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### 2003 National Lecturer

*Janet Thornton* of The European Bioinformatics Institute in Cambridge, England, has been named the 2003 National Lecturer. Thornton will present the National Lecture on Monday, March 3, 2003, in the Henry B. Gonzales Convention Center in San Antonio. See page 16 for further 2003 Annual Meeting information.

*Janet Thornton*

### 2002 Society Elections

#### President-elect Candidates



*Stephen Harvey*



*Jill Trehwella*

#### Secretary Candidates



*Ruth Altschuld*



*Frank Brozovich*

#### Treasurer

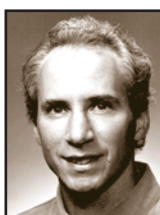


*Mordecai Blaustein*

The 2002 candidates for President-Elect are *Stephen Harvey* of the University of Alabama at Birmingham and *Jill Trehwella* of Los Alamos National Laboratory. *Ruth Altschuld* and *Frank Brozovich* are running for Secretary, and *Mordecai Blaustein* is running unopposed for Treasurer. Twelve candidates (below) are running for the seven Council positions. Eligible members with current email addresses were sent instructions for voting electronically. Print ballots are available upon request. All votes must be received by August 1. The 2002 Nominating Committee was chaired by *Susan Hamilton*. Committee members were *Avril Somlyo*, *Wayne Hubbell*, *Chris Miller*, *Eve Marder*, and *Susan Taylor*.



*Stephen Baylor*  
University of Pennsylvania



*Christopher Berger*  
University of Vermont



*Steven Boxer*  
Stanford University



*Clara Franzini-Armstrong*  
University of Pennsylvania Medical School



*Joachim Frank*  
State University of New York, Albany



*Steve Goldstein*  
Yale University School of Medicine



*Sharona Gordon*  
University of Washington



*Joseph R. Hume*  
University of Nevada School of Medicine



*Elizabeth Komives*  
University of California, San Diego



*Mark Mayer*  
NICHD, NIH



*Eduardo Rios Licenciado*  
Rush University



*Frederick Sachs*  
State University of New York, Upstate



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*President-Elect*  
Yale Goldman  
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*Secretary*  
Jill Trehwella  
*Treasurer*  
Antonio Scarpa

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James M. Hogle  
Linda Kenney  
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## Biophysicist in Profile



Sarah Garber

Sarah Garber is a self-described academic nomad. Born on the south side of Chicago, Garber made many stops along the way, even crisscrossing the US, before finding the 'right fit' back in Chicago, where she is currently an Associate Professor in the Physiology and Biophysics Department at Finch University of Health Sciences/The Chicago Medical School.

While growing up, Garber always wanted to be a scientist, though initially she was torn between being a veterinarian or an astronomer. The inclination to be a veterinarian came from a natural love of animals. "Our first cats came from *George W. Beadle*, the Nobel Prize winning geneticist from the University of Chicago, whose wife bred Siamese cats." Her love of astronomy stemmed from nights spent as a child "on the beach looking up at the stars."

In high school Garber participated in a summer program at Rush Medical College, where she met *Tom Lint*, a professor in the Rush University Immunology/Microbiology Department. Garber credits him with turning her on to science as a career. "He is one of the best teachers I've ever had," says Garber, "This is a guy who could turn

into a tetrahedral carbon atom in no time at all. The Bobby McFerrin of science."

After completing her undergraduate degree at Barnard College, where she majored in biology and minored in chemistry, she entered Brandeis University for graduate work in biochemistry. She chose Brandeis because of her interest in cell membranes as communication barriers between outside and inside the cell. Once she arrived at Brandeis, she wanted to work with *Chris Miller* because he worked in single molecules, ion channel proteins in artificial bilayers. She also realized that Miller was young, bright and innovative. "Working with him would be a good challenge, and fun too," explains Garber.

Her next move was cross-country to Stanford University Medical School, where she did postdoctoral work in the Neurobiology Department with *Rich Aldrich*. "I was lucky to be able to work in the Aldrich lab at the time," she says, "I signed on to his lab before he knew he was moving to Stanford." Aldrich exposed her to different aspects of scientific method, and looking at ion channels from a more physiological point of view.

After completing her fellowship, Garber accepted the position of Research Assistant Professor at the University of Alabama at Birmingham in the Department of Physiology, and as an Associate Scientist in the Cystic Fibrosis and Neurobiology Research Centers. Here, she continued work on anion channels involved in cystic fibrosis that she started as a postdoctoral fellow. "This position established me as an independent investigator. The work that was generated there allowed me to apply for grants, first with the Cystic Fibrosis Foundation and ultimately NIH." Her later move from the

University of Alabama to the department of Physiology at The Medical College of Pennsylvania (which ultimately became MCP Hahnemann University) moved Garber into a tenure track position. There, she received an Established Investigator Award from the American Heart Association and continuous NIH funding.

The impetus for her final move back to Chicago, however, was purely personal. “I got married, had a child,” Garber says, “and I figured it was time to come to back to family.”

At The Chicago Medical School, her lab is studying a volume-regulated anion current that is functionally involved in cellular volume regulation. This current is regulated in several ways, including cytoskeletal integrity and the expression of a small protein called pICln. Both the current and the protein appear to be ubiquitously expressed in cell types as diverse as white blood cells, neurons, glia, myocytes, epithelia and endothelial cells. Their work integrates electrophysiological techniques with molecular biology with confocal and fluorescent imaging in order to understand the role of this protein and anion current to volume regulation and cellular homeostasis and physiology.

Even though she wouldn't describe her journey as clear sailing, she admits that it has been smoother than most and feels fortunate that most of her scientific mentors have been gender blind. “Gender issues do exist,” she explains, “but they don't have to become a real obstacle if you're with the right mentor.” Garber stresses that it's about finding the right mentor at the right time. “I was lucky that my graduate and postdoctoral mentors

really only cared about the science, not what a person looked like,” she says. Even with that, Garber has always had close friends and colleagues who help with some of the more sociological and political issues.

Garber advises young people entering biophysics to find the right mentor for the problem at hand. Her advice is to set goals at different stages of a career, and find people who can help address those goals. “It may take several different mentors,” she says, “no one person can address all of the issues a

person may be concerned about.” A good mentor, she explains, can teach important skills that are not often learned as a student. For example, learning how to communicate or manage a lab full of people. “As you go through the learning track, you learn how to collect data and document that data,” Garber explains, “but often you don't

learn how to communicate that data in different ways such as giving seminars and grant writing.” A good mentor will share past experiences that help you learn how and what to communicate effectively. “You also need to keep in mind,” she warns, “that as you do your postdoc and continue on as an assistant professor, you can become isolated.” She stresses the importance of keeping in touch with colleagues and mentors.

In finding her ‘right fit,’ Garber decided early on that the tenured track was the best option for her. It also helped, she admits, that she had an NIH grant, which gave her the power to make decisions, as opposed others mak-

ing decisions for her. And it helped to be in departments with supportive colleagues, which she found in Philadelphia and in Chicago. “I talk to colleagues about all kinds of issues; collecting and giving advice, sort of like free therapy,” Garber jokes.

Garber joined the Biophysical Society in 1984 while in graduate school, and credits the Society with fostering a sense of community and creativity. She became active in the Society's subgroups, which she says helped her to gain important skills that scientists are not taught, such as administration techniques.

In reaching out to those who have not yet considered biophysics as a field of study, Garber stresses the importance of presentation. “Just the word ‘biophysics’ is intimidating—a great way to stop cocktail party conversation, especially if you are female,” says Garber, “When talking to students, we should begin with saying ‘Hey, look at all the fun things we get to do!’ Then afterwards say ‘this is what it is’.”

As a biophysicist, mother of three-year-old Christopher, and wife of *Glenn Armstrong*, who has a PhD in Food Chemistry and works in industry, Garber performs a balancing act each day. She describes it as a constant struggle where priorities can change day-to-day, minute-to-minute. “It can be extremely difficult,” she notes, “and it is important that you have the support of family and friends. It is also important that you have outside activities.” When not in the lab, Garber enjoys swimming with her son and whitewater kayaking. Garber also practices yoga and uses her science training to teach anatomy and physiology to yoga students working toward their certification.

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**“...set goals at different stages of a career, and find people who can help address those goals.”**

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**“Gender issues do exist,” she explains, “but they don't have to become a real obstacle if you're with the right mentor.”**

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## Treasurer's Report

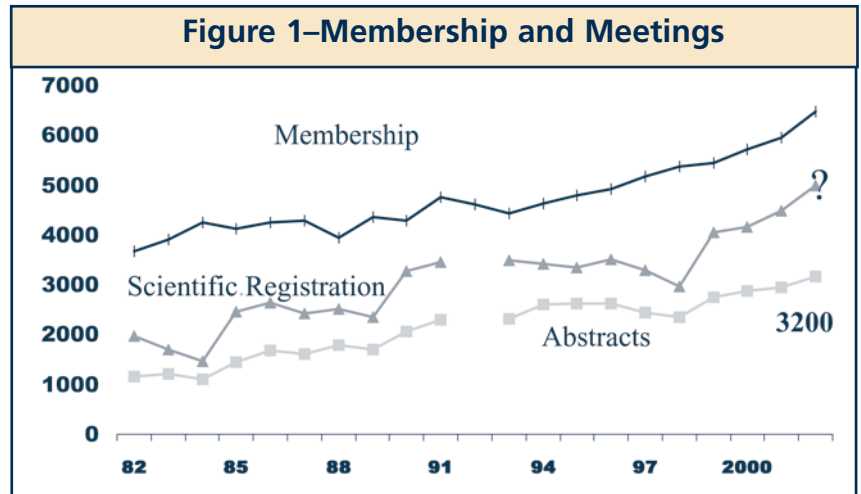


Antonio Scarpa

2001 was a very good year for the Biophysical Society in general, but also financially and for its future outlook. During the last two years several goals of the Finance Committee were achieved: (a) for the third year in a row, revenues significantly exceeded expenses; (b) the reserve account reached and exceeded the Board-mandated level (75% of the Society Operating Budget); (c) the very conservative investment approach paid off during the last 30 months, as the Society was immune from the losses experienced by most financial markets; (d) the financial operations and accounting have been re-engineered through a series of resolutions approved by the Executive Committee, Council and Membership. This resulted in the establishment of cost-revenue centers, and a predictable and proactive capacity to do accurate annual budgeting and allocation of net revenue on a rational and fair basis.

