

# Newsletter

Biophysical Society

November

2012

## DEADLINES

### 57<sup>th</sup> Annual Meeting

February 2–6, 2013  
Philadelphia, Pennsylvania

December 1, 2012  
Student Housing

December 3, 2012  
Image Contest

December 21, 2012  
Early Registration  
Luncheon Registration

January 3, 2013  
Late Abstracts

January 4, 2013  
Hotel Reservations  
Childcare Pre-Registration

### Membrane Protein Folding

May 19–22, 2013  
Seoul, South Korea

January 13, 2013  
Abstract Submission

February 19, 2013  
Early Registration

## 2013 Distinguished Service and Emily M. Gray Awardees Announced

The Biophysical Society is proud to announce the recipients of the 2013 Distinguished Service Award and the Emily M. Gray Award. These Society members will be honored at the National Lecture on Monday, February 4, 2013, in Philadelphia, Pennsylvania. The Emily M. Gray Awardee will also give a presentation at the Undergraduate Student “Breakfast at Noon” on Monday, February 4, 2013.



*Klaus Schulten*, University of Illinois at Urbana-Champaign, will receive the Distinguished Service Award for laying the groundwork for the realistic molecular dynamic

simulations of biological macromolecules on time scales that match the physiological realm, and for making the methods and software openly available.



*Louis De Felice*, Virginia Commonwealth University, will be presented with the Emily M. Gray Award for his enduring and multifaceted

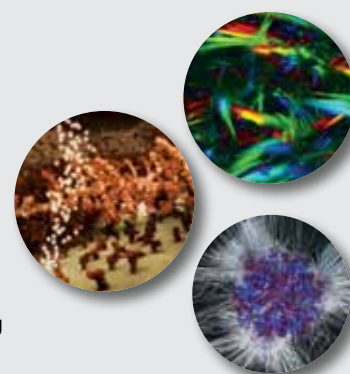
efforts to encourage the development and dissemination of knowledge in biophysics through outreach and education.

### Annual Art of Science Image Contest Opens

Sponsored by Photometrics

Do you have an eye-catching image that resulted from your research? BPS members attending the 2013 Annual Meeting may enter the annual BPS image contest, The Art of Science. Monetary prizes will be awarded for 1st, 2nd and 3rd place.

Entries are now being accepted. For more information and to submit an image, go to [www.biophysics.org/2013meeting](http://www.biophysics.org/2013meeting) and click ‘Program’ and then ‘Special Functions’.



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## Biophysicist in Profile

Bryan "Trevor" Sewell

*Trevor Sewell*, Professor of Medical Biochemistry and Director of the Electron Microscope Unit at the University of Cape Town, is South Africa's most devoted biophysicist. "I would like to see the establishment of an entity in Cape Town, South Africa, which has the capacity to tackle problems in structural biology that are important both for their relevance to Africa and their importance to science," Sewell says. While some other South African scientists emigrate with the promise of funding and fully stocked labs, Sewell's choice to stay and effect change in his homeland shows a willingness to effect change in post-apartheid South African science research and development. "The absence of a critical mass in the local community means that most of the things that structural biologists and other biophysicists regard as self-evident have to be justified," Sewell says.

“My work is almost all about visualization: visualization at an atomic scale or extrapolation from cryo-EM resolutions to the atomic scale. I believe that seeing is believing, and biophysics lets me see.”

– Bryan "Trevor" Sewell

Since he was a student, Sewell has worked tirelessly to demonstrate his work is beneficial to the greater South African population. The son of a chief executive of a British oil company's South African branch, Sewell's interest in science began as he watched his father interact with the world around him. "He was a fundamentally curious man who liked to understand how things worked," Sewell says. Many of the Sewell family's friends were farmers, whose lives revolved around biology. Growing up in this environment made a scientific career a natural choice for Sewell, and he was encouraged not only by his parents but also by *Chris Ballenden*, his math teacher at St. David's Marist College. "He showed me how science and mathematics were a part of everything and aroused in me the passion that is necessary to try and understand the natural world," Sewell says. His interest played out at the University of the Witwatersrand in Johannesburg, where Sewell worked

with *Frank Nabarro*, a physicist looking to apply his well-known laws to biologically relevant crystalline objects. "I decided that I would like to make my contribution by combining X-ray diffraction with the study of biological material," says Sewell. He went on to conduct PhD research on the structure of enzymes in the lab of Sir *Tom Blundell*, now Director of Research and Professor of Biochemistry at the University of Cambridge.

Sewell's ability to make material connections between his surroundings and his studies matured when, as an associate professor at the University of Cape Town he joined colleagues in the Biochemistry and Microbiology Departments in a project on nitrilases—enzymes that convert toxic nitriles to harmless carboxylic acids. "They were studying microbes and enzymes that might be useful to the mining industry," says Sewell. "I visualized nitrilases that my colleagues had prepared by negative staining electron microscopy and thought that they may be short spirals. It was not until some years later that a brilliant student, *Mark Berman*, elected to work with me and we started to make real progress with their structures." Today, Sewell continues to study nitrilases' structures.

Neither his methods nor his gift with students go unrecognized. “Trevor has been at the forefront, and largely instrumental, in virtually all advances in electron microscope and protein crystallographic infrastructure, capability, training, and mentoring in South Africa since he became director of the Electron Microscope Unit and facilities at UCT in 1992,” says Sewell’s colleague *Wolf-Dieter Schubert*, Professor of Structural Biology at the University of the Western Cape (UWC). “His perceptive and bold vision is matched by his unique hands-on abilities, down to the bench level. Indeed, he has been involved boots-and-all in the resolution of virtually every molecular structure emanating from the African continent by EM or X-ray crystallography.”

However, Sewell’s focus doesn’t lie only in methods. “The key problem at present is finding money to create jobs for graduates so that they remain in South Africa and the discipline grows,” Sewell says. “This may sound like a universal problem, but the small number of people involved often means that a single person determines whether the discipline exists in the country or not.” To encourage South African biophysics graduates to remain in South Africa, Sewell is trying to create more attractive opportunities in the country. He initiated a successful Masters program in Structural Biology across three South African universities, an effort Blundell calls ambitious. “The Masters course has been superbly organized with very challenging lectures and projects,” Blundell says. Sewell attributes the success of the program in large part from the cooperation he’s received from the international biophysics community. “The establishment and growth of biophysics in South Africa has required extraordinary input from overseas colleagues and will continue to require nurturing by people from the developed world for many years,” Sewell says. *Edward Egelman*, Professor of Biochemistry & Molecular Genetics at the University of Virginia, served as one of the program’s international mentors. “I visited Cape Town five times as part of this program, and have been immensely impressed with all that Trevor has done to promote biophysics and structural biology in South Africa,” Egelman says. “In fact, everything that I have seen Trevor organize has turned out to be remarkable.”

