

**47<sup>th</sup> Biophysical Society Annual Meeting  
March 1–5, 2003, San Antonio, Texas**

**Onsite Registration Available Online**

<http://www.biophysics.org/register.htm>

Meeting attendees who missed the December 13 early registration deadline have the opportunity to register at the on-site rates online and avoid registration lines on-site. Those who register online prior to February 5 will be mailed badges and any purchased tickets. Anyone registering after February 5 may pick up their materials on-site.

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**Abstracts Sort**

The Society is indebted to the members who this year volunteered their time to sort and program the abstracts submitted for the Annual Meeting. 2981 abstracts have been programmed this year, a record-number for a non-east coast/west coast site. Members of this year's sort committee were:

*David Cafiso, Jean Chin, John R. Clay, Marco Colombini, David R. Davies, Susan Gilbert, H. Robert Guy, W. Jonathan Lederer, Ingrid Markovic, Richard Mendelsohn, Drake C. Mitchell, Brian O'Rourke, Rajini Rao, Alan N. Schechter, James R. Sellers, Kenton Swartz, Charles Sanders, Zhifeng Shao, Ligia Toro de Stefani, Alexander Vologodskii, Kuan Wang, Di Xia, David Yue*

**Dayhoff Award Announced**



Hao Wu

*Hao Wu* of Cornell University Weill Medical College will receive the 2003 Margaret Oakley Dayhoff Award.

The award recognizes a junior woman scientist of very high promise. The award includes honoraria and travel to the Biophysical Society Annual Meeting in San Antonio.

Wu will speak at the Awards Symposium on Tuesday, March 4, 2003.



## Biophysical Society

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## Biophysicist in Profile



Lila Gierasch

Lila Gierasch credits being in the right place at the right time with much of her success. It also helps that she has boundless energy and determination and knows what she wants. Born in Needham, Massachusetts, Gierasch grew up in a science-oriented household. Her mother was a teacher, and her father, a civil engineer, was always “gung-ho about math.” Gierasch’s older brother by eight years, Peter, was interested in astronomy, and she was his sidekick as they built radios and telescopes together. Peter is now an astronomer on the faculty at Cornell, and her older sister by five years, Molly, has been a math teacher and is now a therapist.

While Gierasch’s love and interest in the physical sciences was honed at home, she always felt an innate curiosity toward biology. “I was fascinated by living things and how they worked,” she explains. She began her college education at Mount Holyoke College, which was in her hometown and where her mother had gone. As a ‘townie,’ Gierasch received a scholarship to Mount Holyoke, but Gierasch chose it because of its tradition and reputation in science. “It is a wonderful school that encourages women in science,” Gierasch

explains, “where the professors let you know that anything is possible, that you can do anything.”

In her sophomore year cell biology class, while listening to her professor, *Kay Eschenberg*, Gierasch recalls thinking to herself, “I want to do this!” She enjoyed exploring questions about biological systems with a chemical perspective, and her senior thesis was on the refolding of collagen single chains into triple helical molecules. She recalls her lab time in college fondly, thrilled to spend time “playing in her sand box.”

During the summer following her junior year while working at Harvard in the lab of *Alwyn Pappenheimer*, she saw a poster for the International Union of Biophysics Congress at MIT and attended it. “There, I listened to the founding

**She recalls her lab time in college fondly, as time spent “playing in her sand box.”**

fathers of biophysics speak,” she remembers, “and getting the chance to hear the pillars of biophysics such as *Flory*, *Prigogine*, *Katchalski*, and *Ramachandran*, I was completely won over.” She recounts that she “was intrigued by the intersection of chemistry, physics, and biology” she saw there, and still has her notes from that 1969 meeting!

Deciding that she wanted to do her graduate studies in biophysics, she chose to go to Harvard after graduating in 1970 with a degree in chemistry from Mount Holyoke. But deciding on which lab at Harvard was not as easy.

Being on the ‘right bus’, shuttling between Harvard Medical School and the main campus, helped her decide. Gierasch recalls overhearing a senior biophysics student, *Barbara Brodsky* (now at Rutgers), talking about her research on “collagen”, and she seized the moment to find out whose lab Barbara worked in. It was this “accident of fate,” she says, that helped her choose *Elkan Blout’s* lab, where she explored

synthetic peptides and cyclic peptide models for beta turns and used techniques such as chemical synthesis, NMR, CD, and IR spectroscopies—a multi-method approach she has stuck with throughout her career.

Even before graduating with a doctorate in biophysics in 1975, Gierasch had been drawn to a teaching career. She had accepted a faculty position at Amherst College, a liberal arts school, prior to finishing her dissertation. While she doesn't advise anyone to follow her example, she did enjoy her time there.

She describes those days as “filled to the brim.” Along with teaching and launching an NIH-funded research program working with undergraduates, she coached the women's cross-country and riding teams. Her time at Amherst was significant in many ways. The campus had made the decision to become co-educational

during her first year there; she had been hired along

with six other women, immediately doubling the campus female faculty population. Gierasch recalls that being a woman, who was only a few years older than her students, and working at gaining the respect of her students and peers, was sometimes overwhelming. “You start to lose confidence in yourself,” she says. But she learned that “you need to look around you and notice that it's the situation and not the person that is the problem.”

At Amherst, Gierasch met guest lecturer *Jean-Marie Lehn*, who would later win the Nobel Prize in Chemistry. Interested in the work in supramolecular chemistry that his lab at the Université Louis Pasteur de Strasbourg in France was doing, and a self-proclaimed ‘Francophile’, Gierasch asked if she could join his lab for a sabbatical,

and he agreed. Taking some time off from teaching, Gierasch worked with Lehn's lab, which she describes as “very international and very chemistry oriented,” and immersed herself in the French culture.

Realizing how much she missed having a greater focus on research, which was difficult with the teaching demands at an undergraduate liberal arts school, in

**“...she had been hired along with six other women, immediately doubling the campus female faculty population.”**

Biophysical Chemistry at the University of Delaware. There she spent eight “wonderful” years, where she continued her work on peptides, getting more involved in the biological aspects, including launching a research project on targeting sequences—the zip codes that enable cells to correctly localize newly synthesized proteins. She established fruitful collaborations with *Stan Opella*, *Tom Silhavy*, *Bill Degrad*, *George Rose*, and *Jon King*.

As her research became increasingly biological, she was attracted to a setting where her collegial interactions would offer top-notch biomedical research thrusts. Adding to this had been her continuing difficulty obtaining funds to purchase a high-field NMR instrument in a setting where her lab would be the only major user.

