

MAY 2003

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ASBMB *Today*

Constituent Society of FASEB

AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY

Annual Meeting Wins Accolades

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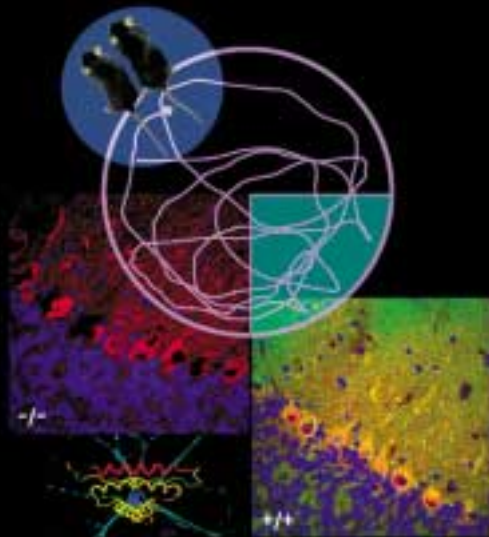




IUBMB/ASBMB 2004



“A Molecular Exploration of the Cell”



June 12 – 16
Boston, MA

American Society for Biochemistry and
Molecular Biology Annual Meeting
and 8th IUBMB Conference

Proteomics and Bioinformatics ■ Chemical Biology ■ Molecular Recognition ■ Cellular Biochemistry

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John D. Scott, HHMI, *Vollum Institute*
Alexandra C. Newton, *UCSD*
Julio Celis, *Danish Cancer Society*, and
the 2004 ASBMB Program Planning Committee

Award Lectures

ASBMB-Merck Award
ASBMB-Avanti Award in Lipids
ASBMB-Amgen Award
William C. Rose Award
Herbert A. Sober Lectureship
Schering-Plough Research Institute Award
Howard K. Schachman Public Service Award
Herbert Tabor/Journal of Biological Chemistry Lectureship

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<http://www.asbmb.org/meetings>

Meeting I: Molecular Recognition and Catalysis
Organizer: Jack E. Dixon, *UCSD*

Meeting II: Cellular Organization and Dynamics
Organizer: Harold A. Stenmark, *Norwegian Rad. Hosp.*

Meeting III: Genomics, Proteomics and Bioinformatics
Organizers: Charlie Boone, *Univ. of Toronto* and
Michael Snyder, *Yale Univ.*

Meeting IV: Integration of Signaling Mechanisms
Organizer: Kjetil Tasken, *Univ. of Oslo, Norway*

Meeting V: Molecular and Cellular Biology of Lipids
Organizer: Dennis Vance, *Univ. of Alberta*

Meeting VI: Protein Structure, Catalysis and Dynamics
Organizer: Susan Taylor, *UCSD*

Meeting VII: Protein Modifications and Degradation
Organizer: William J. Lennarz, *SUNY at Stony Brook*

**Meeting VIII: Regulation of Gene Expression and
Chromosome Transactions**
Organizer: Joan W. Conaway, *Stowers Inst. for Med. Res.*

Meeting IX: Signaling Pathways in Disease
Organizers: Alexandra Newton, *UCSD* and
John D. Scott, *HHMI, Vollum Inst.*

Meeting X: The Future of the Profession
Organizer: J. Ellis Bell, *Univ. of Richmond*

ASBMB *Today*

AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY

MAY 2003,
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Continued Funding for NIH

The Honorable John Spratt
Ranking Member
Committee on the Budget
United States House of Representatives
Washington, DC 20515

Dear Representative Spratt:

I am writing this letter to inform you that I strongly support your planned amendment in the upcoming mark-up of the FY 2004 budget resolution to add additional funds to budget function 550 (health) to continue essential growth in the budget of the National Institutes of Health.

I am a member of the American Society for Biochemistry and Molecular Biology (ASBMB), a scientific and educational society of more than 11,000 biochemists and molecular biologists, most of whom conduct research at many of our nation's colleges and universities. ASBMB, founded in 1906, takes a strong interest in the federal investment in biomedical research as supported by the National Institutes of Health.

Tell Us What You Think

We appreciate receiving letters that are suitable for publication from ASBMB members regarding issues of importance or commenting on articles appearing in ASBMB News. Letters should be sent to the editor, John Thompson, at the address found at left. Letters must be signed and must contain the writer's address and telephone number. The editor reserves the right to edit all letters.

We who conduct biomedical research, along with millions of other Americans, are very grateful to you and the Congress for your commitment to the NIH over the past five years. This investment in NIH-funded research is already paying off in new ways to diagnose and treat many diseases. These innovations are relieving pain and suffering every day across our country, and are enhancing the quality of life of every American—

Only continued, sustained investment in life-saving medical science today will provide cures and therapies tomorrow.

and their loved ones—who may be suffering from diseases such as cancer, diabetes, heart disease, or stroke. They are also helping to reduce the cost of health care and to fuel economic growth.

To maintain the progress that has occurred in recent years, it is essential that medical research be sustained. Thus, I strongly support ASBMB's recommendation to add 10% in FY 2004 to the budget of the NIH, to bring its total budget to \$30 billion. Only continued, sustained investment in life-saving medical science today will provide cures and therapies tomorrow.

Sincerely
Thomas E. Smith, Ph.D.
Howard University
College of Medicine
Email: tsmith@Howard.edu

FASEB, AAI Offer Immunology Courses

The American Association of Immunologists has scheduled two courses in immunology this summer. An Introductory Course in Immunology will be held at the University of Pennsylvania in Philadelphia, June 20–26, and an Advanced Course in Immunology will be held July 19–25 at Stanford University.

This two-part course is a comprehensive introduction to the basic principles of immunology and is suitable for students with a general science background. Part I is not intended for those with extensive course work or research experience in immunology. Part II is a lecture course covering major areas of immunology and will require an understanding of basic immunology. Parts I and II may be taken independently at the discretion of the student.

Category I CME credits toward the American Medical Association Physician's Recognition Award will be offered with the meeting. The Federation of American Societies for Experimental Biology is accredited by the ACCME to sponsor continuing medical education for physicians. This activity has been planned through the joint sponsorship of FASEB and the AAI. CME application forms will be available at the course and from the AAI office. There is a \$45 application fee, payable upon submission of the CME application after completion of the course.


Applications for the first course must be received by June 1. Attendance is limited to 220 attendees.

Part II is directed toward advanced trainees and scientists who wish to expand or update their understanding of the field. This is not a survey course and requires that attendees have a

firm understanding of the principles of immunology. Those seeking a basic course are referred to the AAI Introductory Course in Immunology, June 20 - 26, at the University of Pennsylvania. Application deadline for Part II is June 3.

Category I CME credits toward the American Medical Association Physician's Recognition Award will be offered with the Part II meeting. The Federation of American Societies for Experimental Biology (FASEB) is accredited by the ACCME to sponsor

continuing medical education for physicians. This activity has been planned through the joint sponsorship of FASEB and the AAI. CME application forms will be available at the course and from the AAI office. There is a \$45 application fee, payable upon submission of the CME application after completion of the course.

For information, instructions and registration forms, go to www.aai.org/courses. For questions or assistance in registering, please contact infoaai@aai.faseb.org, or 301-634-7178. 

Polar Biology in the Genomic Era

In these early years of the twenty-first century, the polar biological sciences stand well poised to address numerous important issues, many of which were unrecognized as little as 10 years ago. At the same time, the era of "genome-enabled" biology is upon us. Genomic approaches, in concert with other existing technologies, allow us to examine polar biological questions of unprecedented scope and to do so with extraordinary depth and precision.

The National Academies' Committee on Frontiers in Polar Biology, which was chaired by ASBMB member H. William Detrich, recently released its report, *Frontiers in Polar Biology in the Genomic Era*. The report identifies numerous research problems in the areas of polar physiology and biochemistry, evolution of polar organisms, ecosystems biology, and human impact on polar ecosystems that could benefit from genomic sciences. The report also assesses the impediments to the conduct of polar genomic research

and emphasizes the importance of ancillary technologies to the successful application of genomic technologies to polar studies. The development of a new initiative in polar genome sciences that emphasizes collaborative multidisciplinary research is recommended to facilitate genome analyses of polar organisms and to coordinate research efforts.

For More Information: Contact Evonne Tang, of the National Academies' Committee on Frontiers in Polar Biology, at 202-334-3648; ETang@nas.edu. *Frontiers in Polar Biology in the Genomic Era* is available from the National Academies Press; 2102 Constitution Avenue, N.W. Washington, DC 20055; 800-624-6242 or 202-334-3313 (in the Washington metropolitan area); Internet: <http://www.nap.edu/catalog/10623.html>.

This report is sponsored by the Office of Polar Programs and the Directorate for Biological Sciences of the National Science Foundation.