### Membership Activities

Figure 1 illustrates the Society's wealth by providing a 20-year perspective of the membership, scientific registration to the Annual Meeting and abstracts presented. The membership continues to increase, as described in the report of the membership committee (see page 12). After a



**Figure 2—FY 2001 Budget Overview**

	Revenue	Expenses	(Loss)/Gain
<b>Budget</b>	3,064,180	2,992,580	71,600
<b>Actual Audited</b>	3,457,295	2,811,101	646,194

period of 10 years, where participation (Registrations and Abstracts) in the Annual Meeting was essentially flat, activity has significantly grown over the last four years, when each year has broken the previous year's registration and abstract record. This year in San Francisco we had a new record for abstract submissions, symposia, scientific registration and exhibitors. The latter increment was the clear result of the efforts of the Society Office, which has started to directly manage the exhibits.

### FY 2001 Audited Budget

Figure 2 shows the fiscal year ending 2001 budget (July 1, 2000 – June 30, 2001) as audited and approved. When the budget was formulated, approximately three years ago, we conservatively estimated a very limited surplus. The surplus at the end of the fiscal year 2001 (June 30, 2001) was \$646,194. The reasons for this increased net revenue were the high-

er revenues from the Biophysical Journal and the higher than expected participation at the Boston meeting. Equally important has been the capacity for proactively budgeting and the assumption by the office of several activities in a far more effective and cost-efficient fashion. For comparison, Figure 3 gives a perspective of the financial situation over the past six years.

### FY 2003 Proposed Budget

The Executive Board approved the 2003 budget in November 2002. It is shown in the right column "2003 P" of Figure 4, itemized according to the three cost centers and reserves.

In comparison, the audited budgets of 2000 and 2001 are shown in the first and second rows, respectively. The current budget, 2002, as formulated two years ago, is shown for comparison in the third row. Based upon the mid-year estimates and the success of the San

Francisco meeting, we estimate that the net revenue will be in excess of the \$34,605 originally anticipated.

### Cash Reserve Accounts

The Society voted four years ago to maintain a Reserve Account to be 75%

of the annual operating budget of the Society. This should be allocated 40%–60% in equities and the remaining in short-term bonds, notes and CDs, at the discretion of the Treasurer and the Finance Committee. During the last three years ~60% of the portfolio has been in bonds, treasury notes and CDs.

As of 2/1/01, this goal was achieved and the total Reserve Account was \$2,256,159, exactly 75% of the operating budget. By comparison, in 1998, it was less than 61% of the operating budget. By 2/2/02 the Reserve Account was \$2.4 million, approximately 84% of the operating budget. The annual

performance of the Reserve Account for the years 1993 to 2001 is shown in Figure 5. It should be noted that in years 93-98, the lack of increase in the account is not due to portfolio performance, which was stellar, but is accounted for by major withdrawals to balance the yearly massive operating deficit.

**Figure 3–Audited Financial Positions**

(in thousands)	1995	1996	1997	1998	1999	2000	2001
<b>Net Revenues</b>	\$1,655	\$1,817	\$2,321	\$2,467	\$3,005	\$3,287	\$3,457
<b>Net Expenses</b>	1,863	1,980	2,799	2,572	2,716	2,835	2,811
<b>Income/Loss</b>	-208	-163	-478	-105	289	485	646
<b>Investment Account</b>	1,351	1,555	1,353	1,567	1,729	2,059	2,131

**Figure 4–Financial Summary by Activity Centers**

	2000	2001	2002B	2003P
<b>Annual Meeting</b>				
Revenue	960,025	1,100,195	1,058,200	1,055,910
Expenses	814,211	858,120	944,215	949,661
Net	145,814	242,075	113,985	106,249
<b>Biophysical Journal</b>				
Revenue	1,682,410	1,664,032	1,638,500	1,490,500
Expenses	1,253,052	1,270,664	1,547,025	1,418,180
Net	429,358	393,369	91,275	72,320
<b>Membership Services</b>				
Revenue	613,959	610,155	624,455	780,532
Expenses	767,476	681,443	865,310	908,352
Net	-153,517	-71,288	-240,855	-127,820
<b>Reserve Income</b>				
Revenue	63,438	82,912	70,000	59,400
<b>Total Revenue</b>	3,319,832	3,457,295	3,391,155	3,386,342
<b>Total Expenses</b>	2,834,738	2,810,226	3,356,550	3,276,193
<b>Total New Revenue</b>	485,093	647,068	34,605	110,149

Figure 6 shows the reserves breakdown between equities and liquid assets for each month in 2000 and 2001. The liquid asset portion, \$1.2-1.6 million, has been managed by Mercantile Bank Trust Division in Baltimore and has yielded in 2001 a total annual return above 5.5% (interest plus short and intermediate term bond appreciation).

The equity portfolio is managed by the Finance Committee, in consultation with a senior financial advisor at Morgan Stanley in Chicago. The total annual return for FYE 2001 was essentially flat.

It is noteworthy and encouraging that the Society Equity Portfolio performed at least two times better than the SP500 Index every year during the last 10 years.

When the Reserve Account of the Society finally reached the mandated 75% of the Operating Budget, the Executive Board unanimously approved last December that this should be

(Continued on page 6.)

(Continued from page 5.)

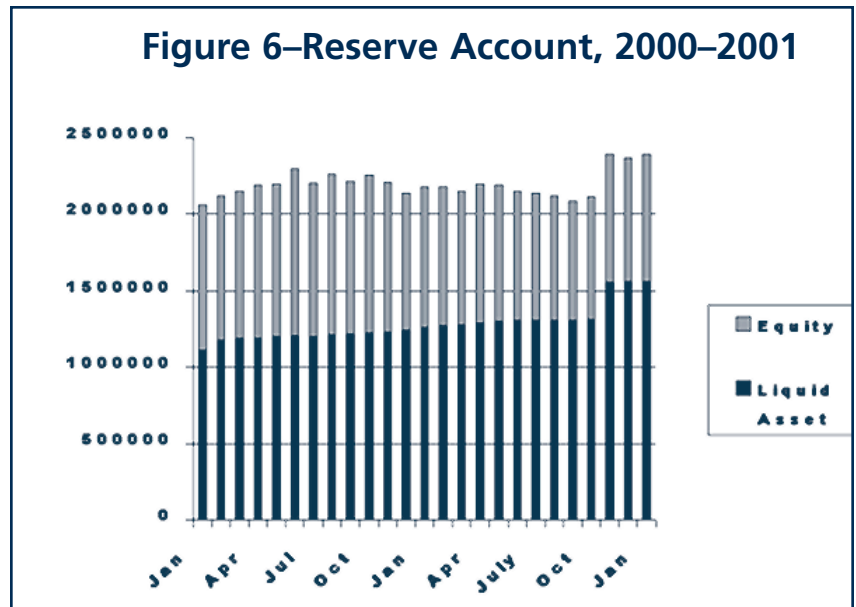
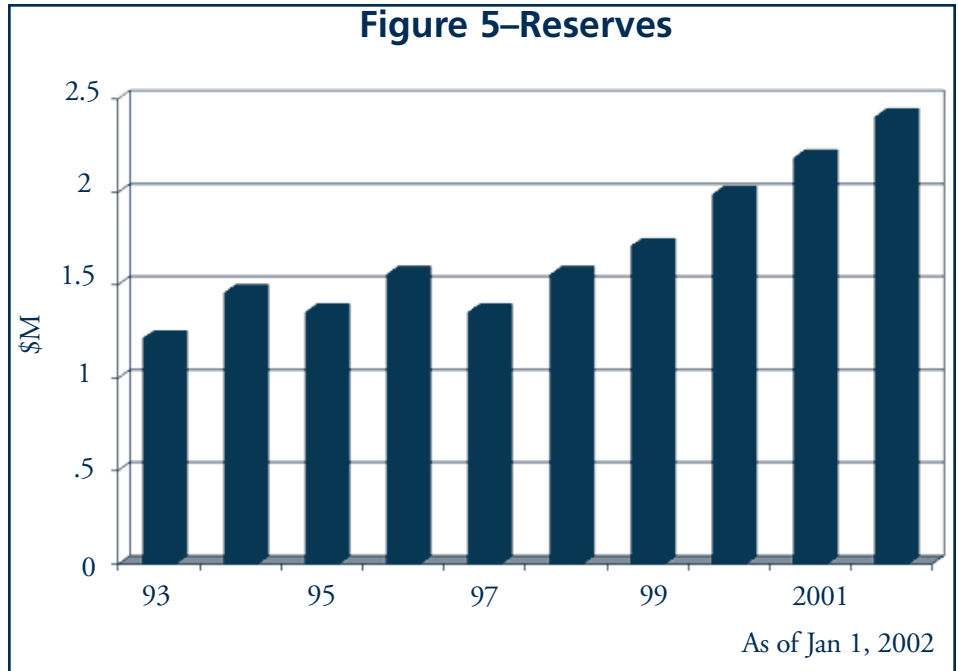
raised to be the equivalent of one full year of the operating budget. Even when this goal is reached, the reserves will remain far smaller than those of other comparable societies. The reserves are designed to protect the Society from unexpected events, as will be described below. Figure 7 shows the ratio between annual expenses and reserves. In January 2002 the ratio was 0.82 and at this writing it was 0.86, which bodes well for the achievement of the goal within one or two years.

