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## 2005 Society Award Recipients Announced

Ten Society members were selected to receive the 2005 Society Awards, including five who were named Society Fellows. The awards will be presented at the Annual Meeting on Monday, February 14, during the Awards Ceremony, in the Long Beach Convention Center. The awardees are listed below and on page 2.

### Avanti Award in Lipids



*Joachim Seelig*

University of Basel Biocenter

For his extraordinary achievements in lipid membrane research, particularly his introduction of solid state NMR spectroscopy for the study of lipid bilayers.

### Distinguished Service Award



*Sarah Hitchcock-DeGregori*

University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School

For her many contributions to the Society as Secretary, and service on Council, Executive Board, Editorial Board, and Public Affairs Committee.

### Emily M. Gray Award



*Barry R. Lentz*

University of North Carolina at Chapel Hill

For the promotion of Biophysics to young investigators, in particular on the basis of his work on the Minority Affairs Committee and the organization of the first ever Summer Mini-Course in Biophysics.

### Founders Award



*Thomas G. Spiro*

Princeton University

For his pioneering role in the application of resonance Raman spectroscopy and related biophysical techniques for the characterization of the biochemical function of proteins and nucleic acids.

### Michael and Kate Bárány Award for Young Investigators



*Vincent J. Hilser*

University of Texas Medical Branch at Galveston

For his highly original work in the field of conformational dynamics, specifically his pioneering development of an ensemble-based approach to studying the conformational states of native proteins.

*(Continued on following page.)*

## 2005 Annual Meeting Call for Papers



The 2005 Call for Papers will be sent to all Society members in the next few weeks in an expanded poster format. All forms and detailed information will be available online at:

<http://www.biophysics.org>

The 49th Annual Meeting will take place in Long Beach, California, February 12-16, 2005. Abstract deadline is October 3, 2004.



# Biophysical Society

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## 2005 Society Fellows

Each year the Biophysical Society honors distinguished members who have demonstrated excellence in science and contributed to the expansion of the field of biophysics. Five Society members have been selected to receive this honor at the 2005 Annual Meeting.



**Sunney I. Chan**  
California Institute  
of Technology

For his many important contributions to Biophysics, including his NMR studies of nucleic acids, membranes, and proteins, which paved the way for widespread applications of NMR to biological systems.



**Edward H. Egelman**  
University of Virginia  
Health Science Center

For his important contributions to Biophysics, particularly in the use of cryo-electron microscopy for exploring the dynamics of macromolecular assemblies, and his discovery of the variable angular twist in the actin helix.



**Jeffrey Skolnick**  
Buffalo Center of Excellence  
in Bioinformatics

For his significant contributions to the field of computational biology, particularly for his pioneering role in the use of reduced protein models and force fields for protein structure prediction.



**David D. Thomas**  
University of Minnesota  
Medical School

For his distinguished contributions to the understanding of the mechanism of muscle contraction through novel spectroscopic approaches to studying molecular dynamics.



**Ernest M. Wright**  
University of California,  
Los Angeles

For his pioneering research on cloning and expression of eukaryotic membrane proteins.

## Biophysicist in Profile



*Stephen L. Mayo*

Few people know that *Stephen L. Mayo* is a former nationally ranked hang glider pilot. His interest in flying began while growing up on an Air Force base in San Antonio, and if he hadn't become a scientist, "a fighter pilot," says Mayo without hesitation, "(is) definitely what I would have wanted to do!"

Born in 1961, Mayo and his brothers *Anthony* and *Bradley* were Air Force brats, moving often to accommodate their father *Leon's* military career. Mayo's mother *Nancy* worked part-time as a teacher's aide in grade school while raising the three boys.

Mayo himself briefly thought of entering the Air Force Academy, a notion that was quickly dismissed because he lacked 20/20 vision. Instead, he took up hang gliding and sail planes in graduate school, where he flew competitively. Although Mayo no longer hang glides, he still has a very strong interest in flying, and is considering

joining the Caltech flying club to get back into the air.

It's clear that many of Mayo's interests were born from things he experienced through his father. In fact, he credits his father for his interest in flying as well as his interest in science. After leaving the Air Force active duty, the elder Mayo went to work for the Army, teaching electronics communications at a military facility. "A lot of my science interest came from my father, who was really into technology," explains Mayo, "he would always have some home project, which involved building computers or televisions, or radios, etc." Watching his father work on projects inspired Mayo to work on his own. When Mayo was about ten years old, his parents bought him a chemistry set for Christmas, which occupied him for hours on end.

Mayo entered Pennsylvania State University as an undergraduate, and in his sophomore year he entered the

newly formed honors program. Mayo describes the program as "really phenomenal" because it allowed him to work in a chemistry lab, a rare opportunity for a sophomore. A philosophy honors course taught by *Professor Flay* ("We used to call him Flay-to," Mayo remembers) was scheduled concurrently with the standard organic chemistry series. To resolve the conflict, Mayo approached the organic chemistry instructor, *Roy Olofson*, and told him he wanted to take his class, but "just take the tests." Mayo explained to Olofson

that he was "not going to go to any of the lectures, and wanted his permission to do that." Olofson laughed and responded that "Rather than doing that and getting honors units from a philosophy class, just work in my lab and get credit that way." So, at the beginning of Mayo's sophomore year, he began working in a synthetic organic chemistry lab and worked there for three years. During that time, Mayo accomplished a number of things from small molecule X-ray crystallography to writing computer graphics code. He completed his Bachelor of Science in Chemistry with Distinction and Honors in 1983.

When it came time to apply to grad schools, Mayo's undergraduate research advisor told him there was only one place for him. "I'll never forget the way he phrased it," Mayo says: "Caltech is the only place where you will survive."

In retrospect, Mayo says he understands why. The chemistry graduate program at Caltech was really top-notch and

allowed Mayo to do his own thing, and after living four years in State College, Pennsylvania, Mayo was ready for a warmer climate. "Happy Valley is not so happy in the winter!" he notes. Mayo ended up having three research advisors for his PhD thesis, and they put together an interdisciplinary research program that kept Mayo busy and interested.

*(Continued on page 14.)*

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**"Happy Valley is not so happy in the winter!"**

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# Annual Meeting Symposia, Workshop, and Subgroup Schedule

## Symposia

*Sunday, February 13*

8:15 AM–10:15 AM

### TRP Channels: What a Sensation

*David E. Clapham*, Harvard Medical School,  
Chair

*David Julius*, University of California,  
San Francisco

*Thomas Voets*, University of Leuven

Additional speaker to be announced.

8:15 AM–10:15 AM

### Molecular Machines that Organize DNA Structure

*James Kadonaga*, University of California,  
San Diego, Chair

*Jan Lowe*, MRC Laboratory of Molecular Biology

*Carlos Bustamante*, University of California, Berkeley

*Brad Cairns*, University of Utah

10:45 AM–12:45 PM

### Glycobiology: Synthesis, Multivalency and Glyochaperones

*Peter H. Seeberger*, Swiss Federal Institute of  
Technology, Chair

*Eric J. Toone*, Duke University

*David Y. Thomas*, McGill University

Additional speakers to be announced.

