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AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY



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CLARA C. BENSON

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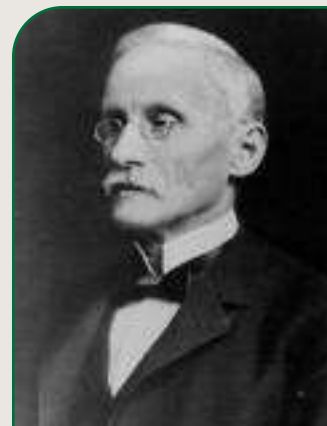
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# Evolution Is No Theory

To the Editor:

Professor Nebert is correct in saying evolution is no theory, just as relativity or quantum mechanics or laws of electromagnetism or of cosmic evolution are not theories, that is they are not speculations or unproven hypotheses but are grounded in experiment and prediction, but this is to use the word theory in a most trivial sense.

In fact these theories are amongst the most glorious accomplishments of human intelligence which provide science with systematic generalizations of the laws of nature without which our understanding would be fragmentary and incapable of guiding and directing new understanding and discovery. Each of these theories play a role in science education, in the planning of experiments and the interpretation of results as a consequence of which theories are continually being revised and expanded.

This is particularly well illustrated with the theory of relativity wherein the experimental demonstration of the gravitational bending of light was key experimental discovery in studying the role of gravity in the formation of galaxies and the distribution of mass in the cosmos.

*Robert J. Rutman, Ph.D.*  
*Professor Emeritus of Biochemistry*  
*and Molecular Biology*  
*Dept. of Animal Biology*  
*University of Pennsylvania*

## Longing for Atlantic City

To the Editor:

This note in response to the literature I've been receiving, almost every week it seems, having to do with the celebration of the 100th anniversary of the society in San Francisco.

It seems to me that Atlantic City would have been a more appropriate for the occasion. For years it had been the home for the spring meeting of FASEB. True, the old icons like Haden Hall and the Marlborough Blenheim, to name two are long gone, but the convention center still stands.

I'm sure that in its rooms there still echoes the sounds of many hot sessions like those of the oxphos wars between the Johnson Foundation and the Enzyme Institute. But I guess there aren't many members who would appreciate this nostalgia nor even long for it. Atlantic City in April, as I recall, left a lot to be desired. Any how, happy one hundredth ASBMB.

*Charles J. Parker Jr., Ph.D.*  
*Retired, Hayes, VA*

### TELL US WHAT YOU THINK

We appreciate receiving letters that are suitable for publication regarding issues of importance or commenting on articles appearing in *ASBMB Today*. 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.



*Dr. Judith Bond*

# If you want to know who we are... Come to the Centennial meeting!

**T**here is a certain air of excitement these days in the ASBMB office as we enter the final stages of preparation for the Centennial meeting of the JBC and the Society, during the first week of April 2006 in San Francisco. The Abstracts have been submitted (approximately twice as many as last year), the convention housing is filling up fast, and the travel fellowships have been awarded to undergraduate students, graduate students, postdoctoral fellows, and minority trainees.

The new competitive Clara Benson travel scholarships, for female scientists within five years of obtaining the PhD, were awarded to four worthy recipients; this award was named after the only woman scientist of the 81 original members of the Society. The recipients of the Society Awards and the FASEB Excellence in Science Awards are preparing their talks, as are the Symposia presenters and Plenary speakers.

We will have many very distinguished biochemists that have had great impact on our discipline joining us for formal and informal interactions. This includes 10 Nobel Laureates, many past officers of our Society, and leaders of our journals and departments.

The 5K Fun Run is oversubscribed, as are the JBC Workshops (How to

publish in the JBC) led by JBC Associate Editors. Scientific technique workshops are planned, as well as special get-togethers for undergraduates, graduate students and postdocs, minority scientists, and women. There will be many opportunities to interact with others (experienced and aspiring scientists) informally at posters, thematic receptions, our own lounge area, and at our Special Events.