### Long-Term Financial Planning

The Society is in a position to undertake long-term financial planning. This process has taken place gradually during the last three years and has been facilitated by the presence of a capable staff, by the true allocation of costs and revenue for each activity, and the retaining of a professional auditor.

Below, in a nutshell, is the basic principle of the new budgeting and financial allocations:

- In normal years, the Society should operate within its budget without tapping into the Reserves.
- The activities of the Society will be grouped in 3 cost/revenue centers:
  - The Annual Meeting
  - The Biophysical Journal
  - Membership Activities (such as Committees, Public Affairs, Subgroups)
- Each year, the Annual Meeting should generate a profit equivalent to 10% of its annual expenses.
- Each year, the Biophysical Journal should generate a profit equivalent to 10% of its annual expenses.
- The annual budget for Membership activities should be consistent with:



- The total revenue from membership dues.
- 10% Journal net revenues
- 10% Annual Meeting net revenues
- Contributions, Donations, Grants

Small reserve accounts for the Journal and the Annual Meeting have been established. They will provide the

following advantages: a) will guarantee that the Society will continue to have 10% income from the Annual Meeting and the Journal even when one or both have a bad year; b) will permit the long-range fixing of finances of one cost center without affecting pricing or activities of the others; c) will facilitate long-term planning and experimental innovative approaches on the part of the Journal

**Figure 7—Expenses/Reserve Ratio**

	1998	1999	2000	2001	2002, Jan
<b>Expenses</b>	2,572,744	2,716,093	2,834,736	2,810,226	2,950,000
<b>Reserves</b>	1,566,898	1,779,159	1,919,659	2,256,159	2,396,224
<b>Ratio</b>	0.61	0.64	0.68	0.78	0.82

Editor and Annual Meeting Program Chair.

### *Conclusion*

In conclusion, 2001 and the beginning of 2002 have been good for Society finances. Now that we are financially stable and solidly in the black, we are giving back to the membership, which has loyally supported the Society, several additional benefits and cost savings. For example, Society members no longer pay for the cost of printing color in the Biophysical Journal and their page charges have been drastically reduced. Other cost savings for the membership are under discussion.

There are, however some clouds on the horizon. Whereas the finances are now in order and a net surplus has been generated over the past three years, the Society has grown significantly over the

last ten years, especially in two activities where finances are highly leveraged. It is apparent from Figure 4 that the Journal and the Annual Meeting constitute 80% of the Society revenues and 76% of the expenses. The uncertainty of the financial standing of scientific journals in an increasingly expanding electronic environment is a matter of continued concern. Real concern arose last September, when the abstracts for the San Francisco meeting were due. While we were fortunate to end up with a record participation, the possibility of one cancelled or several poorly attended annual meetings could suddenly produce a very large deficit, which would rapidly exhaust reserves and require drastic financial decisions. Finally, 2003 will be very likely the last year of the major NIH expansion and the various scenarios for 2004 anticipate a significant bottleneck and/or hard landing.

Whereas these occurrences will be shared by the scientific community and by virtually all societies similar to ours, I believe that the Biophysical Society has unique strengths. The operations of the Society have been entirely redesigned and are in the hands of a very capable office staff. This and the steady growth of the Society and the enthusiasm and the volunteerism of the membership, should permit harmonious expansion of the Society activities for years to come while offering long-term protection for rainy days.

If you require additional information, please visit the web site: <http://www.biophysics.org/business/> where a full financial report is available. Furthermore, if you have any questions, feel free to call me at (216) 368-5298 or email me at [axs15@po.cwru.edu](mailto:axs15@po.cwru.edu).

—Toni Scarpa, Case Western Reserve School of Medicine, Treasurer

## **Help the Biophysical Society Demystify the Graduate and Postdoc Lab Selection Process!**

Remember how nerve-racking it was to choose a postdoc lab, project, and/or advisor? Or a graduate project/advisor? Remember trying to imagine how it was going to be to work with that advisor, those lab mates, that project? How it often felt like there wasn't enough time, or a chance to hear enough comments from current members of that interesting lab?

Now you can help other people facing these tough questions! The Biophysical Society Early Careers Committee is looking for volunteers to serve as contact-points in academic, industrial, and government labs. Contact-points will provide contact information to help connect people interested in working in one lab with current members of the lab, and/or provide some informal impressions about the lab, if requested. Contact-points will be assembled into a searchable database on the Biophysical Society web site. To register, please go to <http://www.biophysics.org/committees/ecvdb.asp>

## Early Careers

### Industry or Academia?



Stephen Raso

While I was in graduate school, the idea of working in industry never crossed my mind. My direction was set: I was going to graduate, move on to a postdoctoral position and then, of course, become a university professor. Once there, I would run my own lab, teach my courses, and train new PhD students. I had the opinion that people in industry didn't do real science. Instead of answering big questions about the laws that govern our universe (or at least sub-cellular processes), industry scientists were tucked away at lab benches, mindlessly working toward the fruition of some project in which I had no interest. Even worse, I assumed that industrial life would be devoid of social interaction; I imagined just standing all day —belly to the bench— with the other lab drones.

I am happy to report that my initial impressions of industrial life were way off the mark, and were mostly simple misconceptions that stemmed from my ignorance. The great thing about ignorance, however, is that it can be cured. After graduate school, I continued on with my plan and began a postdoctoral appointment, where I studied the aggrega-

tion of recombinant proteins. Because the aggregation phenomenon (and how to control it) is of profound interest to the biotech and pharmaceutical industries, I found myself interacting extensively with representatives from that world. Through my collaborations, I learned that industrial scientists do, in fact, do real science. After spending a few years working in this environment, my ideas and career goals started to shift. So, with my career plans no longer set in stone, I was faced with a very difficult decision. Industry or academia?

All scientists come from (and most of us embrace) the academic world, and before choosing to stray from it one should be sure to have his or her priorities straight. In the academic world, a tenure-track professor is highly autonomous, having final say in what work is done in the lab and who does it. Once tenure is reached, the university professor enjoys an unusual level of job security. And lastly, but most importantly, the professor teaches (hence the Professor title).

In contrast, the research of the industrial scientist is more confined by the overall goals of company. As for job security, there are no guarantees in the industrial world. There is no tenure, no Scientists' Labor Union, and the success of the company relies on its success in the commercial marketplace. Stating the obvious: if the company fails, the scientist is out of a job. The industrial scientist is employed to develop products, rather than profess, so there are rarely formal opportunities for him or her to teach.

From what I have observed, the life of a non-tenured faculty member is a very difficult one. Consider that the tenure process at any PhD-granting university puts a major emphasis on the scientist's ability to publish and acquire external funding. Competing for a limited pool of money puts very real and

strong pressure on a young professor. In such cases the non-tenured faculty member may find teaching to

be more of a burden than a pleasure. This is a situation that was particularly unappealing to me.

My initial experience in industry showed me that there is often excellent infrastructure (tech support, solution/media preparation facilities, etc.), that allow the industrial scientist to get research done in a much more streamlined manner than typically found in academia. In addition, the work being done is directly applicable to significant practical problems. For me this was quite gratifying, after having worked on model systems from which practical applications were often extrapolated.

I also found the scientific interactions with my industrial colleagues to be just as rich as those I had in academia. More importantly, the dynamic of the workplace was equally stimulating, full of scientific discussions, seminars, and opportunities to publish or attend conferences. In short, the life of an industrial scientist was not all that different from that of an academic.

Although on average industrial scientists start out with a better salary (a non-trivial consideration), I would caution people against letting this significantly influence their decisions. As academic careers develop, the compensa-

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**“The great thing about ignorance..... is that it can be cured.”**

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**“I had the opinion that people in industry didn't do real science.”**

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**“.....the life of an industrial scientist was not all that different from that of an academic.”**

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tion balances out, and the initial differences in income are not big enough to make it worth accepting a job you don't like every day. For me, the decision came down to sacrificing some autonomy and research latitude for a life free of grant writing and the struggle for tenure.

Once committed to the life of an industrial scientist, the next daunting question I faced was: "Should I go to a big or a small company?" Once again, there are drawbacks and benefits to both and the best fit depends on the researcher's personality. In general, a large company offers more security and resources (i.e., expensive equipment, travel money) but may be far more departmentalized, limiting the scientist's ability to broaden his or her skill base. On the other hand, working at a small company may provide the opportunity to work on many aspects of product development, but with a smaller budget or perhaps less job security. During my job search, I interviewed at both large and small companies.

