

Newsletter

Biophysical Society

DECEMBER

2014

DEADLINES

59th Annual Meeting

February 7-11, 2015
Baltimore, Maryland

January 7

Early Registration
Luncheon Registration
Late Abstract Submission
Graduate and Postdoc Fair
Institution Registration
Industry and Agency
Opportunities Fair
Registration
Childcare Pre-Registration
Satellite Meeting
Registration
Blogger Applications

January 22

Hotel Room Block
Reservations

January 30

Undergraduate Mixer and
Poster Fest Registration

February 16

Priority Application
Deadline for Summer
Research Program in
Biophysics

Future of Biophysics Burroughs Wellcome Fund Symposium



Rommie Amaro



Heather Pinkett



Sivaraj (Shiv)
Sivaramakrishnan



Alexander (Sasha)
Sobolevsky

The 2015 Future of Biophysics Burroughs Wellcome Fund Symposium once again highlights the work of young researchers doing cutting-edge research at the interface of the physical and life sciences.

The speakers selected for the 2015 Symposium are *Alexander (Sasha) Sobolevsky*, Columbia University, *Heather Pinkett*, Northwestern University, *Sivaraj (Shiv) Sivaramakrishnan*, University of

Michigan, and *Rommie Amaro*, University of California, San Diego.

The Symposium, in its sixth year, will be held on Monday, February 9, 8:15 AM – 10:15 AM, at the Baltimore Convention Center.

Enrique De La Cruz and *Karen Fleming*, Program Co-Chairs for the 59th Annual Meeting, will co-chair the symposium.

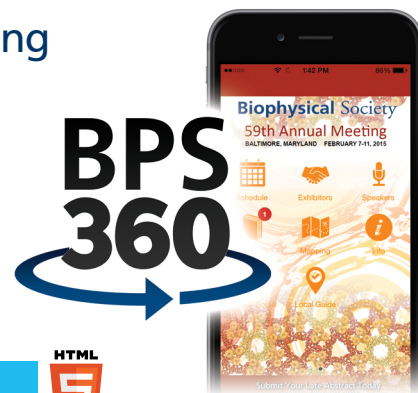
Plan and Navigate the Annual Meeting

Build your personal meeting itinerary and plan your meeting experience in the new BPS 360 app.

Sync your itinerary from the web to your mobile device.

Get Started at www.biophysics.org

Available on all platforms.



CONTENTS

Biophysicist in Profile	2
Biophysical Journal	4
Thematic Meetings	5
Public Affairs	6
Annual Meeting	8

Careers	12
Members in the News	13
Grants and Opportunities	13
Donations to the Society	14
Upcoming Events	16

Biophysical Society

BIOPHYSICAL SOCIETY

Officers

President

Dorothy Beckett

President-Elect

Edward Egelman

Past-President

Francisco Bezanilla

Secretary

Lukas Tamm

Treasurer

Paul Axelsen

Council

Olga Boudker

Taekjip Ha

Samantha Harris

Kalina Hristova

Juliette Lecomte

Amy Lee

Marcia Levitus

Merritt Maduke

Daniel Minor, Jr.

Jeanne Nerbonne

Antoine van Oijen

Joseph D. Puglisi

Michael Pusch

Bonnie Wallace

David Yue

Biophysical Journal

Leslie Loew

Editor-in-Chief

Society Office

Ro Kampman

Executive Officer

Newsletter

Ray Wolfe

Alisha Yocum

Production

Laura Phelan

Profile

Ellen Weiss

Public Affairs

The *Biophysical Society Newsletter* (ISSN 0006-3495) is published twelve times per year, January-December, by the Biophysical Society, 11400 Rockville Pike, Suite 800, Rockville, Maryland 20852. Distributed to USA members and other countries at no cost. Canadian GST No. 898477062. Postmaster: Send address changes to Biophysical Society, 11400 Rockville Pike, Suite 800, Rockville, MD 20852. Copyright © 2014 by the Biophysical Society. Printed in the United States of America. All rights reserved.

Biophysicist in Profile

EVA NOGALES



“Both of them were obsessed with giving my brother and me a college education,” *Eva Nogales* recalls, of her parents. Nogales’s mother and father grew up in Spain following that country’s Civil War. Both were unable to go to high school, as they needed to start working when they became teenagers. During Nogales’s own childhood in Spain, her father worked as a truck driver and her mother was a homemaker. Given that circumstance had prevented them from finishing school, they were always concerned about their children getting an education. “Our studies,” Nogales says, “were paramount and although we did not have money for luxury, we always had brand new textbooks and never missed class – I think I attended school several times with a fever!”

As a young woman, Nogales, who is now a Professor of Molecular and Cellular Biology at the University of California, Berkeley, a senior faculty scientist within the Life Sciences Division at the Lawrence Berkeley National Laboratory (LBNL), and a Howard Hughes Medical Investigator, became interested in science after watching *Carl Sagan’s Cosmos: A Personal Voyage*. “[Sagan] was a fantastic communicator of science that had a gift both for making difficult concepts understandable and for piquing your curiosity,” she explains.

Nogales found a path for her interest in science with the help of her high school physics teacher, who made her realize “the beauty of being able to explain natural laws through math,” Nogales says. Nogales was inspired to study physics at the Autonomous University of Madrid, where she earned her bachelor’s degree. After her undergraduate career, she completed her thesis work at the Synchrotron Radiation Source, a national lab in the United Kingdom, studying the assembly of drug-induced tubulin polymers using time-resolved small angle x-ray scattering and cryo-electron microscopy (cryo-EM). In particular, she looked at tubulin polymers assembled in the presence of vinblastine and taxol, two anticancer agents.

“I want to keep building complexity into the systems I study. As a structural biologist, I am a reductionist by nature, but I want to be able to push the limits of the possible to gain biological insight that comes by placing the pieces of the puzzle together and seeing how they can organize, combine, move.”

