Division of
Biological Physics
A Division of The American Physical Society Fall 1997

DBP Prepares for March Meeting

The March meeting this year is scheduled for the week of March 16-20, at the Los Angeles Convention Center. Our Division Business meeting is tentatively scheduled for Tuesday, March 17 at 5:00 p.m., following one of our sessions and in the same room as the session. The exact time and place will only be available after the sorter's meeting in December when scheduling is done. The time and place will be in the meeting Bulletin and will be accessible by e-mail search with the rest of the schedule on the web page closer to meeting time. All members of the division are urged to attend the Business Meeting.

Submitted abstracts for the Biological Physics sessions are to be sent to APS directly by electronic submission if possible. There are advantages to e-mail submission as the entire abstract will be available by electronic search long before the printed Bulletin is distributed. Early information will make possible planning your time at the meeting before the last date to make inexpensive travel plans. It is very easy to print out your own personal meeting schedule from the electronic version of the meeting Bulletin. For either mail or electronic submission the deadline is **5:00 p.m. EST, December 3, 1998.**

To submit electronically, send an e-mail message to absrequest@aps.org and include the words "**REQUEST MAR98**" in the text of the message. Complete information will be sent to you. If you must submit by postal mail the address is

1998 March Meeting Abstracts
APS Meetings Department
One Physics Ellipse
College Park, MD 20740-3844

The format for mail Abstracts can be found in any issue of *APS News*.

DBP Student Travel Award Submissions

The division will again award a limited number of travel subsidies to students presenting outstanding submitted papers at the March meeting. The winners will be announced at our Business Meeting and will be listed in our Spring Newsletter. The student should be nominated by his/her major adviser who should send a copy of the abstract and a nominating letter which details the student's contribution and why the submission is important. The letter and abstract should be sent to Denis Rousseau by e-mail if possible to rousseau@aecom.yu.edu by January 1.

Deadlines:

Abstracts	December 3
Student Travel Award Submissions	January 1
A.V. requests	January 30
Early Registration	February 2
Housing Deadline	February 13
Last date for forms to APS	March 13

In This Issue

1998 March Meeting of The American Physical Society

16-20 March 1998 — Los Angeles, Calif.

Division of Biological Physics, Invited Symposia

Session 1: Biological Physics Prize Symposium

Organizer: **Dr. Barbara J. Garrison**
Penn State University, 152 Davey Lab
University Park, PA 16802-6300

Chair: **Dr. Barbara J. Garrison**

Speaker 1 **R. Srinivasan**
UV Tech Associates
Title: Ultraviolet Laser Ablation of Biological Materials

Speaker 2 **Barbara J. Garrison**
Penn State University
University Park, PA 16802
Title: A Microscopic View of Laser Ablation

Speaker 3 **Michael W. Berns**
Beckman Laser Institute and Medical Clinic
University of California at Irvine
Title: Laser Surgery: Organelles to Organs

Speaker 4 **Franz Hillenkamp**
Institut fur Medizinische Physik und Biophysik
Universitat Munster
Title: From laser desorption to laser ablation of biopolymers

Speaker 5 **Alexander A. Oraevsky**
Department of Electrical Engineering - Bioengineering Program
Rice University
Title: Laser optoacoustic imaging for medical diagnostics

Session 2: Random Walks in Biology and Medicine

Organizer: **Dr. J. J. Collins**
Boston University

Chair: **Dr. J. J. Collins**

Speaker 1 **Dr. Sergey Buldyrev**
Center for Polymer Studies
Boston University
Title: Scaling theory and modeling of DNA evolution

Speaker 2 **Dr. Gandhimohan M. Viswanathan**
Departamento de Fisica Teorica e Experimentale Universidade Federal do Rio Grande do Norte Natal, Brazil
Title: Quantifying the statistics of animal motion: Levy flights of the wandering Albatross

Speaker 3 **Dr. Toru Ohira**
Sony Computer Science Lab. Inc.
Higashigotanda, Shinagawa, Tokyo, 141 Japan
Title: Delayed random walks: Modeling human posture control