A New Era for the *Journal*

The past year has been an eventful one for the *Journal of Lipid Research (JLR)*. The Directors of Lipid Research, Inc. (LRI), the owner of the Journal since its inception in 1959, are pleased to make some important announcements that should be of great interest to our authors and readers. The first of these is the transfer of ownership of the *JLR* to the American Society for Biochemistry and Molecular Biology (ASBMB) in July 2003. In June 2000, LRI entered into an agreement with the ASBMB to manage the publication of the *Journal*. Although this arrangement was similar to our previous management agreement with FASEB, it was undertaken with the understanding that LRI and the ASBMB would begin to explore the possibility of transfer of ownership and responsibility for publishing the *JLR* to the ASBMB. We were aware that the leadership of the ASBMB, through its Council and Publications Committee, was considering expansion of its publication activities beyond the *Journal of Biological Chemistry*. It was also evident to us that scientific journal publication was undergoing changes that were technically and conceptually challenging, particularly to a free-standing journal such as the *JLR*, which has never previously been sponsored by a scientific society.

During the last three years of affiliation with the ASBMB, we have had ample time to work closely with its publications office, and LRI's president has served as a member of the ASBMB Publications Committee. The ASBMB has indeed initiated another new journal, *Molecular and Cellular Proteomics*, and has become publisher of still another professional journal owned by the International Union of Biochem-

istry and Molecular Biology, *Biochemistry and Molecular Biology Education*, indicating its firm commitment to expanding and supporting additional publications. Equally important, our relationship with all sectors of the ASBMB, including its top leadership, has been most satisfactory. Indeed, the *JLR* has thrived in this setting. The ASBMB Publications Office is sufficiently large to provide expertise and support at several levels. Of particular importance during this period has been implementation of online sub-

mission and review and, most recently, the inauguration of *JLR* Papers in Press, whereby manuscripts are published online within approximately two weeks of acceptance. Trudy Forte, Editor-in-Chief, Carmen Escobar, Trudy's Editorial Assistant, and Virginia Bourgeois, the *JLR* Production Editor in Bethesda, all deserve enormous credit for successfully carrying through these important changes that have placed the *JLR* in the vanguard of these advances in scientific publication. It is also clear, however, that these achievements would have been much more challenging without the advice and support of Charles Hancock, the ASBMB's Executive Officer; Barbara Gordon, Director of Publications; and their staff.

The Directors of LRI have carefully evaluated the development of our relationship with the ASBMB, as has the Council and the Publications and Finance Committees of the ASBMB. Both parties agreed last spring on the transfer of ownership of the *JLR* to the ASBMB, effective July 1, 2003. The LRI Directors are convinced that this

ASBMB intends to work to maintain the JLR as the premier journal in the lipid field, to broaden its appeal to authors, and to increase its impact even more.

Over 30 Years of *JBC* Back Issues Now Available Online—FREE!

As part of our continuous commitment to advance biochemistry and molecular biology, ASBMB and the *Journal of Biological Chemistry (JBC)* have digitized the complete volumes of *JBC* dating back to 1970. More important, online access to these archives is FREE! To access the archives, simply go to the *JBC* website, www.jbc.org.

Look for more archives in the coming months. We will continue to digitize the remaining back issues until we reach Volume 1, Issue 1. Once complete, this will provide the field with 100 years of high quality biomedical research—FREE!

Access the JBC archives today. It's FREE! Go to www.jbc.org.

of Lipid Research



action will ensure the *Journal's* future as the leading publication in biological lipid research. The agreement, which has now been formalized, includes the following statement: "The *JLR* will become an official ASBMB journal and will continue to be published and cited as the '*Journal of Lipid Research.*' ASBMB intends to work to maintain the *JLR* as the premier journal in the lipid field, to broaden its appeal to authors, and to increase its impact even more." Under the agreement, the editorial operations of the *JLR* will continue to be managed by an Editor-in-Chief, assisted by Associate Editors and an Editorial Board, and the relationship between authors and the *Journal's* editorial offices will remain much as at present. LRI's Advisory Board for the *Journal* will be dissolved, and LRI will transfer most of its considerable assets (\$1,000,000) to the ASBMB, to be used exclusively in support of the *JLR*. The Publications Committee of the ASBMB will be the oversight body for the *Journal*, and it is anticipated that the Editor-in-Chief will work closely with the

Associate Editors for ongoing *Journal* operations and editorial decisions, much as has been the case for the *Journal of Biological Chemistry*. We wish to thank all of the many people who have made this landmark change for publication of the *JLR* possible, and particularly Lewis Gidez, former Executive Editor of the *Journal*, who had a key role in working out our initial arrangements with the ASBMB.


We are very pleased to announce at this time the appointment of Edward Dennis as the next Editor-in-Chief of the *JLR*, effective July 1, 2003. Ed is professor and former chair of the Department of Chemistry and Biochemistry at the University of California San Diego (UCSD), and a distinguished biochemist with a special interest in phospholipases and eicosanoids. We are also pleased to announce that Joseph Witztum, professor in the Department of Medicine at UCSD, whose immunological studies of modified lipoproteins and other accomplishments in the lipoprotein field are internationally recognized,

will serve as Deputy Editor. The *JLR* is clearly entering the new era as an official ASBMB journal under outstanding leadership.

Finally, we are delighted to announce the availability of the complete *JLR* Online Archive, something almost no other scientific journal has achieved to date. All issues of the *JLR* back to Volume 1, Number 1, dated October, 1959, will soon be accessible online in searchable PDF format at www.Jlr.org. Our archive is substantial, but of a sufficiently manageable size that we could afford to make this invaluable resource available free to all our authors, loyal subscribers and readers, as well as any interested scientist. Now all will have ready access to original data and less reason unwittingly to repeat the past!

We are pleased that the *JLR* has found a new home with the ASBMB. We are confident that the journal will thrive in its new setting and continue to set standards in the field of lipid research.

Richard J. Havel, President, for the members of Lipid Research, Incorporated: Edward A. Dennis, Howard A. Eder, Claudia Kent, Julian Marsh, Donald M. Small, Daniel Steinberg

Dr. Havel serves on the ASBMB Publications Committee and the Clinical Proteomics Advisory Committee for Molecular and Cellular Proteomics. 

This article is reprinted from The Journal of Lipid Research.

ASBMB Welcomes New Ph.D.s

ASBMB extends its congratulations to these individuals who recently received their Ph.D. degrees. In recognition of this achievement, ASBMB is presenting them with a free one-year membership in the Society. The new Ph.D.'s are listed below with the institution from which they received their degree.

Emine S. Elgin

University of Wisconsin, Madison

Hazel R. Housden

University of Southampton, U.K.

Elaine M. Khan *

University of California, Davis

Yoon-Seong Kim

Weill Medical College at Cornell University

Leonardo Marino-Ramirez

Texas A & M University

Monideepa Roy

Jawaharlal Nehru University, India

Stacy Renee Rushing

University of California, Davis

David A. Six

University of California, San Diego

* Previous Associate member who met the requirements for a free one-year membership.

Obtaining Visas: A Continuing Problem For Foreign Scholars, Postdocs

By Peter Farnham, ASBMB Public Affairs Officer

Things will improve, but we will never go back to the earlier system."

This was the main message the State Department gave at a House Science Committee hearing on March 26 dealing with the continuing difficulties many foreign scholars and post-doctoral fellows experience in obtaining temporary visas to study or conduct research in the United States. This problem has existed for some years, particularly for students and scholars from countries that were long-time geopolitical rivals (particularly the former Soviet Union and the People's Republic of China). However, since the World Trade Center attacks in September 2001 the problem has grown much worse. Several additional security clearance systems have been adopted, and the related startup problems plus a large increase in the number of foreign scholars and students being screened are the main causes of delays and difficulty in obtaining visas.

In 1998, the "Visas Mantis" program was established to impede security-related transfers of technology to foreign adversaries. To trigger a Visas Mantis screening, a visa applicant would, if allowed to work in the United States, have to be exposed to any of 15 sensitive technologies on a "technology alert list." Further, any applicant from any of seven countries the State Department considers supporters of terrorism is assumed to be a problem if he or she wants to work with any technology on the technology alert list. Finally, con-

sular officers may send to Washington any case that appears to warrant further interagency review.

The caseload under the Visas Mantis program grew dramatically since the World Trade Center attacks, so that now there are as many as 2,000 cases pending for review at any given moment. However, these are in turn only about 10% of all cases submitted from consular offices abroad for security review. This is a vast increase over the pre-9/11 number.

The culprit responsible for many of these new cases is the "Visas Condor" program, which began in January 2002. Under this program, visa applicants from certain foreign countries (mostly Muslim or mid-eastern) must automatically have their applications reviewed. Under the program in its early days, if a consular official heard nothing derogatory from State about an applicant within 30 days, the application could be considered problem-free and the consular officer could issue the visa. However, the huge increase in the number of applicants submitted for a Visas Condor review quickly made the 30-day "clock" an untenable feature of the program. Now, all applicants who undergo a Visas Condor review must be affirmatively approved by the State Department.