10:45 AM–12:45 PM

### Control and Regulation of Calcium Signaling in E-C Coupling

*Clara Franzini-Armstrong*, University of  
Pennsylvania, and *W. Jonathan Lederer*,  
University of Maryland, Co-chairs

*David MacLennan*, University of Toronto

*Kurt Beam*, Colorado State University

*Eduardo Rios*, Rush University

*Heping Cheng*, National Institutes of Health

4:00 PM–6:00 PM

### Cooperative Mechanisms in Molecular Motors

*Yale E. Goldman*, University of Pennsylvania,  
Chair

*David Warshaw*, University of Vermont

*H. Lee Sweeney*, University of Pennsylvania

*Jeff Gelles*, Brandeis University

*Steven Rosenfeld*, University of Alabama  
at Birmingham

4:30 PM–6:30 PM

### Moonlighting Proteins: Old Proteins Learning New Tricks

*Constance Jeffery*, University of Illinois at  
Chicago, Chair

*Barry Stoddard*, Fred Hutchinson Cancer  
Research Center

*Donald Becker*, University of Nebraska

*Lynne Howell*, Hospital for Sick Children,  
Toronto

*Monday, February 14*

8:15 AM–10:15 AM

### Membrane Biophysics: Synaptotagmins, SNAREs and Vesicle Biogenesis

*Edwin Chapman*, University of Wisconsin, Chair  
*Jakob Sorensen*, Max Planck Institute for  
Biophysical Chemistry

*Graeme Davis*, University of California,  
San Francisco

*Harvey McMahon*, MRC Laboratory of  
Molecular Biology

8:15 AM–10:15 AM

### Biophysical Approaches to DNA Replication and Repair

*Wei Yang*, National Institutes of Health, Chair

*Timothy Lobman*, Washington University

*John Tainer*, Scripps Research Institute

*Walter Chazin*, Vanderbilt University

10:45 AM–12:45 PM

### Structural and Biophysical Dissection of Nucleocytoplasmic Transport

*Ueli Aebi*, Biozentrum, Chair

*Elena Conti*, European Molecular Biology  
Laboratory

*Murray Stewart*, MRC Laboratory of Molecular  
Biology

*Michael P. Rout*, Rockefeller University

10:45 AM–12:45 PM

### Protein Folding: Theory, Experiment and Design

*Valerie Daggett*, University of Washington, Chair

*Lynne Regan*, Yale University

*William Eaton*, National Institutes of Health

*Jose Onuchic*, University of California,  
San Diego

4:00 PM–6:00 PM

### Rho-GTPase Family Signaling: Intracellular & Structural Mechanisms

*Avril Somlyo*, University of Virginia, Chair

*S. Narumiya*, Kyoto University

*Joan Heller-Brown*, University of California,  
San Diego

*J. Silvio Gutkind*, National Institutes of Health

*Zygmunt Derewenda*, University of  
Virginia School of Medicine

4:00 PM–6:00 PM

### Nucleic Acid Packaging in Virus Particles

*John E. Johnson*, Scripps Research Institute,  
Chair

*William Gelbart*, University of California,  
Los Angeles

*Stephen C. Harvey*, Georgia Institute  
of Technology

*Alex McPherson*, University of California,  
Riverside

*Tuesday, February 15*

8:15 AM–10:15 AM

### Molecular Mechanisms of Translation

*Wolfgang Wintermeyer*, University of Witten/  
Herdecke, Chair

*Arthur Johnson*, Texas A&M University

*Rachel Green*, Johns Hopkins University

*Roland Beckmann*, Humboldt University

8:15 AM–10:15 AM

**Theoretical Models of Dynamical Systems***Ken Dill*, University of California, San Francisco, Chair*Ivet Bahar*, University of Pittsburgh*John Doyle*, California Institute of Technology*Douglas Lauffenburger*, Massachusetts Institute of Technology

10:45 AM–12:45 PM

**Awards Symposium**

Speakers to be announced.

4:00 PM–6:00 PM

**New and Notable***David Millar*, Scripps Research Institute and*David Giedroc*, Texas A&M University, Organizers

Program information to be announced.

4:00 PM–6:00 PM

**Allosteric Pathways Uncovered***Rama Ranganathan*, University of Texas Southwestern Medical Center, Chair*Ronald Breaker*, Yale University*Wendell Lim*, University of California, San Francisco*Greg Reinhart*, Texas A&M University**Wednesday, February 16**

8:15 AM–10:15 AM

**Mitochondrial Ion Channels: Gatekeepers of Life and Death***Brian O'Rourke*, Johns Hopkins University, Chair*Douglas C. Wallace*, University of California, Irvine*Kathleen Kinnally*, New York University*Elizabeth Jonas*, Yale University

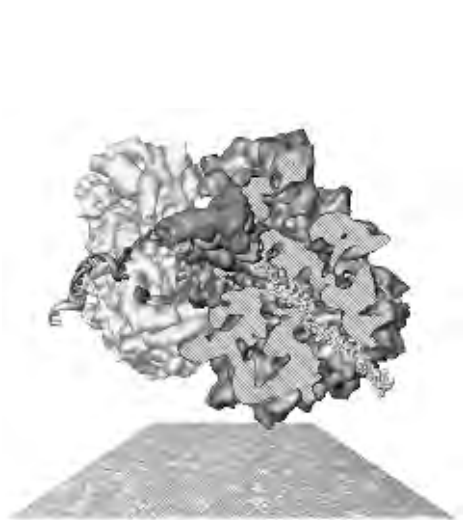
8:15 AM–10:15 AM

**Molecular Motors: Biophysical Mechanisms in Cell Biology***Margaret A. Titus*, University of Minnesota, Chair*Steven Gross*, University of California, Irvine*Lawrence Goldstein*, University of California, San Diego*John Kendrick-Jones*, MRC Laboratory of Molecular Biology

10:45AM–12:45 PM

**Exploring Molecular Motions of Channels & Transporters***Eitan Reuveny*, Weizmann Institute, Chair*Klaus Schulten*, University of Illinois, Urbana-Champaign*Rajini Rao*, Johns Hopkins University*Steven Smith*, State University New York, Stony Brook**Workshops**

All workshops will be held from 7:30–9:30 PM on Sunday, February 13, and Tuesday, February 15.

**Sunday, February 13****RNA as a Therapeutic Drug Target: Progress and Challenges***Richard Roberts*, California Institute of Technology, Chair*Yizhak Tor*, University of California, San Diego*Daniel Pilch*, Rutgers University*Thorsten Diekmann*, University of California, Davis*Alan Frankel*, University of California, San Francisco**Advances in High-Resolution Cellular Electron Tomography***Niels Volkman*, Burnham Institute & University of California, San Diego, and*Mark Ellisman*, University of California, San Diego, Co-Chairs*Brad Marsh*, University of Queensland*Gina Sosinsky*, University of California, San Diego*Delaver Anjum*, Burnham Institute*Stephan Nickell*, Max Planck Institute for Biochemistry*Ken Taylor*, Florida State University**Simulation Methodologies for Membrane Structure and Dynamics***H. Larry Scott*, Illinois Institute of Technology, Chair*Peter Tieleman*, Calgary University*Juan De Pablo*, University of Wisconsin*Olle Edholm*, Royal Institute of Technology, Stockholm*Eric Jakobsson*, University of Illinois & National Institute of General Medical Sciences*John Nagle*, Carnegie Mellon University*Thomas B. Woolf*, Johns Hopkins University**Tuesday, February 15****Advances in Single-Molecule and Single-Cell Detection and Manipulation***Steven M. Block*, Stanford University, Chair*Shuming Nie*, Emory University*Asbok Deniz*, Scripps Research Institute*Julio Fernandez*, Columbia University*Winfried Denk*, Max Planck Institute for Medical Research**New Technologies for Electrophysiology***Kathryn Klemic*, Yale University, Chair*Andrea Bruggemann*, Nanion Technologies GmbH, Munich*Peter Fromherz*, Max Planck Institute for Biochemistry*Allan Erickson*, Dagan Corporation, Minnesota*A. Schafer*, Flyion GmbH, Tübingen*Jie Zheng*, University of California, Davis

## Subgroups

All Subgroup Meetings will be held Saturday, February 15.

## Bioenergetics

*Marco Colombini*, University of Maryland, College Park, Chair

## Morning Symposium: Mitochondria in Diseases and Therapeutics

*Shy-Shing Sheu*, University of Rochester Medical Center, and *John Lemasters*, University of North Carolina, Chapel Hill, Co-Chairs

*Paul Brookes*, University of Rochester  
*Mei-Jie Jou*, Chang Gung University, Taiwan

Additional speaker to be announced.

## Afternoon Symposium: Mitochondria in Cellular Dynamics

*Gyorgy Hajnoczky*, Thomas Jefferson University and *Carmen Mannella*, Wadsworth Center, Co-Chairs

*Nicholas Demaurex*, University of Geneva  
*Richard J. Youle*, National Institutes of Health

Additional speaker to be announced.

## Biological Fluorescence

*Robert Clegg*, University of Illinois, Urbana, Chair

Program information to be announced.

