

Newsletter

Biophysical Society

August

2012

DEADLINES

Lipid-Protein Interactions in Membranes

November 1–5, 2012
Hyderabad, India

August 15
Early Registration

57th Annual Meeting

February 2–6, 2013
Philadelphia, Pennsylvania

October 1, 2012
Abstract Submission



Annual Meeting poster included.

Please post!

Loew Launches into Term as *BJ* Editor-in-Chief

On July 1, Leslie Loew became the Editor-in-Chief of *Biophysical Journal* replacing Edward Egelman, whose five-year term ended. The following Editorial was published as part of the July 4 Issue of the Journal and outlines Loew's vision and goals for the next five years.

Biophysical Journal 60 years after Hodgkin-Huxley



Leslie M. Loew

As I was putting the finishing touches on this inaugural editorial for my tenure as Editor-in-Chief of *Biophysical Journal*, I was saddened to learn of the passing of *Sir Andrew Huxley*. The transition of biology from a descriptive science to a quantitative and predictive science has been in progress for the 60 years since the Hodgkin-Huxley equation, accelerating tremendously in the last 10 years. Hodgkin and Huxley solved their differential equations “using a hand-operated calculating machine” (Hodgkin and Huxley, 1952) and showed the biology community how powerfully physics and mathematics could contribute to the

advancement of biology. Today, the proliferation of computing hardware and software has made it possible to apply quantitative measurements and quantitative analytical methods to even the most complex biology. The application of physics and math to biology has become universally recognized (most importantly, by NIH) as the key ingredient for biomedical research progress. The biophysics era has truly arrived and *Biophysical Journal* has therefore never been a more vital conduit for dissemination of scientific advances.

The first order of business is to express my thanks, on behalf of the readers, authors and editors of *BJ*, as well as the membership of the Biophysical Society, to *Ed Egelman* for his stewardship over the last five years. Ed has worked tirelessly for *BJ* and managed to do so without ever losing his famous

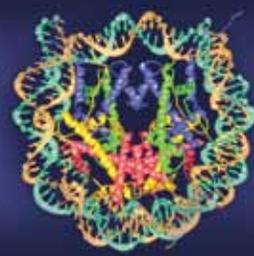
(Continued on page 4.)

2013 Biophysical Society Annual Meeting Travel Awards

As in past years, four Biophysical Society committees will be offering travel awards for students, postdoctoral fellows, junior investigators and senior scientists presenting abstracts at the 2013 Annual Meeting in Philadelphia, Pennsylvania.

All travel award applications are due October 3, 2012. For more information on all travel awards, and to see for which travel awards you qualify, please visit www.biophysics.org/2013meeting.

PHILADELPHIA 2013



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Biophysical Society



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BJ Board: New Editors Named

On July 1, new editors were named to the Editorial Board of *Biophysical Journal*. *Michael Pusch*, Biophysics Institute, CNR, Italy and *Peter Hunter*, University of Auckland, New Zealand replaced *Eduardo Perozo* and *Les Loew* as Associate Editors. *Brian Salzberg*, University of Pennsylvania School of Medicine will now head the *Biophysical Reviews* section as Associate Editor. In addition, 19 new editors joined the Editorial Board in the Sections listed below.

Proteins and Nucleic Acids

Enrique De La Cruz, Yale University; *Ashok Deniz*, Scripps Research Institute; *Patricia Jennings*, University of California, San Diego

Channels and Transporters

Joseph Mindell, National Institutes of Health, NINDS; *Ian Forster*, University of Zurich, Switzerland

Cell Biophysics

Rong Li, Stowers, Institute of Medical Research; *Rick Horwitz*, University of Virginia; *Dave Piston*, Vanderbilt University; *Mark Cannell*, University of Bristol, United Kingdom

Membranes

Simon Scheuring, INSERM; *Andreas Engel*, Case Western Reserve University

Systems Biophysics

James Sneyd, University of Auckland, New Zealand; *Jeff Fredberg*, Harvard School of Public Health; *Dennis Bray*, University of Cambridge, United Kingdom; *Sean Sun*, Johns Hopkins University

Molecular Machines, Motors and Nanoscale Biophysics

Fazly Ataulakhanov, National Research Center Hematology, Russia; *Matthias Rief*, Technische University, Germany; *David Rueda*, Wayne State University

To view a complete list of Editorial Board Members go to www.cell/biophysj/EdBoard

BJ Sections Revamped

Below is the list of revised *Journal* Sections and the Associate Editors as referenced in *Les Loew's* Editorial that begins on page one.