I recently accepted a position at a large pharmaceutical company in which the research is both intellectually stimulating and rewarding. My advice to anyone considering a similar career path is to know what you're getting into before taking the job. Find out if you will be able to publish, go to meetings, and collaborate, and to

what extent you can dictate the direction of your research. In addition to career development, you will want to inquire about

further scientific development. Find out what opportunities you will have to broaden your scientific knowledge. And remember that it is generally easier to switch from an academic position to industry, than the other way around.

Coming from academia, there are certainly adjustments to be made. There is an unmistakable corporate feel that is absent in academics. Instead of

classrooms there are cubicles, instead of "State College" sweatshirts there is the company logo. Psychologically, these things take a little getting used to. More practical day-to-day differences manifest themselves in the rigor with which everything must be documented and the highly formalized training procedures.

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**"I cannot overstate how helpful it was to have the full support of a dedicated and open-minded postdoctoral advisor."**

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In my travels I have found that both types of career provide their own challenges, stresses, and fulfillment. For me, addressing the problems that arise in protein drug develop-

ment is a great fit.

Lastly, I cannot overstate how helpful it was to have the full support of a dedicated and open-minded postdoctoral advisor during the entire process of choosing a career path and subsequently choosing a job.

—*Stephen Raso*  
Wyeth BioPharma

## The Good, the Bad, and the Ugly!

The Early Careers Committee is seeking stories from your graduate student or post-doctoral days illustrating the positive and negative aspects of your experiences with mentors. We hope that these articles will accomplish several goals, including opening the eyes of students who might not have considered the potential horrors, giving grizzled veterans a good laugh, and helping to guide students' future career development. One example of input might be, "My advisor was the worst! I never saw him, he had no input in my experimental design...I feel like the lab tech trained me and made sure that I was on track," while a second might read, "My graduate advisor was instrumental in my development, not only did she teach me the techniques I needed to complete my dissertation project, but also gave me the opportunity to design and carry out a series of experiments in collaboration with other laboratories on campus."

All names will be withheld to ensure privacy, and all submissions, which must be received by 7/15/02, are subject to editing. The final article will be printed in the Sept/Oct Biophysical Society Newsletter. Articles may be submitted online at <http://www.biophysics.org/committees/ec.htm>, by email to [smwilson@med.unr.edu](mailto:smwilson@med.unr.edu), or by snail mail to Sean Wilson, Department of Pharmacology, Mail Stop 318, University of Nevada, Reno 89557.

## Ask Professor Sarah Bellum

This column is a new regular feature of the Newsletter, addressing 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'm a fourth-year physiology grad student who got roped into helping another grad student in the lab get his project off the ground. I use "roped" because, while the project uses methods that are very similar to the ones I developed for my own project, the system is very different and I did not find the project very interesting. After lots of time and effort (taken away from my own project!), we worked out the kinks and got some interesting results; these are now being written up for publication. I assumed I would be second or third author, but I just saw the first draft, and my name is only mentioned in the acknowledgement section, under "helpful advice"! I thought at least I would get another publication out of this. What should I do??*

—Sleepless in Cell Culture-Land

**A:** An excellent question, and one I am glad to print because it addresses an all-too-common cause of graduate student insomnia: publication. And a particularly thorny variety: authorship. While authorship can also be an issue for faculty members, it is often the graduate students and post-doctoral trainees trying to pack a CV for the job market that feel the thorns most acutely.

Why do you want to be an author? Hopefully, you have a real connection to the project: you feel you made a real contribution (physical, intellectual, or preferably both); you are proud of your work on the problem; and this may be an area of research for which you want your expertise to be known. Less nobly, but perhaps no less often, the motivation for authorship may be to lengthen the list of publications on your CV, especially if the manuscript will be submitted to a 'top tier' journal.

Why would you NOT want to be an author? Perhaps you think the work is awful, with poorly designed experiments and/or flawed interpretations. Or perhaps the work is good, but you

feel your contributions were minor, and you have plenty of publications on your own plate. Perhaps you do not want to lay yourself open to having to explain the data in public, or being buttonholed at national meetings.

Who should be an author? In the biomedical sciences such as physiology, one key worker (often a graduate student or postdoc) can often be easily identified; the paper reports the results of his or her project. This person is awarded first authorship. Even this designation can get complex, such as when a project is 'inherited' from a departing student (who becomes first

author, the original student or the 'heir?'). Increasing in use is 'double asterisk' authorship, where an asterisked footnote after the first two authors' names explains, "the contributions of these authors were equal." This is all very nice, but the designation is quickly lost in later citations. And how is it

decided which one of those authors gets to be the 'real' first author?

Almost always the PI is listed as last author, although since most PIs do not work 'at the bench', the actual role of the PI can be rather more intangible: was the PI the source of guiding light and inspiration, the leader of 'bull sessions' where results were reviewed and new directions planned? The writer of

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**"...you can gather an initial assessment of your chances for authorship by comparing your contributions to those of second authors of prior publications from your lab."**

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the first draft? Or was the role more along the lines of 'procurer of funds'/ 'payer of bills'? Or even sketchier: 'provider of bench space'? An opinion on the appropriateness of PI authorship was recently published in *Nature* (1), and an accompanying ensemble of comments from editors, authors and reviewers (2) makes for very interesting reading, providing rare candid (and largely anonymous) views on the subject.

Authorship in the middle of the byline can be even more confusing:

what criteria are used for including a second author (for a total of three)? Or a third or fourth author? When does the contribution taper down far enough that a contributor is merely acknowledged, as you have been? There are no hard-and-fast rules, but since the decision ultimately rests with the PI of the lab, you can gather an initial assessment of your chances for authorship by comparing your contributions to those of second authors of prior publications from your lab. Some labs have a history of including as author everyone who touched a pipet for the project. Others require there be some intellectual contribution, in terms of project design or experimental approach, or analysis of results. The International Committee of Medical Journal Editors has developed a comprehensive, three-prong set of criteria for authorship (3), with requirements at all stages of the project, from experiment design and execution, analysis of results, and a requirement that each author sign off on the final version of the manuscript. That sounds great to me, as applying all three criteria would help address the 'ghost authorship' and 'honorary authorship' traps

that can cloud the authorship picture, as a recent article on Science's Next Wave e-zine suggest (4).

Signs that you might not be included as an author include no intellectual contribution to the project, and/or no contribution to assembling the first draft. You realized that you would not be an author only after the first draft was assembled; that suggests that you might have been a bit unrealistic as to your contributions to the publication.

As authorship standards can vary greatly from lab to lab, I favor directly questioning the PI on their in-house 'rules for authorship'. For wallflowers, this does not have to be as direct as, "Hey, Professor Big Cheese, am I going to be second author on this publication, or what?", but rather a more general question designed to start a conversation: "Professor Big Cheese, what do you consider to be the criteria for

authorship on a paper from your lab?" Imagine some complications and exceptions, such as the ones described above, and ask Big Cheese about those, too. This is something to discuss with your PI as early as possible, preferably before you agree to join the lab (do you really want to work for someone who's authorship standards are radically out of whack with your own ideas on the subject?).

What can you do now? Talk to your PI. Explain your investment in the project, and your critical role in its success. Ask, politely, if you can be included as an author. Next time, have this conversation earlier, at the point where you felt like you were making a significant investment (time, effort, ideas, analysis).

1. Lawrence, P.A. (2002) Rank injustice. *Nature* 415:835-836.
2. (2002) *Nature* 415:819.
3. <http://www.icmje.org/>
4. <http://nextwave.sciencemag.org/cgi/content/full/2002/02/27/6>

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**“Professor Big Cheese,  
what do you consider to be  
the criteria for authorship  
on a paper from your lab?”**

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## Membership Report

The Membership Committee serves in an advisory capacity, offering recommendations to the leadership of the Society and the staff of the Office in Bethesda. Our charge is (1) to monitor changes in membership of the Society and assess the reasons, and (2) to develop plans to recruit new members. In this and upcoming newsletters, the Committee will report on the membership of the Society, its demographics, and how it participates in Society activities.

### A Growing Society

The Biophysical Society in recent years has seen healthy growth in membership across all membership categories. Graph 1 shows the increase in membership during the 1995-2002 period. Although the 2002 dues cycle is not yet complete, indications are that this year will also result in membership growth. As can be seen in the graph, during the period from 1995 to 2001, membership grew 36%. More importantly, in the same time period growth has occurred across all membership categories (Graph 2). The Society has always welcomed young members, offering them lower membership rates while including them in all aspects of Society affairs. The 25% growth in student and early career categories reflects the growing interest in biophysics and the Society among young scientists.

