Newsletter
Biophysical Society December 2012

DEADLINES

57th Annual Meeting

February 2–6, 2013
Philadelphia, Pennsylvania

December 21, 2012
Early Registration

Career Luncheons Registration

January 3, 2013
Late Abstracts

January 4, 2013
Childcare Pre-Registration

Satellite Meeting Early Registration

January 6, 2013
Hotel Reservation in Room Block

Membrane Protein Folding

May 19–22, 2013
Seoul, South Korea

January 13, 2013
Abstract Submission

February 19, 2013
Early Registration

Future of Biophysics Burroughs Wellcome Fund Symposium


Hashim Al-Hashimi


Scott Blanchard


John Christodoulou


Lisa Lapidus

The 2013 Future of Biophysics Burroughs Wellcome Fund Symposium will highlight the work of young researchers who are currently conducting research at the interface of the physical and life sciences. The selected speakers are: *Hashim Al-Hashimi*, University of Michigan; *Scott Blanchard*, Weill Cornell Medical College; *John Christodoulou*, University College London, UK; and *Lisa Lapidus*, Michigan State University.

The Symposium, which is in its fourth year, will be held on Sunday, February 3, 2013, 10:45 AM–12:45 PM, in the Pennsylvania Convention Center.

Jody Puglisi, Stanford University, will chair the symposium.

New Wednesday Annual Meeting Programming—Don't Miss It!

Wednesday, February 6, will include many new programs and features this year that you won't want to miss.

- **Meet the Speakers/Meet the Editors**—in the exhibit hall, attendees will have the opportunity to speak one-on-one with speakers from each symposium and workshop and members of the BJ Editorial Board.
- **iPad Mini Raffle**—to win, you must be in attendance in the exhibit hall on Wednesday at 12:30 PM.
- **Late abstracts** will be programmed throughout the meeting days rather than all on Wednesday, allowing more regular posters—over 700—to be presented on Wednesday.

Make sure when making your travel arrangements to allow for attendance on Wednesday, a day not to be missed!

CONTENTS

Biophysical Society

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Biophysicist in Profile

Karolin Luger

Before *Karolin Luger* was chosen to be the National Lecturer at the 57th Annual Meeting of the Biophysical Society, before she completed a postdoc or got her PhD, before she completed high school at a 'garden-variety' gymnasium in Austria, she was the youngest child, feeling a little left out of the lively discussions between her electronics- and physics-inclined brothers and father. As family lore would have it, math and physics were 'not her thing.' But for a love of nature—which started with a childhood fascination with planting seeds and looking at things under a microscope, and came to fruition in a middle school biology class when she asked how RNAs were connected with the correct amino acids and "didn't get a very clear answer"—Luger might have chosen a different path. As it was, however, "that class was when it dawned on me that not everything was 'known' yet," she said, and headed for a scientific career.

After completing gymnasium with a specialty in foreign languages, Luger attended the University of Innsbruck. "The only way to study biochemistry was through a chemistry degree," said Luger. Given her interest in nature, she went for a degree in microbiology with an emphasis in biochemistry instead. With a Master's degree in biochemistry under her belt, Luger moved to Switzerland to attend the Biocenter at the University of Basel to work on her PhD. Finishing her PhD in biochemistry and biophysics with 'great colleagues and a wonderful mentor' kick-started her rise to success.

> "The beauty of structures and their intricacy still takes my breath away. I'll never get tired of that."
>
> **– Karolin Luger**

As a graduate student, Luger took an advanced lecture course on x-ray crystallography. "The lectures were excruciatingly boring," she said. However, she was intrigued by the beauty of diffraction patterns and how they could provide information on structures, so Luger dedicated her postdoc with *Tim Richmond* at the University of Basel to learning crystallography. Her postdoc experience was longer than expected, as she picked a difficult system to work on, but remained "blissfully ignorant of that fact until I was way too deep into it." After overcoming the challenge of obtaining diffracting crystals and solving the phase problem, "I spent a rather lonely year in a dark airless room, hand-building a very large model on a very slow computer. After that," Luger reflected, "everything else seemed comparatively easy – starting my lab, getting grants, even solving more structures."

Would she recommend that new scientists start with a tough challenge? "While it may have worked for me, it could certainly be dispiriting for a young researcher," she said. "It depends on the type of person you are." Knowing when to push forward and when to call it quits has been an ongoing challenge for Luger. "It can be difficult to remain optimistic when a long-term project isn't going so well, and even more difficult to decide to 'pull the plug,'" said Luger.

