THE BIOLOGICAL PHYSICIST

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

Vol 4 № 6 February 2005

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In this Issue

We've come round to another March Meeting again! This issue of THE BIOLOGICAL PHYSICIST brings you a list of the DBP sessions at the March Meeting, along with the corresponding APS web links. We also bring you some important DBP announcements, as well as a call for proposals from the Human Frontier Science Program (HFSP), and a feature interview with DBP member Phil Nelson, who has recently published a textbook entitled *Biological Physics: Energy, Information, Life*.

See you in L.A.!

-- SB

Teaching Biological Physics: A Conversation with Philip Nelson

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S. Bahar

Philip Nelson, a biological physicist in the Department of Physics and Astronomy at the University of Pennsylvania and (of course!) a long-time DBP member, has recently published a textbook titled *Biological Physics: Energy, Information, Life*. The book, published by W. H. Freeman in August 2003, recently garnered a rave review in *Nature* (**432:** 444-45, 25 November 2004).

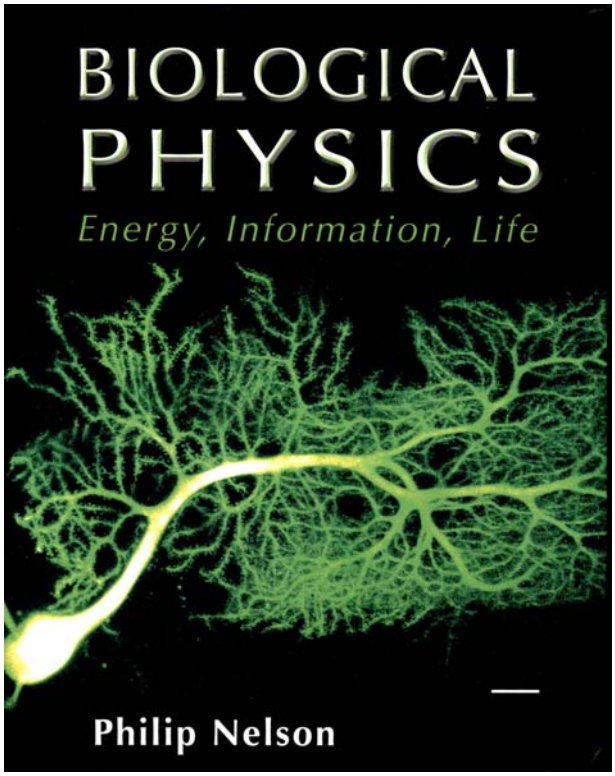
THE BIOLOGICAL PHYSICIST recently sat down to talk with Phil Nelson about the genesis of the book, and the dilemma of how to teach (and how to define) an interdisciplinary subject as complex as biological physics.

THE BIOLOGICAL PHYSICIST: *Tell me something about your scientific background, your research, and how you came to be interested in biological physics.*

Phil Nelson: I'd describe my background as "geometrical and topological methods in physics". That started out meaning high-energy particle physics, but I later found a lot of interesting problems of that type in soft-matter physics, and then eventually in biological physics.

BP: *Describe the genesis of the book. At what time did you decide to write it?*

PN: Our undergraduate students requested a course on biological physics several years ago; even though we had a biophysics major, there wasn't a single biophysics-related course in our Physics department! So we created one, which I taught a few times before beginning the book on a sabbatical in 1999.



The front cover of Philip Nelson's Biological Physics *features a living neuron imaged with two-photon microscopy (from K. Svoboda, W. Denk, W. H. Knox, and S. Tsuda, Opt. Lett. 21:1411(1996)).*

BP: *How does the book compare with other biological physics texts? (For example,*

"classics" like Cantor and Schimmel's 3-volume "Biophysical Chemistry"?)

PN: My goal was to present a lot of interesting biological material in a way that
(a) fit the curriculum of most Physics departments,
(b) emphasized that these beautiful topics illuminate, and are illuminated by, big ideas of Physics,
(c) had a level of mathematical analysis appropriate for Physics students,
(d) could be taught by Physics faculty who didn't necessarily study any biology in grad school, and
(e) provided an overview of a variety of topics, rather than being a specialized course on one area.