Janice Jacobs, Deputy Assistant Secretary for Visa Services, told the Committee that "our operating environment changed forever on September 11, 2001, and there is no turning back the

clock. Security is and will continue to be the top priority in the processing of visas for international visitors." However, she also noted that State is "keenly aware of the need to balance national security interests with other strategic interests such as promoting scientific and academic exchange and the overall health of our economy." She indicated that State has taken steps to eliminate the backlog, including hiring more staff, improving training, and improving technology and data sharing. She indicated that "clearances on most cases raising no problems are available to consular officers within 30 days or less."

Dr. David Ward, President of the American Council on Education, noted three major problems: electronic monitoring of international students and exchange visitors who come to the United States does not work as promised; that extensive visa delays have become common; and confusion regarding what students and scholars can study or investigate when they do manage to get a visa. Among other recommendations, he urged that the Student and Exchange Visitors Information System (SEVIS)—the electronic system for monitoring and sharing information on all foreign students and scholars studying at American academic institutions—be streamlined and improved, as it was implemented before it was completely ready.

Finally, Dr. Shirley Tilghman, President of Princeton University, detailed the problems faced by many foreign

Continued on next page

Congress Passes 2004 Budget Resolution With Mixed News for Basic Research

By Peter Farnham, ASBMB Public Affairs Officer

The House and Senate agreed to a budget resolution for fiscal 2004 in early April, then left Washington for a two-week spring recess. The good news is that the budget resolution was completed on time, only the fifth time that has happened in the past quarter-century. In addition, the resolution assumes more funding for research at the National Science Foundation than the President had asked for in his fund-

ing request for fiscal 2004. However, the bad news is that the agreement assumes only a 2-percent increase for the National Institutes of Health.

The budget resolution sets overall spending totals for the federal government but does not go into a great deal of detail. It is best viewed as a statement of broad congressional priorities. Although the budget resolution is replete with numbers, the only one

that is binding is the total for discretionary spending. In this case, the resolution limits FY 2004 discretionary spending to \$784.5 billion, an increase of \$18.7 billion over FY 2003. The budget resolution does not address the size of the proposed tax cut—\$550 billion seemed most probable at press time. The resolution follows the President's priorities by calling for increased spending for national defense, homeland security, and education while holding the line or cutting spending in most other areas.

ASBMB is supporting an FY 2004 increase for NSF of about 16% overall, in keeping with the increase called for in last year's authorizing legislation.

For NSF, the conference agreement calls for an increase of \$324 million for research & related activities over the President's request, to a total of \$4.430 billion. This would be an increase of 8.4% over the FY 2003 total of \$4.083 billion for NSF research. ASBMB is supporting an FY 2004 increase for NSF of about 16% overall, in keeping with the increase called for in last year's authorizing legislation, approved by Congress and signed by the President last fall.

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Continued from previous page

students here on short-term visas. Such students, she said, are often reluctant to return home for short visits, such as vacations or family emergencies, because they frequently have great difficulty getting back into the United States. She recommended that a pre-certification or pre-approval process be implemented to allow students to avoid this problem. She also called attention to the fee required to obtain expedited approval of an H1-B visa—\$1,000, rather than the standard \$100. The larger fee speeds up approval from months to a matter of weeks or days, and she characterized this fee as "unjust and inappropriate." She also discussed in some detail what she described as the enormous and maddening difficulties, and escalating costs, that the Princeton staff has had to deal with in working with the SEVIS system. She did, however, acknowledge that the Immigration and Naturalization Service has been working hard to fix these problems.*

It may be somewhat reassuring to learn that at the recent ASBMB meet-

ing in San Diego, only two visa applicants were denied visas, and both were related to the SARS epidemic (both applicants were from Hong Kong). ASBMB staff received no reports of visa applicants being denied visas on national security grounds.

The problems that have been reported to ASBMB in recent months predate the September 2001 attacks, and while they are a large inconvenience and annoyance to the people and institutions involved, they can be largely dealt with through careful preparation by the visa applicant when he or she begins the application process. ASBMB will be establishing a webpage to provide guidance and resources to visa applicants, and will continue to call attention to this problem both to the administration and to the Congress. ☞

**The testimony and other background materials quoted from the March 26 hearing are available on the House Science Committee website: <http://www.house.gov/science/hearings/full03/index.htm>*

Guardian of the Genome Role for ATR Revealed

In order for the body to grow, reproduce and remain cancer free, the cells of the body must have a mechanism for both detecting DNA damage and a feedback mechanism for telling the rest of the cell's machinery to stop what it's doing until the damage may be fixed.

This feedback mechanism relies on checkpoints during different stages of the cell's division cycle. Dr. Eric Brown and Dr. David Baltimore, an ASBMB member and President of the California Institute of Technology, have now further defined how the ATR kinase participates in this feedback mechanism as a member of the DNA damage checkpoint machinery. Their study, which appeared in the March 1 issue of *Genes & Development*, utilizes a novel mouse model to produce mouse cells that lack the ATR kinase. The ATR deficient cells have major defects in cell cycle checkpoint regulation and halting the cell cycle. These mouse cells proceed dangerously through the


cell division cycle with chromosome breaks, demonstrating a role for ATR in maintaining the integrity of DNA.

ATR, and a similar protein ATM, have previously been shown to be involved in the response to DNA damage. However previous experiments to determine the role of ATR in preventing cells with damaged DNA from dividing have been contradictory and the precise roles of these proteins have remained obscure. The previous attempts to determine the role of ATR were hindered by the inviability of ATR deficient mice. In this report, the authors use a clever modification of the mouse knockout technology to create cells that can be forced to lose the ATR gene at will.

Cells lacking ATR and ATM did not properly halt the cell division cycle in response to ionizing radiation, a potent DNA damage-inducing agent. Both ATR and ATM contributed to the checkpoint control soon after DNA damage, but ATR was responsible for

regulating the control later in the cell cycle. ATR was also important for regulating a checkpoint signaling pathway previously described in yeast that is initiated by stalled DNA replication. Surprisingly though, ATR was not essential for cell cycle arrest in response to incomplete DNA replication, which implies that an additional mechanism must be at work. Dr. Brown and Dr. Baltimore proceeded to show that when ATR is absent, inhibited DNA replication causes the formation of a very serious form of damage known as double strand breaks. This suggests that while ATR is dispensable for the cell cycle delay in response to incomplete DNA replication, it is essential for ensuring the cells leaving this delay are free of DNA damage.

This study shows that ATR plays an important role in the maintenance of genome integrity. Without this important guardian, cells ignore DNA damage, replicate the unrepaired chromosomes and pass on damaged DNA. Ultimately, this DNA damage could lead to a loss of cell function, cellular death and diseases such as cancer. Previous work from Dr. Brown and Dr. Baltimore showed that even partial loss of ATR function can lead to increased incidence of late-onset cancer in mice.

"It is a very exciting time for the DNA damage response field. Everywhere you look in these pathways, connections can be made to how cancer is normally prevented by maintaining the integrity of the genome. Subtle, yet-to-be-determined deficiencies in any of a number of these DNA damage response molecules may broadly influence cancer risk in humans," explained Dr. Brown. 

ASBMB Members Elected to Academy

The National Academy of Sciences has announced the election of 72 new members and 18 foreign associates from 11 countries in recognition of their distinguished and continuing achievements in original research.

ASBMB members elected are:

J. Woodland Hastings, Paul C. Mangelndorf Professor of Natural Sciences, Department of Molecular and Cellular Biology, Harvard University.

Robert A. Lamb, Investigator, Howard Hughes Medical Institute, and John Evans Professor of Molecular and Cellular Biology, Northwest-

ern University.

Martha L. Ludwig, Professor, Department of Biological Chemistry, University of Michigan.

Stroud, Robert M.; Professor of Biochemistry and Biophysics and of Pharmaceutical Chemistry, University of California, San Francisco.

Weiss, Arthur; Investigator, Howard Hughes Medical Institute; and Ephraim P. Engleman Distinguished Professor, and Chair, Division of Rheumatology, School of Medicine, University of California, San Francisco.

'Meetings Within a Meeting' Concept Wins Accolades

By ASBMB President Bettie Sue Masters

There wasn't time for collection of thoughts or musing at the 94th Annual Meeting of ASBMB held from April 11-15 in San Diego due to the smorgasbord of exciting sessions offered there! Enthusiasm was expressed for every possible aspect of the meeting, beginning with the opening Fritz Lipmann Lecture by Dr. Rod MacKinnon to the seven other ASBMB awards lectures to the various sessions throughout the meeting.

The "meetings within a meeting" concept was received with accolades and, with only a few adjustments overseen by the Meetings Committee, will become the format of the annual meetings for the foreseeable future. I attended all of the meetings of the standing committees (Publications, Education and Professional Development, and Minority Affairs) and was delighted to feel the enthusiasm of their memberships in tackling new issues and programs for the coming year.