The informal interactions will include 'conversations' in the central lounge in the Moscone Convention Center, in an area where most of our scientific sessions will take place. In this lounge we will have posters displaying the history of our Society put in the context of world history.

There will be videos of selected members of the society to watch, displays of the art of JBC covers, drinks and chocolates, in addition to 'conversations with distinguished members'. All our members, especially trainees and junior scientists, are encouraged to come to the lounge and meet other members and talk about science and careers.

The Opening Tabor Lecture by Charles Richardson with an introduction by Arthur Kornberg will be followed by a gala reception on Saturday night 1 April. The Birthday Bash on Sunday night will feature

tastes and music of San Francisco, with lots of entertainment, a dunk tank for several JBC Associate Editors, and a skit adapted from the Mikado for the special occasion. On Monday night the San Francisco Symphony Orchestra has been engaged for a night of music for our members and friends.

These activities only happen because of the work (blood, sweat and tears) of our staff and the volunteers (society members). Of special note for the upcoming meeting are the 2006 Program Planning Committee led by George Carman and Laurie Kaguni, and the Centennial Committee led by Bettie Sue Masters; you will hear more about these and other groups and individuals in the next issue of this magazine.

Meanwhile, planning has already started for the 2007 Annual Meeting. The Program Committee for 2007 is headed by Ben Cravatt and Mike Rosen (See picture on page 21 of the planning session in San Diego, January 2006). If you have to miss the 2006 meeting, start planning for the April 2007 meeting.

If you want to know who we are . . . where we have been . . . where we are going, come to our annual meetings!

*Judith Bond  
President, ASBMB*

by Peter Farnham, CAE, ASBMB Public Affairs Officer

# Defense, Homeland Security, Physical

**C**The Bush Administration released its budget proposal for FY 2007 on February 6, and as expected, defense and homeland security spending were slated for small increases. Spending for research and development in the physical sciences also went up. However, most other discretionary spending, including for biomedical research, was flat-funded or cut; thus the news for science is at best mixed this year. The basic numbers:

The budget proposed \$2.77 trillion in total spending and assumes a \$354 billion deficit this year (down about \$75 billion from last year). Discretionary spending, including all science programs, would increase a little over 3 percent, but almost all of this increase is concentrated in defense and homeland security spending.

Discretionary spending at the Department of Health and Human Services, the agency in which the National Institutes of Health is found, is reduced by \$67.6 billion, and NIH spending remains at the 2006 level in this budget proposal—which at \$28.58 billion, is itself \$66 million below FY 2005. See the accompanying article by Carrie Wolinetz, with FASEB's Office of Public Affairs, for more information on proposed NIH funding this year.

## **"Competitiveness" The New Buzz Word**

One of the few bright spots for science in the proposed budget is the increases proposed for spending in sci-

ences other than biomedical. The President proposed a package of almost \$6 billion in spending increases in the physical sciences called the "American Competitiveness Initiative." The new proposals include about \$4.6 billion in R&D tax incentives, mostly by making the R&D tax credit permanent, as well as \$1.3 billion in new spending for science and education programs. These increases represent the first step in what is claimed to be a plan to double the amount of spending on research and development in the physical sciences over 10 years.

Under the initiative, the National Science Foundation and the Department of Energy's Office of Science are big winners. NSF receives almost an 8% increase, to more than \$6 billion, the agency's largest budget ever. The increase is mostly concentrated in the Research & Related Activities program, and NSF Director Arden Bement says this will allow the agency to fund about 500 new grants.

Likewise, the administration asked for a \$505 million increase in the

Department of Energy's Office of Science—up a whopping 14.1 percent. Increases in the DOE's Biological and Environmental Research program parallel the overall increase in the Office of Science—up more than \$54 million over a 2006 base of about \$460 million.