BP: *What audience is the book aimed for?*

PN: The original intention of my course was to reach undergraduates who had taken 2-3 semesters of calculus-based physics, and 2-3 semesters of calculus. But then we found that lots of grad students wanted to take the course too. So we made a dual-track course, with two sections in the same lectures. The graduate section read additional, more quantitative, material, and did correspondingly more sophisticated homework. This one-room-schoolhouse approach was surprisingly effective, perhaps because much of the material is presented differently from a usual statistical-mechanics course.

The book follows this same approach: there is a self-contained "Track I" for the undergraduate course, with supplementary "Track II" sections and problems for the advanced course.

BP: *How do you define "biological physics"? Do you see it as a distinct discipline from "biophysics"?*

PN: A nice phrase I once heard says that: "Biological physics seeks to apply physical principles, and the corresponding mathematical, engineering, and computational tools, to learn about a biological system; reciprocally, we seek to extract new physical principles, and even new kinds of questions, from biological systems." That seems to sum up what I tried to describe in the book.

BP: *What role do you see DBP playing in the development of biological physics over the coming years?*

PN: Perhaps DBP could usefully serve as a central knowledge base for people wishing to set up courses (including lab courses) in BP, or even Biophysics major programs or concentrations within Physics major programs. The more shared experience we have, the better. As a start, Ray Goldstein, Tom Powers and I just wrote an article for *Physics Today* titled "Teaching biological physics". It will appear in the March issue.

Phil Nelson.

For more information on Phil Nelson's research and on his book, visit

http://www.physics.upenn.edu/~biophys/
http://www.physics.upenn.edu/~pcn/
http://www.whfreeman.com/college/book.asp?2001003095

Announcement:
Call for 2005 APS Fellowship Nominations

It is time to start the process of nominating some of your colleagues to become APS Fellows in 2005. Currently, DBP has over 1600 members, and will be allowed to nominate 8 candidates for the consideration. An important part of being a member of the DBP is to promote qualified members to be recognized with this honor. However, DBP historically gets fewer nominations than the available quota. We had only 4 members elected as 2004 Fellows. Thus, we need your help and input in this process, so that the Division of Biological Physics can be better represented within the APS.

The instructions and forms for the nominations are available on APS website, http://www.aps.org/fellowship/index.cfm.

Fellowship nominations may be submitted at any time, but must be received by April 1, 2005, for the next review.

All forms and supporting papers for the nominations should be sent to: Executive Officer, The American Physical Society, One Physics Ellipse College Park, MD 20740, ATTN: Fellowship Program.

Please also notify me of your nomination intention at e-mail: ShirleyChan@mailaps.org. For any questions, please contact the Fellowship Office directly by e-mail at fellowship@aps.org, or by telephone at (301) 209-3268. Thank you very much.

-- Dr. Shirley Chan
Secretary-Treasurer, DBP

Call For 2006 Biological Physics Prize Nominations

The American Physical Society and the Division of Biological Physics invite DBP members to nominate qualified candidates for the Biological Physics Prize. Nomination packages should be received by July 1, 2005 in order to be considered for the 2006 Prize Nominations remain active for three review cycles (until 2009).

The nomination package should include:

(1) A letter of not more than 1,000 words evaluating the nominee's qualifications for the Biological Physics Prize and identifying the specific work to be recognized.

(2) A biographical sketch (optional).

(3) A list of the most important publications.

(4) A least two, but no more than four, seconding letters and up to five reprints or preprints.

Five copies of the complete nomination package should be mailed to the Chair of the Biological Prize Committee:

Prof. Paul M. Champion
Department of Physics,
Northeastern University
110 Forsyth Street, Boston, MA. 02115.

For further information and questions, please contact the Prize Committee Chair at p.champion@neu.edu

Division of Biological Physics Election Results

The Division of Biological Physics concluded its general elections on February 16, 2005. Of 1650 members, we received 337 electronic and paper ballots. The participation rate was about 20%.

Dean Astumian, University of Maine, with 190 votes, is elected as the new Vice-Chair. Stephen Hagen, University of Florida, with 186 votes, and Chao Tang, NEC Research Institute, with 175 votes, are elected as the new Members-at-Large. All three will start serving their terms during the 2005 March Meeting week in Los Angeles.

The DBP Executive Committee would like to thank all the members who cast their votes, and the other three members, Thomas Thundat, Bernard Gerstman and Glenn Held who ran for those positions.