Again, fate placed her in the right spot at the right time. *Alfred Gilman*, Chair of the Department of Pharmacology at the University of Texas Southwestern Medical Center became aware of her efforts to obtain a high-field NMR, and Gilman informed her that she would have access to the equipment she needed at UT Southwestern. “Plainly speaking,” she says, “I was wooed by an NMR machine.” Of course this was not the whole story, as UT Southwestern offered

the perfect environment for her interest in exciting biomedical research questions. She accepted the position of Professor of Pharmacology and Robert A. Welch Chair in Biochemistry and moved to Texas. She was not only the first woman to have the latter honor, but also was probably the youngest Welch Chair holder.

Gierasch was thrilled to join the faculty of UT Southwestern, because “it provided a candy-store of biological questions for a biophysical chemist to address. Many of my daily interactions were with Nobel Laureates. My lab was next door to *Mike Brown* and *Joe Goldstein*, who received the Nobel Prize in 1985, and we collaborated on several projects.” Gilman, her chair, received the Nobel Prize in 1994. She worked closely with *Hans Deisenhofer*, who received the Nobel Prize in 1988. A self-proclaimed “organizer,” Gierasch joined other colleagues in obtaining a Molecular Biophysics training grant, which paved the way for the establishment of a Graduate Program in Molecular Biophysics, which she directed during the time she was at UT Southwestern.

While in Texas, Gierasch met her husband, *John Pylant*, who at the time worked for Texas Instruments. Both

**“Plainly speaking,” she says, “I was wooed by an NMR machine.”**

avid horseback riders, they met while taking lessons. They enjoyed the outdoors and, since neither of them considered themselves ‘city folk’, they lived on a ranch outside of Dallas. As the city grew, however, the daily commute became too long and Gierasch missed the seasons, especially snow, that were part of growing up in Massachusetts.

She had promised Gilman that she would stay five years in Texas, and

(Continued on page 14.)

## 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 will be finishing my Ph.D. in about eight months, and I am trying to decide what would be the best choice for a postdoc position. Do you think it would be better in the long run to do my postdoc in cancer biology, or AIDS research?*

—*Stepping Ahead in Seattle*

**A:** First of all, Professor Bellum does not hand out individualized career advice. She will not tell you where to postdoc, or which lab to join for graduate school, or which job offer to accept. Nevertheless, your question raises several more general considerations about selecting a research area for a postdoctoral traineeship.

Two of the more important considerations are: WHY do you want to do a postdoc in one of these areas? ...and: Why do you want to do a postdoc AT ALL?

Why have you identified two very 'hot', but very different, research areas? Ideally, a postdoctoral appointment is a fantastic opportunity to explore in-depth a research area that is distinct from your graduate research. If you are thinking about an eventual academic job search, having experience in two distinct research areas can add real strength to your job applications: you'll be the "well-rounded one" (if anyone with a Ph.D., postdoc experience, and academic aspirations can be considered well-rounded!) that can talk to at least two groups of people. Industry is also

keen to hire people that can perform in more than one arena.

Not knowing your graduate research area, it's hard to tell how near or far these areas are to your current work, but regardless, one does not do a postdoc in

**“WHY do you want to do a postdoc in one of these areas? ...Why do you want to do a postdoc AT ALL?”**

“cancer biology” or “AIDS research”: postdoc projects are tightly focused explorations of specific phenomena.

That's not to say that, at this point, you need a well-defined description like, “I want to study the effect of metabolite X on the transport of tumor suppressor Y in cell type Z,” but it appears that you have only defined two very broad (and very crowded) super-fields. This sets off alarm bells in Professor Bellum's head. Right now, when you are still months away from finishing up, is the time to

**“...a postdoctoral appointment is a fantastic opportunity to explore in-depth a research area that is distinct from your graduate research.”**

do some personal and professional soul-searching: what has brought you to consider cancer biology and AIDS research? What, in particular, is it that you find interesting about these areas?

It might be that there is a secondary thread from your graduate research, something that was not central to your

thesis, and which you had no time to explore in detail, but which you find interesting and important and would like to explore in depth. That's great: there are probably lots of labs out there that spend all their time thinking about your secondary thread, and would love to have the expertise of someone with a Ph.D. in what is to them a peripheral but related field join their team. Remember, it's important to think not just about what you want to get out of a postdoc training period, but also what skills, knowledge, and experiences you will be bringing to strengthen your new lab.

Or maybe you were exposed to a certain technique, like fluorescence microscopy, as part of your thesis project, and for your postdoc you would like to train with the best fluorescence microscopists in the world so you can become a hotshot methods-development guru. Or perhaps you spent five plus years as a Ph.D. student becoming a card-carrying fluorescence microscopist (or expert in some other methodology), but for your postdoc, you want to enter into the applications side of things, and learn more about the questions your method might answer rather than stay on the method-development side. These, too, are great reasons to do a postdoc in a particular area, and, like the first scenario, mean that

you will probably have skills that your new postdoc lab will find very desirable. Conversely, your graduate research and postdoc interests may have a weaker connection:

**...what is YOUR motivation for signing up for two to eight more years of underpaid lab work?**

perhaps you were exposed to a different field while preparing a journal club presentation or a departmental literature seminar, and found it captivating (maybe you even secretly wished your thesis research was in this area!). This is also a great way to identify a postdoc research area (and one of the main reasons why Professor Bellum is a big fan of journal clubs), but if you are considering a jump to a more distant research area, you will probably want to give your next steps some serious planning. Do you (or your research advisor, or thesis committee members, or other contacts) personally know anyone in your new area? Personal connections and introductions can be a big help when dramatically shifting fields. What skills from your thesis research might be applicable to your new area? If you are skilled at one of the newer, hotter methods (say, gene expression analysis with DNA microarrays, or bioinformatics methods like genome database mining, but there are plenty of other examples...) you may find many labs that would love to add your expertise to their group, even if they have minimal interest in the system you studied as a graduate student.

But, before you go any further in your soul-searching about research area, let's look at the more fundamental question: Why do you want to do a postdoc AT ALL? Have you decided to do a postdoc just because it feels like what you are "supposed to do" next? Are you receiving subtle (or not-so-subtle) pressure from your graduate advisor to do a

postdoc? Remember, it's easiest for advisors to train and prepare graduate students in the same mold as themselves, but if you don't want an academic position and the life it entails, this very well might not be the best training model for your nascent career. So what is YOUR motivation for signing up for two to eight more years of underpaid lab work?

