos
 Surana, U., 1440-Pos
 Sureda, F. X., 2186-Plat
 Suresh Kumar, G., 3572-Pos
 Suresh, A., 2200-Plat
 Suresh, P., 282-Pos
 Surovtsev, I., 1596.1-Pos
 Surujballi, J. A., 1526-Pos
 Sussan, T. E., 3680-Pos
 Sustarsic, M., 1130-Plat,
 1395-Pos, 2318-Pos
 Sutura, C., 2997-Pos
 Sutherland-Cash, K., 1299-Pos
 Sutoh, K., 1174-Symp
 Sutto, L., 1286-Pos
 Sutton, G. P., 3130-Pos
 Sutton, J., 2220-Plat
 Sutton, R., 2676-Pos,
 3437-Pos
 Sutton, R. B., 1106-Pos
 Sutton, S., 794-Pos,
 2841-Pos
 Suydam, I. T., 1445-Pos
 Suzuki, J., 579-Pos
 Suzuki, M., 2835-Pos,
 3955-Pos
 Suzuki, Y., 1051-Pos
 Svensson, B., 564-Pos
 Svergun, D., 1370-Pos
 Svetlov, D., 2470-Pos
 Svicevic, M., 802-Pos,
 3882-Pos
 Sviderskaya, E. V., 4029-Pos
 Svintrazde, D. V., 3294-Pos
 Svobodova, B., 1608-Pos,
 1609-Pos
 Svoronos, A. A., 1167-Symp,
 3107-Pos
 Swain, M., 3979-Pos
 Swainsbury, D., 481-Pos
 Swaminathan, R., 2447-Pos
 Swank, D. M., 3906-Pos
 Swann, K., 590-Pos
 Swanson, C. J., 2360-Pos
 Swartz, K. J., 779-Pos,
 1700-Pos, 3766-Pos,
 3819-Pos, 3821-Pos,
 3827-Pos
 Sweitzer, S. M., 3267-Plat
 Swenson, A., 911-Pos
 Swenson, A. M., 2839-Pos
 Swift, J., 53-Subg,
 1596.2-Pos, 2886-Pos
 Swift, M., 106-Plat
 Swingle, K., 2576-Pos
 Swint-Kruse, L., 1043-Pos
 Swoboda, M., 1387-Pos
 Swolski, O., 2880-Pos
 Syam, N., 3851-Pos
 Syam, N. R., 3229-Plat
 Sygusch, J., 2750-Pos
 Sykes, B. D., 2361-Pos,
 3664-Pos
 Sykes, K., 975-Pos, 3485-Pos
 Szabo, A., 1028-Pos
 Szabó, I., 18-Subg, 22-Subg,
 3739-Pos, 3844-Pos
 Szabó, L. Z., 2696-Pos
 Szanda, G., 2988-Pos
 Szanto, T. G., 2722-Pos
 Szatmari, T., 1028-Pos
 Szatmary, A. C., 3981-Pos
 Szczesna-Cordary, D.,
 181-Plat, 183-Plat,
 818-Pos, 1739-Pos,
 2845-Pos, 2847-Pos,
 2848-Pos, 3893-Pos
 Szenk, M., 1918-Pos
 Szentandrassy, N., 621-Pos
 Szentesi, P., 650-Pos,
 661-Pos, 2696-Pos
 Szewczyk, A., 21-Subg,
 3732-Pos, 3843-Pos
 Szigeti, K., 3284-Pos
 Szilagyí, O., 2722-Pos
 Szilagyí, O., 3740-Pos
 Szeleifer, I., 1905-Pos,
 3115-Pos
 Szeleifer, I. G., 3617-Pos
 Szöllösi, G. J., 3326-Pos
 Szöllösi, J., 2650-Pos
 Szollosi, J., 1028-Pos
 Sztrétye, M., 650-Pos, 661-Pos
 Szundi, I., 2967-Pos
 Szymanski, K., 435-Pos
- T**
- Tabard-Cossa, V., 1086-Pos
 Tabbakhian, M., 2728-Pos
 Tabei, S., 3950-Pos
 Taberner, A. J., 3901-Pos,
 3912-Pos
 Tachiwana, H., 2347-Pos
 Tai, N., 811-Pos
 Tae-Rae, K., 261-Pos
 Tafoya, S., 2504-Pos
 Taft, M., 2881-Pos
 Taft, M. H., 909-Pos,
 912-Pos
 Taghian, T., 3108-Pos
 Taglialatela, M., 722-Pos
 Taguchi, A. T., 1865-Pos,
 1866-Pos
 Tahara, T., 2321-Pos
 Tai, S., 2261-Plat
 Tainer, J., 1161-Plat
 Taiqin, H., 642-Pos
 Tajhya, R. B., 2786-Pos,
 2787-Pos
 Tajkhorshid, E., 85-Plat,
 522-Pos, 1845-Pos,
 1852-Pos, 1866-Pos,
 2761-Pos, 2828-Pos,
 3237-Plat, 3982-Pos,
 3984-Pos, 3988-Pos
 Takada, S., 2519-Pos
 Takagi, Y., 905-Pos,
 978-Pos, 998-Pos
 Takahashi, H., 2458-Pos
 Takahashi, J. S., 138-Plat
 Takahashi, K., 441-Pos,
 2347-Pos
 Takahashi, S., 3642-Pos
 Takano, M., 2439-Pos
 Takano, Y., 3362-Pos
 Takaoka, Y., 3339-Pos
 Takats-Nyeste, A., 428-Pos
 Takeda, M., 3012-Pos
 Takehana, Y., 3709-Pos,
 3710-Pos
 Takei, H., 3113-Pos
 Takemori, S., 578-Pos,
 579-Pos
 Takemura, K., 3878-Pos
 Takeoka, S., 3109-Pos
 Takeshima, H., 2701-Pos,
 3683-Pos, 3856-Pos,
 3857-Pos
 Takimoto, K., 3740-Pos
 Takubo, N., 3719-Pos
 Talavera, K., 679-Pos,
 1658-Pos, 1706-Pos,
 1707-Pos
 Tam, G., 380-Pos
 Tamaki, F. K., 3487-Pos
 Tamiaki, H., 924-Pos
 Tamkun, M. M., 175-Plat,
 200-Plat, 2588-Pos
 Tamm, L., 958-Pos,
 Tamm, L. K., 2557-Pos,
 2558-Pos, 2559-Pos,
 3219-Symp
 Tamori, M., 3709-Pos,
 3710-Pos
 Tampé, R., 1158-Plat,
 2275-Plat
 Tamura, Y., 3936-Pos
 Tan, B., 2798-Pos
 Tan, C., , 3123-Pos
 Tan, J., 1815-Pos, 3185-Plat
 Tan, R., 877-Pos
 Tan, S., 2095-Pos, 2283-Plat
 Tan, T., 3687-Pos
 Tan, V. H., 572-Pos
 Tan, Y., 3644-Pos
 Tan, Z., 327-Pos
 Tanabe, M., 3612-Pos
 Tanabe, T., 695-Pos,
 696-Pos
 Tanabe, Y., 2644-Pos
 Tanaka PhD, J. C., 3839-Pos
 Tanaka, A., 3149-Pos
 Tanaka, K., 2427-Pos
 Tanaka, N., 3839-Pos
 Tanaka, R., 904-Pos
 Tanaka, Y., 4041-Pos
 Tanenbaum, M., 68-Subg
 Tanenbaum, M. E.,
 1783-Pos
 Tang, D., 2826-Pos
 Tang, G., 2399-Pos
 Tang, H., 898-Pos
 Tang, J. H., 1591-Pos
 Tang, J. X., 2894-Pos
 Tang, K., 291-Pos
 Tang, L., 3343-Pos
 Tang, P., 1728-Pos, 1729-Pos
 Tang, Q., 3778-Pos, 3789-Pos
 Tang, T., 4053-Pos
 Tang, W., 983-Pos
 Tang, X., 338-Pos, 340-Pos
 Tang, Y., 92-Plat, 572-Pos
 Tangrea, M. A., 3711-Pos
 Tani, N., 3973-Pos
 Tanis, J., 3804-Pos
 Tanksley, B., 494-Pos
 Tanner, B. C., 3870-Pos
 Tanner, K., 385-Pos
 Tanner, M. R., 2786-Pos,
 2787-Pos, 3738-Pos
 Tannert, S., 1039-Pos
 Tanyeri, M., 1140-Plat
 Tao, J., 3575-Pos
 Taranova, M., 2468-Pos
 Taraska, J. W., 2112-Pos
 Tarasov, K., 584-Pos
 Tardiff, J., 176-Plat,
 1744-Pos, 3257-Plat
 Tardiff, J. C., 179-Plat,
 1758-Pos, 1760-Pos
 Tarek, M., 1181-Plat,
 1488-Pos, 2813-Pos,
 3749-Pos
 Tarp, J. M., 2151-Plat
 Tartaglia, G. G., 321-Pos
 Tartagni, M., 3151-Pos
 Tartakovskiy, D., 4077-Pos
 Tashiro, M., 3814-Pos
 Tashkin, V. Y., 341-Pos
 Tata, G., 2955-Pos
 Tatsumi, H., 2878-Pos
 Tatulian, S. A., 2369-Pos,
 2384-Pos, 3468-Pos
 Taulier, N., 451-Pos
 Taunton, J., 1340-Pos
 Tavakley, R., 1460-Pos
 Tavoulari, S., 1156-Plat
 Taxilaga-Zetina, O., 1442-Pos
 Tayar, A., 2131-Pos
 Taylor, A., 3495-Pos
 Taylor, D. W., 3523-Pos
 Taylor, E. W., 2088-Pos
 Taylor, J. A., 395-Pos, 2171-Plat
 Taylor, K. A., 2294-Plat,
 3674-Pos
 Taylor, L., 1102-Pos
 Taylor, M., 2369-Pos,
 2384-Pos
 Taylor, N., 1395-Pos
 Taylor, R., , 794-Pos,
 3129-Pos, 3134-Pos,
 3160-Pos
 Taylor, R. K., 2514-Pos
 Taylor, S., , 2346-Pos
 Taylor, T. G., 941-Pos,
 943-Pos