Sewell has also worked to combat South Africa’s lack of resources. “Resources like synchrotrons, certain classes of electron microscope, and supercomputers are considerably less accessible than they are in the ‘developed’ world,” Sewell says. “This makes the logistics of doing an experiment daunting.” To help alleviate the issue, Sewell raised funds to obtain the country’s first cryo-electron microscope, and maintains its level of operation at an internationally competitive edge. He also spearheaded the effort to secure \$1 million in grant funding for X-ray crystallography facilities, now located at UWC. Between the Masters program and the resources he helped put in place, Sewell actively makes sure South African scientists are aware of the opportunities now available to them right at home. “He recruits students from within South Africa and from Africa more generally, touring the country giving lectures to prospective students,” says Blundell. “Trevor has a strong sense of social responsibility. He has recruited a good mix of white and black students from both South Africa and other African countries. He has a great talent for interacting with students at a personal level.”

South Africa’s sole Biophysical Society (BPS) member had his first brush with the organization at a small, localized thematic meeting, which BPS now hosts several of every year. “I think these meetings, now that they are being held throughout the world, are valuable for drawing people into the community,” Sewell says. “My community is primarily 3-D EM, which is strongly represented in BPS. There are many other communities equally represented and in attendance at the Society’s meetings, which also puts everything in proportion.”

Though the effects of apartheid are still keenly felt among the South African scientific community, Sewell is working to overcome the lingering adversity. “The University of Cape Town is an exciting and challenging work environment,” he says. “I am currently trying both to provide a world-class electron microscopy service and do research and teaching in structural biology, with an emphasis on medically relevant problems.” One thing is for certain: Sewell’s career is thriving, and because of his efforts, the South African biophysics community will soon be thriving, too.



Trevor with his wife at their log cabin.



Trevor with students from a Molecular Dynamics course.

## Subgroup Annual Meeting Symposia

The 12 Society subgroups will hold symposia on Saturday, February 2, 2013, in Philadelphia, Pennsylvania. For complete session information for each subgroup visit <http://www.biophysics.org/2013meeting/Program/Subgroups/tabid/3587/Default.aspx>.

### Bioenergetics

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

#### **Morning Symposium: Mitochondrial Calcium Signaling: New Insights after Molecular Identification of the Calcium Uniporter**

*Vasmi K Mootha*, Harvard Medical School, *The Mitochondrial Uniporter: From Molecular Identification to Physiology*

*Rosario Rizzuto*, University of Padova, Italy, and *György Hajnóczky*, Thomas Jefferson University

*Shy-Shing Sheu*, Thomas Jefferson University, *Multiple Mitochondrial Calcium Influx Mechanisms: Physiological and Pathological Implication*

*Brian O'Rourke*, Johns Hopkins University, and *W. Jonathan Lederer*, University of Maryland

#### **Afternoon Symposium: Mitophagy and Mitochondrial Dynamics**

*Heidi M. McBride*, McGill University, Canada, *Mitochondrial Dynamics and Quality Control*

*Hiromi Sesaki*, Johns Hopkins University, *Mitochondrial Dynamics in Neurodegeneration*

*John J. Lemasters*, Medical University of South Carolina, *Initiators of Type 1 and 2 Mitophagy*

*Richard J. Youle*, National Institutes of Health, *PINK1- and Parkin-mediated Mitophagy*

### Biological Fluorescence

*Joachim Mueller*, University of Minnesota, Subgroup Chair

*Jonas Ries*, ETH Zürich, Switzerland, *Novel Labeling Schemes for Single-Molecule Localization Microscopy*

*David Piston*, Vanderbilt University, *Simultaneous Imaging of Vesicle Trafficking and Calcium-Mediated Exocytosis in Pancreatic Beta-Cells*

*Michael Levene*, Yale University, *Invasive Optics for Watching the Brain Work*

*David Millar*, Scripps Research Institute, *Assembly and Dynamics of Nucleic Acid – Protein Complexes at the Single-Molecule Level*

*Rong Li Stowers*, Institute of Medical Research

### Biopolymers in vivo

*Pernilla Wittung-Stafshede*, Umea University, Sweden, Subgroup Chair

#### **10:00 AM Subgroup Business Meeting**

**Keynote Speaker:** *Jacqueline Barton*, California Institute of Technology, *DNA-mediated Signaling*

*Yousif Shamoo*, Rice University, *Small Changes in Enzyme Function can lead to Surprisingly Large in vivo Effects*

*Patricia Clark*, Notre Dame University, *New Directions for Vectorial Protein Folding*

#### **Postdoc Talks**

**Keynote Speaker:** *Stefan W. Hell*, Max-Planck Institute, Germany, *Nanoscopy with Focused Light*

*Jie Xiao*, Johns Hopkins University, *Structures and Dynamics of the E. coli FTSZ-Ring and its Associated Proteins During Cell Division Revealed by Superresolution Imaging*

*John R. Briggs*, European Molecular Biology Laboratory, Germany, *Solving Structure in situ using Cryo-Electron Tomography and Correlative Methods*

*Gael McGill*, Digizyme

**7:00 PM Subgroup Dinner**

## Exocytosis & Endocytosis

*Corey Smith*, Case Western Reserve University, Subgroup Chair

*Ege Kavalali*, University of Texas, Southwestern Medical Center, *Molecular Basis and Physiological Consequences of Synaptic Vesicle Pool Heterogeneity*

*Volker Haucke*, University of Berlin, Germany, *Molecular Mechanism of Synaptic Vesicle Exo-Endocytosis*

*José Lemos*, University of Massachusetts Medical School, *Role of Intracellular Calcium in Release from Nerve Terminals*

*Elise Stanley*, University of Toronto, Canada

*James Rothman*, Yale University, Katz Award Lecture, *Control of Membrane Fusion in Exocytosis*

## Intrinsically Disordered Proteins

*Doug Barrick*, Johns Hopkins University, Subgroup Chair

### Functional Roles of Protein Disorder

**Keynote Speaker:** *Lila Gierasch*, University of Massachusetts, Amherst, *Moving the Protein Folding Problem from the Test Tube to the Cell*

**Keynote Speaker:** *Peter Wright*, Scripps Research Institute, *IDP Research in 2013: what have we accomplished and where are we going?*

*James Bardwell*, University of Michigan, *Structural Studies on the Activation and Substrate Binding of a Conditionally Disordered Acid-Activated Chaperone*

*Ad Bax*, National Institutes of Health, *Alpha-Synuclein, An Intrinsically Unstructured Protein. How Interesting Can It Be?*

*Liesbeth Veenhoff*, University of Groningen, The Netherlands, *A Long Disordered Linker in Nuclear Transport of Membrane Proteins*

*Garagin Papoian*, University of Maryland, *Acetylations of Lysines of the H4 Histone Tail lead to Functionally Important Remodeling of its Energy Landscape*