While completing her postdoc, Luger gave a talk on the x-ray crystal structure of the nucleosome at the Cold Spring Harbor Meeting on Mechanisms of Transcription. Her future colleague, *Laurie Stargell*, then an assistant professor

at Colorado State University (CSU), met Luger at the meeting and described the talk and paper that came out of it (published in *Nature*) as "classic in every sense of the word." At the time of the talk, the nucleosome was the largest and most complex protein-nucleic acid assemblage to be crystallized, and it came at a critical time in chromatin research, just as nucleosomes were being acknowledged as important regulatory components of genes. "The information obtained from the crystal structure of the nucleosome," Stargell explained, "propelled the re-emergence of chromatin as a highly significant field of study."

The ground-breaking nucleosome paper was also the first time Luger appeared on the radar of Biophysical Society President *Jane Richardson*, who named her National Lecturer for the 2013 Annual Meeting. "Karolin gave a gorgeous talk at the 2011 Nucleic Acids Gordon Conference," said Richardson. "Her talk was well-presented and had a take-home message that many, especially young biophysicists, could appreciate."

Her diverse background—"I specialize in not specializing too much," according to Luger—has helped her keep an open mind to using a variety of approaches to answer questions. Moving from DNA sequencing (when there were no facilities to do it) as an undergraduate to protein folding, enzymology and spectroscopy as a PhD student, followed by x-ray crystallography as a postdoc, has brought her to understand and respect many different ways to solve problems. As a favorite she chose the high-resolution electron density map of a new protein complex. "It is thrilling to see, for the first time, how it all fits together," she declared, "The beauty of structures and their intricacy still takes my breath away. I'll never get tired of that."

Now a Howard Hughes Medical Institute Investigator and a Distinguished Professor at CSU, her research focuses on investigating the assembly and disassembly of nucleosome structure by a group of proteins known as histone chaperones. Her lab also works on proteins that shape chromatin architecture by interacting with nucleosomes, as well as the effect of histone post-translational modifications and histone variants on nucleosome and chromatin structure. "It is such a fun set of projects," Luger said, "every project in the lab is tightly interconnected with almost all other projects—histone chaperone function is affected by histone post-translational modifications; chromatin architectural proteins affect nucleosome dynamics… and more."

Luger counts collaboration among one of the most rewarding aspects of her work. "Collaborative projects force me to think outside the box." Her current projects involve interacting with three separate research groups, who are all tackling the same questions with different approaches. Also top on her list of perks? Getting to be a geek. "I love the sheer geekyness of biophysics," Luger admits, "all the shiny and complex equipment, applying many technologies to answer a question, and sometimes 'tricking' the system by devising approaches to study aspects of macromolecules or assemblies that aren't inherently accessible to being studied."

Stargell, now a professor and associate chair at CSU, has worked with Luger extensively since 1999 sharing several publications, working together as PIs/co-PIs on various grants, and presently working together. "Karolin is an absolute joy to have as a colleague," says Stargell. "She is a thinker and a doer, who constantly pushes the envelope of chromatin research using a wide range of approaches."

Luger is "so thrilled to have the opportunity" to be the National Lecturer at the Annual Meeting. "I am tempted to take a picture of the audience from the podium," she said. "I think this will be the largest number of biophysicists in one room I'll ever see!" Luger is honored to be included on the list of National Lecturers, remembering *Roger Kornberg's* talk as an inspiration to a (then struggling) structural biologist.

Outside of the lab, Luger enjoys gardening. In her small garden, she grows lettuce, tomatoes and squash, and says that had she not become a scientist, she might have a very different career today. "If I had a smidge of talent at piano, I might have done that," she joked, "But since I definitively don't, I would enjoy running an organic farm." She also enjoys reading fiction, and spending as much time outdoors as possible with her husband, daughter, and two dogs. "Living in Colorado, there's always hiking, snowshoeing and camping —although not nearly enough!"

Hiking in Telluride, Colorado, with husband Matt and daughter Maya.

Combining a career in science with family life and outdoor activities is a balancing act, as is 'slack-lining', a rather addictive form of excercise.

Dear Molly Cule

Professor Molly Cule is delighted to receive comments on her answers and (anonymized) questions at **mollycule@biophysics.org**, *or visit her on the BPS Blog.*

What do I do if my labmate is messy?

Even if you are a complete organization and cleanliness freak, there is often someone close by, or even sharing space with you, who is a messy labmate. Your messy labmate may say, "If your lab space is clean, it looks like you're not working hard." Indeed, in scientific research, an old adage is that "messier" people are more productive. Of course, this statement raises many flags, as seems obvious that a neat and organized workspace will be more efficient and safer! Addressing your labmate's organization and cleanliness shortcomings must be handled with care. Your labmate is someone you have to work with daily, and it is important to remain collegial and treat your labmate with courtesy.

