

# Newsletter

Biophysical Society

JANUARY

2013

## DEADLINES

### Request Science Fair Award

January 31, 2013  
Registration

### Summer Course

February 15, 2013  
Priority Registration

### Membrane Protein Folding

May 19–22, 2013  
Seoul, South Korea

February 13, 2013  
Abstract Submission

March 19, 2013  
Early Registration

## 2013 New & Notable Symposium

Six speakers were selected for the 2013 New & Notable Symposium from among nearly 170 submissions. The speakers, listed below, will present their work in Philadelphia during the Symposium on Sunday, February 3, at 4:00 PM.



*Yann Chemla*, University of Illinois, Urbana Champaign, *Insights into Motor Protein Mechanism through Simultaneous High-Resolution Optical Trapping and Single-Molecule Fluorescence*



*Adam Cohen*, Harvard University, *All Optical Electrophysiology with Microbial Rhodopsins*



*Lila Gierasch*, University of Massachusetts, *The Allosterically Active State of an Hsp70 Molecular Chaperone*



*Daniel Minor, Jr.*, University of California, San Francisco, *Structure of a Sodium Channel Pore-only Protein*



*Josh Wand*, University of Pennsylvania, *Resolving the Dance of Protein and Solvent by Solution NMR*



*Chenghang Zong*, Harvard University, *Whole Genome Amplification and Sequencing of Single Human Cells*

*Jody Puglisi*, the chair of the New & Notable Symposium noted, “This year’s New and Notable speakers will present exciting new results on a breathtaking range of topics, including structural biology, ion channels, motor proteins, genomics and biophysical methods. I believe our speaker slate, which includes both junior and senior investigators, reflects the breadth of the Biophysical Society.”

### Video Contest

In 2012, the Society’s Membership Committee challenged members to make an original video illustrating “What is Biophysics?”. For 2013 the Society is again encouraging members to submit a five-minute video that is creative, educational, and above all, promotes biophysics to the general public, including high school students!

Submission Opens: January 16, 2013

The submission site opens January 16, 2013.

For more information, visit [www.biophysics.org](http://www.biophysics.org), go to **Awards/Opportunities** page, and then click on **Image/Video Contests**.

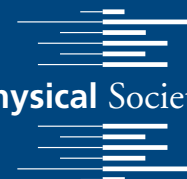


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Biophysical Society



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## Biophysicist in Profile

MIHÁLY (STOCI) KOVÁCS

*Mihály Kovács*, known to his friends and colleagues as Stoci, started his career with a fascination for molecular genetics, leading to the cloning of motor protein genes and then the biochemical and biophysical examination of these enzymes. The “universal perspective” of biophysics, as he puts it, was so interesting he decided to make a career out of it. Following a disciplined Catholic education in Kecskemét, Hungary, Kovács went on to earn his Master of Science degree in biology at Eötvös Loránd University in Budapest.

He continued his PhD studies at Eötvös Loránd University, working with *László Nyitray* and *András Málnási-Csizmadia*, both of whom

proved to be invaluable contacts in moving his career forward. While pursuing his PhD, Kovács had the opportunity to visit the lab of *Clive Bagshaw* (whom he met through Málnási-Csizmadia) at the University of Leicester, United Kingdom, as a student, funded by Hungarian State and EMBO Fellowships. During his stay in the UK, Kovács learned state-of-the-art techniques of motor protein biochemistry, and helped to engineer, prepare and characterize myosin motor domains from the model

organism *Dictyostelium*. “In particular,” Bagshaw explained, “he introduced single tryptophan residues near the ATPase site, allowing us to correlate ATP binding kinetics with structural changes predicted by x-ray crystallography.”

Upon completion of his PhD, Kovács’ advisor Nyitray would connect him to the next step in his career, introducing him to *James Sellers* at a European Muscle Conference. “He was the first Hungarian to work in my lab,” Sellers said, “and I’ve had at least one in my lab ever since!” After welcoming Kovács into his NIH lab, Sellers found out that “he had this girlfriend who was just starting her PhD in France, and that they would really like to be together,” Sellers explained. Kovács asked, “was there any way we could get her to NIH?” Apparently the luckiest man in science, the National Institutes of Health (NIH) had recently begun allowing researchers to hire foreign graduate students, and Sellers hired Kovács’ then-girlfriend and now-wife, *Judit Tóth*, in what he described as a “great two for one deal!”

Postdoctoral training with Sellers at the National Heart, Lung and Blood Institute allowed Kovács to take the myosin ATPase project from his PhD with Bagshaw forward. Working with Sellers, “I acquired additional technical know-how in the biophysical examination of motor proteins,” said Kovács, something he has

“I always felt that science is the walk of life in which I can make best use of my personal capabilities.”

– Mihály (Stoci) Kovács

continued working on after returning to Eötvös Loránd University as an independent researcher at the early age of 30.

Kovács has continued his pursuit of research related to myosin motor proteins involved in cytokinesis and intracellular transport. In a recently initiated new line of research, he has been involved in finding out how DNA helicases belonging to the ubiquitous RecQ family can specifically unwind and rearrange DNA structures. The DNA molecules processed by these enzymes are key intermediates of homologous recombination-based DNA repair. “We have devised and utilized biophysical methods by which we are able to determine all key functional properties of these enzymes,” he explained. “We have elucidated the mechanism of translocation of *E. coli* RecQ and human Bloom’s syndrome (BLM) helicases along single-stranded DNA.” His lab has discovered that the winged helix domain plays a more fine-tuned role in BLM than in other family members, aiding the precise and coordinated unwinding of complex DNA structures. Additionally, Kovács’ team has found that the oligomerization state of BLM is affected by the structure of the DNA substrate encountered, a finding that has bearings on the mechanism of processing DNA structures during recombination. The DNA helicase project has recently obtained support of the prestigious Momentum program of the Hungarian Academy of Sciences.