*Jeffrey Hayes*, University of Rochester, *Linker Histone Structural Transitions upon Binding to DNA, Mononucleosomes, and Oligonucleosomal Arrays*

*Jörg Langowski*, German Cancer Research Center, Germany, *Dynamics of Nucleosome Tails Studied by All-Atom and Course-Grained MD Simulations*

*Elisar Barbar*, Oregon State University, *Intrinsic Protein Disorder in the Regulation of Large Molecular Machines*

*Jennifer Lee*, National Institutes of Health, *Membrane Curvature Generation by  $\alpha$ -Synuclein*

*Ben Schuler*, University of Zürich, Switzerland, *Probing the Polymeric Properties of Unfolded and Disordered Proteins with Single-Molecule Spectroscopy*

## Mechanobiology

*Linda Kenney*, University of Illinois, Chicago, Organizer

*Dennis Discher*, University of Pennsylvania, *From Matrix Elasticity to Nuclear Physics in Lineage Programs*

*GV Shivashankar*, National University of Singapore, Singapore, *Nuclear Mechanics and Genome Regulation*

*Mike Dustin*, New York University, *T-cell Receptor-Associated Actin Patches Generated by Wiskott-Aldrich Syndrome*

*Antoine Triller*, Institute of Biology at Ecole Normale Supérieure (IBENS), France, *Synapse Stability and Plasticity: From Super-Resolution to Physical Chemistry of Molecular Interactions*

*Jennifer Zallen*, Rockefeller University, *Shaping the Embryo: Cellular Dynamics in Development*

*Rob Phillips*, California Institute of Technology, *Bacteria Are Stressed Out Too: The Physics of Mechanosensation*

## Membrane Biophysics

*Diomedes Logothetis*, Virginia Commonwealth University, Subgroup Chair, *Regulation of K Channels by the G Protein Signaling System*

*Ming Zhou*, Baylor College of Medicine, *Structural Basis of Gating by RCK Domains*

*Eitan Reuveny*, Weizmann Institute, Israel, *Regulation of Store Operated Calcium Entry by SARAF*

*William A. Catterall*, University of Washington, *Calcium Channel Regulation in the Fight-or-Flight Response*

### 3:05 PM Subgroup Business Meeting

*Bonnie A. Wallace*, University of London, United Kingdom, *The Open Conformation of a Voltage-Gated Na Channel Reveals the Transmembrane Pathway and Gating Mechanism*

*Kevin J. Foskett*, University of Pennsylvania, *Regulatory Proteins of a Mitochondrial Calcium Uniporter*

*Peter H. Larsson*, University of Miami, *Regulation of Voltage Sensor Movement in KCNQ Channels by KCNE Beta Subunits*

## Membrane Structure & Assembly

*Heiko Heerklotz*, University of Toronto, Canada, Subgroup Chair

*Ole Mouritsen*, University of Southern Denmark, Denmark, *Fatty Acids and Lysolipids Perturb Lipid Membranes: Implications for Drug Delivery*

*Sandro Keller*, University of Kaiserslautern, Germany, *Functional Reconstitution of Membrane Proteins by Isothermal Titration Calorimetry*

*Erwin London*, Stony Brook University, *Both Detergent Effects Upon Domain Size and Transmembrane Protein Length Effects Upon Domain Binding Suggest that Hydrophobic Mismatch can Control the Properties of Ordered Membrane Domains ("Rafts")*

*Bill Wimley*, Tulane University, Thompson Award Winner, *Discovering Highly Potent Pore-Forming Peptides Using Synthetic Molecular Evolution*

*Klaus Gawrisch*, National Institutes of Health, *Detergents for Extraction, Purification, and Reconstitution of G Protein-Coupled Membrane Receptors*

*Allan Grossfield*, University of Rochester Medical Center, *Exploring the Mechanisms of Antimicrobial Lipopeptides with Molecular Simulation*

## Molecular Biophysics

*Jan Lipfert*, Delft University of Technology, The Netherlands, Subgroup Chair, *Probing the Response of Double-Stranded RNA to Force and Torque at the Single-Molecule Level*

*Craig Hetherington*, University of California, Berkeley, *DNA Rotation During Viral Packaging Reveals Motor Mechanisms and Genome Organization*

*Taekjip Ha*, University of Illinois, Urbana-Champaign, *Single Molecule Fluorescence-Force Analysis of DNA and Nucleosome*

*John Marko*, Northwestern University, *Torque and Dynamics of Linking Number Relaxation in Stretched Supercoiled DNA*

*Michelle Wang*, Cornell University, *Biomolecular Processes under Torque*

*Paul Lebel*, Stanford University, *Torque, Twist, and Extension of DNA at Millisecond Resolution using AU-RBT*

*Dominik Kauert*, Dresden University of Technology, Germany, *Single Molecule Mechanical Measurements Using 3D DNA-Origami Nanostructures*

## Motility

*Mihaly Kovacs*, Eotvos Lorand University, Hungary, and *Christopher Yengo*, Pennsylvania State University, Subgroup Co-Chairs

*Ahmet Yildiz*, University of California, Berkeley, *The Mechanism of Cytoplasmic Dynein Motility*

*Zeynep Ökten*, Ludwig Maximilians University, Germany, *What Determines the Path of Kinesin Along the Microtubules?*

### Poster Highlights

*Georgios Tsiavaliaris*, Hannover Medical School, Germany, *Mechanisms of Mechanochemical Coupling in Low and High Duty Ratio Myosins*

*Andras Malnasi-Csizmadia*, Eotvos Lorand University, Hungary, *Communication Pathways between the Functional Regions in Myosin Motor Domain*

### 2:45 PM Subgroup Business Meeting

*Toshio Yanagida*, Osaka University, Japan, *From Single Molecule Fluctuation to Muscle Contraction: A Brownian Model of A.F. Huxley's Hypothesis*

*Stephen Kowalczykowski*, University of California, Davis, *Watching Individual DNA Helicases and Motor Proteins Behaving and Misbehaving*

**Keynote Speaker:** *Susan Gilbert*, Rensselaer Polytechnic Institute, *Kinesin-14: A League of their Own*

## Nanoscale Biophysics

*Joerg Bewersdorf*, Yale University School of Medicine, and *Victoria Birkedal*, Aarhus University, Denmark, Subgroup Co-Chairs

*Christian Eggeling*, Max Planck Institute, Germany & Oxford University, United Kingdom, *New Insight into Lipid-Protein Membrane Organization and Its Functionality with Super-Resolution STED Microscopy*

*Mark Ellisman*, University of California, San Diego, *Correlated Microscopies: Tools & Technologies for Multi-scale-Multimodel Imaging and Information Integration*

*Helmut Grubmüller*, Max Planck Institute, Germany, *Dynamics of the Ribosomal Subunit Interface During tRNA Translocation at Near-Atomic Resolution*