All this largesse in the physical sciences is of course excellent news for science as a whole, a point noted by FASEB President Bruce Bistran. "... NSF and DOE are critical to producing the fundamental knowledge and innovative ideas that enhance our economic productivity, improve the quality of our lives, protect our nation, and maintain America's global competitiveness."

The President also proposed a variety of new science education programs, described in his State of the Union address on February 1:

"... we need to encourage children to take more math and science, and to make sure those courses are rigorous enough to compete with other nations... Tonight I propose to train 70,000 high school teachers to lead advanced-placement courses in math and science, bring 30,000 math and science professionals to teach in classrooms, and give early help to students who struggle with math, so they have a better chance at good, high-wage jobs."

## **Is a Tax Credit the Answer?**

The initiative also proposes to make the R&D tax credit permanent. The credit is quite simple—it gives compa-

*"NSF and DOE are critical to producing the fundamental knowledge and innovative ideas that enhance our economic productivity."*

—FASEB President Bruce Bistran

# Sciences Boosted in 2007 Budget

nies a tax credit for any incremental new money the company spends on research and development in the previous year. According to the White House, this step would generate almost \$4.6 billion in new spending by the private sector.

Unfortunately, this might be the most problematic component of the initiative. The R&D tax credit has been a part of the tax code since the early 1980s, and almost every year since, the administration or someone in congress has proposed to make it permanent. Congress, however, has always only extended it on a year-by-year basis; thus, the credit is unlikely to be made permanent, although it will probably be extended once again.

## A Newfound Interest

All these proposals mirror a growing interest in Congress and in the science community in addressing competitiveness issues. The National Research Council issued a report in November 2005 that proposed a variety of competitiveness-related programs to help the United States compete better against rising economic powers like China and India. The report, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*, is summarized in the December 2005 issue of *ASBMB Today*.

This report has been very influential; Rep. Bart Gordon (D-TN), ranking democrat on the House Science Committee, is circulating draft legislation to address some of the science education

proposals in the report, and Committee Chair Sherwood Boehlert (R-NY) is expected to propose a competitiveness package soon.

The growing interest in competitiveness has made it into the mass media as well; *Time* magazine featured competitiveness as its cover story in the February 13 issue. The story notes the growing economic power of countries that once used to be far behind the United States, and points out that experts have been warning about this for several decades. What has caused the current round of worry is the cut-back in R&D spending over the last several decades by both the feds, beset by deficits, and the private sector, under pressure from stockholders for quick profits which has in turn fueled a cut-back in long-term spending. Added into the mix is the fact that the quality of science and math instruction in public schools has “plummeted, leading to a drop in the number of [American] students majoring in technical fields in college and graduate school.” The slack has been picked up by thousands of immigrants who come to the United States for technical education. While some stay here upon graduation, thousands more return home where they put their newly acquired scientific training to work, often in new, state-of-the-art labs and other facilities.

## A New Problem?

So, for the moment, science and technology seems to have once again captured the attention of government, the

media, and the private sector. However, long-time observers of science policy have seen this sort of enthusiasm for science and technology before, going back to the Carter administration and beyond. The United States has demonstrated its ability to mobilize to support science in the past—most notably during the 1950s and 60s as an outgrowth

*The quality of science and math instruction in public schools has “plummeted, leading to a drop in the number of [American] students majoring in technical fields in college and graduate school.*

of the last major scare we received from abroad (the launch of Sputnik). The threat this time is different—a steady erosion of our once-dominant position over time without a major, catalyzing event such as the launch of a satellite to keep our attention focused. One hopes that this different type of threat will be enough to cause the newly resurrected interest in science to be sustained in coming months, if not years.