After five or so years of graduate school, it has hopefully become clear that science is not a good field for getting rich. So your career motivations include making lots of money, you may want to think about what a postdoc traineeship will add to that equation. There may be more money for scientists in industry than academia, so if money is a consideration, but you love science, too, you may want to consider a move to industry, either as a postdoc or a staff scientist. Many managers consider it a bonus when a scientist has postdoc or other training in a corporate setting: it gives the postdoc a chance to learn the corporate culture after spending so many years steeped in the academic culture.

**...part of what keeps science so interesting is its inherent unpredictability."**

getting famous, but if being famous one of your goals, Professor Bellum would point out that the fields of cancer biology and AIDS research are already crowded with extremely well-funded big shots, many of whom are already hogging the media spotlight. So if fame is one of your motivators, but you're determined to stay in science, you might want to identify a long-overlooked field that is due for a breakthrough. But don't get your hopes up too high: part of

what keeps science so interesting is its inherent unpredictability.

Even if you're not that interested in fame or fortune, it may be that five plus years of graduate school has caused you to realize that, yes, you can do the research thing, and maybe you are even really good at it, but it may not be for you. Maybe law school looks interesting, or sales, or scientific writing, or working on a winery, or maybe landscape gardening or gourmet cooking! There are lots of other career possibilities out there, many of which would value a Ph.D. in science, and many more that have nothing to do with science.

But if you love doing scientific research more than anything else you can think of, and you can handle the lifestyle (some long hours, frustrating experiments, mediocre pay, and family and neighbors that don't understand what you do all day), then go ahead and find the best

**"Most importantly: Follow your heart! Actually, even better: Follow your innate burning scientific curiosity!"**

postdoc position you can. Most importantly: Follow your heart! Actually, even better: Follow your innate burning scientific curiosity! It takes heart and burning curiosity to make it through the lean years of graduate school; you're probably already aware of this. Making it through a postdoctoral traineeship is no different. If anything, you may need MORE heart and burning curiosity to keep driving forward as a postdoc, because the postdoc years are when a lot of scientists finally realize that other things in life (like life partners and children and retirement savings) are also important. Balancing all of the important stuff is never easy, but it will be less painful if you are working on a project that you find intensely interesting, and through which you believe you are making an important contribution. Good luck!

MEETING SUMMARY					
	Saturday MARCH 1	Sunday MARCH 2	Monday MARCH 3	Tuesday MARCH 4	Wednesday MARCH 5
7:30 AM		Postdoctoral & Graduate Student Breakfast	Biophysical Society Business Meeting		
8:15 AM		Symposium 1: Protein Folds, Function, & Evolution Symposium 2: Probing Excitability & Contractility by Gene Transfer Platform Sessions A-E	Symposium 6: Mechanochemistry of Unconventional Myosins Symposium 7: Chaperones—Diversity in Structure & Mechanism Platform Sessions O-S	Symposium 11: Single Molecule Folding & Catalysis Symposium 12: Helicases & Motor Proteins that Act on Nucleic Acids Platform Sessions AF-AJ	Symposium 16: Biophysics in situ Symposium 17: Calmodulin Regulation of Ion Channels Platform Sessions AU-AW
9:00 AM	Molecular Biophysics Subgroup		Exhibitor Showcase: MicroCal, LLC		
10:00 AM		Student Symposium			
10:30 AM		Symposium 3: Molecular Mechanisms of Membrane Fusion: Protein Machines & Lipid Materials Symposium 4: Actin & Tubulin—Passive Substrates or Active Players? Platform Sessions F—I	New Member Welcome Coffee Symposium 8: New & Notable Platform Sessions T—X	Symposium 13: Macromolecular Signaling and Trafficking of Ion Channels Symposium 14: Nucleic Acid Structure & Dynamics Platform Sessions AK—AO	Symposium 18: Microtubule Motors: Structures & Mechanisms Symposium 19: Structural Integration—Chromatin at Many Levels of Detail Platform Session BA—BB, BD—BE
11:00 AM		Exhibitor Showcase: Veeco Digital Instruments			
12:00 NOON		International Travel Luncheon	Public Affairs Committee Meeting	NIGMS Workshop	
12:30 PM		How to Write A Grant Panel Discussion	CPOW Workshop: Advancing in a New Position		
12:45 PM				Early Career Development Panel Discussion: Advisor Selection	
1:00 PM	Bioenergetics Subgroup Membrane Biophysics Subgroup Biological Fluorescence Subgroup Membrane Structure & Assembly Subgroup Motility Subgroup	Undergraduate Poster Session & Reception	Congressional Liaison Committee Meeting		
1:45 PM		Poster Sessions	Poster Sessions	Poster Sessions	Poster Sessions Late Poster Session
2:00 PM	Exocytosis/Endocytosis Subgroup	Education & Minority Affairs Committees Forum: Mechanisms for Retention of Underrepresented Students in Graduate Programs Exhibitor Showcase: Asylum Research			
3:15 PM		Exhibitor Showcase: Molecular Imaging			
3:45 PM					Meeting Ends
4:00 PM		Symposium 5: Countering the Emerging Biological Threat Platform Sessions J—N	Symposium 9: Membrane Trafficking & Targeting Symposium 10: Topoisomerases & Recombinases: Enzymes that Push DNA Around Platform Sessions AA—AE Exhibitor Showcase: Leica Microsystems, Inc.	Symposium 15: Awards Symposium Platform Sessions AP—AT	
5:00 PM	Opening Mixer				
5:30 PM				Korean Biophysicists Meeting	
6:00 PM		SRAA Poster Competition Chinese Biophysicists Meeting Biophysical Society of Canada Meeting			
6:30 PM	Permeation Biophysics Club Meeting Student Travel Grant & MARC Awardee Reception				
7:30 PM		Workshop I: Physical Techniques in Proteins Workshop II: Overexpression of Membrane Proteins Workshop III: Quantifying Reversible Macromolecular Association			
8:00 PM			Awards Ceremony & National Lecture	Sociedad de Biofisicos Latino Americanos (SOBLA) Meeting	
9:30 PM			Society Reception & Dance Institute of Texan Cultures		

## Annual Meeting Special Events

### How to Write a Grant

Sunday, March 2, 12:30–2:00 PM

ROOM 007 A–C

This panel discussion will enlighten those interested in attaining an NIH grant. The audience will be walked through the paperwork and provided with “hints” to make it easier to obtain a grant.