Proteins and Nucleic Acids
Kathleen Hall



Channels and Transporters
Michael Pusch



Cell Biophysics
Michael Edidin



Membranes
Lukas Tamm



Systems Biophysics
Peter Hunter



Molecular Machines, Motors and Nanoscale Biophysics
Yale Goldman



Biophysical Reviews
Brian Salzberg

The Market Leading Back-illuminated EMCCD Camera

Supercharged

>60% faster

56 frames
per second

17 MHz
Pixel Clock Speed

Single Photon
Sensitive

>90% QE

USB
interface



The New iXon Ultra

Accelerated to an outstanding 56 fps, Andor's market leading back-illuminated EMCCD camera is now over 60% faster, maintaining single photon sensitivity and superb quantitative stability throughout. The iXon Ultra 897 is the definitive solution for scientific imaging applications requiring ultra-sensitivity at speed.

- Single Molecule Detection
- Super Resolution Microscopy
- Live Cell Imaging
- Ion Signalling
- Astronomy / Adaptive Optics

andor.com/ixon



(Continued from page 1.)

sense of humor. The *Journal* has become more selective, with an approximately 40 percent acceptance rate, while assuring that Society members and the biophysics community at large have an affordable and fair channel to publish their best work. Ed has been extraordinarily careful in assuring the highest ethical standards during the editorial process. I know how diligently he has worked to achieve these standards because he has shared his voluminous correspondence with me over the last several months; this apprenticeship has been invaluable to me as I attempt to continue in Ed's path.

In a continuing effort to assure that *BJ* remains the best place to publish in our broad field of biophysics and as a response to feedback from authors and readers, there will be changes. You will begin to notice some within the next few issues:

Page limits

A decision was made several months ago to incorporate references from supplementary material into the main bibliography. This effectively reduces the page limit for the main body of a paper. To correct this and in recognition of the challenge that the page limit has posed to some authors, the bibliography will no longer be counted toward the 10 page limit, which now applies only to the text and figures. This effectively increases the overall page limit of each paper. We will also combine the paper and the supplementary material as a single download.

Editorial Board Sections

The names of some sections have been revised to better reflect the scope of the fields they cover. Each section will be managed by a designated Associate Editor. They are: *Proteins and Nucleic Acids* (Kathleen Hall); *Channels and Transporters* (Michael Pusch); *Cell Biophysics* (Michael Edidin); *Membranes* (Lukas Tamm); *Systems Biophysics* (Peter Hunter); *Molecular Machines, Motors and Nanoscale Biophysics* (Yale Goldman); *Biophysical Reviews* (Brian Salzberg). With regard to the latter, Brian has accepted the challenge of making *Biophysical Reviews* a regular feature of the *Journal*.

Table of Contents

Also starting in this issue, you will see a direct

correspondence between the seven Editorial Board Sections, listed above, and the ToC headings.

Emerging Biophysical Technologies

Methods papers can be of great significance to a field and have traditionally been among the most cited *BJ* papers. The electronic version of the ToC will now include a highlighted "Emerging Biophysical Technology" to call attention to those exciting new physics-based methods that are regularly published in *BJ*.

Regular publication of New and Notable Micro-Reviews

We will identify papers that are most enthusiastically refereed and ask reviewers or editors to write short perspectives on the impact of these papers on their field. These short contributions can cite other work in addition to the newly published manuscript and should be of particular value to the non-specialist reader.

Additionally, you can expect to see increasingly rich content in the electronic version of *BJ*. Authors and readers may not even be aware that PDB molecular structures are already displayed and manipulated in 3D using the open source Jmol web tool (<http://jmol.sourceforge.net/>); see for example Buhrow et al., 2012, one of five papers with interactive protein structures in the May 2, 2012 issue of *BJ*. Likewise, movies and animations will be embedded in the paper just like figures. These technologies have been adopted individually by more specialized journals, but *BJ* will give authors and readers access to both. Additionally, *BJ* will support MATLAB .FIG files, so that data can be interactively visualized and all the original data can be accessed. You should see the first papers to use this technology in the next few months. In the longer term, *BJ* will implement technologies to visualize complex multidimensional images and simulations. Ultimately, we hope to give readers interactive features that will allow them to access and reanalyze data sets from both experiments and models. Finally, a *BJ* app for your iPad is slated to be released this fall!

