

Division of Biological Physics

A Division of The American Physical Society

Spring 1995

ANNOUNCEMENTS FROM THE CHAIR

• To contact the Chair of the division with suggestions, announcements or requests please send email to: stuart.lindsay@asu.edu

• Symposia for the March Meeting, 1996: The Meeting will be held in St. Louis from March 18-22, 1996. The division's symposia and contributed talks are scheduled for the Monday, Tuesday and Wednesday March 18, 19 and 20. Please send proposals to Ivar Giaever, Physical Dept., RPI, Troy, NY, 12180-3590. It is a good idea to discuss proposals first: contact Giaev@RPI.EDU. A proposal form is appended to this newsletter and proposals must be received by June 15, 1995. Please act now as APS expects a preliminary list by the end of July. Please note that: a) APS will not pay registration for (or give travel support to) members of the APS, b) speakers this year cannot contribute next year, c) the division has limited funds to help nonmembers, and d) it looks dreadful when speakers do not send abstracts: please make sure yours do if you are an organizer of a symposium.

• Contributed Sessions: The experiment went well this year so we will expand our use of invited talks in the contributed sessions. We need interesting speakers on subjects that do not justify a whole symposium. Please make suggestions to Ivar Giaever. Also encourage submission of contributed papers. Our income as a division is affected by this! Note that we will award travel grants to a few qualified students to enable them to present papers at the meeting. For details contact stuart.lindsay@asu.edu.

• DBP on WWW: The newsletter and other information will be available on our homepage on the World Wide Web which can be accessed through the APS list. To post material contact Brian Hingerty at beh@onrl.gov.

• News Items: Have an interesting biophysical news story? Pass it on to Shirley Chan who is acting as information officer for the division. Contact chan@pupgg.princeton.edu.

• Directory of graduate opportunities in Biological Physics: We would like to compile a directory of graduate research in biophysics in physics departments. We will try to comb through the AIP's *Graduate Research in Physics* but it is surely not up-to-date or comprehensive (i.e., would list faculty with a secondary program in biophysics). If you do direct graduate research in biophysics, please send a line describing what you do and where (together with a phone number) to stuart.lindsay@asu.edu.

• Nominations for Fellowship are due at The American Physical Society by May 1. Contact Peter Debrunner Chair of our Fellowship Committee. Forms for nomination are in the *Bulletin of The American Physical Society (BAPS)*. The deadline for submission to Peter is the end

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Please see *Chair* on pg. 3

**ATTENDANCE AT THE DBP
SYMPOSIA, SAN JOSE
MARCH 21-24, 1995**

Both contributed and invited sessions were very well-attended. High and low numbers over the course of each session were:

Session	High/low No.
Pattern Formation in Micro-Organism Colonies	230, 230
Protein Folding: Theory	230, 180
Protein Folding: Experiment	150, 50
Navigation of a magnetic implant for therapy (Invited Talk during a contributed session which conflicted with the Protein Folding symposium)	60
Dynamics of the Heart	260, 200
Manipulation of Single DNA molecules	230, 200
Physics in Sequence Data	200, 60
DNA-Drug Interactions	40, 20
Electron Tunneling in Biology	60, 20

The last two were on Friday and suffered from reduced attendance at the meeting.

If you have ideas on how the division can serve biophysicists better, I'd like to hear them. Please email me with suggestions or any requests I might be able to help with. My email is: stuart.lindsay@asu.edu. Thanks for joining the Division of Biological Physics and helping to make our voices heard within The American Physical Society.

1995 DBP Fellows

Robert Joseph Warmack

"For his pioneering developments in scanning probe microscopies and applications to bio-species, especially in the mounting and routine imaging of DNA"

Harrison Hooker Barrett

"For important contributions to medical physics and imaging science, particularly to the theory and practice of radionuclide imaging in nuclear medicine"

Sek Wen Hui

"For innovative application of electron diffraction and other physical methods to elucidate membrane and liquid crystal structures, phase transitions, and membrane fusion mechanisms"

Eric Jakobson

"For the elucidation of ion transport through biological membranes by computer modeling of polypeptide, ion, and water motions"

NOTES FROM THE SECRETARY-TREASURER

The results of the 1994 election are as follows: Vice-Chair: Denis L. Rousseau, New Executive Committee Members are: William Bialek, and Shirley Chan. Congratulations on election.