*James Cassatt*  
NIGMS



*Jean Chin*  
NIGMS



*Charles G. Edmonds*  
NIGMS



*Catherine Lewis*  
NIGMS



*Donald Schneider*  
NIH

### Congressional Liasion Committee Meeting

Monday, March 3, 1:00–2:00 PM

ROOM 101 A/B

CLC Guest Speaker:  
*Bill Leinweber*, Vice President  
Research!America

All Society members are encouraged  
to attend this session.

### Undergraduate Student Symposium

Sunday, March 2, 10:00 AM–2:00 PM

ROOM 103 A/B

*Rick Ludescher*, Rutgers University, Organizer

This event, sponsored by the Education Committee, will introduce college and university undergraduates to education, research, and career opportunities in the field of biophysics through seminars on emerging topics in biophysics, the annual Emily M. Gray Award Lecture, and a special poster session highlighting undergraduate research. Schedule of events is as follows:

10:00 AM: Breakfast Mixer

11:00 AM: Seminars Begin

1:00 PM: Undergraduate Poster Session

The mixer, seminars, and poster session are open to all undergraduate students at the meeting. Local undergraduate students from the San Antonio area will be admitted to the conference for free on this day.

### Education and Minority Affairs Committees Forum

#### *Mechanisms for Retention of Underrepresented Students in Graduate Programs*

Sunday, March 2, 2:00–3:30 PM

ROOM 103 A/B

**Government Programs to Increase the Retention of Underrepresented Minority Students in Graduate Programs**, *Roosevelt Johnson*, National Science Foundation

**Private Programs to Increase and Enhance Minority Training**, *Mike Summers*, University of Maryland, Baltimore

**Multiplex Your Training for Competitive Advantage**, *Bryant Moore*, Medtronic

### Early Career Development Panel: Advisor Selection

Tuesday, March 4, 12:45–2:15 PM

ROOM 204 A/B

The Early Careers Committee will sponsor the second annual Career Development Panel, on the topic of selecting a postdoctoral or graduate advisor. The panelists will discuss the duties and responsibilities of advisors, different advisory styles and advisor/advisee conflict resolution. Audience participation will be encouraged.



*Gisela Beutner*  
University of  
Rochester,  
Moderator



*Frances Separovic*  
University of  
Melbourne



*Sean Wilson*  
University of Nevada  
School of Medicine,  
Reno



*Jonathan King*  
Massachusetts  
Institute of  
Technology

### Advancing in a New Position

Monday, March 3, 12:30–2:00 PM

ROOM 008 A/B



*Beth A. Fischer*  
Survival Skills and Ethics Program,  
University of Pittsburgh

This workshop, sponsored by the CPOW, will be of interest to all graduate students, postdocs, and faculty.

## Bioenergetics

### Subgroup Symposium: *Radical-mediated Mechanisms in Cell Function*

The Bioenergetics subgroup symposium for 2003 will focus on *Radical-mediated Mechanisms in Cell Function*, a topic of extreme importance in biology. The symposium is organized by the co-chairs, *Olof Einarsdottir* of the University of California, Santa Cruz, and *Shelagh Ferguson-Miller* of Michigan State University.

The first part of the symposium concerns the role of amino acid or modified amino acid-based radicals in catalysis. This topic has attracted significant interest in the bioenergetics community with the discovery of a tyrosine-histidine cross-link at the active site of heme-copper oxidases, which suggests that formation of a tyrosine radical may play a crucial role during the reduction of dioxygen to water. The tyrosine-histidine cross-link in heme-copper oxidases places these enzymes among a growing list of proteins that contain post-translationally modified redox-active amino acids. *David Dooley* of Montana State University will discuss the assembly of the tyrosine cofactor in galactose oxidase, which contains a thioether bond between a cysteine and a tyrosine, which acts as a radical center during the two-electron oxidation of primary alcohols to the corresponding alcohols.

Another enzyme in which a tyrosine radical plays a central role is ribonucleotide reductase (RNR), which catalyzes the conversion of nucleotides to deoxynucleotides in the rate-determining step in DNA biosynthesis. *JoAnne Stubbe* of MIT will discuss new approaches toward understanding radical initiation and proton-coupled electron transfer in RNR that are applicable to other redox-active enzymes. The

third talk in the symposium will be presented by *Robert Gennis* of the University of Illinois, Urbana, who will summarize the mechanism of dioxygen reduction to water by cytochrome oxidase and the possible role of the cross-linked tyrosine radical in the energy transduction mechanism.

The second part of the symposium concerns the role of radicals in cell function. One of these radicals is NO, which plays a crucial role in a variety of reactions of physiological significance. NO has also been implicated in the regulation of the electron transport chain under a variety of experimental and pathological conditions. A mitochondrial NO synthase has been discovered and the reaction of NO with cytochrome oxidase has been shown to generate nitrite ion, the same product that arises from cellular catabolism of NO. *James Peterson* of the University of Pittsburgh will discuss these issues and proposed mechanisms for the consumption of NO by cytochrome during turnover in the presence of cytochrome c and oxygen. *James Remington* of the University of Oregon will conclude the symposium, describing how ratiometric Green Fluorescent Protein (GFP) can be used as biosensors. GFP has been very popular as a visible tag for a variety of proteins of interest, or as a marker for gene expression. Remington and coworkers have engineered these proteins to construct visual pH indicators, redox potential sensors and indicator of reactive oxygen species (ROS).

Following the break midway through the symposium, the 2003 Young Bioenergeticist award will be presented by the subgroup chair, *Carmen Mannella* of the Wadsworth Center. The subgroup business meeting and dinner will be held the same evening (March 1) at a site to be announced later. Please contact [carmen@wadsworth.org](mailto:carmen@wadsworth.org) for further information.

## Membrane Biophysics

### Yellen Receives 2003 K.S. Cole Award



*Gary Yellen*

The annual K.S. Cole Award given by the Membrane Biophysics Subgroup will be presented to *Gary Yellen*, Harvard Medical School, at the subgroup dinner on Saturday, March 1. The dinner will begin at 7:00 PM at a restaurant to be announced later. Dinner will be followed by a talk by Yellen. The Cole Award is given in honor of Kenneth S. (Kacy) Cole, and it recognizes an individual who has contributed significantly to the field of membrane biophysics. Yellen's research has added much to our understanding of the molecular basis of ion permeation and channel gating. His contributions include pivotal papers in the early 90s identifying the likely pore-forming region of potassium channels and, more recently, incisive studies that indicate the location of gating machinery within the pore. Tickets for the dinner can be purchased for \$45 from *Bill Wonderlin* ([wonder@wvu.edu](mailto:wonder@wvu.edu)).