*Marija Drndić*, University of Pennsylvania, *Nanopore Graphene-based Electronic Devices*

*Julio Fernandez*, Columbia University, *Single Molecule Enzymology*

*Scott Blanchard*, Cornell University, *Allosteric Control of the Ribosome by Small-Molecule Antibiotics*

*Viola Vogel*, ETH Zürich, Switzerland, *Proteins as Mechano-Chemical Signalling Switches*

## Permeation & Transport

*Dirk Gillespie*, Rush University Medical Center, Subgroup Chair

*Lambertus Van den Berg*, University of Massachusetts Medical School, *Understanding Outer Membrane Transport of Small Molecules by Pseudomonas aeruginosa*

*Gerhard Hummer*, National Institutes of Health, *Water Mediated Membrane Transport: From Channels to Proton Pumps*

*Edward Yu*, Iowa State University, *Structure and Mechanism of the Tripartite CusCBA Heavy-Metal Efflux Complex*

## Members in the News



*Brian Kobilka* of Stanford University School of Medicine, and Society member since 2003, won the 2012 Nobel Prize in chemistry, along with *Robert Lefkowitz* (not pictured) of Duke University School of Medicine.



*Roger Tsien* of University of California, San Diego, and Society member since 2000, received the Golden Goose Award.

## Careers

### Mid-Career Advice from the CPOW Luncheon

A number of career-related topics were discussed at the annual Career Roundtable Luncheon at the 56<sup>th</sup> Annual Meeting in San Diego, California, earlier this year. As the session title indicates, participants sat at roundtables along with moderators, senior scientists who led discussion and shared advice. The 2012 moderators included: *Ivet Bahar*, University of Pittsburgh School of Medicine; *Ligia Toro de Stefani*, University of California, Los Angeles; *Al George*, Vanderbilt University; *James Weiss*, University of California, Los Angeles; *Shai Silberberg*, NINDS, NIH; *Harel Weinstein*, Weill Cornell Medical College; *Diomedes Logothetis*, Virginia Commonwealth University; and *Dave Piston*, Vanderbilt University. Highlights from that session's conversations are summarized here.

#### Getting the grant

Start your grant application early so you can take your time gathering the necessary preliminary data. Make sure that you have an important question to ask, and then ask yourself what preliminary results you need to obtain in order to submit a proposal. Don't rush, particularly not on your first proposal. Present an overview of your research without getting bogged down in details of every thought process. Be wary of copying and pasting identical sentences within your application, as grants are screened carefully to throw out redundant and overlapping grants to minimize the time wasted on reviewing poor proposals. Strengthen your application by identifying and heading off pitfalls. Remember, NIH grant officers are there to help, so use them.

When you receive reviewers' comments, don't be shy or ashamed about them. Respond to each point thoughtfully in your revision. Ask for help editing your revision—a mentor, good friend, or colleague you trust. Make sure to give your helper plenty of time (at least a month) to look through your revision and give a critical analysis. Take your time respond-

ing, but be efficient; don't wait so long to respond that your proposal becomes obsolete. Look at your revised proposal with fresh eyes so you can start learning when to make a new proposal out of your old proposal and when to collaborate with other PIs.

#### Getting the promotion

Laying the groundwork for three major components of your career will help put you in line for a promotion: your teaching responsibilities, your research, and the service you give back to your university.

#### Teaching

This is a vital component of your position, especially if you work at a primarily undergraduate institution. If you don't know how to be an effective teacher, make it your mission to find out. Ask your department chair or your colleagues for teaching tips. Collect evaluations from students, a university committee, or third-party reviewers after every course you teach and implement the constructive feedback. Ask fellow faculty members to attend and critique your lectures. If there are any issues with your lectures or your teaching style, work with the university to improve them.

#### Research

Though teaching requires considerable effort and time, your research will get you promoted. Show your ability to land a grant and administer it efficiently. Publish steadily at least once a year—solid publications, especially as a senior author, will convince your peers and superiors that your work should continue to be funded. On top of that, market yourself. Convince your peers that your research is important. Accept invitations to present a poster or give a talk. Once there, introduce yourself to other presenters and speakers to start building relationships. Host students in your lab for a semester or a summer. The experience will give them a valuable research opportunity, and put your name out there in a mentor capacity. Still unsure about how the scientific community perceives your efforts? Talk with senior faculty, your chair, and the promotion committee to see whether they can offer any advice. If you choose



this route, get a jump on gathering advice well before the promotion deadline.

### University service

You must give in order to get. Fatten your service portfolio by getting involved in a university committee or special interest group; organizing seminars; attending meetings; or encouraging your postdocs to apply for fellowships. Find ways to contribute to your department that don't require a lot of your time or energy—be mindful of your teaching and research commitments and find a balance. However, it's important that you do something to give back and share your department's service load. If you're a good citizen and can show that you've contributed to your department in a meaningful way, the promotion should be within your reach.

### Science as a team sport

Though once considered an individual pursuit, these days science is about teamwork: collaborations, co-authoring papers, working well with colleagues. The process of academic advancement is essentially being part of a team from the moment you apply for a job at a university. Admissions committees will look at how you fit into a department, not only based on your unique skills and techniques, but on your personality. Working well with others is the key to success. When it comes to publishing, you will have lots of co-authors, but you must diplomatically integrate their contributions while ensuring that you get adequate credit for your part of the work in a way that will be apparent to review panels. No matter what aspect of your scientific career, you can't go it alone anymore, so make a team. Get people interested in your project or in a project you can work on together. Build collaborations.

### From academia to industry—and back

It can be challenging to switch to an industry career if you're trained in academia, but it can be even more difficult to switch back. Fortunately, there are tried-and-true tricks—including networking and diversification—that you can use to succeed wherever your career takes you.

### Build relationships

Network, network, network. Talk to people at meetings and seminars with the intention of building lasting relationships. Follow up with these new contacts. Find a mentor who truly values your success and wants to help you get there. Build a network of people you can count on for support, advice, and collaboration across career sectors.

### Diversify your experience

Don't be afraid to try new things. Changes in career paths can provide demonstrated success for your CV as well as a broad mix of people you can add to your network. Proven success at places across sectors always looks attractive, to industry and academic settings alike. Showing that you've worked with a diverse group of people across disciplines can make you especially attractive. Those who have successfully combined disciplines through work and expressed this in papers and presentations constitute a different kind of researcher than those who simply created interdisciplinary departments. Papers carry weight between academic and industry sectors based on the impact factor. Additionally reference letters count, so make sure you have good recommendations.

### The bottom line

If you don't love what you do, do something else. Science is extraordinarily competitive regardless of whether you work in academia, industry, or government. You must do something that gets you excited and go where other people are excited about it, too. If you love what you do, keep your mind open to all possible career paths. Maybe your particular skills and disposition are more suited to an NIH program director position than a strictly research position. There are so many ways you as a scientist can positively impact the world around you. Call on your unique strengths to make your contribution.

