Newsletter
Biophysical Society APRIL 2013

DEADLINES

Mechanobiology of Proteins and Cells

September 29–October 3, 2013
Salisbury Cove, Maine

June 10, 2013
Abstract Submissions

July 8, 2013
Early Registration

Video Contest

April 17, 2013
Video Submissions

Society Awards

May 1, 2013
Nomination Submissions

Wiki-Edit Contest

July 15, 2013
Article Submissions

2014 Thematic Meetings Announced

Each year, the BPS sponsors small, focused-topic meetings organized by Society members. The Society is proud to annouce three meetings that will be held in 2014.

Modeling of Biomolecular Systems Interactions, Dynamics, and Allostery: Bridging Experiments and Computations

September 2–6, 2014, Istanbul, Turkey

This meeting will bring together experimental and computational scientists to explore various aspects of well-defined biomolecular interactions, those involved in transcription regulation, protein synthesis/degradation, and various signaling and regulation processes, using different methods at different scales.


Istanbul, Turkey

Significance of Knotted Structures for Function of Proteins and Nucleic Acids

September 18–21, 2014, Warsaw, Poland

The meeting will explore topics related to knotting, linking, and general entanglement in proteins and nucleic acids, and their relationship to folding and function. The focus will be on using physical principles to understand how nature controls tangling and untangling in both proteins and nucleic acids, focusing on understanding the consequences for function of those biomolecules.


Warsaw, Poland

Disordered Motifs and Domains in Cell Control

October 11–15, 2014, Dublin, Ireland

This meeting will be of interest to all biophysicists studying the dynamic features of conserved linear motifs within the intrinsically disordered regions of proteins and their roles in molecular recognition, as well as systems biologists studying the biological processes mediated by these molecular recognition events.


Dublin, Ireland

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Biophysical Society

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Biophysicist in Profile

LEAH EDELSTEIN-KESHET

You might say that *Leah Edelstein-Keshet* is carrying on the 'family business,' combining her parent's professions for a best-of-both-worlds career. Her father, a "pure" mathematician, convinced her to study math, while her mother, a biologist, clearly had an influence as well—"I got to see life under the microscope at an early age," said Edelstein-Keshet. After starting in mathematical biology, she has since evolved into cell biology and biophysics.

Born in Israel, Edelstein-Keshet arrived in Canada with parents in tow when she was 12 years old. She completed both her bachelor and master of science degrees at Dalhousie University in Halifax, Nova Scotia. She majored in pure mathematics as an undergraduate but transitioned to biomathematics for her master of science, a new program at the university during the mid-1970s.

> "[The *Biophysical Journal*] is one of the few journals with the aim of helping authors to improve their papers, rather than just rejecting most of them."
>
> **– Leah Edelstein-Keshet**

She continued her studies at the Weizmann Institute of Science in Rehovot, Israel, where she studied applied mathematics and worked on the growth patterns in filamentous fungi. During her PhD work, Edelstein-Keshet used modeling to describe the colony shapes of the fungi and did experiments growing the fungi in the lab at the Faculty of Agriculture at Hebrew University, conveniently located across the street from the Weizmann Institute.

After completing her PhD, Edelstein-Keshet was a visiting assistant professor at Brown University and Duke University before returning to a permanent position in Canada. "It was a challenge to find a permanent job in the 1980s," she said. "Mathematical biology, which was my main area of research at that time, was still not recognized as a useful area."

Despite her struggles, she eventually found a position in Applied Mathematics at the University of British Columbia (UBC), in Vancouver, Canada, where she has been ever since. *Alex Mogilner* was one of her graduate students in the early 1990s at UBC (though she freely confesses to having learned more from him). They spent much of that decade collaborating on the alignment of elongated objects with an emphasis on biological applications. "The papers we published in our early research led both of us to thinking about cytoskeleton—dynamic polymer scaffold inside the cells—and the realization that there are really interesting quantitative questions in that area," said Mogilner. In 2002, Edelstein-Keshet and Mogilner published a paper in the *Biophysical Journal* that became the first mathematical model of self-

organization of actin network at the motile cell's leading edge. "I'm very proud of that paper," Mogilner said. "It was mathematically elegant, showing that the qualitative dendritic nucleation model introduced in cell biology by *Tom Pollard* and others made sense, and it made some predictions that seriously influenced a number of people in the cell motility field."

Today, Edelstein-Keshet is a full professor at UBC and her work is now much more biological than earlier in her career. "My work gradually evolved, starting with trying to understand actin structures," she said. Now, Edelstein-Keshet works on the link between the internal signaling (e.g., of Rho GTPases) in eukaryotic cells and the shape and motility of those cells. "The biological challenge is how to decipher what are the signaling networks and their key elements; the computational challenge is how to simulate deforming a cell where the internal chemistry affects the protrusion/retraction of the cell edge," she explains. She still relies on her mathematical background to solve biological problems, and enjoys the fact that biophysics includes novel applications of mathematical and physics ideas.

She also serves the Biophysical Society as a member of the *Biophysical Journal* Editorial Board. "I like the *Biophysical Journal*," she said. "It is one of the few journals with the aim of helping authors to improve their papers, rather than just rejecting most of them." Being part of the Society, and part of the Editorial Board, has made Edelstein-Keshet much more cognizant of what constitutes good and relevant biophysical research.