## Exocytosis/Endocytosis

*Kevin Gillis*, University of Missouri, Columbia and *Manfred Lindau*, Cornell University, Subgroup Chairs

*Manfred Lindau*, Cornell University and *Meyer Jackson*, University of Wisconsin, Symposia Chairs

Program information to be announced.

## Membrane Biophysics

*Deborah Nelson*, University of Chicago, Chair

Program information to be announced.

## Membrane Structure & Assembly

*Stephanie Tristram-Nagle*, Carnegie Mellon University, Chair

## Relevance of Lipid Bilayer Structure and Dynamics for Biological Function

*Jenifer Thewalt* and *Ya-Wei Hsueh*, Simon Frazier University

*Joke Bouwstra*, Leiden University  
*Huey Huang*, Rice University  
*Robert Cantor*, Dartmouth College  
*J. Antoinette Killian*, University of Utrecht  
*Marjorie Longo* and *Hung Ly*, University of California, Davis

*Michael Brown*, University of Arizona, Tucson

*Richard Epand*, McMaster University  
*Olaf Anderson*, Weill Medical College  
*Felix Goñi*, University Basque Country

## Molecular Biophysics

*Thomas Schmidt*, Leiden University, Chair

## Single-Molecule Biophysics: From Molecules to Cells

*Taejip Ha*, University of Illinois, Urbana-Champaign

*William Eaton*, LCP, NIDDK, NIH  
*Xiaowei Zhuang*, Harvard University

Additional speakers to be announced.

## Motility

*Steven Rosenfeld*, University of Alabama at Birmingham, and *Kazuhiro Oiwa*, Kansai Advanced Research Center, National Institute of Information and Communications Technology, Co-chairs

## A Panoply of Motors

*Josh E. Baker*, University of Vermont  
*Lynne M. Coluccio*, Boston Biomedical Research Institute

*Susan P. Gilbert*, University of Pittsburgh  
*Shin-Ichi Ishiwata*, Waseda University  
*Kazuo Sutoh*, University of Tokyo

*H. Lee Sweeney*, University of Pennsylvania School of Medicine

*John Kendrick-Jones*, MRC Laboratory of Molecular Biology

Program information to be announced.

## Permeation/Transport

*David Busath*, Brigham Young University, Chair

Program information to be announced.

## Important Deadlines

Abstract Submission . . . . .	October 3	Abstract Withdrawal . . . . .	October 25
International Travel Applications . . . . .	October 3	Student Housing Reservations . . . . .	November 5
Student Travel Application . . . . .	October 3	Special Equipment Reservation. . . . .	December 1
SRAA Poster Competition . . . . .	October 3	Early Registration . . . . .	December 10
MARC Travel Award Applications . . . . .	October 3	General Housing Reservations. . . . .	January 3 , 2005
Abstract Revision. . . . .	October 8		

## Public Affairs

### Bridging the Sciences: Meeting on Grant Review

On June 17 and 18, fifteen scientists gathered in Half Moon Bay, California, to develop a position paper on how to support basic research having long-term pay-offs for the physical, mathematical and life sciences. The scientists represented a variety of disciplines, including biophysics, mathematics, chemical engineering, chemistry and physics. The meeting was generously supported by the Burroughs-Wellcome Fund.

The meeting was developed to support a key goal of the Bridging the Sciences Coalition, which is to attract new federal research dollars for research at the interface between the life sciences and the physical, computational, and mathematical sciences. There is a need for more investment in the kinds of long-term research that led to x-ray crystallography, mass spectrometry, CAT scans, single-molecule methods, and computational biology, for example. These methods have had a huge impact on biology that was unexpected at the time they were developed.

A paper summarizing the outcome of the meeting is being developed.

### NIH Limits Outside Consulting

In response to recommendations made by a blue ribbon panel on Conflict of Interest Policies and pressure from the House of Representatives Energy and Commerce/Oversight and Investigations Subcommittee, *Elias Zerhouni*, Director of the NIH, announced steps the NIH will take to decrease conflict of interest concerns at the agency.

The Subcommittee has held three hearings thus far in 2004 to investigate

ethical concerns at the National Institutes of Health. Concern began in December of 2003 when the Los Angeles Times ran a story on the salaries selected NIH scientists received as consultants to private companies.

At the latest hearing on June 22, 2004, Zerhouni proposed limiting intramural employee's annual compensation from outside activities to 25% of their federal salary, and limiting the time they can spend on these activities to no more than 400 hours per year. Zerhouni also testified that the NIH plans to improve its oversight of such outside activities by creating an ethics database to be housed in the Office of the Director.

The Subcommittee's investigation continues, and is currently seeking to explain discrepancies between outside consulting fees reported by private companies and those by the NIH. The scope of the investigation has also been widened: the Subcommittee has requested information from fifteen other federal agencies on their ethical practices.

For a more detailed explanation of the rules proposed by Zerhouni, see his testimony at: <http://energycommerce.house.gov/108/Hearings/06222004/hearing1312/Zerhouni2076.htm>.

### Federal Budget Update

At the beginning of each budget season, the House and Senate each pass a budget resolution laying out the maximum amount they will spend in that year. This year, the Senate was unable to agree on a number. The disagreement stems from a lack of consensus on whether further tax cuts or new expenditures must be offset by specified spending reductions. As a result, the House and Senate have begun moving forward on their appropriations without this guideline in place. The House began marking up 7 of the 13 annual bills in June, while the Senate appropriations committee had only looked at Homeland Security at that point. The prospect of having the process

*(Continued on page 8.)*



*Rob Phillips, Vageli Coustias, Steve White and Helen Berman* brainstorm methods of funding basic science research with potential outcomes for biology at a meeting in Half Moon Bay, California.

(Continued from page 7.)

completed by the start of the 2005 fiscal year on October 1 is rather bleak.

## Roundup

**NSF:** The National Science Foundation has released two significant reports on the status of science and scientists in the United States. The first report, *Science and Engineering Indicators 2004*, examines the state of science in the United States in comparison to other countries. Information such as R&D expenditures, foreign-owned investments in U.S. research companies, student visas, and PhD earning rates are presented. The report can be found in its entirety at: <http://www.nsf.gov/sbe/srs/seind04/>.

The second report, *Women, Minorities and Persons with Disabilities in Science and Engineering 2004*, presents data on education levels, employment, and earning rates by population groups. The online report makes the information easily searchable. It can be found in its entirety at: <http://www.nsf.gov/sbe/srs/wmpd/start.htm>.

**NIGMS:** The National Institute of General Medical Sciences has published a pamphlet entitled *Curiosity Creates Cures: The Value and Impact of Basic Research*. This full-color pamphlet discusses the importance of basic biomedical research, explaining the economic payoffs of untargeted research and its role in leading to new medicines, technologies, and scientific tools. It mentions the importance of scientific collaboration and the use of model organisms, then lists recent Nobel laureates in basic biomedical research. The pamphlet can be found at <http://www.nighms.nih.gov/curiosity/>. Free copies may be ordered at that site.

**Hill:** On June 8, 2004, leaders of the House Appropriations Subcommittee overseeing the National Science Foundation budget received a letter asking the Committee to fund the NSF at the highest possible level. The letter, signed by 157 Congressmen, noted that Congress authorized a doubling of the NSF budget over five years in 2002, and that the doubling is not on track. The President has requested \$5.7 billion for the National Science Foundation in fiscal year 2005, a three percent increase over

its current allocation. The National Science Foundation bill authorized an increase of 15 percent.

**GAO:** To follow-up on an earlier report outlining delays and inefficiencies in the visa processing system, several House Science Committee Members have asked the General Accounting Office for an update on efforts to improve the system for foreign scientists and students. The Congressmen have asked for a report by September 2004.

**State Department:** The Jefferson Fellowship Program, announced in May by Secretary of State *Colin Powell*, a partnership between the State Department, U.S. institutions of higher education, and several philanthropic foundations, will bring tenured science and engineering faculty members from participating universities to the State Department. They will work in various bureaus throughout the Department, and contribute their expertise to the scientific and technological aspects of foreign policy issues. Readers interested in learning more about the Jefferson Fellowship should see <http://www.nationalacademies.org/jsf>.