There are a few ways of addressing this sort of situation depending on the circumstances. If your labmate is messy when using equipment, talk to them about the uses of the common equipment and how others rely on it. Some equipment is very sensitive to salt deposits and the like, so keeping an area clean can be critical to maintaining the proper function of the equipment. Safety issues can also become a problem if the mess involves leaving dangerous chemicals out without labeling or disregarding other safety precautions like secondary containment. Often times, there are people assigned to keeping common equipment running, perhaps a student or a lab manager. Talking to them about the normal and safe usage of the equipment can supply you with the information you need to address whether the mess is dangerous. They might also be responsible for training so keeping them informed about any issues with the equipment is important.

If the labmate is messy and you share a bench with her, try making similar arguments on a more personal basis. Does the mess prevent you from working? Does the mess make common bench equipment inaccessible? Does the mess create an unsafe environment? Are flammables being used near open flames? Clutter alone can make an environment unsafe! Keep in mind when addressing these types of sensitive situations to avoid inconsiderately making a scene. Instead, try to remind her about the right way to use the shared lab space. Calmly refer the labmate to your institution's safety procedures, which normally include sections on clean, clutter-free work habits. In keeping words simple and civilized, you can avoid creating a larger conflict. Pointing out all your labmate's faults at once with anger, or gossiping about the problem with others in the lab, could anger and offend your labmate, which won't solve anything. If the labmate does not change his habits, suggest splitting the bench down the middle. Whether or not you decide to try splitting the bench, it may help to label your own space or equipment more clearly to make the messy labmate take note before he moves your belongings.

In many cases, a messy labmate has not been properly trained on the protocols of the new lab. This is particularly true for a younger scientist who is tasked with coordinating research across different fields. Sometimes postdocs may think that they do not need to 'waste' time taking safety courses or mandatory instrument training courses. If this is the case, this is not only a messy labmate, but a potentially dangerous one. Avoid the possibility of broken instruments by talking to your labmate to make sure they understand how to use the equipment. As discussed earlier, many labs have students or lab managers in charge of keeping common equipment in working order, so putting your labmate in contact with that person can help avoid problems down the road.

Having a messy labmate can be annoying, but remember, if your labmate's mess does not impact you or others directly and does not create an unsafe situation, you should ignore it. Everyone has different standards, and while a labmate's messy bench may look unsightly to you, she does not see it in the same light.

Public Affairs

NIH Announces Funding Plans Under the Continuing Resolution

To keep the government operating without an approved FY 2013 budget appropriation, Congress passed and President *Barack Obama* approved a continuing resolution (CR) that keeps the government operating through March 27, 2013. The continuing resolution provides for government agencies to operate at approximately the same level they did in FY 2012. Since the ultimate funding level for 2013 is not known, and may be lower than 2012, the National Institutes of Health (NIH) is being conservative with it's funds. While operating under the CR, NIH will be issuing non-competing research grant awards at 90 percent of the previous committed level indicated on the most recent Notice of Award for a grant. This is consistent with what NIH has done under other recent CRs. Once a final budget is approved for 2013, the Institutes and Centers will review their portfolios and consider upward adjustments. Also under the CR, all legislative mandates that were in effect for FY 2012 remain in effect. This means the amount of direct salary that can be charged to grants is still limited to Executive Level II of the Federal Executive Pay scale.

If sequestration, the automatic cuts to all federal programs that are to take effect January 2, 2013, is not prevented, the cuts will be based on the funding levels in the CR and will lower the amount of funding available to NIH and other agencies immediately.

Report Issued on Oversight of Dual Use Life Sciences Research

A report released in October provides both the university and federal law enforcement perspectives on best practices in oversight of "dual use" life sciences research. Issued by the American Association for the Advancement of Science (AAAS), the Association of American Universities (AAU), the Association of Public and Land-grant Universities (APLU), and the Federal Bureau of Investigation (FBI), the report outlines challenges to oversight of dual use research and offers policy recommendations to help academic institutions and the government better ensure that materials or findings from biological research are not otherwise misused for terrorism or similarly harmful purposes. Most of the recommendations focus on improving education, communication, and community outreach.