In addition, I was also invited to "drop in" on the Women Scientists' Networking Reception, the 7th Annual Undergraduate Research Poster Competition, and the Graduate/Postdoctoral and Minority Travel Awardees presentations. All of these events proved to be very well-attended by young scientists with

enthusiasm for their chosen profession but a measure of anxiety about the future. I believe that the networking that ASBMB provided at this meeting will continue to provide connections and resources for these aspiring researchers and opportunities to develop and display their scientific achievements in the future.



ASBMB PRESIDENT Bettie Sue Masters is seen here at right with 2003 Program Committee Co-Chairs Claudia Kent and Vern Schramm.

Coming in the June issue of *ASBMB Today*,
a full report on the ASBMB Annual Meeting.

The Winners: Undergraduate

All of the 40-plus entries in the Seventh Annual Undergraduate Poster Competition were, in the unanimous opinion of the judges excellent, making it difficult to select the most outstanding. The competition, held April 13 at the ASBMB Annual Meeting in San Diego, was organized by Dr. Phillip A. Ortiz, Empire State College; Dr. Marilee Benore-Parsons, University of Michigan, Dearborn; and Dr. Chris Meyer, California State University, Fullerton.

The grand prize, was sponsored by the *Biochemical Journal* published by Portland Press, Inc., and the winner, Sajid A. Noor of the University of Delaware, was presented with a certificate and \$500 check by Professor Peter Parker, member of the *Biochemical Journal* Editorial Board. Seven first prize winners each received \$100 and a certificate. The names of the winning students and titles of their abstracts are listed on the opposite page.

Many of the participating students were beneficiaries of ASBMB Undergraduate Travel Awards which included registration at the Annual Meeting free for all undergraduate students and up to \$300 for travel

expenses. In addition to seeing other students' posters, those attending also enjoyed the opportunity to meet other undergraduates to expand their networking lists.

ASBMB would like to thank this year's Poster Competition judges for their contribution to the success of this program. They were: James Zimmerman, Clemson University; J. Donald Smith, University of Massachusetts, Dartmouth; Chuck Sokolik, Denison University; Terry Woodin, NSF; Donald Voet, University of Pennsylvania; Mary Lou Caspers, University of Detroit, Mercy; Elizabeth Roberts-Kirchhoff, University of Detroit, Mercy; Susan Stapleton, Western Michigan University; Peter Kuhlman, Denison University; Martyn Gunn, Texas A&M University; Pam Trotter, Augustana University; Pam Mertz, St. Mary's College of Maryland; Robert J. Warburton, Shepherd College; Judy Voet, Swarthmore College; and George Carman, Rutgers University.



Grand Prize Winner Sajid J. Noor (right) with (at left) Organizer Phillip A. Ortiz, Empire State College; and in center Professor Peter Parker, who represented Grand Prize sponsor Biochemical Journal.

versity.

The Annual Undergraduate Poster Competition will be held next year at the ASBMB Annual Meeting and 8th IUBMB Conference, June 12 - 16 in Boston. ☺

ASBMB Poster Competition Winners

Biochemical Journal Grand Prize Winner (\$500 and Certificate)

Sajid A. Noor, University of Delaware.

Transcription of the brain creatine kinase gene in glioblastoma cells is regulated by a factor related to activator protein 2.

First Prize (\$100 and Certificate)

Lisa Leon, New Mexico State University
Purification and characterization of Hantaan Virus 246 kDa RNA-dependent RNA polymerase (RdRp).

Alan Boyle, Mississippi State University
Clustering of archaeal gene regulatory regions.

Erwin Calvo Puente, University of Delaware and Indiana University Medical Center

Mechanical stimulation by four-point bending device and fluid shear increase voltage-sensitive calcium channel Cav1.2 subunit mRNA expression in osteoblastic MC3T3-E1 cells.



First Prize Winners were (left to right) Alan Boyle; Organizer Chris Meyer of California State, Fullerton; Lisa Leon; Organizer Marilee Benore-Parsons of the University of Michigan, Dearborn; Alaina Brown; Cory Simpson; Arthur Suckow; and Erwin Calvo Puente.

Poster Competition

Alaina Brown, University of Delaware
A thermodynamic propensity scale for type II polyproline helices.



Megan Thorne, Bradley University
Heat-induced oligomerization of gp96 occurs at physiologically relevant temperatures, is irreversible, and is inhibited by ATP.

Arthur Suckow, University of Delaware and Albert Einstein College of Medicine
The ocular expression of junctional adhesion molecule.

Nicole Stites, Augustana College, showing feature of poster to Judge George Carman, Chair of the ASBMB Meetings Committee.



Discussing Poster with Judge Donald Voet is Meredith McCoy of Denison University.

Cory L. Simpson, University of Washington, St Louis

Jumping the genome: Using P-elements to map DNA packaging domains of the drosophila melanogaster fourth chromosome.

NIH Director Describes 'New Vision' for Agency

Addressing an audience of some 800 attendees, NIH Director Elias Zerhouni described the positive effects of the recently completed doubling of the NIH budget. This includes an increase in the number of new and competing research project grants funded—up 40% since 1998, from 27,000 to 38,000—and a 45% increase in the size of the average grant—from \$255,000 in 1998 to \$370,000 in 2003.

He then discussed a variety of challenges for biomedical research in the coming years: the shift in concern from acute to chronic diseases; an aging population as the baby boom generation approaches retirement; health disparities between segments of the population; the threat of emerging diseases such as SARS and other illnesses we can probably expect in the future; and the challenges of biodefense issues.

Dr. Zerhouni offered an NIH roadmap involving three major themes. First, he hailed the dawning of the



NIH Director Elias Zerhouni chats with former ASBMB President Susan Taylor, HHMI Investigator and Professor in the Department of Chemistry and Biochemistry, University of California, San Diego.

genomic era as offering unprecedented new pathways to discovery, including novel approaches and innovative technologies such as bioinformatics and computational biology, nanotechnology, and molecular libraries.

Second, he described his vision of research teams of the future, saying they will need to be large and multi-disciplinary. Coordination of effort between different locations will be key, and the groups will need to share resources.

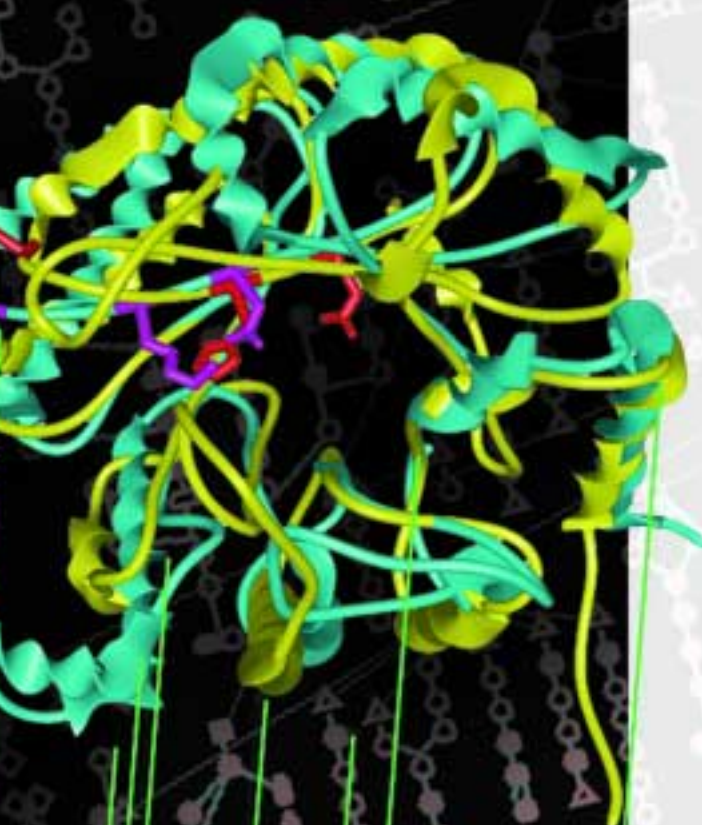
However, Dr. Zerhouni made clear that he wants to preserve the investigator-initiated strategy that has been the hallmark of NIH-funded research.

Third, he noted that the “need to more quickly translate our discoveries into practice” calls for a re-engineering of the clinical research enterprise to attain a goal of a more efficient national “bench to bedside” clinical research system. This involves establishment of integrated clinical research networks, more attention to clinical research informatics, increased clinical training of investigators, focusing on gaining and keeping the public trust, and on more emphasis on translational research—developing the fundamental discoveries of basic research into useful cures and therapies.

Dr. Zerhouni also spoke about his reasons for taking the NIH directorship, mainly his desire to “give something back” to a country that welcomed him as a young immigrant and allowed him to work hard and succeed in a demanding profession.