Congratulations to the three members who were elected. We are looking forward to your services to the Division and its members during your terms in office.

Denis Rousseau
Chair, DBP
Shirley Chan
Secretary/Treasurer, DBP
Ray Goldstein
Nomination Committee Chair, DBP

2005 Division of Biological Physics Student Travel Grant Recipients

We are pleased to announce that the Division of Biological Physics has awarded a total of $3700 for Student Travel Grants to 16 Student-Authors, assisting them with their travel expenses to attend this year's March Meeting in Los Angeles. The grants range from $100 to $300 each. Among the students, 12 are male and 4 are female; 2 are international, and 14 are domestic. In addition, there is a rich mixture of ethnic backgrounds among the students. All of the awardees are to be congratulated for receiving this grant. This year's recipients are:

Rhoda Hawkins *(University of Leeds)*
Cherlhyun Jeong *(Seoul National University)*
Karine Guevorkian *(Brown University)*
Bogdan Leu *(Northeastern University)*
Kun Hu (*Boston University)*
Jose Parra *(Florida International University)*
Prem Chapagain *(Florida International University)*
Carolyn Berger *(Duke University)*
Hana Dobrovolny *(Duke University)*
Kurt Andresen (*Cornell University)*
Lisa Kwok *(Cornell Universty)*
Rajagopal Krishnan *(University of Alabama at Birmingham)*
Daisuke Takeshita *(University of Missouri at St. Louis)*
Guohui Wu *(University of Chicago)*
Jie Yan *(University of Illinois at Chicago)*
Chih-Cheng Lo *(Texas A & M University)*

from
Dr. Denis Rousseau, *Chair, DBP*
Dr. Shirley Chan, *Secretary/Treasurer, DBP*

PRE HIGHLIGHTS

Physical Review E
(Statistical, Nonlinear, and Soft Matter Physics)

December 2004

Volume 70, Number 6, Articles (06xxxx)

http://scitation.aip.org/dbt/dbt.jsp?KEY=PLEEE8&Volume=70&Issue=6

RAPID COMMUNICATIONS

Conformation and dynamics of single DNA molecules in parallel-plate slit microchannels
Y.-L. Chen, M. D. Graham, J. J. de Pablo, G. C. Randall, M. Gupta, and P. S. Doyle
Published 13 December 2004 (*4 pages*)
060901(R)

ARTICLES

Anomalous behavior of water around sodium dodecyl sulphate micelles
Shubhra Ghosh Dastidar and Chaitali Mukhopadhyay
Published 1 December 2004 (*9 pages*)
061901

Transport control within a microtube
A. Kwang-Hua Chu
Published 3 December 2004 (*5 pages*)
061902

Preventing alternans-induced spiral wave breakup in cardiac tissue: An ion-channel-based approach
D. Allexandre and N. F. Otani
Published 3 December 2004 (*16 pages*)
061903

Dynamic plasticity in coupled avian midbrain maps
Gurinder Singh Atwal
Published 9 December 2004 (*7 pages*)
061904

Specular neutron reflectivity and the structure of artificial protein maquettes vectorially oriented at interfaces
Joseph Strzalka, Brian R. Gibney, Sushil Satija, and J. Kent Blasie
Published 9 December 2004 (*10 pages*)
061905

Rate-dependent propagation of cardiac action potentials in a one-dimensional fiber
John W. Cain, Elena G. Tolkacheva, David G. Schaeffer, and Daniel J. Gauthier
Published 15 December 2004 (*7 pages*)
061906

Effects of internal fluctuations on the spreading of Hantavirus
C. Escudero, J. Buceta, F. J. de la Rubia, and Katja Lindenberg
Published 16 December 2004 (*7 pages*)
061907

Networking genetic regulation and neural computation: Directed network topology and its effect on the dynamics
Andreas Grönlund
Published 20 December 2004 (*5 pages*)
061908

Detachment and diffusive-convective transport in an evolving heterogeneous two-dimensional biofilm hybrid model
E. Luna, G. Domínguez-Zacarias, C. Pio Ferreira, and J. X. Velasco-Hernandez
Published 20 December 2004 (*8 pages*)
061909

Reliable biological communication with realistic constraints
Gonzalo G. de Polavieja
Published 21 December 2004 (*7 pages*)
061910