Speaker 4 **Dr. Jeff Hausdorff**
Beth Israel Deaconess Medical Center
Harvard Medical School
Title: When human walking is a random walk

Speaker 5 **Dr. Shlomo Havlin**
Dept. Physics Bar-Ilan Univ.
Ramat-Gan, Israel
Title: DNA and heartbeat fluctuations

Session 3: Long-Range Correlated Fluctuations in Biological Systems

Organizer: **Dr. Mingzhou Ding**
Center for Complex Systems
Florida Atlantic University
Boca Raton, Fla.

Chair: **Dr. Mingzhou Ding**

Speaker 1 **David Gilden**
Department of Psychology, Mezes 330
University of Texas
Title: 1/f fluctuations in cognitive activity

Speaker 2 **Larry S. Liebovitch**
Florida Atlantic University
Center for Complex Systems
Boca Raton, FL 33431
Title: What information is stored in DNA: Does it contain digital error correcting codes?

Speaker 3 **Chung-Kang Peng**
Beth Israel Deaconess Medical Center
Boston, MA 02215
Title: Neuro-Physiological Control and Long Memory Processes

Speaker 4 **Malvin C. Teich**
Depts of Electrical & Computer Engineering, Biomedical Engineering and Physics
Boston University
Title: Long-range correlations in the sequence of human heartbeats and other biological signals

Speaker 5 **Mingzhou Ding**
Center for Complex Systems
Florida Atlantic University
Boca Raton, FL 33431
Title: Long-range correlated processes in human coordination: mechanism and function

Session 4: Statistical Physics in Biology

Organizer: **Dr. Chao Tang**
NEC Research Institute

Chair: **Bill Bialek**

Speaker 1 **Sebastian Doniach**
Dept. of Applied Physics
Stanford University
Title: Protein folding: X-Ray measurements and simulations

Speaker 2 **Dr. Hao Li**
NEC Research Institute
Princeton, NJ 08540
Title: Why do proteins look like protein?

Speaker 3 **Dr. Boris Schraiman**
Bell Labs; Lucent Technology
Murray Hill, NJ 07974
Title: Bio-Bucky-Balls and their self-assembly

Speaker 4 **Dr Terence Hua**
Dept. of Physics, UCSD
La Jolla, CA 92093
Title: Statistical mechanics of nucleic acid hybridization and folding

Speaker 5 **Dr. Stansilas Leibler**
Dept. of Physics
Princeton University
Title: Some collective phenomena in the cell

Session 5: Membrane Ion Channels – From Microscopic Stochastic Behavior to Macroscopic Organization

Organizer: **Dr. Paul Gailey**
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6070

Chair: **Dr. Paul Gailey**

Speaker 1 **Dr. John White**
Dept. of Biomedical Engineering,
Boston University
Title: Contributions of channel noise to cellular responses in the hippocampal Region

Speaker 2 **Dr. Sergey Bezrukov**
National Institutes of Health
Bethesda, MD 20892-0580
Title: Physics of Stochastic Processes in Ionic Channels

Speaker 3 **Dr. Paul Gailey**
Oak Ridge National Laboratory
Title: Self-Organized Noise Reduction in an Array of Ion Channels

Speaker 4 **Dr. Dean Astumian**
University of Chicago
Title: Stochastic Resonance and the Effects of Oscillating Electric Fields on Active Transport in Membranes

Speaker 5 **Dr. Tian Yow Tsong**
University of Minnesota
Title: Molecular recognition and processing of periodic and random signals in cells: activation of NaK ATPase by electric pulses

Session 6: Neural Encoding: Determinism and Noise

Organizer: **Frank Moss**
Center for Neurodynamics
University of Missouri at St. Louis

Chair: **Xing Pei**
Center for Neurodynamics
University of Missouri at St. Louis

Speaker 1 **Christof Koch**
Division of Biology, 139-74 Caltech
Title: Temporal coding in a sensory system: from stimulus acquisition to feature extraction