Adriana Dawes, a former student of Edelstein-Keshet's, regards her editing and publishing expertise as one of the most helpful things she learned from her. "Of the two core things I learned from Leah, the first is constructing and interpreting mathematical models in the context of biology, and the second is how to write and edit a manuscript," said Dawes. "In fact," she continues, "I use Leah as my benchmark for whether a manuscript is ready to submit—if I'm not comfortable with the idea of Leah reading it, it needs more work."

Working with Edelstein-Keshet when she was a graduate student, Dawes admires Edelstein-Keshet, saying, "Leah is incredibly generous with her time and ideas." Adding, "She is very insightful and I rely tremendously on her advice—It's not always what I want to hear, but she is always right!"

Edelstein-Keshet's insight and mentoring abilities have extended to many students over the years. "The part I enjoy most about my work is collaborating with young scientists and writing up our research for publication," Edelstein-Keshet said. Her advice to Mogilner in his final year of graduate school and facing a difficult job market may bolster some young scientists today. "I was fretting and venting about bad global prospects, saying that I'll probably end up hauling crates of oranges in an Israeli port," Mogilner recounted. "When Leah told me, 'Ah! Prospects-schmospects! Trends-schmends! You need this one job, what do you care about the global trends?'" Her advice to focus on his own work and job search paid off, and things worked out "just beautifully" for Mogilner, as Edelstein-Keshet had predicted. Today, he is a professor at the University of California, Davis, and, at the time of publication, has never spent a day hauling oranges in an Israeli port.

In addition to her research, writing, and teaching, Edelstein-Keshet enjoys reading, exercising and spending time with her family. An avid gardener, she built an indoor platform for her seedlings that could be rolled into different positions in the living room and kitchen to maximize light exposure during cloudy Vancouver springs.

Leah Edelstein-Keshet's group at UBC as of 2013: (right to left) (Back row) Hildur Knutsdottir, Mark Zajac, Meghan Dutot (Front row) May Anne Mata, Laura Liao. Edelstein-Keshet is on the left.

Ask Professor Sarah Bellum

Professor Sarah Bellum answers your questions on navigating the often-uncharted waters of early career development. Professor Bellum is communicated by Patricia L. Clark, Associate Professor of Chemistry & Biochemistry at the University of Notre Dame and member of the Society since 1994. Do you have a question for Professor Bellum? Send it to sarahbellum@biophysics.org. Your privacy is assured!

Work More: Harder and Smarter

Q: When I started grad school three years ago, my advisor made a big deal about how he didn't care what hours I kept as long as I am productive. But today he called me into his office to lecture me about how I am not working hard enough. Here's what really made me mad: He specifically objected to me arriving at 10:00 AM and leaving at 5:00 PM, even though he keeps the same hours! This is so unfair! How can I politely point out that he is applying a double standard here?

A: First, let's clarify expectations. All advisors want their students to work long hours, but much more important than logging long hours in lab is productivity. Advisors rely on graduate student productivity to advance the lab's research projects, generate results for research articles and ultimately lay the foundation for the next round of grant proposal applications. Productivity is important for you too: productive graduate students complete more substantial dissertation projects, and a substantial dissertation project will increase the number of opportunities available to you as you contemplate the next step in your career development.

Research articles are the ultimate manifestation of your productivity. So, get your experimental system up and running as quickly as possible. Master the literature in your field and become known as someone who reads broadly and deeply. Act swiftly to resolve the technical problems that you will undoubtedly encounter so that you can produce publication-quality results as fast as possible. Discuss your project and results with your advisor in a way that makes it clear that you are spending considerable time thinking deeply about your project, its implications and future directions. When the time comes, draft manuscripts and complete other writing projects quickly.

Are you doing all of this already? If you are only working from 10:00 AM to 5:00 PM each day, I seriously doubt it. Even if you were operating as efficiently as humanly possible, seven hours a day is unlikely to provide enough time to make substantial, timely progress on all of these various dimensions of a significant research project. You need to spend more hours working per day. Even more importantly, you need to make sure that those work hours are productive. I have explored this topic in a previous column,[1] but in a nutshell some people are very efficient at converting hours spent in lab into publication-quality results. Others are less efficient—and that is OK, as long as it is crystal clear that their lower efficiency will require more work hours in order to achieve the same level of productivity over the long term.

In your case, it sounds like you do need to increase the number of hours you are working, and perhaps also increase your per-hour productivity. It is worth noting that some advisors do find it hard to believe that their graduate students are working productively unless they can see that progress with their own eyes. This can create problems if you are a night owl but your advisor is an early bird: Your advisor only sees you roll in at 10:00 AM (or later), but since he leaves at 5:00 PM, he doesn't see you toiling late into the night, or on weekends, and hence might assume that not much (if anything) is getting done. Again, the most effective way to stop such concerns in their tracks is to produce publication-quality results at a rate that your advisor considers satisfactory (or even better, excellent).