However, it is important to note that there is no downside to the administration’s competitiveness proposals, as far as they go. One only wishes that the largesse had been extended to the biomedical sciences as well. ☺



## Issues to Watch in 2006

Although the eyes of the biomedical research community will clearly be focused on the prospects for funding in FY2007, following the grim budget levels for FY2006, there are a number of other issues likely to arise on the Congressional agenda in the upcoming year. FASEB is keeping a close eye on the following items, which may impact researchers during 2006:

**Innovation:** Innovation is the buzzword of 2006. From the President's State of the Union, to both sides of the Congressional aisle, initiatives aimed at enabling America to remain globally competitive in science and technology have become *de rigueur* in Washington. House Democrats have recently released an "innovation agenda", which, among other provisions, calls on Congress to create a workforce educated in science and mathematics, as well as for an investment in a sustained federal research and development initiative that promotes public-private partnerships.

Congressman Bart Gordon (D-TN) has introduced three pieces of legislation related to science and innovation. Most significant to the current funding climate is H.R. 4596, the "Sowing the Seeds through Science and Engineering Research Act." This legislation authorizes 10% increases per year in federal funding for basic research in the physical sciences, mathematics, and engineering. These increases, if sustained, would lead to a doubling of basic research funding in these critical areas over 7 years. The bill also aims to develop the research talent needed for the future by providing new awards to outstanding early-career

researchers. It seeks to enlarge the pool of graduate students in science, math, and engineering by creating a graduate fellowship program for individuals pursuing studies in areas of national need. There is talk on Capitol Hill that House Republicans are planning on releasing legislation similar to Gordon's bills in early 2006.

The Senate is moving at a quicker pace. On December 15, Senators John Ensign (R-NV) and Joseph Lieberman (D-CT) introduced S. 2109, the "National Innovation Act of 2005." This bi-partisan legislation includes three major components: research investment, increasing science and technology talent, and creating an innovation infrastructure. In January, yet another set of innovation legislation was introduced by Senators Lamar Alexander (R-TN), Jeff Bingaman (D-NM), Pete Domenici (R-NM) and Barbara Mikulski (D-MD). This collection of bills, known as "Protecting America's Competitive Edge (PACE) Act," is a package of 3 separate bills aimed at strengthening our investment in energy research through increases for the Department of Energy and the National Science Foundation (NSF), investing in math and science education, and providing tax incentives to encourage research and development.

**Farm Bill:** The Farm Bill is due to be renewed in 2007, and members of the House and Senate Agriculture committees will be spending much of 2006 working on this massive piece of legislation. Because the U.S. Department of Agriculture regulates the Animal Wel-

fare Act, the Farm Bill presents an opportunity for those who oppose the use of animals in research to add amendments or language that could restrict researchers' abilities to use animal models. Moreover, the Farm Bill could serve as a vehicle for other pieces of legislation that have not moved successfully out of committee. For example, a bill (S.767) introduced by Senator Kit Bond (R-MO) that would create a National Institute for Food and Agriculture research within NSF has potential to be attached to the Farm bill. Given the current fiscal climate, it is unclear where the money for such a new 'agricultural directorate' would come from, presenting the potential for constraint of NSF's existing programs.

**Enhanced Public Access and Peer Review:** Congressional interest in access to scientific publications and the kinds of grants funded by NIH will continue in 2006. Two bills are in development that would make the NIH enhanced public access policy mandatory. A bill introduced by Senators Joe Lieberman (D-CT) and Thad Cochran (R-MS) creating an American Center for Cures within NIH includes a provision on public access to publications. In addition, Sen. John Cornyn (R-TX) is expected to introduce legislation requiring a 6-month public release of manuscripts from NIH. Furthermore, FASEB fully expects Congressional attacks on the peer review system to recur, likely in the form of amendments that would defund specific grants based on ideological or other opposition by members of Congress.