Teague, W. E., 3626-Pos
Teardo, E., 3844-Pos, 3848-Pos
Tedesco, M., 4026-Pos
Tee, Y., 852-Pos
Tefft, K. M., 1655-Pos, 2670-Pos, 3439-Pos
Teigenfeldt, J., 1402-Pos
Teichmann, S. A., 2356-Pos, 3470-Pos
Teif, V. B., 407-Pos
Tejido Hermida, O., 1185-Plat, 2528-Pos, 2983-Pos
Teitell, M. A., 4095-Pos
Teixeira, V. H., 209-Plat
Teixidor, F., 1058-Pos
Tek, A., 2481-Pos, 4083-Pos
Telezhkin, V., 723-Pos
Telmer, C. A., 2637-Pos
Tempestini, A., 124-Plat
Temple, J., 3098-Pos
Templer, V. L., 1102-Pos
ten Siethoff, L., 801-Pos, 2289-Plat
ten Wolde, P., 1786-Pos
Ten, S., 1578-Pos
Tenenbaum, S., 1447-Pos
Tenenbaum, S. A., 1441-Pos
Teng, M., 1891-Pos
Teplov, D. B., 312-Pos
Terada, T., 3078-Pos, 3339-Pos
Terakawa, T., 2519-Pos
Terazima, M., 2922-Pos
Terazono, H., 3113-Pos
Terebus, A., 1912-Pos
Terentyev, D., 619-Pos, 2182-Plat
Terentyeva, R., 619-Pos, 2182-Plat
Terracciano, C., 631-Pos, 3696-Pos
Terracciano, C. M., 3838-Pos
Terrar, D. A., 1228-Plat, 2688-Pos
Tertoolen, L. G., 2795-Pos
Terui, T., 2866-Pos, 3262-Plat
Tervonen, A., 3131-Pos
Terwilliger, T. C., 190-Symp, 1937-Pos
Tesch, D. M., 971-Pos
Tesi, C., 1744-Pos, 1753-Pos, 1757-Pos, 2260-Plat, 3257-Plat
Tesmer, J. J., 1503-Pos, 2360-Pos
Testerink, C., 3629-Pos
Teter, K., 2369-Pos, 2384-Pos
Tetin, S. Y., 342-Pos, 996-Pos, 3059-Pos
Teufel, L., 2498-Pos
Teutloff, C., 969-Pos
Tewari, S. G., 3846-Pos
Textor, M., 1529-Pos
Thacker, V. V., 3193-Plat
Thakur, D., 3818-Pos
Thalheim, T., 891-Pos
Thanassi, D. G., 2818-Pos
Thangapandian, S., 3988-Pos
Thao, C., 3722-Pos
Thapa, M. B., 3080-Pos
Thei, F., 3151-Pos
Theis, J. D., 6-Subg
Theison, S., 2389-Pos
Theodorakis, E., 3067-Pos
Theodorajan, L., 1088-Pos
Theresia, K., 3258-Plat
Theriault, O., 1653-Pos
Theriot, J. A., 1236-Plat, 2925-Pos
Therrien, A., 2615-Pos
Thery, M., 2871-Pos
Thevenin, D., 1167-Symp
Thewalt, J., 1478-Pos, 2571-Pos, 3551-Pos
Thewalt, J. L., 3550-Pos
Thibault, G., 3386-Pos
Thiel, C., 909-Pos
Thiel, C. S., 3180-Plat
Thiel, G., 1524-Pos, 1580-Pos, 3172-Plat, 3850-Pos
Thimot, J., 4099-Pos
Thirumalai, D., 2445-Pos
Thirumurugan, K., 2867-Pos
Thiyagarajan, S., 1808-Pos, 1809-Pos
Thomas, A., 714-Pos
Thomas, C., 539-Pos
Thomas, D., 624-Pos, 2950-Pos
Thomas, D. D., 564-Pos, 819-Pos, 820-Pos, 970-Pos, 1037-Pos, 1275-Pos, 1764-Pos, 2163-Plat, 2673-Pos, 2843-Pos, 2863-Pos, 2952-Pos, 2958-Pos, 2959-Pos, 2960-Pos, 3279-Pos, 3283-Pos, 3672-Pos, 3925-Pos
Thomas, G., 1964-Pos
Thomas, G. A., 2093-Pos
Thomas, J. R., 1838-Pos
Thomas, L., 1697-Pos
Thomas, M. G., 3815-Pos
Thomas, R. J., 3073-Pos
Thomas, S., 811-Pos
Thomas, T., 1409-Pos, 1954-Pos
Thomas, U., 957-Pos, 3702-Pos
Thomasson, K. A., 3102-Pos, 3415-Pos
Thommen, M., 1217-Plat
Thompson, A., 970-Pos
Thompson, A. J., 1731-Pos
Thompson, A. R., 1789-Pos, 3939-Pos
Thompson, B., 1764-Pos
Thompson, B. A., 723-Pos
Thompson, B. R., 3908-Pos
Thompson, C., 96-Plat
Thompson, J. R., 2532-Pos
Thompson, L. K., 552-Pos
Thompson, M. C., 3298-Pos, 4049-Pos
Thompson, M. K., 250-Pos
Thompson, N. L., 1207-Plat
Thomsen, M. B., 592-Pos, 3899-Pos
Thomson, A. S., 1184-Plat, 2744-Pos
Thomson, S. J., 95-Plat
Thoresen, D. T., 3948-Pos
Thorner, J., 301-Pos
Thorpe, I., 211-Plat
Thorpe, I. F., 1329-Pos
Thouin, F., 3097-Pos
Thoumine, O. R., 1019-Pos, 1803-Pos
Thukral, L., 526-Pos
Thulin, E., 3458-Pos
Thyagarajan, B., , 1705-Pos
Thys, W., 330-Pos
Ti, S., 2237-Plat
Tia, S., 1098-Pos
Tian, H., 1206-Plat, 1559-Pos
Tian, J., 2430-Pos, 3210-Plat
Tian, K., 2084-Pos, 2086-Pos
Tian, P., 3236-Plat
Tian, R., 1745-Pos
Tian, W., 1579-Pos
Tian, X., 561-Pos
Tian, Y., 1498-Pos, 2121-Pos, 2335-Pos, 3788-Pos
Tibbitts, G. F., 3086-Pos, 3438-Pos
Tieber, K., 3817-Pos
Tiede-Lewis, L. M., 3060-Pos
Tieleman, D., , 280-Pos, 1939-Pos, 3238-Plat, 3550-Pos, 3551-Pos, 3567-Pos, 3570-Pos, 3596-Pos, 3983-Pos, 4051-Pos
Tieleman, P., 518-Pos, 3114-Pos
Tietjen, G. T., 105-Plat
Tiffany, H., 267-Pos
Tikhonov, D. B., 666-Pos, 1711-Pos
Tikhonova, E. B., 1851-Pos
Tilley, D. C., 3729-Pos
Tillman, T. S., 1729-Pos
Timchenko, L., 2787-Pos
Timerman, R., 935-Pos, 3722-Pos
Timin, E., 706-Pos, 1652-Pos
Timlin, J. A., 2280-Plat
Timney, B., 150-Plat
Timo, A., 137-Plat
Timofeyev, V., 616-Pos
Timp, G., 1078-Pos
Tindjong, R., 684-Pos
Tinoco Jr, I., 2480-Pos
Tinoco, Jr., I., 1210-Plat
Tippiana, R., 345-Pos, 347-Pos
Tirumkudulu, M. S., 2917-Pos
Tirunagari, N., 1330-Pos
Tiruvadi Krishnan, S., 1388-Pos
Tishbi, N., 1513-Pos
Titus, M., 3164-Symp
Tiwari, P., 3135-Pos
Tiwari, S. P., 2356-Pos
Tiwari, V., 2763-Pos
Tjioe, E., 2357-Pos
Tjörnhammar, R., 2032-Pos
Tkáčová, R., 946-Pos
Tkachev, Y. V., 796-Pos, 797-Pos
Tkaczyk, T. S., 3997-Pos
Tkatch, V., 2681-Pos
Tkatchenko, A., 2735-Pos
Toal, S., 3489-Pos, 3490-Pos
Tobacman, L. S., 178-Plat
Tobias, D. J., 1610-Pos, 2569-Pos, 2724-Pos, 3755-Pos
Tobiszewski, A., 1282-Pos, 3532-Pos
Tochitsky, I., 3182-Plat
Todorov, P., 130-Plat
Todt, H., 1652-Pos
Toepfer, C., 1738-Pos
Tohyama, K., 3932-Pos, 3933-Pos
Tokar, S., 2092-Pos, 4029-Pos
Tokarska-Schlattner, M., 933-Pos
Tokeshi, M., 3545-Pos
Tokmakoff, A., 2226-Plat, 2322-Pos, 2732-Pos
Tokman, M., 432-Pos, 2036-Pos
Tokue, M., 3181-Plat
Tolar, P., 1190-Plat
Tolbert, L. M., 3064-Pos
Toleikis, A., 1383-Pos
Tolic, A., 2515-Pos
Tolino, M. A., 3802-Pos
Tollefson, W. T., 2055-Pos
Tomasiak, T., 1144-Plat
Tomba, G., 1306-Pos
Tombola, F., 2724-Pos, 2887-Pos, 3765-Pos
Tomich, J. M., 2548-Pos
Tomishige, M., 3945-Pos
Tomizaki, T., 1710-Pos
Tomko, E., 3521-Pos
Tom-Moy, M., 4030-Pos
Tomobe, K., 3091-Pos
Ton, A., 625-Pos
Tona, A., 141-Plat
Tong, G., 2524-Pos
Tong, W., 546-Pos
Tong, X., 2814-Pos
Tonggu, L., 3034-Pos
Tønnessen, T., 3854-Pos
Ton-That, H., 2921-Pos
Topgaard, D., 223-Plat
Topol, I., 3065-Pos
Toporik, H., 1864-Pos
Tordo, P., 2228-Plat
Torgersen, K. D., 2959-Pos
Torisawa, T., 2241-Plat
Toro, L., 2713-Pos, 2714-Pos, 3055-Pos
Török, K., 1226-Plat
Toropova, K., 1780-Pos, 1781-Pos
Torosyan, A., 495-Pos
Torre Martinez, I., 1738-Pos
Torre, B., 1062-Pos
Torre, V., 117-Plat, 235-Plat, 1308-Pos, 1979-Pos, 3141-Pos, 3834-Pos
Torrenzo-Pina, J., 1205-Plat
Torrente, A. G., 3192-Plat
Torres, J., 1576-Pos
Torres-Bugeau, C., 1942-Pos
Tosatto, L., 1364-Pos, 1366-Pos
Tosi, B., 1744-Pos, 1753-Pos, 1757-Pos, 3257-Plat
Toth, A., 2791-Pos
Tóth, B., 3232-Plat
Toth, B. I., 1690-Pos, 1706-Pos
Toth, K., 2175-Plat
Toth, M. J., 3870-Pos
Toth, P. T., 3779-Pos
Tourdot, R., 1581-Pos
Townend, W., 3156-Pos
Townsend, R. R., 205-Plat
Toy, A., 591-Pos, 3690-Pos
Toyoda, Y., 3967-Pos
Toyoshima, Y., 3947-Pos
Toyoshima, Y. Y., 1784-Pos, 2241-Plat
Toyota, T., 441-Pos
Tracka, M. B., 3292-Pos
Trahe, J., 960-Pos
Trahey, M., 1527-Pos
Trakselis, M. A., 1393-Pos

- Tramontano, A., 4050-Pos
Tran, H., 433-Pos
Tran, K., 3912-Pos
Tran, P., 713-Pos
Tran, Q., 3993-Pos
Tran, T., 2887-Pos
Tranter, P., 736-Pos, 3809-Pos
Trantidou, T., 3696-Pos
Tran-Van-Minh, A., 961-Pos
Trapani, J. G., 862-Pos
Trauner, D., 765-Pos
Trautman, J. K., 2012-Pos
Trautmann, S., 2007-Pos
Travasset, A., 3291-Pos
Trayanova, N., 928-Pos
Traynelis, S. F., 761-Pos
Trchounian, A., 2963-Pos
Trebak, M., 1598-Pos, 3646-Pos
Treece, B. W., 483-Pos
Treger, J. S., 3751-Pos, 3998-Pos
Treinys, R., 632-Pos, 633-Pos
Tremblay, R., 2574-Pos
Trentin, L., 22-Subg, 3739-Pos
Treptow, W., 676-Pos, 2417-Pos
Tresadern, G., 1731-Pos
Treu, J., 117-Plat, 3141-Pos
Treuer, A. V., 605-Pos
Treves, S., 636-Pos, 2256-Plat
Tricarico, D., 2707-Pos
Trick, J. L., 1067-Pos
Trieber, C., 2860-Pos
Trier, S. M., 2932-Pos
Trieu, J., 1494-Pos
Trigo Marqués, J. M., 1056-Pos
Triller, A., 4080-Pos
Trimble, W. S., 313-Pos
Trimmer, J. S., 719-Pos
Trimpin, S., 5-Subg
Tringe, J. W., 4048-Pos
Trinh, L., 2202-Plat, 4018-Pos
Trinh, L. A., 3068-Pos
Trinick, J., 814-Pos, 2294-Plat
Trinick, J. A., 805-Pos
Triola, G., 3607-Pos
Tripathi, S., 3258-Plat
Trisno, S., 1208-Plat
Tristani-Firouzi, M., 724-Pos
Tristram-Nagle, S., 483-Pos
Tritschler, F., 387-Pos, 1999-Pos
Trivedi, D. V., 901-Pos
Trivedi, R. R., 2916-Pos
Trivedi, V., 2202-Plat, 2905-Pos, 4018-Pos
Trommer, W. E., 2389-Pos
Trone, K., 738-Pos
Tronin, A., 3755-Pos
Trudeau, M. C., 704-Pos
Trudell, J., 2756-Pos, 2768-Pos
Truex, K., 2221-Plat
Trujillo, A., 3921-Pos
Truong, P., 3013-Pos
Truong, T., 4018-Pos
Truong, T. V., 2202-Plat, 2905-Pos, 3068-Pos
Trushko, A., 3966-Pos
Trybus, K. M., 3674-Pos
Trzeciakowski, J. P., 1797-Pos
Tsai, A., 1212-Plat
Tsai, C., 3367-Pos
Tsai, M., 320-Pos, 1926-Pos, 2166-Plat
Tsao, D. S., 1828-Pos
Tsao, T., 2764-Pos
Tsaturyan, A. K., 3865-Pos
Tsaturyan, V. V., 3996-Pos
Tscheliessnig, R., 3125-Pos
Tse-Dinh, Y., 358-Pos
Tsekouras, K., 3385-Pos
Tsemakhovich, V., 2187-Plat
Tseng, G., 721-Pos
Tseng, R., 151-Plat
Tseng, T., 2401-Pos
Tsjerk, W. A., 520-Pos
Tskhovrebova, L., 814-Pos
Tsodikov, O. V., 2371-Pos
Tsou, M. B., 2200-Plat
Tsujioka, M., 3959-Pos
Tsukamoto, S., 2865-Pos
Tsumoto, K., 3339-Pos
Tsunaka, Y., 3512-Pos
Tsuneshige, A., 2403-Pos
Tsutakawa, S., 1161-Plat, 3501-Pos
Tsutsui, Y., 2359-Pos
Tu, A., 1280-Pos, 3676-Pos
Tu, H., 3622-Pos
Tu, S., 772-Pos
Tu, Y., 2052-Pos
Tuan, H. M., 2180-Plat
Tuccio, S., 117-Plat, 3141-Pos
Tucek, J., 2116-Pos, 3158-Pos
Tucker, S. J., 786-Pos, 3773-Pos
Tulinski, P., 1388-Pos
Tulsian, N. K., 3266-Plat
Tuluc, P., 650-Pos, 689-Pos, 697-Pos, 1680-Pos, 1685-Pos
Tuncay, E., 591-Pos
Tung, C., 569-Pos
Tunuguntla, R., 1079-Pos, 1239-Plat, 2117-Pos
Turan, B., 591-Pos, 3690-Pos
Turberfield, A. J., 133-Symp
Turgut, D., 3311-Pos
Türkcan, S., 3202-Plat
Türkcan, S. C., 2025-Pos
Turna, R., 3663-Pos
Turna, R. S., 1743-Pos
Turner, J. J., 3004-Pos
Turner, M., 793-Pos
Turner, M. A., 3667-Pos
Turner, R. J., 3388-Pos
Tuson, H., 3002-Pos
Tuson, H. H., 2006-Pos
Tuteja, D., 614-Pos
Tutkus, M., 1158-Plat
Tuzel, E., 3952-Pos
Tuzikov, A. V., 3316-Pos
Tytgat, J., 679-Pos, 3742-Pos
Tyurin, V. A., 4064-Pos
Tyurina, Y. Y., 933-Pos
Tzanakakis, E. S., 3190-Plat
Tzeng, Y., 1092-Pos
Tzingounis, A., 3785-Pos
Tzitzoglaki, C., 2186-Plat, 3337-Pos
- U**
- Ubarretxena, I., 3778-Pos
Ubarretxena-Bilandia, I., 87-Plat
Uchihashi, T., 517-Pos
Uchikoga, N., 2071-Pos
Ucuncuoglu, S., 2472-Pos
Uddin, S., 3292-Pos
Udy, D. B., 63-Subg, 3969-Pos
Ueberbacher, R., 3125-Pos
Ueda, M., 2625-Pos, 2644-Pos, 3006-Pos, 3959-Pos
Ueda, Y., 2890-Pos
Ueguchi-Tanaka, M., 3012-Pos
Uehara, A., 568-Pos
Ueno, H., 1339-Pos
Ufret-Vincenty, C. A., 3173-Plat
Ujla, D., 3018-Pos
Ujwal, R., 2983-Pos
Ulas, G., 546-Pos
Ulen, C., 679-Pos, 1731-Pos, 2760-Pos, 3842-Pos
Uline, M. J., 3617-Pos
Ullah, A., 588-Pos, 2179-Plat
Ullah, G., 2773-Pos
Ullman, O., 285-Pos
Ullrich, N. D., 2256-Plat
Ulmschneider, J., 2266-Plat
Ulmschneider, J. P., 1517-Pos
Ulmschneider, M., 1516-Pos, 2266-Plat
Ulrich, A. S., 454-Pos, 470-Pos, 1491-Pos, 1492-Pos, 1502-Pos, 2235-Plat
Ulrich, T. A., 1795-Pos
Uludag, H., 4053-Pos
Umanskaya, A., 583-Pos
Umbach, C., 2662-Pos
Umemura, Y., 1857-Pos
Umezawa, K., 2439-Pos
Umezu, M., 3109-Pos
Unchwaniwala, N., 327-Pos
Unger, A., 812-Pos
Unnersåle, S., 1521-Pos
Unrath, W., 911-Pos
Unsay, J. D., 992-Pos
Upadhyaya, A., 1192-Plat, 3961-Pos, 3962-Pos
Uphoff, S., 1881-Pos
Upla, P., 150-Plat
Uporov, I. V., 3102-Pos, 3415-Pos
Uppal, S., 3417-Pos
Urade, Y., 262-Pos, 3422-Pos
Urano, R., 3314-Pos
Urano, Y., 1287-Pos
Urayama, P., 1035-Pos
Urbach, W., 451-Pos
Urbakh, M., 3432-Pos
Urban, J. M., 858-Pos
Urban, V., 1535-Pos
Urbanczyk-Lipkowska, Z., 1123-Plat
Urbani, A., 1644-Pos
Uribe, K. B., 477-Pos
Uribe-Carvajal, S., 824-Pos, 2831-Pos
Ursell, T., 2914-Pos, 2920-Pos
Ustione, A., 3640-Pos, 3641-Pos
Uusitalo, J., 3570-Pos, 4051-Pos
Uyar, A., 290-Pos, 1277-Pos
Uyeda, T. Q., 826-Pos
- V**
- V. Camargo da Silva, J. P., 2965-Pos
Vacha, R., 524-Pos
Vafabakhsh, R., 122-Plat, 981-Pos, 3782-Pos
Vafaei, R., 3382-Pos
Vahedian-Movahed, H., 2469-Pos
Vahey, M. D., 335-Pos, 847-Pos
Vahia, A., 2468-Pos
Vahidi, S., 3-Subg
Vaiana, A. C., 1215-Plat, 1266-Plat, 2485-Pos, 2495-Pos
Vaiana, S. M., 1379-Pos, 3481-Pos
Vaidehi, N., 2038-Pos, 2069-Pos, 3209-Plat, 3580-Pos
Vaidelytė, B., 633-Pos
Vaidyanathan, R., 2799-Pos
Vainio, I., 2685-Pos, 3131-Pos
Vaish, A., 3772-Pos
Vaisman, I. I., 2065-Pos
Vaissière, A., 2409-Pos
Vakser, I., 3317-Pos
Vakser, I. A., 3316-Pos
Valades-Cruz, C. A., 1027-Pos
Valant, C., 533-Pos
Valbuena, A., 1979-Pos
Valcourt, J. R., 533-Pos
Valdes-Garcia, G., 1311-Pos
Valdink, D., 2565-Pos
Valdivia, C. R., 570-Pos
Valdivia, H. H., 562-Pos, 570-Pos, 571-Pos, 1633-Pos
Vale, R., 68-Subg
Vale, R. D., 1775-Pos, 1779-Pos, 1783-Pos, 3937-Pos, 3945-Pos
Valente, A. P., 2230-Plat
Valentine, M. T., 1791-Pos, 1794-Pos, 1954-Pos
Valenzuela, C., 2752-Pos, 2753-Pos
Valeri, A., 411-Pos, 3515-Pos
Valiunas, V., 2830-Pos
Valiuniene, L., 2830-Pos
Valiyaveetil, F. I., 1157-Plat, 1182-Plat
Valk, R. v., 1949-Pos
Valkai, S., 2130-Pos
Valladares, D., 3682-Pos
Vallee, R. B., 2242-Plat
Vallée-Bélisle, A., 3106-Pos
Vallejo-Gracia, A., 3737-Pos
Valley, C. C., 540-Pos, 3624-Pos
Vallmitjana, A., 2008-Pos
Valls, L., 86-Plat
Valois-Paillard, G., 2613-Pos
Valon, L., 1237-Plat
Valpuesta, J. M., 1159-Plat
Valtiner, M., 1978-Pos
Valverde, C. A., 1637-Pos
van Bogaert, P., 2738-Pos
van Bremen, T., 3679-Pos
van de Meent, J., 127-Plat
Van de Vijver, G., 2738-Pos
van Deel, E., 1749-Pos
van den Akker, C. C., 3465-Pos
van den Bedem, H., 3212-Plat
van den Berg, A., 447-Pos, 3195-Plat
Van Den Berg, B., 2825-Pos, 3150-Pos