Speaker 2 **J. Leo van Hemmen**
Physik-Department TU München D-85747
Garching bei München Germany
Title: Tuning neuronal hardware with microsecond precision: Sound localization in the barn owl

Speaker 3 **Xing Pei**
Center for Neurodynamics
University of Missouri at St. Louis
Title: Prestate of the neuron and spike timing precision

Speaker 4 **Tim Sauer**
Dept. of Mathematical Sciences
George Mason University
Title: Nonlinear dynamics and spike coding

Speaker 5 **Martin Stemmler**
Innovationskolleg Theoretische Biologie
Humboldt-Universitaet zu Berlin
Title: Learning to spike: the self-organization of spiking behavior in neurons for the purpose of reliable information transmission

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1998 March Meeting of The American Physical Society

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Division of Biological Physics, Focus Sessions

1 Magnetic Field Effects on Biological Systems

Invited Speaker: **James Valles**
Brown University
Tentative Title: Static magnetic field effects on amphibian development

2 Synchronization in Neural Systems

Invited Speaker: **Daniel Gauthier**
Duke University
Tentative Title: Controlling and synchronizing the dynamics of biological systems

3 Neural Timing and Information

Invited Speaker: **William Bialek**
NEC Research Institute
Tentative Title: Information theory and neural spike timing

4 Low-Dimensional Dynamics and Control

Invited Speaker: **Frank Moss**
University of Missouri at St. Louis
Tentative Title: Finding and scaling unstable periodic orbits in biological systems

5 Spectroscopy of Biomolecules

Invited Speaker: **Arnold J. Hoff**
Leiden University
The Netherlands
Tentative title: Microwaves, Magnetic Fields and Isotopes: A powerful combination to unravel the secrets of photosynthesis

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Continued from page 3: Invited Symposia

Session 7: Understanding the Hydrophobic Effect and its Role in Protein Folding

Organizer: **Angel E. Garcia**
Theoretical Biology & Biophysics Group
Los Alamos National Laboratory

Chair: **Angel E. Garcia**

Speaker 1 **Lawrence R. Pratt**
Los Alamos National Laboratory
Title: An information theory of hydrophobic effects

Speaker 2 **George Makhatadze**
Dept. of Chemistry and Biochemistry
Texas Tech University
Title: Protein Folding: Stability and Hydration

Speaker 3 **Ken A. Dill**
University of California at San Francisco
Department of Pharmaceutical Chemistry
Title: Puzzles in the modeling of solvation and the conformations of Biopolymers

Speaker 4 **Gerhard Hummer**
Theoretical Biology and Biophysics Group
Los Alamos National Laboratory
Title: New perspectives on hydrophobic hydration: From small solutes to proteins and interfaces

Speaker 5 **Michael Paulaitis**
Department of Chemical Engineering
Johns Hopkins University
Title: An experimental study of kilobar pressures on micelle structure as a model for pressure denaturation of proteins

Division of Biological Physics to Elect New Vice Chairperson and Two Executive Committee Members

Letter to DBP Members

Dear DBP Member:

I enclose the list of candidates and their statements for the offices of Vice Chairperson and two Member-at-Large positions on the Executive Committee. The current Vice Chairperson automatically moves up to Chairperson-Elect, the current Chairperson-Elect moves up to Chairperson. There are two positions open for Member at Large (three-year terms) on the Executive Committee and you should vote for two for that position. The continuing members of the Executive Committee as of March 1998 are at right.

Ballots should be placed in the enclosed envelope. Sign your name at the upper left corner and mail before Jan. 15.