Complexity, fractals, disease time, and cancer
W. B. Spillman, Jr., J. L. Robertson, W. R. Huckle, B. S. Govindan, and K. E. Meissner

Published 21 December 2004 (*12 pages*)
061911

Importance of DNA repair in tumor suppression
Yisroel Brumer and Eugene I. Shakhnovich
Published 22 December 2004 (*7 pages*)
061912

Intramural wave propagation in cardiac tissue: Asymptotic solutions and cusp waves
O. Bernus, M. Wellner, and A. M. Pertsov
Published 27 December 2004 (*7 pages*)
061913

Model ecosystems with random nonlinear interspecies interactions
Danielle O. C. Santos and José F. Fontanari
Published 29 December 2004 (*10 pages*)
061914

Imperfect DNA lesion repair in the semiconservative quasispecies model: Derivation of the Hamming class equations and solution of the single-fitness peak landscape
Emmanuel Tannenbaum, James L. Sherley, and Eugene I. Shakhnovich
Published 30 December 2004 (*15 pages*)
061915

BRIEF REPORTS

Directed percolation in a two-dimensional stochastic fire-diffuse-fire model
Y. Timofeeva and S. Coombes
Published 2 December 2004 (*3 pages*)
062901

Finite-size effects in biomimetic smectic films
T. A. Harroun, V. A. Raghunathan, J. Pencer, M.-P. Nieh, and J. Katsaras
Published 20 December 2004 (*4 pages*)
062902

January 2005

Volume 71, Number 1, Articles (01xxxx)
http://scitation.aip.org/dbt/dbt.jsp?KEY=PLEEE8&Volume=71&Issue=1

RAPID COMMUNICATIONS

Theoretical determination of the strength of soft noncovalent molecular bonds
Hsuan-Yi Chen and Yi-Ping Chu
Published 13 January 2005 (*4 pages*)
010901(R)

Inertia of amoebic cell locomotion as an emergent collective property of the cellular dynamics
Shin I. Nishimura and Masaki Sasai
Published 14 January 2005 (*4 pages*)
010902(R)

ARTICLES

Dynamics of water in strawberry and red onion as studied by dielectric spectroscopy
H. Jansson, C. Huldt, R. Bergman, and J. Swenson
Published 7 January 2005 (*7 pages*)
011901

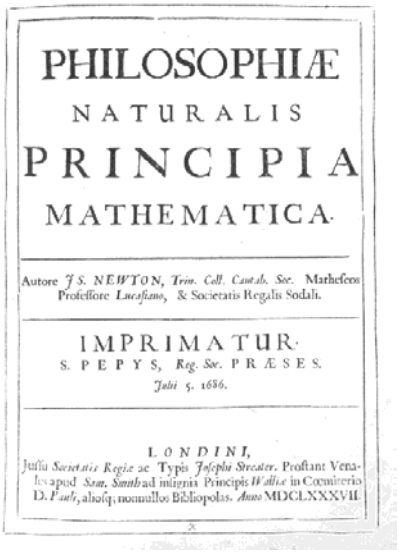
Optimal path to epigenetic switching
David Marin Roma, Ruadhan A. O'Flanagan, Andrei E. Ruckenstein, Anirvan M. Sengupta, and Ranjan Mukhopadhyay
Published 11 January 2005 (*5 pages*)
011902

Temperature dependence of vesicle adhesion
Thomas Gruhn and Reinhard Lipowsky
Published 12 January 2005 (*10 pages*)
011903

Opening of nucleic-acid double strands by helicases: Active versus passive opening
M. D. Betterton and Frank Jülicher
Published 19 January 2005 (*11 pages*)
011904

Two-state migration of DNA in a structured microchannel
Martin Streek, Friederike Schmid, Thanh Tu

BRIEF REPORTS


PHILOSOPHIÆ
NATURALIS
PRINCIPIA
MATHEMATICA.

Autore *J. S. NEWTON, Trin. Coll. Cantab. Soc.* Matheseos Professore *Lucasiano*, & Societatis Regalis Sodali.

IMPRIMATUR.
S. PEPYS, *Reg. Soc.* PRÆSES.
Julii 5. 1686.

LONDINI,
Justu *Societatis Regiæ* ac Typis *Josephi Streater*. Prostant Venales apud *Sam. Smithum* ad insignia Principis *Walliæ* in Coemiterio D. *Pauli*, aliosq; nonnullos Bibliopolas. *Anno* MDCLXXXVII.