van den Berg, J., 1492-Pos
 Van Den Bosch, L., 1658-Pos
 Van den Heuvel, L., 137-Plat
 van den Heuvel, N., 1749-Pos
 van der Cruijns, E., 3176-Plat
 van der Merwe, A., 1193-Plat
 van der Vaart, A., 362-Pos, 2414-Pos, 3536-Pos, 4054-Pos
 van der Velden, J., 1749-Pos, 1750-Pos, 2836-Pos, 2849-Pos, 3258-Plat, 3924-Pos
 Van Diepen, M., 3809-Pos
 Van Doren, D., 1256-Plat
 Van Dyken, C. M., 3104-Pos
 van Eerden, F. J., 917-Pos
 van Giessen, A., 3368-Pos
 van Grondelle, R., 481-Pos, 922-Pos
 van Haren, J., 3980-Pos
 van Hoorn, H., 1824-Pos, 2147-Plat
 Van Horn, W., 730-Pos, 975-Pos
 Van Horn, W. D., 3822-Pos
 van Laar, T., 1388-Pos
 van Lengerich, B., 1209-Plat
 Van Minh, N., 1821-Pos
 van Noort, J., 993-Pos, 2278-Plat
 van Oene, M., 1984-Pos, 1986-Pos, 2273-Plat
 van Oijen, A. M., 1390-Pos
 Van Orden, A. K., 989-Pos
 van Oudenaarden, A., 1879-Pos
 Van Petegem, F., 201-Plat, 203-Plat, 565-Pos, 569-Pos
 van Rijn, E., 948-Pos
 van Rooijen, B. D., 1367-Pos
 van Schie, B., 948-Pos
 Van Slyke, A. L., 4015-Pos
 van Son, M., 2565-Pos
 van Wachem, B., 1895-Pos
 Van Wilderen, L., 2978-Pos
 Van Winkle, M. A., 3526-Pos
 Van, B., 2701-Pos
 Vanatta, D., 3290-Pos
 VanBenschoten, A., 1937-Pos
 Vandecaetsbeek, I., 2962-Pos
 Vandecasteele, G., 1641-Pos
 VanDelinder, K., 3288-Pos
 VanDelinder, V., 1774-Pos
 Vandenberg, J. I., 2796-Pos
 Vandenbranden, M., 1567-Pos
 Vanderlee, G., 1540-Pos
 Vanderpool, C. K., 2196-Plat
 Vander-Schuur, M. R., 3516-Pos
 vandeVen, M., 2928-Pos
 Vandiver, L., 307-Pos
 Vane, E., 301-Pos
 Vanegas, J. M., 2580-Pos
 Vangheluwe, P., 2962-Pos
 vanHelden, D. F., 2672-Pos
 Vanni, S., 527-Pos
 Vanommeslaeghe, K., 3566-Pos
 Vanoye, C., 730-Pos
 Vanoye, C. G., 717-Pos, 718-Pos, 1650-Pos
 Vanzi, F., 124-Plat
 Varadarajan, R., 2389-Pos
 Varadi, T., 1028-Pos
 Varanda, W. A., 3840-Pos
 Varas, I., 2731-Pos
 Vardanyan, H., 1455-Pos
 Vardanyan, I., 1437-Pos
 Vardanyan, Z., 2963-Pos
 Vardjan, N., 69-Subg, 2664-Pos
 Varga, Z., 202-Plat, 2791-Pos
 Vargas, C., 1529-Pos, 2413-Pos
 Vargas, E., 105-Plat, 2211-Plat
 Vargas, J., 2932-Pos
 Vargas, M., 1536-Pos
 Vargas-González, M., 4046-Pos
 Vargas-Pinto, R., 1963-Pos
 Vargas-Urbe, M., 3631-Pos, 3632-Pos, 3633-Pos
 Vargas-Zambrano, J. C., 3970-Pos
 Varin, A., 1641-Pos
 Varkuti, B., 895-Pos
 Varma, D., 2410-Pos
 Varma, S., 2066-Pos, 2735-Pos, 2736-Pos, 3469-Pos
 Varman, P. M., 2998-Pos
 Várnai, P., 599-Pos
 Varzavand, K., 402-Pos
 Vasdekis, A. E., 2124-Pos, 3708-Pos
 Vasilyeva, A., 3698-Pos
 Vasquez, J. K., 1587-Pos
 Vásquez, M., 748-Pos
 Vasquez, V., 2269-Plat
 Vatner, D., 628-Pos
 Vatner, D. E., 1797-Pos
 VanDelinder, K., 3288-Pos
 Vatner, S. F., 1797-Pos
 Vattulainen, I., 2601-Pos, 2621-Pos, 2964-Pos, 3569-Pos, 3577-Pos, 3598-Pos
 Vavylonis, D., 898-Pos
 Vaz, C., 1074-Pos
 Vaziri, A., 2732-Pos
 Vazquez-Sanchez, S., 438-Pos
 Veatch, S., 227-Plat, 501-Pos, 2192-Symp
 Veatch, S. L., 491-Pos, 492-Pos, 1204-Plat, 2581-Pos, 3587-Pos
 Vecchiarelli, A. G., 1826-Pos
 Veeramachaneni, R., 2772-Pos
 Veeramachaneni, R. J., 2771-Pos
 Veetil, J. V., 3441-Pos, 3442-Pos, 3443-Pos
 Vegh, R. B., 3064-Pos
 Veglia, G., 2521-Pos, 2673-Pos, 2953-Pos, 2955-Pos, 3278-Pos, 3303-Pos, 4074-Pos
 Veiga, A., 1509-Pos
 Veiga, M., 1039-Pos
 Veigel, C., 910-Pos
 Velarde-Buendía, A., 2961-Pos
 Velardez, G. F., 2285-Plat
 Veldkamp, M. W., 3898-Pos
 Veley, K., 2140-Symp, 3806-Pos
 Velez, B. A., 2733-Pos
 Velez-Cortes, F., 659-Pos
 Vélez-Ortega, A., 4024-Pos
 Velikov, K. P., 3465-Pos
 Velikovskiy, C. A., 2633-Pos
 Velisetty, P., 3244-Plat
 Vellore, N. A., 1290-Pos, 3341-Pos
 Velmurugu, Y., 3497-Pos
 Velpula, K., 1694-Pos
 Vena, P., 4026-Pos
 Venable, P. W., 941-Pos, 943-Pos
 Venable, R. M., 1498-Pos, 3119-Pos
 Venditto, V. J., 220-Plat
 Vendruscolo, M., 321-Pos, 1306-Pos, 1361-Pos, 1370-Pos, 2323-Pos, 2428-Pos, 3213-Plat, 3456-Pos
 Veneziano, R., 107-Plat, 2095-Pos
 Venkadesan, M., 55-Subg
 Venkatesan, S., 1848-Pos
 Venkatesh, K. V., 2917-Pos
 Venkatramani, R., 1972-Pos, 2078-Pos
 Venkiteswaran, S., 1409-Pos
 Vennekate, W., 2563-Pos
 Venturi, E., 3857-Pos
 Ver Hoef, C. J., 488-Pos
 Vera, A., 739-Pos
 Vera, C., 2838-Pos
 Verardi, R., 2521-Pos
 Verbaro, D., 3489-Pos
 Verdiá Báguena, C., 1058-Pos
 Verdonk, E., 681-Pos
 Vereb, G., 2650-Pos
 Vergara, J., 3179-Plat, 3701-Pos
 Vergara, J. L., 664-Pos
 Verhaegen, M., 3097-Pos
 Verkerk, A. O., 3898-Pos
 Verkuyl, J., 3809-Pos
 Verma, A., 1448-Pos, 3409-Pos
 Verma, C., 3544-Pos
 Verma, C. S., 1332-Pos
 Verma, S., 3144-Pos
 Verma, S. K., 2259-Plat
 Verma, V., 372-Pos
 Vermaas, J. V., 1866-Pos
 Vernier, P. T., 432-Pos
 Vernon, B. C., 3588-Pos
 Vernon, R., 84-Plat
 Vérollet, Q., 2014-Pos
 Versaavel, M., 2884-Pos
 Veshaguri, S., 1158-Plat
 Vestergaard, C., 2288-Plat
 Vetromile, C. M., 449-Pos
 Vetter, A. D., 1764-Pos
 Veya, L., 536-Pos
 Viana, A. S., 1056-Pos
 Vianay, B., 3956-Pos, 3957-Pos
 Viani-Puglisi, E., 1435-Pos
 Viasnoff, V., 1066-Pos
 Vicart, P., 1800-Pos
 Vicci, L., 3129-Pos
 Vicente, E. F., 1506-Pos
 Vicidomini, G., 3054-Pos
 Vicsek, T., 3138-Pos
 Victor, B. L., 292-Pos, 293-Pos
 Victor, J., 4067-Pos
 Victor, R., 1513-Pos
 Victoria, V., 2820-Pos
 Vieregg, J., 3118-Pos
 Viet, M., 304-Pos
 Vig, D. K., 2927-Pos
 Vigant, F., 3590-Pos
 Vigh, L., 2788-Pos
 Vignjevic, D., 231-Plat
 Vigoreaux, J., 305-Pos
 Viguera, A. O., 3248-Plat
 Vijayvergiya, V., 3828-Pos
 Vikhorev, P. G., 3907-Pos
 Vilaneuava, K., 3013-Pos
 Vilhena, G., 4036-Pos
 Vilin, Y. Y., 3174-Plat
 Villa Gawboy, T., 2968-Pos
 Villa, A., 1660-Pos
 Villa, E., 3030-Pos
 Villada-Balbuena, M., 1442-Pos
 Villalba-Galea, C. A., 3770-Pos
 Villalgorido, J. M., 1731-Pos
 Villar, J., 303-Pos
 Villarroel, A., 722-Pos
 Vilotic, A., 2854-Pos
 Viñas, C., 1058-Pos
 Vincent, T., 3520-Pos
 Vincze, J., 2696-Pos
 Vindas, R., 748-Pos
 Vink, R., 3204-Plat
 Vinogradova, O., 2408-Pos
 Viola, V., 3072-Pos
 Visco, I., 445-Pos
 Vissa, A., 313-Pos
 Visscher, K., 3176-Plat
 Viswanathan, M. C., 3906-Pos, 3917-Pos
 Vitalis, A., 2445-Pos
 Vithanarachchi, S. M., 5-Subg
 Vithayathil, R., 2072-Pos
 Vitrac, H., 7-Subg
 Vivas, O., 2737-Pos
 Vizcarra, C., 831-Pos
 Vizsnyiczai, G., 3138-Pos
 Vlassioug, I. V., 1089-Pos
 Vlijm, R., 398-Pos
 Voehler, M., 2170-Plat
 Voets, T., 679-Pos, 1658-Pos, 1690-Pos, 1691-Pos, 1704-Pos, 1706-Pos, 1707-Pos, 3811-Pos
 Vogel, H., 536-Pos, 1710-Pos
 Vogel, M., 680-Pos
 Vogel, S. S., 3441-Pos, 3442-Pos, 3443-Pos, 3716-Pos
 Vogel, V., 14-Subg, 4020-Pos
 Vogt, A., 789-Pos, 1861-Pos
 Vogt, K., 3426-Pos
 Voigt, A., 957-Pos
 Voinov, M. A., 1119-Plat
 Voith von Voithenberg, L., 2352-Pos
 Volkan, E., 2818-Pos
 Volkhardt, A., 1381-Pos
 Volkman, N., 106-Plat
 Volkov, I. L., 1095-Pos, 1995-Pos
 Vollmar, A. M., 2650-Pos
 Volpi, E., 1993-Pos
 von Diezmann, A. R., 324-Pos, 1023-Pos
 von Heijne, G., 1516-Pos
 von Helden, G., 3308-Pos
 von Hippel, P. H., 1394-Pos
 von Stockum, S., 18-Subg
 Vonk, W. I., 3460-Pos
 Voortman, L., 1166-Plat
 Vorobyov, I., 521-Pos, 669-Pos, 675-Pos, 2527-Pos
 Vorvis, C., 1251-Plat