Nogales then undertook postdoctoral training with *Ken Downing* at the Lawrence Berkeley National Laboratory. She says, “Ken is an expert in electron crystallography and was interested in solving the structure of tubulin using an aberrant polymer that forms in the presence of zinc and results in 2D sheets of antiparallel protofilaments. Using a combination of electron diffraction data and images, our lab obtained the first atomic model of tubulin.

As an added bonus, the 2D sheets of tubulin had been stabilized with taxol, an anticancer agent that stops the dynamic behavior of microtubules and freezes cell

division. So, we could describe the taxol binding site and postulate its mode of action. It was really hard work, but it REALLY paid off!”

After completing her postdoc, Nogales joined the Molecular and Cellular Biology Department at the University of California, Berkeley. Her colleague in the department, *Robert Tjian* explains, “We decided to hire her in the MCB Department based on her beautiful work on microtubules. [...] After Eva joined MCB, I encouraged her to work on a new area of biology – transcriptional regulation.” The two collaborated on the EM structures of the human TFIID complex and human mediator, and Nogales introduced high resolution cryo-EM to Tjian’s lab. The two have had a pleasant and productive working relationship over the years. “She is immensely energetic, passionate about good science, highly focused, visionary, and an absolute pleasure to work with” Tjian says. “She is also, in my opinion, one of the very best single particle reconstruction cryo-EM practitioners in the world. I would pity anyone who thinks they can weaken her resolve.”

Nogales’s lab uses cryo-EM to visualize the structure of microtubules and other cytoskeletal components, like septins, and the machinery involved in gene regulation in eukaryotes, especially during transcription initiation. This field has undergone a revolution in recent years due to new detector technology, which is leading to structures being visualized with unprecedented resolution. As she progresses in her research, she says, “I want to keep building complexity into the systems I study. As a structural biologist, I am a reductionist by nature, but I want to be able to push the limits of the possible to gain biological insight that comes by placing the pieces of the puzzle together and seeing how they can organize, combine, move.”

More than any other aspect of her work, sharing the process and discoveries with her students invigorates Nogales. She explains, “Their brilliance and breadth of understanding, across physical and biological disciplines, is quite amazing. They do keep me on my toes. I love working with them deciphering molecular mechanism puzzles!”

One of her former PhD students, *Gregory Alushin*, describes this same passion, “Eva is extremely energetic, incredibly wide-ranging in her interests and insights, and firm in her opinions, positive and negative, which she expresses directly and forcefully. She is an extraordinarily passionate person, first and foremost about science, but really about everything. This is crystallized in her trademark exclamation, ‘It’s un-be-LIEVE-able!’ which can refer to a dazzling new result, the latest book of film to capture her interest, and any other fascinating or exasperating aspect of life.”

Nogales enjoys attending the Biophysical Society Annual Meeting, in large part because of how many speakers are selected from abstract submissions. “It gives young people the opportunity to present to a large audience and get very good projection, [and] now for me is an opportunity to catch talent as it emerges!” she says, “I was given the opportunity to talk at a number of Biophysical Society meetings very early in my career as a postdoc and a junior faculty [member] and it really had an effect of promoting me and my work.”

Outside of the lab, Nogales spends her time with her husband, *Howard Padmore*, a physicist at LBNL, and their two sons, Daniel and Ricky. “I also like having the opportunity to dance and be loud,” she notes. If she weren’t a biophysicist, Nogales says she would love to be a pop singer, “but I am tone deaf.” Regardless of the fact that she does not perform as a musician, she certainly commands attention. “In the Nogales lab, everyone’s ears are sensitized to the rapid, purposeful ‘click-click-click’ of high heels on the floor, which likely means that Eva has entered the lab and is coming to talk to someone.” Alushin jokes, “It is quite amusing to watch the Pavlovian response of every head whipping around from the computers whenever someone wearing heels walks in. She has trained us all well.”

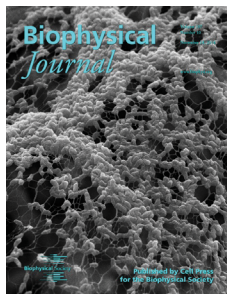
“ In the Nogales lab, everyone’s ears are sensitized to the rapid, purposeful ‘click-click-click’ of high heels on the floor, which likely means that Eva has entered the lab and is coming to talk to someone. ”

Profilee at-a Glance

Eva Nogales

Institution
University of California,
Berkeley

Area of Research
Cryo-electron microscopy of
macromolecular assemblies



Biophysical Journal Corner

Know the Editors



Andrew Plested

Andrew Plested

Leibniz-Institut für Molekulare
Pharmakologie

Editor for Channels and
Transporters Section

My research interest lies in ion channels that are activated by neurotransmitters. In my lab we almost exclusively work on the excitatory glutamate receptor, which is found at fast synapses throughout the brain. We are interested in these receptors because they are heavily involved in cognition and learning. In the past I did a lot of mathematical modelling of the kinetics of inhibitory glycine receptors, and I was once a physicist, so I am always keen to be quantitative when I think about biology. We are asking questions such as: How is the receptor composed? How does the binding of small molecules open a distant gate for ions in the membrane? How do the different pieces of the receptor work together? We attack these questions with various electrophysiological methods including fast solution exchange and single-channel recording. Some people in the lab crystallize parts of the receptor to help us build molecular models of activation states. If we are fortunate, we can put the data we obtain toward computational simulations (either molecular or kinetic) to give us a synoptic view of what is happening. Recently, with the help of colleagues, we have become involved in more advanced molecular biology and optical methods, such as photoactivatable unnatural amino acids and fluorescence studies of activation.

Change to *Biophysical Journal* Instructions for Authors

In order to increase transparency in research, authors are now asked to include an “Author Contributions” section in their submitted manuscript. This should be a separate subhead within

the manuscript and should appear just before the “Acknowledgements” section or, if there are no acknowledgements, just before the “References.” This text should describe the contributions of each author, designated by initials.