### Student Dinner Tickets

The Membrane Biophysics Subgroup would like to encourage students to attend the dinner, and will be giving away 15 tickets by lottery to participants in the student poster competition at the 2003 meeting. Students should contact *Bill Wonderlin* ([wonder@wvu.edu](mailto:wonder@wvu.edu)) to be included in the lottery.

## Membrane Biophysics Symposium

*Barbara Ehrlich* of Yale University will chair the 2003 subgroup symposium entitled *Protein Partners in the Regulation*

*of Intracellular Calcium*. This symposium will spotlight recent research on the protein-protein interactions responsible for modulation of calcium signaling pathways, featuring presentations by:

*Ilya Bezprozvanny* of the University of Texas Southwestern

*Patricia Camacho* of the University of Texas, San Antonio  
*Gerda Breitwieser* of Syracuse University  
*Patrick Delmas* of CNRS, Marseille  
*Kurt Beam* of Colorado State University

## Annual Meeting Symposia & Workshop Schedule

### Symposia

#### *Sunday, March 2*

8:15 AM–10:15 AM

**Symposium 1: Protein Folds, Function, and Evolution**

*Mark Gerstein*, Chair

8:15 AM–10:15 AM

**Symposium 2: Probing Excitability and Contractility by Gene Transfer**

*Eduardo Marbán*, Chair

10:30 AM–12:30 PM

**Symposium 3: Molecular Mechanisms of Membrane Fusion: Protein Machines & Lipid Materials**

*Barry Lentz*, Chair

10:30 AM–12:30 PM

**Symposium 4: Actin and Tubulin—Passive Substrates or Active Players?**

*Tom Pollard*, Chair

4:00 PM–6:00 PM

**Symposium 5: Countering the Emerging Biological Threat**

*Jill Trewthella*, Chair

#### *Monday, March 3*

8:15 AM–10:15 AM

**Symposium 6: Mechanochemistry of Unconventional Myosins**

*Kathleen Tiybus*, Chair

8:15 AM–10:15 AM

**Symposium 7: Chaperones—Diversity in Structure and Mechanism**

*Sue Wickner*, Chair

10:30 AM–12:30 PM

**Symposium 8: New and Notable**

4:00 PM–6:00 PM

**Symposium 9: Membrane Trafficking and Targeting**

*Suzanne Scarlata*, Chair

4:00 PM–6:00 PM

**Symposium 10: Topoisomerases and Recombinases: Enzymes that Push DNA Around**

*Jim Berger*, University of California, Berkeley, Chair

#### *Tuesday, March 4*

8:15 AM–10:15 AM

**Symposium 11: Single Molecule Folding and Catalysis**

*Jane Clarke*, Chair

8:15 AM–10:15 AM

**Symposium 12: Helicases and Motor Proteins that Act on Nucleic Acids**

*Dale Wigley*, Chair

10:30 AM–12:30 PM

**Symposium 13: Macromolecular Signaling and Trafficking of Ion Channels**

*Lily Jan*, Chair

10:30 AM–12:30 PM

**Symposium 14: Nucleic Acid Structure and Dynamics**

*James R. Williamson*, Chair

4:00 PM–6:00 PM

**Symposium 15: Awards Symposium**

*Wilma Olson*, Chair

#### *Wednesday, March 5*

8:15 AM–10:15 AM

**Symposium 16: Biophysics in situ**

*Karel Svoboda*, Chair

8:15 AM–10:15 AM

**Symposium 17: Calmodulin Regulation of Ion Channels**

*John Adelman*, Chair

10:30 AM–12:30 PM

**Symposium 18: Microtubule Motors: Structures and Mechanisms**

*Joe Howard*, Chair

10:30 AM–12:30 PM

**Symposium 19: Structural Integration—Chromatin at Many Levels of Detail**

*Jeffrey Hansen*, Chair

### Workshops

#### *Sunday, March 2*

7:30 PM–9:30 PM

**Workshop I: Physical Techniques in Proteomics**

*Michael Snyder*, Chair

7:30 PM–9:30 PM

**Workshop II: Overexpression of Membrane Proteins**

*Robert Nakamoto*, Chair

7:30 PM–9:30 PM

**Workshop III: Quantifying Reversible Macromolecular Association**

*Jack Correia*, Chair

## Minority Affairs

On behalf of the Society's Minority Affairs Committee (MAC), *Paul Adams* attended the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) in Anaheim in September, while *Barry Lentz* attended the Annual Biomedical Research Conference for Minority Students (ABRCMS) meeting in New Orleans in November. Both Paul and Barry found these gatherings very useful for identifying ways in which our Society can encourage the participation of minority students in biophysics. Although this was our second year participating in the SACNAS meeting, it was the first for the ABRCMS and the first for which the Society staffed a booth. Paul and Barry both helped *Cheryl Szaro* of the Society office gather material and put together a very colorful and informative poster that asked the question "What is Biophysics?" Both Paul and Barry were not surprised to find that very few students or faculty at the meetings knew the answer to this question. Most of the students who visited our booths were surprised to learn that their interests were biophysics! Many faculty agreed that biophysics was important to their students but that it was not taught or even discussed at their institutions. As a result, Paul and Barry distributed roughly 50 of the "Careers in Biophysics" booklets. However, this just scratches the surface of the enormous problem of exposing faculty and students at historically minority colleges and universities (HMCUs) to science at the interface of biology and the physical and computational sciences. The good news is that participation in these meetings has provided the MAC with a bevy of ideas for activities that will allow the Biophysical Society to make a real dent in this problem.