TENURE-TRACK POSITIONS
IN BIOLOGICAL PHYSICS
DEPARTMENT OF PHYSICS, UNIVERSITY OF OTTAWA

The Department of Physics wishes to expand its strength in biological physics. We invite applications for two regular faculty positions, as well as for a Tier II Canada Research Chair in this area (http://www.chairs.gc.ca/). The emphasis is on innovative computational approaches to study biological systems, which may be carried out in conjunction with experimental and/or theoretical approaches. Appointments of outstanding candidates will normally be at the Assistant Professor level, but applications for higher ranks will be considered as well. Cross-appointment with other departments in the Faculty of Science or Medicine is possible. The Department is building its interdisciplinary strength in areas such as, but not limited to, biological modeling and computation, neurophysics, computational biology, cellular interactions, genomics, proteomics, molecular biophysics and the physics of complex biological networks. More information can be obtained at http://www.science.uottawa.ca/phy/eng/welcome.html. Canadians and permanent residents will be given priority. As the University of Ottawa is a bilingual institution, bilingualism is an asset. Applicants are requested to send a curriculum vitae, the names of at least three referees, and a statement of research interests to: Search Committee (c/o Dr. André Longtin), Department of Physics, University of Ottawa, 150 Louis Pasteur, Ottawa, Ont. Canada K1N 6N5. Applications will be reviewed starting in January 2005; reviewing will continue until the positions are filled.

(Ad submitted by André Longtin)

Tenure-track positions, Faculty of Medicine
Department of Cellular and Molecular Medicine,
University of Ottawa

The Department of Cellular and Molecular Medicine wishes to expand its strength in Computational and Systems Neuroscience. We are seeking dynamic individuals to fill several tenure-track positions at the junior or senior level. Strong candidates using innovative theoretical and experimental approaches to study neural function are encouraged to apply. These experimental approaches may range from the molecular to the systems level, but must be strongly coupled with computational modeling and theory. The ideal candidate will have an excellent track record of research that combines theory and experimentation, either within their own program, or in collaboration. Outstanding candidates will be eligible for Canada Research Chairs. Successful candidates will have the opportunity for cross-appointment with Departments in the Faculty of Science. They will also have the opportunity to interact with the large contingent of neuroscience researchers distributed throughout the Faculty of Medicine as well as within Federal government laboratories in Ottawa. Attractive start-up packages are available. Candidates will be expected to contribute to the teaching mission of the Department, including developing an interdisciplinary curriculum in Computational and Systems Neuroscience. Since the University of Ottawa is a bilingual institution, proficiency in both English and French would be an asset.

As Canada's National Capital, Ottawa is a vibrant and attractive city with a high standard of living. It has several cultural amenities and offers easy access to summer and winter outdoor activities.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. Equity is a University of Ottawa policy; women, aboriginal people, members of visible minorities and persons with disabilities are invited to apply. More information on the Department can be obtained at: http://www.uottawa.ca/academic/med/cellmed.

Interested individuals are requested to submit a curriculum vitae, a list of at least three references and a statement of research interests to: Dr. Bernard J. Jasmin jasmin@uottawa.ca, Professor and Chair, Department of Cellular and Molecular Medicine, Faculty of Medicine,University of Ottawa
451 Smyth Road Ottawa, Ontario K1H 8M5

Applications will be reviewed until the positions are filled. *(Ad submitted by André Longtin)*

Tenure Track Faculty Position
Experimental Biological or Condensed Matter Physics

The Department of Physics and Astronomy at the University of Rochester invites applications for a faculty position in Experimental Biological Physics or Experimental Condensed Matter Physics. Applicants should have a Ph.D., an outstanding record of research, and a commitment to excellence in teaching at both the undergraduate and the graduate level. The position is for a junior tenure track appointment, however applicants at a more senior level may also be considered. Applicants whose research involves optical techniques would leverage Rochester's strength in this area and are of particular interest.

Candidates should submit a letter of application, a curriculum vita including a list of publications, a description of research plans, and arrange for at least four letters of recommendation to be sent to:

Experimental Search Committee
c/o Prof. N. P. Bigelow
Department of Physics and Astronomy
University of Rochester
Rochester, NY 14627

Applications will be considered on an ongoing basis. The University of Rochester is an Equal Opportunity/Affirmative Action employer and encourages applicants from members of minority groups and women. All applications are considered without regard to race, sex, age, religion or national origin. Salary will be competitive.