- Voß, B., 3297-Pos
Voss, T. G., 3585-Pos
Vostrikov, V. V., 2955-Pos
Vosyliūtė, R., 632-Pos, 633-Pos
Voth, G. A., 2287-Plat, 2503-Pos, 3070-Pos
Vought, V. E., 2411-Pos
Voyer, N., 456-Pos, 459-Pos, 1532-Pos, 2234-Plat
Voynov, M. A., 2573-Pos
Vozenin, M., 593-Pos
Vrana, J. A., 6-Subg
Vrbsky, J., 2854-Pos
Vriens, J., 1690-Pos, 1691-Pos, 1706-Pos, 3811-Pos
Vtyurina, N., 423-Pos
Vukmirovic, M., 3663-Pos, 3910-Pos
Vukovic, L., 128-Plat
Vulin, C., 3003-Pos
Vunnam, N., 3445-Pos
Vyas, S. P., 1419-Pos
Vysotskaya, Z., 549-Pos
- W**
- Waard, M. D., 577-Pos
Wachter, R., 221-Plat
Wachter, R. M., 2315-Pos, 3485-Pos
Wacklin, H. P., 1123-Plat
Waclawska, I., 1836-Pos
Wade, H., , 2215-Plat
Wadhvani, P., 470-Pos, 1491-Pos, 1492-Pos, 1502-Pos
Wadsworth, P., 3930-Pos
Wagenaar, D. A., 2106-Pos
Wagenknecht, T., 561-Pos, 566-Pos, 3703-Pos
Wager-Miller, J., 5-Subg
Wagner, E., 1060-Pos
Wagner, J., 476-Pos, 1515-Pos
Wagner, J. E., 2038-Pos
Wagnon, E. C., 170-Plat
Wahl, M., 1039-Pos
Wahl-Schott, C., 2937-Pos
Waite, B. C., 3440-Pos
Waite, J., 2136-Pos
Waitsman, J. S., 3930-Pos
Wajdner, H., 1616-Pos
Wakai, N., 3878-Pos
Wakamoto, Y., 954-Pos
Wakefield, D., 545-Pos
Waksman, G., 2818-Pos
Wakula, P., 601-Pos, 602-Pos
Walani, N., 1576-Pos
Walcott, S., 793-Pos, 3880-Pos
Walczak, M., 1262-Plat
Waldeisen, J. R., 3140-Pos
Walder, R., 1981-Pos
Waldispuhl, J., 3473-Pos
Waldmann, H., 3607-Pos
Wales, D., 1299-Pos
Walhorn, V., 2277-Plat
Walker, G. C., 1371-Pos
Walker, J. T., 1063-Pos
Walker, M. A., 1619-Pos
Walker, M. L., 805-Pos, 814-Pos
Walko, M., 208-Plat
Wall, K. A., 2686-Pos
Wall, M. E., 1937-Pos, 3990-Pos
Walla, P. J., 137-Plat
Wallace, B., 2614-Pos
Wallace, B. A., 198-Plat, 1516-Pos
Wallace, D. C., 1136-Plat
Wallace, E., 1067-Pos
Wallace, J., 2227-Plat
Wallace, M. I., , 2363-Pos, 2543-Pos, 2545-Pos
Wallace, S. S., 1164-Plat
Wallgren, M., 3205-Plat
Wallin, S., 2212-Plat
Wallis, R., 3648-Pos
Walls, A. S., 1518-Pos
Walsh, D., 3458-Pos
Walsh, N. C., 1080-Pos
Walsh, P., 1540-Pos
Walsh, S. M., 550-Pos
Walsworth, R. L., 966-Pos
Walt, D. R., 130-Plat
Walter, N., 2501-Pos
Walter, W. J., 3953-Pos
Walters, A., 3445-Pos
Walters, R. M., 3576-Pos
Walters, T. J., 3687-Pos
Walther, S., 604-Pos, 944-Pos
Walton, S. D., 3665-Pos
Walweel, K. D., 2672-Pos
Wambaugh, M., 2344-Pos
Wan, X., 3062-Pos, 3793-Pos, 4019-Pos
Wanderlin, S., 1221-Symp
Wanderling, S., 3767-Pos
Wanderling, S. S., 2211-Plat
Wang, A., 836-Pos
Wang, B., 100-Plat, 2115-Pos, 2477-Pos
Wang, C., , 1070-Pos, 1369-Pos, 1578-Pos, 2184-Plat, 2285-Plat, 2651-Pos, 3858-Pos
Wang, D., 77-Symp, 811-Pos
Wang, F., , 2216-Plat
Wang, H., , 138-Plat, 2493-Pos, 2524-Pos, 3107-Pos, 3541-Pos, 3644-Pos
Wang, I., 2051-Pos
Wang, J., 963-Pos, 1924-Pos, 2022-Pos, 2781-Pos, 3550-Pos, 4015-Pos
Wang, K., 92-Plat, 530-Pos, 3823-Pos
Wang, K. W., 3110-Pos
Wang, L., 629-Pos, 1578-Pos, 1740-Pos, 2033-Pos, 2035-Pos, 2651-Pos, 2977-Pos, 3034-Pos, 3551-Pos, 3610-Pos
Wang, M. D., 410-Pos, 1134-Plat, 1382-Pos, 1990-Pos
Wang, N., 2059-Pos
Wang, P., 1439-Pos
Wang, Q., , 154-Plat, 1989-Pos, 3252-Plat, 3720-Pos
Wang, R., 561-Pos, 566-Pos, 572-Pos, 2008-Pos, 4055-Pos
Wang, R. L., 3071-Pos, 3085-Pos
Wang, S., 638-Pos, 1625-Pos, 2325-Pos, 2452-Pos, 2651-Pos, 3550-Pos, 3781-Pos, 3782-Pos
Wang, W., 158-Plat, 1111-Symp, 2200-Plat, 2209-Plat, 2263-Plat, 2360-Pos, 2627-Pos, 3246-Plat, 3436-Pos
Wang, X., 693-Pos, 1091-Pos, 1111-Symp, 1599-Pos, 1603-Pos, 1606-Pos, 1625-Pos, 1849-Pos, 2583-Pos, 2668-Pos, 3135-Pos, 3214-Plat, 3529-Pos, 3644-Pos
Wang, Y., 648-Pos, 721-Pos, 850-Pos, 1011-Pos, 1085-Pos, 1101-Pos, 1457-Pos, 1517-Pos, 1599-Pos, 1603-Pos, 1606-Pos, 1625-Pos, 1827-Pos, 2085-Pos, 2730-Pos, 2780-Pos, 2846-Pos, 3058-Pos, 3613-Pos, 3663-Pos, 3719-Pos, 3792-Pos
Wang, Z., 629-Pos, 1825-Pos, 3031-Pos, 3495-Pos
Wanichawan, P., 3854-Pos
Wanner, K., 1309-Pos
Wanunu, M., 1075-Pos, 1076-Pos, 2087-Pos
Ward, A., 1950-Pos
Ward, A. B., 3028-Pos
Ward, C., , 4026-Pos
Ward, C. W., 1638-Pos, 3680-Pos, 3681-Pos, 3686-Pos
Ward, K. E., 487-Pos
Ward, K. G., 936-Pos
Ward-van Oostwaard, D., 2795-Pos
Waring, A. J., 454-Pos
Warner, J. M., 170-Plat, 2555-Pos
Warner, L., 2352-Pos
Warnica, J., 2158-Plat
Warnke, S., 3308-Pos
Warren, C. M., 3923-Pos
Warren, K. M., 1968-Pos
Warschawski, D., 253-Pos
Warschawski, D. E., 2574-Pos
Warsaw, D. M., 1164-Plat
Warshel, A., 145-Plat, , 2486-Pos, 3757-Pos
Washington, T., 3501-Pos
Washio, T., 3249-Plat
Wassall, S. R., 226-Plat, 499-Pos, 502-Pos
Wassenaar, T. A., 3238-Plat
Wasserstrom, J., 3895-Pos
Wasserstrom, J. A., 2259-Plat, 2261-Plat
Watanabe, R., , 144-Plat, 1287-Pos, 3148-Pos
Watanabe, T., 906-Pos
Watanabe, T. M., 112-Plat, 904-Pos, 1772-Pos, 2879-Pos
Waterman, C., 81-Symp
Waters, M. J., 123-Plat
Watkins, H., 1936-Pos
Watkins, H. M., 1944-Pos, 3106-Pos
Watkins, W. J., 1330-Pos
Wattellier, B., 2904-Pos, 3041-Pos, 3045-Pos
Watts, A., 2363-Pos
Waugh, M. J., 1086-Pos
Waxham, M. N., 2668-Pos, 3214-Plat, 3720-Pos, 4007-Pos
Weaver, D., 2989-Pos
Weaver, L. D., 2670-Pos
Weaver, V., 2907-Pos
Webb, B., 3457-Pos
Webb, M., 388-Pos
Webb, M. R., 1383-Pos
Webber, J., 681-Pos
Weber, D., 476-Pos, 1515-Pos
Weber, J., 858-Pos
Weber, W. S., 1150-Plat
Wecker, T., 3005-Pos
Weckström, M., 4047-Pos
Wedemann, G., 407-Pos
Wee, K., 1440-Pos
Weghuber, J., 541-Pos, 1980-Pos, 3642-Pos
Wegner, L., 448-Pos
Wehnekamp, F., 136-Plat
Wehrens, X., 2263-Plat
Wei, B., 3666-Pos
Wei, G., 170-Plat, 529-Pos
Wei, M., 1606-Pos, 2544-Pos
Wei, Q., 3978-Pos
Wei, R., 1077-Pos
Wei, W., 2136-Pos
Weichbrodt, C., 2825-Pos
Weichselbaumer, S., 2995-Pos
Weidner, T., 210-Plat
Weidtkamp-Peters, S., 2016-Pos
Weigel, A. V., 175-Plat, 200-Plat
Weil, S. J., 2242-Plat
Weinacht, C., 3501-Pos
Weinberg, C., 407-Pos
Weinberg, R. J., 2012-Pos
Weinberg, S. H., 600-Pos, 693-Pos
Weinberger, L. S., 1886-Pos, 1891-Pos
Weiner, J. A., 544-Pos
Weinert, F., 1396-Pos
Weinert, F. M., 2473-Pos
Weingarth, M., 257-Pos, 3176-Plat
Weis, D. D., 3480-Pos
Weis, K., 1005-Pos, 1591-Pos
Weis, R. M., 552-Pos
Weis, W., 189-Symp
Weiss, W. I., 1815-Pos
Weise, K., 3607-Pos
Weisleder, N., 932-Pos
Weiss, A., 1899-Pos
Weiss, G., 2072-Pos, 3143-Pos
Weiss, J., 1622-Pos
Weiss, J. N., 618-Pos, 931-Pos, 2687-Pos, 3188-Plat, 4076-Pos
Weiss, L., 2790-Pos
Weiss, L. E., 120-Plat, 3460-Pos
Weiss, T., 1285-Pos
Weissburg, P., 2377-Pos
Weisshaar, J., 2338-Pos, 2456-Pos
Weisshaar, J. C., 2233-Plat, 2492-Pos
Weissman, J., 2490-Pos
Weissman, J. S., 220-Plat, 1894-Pos
Weitsman, G., 535-Pos
Weitz, D., 838-Pos, 1235-Plat
Weitz, D. A., 229-Plat, 1805-Pos, 3960-Pos
Weitzel, S. E., 1394-Pos

