

THE BIOLOGICAL PHYSICIST

The Newsletter of the Division of Biological Physics of the American Physical Society, Apr 2012

DIVISION OF BIOLOGICAL PHYSICS EXECUTIVE COMMITTEE

Chair

Pupa Gilbert

pupa@physics.wisc.edu

Chair-Elect

Daniel Cox

cox@physics.ucdavis.edu

Vice-Chair

Wolfgang Losert

wlosert@umd.edu

Secretary/Treasurer

Jennifer Ross

rossj@physics.umass.edu

Past Chair

Aihua Xie

aihua.xie@okstate.edu

Division Councillor

Mark Reeves

reevesme@gwu.edu

Members-at-Large:

Margaret S. Cheung

mscheung@uh.edu

John Bechhoefer

johnb@sfu.ca

Jan Liphardt

liphardt@berkeley.edu

Michelle D. Wang

mdw17@cornell.edu

Sonya Bahar

bahars@umsl.edu

Lisa Lapidus

lapidus@msu.edu

Guest Newsletter Editor

Margaret S. Cheung

mscheung@uh.edu

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APS March Meeting Poster Section. Boston. 2012.
(photo taken by Dr. Aihua Xie)

“Physics of Cancer” 2012 DBIO Tutorial Session: A Huge Success

By Dr. Aihua Xie

Of all human maladies, cancer remains the most recalcitrant. The 2012 DBIO Tutorial Session on Physics of Cancer (February 26 in Boston) attracted a record high number of diverse participants (89 in total), ranging from graduate students to senior investigators.

Recently, the National Cancer Institute has called for help from the physical sciences to help understand cancer and discover ways to treat it. Twelve Physical Science Oncology Centers have been created (see Office of Physical Sciences Oncology) seeking "out of the box" new ideas from the physical sciences to combat cancer, in entirely new directions. This Tutorial was aimed at physicists who would like to become involved with one of the Physical Sciences Oncology Centers but need to learn: (1) more about the fundamentals of cancer, (2) have an introduction to the major problems in cancer to which physicists could contribute, and (3) receive a guide to writing a successful pilot project.

Dr. Anna Barker, who initiated this new trend in cancer research when she was Deputy Director of the National Cancer Institute (NCI) at NIH, opened the tutorial with a breathtaking presentation on “A History of Cancer and the National Cancer Institute”. Other instructors were: Dr. Larry Nagahara, Director for the Physical Sciences-Oncology Centers (PS-OCs) Program on “Introduction to the Physical Sciences Oncology Centers”; Prof. Denis Wirtz from John Hopkins University on “An Experimentalist Looks at the Physics of Cancer”; and Prof. Sal Torquato from Princeton University on “Theoretical Challenges in Cancer”. Each of them gave an impressive presentation. This tutorial was organized by Prof. Bob Austin (Princeton) and coordinated through Prof. Aihua Xie (2011 DBIO Chair) and Prof. Pupa Gilbert (2011 DBIO Chair-Elect). (Note: the pdf files of these presentations are now available online from the DBIO website.)



The organizer and speakers of the tutorial session: from left to right are Drs: Bob Austin, Anna Barker, Sal Torquato, and Larry Nagahara. (Photo taken by Dr. Aihua Xie)

Two DBIO members newly elected to National Academy of Sciences

National Academy of Sciences has recently announced the election of 84 new members. Two of them are members of APS Division of Biological Physics:

Bialek, William; John Archibald Wheeler/Battelle Professor in Physics and member, Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, N.J.

Zhuang, Xiaowei; investigator, Howard Hughes Medical Institute, and professor of chemistry and chemical biology and of physics, department of chemistry and chemical biology, Harvard University, Cambridge, Mass.

Chao Tang to lead the Center for Quantitative Biology in Peking University

Prof. Chao Tang has recently moved from UC San Francisco to Peking University to lead the interdisciplinary Center for Quantitative Biology (CQB; <http://cqb.pku.edu.cn>). CQB is dedicated to research and education at the interface between the traditionally more quantitative disciplines (such as mathematics, physical sciences, engineering, computer science) and the biological sciences. Prof. Tang has indicated that CQB is expanding rapidly and has many openings for talented candidates.