# NIH Conspicuous by Absence from List Of Agencies Getting Increases

Despite the focus of the State of the Union and American Competitiveness Initiative on strengthening U.S. science and technology, the National Institutes of Health (NIH) is conspicuously absent from the list of science agencies receiving increases in President George W. Bush's FY 2007 budget. The proposed funding level of \$28.6 billion is identical to FY 2006, meaning NIH would be flat funded. However, NIH's purchasing power would decline because the Biomedical Research and Development Price Index (BRDPI) is forecasted to be 3.5 percent in FY 2007. Members of Congress, including Senator Arlen Specter (R-PA) and Representative Chris Van Hollen (D-MD), have already questioned the Administration's commitment to science and research in light of the neglect of the nation's premier biomedical research agency.

Unfortunately, there is a perception among some members of Congress that NIH has been "taken care of" as a result of the large budgetary increases the agency received from 1998 through 2003. Moreover, many of the Congressional champions for NIH, such as John E. Porter, former Chair of the House Labor-HHS appropriations subcommittee, are no longer serving in Congress, or are caught up in other issues, like Senator Specter, whose chairmanship of the Judiciary committee has ensconced him in hearings related to Supreme Court nominees,

asbestos and wiretapping. These circumstances have left many in the research advocacy community struggling to find new ways to explain the importance of NIH, or to educate members of Congress on the critical need to support medical research.

FASEB began in the last fiscal year to shift our advocacy strategy in several ways, in light of the grim scenario faced by NIH. We have begun to team up scientists from key Congressional districts with patient advocacy groups to explain to policymakers how the basic research funded by NIH is not only being conducted at their home institutions, but ultimately has tangible medical benefits that impact people suffering from diseases and injuries. In addition, FASEB is working to find additional Congressional champions for medical research; startlingly, many lawmakers do not realize that extramural research funding goes to their districts. The research advocacy community has started to unite around common messages, working together to highlight the importance of NIH. For example, FASEB recently joined with the Ad Hoc Group for Medical Research, Research!America, Campaign for Medical Research, and the National Health Council on a joint statement which warned that a budgetary freeze at NIH could "undermine President Bush's own efforts to make the nation more competitive in the world."

In responding to the President's budget for NIH, FASEB President Bruce Bistrrian contrasted speeches made by Bush, in which the President vowed, "America leads the world in medical research, and we are committed to continuing progress..." with the proposed funding level, warning of the slowing rate of research discovery and potential loss of scientific talent. "It's as if we can see the tide rising, we've already bought the tools to build the floodgate, and are just letting ourselves be engulfed," said Bistrrian.

To set the stage for FY 2007 advocacy, FASEB has begun arranging meetings between constituent scientists and key members of the Congressional budget committees, whose decisions affect the total amount of money available for discretionary spending and therefore research funding. "It is important to let members of Congress know that medical research affects real people in their districts," according to Jon Retzlaff, FASEB Director of Legislative Relations. "Not only does NIH funding translate into jobs for scientists and their staff, but it gives hope to American citizens who are sick. Remember when cancer was always a terminal illness? People survive cancer now because of medical research. We need to drive that message home." For more on the President's budget or FASEB advocacy, please visit: <http://opa.faseb.org>.

# When East

## A Brief History of the

American missionaries, teachers, and doctors who visited China in the early 1800s opened the path for Chinese students to enter the United States for a Western education. The first known Chinese students were Yung Wing and two other young men who came to Monson Academy in Wilbraham, Massachusetts, in 1846. Yung Wing, who eventually enrolled at Yale University, graduated with a bachelor's degree in 1854. He then returned to China and convinced the Chinese government to send students to the West to be "thoroughly educated for the Chinese Public Service." In 1872, he established the Chinese Educational Mission, in Hartford, Connecticut, and over the next four years brought about 120 students to the United States.

The influx of Chinese students to the United States has fluctuated over the years, influenced largely by internal and international political events, such as the overthrow of the Ching dynasty and the founding of the Republic of China in 1911, the Sino-Japanese War in 1937, the establishment of the People's Republic of China (PRC) in 1949, and the diplomatic recognition of the PRC by the United States in 1976. Professor Hsien Wu was among the earlier U.S.-trained Chinese students in biology. He developed the Folin-Wu method for blood analysis in 1919, returned to The Peking Union Medical College in Beijing, and established the first department of biochemistry in China.