Welch, R. C., , 717-Pos, 718-Pos
 Welch, W. R., 3472-Pos
 Weliky, D. P., 3217-Symp
 Weller, R. S., 1743-Pos
 Wells, C. D., 1546-Pos, 2566-Pos
 Wells, J., 3011-Pos, 3212-Plat
 Wells, J. A., 220-Plat
 Wells, J. W., 538-Pos
 Welscher, K., 2024-Pos
 Welte, T., 111-Plat
 Welty, R., 3722-Pos, 3723-Pos
 Wen, B., 963-Pos
 Wen, H., 628-Pos
 Wen, J., 1210-Plat, 2493-Pos, 2494-Pos
 Wen, P., 3984-Pos
 Wen, Q., 1964-Pos
 Wendell, D., 2134-Pos
 Wendorff, T. J., 2311-Pos
 Weninger, K., 3584-Pos
 Wennemuth, G., 2739-Pos
 Wensel, T. G., 3035-Pos
 Wenzel, W., 472-Pos, 1318-Pos, 1319-Pos, 2058-Pos, 3535-Pos
 Wereszczynski, J., 3430-Pos, 4070-Pos
 Werge, M., 2285-Plat
 Werkman, C., 795-Pos
 Werner, A., 1154-Plat
 Werner, E., 1402-Pos
 Werner, J., 2000-Pos
 Werner, J. H., 979-Pos, 1093-Pos, 1887-Pos
 Werner, S., 3048-Pos, 3612-Pos
 Wescott, A. P., 1630-Pos, 2703-Pos
 Wessels, L., 3584-Pos
 West, T., 1738-Pos
 Westacott, M., 1934-Pos
 Westacott, M. J., 3859-Pos
 Westerblad, H., 3685-Pos, 3868-Pos
 Westerlund, F., 1402-Pos, 1416-Pos, 1421-Pos, 2168-Plat, 3508-Pos
 Westervelt, K., 1404-Pos
 Westfall, M., 2360-Pos
 Westfall, M. V., 3909-Pos
 Westh, P., 2285-Plat
 Weston, E. C., 1004-Pos
 Westra, E., 131-Plat
 Wetzlar, R., 3403-Pos
 Wetzler, D. E., 839-Pos
 Whang, J., 1242-Plat
 Wheaten, S., 1494-Pos
 Whelan, D. R., 1040-Pos, 3047-Pos
 Whitaker, S. K., 2548-Pos
 Whitcomb, K. J., 989-Pos
 White, E., 3896-Pos
 White, H., 902-Pos
 White, H. D., 805-Pos, 3675-Pos
 White, J., 2502-Pos
 White, L. A., 3968-Pos
 White, S. H., 1516-Pos, 2160-Plat, 2724-Pos
 White, T. W., 2830-Pos
 Whited-Holt, A. M., 2365-Pos
 Whitelegge, J. P., 2817-Pos
 Whitford, P., 2476-Pos
 Whitford, P. C., 3077-Pos
 Whitman-Cox, S., 2842-Pos
 Whitt, J. P., , 2712-Pos
 Whittington, C., 2127-Pos
 Whittington, C. L., 2414-Pos
 Whyte, G., 1026-Pos, 2912-Pos
 Wiche, G., 822-Pos
 Wichner, S. M., 3199-Plat
 Wickramasinghe, D., 935-Pos, 3722-Pos
 Wicks, G., 4092-Pos
 Wicks, G. R., 3065-Pos
 Widengren, J., 991-Pos
 Widom, J. R., 1038-Pos
 Wieczor, M., 1282-Pos, 3532-Pos
 Wieczorek, A., 1970-Pos
 Wieczorek, D. F., 1752-Pos
 Wiedenheft, B., 2174-Plat
 Wiedman, G., 457-Pos
 Wiemhöfer, M., 3180-Plat
 Wiener, D. M., , 1098-Pos, 1102-Pos
 Wiersma Capp, J. A., 1289-Pos
 Wieser, S., 1980-Pos
 Wietek, J., 1861-Pos
 Wigenius, J., 2168-Plat
 Wiggin, M., 1071-Pos
 Wiggins, C., 127-Plat
 Wiggins, P., 300-Pos
 Wiggins, P. A., 420-Pos, 1201-Plat, 1392-Pos, 2223-Plat
 Wigström, H., 965-Pos
 Wigström, J., 2099-Pos
 Wijesinghe, D. S., 1544-Pos
 Wikström, M., 1870-Pos
 Wilcox, K., 186-Symp
 Wilkes, A., 2105-Pos
 Wilkinson, R., 3907-Pos
 Willcocks, S., 2568-Pos
 Willems, R., 2180-Plat
 Williams, A. J., 559-Pos
 Williams, G. S., 588-Pos, 760-Pos, 1619-Pos, 1630-Pos, 2179-Plat, 2703-Pos, 3705-Pos
 Williams, J. A., 226-Plat, 499-Pos, 502-Pos
 Williams, M., 1507-Pos, 2172-Plat, 3539-Pos
 Williams, M. C., 394-Pos, 401-Pos, 1166-Plat, 1384-Pos, 1416-Pos, 1421-Pos
 Williams, M. R., 176-Plat, 1758-Pos
 Williams, P., 338-Pos
 Williams, S., 3993-Pos
 Williams, T., 3421-Pos
 Williamson, P., 703-Pos, 2596-Pos
 Willits, C. P., 3692-Pos
 Willkomm, S., 148-Plat
 Wilson, B., 2430-Pos
 Wilson, B. S., 540-Pos, 979-Pos, 1093-Pos
 Wilson, C., 791-Pos, 3269-Plat
 Wilson, C. A., 2373-Pos
 Wilson, C. G., 3324-Pos
 Wilson, C. W., 3385-Pos
 Wilson, I. A., 2216-Plat
 Wilson, K., 1820-Pos
 Wilson, L., 1787-Pos
 Wilson, L. G., 885-Pos
 Wilson, M., 2140-Symp
 Wilson, R. B., 3585-Pos
 Wilson, R. C., 2340-Pos
 Wilson, W. D., 2515-Pos
 Wimley, W. C., 457-Pos, 463-Pos, 2570-Pos, 3585-Pos
 Winge-Barnes, S., 1510-Pos
 Wink, M. M., 1988-Pos
 Winkelmann, D. A., 2839-Pos
 Winkle, S. A., 1400-Pos
 Winkler, J. R., 2390-Pos
 Winkler, S., 541-Pos
 Winn, M., 535-Pos
 Winnie, A. M., 848-Pos
 Winslow, R. L., 760-Pos, 1619-Pos, 2179-Plat
 Winter, L., 789-Pos
 Winter, P. W., 999-Pos
 Winter, R., 828-Pos, 1317-Pos, 1941-Pos, 3273-Pos, 3396-Pos, 3607-Pos
 Winterhalter, M., 2815-Pos, 2816-Pos, 3144-Pos
 Winterwerp, H. H., 3507-Pos
 Wioland, H., 2918-Pos
 Wiriyasermkul, P., 1857-Pos
 Wirtz, D., 237-Plat
 Wiseman, P. W., 3053-Pos, 3169-Plat, 3253-Plat
 Wishart, D. S., 2073-Pos
 Witayavanitkul, N., 1752-Pos, 1755-Pos, 3887-Pos
 Witjas-Paalberends, R., 2836-Pos, 3924-Pos
 Witkowski, A., 2379-Pos
 Witkowski, P., 2500-Pos
 Witte, A., 1956-Pos
 Witte, O. N., 4095-Pos
 Witteveen, M. J., 1994-Pos
 Witthoft, A. E., 3010-Pos
 Wittmann, T., 3980-Pos
 Wityk, P., 3532-Pos
 Wiwchar, M., 733-Pos
 Wizert, A., 3603-Pos
 Wohland, T., 50-Subg, 1504-Pos, 2002-Pos
 Wohlfarth, T., 3026-Pos
 Wojtas, L., 2127-Pos
 Wojtas-Niziurski, W., 1183-Plat
 Wold, M. S., 393-Pos
 Wolf, M., 1318-Pos, 1319-Pos
 Wolf, S. G., 3023-Pos
 Wolfenson, H., 2913-Pos
 Wolff, E. K., 2130-Pos
 Wolff, T., 129-Plat
 Wolgemuth, C. W., 2148-Plat
 Woll, K. A., 2416-Pos
 Wollmuth, L. P., 160-Plat
 Wolny, M., 2995-Pos, 3163-Symp
 Wolny, PhD, M., 2996-Pos
 Wolska, B. M., 2858-Pos
 Woltz, R., 614-Pos
 Won, A. M., 3975-Pos
 Wong, C., 3528-Pos
 Wong, E., 1610-Pos, 3021-Pos
 Wong, J., 1251-Plat
 Wong, K., 2444-Pos, 3076-Pos
 Wong, M., 1330-Pos
 Wong, S. Y., 1795-Pos
 Wong, V., 2452-Pos, 453-Pos
 Wong, W., 3836-Pos
 Wong, W. P., 982-Pos, 1948-Pos, 1950-Pos
 Woo, J., 662-Pos, 3694-Pos
 Woo, S., 1626-Pos, 1627-Pos
 Wood, B. R., 1040-Pos
 Wood, E., , 519-Pos, 2398-Pos
 Wood, J. W., 3193-Plat
 Wood, M., , 3220-Symp
 Wood, M. K., 512-Pos
 Wood, M. L., 1610-Pos, 2724-Pos
 Wood, N. W., 2679-Pos, 2982-Pos
 Woodahl, E. L., 1527-Pos
 Woodall, K., 910-Pos
 Woodbury, D. J., 1584-Pos
 Woodcock, A. K., 1238-Plat
 Woodcock, H. L., 2414-Pos
 Woodhouse, F. G., 2918-Pos
 Woodside, M., 28-Subg
 Woodward, M., 793-Pos
 Woolf, T. B., 2051-Pos, 2947-Pos, 2951-Pos, 3076-Pos
 Woolfson, D., 1240-Plat
 Worcester, D., 3734-Pos, 3755-Pos
 Word, T. A., 1323-Pos, 2414-Pos
 Worden, E., 149-Plat, 2366-Pos
 Workman, R. J., 309-Pos
 Wostein, H., 3196-Plat
 Wösten, H. A., 1034-Pos
 Wowor, A. J., 2406-Pos
 Wragg, R., 959-Pos
 Wraight, C. A., 1865-Pos, 1866-Pos, 2970-Pos
 Wrana, J. L., 3975-Pos
 Wray, R., 2268-Plat
 Wren, M., 3990-Pos
 Wright, A., 3185-Plat
 Wright, A. K., 2186-Plat, 3337-Pos
 Wright, E., 1843-Pos
 Wright, E. M., 1842-Pos
 Wright, J., 2741-Pos
 Wright, J. W., 1475-Pos
 Wright, N., 703-Pos
 Wright, P. J., 2667-Pos
 Wrobel, E., 726-Pos
 Wruss, J., 541-Pos
 Wu, B., 2017-Pos
 Wu, D., 1880-Pos, 3791-Pos
 Wu, E., 2053-Pos
 Wu, E. L., 3319-Pos, 3566-Pos
 Wu, F., 948-Pos
 Wu, G., 573-Pos
 Wu, H., 2823-Pos, 3960-Pos
 Wu, J., 1728-Pos
 Wu, J. C., 2858-Pos, 3695-Pos
 Wu, L., 287-Pos, 3178-Plat
 Wu, N. Z., 557-Pos
 Wu, Q., 1578-Pos
 Wu, S., 256-Pos, 374-Pos, 2454-Pos
 Wu, S. C., 1761-Pos, 3260-Plat
 Wu, W., 708-Pos
 Wu, X., 1548-Pos, 1578-Pos, 2667-Pos, 3055-Pos, 3178-Plat, 4017-Pos
 Wu, Y., , 546-Pos, 857-Pos, 2209-Plat, 2781-Pos, 2977-Pos, 3055-Pos, 3758-Pos
 Wu, Z., 170-Plat, 2209-Plat, 2552-Pos, 2562-Pos

Wuite, G. J., 1163-Plat,
1418-Pos, 1949-Pos,
1955-Pos, 2222-Plat,
2617-Pos
Wulf, S. D., 1284-Pos
Wulff, H., 2188-Plat,
2745-Pos, 2746-Pos,
2790-Pos, 3248-Plat
Wullschleger, M., 2693-Pos,
2694-Pos, 2695-Pos
Wyant, K., 2342-Pos
Wych, D. C., 2040-Pos
Wylie, B. J., 552-Pos
Wyss, R., 1710-Pos

X

Xia, L., 612-Pos
Xia, T., 2096-Pos
Xia, X., 2715-Pos
Xiao, F., 2209-Plat
Xiao, J., 573-Pos, 3407-Pos
Xiao, L., 562-Pos
Xiao, Q., 2688-Pos
Xiao, S., 3347-Pos, 3349-Pos
Xiao, W., 347-Pos, 613-Pos
Xie, C., 1139-Plat,
1548-Pos, 1829-Pos
Xie, L., 332-Pos, 628-Pos,
3676-Pos
Xie, S., 1373-Pos
Xie, W., 583-Pos
Xie, X., 2450-Pos
Xie, Y., 610-Pos, 3060-Pos
Xing, D., 840-Pos
Xing, Y., 296-Pos, 1326-Pos
Xiong, C., 3303-Pos,
3329-Pos
Xiong, L., 1913-Pos
Xiong, W., 1578-Pos
Xu, A., 2183-Plat
Xu, C., 47-Subg, 2238-Plat
Xu, D., 629-Pos, 1047-Pos,
3476-Pos
Xu, H., 1251-Plat,
2651-Pos, 3464-Pos
Xu, J., 932-Pos, 1625-Pos,
1790-Pos, 3938-Pos
Xu, L., 3813-Pos
Xu, M., 1200-Plat, 2320-Pos
Xu, P., 922-Pos
Xu, Q., 1573-Pos
Xu, R., 3788-Pos
Xu, S., 306-Pos, 1038-Pos
Xu, T., 168-Plat
Xu, X., 106-Plat, 1251-Plat,
1675-Pos, 3293-Pos,
3501-Pos
Xu, Y., 417-Pos, 418-Pos,
721-Pos, 740-Pos,
741-Pos, 1728-Pos,
1729-Pos
Xue, M., 2355-Pos
Xuhui, T., 2812-Pos