(Ad submitted by Tom Foster)

Postdoctoral Position in Cartilage µMRI

A postdoctoral position will soon be available* in the Microscopic NMR Imaging (µMRI) Lab in Department of Physics, Oakland University. OU is located in suburban Rochester, Michigan, in north Oakland County, which boasts one of the most picturesque campuses in the country.

The work will center on quantitative and microscopic imaging studies of articular cartilage using multidisciplinary techniques, including non-invasive µMRI, polarized light microscopy and histology, Fourier-transform infrared imaging (FTIRI) system, and biochemical and mechanical calibrations. The results from these fundamental research at microscopic resolution will be used to determine a set of baselines / guidelines for the successful MRI application in clinics, which is also an aim of our study.

Our MRI instrumentation consists of a Bruker AMX 300 NMR system with 7T wide-bore superconducting magnet, microimaging accessories, and a SGI workstation running ParaVision software package. In addition, research times on a Bruker 7T/20cm system and a GE 3T whole-body system are available at a nearby institution. Other major instruments in our lab include an EnduraTec ELF 3200 mechanical testing system, a Leica DM RXP polarized light microscope interfaced with a 12-bit CCD camera, a soon-to-be-installed modern FTIRI system, and a number of personal computers running Macintosh, UNIX, and Windows operating systems.

Applicants should have a PhD or equivalent in physical sciences, engineering, or a related field. A background and previous experience in NMR and MRI of connective tissue is preferred. We also strongly encourage applications from individuals who have the solid expertise in cartilage biology and the desire to learn µMRI techniques, or who have expertise in other areas of biological NMR and MRI.

Interested individuals should send their CV, statements of research experience and research interest, and the names, telephone numbers, and e-mail addresses of at least three references to:

Dr. Yang Xia
Associate Professor of Physics
Dept of Physics, Oakland University, Rochester, MI 48309, USA
Tel: 248-370-3420; **Fax:** 248-370-3408; **E-mail:** xia@oakland.edu
Web: http://www.oakland.edu/~xia/XiaLab_index.html.

** Pending final budgetary approval. OU is an equal opportunity employer.*

(Ad submitted by Yang Xia)

HUMAN FRONTIER SCIENCE PROGRAM (HFSP)

12 quai St. Jean, 67080 STRASBOURG Cedex, FRANCE

E-mail:grant@hfsp.org
Web site: http://www.hfsp.org

OPPORTUNITIES FOR INTERDISCIPLINARY RESEARCH

The Human Frontier Science Program (HFSP) supports **international** collaborations in basic research with emphasis placed on novel, **innovative** and **interdisciplinary** approaches to fundamental investigations in the life sciences. Applications are invited for grants to support projects on **complex mechanisms of living organisms**.

CALL FOR LETTERS OF INTENT FOR RESEARCH GRANTS: AWARD YEAR 2006

The HFSP research grant program aims to stimulate novel, daring ideas by supporting collaborative research involving biologists together with scientists from other disciplines such as chemistry, physics, mathematics, computer science and engineering. Recent developments in the biological and physical sciences and new disciplines such as bioinformatics and nanoscience open up new approaches to understanding the complex mechanisms underlying biological functions in living organisms. Preliminary results are not required in research grant applications. Applicants are expected to develop new lines of research through the collaboration; projects must be distinct from applicants' other research funded by other sources. HFSP supports only international, collaborative teams, with an emphasis on encouraging scientists early in their careers.

International teams of scientists interested in submitting applications for support must first submit a letter of intent online via the HFSP web site. The guidelines for potential applicants and further instructions are available on the HFSP web site (www.hfsp.org).

Research grants provide 3 years support for teams with 2 – 4 members, with not more than one member from any one country, unless more members are absolutely necessary for the interdisciplinary nature of the project, which is an essential selection criterion. Applicants may also establish a local interdisciplinary collaboration as a component of an international team (see below). The principal applicant must be located in one of the member countries* but co-investigators may be from any other country. Clear preference is given to **intercontinental** teams.