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[1] **http://www.biophysics.org/LinkClick.aspx?fileticket=3rOkhfugSfw%3d&tabid=544**

What about the double standard you mentioned, that your advisor spends only seven hours a day in his lab/office but expects you to work much longer hours? Part of this might pertain to your relative levels of efficiency, but I suspect that a more careful inspection will also reveal that your advisor also spends many hours working from another location. Simply put, your advisor's job and workload are very different from yours. Your advisor probably teaches, and lecturing and lecture prep might occur entirely away from your view. Indeed, by the time your PI arrives at his office at 10:00 AM he might already have logged three or more hours preparing and delivering a lecture. Likewise, proposal-writing, manuscript-writing and literature-reading are all tasks that your advisor might prefer to undertake from home or another quiet location, because in the office/lab they are more likely to encounter distractions (even the good kind of distractions, like talking over your most recent results) that can seriously impede progress. In addition, your PI probably spends many hours per week tied up in service obligations such as curriculum meetings or other committee work—additional commitments that extend his work day but are not particularly visible to you.

For all these reasons, you should not use the amount of time that your PI spends in his office/lab as a ruler against which to measure the amount of time you will need to spend in lab in order to be productive at the level required to complete a PhD project in a timely fashion. Instead, ask to sit down with him and together set clear expectations about how long it might reasonably take for you to complete the tasks currently on your to-do list. These will, of course, be rough estimates, as progress in lab tends to proceed in fits and starts (with many 'stops' along the way), but going through this exercise should be an eye-opening experience for both of you, and ultimately improve the lines of communication between you and your PI. It might also require you to educate your advisor on exactly how much time and effort is required to achieve some of your goals: in general, the longer a PI has been out of the business of doing experiments themselves, the easier it can be to lose touch with exactly how long some assays or setups require. But be very careful not to fall into the trap of whining that your advisor "just doesn't understand" how hard it all is—your advisor probably has a much better handle on graduate student time and productivity than you realize. Remember, for example, that it is relatively easy for him to compare your rate of progress against other graduate students who are working on similar problems.

It might also be illuminating to ask your advisor to estimate how many hours he works per week, where he works, and how he divides up his time between competing priorities (writing proposals versus preparing lectures versus attending committee meetings, etc.) as a guide for you. This discussion might reveal, for example, that your advisor has developed some multi-tasking strategies that you might be able to apply to your own priorities, in order to help you make more productive use of your hours in lab.

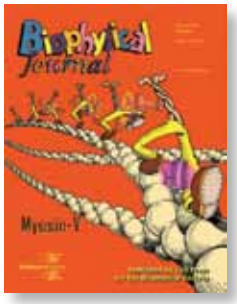
In conclusion, it sounds like you have been delivered a well-deserved warning. Take it in the best possible way, and use it as an opportunity to start a dialogue with your advisor about how to increase your productivity up to the level required to complete a substantial PhD project in a reasonable amount of time. That scenario will be win-win for both of you.

Members in the News

Amitabha Chattopadhyay, Centre for Cellular & Molecular Biology, India, and Society member since 1984, was recently admitted to the Category of Fellow of the Royal Society of Chemistry.

Cynthia Wolberger, Johns Hopkins University School of Medicine, and Society member since 1995, received the 2013 Dorothy Crowfoot Hodgkin Award from the Protein Society.

Charles Sanders, Vanderbilt University Medical School, and Society member since 1992, was awarded the 2013 Hans Neurath Award from the Protein Society.



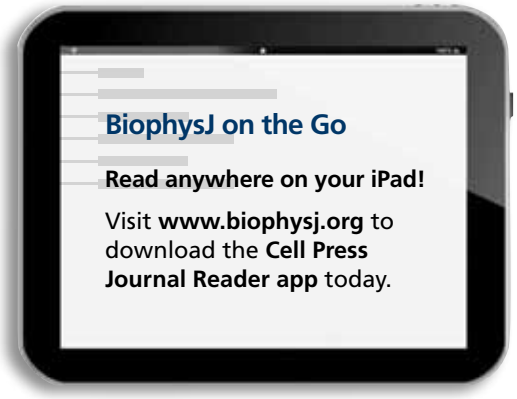
Biophysical Journal Editor's Corner

BiophysJ is "Truckin" on

Biophysical Journal's recent cover (inspired by the *Robert Crumb* cover for the Blind Boy Fuller record album "Truckin' My Blues Away") is a great cartoon evoking the directed motion of myosin motors as described by *Yale Goldman's* lab and highlighted as a "New and Notable" in the March 19 issue. But it may also be a good representation of all the things happening in *BJ*. In 2013, the Journal will continue "truckin" on with newly-enhanced features. These include:

- New & Notables that make it easy for you to learn what is new and interesting in the latest biophysics research.
- Short highlights for Emerging Biophysical Technologies, selected by Editors, that describe exciting new physics-based methods for probing biological systems.
- An expanded number of invited Biophysical Reviews by leaders in our diverse discipline.
- Virtual Issues, which collect the best papers in a subdiscipline of biophysics that have been recently published in *BJ*. A recent issue on Channels & Transporters was just released in March.

To see the most recent highlights and articles, visit **www.biophysj.org**



Know the Editors

Each month we feature a *Biophysical Journal (BJ)* editor and highlight a *BJ* section.

Peter Hunter, University of Auckland, New Zealand; Associate Editor of the Systems Biophysics Section

Q: What is your area of research?

Cardiac modeling and the Physiome Project.

Q: As Associate Editor of the Systems Biophysics Section, what type of papers is *BJ* looking for in that area?