Past Chairperson	Dennis Rousseau	Term ends 3/99
Chairperson	Frank Moss	Term ends 3/99
Chairperson-Elect	Bruce J. West	Term ends 3/99
Secretary-Treasurer	Earl Prohofsky	Term ends 3/01
Member at Large	Angel Garcia	Term ends 3/99
Member at Large	Thomas Nordlund	Term ends 3/99
Member at Large	Johnny Powell	Term ends 3/00
Member at Large	Mark Spano	Term ends 3/00

Those members stepping down in March 1998:

Past Chairperson	Ivar Giaever
Members at Large	William Bialek
	Shirley Chan

Candidates for Vice Chairperson

BRIAN E. HINGERTY

Dr. Brian E. Hingerty was born in Brooklyn, N.Y., in 1948. He graduated from Brooklyn College of the City University of New York (CUNY) with a B.S. in Physics and Mathematics in 1969. He then attended Princeton University as an NSF Fellow and received a PhD in Biophysics (Crystallography and Theoretical Structure Prediction) in 1974 under Prof. Robert Langridge in Biochemical Sciences and Prof. John Hopfield in Physics. He then spent a year as a NATO Postdoctoral Fellow at the Max Planck Institute for Experimental Medicine in Gottingen, Germany, under Dr. Wolfram Saenger working on x-ray and neutron diffraction of cyclodextrins. From 1975 to 1978 he was an NIH Postdoctoral Fellow at the MRC Laboratory of Molecular Biology under Dr. Aaron Klug and worked on the structure of tRNA and the mechanism of Pb+2 induced RNA chain cleavage as in the ribozyme. He came to Oak Ridge National Laboratory in 1978 first as a Eugene Wigner Fellow then as a staff member. He continued his long standing collaboration with Prof. Suse Broyde at New York University on RNA/DNA structure prediction first begun at Princeton. He continued collaboration with Wolfram Saenger on neutron diffraction studies of cyclodextrins discovering the "flop-flop hydrogen bond".

More recently with Dr. Dinshaw Patel at Memorial Sloan Kettering Cancer Center and Prof. Broyde at NYU he has worked on the NMR structures of carcinogen modified DNA by computational modeling. Dr. Hingerty has recently started his own company Knox Computer Consultants to pursue some projects independently while remaining at Oak Ridge. Dr. Hingerty has over 100 publications and has served on the board of the Division of Biological Physics from 1992-1994.

EGIDIJUS UZGIRIS

Egidijus Uzgiris received his Ph.D. in physics from Harvard University in 1968 working with Norman Ramsey on a new type of atomic clock, the hydrogen maser. After a further year at Harvard, he moved to the University of Colorado and the Joint Institute for Laboratory Astrophysics where he demonstrated a new type of very high resolution molecular spectroscopy based on nonlinear effects associated with line saturation. In 1970 he joined the GE Research and Development Center.

His research interests turned from spectroscopy to laser light scattering studies of macromolecules, viruses, and cells. He developed a method of laser Doppler spectroscopy which allowed measurements of electrophoretic motion of molecules and particles. This method is currently implemented in several commercial laser particle analyzers.

He organized and chaired an international workshop on this topic in Nancy, France in 1978. While a visiting scientist in Stanford University in 1982 he teamed with Roger Kornberg to develop a new method of protein ordering in two dimensions utilizing phospholipid monolayers. This method is currently used in numerous laboratories engaged in electron crystallography of proteins. His research interests in recent years has included the study of photophysics

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Continued from page 4: Egidijus Uzgiris, candidate for Vice Chairperson

in the nonlinear formation of free radicals in intense light, optical sensors of immunoreactions, kinetic processes in molecular desorption from complex media, and high temperature superconducting coils for NMR spectroscopy. Currently his main research interest is the study of contrast media for magnetic resonance imaging, and, in particular, the role of molecular conformation in the uptake of contrast agents by tumors. He was elected a fellow of the APS in 1982. He was on the Executive Committee of DBP(91-94). He is chairman of the DBP fellowship committee and is vice-chairman of the Committee for the Biological Physics Prize. He was a visiting scientist at INSERM, Nancy, France in 1978 and at the Stanford University School of Medicine in 1981-1982. He is currently a visiting scientist at Harvard University, Mass General Hospital, in the Center for Molecular Imaging Research.

