THE BIOLOGICAL PHYSICIST

The Newsletter of the Division of Biological Physics of the American Physical Society

Vol 4 № 1 April 2004

In this Issue

MONTRÉAL… JE ME SOUVIENS…

This issue takes a moment to remember some of the important "DBP moments" of the APS March Meeting. We also bring you the results of the DBP election, an important announcement from HFSP, the call for Symposia and Focus Sessions for the next APS March Meeting, and much more!

Watch for the complete minutes of the DBP Business Meeting, including citations of awards to new fellows, in the June issue.

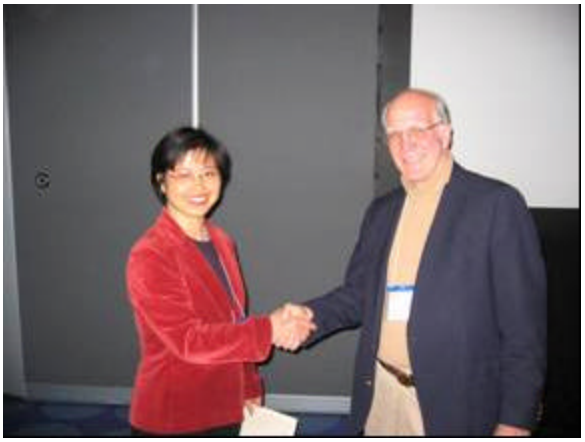
SB

MARCH MEETING RECAP: in pictures

New Fellow Andre Longtin receives his fellowship citation from incoming DBP Chair Denis Rousseau.

Photos by
Jennifer Simonotto
and
Michael Furman

New Fellow Bill Ditto receives his fellowship citation from incoming DBP Chair Denis Rousseau.



New Fellow Aihua Xie receives her fellowship citation from incoming DBP Chair Denis Rousseau.

New Fellows not pictured here include Laura Garwin, Jacob Israelachvili, Phil Nelson. and Ilme Schlichting. The complete text of all the fellowship citations will appear in the June issue of *The Biological Physicist*.

Outgoing DBP Chair Raymond Goldstein welcomes members of DBP to the Business Meeting.

A DBP Family Portrait. Top row: Shirley Chan, Ka Yee C. Lee, Leon Glass. Bottom Row: Bob Austin, Denis Rousseau, Ray Goldstein, Bob Eisenberg and Peter Jung.

MARCH MEETING RECAP
TWELVE STUDENT AUTHORS RECEIVE DBP TRAVEL GRANT

Each year, DBP offers a limited number of travel grants to encourage the participation of graduate students who wish to present their research at the March Meeting in DBP-sponsored sessions. We are trying to help as many student authors as DBP's limited budget allows. The amount of each award to each chosen student author is based partly on his/her need and partly on the traveling distance.

This year, DBP sponsored a record number of meeting sessions. At the same time, we received over 30 applications from student-authors, also a record number! We carefully selected twelve students and awarded, on an average, $250 per applicant, for a total of $3200.

We congratulate the recipients, listed below, for their excellent work!

-- Shirley Chan, DBP Secretary-Treasurer

Supratim Ray *(Weizmann Institute)*

Lawrence Lin *(University of California at Santa Barbara)*

Gerald Lim *(Simon Fraser University)*

Rui Zhang *(University of Minnesota)*

Ai Nihongi *(University of Wisconsin, Milwaukee)*

Nitin Rathore *(University of Wisconsin, Madison)*

Prem Chapagain *(Florida International University)*

Jose Parra *(Florida International University)*

Nitin Agrawal *(Texas A&M)*

Roger C. Lo *(Texas A&M)*

Faisal A. Shaikh *(Texas A&M)*

Arjun Sudarsan *(Texas A&M)*

Coming soon! - New Cross-Disciplinary Fellowship Program from the Human Frontier Science Program

Over the last few years, the HFSP has been increasingly emphasising the collaboration between scientists in different disciplines in its grant and postdoctoral fellowship programs. Thanks to the help of organisations such as the APS in publicising these programs, the involvement in the grant program of scientists working in disciplines outside the life sciences has increased seven-fold suince 2001. More applications have also been received for postdoctoral fellowships from young scientists trained in the physical sciences, who are seeking training in the life sciences in laboratories abroad, but the change has not been as dramatic as in the grants. HFSP is especially committed to bringing new conceptual and methodological approaches from other disciplines into biology and young scientists will play an important role in this transformation. A special fellowship program for such scientists is therefore being introduced. The new Cross-Disciplinary Fellowships will be introduced starting with the application deadline in September 2004. The first awards will be announced in March 2005.