Our biophysics community is accumulating data on the structure and dynamics of macromolecules; the detailed mechanisms of membrane channels and transporters; spatiotemporal molecular distributions

in cells down to the level of single molecules; mechanics at the molecular, organelle, cell and tissue levels; and the kinetics of cell signaling and gene regulatory networks. These are the pieces of the puzzle of how cells and organisms function. The next challenge is to marshal the physics and physical chemistry that will allow us to put the puzzle pieces together. Biophysics is by definition multidisciplinary; therefore it is precisely the field that spans molecular, cell, organ and systems biology. I look forward to working with the authors and readers of *BJ* as we build those bridges.

Buhrow, L., S. Ferguson-Miller, and L.A. Kuhn. 2012. *From Static Structure to Living Protein: Computational Analysis of Cytochrome c Oxidase Main-chain Flexibility*. *Biophysical Journal*. 102:2158-2166.

Hodgkin, A.L., and A.F. Huxley. 1952. *A quantitative description of membrane current and its application to conduction and excitation in nerve*. *Journal of Physiology*. 117:500-544.

Congratulations to the Winners of the *What is Biophysics?* Video Contest!

1st place:

Bram Van Hoof "Collagen: The Fabric of Life"

2nd place:

Matthias Wolf "Assembly of Human Papillomavirus Virus-like Particles"

3rd place:

Andy Wowor "What is Biophysics?"

Members' Choice Award:

Bram Van Hoof "Collagen: The Fabric of Life"

First, Second, and Third Places were selected by a panel of judges. The Members' Choice Award was selected by the Society members, through online voting.



Check out the winning videos on the Biophysical Society's YouTube channel: www.youtube.com/biophysicalsociety

Subgroups

Intrinsically Disordered Proteins: Is Your Protein Disordered?

Intrinsically disordered proteins are proteins (or regions of proteins) which, as a monomer, lack stable tertiary structure under physiological conditions *in vitro* [Dyson (2011) Q. Rev. Biophys. 44:467]. These fascinating proteins frequently regulate cellular processes, and consequently play a prevalent role in a variety of human diseases, including amyloid diseases, viral infections, cancer, and heart disease [Uversky (2012) Expert Opin. Drug. Discov. 7:475]. Since biophysical techniques often define and manipulate the molecular mechanisms underlying cell regulation and disease, many biophysicists work with proteins that are either disordered or have disordered regions. *Examining your favorite protein in light of the disordered protein field could suggest potential molecular mechanisms unique to this protein class, identify useful experimental approaches designed for disordered proteins, and provide clues to more easily handle your protein* [Mitrea et al. (2012) Biol. Chem. 393:259]. The first step is to determine whether you might have a disordered protein/region:

- Does your protein's sequence have a high ratio of charged amino acids to hydrophobic amino acids?
- Is your protein post-translationally modified?
- Is the corresponding mRNA alternatively spliced?
- Is your protein easily proteolyzed?
- Does your protein interact with many proteins *in vivo*?

As an aid to biophysicists interested in exploring how disorder might contribute to the function or regulation of their protein, we will present several articles to provide some initial guidance and suggestions. If you answered "yes" to any of the above questions, this series is for you! Finally, please remember that attending the IDP subgroup meeting is an excellent way to learn about these topics and meet helpful experts in these techniques. New members are always very welcome!

—Sarah Bondos, IDP Subgroup Councilor



Biophysicist in Profile

Anita Niedziela-Majka

A day in the life of *Anita Niedziela-Majka*, biology senior research scientist at Gilead Sciences, Inc., can be hectic. “As a biophysicist in an industrial setting, I participate in many different projects where I provide expertise in assays development, macromolecular interaction studies, and self-assembly processes,” she says. “Being able to provide data for all projects in a timely manner, attending numerous meetings, keeping track of scientific developments and literature, being creative, and being a good manager at the same time is quite challenging, although stimulating.”

