

Biophysical Society

Newsletter

July/August 2007 Issue

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Joint BPS/IUPAB Meeting

February 2-6, 2008
Long Beach, California

Website Now Open

Visit www.biophysics.org to find all information related to the meeting.

Abstract Deadline:
October 1, 2007

See related article on page 10.

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2008 Society Fellows Announced

Five Society members have been selected to join the rank of Society Fellows. Fellows are members who have demonstrated excellence in science and contributed to the expansion of the field of biophysics. The awards will be presented at the 2008 Joint BPS Annual Meeting and IUPAB International Biophysics Congress Awards Ceremony in Long Beach, California, on Monday, February 4.



Timothy A. Cross
Florida State
University

For his scientific accomplishments and leadership in the field of solid state NMR methods to the biophysical characterization of membrane proteins, and for service to the scientific community.



Eve E. Marder
Brandeis University

For her seminal discoveries in the field of neuroscience and elegantly combining both experiment and theoretical work in an innovative manner to advance the field of neurobiology.



Ivan Rayment
University of
Wisconsin

For his work in protein crystallography demonstrating the essential function it plays in modern biophysics.



Stephen G. Sligar
University of Illinois,
Urbana-Champaign

For advancing our knowledge of biological function through the concerted application of numerous biophysical methods.



Attila Szabo
NIH, NIDDK

For developing novel theoretical analyses for a wide variety of experiments and bringing leadership to the service of biological physics.

Biophysical Society

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The Biophysical Society Newsletter (ISSN 0006-3495) is published six times per year January/February, March/April, May/June, July/August, September/October, and November/December by the Biophysical Society, 9650 Rockville Pike, Bethesda, Maryland 20814-3998. Distributed to USA members and other countries at no cost. Canadian GST No. 898477062. Postmaster: Send address changes to Biophysical Society, 9650 Rockville Pike, Bethesda, MD 20814-3998.

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Biophysicist in Profile



Edward Egelman

It was perhaps prescient that Ed Egelman, who on July 1 began his five-year term as Editor-in-Chief of *Biophysical Journal*, was once editor-in-chief of his high school newspaper. His respect for the art of reading and writing has only grown since then, in large part through his experience in authoring scientific papers. Along the way, he has earned a reputation for doing everything with focus, intelligence, and enthusiasm.

Egelman was born in 1952 in Malverne, NY, on Long Island. He and his older brother, Alan, now a cardiologist in New York, kept their father Israel, a physician, and mother Frances, a school teacher, quite busy. Egelman admits his natural curiosity and initiative as a child, which continue to this day, sometimes bordered on the obnoxious. From the beginning, he was intellectually quicker than most, skipping a grade in elementary school as well as another in high school. “No one wanted me there,” he notes with self-deprecating humor.

His decision to attend Brandeis University after high school came relatively easily. “I got the feeling that it was progressive,” he remembers. “It was relatively small with an excellent reputation.” Egelman’s interests at first lay in the social

sciences. But in 1970, after two years at Brandeis, Egelman dropped out of school. It was the height of the Vietnam War and the anti-war movement was in full swing. He decided to become a full-time organizer for Students for a Democratic Society (SDS), an organization that promoted change in social, political and education practices through demonstration and education. “My time spent as a youth in the anti-war movement has made me more aware of issues of social injustice, social inequity and racism,” he explains. “I view myself as a progressive today, one who wants to work towards a more just society.”

As the war came to an end in 1975, Egelman returned to Brandeis, focusing on earning his degree. In the intervening five years, however, Egelman’s interests had changed. “I became very interested in philosophy, particularly epistemology and the philosophy of science,” he explains. He spent the next year and a half finishing up a bachelor’s degree in physics. “It was rather bizarre because I had not been a science major at Brandeis originally, and I went back and took a concentrated program in physics with this philosophical motivation that physics held the answers to many fundamental questions about the origins of knowledge and epistemology.” His advisor was David DeRosier, now professor of Biology, Emeritus, at Brandeis University. “As an undergraduate, Ed showed he was exceptional,” states DeRosier. “I taught

...his natural curiosity and initiative as a child, which continue to this day, sometimes bordered on the obnoxious.

an experimental physics course. Ed set up and completed a particularly difficult experiment while I was out of town at a meeting. He analyzed why the apparatus wasn’t working, devised a fix, tested the fix by building an interferometer, and got a result.”

After graduation, Egelman took these skills to Harvard, where he worked with Carlo Rubbia, who won the Nobel Prize

in Physics in 1984. Together they worked on experimental high energy physics. “Working for him convinced me that I did not want to stay in high energy experimental physics,” Egelman explains. Whereas he had

ent support like most postdocs at MRC at the time, I was able to basically do whatever I wanted.” There he started working on RecA protein. “He had his own fellowship and did his own work. Hugh Huxley and

“As an undergraduate, Ed showed he was exceptional,”

envisioned walking into a small lab and designing experiments without spending millions of dollars or needing many people, high energy physics was much larger than this, often requiring a large lab and an industrial-sized budget.

Leaving Harvard, Egelman traveled to France to work on another deep-seated interest: he enrolled in culinary school. He admits that his interest in cooking stems in large part from his love of eating good food. While he did and continues to adore cooking, he found the schedule too strenuous and also realized that science was his true passion. He also cites another, smaller, reason, “because I enjoyed eating too much.” Returning to Brandeis to finish his PhD, Egelman quickly rejoined his old advisor DeRosier. “Most of what I know now is due to David’s tutelage,” confesses Egelman. DeRosier’s lab focused on F-actin and was relatively small. “We worked on analyzing a disordered helical structure, actin, whose perfect symmetry was reduced by disorder of the second kind,” says DeRosier. Together they published papers, some of which were, at the time, controversial, but have since been substantiated.

After completing his PhD in 1982, Egelman took a postdoctoral fellowship at the Medical Research Council (MRC) Laboratory of Molecular Biology in Cambridge. “I thought that I was going to work with Aaron Klug but Richard Henderson was the formal sponsor of my fellowship application,” Egelman explains, “and since I had independ-

I were his postdoctoral sponsors,” explains Henderson,

currently studying the development of electron microscopy techniques for high resolution (atomic) structure determination at MRC. “We talked to him occasionally, but he was completely self-propelled and required only periodic expressions of interest in his work.” Egelman explains that part of the reason for his apparent independence might be what he claims to be a lack of personality, a claim that those who know him say is quite the opposite.