Running his own lab ([www.mk-lab.org](http://www.mk-lab.org)) has been rewarding for Kovács, allowing him to not only find intellectual satisfaction in the “perpetually interesting task of hunting out and solving relevant problems,” but in helping develop the careers of others. “I regard fostering other people’s careers just as important as the scientific achievements themselves,” said Kovács. “I am proud that several of my former students and group members have successfully furthered their careers in leading labs of the world.” As rewarding as it may be to assist his colleagues,

Kovács has not always found it easy to find those great colleagues to help. “Of course the biggest challenge is getting manuscripts past the editorial screens at high-profile journals,” he said, “but more specifically, it can be difficult to attract highly skilled and motivated postdoctoral researchers to Central Europe.”

Geographic difficulties aside, Kovács has set up many important collaborations at Biophysical Society Annual Meetings. “At one Meeting, I learned about the fascinating findings of my former NIH coworkers *Xuefei Ma* and *Bob Adelstein* on the role of non-muscle myosin II in cytokinesis,” he said. “Later, we combined their cell biological results with my lab’s biophysical results, which resulted in a recent paper.” The paper in question, Kovács mentions, may just be “one of the most important ones during my career.” The Annual Meetings also provide a great opportunity for Kovács to keep in touch with *Keir Neuman* of the NIH, with whom he runs a joint project funded by the Human Frontier Science Program (HFSP).

Throughout his career, Kovács has been inspired by his mentors, co-workers, and his wife, who is also a biophysicist. “I admire her for continuing to mentor students and write papers and grant applications through her pregnancy and the first few months after the birth of our son, while of course dedicating her attention to our baby,” said Kovács. A rock band drummer in years past, career and family has limited his practice time. Kovács spends most of his spare time with his young family, and is expecting another son later this year.

Kovács will be at the 2013 Annual Meeting, co-chairing the Motility subgroup with *Chris Yengo*, Pennsylvania State University. His advice to young researchers is to “be brave enough to do research on whatever truly fascinates you, and be mobile, try different places and look for the mentor who suits you best.”



Mihály Kovács with his wife, Judit Tóth, and their son, Géza.

## Careers

### Make the Most of Your Annual Meeting

#### How Do I Prepare My Poster? How Do I Give a Talk?

Sections of this article are adapted from the article *"Do's and Don'ts of Poster Presentation,"* by Steven M. Block, published in *Biophysical Journal*, Volume 71, December 1996.

Congratulations! Your abstract has been accepted for the 57<sup>th</sup> Annual Meeting of the Biophysical Society and your poster has been scheduled in with thousands of others during the meeting. What do you do next? How do you prepare for the presentation? What can you do to stand out from the others? Even if this is not your first presentation, it is important to keep certain things in mind while preparing your poster and presentation.

First, consider how your poster will look—the size, colors, font, and flow of it. Think of your audience—people walking through the poster hall, glancing around for interesting topics. Most important on your poster is the title. The title of your poster does not need to match the title of your abstract. In fact, it's best that it doesn't. Your abstract title is probably long, incredibly descriptive, and possibly laden with jargon. But you are trying to attract people to come over and read your poster, so keep the title short, snappy, and to the point. Make sure someone can get a general idea of your topic just from reading the title – and make sure they can read the font from a reasonable distance.

Once you've lured readers to your poster, you want to make sure they can actually read the text you've so painstakingly put together. Fonts smaller than 12-point are just too small for a poster—14-point should be used as a benchmark for the absolute minimum font size (think fine print), and the main text should be 18-20 point or larger (the title should be even bigger). If your text doesn't fit at that size, consider editing your text, not decreasing the font size.

While we're talking about fonts, keep in mind that poster presentations are not the right place to experiment with fun, fancy fonts (save those for e-cards to

your Nobel Prize celebration!). Use fonts that are easy to read. If you want to move from the traditional Times New Roman, stick with something equally basic, such as Baskerville Old Face, Century Schoolbook, or Palatino Linotype. Make sure whatever font you choose works well with any equations or symbols you use. Once you've selected a font, keep your choice (and size) consistent throughout the poster.

You may want to draw readers to you by making your poster a bright color, or adding patterns or some other loud visual cue. There's nothing wrong

## The Journal of Physiology

### Meet the Editor

Meet David Paterson,  
Editor-in-Chief, at  
exhibition booth #115  
to discuss  
your research.




Read our Biophysics  
Virtual Issue

<http://bit.ly/jpbiophysics>




with a little color in your poster, but keep it professional (avoid neon hues, unless they're relevant to your research), and keep it readable by making sure the colors contrast well—if you want a navy blue background, your font color should not be deep magenta.

Now that you've settled on the basic font, size, and color choices, it's time to lay out your poster. Break your presentation into logical sections that easily flow from one to another, to help your reader follow your research. Start in the top left, moving vertically first, then left to right. Make sure to include any additional authors towards the beginning of your poster and any relevant references towards the end—it is very important to give credit to everyone involved!

