

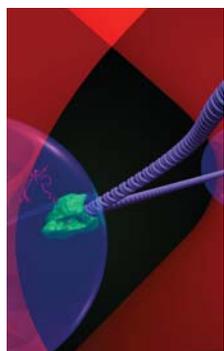
Biophysical Society NEWSLETTER

July 2011

Society Elections

Deadline

August 1, 2011



Call For Papers

Look for the Annual Meeting Call for Papers this month in your mailbox.

56th Annual Meeting

February 25–29, 2012
San Diego, California

Steven Block, 2012 National Lecturer

Steven M. Block, Stanford W. Ascherman Professor of the Sciences, Department of Biology and Department of Applied Physics, and Senior Fellow, Spogli Institute for International Studies, Stanford University, will give the National Lecture at the Biophysical Society 56th Annual Meeting, which will take place in San Diego, California, February 25–29, 2012. He will present the National Lecture, *Shedding Light on Single Molecules*, on Monday, February 27.



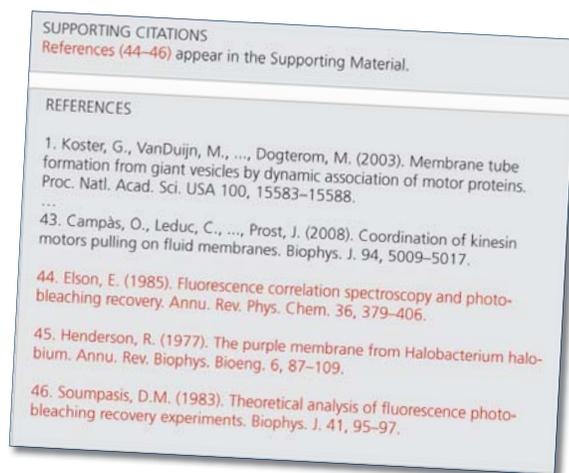
Steven M. Block

Biophysical Journal

A New Approach to Supporting References

As part of the continuous review of *Biophysical Journal* policies and practices, the Publications Committee discovered that literature references cited only in the online supporting material of an article are not properly cataloged in the Science Citation of Google Scholar indices. That is, references listed in the supporting

(Continued on page 6.)



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Biophysical Society



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Biophysicist in Profile

LISE THOMAS

The best part of the job for Lise Thomas, Associate Professor of Biology at Quinnipiac University in Hamden, Connecticut, is “seeing students succeed,” she says. “I like victories in all sizes, from little ones in lab like getting a ligation to work, or academic breakthroughs like understanding how a particular neural circuit works, to life-changing ones like acceptance to graduate, medical, or dental school.”

Fortunately for Thomas, her faculty position at a primarily undergraduate institution offers views of many such wins. “My primary responsibility is teaching, and I have taught at all levels, freshmen through graduate students,” she says. At least two students occupy her research lab at any given time, with as many as five researching there in the summer months. But a full teaching schedule and a full lab is just how Thomas likes it, provided she can find the balance between teaching and lab time. “This is a constant struggle,” she says. “The best solution I’ve found so far is to make sure there are students in the lab at all times. There’s nothing that can get me into a lab faster than a student who needs help.”

Thomas loved science from the get-go. Her dad, a professor at Carleton College in Northfield, Minnesota, let his daughter play in his lab, “freezing things in liquid nitrogen for our enjoyment,” she says. By the time she hit middle school, Thomas thought she knew what she wanted to be

“There’s nothing that can get me into a lab faster than a student who needs help.”

—LISE THOMAS

when she grew up. “I was completely hooked on biology from seventh grade science class when I first looked through a microscope at cheek cells and onion cells,” she recalls. “I

spent most of high school and college certain I wanted to be a botanist.” However, before she could take the class, the professor who taught plant physiology at Swarthmore College, where Thomas was an undergraduate, went on sabbatical. Forced to find a substitute course that semester, she opted for a neurobiology course taught by *Jon Copeland*. “We spent many hours recording electrical activity from cockroaches,” she says. “I still distinctly remember the minute when I first really understood the molecular details of an action potential.” This moment showed her the glories of ion channel proteins, and permanently altered her career path.

After earning her MS in Pharmacology at the University of Colorado Health Sciences Center, Thomas went on to pursue a PhD at Harvard University as *Rod MacKinnon’s* first graduate student. At the time, MacKinnon was one of several ion channel researchers at the university, the abundance of which Thomas says attracted her to Harvard’s program. “My thesis work used molecular biology and electrophysiology to understand functional properties of K⁺ channels,” she says. She continued working with ion channels throughout her postdoc in *Chris Miller’s* lab at Brandeis University, “using biochemical approaches and functional reconstitution,”

she says. Today, her work involves a couple of Ca^{2+} transport proteins in the yeast vacuole: a Trp ion channel and a $\text{Ca}^{2+}/\text{H}^+$ exchanger. “We are using a combination of genetic, biochemical, and functional approaches to understand their function and regulation,” she says. Mainly, though, Thomas is teaching.

Landing herself a teaching-focused gig was no accident. After completing her postdoc with Miller, Thomas initially joined the faculty at Yale University, where she spent most of her time doing research. The experience was eye-opening. “I realized fairly rapidly that my passion was teaching and mentoring,” she says. She’s been at Quinnipiac ever since, and finds plenty to sink her teeth into. “It’s a continuing challenge—learning how to be an effective teacher,” she says. It’s a challenge she feels prepared to meet, thanks in large part to her support system, comprised of former advisors and coworkers and current colleagues. “In developing my teaching I’ve benefited from having a huge network of mentors,” she says. “My colleagues at Quinnipiac are receptive and enthusiastic about sharing their experience and knowledge about novel teaching approaches.”