His future would soon be sealed when Paul Howard-Flanders came to speak at the lab. The professor from Yale spoke with Egelman about the similarities between F-actin and RecA proteins. The two hit it off and soon Egelman was hired as an assistant professor at Yale. “Since I was in a department that was very much focused on protein-DNA interactions, it was much better to work on

“There’s a continual development of techniques that will give us more and more insight into the architecture of life...”

RecA protein than to continue working on actin,” explains Egelman.

A few years later, Egelman was offered a job at the University of Minnesota, where he continued to work on F-actin and RecA proteins. But after 10 years in the department of Cell Biology and Neuroanatomy, Egelman wanted to go to a department that focused more on Biophysics and Biochemistry. He moved to the University of Virginia shortly after where he remains today, continuing his work on F-actin and

RecA proteins.

Over the past several years new methods for viewing these filaments have emerged. These new methods can also be applied to other structures like bacterial pili or filamentous bacteriophage. “We are working on other helical polymers that were not previously amenable to electron microscopic reconstruction or study,” he explains. “We have exceedingly good resources and a very collegial faculty at the University of Virginia.”

Through the course of his career, Egelman has seen biophysical techniques come to be used more generally in other fields. “It’s clear that the techniques that are biophysical, such as single molecule experiments or X-ray crystallography, NMR spectroscopy or electron microscopy, are just becoming more pervasive now in many aspects of molecular biology,” he says. The continued growth of knowledge will no longer be limited by tools because the tools will progress. “There’s a continual development of techniques that will give us more and more insight into the architecture of life,” Egelman predicts.

Egelman joined the Biophysical Society in 1984. An invitation to serve on the BJ Editorial Board by

then colleague at the University of Minnesota, Vic Bloomfield, who was Editor-in-Chief at the time, motivated Egelman to become involved in Society activities. “I haven’t kept an accurate count but I’m sure over the past 27 years I’ve been to 95% of the meetings,” he reminisces. He has served numerous terms as an Editorial Board member as well as on the Society Council and, more recently, on the Society’s Public Affairs Committee. According to

(Continued on page 14.)

2008 Society Award Recipients Named

The 2008 Society awardees, listed below together with the awards for which they've been selected, will be presented their respective awards at the Joint BPS Annual Meeting/IUPAB International Biophysics Congress on Monday, February 4, 2008, during the Awards Ceremony.



Anatrace Membrane Protein Award

H. Ronald Kaback of the University of California, Los Angeles, will receive the 2008 Anatrace Membrane Protein Award for his outstanding contributions to unraveling the structure and mechanism of action of E. coli lactose permease.



Avanti Award in Lipids

Ben de Kruijff of Utrecht University will receive the 2008 Avanti Award in Lipids for his excellent and high-impact contributions to the field of lipids and membrane biology.



Michael & Kate Bárány Award for Young Investigators

Sergei I. Sukharev of the University of Maryland will receive the 2008 Michael & Kate Bárány Award for Young Investigators for his outstanding and creative contributions to membrane biophysics.



Margaret Oakley Dayhoff Award

Judith Klein-Seetharaman of the University of Pittsburgh School of Medicine will receive the 2008 Margaret Oakley Dayhoff Award for her remarkable work in computational biology embracing the full spectrum of experimental biophysics.



Distinguished Service Award

Robert Callender of Albert Einstein College of Medicine will receive the 2008 Distinguished Service Award for his service and remarkable commitment to the *Biophysical Journal* during his term as Editor-in-Chief.



Founders Award

Peter G. Wolynes of the University of California, San Diego, will receive the 2008 Founders Award for his exceptional intellectual contributions in advancing biophysical theory and physical sciences.



Emily M. Gray Award

Donald M. Crothers of Yale University and David S. Eisenberg of the University of California, Los Angeles, will share the 2008 Emily M. Gray Award for their significant contributions to education through creating rigorous, ground-breaking text enriching generations of biophysicists.



U.S. Genomics Award for Outstanding Investigator in the Field of Single Molecule Biology

Steven M. Block of Stanford University will receive the U.S. Genomics Award for Outstanding Investigator in the Field of Single Molecule Biology for his contributions, leadership, and creativity in advancing the field of single molecule biology.

Annual Meeting Symposium, Workshop, and Subgroup Schedule

Symposia

Sunday, February 3

8:15 AM - 10:15 AM

Symposium 1: The Biophysics of the Immune Response.

E. Yvonne Jones, University of Oxford, United Kingdom, Chair.
Michael Cabalan, University of California, Irvine.
Arup Chakraborty, Massachusetts Institute of Technology.
Abraham Kupfer, Johns Hopkins University.

Symposium 2: Mechanoenzymes.

Susan P. Gilbert, University of Pittsburgh, Chair.
Michael Boersch, University of Stuttgart, Germany.
Erika Holzbaur, University of Pennsylvania.
Peter Knight, University of Leeds, United Kingdom.

10:45 AM - 12:45 PM

Symposium 3: Membrane Protein Structure: Freed from the Lattice.

Marc Baldus, Max Planck Institute of Biophysical Chemistry, Germany, Chair.
John Bushweller, University of Virginia.
Roland Riek, The Salk Institute.
Gerhard Wagner, Harvard University.

Symposium 4: Putting the Move on Myosin.

Piotr Fajfer, Florida State University, Chair.

Anne Houdusse, Institute Curie, France.
Raul Padron, Venezuelan Institute for Scientific Research (IVIC).
Ronald Rock, University of Chicago.

4:00 PM - 6:00 PM

Symposium 5: Driving Forces in Macromolecular Binding.

Anthony Kossiakoff, University of Chicago, Chair.
Johan Aqvist, University of Uppsala, Sweden.
Elizabeth Komives, University of California, San Diego.
John Ladbury, University College London, United Kingdom.

Symposium 6: EGF Receptor Signaling and Networks.

Kate Ferguson, University of Pennsylvania, Chair.
Michael Eck, Dana-Farber/Harvard Cancer Center.
Stuart McLaughlin, SUNY Stony Brook.
Additional speaker to be confirmed.