TWO TYPES OF GRANT ARE AVAILABLE:

Young Investigators' Grants are for teams of scientists who are all within 5 years of establishing an independent laboratory and within 10 years of obtaining their PhDs. Successful teams will receive up to $450,000 per year for the whole team. Scientists involved in a local interdisciplinary collaboration are considered as 1.5 team members for budgetary purposes.
Program Grants are for independent scientists at all stages of their careers, although the participation of younger scientists is especially encouraged. Program grants provide up to $450,000 per year for the whole team. Scientists involved in a local interdisciplinary collaboration are considered as a single team member for budgetary purposes.

Important Deadlines:
Compulsory pre-registration for password: 21 MARCH 2005
Submission of Letters of Intent: 31 MARCH 2005

**Members are Australia, Canada, the European Union (including the 10 new member countries), France, Germany, Italy, Japan, the Republic of Korea, Switzerland, the United Kingdom and the United States.*

New full member countries for award year 2006 are **Australia** and the **Republic of Korea**

DBP Sessions
2005 APS March Meeting
Los Angeles, CA
Monday March 21-Friday March 25

Monday 8:00am

A7: Invited: From Egg to Adult: Patterning and Morphogenesis in Animal Development
Sponsoring Units: DBP
Chair: Boris Shraiman, UCSB
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26638

A21: Focus: Dynamics of Transcription
Sponsoring Units: DBP
Chair: Robijn Bruinsma, UCLA
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30117

A23: Focus: Biological Hydrodynamics I
Sponsoring Units: DFD DBP GSNP
Chair: Peter Lenz, Universitaet Marburg
LACC - 410
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28614

Monday 11:15am

B7: Invited: Women at the Forefront of Biological Physics
Sponsoring Units: DBP CSWP
Chair: Aihua Xie, Oklahoma State University
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30017

B21: Protein Metastability
Sponsoring Units: DBP
Chair: Denis Rousseau, Albert Einstein Medical
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28679

B22: Focus: Fluctuations and Fluctuation Analysis in Biological Systems

Sponsoring Units: DBP
Chair: Peter Hänggi, University Augsburg
LACC - 409B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28706

Monday 2:30pm

D6: Invited: The Facts of Life: Data-Driven Approaches To SystemsBiology
Sponsoring Units: DBP DCOMP
Chair: Chris Wiggins, Columbia University
LACC - 502A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26688

D21: Methods in Nanobiotechnology
Sponsoring Units: DBP
Chair: Kai Felix Braun, Ohio University
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26693

D22: Focus: Protein Folding
Sponsoring Units: DBP
Chair: Denis Rousseau, AECOM
LACC - 409B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=22162

Tuesday 8:00am

H7: Invited: Nanomechanical Biosensors
Sponsoring Units: DBP
Chair: Thomas Thundat, Oak Ridge National Laboratory
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26751

H22: Nucleic Acids
Sponsoring Units: DBP
Chair: Robert Austin, Princeton University
LACC - 409B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=29903

H23: Focus: Brownian Motion and Stochastic Dynamics in the 100 Years Since Einstein
Sponsoring Units: GSNP DBP
Chair: Peter Jung, Ohio University
LACC - 410
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=22487

H35: Invited: Energy Landsapes in Clusters, Materials and Biology III

Sponsoring Units: DCP DBP
Chair: J. Onuchic, UCSD
LACC - 511B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=25772

Tuesday 11:15am

J7: Invited: Biological Microsystem Technologies Using Microfluidics and Integrated Circuits

Sponsoring Units: DBP
Chair: Robert M. Westervelt, Harvard University
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28511

J21: Lipid and Insulating Bilayers

Sponsoring Units: DBP
Chair: Jürgen Kurths, University of Potsdam
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=22736

J22: Biochemical and Genetic Networks

Sponsoring Units: DBP
Chair: Gabor Balázsi, Northwestern University
LACC - 409 B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=22750

Tuesday 2:30pm

L7: Invited: Modeling Large Scale Molecular Biological Data

Sponsoring Units: DBP DCOMP
Chair: Orly Alter, University of Texas at Austin
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28566

L21: Focus: Intracellular Calcium Dynamics in Myocytes

Sponsoring Units: DBP
Chair: Wouter-Jan Rappel, UCSD
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=23011