Turn to page 13 for a teaser of the 2013 mid-career program, *PROMOTE your research, PROMOTE yourself*.

—*Gabriela Popescu, Thao Nguyen, and Teresa Giraldez, CPOW members*

57<sup>th</sup> Annual Meeting

Philadelphia, Pennsylvania | February 2–6, 2013

**Abstracts**

Over 3,500 abstracts have been submitted for the Meeting!

Look for your programming email notice in late November.

**Teaching Biophysics at the High School Level**

Meeting attendees are invited to join local high school teachers as they are introduced to biophysics and experience the benefits of teaching interdisciplinary science at the high school level. Speakers will discuss the challenges that can arise while teaching interdisciplinary subjects, and leave with new tools to address these difficulties.

## 2013 Annual Meeting Career Events: What Will You Learn...?

From putting potential students in touch with top biophysics programs, to resume critiques and panel discussions for mid-career professionals, this year's Annual Meeting will feature a wide variety of career enriching events for Meeting attendees at every career level and on every career path.

### ... how to network

The Annual Meeting is a wonderful place to meet new friends and make new career contacts, but knowing how to network is key to taking advantage of this opportunity. Career expert *Monica Weil* will teach *Networking for Those Who Hate to Network*, offering attendees tips and tricks to help make the most out of the Meeting.

Once you've attended the workshop on Sunday, February 3, 2:30 PM–3:30 PM, use what you learn to network through the rest of the meeting—presenting your poster, attending luncheons, meeting the speakers and at many events, such as:

- *Postdoctoral Breakfast*, Sunday, February 3, 7:30 AM–8:30 AM
- *Graduate Student Breakfast*, Monday, February 4, 7:30 AM–8:30 AM
- *Undergraduate Student "Breakfast"*, Monday, February 4, 11:30 AM–1:00 PM
- *Networking with Minority Biophysicists: Resources & Opportunities*, Tuesday, February 5, 1:00 PM–2:00 PM

If you miss the Sunday networking workshop, it will be presented again on Tuesday. There are endless opportunities to network!



### ... how to share your science

Part of successful networking is the ability to communicate the research you're working on. For tips on communicating through your writing, check out *How to Get Your Scientific Paper Published*, Monday, February 4, 1:30 PM–2:30 PM. Moderator *Da-Neng Wang* will lead a panel of speakers including *Les Loew*, Editor-in-Chief, *Biophysical Journal*, *Michael Edidin*, Associate Editor, *Biophysical Journal*, and *Lara Szewczak*, Editor at *Cell Press*, in a discussion about the practical issues involved in publishing a scientific paper. The panelists have extensive experience in publishing, and will provide information on the do's and don'ts of submitting research manuscripts.

The Public Affairs Committee is sponsoring a *Communicating Science* workshop, Sunday, February 3, 2:30 PM–4:00 PM. Attendees will learn about the role of the media in the vaccine-autism controversy from *Paul Offit*, an infectious disease expert from The Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine and author of *Deadly Choices: How the Anti-Vaccine Movement Threatens Us All*. Attendees will also learn about strategies to educate the public and the media about science research.



## ... how to get a job

Do you hope to work in a university? Or is a career in industry more your speed? Regardless of your career goal, BPS has put together a session or workshop to help get you there.

Stop by the Career Center and sign up early for a 30-minute, one-on-one resume critique session with one of our career experts. *Monica Weil* or *Joe Tringali* will review your resume and offer suggestions to strengthen and tailor it for your individual career goal. These critiques fill up fast, so make sure to sign up as soon as you can! If you don't get a spot, come back on Wednesday for a last chance at one of 12 additional 15-minute, one-on-one reviews.

Once your resume is ready to go, stop by the *Graduate & Postdoc Institution Fair* and put your new networking skills to work meeting representatives from more than 40 institutions with biophysics programs. You can also head to the Career Center to post your CV to the Biophysical Society job board and apply for positions. Employers with job openings can advertise positions in the Career Center, and some companies will even conduct on-site interviews!

If you're unsure where you'd like your career to take you (mentally or physically), BPS workshops can help you decide! Weil's workshop, *Who am I?*



*Self-Reflection as a Career Tool*, Sunday, February 3, 10:30 AM–11:30 AM, will give you tools and techniques that can help translate a reflective understanding of self into making meaningful career choices. If you're not sure where you'd like to work geographically, check out the Early Careers Committee panel *Early Career Opportunities Outside of the US*. Panelists who have worked all over the world will share their experience and recommendations for working abroad. If you think a career abroad is for you, Weil will also present *Building Cross-Cultural Competence: Beware of the "Iceberg,"* Monday, February 4, 2:30 PM–3:30 PM, where you can learn how to navigate the unique cultural differences between your home country and adopted country.

### Careers in Academia

If you're looking to academia for your current or future career, stop by one of these sessions:

- *Securing Your First Faculty Position: The Perspective of the Search Committee*, Sunday, February 3, 1:00 PM–2:30 PM

Panelists who have served on faculty search committees, including *Ian Thorpe*, University of Maryland; *Casey Londergan*, Haverford College; and *Brian Salzberg*, University of Pennsylvania, will discuss the hiring process from their point of view. Hosted by the Early Careers Committee.

### Win an iPad at the Annual Meeting!

Visit exhibitors in the Exhibit Hall and receive entry tickets for exciting raffle prizes. The more exhibitors you visit, the more chances you'll have to win! The winner of the grand prize, an Apple iPad 3, will be announced on Tuesday, February 5.

57<sup>th</sup> Annual Meeting

Philadelphia, Pennsylvania | February 2–6, 2013

**BPS thanks the following 2013 Annual Meeting sponsors:**

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- *Postdoc to Faculty Q&A: Transitions Forum and Luncheon*, Tuesday, February 5, 12 NOON–2:00 PM

Are you finishing up your postdoc and applying to (or getting ready to apply to) academic faculty positions? Bring your questions for this experienced panel of new faculty and recently tenured professors. The Q&A, hosted by CPOW, will answer your questions and offer tips for CV and interview preparation, job negotiation and getting started in your new role. Registration is required. Fee includes lunch.

- *Teaching Science Like We Do Science*, Sunday, February 3, 2:00 PM–3:30 PM

If science consisted only of 8:00 AM lectures, there would be far fewer scientists. For many, the exciting part comes in the lab—so why don't we teach it that way? This workshop will highlight examples of successful integrations of teaching and research, and

discuss funding opportunities for developing unique undergraduate courses. Speakers *Karen Fleming*, Johns Hopkins University and *Gina MacDonald*, James Madison University, will present courses they have developed to incorporate biophysics education into undergrad curriculums.