Monday, February 4

8:15 AM - 10:15 AM

Symposium 7: Translation and the Translocon.

Arthur Johnson, Texas A&M University, Chair.
Klaus Schulten, University of Illinois, Urbana-Champaign.
William Skach, Oregon Health & Sciences University.
Richard Wagner, University Osnabrueck, Germany.

Symposium 8: Imaging and Controlling Cellular Dynamics in vivo Using Light.

Mark Schnitzer, Stanford University, Chair.
Alexander Gottschalk, University of Frankfurt, Germany.

Stefan Herlitzke, Case Western Reserve University.
David Piston, Vanderbilt University.

10:45 AM - 12:45 PM

Symposium 9: RNA in Action.

Joseph Piccirilli, University of Chicago, Chair.
Philip Bevilacqua, Pennsylvania State University.
Harry Noller, University of California, Santa Cruz.
Olke Uhlenbeck, Northwestern University.

Symposium 10: Ca⁺⁺ Signaling: From the Plasma Membrane to the Nucleus.

Barbara Ehrlich, Yale University, Chair.
Hilmar Bading, University of Heidelberg, Germany.
David Clapham, Children's Hospital, Boston.
Fatima Leite, University of Brazil.

4:00 PM - 6:00 PM

Symposium 11: Collective Motor Dynamics in Cell Division.

Fred MacKintosh, Free University, Amsterdam, Chair.
Tarun Kapoor, Rockefeller University.
Julie Theriot, Stanford University.
Additional speaker to be confirmed.

Symposium 12: Non-conducting Functions of Ion Channels.

Federico Sesti, UMDNJ Robert Wood Johnson Medical School, Chair.
Lori Isom, University of Michigan.
Irwin Levitan, University of Pennsylvania.
Ming Zhou, Columbia University.

Tuesday, February 5

8:15 AM – 10:15 AM

Symposium 13: Voltage-dependent Proton Channels Come of Age.*Thomas DeCoursey*, Rush University, Chair.*Nicolas Demaurex*, University of Geneva, Switzerland.*Yasushi Okamura*, Okazaki Institute, Japan.*Kenton Swartz*, NINDS, National Institutes of Health.**Symposium 14: Mechanisms of Exo- and Endocytosis.***Timothy Ryan*, Cornell University, Chair.*Jenny Hinshaw*, NIDDK, National Institutes of Health.*Yeon-Kyun Shin*, Iowa State University.*Tao Xu*, Chinese Academy of Sciences.

10:45 AM – 1:30 PM

Symposium 15: Awards Symposium/IUPAB Plenary Lecture.*Joseph Falke*, University of Colorado, Boulder, Chair.**Biophysical Society Awardees***U.S. Genomics Award for Outstanding Investigator in the Field of Single**Molecule Biology**Steven M. Block*, Stanford University.*Avanti Award in Lipids**Ben de Kruijff*, Utrecht University, The Netherlands.*Anatrace Membrane Protein Award**H. Ronald Kaback*, University of California, Los Angeles.*Margaret Oakley Dayhoff Award**Judith Klien-Seetharaman*, University of Pittsburgh School of Medicine.*Michael & Kate Barany Award for Young Investigators**Sergei Sukharev*, University of Maryland, College Park.*Founders Award**Peter Wolynes*, University of California, San Diego.**IUPAB Awardee***Arne Engström Lecture**Ueli Aebi*, University of Basel, Switzerland.

4:00 PM- 6:00 PM

Symposium 16: New and Notable

Chair and Speakers to be announced.

Symposium 17: From Protein Crystals to Amyloid Fibrils: Condensed Colloidal Phases in Biology.*(Symposium co-sponsored by the American Physical Society)**Martin Muschol*, University of South Florida, Chair.*Aleksey Lomakin*, Massachusetts Institute of Technology.*Martin Muschol*, University of South Florida.*H. Eugene Stanley*, Boston University.*David Weitz*, Harvard University.

7:00 PM – 8:00 PM

IUPAB Lecture*G.N. Ramachandran Award Lecture**Girjesh Govil*, Tata Institute of Fundamental Research, India.**Wednesday, February 6**

8:15 AM – 10:15 AM

Symposium 18: Damaged Proteins – Structural and Biological Consequences.

Chair to be confirmed.

Louise Serpell, University of Sussex, United Kingdom.*Phoebe Stewart*, Vanderbilt University.

Additional speaker to be confirmed.

Symposium 19: Allostery and Dynamics in Protein Function.*Anthony Auerbach*, SUNY, Buffalo, Chair.*Thomas Alber*, University of California, Berkeley.*Dorothee Kern*, Brandeis University.
James Wells, University of California, San Francisco.

10:45 AM – 12:45 PM

Symposium 20: ABC Transporters: Molecular Structures and Mechanisms.*Hassane Mchaourab*, Vanderbilt University, Chair.*Amy Davidson*, Purdue University.*Hassane Mchaourab*, Vanderbilt University.*John Hunt*, Columbia University.

Additional speaker to be confirmed.

Symposium 21: Nucleic Acid-based Motors.*Antoine van Oijen*, Harvard University, Chair.*Steven M. Block*, Stanford University.*Keir Neuman*, Ecole Normale Supérieure, France.

Additional speaker to be confirmed.

Workshops*Workshops will be held Sunday evening, 7:30 – 9:30 PM.***Sunday, February 3**

7:30 PM – 9:30 PM

Workshop 1: Modeling the Membrane.*Peter Tieleman*, University of Calgary, Chair.*Antoinette Killian*, University of Utrecht, The Netherlands.*Doug Tobias*, University of California, Irvine.*Ilpo Vattulainen*, Helsinki University of Technology, Finland.**Workshop 2: Single Molecule Biophysics.***Lori Goldner*, NIST, Chair.*Giovanni Cappello*, Institute Curie, France.

Marileen Dogterom, FOM Institute for Atomic and Molecular Physics, The Netherlands

Jens Michaelis, Ludwigs Maximilians University, Germany.

Workshop 3: Structural Genomics: A Discussion.

Andrzej Joachimiak, Argonne National Science Lab, Chair.

Cheryl Arrowsmith, University of Toronto, Canada.