L22: Focus: Metalloenzymes: Structure and Function

Sponsoring Units: DBP
Chair: Marilyn Gunner, CCNY

LACC - 409B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26919

Tuesday 5:30pm

M6: Invited: Multi-Scale Aspects and Dynamical Networks in Integrated Physiologic Systems
Sponsoring Units: DBP
Chair: Plamen Ivanov, Boston University
LACC - 502A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28565

M7: Invited: Kinked States of DNA: From Physical Measurement to Functional Significance
Sponsoring Units: DBP
Chair: Philip Nelson, University of Pennsylvania
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26944

Wednesday 8:00am

N21: Focus: Single Molecule Nanobiology
Sponsoring Units: DBP
Chair: Saw-Wai Hla, Ohio University
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26966

N23: Focus: Methods of Statistical Physics in Population Dynamics and Epidemiology
Sponsoring Units: GSNP DBP
Chair: Len Sander, University of Michigan
LACC - 410
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=23287

Wednesday 11:15am

P21: Nanotubes, Nanowire and Nanoparticles in Biology
Sponsoring Units: DBP
Chair: Robert Austin, Princeton University
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=23573

P23: Focus: Biological Hydrodynamics II
Sponsoring Units: DFD DBP GSNP
Chair: Peter Lenz, University of Marburg
LACC - 410

http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=25548

P31: Focus: Biopolymers: Molecules, Solutions and Networks I

Sponsoring Units: DPOLY DBP
Chair: John Crocker, University of Pennsylvania
LACC - 503
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=23655

Wednesday 2:30pm

S7: Invited: Gene Chips

Sponsoring Units: DBP
Chair: Ned Wingreen, Princeton University
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28570

S21: Cellular Biomechanics

Sponsoring Units: DBP
Chair: Alexander Neiman, Ohio University
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30018

S22: Biological Physics

Sponsoring Units: DBP
Chair: Sonya Bahar, University of Missouri-St. Louis
LACC - 409B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28700

Thursday 8:00am

U7: Invited: Nucleic Acid Translocation Through Nanopores

Sponsoring Units: DBP
Chair: David Lubensky, Vrije University
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26976

U21: Biomedical Physics

Sponsoring Units: DBP
Chair: Herbert Levine, University of California, San Diego
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30903

U22: Focus: Transport and Kinetics in Biological Systems

Sponsoring Units: DBP GSNP
Chair: Uwe Tauber, Virginia Tech
LACC - 409B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28514

U31: Polymers and Filaments for the Cytoskeleton
Sponsoring Units: DPOLY DBP
Chair: David Morse, U Minnesota
LACC - 503
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=24304

Thursday 11:15am

V21: Focus: Localized Dynamical States
Sponsoring Units: DBP
Chair: Bernard Gerstman, Florida International University
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30019

V22: Biological Computation
Sponsoring Units: DBP
Chair: Peter Jung, Ohio University
LACC - 409B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30020

V31: Bioploymers: Molecules, Solutions and Networks II
Sponsoring Units: DPOLY DBP
Chair: Jay Tang, Brown University
LACC - 503
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=24644

Thursday 2:30pm

W7: Invited: Advances in the Biological Physics of Morphogenesis
Sponsoring Units: DBP
Chair: Timothy Newman, Arizona State University
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=26982

W21: Techniques in Biophysics
Sponsoring Units: DBP
Chair: Robert Riehn, Princeton University
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30034

W22: Focus: Microtubules and Molecular Motors
Sponsoring Units: DBP GSNP
Chair: Beate Schmittmann, Virginia Tech
LACC - 409B

http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=24799

Thursday 5:30pm

WW7: Invited: The Physics and Bioengineering of Artificial Sight

Sponsoring Units: DBP
Chair: Robert Greenberg, Second Light LLC
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=27020

Friday 8:00am

X7: Invited: Complex Spatio-Temporal Patterns in Cardiac Tissue

Sponsoring Units: DBP
Chair: Leon Glass, McGill University
LACC - 408B
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=28501

X21: Focus: MultiScale Analysis of Ions in Solutions, Proteins, and Channels: Analysis

Sponsoring Units: DBP
Chair: Robert Eisenberg, Rush Medical Center
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30022

Friday 11:15am

Y21: Focus: MultisScale Analysis in Biology: Computation

Sponsoring Units: DBP
Chair: Robert Eisenberg, Rush Medical Center
LACC - 409A
http://meetings.aps.org/Meeting/MAR05/sessionindex2/?SessionEventID=30023