With a background in fluorescence spectroscopy, analytical ultracentrifugation, and label-free

technologies for studying biomolecular interactions, Niedziela-Majka is a member of a biochemistry research and development group at Gilead. She is part of multidisciplinary teams developing small molecule drugs against HIV and HCV therapy targets, as well as anti-inflammatory and anti-cancer

therapeutic approaches. She provides expert consultation on the quantification of thermodynamics, energetics, and kinetics of interactions between therapeutic molecules and their targets. “My research contributes to demonstrating the specificity of binding events and provides data enabling the establishment of structure activity relationships that ultimately allow for improvement of potency of therapeutic molecules,”

she explains. “Moreover, I am involved in understanding how the binding of therapeutic molecules to the target results in an amendment of target function—a mode of action studies.” For Niedziela-Majka, being part of these multidisciplinary project teams is what makes her job so much fun. “Imagine having many collaborators who are experts in diverse disciplines all under one roof and working with you to solve the questions you are after,” she says. “You just walk down the hall and can talk to protein chemists, crystallographers, cell biologists, virologists, medicinal chemists, computational scientists, high-throughput specialists, and metabolism experts. The research has a fast speed and is very collaborative.”

Niedziela-Majka’s interest in science was fueled when she was in high school in Kedzierzyn-Kozle, Poland, where her studies were heavily concentrated in math and physics. Her father, an engineer, and her mother, an administrative assistant, supported Niedziela-Majka’s career choice from the beginning. Now retired, they enjoy discussing the details of lab work with their daughter and the implications of her research on the lives of everyday people. “They are very proud of my accomplishments, even the smallest ones,” says Niedziela-Majka. After high school, she went on to the Wrocław University of Technology, where she earned her MSc in biotechnology and her PhD in biochemistry and organic chemistry. She then completed two postdoctoral fellowships, both in St. Louis, Missouri. The first, in *Tomasz Heyduk’s* lab at Saint Louis University, was focused on fluorescence spectroscopy. “Anita was absolutely an outstanding colleague who has made enormous contributions to the progress in my lab,” says Heyduk. “Although many years have passed since she left the lab, I am still finding results in her notebooks that provide motivation and guidance for the current work in our lab.” Niedziela-Majka proved just as valuable a colleague in her second

“ I love the quantitative and predictive aspect of biophysics and the complementarity of data which are obtained with orthogonal approaches... Often I have a feeling that I am solving a big jigsaw puzzle whereby pieces of data—binding, crystallographic, computational, kinetic—neatly fit with each other and give a complete picture. ”

– Anita Niedziela-Majka

postdoctoral fellowship, with *Timothy M. Lohman* at Washington University. There, she applied analytical ultracentrifugation, kinetics, and label-free technologies in a life science setting. “Anita is incredibly energetic, a very hard worker, and a constant pleasure to be around,” says *N. Karl Maluf*, an assistant professor at the Skaggs School of Pharmacy and Pharmaceutical Sciences at the University of Colorado Denver, who was a graduate student in Lohman’s lab with Niedziela-Majka. “Scientifically, she is fearless. She will tackle any project, no matter how challenging, and do it with a smile on her face.”

Now a senior scientist, Niedziela-Majka’s enthusiasm creates a spirited, productive atmosphere surrounding her projects. “She is very innovative and creative,” says *Elaine Kan*, who reports to Niedziela-Majka at Gilead. “Anita is my mentor and she is wonderful. Her management skills show great support and provide good direction.” Niedziela-Majka’s talent for mentoring is no fluke; she taught classes and seminars in biochemistry and molecular biology while completing her doctoral thesis in Poland. “I love teaching and interacting with young scientists,” she says, “being a mentor to a younger colleague is extremely rewarding.” *Iwona Grad*, a former student of Niedziela-Majka’s, certainly benefited from the relationship. “As a teacher Anita is very calm and competent, and also has tons of patience,” says Grad. “As a colleague, she was always very helpful, always had time to answer questions, to explain, and to give a hand if needed.” As a scientist in industry, Niedziela-Majka is a wealth of knowledge about pursuing such a career. “In industry, at the beginning of your career, you will concentrate on exploiting your strongest skills. You will serve as an expert in your field,” she says. “As you grow, you will be required to broaden your understanding of the discovery process and explore new areas of science that are outside your immediate expertise, and you will need to understand data coming from diverse studies—virology, metabolism, physiology, animal studies—and make decisions.” She knows it is important to start by putting your best foot forward. “Be prepared for an interview,” she advises. “Do not dilute your

skills, emphasize the strongest ones. Do your homework and learn about the company and the people with whom you are about to interview. Ask questions, as it shows that you are really interested in joining the group.”