The conditions for these fellowships will be the same as those of the current Long-term Fellowships. This three year postdoctoral package for training abroad is particularly attractive due to its flexibility and the chances it offers young scientists during their move to independence. Fellows can either remain in their host laboratories for the three years of the fellowship, or they can take the third year in a laboratory back in their home countries. The return home may be deferred for up to two years if the host is prepared to support the Fellow from other sources. Those who return home are eligible to apply for a Career Development Award to help them start up their own independent laboratories.

More details will be available on the HFSP web site at www.hfsp.org from the beginning of May.

PRE HIGHLIGHTS

Biological Physics Articles from Physical Review E

February 2004

Volume 69, Number 2, Articles (02xxxx)
http://scitation.aip.org/dbt/dbtjsp?KEY=PLEEE8&Volume=69&Issue=2

ARTICLES

Absolute interfacial distance measurements by dual-wavelength reflection interference contrast microscopy
Jörg Schilling, Kheya Sengupta, Stefanie Goennenwein, Andreas R. Bausch, and Erich Sackmann
Published 12 February 2004 (*9 pages*)
021901

Anomalous self-assembly of gelatin in ethanol-water marginal solvent
H. B. Bohidar and B. Mohanty
Published 19 February 2004 (*9 pages*)
021902

Evolutionary model with genetics, aging, and knowledge
Armando Ticona Bustillos and Paulo Murilo C. de Oliveira
Published 20 February 2004 (*8 pages*)
021903

Simulation of the kinetics of a sphere attached to a fluctuating polymer: Implications for target search by DNA-binding proteins
J. Chakrabarti and S. Roy
Published 24 February 2004 (*5 pages*)
021904

Spiking neural network for recognizing spatiotemporal sequences of spikes
Dezhe Z. Jin
Published 26 February 2004 (*13 pages*)
021905

Outbreaks of Hantavirus induced by seasonality
J. Buceta, C. Escudero, F. J. de la Rubia, and Katja Lindenberg
Published 26 February 2004 (*8 pages*)
021906

Model study of protein unfolding by interfaces
S. D. Chakarova and A. E. Carlsson
Published 26 February 2004 (*9 pages*)
021907

Extinction in population dynamics
C. Escudero, J. Buceta, F. J. de la Rubia, and Katja Lindenberg
Published 26 February 2004 (*9 pages*)
021908

Phase diagram of aggregation of oppositely charged colloids in salty water
R. Zhang and B. I. Shklovskii
Published 26 February 2004 (*10 pages*)
021909

From a discrete to a continuous model of biological cell movement
Stephen Turner, Jonathan A. Sherratt, Kevin J. Painter, and Nicholas J. Savill
Published 27 February 2004 (*10 pages*)
021910

Elastic interactions of active cells with soft materials
I. B. Bischofs, S. A. Safran, and U. S. Schwarz
Published 27 February 2004 (*17 pages*)
021911

Cooperative effects on the kinetics of ATP hydrolysis in collective molecular motors
Yaogen Shu and Hualin Shi
Published 27 February 2004 (*5 pages*)
021912

Eigen model as a quantum spin chain: Exact dynamics
David Saakian and Chin-Kun Hu
Published 27 February 2004 (*5 pages*)
021913

Stochastic resonance in a biological motor under complex fluctuations
Cheng-Hung Chang and Tian Yow Tsong
Published 27 February 2004 (*4 pages*)
021914

Constant-*p*H molecular dynamics study of protonation-structure relationship in a heptapeptide derived from ovomucoid third domain
Maciej Długosz, Jan M. Antosiewicz, and Andrew D. Robertson
Published 27 February 2004 (*10 pages*)
021915

Collapse of a semiflexible polymer in poor solvent
Alberto Montesi, Matteo Pasquali, and F. C. MacKintosh
Published 27 February 2004 (*10 pages*)
021916

BRIEF REPORTS

Interspike interval statistics of neurons driven by colored noise
Benjamin Lindner
Published 27 February 2004 (*4 pages*)
022901

March 2004

Volume 69, Number 3, Articles (03xxxx)
http://scitation.aip.org/dbt/dbt.jsp?KEY=PLEEE8&Volume=69&Issue=3

ARTICLES

Stochastic heart-rate model can reveal pathologic cardiac dynamics
Tom Kuusela
Published 31 March 2004 (*7 pages*)
031916

Transmission of severe acute respiratory syndrome in dynamical small-world networks
Naoki Masuda, Norio Konno, and Kazuyuki Aihara
Published 31 March 2004 (*6 pages*)
031917

Numerical path integration technique for the calculation of transport properties of proteins
Eun-Hee Kang, Marc L. Mansfield, and Jack F. Douglas
Published 31 March 2004 (*11 pages*)
031918

Lattice Boltzmann simulation on particle suspensions in a two-dimensional symmetric stenotic artery
Huabing Li, Haiping Fang, Zhifang Lin, ShiXiong Xu, and Shiyi Chen
Published 31 March 2004 (*9 pages*)
031919