Primarily papers that combine experimental work with insights from mathematical analysis and modeling at the subcellular, cellular, and tissue scales. Papers on multi-scale modeling are particularly welcome, especially where these include mechanistic insights into biological function. The Systems Biophysics section of *BJ* is also keen to attract modeling and experimental work that links cellular mechanisms into the understanding of structure-function relations at the higher spatial scales of tissues and organs.

Q: Why did you take on the role of Associate Editor?

I have been a fan of *BJ* for over 30 years and have always felt that its focus on the close coupling between experiment and quantitative analysis through modeling was the key to understanding multi-scale biological processes, so I was delighted when Les asked me to take on this role. I also felt that *BJ* would be one of the first journals to adopt the CellML and FieldML modeling standards being developed as part of the Physiome Project.

Subgroups

BIV

BIV Subgroup Takes Exciting Journey Through in vivo Biophysics

As tools to study complex biological systems become more and more sophisticated, we are increasingly empowered with the ability to interrogate and understand the behavior of biomolecules in the context of the living cell and in complex cell-like environments. This fascinating, yet still poorly explored research area, is the focus of one of the youngest subgroups of the Biophysical Society, the Biopolymers in Vivo (BIV) subgroup, which was formed three years ago. The third BIV subgroup symposium was held at the recent Biophysical Society Annual Meeting in Philadelphia and featured a variety of stimulating lectures elucidating how the cellular context is able to shape macromolecular behavior.

One of the keynote speakers at the BIV symposium, *Jacqueline Barton*, explained that double-stranded DNA has the ability to mediate charge transport across long distances via its stacked aromatic bases. She pointed out that this ability is dramatically impaired in the presence of DNA mismatches or base-pair damage. The implications of Barton's research are far-reaching: In the context of the living cell, this special function of DNA may be exploited in a variety of ways, for example by proteins devoted to DNA repair. We also heard from *Yousif Shamoo* on how cellular needs may be met through evolution of enzymatic properties. Shamoo also showed that one can carry out quantitative enzymology directly in living cells. This strategy has a two-fold advantage. On the one hand, it bypasses the need for tedious protein purification and, on the other, it takes the influence of the cellular environment into account. Another speaker, *Patricia Clark*, described how the bacterial cell requires a protein to fold and unfold to make its way between different compartments and to properly display deadly virulence factors on its surface.

The second keynote speaker of the BIV symposium was *Stefan Hell*, who explained the basis behind his pioneering super-resolution imaging methods, which break the diffraction limit and provide exquisite detail about cellular features. In other lectures, mechanisms of proteins involved in cell division were revealed via imaging by *Jie Xiao*, and *John Briggs* explained how he used cryo-electron tomography for protein structure determinations. Finally, *Gael McGill* explained how cellular processes can best be grasped by K-12 students through the use of graphical examples and movies rather than with traditional textbooks. The talk highlighted the non-trivial nature of the creative process that leads to the most effective, yet scientifically accurate, visual biophysical learning tools. Two excellent postdoctoral fellow talks were presented by *Robert Crawford* on single molecule fluorescence in living cells and *Rudra Kafle* on chromosomal DNA dynamics; both received a BIV travel award. All told, it was a wonderful session, and the room was overloaded with listeners. We thank our sponsors for making this possible: Applied Photophysics, Jasco, OLIS, Bruker, and GE.

In the coming year, we will strive to increase visibility of BIV (e.g., by proposing a workshop for the Annual Meeting, by going to other meetings and spreading the word) and to increase the number of members. We will have a logo competition for students/postdocs: stay tuned for the announcement of the rules! We are very excited about the growing importance of in vivo biophysics and hope that many of you will decide to become BIV members. With a critical mass it is easier to make a difference and to share scientific excitement about the world of in vivo biophysics!

—*Pernilla Wittung-Stafshede*, *Lila Gierasch*, and *Silvia Cavagnero*
Former, current, and future BIV chairs

MSAS

Membrane Structure Perturbation and Disassembly

This year's Membrane Structure and Assembly Subgroup (MSAS) symposium in Philadelphia was dedicated to a variety of phenomena related to the permeabilization, solubilisation, and reconstitution of membranes. The session started with the

William Wimley, Thomas E. Thompson awardee

presentation of the first Thomas E. Thompson Award to *William Wimley*, Tulane University. It was a particular highlight that Thompson attended the meeting and handed the award plaque to Wimley, his former graduate student. Noticing Thompson's portrait on the award plaque, Wimley said he looked forward to Thompson watching over his shoulder from now on. In contrast, Wimley seems to have been less seamlessly supervised by Thompson back in his grad student times, and he obviously used this freedom wisely. The award money of $1,000, as well as the symposium as a whole, was sponsored by Avanti Polar Lipids.