Y

Yacoby, A., 966-Pos
Yacoub, M. H., 631-Pos,
3838-Pos
Yadav, S., 314-Pos
Yaffe, D., 1158-Plat
Yagi, N., 810-Pos,
3181-Plat
Yajima, J., 3947-Pos
Yakubovich, D., 2748-Pos
Yamada, A., 3709-Pos,
3710-Pos, 4030-Pos
Yamada, S., 1188-Plat
Yamada, T., 517-Pos
Yamagishi, M., 3947-Pos
Yamaguchi, H., 2386-Pos
Yamaguchi, N., 580-Pos,
1227-Plat
Yamaguchi, T., 3089-Pos
Yamaguchi, Y., 3897-Pos
Yamamoto, D., 3771-Pos
Yamamoto, D. L., 3873-Pos
Yamamoto, E., 2827-Pos,
3091-Pos
Yamanoha, B., 3933-Pos
Yamato, T., 3493-Pos
Yamazaki, D., 2701-Pos,
3856-Pos, 3857-Pos
Yamazaki, S., 3959-Pos
Yamazawa, T., 578-Pos,
579-Pos
Yamoah, E. N., 614-Pos,
615-Pos
Yan, C., 3501-Pos
Yan, J., 784-Pos, 1041-Pos,
1428-Pos, 3246-Plat,
3787-Pos
Yan, K., 2272-Plat
Yan, L., 155-Plat, 628-Pos
Yan, N., 1219-Symp
Yan, P., 964-Pos, 2260-Plat
Yan, S., 1210-Plat
Yan, Y., 167-Plat, 2406-Pos
Yanagida, T., 112-Plat,
792-Pos, 953-Pos
Yañez, O., 2822-Pos
Yang, B., 1682-Pos, 3628-Pos
Yang, C., 1089-Pos
Yang, C. J., 1094-Pos
Yang, D., 585-Pos, 982-Pos,
3498-Pos
Yang, F., 92-Plat, 3824-Pos
Yang, H., 727-Pos, 922-Pos,
983-Pos, 1303-Pos,
1332-Pos, 2024-Pos
Yang, J., 479-Pos, 1081-Pos,
1251-Plat, 3067-Pos
Yang, L., 1940-Pos
Yang, P., 3653-Pos,
3915-Pos
Yang, P. S., 1670-Pos,
3171-Plat

Yang, R., 397-Pos,
2741-Pos, 2742-Pos,
3174-Plat
Yang, T. T., 2200-Plat
Yang, W., 1357-Pos,
1594-Pos, 2308-Wkshp,
2383-Pos, 3171-Plat
Yang, X., 1009-Pos,
3458-Pos
Yang, Y., 167-Plat, 281-Pos,
905-Pos, 1227-Plat,
1382-Pos, 1682-Pos,
1794-Pos, 2154-Plat,
2301-Wkshp, 2339-Pos,
2551-Pos, 2671-Pos,
3858-Pos
Yang, Z., 2184-Plat,
2345-Pos
Yaniv, Y., 660-Pos,
1639-Pos, 2690-Pos
Yano, Y., 1495-Pos
Yanoski, J., 1697-Pos
Yao, L., 471-Pos, 1510-Pos,
1757-Pos, 2556-Pos
Yao, S., 476-Pos, 1515-Pos
Yao, X., 2050-Pos, 2076-Pos
Yao, Y., 162-Plat, 259-Pos,
4060-Pos
Yap, T. L., 103-Plat, 2984-
Pos
Yarger, J. L., 1150-Plat,
3476-Pos
Yarmola, E. G., 3155-Pos
Yarotsky, V., 663-Pos
Yarov-Yarovoy, V.,
614-Pos, 670-Pos,
697-Pos, 1597-Pos,
2745-Pos, 3729-Pos,
3824-Pos
Yasar, S., 1410-Pos
Yassif, J., 1591-Pos
Yasuda, K., 3113-Pos
Yasuda, S., 1855-Pos,
2332-Pos
Yasui, H., 3186-Plat
Yasui, M., 2827-Pos,
3091-Pos
Yasukochi, M., 568-Pos
Yasuoka, K., 2827-Pos,
3091-Pos
Yau, J., 1540-Pos
Yau, M., 728-Pos
Yavorska, O., 3433-Pos
Yavuz, H., 2563-Pos
Yazdi, S., 3736-Pos
Ye, J., 1438-Pos
Ye, L. F., 1397-Pos
Ye, Q., 846-Pos
Ye, S., 3823-Pos
Ye, W., 1521-Pos
Yeager, M., 342-Pos,
4040-Pos
Yeates, T. O., 2248-Symp,
3298-Pos, 4049-Pos

Yedvabny, E., 2433-Pos
Yeh, C., 2100-Pos
Yeh, E., 2100-Pos
Yeh, H., 755-Pos
Yeh, J., 755-Pos
Yeliseev, A. A., 558-Pos
Yelle, N., 3520-Pos
Yellin, F. H., 2899-Pos
Yen, C., 1961-Pos
Yen, M., 1601-Pos,
2638-Pos, 3170-Plat
Yengo, C. M., 901-Pos,
911-Pos, 2839-Pos
Yeom, K., 3537-Pos
Yeom, M., 2053-Pos
Yeon, J., 2755-Pos
Yeromin, A. V., 1605-Pos
Yerushalmi, E., 1097-Pos
Yevick, H., 1802-Pos
Yi, J., 932-Pos, 1624-Pos
Yi, S., 3430-Pos
Yildiz, A., 1776-Pos,
1777-Pos, 1778-Pos,
2201-Plat, 3199-Plat
Yilmaz, D., 2803-Pos
Yilmaz, N., 517-Pos
Yin, D., 311-Pos
Yin, H., 2547-Pos
Yin, T., 857-Pos
Ying, L., 214-Plat, 3455-Pos
Yingling, Y. G., 1415-Pos
Yip, C., 1033-Pos
Yip, C. M., 313-Pos, 1540-
Pos, 3975-Pos
Yoda, T., 3404-Pos
Yoder, J. B., 1655-Pos,
3439-Pos, 3440-Pos
Yokokawa, R., 3496-Pos
Yokota, H., 3496-Pos,
3512-Pos
Yokoyama, T., 3186-Plat
Yoluk, O., 2756-Pos,
2768-Pos
Yoluk, Ö., 1734-Pos,
1735-Pos
Yonetani, T., 3211-Plat
Yonetani, Y., 378-Pos
Yonkunas, M., 771-Pos
Yoo, J., 392-Pos, 408-Pos,
2091-Pos, 3517-Pos,
3522-Pos
Yoon, C., 712-Pos
Yoon, T., 994-Pos, 1131-Plat,
1423-Pos, 2551-Pos
Yoon, Y., 424-Pos
Yoon, Y. J., 2017-Pos
Yosefson, O., 2247-Symp
Yoshida, A., 3186-Plat
Yoshida, Y., 2386-Pos
Yoshidome, T., 1938-Pos
Yoshizawa, K., 112-Plat
Yoshua, S., 3541-Pos
Younes, A., 584-Pos
Young, C., 1253-Plat

Young, E. C., 787-Pos
Young, H. S., 2860-Pos,
2861-Pos
Young, J., 703-Pos
Young, L. H., 1548-Pos
Young, M. A., 3289-Pos
Young, S. G., 3019-Pos
Younsook, L., 1669-Pos
Younkin, J., 549-Pos
Yousef, Z., 590-Pos
Ysselstein, D., 1540-Pos
Ytreberg, F., 2431-Pos,
2434-Pos
Yu, A., 4057-Pos
Yu, C., 664-Pos, 825-Pos,
2631-Pos
Yu, D., 1211-Plat, 2406-Pos,
2482-Pos
Yu, I., 2045-Pos
Yu, J., 857-Pos, 2136-Pos,
2517-Pos, 3639-Pos
Yu, K., 3800-Pos
Yu, L., 264-Pos, 3039-Pos
Yu, N., 1172-Symp
Yu, R., 2769-Pos, 2770-Pos
Yu, W., 2746-Pos
Yu, X., 147-Plat, 2112-Pos
Yu, Y., 732-Pos, 918-Pos,
2331-Pos, 2634-Pos,
3812-Pos
Yu, Z., 1389-Pos, 3464-Pos
Yuan, C., 183-Plat, 1679-
Pos, 1683-Pos, 1739-Pos,
3893-Pos
Yuan, H., 761-Pos
Yuan, J., 320-Pos
Yuchi, M., 2209-Plat
Yuchi, Z., 565-Pos, 569-Pos
Yue, D., 894-Pos
Yue, D. T., 59-Subg,
1241-Plat, 1670-Pos,
1681-Pos, 2797-Pos,
3171-Plat
Yue-Xian, L., 3836-Pos
Yukawa, A., 1287-Pos
Yun, Y., 3117-Pos
Yura, K., 3493-Pos
Yurtsever, Z., 3799-Pos
Yusif, M. A., 3614-Pos
Yusifov, T., 2709-Pos,
2710-Pos
Yusko, E. C., 844-Pos,
1080-Pos
Yusuf, M., 1993-Pos

Z

Zaba, L. C., 415-Pos
Zacchariae, U., 206-Plat
Zacchia, N. A., 1954-Pos
Zachariae, U., 757-Pos,
2729-Pos
Zacharias, M., 1264-Plat,
3354-Pos
Zachariassen, L., 769-Pos