The report, *"Bridging Science and Security for Biological Research: A Discussion about Dual Use Research Review and Oversight at Research Institutions,"* summarizes the second of what will be three meetings of these organizations on the topic of biosecurity. The report can be found at **http://cstsp.aaas.org/files/AAAS-APLU-AAU-FBI%20report%20Final.pdf**.

Sequestration: To Be or Not To Be?

Congress returned to work on November 13, 2012 to complete unfinished business, including an effort to prevent sequestration, the automatic budget cuts scheduled to take place on January 2, 2013 if Congress fails to come to an agreement on a deficit reduction plan prior that date. Visit the Biophysical Society's sequestration webpage for updated information on the status of the impending sequestration, its impact on science research and education, and how you can get involved. The website can be found at **http://www.biophysics.org/Policy/FederalBudget/Sequestration/tabid/4060/Default.aspx**.

Grants and Opportunities

Name: Structural Biology of Membrane Proteins (R01)

Objective: Develop research and methods to enhance the rate of membrane protein structure determination and to determine specific membrane protein structures. Projects that will lead in the near term to determining the structures of biologically important membrane proteins are also encouraged.

Submission Deadline: September 7, 2013

Website: http://www.grants.gov

Open Access: A Primer

Given current publishing trends, it is likely that in the next three-to-five years, most scientific journals, including *Biophysical Journal (BJ)*, will become completely open access (OA) upon publication. Open access is the practice of providing unrestricted access to scholarly articles. Various countries' governing bodies and funding institutions have different and shifting OA requirements for articles based on research they have funded. As trends change and more laws begin to dictate OA, scientific journals, including *BJ*, will continue to navigate these regulations while maintaining benefits to authors and readers alike.

There are various models of OA, but all of them have this in common: they shift the bearing of publishing costs from the end user (reader) to the creator (submitter/author). While open access might mean "free" to the general public, models providing OA show that it is not really free at all, but has simply shifted the cost to the author or author's funding agency or institution.

What Are the Agency Requirements?

The National Institutes of Health (NIH) requires that all reviewed and accepted NIH-funded research be published on PubMedCentral and made OA after 12 months. NIH does not recognize OA when provided from a publisher's website, and it does not provide any additional funds to the publisher or author for OA fees. *Biophysical Journal* has from the very start complied with

NIH requirements by providing final redacted copies of all accepted papers to PubMedCentral at the time of publication, and allowing OA after 12 months.

Research Councils UK (RCUK) will require, effective April 2013, that all UK-government funded research is made available through OA after six months. OA material may reside on the publisher's website. The UK government has also agreed to pay for publisher's OA fees, agreeing that publishers provide added value through peer review and editing.

Other funding institutions have also established OA rules for the research they fund, including the Howard Hughes Medical Institute (HHMI) and the Burroughs Wellcome Trust (BWT). These organizations require that research they have supported be available through OA after six months of publication. Like the UK government, these groups have agreed to pay OA fees.

Because so many groups have such varying requirements, be sure to research any requirements your funding agency or institution may have before submitting your paper.

What Does Open Access Cost?

Completely OA (at publication)journals are still in the comparative minority to closed or hybrid-model journals. Some examples of completely OA journals include *Cell Reports* and the *PLOS* journals. Hybrid examples include *Biophysical Journal*, *AIP Journals*, *Journal of Biological Chemistry*, and *Proceedings of the National Academy of Sciences*. Journals that do not offer OA at time of publication include *The Journal of General Physiology (JGP)*, *The Journal of Cell Biology (JCB)*, and *The Journal of Experimental Medicine (JEM)*.

Each journal has a slightly different pricing model for making articles immediately OA. *PLOS* journals, for example, charge authors a publication fee, making OA fully funded by authors or their funding agencies. Other journals, including *Biophysical Journal*, offer a 'hybrid' model, where the author has the choice of making the article immediately available through OA or not, while other articles remain available through subscriptions. The chart below outlines the models and OA fees of several journals, including *BJ*.

Biophysical Journal Publication Costs

Page Charges

Society Member: $65
Non-member: $95

Optional Open Access

$1,000 plus page charges

Open Access Business Models: Who Pays?

Open access at time of publication shifts the burden of paying for the product from the end user (subscriber, reader) to the start of the process (submitter, author). Below is a list of the different OA models with examples of journals and costs for each.