The 1996 meeting and symposia will be during the first half of the week of the APS March Meeting, March 18-22 in St. Louis. Because of the unexpected shift of our sessions to the latter half of the week in 1995, we have a promise from the APS Meetings Department to stop shifting around and always be in the first half of the week in the future. Our sessions should run at least Monday through Wednesday, but as has been the case in the last few years, into a fourth day, in the future, Thursday. Our division business meeting will then regularly be late afternoon Tuesday. Our division has a long standing relationship with the Biophysical Society and has an Editor and members on the editorial board of the *Biophysical Journal (BJ)*. Tom Nordlund is currently an editor recommended by our division. The *BJ* is expanding its list of referees and it was felt that representation of Biological Physicists in that list is desirable. A Referee Expertise Form is included in this newsletter. I encourage members to fill it out and mail it to the address

on the form to insure a wider expertise in review for *BJ*. Tom Nordland also wants to encourage submission of appropriate papers to *BJ*. It is time to start organizing our invited symposia for next March. The meeting is in St. Louis and this presents an opportunity to tap the excellent community of scientists from that area to participate and give talks in our sessions. A form for suggesting Symposia is included in this newsletter. Send the form to Ivar Giaever, Phys. Dept., RPI, Troy, NY, 12180-3590. We had one invited talk lead off a contributed session at this years meeting. Those who attended that session felt that the talk was very good at introducing the subject matter and greatly enhanced the session. The executive committee of the division highly recommends the inclusion of an invited talk at future contributed sessions. A form for recommending persons for such a talk is also included in this newsletter. Please send it to Ivar Giaever as well. The division will again award travel grants to Student members who are first authors on a submitted abstract based on the content of the abstract and letters of recommendation from their advisors. The student travel award winners for the 1995 meeting are listed below.

Chair, cont'd from pg. 1

of May. The APS and our division is encouraging the nomination of foreign members for Fellowship as they are currently underrepresented. For more information contact Peter Debrunner, Dept. of Physics, University of Illinois, 1110 Green St., Urbana, IL. His phone is: 217 333-1557, fax: 217 333-9819, and he can be reached by email aprel@uiuc.edu (mention Debrunner by name in the subject).

• Tutorials at the March Meeting, 1996: We would like to organize tutorials on the theme of 'biology for physicists wanting to get into biophysics'. These will be organized by Dennis Rousseau (dlr@physics.att.com) and Eli Greenbaum (exg@ornl.gov). If you'd like to help, please contact them.

STUDENT MEMBER TRAVEL AWARD WINNERS 1995

Leyun Zhu

Department of Physics, Northeastern University (Co-authors J. Timothy Sage and Paul M. Champion) For abstract "Coherent Reaction Dynamics in Heme Proteins" Edited abstract: Using femtotesla laser pulses resonant with absorption bands of myoglobin and nitrosylmyoglobin, it was possible to probe coherent low-frequency nuclear motion of the heme group. Their results verified that the nuclear motion of the heme is strongly coupled to the ligand binding reaction.

Yuval Gazit

Medical Physics program at the Harvard-MIT Division of Health Sciences and Technology (Co-authors D.A. Berk, Lawrence T. Baxter and R.K. Jain) "Vascular Network Growth Modeling Based on Fractal Analysis" Edited abstract: Fractal analysis of the 2-dimensional vascular networks in the murine dorsal window reveals three types of scale-invariant behavior. Normal arterial and venous networks display diffusion-limited scaling; normal capillary networks are compact structures; and tumor networks display percolation-like scaling.

MINUTES OF BUSINESS MEETING OF THE DIVISION OF BIOLOGICAL PHYSICS MARCH 22, 1995 SAN JOSE, CA

NOTE: This meeting was scheduled for March 23 but was held on March 22 due to an error in time and place printed in the meeting bulletin.