With your poster finished, it's time to prepare your actual presentation. You'll want to stick around near your poster for as much time as you can to engage with readers, answer questions, and of course meet and network with other scientists interested in your research. Definitely plan to camp out by your poster for at least the hour that you are scheduled to present. Keeping in mind that most people will only stop for a moment, and even those who linger will only do so for three to five minutes, put together an "elevator speech" with the top points you want to make and practice it! To help develop your presentation, test it out on a colleague or labmate to get feedback on your clarity and delivery.

Engage curious parties in conversation, but be careful to not badger anyone, or to be too engrossed in any one conversation (thus ignoring everyone else). You can always schedule a follow-up with very interested individuals if needed. If you have them, bring business cards (or paper and pen) to share your contact information with anyone interested in follow-up.

If you come prepared with a well-designed poster, a few key talking points, and copies of any necessary ancillary materials, you can hang your poster and then let your science speak for itself!

## Platforms

Congratulations! You have been selected as a platform speaker for the Annual Meeting! Here are a few tips to help you make the best possible impression on your audience:

**Be on time.** Speakers each have 15 minutes for their talk, with no breaks in between speakers. Showing up late will cut into your talk time!

**Be prepared.** You will need to provide your own laptop to display your presentation. Try to arrive before your session starts and meet with the A/V professional to get everything set up. Even better, stop by the Speaker Ready Room prior to your session to check with A/V and make sure your presentation is compatible with their system. The faster you can get set up, the sooner your talk can begin, and the more time that can be spent on your research.

**Know your timeline.** In your 15 minutes of talk time, 12 minutes are set aside for you to speak, and the remaining three minutes are reserved for a question and answer session. If you go over your 12 minutes, no one will be able to ask questions.

**Speak to your audience.** Don't spend your entire 12 minutes reading your slides. You can bring notecards or an outline of your presentation (or a printed 'notes view' version of your presentation) to help remind you of what you want to say, but you should be prepared enough to speak about your research without staring at the screen (or your hands) too much. Look up at the audience as often as possible!

**Speaking of slides...** The color, font, and size rules that apply for designing your poster apply just as much to your slides. Your audience should be able to read your text, photo captions, and tables from the back of the room. Keep in mind that your slides are there only to support your overall presentation—there shouldn't be too much text on any of them. Think of each slide as a guide to your topic, not a full-fledged explanation.

## Public Affairs



Paula Stephan

### An Economist's View on the Inner Workings of Science

*Paula Stephan, an economist at Georgia State University who studies science and the scientific workforce, published a book, "How Economics Shapes Science," in January 2012. Stephan shares her thoughts here on her research, what needs to change in science, and her upcoming speaking engagement at the Biophysical Society's 57<sup>th</sup> Annual Meeting.*

**Q: How did you end up studying the economics of science?**

In the late 1970s, an NSF program officer suggested that I, with training in labor economics and econometrics, study whether science is a young person's game. His rationale was that the median age of the US scientific workforce had been aging and if the popular belief that science is a young person's game is true, this bodes ill for the United States scientific enterprise. The research showed that exceptional contributions--such as those recognized by the Nobel Prize---are more likely to be made by scientists under the age of 40, especially in theoretical physics. For most other research, the relationship between age and productivity is much more attenuated.

**" ...the current system cannot continue as we know it. "**

**Q: What is the most rewarding aspect of your work?**

By far the most rewarding aspect of my work is that it gives me the opportunity to interact with individuals working in a wide variety of disciplines. Believe me, life would be terribly dull if the only people I interacted with professionally were economists! I really enjoy this interdisciplinary nature of the work. My work also provides the opportunity for me to interact with younger people who are just beginning their careers.

**Q: What was/is the most surprising finding your research has led you to?**

Some of the problems that we face today have been around for more than 40 years and only now, when things have gone from bad to terrible, are scientists and university administrators finally beginning to understand that the current system cannot continue as we know it.

**Q: In your latest book, *How Economics Shapes Science*, you explore the ways scientific research is driven by economics, funding policies, etc. Have you received push back on any of the visions you present in that book?**

In the past I have received considerable push back from scientists when I describe what I see as problems in the way research is structured at universities in the US. But this time the response has been entirely different. I am surprised and encouraged by just how many scientists have written to me, saying that they share my views and want to explore ways to fix the system, and by how many invitations I have received to speak at national meetings of scientists, such as the Biophysical Society.

**Q: You served on a modeling subcommittee for the Working Group of the Advisory Committee to the NIH Director's Task Force on the Biomedical Workforce. In your opinion, of the recommendations in that report, which one should NIH tackle first? Why?**

I'm going to cheat and give you two answers. First, I think it's really crucial that the mix of support for graduate students be shifted more towards training grants and fellowships and away from project grant funding that supports students as GRAs. Training grants are arguably superior; they provide incen-

tives for universities to focus on training outcomes and provide the opportunity for students to work with several mentors. Second, I fully support the recommendation that universities share a piece of the cost of faculty research time, rather than offload the funding to NIH and the risk of not having funding (and salary) to faculty. Thus, I strongly support the recommendation that institutions should provide some fraction of salary support for their researchers in order to qualify for NIH funding. It will take a while to implement, given the consequences the recommendation has for individuals and institutions, but it is key to solving some of the problems plaguing the biomedical sciences today.