Thomas’ students recognize her efforts. “She takes the time to explain everything from different teaching angles in order for her students to thoroughly grasp the information,” says *Brittani Strayhorn*, a former student. “In doing this, she makes difficult subject matter approachable for a wide range of academic levels.” *Jason Landino*, another former student, points out an additional way that Thomas connects with the students. “She treats all of her students as if they were colleagues, and always encourages professor-student collaboration,” he says. According to Landino, Thomas fosters a bond with her students that encourages give and take and builds trust. “She is not afraid to open up to students, to share her expertise and life experiences, or to engage students with caring social interactions,” he says. “By forming such ‘partnerships’ with her students, Thomas instills within them a sense of value, respect, and trust that in turn nurtures the learning environment.”

Thomas treats her colleagues with the same respect, warmth, and consideration. *Merritt Maduke*, now Associate Professor of Molecular & Cellular Physiology at Stanford University, was a postdoc

alongside Thomas in Miller’s lab at Brandeis. “Lise came into the lab with a lot of experience in ion-channel biophysics, while I was completely new to the field,” says

Maduke. “She was extremely generous and patient in teaching me electrophysiology and molecular biology, and in taking time to introduce me to others at the Biophysical Society Annual Meeting.”

Indeed, the Biophysical Society Annual Meeting holds recurring value for Thomas. “I have attended nearly every year since I was a graduate student,” she says. “They provide me with opportunity to catch up on scientific progress, and with old friends.” She emphasizes the role the meetings have played as she progressed through different phases of her career, especially in the transitional periods. For her, the Annual Meeting “provides the opportunity to meet others who have made similar transitions and who can give unique insight and advice,” she says.

If you can’t find Thomas at the Annual Meeting, in the classroom, or in the lab, check her basement. Thomas, a carpenter, keeps a number of power tools down there, from among which she picks and chooses to work on her cabinetry projects. “My current favorite is a router,” she says. Thomas also spends free time with her husband, *Ben Turk*, who is a scientist and faculty member at Yale University, and their three-year-old daughter, Cora.

“Lise is a Renaissance woman,” says Maduke. “In addition to being a great scientist and teacher, she is athletic—she played on the boys’ soccer team in high school—she knits, makes her own soap, refinishes furniture, and I would bet she could do anything she set her mind to.” Among these interests, Thomas is also invested in “issues surrounding undergraduate education, particularly increasing access to research for students who have never considered research as a future career,” she says. “I’m currently exploring ways to incorporate freshmen in ongoing research projects.” A recent recruit to the Biophysical Society’s Education Committee, Thomas plans to continue her search in more depth. Odds are she’ll succeed.



Lise Thomas with husband Ben Turk and daughter Cora.

The Biophysical Society

A Short History

The Biophysical Society was founded in the 1950s to encourage the development and dissemination of knowledge in biophysics through many activities including meetings, publications, community outreach, and career placement. The Society members, of which there are currently over 9,000, work in academia, industry, and government agencies worldwide. Membership is open to scientists who have educational, research, or practical experience in biophysics or an allied scientific field (excerpted from the official Society webpage, www.biophysics.org/AboutUs).

Origins: Restive biophysicists form new society led by an esteemed “Group of Four”

The field of biophysics grew immensely during WWII and the increased availability of increasingly quantitative tools such as sophisticated electronic instruments and radioisotopes for basic science and medical studies stimulated increased progress. The continued growth of the parent scientific group, the American Physiological Society (APS), founded in 1887, (1; 3—see “For Further Reading,” page 5) and concomitantly the size of its scientific meetings led to the idea that perhaps the biophysicists would be better served by having a society of their own, perhaps one more allied with physics? (1). In addition, other groups within APS were also becoming restive, including the physiological chemists, neuroscientists, immunologists, and others (1).

To address this issue, several prominent biophysicists in the country began corresponding with one another to gauge each other’s interest in a possible society of their own, ultimately with its own meetings and its own journal. Meet-

ings were held to discuss these issues in Boston at Tufts College in September, 1955, at the Hartford House at Yale, also in 1955, and at the American Institute of Physics meeting in New York in 1956. At this meeting, an initial steering committee was appointed, and this culminated at a Federation meeting in Atlantic City in 1956. At this meeting, a vote was cast to have a national biophysics meeting and a Group of Four was appointed to get things going and make the first biophysics meeting a reality. This committee consisted of *Ernest C. Pollard*, Yale University; *Samuel A. Talbot*, Johns Hopkins University; *Otto Schmitt*, University of Minnesota; and *Kenneth S. Cole*, NNRI, NIH (1-3).

While the APS tried their best to avoid the inevitable splintering of their society into different interest groups (see President’s News Letter of 1955 from *William Hamilton*, APS president), with much correspondence going to and fro and with the promise offered that perhaps the interests of the various APS subgroups could be well accommodated if the APS formed different subgroups (eventually implemented, but not until the 1970s), progress in forming an independent biophysics society continued unabated. Besides the Group of Four, other distinguished American biophysicists contributed much time and energy to this effort, including *W. A. Selle*, University of California, Los Angeles; *Max Lauffer*, University of Pittsburgh; *Ralph Stacy*, *Herman Schwann* Penn State University, and others (1-3).