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Gene Linked to Neurological Disorders

Scientists at the National Human Genome Research Institute (NHGRI) and at the National Institute of Neurological Disorders and Stroke (NINDS) have identified the gene responsible for two related, inherited neurological disorders, and have, for the first time, directly implicated this gene and its enzyme product in a genetic disease.

The discovery supports further investigation of this gene family for additional neurological disease genes, research that may shed light on a range of disorders, including carpal tunnel syndrome, which affects the hands and the wrists, and the fatal degenerative disease amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease.

NHGRI and NINDS scientists found the gene responsible for Charcot-Marie-Tooth (CMT) disease type 2D and distal spinal muscular atrophy (dSMA) type V. The gene called GARS, glycyl tRNA synthetase gene, is located on chromosome 7 and encodes one of the aminoacyl tRNA synthetases, a family of enzymes vital to the cell's ability to build proteins.

"With this discovery, we now know that the GARS gene—whose function is so fundamental to biological processes—can be mutated in a fashion that results in a highly discrete neurological disease," said Francis S. Collins, Director of NHGRI.

The scientists identified four disease-related mutations and speculate that a mutated copy of GARS leads to a reduction in the activity of the gene's enzyme product. More research will be necessary to find why this produces the specific symptoms of CMT type 2D

and dSMA type V.

"This discovery is another piece of a jigsaw puzzle picture of how peripheral nerve diseases and motor neuron diseases happen," said Kenneth Fischbeck, Chief of the Neurogenetics Branch at NINDS. "It provides a more complete view of the mechanism of these diseases. This will hopefully lead to new treatment approaches. The more complete the picture, the more we know how to intervene."

Charcot-Marie-Tooth disease is a group of genetic diseases that causes muscle weakness and wasting, or atrophy, in the feet, legs, hands, and forearms, as well as diminished sensation in the limbs. CMT disease affects the peripheral nerves that travel to the muscles of the limbs and is known as a peripheral neuropathy. Estimated to affect one in 2,500 people, it is the most common inherited neurological disorder.

Some forms of CMT disease are autosomal dominant, meaning that a person needs to inherit only one defective copy of the responsible gene to acquire the disease. Other forms are autosomal recessive, meaning both copies of the gene must be defective to result in illness. There is also a form of CMT that is X-linked, meaning that the responsible gene is located on the X chromosome, one of the two sex chromosomes.

CMT typically begins with mild symptoms—foot and ankle weakness and fatigue. Eventually, toes and the fingers curl due to weakness and atrophy in the small muscles of the feet and the hands. Writing and other functions of the hands become difficult, there is a loss of ability to distinguish between hot and cold, and the sense of touch is also affected. There is


no cure but there are treatment options, including physical therapy and bracing.

Distal spinal muscular atrophy (dSMA) disease is a type of SMA that affects the hands and the feet. The GARS gene is implicated in dSMA type V. Its symptoms of muscle weakness and atrophy in the hands and the forearms mirror those of CMT type 2D, except that people with dSMA type V

"With this discovery, we now know that the GARS gene can be mutated in a fashion that results in a highly discrete neurological disease."

*—Francis S. Collins,
Director of NHGRI.*

do not experience sensory loss. dSMA type V is also an autosomal dominant genetic disorder, like CMT type 2D.

Even though the GARS gene is implicated in only two specific types of Charcot-Marie-Tooth and spinal muscular atrophy, this discovery will guide researchers in studying other forms of these diseases, as well as other neurological disorders. Because carpal tunnel syndrome affects the hands and the forearms, scientists may now investigate whether the GARS gene plays some role in this disorder. Two defective forms of the gene implicated in Lou Gehrig's disease are also known to interact with a GARS family member. 

Seeking to Understand Molecular Basis of Post-Operative Delirium in the Elderly

A new clinical trial at Duke University Medical Center seeks to unravel the genetic and molecular basis for delirium, a common complication afflicting elderly patients after major surgery.

Delirium, which can prolong the recovery of elderly surgical patients, is a mental state characterized by impaired cognitive function, fluctuating levels of consciousness, disturbed sleep-wake cycles and agitation. Although difficult to measure, the incidence of delirium has been reported to be as high as 60%, with the elderly at the highest risk, the researchers said.

"The proportion of elderly surgical patients is increasing, so we feel it is important to gain a better understanding of this condition," said Duke pharmacologist and ASBMB member, Dr. Madan Kwatra, principal investigator of the study. "This is the first such study looking at the role of genetics in the development of delirium."

The trial is supported by a \$2.57 million grant from the National Institute on Aging, part of NIH. This month, Duke researchers will begin enrolling 250 patients over the age of 65 who are undergoing either knee or hip joint replacement procedures.

The joint replacement surgeries will be performed by orthopedic surgeon T. Parker Vail, M.D., Director of Duke's Total Joint Replacement Center.

The researchers point out that delirium is almost always a transient condition, and although it usually dissipates with time, over the short-term it has been associated with complications,

delayed recovery, longer hospital stays and even death. They estimated that post-operative delirium annually costs the U.S. health care system between \$8 billion and \$10 billion.

Dr. Kwatra said that there are many hypotheses for the cause of post-operative delirium, and it is likely that there are numerous factors involved. One theory the Duke team is exploring holds that reduced levels of oxygen in the brain during surgery can lead to a decline in the levels of certain neurotransmitters such as acetylcholine, that one nerve cell uses to signal its neighbor to trigger a nerve impulse.

Since the researchers do not have access to actual nerve cells in the brain, they are studying molecular changes in circulating red blood lymphocytes, which share many of the same responses to neurotransmitters as nerve cells.

"Preliminary data has shown that the act of surgery alone causes a twofold or greater increase in the expression of 466 individual genes, as measured in red blood cells," Dr. Kwatra explained. "The magnitude of this surgery-inducing change in gene expression is unprecedented and raises the probability that some of these genes may cause or contribute to post-operative delirium."

Using a comprehensive battery of cognitive and psychological tests before and after surgery, the researchers will first identify those patients who become delirious. Blood samples will also be taken before and after surgery.

The researchers then plan to employ "DNA microarray" (also known as the

gene chip) technology to measure the activity of more than 12,000 known human genes in lymphocytes. This analysis will help identify delirium-associated genes, the researcher said. In addition, the team will use protein chip technology and 2D-gel electrophoresis to determine delirium-associated proteins.



Dr. Madan Kwatra

"Identification of genes associated with post-operative delirium could lead to new insights that could help us better identify patients at high risk for developing delirium or even develop a potential drug for treating it," Dr. Kwatra said.

"The average age of a patient undergoing joint replacement surgery is about 68 years," Dr. Vail explained. "Patients with delirium often have longer hospital stays and more difficult recoveries. The results of this study should help us get a handle on how even subtle changes in mental status can adversely impact a patient's ability to recover smoothly from surgery."

He said that current strategies to prevent or reduce delirium are varied. "During surgery, we try to maintain optimal oxygenation of the blood, to keep blood pressure as normal as possible and to target the anesthesia to the patient. Where possible, for example, we try to use regional anesthesia as a way of avoiding the possible adverse effects of general anesthesia."

After the surgery, he added, the care

Continued on next page

Rowena Matthews Shares Her 25-Year Pursuit of a Biochemical Mystery

A SBMB member Dr. Rowena G. Matthews, who recently delivered the 2003 Henry Russel Lecture at the University of Michigan, has been doing bold, creative biochemistry research since the early 1960s at that University. However, it has only been in the last decade that her findings have made her famous.

"I'd like to thank the NIH for funding this work when we really didn't know that it had any human health relevance," she said toward the end of the 2003 Henry Russel Lecture she delivered in the University's Michigan League ballroom.

Starting with Vitamin A in the Harvard lab of future Nobel Prize winner George Wald as an undergraduate, Dr. Matthews moved on to Vitamin B2 as a graduate student at Michigan. Here, she studied under the late Dr. Vincent Massey, who was a Russel lecturer in 1995.

As a chemist, Dr. Matthews' interest was in the role vitamins play in helping to catalyze chemical reactions in living cells. These chemicals are critical for life, but we can't make them ourselves; we must get them from our diet, she explained.

She gravitated toward a particular nutrient, folate, or folic acid, which was known to work with an enzyme with an impossibly long name. This enzyme, methylenetetrahydrofolate reductase (or MTHFR for short) is important for the conversion of homocysteine to methionine, an essential component for the synthesis of human proteins. Starting in 1978, shortly after joining the U-M faculty as a research investigator in biophysics, Dr. Matthews and colleagues began a

25-year pursuit of the intricacies of the chemical structures and functions of MTHFR and folate.

In 1995, just as she and McGill University geneticist Dr. Rima Rozen had identified a gene for the enzyme MTHFR, cardiologists had begun discussing an apparent link between blood homocysteine levels and heart disease.

Dr. Matthews knew that "our enzyme," MTHFR, was at least one of the proteins involved in managing blood homocysteine levels. It wasn't long before she and Rozen had found a single-nucleotide difference in the genes of some people that apparently affected their ability to make MTHFR. Indeed, this tiny polymorphism was found to correlate with varying levels of homocysteine and folate. Humans with the variant on both chromosomes had elevated levels of homocysteine, particularly if their folate intake was low.