Postdoctoral Fellowships in Biophysics, University of Washington, Seattle

The Raymond and Beverly Sackler Scholars Program in Integrative Biophysics provides up to two years of funding to support outstanding early career scientists

seeking postdoctoral positions at the intersection of the physical sciences, biology, and medicine. The program provides \$50,000 per year for stipend and benefits, plus \$3,000 for professional development. It encourages collaborative work by supporting fellows partnering with two principal investigators working in different fields. Apply at:

http://depts.washington.edu/pbiopage/sackler/app_process.php

Graduate Studies in Biophysics, University of Washington, Seattle

The UW announces a new interdepartmental graduate program in Biological Physics, Structure, and Design (BPSD). The new program was created to unite biophysical work on biomolecules and their complexes across campus. *It builds on two previous programs (Biomolecular Structure and Design and the Physiology and Biophysics Departmental program), and provides incoming students with a broad set of labs to consider for their thesis work. For more information and application instructions, see:*

<http://depts.washington.edu/bpsd/>

2012 Boston Business Meeting

By Dr. Jennifer Ross

1. Members for membership campaign for DBIO

There was a lot of fantastic biological physics at the March Meeting this year. Not only did DBIO sponsor or 64 sessions with a record 442 abstracts submitted, but biology seemed to be cropping up in the other divisions' sessions as well. Our Delbruck Award winner, Bill Eaton (NIH), pointed out at the business meeting that we should recruit those people to DBIO. Not a bad idea, but how?

An option would be for you, our DBIO members, to ask around in your departments to make sure that people who are doing bio are members of DBIO. It is only \$8 and comes with a number of fantastic benefits such as: (1) The ability to suggest focus and invited session for DBIO, (2) Having students eligible for the Shirley Chan Student Travel Award, (3) Being able to be nominated as an APS fellow in DBIO, (4) Student members are eligible for a wonderful thesis prize, and many others!

Why is membership important? Membership dictates the allocation of invited sessions at the March Meeting and funds for the division. More members means more

invited sessions on the science you are doing. Further, more, members result in more funds and more travel grants for students, better food at the business meeting, and more! Remember to renew your membership in DBIO and remind your colleagues to start theirs. They will be glad they did.

2. Rumble over soft condensed matter

Politics at the APS March Meeting were heated in 2012. There is a turf war brewing over soft condensed matter. Since many biophysicists have roots in soft condensed matter, and DBIO has programmatic overlap with soft matter areas, this is of some interest to the DBIO membership. The dispute over the ownership of soft condensed matter is between the Division of Polymers (DPOLY) and the Topical Group on Statistical and Nonlinear Physics (GSNP). Although both sponsor soft matter themed session, both also have sessions that are not soft-matter oriented. Several business meetings and even a meeting between the two sides occurred at the meeting to discuss who should own soft condensed matter. Will we see the Division of Polymers and Soft Matter? We will have to wait and see. Hopefully, DBIO will be able to continue to offer Focus and Invited sessions partnered with both groups for March Meeting in 2013 in Baltimore, MD.

3. Overlap with Biophysical Society Meeting plagues DBIO in 2012

Although the overlap in this year's March Meeting in Boston, MA and Biophysical Society Meeting in San Diego, CA could have been devastating for DBIO, we had a record number of submitted abstracts this year: 442! This is a 50% increase over last year's submissions! Many DBIO members ended up splitting their time between both meetings. This resulted in many colleagues having limited contact or missing each other completely. It also reduced the number of new APS Fellows who were able to attend the business meeting to receive their Fellowship Awards.

Although DBIO would like to avoid this type of tragedy, it is not in our hands. The scheduling of both meetings is done by higher powers and arranged 4-5 years in advance. We have checked that there is no overlap for the next 5 years, making this problem more rare than Leap Day.