Timothy Cross, Florida State University.

Robert Fletterick, University of California, San Francisco.

Herman van Tilbeurgh, University of Paris, France.

Additional speaker to be confirmed.

Minisymposia

Minisymposia will be held Sunday – Wednesday, running concurrently with platform sessions.

Structure-Function of Oxidative Pathway Proteins.

Inactivation and Desensitization Mechanisms in Ion Channels.

The Physics of Protein Folding/Unfolding.

Structural Refinement and Modeling Guided by Low-Resolution Experimental Data.

Subgroups

All subgroup meetings will be held on Saturday, February 2.

Bioenergetics

Lawrence Prochaska, Wright State University School of Medicine, Subgroup Chair.

Morning Symposium: Mechanism of Ion Pumps by Time-resolved Measurements.

Robert B. Gennis, University of Illinois, and *Renate L.C. Naumann*, Max Planck Institute for Polymer Research, Germany, Session Co-Chairs.

Shinya Yoshikawa, University of Hyogo, Japan.

Frank Millett, University of Arkansas.

Michael I. Verkhovskiy, University of Helsinki, Finland.

Klaus Gerwert, Ruhr-Universität Bochum, Germany.

Constantinos Varotsis, University of Crete, Greece.

Michael Börsch, University of Stuttgart, Germany.

Afternoon Symposium: Mitochondrial Bioenergetics in Disease and Therapeutics.

Paolo Bernardi, University of Padova, Italy, and *Shey-Shing Sheu*,

University of Rochester, Session Co-Chairs.

Young Investigator Award and Presentation

Luca Scorrano, Venetian Institute of Molecular Medicine, Italy.

Shey-Shing Sheu, University of Rochester.

Douglas Wallace, University of California, Irvine.

Barbara Cannon, Stockholm University, Sweden.

Paolo Bernardi, University of Padova, Italy.

Biological Fluorescence

Ari Gafni, University of Michigan, Subgroup Chair.

Program to be announced.

Exocytosis & Endocytosis

Guillermo Alvarez de Toledo, University of Seville School of Medicine, Spain, Subgroup Chair.

Fifth Annual Sir Bernard Katz Award for Excellence in Research in Exocytosis and Endocytosis.

Yuki Goda, University College London, United Kingdom.

Edward Stuenkel, University of Michigan.

Sandra Schmid, The Scripps Research Institute.

Josh Zimmerberg, National Institutes of Health.

Thomas Sudhof, Southwestern Medical Center, Dallas.

Reinhard Jahn, Max Planck Institute for Biophysical Chemistry, Germany.

Intrinsically Disordered Proteins

Keith Dunker, Indiana University, Subgroup Chair.

Session 1

Rohit Pappu, Washington University, Session Chair.

Michele Vendruscolo, Cambridge University, United Kingdom.

Lila Gierasch, University of Massachusetts.

Ashok Deniz, The Scripps Research Institute.

David Eliezer, Weill Cornell Medical College.

Session 2

David Eliezer, Weill Cornell Medical College, Session Chair.

Alan Fersht, Cambridge University, United Kingdom.

Alexander Sigalov, University of Massachusetts Medical School.

Rohit Pappu, Washington University.

Elisar Barbar, Oregon State University.

Vladimir Uversky, Indiana University.

Membrane Biophysics

Channel Gating Modifiers and Modulators.

Eitan Reuveny, Weizmann Institute of Science, Israel, Subgroup Chair.

John P. Adelman, Vollum Institute, Oregon Health Sciences University.

Diomedes E. Logothetis, Mount Sinai School of Medicine.
Jeffrey R. Martens, University of Michigan.
Daniel L. Minor, University of California, San Francisco.
Eitan Reuveny, Weizmann Institute, Israel.

Membrane Structure & Assembly

Scott Feller, Wabash College, Subgroup Chair.
Klaus Gawrisch, National Institute of Alcohol Abuse and Alcoholism.
Ka Yee Lee, University of Chicago.
Alexandra Newton, University of California, San Diego.
Toby Allen, University of California, Davis.
Keith Miller, Harvard University Medical School.
Stephen White, University of California, Irvine.

Molecular Biophysics

Elizabeth Komives, University of California, San Diego, Subgroup Chair.
Dorothy Beckett, University of Maryland, College Park.
Leor Weinberger, Princeton University.
Gioacchino Natoli, European Institute of Oncology, Italy.
Alexander Hoffmann, University of California, San Diego.
Sandra Greive, University of Oregon.
Doug Barrick, Johns Hopkins University.
 Speaker to be announced.

Motility

Piotr Fajer, Florida State University, CIMAR, and *Roger Craig*, University of Massachusetts Medical School, Subgroup Co-Chairs.
Yuichiro Maeda, Nagoya University Graduate School of Science, Japan.

Andras Malnasi-Csizmadia, Eotvos Lorand University, Hungary.
Samantha Harris, University of Washington.
Maria-Elena Zoghbi, University of Massachusetts Medical School.
Kevin Facemyer, University of Nevada Medical School.
Rob Cross, Marie Curie Research Institute, United Kingdom.
Charles Sindelar, Lawrence Berkeley National Laboratory.

Evening Talk

Roger Cooke, University of California, San Francisco.

Permeation & Transport

Wolfgang Nonner, University of Miami Medical School, Subgroup Chair.
 Program to be announced.

The Annual Meeting schedule is subject to change. Please visit www.biophysics.org for updates.

Visa Information

Scientists planning to enter the US to attend the 2008 Joint Biophysical Society Meeting and IUPAB International Biophysics Congress should apply for a visa at least three months before the meeting. International meeting attendees are encouraged to visit the following websites for information regarding obtaining a visa for entry into the US:

US Department of State
http://travel.state.gov/visa/visa_1750.html
<http://www.unitedstatesvisas.org>

National Academies of Science
<http://www7.nationalacademies.org/visas/>

US Department of Homeland Security
<http://www.dhs.gov/xtrvlsec/crossingborders/>

Housing Opens August 16, 2007

When making a reservation, be sure to go through the Housing Bureau.