Self-similar processes and flicker noise from a fluctuating nanopore in a lipid membrane
Malgorzata Kotulska, Stanislawa Koronkiewicz, and Slawomir Kalinowski
Published 31 March 2004 (*10 pages*)
031920

BRIEF REPORTS

Structural stability study of protein monolayers in air
P. P. Pompa, A. Biasco, R. Cingolani, R. Rinaldi, M. Ph. Verbeet, and G. W. Canters
Published 30 March 2004 (*4 pages*)
032901

Low-lying excited states of light-harvesting system II in purple bacteria
Yang Zhao, Man-Fai Ng, and GuanHua Chen
Published 31 March 2004 (*4 pages*)
032902

NEW RESOURCE LETTER ON "PHYSICAL PROBLEMS IN BIOLOGY"

Eugenie Mielczarek is compiling a resource letter on "Physical Problems in Biology" for the American Journal of Physics. AJP Resource Letters provide a survey of popular level books; texts, elementary, intermediate and advanced; journals and recent review papers. She welcomes input from DBP's general membership. The topic "Physical Problems in Biology" as presently titled by AJP is narrower than the general term Biological Physics but there is no need to agonize over whether your suggestions are perfect fits to the present title. In categories 4 and 5 she is seeking reviews and monographs published after 1993.
-- Eugenie V. Mielczarek Emeritus Professor of Physics

Please reply by June 1, 2004 either by e-mail mielczar@physics.gmu.edu, Phone 703-993-1282, or snail mail, to Professor Eugenie V. Mielczarek, Mail Stop 3F3, Physics Dept, George Mason University, Fairfax, VA 22030-4444

Categories
1. Popular Books (general public, 9^{h} grade and above)
2. Texts (all levels)
3. Professional books and conference proceedings
4. Journal Articles
5. Chapter or article in a book
6. Video Tapes---DVD's
Any comment(s) about your selection(s) would be very helpful. Thank you!

DBP ELECTION RESULTS

The Biological Physicist
extends a warm welcome to the newly elected members of the Executive Committee

Vice-Chair
Marilyn Gunner

Secretary-Treasurer
Shirley Chan

At-Large Members
Lois Pollack
Stephen Quake

Instructions for submission of proposals for DBP focus session at the 2005 March meeting in LA

A. Session Title:
Please don't forget that we would like to **attract** a large audience to each session and that we compete with many parallel events.

B Organizer:

Name:
Affiliation:
Phone:
Email:
Postal Address:

C Description of focus session
This description is the basis upon which the program committee will select proposals. Describe what topics are targeted. Please describe the topics in non-technical terms (so that the committee members with a diverse background can understand the relevance). There are TWO invited speakers per session. Describe the role of each speaker and what she/he will present and how it fits into the topics of the session. It is important to keep in mind that we would like to see many contributed submissions for each focus-topic. Please stay within 1/2 page.

D For each invited speaker:

Name:
Affiliation:
Phone:
Email:
Postal Address

E. Session Chair
It is very important that a session chair is selected at the time of proposal submission. The session organizer can act as chair. The chair needs to be absolutely committed to attend the March meeting and chair the session. The session chair needs to be available for phone calls during the sorters meeting December 11-12.

Name:
Affiliation:
Phone:
Email:
Postal Address:

The DBP program committee (6 members of the executive committee) will select proposals for focus sessions

Submit by email to the program-chair by 07/01: Peter Jung, jung@helios.phy.ohiou.edu

Instructions for submission of proposals for DBP symposia at the 2005 March meeting in LA

A. Symposium Title:

Please don't forget that we would like to **attract** a large audience to each symposium and that we compete with many parallel events. If a title is too technical – as grand as the content of the symposium may be -, it is likely that we do not attract a large audience.

B Organizer:

Name:
Affiliation:
Phone:
Email:
Postal Address:

C Description of Symposium

This description is the basis upon which the program committee will select proposals. Please describe the symposium in non-technical terms (so that the committee members with a diverse background can understand the relevance). Write it like you write the proposal summary of an NSF proposal. You have to convince the committee that the topic is a) important b) relevant and c) interesting for more than a few specialists in the field. Describe the role of each speaker and what she/he will present and how it complements the other speakers. In other word, we would like to see an overall plan and coherence between the speakers. Like an NSF summary, please stay within 1 page.

D For each speaker:

Name:
Affiliation:
Phone:
Email:
Postal Address:

E. Session chair

It is very important that a session chair is selected at the time of proposal submission. The organizer This person needs to be absolutely committed to attend the March meeting and chair the session.

Name:
Affiliation:
Phone:
Email:
Postal Address:

The DBP program committee (6 members of the executive committee) will select proposals for invited sessions.

Submit by email to the program-chair by 07/01: Peter Jung, jung@helios.phy.ohiou.edu