WHO PAYS	MODEL	EXAMPLES	COST
Charges are borne by accepted authors or their funding institutions	Complete OA	PLOS PLOS ONE Cell Reports	$2,200–2,900 $1350 $5,000
	Hybrid OA – OA depends on author's selection, with OA fees a combination of page charges and OA fee	BJ, JBC, PNAS	$1,000–$1,500 plus page charges
	Hybrid OA – OA depends on author's selection with OA having one set fee	AIP, PNAS, JBC, Cell Reports	$1,500–$5,000
Submitting authors or their funding institutions pay OA charges	Complete OA	F1000 Research	Free for 2012 will be $500–$1,000
No one pays directly for OA, but publication costs are borne by funding groups	HHMI, Burroughs Wellcome, and Max Planck will, for the time being, provide funds for the publication of all articles.	eLIFE	$0

57th Annual Meeting

Philadelphia, Pennsylvania | February 2–6, 2013

Calling All Bloggers!

Want to blog for BPS at the 2013 Annual Meeting? BPS is looking for 5–10 bloggers to share meeting tips, must-go-to events, the best local eateries, and more with the Society's blog readers (3,500+ during the Meeting). Check out some of the latest entries, as well as posts from the 2012 meeting at **biophysicalsociety.wordpress.com**. To learn more and submit your application, visit **www.surveymonkey.com/s/NRQW5MJ**. Deadline to apply is January 15.

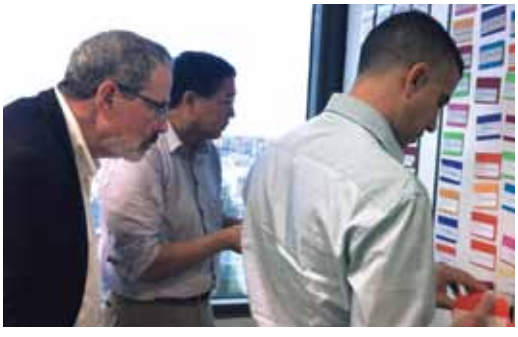
Over 3,500 Abstracts Programmed

Following the October 1 regular abstract deadline, members of the Program Committee and Council reviewed and sorted the 3,575 submitted abstracts, which were then programmed into 20 symposia, four workshops, 64 platforms, and 138 poster sessions. Over 700 posters will be presented each day of the meeting!

The Society is indebted to the efforts of the Program Committee, Council, and the many other Society members who participate in the planning, reviewing, sorting, and programming each year. Their work ensures that the final program reflects the breadth of research areas in biophysics with as few programming conflicts as possible given the volume and richness of the scientific program.

The 2013 Annual Meeting Program Committee members are *Jody Puglisi, Chair, Karen Fleming, Laura Finzi, Angela Gronenborn, Peter Hinterdorfer, Brian Kobilka, Tanja Kortemme, Sharona Gordon* and *William Zagotta*.

The Society members who assisted with the sort are *Michael Edidin*, *Katia Kontrogianni*, *Robert Nakamoto*, *Ana-Maria Soto*, *Gil Wier* and *Jin Zhang*.



Society members Michael Edidin, Robert Nakamoto, and Jody Puglisi work on programming scientific sessions for the 2013 Annual Meeting.

Satellite Meeting

Drug Discovery for Ion Channels XIII

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

Friday, February 1, 2013; 9:00 AM–5:00 PM

Pre-registration deadline: Friday, January 4, 2013

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

For more information and to register, please visit **www.biophsics.org/2013meeting**. Click on Program, Satellite Meetings.

For more details about Annual Meeting events go to www.biophysics.org/2013meeting.

Education Sessions

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

Biophysics 101: Atomic Force Microscopy

Monday, February 4, 1:30 PM–3:00 PM

Atomic force microscopy (AFM) has emerged as a biophysical technique capable of taking measurements on unstained and unfixed biological molecules and assemblies under fluid. This year's "Biophysics 101" session, sponsored by the Education Committee, will feature two lectures on the fundamentals of this technique, describing AFM and different applications. *Dennis Discher,* University of Pennsylvania, who was recently elected to the National Academy of Engineering; and *Manish Butte*, Stanford University; will speak.

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

Sunday, February 3, 2:00 PM–3:30 PM

Do you teach undergraduates? Are you looking for a way to incorporate biophysics research into your course curriculum? Join the Education Committee for this popular workshop, where speakers will give participants specific examples of how to better integrate teaching and research into an undergraduate curriculum. Both speakers have been successful in securing both research and education grants, and will provide models and examples of how faculty can be successful and effective in both. Information about funding and grants to develop these research-based undergraduate courses will also be provided. Speakers include *Karen Fleming*, Johns Hopkins University and *Gina MacDonald*, James Madison University.