## Placement Service



The Biophysical Society provides a free placement service at the Annual Meeting to all its members seeking positions. Exhibiting employers may also use the service at no cost. The placement service is easy to use and ongoing throughout the year. For information and rates, contact Andrea Frazier at 301-634-7923, or by e-mail at [afrazier@biophysics.org](mailto:afrazier@biophysics.org). To submit an ad or a CV, visit our Placement Service site at <http://www.biophysics.org/placement/>.

## Professional Development Committee Meets

The Professional Development Committee (PDC) met in Bethesda on May 25 to coordinate plans and activities for the coming year. Chairs of the Committee for Professional Opportunities for Women (CPOW), Early Careers, Education, and Minority Affairs (MAC) Committees were present. The Chair of International Relations Committee was unable to attend.

Each of the committees has been working independently on its own website content. This meeting allowed the group to develop common links, including to funding resources, available speakers and career development issues. *Richard Ludescher*, Education Committee Co-Chair demonstrated the new educational resources site, which he had recently developed and which had just gone live. *Barry Lentz*,

Minority Affairs Committee Chair, and *Bernard Chasan*, Education Committee Co-Chair, described the work they had done in preparation for the Summer Biophysics Course at Hampton University, which is jointly sponsored and developed by their two committees. A full report of the course will appear in future newsletters.

*Ishita Mukerji*, CPOW Chair, and *Patricia Clark*, Early Careers Committee Chair, discussed plans to offer on-site day care at the upcoming Annual Meeting. Both committees have been actively involved in collecting information related to feasibility, cost and participation in the day care. Mukerji presented bids from several day-care companies that are interested in offering the service in Long Beach during the Annual Meeting. The proposal was sent to the Executive Board for consideration.

Early Careers, Education and MAC discussed enhancements to the Placement Service, which will facilitate

summer research internships for interested and qualified undergraduate students. Additionally, there was discussion about how to strengthen the role of the subgroups in the SRAA student poster competition at the Annual Meeting.

Finally, there were several personnel issues discussed. *Jackie Tanaka's* position as Chair of PDC ended July 1, 2004. A new chair, to be approved by the Executive Board, must be a past or current chair of one of the member committees of the PDC. The PDC also nominates two representatives to the Program Committee, each for three-year rotating terms. The current PDC representatives on the Program Committee are *Rachel Laudadio* of Early Careers, and *Kathy Giangiacomo* of CPOW. The PDC will make its recommendation to the Executive Board for a replacement for Laudadio, whose term ends this year.

—*Jackie Tanaka*, PDC former Chair

## Biophysical Letters Now Being Accepted



The *Biophysical Journal* has added a new section called *Biophysical Letters*. This new section is intended to allow rapid publication of important and timely short articles in diverse areas of biophysics.

For more information and to submit manuscripts visit: <http://www.biophysics.org>.

## Why Society Publications Are Important



Robert Callender

Historically, since science is basically a social enterprise, its development is coupled to communication and the exchange of ideas among people. With the development of written language and the dissemination of scientific discoveries and ideas via ever increasing and widespread means, i.e., from writing on papyrus rolls to the invention of the printing press during the 1400s to the recent development of the Web, science's progress has increasingly accelerated. By the 1600s for example, science books were commonly found in many libraries, and the fast printing of writings and developed transportation systems meant that treatises could, and were, spread all over Europe in less than a month. With the Web, a book, treatise, or paper can now be communicated worldwide virtually instantaneously.

**“... it is clear that the pursuit of the sciences and their advancement require a publishing outlet for the various disciplines, and one that maintains specific and well recognized standards.”**

tises could, and were, spread all over Europe in less than a month. With the Web, a book, treatise, or paper can now be communicated worldwide virtually instantaneously.

The first scientific society, the Royal Society of London, was founded as a private corporation in 1662 to further science and support the exchange of ideas and concepts. The second scientific society, the Academy of Sciences of Paris, was founded soon after in 1666 and sponsored by the French Government. These associations proved quite useful and productive as a means to foster gatherings, debate, exchange of ideas and generally to further science so that, by the 1800s, many other scientific societies and organizations had been established. The idea and implementation of organized publishing via journals is traced to the founding of the first journal in 1665, *The Philosophical Transactions of the Royal Society of London* (a second journal, *Journal des Scavans* was also established that same year). The *Transactions* are, of course, still being published.

At first, there were no restrictions on what could be printed in the *Transactions*. However, the issue of

quality control clearly became evident. Papers appeared in the *Transactions* over the years that were quite rambling and speculative; even works of fiction were published. The Royal Society started re-

**“A review system that brings together focused expertise and objectivity, which discipline-based societies provide, goes a long way towards filtering science from fantasy.”**

viewing papers for content and appropriateness in 1752, and so the peer review system was launched over 350 years ago.

The process of peer review has developed steadily, and its use has become widespread. In fact, a claim can be made that its institutionalization is key to the public support of science funding. In 1940, the US government spent about \$75 million on science of all types (mostly for agriculture and defense) compared to about \$30 billion for just NIH today. Such strong public support grew out of the clear lesson of World War II that our nation's security and health depends crucially on science and technology. It was also felt that the fruits of pure and applied science will result in clear financial payoffs for the country, a concept borne out by developments since the War. However, it is difficult to imagine that the growth of public support could have been sustained without the peer review system. Peer review of grants and contracts fosters, rightly so, a basic perception of fairness in and quality control of the granting and use of public funds.

One hears, from time to time, “why is there a need for society-published, peer reviewed publications like the *Biophysical Journal*?” With desktop

computers, a manuscript can be composed and printed without the need for expensive printer facilities. The computer also permits the 'library in the office' where information, news articles, scientific articles, pictures taken by cell phones, all sorts of information and data, are available without leaving the desk chair. The internet gives anyone, including scientists, the ability to publish anything instantaneously and with unfettered worldwide dissemination. Indeed, we see the formation of web-based archives, which serve to post and archive scientific papers and other information with very minimal review, and these are proving quite useful. For the *Biophysical Journal*, the time from submission of an article to its arrival in a library is no faster than about four months. *BJ* will soon shorten this time considerably to about six weeks, which is roughly the shortest time it takes for peer review, by publishing articles on the Web upon acceptance. In this form, papers will also be available without regard to subscription, and so openly accessible to all.

Still, six weeks is not right away. Moreover, the Journal costs the Society a lot of money to produce. It is roughly 40% of the total budget of the Society and, as such, presents financial risks more than financial rewards (the Society typically earns quite little from its publishing efforts). If *BJ* catches a financial cold (a current fear due to

the changing nature of publishing), our Society becomes ill. Nevertheless, I would argue that *BJ* is crucial to our Society and is, in fact, the single most important function of the Society in its mandate to further the biophysical sciences.

The reasons for the importance and place of the Journal, and other forms of Society publications, are evident when considering the brief history of publishing given above. A review system that

brings together focused expertise and objectivity, which discipline-based societies provide, goes a long way towards filtering science from fantasy. Hence, the readers of papers found in *BJ* are assured that their time is not wasted. Not only is the subject of the papers really biophysics, but quality biophysics that is worth reading. Moreover, and this is important to today's methods of funding, study sections and other systems of grant and contract peer review can depend on the quality of papers published in *BJ*.

Given the history above, it is clear that the pursuit of the sciences and their advancement require a publishing outlet for the various disciplines, and one that maintains specific and well

recognized standards. I purposely did not use the term 'high standards' in the last sentence because, even though *BJ* does maintain high standards, the role of *BJ* is to foster biophysics. Standards that are too 'high' in that they are too narrow, too conservative, or too grounded in the past can choke innovation and originality.

Biophysics today is undergoing rapid changes and developing novel approaches and concepts. We consider one of our biggest challenges to be the need to be open to and review papers competently in the newly developing sub-areas of our fast-paced and exciting field. In any case, it seems clear that the *Biophysical Journal* is key to carrying out the Society's mandate of furthering the dissemination and growth of biophysics. In fact, despite the internet and its advantages, this seems even more true now than when the Biophysical Society was formed.

—*Robert Callender*, Editor-in-Chief,  
*Biophysical Journal*



## 2006 Biophysical Discussions Call for Topics

The Discussions Committee is soliciting proposals for the 2006 Biophysical Discussions.