Wimley's award lecture presented an extensive screen identifying pore forming peptides with superior performance. *Alan Grossfield* presented MD simulations of lipopeptides, showing that and why anionic molecules can in fact be attracted by anionic lipids. *Ole Mouritsen* explained the effects of lysolipids on membranes and their potential applications for drug delivery systems, including so-called LiPLAsomes. *Erwin London* presented that techniques with very high spatial and temporal resolution can detect nanoscopic domains in membranes. He found detergent not to induce, but rather to coalesce such nanodomains into larger ones. One issue raised in the discussion after the talk was that domains of a few nanometers lack key properties of a phase as assumed for rafts. Potential biological functions of nanodomains are quite distinct from those postulated for rafts, unless certain proteins or other triggers coalesce or grow nanodomains in vivo. *Sandro Keller* showed that membrane proteins can substantially promote membrane reconstitution from micelles and how this process can be monitored by isothermal titration calorimetry and fluorescence correlation spectroscopy. Last but not least, *Klaus Gawrisch* outlined the amazing complexity of solubilizers and stabilizers needed for each step of isolating, purifying, and reconstituting recombinant cannabinoid receptor and described their potential functions. Overall, the issue of membrane-disintegrating agents will keep on being instrumental for a variety of topics and applications in biology and medicine.

All colleagues who are interested in our field are invited to be part of our community and asked to support it by being members of the subgroup. All members are encouraged to make a nomination for the 2014 Thomas E. Thompson award before May 1, 2013.

The next MSAS chairs will be *Felix Goni* (2014) and *Marjorie Longo* (2015)—congratulations on your election and thanks to all candidates who agreed to run! Many thanks also to sponsors, members, and all attendees. We hope to see you in San Francisco next year!

—*Heiko Heerklotz*
Former MSAS chair

Membrane Biophysics

The Membrane Biophysics Subgroup activities took place on February 2–3, 2013, during the 57th Annual Meeting of the Biophysical Society in Philadelphia. The Subgroup Symposium this year, *Macromolecular Complexes of Ion Channels and Transporters*, was co-organized by *Diomedes Logothetis*, Virginia Commonwealth University, and *Brad Rothberg*, Temple University. The Symposium, held on Saturday, February 2, featured seven talks: *Diomedes Logothetis* presented work on reconstitution of purified components of the G protein signaling system with K^+ channels in planar lipid bilayers as well as a three dimensional model of a GIRK1 complex with the Gbg subunits; *Ming Zhou*, Baylor College of Medicine, presented work on crystal structures of TrkA, a soluble RCK-containing protein, with and without the K^+ transport protein TrkH, suggesting a mechanism of how ATP regulates the activity of the complex; *Eitan Reuveny*, Weizmann Institute, presented work on the ER membrane proteins SARAF that causes Ca^{2+}-dependent inactivation of STIM in regulating the activity of the plasma membrane channel Orai; *Bill Catterall*, University of Washington, presented work on the regulation of Cav1.2 by a signaling complex involving AKAP and PKA and carried the mechanistic studies to transgenic mice with specific mutations at key phosphorylation sites to assess the cardiovascular effects of the defective PKA regulation of the channel; *Bonnie Wallace*, Birkbeck College of the University of London presented work on a high-resolution structure of the NavMs channel

that provided insights as to the sodium ion selectivity filter and the resolved C-terminal domain; *Kevin Foskett*, University of Pennsylvania, presented work on two interacting proteins with the Mitochondrial Calcium Uniporter (MCU), MUC1 and MCUR1, that are components of the mitochondrial uniporter channel complex required for mitochondrial Ca^{2+} uptake; and *H. Peter Larsson*, University of Miami, presented work distinguishing the effects of different KCNE beta subunits on KCNQ1 voltage sensor movement versus gate opening, using voltage clamp fluorometry. Six sponsors (ChanTest, the journal Channels published by Landes Bioscience, Sutter Instrument, Automate Scientific, ALA Scientific Instruments, and nan]i[on) provided support for the Symposium and the coffee break.

Elections for the 2015 Chair of the Membrane Biophysics Subgroup were held during the coffee break. The group voted for *Baron Chanda*, University of Wisconsin at Madison, who promised to showcase state-of-the-art single molecule techniques in the study of structure-function of ion channels and transporters.

The Symposium was followed by the 2013 Kenneth S. Cole (KC) Award Dinner honoring this year's recipient, *Fred Sachs*, University of New York at Buffalo. As the dinner was served, *Elise Stanley,* Toronto Western Research Institute, introduced *Kenneth Cole* and showed pictures of chambers she obtained from the Marine Biological Laboratories at Woods Hole, Massachusetts, among which was the first chamber used for voltage-clamp studies. As dessert was served, Sachs presented the major parts of his career path in his usual entertaining manner. His technical genius came through loud and clear throughout his illustrious career. He also did not miss the opportunity to challenge all of us in the field with convincing single-channel looking records obtained when pressing a patch pipette onto sylgard. The dinner concluded the wonderfully rich day of science with the name of another giant in the membrane biophysics field added to the 40 past recipients that make the KC award the prestigious honor it is in this field.

On Sunday, February 3, four members of the subgroup served as judges for the Society's Student Research Achievement Award (SRAA) Poster Competition. The four judges were *Irena Levitan*, University of Illinois, Chicago; *Paul Slesinger*, Mount Sinai School of Medicine; *Stephen Tucker*, Oxford University, United Kingdom; and *Diomedes Logothetis*, Virginia Commonwealth University.

Preparations for the 2014 meeting have already begun. The 2014 Subroup Chair, *Henry Colecraft*, Columbia University, along with the Treasurer, *Christopher Ahern*, University of Iowa, have started to assemble the exciting program focusing on the role of auxiliary subunits in shaping the function of ion channels and transporters, to gather the support of sponsors, to preside over the selection of the prestigious KC Award, and to prepare for another SRAA poster competition. Last but not least, the tireless support of the Biophysical Society staff, and particularly of *Vida Ess*, makes the activities of each subgroup happen seamlessly year after year. Their continuous support and guidance are greatly appreciated.