Authors are to indicate their specific contributions to submitted work. Examples of designations an author could report include the following: designed research; performed research; contributed analytic tools; analyzed data; or wrote the paper. An author may list more than one contribution, and more than one author may have contributed to the same aspect of the work.

If a manuscript does not include this information when submitted, it will be returned to the authors with a request to add the paragraph, or the authors may be queried for the information at the proof stage.

Biophysical Journal Special Issue: Focus on Quantitative Cell Biology

Edited by *David W. Piston*, Associate Editor for Cell Biophysics, *Biophysical Journal*

This first special issue published by *Biophysical Journal* highlights a broad range of biophysical approaches applied to mechanistic questions in cell biology and celebrates the growth of quantitative cell biology research and techniques used in today’s labs.

In addition to 23 original research papers, the issue features reviews from the *Sheetz*, *Pollard*, and *Danuser* labs, and the first article in the Journal’s new feature called “Computational Tools.” Six New and Notable articles highlight and discuss work presented in this issue of the Journal and in the multi-disciplinary field of cell biophysics in general.

Visit <http://www.cell.com/biophysj/home>.

Thematic Meetings

Polymers and Self-Assembly: From Biology to Nanomaterials

October 25–30, 2015, Rio de Janeiro, Brazil

Many proteins assemble into polymers, both naturally (as in actin and tubulin) and pathologically (as in amyloid). The study of the structure and function of these biological polymers has been an important area of research by biophysicists. A large and growing community of chemists, chemical engineers, physicists, and materials scientists have been investigating the self-assembly of peptides for many purposes, from creating new bionanomaterials to forming assemblies for drug delivery. The aim of this meeting is to bring together these multidisciplinary areas to share techniques and innovations, advancing our understanding of these complex systems.

To learn more about the program, submit an abstract, or register for the meeting visit: www.biophysics.org/2015brazil.

Organizing Committee

Vince Conticello, Emory University, USA

Edward Egelman, University of Virginia, USA

Louise Serpell, University of Sussex, United Kingdom

Jerson Silva, Federal University of Rio de Janeiro, Brazil

Ting Xu, University of California, Berkeley, USA

Speakers*

Dave Adams, University of Liverpool, United Kingdom

Angela Belcher, MIT, USA

C.J. Brinker, Sandia National Laboratories, USA

Marie-France Carlier, CNRS, France

Vince Conticello, Emory University, USA

Enrique De La Cruz, Yale University, USA

Edward Egelman, University of Virginia, USA

Claudio Fernandez, National University of Rosario, Argentina

Debora Foguel, Medical Biochemistry Institute, Brazil

Monica Freitas, Federal University of Rio de Janeiro, Brazil

Richard Garratt, University of San Paulo, Brazil

Sharon Glotzer, University of Michigan, USA

Myongsoo Lee, Jilin University, China

Cait MacPhee, University of Cambridge, United Kingdom

Aline Miller, University of Manchester, United Kingdom

Emil Reisler, University of California, Los Angeles, USA

Thomas Scheibel, University of Bayreuth, Germany

Louise Serpell, University of Sussex, United Kingdom

Jerson Silva, Federal University of Rio de Janeiro, Brazil

Akif Tezcan, University of California, San Diego, USA

Derek Woolfson, University of Bristol, United Kingdom

Ting Xu, University of California, Berkeley, USA

Ronald Zuckermann, University of California, Berkeley

*Speakers confirmed as of October 31, 2014

Deadlines

Abstract Submission: June 22, 2015

Early Registration: July 27, 2015

Public Affairs



Yeh-Hsing Lao

2014 Wiki-Edit Contest Winners Selected

To encourage Society members to share their knowledge with the public and contribute to the accuracy of information residing on the Internet, the Biophysical Society held its second Wiki-Edit Contest in 2014. The contest kicked off at the 58th Annual Meeting and ended on July 15.

Two winners were chosen by a panel of judges for creating the most improved biophysics-related articles, image collections, or other contributions to Wikipedia or Commons, compared to what was posted prior to that individual's edits to the entry.

The winners of the 2014 contest are:

Yeh-Hsing Lao, Columbia University, for his work on Anti-thrombin aptamers; and

David Sauer, New York University, for his work on the Major Facilitator Superfamily.

Fang Liu, Duke University, received an honorable mention.

Each winner will receive \$100, a barnstar on their Wiki talk page, a one-year complimentary Society membership, and complimentary registration to the 2015 Annual Meeting in Baltimore, Maryland.

To read the winning entries, learn more about the contest and WikiProject Biophysics, go to <http://bit.ly/1tU7cO6>.

BPS Asks Congress to Finish FY 2015 Budget

The Biophysical Society joined other organizations in sending a letter to Members of Congress asking them to approve a budget for the federal government for FY 2015 promptly. The federal government has been operating under a continu-

ing resolution since the fiscal year started on October 1. That resolution, which is set to expire on December 11, provides agencies with funding at roughly 2014 levels. Since the resolution is temporary, it makes it very difficult for agency leaders to plan for the upcoming year because they do not know how much money they will ultimately have to spend. NIH is dealing with this uncertainty by awarding non-competing research grant awards at up 90% of previously committed level while the continuing resolution is in effect.

The letter sent to Congress specifically asks that Congress "make fiscal year (FY) 2015 appropriations legislation a priority" for the lame duck session and that Members "work in a bipartisan manner to pass final, omnibus spending legislation before the end of the calendar year. This omnibus spending package should include an FY 2015 Labor-HHS-Education appropriations bill that restores funding for the National Institutes of Health (NIH) to at a minimum pre-sequestration levels."

The letter was organized by the Ad Hoc Group for Medical Research, which is a coalition of organizations interested in biomedical research funding of which the Biophysical Society is a member.