**Q: Based on your research, what advice would you give scientists just starting their careers?**

First, be informed! You owe it to yourself to understand how labor markets in science operate and what career opportunities and options are likely to await you after you complete your graduate work. Second, explore alternative possibilities early in your training. Remember that just because your faculty mentor got a tenure track position when he or she was 34, it does not follow that you will. Take an internship during the summer, take a course in the business school, and develop your quantitative skills as well as the “soft” skills that can make you an effective communicator. In today’s economy every young person should be worried about their job prospects, particularly those entering fields that are dependent on public funding, or funding from industry that requires companies to take a long-run view.

**Q: If you could change one thing about the scientific enterprise in the US, what would it be?**

For over 60 years, scientists have looked to NIH to provide funding for their labs and have staffed these labs with graduate students and postdocs. The system resembles a pyramid with the PI at the top. It also resembles a pyramid scheme that works well as long as the funding system is expanding at a rapid clip. But this becomes increasingly more difficult as the size of the enterprise has grown. Job market

problems in the biomedical sciences are not new. As early as the 1970s, a National Research Council committee charged with evaluating training grants concluded that a slower rate of growth in the labor force in these fields was advisable. And the message has been repeated again and again. But scientists (especially those at universities) have been resistant to the message and the system lacks the types of feedbacks that typically would lead to a contraction. So, if I could change one thing, I would dampen the incentives that encourage the system to constantly expand at the expense of young people.

**Q: What do you plan to talk about during the session, *The Future of Science in America*, taking place at the Annual Meeting?**

My current plan is to focus on possible solutions to what I see as fundamental problems with the way in which scientific research is organized in universities today. I also plan to talk about the degree to which the United States is allocating the resources it devotes to science efficiently.

**Q: What do you look forward to hearing about from the other speakers?**

It’s a treat to be on a program with *Greg Petsko*, *Richard Freeman*, and *Michael Teitelbaum*, all of whom have strong opinions about the way in which the scientific enterprise functions in the US. Starting with Greg, I would hope to hear more about what the US can do to encourage scientists to undertake more risky research agendas and, as chair of the National Research Council postdoc committee, on which I also serve, Greg may choose to share some of our thoughts and preliminary recommendations. Richard always has interesting ideas about ways to restructure incentives; he also has unique insights on how the internationalization of science is changing the scientific enterprise. Michael is an expert on US visa policy. He has also contributed a great deal to our understanding of how policy makers, as well as university administrators and industry scientists, revel in stating that the US either has a shortage of scientists or will have a shortage of scientists down the road when the facts often do not support the conclusion or prediction.

57<sup>th</sup> Annual Meeting

Philadelphia, Pennsylvania | February 2–6, 2013



Philadelphia Downtown



Convention Center



The Franklin Institute

## Outreach Activities

The Biophysical Society Public Affairs Committee encourages attendees to take time during the Annual Meeting to learn about how their research fits into the bigger picture. How does science get funded? How can I get funding? How do scientists work with the media to relay their findings to the public? How can I make my research exciting and accessible for high school students? The following sessions will address these questions.

### The Future of Science in America

**Monday, February 3, 1:00 PM–2:30 PM**

With the outlook for federal science funding looking bleak in the near future, many scientists are concerned about what will happen to scientific research in the US and how they will secure funding for their own work. This symposium will address issues of science funding, training, and policy as seen from the perspective of economists, demographers, and scientists. Speakers will discuss the economic impact and cost of scientific research, and what a sustainable science policy might look like.

#### Speakers

*Richard Freeman*, Harvard University  
*Gregory A. Petsko*, Weill Cornell Medical College  
*Paula Stephan*,\* Georgia State University  
*Michael S. Teitelbaum*, Harvard University

\*See page 6 to read about speaker *Paula Stephan's* work studying the economics of science.

### Grant Writing Workshop: How (Not) to Write Your NIH Grant Proposal

**Tuesday, February 5, 2:00 PM–4:00 PM**

Through mock study sections, veteran NIH officials will demonstrate what review panels look for when they read and assess proposals. They will also answer questions about the changes at NIH and how to communicate with funding agencies prior to submitting a proposal and after its review. This session is appropriate for both experienced principal investigators and those applying for their first grant.

#### Speakers

*Jean Chin*, NIGMS  
*Catherine Lewis*, NIGMS  
*Peter Preusch*, NIGMS  
*Arnold Revzin*, CSR  
*Don Schneider*, CSR

### Communicating Science

**Sunday, February 3, 2:30 PM–4:00 PM**

*Paul Offit*, a leading expert in infectious diseases, will offer his experience in communicating the science behind the vaccine-autism controversy, and *Faye Flam*, a seasoned science journalist, will explore the challenges in making science accessible to the general public. Attendees will also learn strategies on communicating their own science and working with journalists effectively.



# Philadelphia 2013





## Biomolecular Dome

**Sunday, February 3–Tuesday, February 5,  
10:00 AM–5:00 PM**

**Wednesday, February 6, 9:00 AM–1:00 PM**

Watch cells and viruses come to life in this portable 3-D Dome and see how difficult biophysical topics can be made accessible to a high school audience. The Public Affairs Committee is pleased to be sponsoring the Dome for the second year in a row. Short videos will present topics ranging from icosahedral viruses to the ribosome to how HIV replicates. The theme of evolution will be conveyed to students by looking at how pathogens rapidly evolve to escape immune surveillance by hosts. Overall, these videos communicate the excitement of looking at macromolecular complexes and understanding the molecular basis for life. The videos will be shown on a rolling basis throughout each day.