Candidates for Executive Committee

GLENN EDWARDS

Glenn Edwards received a B.S. in Mathematics in 1978 and a Ph.D. in Chemical Physics in 1984, both from the University of Mary and. As a graduate student, he worked under the direction of Christopher Davis and Mays Swicord carrying out an experimental investigation of the vibrational dynamics of DNA. As a postdoctoral fellow, he worked in the laboratory of Ludwig Genzel at the Max Planck Institute for Solid State Research. With Genzel and others he continued to investigate the vibrational dynamics of DNA and to account for data with models based on lattice dynamics. In 1986 Edwards joined the Department of Physics and Astronomy at Vanderbilt University, earning tenure in 1993, where he continues experimental and theoretical investigations of vibrational dynamics of DNA and proteins and, in particular, has been pioneering the application of Free-Electron Lasers (FELs) to biological physics.

In November 1994, Edwards was appointed the associate director for research and in July 1995 he became the director of the W.M. Keck FEL Center at Vanderbilt University. The center houses a Mark-III FEL, tunable from 2 to 10 microns, producing pulsed radiation with both high-peak and high-average power. The pulses have complex temporal structure, with picosecond, hundreds of picoseconds, and microseconds components. The center supports a broad range of multi-disciplinary research, including FEL development, basic research in condensed matter, biological physics, and biomedical research, and both pre-clinical and clinical applications of the FEL.

Currently the center is progressing towards FEL surgery based on the research foundation provided by Edwards and collaborators.

Candidate's Statement

My dedication to biological physics was in place by my junior year of undergraduate training. My scientific career has emphasized the application of experimental and theoretical techniques typical of condensed matter physics to biological systems. During the past several years my personal research agenda has emphasized translating research from the spectroscopy lab to the clinic, i.e. the transition from biological physics to medical physics, biomedical engineering, pre-clinical and now clinical research, where I have benefited from a broad range of collaborations with a multidisciplinary group of scientists. Along the way I have learned a bit of accelerator physics in our attempt to take the FEL from a research to a medical laser and learned more than a bit about science funding.

Recently there has been substantial speculation about the future of physics and, in particular, how biological physics will grow in prominence as a research specialty. The funding agencies, however, have yet to dedicate relatively substantial resources for the pursuit of biological physics. Recognizing this lack of investment, academic departments of either physics or applied physics in some cases have been reluctant to dedicate faculty lines in biological physics. Furthermore, recently both federal and private funds have become available with the aim of recruiting young scientists with physical training to careers in biomedical research in non-physics departments. We need be advocates for biological physics, to identify our most influential colleagues to work with federal agencies and private foundations to develop resources for research in biological physics. The aim is to foster a community of biological physicists, whose natural home frequently is within physics or applied physics departments, to refine the physicists perspective and to continue the tradition of answering outstanding scientific questions about biological systems.

SCOTT A. LEE

Scott Lee graduated Magna cum Laude from Bowling Green State University in 1975 with a BS in Physics, Chemistry and Mathematics. He subsequently graduated from the University of Cincinnati in 1978 with his MS and in 1983 with his PhD in condensed matter physics. He then joined the Department of Physics at Arizona State University as a postdoctoral research associate working on light scattering from biomolecules, primarily DNA. Working at the interface between biology and physics convinced him of the importance of Biological Physics. In 1987 he accepted an appointment as

an Assistant Professor in the Department of Physics and Astronomy at the University of Toledo where he is now a Professor of Physics. While at Toledo he has used Raman and IR spectroscopies as well as differential scanning and isothermal titrational calorimetries to study the interactions of DNA with various molecules, primarily cancer fighting drugs and, most recently, antisense drugs. He also has studied hyaluronic acid which is the central component of cartilage and connective tissues in the body. He received the Sigma Xi award for Outstanding Research at the University of Toledo in 1993. His research has been supported by the Office of Naval Research. He is one of the leaders of the University of Toledo's NSF-REU site. He has been recognized as a Master Teacher at the University of Toledo since 1995. He has served on the Executive Committee of the Ohio Section of the American Physical Society since 1992 and is the current Chair of the Section. He was the Zone 7 Councilor of the Society of Physics Students from 1992 to 1995. He was the President of the University of Toledo Chapter of Sigma Xi in 1994-95.