- *Funding Opportunities for Faculty at Predominantly Undergraduate Institutions*, Tuesday, February 5, 12:30 PM–2:00 PM

Faculty at PUI can find it difficult to establish or maintain an active and productive undergrad research lab. This session, hosted by the Education Committee, will feature speakers *Gina MacDonald*, James Madison University; *Scott Brewer*, Franklin & Marshall College; and *Myriam Cotton*, Hamilton College, discussing how PUI faculty can find funding sources.

**Careers in Industry**

Looking for tips on a career in industry? Look no further than these workshops presented by career expert *Joe Tringali*:

- *Beyond the Bench: Preparing for Your Career Transition in the Life Sciences*  
 Sunday, February 3, 9:00 AM–10:00 AM  
 Monday, February 4, 11:30 AM–12:30 PM
- *Selling Yourself to the Life Sciences Industry*  
 Sunday, February 3, 12 NOON–1:00 PM
- *Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)*  
 Sunday, February 3, 4:00 PM–5:00 PM  
 Monday, February 4, 4:00 PM–5:00 PM

**NEW** for 2013, this session will help you prepare for those tricky interview questions you may not be ready for in an industrial interview.

**Traveling from Outside the US to the Annual Meeting?**

Interview requirements for obtaining a visa may be more stringent than in years past, and visas may take longer to approve. For further information on the visa application process visit [www.biophysics.org/2013meeting/GeneralInfo/InternationalTravelers/VisalInformation/tabid/3531/Default.aspx](http://www.biophysics.org/2013meeting/GeneralInfo/InternationalTravelers/VisalInformation/tabid/3531/Default.aspx)

[www.biophysics.org/2013meeting/GeneralInfo/InternationalTravelers/VisalInformation/tabid/3531/Default.aspx](http://www.biophysics.org/2013meeting/GeneralInfo/InternationalTravelers/VisalInformation/tabid/3531/Default.aspx)

You may need a letter of invitation to obtain a visa. To obtain a letter of invitation you must first register for the meeting and pay any registration fees in full. Once you have completed your registration, send requests to [society@biophysics.org](mailto:society@biophysics.org).



## ... how to get & keep a grant

Learn from veteran NIH grant reviewers what panels look for when they read and assess proposals in the *Grant Writing Workshop: How (Not) to Write Your NIH Grant Proposal*, Tuesday, February 5, 2:00 PM–4:00 PM. *Jean Chin*, NIGMS, NIH, and other NIH staff will also answer questions about the changes at NIH and the best ways to communicate with funding agencies both before and after submitting a proposal. Sponsored by the Public Affairs Committee, this session is appropriate for grant-seekers at all levels.

If you already have a grant and you're worried about getting it renewed, check out the CPOW-sponsored

session, *How to Get Your Grant Renewed*. Knowledgeable panelists, including *Donald Schneider*, Senior Advisor, NIH Center for Scientific Review; and *R. John Solaro*, Head, Department of Physiology and Biophysics, University of Illinois, Chicago, will discuss the best ways to ensure your research continues to receive funding.

If you are looking for general advice or have questions not covered by any of these sessions, *Monica Weil* and *Joe Tringali* will host a *Career Open Forum/Career Q&A Session* on Monday, February 5, 10:00 AM–11:00 AM. Bring your career questions to the Annual Meeting and see what you can learn!

## ... how to prevent a mid-career crisis

In an effort to offer more programming targeted above the student or early career level, BPS is excited to present 3 mid-career workshops this year.

### **PROMOTE Your Research, PROMOTE Yourself**

February 3, 12:00 NOON–2:00 PM

You've secured a job and established a lab. Now what? You're looking to make an impact on your field beyond the bench, but not sure what you can do to increase the visibility of your research and widen your scientific influence. The purpose of this CPOW luncheon is to help mid-level professionals learn how to get noticed. Experienced panelists include *Susan Amara*, past president, Society for Neuroscience and member, National Academy of Sciences; *Al George*, Study Section Chair, NIH and chief, Division of Genetic Medicine, Vanderbilt University; *Harel Weinstein*, former BPS president, Chairman of Physiology and Biophysics, WCML; *Shai Silberberg*, program director, Extramural Research Program, NIH/NINDS; and *Brian O'Rourke*, Associate Editor, *Circulation Research* and director, Bernard Laboratory of Fundamental Research in Preventive Cardiology, Johns Hopkins University. Discussions will include how to have your work published in high quality, broad-audience journals; how to volunteer to

serve on an editorial board; and how to get involved with grant review. Following the panel discussion, the audience will have a chance to interact with the panel in small-group or one-on-one interactions to ask specific questions and get individualized feedback. Space for this event is limited—pre-register now to reserve your spot! The fee to register includes lunch.

### **Now What? Career Tips & Techniques for Seasoned Professionals**

Tuesday, February 5, 2:30 PM–3:30 PM,

During this interactive workshop *Monica Weil* will offer tips and techniques for dealing with late career issues—from lost funding to dissatisfaction with your position.

### **Biophysics 101: Atom Force Microscopy**

Monday, February 4, 1:30 PM–3:00 PM

Thinking about switching careers? Just want to stay up to date on biophysical techniques outside of your area? This session will continue a series of symposia initiated by the Education Committee to educate Meeting attendees at all levels about biophysics techniques with which they may not be familiar.

# What's New in *Biophysical Journal*?

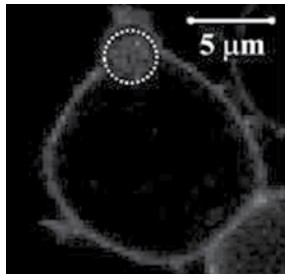
## Emerging Biophysical Technologies

Have you noticed the new Emerging Biophysical Technologies (EBT) featured papers on the *Biophysical Journal* website as part of each issue? As an initiative to highlight physics-based methods, editors are selecting papers to be featured and writing a short description about why this new method is important.

Here are some of the latest featured EBT papers. To view the papers, visit [www.biophysj.org](http://www.biophysj.org).

### A Method for Spatially Resolved Local Intracellular Mechanochemical Sensing and Organelle Manipulation

S. Shekhar, A. Cambi, C. G. Figdo, V. Subramaniam, and J. S. Kanger



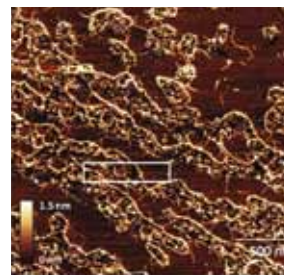
It is clear that mechanical properties of cells and the forces impinging on a cell translate into biochemical changes. These are typically characterized for a whole cell or a population of cells. Shekhar

et al. have constructed a novel probe/perturbant, a magnetic particle coupled to a fluorescent sensor of local chemistry. With this, they simultaneously characterize the rheology of a small volume of cytoplasm and the changes in the pH of an internalized vesicle (phagosome) as it trafficks into the cell interior. The probe lets them go beyond characterization, to show that perturbing the centripetal movement of a phagosome changes the kinetics of its acidification. As the authors note, the method has many applications to cell biophysics. Indeed, their probe may well be the prototype for a number of such probes able to perturb subcellular processes, for example by local heating rather than by mechanical force.