Columbus, 1957: The first biophysics meeting

The early efforts of these individuals culminated in the “First National Biophysics Conference”, held in Columbus, Ohio on March 4–6, 1957. The meeting was organized by the Group of Four, and of these four, three were still members of the APS at the time. At the beginning of the meeting, which had an attendance of about 500, Cole of the Committee of Four made the following remarks concerning the early steps taken to help form the still nascent biophysical society:

“Last Spring, after considerable rumbling, some minor explosions, and not a little bickering, a Committee of Four was designated to organize a biophysics meeting with the ulterior motive of finding out if there was such a thing as biophysics and, if so, what sort of thing this biophysics might be” (2).

Besides talks and scientific presentations, a business meeting was held at the first meeting, presided over by Lauffer, and the decision was made at that time to formally organize the Biophysical Society and elect a Temporary Council to run it. Later, *Robley Williams* was elected first President and the Constitution and the Bylaws of the Biophysical Society were adopted. At the second Annual Meeting, held in Cambridge, Massachusetts, the Constitution and the Bylaws of the Biophysical Society were officially ratified. An interesting note is that Williams was originally trained as an astronomer but later became interested in the study of viruses (1–3)!

The establishment of the Biophysical Journal

Two years after the National Biophysical Conference, the *Biophysical Journal (BJ)* was established as the official publication of the new Biophysical Society. The formation of *BJ* was viewed as an indispensable need by the biophysicists of the time and was part of the reason for being of the Society. It was felt that the *BJ* would allow biophysicists to have a specialized journal devoted to their own interests in the application of physics to biomedical problems, as extant journals were viewed as being not entirely sympathetic to papers authored by biophysicists (1, 4). Having their own journal and a society that was both smaller and more focused, would be advantageous in many ways and stimulatory to the field as it moved forward.

Parenthetically, it is interesting to note that within several years, the *Journal of Neurophysiology* was established by the APS, and later, the Society for Neuroscience (SFN) broke away from APS and founded its own journal as well, the *Journal of Neuroscience* (1).

Growth of the Society and the Journal over the last 54 years

The Biophysical Society has continued to grow and prosper and its Annual Meeting is attended by over 6,000 scientists working in biophysics, the biggest meeting of its kind in the world. More than 4,000 poster presentations are offered, more than 20 symposia, and over 200 exhibits per meeting. However, despite this growth, compared to meetings of Experimental Biology (12,000) or the Society for Neuroscience (32,000), the Biophysical Society meeting is relatively small and much more intimate (6,700 at 2010 Annual Meeting). The Society also holds smaller and more focused meetings of a thematic nature each year.

The *Biophysical Journal* is published twice monthly and is widely acknowledged to be the outstanding, cutting edge journal in biophysics today (4). With the growth and rapid development of molecular biology, *BJ* has expanded to include contributions on the application of biophysics to gene and protein structure, gene regulation, advanced optical imaging, and many other cutting-edge areas of biophysics. Certainly the early dreams of the pioneers who organized the Society and worked hard to see it take shape have been amply realized!

Acknowledgements

I would like to thank *Henry Lester* and *Ro Kampman* for their encouragement, and *Lindsey Loeper*, Special Collections Archivist of the Albin O. Kuhn Library of the University of Maryland, Baltimore County, for supplying me with copies of original materials from the Biophysical Society Archives of the University of Maryland. *Arthur Sherman*, *Dave Piston* and *R. Williams, Jr.*, kindly provided comments on an earlier version.

— *L. S. Satin*,
Publications Committee Member

For Further Reading

1. History of the American Physiological Society: The First Century, 1887-1987. J. Brobeck, O. Reynolds and T. Appel (eds.). APS, Baltimore. 1987.
2. Proceedings of the First National Biophysical Conference. H. Quastler and H. Morowitz (eds.). Yale University Press, New Haven. 1959.
3. Lauffer MA. History of the Biophysical Society. UMBC Archives.
4. Oncley JL. 1990. Remarks on the origins of the Biophysical Journal. *Biophys. J.* 58: 1335-1340.

(Biophysical Journal *continued from page 1.*)

material do not count towards journal impact factors or individual authors' citation records, such as the h-index. These legitimate literature citations are only in the supplement because of space constraints, but they are equally important as any other references. The supporting material typically contains most if not all of the methodological references, which are often of significant interest to biophysicists. In fact, we find that many of the citations in the supporting material are to *Biophysical Journal* articles or other articles authored by Biophysical Society members. While it is unclear how the supporting material references became second-class citizens in the first place, the Publications Committee felt that we needed to bring them to status equal with those in the main text. Regardless of the limitations of quantitative publishing measures, metrics such as impact factor and h-index continue to receive emphasis in the evaluation of scientific achievement. It is thus imperative that we provide fully accurate accounting of literature citations to inform such metrics.

At the Annual Meeting in 2010, the Committee charged the *Journal's* production team at Cell Press to investigate the necessary formatting changes and to develop a technically feasible plan to implement these changes. The new plan was presented to the Publications Committee and Editorial leadership at the meeting this year, and we are happy to report that new procedures will be in place starting July 2011 that will give proper credit to all of the cited literature. As described below, the solution is to include the extra supporting references at the end of the main-text reference list, as well as to include their citations in the statement describing the supporting material. This change will place minimal extra burden on our authors,

but will result in proper credit to all of the authors and journals of the cited references.

Implementation

Beginning July 1, all submitted manuscripts should (a) include all supporting references within the main-text reference list and (b) cite the supporting references in a short blurb in the main text. These steps will ensure that all supporting references are included and cited within the main manuscript, which will allow them to be included in citation counts, as discussed above. The approach is briefly outlined below, but please visit the newly updated online instructions, accessible through the Biophysical Journal homepage, www.biophysj.org, for details.