### An International Society

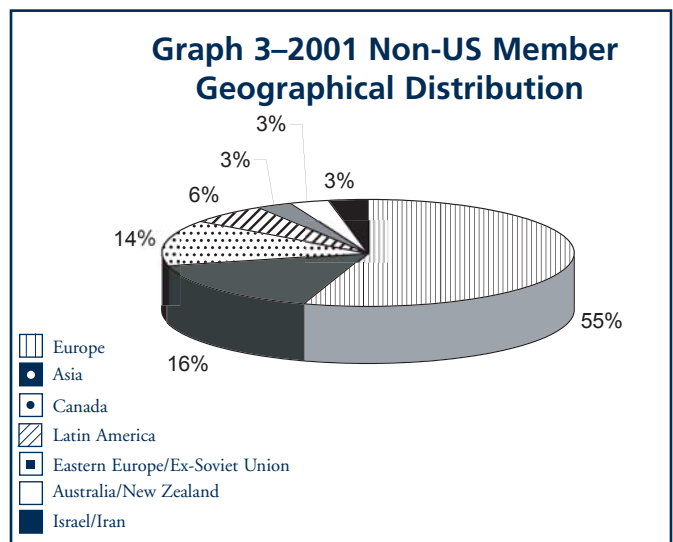
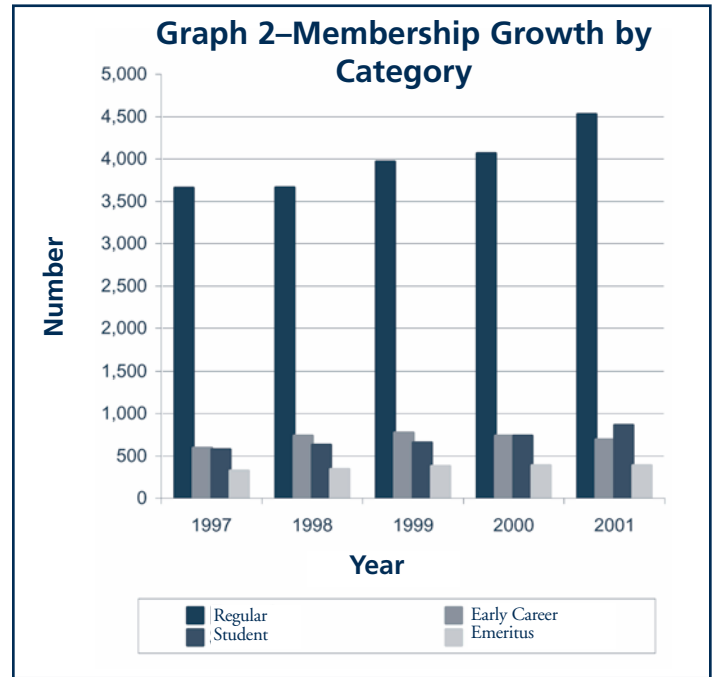
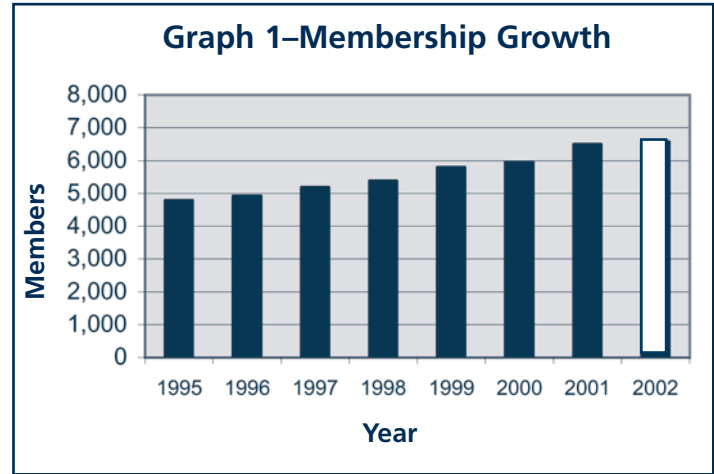
The Biophysical Society was incorporated as an international society and has always maintained broad international representation in its membership.

Currently, over one quarter (27%) of the members reside in countries other than the United States. Not surprisingly, the largest proportion of non-US membership is European, with the second largest group coming from Asia in particular from Japan. But the Society

is truly international, with representation from throughout the world, as seen in Graph 3.

The annual dues renewal form for 2003 will include questions regarding where members receive funding, areas of expertise, and other demographic information. We encourage you to take the time to answer them. The data is used for planning all society activities including Annual Meeting programs, committee outreach, public affairs, and elections. The information you provide will help ensure that the Society's activities continue to best reflect and address the needs of its membership.

—Catherine Royer,  
Universite Montpellier



## Minority Affairs Committee (MAC)

The MAC is actively reviewing the Annual Meeting activities of February 2002 and planning the activities for 2003 in San Antonio. In San Francisco, we co-hosted a dinner on Saturday evening with the Education Committee for all MARC and Student Travel Award recipients. This year there were 17 MARC recipients, 13 of which presented their work in the general poster sessions. Many of these students were undergraduates, some from small undergraduate institutions, and we look forward to their continued maturation as biophysicists as well as their participation in the Society.

The MAC met on Sunday, February 24, at the Annual 2002 Biophysical Society Meeting in San Francisco. Our discussion focused on how the MAC and the Biophysical Society could attract more minority students into biophysics. Below is a summary of the major points discussed.

### Attracting Students to Biophysics

A unique aspect of the recruiting challenge for biophysics is explaining to young students what biophysics is and what biophysicists do. Many undergraduates do not have exposure to biophysics and the Committee discussed a number of mechanisms to reach talented young people, especially those from underrepresented groups. A major goal of MAC will be to pursue ways of meeting and interacting with students who have an interest in biophysically-related topics.

One mechanism for reaching the target audience is to have representatives from the Biophysical Society at other professional meetings, particularly those meetings that attract a large

cohort of minority students. Last year *Paul Adams* from the MAC attended the National SACNAS meeting as a representative of the Biophysical Society (see report in the Nov/Dec 2001 Newsletter). Paul has agreed to attend the 2002 meeting in San Diego and the MAC will sponsor a booth at this meeting. Discussions are ongoing with the organizers of SACNAS to develop a biophysics symposium at their annual meeting featuring local biophysicists. As a follow-up to the scientific presentation, there would be a general question/answer session about careers in biophysics.

The incoming MAC chair, *Barry Lentz*, has agreed to represent the Biophysical Society at the Annual Biomedical Research Conference for Minority Students (ABRCMS) in Orlando, Florida, in the fall.

### Developing the Biophysical Society Web Site to Attract Minority Students

The MAC is interested in reaching students through the Biophysical Society web site. We discussed this goal with *Mekbib Gamea*, a representative from the Just/Garcia/Hill network for minority scientists. One goal of the Just/Garcia/Hill organization is to develop online mentoring for young minority students. Several years ago, the MAC developed a Database of Speakers for the Biophysical Society, which can be accessed through the Society webpage. (<http://www.biophysics.org/committees/speakers.htm>) One of our current goals is to increase the database and to advertise it as a resource for undergraduate institutions that do not have a biophysics curriculum. If you would like to join the database, you can access the application form from the MAC web page.

### Development of the Placement Service to Provide Research Opportunities for Minority Students and Faculty at HMUs

The BPS Placement Service has undergone a change in management. The Early Careers Committee is now overseeing this wonderful resource. Our committee will expand the Service to assist the recruitment of minority students and faculty into research summer opportunities or sabbatical opportunities for historically minority universities (HMU) faculty. This Service could also assist Biophysics training grant directors in their recruitment efforts, as described below.

### Importance of Continuing the Quest for Diversity in Biophysics

*Science* recently published an editorial entitled *Minorities in the Scientific Workforce* by *George H. Jones* (*Science*, 296: 217 4/12/2002). In the article Jones lays out a number of reasons we need to be concerned about the low representation of minorities in science, engineering, and mathematics. These reasons have been presented in our newsletters in the past and they needn't be reviewed here. What is worth discussing are some of his proposed solutions. He relates the past strategies of NSF and NIH, which offered incentives to increase diversity, including K-12 initiatives and funding of summer research experiences, and NIH-sponsored research supplements. The modest success of these initiatives prompt him to argue that federal funding agencies must now begin to require accountability from institutions and investigators who fail to demonstrate a commitment to diversity. He argues that proposed projects should require detailed

(Continued on page 14.)

(Continued from page 13.)

descriptions of how they will involve minorities, and a summary of the institution's past history and present demography with respect to diversity in the faculty and students. He states, "Proposals that fail to include this information would be at a competitive disadvantage and the consequence would be that only those institutions that demonstrate a substantive commitment to the recruitment, development, support and retention of minority scholars would continue to receive generous federal funding." He concludes that "incentive programs alone will not solve the problem. It is now time to hold investigators and institutions accountable. In the scientific context at least, doing so may well lead to an operational redefinition of affirmative action."

The MAC recognizes this need and is directing its efforts toward facilitating the communication between HMUs and majority research institutions through the activities described above. We welcome suggestions and participation from any Society member about how to implement these networks. In particular, we would like to encourage student and postdoctoral Society members to join MAC. If you are interested, contact *Barry Lentz*, the Society office, or myself.

### Transition in MAC leadership

I would like to add a few comments as the outgoing chair of the MAC. I am excited by the progress we have made over the past three years. The number of minority students participating in the Annual Meeting has increased dramatically. We do not ask members to identify their ethnic/racial origins so we cannot trace the number of participating minorities but it is clear that we have a more diverse group of young cohorts than in

the past. Nearly all of our MARC awardees, many of whom are undergraduates, now present posters in the general poster sessions. This is in stark contrast to the past where the minority students had a separate poster session. Also, an increasing number of young minority participants attend the meeting without the support of MARC.

The Minority Affairs Committee will undergo some face changes. At the end of the year, I will hand over Chair of the committee to *Barry Lentz* of the University of North Carolina. Barry has a long-standing interest and commitment to minority recruitment and retention, and he will combine his exciting ideas with his administrative knack of getting the job done. He will count on contributions from new Committee members: *Dixie J. Goss*, *Luis Markey*, and *Lydia L. Sohn*. I would like to thank outgoing committee members *Robert Canada* and *Christian Parry* who have contributed much to the MAC in the past three years.