Another key point: networking. “Networking is very important if you are looking for position in industry,” according to Niedziela-Majka. “Talk to people about your research during scientific meetings, and treat poster sessions as opportunities to present—and sell—your skills.” For Niedziela-Majka, Biophysical Society Annual Meetings create a useful venue for such exchanges. “Society events provide a unique opportunity to meet friends and collaborators, and they reveal new trends in various areas, new and innovative approaches, and emerging technologies,” she says. Niedziela-Majka also attends the meetings “to meet people you can email when you have questions or problems with laboratory instruments. It’s the only place where you can find vendors of all the scientific equipment that you have in your lab or that you wish you could purchase.”

When she’s not working among her lab equipment, Niedziela-Majka and her husband, *Jurek Majka*, also a scientist, find many ways to relax, including cooking, traveling, and watching the Science Channel. “We understand each other very well,” Majka says. These days, Niedziela-Majka is learning the bird-watching ropes from her husband, a veteran birdwatcher. “This hobby is well suited for a scientist,” she observes. “It requires a lot of patience, a great dose of knowledge, extensive experience, and a bit of luck—and of course, getting up early and going to bed late.”

When Niedziela-Majka goes to work the next day, she knows that while it might be hectic, it is undeniably worth it. “It’s a very rewarding feeling that my research contributes to the discovery of drugs that can treat life-threatening diseases or address areas of unmet medical needs,” she says. And she’ll have new developments on those fronts to discuss with her parents the next time she sees them.



Anita Niedziela-Majka on a trip to the Galapagos Islands.



Anita Niedziela-Majka backpacking in the Grand Canyon.

Public Affairs

NIH Workforce Reports Released

In June, the Advisory Committee to the Director (ACD) of the National Institutes of Health (NIH) released two reports focused on the biomedical research workforce—one that focuses on the future of the biomedical research workforce and one that focuses on diversity within the biomedical research workforce. Both reports were created by working groups set up by Director *Francis Collins* to study these issues.

The Biomedical Research Workforce

The Biomedical Research Workforce Working Group, co-chaired by *Shirley Tilghman*, president of Princeton University and *Salley Rockey*, director of Extramural Affairs at NIH, was asked to develop a “model for a sustainable and diverse US biomedical research workforce that can inform decisions about training the optimal number of people for the appropriate types of positions that will advance science and promote health.” The Working Group was also asked “to make recommendations for actions the NIH should take to support a future sustainable biomedical research infrastructure.”

The task force’s recommendations included:

- Training students and postdocs for jobs beyond conducting research and recognizing the value of that work;
- Shortening the length of the PhD and postdoctoral fellowships by capping the number of years a graduate student can be supported by NIH funds and increasing postdoctoral salaries;
- Increasing the proportion of students supported by NIH training grants and fellowships compared to those supported by research project grants;
- Doubling the number of Pathways to Independence Awards and NIH Director’s Early Independence Awards offered by the NIH;
- Requiring individual development plans for all NIH-supported postdoctoral researchers;

- Encouraging study sections to be receptive to grant applications that include staff scientists; and
- Reducing the percentage of funds from all NIH sources that can be used for faculty salary report.

In creating the report and crafting recommendations, the Working Group was challenged with a lack of comprehensive data on the biomedical research workforce. As a result, the Working Group also recommended that NIH require institutions receiving NIH funds to collect information on career outcomes for graduate students and postdoctoral fellows, and that the NIH work with other government agencies on collecting information on the biomedical research workforce.

The report, as well as additional data the Working Group collected on the biomedical research workforce, can be found at <http://acd.od.nih.gov/bwf.htm>

Diversity in the Biomedical Research Workforce

The Working Group on Diversity in the Biomedical Research Workforce also made its findings available in June. Collins charged this group with “providing concrete recommendations toward improving the recruitment and retention of underrepresented minorities (URM), people with disabilities, and people from disadvantaged backgrounds across the lifespan of a biomedical research career from graduate study to acquisition of tenure in an academic position or the equivalent in a nonacademic setting.” The Working Group was chaired by *Reed Tuckson*, executive vice president and chief of medical affairs at UnitedHealth Group, *John Ruffin*, director of the National Institute on Minority Health and Health Disparities at NIH and *Lawrence Tabak*, principal deputy director of NIH.