Including supporting references in the main-text reference list

- Supporting references should now appear at the end of the main-text reference list, numbered accordingly. For example, if there are 43 main-text references and three supporting references, the supporting references would appear at the end of the list as references 44–46.

Citing supporting references in the main text

- Supporting references should now be cited within a short section entitled Supporting Citations.

This section should appear directly after the main text (i.e., before the reference list) and should be worded as follows: “References (XX–XX) appear in the Supporting Material.”

—*Dave Piston*, Publications Committee Chair

Summer Course Kicks off 4th Year in Chapel Hill

Eleven students from various academic and cultural backgrounds have gathered at the University of North Carolina at Chapel Hill (UNC) with a common goal: to spend the summer immersed in biophysics.

As the fourth class of students to attend the NIGMS-funded *Biophysical Society Summer Course: Case Studies in the Physics of Life*, these students will spend 11 weeks this summer in lectures, seminars, and, most importantly, in the lab with hand-picked mentors, elbow-deep in biophysics-related research projects of their choice. Three TAs, *Tim Jacobs*, *Gregg Rice*, and *Matt Smola*, all first-year graduate students at UNC, are helping out by hosting recitation sessions and giving quizzes. Course Director *Barry Lentz* and Assistant Director *Mike Jarstfer* have lined up visiting speakers to supplement the core UNC faculty lectures and give students the opportunity to investigate biophysics programs at other institutions. The full Course schedule also includes professional development classes on topics such as writing a personal statement, presenting an abstract, and research collaboration ethics. Field trips to the beach, a minor league baseball game, and Duke University are on the summer's agenda, too.



Jazmyne Hefflefinger
Movement Science: Pre-Health
Professional Major



Vontriska Jones
Winston-Salem State University
Biology Major, Chemistry Minor



Jasmine Martich
University of Bridgeport
Mathematics Major,
Biology & Chemistry Minor



Chukwunweike George Nwangwu
Towson University
Chemistry Major



Alexius Otto
Hunter College
Mathematics Major, German Minor



Joshua Cochran
University of Montana
Biochemistry Major, Physics Minor



Mahmoud Shobair
University of Florida
Physics Major



Gladys Díaz Vázquez
University of Puerto Rico, Rio Piedras
Biology Major, Physics Minor



Ilyssa Summer
Arizona State University
Mathematics Major
(PhD candidate)



Alba Katiria González Rivera
University of Puerto Rico, Arecibo
Microbiology Technology Major



Rauta Aver Yakubu
University of Missouri
Biochemistry Major, Sociology Minor

Ask Professor Sarah Bellum



After a much-needed sabbatical, Professor Sarah Bellum has returned to answer your questions on navigating the often-uncharted waters of early career development. Professor Bellum is communicated by Patricia L. Clark, founder of the Early Careers Committee and a member of Council. Do you have a question for Professor Bellum? Send it to sarah_bellum@biophysics.org. Your privacy is assured!

Too Many Distractions!

Q: I am a fifth-year graduate student, in the midst of finishing up the experimental work for my dissertation. I know what I need to do to finish; I just need time to do it. My advisor insists that I also attend one or two seminars a week, in addition to our weekly two-hour lab meeting! I am happy to go to seminar if the topic is relevant to my thesis project, but most of these seminars are not. How can I be expected to get my work done with all these time-wasting meetings and seminars?

Q: I have a fifth-year graduate student in my lab, in the midst of finishing up his experimental work. Lately he has been skipping our weekly departmental seminars and journal clubs, and once he even missed our weekly lab meeting. When I questioned him about this, he complained that he needed the time for his experiments. How can I help him see that seminars and lab meetings are an important part of his development as a scientist?

A: The end of graduate school can be magical in terms of experimental progress. You have survived the pitch-black period in the middle of the tunnel that is graduate school, when all experiments seem doomed to fail, hypotheses fall apart, and whole chapters of your thesis seem to go “Poof!” overnight. But you can see glimmers of light at

the end of the tunnel now, and you have every right to revel in the accompanying increase in productivity as you work out the last kinks in your experimental system. Indeed, it is becoming clear that, barring some unforeseen catastrophe, you are on track to graduate with a PhD.

However, scheduling your thesis defense date is limited by how fast you can finish your experiments, and that is limited by unglamorous realities such as how long it takes to grow cells, collect data, run simulations, construct figures, etc. You cannot work 24 hours a day, but you could get at least one more experiment started today if you skip the first 30 minutes of lab meeting.

Don't do it. Let me repeat that: Do not skip lab meeting—not even the first few minutes—so that you can set up an experiment. Your advisor will not regard this as your reasonable effort to complete your thesis project in a timely fashion. Instead, he/she will conclude that you are unable to manage your time and responsibilities appropriately. Showing up late to lab meeting or skipping it altogether demonstrates a lack of respect for your advisor's time and that of your fellow lab mates. What makes you and your experiments so special that everyone should wait for your tardy arrival, or exempt you from participating in the first part of the meeting?

Even in labs of modest size, lab meetings are valuable for everyone in the lab. It might be the only opportunity for all lab members to gather together to discuss lab-wide organizational issues like ordering, equipment problems, and planning for upcoming events. It is also a chance for younger grad students to observe senior students such as yourself, and model their own behavior accordingly. I guarantee you that your advisor does not want any student forming the impression that it is acceptable to skip lab meeting.

At any stage in your scientific career, seminars and journal clubs provide a valuable opportunity to share ideas with your colleagues and learn what is or is not cutting-edge for a given field. The introduction to a field that you listen to at a seminar can make it easier to read research articles

in that field, and can be faster even than reading a review article. Listening to a well-presented talk can help you critique your own work, challenge your assumptions about your experimental system, and design better control experiments.