Presidential Advisory Committee Makes Nanotech Recommendations

The President's Council of Advisors on Science and Technology (PCAST) released the Report to the President and Congress on the Fifth Assessment of the National Nanotechnology Initiative (NNI) in October. The report concludes that after thirteen years of federal investment in nanotechnology, the time has come to focus on commercialization of that research. PCAST calls for the federal government to set up a process for the nanotechnology community to identify grand challenges to accelerate commercialization. Potential ways to do this include innovation prizes and public-private partnerships. While the focus is on translating the basic research that has come

out of the NNI thus far, PCAST does indicate that support for fundamental research “remains critical” moving forward. “Just as the last decade of research has given rise to the present opportunity for commercial applications of nanotechnology, new technologies developed a decade from now will be built on the exploration and discoveries of today. Support for creative and high-risk research will help sustain this country’s advanced nanotechnology infrastructure and keep the most talented scientists and engineers in the United States, even in the face of global competition.

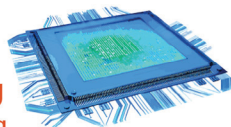
The NNI is a U.S. Government research and development initiative involving 20 departments and independent agencies working together toward the shared vision of “a future in which the ability to understand and control matter at the nanoscale leads to a revolution in technology and industry that benefits society.”

Read the full report at <http://1.usa.gov/1wZEtIw>.

National Research Council Seeks Comments on Future NSF Advanced Computing Activities

Advanced computing is being used to tackle a rapidly growing range of science and engineering problems. At the National Science Foundation’s request, the National Research Council (NRC) is examining future needs and priorities for advanced computing and is developing a framework to guide future investments. Community input will inform the creation of the final report, which the NRC will release in 2015.

Call for Input on
**The Future of NSF
Advanced Computing**
for Science & Engineering



For more on the study, to view the NRC’s interim report, and to submit comments, visit nas.edu/ScienceComputing. Comments should be submitted by January 31, 2015.

International Relations

Switzerland Returns to EU Research Program

In February, Switzerland was excluded from participating in the European research program, Horizon 2020, after voting to curb immigration from Europe into Switzerland. Horizon 2020 aims to drive economic growth and create jobs by emphasizing research and innovation in science and technology. This exclusion was retracted in October, when the European Commission granted Switzerland a partial and temporary association with the program through 2016. In order to again become a fully associated member of the Horizon 2020 program, Switzerland must reconsider its immigration quotas.

Italian Scientists Argue Against Funding Cuts

ScienceInsider reported in late October that a bill proposed to reduce public spending by the Italian government would cut €100 million from the budget for universities and €120 million from the budget for public research centers. The bill was approved recently by Italy’s cabinet of ministers. If given final approval, the bill also would eliminate the €140 million fund earmarked for applied research.

Researchers in Italy have argued against the cuts, which would reduce drastically the financial resources available in the country. These cuts would be devastating, especially given that the government eliminated grants for basic research in 2013. The National University Council (CUN), governing body of Italy’s university system, stated in an open letter that the universities “could hardly bear further contraction of resources without collapsing.” Italy’s president, Giorgio Napolitano, and the European Commission are currently reviewing the bill.

59th Annual Meeting

February 7-11, 2015 • Baltimore, Maryland

Perspectives on the Meeting

"There is something for people at all levels, from beginning students to senior faculty"

—*Jefferson Knight*

"Gives students the opportunity to learn about techniques from experts and get them up to date with new and exciting methods"

—*Rahel Woldeyes*

Meeting Updates

Late Abstract Deadline

Deadline: January 7

Late abstracts for the 2015 BPS Annual Meeting in Baltimore are now being accepted. Although late abstracts will not be published, they will be posted online in a searchable format through the online itinerary planner and meeting app, available in late December on the meeting website. Late abstracts will be programmed each day of the meeting and grouped by topic to correspond with the topic presentations of abstracts submitted by October 1.

Calling All Bloggers!



Deadline to apply: January 7

Want to blog for BPS at the 2015 Annual meeting? BPS is looking for five to ten bloggers to share meeting tips, must-go-to events, the best local eateries, and more with the Society's blog readers (3,500+ during the Meeting). Check out some of the latest entries, as well as posts from the 2014 meeting at biophysicssociety.wordpress.com. To learn more and submit your application, visit

<https://www.surveymonkey.com/s/bpsblog15>.

Student Volunteers

The Biophysical Society invites undergraduate and graduate students to volunteer time (six hours) at the Annual Meeting in exchange for complimentary meeting registration. Volunteers must be Society members with registration fully paid. To apply, please send an email to meetings@biophysics.org by December 19, 2014, with the following information: full name, cell phone number, and complete list of dates/times available. Those selected will have their registration refunded after the meeting.

Poster Printing

Looking for an easy way to have your poster printed and delivered directly to the Baltimore Convention Center for onsite pickup? BPS is working with Tray Printing to simplify poster printing. Visit www.biophysics.org/2015meeting and click on 'Abstracts', 'Poster Guidelines' for more information. Receive discounts for early printing submissions.



Graduate and Postdoctoral Institution Fair

Monday, February 9, 1:00 PM – 3:00 PM

Does your institution have a program that leads the way in biophysics? Reserve a table today to showcase your programs at the Graduate and Postdoctoral Institution Fair at the 2015 Annual Meeting. Representatives interested in reserving a table at this fair to display information about their institution's biophysics program must complete a registration form and submit the registration fee by January 7. Institution registration can be found online at <http://www.biophysics.org/2015meeting/tabid/4980/Default.aspx#gradpostfair>.

BRIDGING THE SCIENCES: COMPUTATION AND EXPERIMENT

Over 3,200 Abstracts Programmed

Following the October 1 regular abstract deadline, members of the Program Committee and Council reviewed and sorted over 3,200 submitted abstracts, which were programmed into 20 symposia, six workshops, 64 platforms, and 120 poster sessions. Over 800 posters will be presented each day of the meeting.