—*Jacqueline Tanaka*,  
Temple University

## Subgroups

### Bioenergetics

The Bioenergetics Subgroup held its annual symposia and business dinner on February 23, 2002. The morning symposium, on channels and transporters, covered a wide range of experimental and computational approaches that are being brought to bear on these important classes of integral membrane proteins. *Bridgette Barry* of the University of Minnesota and *Amy Davidson* of Baylor College of Medicine discussed new findings about protein conformations and interactions associated with functional states of two types of transporters, lactose

permease and a multi-subunit ABC transporter. *Robert Stroud* of the University of California, San Francisco and *Roderick MacKinnon* of HHMI and Rockefeller University described how the latest atomic structures of two types of channels, glycerol- and potassium-conducting, are providing exciting insights into the mechanisms of channel conduction and selectivity. The final speaker, *Milton Saier* of the University of California, San Diego, presented tantalizing clues to the evolution of membrane transport systems that are being gleaned from sequence analysis.

Before the start of the afternoon symposium, the 2002 Young Bioenergeticist Awards were presented to *K.V. Lakshmi* of Yale University and *Kunhong Xiao* of Oklahoma State University for their outstanding research accomplishments.

The two awardees presented brief talks on their work in the areas of redox events in photosystem II and molecular dissection of cytochrome bc<sub>1</sub>, respectively.

In the afternoon symposium, attention shifted to cellular events, specifically the role of mitochondria in calcium signaling. The speakers covered several inter-related subthemes, stressing the integration of mitochondria into cell function at multiple levels. Examples included the nature of the interaction between mitochondria and endoplasmic reticulum, from *Rosario Rizzuto* of the University of Ferrara; the involvement of mitochondria in calcium waves and sparks from *Andrew Thomas* of the University of Medicine and Dentistry of New Jersey; and the role of mitochondria in cell death triggered by calcium oscillations in myotubes from *Gyorgy Hajnoczky*, of Thomas Jefferson University, by glutamate-induced calcium overload in neuronal cells, from *Michael Duchen* of the University of

London, and by ischemia/reperfusion in liver cells from *John Lemasters* of the University of North Carolina, Chapel Hill.

At the subgroup business dinner held that evening, several issues were discussed, including the recent rise in subgroup membership, which is now 160, and budget-related matters. Preliminary topics for next year's symposia were proposed at the dinner and subsequently discussed among the council members. The topics for the 2003 symposia will be ATPase motors and oxygen radicals.

—*Carmen Mannella*, New York State Department of Health, Wadsworth Center

## Society International Programs

The Society sponsors and funds several international programs of interest to members.

1) International Travel grants to attend the Biophysical Society Annual Meeting. The criteria for selection will appear in the Call for Abstracts. Forms and information available at:

<http://www.biophysics.org>

2) International Courses in countries in need. Criteria and basis of evaluation:

- a) Course and application must be from a country experiencing financial need;
- b) Workshop must be on a frontier theme or topic;
- c) Quality of full program;
- d) Excellence and productivity of proposed speakers;
- e) Number of students;
- f) Balance between international and local speakers;
- g) Matching funds;
- h) Facilities.

Application should contain information on all these aspects. Deadline for submissions are February 1 and August 1 of each year. Awards will be announced in November and February of each year.

3) Travel grant for non-US graduate students from countries in need to visit US labs (This is a new program).

Description and criteria for evaluation:

- a) Applicant must reside in a country experiencing financial need;
- b) Visit duration is short, 1-3 months, to a US lab to acquire skills that may be applied to PhD thesis in the country of residence;
- c) Quality of the facility and research to be undertaken;
- d) Funds cover only receipted costs of travel;
- e) US laboratories involved must cover other living expenses;
- f) Receiving laboratory PI must be Biophysical Society member or willing to join.

Application letter from the applicant should contain information on all these aspects and include a biographical sketch (two-page maximum) of applicant and PI of receiving laboratory. In addition, application must include a letter of acceptance by the US laboratory and letter from PhD thesis advisor describing the skill(s) that will be learned in the US-lab. Both letters should state how the living expenses will be paid. At the end of the stay, the awardee should send a summary statement to the Biophysical Society describing the skills acquired and their use towards PhD thesis.

Deadline for submissions are: February 1 and August 1 of each year. Awards will be announced in November and February of each year. Applications should be sent to:

Biophysical Society, International Affairs Committee, 9650 Rockville Pike, Bethesda, Maryland 20814.

## 2002-2003 Travel Awards For Women In International Scientific Research

This program provides small travel grants to US scientists who plan to establish new research partnerships with colleagues in eligible countries in Central/Eastern Europe, the Newly Independent States of the former Soviet Union, Near East, Middle East, Africa, the Americas, Asia and the Pacific Region. Only fields funded by the National Science Foundation and interdisciplinary research cutting across these fields are eligible. In general, female and male scientists who have Ph.D.s or equivalent research experience are eligible to apply. US citizenship or permanent residency status in the US is required. Scientists who have received their doctoral degrees within the past six years will receive special consideration, as will scientists applying to work with colleagues in less frequently represented countries and regions. Grants of \$4,000 or \$5,000 (depending upon the region) provide travel and living expenses for a US scientist to visit a partner country for up to four weeks to plan and design a new collaborative research project. When appropriate, an additional grant of \$4,000 or \$5,000 may be made to an American co-PI for the same purpose. Grant funds may also be used to cover material and supplies needed during the stay. With prior approval, grant funds may also be used to support a second visit to the partner country or for a foreign partner to travel to the U.S. if necessary for planning purposes. It is expected that the project investigators will eventually submit a formal grant proposal for continuation of the research to the NSF and/or other appropriate sponsors. Application deadline is July 15, 2002. The WISC Program overview and Grant Application Forms can be downloaded from: <http://www.aaas.org/international/wiscnew.shtml>

## San Antonio 2003



*Ed Egelman, Program Committee Chair*

The Program Committee for the 2003 Biophysical Society meeting in San Antonio received extensive input from the Society as a whole as well as from the Council. It is clear that diverse ideas exist about what Symposia and Workshops should be organized, with some people feeling that fewer topics should be covered and others feeling that more topics need to be included! In the spirit of compromise, we have tried to assemble a program that reflects the current diversity of interests in the Society, as well as highlighting areas that we feel are emerging and important. More complete details, including additional speakers will be available within the next few months. For updates, visit: <http://www.biophysics.org>

—*Ed Egelman, University of Virginia*

### Symposia

#### Actin and Tubulin – Passive Substrates or Active Players?

Traditionally, symposia are held on motors that walk on actin (myosin) or on microtubules (kinesin, dynein). This symposium will focus on the growing body of evidence suggesting that these lattices are more than passive.

*Tom Pollard, Yale University, Chair*

*Julie Theriot, Stanford University*

*Edward Egelman, University of Virginia*

*Marileen Dogterom, Institute for Atomic and Molecular Physics, Amsterdam*

#### Awards Symposium

Will run unopposed to all symposia

#### Biophysics in situ

This symposium will focus on in vivo imaging and other techniques where living cells are studied.

*Karel Svoboda, Cold Spring Harbor Laboratory, Chair*

*Petra Schwille, Max-Planck Insitute, Gottingen*

*Philippe Bastiaens, European Molecular Biology Laboratory, Heidelberg*

*Wolf Almers, Vollum Institute*

#### Calmodulin Regulation of Ion Channels

*John Adelman, Oregon Health and Science University, Chair*

*David Yue, Johns Hopkins University*

*Gerhard Meissner, University of North Carolina*

*Mark Anderson, Vanderbilt Univeristy*

#### Chaperones – Diversity in Structure and Mechanism

*Sue Wickner, National Institutes of Health, Chair*

*Helen Saibil, Birkbeck College, London*

*Bernd Bukau, Institute of Biochemistry and Molecular Biology, Freiburg*

*Andreas Matouschek, Northwestern University*

#### Countering the Emerging Biological Threat

This symposium will highlight recent biophysics-related research that contributes to detecting, understanding the pathogenicity and development of new antimicrobial therapies for the causative agents of such diseases as anthrax and smallpox.

*Jill Trewhella, Los Alamos National Laboratory, Chair*

*R. John Collier, Harvard University*

*J. A. T. Young, University of Wisconsin*

*Basil Swanson, Los Alamos National Laboratory*

#### Helicases and Motor Proteins that Act on Nucleic Acids

Presentations will be aimed at providing

a more biophysical approach to understanding many aspects of replication, recombination, repair and transcription.

*Dale Wigley, Cancer Research, UK, Chair*  
*Smita Patel, University of Medicine and Dentistry of New Jersey*

*Kevin Raney, University of Arkansas*  
*Terence Strick, Cold Spring Harbor Laboratory*

#### Macromolecular Signaling and Trafficking of Ion Channels

The symposium will focus on channel interactions with intracellular proteins and membrane targeting.

*Lily Jan, University of California, San Francisco, Chair*

*Johannes W. Hell, University of Iowa*

*Robert Kass, Columbia University*

*James Trimmer, State University of New York, Stony Brook*

#### Membrane Trafficking and Targeting

*Suzanne Scarlata, State University of New York, Stony Brook, Chair*

*Jim Hurley, National Institutes of Health*

*Scott Emr, University of California, San Diego*

*Jennifer Lippincott-Schwartz, National Institutes of Health*

#### Molecular Mechanisms of Membrane Fusion: Protein Machines & Lipid Materials

Studies using both viruses and the cellular systems will be highlighted.