But aren't you justified in skipping those seminars that are unrelated to your research area? Well, while it might seem that your path to graduation is paved exclusively by finishing up your experiments/manuscripts/thesis, you are still a student who is learning how to become an independent scientist. Clearly, your experiments are under control, so where should you now focus your learning? Students close to completing their PhD research should make a concentrated effort to polish their public speaking skills. You have some big talks coming up, including your dissertation defense and job talks. Regardless of whether you pursue a postdoc or something else, you will undoubtedly be called upon to make formal and/or informal presentations on your graduate research project as you prepare to take the next step in your career trajectory.

Besides giving as many presentations of your own as you can, the easiest way to learn how to be a good public speaker is to listen to others' presentations. As you listen to the science, notice how the speaker puts the talk together. Do you find your attention wandering during the talk? Try to pinpoint why. Did the speaker start off with so little introduction to her field, that you, an outsider, were lost after the first slide? Did the speaker rush so fast through a stack of data slides that he neglected to mention what question these experiments were designed to answer? Is the color scheme so low-contrast that you can't see half the data? Sitting through a poor talk provides you with an excellent opportunity

to analyze the mechanics of it, specifically what is or is not working to capture audience attention. Excellent talks, on the other hand, are carefully constructed to shepherd you through a scientific story. You might get so caught up in the story that you don't notice and fail to appreciate the extensive preparation that went into constructing clear, bite-sized slides and concise, carefully-selected phrases of explanation. Make an effort to analyze the mechanics of good talks,

Regardless of whether you pursue a postdoc or something else, you will undoubtedly be called upon to make formal and/or informal presentations on your graduate research project as you prepare to take the next step in your career trajectory.

too, especially the introductions and endings. What strategies do the speakers use to make you care about their research areas? How do they set the stage for presenting experimental results? Excellent speakers devote time to convincing you that their research area is important, and you get caught up in the story, the take-home message, and the exciting future directions.

As you wrap up your graduate career, don't shirk your responsibilities to your advisor and your lab mates by failing to appear at or be on time to lab meetings. Attend as many seminars as possible, approaching every one, regardless of the research topic, as a learning opportunity. Take notes not just on the science you hear, but also on what works and what doesn't for the mechanics of a talk. You will be well on your way to establishing your own reputation as a good time manager and an excellent speaker.

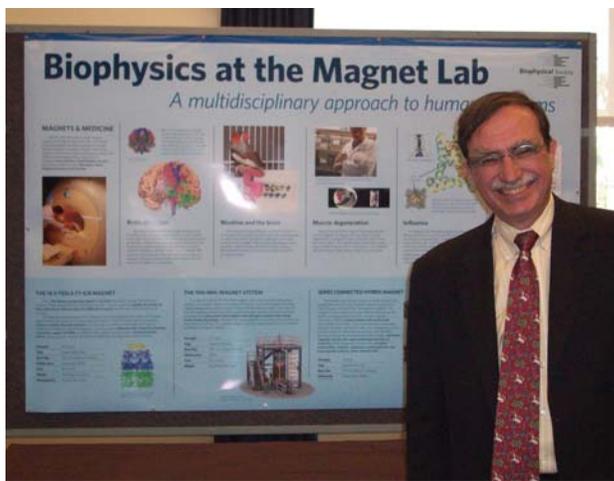
Members in the News

Mark Schnitzer of Stanford University and Society member since 1997 was awarded a Keck Futures Initiative (NIKFI) grant by the National Academies.

Public Affairs

BPS Exhibits on the Hill

On May 11, Society member *Timothy Cross*, National High Magnetic Field Lab and Florida State University, represented the Biophysical Society at the Coalition for National Science Funding's (CNSF) exhibition and reception,



Timothy Cross presenting his poster on Capitol Hill.

STEM Research and Education: Underpinning American Innovation. The purpose of the exhibition and reception, which is held each spring on Capitol Hill, is to demonstrate to Congressional members and staff the research being funded by the National

Science Foundation (NSF). The Biophysical Society was one of 30 scientific organizations and institutions participating. Cross's poster highlighted biophysics-related projects at the Magnetic Lab that are funded by NSF.

The event attracted approximately 285 attendees, including House Appropriations Commerce, Justice, Science Subcommittee Ranking Member *Chaka Fattah* (D-PA), Representatives *Rush Holt* (D-NJ), *Phil Roe* (R-TN), *Jerry McNerney* (D-CA), and *Glenn Thompson* (R-PA). NSF Senior Advisor *Cora Marrett* also attended.

2011 marks the 17th year CNSF has hosted a Capitol Hill exhibition and reception in support of NSF research. CNSF is an alliance of over 100 organizations, including the Biophysical Society, working together in support of the United States' investment in NSF's research and education programs.

NIH Biomedical Task Force Members Named

The National Institutes of Health (NIH) named the members of the working group charged with creating a model for building a sustainable and diverse biomedical research workforce. NIH Director *Francis Collins* has asked for the working group to develop the model to help inform decisions about how to train the optimal number of people for the appropriate types of positions that will advance science and promote health. The working group was created at the December 2010 meeting of the Advisory Committee to the Director. *Shirley Tilghman*, President of Princeton University, and *Sally Rockey*, Deputy Director for Extramural Research, NIH, are the co-chairs of the committee. Other committee members include individuals representing biomedical research, industry, economics, and social science research. A list of working group members is available at <http://acd.od.nih.gov/bwf.asp>.