Candidate's Statement

I am grateful for the possibility of serving the Division of Biological Physics during these exciting times in Biological Physics. My goals for the DBP would be to increase its efforts in outreach to the general public and in educating young physicists about the job opportunities in Biological Physics. Tremendous advances are being made in understanding the microscopic mechanism for many of life's processes. Biological Physics has made, and will continue to make, fundamental contributions to this progress. Such work is leading to revolutionary developments in the treatment of various diseases. It is important that the DBP use all of the resources of the American Physical Society to inform the public of the important contributions that fundamental research makes to such medical advances. One of my goals would be to insure that the DBP works hard in this area. My recent collaboration with Isis Pharmaceuticals has provided me with insight about how basic research can be used to guide industrial development. I am using this knowledge in my advising of both graduate and undergraduate students as they prepare for their careers. Another of my goals for the DBP would be to disseminate such information concerning job opportunities to many young physicists, particularly about those opportunities outside of traditional academia.

GENE STANLEY

Gene Stanley was born in Oklahoma City on 28 March 1941. He obtained his B.A. in physics at Wesleyan in 1962, performed biological physics research with Max Delbruck in 1963 (on a Fulbright in Germany), and was awarded the Ph.D. in physics at Harvard in 1967.

Stanley was a Miller Fellow at Berkeley, before becoming Asst. Prof. Physics at MIT in 1969. He was promoted to Assoc. Prof. in 1971 and to Herman von Helmholtz Associate Professor in 1973, in recognition of his interdepartmental teaching and research with the Harvard-MIT Program in Health Sciences and Technology. In 1976 Stanley joined Boston University as Prof. Physics, and as Assoc. Prof. Physiology (in the School of Medicine). In 1978 and 1979, he was promoted to Professor of Physiology and University Professor, respectively.

Stanley has served as thesis advisor to 55 Ph.D. candidates at MIT and Boston University, and has worked with 68 postdoctoral level research associates. Stanley is known for his commitment to international education and cooperation. For example, he co-founded a series of NATO Advanced Study Institutes in interdisciplinary physics, co-directed the 1996 Enrico Fermi School of Physics on Complex Systems, and chaired the 1998 Gordon Conference on Water. In 1986 he chaired the triennial IUPAP International Conference on Statistical Mechanics STATPHYS16. Stanley pressed for the reform of medical education through the introduction of concepts and techniques of the physical sciences. He created new courses in human anatomy and physiology that allow physics to play a role parallel to that currently played by biochemistry.

Stanley works in collaboration with students and colleagues attempting to understand puzzles of possible interest to biological pysics, including the structure and dynamics of liquid water, Albatross behavior, membrane-active antibiotics, cooperative phenomena in hemoglobin, quantifying correlations among constituents of the Alzheimer brain, fluctuations in noncoding and coding DNA sequences, heartbeat intervals and lung inflation, and gastrointestinal physiology (resolving the paradox of why the stomach does not digest itself). Four of his papers have been among the most-cited publication in the year that they were published, one is a Science Citation Classic, and two were reproduced in *The Physical Review, The First Hundred Years: A Selection of Seminal Papers and Commentaries.*

In recognition of his work, Stanley has received a Guggenheim Memorial Fellowship, a BP Venture Research Award, the 1997 Floyd K. Richtmyer Memorial Lectureship Award, the Choice Award for Outstanding Academic Book of 1971, and the Massachusetts Professor of the Year (awarded by the Council for Advancement and Support of Education). He was elected APS Fellow, AAAS Fellow, Honorary Member of the Hungarian Physical Society, and Honorary Professor at Eotvos Lorand University (Budapest). He received Doctorates Honoris Causa from Bar-Ilan University and the Eotvos Lorand University.