## BPS High School Outreach

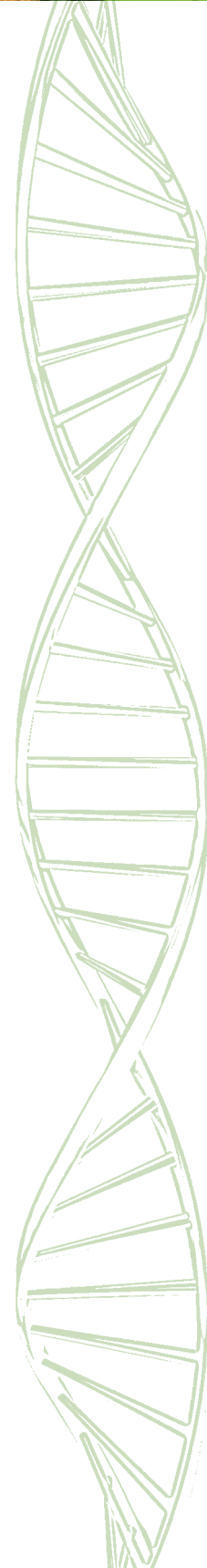
Don't be surprised to see some younger faces at the Annual Meeting in Philadelphia. The Education Committee is sponsoring a day of programming for local high school students and teachers. On Sunday, February 3, high school students will participate in a special session to introduce them to biophysics and energize them about pursuing a career in science. While students are in this session, high school teachers will attend a unique event that will address the challenges in teaching interdisciplinary science at the high school level. In the afternoon, both teachers and students will visit the Biomolecular Discovery Dome and participate in an Exhibit Hall Scavenger Hunt.

## Career Center Job Board

Looking for a new position? Have a position to fill? Visit the Career Center at the Annual Meeting. Candidates may post their CVs at no charge and apply for job openings. Employers wishing to advertise job opportunities may do so, and 2013 BPS members qualify for a reduced posting fee. Post your job or resume on the Society Job Board from January 2–January 23, indicate that you're participating in the Annual Meeting Career Center, and receive the following advantages:

- Copies of your job posting or inclusion of your resume in the Resume Binder for participants to view onsite;
- A listing of job postings given to all attendees;
- Job seeker's name along with poster/platform presentation name and number (if applicable) included on the candidate listing page and given to all employers;
- The ability to set up interviews onsite at the meeting;
- Time saved at the Annual Meeting!

Resume posting is FREE for all attendees. Can't post your job or resume online by January 23? Don't worry! You may still post your resume at the Annual Meeting, but your job posting or resume will not be included in the items listed above. For more information, please visit: [www.biophysics.org/2013meeting](http://www.biophysics.org/2013meeting) and click the **Career Center** tab.



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

Philadelphia, Pennsylvania | February 2–6, 2013



Liberty Bell



Society Hill



Antique Row

## Child Care

Why choose between your family and great science when you can have both?

Don't worry about leaving your children at home—utilize child care services while you attend the Annual Meeting! The Biophysical Society provides discounted child care at the Annual Meeting through KiddieCorp. Trained professionals will be on hand to watch children of all ages, and the fee includes fun activities and light snacks. Pre-registration is recommended. A family room will also be available in the Convention Center, stocked with diapers, electrical outlets, a small refrigerator, private areas for nursing, and a small area for rest and play. To register your child for the child care service, visit [www.biophysics.org/2013meeting](http://www.biophysics.org/2013meeting), and click the **General Information** tab.

## Meet and Greet

Attending your first Annual Meeting, or are you the only person from your lab attending? Stop by the Meet and Greet table at the opening reception on Saturday, February 2, at 5:00 PM to meet other members, get your questions answered by members of the Early Careers Committee, and even head out to dinner with other first timers and solo travelers after the Opening Mixer!



For more information, visit the Annual Meeting website: [www.biophysics.org/2013meeting/Main/tabid/3523/Default.aspx](http://www.biophysics.org/2013meeting/Main/tabid/3523/Default.aspx).

## Calling All Wiki-Editors and Wiki-Editor Wannabes!

Here's your chance to share what you know about biophysics with the world! The Biophysical Society is launching a Biophysics Wiki-Editing Contest at the Annual Meeting.



Participants choose an article to work on, and judges will select the most improved article at the end of the contest. Contest ends July 15, 2013.

Six winners will receive \$100 plus free membership and 2014 Annual Meeting registration. While all are encouraged to edit, only early career and student members are eligible to win a prize.

Attend the kick-off session for this event on Tuesday, February 5, 2013, at 2:15 pm–3:30 pm.

*Emily Temple-Wood*, Loyola University Chicago, will speak about her extensive experience as a biophysics Wikipedia editor, administrator, mentor, and co-organize of the new-wiki project, Women in Science.

Not attending the meeting? To learn more about the contest, go to our website [www.biophysics.org](http://www.biophysics.org), click on **Awards/Opportunities** tab, then **Society Contests**, and **Wiki Editing Contest**.

## Reaching Young Minority Biophysicists: Conference Roundup



BPS Staff member Shanae Jones meets with students at ABRCMS.