NIDCR Under New Leadership

NIH Director Collins announced that *Martha J. Somerman* will be the new Director of the National Institute of Dental and Craniofacial Research (NIDCR), effective August 29, 2011. Somerman will replace *Isabel Garcia*, who has served as Acting Director of NIDCR since August 2010.

Somerman has been Dean of the University of Washington School of Dentistry since 2002, also holding appointments as Professor in the School of Dentistry's Department of Aerodontics and Adjunct Professor in the Department of Oral Biology. Since 2004, she has also served on the medical staff of the Seattle Cancer Care Alliance and as a member of the associate medical staff of the University of Washington Medical Center and the Harborview Medical Center.

The mission of the National Institute of Dental and Craniofacial Research (NIDCR) is to improve oral, dental, and craniofacial health through research, research training, and the dissemination of health information.

International Affairs

2011 Australian Budget Preserves Research Funding

Despite rumors of significant budget cuts, the 2011 Australian Budget included a 4.3% increase in support to the National Health and Medical Research Council (NHMRC), the primary provider of funding to Australian biomedical researchers. This news came after reports that there would be a \$400 million AUD cut over three years to the NHMRC's current \$715.5 million AUD budget.

Researchers across the country protested this potential slash in funding. In early and mid-April, approximately 12,000 Australian scientists rallied across seven different major cities, including Melbourne and Sydney. A social media campaign with the catch phrase "protect research" was launched, garnering close to 12,000 signatures on a government petition, over 200,000 website views, 8,000 fans on Facebook, and 700 Twitter followers.

After multiple protests and rallies, Australian Prime Minister *Julia Gillard* reassured the scientific community that the rumored budget cuts to research funding were being reconsidered. The 2011 Australian Budget, released on May 10, revealed that the NHMRC would receive \$746.1 million AUD in funding.

ESF-EuroHORCs Merge Falls Through

The proposed merger of the European Science Foundation (ESF) and the European Heads of Research Councils (EuroHORCs) to a single organization failed to obtain the required two-thirds majority in an ESF vote held May 4. A second option to reorganize the current ESF into a strategic lobbying body also was put to a vote but did not receive the required votes to pass.

The ESF, an independent nongovernmental organization, is a primary source of research funding in Europe and works to advance European research and scientific collaboration. Heads of research funding and research performing organizations in Europe make up EuroHORCs, which focuses on research cooperation. EuroHORCs serve as a representative body for scientific research interests at an international level.

The proposed organization would have served as a replacement for ESF and EuroHORCs and would have been smaller and more streamlined, serving as a united voice for European scientists. Supporters of the merger believed that this new body would more effectively represent the interest of European scientists while contributing to the development of research policy.

Opponents of the merger worried that the new organization would have too much of a focus on policy strategies and little emphasis on research. For more information, visit www.esf.org or www.eurohorcs.org.



Grants and Opportunities

Name: East Asia and Pacific Summer Institutes for US Graduate Students (EAPSI)

Objective: To introduce students to East Asia and Pacific science and engineering in a research setting, and to help initiate scientific relationships to enable future collaboration.

Application Deadline: November 9, 2011

Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5284

Biophysics Across America

For the third year running, the Biophysical Society has sponsored awards for outstanding biophysics-related projects at regional and state high school science fairs across the country.

In 2009 and 2010, BPS provided awards at science fairs local to Annual Meeting sites. After successfully sponsoring Boston-area awards in 2009, San Francisco Bay-area science fair awards were added in 2010. This year, the Society extended its sponsorship scope to include the Baltimore area in tandem with the 55th Annual Meeting, including the Washington, DC area, surrounding Maryland counties, and northern Virginia.

In addition, this year the Society has provided a BPS award to science fairs where members serve as judges. Members who notified BPS by February 1, 2011, about which local state or regional fair(s) they were interested in judging chose winners and presented Biophysics Awards for the best biophysics-related project at those fairs.

In 2011, Biophysics Awards were presented at the fairs listed below.

Baltimore/DC Metro Area

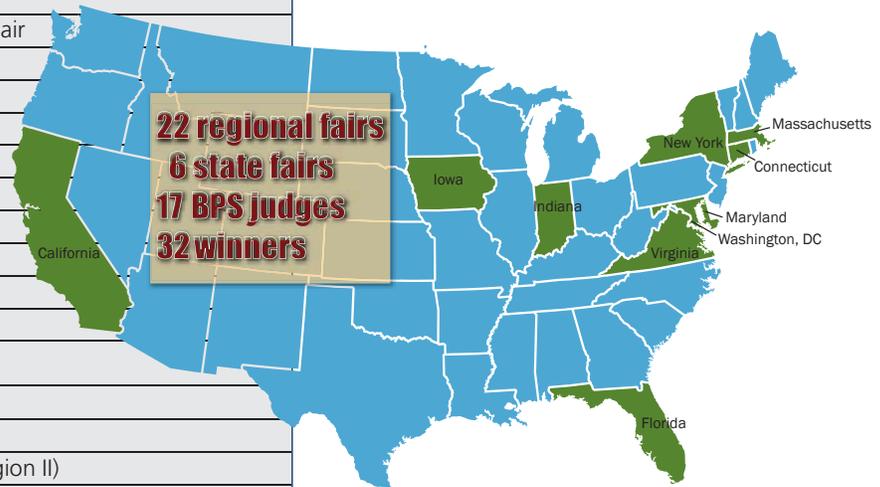
Baltimore Science Fair
AACPS Regional Science and Engineering Fair
Montgomery County Science Fair (ScienceMONTGOMERY)
Prince George's Area Science Fair
Virginia Piedmont Regional Science Fair
Northern Virginia Regional Science and Engineering Fair
Fairfax County Regional Science and Engineering Fair
Virginia State Science & Engineering Fair
DC Science & Engineering Fair
San Francisco Bay Area
Sonoma County Science Fair
Contra Costa County Science & Engineering Fair
San Francisco Bay Area Science Fair
Tri-Valley Science and Engineering Fair
California State Science Fair