Funding Opportunities for Faculty at Predominantly Undergraduate Institutions

Tuesday, February 5, 12:30 PM–2:00 PM

Do you run an undergraduate research laboratory at a PUI but struggle to find funding? This Education Committee-sponsored session will feature a panel of speakers who will address the challenges PUI faculty face when looking for funding sources. Panelists will discuss different funding sources to help PUI faculty establish or maintain an active and productive undergraduate research laboratory. Speakers include *Gina MacDonald*, James Madison University; *Scott Brewer*, Franklin & Marshall College; and *Myriam Cotton*, Hamilton College.

Biomolecular Discovery Dome

Sunday, February 3–Tuesday, February 5, 10:00 PM–5:00 PM
Wednesday, February 6, 9:00 AM–1:00 PM

Watch cells and viruses come to life in an audio-visu-immersion experience! The 3-D Biomolecular Discovery Dome will feature films that will take you inside the exciting world of cells, all while showing how difficult biophysical topics can be made accessible to a high school audience. The Biomolecular Discovery Dome will be open to Meeting attendees daily from Sunday through Wednesday. This portable dome is being sponsored by the Public Affairs Committee for the second consecutive year.

(continued on page 10)

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BPS thanks 2013 Annual Meeting sponsors:

Asylum Research
Bruker Corporation
Bruker BioSpin Corporation
Burroughs Wellcome Fund
ForteBio – A Division of Pall Life Sciences
Molecular Devices
Nanion Technologies
Photometrics
Photon Technology International
Sutter Instruments

Biophysics Wiki-Edit Contest Meet-up

Tuesday, February 5, 2:15 PM–3:30 PM

Share what you know about biophysics with the public! How, you ask? By becoming a Wikipedia contributor. The Society will be launching a wiki-editing contest at the Annual Meeting to encourage members to become editors, and will host a demonstration and discussion for contest entrants and anyone curious about wiki editing. Learn about the contest, as well as the easy techniques and the few basic principles for becoming a science wikipedian. Register your username, do an edit, and get a WikiProject Biophysics button to wear! This event is sponsored by the Early Careers Committee and hosted by host *Jane Richardson*, Duke University, and Society President. Check the website for more information about the contest.

Late Abstracts

Deadline: January 3, 2013

Late abstracts for the 2013 BPS Annual Meeting in Philadelphia are now being accepted. Although late abstracts will not be published, they will be posted online in a searchable format through the online itinerary planner, available in late January at **www.biophysics.org**.

NEW **Late submissions will be programmed throughout the meeting Sunday–Wednesday.**

Poster Printing

Looking for an easy way to have your poster printed and delivered directly to the Pennsylvania Convention Center for onsite pick-up?

BPS is working with Tray Printing to simplify poster printing. Visit **biophysics.org/2013 meeting** and click on Abstracts, Poster Guidlines for more information.

Exhibitor Presentations

Exhibitor Presentations will be held throughout the week at the Annual Meeting by companies who have exciting products, tools, or technologies to showcase. All attendees are welcome to check out these presentations. Visit the BPS website for session descriptions.

Sunday, February 3, 2013

11:00 AM–12:30 PM Bruker Corporation

1:00 PM–2:30 PM ForteBio–A Division of Pall Life Sciences

3:00 PM–4:30 PM Kintek Corporation

5:00 PM–6:30 PM: Asylum Research

7:00 PM–8:30 PM: HEKA Electronics, Inc.

Monday, February 4, 2013

9:00 AM–10:30 AM: Wyatt Technology Corporation

11:00 AM–12:30 PM: Nanion Technologies

1:00 PM–2:30 PM: Nanonics Imaging

3:00 PM–4:30 PM: Bruker BioSpin Corporation, EPR Division

5:00 PM–6:30 PM: Molecular Devices

Tuesday, February 5, 2013

9:00 AM–10:30 AM: World Precision Instruments, Inc.

11:00 AM–12:30 PM: Nanion Technologies

This list is up-to-date as of 10/31/12.

Subgroups

Membrane Structure and Assembly

Membrane Structure Perturbation and Disassembly

This is the working title of the upcoming symposium of the Membrane Structure and Assembly Subgroup in Philadelphia, during the 2013 Annual Meeting. A better understanding of these phenomena is of major importance for a broad range of fields, all the way from antimicrobial peptides and membrane-active drugs to the solubilisation of membrane proteins by detergents.

Tom Thompson has been invited to present the first Thomas E. Thompson Award to *Bill Wimley*, Tulane University. The award is sponsored by Avanti Polar Lipids. After Bill's award lecture, *Alan Grossfield*, Rochester University and *Ole Mouritsen*, Odense University, Denmark, will speak about aspects of membrane structure perturbation. After the break, *Erwin London*, Stony Brook University; *Sandro Keller*, University of Kaiserslautern, Germany; and *Klaus Gawrisch*, NIH, will address topics related to the solubilisation and reconstitution of membrane components.

