

THE BIOLOGICAL PHYSICIST

The Newsletter of the Division of Biological Physics of the American Physical Society, Nov 2011

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Invited speakers and Prof. Pupa Gilbert (middle) at the 2011 DBIO Tutorial Section, part of the APS March Meeting.

DBIO Members Elected to the National Academy of Sciences

Congratulations to DBIO members, Professors Herbert Levine (UC San Diego), Andrew J. McCammon (UC San Diego) and Sunny X. Xie (Harvard) were elected to the National Academy of Sciences, U.S.A.

2012 APS Delbruck Prize in Biological Physics

Congratulations to DBIO member, Dr. William A. Eaton (NIH) for winning the 2012 Delbruck Prize in Biological Physics.

In recognition of his contributions to the understanding of protein folding, dynamics, and function. Eaton's innovative experiments provided a detailed characterization of the energy landscape of proteins

2012 DBIO APS Fellows

Michael Brown (University of Arizona) -- *For the development and application of nuclear spin relaxation in biophysics and applications to investigating the molecular dynamics of proteins and lipids in membranes; for introduction of concepts of membrane elastic deformation on the mesoscale to explain functional lipid-protein interactions in cellular membranes.*

Feng Gai (University of Pennsylvania)-- *For his pioneering contributions to the field of protein folding, in particular the innovative use of infrared spectroscopy and the novel development of vibrational probes to elucidate the fundamental folding mechanism.*

Sarah Keller (University of Washington)-- *For her pioneering, fundamental contributions to the understanding of miscibility phase transitions in model surfactant and membrane systems*

Thorsten Ritz (UC Irvine) -- *For illuminating our understanding of photosynthesis and of the role of magnetoreception in magnetonavigation.*

Joan Shea (UC Santa Barbara)-- *For fundamental contributions in the field of theoretical and computational biophysics and the study of protein folding and aggregation.*

Gerard Wong (UC Los Angeles)-- *For his fundamental contributions to the understanding of electrostatic self-assembly in biological systems*

Syun-Ru Yeh (Albert Einstein College of Medicine)-- *For fundamental contributions to the understanding of protein structure, function and folding and for technological advances that opened new windows of opportunity for the study of rapid biological reactions.*

Ruhong Zhou (IBM)-- *For outstanding research on structure and biodynamics of proteins, particularly the hydrophobic effect and the role of water, using massively parallel molecular dynamics computations.*

Outstanding Doctoral Thesis Research

Congratulations to Siyuan (Steven) Wang for the 2011 APS Award for Outstanding Doctoral Thesis Research in Biological Physics. Dr. Wang graduated from Princeton with a Ph.D. in Molecular Biology and his advisors are Profs Ned Wingreen and Joshua Shaevitz.

DBIO Member is a Fellow of the Biophysical Society

Congratulations to Professor José Onuchic (UC San Diego, Rice) elected as a fellow of the Biophysical Society.

US Liaison to IUPAP Commission on Biological Physics

Prof. Aihua Xie (Oklahoma State Univ), Chair of APS DBIO, is elected as Vice Chair of IUPAP Commission on Biological Physics (C6) at the 24th General Assembly of IUPAP in London (Nov 2-4, 2011). Prof. José Onuchic (UC San Diego, Rice) finished his terms as Vice Chair (2002-2005), Secretary (2005-2008) and Chair (2008-2011) of the IUPAP C6. The main task of the new C6 commission is to organize the 8th International Conference in Biological Physics in China.

2010 DBIO Dissertation Winner Received \$2.5 M NIH funding

DBIO congratulates Dr. Erez Lieberman (Harvard), last year's dissertation-prize winner for a \$2.5M NIH Director's New Innovator Award.

We Have a New Acronym, DBIO

Following overwhelming support (over 82%) in a survey of the membership, the Executive Committee voted in May to change the acronym used to designate the Division of Biological Physics on the APS Web site and in society documents from DBP to DBIO. There is no change to the name of the division, but DBIO should be closer to self-explanatory; it should also help avoid confusion with the Division of the Physics of Beams (DPB). As databases are slowly converted, a few references to "DBP" are likely to remain for a while.

Update to the Election Results 2011

The election closed in February 2011. Daniel Cox (UC, Davis) was elected Vice Chair of the division, a role he will continue to play through the 2012 March Meeting, when he will become Chair Elect. Jan Liphardt (UC, Berkeley) and Michelle Wang (Cornell) were elected to three-year terms as members-at-large of the divisional Executive Committee.

While the 18% turnout for the vote represents a slight improvement over the previous year, elections are more effective when a large percentage of members participate. Members of the Executive Committee will respond to any ideas for engaging more people. As past divisional chair, Herbie Levine (UC, San Diego) chairs the Nominating Committee.

2011 Dallas Business Meeting

At the divisional business meeting during the 2011 March Meeting in Dallas, the outgoing divisional chair, Herbie Levine, recognized Erez Lieberman-Aiden, winner of the 2010 award for Outstanding Doctoral Thesis in Biological Physics, along with the two runners-up, Hyun Youk and Gene-Wei Li. The six graduate-student recipients of travel grants (see photo), Claire Armstrong, Tatiana Artemova, Aidan Brown, Nir Friedman, Shuo Huang, and Jie-Pan Shen, were also recognized. The secretary-treasurer, David Rabson, presented the election results and gave the annual financial report. The 2010 fellows of the APS nominated through the division were recognized: Olgica Bakajin (Lawrence-Livermore National Laboratory), George Hentschel (Emory University), Plamen Ch. Ivanov (Boston University), John Kasianowicz (National Institute of Standards and Technology), Ching-Hwa Kiang (Rice University, see photo), Hong Qian (University of Washington), Jau Tang (Academia Sinica, Taipei), Peter Vekilov (University of Houston), Jin Wang (Stony Brook, see

photo), Denis Wirtz (Johns-Hopkins University), and Huan-Xiang Zhou (Florida State University). At the conclusion of the meeting, Prof. Levine introduced Prof. Aihua Xie as the incoming divisional chair.



Prof. Herbert Levine and Ching-Hwa Kiang (Rice, 2011 APS fellow) at the Dallas business meeting



Prof. Herbert Levine and Jin Wang (Stony Brook, 2011 APS fellow) at the Dallas business meeting



Graduate-student recipients (standing) of the travel grants (photos taken by Margaret S. Cheung).

2012 March Meeting DBIO Symposia

Mon 11:15am:

Physical Mechanisms of Cell Growth

Fri. 8:00am:

Physical Organizing Principles for Amyloid Matter: Prediction, Structure, Function

Fri. 11:15am:

Self-assembly of proteins: from capsids to crystals

Thu. 2:30pm

Bacterial Swimming and Chemotaxis

Wed. 11:15am

Techniques to study Dynamic Cellular processes one molecule at a time

Tue. 8:00am

Physics of Systems Biology

Thu. 11:15am

Physical mechanisms of collective microbial dynamics

Tue 2:30pm

Precursors to the folding and aggregation of biological molecules

Wed 8:00am

High Content Biophysical Data for Dynamic Studies in Cancer

TBD

Mechano-biophysics at the molecular, cellular, and micro-environmental interfaces