Some of these activities are already underway. The MAC and Education Committee are co-sponsoring a workshop entitled *Mechanisms for Retention of Underrepresented Students in Graduate Programs* organized by *Suzanne Scarlatta* of the Education Committee. *Bernie Chasan*, from the Department of Physics at Boston University, and *Al McQueen*, from the Department of Biology at Hampton University, are working on creating a summer course on *Problems in Biophysics* aimed initially at HMCU students (with a course in physics at minimum) but designed in such a way that HMCU faculty could also take and adopt aspects of it to courses at their institutions. Bernie and Al will present their ideas for this course to the MAC at the Society meeting in March 2003. The initial offering is planned for the summer of 2003 at Hampton. Bernie plans to give most of the lectures, but *Wilma Olson*, from the Department of Chemistry at Rutgers University, has volunteered to give lectures on nucleic acids. If there are other Society members who would like to help with this effort, please contact Bernie at ([bc@bu.edu](mailto:bc@bu.edu)) and copy *Barry Lentz* at ([uncbel@med.unc.edu](mailto:uncbel@med.unc.edu)). *Dianne McGavin* of the Society staff is creating a minority-training-opportunities web site that will serve as a portal to the Society's web site for students and faculty at HMCUs. This will also serve as a link between HMCUs and research universities offering training opportunities in biophysics. The Directors of 15 NIH-funded Biophysics Training Programs have already agreed to take part in a discussion at the next Society meeting to define ways in which this site and the Society can help their programs identify minority students desirous of research or training opportunities in biophysics laboratories. The MAC is excited about these new directions and welcomes ideas

from other Society members. We would also invite anyone who would like to help with these goals to join the MAC and get involved! (e-mail *Barry Lentz* at [uncbrl@med.unc.edu](mailto:uncbrl@med.unc.edu)).

## Public Affairs

### Labor/HHS Appropriations 2003 Up in the Air

All bets are off. Congress is under a continuing resolution (CR), its fifth since the fiscal year ended September 30, and the government is running under the FY 02 levels. That, along with the mid-term election results, has given *President Bush* new political capital in Congress—and he wants to spend it.

There are still 11 appropriation bills that have not passed and Labor/HHS, which funds the NIH, is one of them. Labor/HHS is usually left until the end because of its size and often controversial appropriations allocations. However, when the 108th Congress convenes, and Senator *Ted Stevens* (R-AK) assumes the Chair of the Appropriations Committee, subcommittee chairs are to have their bills ready to go, with reworked numbers not to exceed the President's \$749 billion discretionary spending mark.

In fact, it has been reported that the President would like to announce in his State of the Union address that FY 03 funding is complete. Labor/HHS is to be marked up at \$129.9 billion, of which the NIH is scheduled to receive \$27.2 billion, a \$3 billion increase. This hefty percentage for social, education, and general welfare programs is often at the core of disputes, annually holding up the legislative process.

There is much speculation about the possibility that the appropriations process could be finished by late January. Some are predicting that March is a more

accurate timeline. This would allow FY 03 levels to be marked up at diminished levels because half of the year's funding would be already complete. Interestingly, the NIH has adjusted its administrative process to accommodate for prolonged CRs, so it is fairing better than most agencies.

2002 was to be the last year of the doubling effort for NIH. Once this is complete, the biomedical research community can look forward to advancing Senator *Arlen Specter's* (R-PA) October Senate Resolution advocating for a tripling of NIH budget.

## NAS Discusses NIH Restructuring

Every few years there seems to be a movement afoot to improve the efficiency of the NIH by restructuring its 27 Institutes and Centers. This often translates into reducing the number of individual and specific Institutes, by combining them into 5-7 larger Institutes. This idea was again promoted by former NIH Director *Harold Varmus*, towards the end of his tenure. To deal with the suggestion, the National Academy of Sciences (NAS) created a committee to consider if, and then how, the NIH might be reorganized.

The group has met on two previous occasions, resulting in mixed suggestions about the future direction of the NIH. Following the earlier meeting, two former NIH directors advocated for clustering, forming "mage-Institutes," while at the second meeting, other institute directors testified that such an arrangement would not meet the NIH's needs.

On November 20, NAS held an open meeting, inviting testimony on the subject from a variety of sources. All of the groups represented acknowledged the supreme work generated by the NIH, but some, such as the CEO of the

Epilepsy Foundation, added that "the need for more formalized cross-agency collaboration" was needed.

This is only the beginning of the process and the committee is interested in hearing from other sources about the NIH potential restructuring. Other groups that offered testimony that day were the American Autoimmune Related Diseases Association, the American Diabetes Association, the American Heart Association, and the National Mental Health Association.

The 21 panel members include: *Mary Woolley*, Research!America; *Samuel Silverstein*, Columbia University; *Alan Leshner*, AAAS; and *J. Michael Bishop*, UCSF. The next meeting will be held at the Beckman Center in Irvine, California, December 18-19.

## NSF Tightrope

The NSF Reauthorization bill (H.R. 4664) that recently passed Congress contains elements that deal with science, math, engineering and technology (SMET) education. As previously reported, the NSF is in a difficult bind. The science advocacy community has been lobbying Congress to double the NSF budget, much like that of the NIH. However, the OMB Director *Mitch Daniels* does not advocate this same level of increase. This has put NSF Director *Rita Colwell* in a strange place. She had to write to Congress saying that now was not the time to increase her budget and that she must side with the Administration.

Here are some comments from Congress about the NSF:

"The bill before us doubles NSF's budget authority over the next five years. It matches the growth of the National Institutes of Health over the last five years. We double budget authority for research and development in physical sci-

ences and theoretical mathematics, because they support advances in the health sciences and because they are valuable in their own right." Senator *Edward Kennedy* (D-MA).

"Improved science and math education, scientific innovation, and new technology hold the key to our nation's future economic success, as well as our national security. During its 50 years, NSF has supported the research of more than half of U.S. Nobel laureates in physics, chemistry and economics, and contributed to such breakthroughs as the Internet, artificial skin to help burn victims and the discovery of new planets and black holes." Representative *Sherwood Boehlert* (R-NY).

This is a good start, but in order to move the NSF budget to a respectable level, the science and biomedical research communities will have to continue their advocacy efforts, changing the Administration's attitude about funding.

## Homeland Security

On the heels of the November mid-term elections, Congress was once again transformed, allowing President Bush to push through his legislative agenda. Topping the list was the creation of the Department of Homeland Security (DHS). On November 25, President Bush signed the Homeland Security Act. The Act granted DHS many areas of oversight, such as the Coast Guard, the Customs Service, Border functions at Animal Plant Health Inspection Service (APHIS), INS enforcement and the Federal Emergency Management Agency. But it also has a section called "Promoting World-Class Research and Development."