See you in Philadelphia!

—*Heiko Heerklotz*, Chair, MSA Subgroup

IDP

Postdoctoral Research Award

Postdoctoral researchers working on intrinsically disordered proteins may compete for one of two Postdoctoral Research Awards which will include an honorarium and an opportunity to present a short talk at the 2013 IDP Subgroup Symposium. Send your submitted abstract (regular or late) and its BPS abstract control number, via email to IDPsymposium2013@gmail.com. To be eligible you must be a postdoctoral researcher at the time of abstract submission and have your advisor confirm this via email to IDPsymposium2013@gmail.com. The deadline to apply is December 14!

Functional Mechanisms of IDPs

We continue our series of contributions covering broad aspects of the IDP field with a brief overview of functional mechanisms for which IDPs have evolved. Since the very first reports of functional IDPs, the ability of portions of these proteins to fold upon binding to their interaction partners has been evident. This feature is observed in all the realms of life, from proteins involved in the assembly of bacterial flagella to cell cycle regulators and transcription factors in eukaryotes. Coupled binding and folding allows certain IDPs to bind diverse partners by assuming different conformations, and permits high binding specificity without high affinity. Both features are consistent with the role of IDPs as hub proteins in signaling pathways.

Intriguingly, many other functions of IDPs do not require folding. Some IDPs may bind their partners in a 'fuzzy' fashion, exhibiting multiple interaction regions that rapidly exchange for binding to a single site on their partners. Recently, disordered segments have been shown to modulate solution-gel phase transitions of protein assemblies implicated in cell signaling events. While disordered proteins are more common within higher organisms, every form of life takes advantage of the unique functional characteristics bestowed by the lack of tertiary structure. Disorder regions are key regulators of the assembly-disassembly of viral particles; they are responsible for the amazing mechanical properties of spider silk and play the role of gatekeepers in the nuclear pore complex of eukaryotes. Even at this early stage, it is evident that intrinsic disorder is crucial to the performance of diverse and fascinating biological functions.

—*Ariele Viacava Follis*, Postdoc Representative, IDP Subgroup

Obituary

Robert M. Clegg (1945–2012)

Robert MacDonald Clegg passed away October 15, 2012, at Carle Hospital in Urbana, Illinois, from complications arising from cancer. He died surrounded by his family, and he was never in pain. He is survived by his sister *Victoria L. Clegg*, his wife of 43 years, *Margitta Clegg*, and their three sons *Benjamin F.*, *Niels T.*, and *Robert A. Clegg*. Bob was a leading expert in applying fluorescence spectroscopy to biological problems, fluorescence lifetime microscopy (FLIM), and Förster Resonance Energy Transfer (FRET) microscopy.

Bob was born on July 18, 1945, in Providence, Rhode Island. He received his doctorate in physical chemistry in 1974 from Cornell University. Professor *E. L. Elson* supervised his dissertation entitled "*Relaxation Kinetics Applying Repetitive Pressure Perturbations*." Following graduation, Bob worked as a postdoctoral research associate in the Max Planck Institute for Biophysical Chemistry in Göttingen, Germany. He was promoted to senior staff research associate in the Department of Molecular Biology where he developed state-of-the-art instruments to investigate the structure of nucleic acids, and to apply photo-physical approaches for clinical applications. Bob accepted a position as Professor of Physics and Bioengineering at the University of Illinois at Urbana-Champaign in 1998, where he remained for the rest of his career. Bob was an avid student of the history of science with a special interest in FRET. His colleagues considered him "a walking library of FLIM and FRET." Bob was also a dedicated and beloved teacher, always searching for simple ways to convey complex biophysical ideas to his students. He was extremely generous with his time and intellect to the ultimate benefit of his students and colleagues.

In lieu of gifts, the family requests memorial donations be made to the American Cancer Society, **www.cancer.org**. Condolences may be offered at **www.renner-wikoffchapel.com.**

—Prepared by *Steven Vogel*

Guoliang Yang Memorial Minisymposium

Guoliang Yang, Associate Professor of Physics at Drexel University, and Society Member passed away last summer.