Each year the Biophysical Society sets up a housing block for the Annual Meeting. The block consists of rooms among several hotels in the city where the meeting is being held, which have agreed to offer the best accommodations and most competitive nightly rates for meeting attendees. This housing block is monitored by the Housing Bureau, which can on any day notify the Biophysical Society staff of the number of rooms available in each hotel and provide the hotels with lists of meeting attendees who have made reservations.

Booking a room within the housing block is a benefit for meeting attendees because, in addition to the lower room rates, the Housing Bureau guarantees rates and rooms to those who use the service in the event of overbooking, construction, or problems with a room. The Housing Bureau is in place to immediately serve meeting attendees by taking care of any problems that arise for individuals who have booked through their service.

If, for example, a hotel within the block overbooks, the attendee who used the Bureau service is guaranteed either a room at that hotel or a room at a comparable hotel and various compensations. If, on the other hand, an attendee secured a room outside the housing block, the hotel is under no contractual obligation to provide a room or compensation. In that scenario, the hotel will always move the outside-the-block attendee.

Booking your hotel room with the housing block is also important because the block provides a “report card” on the Society for future meeting sites. By establishing a history of always filling the room block, the Society is able to secure both competitive room rates and larger blocks for future years’ meetings.

The 2008 Annual Meeting, which is a joint meeting with IUPAB’s International Biophysics Congress, will be held in Long Beach, California. The Long Beach Convention and Visitors Bureau will also serve as the Housing Bureau for this meeting. To view rates and amenities for all hotels within the meeting housing block and to complete your hotel reservation, visit www.biophysics.org.

Biophysical Society 52nd Annual Meeting

16th International Biophysics Congress (IUPAB)

February 2-6, 2008

Long Beach, California

Mark Your Calendars Now!

You won't want to miss this joint meeting!

————— Visit the meeting website at www.biophysics.org. —————



October 1 Abstract Deadline for Joint BPS/IUPAB Meeting

The 2008 meeting is not only the 52nd Annual Meeting of the Biophysical Society, but also a joint meeting with the 16th International Biophysics Congress of IUPAB. Record attendance is expected, so be sure to submit your online abstract early. Abstracts submitted by the October 1 deadline and accepted for programming will be published as a CD supplement to the *Biophysical Journal*.

Meeting attendees submitting abstracts will be able to choose from among several presentation formats: posters, minisymposia or posters, platforms or posters, and self-assembled sessions.

Minisymposia

Following the success of last year's initial four minisymposia, the 2008 meeting will again provide opportunities for minisymposia presentations. Each day will feature one minisymposium running concurrently with platform sessions. Each of the four 2008 minisymposium will feature six talks organized around a specific topic. The four minisymposia topics are:

Structure-Function of Oxidative Pathway Proteins

Inactivation and Desensitization Mechanisms in Ion Channels

The Physics of Protein Folding/Unfolding

Structural Refinement and Modeling Guided by Low-Resolution Experimental Data.

Attendees submitting abstracts by the October 1 deadline will have the option to submit their abstracts for possible inclusion in one of these sessions. The minisymposium co-chairs for each topic will select the six most appropriate abstracts from among those submitted for each topic. Those not selected will be programmed in the appropriate poster session.

Posters

More than 700 new poster presentations will be scheduled each day from Sunday through Wednesday. Abstracts submitted after the October 1 abstract deadline will be programmed in a late-poster session, which will run concurrently with the regular poster session on Wednesday.

Platform Sessions

Each platform session includes eight presentations, selected from among the abstracts submitted. When submitting abstracts, authors have the option to request being considered for platform sessions. Abstracts not chosen are programmed in the appropriate poster session. As the meeting attendance has grown, so has the number of attendees requesting to be considered for the approximately 50 platform sessions, making platform selection increasingly competitive.

Self-Assembled Sessions

Meeting attendees interested in organizing their own platform session on a specific topic or theme not included in the poster or minisymposium categories may submit a request to the Program Committee in the form of a self-assembled session. Anyone interested in organizing a self-assembled session must submit the title of the session, chair of the session, and a proposed list of speakers and titles of each of their abstracts to the Society office by September 21. All abstracts proposed in the session must then be submitted by the October 1 deadline. Selection of the self-assembled sessions is made by the Program Committee. Abstracts not selected for self-assembled sessions will be programmed in an appropriate poster session.

The abstract submission site, found at www.biophysics.org, closes at midnight on October 1, 2007. Revisions will be accepted until midnight, October 5, 2007.

Subgroups

Membrane Structure & Assembly

The Membrane Structure and Assembly Subgroup is planning its subgroup meeting in Long Beach around the topic of specific interactions between lipids and membrane proteins. Look for the list of speakers in the Call for Papers. The subgroup's charter, which can be accessed on the Society's web page by following the subgroups link, describes the MSAS mission as advancing "knowledge pertaining to the biophysical properties of lipids, lipid assemblies, membrane proteins and lipid-protein interactions generally relevant to biological membranes and their assembly". As you renew your membership please consider joining the MSAS if your interests overlap with us. The subgroup would also like to encourage graduate students working in this area to compete for the Student Research Achievement Award at the Meeting. See you in Long Beach!

—Scott Feller, Chair

Intrinsically Disordered Proteins (IDP)

Breaking IDP News: Disorder Reigns in Budapest

Approximately 130 scientists from Europe, North America, Asia, Australia and the Middle East assembled in beautiful Budapest, Hungary, in May to discuss intrinsically disordered/unstructured proteins at an EMBO/SPINE2-sponsored meeting entitled *Intrinsically Unfolded Proteins: Biophysical Characterization & Biological Significance*. The 4½-day meeting (May 20-24) featured plenary lectures by well established luminaries in the field as well as talks and short talks by others, from principal investigators to postdoctoral fel-

lows and PhD students. The meeting, held at the Central European University Conference Center, was characterized by open and often lively discussion of key topics in the field, from the diverse role(s) of IDP/IUPs in a wide range of biological systems, to their structural and dynamic characteristics, to the plethora of physical and computational methods being used to study them. The IDP Subgroup was well represented in Budapest, with at least eight officers or past symposium speakers presenting lectures. However, in contrast to the ½-day IDP Subgroup Symposium held at the Annual Biophysical Society Meeting in Baltimore on March 3, 2007, the Budapest meeting allowed for total immersion in the subject of IDP/IUPs and for scientists from around the world to exchange ideas over the several-day period.