The Society would like to thank the Program Committee, Council, and the many other Society members who participate in the planning, reviewing, sorting, and programming each year. Their work ensures that the final program reflects the breadth of research areas in biophysics with as few programming conflicts as possible given the volume and richness of the scientific program. The 2015 Annual Meeting Program Committee members are *Karen Fleming, Enrique De La Cruz, Peter Hinterdorfer, Vasanthi Jayaraman, Amy Lee, Robert Nakamoto, Michael Ostap, David Sept, Antoine van Oijen, and Claudia Veigel*. Society members *Olga Boudker, Merritt Maduke, Jim Sellers, Ana Maria Soto, and Sergei Sukharev* also assisted *Karen Fleming* and *Enrique De La Cruz* with the programming this year.



Program Chairs Enrique De La Cruz and Karen Fleming finalize the programming and scientific sessions for the 2015 Annual Meeting.

Satellite Meeting

Drug Discovery for Ion Channels XV

Sponsored by ChanTest, Molecular Devices, Nanion Technologies GmbH, and Sophion Bioscience

Friday, February 6, 8:30 AM – 5:00 PM

Pre-registration deadline: January 7



Ion channels are an important class of therapeutic drug targets, and mutations in ion channel genes are found to be responsible for an increasing number of diseases. While conventional electrophysiological techniques permit the most detailed and direct study of ion channel function, they are limited due to the manual nature of the method and their low throughput. Because of this, ion channels remain an underrepresented target class for drug discovery. The advent of higher throughput automated electrophysiology systems has begun to change the face of ion channel drug discovery. This symposium will review the advances in automated electrophysiology and other emerging technologies and their impact on ion channel drug discovery today. This year's meeting will highlight presentations from users of automated electrophysiology instrumentation as well as other speakers in the field of ion channel drug discovery. For more information and to register, please visit <http://www.biophysics.org/2015meeting/tabid/4985/>.

Education Events

The Annual Meeting offers many committee-sponsored sessions to help you get ahead in teaching and academia.

Undergraduate Mixer and Poster Fest

Saturday, February 7, 4:00 PM – 5:00 PM

A social and scientific mixer for all undergraduate students attending the meeting. Practice your presentation and come meet other undergraduates and learn about their research projects. Undergraduates listed as coauthors on posters are welcome to practice their poster presentation in a less formal setting, even if not listed as the presenting author. For undergrads who will be presenting during the standard scientific sessions, the mixer provides an additional opportunity to hone presentation skills. Pre-registration is required to present. Organized by the Education committee. For the registration form go www.biophysics.org/2015meeting, and choose “Program”, then “Special Function” and click “Student and Faculty Activities.”

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

Sunday, February 8, 2:00 PM – 3:30 PM

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

Speakers

Pete Nelson, Benedictine University

Leslie Leinwand, University of Colorado, Boulder

Brian Helmke, University of Virginia

Biophysics 101: Super Resolution Microscopy

Monday, February 9, 1:30 PM – 3:00 PM

Eric Betzig, Stefan W. Hell and William E. Moerner were awarded the 2014 Nobel Prize in Chemistry for their great achievements in developing super-resolution/single-molecule microscopy. This revolutionary progress in optical microscopy enables us to have an unprecedented power peering into the nanoworld in live organisms. This year’s “Biophysics 101” session will include two lectures on this topic, outlining the practice of **super-resolution/single-molecule microscopy** for not-yet-experts, and describing some of its uses and rewards. The session is part of a continuing series of symposia initiated by the Education Committee to educate the Society membership about fundamentals of various biophysical techniques with which they may not be familiar but might want to use.

Speakers

Keith Lidke, University of New Mexico

Weidong Yang, Temple University

Funding Opportunities for Faculty at Primarily Undergraduate Institutions

Tuesday, February 10, 12:00 PM – 1:30 PM

The Education Committee is hosting this session aimed at helping PUI faculty find funding sources that will help them to establish or maintain an active and productive undergraduate research laboratory

Speakers

Jean Chin, NIGMS

Kamal Shukla, NSF

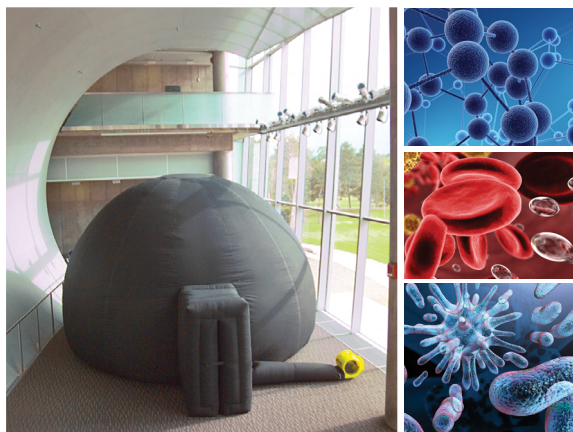
Biomolecular Discovery Dome

Sunday, February 8–Tuesday, February 10,

10:00 AM–5:00 PM

Wednesday, February 19, 9:00 AM–1:00 PM

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



Connect at #BPS15



Meeting Hashtag:
#BPS15



Society Twitter:
@BiophysicalSoc



Facebook:
facebook.com/biophysicalsociety



YouTube:
youtube.com/biophysicalsociety



Blog:
biophysicalsociety.wordpress.com



Google+: **plus.google.com**
search for **Biophysical Society**



LinkedIn: **linkedin.com**
search for **Biophysical Society**

Exhibitor Presentations

Exhibitor Presentations will be held throughout the week of the Annual Meeting by companies that have exciting products, tools, and technologies to showcase. All attendees are welcome to attend these presentations.