The Working Group carefully reviewed the publication, *Race, Ethnicity, and NIH Research Awards*, an NIH-commissioned study conducted by *Donna Ginther* and her colleagues, which reported significant disparities in R01-funding probability for both Asian applicants that were not US citizens at the time of receiving their PhD and Black applicants, compared to White applicants. Follow-up work done by the Working Group confirmed this discrepancy, and found that less than one percent of those seeking R01 funding are Black.

Based on the available data (which, among other things, shows that Black applicants are less likely to receive R01 funding than White applicants), the Working Group made several recommendations aimed at increasing the number of underrepresented minorities (URM) in the workforce. The highest priority recommendations are for NIH to:

- Improve data collection on all trainees;
- Implement a system of mentorship networks for underrepresented minority;
- Increase support for URM undergraduate and graduate students;
- Increase support for comparatively under-resourced institutions with a documented track record of producing and supporting URM students;
- Establish a new Working Group focused on determining and combating real or perceived biases in the NIH peer review system;
- Pilot different forms of implicit bias/diversity awareness training; and
- Appoint a scientist as Chief Diversity Officer (CDO) and establish an NIH Office of Diversity.

The full report on the Diversity in the Biomedical Research Workforce can be found at <http://acd.od.nih.gov/dbr.htm>.

Biophysical Society Says “No” to Further Budget Cuts

The Biophysical Society, along with nearly 3,000 other national, state and local organizations, has signed a letter sent to Congress asking Congress to work together to save nondefense discretionary (NDD) programs from more devastating funding cuts. NDD programs are core functions government provides for the benefit of all, including medical research, public health, and education, among others. The letter asks Congress to use a balanced approach to deficit reduction that does not include further cuts to NDD programs.

The NDD budget represented just 3.4 percent of the US' Gross Domestic Product (GDP) in 2011, consistent with historical levels. Under the bi-partisan Budget Control Act, by 2021 NDD funding will decline to just 2.5 percent of GDP, the lowest level in 50 years.

The letter explains that NDD programs are not the reason behind our growing debt. In fact, even completely eliminating all NDD programs would still not balance the budget. Yet NDD programs have borne the brunt of deficit reduction efforts. If Congress and the President fail to act, between fiscal 2010 and 2021 NDD programs will have been cut by 20 percent overall.

To read the letter and see all the organizations that signed it, go to <http://www.biophysics.org/AboutUs/NewsReleases/tabid/2243/Default.aspx>.

Members in News



Sarah Veatch of the University of Michigan and Society member since 2002 was selected as a 2012 Alfred P. Sloan Research Fellow.

Grants and Opportunities

Name: International Science & Engineering Visualization Challenge

Objective: The National Science Foundation (NSF) and the journal *Science* created the International Science & Engineering Visualization Challenge to celebrate the grand tradition of science visualization and to encourage its continued growth.

Who May Apply: Individuals or teams

Submission Deadline: September 28, 2012

Website: http://www.nsf.gov/news/special_reports/scivis/challenge.jsp

2012 Networking Events in Review

Several BPS members took advantage of mini-grants available for local networking events in 2012. Since January, BPS has sponsored six events around the US and across the world. Each event provided unique opportunities for discussion, presentation and networking, covering topics from protein folding biothermodynamics, molecular biophysics, biophysics in sensory transduction, and biomolecular structure, to welcoming high school students interested in physics and discussing teaching biophysics to undergraduates.

New York, NY



Memphis, TN



Kaunas, Lithuania



In total, the events welcomed over 450 attendees, including more than 100 Society members.

Lexington, KY



Charlottesville, VA



Concepción, Chile



Read more about each event on the Society's blog: biophysicalsociety.wordpress.com

Bring a Networking Event to Your Institution in 2013

Interested in hosting a networking event in your area? Submission for 2013 networking event proposals will open on August 27, 2012. Visit the Members Only section of the Biophysical Society website to find out more!

2nd Annual Pennsylvania Regional Networking Event

The Pennsylvania Regional Networking Meeting, which took place in Hershey, PA last fall, will be hosting a second meeting this year in Bethlehem, PA at Lehigh University. The event will take place on September 14, 2012. Visit www.lehigh.edu/~inbioph/index.html to submit a poster and register for this event.



Student Spotlight

Peter Lee

University of Oxford

Atomic and Laser Physics Group

Q: What initially attracted you to biophysics?

Biology. In particular, understanding biological phenomena quantitatively and developing new tools for probing cells and tissues were aspects of biophysics that initially got me excited about the field.