The meeting was called to order by Chair Sam Williamson at 5:30 pm March 22, 1995 in room J3 of the San Jose Convention Center. The Chair awarded the certificates and read the citations for the four candidates admitted to Fellowship in The American Physical Society at this meeting through the sponsorship of the Division of Biological Physics. The names and citations are listed in the spring newsletter. The Chair announced that the division can expect to sponsor seven new fellows for next year. The Chair reported on the division activities of the past year. The points mentioned were:

- (1) The organization of Symposia for the current meeting and the preparation of a written summary by Stuart Lindsay of procedures to be followed. The Symposia will be organized by Chair-Elect Ivar Giaever next year.
- (2) The organization of a tutorial preceding the meeting. These are aimed at equipping physicists with skills in areas of biological interest. Last year's topic was EEG measurements on the brain. This year's was devoted to sophisticated methods of cleaning the environment. The attendance was greater last year, this year 12 attended, and the Chair suggested that we establishing a criteria for what we consider a successful tutorial. The APS considers attendance by eight as sufficient.
- (3) Two student travel grants were made for attendance at this meeting based on first author presentation abstracts and recommendations by advisors. The grants went to Leyun Zhu, Department of Physics, Northeastern University and Yuval Gazit, Medical Physics program at the Harvard-MIT Division of Health Sciences and Technology. The chair felt that this program should get wider publicity at an earlier time to stimulate greater participation.
- (4) The prize awarded by our division will be given in 1996 and a selection committee is being chosen.
- (5) The role of members of editorial boards selected by our division was described. Those on *Physical Review Letters* are Champion and Wortis. J. Nordlund is our representative to *Biophysical Journal*.
- (6) The progress in setting up an email bulletin board for our division was reported on. It should be in operation soon.
- (7) The development of a brochure describing Biological Physics was still being worked on.

The Chair then opened the meeting to discussion on the nature of the biophysics program at the March Meeting in future years.

- (1) There was consensus that more division members were needed at the session for sorting papers. This meeting was recently moved from New York to Maryland and new people involved who have now done it once and will have a better handle on it in the future.
- (2) The problem of conflicting times for Symposia was raised. Lindsay reported that many Symposia were set up to conform with the times desired by the speakers. It was that consideration that led to our sessions being in the latter half of the week when we were originally scheduled for the first half of the week. It was voted that the speakers would have to be told that the sessions would be set up for the first half of the week in the future. Lindsay has gotten a commitment from APS to have the division sessions in the first half of the week in all future meetings.
- (3) The need for more rapid dissemination of scheduling information was discussed. The sorting meeting occurs in December and our sorters can report on the program by January. The divisional sessions should be listed on our bulletin board as early as possible.
- (4) The Chair asked the members to think about what is special in biological physics to help in planning for the centennial meeting of APS in March 1999. The APS is planning for special Symposia celebrating 100 years of U.S. physics. Sam asked for ideas to be sent in to the executive committee.

The Chair then opened a general discussion of how the division can be more useful to its members. Some suggestions were for some meeting years to focus on a particular subjects. Other suggestions were for more biology tutorials or symposia. It was suggested that some programs be aimed at industrial physicists who have drifted away from APS participation.

Austin raised the question as to whether the vote by the Executive Committee in support of the POPA statement opposing increased resources devoted to the study of health effects of 60 Hz radiation was appropriate. Callender said it was an expression of opinion by individuals on the committee rather than an act by the committee. Williamson said that the POPA statement has been altered and the vote on the original statement no longer has any meaning or role. Mielczarek stated that *Physics Today* will do an article on the subject soon. The meeting was adjourned at 6:15 PM.

Financial Report March 22, 1995

Balance @ 1/1/94	\$20,888
Expenses through 1/1/95	4,561
Income through 1/1/95	7,631
Balance @ 1/1/95	23,957

Division of Biological Physics

EXECUTIVE COMMITTEE

3/95 - 3/96

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The American Physical Society

1996 March Meeting 18-22 St. Louis, MO

Division of Biological Physics

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? _____

Please submit proposal prior to June 15, 1995 to:
Ivar Giaever, Physics Department, RPI, Troy, NY 12180-3590

The American Physical Society

1996 March Meeting 18-22 St. Louis, MO

Division of Biological Physics

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? _____	

Please submit proposal prior to June 15, 1995 to:
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