New this year! Exhibitor Presentations will take place in the Exhibit Hall and will be held in two rooms. Visit www.biophysics.org/2015meeting for session descriptions.

Sunday, February 8

- 7:30 AM – 9:00 AM FEI Company
- 10:30 AM – 12:00 PM Carl Zeiss Microscopy, LLC
- 12:30 PM – 2:00 PM TA Instruments
- 2:30 PM – 4:00 PM Bruker Nano Surfaces
- 3:30 PM – 5:00 PM Wyatt Technology Corp.
- 4:30 PM – 6:00 PM OriginLab

Monday, February 9

- 8:30 AM – 10:00 AM FEI Company
- 9:30 AM – 11:00 AM Pall ForteBio
- 10:30 AM – 12:00 PM Molecular Devices
- 11:30 AM – 1:00 PM Asylum Research
- 12:30 PM – 2:00 PM Nanion Technologies
- 1:30 PM – 3:00 PM World Precision Instruments
- 2:30 PM – 4:00 PM Sutter Instrument
- 3:30 PM – 5:00 PM Bruker Nano Surfaces
- 4:30 PM – 6:00 PM Molecular Devices
- 5:30 PM – 7:00 PM HEKA Elektronik

Tuesday, February 10

- 10:30 AM – 12:00 PM SensiQ Technologies, Inc.
- 12:30 PM – 2:00 PM Nanion Technologies
- 1:30 PM – 3:00 PM KinTek Corporation

Interested in exhibiting and hosting an exhibitor presentation?

Visit www.biophysics.org/2015meeting

*This list is up to date as of November 13, 2014

Careers

Preparing for Promotions

CPOW, the Committee for Professional Opportunities for Women, hosted a panel discussion at the 58th Annual Meeting in San Francisco, California, focusing on how to prepare for promotions. The panel consisted of *Steve A. N. Goldstein*, Brandeis University, *Hector Rodriguez*, MyoKardia, Inc., *Jil Tardiff*, University of Arizona, and *Pamela Tranter*, Novartis. Below are some of the highlights from the session.

Do I need a mentor?

Mentors can help you become a better scientist. Do not be afraid to ask someone to serve as your mentor – it is quite a compliment. Getting advice from someone you admire is always a good idea, but especially at the beginning of your career. Peer mentoring is also a good option.

Many people start networking with their mentors. If you do not have a mentor who is good at networking, how do you get started networking?

Be brave and take the plunge. It won't come to you without effort. Ease into the process by starting with people you know a bit. Go to group meetings and networking events in order to practice your networking skills. Sit in on talks at conferences and introduce yourself to people you are interested in meeting or working with. Do not forget that even networking with your peers will help build your network.

What should I look for in a postdoc? How can I advance in my postdoc and beyond?

The fun of a postdoc is determining what you want. Be willing to work hard. Look at the track record of your potential PI and find out if there will be room to grow with him/her. Find out if he/she is intellectually generous. Consider whether you want to work with someone more junior, with whom you would be more of a

partner, or choose someone who launches careers, but may be harder to work with. Either can be a good option – it just depends on what you are looking for in a lab.

I am preparing to transition from a postdoc to a faculty position. It is tempting to give up some research and go to a teaching-intensive university. Is it possible to start in a teaching-intensive university and later transition to a research-intensive institution?

This happens infrequently. Most research-intensive universities hire young people or laterally pull people from other research-intensive universities in order to fill a specific niche.

What can I do when I first get a job in industry to lay the groundwork for future promotions?

Settle in first and learn what the expectations are for your position. Do your job well rather than spending too much time looking ahead at what you will need to do in a future position. Network with your colleagues, especially those in different departments. Be willing to collaborate. If you are a collegial team player, your colleagues will be more likely to think of you when promotions become available.

How do I go about getting a promotion in industry?

Companies have public job descriptions and a formal ladder structure for advancement. Show that you can do the work of the position in which you are looking to progress. If you think you are fulfilling the requirements to advance but are not being promoted, ask your superiors what more you can do. Often, you will need letters of recommendation to give to your boss, who will use them as part of a promotion package that will be reviewed by the company's Human Resources department.

Can you return to academia after working in industry? Is this difficult without a good publication history?

With only a few publications, it is difficult to be a competitive candidate for positions in academia. Explain what you *have* done, in the absence of publications, and look into career tracks where the requirements are less standardized.

If you are one step below the top, how can you get promoted?

When your supervisor is a manager, ask if you are on a management track. In most cases, your manager needs to get promoted or leave the company in order for you to be promoted. Changes in structure are fairly common, and opportunities often present themselves when these occur.

What are some of the major stumbling blocks on the path to promotion?

Not being a team player can be a big problem, but saying “yes” too often causes issues for many people, too. Be sure to complete your own work before helping others. Try to avoid spreading yourself too thin. It is okay to say “no” to committees, reviews, and collaborations, especially when you are new to running a lab or handling extra administrative work. Women and minority scientists especially are asked to serve on many committees when working in departments that are unbalanced in these areas. If you can, find a mentor who can help protect you so that you do not hurt your reputation by saying “no” too often.

Members in the News



Santiago Schnell

Santiago Schnell, University of Michigan and Society member since 2009, has been elected President of the Society for Mathematical Biology.



Charles Lieber

Charles Lieber, Harvard University and Society member since 2011, has been awarded the first Nano Research Award from Springer and Tsinghua University Press.

Grants and Opportunities

Gilliam Fellowships for Advanced Study

Objective: To ensure the development of a diverse and highly trained workforce is available to assume leadership roles in science, including college and university faculty, who have the responsibility to teach the next generation of scientists.

Who Can Apply: Alumni of HHMI's Exceptional Research Opportunities Program (EXROP), regardless of country of origin or nationality.