She and University of Michigan biochemist Dr. Martha Ludwig, also an ASBMB member, went on to show how, structurally, the one-basepair difference resulted in a form of MTHFR that wouldn't function as it should. People carrying two copies of this allele have a particular need for folate to keep their homocysteine in check.

A few years ago, the U.S. Department of Agriculture began requiring folic acid supplements in grain products. Since then, there has been an average drop of 22 percent in the homocysteine levels of Americans, she said. Dr.




Photo by Martin Vloet

Dr. Rowena Matthews

Matthews, along with "almost everyone I know in the homocysteine field," takes vitamin supplements with folate.

The Russel Lecture is the highest award the university of Michigan can bestow on a senior faculty member, and it is given in recognition of exceptional research and teaching. Dr. Matthews is the G. Robert Greenberg Distinguished University Professor of Biological Chemistry, and a Senior Research Scientist in the Life Sciences Institute and the Biophysics Research Division. Last year, she was elected a member of the National Academies of Sciences.


Nominators for Dr. Matthews cited her "first-rate intellectual rigor and clarity of purpose," calling her work "comprehensive, comprehensible and important." They said she is "exceptional for the breadth of her scientific and technical ability." 

This article was written by Karl Leif Bates of the University of Michigan Life Sciences Institute.

Continued from previous page

team tries to make the recovery period as stress- and pain-free as possible.

"What is optimal for the benefit of the patient's recovery is paying close attention to the whole continuum of care, from the pre-operative screening to the actual surgery to the time in the recovery unit," Dr. Vail said. "We hope the results of this study will help us improve the outcomes for these patients."

The multidisciplinary team includes researchers from geriatrics, psychology, nursing, psychiatry, anesthesiology, bioinformatics and molecular pharmacology. 


William Smith to Chair Department at Michigan

The University of Michigan Board of Regents has named Dr. William L. Smith, Ph.D., Chair of the Medical School's Department of Biological Chemistry and the Minor J. Coon Professor of Biological Chemistry. Dr. Smith, an ASBMB member and associate editor of the *Journal of Biological Chemistry*, took office May 1. He formerly was Chair of Biochemistry and Molecular Biology at Michigan State University,

"I am very pleased that Bill Smith has accepted our offer to become the Medical School's newest department Chair," said Allen S. Lichter, M.D., Dean of the University's Medical School. "Bill is a distinguished scientist with nearly 30 years of expertise in

prostaglandin biochemistry and an active research program, which has been continuously funded by NIH since 1976. His leadership experience will be invaluable as our Department of Biological Chemistry begins an important period of growth and change."

"Biological chemistry is a department in transition," said Dr. Smith. "There have been many retirements and departures over the last five years, which gives us a valuable opportunity to reshape the department. We anticipate hiring 15 primary faculty over the next five to 10 years.

Recruitment will be the department's biggest challenge, but also our biggest opportunity." 

MIT Cuts Back as Endowments Shrink

The Massachusetts Institute of Technology is to slash \$33m from its academic and administrative budgets from July to compensate for a decline in its endowment income.

The *Manchester* (UK) *Guardian* reports that after peaking at \$6 billion in 2000, MIT's endowment income has fallen to \$5.5 billion. The British newspaper quoted MIT provost Robert Brown as saying that this had left the institution as the "poorest of the wealthy" universities in the U.S.

State universities and colleges in the U.S. are facing even worse difficulties. In January, Californian announced cuts of \$530 million (10.5%) in funding for the state's 108 colleges.

John Curry, MIT's Executive Vice-President told the *Guardian* that the institution had made some mid-year adjustments this year, and were delaying filling some positions to balance the increase in costs in such things as utilities and, in particular, snow clearance. He expects the fiscal year which ends in July, to come out "very close to balanced." However, in the next fiscal the budget is being cut 5%, which a spokesperson for MIT termed "significant but not severe."

MIT's endowment is comparably limited because of its smaller alumni. They have just over 6,000 students this year, and there have been fewer in the past.

Over the last five years MIT has increased its average scholarship to students by more than \$6,000 to \$19,227, while recruiting 300 new faculty members.

2004 Budget Resolution continued

Continued from page 7


Regarding the NIH, funding for discretionary health programs (which includes NIH funding), the conference agreement calls for \$49.62 billion, equal to what the Administration proposed and an increase of \$152 million (0.3%) over FY 2003. However, NIH itself is limited to about a 2% increase, to \$27.9 billion from the \$27.3 approved in FY 2003.

Senator Arlen Specter (R-PA) had an amendment included in the Senate version of the budget resolution that assumed an increase for NIH of 10% in FY 2004, bringing NIH in the Senate version to \$29.7 billion. However, this amendment was not accepted in conference.

That the Specter amendment was not adopted in the final version of the budget resolution does not help NIH in its struggle to maintain a decent funding level in the post-doubling era. However, the absence of the amendment is

by no means fatal. Congressional appropriators are very good at finding creative ways to fund programs in spite of unfriendly budget resolutions.

In addition, the biomedical research community needs to keep in mind that it could not have a more staunch friend and champion on Capitol Hill than Senator Specter. A Specter staff member indicated in a discussion with ASBMB Today that even though the Senator's amendment to the budget resolution did not survive the conference committee, he intends to continue to pursue increases in NIH funding during the appropriations process this spring (although it is unclear how successful this effort will be, given the overall low number for discretionary spending contained in the resolution).

ASBMB will of course continue to advocate for a 10% increase in NIH funding in FY 2004. 

ASBMB Member Is New Chair Of American Cancer Society

John Lazo, Professor and Chairman, Department of Pharmacology, University of Pittsburgh School of Medicine, is the new chair of the American Cancer Society (ACS) Extramural Grants Council. Dr. Lazo, Co-Director of the Molecular Therapeutics/Drug Discovery Program at the University of Pittsburgh Cancer Institute, assumed his role at ACS in April.

As chair of the Extramural Grants Council, Dr. Lazo, an ASBMB member, will lead a multidisciplinary panel of midlevel and senior scientists to determine ACS funding for investigator-led projects taking place at leading cancer centers across the country, as well as training grants in selected health pro-

fessions. In 2002, the council approved funding for research and training grants amounting to more than \$110 million. Under Dr. Lazo's leadership, the council also will advise the ACS on nationwide research policy issues.

Dr. Lazo was appointed chair following several years of volunteer service, first as a member of a peer review committee evaluating applications for funding and then as a member of the council. A researcher himself, Dr. Lazo has made seminal research contributions to the development of novel therapeutics that interact with molecular and biochemical targets to control the growth and spread of cancer.

The ACS, a nationwide, community-



Dr. John Lazo

based voluntary health organization, is the largest source of private, not-for-profit cancer research funds in the United States, second only to the federal government. The ACS, headquartered in Atlanta, has state divisions and

Roland Lill Awarded 2003 Leibniz Prize

ASBMB Member Roland Lill, Professor of Cell Biology/Biochemistry, Philipps University, Marburg, Germany, is one of 11 recipients of Germany's most prestigious research-funding award, the Leibniz Prize. Each prize is accompanied by a grant of 1.55 million euros (approximately \$1.07 million U.S.) for use in research projects over a period of five years.

In his studies in the intensively-researched field of mitochondrial biogenesis, Dr. Lill discovered a completely new facet of the mitochondrial function. With the help of his study group, he discovered that mitochondria are essential for the formation of the so-called iron-sulphur proteins. The experiments, which were originally carried out on yeast, revealed a dozen mitochondrial proteins which play an important part in the biogenesis of iron-sulphur centers

in proteins of the whole cell. Mutations in the equivalent transport proteins in humans are already known as the causes of two genetically-caused diseases. Dr. Lill has opened up an entirely new branch of cell biology with this discovery, and has at the same time provided a convincing example of the significance of model organisms in the biosciences.

Dr. Lill studied chemistry in Ulm and Munich and obtained his doctorate in biochemistry. He went on to two years of postdoctoral research at the University of California in Los Angeles, followed by a post as scientific assistant at the University of Munich's Institute for Physiological Chemistry from 1990 to 1995. From 1996 he held a C3 professorship, and from 2002 a C4 professorship, at the Institute for Clinical Cytobiology and Cytopathology at Philipps University in Marburg.

Satellite Meeting Cancelled

The ASBMB satellite meeting, Education in the Molecular Life Sciences: The Central Role of Biochemistry and Molecular Biology, scheduled for July 18-20 in Toronto has been cancelled.

Many of the lectures and hands-on demonstrations planned for that meeting will be incorporated into the 2004 ASBMB Annual Meeting and 8th IUBMB Conference to be held June 12-16, 2004 in Boston. Please continue to check the ASBMB Meetings website for details.

by John D. Thompson, Editor

Pharmaceutical Companies Turning to 'Virtual Reality'

Some pharmaceutical companies and research institutions are looking to virtual reality (VR) for assistance in drug design and testing, in the hope of avoiding unnecessary experiments and expensive clinical trials.