Following normalization of U.S.-China relations in 1979, thousands of Chinese students wanted to come to the United States for advanced education and training. A major challenge, though, was that the U.S. universities had difficulty in comparing American and Chinese applicants and selecting the most qualified, since the GRE [Graduate Record Examination] and TOEFL [Test of English as a Foreign



*Dr. Robert Yu*

Language] exams were not available for Chinese applicants. To overcome this challenge, in 1981 Professor Ray Wu at Cornell University initiated the China-U.S. Biochemistry Examination and Application (CUSBEA) program with the goal of recommending qualified students in the areas of biological sciences to be educated in the U.S. The Chinese Ministry of Education, which sponsored the CUSBEA program in China, delegated coordination of the program to the biology department at Peking University. Professor Wu served as the U.S. coordinator, and he began to contact a number of major U.S. universities. Within only a year, approximately 50 universities had agreed to participate, a number that nearly doubled to almost 90 over the next seven years.

Until 1989, the last year of the program, 425 Chinese students came to

the United States through the CUSBEA program. By 1984, due to its success, even those students who applied for admission on their own benefited from the reputation of the students admitted under the aegis of the CUSBEA program.

Even though the CUSBEA program ceased operations more than 15 years ago, the Chinese applicant pool has continued to increase. In the biological and biomedical sciences, many U.S. colleges were receiving far more applications each year than they could accommodate, creating a serious logistical burden in the handling, responding, and filing of applications. And, without the CUSBEA program, it was again difficult to evaluate the qualifications of the Chinese applicants.

Robert Yu, who was chair of the department of biochemistry at the Medical College of Virginia in Richmond from the late 1980s until 2000, first brought this issue to the attention of the Association of Medical and Graduate Departments of Biochemistry (AMGDB) at its 1994 annual meeting. Many of the AMGDB attendees that year believed it would be advantageous to establish a mechanism to assist U.S. institutions in evaluating the credentials of Chinese applicants. Based on our previous experience with the CUSBEA program, we believed that a face-to-face interview by an experienced interviewer was the most efficient and cost effective

# Meets West: CUSBEA and CUSBA Programs

tive mechanism for conducting the selection process.

After additional discussions among several prominent educators in the biomedical sciences in the United States and China and with the support of the Society of Chinese Bioscientists in America (SCBA), we formally initiated the China-United States Biochemistry Admissions (CUSBA) Program in 1995. Our purpose was then, and still is, to provide coordination services in graduate admissions from Chinese students to U.S. departments of biochemistry, molecular biology, biophysics, and related fields.



*Dr. Ray Wu*

Since its inception over a decade ago, more than 50 departments and programs in the United States and Canada have participated in and sought assistance from the CUSBA program, which to date has interviewed nearly 2,000 applicants.

As of this writing, most of the CUSBEA alumni/alumnae have completed their academic training and have been doing excellent and important research. All together, more than 1,000 well-trained and talented Chinese scientists are active in the areas of biochemistry, molecular biology and biotechnology as a result of the CUSBEA program, constituting a "reservoir of talent" in the United

States. Because of its relatively short history, the number of students who have completed the CUSBA program is not yet available.

Robert Yu and Ray Wu serve as the coordinators of the CUSBA program. The U.S. coordination office is currently located at the Institute of Molecular Medicine and Genetics, Medical College of Georgia, Augusta, GA, 30912 (tel. 706-721-0699, fax 706-721-8727, E-mail: ryu@mcg.edu).