4. Join the DBIO Executive Committee

DBIO is seeking nominations for several positions within the DBIO Executive Committee. Open positions include APS Councilor and two Members-at-Large, and position descriptions are below. The election for APS Councilor will occur this summer, so nominations are needed soon! The election for new Members-at-Large will occur this fall. Self-nominations are welcomed and encouraged, but you must have been a member of DBIO for at least two years.

- **Division Councilor.** The Division Councilor shall serve as liaison between the Council of the Society and the Executive Committee of the Division. Following each APS Council meeting, the Division Councilor shall report to the DBIO Executive Committee regarding Council actions that affect the status and operations of DBIO. Reports shall be made to the entire Executive Committee during their regularly scheduled meetings. The term of office of a Division Councilor shall begin at the beginning of the calendar year following his or her election. The Division Councilor shall serve for a term of four years and may not serve more than two consecutive terms unless otherwise specified by Council. We need one more nominee for Councilor.

- **Members-at-Large.** Members-at-Large are members of the Executive Committee of DBIO and serve on various committees and help make decisions on DBIO matters. There are six Members-at-Large elected to staggered three-year terms, so that two are elected each year. We need four nominees for new Members-at-Large.



Prof. Aihua Xie (DBIO Chair: March 2011 to Feb 2012) chaired the DBIO business meeting, and passed the Chair position to Prof. Pupa Gilbert (DBIO Chair-Elect: March 2011 to Feb 2012) at the end of the DBIO business meeting (photo taken by Mr. Adam Scott).

DBIO Honorees for 2012

1. Max Delbruck Prize for Physics: **William Eaton**, *NIDDK, National Institutes of Health*
2. Award for Outstanding Doctoral Thesis Research in Biological Physics for 2012: **Siyuan Steven Wang**, *Princeton University*
3. APS Fellows for 2012:

Michael Brown, *Department of Chemistry, University of Arizona*

Feng Gai, *Department of Chemistry, University of Pennsylvania*

Sarah Keller, *Department of Chemistry, University of Washington*

Syun-Yu Yeh, *Department of Physiology & Biophysics, Albert Einstein College of Medicine*

Thorsten Ritz, *Department of Physics & Astronomy, University of California, Irvine*

Joan Shea, *Department of Chemistry, University of California Santa Barbara*

Gerard Wong, *Department of Bioengineering, University of California Los Angeles*

Ruhong Zhou, *IBM T.J. Watson Research Center*

4. Shirley Chan Travel Awards for 2012:

Hamidrez Marvi, *Georgia Tech*

Ana Hocevar, *Jozef-Stefan Institute, Ljubljana*

Evan Lyall, *University of California Berkeley*

Hodjat Pendar, *Virginia Tech*

Alice Qinhua Zhou, *Yale University*

Corey Kelly, *Guelph University*

Ming Li, *University of Connecticut*

Johannes Knebel, *Munich University*



Prof. Michael Brown (left) as one of the 2012 APS fellows (photo taken by Mr. Adam Scott).

Important Upcoming dates for DBIO:

May 1, 2012: Deadline for nominations for APS Fellow to APS. To nominate someone you know! Nomination Guidelines can here found here:
<http://www.aps.org/programs/honors/fellowships/nomination-requirements.cfm>

To nominate someone, go to:
<http://www.aps.org/programs/honors/fellowships/nominations.cfm>

June 20, 2012: Focus Session ideas due to DBIO

July 1, 2012: Nominations for Division Councilor due to DBIO

August 10, 2012: Invited session ideas due to DBIO

October 1, 2012: DBIO Thesis Award Prize Applications due.

October 1, 2012: Nominations for Members-at-Large due to DBIO

November 15, 2012: Abstracts due for March Meeting 2013

November 15, 2012: Applications for Student Travel Award due to DBIO.

March 12, 2013: APS March Meeting 2013 in Baltimore, MD