### Nanoscale Electrostatic Domains in Cholesterol-Laden Lipid Membranes Create a Target for Amyloid Binding

Elizabeth Drolle, Ravi M. Gaikwad, and Zoya Leonenko

Frequency-modulated Kelvin probe force microscopy (FM-KPFM) is a relatively new technique for

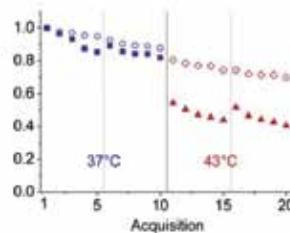


mapping the local electrostatic surface potential simultaneously with AFM topography images with superior resolution and sensitivity (few nm and few 10 mV). Previously developed KPFM methods

have limited application in biological research, while FM-KPFM has proven to be advantageous for studying the surface potential maps in complex self-assembled biological samples on surfaces such as supported model and biological membranes.

### Cellular Response to Heat Shock Studied by Multiconfocal Fluorescence Correlation Spectroscopy

S. Meike Kloster-Landsberg, Gaetan Herbomel, Irene Wang, Jacques Derouard, Claire Vourc'h, Yves Usson, Catherine Souchier, Antoine Delon



FCS, a powerful technique for measuring diffusion and other protein motions within cells, readily resolves multiple species within a population, but at the cost of sampling only a single spot. The authors

develop a technique, multiconfocal fluorescence correlation spectroscopy (mFCS), for measuring the diffusion and binding dynamics of heat-shock protein in five spots simultaneously with a time resolution of 14  $\mu$ s. The improved method promises to be a general method for resolving spatial heterogeneities in protein-protein interactions within a living cell.

## Subgroups

### IDP

At the 2012 meeting of the Protein Society in San Diego, IDP pedagogy was addressed in a lunchtime “*Educator’s Workshop*” chaired by *Ellis Bell*, University of Richmond; *H. Jane Dyson*, The Scripps Research Institute; and *Elizabeth A. Komives*, University of California. Each presented some approaches to a protein science curriculum. Below is an overview of the workshop.

Dyson reviewed her work on IDPs, which began with studies of the CDK inhibitor, p21 and continued with the transcriptional coactivator CBP and its various binding partners. She emphasized that the notions of NMR chemical shift dispersion and HSQC-monitored titrations are accessible to undergraduates. Relaxation-dispersion experiments and their interpretation are more suited for upper-year students. Students should learn the functional scenarios for functional disorder, including the enhancement of specificity (larger interfaces for a given mass of protein), energetically-accessible conformational switching between functional states, and the accessibility of a given state to post-translational modifications or proteolysis. The discussion elaborated on how post-translational modifications alone rarely effect large conformational transitions, but rather shift the enthalpy/entropy balance of an association process.

Komives presented a handful of concepts she thought were appropriate for undergraduates. She prefers to introduce the notion of native structure through energy landscape theory. This helps to avoid the misunderstanding that IDPs are completely unfolded/extended – a notion complemented by the study of the worm-like chain model. Komives advocated the introduction of IDP predictors (suitable for interactive classroom use and study), hydrogen-deuterium exchange, and single molecule FRET. Students should be familiar with the idea that disordered proteins can be more prone to fibril-

lization. The ensuing discussion addressed the continuum of conformational order in the protein universe. Textbooks have not yet incorporated much IDP material; a notable exception is the latest edition of Alberts and others’ *Molecular Biology of the Cell*.

-*Ryan Hoffman*

## Grants and Opportunities

**Name:** Science, Engineering and Education for Sustainability Fellows

**Objective:** The program’s emphasis is to facilitate investigations that cross traditional disciplinary boundaries and address issues of sustainability through a systems approach, building bridges between academic inquiry, economic growth, and societal needs.

**Who May Apply:** Non-tenure track individuals that have worked no more than 36 months in position(s) requiring a doctoral degree.

**Submission Deadline:** November 26, 2012

**Website:** [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=504673](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504673)

**Name:** 2013 IUPAC Prize for Young Chemists

**Objective:** This award encourages outstanding young research scientists at the beginning of their careers. The prizes will be given for the most outstanding PhD theses in the general area of the chemical sciences, as described in a 1000-word essay.

**Submission Deadline:** February 13, 2013

**Website:** <http://www.iupac.org/news/news-detail/article/2013-iupac-prize-for-young-chemists-announced.html>

## Public Affairs

### AAAS Estimates Sequestration Cuts to Research

With the Congressional and Presidential election results nearly behind us (after November 6), Congress will return to Washington, D.C. for a lame duck session, a legislative session in which those that lost reelection or are retiring are still in office and still have a vote. During the session, Congress is expected to tackle sequestration, the large, automatic, across-the-board reductions in federal funding set to begin January 1, 2013, which were established in the Budget Control Act (BCA) of 2011. The cut would result in an immediate \$5.2 billion reduction in nondefense discretionary spending, which includes biomedical research funding.



#### Looking for a Job?

The Biophysical Society Job Board is the place to find jobs related to biophysics around the world. View the latest jobs and upload your resume today!

Employers: Don't forget to take advantage of member rates to find your next postdoc, professor, or researcher.

Go to [www.biophysics.org](http://www.biophysics.org) and click "Job Board" from the main page.

The American Association for the Advancement of Science (AAAS) has estimated the budget impacts sequestration would have on key R&D agencies, and the funding ramifications by state, over the next five years.

The purpose of the BCA and sequestration is to reign in the federal deficit. The BCA accomplished this by establishing caps that will keep federal discretionary spending mostly flat (when accounting for inflation) over the next decade and by putting in additional automatic reductions – the sequestration – which would reduce federal spending even more- roughly 9.4 percent for defense spending and 8.2 percent for nondefense spending. Almost no one likes the BCA and the possibility of sequestration; the law was created to intentionally include something disagreeable to all the negotiators as a way to force them to come up with a bipartisan plan to avoid it.

The AAAS estimates that federal R&D spending could be cut by more than \$50 billion over the next five years. If sequestration takes place as it is currently written, the NIH could receive a cut of \$11.3 billion over five years, averaging \$2.3 billion less per year for research. The National Science Foundation could receive \$2.1 billion less over five years. If defense spending is taken out of the equation, which some in Congress are advocating for, the NIH would see a \$26.1 billion cut over the next five years, or \$5.2 billion per year. The Department of Energy's (DOE) Office of Science could lose \$3.9 billion total for research, or \$775.9 million per year; NSF could lose \$4.9 billion, or \$976.0 million per year. These cuts would result in a major decrease to the amount of research being conducted in the US.