See you all in 2014 in San Francisco!

—*Diomedes E. Logothetis*
Former Membrane Biophysics chair

Public Affairs

NIH Wants to Hear from You!

The National Institute of Health's (NIH) Advisory Committee to the Director (ACD) is inviting comments and suggestions on its implementation plans of recommendations it received from a subcommittee to ensure a sustainable biomedical research workforce. The Committee has reviewed the recommendations and is moving ahead with plans to:

- Provide better support for graduate students and postdoctoral fellows, both financially and academically;
- Improve data collection on graduate students, postdoctoral fellows, and career outcomes for individuals supported by NIH;
- Revise key standards in training grant applications by including tracking outcomes for all students in a program and considering a range of career outcomes as indicators of success; and
- Start a discussion with the extramural biomedical research community to assess the construct of NIH support of the biomedical community, including faculty salaries.

The Working Group wants to hear from all stakeholders, including students, postdoctorates, scientists, and the general public.

To read the request in full and submit comments, please visit **http://grants.nih.gov/grants/guide/notice-files/NOT-OD-13-045.html**. You do not have to comment on all the recommendations; you are free to selectively respond to those of interest to you. Comments are due April 22.

White House Extends Open Access Policies Government-wide

In a memorandum issued on February 22, *John Holdren*, Director of the Office of Science and Technology Policy (OSTP) of the White House, directed federal agencies with more than $100 million in research and development expenditures to make journal articles resulting from federally-funded research publicly available free-of-charge within a year of original publication. The requirements are similar to those that have been in effect at the NIH since 2008. Unlike at NIH, though, agencies do not need to create their own repositories but are encouraged to partner with scientific societies, publishers, and other private entities in doing so. This will minimize the significant costs incurred by federal agencies that have built repositories that are redundant with those of scientific societies.

The Society's journal, *Biophysical Journal*, currently makes all papers available to the public free-of-charge after 12 months and submits those papers to NIH's repository, PubMedCentral, as a service to authors.

Holdren announced the new policy on the White House's "We the People" website, where proponents of increased access to federally funded research findings had created a petition on this topic with over 65,000 signatures. In that announcement, Holdren

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noted that the policy was developed to "strike the balance between the extraordinary public benefit of increasing public access to the results of federally-funded scientific research and the need to ensure that the valuable contributions that the scientific publishing industry provides are not lost."

In addition to requiring public access to scientific publications, the memorandum requires federal agencies to examine ways to improve how scientific data produced with federal funding is managed and shared.

Agencies must submit their plans to increase access to the results of federally-funded scientific research to OSTP by August 22, 2013, but the plans must not require additional federal investment.

The memorandum can be read in its entirety at **http://www.whitehouse.gov/sites/default/files/microsites/ostp/ostp_public_access_memo_2013.pdf**.

The *Biophysical Journal's* embargo and open access policies can be found at **http://www.cell.com/biophysj/FAQ#Embargoes**.

Ernest Moniz Nominated as Secretary of Energy

President *Obama* announced *Ernest Moniz* as his pick to replace *Steve Chu* as Secretary of Energy in early March. Describing Moniz as a "brilliant scientist," the President lauded Moniz for his work at the Department of Energy and the Massachusetts Institute of Technology, adding, "Ernie knows that we can produce more energy and grow our economy while still taking care of our air, our water, and our climate." Moniz also has previous federal experience, having served as the Associate Director for Science at the Office of Science and Technology Policy during the Clinton administration.

Moniz is currently a professor of physics and engineering systems, director of the Energy Initiative, and director of the Laboratory for Energy and Environment at MIT. Moniz received his PhD in theoretical physics from Stanford University.

The nomination is subject to confirmation by the US Senate.

Grants and Opportunities

Support of Competitive Research (SCORE) Research Advancement Award

Objective: To increase the research competitiveness of faculty at minority-serving institutions and institutions with a historical mission of training students from backgrounds underrepresented in biomedical research. The award provides research support to faculty who are at the most advanced formative stages of their research career and are seeking to transition to non-SCORE support.

Who May Apply: All US institutions of higher learning with a historical mission of educating students from diverse backgrounds underrepresented in biomedical and behavioral research as defined by the National Science Foundation that award science degrees and have received less than six million dollars from NIH R01 support in the last two fiscal years.

Deadline: May 25, 2013

Website: http://grants.nih.gov/grants/guide/pa-files/PAR-13-069.html

The Enrico Fermi Award

Objective: To recognize excellence in science and technology relevant to the Department of Energy's missions; show appreciation to scientists, engineers, and science policymakers who have given unstintingly to advance DOE-relevant science and technology; and inspire people of all ages through the examples of Enrico Fermi, and the Fermi Award laureates who followed in his footsteps, and explore and open new scientific and technological realms.