The following is an abbreviated overview of main themes that emerged from the meeting. [Note: the names of the speakers that addressed particular topics are given parenthetically.] One major goal was to survey the widely divergent biological roles played by IDP/IUPs, especially in human disease. The sequences of IDP/IUPs are often extremely long and, consequently, contain an enormous number of sites/motifs for interactions with other biomolecules (*Peter Wright*, CBP/p300; *Ray Norton*, malarial proteins; *Alan Fersht*, *Kyou-Hoon Han* & *Gary Daughdrill*, p53; and *Ruth Nussinov*, multi-protein assemblies). Much attention was given to the structural features of protein complexes comprised of IDP/IUPs and their mechanisms of assembly. For example, at least some IDP/IUPs adopt different conformations when interacting with different biological partners, consistent with their roles as hubs in signaling pathways (*Keith Dunker*). Further, IDP/IUPs often contain multiple, compact interaction domains within their sequences

and these can serve as scaffolds for assembly of multi-protein complexes, for example complexes that regulate eukaryotic gene transcription.

The meeting also featured discussion of a wide range of biophysical, theoretical and computational techniques that are being applied to understand the often highly dynamic conformational features of IDP/IUPs. NMR spectroscopy remains a mainstay in the field, providing information on local secondary structure propensities as well as long-range structure through analysis of RDCs and paramagnetic effects (*Lucia Banci*, *Gary Daughdrill*, *Richard Kriwacki*). In addition, NMR provides detailed insights into the inherent dynamical properties of IDP/IUPs and can be used to probe dynamic features of protein complexes as they form (*Peter Wright*). However, other methods such as SAXS (*Veronique Receveur-Brechet*, *Bojan Zagrovic*), Raman optical activity (*Laurence Barron*), and fluorescence spectroscopy, both steady-state and time-resolved (*Thomas Jovin* and *Carlos Bertoncini*), are increasingly being used to complement information from NMR and CD. Consideration was given to just how random the backbone conformations of IDP/IUPs actually are and the extent to which they populate polyproline type II conformations (*George Rose*, *Israel Silman*). An emerging theme is that the conformations of IDP/IUPs are much less random than originally thought. Further, molecular dynamics computations are being used increasingly to visualize the structural and dynamic features of IDP/IUPs (*Bojan Zagrovic*, *Gary Daughdrill*).

Six or more talks addressed the properties of amyloidogenic IDP/IUPs, with synuclein (*David Eliezer*, *Thomas Jovin*, *Carlos Bertoncini*, *Vladimir Uversky*), Tau (*Eckhard Mandelkow*), and Huntingtin exon-1 (*Ron Wetzel*) as main topics of discussion. An emerging view is that, while

highly disordered, some of these proteins exhibit a degree of compactness in the non-aggregated native state which may arise from transient, long-range interactions between segments that exhibit partially populated secondary structure. This dynamic structural organization may be altered by disease-associated mutations, leading to heightened propensities to aggregate. Several speakers discussed the influence of lipids and/or membrane-like media on the conformations and aggregation properties of this class of IDP/IUPs, with strong suggestions that interactions with biological membranes play key roles in pathogenesis of, for example, Alzheimer's, Parkinson's and Huntington's disease.

The field of IDP/IUPs has grown rapidly in part due to a potent synergy between experimental and computational techniques. Bioinformatics methods have played a crucial role in generalizing the phenomenon of intrinsic disorder, for example, by showing the abundance of IDP/IUPs in nature (*Keith Dunker*). Bioinformatics tools have proved vital for understanding the diverse functional roles of IDP/IUPs in biological systems (*Keith Dunker*), and for clarifying the roles of IDP/IUPs in human diseases (*Vladimir Uversky*). In addition to the continued development of increasingly accurate predictors of disorder (*Robert Esnouf*, *David Jones*, *Oxana Galzitskaya*, *Zsuzsanna Dosztanyi*, *Jaime Prilusky*), much effort is being given to the development of bioinformatics methods to identify short, functionally significant segments (e.g. interaction motifs, sites of post-translational modifications) within long, disordered polypeptide regions (*Monika Fuxreiter*, *Toby Gibson*, *Rob Russell*). These efforts, in part, represent infusion of expertise from systems biology into the rapidly expanding IDP/IUP field, and have the potential to offer new perspectives on the broad roles of IDP/IUPs in whole biological systems.

Finally, exciting developments and new perspectives were discussed in several other important areas. Two talks (*Yossi Shaul*, *Peter Tompa*) addressed the issue of the regulation of IDP/IUPs by proteolytic/proteasomal degradation. While the in vitro proteolytic susceptibility of IDP/IUPs is well established, whether these proteins generally exhibit heightened susceptibility to proteolytic degradation in vivo, and the extent to which such degradation is individually regulated, is less well understood. In vivo studies of IDP/IUPs by NMR (*Philipp Selenko*) have the potential to address issues of their stability in cells and how stability is regulated through post-translational modifications (e.g. phosphorylation, ubiquitylation), or not regulated (e.g. "degradation by default"). On another topic, the significance of IDP/IUPs in one of the evolutionarily earliest biological structures, the ribosome, was addressed (*Ada Yonath*). Ribosomal IDP/IUPs may represent some of the earliest proteins, highlighting their importance in the structure of and likely the assembly of complex biomolecular machines. Last, but certainly not least, are the important roles played by IDP/IUPs in plants (*Adela Goday*, *Denes Kovacs*). Specialized IDP/IUPs protect plants from various types of environmental stress, including dehydration and extremes of temperature, and exhibit unique structural and dynamic features.

The Budapest IDP Meeting was a significant event in the maturation of scientific studies of IDP/IUPs. Efforts are underway by IDP Subgroup members to organize a similar meeting in the United States in two or three years. Importantly, the IDP Subgroup and the Biophysical Society provide a mechanism for, on an annual basis, discussion of current topics in the IDP/IUP field. We strive to catalyze broader understanding of IDP/IUPs in biological systems, and to communicate their significance to the broader scientific community.