In this section, Congress recognizes the advances that have been made in science and states a commitment to contin-

*(Continued on page 13.)*

## *Message from the Secretary*



*Jill Trehwella*

### **50 Years of Biophysics Coming Up—Any Volunteers to Help Plan the Celebration?**

In 2007 we will be celebrating the 50th anniversary of the meeting that began it all: The First National Biophysics Conference. This historic meeting was held March 4–6, 1957, in Columbus, Ohio, with funds granted by the United States Air Force Office of Scientific Research. A Committee of Four, Samuel Talbot, Kenneth S. Cole, Ernest C. Pollard and Otto H. Schmidt, organized the event aided by H. P. Schwan and R. B. Stacey who handled publicity and local arrangements, respectively. Invitations were sent to 1500 scientists, and 225 papers were subsequently reviewed, with about one third selected for publication in full in the Proceedings to be edited by Henry Quastler of Brookhaven National Laboratory and Harold Morowitz of Yale University. About 200 researchers attended the conference, and at the meeting it was decided that it was time to form a society for biophysicists. The following year the Biophysical Society was incorporated with its own set of bylaws and officers.

Up to that point biophysics was a topic at the meetings of various groups such as the American Institute of Physics and the American Physiology Society, but it had yet to achieve recognition as a discipline requiring its own organization. The preface to the Proceedings of this first meeting reveals much about the public dialogue around biophysics at the time, which is described as “the application of physicists’ methods and instruments to biologists’ problems.” Quastler goes on to say that “This area is a moving frontier zone: as soon as a physical method is worked out to a degree where its application no longer requires the special training of a physicist or the special facilities of a physics laboratory, it ceases to be part of biophysics and becomes just plain biology.” It is a treat to read on and contemplate some of the comments about what physicists can do that biologists are not trained so well in, and vice versa, comments about communications between the disciplines and the conclusion that “The combination of a biologist’s problems with a physicist’s approach has yielded some excellent results, and some that are rather regrettable; examples of both kinds are on view in this very volume.”

Anniversaries are great times to look back and reflect on past accomplishments and to look forward with excitement about the future! Perhaps you attended this first meeting and are still a member of our Society? Perhaps you were trained by one of those who participated in this first meeting and formulation of our Society? Or perhaps you are simply interested in history, and in particular in the accomplishments of biophysicists? If so, please make yourself known to us as we begin to think about plans to honor 50 years of scientific discovery, accomplishment, and evolution in biophysics. Some ideas of things we might do are to publish some Newsletter articles between now and the 2007 meeting focusing on the work of the Society founders, or perhaps highlights from the first 50 years, organizing some special events at the 2007 meeting itself that could involve special guests, or other ideas not yet thought of. Send ideas or expression of your interest in helping to [Society@biophysics.org](mailto:Society@biophysics.org).

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uing “our strength in this area to promote research, development, technology, engineering and acquisition in homeland security.” The bill adopts these points:

- Establishes a Homeland Security Research Center at one of the National Laboratories of the National Nuclear Security Administration for homeland security research.
- Allows the Secretary of Homeland Security to use any Federally Funded Research and Development Center in the public or private sector to support homeland security research and conduct independent analysis on those topics.
- Establishes a university-based center or centers to assist in training first responders and conducting research in a variety of areas related to homeland security including bio- and agro-terrorism.

Current Homeland Security Advisor Tom Ridge was nominated as the first Homeland Security Secretary, a Presidential Cabinet level position.

In a White House statement earlier this year, President Bush said that “\$1.75 billion will be provided to the National Institutes of Health to conduct basic and applied research needed to provide solutions to a range of specific operational problems in our bioterrorism response plans. To do this, NIH will lead a partnership with industry, academia, and government agencies dedicated to understanding the pathogenesis of potential bioterrorism agents and to translating this knowledge into required medical products.

### HHS Restructuring Seen as Politicization of Science

In mid-September, HHS Secretary Tommy Thompson announced the re-chartering and re-staffing of the National

Human Research Protections Advisory Committee (NHRPAC). NHRPAC’s original mission was to provide expert advice and recommendations to the Secretary of HHS, Assistant Secretary for Health (ASH), the Director, Office for Human Research Protections (OHRP), and other departmental officials on a broad range of issues and topics pertaining to or associated with the protection of human research subjects.

After the NHRPAC reorganization, many Democrats were outraged at what they perceived as the politicization of science from HHS. In particular, Representative *Diana DeGette* (D-CO) spoke out at the November Public Responsibility in Medicine & Research annual meeting. DeGette said that in her view this move “is not a restructuring, it’s a purge of people who disagree with certain viewpoints.” She further stated that “the President is not looking for advice. What he’s looking for is ideological conformity.”

As an advocate for strengthening human subject protections, DeGette emphasized that “when playing politics

with biomedical science, we run the risk of harming millions of people who look for new discoveries and new applications to ease their pain, address, disease and overcome disease. We also run the risk of damaging the credibility of good science because it inconveniently runs against the wishes of political fortune.”

Other House Democrats have recently written to Secretary Thompson about this issue.

Secretary Thompson has allegedly begun to make appointments to certain science committees dependent upon political views. Hearing this rumor, Senators Kennedy and Clinton addressed the Secretary saying, “As you know, these committees...provide the government with independent scientific advice on matters that affect the well-being of millions of Americans. So we are deeply concerned by allegations that the changes under way are driven more by ideology than by science.” No specific litmus test has been confirmed and Thompson has sometime before he must respond to the Senate’s questions.

### Breakthroughs in Bioscience



The latest article in the Breakthroughs in Bioscience series can be found on the FASEB Breakthroughs website at <http://www.faseb.org/opa/break/>. The article, written by Margie Patlak, is entitled *New Weapons to Combat an Ancient Disease: Treating Diabetes*. It can be located directly at: <http://www.faseb.org/opa/break/diabetes.pdf>.

A summary of the article was published in the December FASEB Journal and the full article published in FJ Express. Additional copies can be obtained by contacting FASEB Office of Public Affairs

## Biophysicists in the News



*Amit Chattopadhyay*, Centre for Cellular & Molecular Biology, India, and Society Member since 1984, received The Shanti Swarup Bhatnagar Prize in Biological Sciences.



*Keith Hodgson*, Stanford University, and Society Member since 1999, received the Department of Energy's Ernest O. Lawrence Award for 2002.



*Helmut Strey*, University of Massachusetts, and Society Member since 1994, received the 2003 John H. Dillon Medal from the American Physical Society.

