

Division of Biological Physics

A Division of The American Physical Society

Spring 1997

Message from the Chair

The Division of Biological Physics continues to be healthy and we look forward to continued growth over the next year. As the new Chair of the Division, I welcome suggestions, comments, announcements, and requests. These may be sent by snail mail, fax or e-mail (rousseau@aecom.yu.edu).

There are three high priority issues that the membership should address as soon as possible: symposia for next years March Meeting, nominations for the Biological Physics Prize, and nominations for fellowship.

For the March Meeting to have a successful series of symposia, it is essential for the membership to suggest topics. The Meeting next year will be held in Los Angeles from March 9 to March 13, 1998. Every effort will be made to arrange the symposia on the first three days of the Meeting (March 9-11). Symposia should include four, or at most five, invited speakers in areas of biological physics that are of general interest to the Physics community. The suggestions for symposia should be sent to Frank Moss in the Department of Physics at the University of Missouri (e-mail: C464@sevaxa.umsl.edu) by June 15th, 1997 to allow sufficient time for the decisions to be made and the APS to be notified.

At this year's March Meeting in Kansas City we had seven invited symposia that were very well attended. Indeed, some

were standing room only and even on Friday, the last day of the meeting, the attendance was excellent. I want to thank the organizers of each symposium for selecting such excellent topics. In addition to the symposia, this year four of the contributed sessions had one invited presentation. This added interest and depth to the contributed sessions and is a format we plan to continue to use in the future. In addition to suggesting speakers for the symposia, please submit proposed invited speakers for the contributed sessions as well. Many of the contributed sessions could have one or even two invited speakers to serve as a foundation for the contributed talks. Please be aware that the APS does not provide any travel support for the invited speakers. However, the DBP does offer complementary registration for invited speakers who are not APS members and some limited travel support for those speakers who have specific needs.

The second issue of high priority concerns the Biological Physics Prize which we give every other year. The Prize is to recognize and encourage outstanding achievement in biological physics research and consists of a \$5000 stipend along with a travel allowance to attend the March Meeting where the prize is bestowed. As a Division we are proud to have recognized very distinguished biological physicists in the past since the first granting of the Prize in 1982. The past winners are Broderick Clayton, George Feher, Paul Lauterbur, Howard Berg, Edward Purcell, John Hopfield, Harmut Michel, Johann Deisenhofer, Britton Chance, Watt Webb, Hans Frauenfelder, Robert Pearlstein, Robert Knox and Seiji Ogawa. A nomination letter, a biographical summary and supporting letters

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Physical Review E

Biological Physics Home

The Division of Biological Physics (DBP) actively promotes three publication homes for its members, the *Biophysical Journal* (owned by the Biophysical Society), *Physical Review Letters* and *Physical Review E*, both owned and operated by the American Physical Society (APS). Before 1992 Biological Physics papers that were published in APS journals were published in *Physical Review A*, then in *A15* when the journal split, and now in *Physical Review E* in Section 5 (especially created to contain Biological Physics papers). *PRE* is the newest member of the Physical Review family of journals (since 1992) and is the journal where new areas of physics are published, so it seemed the most appropriate APS journal for Biological Physics. The DBP is represented on the *PRE* board by John Nagle, a past Chair of the Division, and a continuing

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Minutes of the Business Meeting of the Division of Biological Physics

*Kansas City, MO Convention Center
March 19, 1997*

The meeting was called to order by Chairperson Ivar Giaever at 5:31 PM. The minutes of the 1996 meeting was read by Earl Prohofsky and accepted as read. The Treasures report was read by Earl Prohofsky and was accepted as read. The Chair introduced the new members of the Executive Committee, Bruce West, Vice Chairperson, Mark Fano and John Powell, new at large members.

1. The Chair announced those selected to Fellowship in the APS that were sponsored by DBP and read the citations on their certificates. Two Fellows Paul Erdos and Arnold Hoff are foreign members and were not present at our meeting. The certificates of Fellowship were presented to our two US Fellows, Bill Bialek and Frank Moss, by Chairperson Ivar Giaever.

Ivar then commented that we could have up to 5 Fellows selected from DBP and that he would urge more Fellow nominations. The nominations should go to our divisional Fellowship Committee Chair Ed Uzgiris. The forms for Fellow nomination are available on the APS web page.

2. Ivar announced that PRE was the PR journal publishing work in Biological Physics and urged people to submit articles. He also urged members to fill in reviewer forms and act as referees for the journal as the Editors felt that they had a small referee base in biological physics.