Boston Area

Braintree High School Science Fair
Western Massachusetts Region I Science Fair
Worcester Regional Science and Engineering Fair (Region II)
Rensselaer-BCC Region III Science & Engineering Fair
Massachusetts Region IV Science Fair
South Shore Regional Science Fair (Region V)
Boston Public Regional Science Fair (Region VI)
MA State Science & Engineering Fair

Nationwide

Iowa Science Fair - Ames, Iowa
Lafayette Regional Science & Engineering Fair - Lafayette, Indiana
Northern Indiana Regional Science & Engineering Fair - Notre Dame, Indiana
New Haven Science Fair - New Haven, Connecticut
Connecticut Science Fair - Hamden, Connecticut
Alachua Region Science Fair - Gainesville, Florida
State Science & Engineering Fair of Florida - Orlando, Florida
Greater San Diego Science & Engineering Fair - San Diego, California
New York City Science & Engineering Fair - New York, New York



Thank you to Society members who volunteered to judge at their local science fairs! Didn't get a chance to volunteer this year? Contact BPS at society@biophysics.org to give the Biophysics Award at a fair in your area in 2012.

For a list of Biophysics Awardees and volunteer judges, check out the BPS Blog: <http://biophysicalsociety.wordpress.com>

Pizza and Perspective: Undergraduate Student Breakfast at Noon

The Education Committee hosted the first Undergraduate Student Breakfast at Noon at the Annual Meeting in Baltimore. The 75 student attendees enjoyed a pizza “breakfast” while getting a chance to interact with other undergraduates interested in biophysics. Three speakers gave brief presentations on ways that young students can work effectively to reach their scientific career goals.

Focus on developing both your scientific and professional skills in order to have a successful career. That was the message delivered by *Patricia Sokolove*, Office of Intramural Training & Education, National Institutes of Health. Many students preparing for a career in science focus primarily on developing their laboratory skills. While polishing your lab techniques and practicing your scientific writing are certainly essential for getting into a graduate program, more is needed to prepare for long-term success. Undergraduate students should work on sharpening their communication skills, both inside and outside the lab. Knowing how to effectively communicate your career goals is just as important as being able to discuss your scientific research. Sokolove also emphasized the importance of career planning. When researching graduate institutions, be sure to take into consideration where you’d like to end up *after* you have your graduate degree. This can help you focus your search, and will show interviewers that you are working towards a specific career goal.

Kambiz Shekdar, Chromocell Corporation, provided guidance from an industry perspective. As

the Chief Scientific Officer of Chromocell Corporation, Shekdar described both the challenges and opportunities associated with careers in industrial science. Just as in academics, groundbreaking discoveries do occur in research at the industrial level. However, research at the industrial level occurs on a much larger scale, requiring a much greater level of organization and teamwork. Shekdar encouraged students to master their communication skills, as well as to always question their approaches in the lab. Curiosity drives scientific discoveries in any lab setting.

The undergraduate attendees were provided with a glimpse of what to expect in graduate school from Education Committee member *Richard Ludescher*, Rutgers University. Ludescher advised students to choose their graduate labs carefully. He told the students that they want to have a laboratory setting that is not only intellectually stimulating, but supportive of their scientific growth. The ideal laboratory environment should also be respectful of every lab member. While your research is one of the most important aspects of your graduate studies, Ludescher reminded students that there is life outside the lab. He encouraged students to get involved with members of other departments on both a social and scientific level. Additionally, students should be sure to forge relationships with a variety of interdepartmental faculty members. These individuals can serve as valuable resources even after your graduate studies are over.

After these brief presentations, students were able to finish their lunch while chatting with other undergraduates and talking to Sokolove, Shekdar, and Ludescher in a more informal setting. Education Committee members present also used this time to interact with the students, answering questions ranging from career goals to research advice. Be sure to look for this event at the 2012 Annual Meeting in San Diego!

Subgroups

Membrane Biophysics

2011 Annual Symposium

The focus of the 2011 Membrane Biophysics Subgroup Symposium was *Single Molecule Approaches to Ion Channel Structure & Function*. The meeting was organized and chaired by *Stephen Tucker*, University of Oxford, and started off with a description by *Gabriela Popescu*, SUNY Buffalo, of how immensely powerful single-channel electrical recordings of ion channel behavior can still be. Highlights of the meeting included talks by *Baljit Khakh*, University of California, Los Angeles, on combining electrical recordings with the use of quantum dots to study the trafficking of P2X receptors, and from *Scott Blanchard*, Cornell University, on the use of single-molecule FRET to probe novel conformational states of a membrane transporter. Following in this theme of combining single molecule electrical and fluorescence measurements both *Rikard Blunck*, University of Montreal, and *Mark Wallace*, Oxford University, described how new methods meant these approaches could now be applied to many different classes of both prokaryotic and eukaryotic ion channels.

2012 Annual Symposium

Paul Slesinger, Salk Institute, the current subgroup Chair, is busy organizing the 2012 Membrane Biophysics Symposium, *Dancing with New Structures: Insights into Transport Function*. This symposium will cover some of the latest discoveries using high-resolution structures to significantly advance our understanding of the function of channels, pumps, and transporters. Stay tuned for more details. See you in San Diego!