This fall, the Biophysical Society participated in three of the nation's largest, minority student-centered scientific conferences. At each conference, BPS members judged undergraduate and graduate student posters, selecting 16 total winners of BPS-sponsored poster awards.

The first conference of 2012 was the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCCChE) Conference, which took place in Washington, DC, in late September. Minority Affairs Committee (MAC) members *Chandran Sabanayagam*, University of Delaware, and *Kandice Tanner*, NIH, served as judges.

In October, BPS exhibited at the Society for the Advancement of Hispanics/Chicanos and Native Americans in Science (SACNAS) National Conference in Seattle, Washington. MAC member *Luis Marky*, University of Nebraska Medical Center, organized a biophysics symposium, "Cutting Edge Research in the Biophysical Chemistry of Nucleic Acid and Proteins," where *Marvin Bayro*, Massachusetts Institute of Technology; *Silvia Cavagnero*, University of Wisconsin, Madison; *Gabriele Varani* and *Rachel Kelvit*, both from University of Washington, spoke. Marky, Bayro and Cavagnero also met with students at the BPS booth and judged posters.

Last but not least, BPS headed to San Jose, California, for the Annual Biomedical Research Conference

for Minority Students (ABRCMS) in November. At the BPS booth, staff members talked about student opportunities offered by the Society, including the Summer Course in Biophysics, an 11-week introductory course sponsored by BPS, funded by the NIGMS, and hosted by the University of North Carolina at Chapel Hill. Local members, *Daryl Eggers*, San Jose State University, and *Ricky Cheng*, Stanford University, judged posters.

Additionally, two students from SACNAS and two from ABRCMS were selected for MAC Travel Awards to the BPS's 2013 Annual Meeting. Winners *Maia Kinnebrew*, University of California, Santa Barbara; *Jessica Morgan*, California State University, Fullerton; *Ninotchka De Valle*, University of Puerto Rico at Arecibo; and *Alan Stern*, City College of New York, will present their posters at the Meeting in Philadelphia, Pennsylvania.

### Members in News



**Carlos Bustamante**, University of California, Berkeley, and Society member since 1984, has been awarded the Raymond and Beverly Sackler International Prize in Biophysics.



**Marisa Roman**, Drexel University and Society member since 2007, was named recipient of the Guiliang Yang Memorial Award in Biophysics Research.



**Scott Showalter**, Penn State University, and Society member since 2009, received the Eastern Analytical Society New Faculty Award in Nuclear Magnetic Resonance Spectroscopy.



## Biophysical Journal Editor's Corner

### Meet the Editors

**NEW** Stay tuned each month for these *Biophysical Journal (BJ)* editor and section highlights!



This month, meet *Brian Salzberg*, University of Pennsylvania School of Medicine, Associate Editor of the Biophysical Reviews section.

#### Q: Why did you take on the role as Associate Editor of the Biophysical Reviews section?

I took on the role as Associate Editor of the Biophysical Reviews section of *BJ* for largely selfish reasons. I like to read pithy reviews of fields other than my own, and this was a wonderful opportunity to influence both the scope, and the focus, of these reviews! With the aid of the Editor-in-Chief, and the other Associate Editors of the *Biophysical Journal*, I can have real input into the selection of Review subjects and authors.

#### Q: What makes Reviews published in *Biophysical Journal* unique or different from reviews published in other journals?

Reviews published in the *Biophysical Journal* are unique, or at least, unusual in that together, they cover the entire field of biophysics and are not limited in their scope. More than in any other journal, the whole range of biophysics is represented.

#### Q: What is your area of research?

My area of research is mainly on the application of optical methods to cell physiology and neuroscience. These include multiple site optical recording using voltage-sensitive dyes, voltage-sensitive proteins, and calcium-sensitive molecular probes. We are also interested in light scattering changes, nanometer scale mechanical changes, and intrinsic fluorescence changes, especially those arising from nerve terminals.

### The Breadth of Biophysical Reviews

Biophysicists are proud of the breadth and interdisciplinary character of our field. But this breadth also makes it difficult to keep up with progress outside our own research specialty. The editors of *Biophysical Journal* believe that our readers are eager to learn about current research in all areas of biophysics. It is often by reading reviews of topics of current interest in other areas that one makes intellectual connections that might otherwise have been neglected. Thus, aside from contributing to the general culture of biophysics, Biophysical Reviews allow a very broad range of biophysicists to keep up with the most salient developments throughout our discipline. The Biophysical Review Section of *BJ* has been revitalized since the appointment of Associate Editor *Brian Salzberg*. The reviews, limited to about five pages, are written by leading authorities in a sub-specialty of biophysics with a broad audience in mind. They are more than just a compilation of recent literature, offering a synthesis that points to where the research is heading. Here are some examples of Biophysical Reviews that have been published in the last few months:

*Seeing the Forest Through the Trees: Towards a Unified View on Physiological Calcium Regulation of Voltage-gated Sodium Channels*, *Filip Van Petegem*, *Paolo Lobo* and *Christopher A. Ahern*

*Quantitative Intensity-based FRET Approaches—A Comparative Snapshot*, *André Zeug*, *Andrew Woehler*, *Erwin Neher*, and *Evgeni G. Ponimaskin*

*Sensing and Responding to Membrane Tension: The Bacterial MscL Channel as a Model System*, *Irene Iscla* and *Paul Blount*