Bill Ditto commented that biologists don't read PRE and he wondered how we could spread the word that good biological papers of interest to them were available in PRE. Discussion followed with Ivar suggesting an effort to get the papers in biological physics listed in Medline. John Powell volunteered to find out how to go about getting work listed on Medline. More discussion took place on just what papers should be in PRE and which should be in biological journals. There was a consensus that the detailed equations fully describing the physics could only be published in PRE.

3. Ivar then brought up the question of running a shorter DBP meeting with some overlapping sessions verses running the full week with fewer overlapping sessions. The majority seemed to favor a shorter meeting. Frank Moss said that we can expect our number of Symposia to grow and the overlap problem will only get worse.

Ivar reminded Frank that one Symposia had to be reserved for the Biological Physics Prize Symposia next year.

4. The Chair then called for New Business

J. Paul Grigera, from IFLYSIB-LA Plata Argentina, who is a member of the Board of the International Union of Pure and Applied Biophysics [IUPAB] asked why our division wasn't affiliated with IUPAB. They could, for example, sponsor a Symposia at our meeting or at theirs.

Earl Prohofsky volunteered to follow up on the suggestion for affiliation.

5. Ivar then introduced our incoming Chairperson Denis Rousseau who then took over as Chair of the meeting.

1. Denis publicly thanked Ivar for his work during the past year. He also thanked all the people who helped arrange the program for the meeting and all the officers of the Division for their efforts during the past year.

2. Denis urged the members to start early in suggesting good quality Symposia and Lead off speakers for next years meeting. The forms for suggesting names are included in our newsletter and are always available on the web. There was discussion about where to put the invited talk in contributed sessions. It would be nice to lead off the session with a good talk setting the stage for the contributed talks, but there is pressure from schedulers to spread them out over the session so a listener can get to several in overlapping sessions. Denis Rousseau felt they should be lead off speakers. Peter Hanggi suggested focus sessions mixing more invited talks with contributed talks and even spreading out a topic over two sessions. Frank Moss said it was difficult to do for DBP as the work is so diverse. Frank also said we need to coordinate with other divisions that are running symposia in our areas as there was overlap of sessions with DCP.

3. There was some discussion about better publicity for our division and our Symposia. It was pointed out that the local paper spent much of its article on the meeting describing one of the DBP Symposia. It was asked how that came about and Denis said it came from the "laymen" versions of the talks that are given to Ben Stein for distribution to the press before the meeting. The press follows up on any of these announcements that seems interesting to them. It was suggested that all these "layman versions" be collected and used for publicizing our sessions.

Bill Ditto again raised the issue of why we don't get more recognition and achieve greater growth. Bill said we need to work at breaking down barriers with people in industry and other academic departments. Sam Williamson pointed out that our division has been getting recognition in the form of extra symposia, above that based on our contributed sessions, at a time when other divisions have had their symposia numbers cut. Denis Rousseau set up a committee to seek greater interaction with people in medicine, industry and other academic departments and asked Bill Ditto to head the committee.

Shirley Chan talked about getting articles in Physics Today and other places. Sam Williamson volunteered to work with Shirley on writing and organizing articles for APS News etc. Earl Prohofsky suggested starting with the "Layman" articles from our symposia each year. Bill Bialek suggested articles for the new breed of Review Journal in Biology by members of our division. For example by Frank Moss.

The meeting was adjourned at 6:30 PM.

Respectfully submitted
E.W. Prohofsky

Physical Review E — Biological Physics Home

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member of the DBP Publications Committee. It is important for Biological Physics to have a vital publishing home in APS journals for several reasons.

- (1) Biological Physics is indeed physics and should be published in a physics journal to demonstrate this. (Physics department promotions committees should not be given any excuse to say that a junior faculty member does not do physics based on the journals used for publication, nor should long range planning committees have an excuse not to think of Biological Physics as a direction for a physics department.)
- (2) The traditional physics community should have the opportunity to read about exciting Biological Physics in a convenient and congenial APS journal. (This, in turn, will help to keep the APS journals in the mainstream of what we think will be the most exciting science.)
- (3) Members of the DBP should have options for publishing and not be restricted to journals operated by other societies. (Even in the case of the Biophysical Journal where the DBP has influence, there are differences in emphasis, ideals, and certainly of style, compared to what most physicists prefer.)