—*Richard Kriwacki*, Chair

Additional IDP News

The second annual meeting of the Intrinsically Disordered Proteins Subgroup will be held in Long Beach on February 2, 2008. The symposium theme will be Intrinsic Disorder and Human Disease. The first session will be chaired by *Rohit Pappu*, of Washington University. Speakers will include *Michele Vendruscolo*, Cambridge University; *Lila Gierasch*, University of Massachusetts, Amherst; *Ashok Deniz*, The Scripps Research Institute; *David Eliezer*, Cornell University, Weill Medical College. The second session chair will be *David Eliezer*, Cornell University, Weill Medical College. The speakers include *Alan Fersht*, Cambridge University; *Alexander Sigalov*, University of Massachusetts, Worcester; *Rohit Pappu*, Washington University; *Elisar Barbar*, Oregon State University; and *Vladimir Uversky*, Indiana University School of Medicine.

Join the IDP Subgroup

Have an intrinsically disordered protein or are interested in them? Join the IDP Subgroup. Download the application form from <http://www.biophysics.org/subgroups/idp.htm>.

—*Trevor Creamer*,
Secretary/Treasurer

Membrane Biophysics

The 2008 Membrane Biophysics Symposium at the Long Beach meeting is entitled *Channel Gating Modifiers and Modulators*. The chair of the subgroup, *Eitan Reuveny*, Weizmann Institute will be speaking along with *John P. Adelman*, Vollum Institute, Oregon Health Sciences University, *Diomedes E. Logothetis*, Mount Sinai School of Medicine, *Jeffrey R. Martens*, University of

Michigan, *Daniel L. Minor*, University of California, San Francisco and *Eitan Reuveny*, Weizmann Institute. Be sure not to miss it!

—*Carol Beck*, Secretary

Public Affairs

R&D Appropriations Update

When this newsletter went to press, the House and Senate Appropriations Committees were in the process of considering Fiscal Year (FY) 2008 funding for federal agencies, but had yet to pass any appropriations bills into law. With the House committee having passed funding bills for the Department of Energy, the National Science Foundation, and the National Institutes of Health, it looks as though the DOE Office of Science will be the clear winner among the Research and Development agencies in 2008 with a budget of 4.5 billion. The House has approved a budget of \$4.5 billion for the Office of Science, an 18.9% increase over Fiscal Year 2007 funding.

The National Science Foundation most likely will also do well in the FY 2008 appropriations process. For the National Science Foundation, the House had approved a budget of \$6.5 billion, an increase of 10% over FY 2007.

Unfortunately, the outlook for the National Institutes of Health (NIH) is not as rosy. While it is unlikely that the NIH will suffer from an actual decrease next year, as proposed by the President's budget, the House and Senate Appropriations committees passed bills with a 2.9% and 3.5% increase for NIH respectively. The House would provide \$29.650 billion, and the Senate \$29.9 billion. Both committees increased the

amount of money NIH would have to transfer out of the agency to the Global HIV/AIDS fund, thus shrinking the budget increase to less than 2%.

The White House has threatened to veto any spending bills that exceed the amount requested by the White House.

The Biophysical Society, as part of the Ad Hoc Group for Medical Research, recommended a 6.7%

The two new NIH working groups will seek input from the scientific community, including investigators, scientific societies, grantee institutions, voluntary health organizations, and NIH employees. The groups will study the context, criteria, and culture of peer review to make sure the most talented individuals and reviewers are engaged in the process. As part of the information gathering process, Biophysical

The DOE Office of Science will be the clear winner among the Research and Development agencies in 2008, with a budget of \$4.5 billion.

increase for NIH. Through the Coalition for National Science Funding and the Energy Sciences Coalition, the Society supported the President's requests for the NSF and DOE Office of Science.

NIH Establishes Working Groups to Examine Peer Review

National Institutes of Health (NIH) Director *Elias A. Zerhouni*, M.D., announced in June the formation of two working groups — one external, the other internal — to examine the

Society President Joe Falke participated in a half-day meeting on July 30 sponsored by the Advisory Committee. BPS members have also been encouraged to respond to a Request for Information from NIH. (Go to <http://grants.nih.gov/grants/guide/notice-files/NOT-00-07-074.html> to learn more and submit a response. The deadline has been extended to Sept. 7.)

The external working group will present its findings to the full Advisory Committee to the Director in December 2007. The internal NIH steering committee working group will present its findings to the

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NIH peer review process, with the goal of maximizing its effectiveness.

"Peer review is such a fundamental and critical part of the research process that it requires our constant vigilance," said Director Zerhouni in a press release. "With the increasing breadth and complexity of science, along with the increased number of research grant applications, we need to take a comprehensive look at our review process, and make the necessary changes to strengthen it for applicants and reviewers alike.

NIH Director's Steering Committee during the same month. Both working groups will meet in January 2008 to develop a set of integrated recommendations for next steps.

Biophysical Society Cosponsors Science Exhibit on the Hill

On June 26, the Coalition for National Science Foundation held its 13 Annual Exhibition and Reception

on Capitol Hill. The Biophysical Society was a cosponsor of the event.

The purpose of the event is to show Congress members and Congressional staff the importance of funding for NSF by demonstrating the breadth of the research funded by the organization, and that the money goes to researchers working all over the country. Many members and staff had an opportunity to connect directly with researchers from their own districts.

Over 490 individuals attended this year's exhibition, including Congressmen Altmire (PA), Baird (WA), Capps (CA), Clay (MO), Ehlers (MI), Etheridge (NC), Hopson (OH), Kennedy (RI), Lipinski (IL), H. Wilson (NM), and J. Wilson (SC).

Profile (Continued from page 3.)

Bloomfield, currently Professor of Biochemistry, Molecular Biology and Biophysics and Associate Vice President for Public Engagement at the University of Minnesota, Egelman will bring "good scientific

judgment, knowledge of important areas, scientific breadth, high standards, and articulateness," to the Journal. As he steps into the role of Editor-in-Chief of *Biophysical Journal*, Egelman brings with him a solid understanding of and respect for the Society and the field of biophysics as well as a sense of humor, although he notes that "most people doubt that I do have a sense of humor, so this gets controversial." He wants to see the Journal continue to grow in stature. "I would like to increase the number of review articles for several reasons," he explains. "One reason is that these reviews tend to be cited very heavily and regardless of how one feels about the liability of impact factors in judging a journal, they do carry weight with many people." He would also like to raise the standards for articles accepted in the Journal in terms of significance.