The liaison office in Beijing is chaired by Dr. Zeng-Yi Chang (a former CUSBEA graduate), professor of biochemistry and molecular biology, at Peking University, and the liaison office is located at the Department of Life Sciences, College of Life Sciences, Rm. 204, New Life Sciences Building, Peking University, Beijing 100871, China; tel.: 86-10-6275-8822; fax: 86-10-6275-1526; email: changzy@pku.edu.cn.

We are fortunate that Professor Xiaocheng Gu, who participated in the founding of the CUSBEA program, continues to act as a consultant. Drs. David Allmann and Richard Haak (Indiana University School of Medicine, Indianapolis) served as group leaders of the team who conduct the onsite interviews. We usually invite 4–5 interviewers each year from participating universities. It should be noted that the CUSBA program is a non-profit consortium for the sole purpose of providing the coordination services in graduate admissions from China to U.S. and Canadian universities.

In conclusion, both the CUSBEA and the CUSBA programs have provided a vital service to U.S. educational institutions, achieving the recruitment and training of a large number of outstanding Chinese students in biological sciences, many of whom have become leaders in the biomedical and life sciences. Nine are Investigators of the Howard Hughes Medical Institute (HHMI), and many others have become professors and achieved recognition from prestigious academic institutions. A former CUSBEA student, Professor Xiaodong Wang of the University of Texas Southwestern Medical Center, has become a member of the National Academy of Sciences.

Even though the majority of these scientists have remained in the United States, many of them have become increasingly active in helping China to develop life sciences. Those who have returned to China have made important contributions in science, engineering, education, and government service there, and, importantly, have taken an active role in the modernization of China. With the globalization of science, we will certainly witness more mixing and exchange ahead with China and other countries. 

*\*Contributed by Dr. Robert Yu, Institute of Molecular Medicine and Genetics and Institute of Neuroscience, Medical College of Georgia, Augusta, GA 30912, and Dr. Ray Wu, Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY, 14853*

# ASBMB Supports State Initiatives in Wisconsin, Missouri

By Peter Farnham, CAE, ASBMB Public Affairs Officer

**A**t its December 2005 meeting, the ASBMB Council delegated to the Public Affairs Advisory Committee the authority to commit the society to action on state-level initiatives that it learns about in the policy areas of stem cell research, and evolution. As an indication of how volatile these policy areas are in the states, the committee has already decided to support two initiatives—one in each policy area.

*“In dozens of other states, legislation is being introduced that is designed to undermine science education.*

*With Representative Berceau's bill, our state can be the first to set a very different example.”*

—ASBMB member Mike Cox


In Wisconsin, state representative Terese Berceau introduced a bill on February 7 that requires any material taught in science class as science to meet two tests: the material must be testable as a scientific hypothesis and describe only natural processes, and must be consistent with any definition of science adopted by the National Academy of Sciences.

ASBMB member Mike Cox, University of Wisconsin, Madison, said of the bill, “In dozens of other states, legisla-

tion is being introduced that is designed to undermine science education. With Representative Berceau's bill, our state can be the first to set a very different example.”

In Missouri, ASBMB is supporting the Missouri Stem Cell Initiative, an effort to get a proposition on the ballot in November in the state that would simply allow any stem cell research to be conducted in Missouri that is allowed at the Federal level. This initiative is being advocated for by the Missouri Coalition for Lifesaving Cures. If passed, this constitutional initiative would insure that any stem cell research or therapies permitted by Federal law would be allowed in Missouri.

ASBMB Council member Joan Conaway, Stowers Medical Research Institute, said of the effort, “This is pretty important here, as there is a group of legislators who repeatedly bring up bills that would criminalize stem cell research or therapies in Missouri.”

ASBMB will consider requests from Society members to assist in state-level efforts in these two policy areas. However, we depend on you to keep us informed of such activities in your state, as we lack the staffing to monitor all fifty states for such activity. Please contact ASBMB Public Affairs Officer Peter Farnham (pfarnham@asbmb.org) for further information. 