Physical Review E has prepared the following description of appropriate papers for the Biological Physics section of *PRE*.

"*Physical Review E* welcomes biologically inspired physics papers for publication in Section 5 on Biological Physics. This Section has been placed next to Section 4 (Complex Fluids) since many of the problems studied and approaches utilized in these sections are similar. In keeping with the general policy of *Physical Review*, appropriate papers should report innovative physics which may involve

- (i) advances in physical understanding of biological processes or of the materials that are involved in biological systems.

- (ii) better methods of physical analysis of experimental data or better theory.

- (iii) advances in physical instrumentation to be applied to biological problems.

- (iv) new phenomena of a primarily physics nature in a biological system.

Applications that apply traditional physical methods to biological problems and that have no new methods of analysis or interpretive theory, even though they contain important results for understanding the biology of a system, are usually more appropriately published in the biophysical journals.

Many biomedical projects that result in multiple publications involve both basic physics and applications to a sub-field of biology. It is the purpose of Section 5 of *Physical Review E* to provide a publishing home for the physics component. Authors are encouraged to plan their papers to take advantage of this opportunity."

There are other advantages to publishing in *Physical Review E*. Since the journal covers several areas, including a variety of topics in many-body physics, a broader, international audience of readers is reached. In addition, the current average processing time for articles from receipt to acceptance is 131 days, and the time from acceptance to publication is about 3 months; for *Rapid Communications* about a month is saved both in the editorial office and in production time.

The American Physical Society (APS) has developed electronic products and services that also enhance the appeal of the journal. These include an author status inquiry system (<http://publish.aps.org/>), and a developing electronic preprint service which was launched officially October 1, 1996. A fully searchable electronic archive of the *Physical Review* and *Physical Review Letters* is also envisioned.

We suggest that it is in the interest of the DBP to respond to this call for papers in order to enhance considerably the presence of Biological Physics in the APS journals. We will, of

course, be happy to answer specific questions regarding appropriateness of particular papers. Please feel free to contact any of us: Irwin Oppenheim, Editor *PRE*; John Nagle, member of the *PRE* Editorial Board; Margaret Malloy, Senior Assistant Editor *PRE*.

DIVISION OF BIOLOGICAL PHYSICS

Submitted by E.W. Prohofsky

Financial Report
March 18, 1997

Balance	6/30/95	\$ 23,735
Expenses	through 6/30/96	\$4,736
Newsletters		\$3,458
Misc.		\$1,278
Income	through 6/30/96	\$12,809
Dues		\$6,220
Meeting Income		\$4,733
Investment Allocation		\$1,857
Balance	6/30/96	\$31,809

Note: This report reflects the current APS fiscal year for units.

The American Physical Society

Division of Biological Physics
March Meeting 1998, Los Angeles, CA

PROPOSED INDIVIDUAL INVITED TALKS (LEAD OFF CONTRIBUTED SESSIONS)

Speaker #1	Name: _____	Telephone: _____
	Address: _____	

	Title of Talk: _____	APS Member? _____

Speaker #2	Name: _____	Telephone: _____
	Address: _____	

	Title of Talk: _____	APS Member? _____

Speaker #3	Name: _____	Telephone: _____
	Address: _____	

	Title of Talk: _____	APS Member? _____

Speaker #4	Name: _____	Telephone: _____
	Address: _____	

	Title of Talk: _____	APS Member? _____

Speaker #5	Name: _____	Telephone: _____
	Address: _____	

	Title of Talk: _____	APS Member? _____

Send by June 15, 1997 to
Prof. Frank Moss
Department of Physics
University of Missouri at St. Louis
St. Louis, MO 63121

NEW APS FELLOWS SPONSORED BY DBP

William Bialek NEC Research Institute,

"For his contributions in understanding the neural code and the optimization of neural processing through application of the methods of theoretical physics to problems in neuroscience."

Paul Erdos Institute Physics Theory, University de Lausanne, Switzerland

"For the elucidation of the thermal and electronic properties of disordered materials and actinide compounds, and for his work on the biophysics of neural control of the locomotion of nematodes."

Arnold J. Hoff Dept. of Biophysics, Huygens Lab, University of Leiden, The Netherlands.

"For novel and insightful applications of a variety of EPR related techniques to the elucidation of the primary processes in bacterial and green plant photosynthesis."

Frank Moss Dept. of Physics, University of Missouri at St. Louis.