*Barry Lentz, University of North Carolina, Chair*

*Axel Brunger, Stanford University*

*Leonid Chernomordik, National Institutes of Health*

*John Skehel, National Institute for Medical Research, London*

#### Microtubule Motors: Structures and Mechanisms

While a similar symposium was held in 2002, this topic reflects the research interests of a large group in the motility area.

*Joe Howard*, Max-Planck Institute,  
Dresden, Chair  
*Sharyn Endow*, Duke University  
*Kazuhiko Oiwa*, Kansai Advanced Research  
Center  
*Ron Milligan*, Scripps Research Institute

### **Mechanochemistry of Unconventional Myosins**

*Kathy Trybus*, University of Vermont, Chair  
*Toshio Yanagida*, Osaka University  
*Peter Gillespie*, Oregon Health and Science  
University  
*Sarah Rice*, Stanford University

### **New and Notable**

The program for this symposium will not be finalized until December 2002. We will attempt to spread a wide net to find out what is truly new and notable, and hope for input from the membership as we move closer to the time of the meeting.

### **Nucleic Acid Structure and Dynamics**

*Jamie Williamson*, Scripps Research  
Institute, Chair  
*Ignacio Tinoco*, University of California,  
Berkeley

### **Probing Excitability and Contractility by Gene Transfer**

*Eduardo Marban*, Johns Hopkins  
University, Chair  
*John Solaro*, University of Illinois, Chicago  
*Henry Lester*, California Institute of  
Technology

### **Protein Folds, Function, and Evolution**

*Mark Gerstein*, Yale University, Chair  
*Gitte Neubauer*, Cellzome, Heidelberg  
*Nick Grishin*, University of Texas  
Southwestern, Dallas  
*Bonnie Berger*, Massachusetts Institute of  
Technology

### **Single Molecule Folding and Catalysis**

*Jane Clarke*, Cambridge University, Chair  
*Daniel Herschlag*, Stanford University  
*Julio Fernandez*, Mayo Clinic  
*Xiaowei Zhuang*, Harvard University

### **Structural Integration – Chromatin at Many Levels of Detail**

*Jeffrey Hansen*, University of Texas Health  
Science Center, San Antonio, Chair  
*Karolin Luger*, Colorado State University  
*Chris Woodcock*, University of  
Massachusetts  
*Sepideh Khorasanizadeh*, University  
of Virginia

### **Topoisomerases and Recombinases: Enzymes that Push DNA Around**

*Jim Berger*, University of California,  
Berkeley, Chair  
*Phoebe Rice*, University of Chicago  
*Vincent Croquette*, Centre National de la  
Recherche Scientifique, Paris  
*Nicholas Cozzarelli*, University of  
California, Berkeley

### **Workshops**

#### **Overexpression of Membrane Proteins**

*Robert Nakamoto*, University of Virginia,  
Chair  
*Reinhard Grishammer*, National Institutes  
of Health  
*Ronald Kaplan*, Finch Medical College  
*Ina Urbatsch*, Rochester University  
*Svetlana Lutsenko*, Oregon Health and  
Science University

#### **Physical Techniques in Proteomics**

*Michael Snyder*, Yale University, Chair  
*Erin O'Shea*, University of California,  
San Francisco  
*Brian Chait*, Rockefeller University

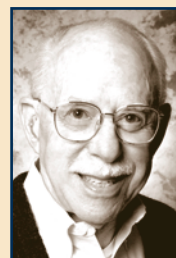
#### **Quantifying Reversible Macromolecular Association**

*Jack Correia*, University of Mississippi  
Medical Center, Chair  
*Nancy Thompson*, University of North  
Carolina  
*Jim Cole*, University of Connecticut  
*Walter Stafford*, Boston Biomedical  
Research Institute  
*Peter Schuck*, National Institutes of Health  
*Roy Marriuzza*, Center for Advanced  
Research in Biotechnology  
*George Makhatadze*, Penn State College  
of Medicine

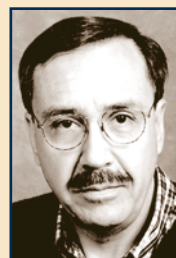
## **Biophysicists in the News**



*Anthony Watts*, University of  
Oxford, UK, Society member  
since 1983, received the Royal  
Society of Chemistry, London,  
Silver Medal for Biomembrane  
Chemistry.



*Richard Setlow*, Brookhaven  
National Laboratory, Society  
member since 1979, received the  
2002 Environmental Mutagen  
Society Award.



*Carlos Bustamante*, University of  
California, Berkeley, Society  
member since 1984, received  
the American Physical Society  
2002 Biological Physics Prize  
and was elected to the National  
Academy of Sciences.

## 2002 Biophysical Discussions

The 2002 Biophysical Discussions meeting, *Frontiers in Structural Cell Biology: How Can We Determine the Structures of Large Subcellular Machines at Atomic Resolution*, was held in Asilomar, California, April 19–22. Over the course of 2 ½ days, 130 scientists from the fields of x-ray crystallography, electron microscopy, and computational biology discussed approaches used in determining the structure of large subcellular machines at atomic resolutions, spanning a wide range of scales and methods.

As an experiment, audiovisual recordings of the entire Discussions—talks and the ensuing discussion—have been posted on the Society's website. These talks, which can be viewed in any order, make the discussions available to students, those who were not able to attend, and those wanting to review the talks. Have a look at:

[www.biophysics.org/discussions](http://www.biophysics.org/discussions)



*The 2002 Biophysical Discussions Organizing Committee members (l-r): Stephen Harrison, Eva Nogales, David DeRosier, Axel Brunger*



## Call for Topics 2004 Discussions

The Biophysical Society is soliciting proposals for future conferences in the Biophysical Discussions format. These are specialized-topic conferences allowing 100 to 150 participants to conduct intensive discussions on the state-of-the-art of a focus area within biophysics over a two-to-three-day period. Abstracts of posters, and audio visual recordings of the presentations and discussion are published as online supplements to the Biophysical Journal. Innovative subjects and interdisciplinary interactions are especially encouraged.

Submit proposals for Biophysical Discussion meetings in an outline format with proposed conference organizers to *Rosalba Kampman* at [rkampman@biophysics.org](mailto:rkampman@biophysics.org).

## Public Affairs

### DOE

The newly confirmed director of the Office of Science in the Department of Energy, *Raymond V. Orbach*, announced the establishment of five new user centers for nanoscience research at DOE sites nationally. The first two will be located at Brookhaven and Oak Ridge. Other centers will include Lawrence Berkeley, Argonne, and a linked center between Sandia and Los Alamos. Orbach said the idea is to make good use of the large machines at these institutions. Ultimately, it is his goal to increase funding for research and development by 40 percent over the next five years. Additionally, he said that DOE will spend more money on education in the areas of math, physics, and technology.

### Porter Award and Advocacy Awareness

Former Congressman *John Porter* (R-IL) was honored with the first Howard Schachman Public Service Award from the American Society for Biochemistry and Molecular Biology at the Experimental Biology 2002 conference in New Orleans in April.

In his introductory remarks, Porter said, "Science advocates can only go so far for you. Scientists must speak up individually to protect science." His stirring remarks were a wake-up call from the former Chair the Labor/HHS Subcommittee on the U.S. House Appropriations Committee that funds the NIH.

Commenting that this Congress faces some of the most difficult scientific decision ever, Porter continued that scientists "can't abdicate to advocates your responsibilities as scientists and as citizens" on such grave matters as cloning, bioterrorism, stem cell research and general biomedical research funding. It was as much a rallying cry from

Porter to the scientists as it was an opportunity for the scientific community to honor one of its champions. Porter ended by asking the crowd to continue its "involvement and commitment" as individuals as well as in science-membership blocs.

### NSF Update

On June 5, the U.S. House of Representatives enthusiastically approved legislation authorizing a 15 percent increase in the National Science Foundation (NSF) budget for each of the next three years. In an overwhelming, bipartisan display of support for the NSF, the House passed the bill by a vote of 397 to 25. The bill, entitled "Investing in America's Future Act of 2002" (H.R. 4664), authorizes an increase in the NSF budget from \$4.8 billion in 2002 to \$7.3 billion in 2005. H.R. 4664 puts NSF on track to double its budget in five years.

The NSF reauthorization bill is co-sponsored by 12 Republicans and 11 Democrats. Among the bipartisan

group co-sponsoring the bill are the Chairman and Ranking Minority Member of the House Science Committee, *Sherwood Boehlert* (R-NY) and *Ralph Hall* (D-TX). The bill is also co-sponsored by the Chairman and Ranking Minority Member of the House Science Subcommittee on Research, *Nick Smith* (R-MI) and *Eddie Bernice Johnson* (D-TX).

### Nanotechnology at NSF

While the bill for reauthorizing the NSF has not yet been introduced in the Senate, the Subcommittee on Science, Technology and Space did convene a hearing on the NSF on May 22. Senator *Ron Wyden* (D-OR), Chairman of the Senate Subcommittee on Science, Technology and Space was yet another Congressional leader to go on record in support of doubling the NSF budget over the next five years. In response to testimony by NSF Director *Rita Colwell*, Wyden remarked that there "will

*(Continued on page 20.)*



From left to right Public Affairs Committee co-chairs, *Ken Dill* and *Mary Barkley*, Society Executive Director *Ro Kampman*, and Former Congressman *John Porter* met to discuss the Society's role in helping to generate interest in increasing the federal appropriations for the NSF and the underpinning sciences across agencies.