*Deadline: December 31, 2004.*

Submit proposals by email to:  
[discussions@biophysics.org](mailto:discussions@biophysics.org)

*What Are Discussions?* The Discussions are small meetings that focus on a cutting-edge or emerging topic in biophysics; topics that benefit from intense discussions. The meetings are patterned after the Farraday Society and have a unique format that stresses discussion over formal presentations. Plenary sessions consist of five-minute presentations by speakers, followed by a lengthy discussion. In addition there are poster sessions. This format allows for greater, less-inhibited participation by participants. The meetings are limited to 200 participants and last for approximately three days. The 2004 Discussions will be the eighth such meeting organized by the Biophysical Society. Suggestions for possible 2006 Discussion sites are also welcome.

- A proposal should contain names of the organizer(s), who must agree to do so, a title/theme, a short paragraph telling why this is an important topic, and a list of possible presentations and presenters.
- Preference will be given to topics that bring together scientists from diverse disciplines.
- The meeting takes place over a three-day period, with talks in the morning and evening, and the afternoons set aside for informal interactions.
- Additional details can be found at: <http://www.biophysics.org>.

### The Biophysical Society Discussions Committee

*David DeRosier*, Brandeis University Rosenstiel Ctr, Chair  
*Steven M. Block*, Stanford University  
*David E. Eisenberg*, University of California, Los Angeles  
*Joseph J. Falke*, University of Colorado  
*Lila M. Gierasch*, University of Massachusetts  
*Christopher Miller*, Brandeis University, HHMI

## Temprana Selected for International Travel Award



*Carlos Facundo  
Temprana*

*Carlos Facundo Temprana* a PhD student at the National University of Quilmes, Argentina, has been awarded a travel grant to work in the lab of Society member *Norma Adragna* of the Wright State University, School of Medicine. There, he will learn to obtain knockout vascular smooth muscle cells for the K-Cl cotransporter for his PhD thesis.

The award, sponsored by the International Relations Committee is given to a non-US graduate student to visit and work in a lab in the United States for a period of up to three months. For applications, visit <http://www.biophysics.org>.

## VISA Update



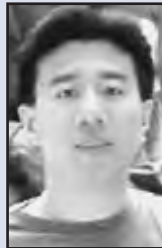
If you plan to visit the US to attend 2004 Discussions or the 2005 Annual Meeting, please visit <http://www.biophysics.org> for the most current VISA requirements and related information.

## Members in the News

Seven Society members were recently awarded a Sloan Research Fellowship for 2004. (Six are listed below; not pictured is *Meredith D. Betterton*, of the University of Colorado, Society member since 2002.)



*Nathan Andrew Baker*, of Washington University, Society member since 2001.



*Qiang Cui*, of the University of Wisconsin-Madison, Society member since 2001.



*Christine Dolan Keating*, of Pennsylvania State University, Society member since 1998.



*Anatoly B. Kolomeisky*, of Rice University, Society member since 2000.



*Joan-Emma Shea*, of the University of California, Santa Barbara, Society member since 2003.



*Dirk Peter Tieleman*, of the University of Calgary, Society member since 1997.



*Susan K. Buchanan*, of National Institute of Diabetes and Digestive and Kidney Diseases, NIH, Society member since 2002, was awarded a Presidential Early Career Award for Scientists and Engineers (PECASE).



*Rakesh Jain*, of Harvard Medical School and Society member since 1999, was elected to the National Academy of Engineering.



*Roger D. Kamm*, of the Massachusetts Institute of Technology, Society member since 2004, was named Fellow of American Society of Mechanical Engineers (ASME).

(Continued from page 3.)

As a student at Caltech, Mayo worked on two different projects. His main thesis project area was looking at electron transfers in metalloproteins, which he worked on primarily with *Harry Gray*, with components done with *Jack Richards* and *Judy Campbell*. The main question was “How do electrons get from metal site A to metal site B within a metalloprotein?” At the time they were looking at electron transfer rates that were measured between naturally occurring internal and external metal binding sites that the group would prepare. The group put a ruthenium complex on the surface of the protein and then measured the rate constant for the transfer between the two sites. Mayo’s project area was to use site-directed mutagenesis to control where the labeling would occur so that they could get a defined set of distances and orientations for the electron transfer event. The second project, done pri-

marily with *Bill Goddard*, a computational chemist at Caltech, was to develop computational modeling tools to analyze proteins and to run molecular mechanic and dynamics simulations on proteins. The work involved a lot of software development and computer graphics, as well as computational chemistry work, which Mayo really enjoyed.

The work Mayo did with Goddard ultimately led to the formation of a company, Molecular Simulations, Inc. (MSI). They started the company when Mayo was a first-year graduate student, and he worked there part-time. Between his first and second postdoctoral appointments, Mayo worked at MSI full-time for more than a year. He continued as a consultant with the company through his second post-

pioneered in Mayo’s lab at Caltech. Dahiyat, now chief scientific officer says that “Steve was, and is, committed to going after the most challenging scientific problems in protein structure, and really lives a high-risk/high-reward research approach.” “We faced a lot of roadblocks,” Dahiyat continues, “both technical and perceptions of our peers, during our work to establish protein design methodologies, yet he never wavered. He believed that what we

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**“We faced a lot of roadblocks...yet he never wavered. He believed that what we were trying to do was both worthwhile and achievable, and events have proven him out.”**

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were trying to do was both worthwhile and achievable, and events have proven him out.” Since then, Dahiyat says that Mayo has been instrumental in bringing a number of their competitors into Xencor, because

he recognizes that their work can bring significant benefit to the company’s design efforts. “He clearly still insists on going for the bleeding edge developments in the protein structure field, which is true to form.” At Xencor, computational protein design methods are used to design novel protein-based therapeutics. Mayo remains active in the company as the chair of the scientific advisory board.

In addition to Xencor, Mayo is Professor of Biology and Chemistry at California Institute of Technology, which Mayo describes as “awesome.” He quotes one of his colleagues at Caltech that “being a professor is one of the last great jobs in America and I have to say that (it) is certainly a phenomenal thing.” Mayo’s joint appointment in



*Stephen Mayo* pictured with a Mahi Mahi he caught off the coast of Cabo San Lucas, Baja California, while at the World Molecular Engineering Network Thirteenth Annual Meeting on Structural Biology. The photo is courtesy of *Carlos Barbas* of the Scripps Research Institute.

doc and later, when he became a professor at Caltech. He is no longer affiliated with the company because as he says, “it’s not atypical for scientific founders of a company to be banished after several years.”

In 1997 Mayo, together with a former graduate student *Bassil Dahiyat*, co-founded a second company, Xencor. The privately owned, California-based biotechnology company is founded on the protein design technology

biology and chemistry gives him even greater access to the “general interdisciplinary vibe,” which he says is ingrained in the system. As an example, he describes the tradition that graduate students are admitted to different graduate programs—chemistry, biology, chemistry students, biochemistry, physics, etc.—which means that “once you’re admitted as a grad student to any of these programs, you can work in anyone’s lab, as long as they can support you. I’ve had physics students, students from computational science, biology students, and biochemistry students. So there’s an incredibly low level of bureaucratic impediment to doing interdisciplinary work, and for my lab that’s incredibly important because we do a combination of theoretical work, computational work, and experimental work...I need to have people with a really broad background in order to get all the stuff done. Caltech is set up in a way that really fosters this sort of endeavor.”

*Christopher Voigt*, Mayo’s former student and now assistant professor at UCSF, calls Mayo a “technophile.” He says that Mayo’s “electronics interest flowed naturally into computers and programming and he developed one of the first programs to study proteins in the early 1980s.” Despite running a lab, Voigt says Mayo is still an “avid programmer and often would be utilizing his insomnia to write code. His hands-on approach led to the coherent software package that dominates his lab’s research.”