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Continued from page 7: Gene Stanley, candidate for Executive Committee

Stanley delivered the Thirtieth Saha Memorial Lecture, the Fourth Bose Memorial Lecture, 1992; the Eotvos Lecture, and was recently selected as an APS Centennial Lecturer. He has served as Joliot-Curie Professor in Paris, twice as Japan Society for Promotion of Science Visiting Professor, and as a member of the NAS Committee on Non-Linear Science.

Candidate's Statement

Education and coaching of the next generation requires that this generation create opportunities for appropriate utilization of talent of physicists of all ages. This in turn requires active work on behalf of professional organizations, not only to lobby for increasing funding but also to distribute information about employment opportunities in a fashion that scientists of all ages can feel productively engaged. Sometimes overlooked is outreach to young audiences in the schools and undergraduate colleges, and equally important effective communication with science writers who are our only direct link to the public that is asked to support our research with their taxes. Organizing truly outstanding APS Symposia are one of several ways to help achieve these goals.

PETER WOLYNES

Peter Wolynes received his Bachelor's degree from Indiana University in 1971 and a Ph.D. in chemical physics from Harvard University in 1976. After postdoctoral study at MIT with John Deutch, later to be Director of the Central Intelligence Agency, he returned to Harvard as an Assistant Professor. In 1980 he moved to the University of Illinois where he now enjoys joint appointments in the departments of chemistry, physics and biophysics. His research for many years has concentrated on problems in statistical mechanics, concentrating on the foundations of chemical reaction dynamics and the dynamics of complex systems such as glasses and biomolecules. For the first ten years of his research career biological problems were largely a hobby for him, although a time-consuming one. His first paper on the dynamics of a biological molecule was published in 1976. In the late 1980s, Wolynes turned his attention to the theory of protein folding and has contributed a number of new theoretical approaches that connect the problem with the theory of phase transitions and of dynamics in more conventional disordered systems such as glasses and spin glasses. He has been recognized for his work in these areas by election as a Fellow of the American Physical Society and to the National Academy of Sciences in 1991. Last year he was a Fogarty Scholar-in-Residence at the National Institutes of Health in Bethesda.

Candidate's Statement

The biological and physical sciences have had a long history of mutually beneficial interaction. The first law of thermodynamics was first postulated in a medical context, while Hemholz is a 19th Century hero of both mathematical physicists and physiologists. In this century, the migration of physicists like Delbrÿck, Crick and Gilbert to the life sciences became the foundation of the field of molecular biology. Modern experimental biology would be impossible without the infusion of modern methods invented by physical scientists such as NMR and X-Ray diffraction. Finally in recent years, many physicists, both experimental and theoretical, while remaining physicists, have sought inspiration for their research in the problems of biology. The interaction between the physical and biological sciences must be maintained in order to insure the future vitality of both areas. I feel the Biological Physics Division of the APS must help to foster these interactions. Currently this Division represents the only official part of the community of physicists devoted to this important area of interdisciplinary work. Funding for work in this interdisciplinary area comes usually from organizations unfamiliar to the physical scientists who are used to going to the National Science Foundation or the Department of Energy for research support. They are underrepresented on the panels that select projects for funding. While many physics departments recognize the importance of this area to their future vitality, without a pre-existing network of scientists to call upon, departments are at a loss as to how to evaluate work in the field or even sometimes to provide a good environment for research in the area. The Biological Physics Division must function as the voice of physicists interested in biological problems in the larger context of the community of physicists and to the wider scientific community. In my view, the work of the Division is to continue to provide a meeting place for biologically inspired physicists and to promote the understanding of the field more widely by organizing appropriate symposia at the annual meetings of the Society. It should also act as a strong advocate for scientists in interdisciplinary areas joining biology and physics in the councils of the society and to make high quality work in the area publicly visible by sponsoring biological physicists for recognitions through fellowship and awards programs.