"For the elucidation of the structure of turbulent superfluid helium and for the discovery of stochastic resonance in sensory biology."

1997 DBP Student Travel Award Winners

Robert Carlson, Department of Physics, Princeton University

"Sorting of White Blood Cells in a Lattice"

Syun-Ru Yeh, Dept. of Physiology & Biophysics, Albert Einstein College of Medicine

"Thermodynamics of Cytochromic c Folding"

Message from the Chair

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should be sent to John Hopfield in the Molecular Biology Department at Princeton University (e-mail: john@hope.caltech.edu) by July 1, 1997.

The third important issue is the nomination of new Fellows. Each year we can nominate up to five members of the DBP for fellowship. The executive committee adopted a new policy this year concerning Fellows. Once approved, they will be asked to present an invited talk at the following March Meeting. Only a small fraction of our members are fellows and it is an honor so nominations are welcomed. The rules and regulations can be found on the APS home page (<http://aps.org/>). Nominations should be sent by June 1, 1997 to Edgidijus Uzgiris at uzgiris@crd.ge.com or mailed to him at GE R&D Center, PO Box 8, Schenectady, NY 12301.

In order to encourage young scientist to attend the March Meeting, the DBP offers travel awards of \$400 to students or postdocs to make a contributed presentation at the March Meeting. This years winners were Dr. Syun-Ru Yeh of Albert Einstein College of Medicine ("Thermodynamics of Cytochrome c Folding") and Dr. Robert Carlson of Princeton University ("Sorting of White Blood Cells in a Lattice"). This is a very nice way to stimulate the careers of younger scientists so I solicit nominations for next years meeting. A nomination letter and a copy of the abstract of the talk that will be presented at the March Meeting should be submitted to me (rousseau@aecom.yu.edu) at the time the abstract for the meeting is sent to the APS.

At this years March Meeting there was considerable discussion concerning the visibility of the DBP. Specifically, it was recognized biological physics is rapidly growing in importance in Physics Departments as well as in Chemistry Departments throughout the country. Thus, it was felt that the DBP

should have more influence, should have a larger membership, and should be more widely recognized. Several ideas were put forward to achieve some of these goals. First, I encourage every member of the Division to increase our membership by convincing other members of their departments and other colleagues to become members of the division. Secondly, I have appointed Bill Ditto of the School of Physics at Georgia Tech (wditto@ac11.physics.gat.edu) to spearhead an effort to increase the membership. Third, Shirley Chan of the Department of Physics at Princeton University (chan@pupgg.princeton.edu) will lead an effort to have popular articles about Biological Physics published in Physics Today or the APS News. In addition, these articles will appear on the DBP web site. Exciting advances in biological physics should be written in a way understandable to a general audience and submitted to her. We hope that these efforts will result in greater recognition of our division.

For future happenings in the DBP please keep checking the DBP web page (<http://aps.org/DBP/>). It will be maintained this year by Johnny Powell of Reed College (dna@reed.edu). Please send any comments concerning the web site to him.

Please send me any ideas or comments you have concerning the Division of Biological Physics. Our goal is to represent biological physics to the APS as well as to the outside world in general. Often we fall in the cracks between "physics" and "biology" so we must constantly work to demonstrate the value of our research to physical and biomedical communities. As a division we want to play as essential a role in this effort as possible. Your ideas are welcomed and may be mailed to me at the Department of Physiology and Biophysics, Albert Einstein College of Medicine, Bronx, NY 10461 or e-mailed at rousseau@aecom.yu.edu.

The American Physical Society

Division of Biological Physics
March Meeting 1998, Los Angeles, CA

SYMPOSIUM PROPOSAL

Symposium Title: _____

Symposium Organizer: _____

Proposed Chairperson: _____

Speaker #1	Name: _____	Telephone: _____
	Address: _____	
	Title of Talk: _____	
	_____ APS Member? _____	

Speaker #2 Name: _____ Telephone: _____

Address: _____

Title of Talk: _____

_____ APS Member? _____

Speaker #3	Name: _____	Telephone: _____
	Address: _____	
	Title of Talk: _____	
	_____ APS Member? _____	

Speaker #4 Name: _____ Telephone: _____

Address: _____

Title of Talk: _____

_____ APS Member? _____

Speaker #5	Name: _____	Telephone: _____
	Address: _____	
	Title of Talk: _____	
	_____ APS Member? _____	

Send by June 15, 1997 to
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Division of Biological Physics

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