Application Deadline: February 5, 2015

Website: <http://www.hhmi.org/node/18378>

NIH Director's Early Independence Awards (DP5)

Objective: To support exceptional investigators who wish to pursue independent research directly after completion of their terminal doctoral/research degree or clinical residency, thereby forgoing the traditional post-doctoral training period and accelerating their entry into an independent research career

Who Can Apply: Higher Education Institutions, Non-profits Other Than Institutions of Higher Education, For-Profit Organizations, and Governments.

Application Deadline: January 30, 2015

Website: <http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-14-004.html>

Mid-Career Scientists

Need advice on navigating the two-body problem or getting the next promotion?

Tips on becoming a great mentor?

Come discuss these and other issues with your peers at the Mid-Career Mixer.

Society Donors

The Society gratefully acknowledges the 2014 members who made donations to Society programs. Donations allow for the growth each year in student and international travel awards, public affairs involvement, Society Awards, and other outreach activities that could not otherwise be undertaken. The names of the Society donors are listed below.

\$200-\$500

Brown, Henry G.
Curtis, Adam S.
Frauenfelder, Hans
Soto, Ana-Maria

\$100-\$150

Armstrong, Clay M.
Behrends, Jan C.
Blaustein, Mordecai P.
Brennan, Richard G.
Chazin, Walter J.
Chernomordik, Leonid V.
Cheung, Herbert C.
Cooke, Ian M.
Cooke, Roger
Crothers, Donald M.
Dyson, Jane
Gough, Craig A.
Holloway, Peter W.
Jakes, Karen S.
Koepppe, Roger E.
Lee, Raphael C.
Ludescher, Richard D.
Maduke, Merritt
Mindell, Joseph A.
Nordenskiöld, Lars
Nowoslawski, Joseph F.
Olson, John S.
Pappu, Rohit V.
Piston, David W.
Reedy, Michael K.
Scott, H. Larry
White, Stephen H.

Yeh, Yin
Yoshikawa, Shinya
Zimmer, Thomas

\$50-\$99

Aebi, Ueli
Ballas, Samir K.
Banaszak, Leonard J.
Banda, Phillip W.
Boudker, Olga
Brand, Ludwig
Branton, Daniel
Cafiso, David S.
Caspar, Donald L D
Clark, Eloise E.
Clegg, James S.
Colecraft, Henry M.
Correa, Ana M.
Cross, Timothy A.
Davis, James H.
Discher, Dennis E.
Eichhorn, Gunther L.
Franzini-Armstrong, Clara
Harvey, Stephen C.
Hingorani, Manju M.
Holzwarth, George M.
Izu, Leighton T.
Karpinski, Edward
Kirschner, Leonard B.
Lee, James C.
Luther, Pradeep K.
Meyer, E Gerald
Morais Cabral, Joao H.
Ohnishi, Tomoko
Padilla, Emelia H.
Quiococho, Florante
Ripoche, Pierre

Sakamoto, Takeshi
Saotome, Masao
Sinsheimer, Robert L.
Stauffacher, Cynthia V.
Tombola, Francesco
Yount, Ralph G.

Under \$50

Abdulkader, Fernando
Abel, Stéphane
Adelstein, Robert S.
Aguilella, Vicente M.
Akten, Ebru
Amuzescu, Bogdan P.
Andrews, Andrew J.
Ansevin, Allen T.
Aulabaugh, Ann E.
Aygün, Hatice
Azizov, Vugar
Baginski, Maciej
Bagur Quetglas, Rafaela C.
Baker, Nathan A.
Barkley, Mary D.
Beck, Brian W.
Berger, James
Berger, Robert L.
Berlin, Joshua R.
Berman, Helen M.
Beuning, Penny
Blab, Gerhard A.
Blackman, Carl F.
Blank, Paul S.
Bleecker, Joan V.
Bollendorff, Christian
Bondarenko, Vladimir E.
Bonnette, William G.
Brandenburg, Klaus

Brandt, Philip W.
Braswell, Emory H.
Braun, Andrew P.
Brewer, John M.
Bruening, Beate-Annette
Bullitt, Esther
Cala, Steven E.
Cappuccio, Jenny A.
Castaneda, Carlos A.
Chapman, Edwin R.
Chavent, Matthieu G.
Chin, Jean
Clark, Nicholas J.
Collins, Anthony
Copello, Julio A.
Coppey-Moisan, Maite
Coutinho, Ana
Craig, Roger W.
Csordas, Gyorgy
de Lanerolle, Primal
Dedkova, Elena N.
Demontis, Gian Carlo
Dilger, James P.
Dreizen, Paul
Drozd, John J.
Dunker, A. Keith
Dunlap, David
Elson, Elliot L.
Escalada, Artur
Fidy, Judit
Finzi, Laura
Fleischer, Daniel A.
Foit, Linda
Foster, Margaret C.
Frenster, John H.
Fried, Michael G.
Fuchs, Franklin
Fulbright, Robert M.