Nomination Deadline: May, 31, 2013

Website: http://science.energy.gov/fermi/nomination-and-selection-guidelines/

Mechanobiology of Proteins and Cells

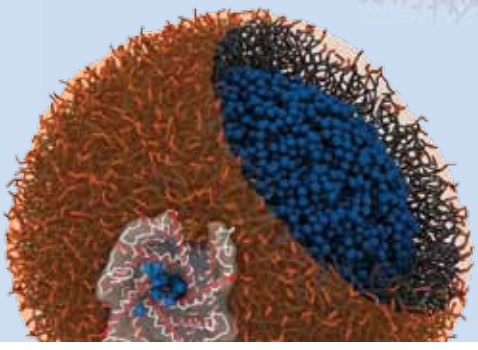
SEPTEMBER 29–OCTOBER 3, 2013
Salisbury Cove, Maine

www.biophysics.org/2013Maine

This Biophysical Society sponsored meeting will provide a forum for analysis of the mechanobiology of proteins and cellular structures by biophysicists, biochemists, structural biologists, and physiologists.

Important Deadlines

Abstract Submission ..... **June 10**
Early Registration.....**July 8**



Philadelphia Meeting Survey Winners

Congratulations to *Rebecca "Reba" Howard*, Assistant Professor of Chemistry, Skidmore College, and *Burcu Celikkol*, Researcher, University of Twente, The Netherlands, for winning complimentary registration to the Biophysical Society's 58th Annual Meeting in San Francisco, California, February 15–19, 2014.

Rebecca "Reba" Howard

Burcu Celikkol

Howard and Celikkol were randomly selected from meeting attendees who submitted a complete 2013 Annual Meeting survey. Feedback from the survey is used for the planning of future meetings.

Thanks to all attendees who took the time to complete the questionnaire.

Call for Society Awards Nominations

Submission Deadline: May 1, 2013

The Biophysical Society honors its members and recognizes excellence in biophysics each year through its awards program. Nominations are now being accepted for eight awards, which will be presented at the Society's 58th Annual Meeting in San Francisco in 2014.

For more information about the Biophysical Society Awards, visit **www.biophysics.org** and click **Awards/Opportunities**.

BPS Awards

Treasurer's Report


Linda Kenney

At the end of each fiscal year, which runs from July 1 to June 30, the Society's finances undergo an audit. The fiscal year ending 2012 (FYE12) audit was conducted in August 2012 and presented to the Executive Board at its October 2012 meeting. The full audit is available online at **http://www.biophysics.org/AboutUs/Committees/Finance/tabid/472/Default.aspx.**

After deducting revenue from interest and dividends received from the reserves, which do not come from operations, the audit showed that the Society's operations resulted in net revenue of $649,563. This reflects the continued growth of the Society as well as the efficient control of overall costs. The Society's net assets grew from $8,700,029 in FYE11 to $9,651,927 at the end of FYE12. That growth was due to the positive FYE12 operating net revenues transferred into reserves, as well as the overall gains in the stock market.

Society Now Over 9,000 Members Strong

The Society has continued to flourish even in financially challenging times. Membership continues to be strong with nearly 9,100 members in 2012. Over the last four years, membership growth has been mainly fueled by student and early career members, who represent the future of biophysics, and there has been an increase in membership from outside the US, which now stands at nearly 36 percent.

Society Reserves

As has been done in past years, the net revenues from FY12 are being moved to the Society's reserves to ensure that those funds continue to build toward the prescribed level of 100 percent of one year's operating expenses. Such a level is needed to ensure that the Society can withstand a catastrophic event, such as a precipitous decline in meeting attendance due to a blizzard. The reserves level at the end of 2012 stood at $8,810,208. The average balance of the reserves over the last three years is slightly over the projected FY13 operations expenses level.

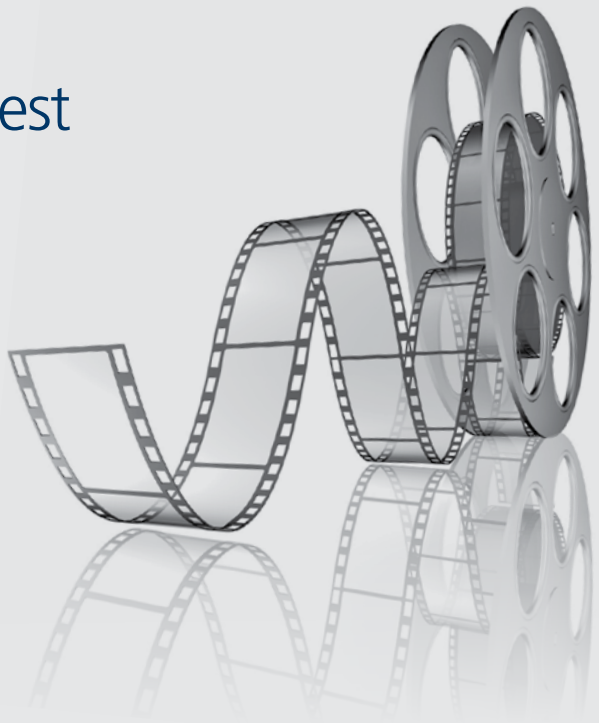
Ongoing Programs

During difficult economic times, members turn to their professional societies for greater support services. The Biophysical Society is continually updating its website (**www.biophysics.org**) to help members better learn about the Society's programs and more easily take advantage of the opportunities it offers. The Society has been working with Cell Press to make *Biophysical Journal* read by more people throughout the world, and offers members free online color figures and lower publication charges. In total, 149 travel, poster, Society, and science fair awards were given to support students, postdocs, and minorities. BPS sponsored two very successful thematic meetings in China and India in 2012, and awarded six grants for local networking events to Society members throughout the world. The public policy efforts of the Society have helped educate those in the government and agencies to the importance of funding research in biophysics. The Philadelphia meeting attracted a record number of abstracts for an east coast meeting with 3,875 abstracts and close to 6,000 attendees. The Annual Meeting continues to be the greatest international networking opportunity for biophysics researchers.