(Continued from page 3.)

ended up staying six. Missing her New England roots, and drawn to a university setting, Gierasch applied for a faculty position at the University of Massachusetts, Amherst. She was recruited to head the Chemistry department. This was a challenging position because the department was not only large, it was also one with divisions among the chemistry communities. Gierasch sought to break down the barriers that separated the chemists by making the department more interdisciplinary and hiring new faculty with interdisciplinary research interests. Nine faculty were hired during this time. Slowly, however, she realized that the administrative duties were taking her out of the lab and classroom. When the opportunity arose to become chair of the Biochemistry & Molecular Biology Department, she took it because the smaller, more cohesive department allows her to do more research and teaching, the two things she loves most about her career.

Today, her lab includes eighteen members, and a major research thrust is protein folding, the interest that began at Mount Holyoke. She remains committed to breaking down barriers, and encourages her students to become more interdisciplinary by doing things like involving computer scientists in her research. *Joanna Swain*, who has worked with Gierasch for the last six years, finds that Gierasch "has an exquisite eye for detail," which challenges her students to excel. "Lila takes her job as a trainer of scientists very seriously....and she is absolutely tireless," notes Swain. "Anyone who has watched her disappear up the mountain trail ahead of them, either at a Gordon conference or lab retreat, knows that she is driven to

excel," Swain says. "You can usually forgive her competitive nature, however, when you reach the top and find she's laid out a picnic, replete with wine!"

Gierasch advises those starting out in biophysics to be careful when options are presented. "Weigh them carefully, and don't go by what others tell you," she says, "and be aware of what you want. Focus on how you want to invest your time." This is particularly important, she reflects, for her female students. Women in science are increasingly asked to join committees and become involved in departmental duties. While this is not necessarily bad, she notices that women tend to end up doing more administrative duties and less work in the lab. *Patricia Clark*, one of her former postdocs, appreciated Gierasch's style of encouraging students to make their own choices, while being there when they need her. Clark recalls that "Lila went a long way towards clarifying what I wanted from an academic position. Not because she filled my head with her own ideas, but because she had a knack for asking me questions....and hearing my own answers made me realize what I wanted to do. That was invaluable." Now an assistant professor at the University of Notre Dame, and mentoring her own students, Clark finds herself asking, "What would Lila do in this situation?"

When Gierasch does find the rare opportunity for some free time, she enjoys spending it with her husband, whom she calls her "support system who holds the world together." Together they enjoy gardening, bicycling, bird watching, and preparing homemade jams from their own fruit trees. And the non-city folks still ride horses together, now in the rural countryside of Amherst.

## Obituary



*Arthur Solomon*

*Arthur Kaskel Solomon*, Professor Emeritus of Biophysics at Harvard Medical School, and a pioneer in the field of Biophysics, died November 6, 2002 at the age of 89. Solomon received an A.B. from Princeton and A.M and Ph.D. degrees in Chemistry from Harvard University. He undertook postdoctoral studies at the famed Cavendish Laboratory at Cambridge University, where he assisted in the building of that laboratory's first cyclotron. He returned to Harvard University as a Research Associate in Physics and Chemistry at Harvard University and Research Fellow in Biological Chemistry at Harvard Medical School. During this period, he assisted in the completion of the Harvard cyclotron, used the cyclotron to produce radioisotopes (notably  $^{11}\text{C}$ ), and participated in pioneering studies using isotopes to probe metabolic pathways. These studies were interrupted by the outbreak of World War II. During the war, Solomon returned to England where he played a

major role in the development of close-range tracking anti-aircraft radar. After the war ended he was awarded a D.Phil. from Cambridge University.

Shortly after Solomon returned to Harvard to resume his postdoctoral studies, he was asked to organize and direct the Biophysical Laboratory at Harvard Medical School and was appointed to the faculty as Assistant Professor in the Department of Physiology. In its early years, the Biophysical Laboratory was focused primarily on the use of radioisotopes in biomedical research. At that time, neither the isotopes nor the devices necessary to detect them were commercially available, and for its first three years the Laboratory provided most of the isotopes and nearly all of the Geiger counters, as well as expertise in the design, execution and interpretation of experiments involving radioisotopes throughout Harvard Medical School. At this time, Solomon's own research interests turned to investigations of the transport of small molecules across cell membranes, an area that remained his major research focus until his laboratory closed in 1997. Although much of his work involved transport in isolated cells, most notably the red blood cell, his research also touched on several important questions regarding transport of water and ions in tissues including the intestine and kidneys. His careful measurements of the coupling between the transport of water and the active transport of sodium in the intestine, carried out with *Peter Curran*, are widely cited as crucial to the subsequent development of oral rehydration therapy for cholera.

In addition to his own research, Solomon played a key role in professional activities and education in Biophysics as it emerged as a formal discipline. He was a founding member of the Biophysical Society and served on the Provisional Council from 1957–1959 and the Executive Board from 1958–1962. In 1959 he founded the Committee on Higher Degrees in Biophysics (a Ph.D. granting graduate program) and served as its chairman from 1959 until 1981. Under his leadership, the Harvard Biophysics Program emerged as one of the premier programs of its kind and trained several generations of talented students, including many who went on to become leaders in the field. Although he officially became a Professor Emeritus in 1983, he remained active in research and graduate education for another 15 years.

A man with extraordinarily broad interests, Solomon played leading roles in a number of national and international scientific societies and advisory boards and in local advisory boards for the arts and humanities. He served as a Trustee of the Institute of Contemporary Arts, Boston, from 1946-1976, as an Overseer of the Museum of Fine Arts, Boston, from 1978-1984, and as founding Fogg Fellow of the Harvard Art Museums from 1976 until his death.

Arthur Solomon is survived by his wife *Mariot Fraser Solomon* and by his children *Susanna Van Leuven* and *Mark Solomon*.

—*James M. Hogle*,  
Harvard Medical School

## Upcoming Events

**March 1–5, 2003**

*Biophysical Society 47<sup>th</sup> Annual Meeting*

San Antonio, Texas

<http://www.biophysics.org/>

**May 18–22, 2003**

*American Society for Microbiology, 103rd General Meeting*

Washington, DC

<http://www.asmsa.org>

**July 9–14, 2003**

*Bionanotechnology: Euroconference on Biomolecular Devices*

Granada, Spain

<http://www.esf.org/euresco/03/lc03192>

**July 26–31, 2003**

*American Crystallographic Association, Annual Meeting*

Covington, KY

<http://www.hwi.buffalo.edu/aca/>

**August 15–20, 2003**

*First Gordon Research Conference on Cellular*

*Osmoregulation: Sensors, Transducers and Regulators*

Roger Williams University, Bristol, Rhode Island

<http://www.grc.uri.edu/programs/2003/cellosmo.htm>



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