In such settings, molecular modelers, medicinal chemists, and toxicologists can be found making decisions together in a VR movie theatre, conducting real-time simulations of different design concepts, than wasting days sending data back and forth between separate work stations in different rooms. While a new way of team working for the pharmaceutical industry, it is commonplace in the oil industry, where large amounts of seismic and geological data are visualized and manipulated by a group of experts.

According to BioMed Net News, Janssen Pharmaceuticals and Astra-Zeneca have embraced VR design, as

have a molecular design group at the University of Toronto and surgeons at the University of Manchester in Britain.

Going one step further, Entelos, a Menlo Park, California, has created virtual reality models of human patients which researchers can use to simulate clinical tests with the goal of reducing time and cost, and improving the design of the real clinical trials. Last year, for example, Johnson and Johnson tested a new treatment for type II (insulin-independent) diabetes with Entelos, and was able to select a single high dose of the drug for testing with less real live volunteers than would have been needed to screen a wide range of doses. The company is the first corporate partner in a new alliance set up by the American Diabetes Association and Entelos to promote the development of novel treatments.

Drug Discovery Collaboration

Inpharmatica Ltd, a British informatics-driven drug discovery company, and Galapagos Genomics NV, the Belgian functional genomics company, have entered into a drug discovery collaboration.

Under the terms of the collaboration, Inpharmatica will use its chemogenomics technology platform, PharmaCarta™, to determine the druggability of targets selected by Galapagos in its inter-

nal disease programs. Galapagos will provide Inpharmatica access to its PhenoSelect™ adenoviral expression platform for a subset of Inpharmatica's novel nuclear receptors. Inpharmatica will use the adenoviral technology in its in-house programmes to further validate and prioritise these receptors as targets for drug development. Financial terms of the agreement were not disclosed.

King Pharmaceuticals Drops Elan Purchase

King Pharmaceuticals Inc. is walking away from an \$850 million deal to buy the primary care business unit and two brand-name drugs of Ireland-based Elan Corp. PLC.

The Bristol, Tenn.-based drug company claims that Elan committed "various breaches and misrepresentations" involving the asset purchase agreement signed by the companies in January of this year. Under the deal, King would have acquired from Elan the rights to the muscle relaxant Skelaxin and the insomnia drug Sonata, as well as Elan's 400-person sales staff in the United States. Subsequently, King suggested expressed concern that a Federal Trade Commission probe could jeopardize the agreement. The FTC said it was investigating whether Elan illegally suppressed competitors' efforts to produce generic rivals to Skelaxin, known in its generic form as metaxolone.

Elan, a cash-strapped Dublin company that was once the most valuable publicly held company in Ireland, with a lawsuit in New York Supreme Court to force King to complete the deal. The case was set for trial May 15.

In a separate development, King shareholders sued the company in U.S. District Court in Greeneville, Tennessee, claiming it had failed to disclose that its rebate and pricing practices subjected it to heightened government scrutiny.

St. Jude 's to Manufacture Investigative Drugs, Vaccines

St. Jude Children's Research Hospital has become the only pediatric cancer research center in the United States to open a Good Manufacturing Practices (GMP) facility for producing vaccines, drugs, proteins, gene-based molecules and other biological products. The facility also has Biological Safety Level (BSL) 3 laboratories to accommodate work with microorganisms that must be specially contained.

The GMP facility, which meets standards of operation established by the U.S. Food and Drug Administration (FDA), will allow the research center to produce such products as a three-tiered AIDS vaccine currently under develop-

ment at St. Jude, a cholera virus, vaccines for influenza and parainfluenza, immunotherapy proteins, and other drugs and diagnostic products.

The facility is designed to support the hospital's goal of swiftly taking research from the laboratory to the clinic. The GMP facility's mission is to solve the problem of how to engage major pharmaceutical companies that are reluctant to make a large up-front investment in developing products that will have a limited market.

"The GMP facility will be key to our strategy of fast-tracking breakthroughs in basic research into products that we can bring through initial clinical tri-

als," said Hospital Director Arthur Nienhuis. "Pharmaceutical companies can then take these vaccines and drugs through final development and bring them to market so children can benefit from them. Any royalties from such products would be put back into research that will help us develop more cures for childhood diseases."

Could Prozac Beat Cancer?

The anti-depressant drug Prozac could help doctors tackle cancer, according to a UK-based research team. Researchers from Birmingham University looked at the effects of a variety of chemicals on cancer cells of a type called Burkitt's lymphoma, and claim to have found that even moderate doses of Prozac appeared to trigger cell death. This type of cancer, a type of non-Hodgkin's lymphoma, frequently develops in AIDS patients, whose weakened state means that conventional chemotherapy may not be appropriate.

Ken Campbell, of the Leukemia Research Fund, welcomed the research, saying, "While there is still some way to go before doctors can start prescribing these drugs to patients with this cancer, these findings could be of major importance to those patients with the AIDS-related form of the disease, and to those patients who are not in a position to tolerate intensive chemotherapy. Alternative treatments such as this which are inexpensive and have low levels of toxicity would be major step forward in the treatment of this disease."

Biotech Regulations Impede Crop Domestication

An increasing amount of genetic engineering in agriculture closely resembles the conventional crop breeding that has been done for thousands of years, and unnecessarily stringent regulation of this type of gene research is choking off its usefulness, one expert says in a new policy forum in *Science*.

Government regulations that lump all types of genetic engineering together, instead of making reasonable distinctions between differing technologies, is stifling research, favors the efforts of large and wealthy corporations, and does little or nothing to protect the public safety, according to Steven Strauss, Professor of Forest Science at Oregon State University.

In a policy published in *Science*, Dr. Strauss said the time has come

to dramatically reduce the level of government regulations when genetic engineering is based on "native or homologous" genes, or those commonly found within related plant species.

"For centuries with conventional crop breeding we created plants that never before existed in nature, and no one thought twice about it," he said. "Now, as it becomes increasingly easier and less expensive to map out the genomes of different crop plants, we have an opportunity to make similar and more precisely designed types of changes with genetic engineering. But the current environment of regulations and oversight is making this almost impossible for all but large, wealthy companies."

Calendar of Scientific Meetings

JUNE 2003

Transposition, Recombination and Applications to Plant Genomics A Plant Sciences Institute Symposium

June 5-8 • Iowa State University, Ames, Iowa
Contact: Gulshan Singh
Ph: 515-294-7978; Fx: 515-294-2244; E-mail: pbmb@iastate.edu
Website: <http://molebio.iastate.edu/~gfst/phomepg.html>

AAPS Pharmaceutical Technologies Summer Conference

Jun 8-13 • Lansdowne, Virginia
Contact: AAPS Meetings Department
Ph: 703-243-2800; Fx: 703-243-9532; Email: meetings@aaps.org
Website: <http://www.aapspharmaceutica.com/meetings>

Symposium on Nitric Oxide: A Janus Molecule

June 13-14 • Rome
Contact: Dr. A. Bocedi or Dr. R. Melissano, University of Roma Tre
Ph: 39-06-55173200; Fx: 39-06-55176321
Email: bocedi@uniroma3.it or melissan@uniroma3.it

AAPS Conference on Advances in Pharmaceutical Processing

June 19-20 • Parsippany, New Jersey
Contact: AAPS Meetings Department
Ph: 703-243-2800; Fx: 703-243-9532; Email: meetings@aaps.org
Website: <http://www.aapspharmaceutica.com/meetings>

4th International Symposium on Hormonal Carcinogenesis

June 21-25 • Palau de la Musica, Valencia, Spain
Contact: Tandria Price/Dr. Jonathan J. Li
University of Kansas Medical Center
Ph: 913-588-4744; Fx: 913-588-4740; Email: tprice@kumc.edu
Website: <http://www.kumc.edu/hormonecancers>.