- Zaeifi, D., 2420-Pos
 Zagotta, W. N., 2541-Pos, 3727-Pos, 3728-Pos
 Zagrebelsky, M., 137-Plat
 Zaha, V. G., 1548-Pos
 Zahid, O. K., 2088-Pos
 Zahradnik, I., 630-Pos, 2698-Pos
 Zahradnik, I., 3894-Pos
 Zahradnikova, A., 567-Pos, 637-Pos, 2698-Pos
 Zahradnikova, Jr, A., 2698-Pos
 Zaid, I., 868-Pos, 2934-Pos
 Zaidel-Bar, R., 2631-Pos
 Zaini, A., 3192-Plat
 Zaitsev, A. V., 941-Pos, 943-Pos
 Zaitseva, E., 3150-Pos
 Zakany, F., 2722-Pos
 Zakharian, E., 1694-Pos, 1698-Pos, 3807-Pos, 3826-Pos
 Zakharov, S. D., 1871-Pos, 2817-Pos
 Zakrevsky, P., 1436-Pos
 Zaleta-Rivera, K., 1065-Pos
 Zaman, J., 631-Pos
 Zamanian-Azodi, M., 3382-Pos
 Zambrano-Arnone, A., 2936-Pos
 Zamiri, B., 349-Pos, 1443-Pos
 Zampighi, G. A., 3179-Plat
 Zamudio, F. Z., 562-Pos
 Znacchi, F. C., 2001-Pos
 Zand, K., 1136-Plat
 Zanetti-Domingues, L., 535-Pos
 Zang, Y., 612-Pos
 Zangle, T. A., 4095-Pos
 Zanni, M. T., 219-Plat
 Zare, R. N., 1243-Plat, 2319-Pos, 4027-Pos
 Zaritskiy, A., 2313-Pos
 Zarnani, A., 2749-Pos
 Zauscher, S., 1531-Pos
 Zavala, E., 1896-Pos
 Zawrotny, M., 2308-Wkshp
 Zayats, V., 1608-Pos, 1609-Pos
 Zaydman, M., 3750-Pos
 Zaydman, M. A., 202-Plat, 3749-Pos, 3791-Pos
 Zaytsev, A., 841-Pos
 Zaza, A., 621-Pos, 627-Pos, 1660-Pos, 1686-Pos
 Zboril, R., 2116-Pos, 3158-Pos
 Zdravkovic, I., 2068-Pos
 Zecchi, K., 3573-Pos
 Zecchi, K. A., 3595-Pos
 Zehner, J., 1109-Pos
 Zehra, K., 3929-Pos
 Zeko, T., 3099-Pos
 Zelenka, J., 1025-Pos
 Zell, R., 2186-Plat
 Zeller, F. T., 2041-Pos
 Zeng, W., 2209-Plat
 Zenisek, D., 3016-Pos
 Zeno, W. F., 2129-Pos
 Zervantonakis, I. K., 2889-Pos
 Zervou, S., 945-Pos
 Zerweck, J., 1502-Pos
 Zerze, G. H., 2442-Pos
 Zettl, A., 2090-Pos
 Zha, X., 440-Pos
 Zhai, D., 106-Plat
 Zhai, X., 1530-Pos, 1543-Pos, 1544-Pos
 Zhan, Y., 2431-Pos
 Zhang, D., 616-Pos, 999-Pos, 2740-Pos
 Zhang, F., 1700-Pos, 3819-Pos
 Zhang, G., 2209-Plat, 2898-Pos, 3037-Pos
 Zhang, H., 158-Plat, 966-Pos, 1147-Plat, 3175-Plat, 3175-Plat, 3301-Pos, 3858-Pos
 Zhang, J., 46-Subg, 291-Pos, 562-Pos, 573-Pos, 761-Pos, 857-Pos, 1047-Pos, 1047-Pos, 1263-Plat, 1541-Pos, 1742-Pos, 2461-Pos, 2497-Pos, 2713-Pos, 3790-Pos, 4090-Pos
 Zhang, K., 2651-Pos, 2998-Pos
 Zhang, L., 255-Pos, 572-Pos, 1274-Pos, 1571-Pos, 3021-Pos, 3975-Pos
 Zhang, M., 113-Plat, 721-Pos, 1755-Pos, 3021-Pos, 3040-Pos, 3778-Pos, 3790-Pos, 3792-Pos, 3887-Pos
 Zhang, P., 2346-Pos, 3720-Pos
 Zhang, Q., 1195-Plat, 1578-Pos, 2196-Plat, 3620-Pos
 Zhang, R., 270-Pos, 273-Pos, 1348-Pos, 2236-Plat, 2316-Pos, 2425-Pos, 3192-Plat, 3823-Pos
 Zhang, R. S., 2741-Pos
 Zhang, S., 546-Pos, 1198-Plat, 3499-Pos, 4032-Pos
 Zhang, T., 2857-Pos
 Zhang, T. O., 219-Plat
 Zhang, W., 763-Pos, 1267-Plat, 1598-Pos
 Zhang, X., 255-Pos, 598-Pos, 616-Pos, 1085-Pos, 1219-Symp, 1274-Pos, 1428-Pos, 1598-Pos, 2348-Pos, 2350-Pos, 3464-Pos, 3518-Pos
 Zhang, Y., 648-Pos, 1156-Plat, 1199-Plat, 1324-Pos, 1958-Pos, 1977-Pos, 2301-Wkshp, 2338-Pos, 2348-Pos, 2350-Pos, 2352-Pos, 2469-Pos, 2564-Pos, 2766-Pos, 2948-Pos, 3592-Pos, 3965-Pos
 Zhang, Y. H., 709-Pos
 Zhang, Z., 274-Pos, 614-Pos, 615-Pos, 1142-Plat, 2713-Pos, 2714-Pos, 3789-Pos
 Zhao, C., 2730-Pos, 3856-Pos
 Zhao, G., 665-Pos
 Zhao, H., 767-Pos, 768-Pos, 1196-Plat, 1259-Plat, 3267-Plat
 Zhao, J., 89-Plat, 2355-Pos, 3252-Plat, 3351-Pos
 Zhao, L., 503-Pos
 Zhao, M., 3062-Pos, 4019-Pos
 Zhao, Q., 1859-Pos
 Zhao, S., 142-Plat
 Zhao, W., 172-Plat, 1139-Plat, 2146-Plat
 Zhao, X., 3349-Pos
 Zhao, Y., 140-Plat, 570-Pos, 571-Pos, 713-Pos, 2094-Pos, 3183-Plat, 3315-Pos
 Zhao, Z., 629-Pos
 Zheng, A., 3588-Pos
 Zheng, H., 1520-Pos, 3464-Pos
 Zheng, J., 92-Plat, 3230-Plat, 3813-Pos, 3824-Pos
 Zheng, L., 1578-Pos, 2165-Plat
 Zheng, N., 674-Pos, 3343-Pos
 Zheng, P., 1947-Pos
 Zheng, Q., 980-Pos
 Zheng, T., 2565-Pos
 Zheng, W., 925-Pos, 2240-Plat
 Zheng, Y., 1879-Pos
 Zhi, X., 2466-Pos
 Zhiyentayev, T., 1880-Pos
 Zholobenko, A., 1552-Pos
 Zholos, A. V., 1689-Pos
 Zholudeva, L. V., 936-Pos
 Zhong, L., 860-Pos
 Zhong, X., 572-Pos
 Zhorov, B. S., 666-Pos
 Zhou, A., 3309-Pos
 Zhou, B., 1894-Pos
 Zhou, C. Y., 409-Pos
 Zhou, H., 160-Plat, 2256-Plat, 3436-Pos
 Zhou, J., 92-Plat, 932-Pos, 1624-Pos
 Zhou, L., 634-Pos, 1251-Plat, 1933-Pos, 2651-Pos, 3363-Pos, 3830-Pos, 3831-Pos
 Zhou, M., 1856-Pos
 Zhou, P., 89-Plat
 Zhou, Q., 573-Pos, 2743-Pos, 3190-Plat
 Zhou, R., 1982-Pos
 Zhou, S., 2059-Pos, 2122-Pos
 Zhou, W., 1854-Pos, 1877-Pos, 3062-Pos, 4019-Pos
 Zhou, X., 503-Pos, 2766-Pos, 2925-Pos, 3683-Pos
 Zhou, X. X., 1929-Pos
 Zhou, Y., 1599-Pos, 1602-Pos, 1603-Pos, 1606-Pos, 2204-Plat, 3846-Pos
 Zhou, Z., 710-Pos, 980-Pos, 1578-Pos, 1809-Pos, 2651-Pos, 2929-Pos, 3660-Pos
 Zhu, C., 78-Symp, 823-Pos, 1186-Plat
 Zhu, F., 2651-Pos
 Zhu, H., 3687-Pos
 Zhu, J., 3800-Pos
 Zhu, L., 566-Pos
 Zhu, M., 1520-Pos
 Zhu, M. X., 3818-Pos
 Zhu, R., 1128-Plat, 1953-Pos
 Zhu, S., 1009-Pos
 Zhu, X., 892-Pos, 894-Pos
 Zhu, Y., 1797-Pos
 Zhuang, X., 429-Pos, 2203-Plat, 3061-Pos
 Zhuang, Z., 3501-Pos
 Ziblat, R., 2616-Pos
 Ziegler, C., 1834-Pos, 1835-Pos, 1836-Pos
 Zielinska, P., 1123-Plat
 Ziembra, B. P., 2598-Pos
 Zieske, K., 947-Pos
 Zifarelli, G., 743-Pos
 Zilbershtein, A., 2231-Plat
 Zilman, A., 1593-Pos
 Ziman, B., 584-Pos
 Ziman, B. D., 585-Pos
 Zimanyi, C. M., 285-Pos
 Zimmerberg, J., 2626-Pos
 Zimmermann, J., 876-Pos
 Zimpfer, B., 470-Pos
 Ziolo, M. T., 1742-Pos
 Ziomkowska, J., 3147-Pos
 Zipfel, W., 2022-Pos
 Zipfel, W. R., 2028-Pos, 4015-Pos
 Zissimopoulos, S., 563-Pos
 Zito, F., 2574-Pos
 Zitouni, N. B., 2872-Pos
 Zlotnick, A., 327-Pos, 328-Pos
 Zocher, F., 3361-Pos
 Zoghbi, M. E., 1152-Plat
 Zola, J., 406-Pos
 Zollmann, T., 1158-Plat
 Zolmajd-Haghighi, Z., 3447-Pos
 Zook, J. D., 975-Pos
 Zoonens, M. A., 1346-Pos
 Zoratti, M., 18-Subg, 22-Subg, 3739-Pos
 Zorec, R., 69-Subg, 2664-Pos
 Zorio, D., 3663-Pos
 Zorman, S., 2564-Pos
 Zorn, J. A., 220-Plat
 Zorzato, F., 636-Pos, 2256-Plat
 Zosel, F., 1363-Pos
 Zot, H. G., 1821-Pos
 Zou, S., 1780-Pos, 1781-Pos
 Zou, T., 3355-Pos
 Zou, X., 1544-Pos
 Zouani, O., 1823-Pos
 Zubriené, A., 1336-Pos
 Zucca, S., 3172-Plat
 Züchner, T., 1283-Pos
 Zuckerman, D., 1096-Pos
 Zuckerman, D. M., 2047-Pos, 2080-Pos, 2081-Pos, 2400-Pos
 Zuckermann, M., 1240-Plat, 1478-Pos
 Zuckermann, M. J., 3943-Pos
 Zuev, Y., 3379-Pos
 Zuer, M., 1441-Pos
 Zuo, F., 918-Pos
 Zuo, L., 929-Pos
 Zuo, P., 2651-Pos
 Zurdo, J., 318-Pos
 Zuttion, F., 1987-Pos
 Zuzek, Z., 3802-Pos
 Zweytick, D., 464-Pos, 468-Pos
 Zwick, M., 3798-Pos
 Zwier, J., 534-Pos
 Zwier, M. C., 2047-Pos
 Zwolak, A., 64-Subg, 899-Pos

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George, Alfred L.	Allergan	Research funded by industry grant	1650-Pos
Ghermazien, Haben T.	MyoKardia Inc	Employment (full or part-time) in funding company	3692-Pos
Gillis, Kevin D.	ExoCytronics LLC	Ownership or Partnership in funding organization	2659-Pos
Goepel, Sven	AstraZeneca	Employment (full or part-time) in funding company	694-Pos
Goldstein, Goldie	4D Technology Corp	Employment (full or part-time) in funding company	2020-Pos
Gosling, Martin	Novartis	Employment (full or part-time) in funding company	736-Pos
Griffis, Joshua W.	PathoGenetix	Employment (full or part-time) in funding company	1419-Pos
Guimarães, Paola B.	FAPESP	Other	1554-Pos
Guinot, David	Nanion Technologies	Employment (full or part-time) in funding company	3702-Pos
Guinot, David	Nanion Technologies	Employment (full or part-time) in funding company	694-Pos
Guo, Senli	Bruker Corp	Employment (full or part-time) in funding company	4033-Pos
Guy, Andrew T.	Oxford Nanopore Technologies	Research funded by industry grant	2227-Plat
Haarmann, Claudia	Nanion Technologies	Employment (full or part-time) in funding company	680-Pos
Haarmann, Claudia	Nanion Technologies	Employment (full or part-time) in funding company	694-Pos
Hackos, David H.	Genentech, Inc.	Employment (full or part-time) in funding company	2810-Pos

Name	Disclosure Entity	Disclosure Type	Presentation Number
Hassaine, Gherici	Theranyx	Employment (full or part-time) in funding company	1710-Pos
Heedy, Sara	Anasys Instruments Corp.	Employment (full or part-time) in funding company	1033-Pos
Heerklotz, Heiko	this study was supported by an industry grant from AgraQuest/ Bayer CropScience	Research funded by industry grant	1497-Pos
Heifetz, Alexander	Evotec (UK) Ltd	Employment (full or part-time) in funding company	90-Plat
Helmes, Michiel	Ionoptix LLC	Ownership or Partnership in funding organization	2849-Pos
Hirakawa, Ryoko	Gilead Sciences	Employment (full or part-time) in funding company	1656-Pos
Hoang Trong, Minh Tuan	NVIDIA	Research funded by industry grant	2179-Plat
Hong, Jingjun	National Cancer Institute grant Y1-CO-1020, National Institute of General Medical Sciences grant Y1-GM-1104, and U.S. Department of Energy grant DE-AC02-06CH11357 (APS).	Research funded by industry grant	249-Pos
Hu, Erding	GlaxoSmithKline	Employment (full or part-time) in funding company	3267-Plat
Hu, Qichi	Anasys Instruments Corp.	Employment (full or part-time) in funding company	1033-Pos
Hwang, You Jin	National Research Foundation of Korea(NRF)	Research funded by industry grant	3713-Pos
Jacobs, Donald J.	Medimmune LLC	Research funded by industry grant	3292-Pos
Jafri, Mohsin S.	NVIDIA	Research funded by industry grant	2179-Plat
January, Craig T.	Cofounder of Cellular Dynamics International	Other	2799-Pos
Jesorka, Aldo	Co-founder of Avalance Biotech AB	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	1055-Pos
Jiang, Yong	GlaxoSmithKline	Employment (full or part-time) in funding company	3267-Plat
Jiang, Xin	Molecular Devices, LLC	Employment (full or part-time) in funding company	681-Pos
Jyothikumar, Vinod	National Heart, Lung, and Blood Institute (PO1HL101871)	Other	3052-Pos
Kamp, Timothy J.	cofounder of Cellular Dynamics International	Other	2799-Pos
Kan, Elaine	Gilead Sciences	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	2377-Pos
Kan, Elaine	Gilead Sciences Inc.	Employment (full or part-time) in funding company	1330-Pos
Karagueuzian, Hrayr S.	Gilead Sciences Inc., Foster City, California	Research funded by industry grant	3188-Plat
Kasson, Peter	Google, Inc	Employment (full or part-time) in funding company	3218-Symp
Kawas, Raja	MyoKardia, Inc.	Employment (full or part-time) in funding company	2842-Pos
Kettenhofen, Ralf	Axiogenesis	Employment (full or part-time) in funding company	694-Pos
Khalid, Syma	Oxford Nanopore Technologies	Research funded by industry grant	2227-Plat
Kjoller, Kevin	Anasys Instruments Corp.	Employment (full or part-time) in funding company	1033-Pos
Knapp, Stefan	Structural Genomics Consortium	Research funded by industry grant	108-Plat
Kondo, Richard	Sophion Bioscience	Employment (full or part-time) in funding company	3861-Pos
Kossolov, Eugen	Axiogenesis	Employment (full or part-time) in funding company	694-Pos
Lacey, Ernest	BioAustralis Pty Ltd	Employment (full or part-time) in funding company	1500-Pos
Lagpacan, Leanna	Gilead Sciences Inc.	Employment (full or part-time) in funding company	1330-Pos
Law, Richard, J.	Evotec (UK) Ltd	Employment (full or part-time) in funding company	90-Plat

Name	Disclosure Entity	Disclosure Type	Presentation Number
Leite, Maria F.	CNPq, CAPES, FAPEMIG	Other	1554-Pos
Lembong, Josephine	Firmenich Inc.	Research funded by industry grant	1223-Plat
Lenzi, David	Aratome LLC	Ownership or Partnership in funding organization	2012-Pos
Li, Tong	Medimmune LLC	Research funded by industry grant	3292-Pos
Liao, Jinfang	Full time employment with AAT Bioquest	Employment (full or part-time) in funding company	1859-Pos
Lilja, Kaisa E.	Biolin Scientific	Employment (full or part-time) in funding company	3153-Pos
Liu, Gongxin	Gilead Sciences	Employment (full or part-time) in funding company	1664-Pos
Liu, Fei	Bill & Melinda Gates Foundation	Research funded by industry grant	2108-Pos
Livesay, Dennis R.	Medimmune LLC	Research funded by industry grant	3292-Pos
Lo, Michael	Anasys Instruments Corp.	Employment (full or part-time) in funding company	1033-Pos
Løjkner, Lars D.	Full time employee of Sophion	Employment (full or part-time) in funding company	2746-Pos
Lopaschuk, Gary D.	Metabolic Modulators Research Ltd	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	945-Pos
Luerman, Greg	ChanTest	Employment (full or part-time) in funding company	3647-Pos
Ma, Jianjie	TRiM-edicine, Inc	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	503-Pos
Ma, Jianjie	Founder of TRIM-edicine	Other	3201-Plat
Ma, Jianjie	Dr. Jianjie Ma has equity interest in TRIM-edicine, Inc. that is developing MG53 as a regenerative medicine agent.	Other	3687-Pos
Magdeleine Hung, Magdeleine	Gilead Sciences Inc.	Employment (full or part-time) in funding company	1330-Pos
Malkin, Gene	PathoGenetix	Employment (full or part-time) in funding company	1419-Pos
Manara, Richard	Oxford Nanopore Technologies	Research funded by industry grant	2227-Plat
Mansson, Alf	Co-founder and owner: ActoSense Biotech AB	Other	2289-Plat
Markova, Natalia	GE Healthcare	Employment (full or part-time) in funding company	1529-Pos
Mayer, Michael	Oxford Nanopore	Research funded by industry grant	1080-Pos
Mayer, Michael	Oxford Nanopore	Research funded by industry grant	1081-Pos
Meltzer, Robert H.	PathoGenetix	Employment (full or part-time) in funding company	1419-Pos
Metzger, Joseph M.	Phrixus Pharmaceuticals	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	3867-Pos
Miller, William	GlaxoSmithKline	Employment (full or part-time) in funding company	3267-Plat
Minner, Daniel E.	Indiana University-Purdue University Indianapolis, Integrated Nanosystem Development Institute, Indianapolis	Other	873-Pos
Mitlo, Trisha	Molecular Devices, LLC	Employment (full or part-time) in funding company	681-Pos
Mobley, David L.	Schrodinger Software	Consulting fees or other remuneration from industry	1265-Plat
Mofrad, Mohammad R.	NSF Career Award	Other	1208-Plat
Mueller, Max	Nanion Technologies	Employment (full or part-time) in funding company	680-Pos
Mumm, Patrick	Nanion Technologies	Employment (full or part-time) in funding company	694-Pos
Nguyen, Steven	Gilead Sciences	Employment (full or part-time) in funding company	1664-Pos
Nicholson, Andrew	PathoGenetix	Employment (full or part-time) in funding company	1419-Pos
Niedziela-Majka, Anita	Gilead Sciences	Employment (full or part-time) in funding company	2377-Pos