Besides science and BJ, cooking continues to be one of Egelman's great interests. As with everything he does, he brings intellectual curiosity and high energy to his cooking. He is

known for whipping up incredible gourmet meals, which he pairs with another love: wine. His wife Adrienne is a fine arts appraiser, the only Accredited Senior Appraiser designated in Fine Arts in Virginia. His two children, Serge and Liana, are both in graduate school and have followed in their parents' footsteps. Serge is currently working on his PhD in computer science while Liana is getting her master's in fine arts management. While Egelman admits that "it's hard for me to imagine doing anything other than science," he does continue to have an avid interest in philosophy, literature, and travel. He makes a concerted effort to "have collaborators in nice locations," so that he can turn work travel into an interesting vacation, with Adrienne often joining him.

Biophysical Journal can only benefit from the passion, energy, and intellectual curiosity that Egelman has brought to every endeavor he has undertaken.

Research Grants

NOHR Request for Applications

Grant Application #1—The National Organization for Hearing Research Foundation announces a request for Applications for Inner Ear Hair Cell Regeneration Research. The grant will present one project with one principal investigator and one collaborating investigator \$100,000 per year for a two-year period. For more information please visit <http://www.nohrfoundation.org/Pages/2007%20innereargrants.html>.

Deadline: September 7, 2007

Grants Awarded By: December 7, 2007

Grant Application #2—The National Organization for Hearing Research Foundation will award grants for exploration into innovative biomedical research areas in the preventions, causes, treatments and cures of hearing loss and deafness in January 2008. The grants will be for approximately \$20,000, primarily in the form of seed money. For more information please visit <http://www.nohrfoundation.org/Pages/2002%20reseach%20grants.html>.

Deadline: October 6, 2007

Obituary

Elizabeth Gross, a member of the Biophysical Society since 1979 and director of the Ohio State Biophysical Program from 1990-2001, died on Wednesday, June 27, from complications arising from pneumonia. Throughout her career, Elizabeth was an advocate for biophysics and was responsible for the education of hundreds of biophysics PhD students during her tenure as director at Ohio State. She played an active role in providing opportunities for women in science, both at Ohio State and at the national level, serving as the Chair of the Committee on Professional Opportunities for Women (CPOW) of the Biophysical Society in 1982.

Elizabeth was an active scientist throughout her life, with her most recent work focusing on the Brownian dynamics of electron transfer reactions in cytochromes of photosynthetic cells, published in the *Biophysical Journal* in 2006. She was greatly loved by the biophysics community at Ohio State where a faculty award in biophysics is given annually in her honor.

—*Tom Clanton*, Co-director of the OSU Biophysics Program

Call for Discussions Topics

The Discussions Committee is soliciting proposals for the 2008 Biophysical Discussions.

Deadline: December 31, 2007. Submit proposals by email to: discussions@biophysics.org

Biophysical Discussions are small meetings that focus on cutting-edge or emerging topics in biophysics, topics that benefit from intense discussions. The meetings have a unique format that stresses discussion over formal presentations. Plenary sessions consist of five-minute presentations by speakers, followed by a lengthy discussion. In addition, there are poster sessions. The meetings take place over a three-day period, with talks in the morning and evening, and the afternoons set aside for informal interactions.

This format allows for greater, less inhibited participation by attendees. The meetings are limited to 200 participants.

The 2008 Discussions will be the tenth such meeting organized by the Biophysical Society. Suggestions for possible 2008 Discussion sites are also welcome.

- A Discussions proposal should contain names of the organizer(s), who must agree to the role, a title/theme, a short paragraph telling why this is an important topic, and a list of possible presentations and presenters and tentative plans to obtain extramural support.

- Preference will be given to topics that bring together scientists from diverse disciplines.

- Additional details can be found at: <http://www.biophysics.org>.

The Biophysical Society Discussions Committee

Yale Goldman, University of Pennsylvania

Steven M. Block, Stanford University

Edward Egelman, University of Virginia

David E. Eisenberg, University of California, Los Angeles

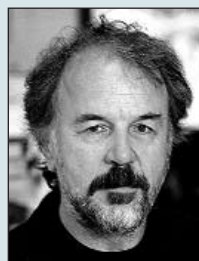
Christopher Miller, Brandeis University, HHMI

Members in the News



David F. Bocian

David F. Bocian, of the University of California, Riverside, and Biophysical Society member since 1979, was awarded the 2007 Bomm-Michelson Award. The award is given for achievements in chemistry and spectroscopy.



Harry F. Noller



Thomas Steitz

Harry F. Noller of the University of California, Santa Cruz and Society member since 2002, and *Thomas Steitz* of Yale University and Society member since 2003, were recipients of the 2007 Gairdner International Awards.

The awards honor biomedical scientists who have made original contributions to medicine with the ultimate goal of contributing through research to the conquest of disease and relief of human suffering.

September 6-7, 2007

2nd International Meeting on the Role of Nitrate in Physiology, Pathophysiology & Therapeutics

Bethesda, Maryland

www.strategicresults.com

October 17-18, 2007

Nano for the 3rd millennium - Nano for life

Prague, Czech Republic

<http://www.nano3millennium.com/>

October 29-November 2, 2007

IMA Workshop: RNA in Biology, Bioengineering and Nanotechnology

Minneapolis, Minnesota

<http://www.ima.umn.edu/2007-2008/W10.29-11.2.07/>

November 1-6, 2007

8th International Conference on Systems Biology

Long Beach, California

<http://icsb-2007.org/>

November 6-8, 2007

4th World Congress on Biomimetics, Artificial Muscles and Nano-Bio

Cartagena, Spain

<http://www.upct.es/~nano-bio/location.htm>

November 7-10, 2007

FIT 2007 — Franco-Israeli Trends in Soft Matter, Biophysics and Microfluidics

Biarritz, France

<http://fit2007.crpp-bordeaux.cnrs.fr/>

November 28, 2007

Genomics Momentum 2007

The Netherlands

<http://www.GM2007.org/GM2007/update.aspx>

Please visit <http://www.biophysics.org/> for a complete list of upcoming events.