Colleagues are organizing a minisymposium in Yang's memory that is scheduled for the afternoon of Friday, February 1 at Drexel University (a day before the Annual Biophysical Society Meeting, also in Philadelphia). Speakers include Guoliang's postdoctoral advisor *Carlos Bustamante* and others. For more information about the event visit **http://drexel.edu/physics/news/events/Yang/**. To view Yang's obituary visit **http://www.drexel.edu/physics/news/archive/20110816/**.

Postdoc Spotlight

Benjamin (Ben) L. Prosser
University of Maryland School of Medicine, Dept. of Physiology
Lederer Lab, Center for Biomedical Engineering and Technology

Q: What field is your PhD in?

I received my PhD in molecular medicine in 2009 in the lab of *Martin Schneider*. My project combined ultra-high speed (μs) confocal microscopy, patch-clamp electrophysiology, and whole muscle mechanical measurements to study the effect of two small Ca^{2+} binding proteins, calmodulin and S100A1, on muscle EC coupling and force generation.

Q: What initially attracted you to the field?

As a bit of a health and fitness nut, I've always been drawn to biomechanics and human performance, so muscle research seemed like the way to go. When I met Schneider, the head of a long-standing training program in muscle biology at Maryland, I knew it would be a good fit. My work moved to a smaller scale than I originally anticipated, but I was quickly hooked on the intricacies of electrophysiology.

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

While I've certainly developed technical skills in imaging, mechanics, and cell biology, I think the intangibles I've absorbed are more valuable. *Jonathan Lederer* is an extremely innovative scientist, with no limit of creative and often DIY solutions to whatever challenges arise. This forward thinking, high energy, never-say-die attitude is contagious and drives scientific breakthroughs, so I hope I've absorbed my fair share.

Q: What is your current research project?

When I began in the lab, I was tasked with developing new methods to study single cell mechanics in heart and skeletal muscle. My colleagues and I developed a biological "glue" to attach cells to mechanical apparatus. We combined this with imaging and electrophysiology to look at the effect of cell stretch on intracellular signaling pathways. We identified that stretching a heart cell, as occurs during diastolic filling, triggers a burst of reactive oxygen species (ROS) that regulate calcium signaling. I now study how this mechano-transduction pathway, termed X-ROS signaling, regulates physiologic function in healthy hearts, but contributes to arrhythmia and pathologic signaling in disease.

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

Tenure-track assistant professor at a premier research institute of course! With loads of funding, great people, fruitful collaborations and high profile, impactful findings. Shoot for the moon, right?

Q: Why did you join the Biophysical Society?

The Annual Meeting was in my hometown of Baltimore my first year of graduate school. I joined the Society, haven't missed a meeting since, and it's always one of the most impactful conferences I attend each year.

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

Ah, that one is easy. I would likely pursue some nutritional certification and run a facility (CrossFit style) that provides fitness programs as well as nutritional advice based on the latest research. I'm still a scientist at heart, after all.

W. Jonathan Lederer, Prosser's PI says:

Ben is one of those postdocs whose intellectual gifts and experimental creativity is only surpassed by his enthusiasm and personal integrity. He is a delight to have in the lab. The project that Ben works on had the potential to be a bust. But Ben made it work, creating MioTAK in the process that we have patented. That was in his first year as a postdoc! His potential is unlimited. His whole attitude is infectious. He helps everyone in the lab work smarter.

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.

Society Donors

The Society gratefully acknowledges the 2012 members who made donations to Society programs. Donations allow for the growth each year in student and international travel awards, public affairs involvement, Society Awards, and other outreach activities that could not otherwise be undertaken. The names of the Society donors are listed below.

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February 2–6, 2013

Biophysical Society's
57th Annual Meeting
Philadelphia, Pennsylvania
http://www.biophysics.org/2013meeting

February 10–15, 2013

Fibronectin, Integrins
and Related Molecules
Ventura, California
http://www.grc.org/programs.aspx?year=2013&program=fibronec

March

March 7–10, 2013

Physical Biology of Cancer
Candiolo, Italy
http://events.embo.org/13-cancer/programme.html

March 16–21, 2013

Bacterial Networks (BacNet13)
Pultusk, Poland
http://www.esf.org/index.php?id=9575

April

April 3–13, 2013

EMBO Practical Course in
Advanced Optical Microscopy
Plymouth, United Kingdom
http://www.mba.ac.uk/embo-course/

April 13–17, 2013

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

May

May 5–7, 2013

Mitochondria: from
Signaling to Disease
Lisbon, Portugal
http://www.cell-symposia-mitochondria.com/index.html

May 25–26, 2013

Chromosome Dynamics
Lucca (Barga), Italy
http://grc.org/programs.aspx?year=2013&program=grs_chrom

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