(Continued from page 19.)

be a big push for doubling the funding” of the NSF this year. The former Speaker of the House of Representatives, *Newt Gingrich*, testified that the NSF budget should be increased to \$15 billion, more than triple its present funding level of \$4.8 billion. Concerning the organization of the NSF, Gingrich noted that, “it is clear that instrumentation, education and research projects could absorb a \$15 billion-level productively.”

*John Podesta*, former Chief of Staff to President Clinton, also went on record in support of doubling the NSF budget. Podesta believes the current Administration’s FY 2003 budget proposal of \$5 billion “fails to adequately support the NSF and threatens the quality of

basic research conducted at colleges and universities.”

The purpose of the hearing was also to give the Subcommittee Members more information about the National Nanotechnology Initiative (NNI) at the NSF. Wyden expressed his strong support for this area of NSF research: “In the coming years, nanotechnology research funded by the National Science Foundation could aid the development of electronic circuits and devices from a single atom or molecule. Who knows what potential that may have for medicine, for technology, even for homeland security?”

*Newt Gingrich* also testified about the value of nanotechnology research: “The explosion of knowledge in

nanoscale science and technology and in the quantum behaviors associated with that scale, from smaller than one atom to about 400 atoms, represents a profound transformation in our understanding of the natural world. Every member of Congress should take time to learn the basics of nanoscale activities and the potential of quantum behaviors.”

Gingrich added that the fields of health, the environment and homeland security “will all be profoundly shaped by this emerging revolution in knowledge.” He asked the Senate Subcommittee on Science, Technology and Space to expand the NNI budget to \$1.1 billion in the coming year, and to increase it by 15 to 20 percent every year afterward. The current proposed budget FY 2003 calls for increasing National Nanotechnology Initiative funding by 17 percent, to \$679 million.

Presently, the role of the government in funding basic science research is a hot topic with policymakers. The hearing on the nanotechnology and the NSF is just one of many research related hearings on Capitol Hill this summer.

## Mathematics and Science Partnerships

The Chairman of the House Science Committee, *Sherwood Boehlert* (R-NY), and the Chairman of the House Education and the Workforce Committee, *John A. Boehner* (R-OH), have joined forces to support increased funding for the Mathematics and Science Partnership (MSP) program. Boehlert and Boehner sent a letter to *James Walsh* (R-NY), Chairman of the VA/HU Appropriations Subcommittee, asking Walsh to “provide the President’s request of \$200 million” for the MSP program. Boehlert and Boehner believe the MSP program will allow “local communities to participate in model partnerships

### Mikulski and Walsh Honored



Senator *Barbara Mikulski* (D-MD) and Representative *James Walsh* (R-NY) received awards from the Mathematics Society, the Astronomy Society and the American Physical Society for their leadership in supporting the NSF.

designed to reform the instruction of elementary and secondary school mathematics and science education. The program recognizes the unique contribution that institutions of higher education and businesses can make to education reform.” In another letter, Boehlert and Boehner urged *Ralph Regula* (R-OH), Chairman of the Labor/HHS Subcommittee to “significantly increase funding for the Mathematics and Science Partnerships Program authorized under Title II of the No Child Left Behind Act of 2001...In this era of high technology, proficiency in mathematics and science is essential, if today’s students and our Nation as a whole hope to compete in the New Economy tomorrow.”

### Kirschstein National Research Service Awards

House and Senate members within the Ad Hoc Group for Medical Research Funding were successful in campaigning to rename the NIH’s National Research Service Awards after *Ruth L. Kirschstein*. According to Ad Hoc Group Chair, *Richard Knapp*, “The Ad Hoc Group and the advocacy community were seeking a

way to honor Dr. Kirschstein’s brilliant NIH career and commitment to future generations of scientists.” The Ad Hoc Group had its request granted on May 22 by the Senate Labor/HHS Appropriations Subcommittee. At a Subcommittee hearing on Parkinson’s Disease, Senator *Tom Harkin* (D-IA) announced that his colleagues had agreed to rename the NIH research training grants the “Ruth L. Kirschstein National Research Service Awards.” The name change was inserted into the Supplemental Appropriations bill that the Senate began considering during the last week in May. The National Research Service Awards total over \$650 million and are given to 16,700 pre-doctoral students engaged in biomedical research.

### Appropriations

From June to October, Capitol Hill will be the site of a flurry of activity surrounding the passage of the 13 appropriations bills in the Senate and the 13 appropriations bills in the House. Due to the war on terrorism, a slow economy and the disappearance of the budget surplus, policy-makers on Capitol Hill will have to make

increasingly difficult choices regarding funding levels. The chair of the House Appropriations Committee, *C.W. Bill Young* (R-FL), recently remarked that the \$759 billion available as part of the House budget resolution is \$20 billion short of what the appropriators really need to meet reasonable expectations among House members. House members are already wary of obstacles that may keep the 13 bills from being passed by the October 4 target adjournment date, when many of the Representatives must begin campaigning in mid-term elections.

In the Senate, the budget resolution (S. Con. Res. 100) has not been approved by a floor vote. If the resolution recommended by the Senate Budget Committee is adopted, discretionary spending will be around \$769 billion. While the 13 Senate appropriations bills will be negotiated separately, it is likely they all will be enacted in a single omnibus effort. *President Bush* will then have to decide whether to veto the bill or bills in the very likely event that they exceed his proposed limits. The idea of deficit spending will begin to garner more attention on Capitol Hill.

## REMEMBER...



## 2003 ANNUAL MEETING, MARCH 1–5 SAN ANTONIO, TEXAS

Abstract Deadline: October 6, 2002  
<http://www.biophysics.org/>

## Obituary



*Arthur Kowalsky*

*Arthur Kowalsky* died in Bethesda, Maryland on April 13, 2002, at the age of 79. His passing reminds us all of the positive impact a single person can have on a field of science, in particular, Biophysics. Arthur guided the Biophysics Program at the National Science Foundation from 1978 until his retirement in 1993, after which he periodically helped the Multi-User Instrumentation and Instrument Development Programs with their review processes until mid-1995.

As Program Director, Arthur worked intensively with the biophysics community for 15 years through his

interactions with ad hoc reviewers, panel reviewers, the applicant community, and through discussions with colleagues and friends at the Biophysical Society and other national meetings. Importantly, his program provided the Biophysics community with a federal identity, even though its name did not appear as 'Biophysics' in NSF Annual Reports until 1984.

Those of us who were privileged to have worked with him recall his intense focus on the review process, which he meticulously executed, the imperative he felt for supporting excellence in biophysics research, and the importance he attributed to emerging techniques. His management of review panels, initially called Molecular Biology (Panel's A & B), involved him with a remarkably broad cross-section of the biophysics community.

Arthur received his MS and PhD degrees in physical organic chemistry from the University of Chicago in 1950 and 1954, respectively. His thesis was entitled Analysis of Organic Free Radicals by Paramagnetic Resonance Absorption. He subsequently did post-doctoral work at Brookhaven National Laboratory, the University of Minnesota, and the University of

Pennsylvania, working with *D.E. Koshland*, *R. Lumry*, and *P.D. Boyer*, among others. He was appointed assistant professor at the Johnson Foundation in 1963. There, his association with *A. Milvan* and *M. Cohn* further stimulated his interest in applications of NMR to protein structure issues, and encouraged his use of metal ion NMR as a probe of ionic interactions in a range of biological systems. Prior to joining the Foundation, he spent seven years on the faculty of the Albert Einstein College of Medicine.

He received the Distinguished Public Service Award from the Biophysical Society in 1993. At the awards symposium, Arthur appropriately discussed 'The Changing Faces of Research', which have certainly undergone changes in focus and context since the 1950s. Even after his retirement, his colleagues at the Foundation enjoyed monthly dinners with Arthur, boring him with endless shop-talk. We will all miss those conversations, which actually helped us better understand ourselves and the role we play in supporting the biophysics community he loved.

–*Karl Koehler* and *Kamal Shukla*,  
National Science Foundation

## Biophysical Society Ballot Nomination Form

*Do you wish to nominate someone for Council? Completed forms received prior to October 3, 2002 will be included in the 2003 slate of candidates.*

Nominee: \_\_\_\_\_

Present Title/Department/Institution: \_\_\_\_\_

Nominee Biographical Data: Highest degree: \_\_\_\_\_ Year received: \_\_\_\_\_

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

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

Research Interests & Experience: \_\_\_\_\_

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

The undersigned members of the Biophysical Society hereby nominate \_\_\_\_\_  
for the office of \_\_\_\_\_

Signature	Typed Name
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____
9. _____	_____
10. _____	_____

If I am elected to the office of \_\_\_\_\_, I agree to serve and to attend Council meetings as described in Article VIII of the Bylaws. My reason for running for the office is: \_\_\_\_\_

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

Mail completed form to:  
Secretary  
Biophysical Society  
9650 Rockville Pike, Bethesda, MD 20814-3998

## Upcoming Events

July 22–27, 2002

*International Conference on Theoretical Physics*  
Paris, UNESCO

July 29–31, 2002

*First International Conference on Quantum Limits to the  
Second Law*

San Diego, California

For more information, contact Daniel Sheehan at:

[dsheehan@sandiego.edu](mailto:dsheehan@sandiego.edu)

September 19–24, 2002

*7th International Symposium on Dendritic Cells*  
Bamberg, Germany

June 25–June 29, 2003

*2003 Summer Bioengineering Conference*  
Sonesta Beach Resort Key Biscayne Florida

November 3–8, 2003

*Third International Symposium on Slow Dynamics in  
Complex Systems*  
Sendai, Japan



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