Furuike, Shou
Garcia de la Torre, Jose
Garcia, Maria C.
Garini, Yuval
Gaspers, Lawrence D.
Geeves, Michael A.
Gershenson, Anne
Glazier, James A.
Goldberg, Jacob M.
Goni, Felix M.
Gonzalez Gallego, Teresa
Gonzalez Jr., Ruben L.
Gonzalez-Ros, Jose M.
Goodman, Miriam B.
Gorfe, Alemayehu A.
Grage, Stephan L.
Gratton, Enrico
Green, Michael E.
Greenfield, Norma J.
Guilford, William H.
Haas, Ryan M.
Hall, Carol K.
Harper, Paul E.
Hatcher-Skeers, Mary E.
Haugh, Jason M.
Hauser, Kevin E.
Havrdova, Marketa
Heerklotz, Heiko H.
Helliwell, Ray M.
Hellmann, Nadja
Henry, Nelly
Henzler-Wildman, Katherine A.
Heuck, Alejandro P.
Hingerty, Brian E.
Hitchcock-DeGregori, Sarah E.
Hobiger, Kirstin
Hoffman, Ryan
Horkay, Ferenc
Horkayne-Szakaly, Iren
Hoskins, Aaron A.
Huang, Yao-Te
Inoue, Yasuhiro
Ishihara, Keiko
Itoh, Hiroyasu
Iwamoto, Hiroyuki
James, Andrew F.
Janke, Jonathan J.
Jimenez, Ralph
Johnson-Chavarria, Eric M.
Kapanidis, Achilles N.
Kemple, Marvin D.
Kenney, Linda J.
Kensler, Robert W.
Kimura, Junko
Kimura, Tadashi
Kimura, Tetsunari
Knoll, Wolfgang
Kono, Masahiro
Korepanova, Alla
Kouznetsov, Serguei
Lamb, Don C.
Lampe, Andre
Lattman, Eaton E.
Lawson, Catherine
Lecomte, Juliette T.
Lee, Chuan P.
Lemke, Edward A.
Leuba, Sanford H.
Leuchtag, H. Richard
Lingle, Chris
Longo, Marjorie L.
Lopez de Victoria, Aliana
López-Redondo, Fernando
Lorigan, Gary A.
Lucia, Sabina
Lukashkin, Andrei N.
Lymn, Richard W.
Lysakowski, Anna
Macgregor, Roderick D.
Maeda, Yuichiro
Mansson, Alf L.
Marquês, Joaquim T.
Matsunami, Hideyuki
Mattheis, James R.
Matthews, Kathleen S.
McCarty, Nael A.
Miller, Jay H.
Miller, Keith W.
Mironov, Sergej L.
Moller, Jesper V.
Moran, Nava
Murthy, Venkatesh N.
Nagle, John F.
Naumann, Christoph A.
Nemec, Kathleen N.
Niemeyer, Barbara A.
Nossal, Ralph J.
Okun, Ilya
Osbakken, Mary D.
Otterstrom, Jason J.
Otto, Michael R.
Panteleev, Mikhail A
Parker, Kevin K.
Parness, Jerome
Perez, Guillermo J.
Petrache, Horia I.
Philipson, Louis H.
Pilarczyk, Goetz C.
Poburko, Damon
Pohl, Elena E.
Polder, Hans Reiner
Pollard, Thomas D.
Preisler, Richard S.
Prevarskaya, Natacha
Puglisi, Jose L.
Puria, Sunil
Radermacher, Michael
Ram, Sripad
Ramirez-Alvarado, Marina
Ramsey, I. Scott
Randall, Cynthia S.
Rebouças, Nancy
Reif, Bernd
Reporter, Minocher
Rettig, Jens
Richardson, David C.
Richardson, Jane S.
Roberts, Daniel M.
Roche, Camille J.
Ruzicka, Jan A.
Rydqvist, Bo J.
Sadowski, John P.
Salgado, Jesus
Samatey, Fadel A.
Sargent, David F.
Scheuer, Todd
Sciamanna, Michele
Seabra, Maria B.
Sekatskii, Sergey K.
Shea, Madeline A.
Sheppard, Asher R.
Sherman, Arthur
Shillcock, Julian C.
Siegel, Edward
Smith, Jerry C.
Sondermann, Holger
Sonnichsen, Frank D.
Sosnick, Tobin R.
Spangler, Robert A.
Sprang, Stephen
Stark, Ruth E.
Stewart, Martin P.
Stine, Keith J.
Stroffekova, Katarina
Tang, Bin
Taylor, Kenneth A.
Tees, David
Tobias, Douglas J.
Toombes, Gilman E.
Umemura, Kazuo
Vais, Horia
Valenzuela, Carmen
VandeVen, Martin J.
Veenstra, Richard D.
Vergani, Paola
Verma, Santosh K.
Vinogradova, Tatiana M.
Vissing, Thomas
Von Hippel, Peter H.
Wade, Rebecca C.
Wei, Aguan D.
Wessels, Laura R.
Wetzler, Modi
Willisky, Gail R.
Yoda, Takao
Yoon, Tae-Young
Yoshimura, Kenjiro
Yosmanovich, Donna A.
Yu, Hao Y.
Yurke, Bernard
Zablow, Leonard
Zacharias, Martin
Zerbe, Oliver
Zhadin, Nickolay N.
Zhang, Xiao-Dong
Zimmerman, Anita L.
Zoppe, Monica
Zuckermann, Martin J.



11400 Rockville Pike, Suite 800
Rockville, Maryland 20852

Presorted
First Class Mail
U.S. Postage
PAID
Claysburg, PA
Permit #6

THIS IS YOUR LAST ISSUE OF THE NEWSLETTER.

Don't forget to renew your membership today.

UPCOMING EVENTS

BIOPHYSICAL SOCIETY NEWSLETTER DECEMBER 2014

February

January 30–February 2

Annual Linz Winter Workshop
Linz, Austria

<http://www.jku.at/conferences/content/e94666>

March

March 7-8

Chemical & Biological Terrorism
Defense (GRS)
Ventura, CA

<https://www.grc.org/programs.aspx?id=14689>

March 22-25

Proteomic Forum 2015
Berlin, Germany

<http://www.proteomic-forum.de/>

April

April 8-10

NIMBioS Investigative Workshop:
Information and Entropy
Knoxville, Tennessee

http://nimbios.org/workshops/WS_entropy

April 12-17

Cancer Genetics & Epigenetics
Lucca, Italy

<https://www.grc.org/programs.aspx?id=12552>

May

May 17-21

The Hippo Pathway: Signaling,
Development and Disease (E4)
Taos, New Mexico

<https://www.keystonesymposia.org/index.cfm?e=web.Meeting.Program&meetingid=1328>

May 23-24

Cannabinoid Function in the CNS
(GRS)

Lucca, Italy
<https://www.grc.org/programs.aspx?id=14641>