For the past eight years, Mayo has also been a Howard Hughes Medical

Institute Investigator. “This has been absolutely phenomenal,” he says, “because of the level of financial commitment that they provide for running a lab.” This is particularly important in a lab that does interdisciplinary work, Mayo explains, because there is a need to be skilled in many different areas with state-of-the-art equipment. “We have several very large scale multiprocessor computer clusters to do computational work, but we also have a state of the art

experimental lab, which includes really extensive analytical equipment like circular dichroism spectrometers, and NMR spectrometers, etc.,” Mayo explains. “Having the resources that Hughes provides allows me to really establish a truly state-of-the-art interdisciplinary environment where we can actually be on the cutting edge all the way across the spectrum, from computational to experimental work.”

Mayo was recently one of four from Caltech to be named to the National Academy of Sciences (NAS). “First I was surprised, because usually people are significantly older than I am when they get into the academy,” he explains. “The timing was surprising, but (I’m) very, very happy, and the recognition has certainly been very nice.” Mayo is also a Rita Allen Foundation Scholar, a Searle Scholar, and a Packard Fellow.

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**“He clearly still insists on going for the bleeding edge developments in the protein structure field, which is true to form.”**

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When asked to describe his greatest professional accomplishment, Mayo says it was his 1997 scientific paper entitled, *De novo protein design: Towards fully automated sequence selection*. In that paper, he and Dahiya showed that one could design a protein on a computer and show in a laboratory that it really works. This was a significant achievement because at the time, the level of skepticism was very high, and Mayo has always believed that the most compelling computational experiments have at the back end a

wet lab experiment that shows something important. In that paper, the group was able to develop a theoretical model and a computational model for how to design amino acid sequences and then show in the same paper that it actually works, and that a protein that folds to the right structure can be built. “For my career,” Mayo says, “I think that it was the most significant thing I’ve done so far.”

Mayo’s future scientific goals relate to an idea he has been trying to develop that interesting questions in structural biology/computational biology will be best approached by using what they call a design paradigm. “Problems will be so complex that rather than utilizing and relying on the normal, simple perturbation paradigm, perturbing the system and seeing what it does, we’re interested in this idea that in order to really gain deep insight you’ll have to be able to design very complex systems—complex proteins, complex enzymes, etc.—

*(Continued on page 16.)*

(Continued from page 15.)

and then explore questions about naturally occurring biological systems through this design approach.” He describes as an example that “if you are interested in the evolution of protein structure and function, one interesting way to approach that problem is to try to design proteins in the lab and to impose upon your designs a computational model for how you think evolution could occur and then try to recapitulate that experimentally using a complex series of design proteins. In general we’re trying to really establish and demonstrate that a design-based approach to study

biology is going to be a viable and necessary way to gain deep insight going forward. The goal then is to really make sure that we actually have a technology base, in terms of software ultimately, that allows you to execute these complex designs. Whether it be for enzymology, or

evolution, or signaling in cells or networks, etc., that there needs to be a technology infrastructure that allows researchers in general to go out to execute complex designs and allow them to probe the fundamental aspects of particular experimental systems.” Mayo continues, “trying to understand the evolution of structure and function is one of the basic questions in biology: how do you evolve? How do you go

from something that’s not folded to something that is folded, something that’s not functional to something that is functional? It really speaks to the fundamental aspects of what biology and evolution are. Will we get there in ten years? Yeah. Maybe. We’ll see.”

Mayo is a member of the Biophysical Society Minority Affairs Committee. He feels, however, that “we would get greater and more universal participation in science and technology fields in general by providing appropriate educational opportunities to children in K-12.” His experience taught him that K-12 is the place where an interest in science is initially generated. “Unfortunately, the quality of edu-

cation is just incredibly non-uniform across the country and it seems invariably true that minority communities tend to have much weaker public school systems, so in order to get greater universal participation in science, we have to improve the educational system really starting at the K-12 level.”

Mayo advises young scientists to get broad training in mathematics and in the more physical sciences to be adequately prepared for the increasingly quantitative nature of science in biology, chemistry, biochemistry, and biophysical chemistry. He is on a number of graduate admissions committees at Caltech and is often surprised by how many students apply who have no real physical chemistry or math coursework beyond simple calculus.

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**“Unfortunately, the quality of education is just incredibly non-uniform across the country...so I think that in order to get greater universal participation in science, we have to improve the educational system really starting at the K-12 level.”**

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In this same vein, Mayo is passing his love of science onto the next generation. Married for almost five years to wife, *Julie*, an MIT graduate who is a science writer for two labs at the City of the Hope Research Hospital, the couple are raising two sons, *Derek*, two and half years, and *Jason* six months. Mayo has found the last several years challenging in terms of trying to raise two boys and still putting in the time and effort required to run a vigorous research lab. Mayo brings Derek to his office almost every weekend, where he likes to play on the computer. “It’s amazing what kids can do at that age now with computers,” Mayo says, “he can actually start up his own educational games and play with them and turn them off. When he comes to my office, he likes to just hack around on my computers, not doing anything important, but just messing everything up.” And the apple doesn’t fall far from the tree. Just recently, father and son sat in Mayo’s conference room and spent hours building different amino acids out of a modeling kit for making peptide protein models. “Derek obviously had no idea what they were,” Mayo says, “but just the idea of plugging little balls and sticks together, he seems to find it enjoyable.”

When they can fit it into their busy schedule the Mayo family enjoys the California climate by cruising up and down the coast, visiting various islands on their 40-foot powerboat. Whether sailing over seas, gliding through air, working on a technical solution to an experiment, or putting things together with his son, *Steve Mayo* has more than just a few cutting edge interests to utilize his insomnia.

**Biophysical Society Volunteer Biographical Sketch**

The Biophysical Society Committees are essential to the implementation of the Society's stated purpose to encourage development and dissemination of knowledge in biophysics. Committee members and chairs in all but two of the Society's fourteen committees serve three-year terms, renewable once. All new and continuing committee appointments are approved by Council when it meets each year at the Annual Meeting. Committee members must be current Society members at the time of their appointment. Society members who wish to be considered for a committee appointment are encouraged to submit this form.

*Volunteer forms received prior to October 1, 2004, will be considered for appointment in 2005.*

I wish to be considered for (indicate office): \_\_\_\_\_

I am interested in serving on the following committee(s): \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Full name: \_\_\_\_\_

Highest degree: \_\_\_\_\_ Year received: \_\_\_\_\_

Discipline/Field: \_\_\_\_\_

Institution where degree was received: \_\_\_\_\_

Present title/department/institution: \_\_\_\_\_

Research interests and experience: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

Previous Biophysical Society experience (Officer, Executive Board, Council, Editor, Committee Chair or member, Subgroup Chair, etc.):

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

My reason for running for this office or serving on this committee is: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Mail or fax completed form to:  
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 Biophysical Society  
 9650 Rockville Pike, Bethesda, MD 20814-3998  
 301-634-7133

## Ask Professor Sarah Bellum

Professor Sarah Bellum answers your questions on navigating the often-uncharted waters of early career development. Professor Bellum was inspired by Ms. Mentor, a column by *Emily Toth* appearing in *The Chronicle of Higher Education*, and is written by *Patricia L. Clark*, chair of the Early Careers Committee. Do you have a question for Professor Bellum? Send it to [sarah\\_bellum@biophysics.org](mailto:sarah_bellum@biophysics.org). Your privacy is assured!

**Q:** *I have just completed my first year as an assistant professor at a major research university, and last week I found out I am pregnant with my first child. My husband and I are thrilled, but I am very apprehensive about how to tell my lab, my department chair, and my colleagues about my pregnancy. Won't my students feel abandoned? Won't my colleagues resent having to cover my teaching load? Also, my university allows the tenure clock to be stopped for a year due to childbirth, and/or a semester leave-of-absence, but I am worried I will be perceived as a lightweight if I exercise this options. How can I minimize the academic fallout from what should be a joyous event?*

—Expecting in Evanston

**A:** Young women with plans to stay in academia often wonder, "When is the best time to have children?" Too often, the answer they hear is, "Never!" There is some truth to this: As a grad student/postdoc, there is not much money and there is a single-minded focus on research. Daycare, if affordable, constrains time in lab to a 9-to-5 schedule that may be incompatible with experiments. As an assistant professor, there is more money, fewer experiments, and a private office (invaluable for things like breastfeeding/pumping, diaper changes, spontaneous naps—for mother or baby, etc...), but the job intensity goes up ten-fold (or more!). As a tenured professor, money and job pressures may be more manageable, but fertility is waning. Of course, the specifics of these trade-offs are different for everyone, and will help shape the best time to start a family.