To read the AAAS report on sequestration and see the detailed analysis of cuts by agency and by state, go to <http://www.aaas.org/spp/rd/fy2013/SeqBrief.pdf>.



## Worried About Sequestration: Make Your Voice Heard!

The Biophysical Society has created a webpage (<http://www.biophysics.org/Policy/FederalBudget/Sequestration/tabid/4060/Default.aspx>) focused on sequestration and will keep it up-to-date with information on what is happening. Information will be included on current advocacy efforts and steps you can take to make your voice heard.

In September, the Society joined an American Physical Society (APS) initiative to encourage student scientists to share their concerns about sequestration with Congress. APS student members created a letter expressing their concern over the effect sequestration will have on future job prospects and research opportunities, amongst other things. The Biophysical Society let student members know about the opportunity to sign the letter via email and social media outlets. Through September, 4000 students from a multitude of scientific disciplines had signed the letter. Students can sign the letter through November 10, 2012 at [go.aps.org/sequestration2012](http://go.aps.org/sequestration2012). The letter will be delivered to Congress when it returns to work November 13, 2012.

After November 10, you can still let your Congressmen know how you feel about sequestration. There are instructions on how to do so at [www.biophysics.org/Policy/AdvocacyAction/tabid/443/Default.aspx](http://www.biophysics.org/Policy/AdvocacyAction/tabid/443/Default.aspx).

## New NIH Institute Gets Director

*Christopher P. Austin* became the director of the NIH's newest center, the National Center for Advancing Translational Sciences (NCATS) on September 23. Austin had been serving as director of NCATS Division of Pre-Clinical Innovation since the NCATS launch in December 2011.

A developmental neurogeneticist by training, Austin came to NIH in 2002 as senior advisor to the director for translational research at the National Human Genome Research Institute. Austin earned a medical degree from Harvard Medical School and an undergraduate degree in biology from Princeton University.

Austin succeeded NCATS Acting Director *Thomas R. Insel*.

### Stay Connected

Be sure to get the latest news and updates on the Annual Meeting and other Society news by following the Biophysical Society on Twitter, Facebook, and the official BPS Blog!



Twitter: @BiophysicalSoc  
#BPS13



Facebook: [facebook.com/biophysicalsociety](http://facebook.com/biophysicalsociety)



Blog: [biophysicalsociety.wordpress.com](http://biophysicalsociety.wordpress.com)

### Members Be Aware: Scam Alert

Several BPS Members have recently been contacted via phone by "Madison Who's Who," alleging that the Biophysical Society had nominated them for inclusion. Please be aware that this is a scam. If you are contacted, do not offer any personal or financial information. BPS has not provided Membership information to this organization, and all personal membership and registration data reside on encrypted, secure servers.

## 2014 Annual Meeting Program Committee Begins Planning



Robert Nakamoto

The 2014 Annual Meeting Program Committee, chaired by *Robert Nakamoto*, University of Virginia Health Science Center, has already started developing the scientific program for the 2014 Biophysical Society Annual Meeting, which will be held in San Francisco, California, February 15–19, 2014. The 2014 Program Committee members are *Karen Fleming*, Johns Hopkins University; *Rebecca Heald*, University of California, Berkeley;

*Peter Hinterdorfer*, University of Linz, Austria; *Linda Kenney*, University of Illinois, Chicago; *Tanja Kortemme*, University of California, San Francisco; *Carol Robinson*, University of Oxford, United Kingdom; *Emad Tajkhorshid*, University of Illinois, Urbana Champaign; *Claudia Veigel*, Ludwig Maximilians University, Germany; and *Jody Puglisi*, Stanford University School of Medicine.

Nakamoto will present the 2014 program to Council for approval when it meets at the 2013 Annual Meeting in Philadelphia, Pennsylvania.



Karen Fleming



Rebecca Heald



Peter Hinterdorfer



Linda Kenney



Tanja Kortemme



Carol Robinson



Emad Tajkhorshid



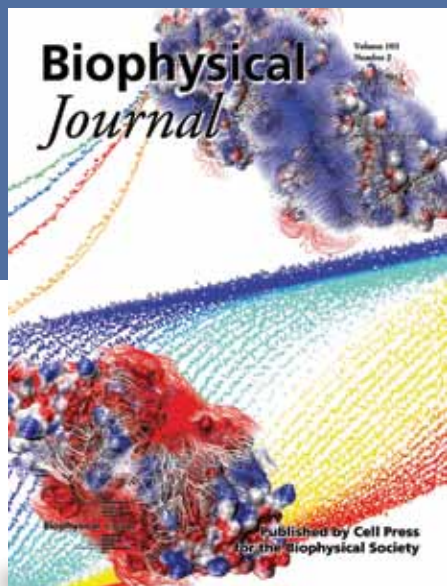
Claudia Veigel



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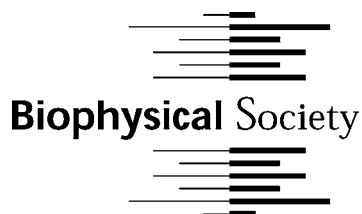


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## UPCOMING EVENTS

BIOPHYSICAL SOCIETY NEWSLETTER NOVEMBER 2012

### January

#### January 7–10, 2013

Using Bioinformatics Data and Tools to Engage Students in Problem Solving: A Curriculum Development Workshop  
*Knoxville, Tennessee*

[http://www.nimbios.org/education/WS\\_curriculum\\_dev2013](http://www.nimbios.org/education/WS_curriculum_dev2013)

#### January 13–18, 2013

Frontiers of NMR in Biology  
*Snowbird, Utah*

<http://www.keystonesymposia.org/index.cfm?e=web.Meeting.Program&meetingid=1161>

### February

#### February 2–6, 2013

Biophysical Society's 57<sup>th</sup> Annual Meeting  
*Philadelphia, Pennsylvania*

<http://www.biophysics.org/2013meeting/Main/tabid/3523/Default.aspx>

#### February 6–8, 2013

Beating the Blood-Brain and Other Blood Barriers  
*Lisbon, Portugal*

<http://www.beatbarrier.com/>

### March

#### March 3–7, 2013

Structural Analysis of Supramolecular Assemblies by Hybrid Methods  
*Tahoe City, California*

<http://www.keystonesymposia.org/index.cfm?e=web.Meeting.Program&meetingid=1184>

#### March 3–8, 2013

DNA Replication and Recombination  
*Alberta, Canada*

<http://www.keystonesymposia.org/index.cfm?e=web.Meeting.Program&meetingid=1240>

### April

#### April 4–6, 2013

Frontiers in Structural Biology of Membrane Proteins  
*Birmingham, Alabama*

<http://www.uab.edu/membraneproteins/>

#### April 11–12, 2013

Nanomedicine  
*Barcelona, Spain*

<http://selectbiosciences.com/conferences/index.aspx?conf=Nanomedicine2013>