To read the Reviews go to [www.biophysj.org](http://www.biophysj.org). Have an idea for a Biophysical Review? Email *Brian Salzberg* at [bmsalzbe@mail.med.upenn.edu](mailto:bmsalzbe@mail.med.upenn.edu)

—*Les Loew*, Editor-in-Chief and  
*Brian Salzberg*, Associate Editor

# Subgroups

## Biopolymers In Vivo

The BIV program for February 2, 2013, is now complete! In addition to exciting keynote lectures by *Jacqueline Barton* and *Stefan Hell*, there will be a great array of invited speakers, including *Yousif Shamoo*, *Patricia Clark*, *Jie Xiao*, *John R. Briggs*, and *Gael McGill*, as well as two talks by early career investigators selected from submitted abstracts: *Robert Crawford*, Oxford University, United Kingdom, (*Single-molecule fluorescence and FRET measurements on internalized proteins in living bacteria*) and *Rudra Kafle*, University of Michigan (*Conformational fluctuations of chromosomal DNA in E coli*). Both postdoc speakers will receive a travel award, and all speakers are invited to the subgroup dinner.

This year, the BIV subgroup increased its membership by about ten percent. We now have 341 members (including regular and student members). Let's continue this trend! Everyone interested in questions related to the biophysical impacts of in vivo conditions on biologically important processes and how to investigate these is welcome to become a member of the subgroup.

We hope to welcome you to our session in Philadelphia! All of our events can be found at [www.biophysics.org/2013meeting](http://www.biophysics.org/2013meeting), click on **Program** and then **Subgroups**.

—*Pernilla Wittung-Stafshede*, Chair  
*Lila Gierasch*, Chair-elect

Biophysical Society Thematic Meeting

## Membrane Protein Folding

MAY 19–22, 2013 | SEOUL, SOUTH KOREA

### IMPORTANT DEADLINES

- Abstract Submission: February 13, 2013
- Early Registration: March 19, 2013

[www.biophysics.org/2013korea](http://www.biophysics.org/2013korea)

## Grants and Opportunities

### Division of Molecular and Cellular Biosciences: Investigator-Initiated Research Projects

**Objective:** The NSF Division of Molecular and Cellular Biosciences (MCB) is accepting proposals for hypothesis-driven and discovery research and related activities in four core clusters: Molecular Biophysics; Cellular Dynamics and Function; Genetic Mechanisms Systems; and Synthetic Biology. MCB gives high priority to research projects that use theory, methods, and technologies from physical sciences, mathematics, computational sciences, and engineering to address major biological questions.

**Who May Apply:** Non-profit, non-academic organizations, universities, and colleges

**Deadline:** January 30, 2013

**Website:** [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503626](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503626)

### Postdoctoral Research Fellowships in Biology

**Objective:** The NSF fellowships encourage independence at an early stage of the research career to permit Fellows to pursue their research and training goals in the most appropriate research locations regardless of the availability of funding for the Fellows at that site.

**Who May Apply:** US Citizens or permanent residents of the United States

**Deadline:** October 8, 2013

**Website:** [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503622&org=NSF](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503622&org=NSF)

## Obituary

### Annemarie Weber (1923–2012)



*Annemarie Weber*, MD, DM, and Biophysical Society member since 1985, died on July 5, 2012. She completed her postdoc at multiple universities, including University College of London, United Kingdom; University of Maryland;

Harvard University (Rockefeller fellowship); and the University of Tubingen (with *Hans H. Weber*). During her career, she worked at Columbia, the NY MDA Institute, St. Louis University, and the University of Pennsylvania. Annemarie was elected to the Deutsche Akademie der Naturforscher Leopoldina; the American Academy of Arts and Sciences and was a Biophysical Society Fellow.

In her research, Annemarie established the principles of  $\text{Ca}^{2+}$  action in the activation of muscle contraction, demonstrating that low concentrations of free  $\text{Ca}^{2+}$  are necessary and sufficient to activate contraction of muscle at physiological [MgATP] and that the relaxing effect of SR is due to the reduction of cytoplasmic [ $\text{Ca}^{2+}$ ] to very low levels. Her insights paved the way for the discovery by Ebashi of troponin C, and led to the general concept of  $\text{Ca}^{2+}$  as an intracellular messenger.

Annemarie added an additional graphic to the steric hindrance model (proposed by *John C Haselgrove*, *Hugh E. Huxley*, *David A. D. Parry*, and *John M. Squire* in 1972) by showing that at low [MgATP], the myosin crossbridges still attached to actin act as a 'foot in the door,' cooperatively activating seven actin monomers.

Later in her career, Annemarie focused on the formation and disassembly of actin filaments, defining the regulation of actin-subunit association and dissociation at the slow-growing (pointed) filament end and demonstrating, with *Velia M. Fowler*, that tropomodulin caps thin filament pointed ends in striated muscle.

Annemarie was a dedicated teacher who was totally dedicated and enjoyed challenging students. At Penn, she revised the medical biochemistry course with a novel approach, building student enthusiasm and receiving the Provost Award for Distinguished Teaching.

## Judge Local Science Fairs, Give a BPS Award!

For the fifth consecutive year BPS will sponsor Biophysics Awards at state and regional science fairs in the United States. The initiative promotes the teaching and learning of STEM subjects, and raises awareness of biophysics in high school.

Last year, this Public Affairs Committee initiative funded awards for 26 different students in 11 states. In 2013, BPS plans to sponsor awards at state and regional fairs in the Boston, San Francisco, Baltimore, Washington DC, San Diego, and Philadelphia areas.