That being said, as the average duration of a postdoc appointment continues to lengthen, the average age for first childbirth continues to increase nationwide, and more and more women enter tenure-track faculty positions, it is

increasingly common for assistant professors to have their first child as an untenured assistant professor. Indeed, Professor Bellum personally knows three women who started their faculty position in a delicate condition!

But on to your specific questions: You are pregnant, and worry about how to tell your colleagues. Here is the most important thing to remember through all of the telling phase: more likely than not, you are far more worried about the impact of your pregnancy than any of them. After all, you are the one who will be most affected, not them, and you may already be battling hormone-induced shifts in perception. But that being said, there are a few protocols to follow. It sounds like you have already finished the first, which is to pull out your Faculty Handbook and find out exactly what is written with regard to materni-

ty leave (or medical leave, if there is no specific policy for childbirth). Do not rely on word of mouth. Use this information to start constructing possible leave scenarios for your situation. The second is how you begin the telling phase: Tell your department chair first. As soon as you leave his/her office, tell everyone in your lab (as a group). These are the people who absolutely must hear this news from you, rather than second-hand from someone else, so they must be told in rapid succession.

Most likely, you will receive sincere well wishes from your chair and lab. After all, your chair hired you knowing you were a woman of childbearing age; your news may even trigger some nostalgic gazing back to his/her own days as an assistant professor with a new baby, if those days existed. Likewise, the general reaction from your lab will probably be positive: Your

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**“Here is the most important thing to remember through all of the telling phase: more likely than not, you are far more worried about the impact of your pregnancy than any of them.”**

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students who are childless (but hope to have a child one day) will rejoice that their mentor is tacking this big, extra, non-science component onto her life; they will likely be encouraged by this fusion of science with family. Your students who already have children will rejoice that soon, you will have a deeper understanding of what it is like to be

torn between running one more experiment and going to the zoo on Saturday. Your childless students who intend to always remain childless will probably regard the whole situation as strange and unfathomable: "What is all the fuss about?"

Granted, the congratulations from your students may come mixed with some worries about your attentiveness to their progress in the months to come. However, in Professor Bellum's experience, it is far more likely that your students will welcome the extra breathing room and reduced watchful gaze. Even better, the extra leash will probably encourage some of them to develop their skills as independent scientists and problem solvers. Nevertheless, if you are still worried that your students will feel abandoned, you can reassure them that their progress is your highest work-related priority, and you will do your best to make sure the pregnancy and childbirth are minimally disruptive.

You didn't ask, but a related question is, after you tell your chair, the lab, and any other key people, how do you spread the news to the wider department? If your chair or one of your stu-

dents has a big mouth, the situation may resolve itself without your input. If they are a discrete bunch, however, it may be worth it to next mention your news to a few departmental gossips, and let them take it from there. If you are not plugged into the department grapevine and therefore unsure who will spread the word, take yourself down to

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**"Fortunately, most departments have undergone a Childbirth Enlightenment, meaning they have acquired a more realistic view of what it takes to have/raise a baby and maintain a world-class teaching and research program."**

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the department office and tell as many of the office staff as possible. An announcement in this public place, to administrators who see far more of your colleagues in a day than you see in a month, will ensure rapid distribution of your news.

Whether or not to take advantage of a semester leave is not clear-cut, and may depend on the exact timing of the birth. After all, long ago (like ten years ago, when many maternity leaves were six weeks long), a large fraction of academic babies were born immediately after spring final exams were graded, in order to avoid conflicts with teaching schedules. Fortunately, most departments have undergone a Childbirth Enlightenment, meaning they have acquired a

more realistic view of what it takes to have/raise a baby and maintain a world-class teaching and research program. And remember, regardless of when your baby is due: it is very easy to underesti-

mate the amount of time and energy that a baby requires. Even with an 'easy' birth and lots of help at home, your short-term productivity will take a significant hit, and your work schedule and habits will likely be permanently altered. So, Professor Bellum falls firmly in the camp that suggests: if you have the option of a semester-long leave after childbirth, go ahead and take it, even if you do not think you will 'need' it. Yes, it is certainly true that the longer you are on leave, the longer your department colleagues must cover your teaching load. But get it out of your head right now that taking a semester of leave will come back to haunt you in some way.

After all, do you really expect your department is going to tot up all your publications, grants, teaching evaluations, and service at your tenure review and then say, "Well, this would be fine under normal circumstances, but she had an extra semester leave, so we would really like to see two more papers/another grant/etc."? Not hardly. A central component of the Childbirth Enlightenment was the realization that

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**"So, Professor Bellum falls firmly in the camp that suggests: if you have the option of a semester-long leave after childbirth, go ahead and take it, even if you do not think you will 'need' it."**

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release from teaching after childbirth lets a new mother spend what little time she can scrape together after the birth on the care and feeding of her research program. This makes sense: it is in your department's best interest to do everything it can to help you establish and maintain research productivity, and an interruption in your

*(Continued on page 20.)*

(Continued from page 19.)

teaching has little impact on the department when compared to a drop in your research productivity. Departments that understand the relative importance of these demands are investing wisely in the future of the department; a reasonable maternity

leave arrangement is one part of this understanding. Likewise, and perhaps most importantly, if you decide not to take the

leave, and your tenure decision is on the fence, get it out of your head right now that anyone in the room will point out that you had a baby but did not take any extra leave. In other words, taking the leave is unlikely to hurt you, and you definitely will not receive any 'extra points' for not taking the leave.

The above assumes you do a fair amount of teaching, because this is what your 'leave' will really be a leave from: your lab is not going anywhere, nor are your commitments to collaborators, etc. So, if you are in a medical school or some other situation where the teaching loads are light, a leave may not ease your schedule that much.

**“So consider the stopped clock as an extra buffer, or an insurance policy, but not one that will necessarily change your plans or goals.”**

As for stopping the tenure clock for a year—why would you not want to do this? After all, most universities that provide this option require that you exercise it at the time you apply for maternity leave. But if you are ready, you can still go up for tenure early, or on your original track, so this seems like a win-win situation. Meaning: just because you stop the clock does not mean that you must delay your eventual tenure application. And keep in mind that some pregnancies/births are more disruptive than others, and there is no way to know what your situation will be like until it is upon

you. So consider the stopped clock as an extra buffer, or an insurance policy, but not one that will necessarily change your plans or goals.

"But what," some of you whisper, rattling your newsletter, "what if I am in a department that has not undergone Child-birth Enlightenment? That has a draconian maternity leave policy? Or no policy at all!?" Do not despair! First of all, it would be helpful to find out if there is another woman in your depart-

ment (tenured or not) who has had a baby—from her, you can learn how your department chair handled her maternity leave. For example, maybe she asked your chair for, and received, a semester off from teaching, even though this is not an automatic university policy. If you have no trailblazer in your own department, ask within your college, or ask friends (or even casual acquaintances) at other universities how their leave was handled. Then go ahead and ask your chair for something reasonable, like a semester off from teaching. The worst you can hear is no, which is still better than not asking at all.

Finally, if faculty childbirth is a rare event in your department, you may feel especially concerned about how you will be perceived (that whole 'lightweight'

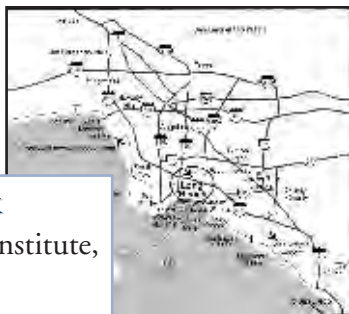
thing again). As a positive thought to help counteract these worries, keep in mind that you are serving as a tremendous role model. Everyone in your department (female and male) who would like to

have a family of their own will benefit from seeing your example that families and academic jobs can indeed go together!