Chair-Elect

Diomedes Logothetis, Virginia Commonwealth University, was elected Chair-Elect at the 2011

Subgroup business meeting. He will be responsible for organizing the 2013 symposium.

Subgroup Email List

The subgroup has an email distribution list. Members may contact *Mike White* (mwhite@drexelmed.edu) for information about sending out email announcements of conferences or meetings.

IDP

The program for the 6th Annual Symposium of the Intrinsically Disordered Proteins subgroup has been finalized. Under the theme of *Intrinsic Protein Disorder: Single Molecules to Systems Biology*, the program co-chairs *Tanja Mittag* and *Ashok Deniz* have assembled the following talks. We look forward to seeing you in San Diego!

Antoine Van Oijen, University of Groningen, *Single-molecule fluorescence study of p53 sliding*; *Jane Dyson*, The Scripps Research Institute, *Solution NMR as an investigational tool for disordered and partly folded proteins*; *Kai Wucherpfennig*, Dana Farber Cancer Institute, *Role of disorder in T-cell signaling*; *Michael Rexach*, University of California, Santa Cruz, *Sorting with Disorder at Nuclear Pores*; *Madan Babu*, MRC-Laboratory Cambridge, *Regulation of protein disorder in genetic networks/Systems Biology of IDPs*; *Eileen Lafer*, University of Texas Health Science Center, San Antonio, *Role of disorder in clathrin lattice assembly*; *Martin Blackledge*, Institute de Biologie Structurale, Grenoble, *NMR methods for characterization of disordered ensembles*; *Doug Barrick*, John Hopkins University, *The role of an intrinsically disordered region in assembling the Notch transcriptional activation complex*; *Johannes Buchner*, Technical University of Munich (Keynote Speaker), *Intrinsic disorder at the heart of antibody assembly and secretion control*

IDP Papers of Interest

To view notable recent articles on IDPs, visit www.biophysics.org/membershipsubgroups and click on *IDP Papers of Interest*.

Interested in Starting a Subgroup?

For more information, visit www.biophysics.org/MembershipSubgroups.



Student Spotlight

PRESTON MOON
JOHNS HOPKINS UNIVERSITY
KAREN G. FLEMING LAB

What initially attracted you to biophysics?

I temporarily left science after my undergraduate degree and got a law degree and worked in patent law for a while. Biophysics actually attracted me to come back into science. I chose it because I was particularly enchanted by all aspects of the protein folding problem.

What specific areas are you studying?

I seek to understand the thermodynamics and other fundamentals of membrane protein folding and how proteins interact with lipid bilayers.

What is your current research project?

We were able to use a transmembrane protein that can spontaneously fold into lipid bilayers to directly measure a new hydrophobicity scale of water-to-bilayer transfer free energies of the amino acid side chains.

What do you hope to do after graduation?

I am keen on teaching and managing a research lab at a primarily undergraduate institution. For my research element, I would certainly like to stay with membrane protein thermodynamics.

What do you see as the biggest challenge as a student of biophysics?

I hear a lot of gloomy predictions about ever-diminishing certainties in the scientific job market, so my biggest challenge has been to justify the commitment of several years of my youth to training in a field that may be stalling.

Why did you join the Biophysical Society?

The Society's Annual Meeting is a prize of membership for many students, and I've been lucky enough to attend three during my graduate school tenure. But another aspect of the Society I follow is its policy and legislative actions. I still have a fondness for those issues from my days in the legal profession, and I am also very interested in the civics of being a scientist.

When you're not studying biophysics, what do you like to do in your spare time?

I steal away to mountain trails for backpacking and checking off peak-bagging lists.

Karen Fleming, Moon's PI, Says:

"Preston is an example of a highly thoughtful and self-motivated scientist. He really drove the success of his thesis project by very careful experiments and by really listening to what the data were telling him instead of trying to fit his results into a predetermined model. He is also not afraid of adversity, and his success, I think, comes from his ability to embrace the challenges in the data rather than run from them. He reads the literature widely and is an independent thinker about other studies. I expect to see great things from him in the future."

Suggest a Student to Spotlight

Do you have a spotlight-worthy student in your lab? Send his/her name to society@biophysics.org.



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UPCOMING EVENTS

September

September 26–30, 2011

Mathematical Oncology: New
Challenges for Systems Biomedicine
Erice, Italy
<http://www.dm.unipi.it/~erice2011/>

September 28–30, 2011

2011 International Conference on
Solid State Devices and Materials
Nagoya, Japan
<http://www.ssdm.jp/index.html>

October

October 28–30, 2011

A Special Symposium Celebrating
the 40th Anniversary of the Protein
Data Bank
Cold Spring Harbor, New York
[http://meetings.cshl.edu/meetings/
pdb40.shtml](http://meetings.cshl.edu/meetings/pdb40.shtml)

October 30–November 3

17th IBC: The 17th International
Biophysics Congress (IUPAB)
Beijing, China
<http://www.17ibc.org/>

November

November 7–11, 2011

Malnutrition, Gut-Microbial
Interactions and Mucosal Immunity
to Vaccines
New Delhi, India
[http://www.kestonesymposia.
org/tks/marketing/special/
T1MtgSpecialEmail.html](http://www.kestonesymposia.org/tks/marketing/special/T1MtgSpecialEmail.html)

November 28–December 2

2011 Materials Research Society Fall
Meeting & Exhibit
Boston, Massachusetts
<http://mrs.org/fall2011/>

December

December 3–7, 2011

The American Society for Cell
Biology Annual Meeting
Denver, Colorado
<http://www.ascb.org/meetings/>