Q: What specific areas are you studying?

Cardiac electrophysiology.

Q: What is your current research project?

My current research projects include developing new methods of optically measuring multiple electrophysiological parameters simultaneously at high-speeds and electromechanically stimulating cardiac tissue constructs in culture.

Q: What do you hope to do after graduation?

I hope to continue to develop cardiac electrophysiology tools for *in vitro* applications and, ultimately, *in vivo* applications in either an industrial or academic setting (or both).

Q: If you could give one piece of advice to someone just starting their undergraduate science career, what would it be?

Work in a field and environment where your interests and scientific development are both strongly supported.

Q: Why did you join the Biophysical Society?

To be a part of a network of scientists interested in the same sorts of scientific problems I'm interested in.

Q: What (or who) inspires you scientifically?

The colleagues I work with on a day-to-day basis and pioneers in my field, such as Professors *Denis Noble* and *Leslie Loew*.

Paul Ewart and Christian Bollensdorff, Lee's PI's, say:

"Peter's work has had an exceptional impact in the field of cardiac electrophysiology where new approaches are urgently needed. In particular, Peter has introduced some novel methods that are highly cost effective, accessible to a wide range of research groups and, most importantly, are well-suited to addressing long standing questions. Peter is a highly self-motivated student, passionate about providing solutions to important problems using his technical expertise in electronics, optics and mechanics, together with computer control and analysis. Whilst gaining understanding of heart physiology he was able to identify efficient new ways to tackle the problems in the field using state-of-the-art techniques and bringing his own "can-do" approach. We have no doubt that he will continue to work effectively to improve the tool-kit for research in cardiac electrophysiology."

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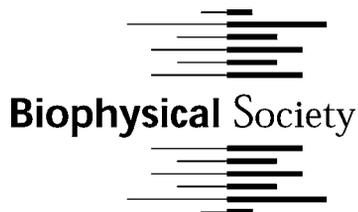


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www.facebook.com/biophysicalsociety
www.twitter.com/biophysicalsoc

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.



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UPCOMING EVENTS

BIOPHYSICAL SOCIETY NEWSLETTER AUGUST 2012

October

October 9–12, 2012

V International Symposium
on Biochemistry and
Molecular Biology
Havana, Cuba

[http://www.safv.com.ar/
documentos/Anexo%20
1-Programa%20Congreso.pdf](http://www.safv.com.ar/documentos/Anexo%201-Programa%20Congreso.pdf)

October 11–14, 2012

SACNAS National
Conference: Science,
Technology, and Diversity
for a Healthy World
Seattle, Washington

[http://sacnas.org/events/
national-conf](http://sacnas.org/events/national-conf)

November

November 1–5, 2012

Lipid-protein Interactions
in Membranes: Implications
for Health and Disease
Hyderabad, India

[http://www.biophysics.org/
2012india/Home/tabid/3788/
Default.aspx](http://www.biophysics.org/2012india/Home/tabid/3788/Default.aspx)

November 2–3, 2012

2012 International Forum
on Stem Cells
Tianjin, China

[http://selectbiosciences.com/
conferences/index.aspx?conf
=2012IF5C](http://selectbiosciences.com/conferences/index.aspx?conf=2012IF5C)

December

December 2–5, 2012

2012 Sydney-Australian
Physiological Society/Physiological
Society of New Zealand and
Australian Society for Biophysics
Sydney, Australia

[http://aups.org.au/Meetings/
201212/2012flyer.pdf](http://aups.org.au/Meetings/201212/2012flyer.pdf)

December 13–18, 2012

Immunological Mechanisms
of Vaccination
Ottawa, Canada

[http://www.keystonesymposia.
org/index.cfm?e=Web.Meeting.
Flyer&MeetingID=1224](http://www.keystonesymposia.org/index.cfm?e=Web.Meeting.Flyer&MeetingID=1224)

January

January 13–18, 2013

Frontiers of NMR in Biology
Snowbird, Utah

[http://www.keystonesymposia.
org/index.cfm?e=web.Meeting.
Program&meetingid=1161](http://www.keystonesymposia.org/index.cfm?e=web.Meeting.Program&meetingid=1161)

January 22–23, 2013

CellTech 2013
San Diego, California

[http://selectbiosciences.com/
conferences/index.aspx?
conf=CT2013](http://selectbiosciences.com/conferences/index.aspx?conf=CT2013)