The Finance Committee and Council will continue to closely monitor the Society's fiscal health to ensure that the programs and services so many members depend on continue to grow.

—*Linda Kenney*
Treasurer & Finance Committee chair

Biophysics—
The Everyday Video Contest



How does biophysics affect our everyday lives? Whether it is the discovery of a new drug, throwing a baseball, or finding solutions for cleaner water, givethe general public (including high school students) a simple and visual explanation of how biophysics plays its part in our world!

Submit your video by April 17.
Monetary prizes will be awarded.

For more information, visit **www.biophysics.org**, go to the **Awards/Opportunities** page, and then click on **Society Contests**.

Wiki-Edit Contest

Share what you know about biophysics with the world by participating in the biophysics Wiki-Edit Contest! Deadline to finish your wiki article is **July 15, 2013**.

Six winners will receive $100 and free registration to the 2014 Annual Meeting.

For more information, visit **www.biophysics.org**, go to the **Awards/Opportunities** page, and then click on **Society Contests**.

Postdoc Spotlight

ANU NAGARAJAN
University of Maryland, College Park
Silvina Matysiak's Lab

Q: What field is your PhD in?

I received my PhD in Biophysics from Johns Hopkins University where I gained an excellent foundation for a research career. I had the fortune of working with *Tom Woolf* and have greatly benefited from his guidance and mentorship. My research focus was studying the conformational changes in CaATPase (SERCA) using molecular dynamics simulations.

Q: What is your current research project?

I am currently working on developing a novel multi-scale simulation method, which would allow simultaneous representations of different resolutions in the same system to reduce computational cost. This would enable large systems to be decomposed into sets of nested regions represented in different resolutions based on their relevance. In addition, I am studying the effect of varying length of polyQ repeats and flanking sequences of Huntington protein on the interaction with lipid bilayers and changes in their structure.

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

Working with *Silvina Matysiak* has been a tremendous learning experience. In addition to working on novel methods research, I have had the opportunity to write grants, co-teach a course, and mentor students in my lab. These experiences have been essential in my development as an independent researcher.

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

I have had the opportunity to present my work in several platforms, including conferences and publications in premier journals. It was inspiring to receive positive reviews and encouragement of my work. I have also had the good fortune of meeting exceptional scientists, who have motivated me.

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

I plan to pursue a career in academic research and hope to make valuable contributions to science and to the education of students and junior researchers.

Q: Why did you join the Biophysical Society?

The Biophysical Society Annual Meeting provides a great opportunity to present my research and get valuable feedback from my peers. The Society also provides a wonderful forum to network and meet the many inspiring people who are working in my field.

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

I have been an Indian classical music student, and it has been my passion since childhood. If I were not a biophysicist, I would be a musician running a music school.

Silvina R. Matysiak, Anu's PI says:

Anu joined my lab in fall 2011. She is an outstanding Postdoctoral Fellow and she has been key in helping me building my lab which is a little over two years old. Anu is becoming an amazing independent researcher, working on multiple projects and having a nice balance between them. Anu has expressed to me several times her interest in going back to her home country (India) and opening her own lab in a research-intensive university. I see a bright future ahead of her.

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.

Biophysical Society

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UPCOMING EVENTS

June

June 10–14, 2013

Exploiting Anomalous Scattering in Macromolecular Structure Determination
Grenoble, France
events.embo.org/13-crystallography/

June 10–14, 2013

"Hands-on" Workshop on Computational Biophysics
Pittsburgh, Pennsylvania
www.ks.uiuc.edu/Training/Workshop/Pittsburgh2013/

July

July 13–17, 2013

9th European Biophysics Congress
Lisbon, Portugal
www.ebsa2013.org/

July 28–August 3, 2013

Motile & Contractile Systems: Cytoskeletal Dynamics from Single Molecules to Motile Organisms
New London, New Hampshire
grc.org/programs.aspx?year=2013&program=motile

August

August 4–9, 2013

Clusters, Nanocrystals & Nanostructures: From Fundamental Chemical and Physical Processes to Applications
South Hadley, Massachusetts
grc.org/programs.spx?year=2013&program=clusters

August 18–23, 2013

Soft Condensed Matter Physics: Bio-Soft Matter: Dynamical and Structural Complexity
New London, New Hampshire
grc.org/programs.aspx?year=2013&program=softcond

September

September 21–24, 2013

The 5th EMBO Meeting
Amsterdam, The Netherlands
www.the-embo-meeting.org/

September 30–October 3, 2013

Mechanobiology of Proteins and Cells
Salisbury Cove, Maine
www.biophysics.org/2013maine/Home/tabid/4368/Default.aspx

Please visit www.biophysics.org for a complete list of upcoming events.