ECM IV: Bone Tissue Engineering

June 30-July 2 • Davos, Switzerland
Contact: R. Geoff Richards, Dr. Sci. M.Sc. biol.
Programme Leader AO Research Institute,
Bioperformance of Materials & Devices
email: geoff.richards@ao-asif.ch; Ph: ++41 (0) 81 4142 397
<http://www.aofoundation.org/events/ao/ecm/ECMIV/index.shtml>

JULY 2003

FEBS 2003 Meeting on Signal Transduction

July 4-8 • Brussels
Contact: V. Wouters; Ph: 32 2 7795959; Fx: 32 2 7795960
Email: febs@iceo.be; Website: <http://www.febs-signal.be>

19th International Congress of Biochemistry and Molecular Biology

July 20-24 • Toronto, Canada
Contact: Congress Secretariat; Ph: 613-993-9431
Email: iubmb2003@nrc.ca
Website: <http://www.nrc.ca/confserv/iubmb2003/>

AUGUST 2003

First Gordon Research Conference on Cellular Osmoregulation: Sensors, Transducers and Regulators

August 15-20 • Roger Williams University, Bristol, RI
Contacts: Janet M. Wood (jwood@uoguelph.ca) and Karlheinz Altendorf (altendorf@biologie.Uni-Osnabrueck.de)
Website: <http://www.grc.uri.edu/programs/2003/cellosmo.htm>
Application: <http://www.grc.org/scripts/dbml.exe?Template=/Application/apply1.dbm>

Sixth International Symposium on Mass Spectrometry in the Health and Life Sciences: Molecular and Cellular Proteomics

August 24-28 • Fairmont Hotel, San Francisco
Contact: Marilyn Schwartz; Ph: 415-476-4893
Email: sfms@itsa.ucsf.edu;
Website: <http://donatello.ucsf.edu/symposium>

Biology of Molecular Chaperones Mechanisms and Regulation of Chaperones

August 30-September 4 • Tomar, Portugal
Contacts: Dr. Josip Hendekovic or Caroline Walford
Ph: + 33 388 76 71 35; Fx: + 33 388 36 69 87
Website: http://www.esf.org/esf_euresco
Please quote 2003-15 in any correspondence

16th International Mass Spectrometry Society Conference

August 31-September 5 • Edinburgh, Scotland, United Kingdom
Contact: John Monaghan; Email: johnmonaghan@ed.ac.uk
Website: <http://www.imsc-edinburgh2003.com>

SEPTEMBER 2003

NMR in Molecular Biology EuroConference on Structural Genomics: From Gene to Structure as viewed by NMR

September 5-10 • Obernai (near Strasbourg), France
Contact: Dr. Josip Hendekovic or Anne-Sophie Gablin
Ph: + 33 388 76 71 35; Fx: + 33 388 36 69 87
Website: http://www.esf.org/esf_euresco
Please quote 2003-14 in any correspondence

Sixth Conference on Protein Expression in Animal Cells

September 7-11 • Mont-Tremblant, QC, Canada
Contact: Marc Aucoin, Technical Officer
Biotechnology Research Institute; Email: 6thPEACe@nrc.ca
Website: <http://www.bri.nrc.ca/6thPEACe>

Third International Conference on the Pathobiology of Proteoglycans

September 20 - 25 • Parma, Italy

Contacts: Roberto Perris, Chair and Ariane De Agostini, Co-chair
Clinique de Stérilité de d'Endocrinologie gynécologique,
Hôpital Cantonal Universitaire de Genève
Ph: 41-22 / 382.43.46; Fx: 41-22 / 347.59.79
Email: Ariane.Deagostini@medecine.unige.ch
Website: <http://www.assb.biol.unipr.it/PG2003>

OCTOBER 2003

OARSI's 2003 World Congress on Osteoarthritis

October 12-15 • Palais am Funkturm, Berlin

Contact: OARSI Headquarters; Ph: 202-367-1177; Fx: 202-367-2177
Email: oarsi@oarsi.org; Website: www.oarsi.org

AAPS Workshop on Method Validation and Measurement of Biomarkers in Nonclinical and Clinical Samples in Drug Development

Cosponsored with Clinical Ligand Assay Society

October 24-25 • Salt Lake City, Utah

Contact: AAPS Meetings Department
Ph: 703-243-2800; Fx: 703-243-9532; Email: meetings@aaps.org
Website: <http://www.aapspharmaceutica.com/meetings>

AAPS Annual Meeting and Exposition

October 26-30 • Salt Lake City, Utah

Contact: AAPS Meetings Department
Ph: 703-243-2800; Fx: 703-243-9532; Email: meetings@aaps.org
Website: <http://www.aapspharmaceutica.com/meetings>

Cytokines, Signalling & Diseases

Oct. 26-30 • Cairns, Australia

Event Host: International Society for Interferon and Cytokine Research; Website: <http://www.cytokines2003.conf.au/>

FEBRUARY 2004

The 1st Gordon Research Conference on The Biology of 14-3-3 Proteins

February 22-27 • Ventura, California

Chairs: Haiyan Fu & David Klein, Vice-Chair: Alastair Aitken
email: hfu@emory.edu
Website: <http://www.grc.org/programs/2004/14-3-3.htm>

JUNE 2004

American Society for Biochemistry and Molecular Biology Annual Meeting and 8th IUBMB Conference

June 12-16 • Boston, Massachusetts

Contact: Kelly Gull; Ph: 301-634-7145; Fx: 301-634-7126
Email: kgull@asbmb.faseb.org; Website: www.asbmb.org/meetings

Department Heads Take Note:

ASBMB Offers Free Membership to New Ph.D.s

ASBMB is now offering a free one-year Associate membership to all students who have, within the past year, earned a Ph.D. degree in the molecular life sciences or related areas.

ASBMB implemented this program as a way to recognize the significant accomplishment of earning the Ph.D., and to provide new Ph.D.s with something tangible and of economic value. Membership in ASBMB brings with it a free subscription to the online versions of the *Journal of Biological Chemistry* and *Molecular and Cellular Proteomics*, as well as subscriptions to *The Scientist* and the Society's magazine, *ASBMB Today*, discounts on other publications, and a host of other benefits.

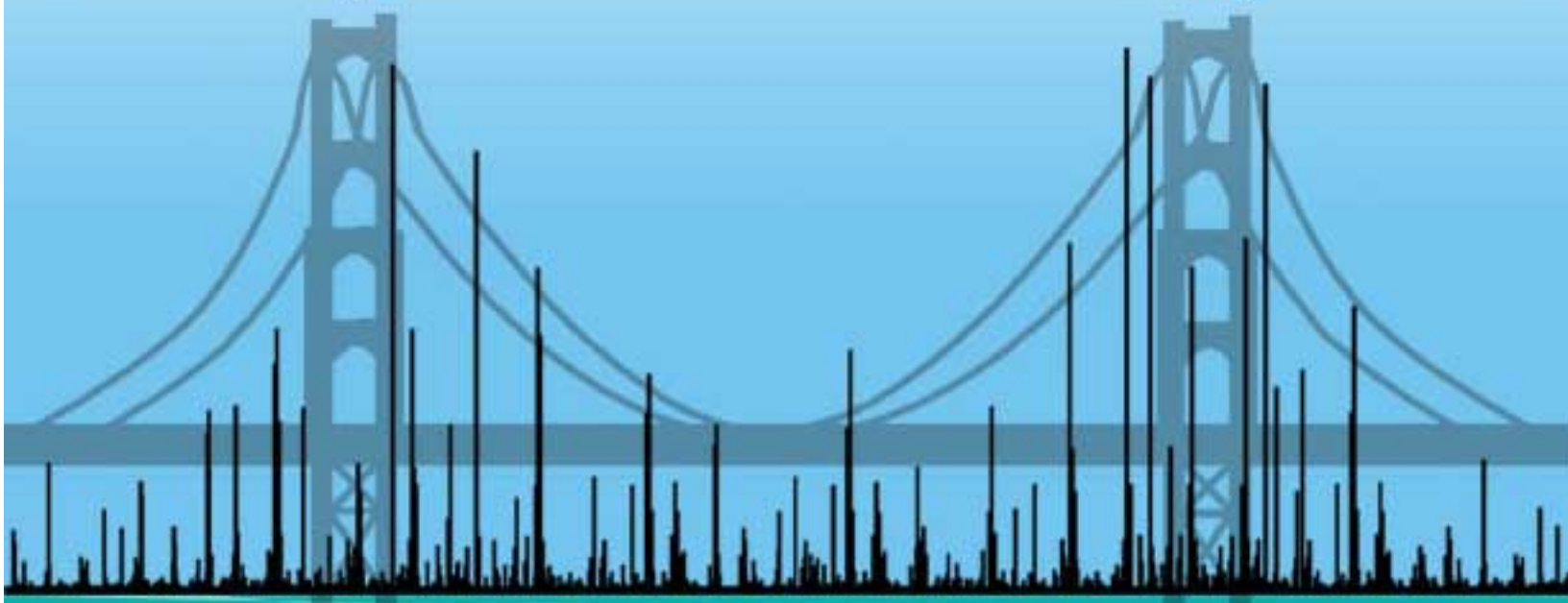
The Society is asking department chairs to provide ASBMB with the names and addresses of each new Ph.D. recipient from their institutions. Upon receipt of this information, we will write the new Ph.D.s to congratulate them on their accomplishment and offer the free one-year membership in ASBMB. Names and addresses of the new Ph.D.s should be sent to:

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Email: asbmb@asbmb.org

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Sixth International Symposium on
Mass Spectrometry in the Health & Life Sciences:
Molecular & Cellular Proteomics



August 24 - 28, 2003

San Francisco

For information visit our website at
<http://donatello.ucsf.edu/symposium>

or email sfms@itsa.ucsf.edu