Name	Disclosure Entity	Disclosure Type	Presentation Number
Niedziela-Majka, Anita	Gilead Sciences Inc.	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	1330-Pos
Nohava, Jiri	CSM Instruments	Employment (full or part-time) in funding company	3979-Pos
Obejero-Paz, Carlos	ChanTest	Employment (full or part-time) in funding company	3647-Pos
Olander, Emma	Sophion Bioscience	Employment (full or part-time) in funding company	3861-Pos
Oslob, Johan	MyoKardia, Inc.	Employment (full or part-time) in funding company	2842-Pos
Oslob, Johan	MyoKardia Inc	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	3692-Pos
Ouari, Olivier	Bruker	Research funded by industry grant	2228-Plat
Parker, James E.	General Dynamics Information Technology	Employment (full or part-time) in funding company	3073-Pos
Periasamy, Ammasi	National Heart, Lung, and Blood Institute (PO1HL101871)	Other	3052-Pos
Perry, Jason	Gilead Sciences Inc.	Employment (full or part-time) in funding company	1330-Pos
Pesquero, João B.	FAPESP	Other	1554-Pos
Pietrak, Beth	GlaxoSmithKline	Employment (full or part-time) in funding company	3267-Plat
Popa, Mariana Oana	Novartis	Employment (full or part-time) in funding company	736-Pos
Prater, Craig	Anasys Instruments Corp.	Employment (full or part-time) in funding company	1033-Pos
Prins, Menno W.	Employee of Philips Research	Employment (full or part-time) in funding company	236-Plat
Prinzen, Peter	Nanion Technologies	Employment (full or part-time) in funding company	3702-Pos
Pryde, David	Pfizer Neusentis	Employment (full or part-time) in funding company	198-Plat
Pykönen, Maiju	Biolin Scientific	Employment (full or part-time) in funding company	3153-Pos
Raghavan, Srikanth	Corning, Inc.	Employment (full or part-time) in funding company	875-Pos
Rajamani, Sridharan	Gilead Sciences	Employment (full or part-time) in funding company	1656-Pos
Rajamani, Sridharan	Gilead Sciences	Employment (full or part-time) in funding company	1664-Pos
Rammohan, Aravind	Corning, Inc.	Employment (full or part-time) in funding company	875-Pos
Regnier, Michael	BEAT Bio	Non-remunerative positions of influence such as officer, board member, trustee, or public spokesperson in company	1745-Pos
Riese, Martin	DNASTAR, Inc.	Employment (full or part-time) in funding company	1044-Pos
Rizzetto, Riccardo	Gilead Sciences INC	Research funded by industry grant	1660-Pos
Rodriguez, Hector M.	MyoKardia, Inc.	Employment (full or part-time) in funding company	2842-Pos
Rodriguez, Hector M.	MyoKardia Inc	Employment (full or part-time) in funding company	3692-Pos
Rosenstein, Jacob K.	Chimera Instruments	Non-remunerative positions of influence such as officer, board member, trustee, or public spokesperson in company	2087-Pos
Rothwell, Christopher	Novartis	Employment (full or part-time) in funding company	736-Pos
Safranovitch, Mikhail M.	PathoGenetix	Employment (full or part-time) in funding company	1419-Pos
Sahin, Ozgur	Bruker-nano, Inc.	Receipt of royalties from referenced company products	2144-Plat
Sakowicz, Roman	Gilead Sciences	Employment (full or part-time) in funding company	2377-Pos
Sakowicz, Roman	Gilead Sciences Inc.	Employment (full or part-time) in funding company	1330-Pos
Sarrouj, Hiba	Bruker - CNRS PhD grant	Research funded by industry grant	2228-Plat
Scherer, Thomas	Genentech	Employment (full or part-time) in funding company	314-Pos
Schmitz, Uli	Gilead Sciences Inc.	Employment (full or part-time) in funding company	1330-Pos
Schwartz, Benjamin	GlaxoSmithKline	Employment (full or part-time) in funding company	3267-Plat

Name	Disclosure Entity	Disclosure Type	Presentation Number
Schwarzenberger, Tobias	Nanion Technologies	Employment (full or part-time) in funding company	3702-Pos
Sellers, Scott	Gilead Sciences	Employment (full or part-time) in funding company	2377-Pos
Shelley, Mee Y.	Schrodinger, Inc.	Employment (full or part-time) in funding company	3070-Pos
Shelley, John C.	Schrodinger, Inc.	Employment (full or part-time) in funding company	3070-Pos
Shetty, Roshan	Anasys Instruments Corp.	Employment (full or part-time) in funding company	1033-Pos
Shorthouse, David	Lonza Biologics plc	Research funded by industry grant	318-Pos
Skinner, Joseph P.	Abbott	Employment (full or part-time) in funding company	996-Pos
Slack, Mark	Evotec AG	Employment (full or part-time) in funding company	90-Plat
Solaro, Ross J.	Cytokinetics, Inc.	Non-remunerative positions of influence such as officer, board member, trustee, or public spokesperson in company	2858-Pos
Song, Yonghong	MyoKardia, Inc.	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	2842-Pos
Song, Zhen	Gilead Sciences Inc., Foster City, California	Research funded by industry grant	3188-Plat
Song, Yonghong	MyoKardia Inc	Employment (full or part-time) in funding company	3692-Pos
Sran, Arvinder	MyoKardia, Inc.	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	2842-Pos
Sran, Arvinder S.	MyoKardia Inc	Employment (full or part-time) in funding company	3692-Pos
Steindl, Juergen	Nanion Technologies	Employment (full or part-time) in funding company	680-Pos
Stengel, Timo	Nanion Technologies	Employment (full or part-time) in funding company	680-Pos
Stiehler, Johannes	Nanion Technologies	Employment (full or part-time) in funding company	680-Pos
Stiehler, Johannes	Nanion Technologies	Employment (full or part-time) in funding company	3702-Pos
Stoelzle-Feix, Sonja	Nanion Technologies	Employment (full or part-time) in funding company	3702-Pos
Stoelzle-Feix, Sonja	Nanion Technologies	Employment (full or part-time) in funding company	694-Pos
Stolarska, Magdalena	Corning, Inc.	Consulting fees or other remuneration from industry	875-Pos
Stone, Howard	Firmenich Inc.	Research funded by industry grant	2684-Pos
Sun, Bo	Firmenich Inc.	Research funded by industry grant	2684-Pos
Sunesen, Morten	Sophion Bioscience	Employment (full or part-time) in funding company	3861-Pos
Sweitzer, Sharon M.	GlaxoSmithKline	Employment (full or part-time) in funding company	3267-Plat
Tan, Tao	Trim-edicine, Inc.	Employment (full or part-time) in funding company	3687-Pos
Tetin, Sergey Y.	Abbott	Employment (full or part-time) in funding company	996-Pos
Thomas, Ulrich	Nanion Technologies	Employment (full or part-time) in funding company	3702-Pos
Thouin, Félix	Photon Etc.	Employment (full or part-time) in funding company	3097-Pos
Tirunagari, Neeraj	Gilead Sciences Inc.	Employment (full or part-time) in funding company	1330-Pos
Tordo, Paul	Bruker	Research funded by industry grant	2228-Plat
Tracka, Malgorzata B.	Medimmune Ltd.	Employment (full or part-time) in funding company	3292-Pos
Tranter, Pamela	Novartis	Employment (full or part-time) in funding company	736-Pos
Trautman, Jay K.	Aratome LLC	Ownership or Partnership in funding organization	2012-Pos
Trick, Jemma L.	Oxford Nanopore Technologies	Research funded by industry grant	1067-Pos
Uddin, Shahid	Medimmune Ltd.	Employment (full or part-time) in funding company	3292-Pos
Ullah, Aman	NVIDIA	Research funded by industry grant	2179-Plat
Vaissière, Anais	Servier	Research funded by industry grant	2409-Pos

Name	Disclosure Entity	Disclosure Type	Presentation Number
Vale, Ronald	Cytokinetics, Inc.	Non-remunerative positions of influence such as officer, board member, trustee, or public spokesperson in company	68-Subg
Vanoye, Carlos G.	Allergan	Research funded by industry grant	1650-Pos
Verdonk, Edward	Molecular Devices, LLC	Employment (full or part-time) in funding company	681-Pos
Verhaegen, Marc	Photon Etc.	Employment (full or part-time) in funding company	3097-Pos
Vogel, Marius	Nanion Technologies	Employment (full or part-time) in funding company	680-Pos
Vyas, Shilpi P.	PathoGenetix	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	1419-Pos
Wajdner, Hannah	GlaxoSmithKline	Research funded by industry grant	1616-Pos
Wallace, E. Jayne	Oxford Nanopore Technologies	Employment (full or part-time) in funding company	1067-Pos
Wallace, Jayne	Oxford Nanopore Technologies	Employment (full or part-time) in funding company	2227-Plat
Watkins, William J.	Gilead Science Inc.	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	1330-Pos
Wattellier, Benoit	Phasics	Employment (full or part-time) in funding company	2904-Pos
Wattellier, Benoit	PHASICS S.A.	Employment (full or part-time) in funding company	3041-Pos
Wattellier, Benoit	PHASICS S.A.	Employment (full or part-time) in funding company	3045-Pos
Webber, Jeffrey	Molecular Devices, LLC	Employment (full or part-time) in funding company	681-Pos
Weissburg, Perry	Gilead Sciences	Stock options or bond holdings in a for-profit corporation or self-directed pension plan	2377-Pos
Weisshaar, James C.	NIH	Research funded by industry grant	2492-Pos
Whitman-Cox, Stephanie	MyoKardia, Inc.	Employment (full or part-time) in funding company	2842-Pos
Willits, Christopher P.	MyoKardia Inc	Employment (full or part-time) in funding company	3692-Pos
Wilson, Russell B.	Autoimmune Technologies	Ownership or Partnership in funding organization	3585-Pos
Wong, Melanie	Gilead Sciences Inc.	Employment (full or part-time) in funding company	1330-Pos
Wulff, Heike	H.W. is named as an inventor on a University of California patent claiming PAP-1 for immunosuppression	Other	2188-Plat
Wulff, Heike	H.W. is an inventor on a University of California patent claiming PAP-1 for immunosuppression	Other	2790-Pos
Yao, Lina	Gilead Inc.	Employment (full or part-time) in funding company	1757-Pos
Yu, Weifeng	Full time employee of Sophion	Employment (full or part-time) in funding company	2746-Pos
Zhao, Qin	Full time employment with AAT Bioquest	Employment (full or part-time) in funding company	1859-Pos
Zhao, Huizhen	GlaxoSmithKline	Employment (full or part-time) in funding company	3267-Plat
Zurdo, Jesus	Lonza Biologics plc	Employment (full or part-time) in funding company	318-Pos

Biophysical *Journal*

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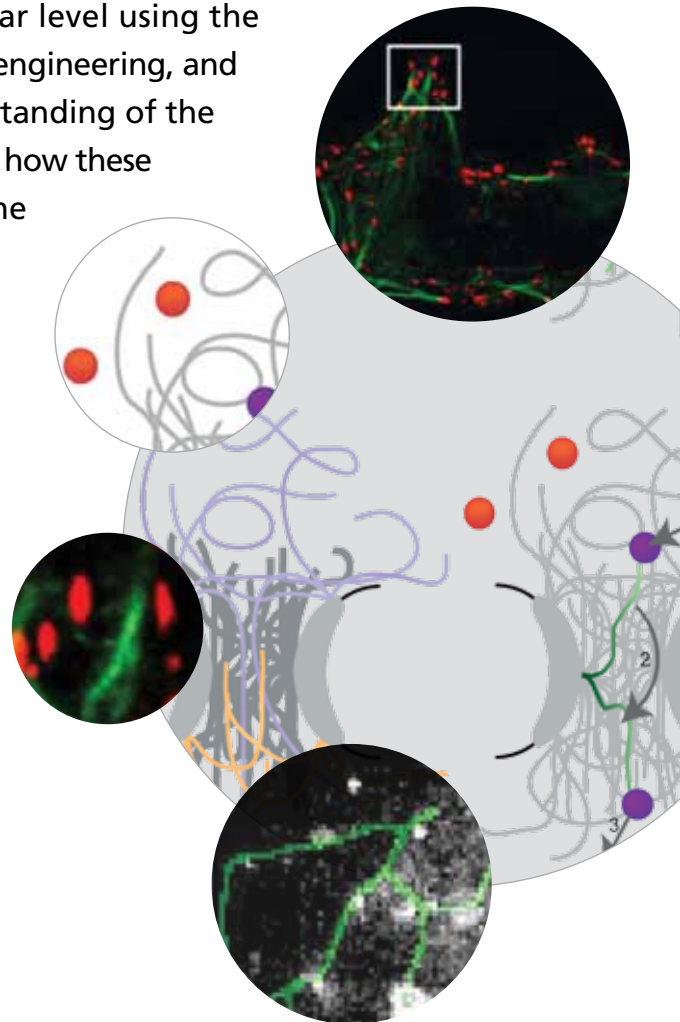
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