All science fairs need scientists to serve as judges. If you are interested in judging, please visit <http://bit.ly/tphywC>.

Don't live in these areas? Consider giving a Biophysics Award at your local fair! Visit <http://bit.ly/tphywC> for instructions on how to have BPS sponsor the award.

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## Postdoc Spotlight

RUHMA SYEDA

University of California, San Diego  
Mauricio Montal's Lab

### Q: What field is your PhD in? How did you specialize in biophysics?

I received my PhD in Chemical Biology from the University of Oxford. During my PhD, I was privileged to work in the laboratory of *Hagan Bayley* on challenging projects that required a good grasp of biophysics. The collaboration with *Jose Santos* provided an incentive to focus on biophysics of ion channels.

### Q: What is your current research project?

I am interested in studying ion channels and my work is currently centered on voltage gated potassium selective channels (Kv). The objective is to discover pathways to regulate the minimal ion-conducting module of the whole channel protein. I am also keen on establishing structure-function relations of these channels and particularly about specific interactions with their eternal partner, namely the "lipid bilayer."

### Q: What skills and experiences have you gained/do you hope to gain from your postdoc position?

My postdoctoral training under the supervision of *Mauricio Montal* has been tremendously productive. I have learned to be more independent in thinking and executing projects. I have acquired a positive attitude towards unsuccessful experiments. Truly, failures can direct us towards better experimental design and bring us one step closer to an answer. More than anything, the take-home lesson for me is "Enjoy the work you do, and do the best you can!"

### Q: Tell us about a great experience or opportunity you've had in the past year?

A number of exciting things happened in 2012. The results of my three separate research projects got pub-

lished in top journals. The Biophysical Society meeting in San Diego was an eye-opening and delightful experience. I presented the results of my research in a poster session and found the exchange productive, informative and inspirational for future work. It was also an opportunity to discuss and educate myself on what new science my colleagues have been practicing.

### Q: What do you hope the next step in your career path will be?

I am eager to remain in academia and continue research. I am planning to apply for a faculty position in the near future.

### Q: Why did you join the Biophysical Society?

I was invited by *Daniel Minor*, University of California, San Francisco to present my work at the Membrane Biophysics Subgroup Annual Symposium during the 2010 Biophysical Society meeting. The experience was unique and I decided to join the Society for good. I would like to take this opportunity and thank everyone who works enthusiastically to keep the Biophysical Society and its meetings up and running. I am honored to be a member of the Biophysical Society.

### Q: If you were not a biophysicist, what would you be?

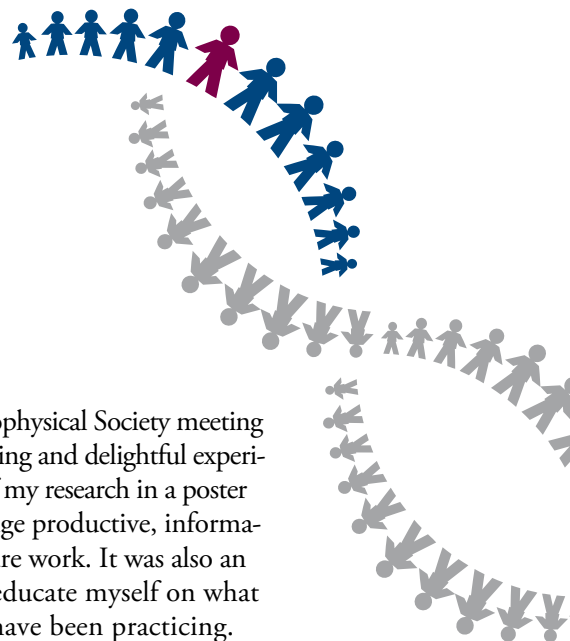
An MD-Ph.D. running a biophysics lab and practicing molecular medicine.

### Mauricio Montal MD, PhD says:

*Ruhma is just terrific. This year she has published a full article in Nature and another in PNAS. Others are in the pipeline. She is a biophysicist at heart, passionate and driven about her science. Her personal background would be an eye-opener and a model for young women to pursue biophysics as the theme of a lifetime.*

### Suggest a Student or Postdoc to Spotlight

Do you have a spotlight-worthy student or postdoc in your lab? Send his/her name to [society@biophysics.org](mailto:society@biophysics.org).





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## UPCOMING EVENTS

BIOPHYSICAL SOCIETY NEWSLETTER JANUARY 2013

### 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.keystone-symposia.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 13–17, 2013

From Structure to Function  
of Translocation Machines  
*Dubrovnik, Croatia*  
<http://events.embo.org/13-translocase/>

### May

#### May 19–22, 2013

Membrane Protein Folding  
*Seoul, South Korea*  
<http://www.biophysics.org/2013korea>

#### May 26–31, 2013

Chromosome Dynamics  
*Lucca, Italy*  
<http://grc.org/programs.aspx?year=2013&program=chromdyn>

### June

#### June 9–13, 2013

12<sup>th</sup> Symposium on Bacterial  
Genetics and Ecology  
*Ljubljana, Slovenia*  
<http://www.bageco2013.org>

#### June 26–29, 2013

ASME 2013 Summer  
Bioengineering Conference  
*Sunriver, Oregon*  
<http://www.asmeconferences.org/SBC2013/index.cfm>