**“But what,” some of you whisper, rattling your newsletter, “what if I am in a department that has not undergone Child-birth Enlightenment?”**



**Joachim Frank**  
Howard Hughes Medical Institute,  
Wadsworth Center  
2005 National Lecture



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**2005 Clinical Scientist Awards in Translational Research**  
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<http://www.bwfund.org/programs/translational/index.html>

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**Burroughs Welcome Fund  
Career Awards in the Biomedical Sciences**  
*Up to 12 fellowships*  
Deadline: October 1, 2004  
<http://www.bwfund.org>

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**British Council  
Marshall Sherfield Fellowships**  
*Up to two postdoctoral fellowships for one to two academic years*  
Deadline: October 1, 2004  
[www.marshallscholarship.org/comp.html](http://www.marshallscholarship.org/comp.html)

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**The IIE Fulbright Graduate Study Abroad Program**  
*Up to \$70,000*  
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## Transition from Predoc to Postdoc

*This is the first in a series of articles written by Early Careers Committee member Amy B. Harkins of the Saint Louis University School of Medicine, Department of Pharmacological and Physiological Science.*

### How to target and contact prospective postdoctoral mentors, and what to expect in return.

From the time I first found my postdoc position, students have asked me how I went about identifying, communicating with, and selecting a postdoctoral advisor. Now that I am an assistant professor in a medical school and have had numerous conversations with graduate students about this process, I have decided to commit my verbal advice to paper. This article first appeared in *The Next Step E-Newsletter* distributed by the Early Careers Committee of the Biophysical Society. It is my hope that the advice will be helpful to those of you who are interested in pursuing an academic (or industrial) postdoctoral position, and complement the advice you have (hopefully) received from your advisor, mentors, and friends who have gone before you. These are entirely my own opinions and in no way represent the opinions of the Biophysical Society or any university.

Typically, my advice to students in the early phase of dissertation research is to begin reading a lot, both inside and outside of your current research field. If you are well beyond your second year, this would still be the first place to start, but you may need to collect this information more quickly than less advanced

students. As you prepare for your preliminary or qualifying examinations, journal clubs, and colloquia, or read for your own research, pay attention to the scientific questions that interest you and keep a list of the people doing research in these areas. Alongside this list of people, begin formulating the "ideal" lab you would like to work in, establishing the criteria for what you "must have" and what you would "like to have" in a lab and a postdoc mentor. For example, what type of mentoring do you want from someone? Do you want more of a graduate student mentor who is there at every step or a mentor who is only a fall net when the going gets rough? Do you want a lab that is large and social and interactive, or a smaller more intimate setting? Do you want to have your own funding in order to join a lab, or be able to write your own grants as your project develops?

As you establish a working list of these needs and wants, somewhere in the middle of your dissertation research, begin talking to as many faculty, postdocs and senior students as possible about the names of people on your list. As you receive feedback from others, be sure to ask your questions in the context of both the research being conducted, and the manner in which you'd like to conduct your research in this lab, keeping in mind your "must have" and "like to have" lists. For

example, if you are interested in a small laboratory with only two or three others in addition to the advisor, you may find that some PIs on your list employ more than 10 postdocs, plus graduate students and technical support staff. For those of you limited by a specific geographical location, these same questions apply, only on a smaller scale and with the obvious limitations of schools in that location.

Once you have narrowed your list of faculty to those who fulfill your criteria for both the research and the lab environment, and those who come recommended by one or more trusted sources,

**“begin formulating the “ideal” lab you would like to work in, establishing the criteria for what you “must have” and what you would “like to have” in a lab and a postdoc mentor. ”**

it is time to contact prospective postdoc advisors. I am often asked when is the "best" time to contact faculty for a postdoc position. I would say it is almost never too early to make an initial contact, but aim for at least a year before defending your

thesis. After all, it frequently takes a full year to contact the faculty, visit the labs that are interested in you, and



**“...begin reading a lot, both inside and outside of your current research field.”**



Each year, the Early Careers Committee sponsors breakfasts at the Annual Meeting where career issues are discussed.

make the final decision, especially if you have to consider a spouse, significant other, and/or children that have additional requirements for relocation. Moreover, remember you will also be using this time to finish your dissertation and produce publications from your thesis project.

Although there are many ways of contacting prospective postdoc advisors, email is particularly useful because it makes it easy for PIs to respond to your inquiries. However, this first email should be constructed as a formal letter, unless you already know the person well. Introduce yourself with a statement that includes the name of your thesis advisor, the university from which you will receive your degree, and an approximate date when you expect to complete your degree. Then briefly outline your research project(s) with an emphasis on the scientific questions you have asked, followed by a short statement of techniques and methods used to address these questions, and a summary of the results including publications, pending or otherwise.

In the next paragraph of your letter, briefly outline your interest in their research and why you think you would be a good postdoctoral candidate for

their laboratory. At this point, your reasons typically should be science-driven, not technique-driven, as you are expected to be a researcher who thinks in terms of scientific questions and not a technician listing your abilities. End the letter by listing the attached supporting documents; include your complete contact information, stating that you are sending a hard copy in the mail and that you look forward to their response. In attachments, include a list of three-four faculty members (including your thesis advisor) who have previously agreed to write letters of recommendation for you. Be sure to provide complete contact information for your references, including email address and telephone numbers. If you have publications, include PDF files of them as attachments too.

My advice, though this may not always be possible or practical, is to prepare all of these letters and send them out at the same time via email and hard copies in the mail. Because most PIs will respond to you within a short period of time, often within 24 hours of receiving your email, you will want to be able to schedule all of your visits to laboratories close in time to one another. By reducing the time between the

first and last visits, you will be able to better evaluate the lab and mentor, and this will help to clarify your decision in choosing the postdoc mentor. Some PIs you contact may not have a position in their laboratory and will write only to thank you for your interest. Others will not respond at all. However, because you have spent the time and effort to identify a good match in advance, you should also expect to be invited to visit the laboratory of some prospective advisors. Many of these invitations will come from faculty who contacted your references in advance to contacting you. You can expect the expenses for a visit to a prospective laboratory to be paid by the inviting PI, and not from your own pocket, but be sure to confirm this in advance. As you schedule your visits, remember that in most cases you will be asked to give a short presentation on your thesis project and to be familiar with the background of the lab you are visiting (both the general field and their research in particular). Be sure to give yourself enough time between visits to develop this familiarity, along with the time that your own research will require, but not so much time that you forget your impressions of the laboratories you visited early on. This is a very exciting time in a graduate student's career, and being properly prepared will help keep it a positive experience.

In the next article for *The Next Step E-Newsletter*, I will discuss topics such as what to expect during visits to different laboratories, and what to discuss with PIs and their lab members during lab visits in order to help you make a decision as you continue your scientific career.

—Amy B. Harkins,  
Early Careers Committee

## Upcoming Events\*

August 15–20, 2004

*Macromolecular Organization and Cell Function*

Oxford, United Kingdom

<http://www.grc.uri.edu/programs/2004/macromol.htm>

August 18–21, 2004

*4th International Symposium on Algorithms for Macromolecular Modelling (AM<sup>3</sup>-IV)*

Leicester, United Kingdom

<http://www.am-3.org/>

August 29–September 2, 2004

*7th European Biological Inorganic Chemistry Conference (Eurobic7)*

Garmisch-Partenkirchen, Germany

<http://www.uni-dortmund.de/eurobic7/>

August 31–September 3, 2004

*Applications of BioCalorimetry (ABC IV)*

Budapest, Hungary

<http://www.microcalorimetry.com/index.php?id=166>

September 1–3, 2004

*Genomes to Systems*

Manchester, United Kingdom

<http://www.postgenomeconsortium.com/>

September 3–6, 2004

*Developing Concepts for Systems Biology*

Oxford, United Kingdom

<http://mudshark.brookes.ac.uk/BTK/>

September 4–8, 2004

*5th New England Biolabs Meeting on Restriction/Modification*

Bristol, United Kingdom

<http://www.bch.bris.ac.uk/staff/szcz/RM2004.html>

September 8–11, 2004

*Immunological and Pathophysiological Mechanisms in Inflammatory Bowel Disease*

Snowmass Resort, Colorado

<http://www.the-aps.org/meetings/aps/snowmass/index.htm>

\*Please visit <http://www.biophysics.org/> for a complete list of upcoming events.

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