The picture accompanying the January *ASBMB Today* article, Founding Fathers of ASBMB, was not that of ASBMB's Samuel Johnson. After checking numerous sources, including the Chemical Heritage Foundation, and finding no such picture, we obtained from the National Library of Medicine an electronic image—the only one available—identified as Samuel W. Johnson. Alas, that turned out not to be our Samuel W. Johnson, but instead that of an eighteenth century English chemist, writer and lexicographer with an iden-



Dr. Samuel W. Johnson

tical name. Kenneth R. Hanson, one of several members who had pointed out this error, directed us to the Connecticut Agriculture Experimental Station in New Haven, which was able to provide us with the photo at right. Coincidentally, our Dr. Johnson was also one of the founders of the Connecticut institution. In retrospect, a careful look at the clothing worn by the English writer might have alerted us to the error, however that unfortunately was not done in the rush to get the magazine off to the printer.



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# Astrocytes May Play Role in Controlling Blood Flow in the Brain, Possibly Influencing Alzheimer's

**I**n a paper that appeared in the February 2005 issue of *Nature Neuroscience*, scientists at the University of Rochester Medical Center demonstrate that brain cells known as astrocytes play a direct role in controlling blood flow in the brain, a crucial process that allows parts of the brain to burst into activity when needed. The finding is intriguing for a disease such as Alzheimer's, which has long been considered a disease of neurons, and certainly not astrocytes.

"For many years, astrocytes have been considered mainly as housekeeping cells that help nourish and maintain a healthy environment for neurons. But it's turning out that astrocytes may play a central role in many human diseases," said neuroscientist Maiken Nedergaard.

"In a disease like Alzheimer's, perhaps it's the astrocytes that are damaged first," she said. "It may be that for whatever reason, astrocytes are not doing their job properly, and then blood flow decreases. This could lead to the death of the neurons which depend on the astrocytes for their survival."

The new research focuses on the moment-to-moment allocation of vital resources like oxygen that goes on within our bodies. The process is particularly crucial in the brain, the body's most voracious guzzler of "fuel," with a constant need for oxygen. When part of the brain becomes more active, more blood is shunted to that region to bring extra nutrients like oxygen, making the increased activity possible.

Most scientists have assumed that the more blood that flows to a particular part of the brain, the more activity on the part of neurons, the nerve cells that send electrical signals that are widely considered to be "brain activity." The assumption that more blood flow equals more active neurons forms the basis for interpretation of sophisticated brain imaging techniques such as PET scans and functional MRI scans.

Now the group led by Nedergaard, Professor in the Department of Neurosurgery and a member of the Center for Aging and Developmental Biology, and post-doctoral associate Takahiro Takano, the first author of the paper, has thrown doubt on the assumption by showing that astrocytes are important players in the process too. Studies by the team in mice show that signaling from astrocytes causes arteries in the brain to expand, causing increased blood flow.


*"In a disease like Alzheimer's, perhaps it's the astrocytes that are damaged first . . . and then blood flow decreases. This could lead to the death of the neurons which depend on the astrocytes for their survival."*

—Dr. Maiken Nedergaard


"When we measure blood flow," said Nedergaard, "it may be that we are not measuring the activity of neurons so much as that of astrocytes."

The idea creates a "chicken or egg" type question in patients with conditions like Alzheimer's or traumatic brain injury where blood flow to parts of the brain plummets. In Alzheimer's it's known that neurons sicken and die over a period of years. When a brain scan shows lessened blood flow, it is assumed that there must be less demand for blood, so significant numbers of neurons in that brain region must have died. While that may be true, Nedergaard said, the new results muddy the picture, calling into question any straightforward link between the health of neurons and blood flow.

Nedergaard said that while it is new to find that astrocytes can regulate blood flow, the finding shouldn't be entirely surprising. She said that astrocytes physically touch both synapses and blood vessels. Portions of astrocytes known as "astrocytic endfeet" wrap around nearly all the blood vessels in the brain.

The current research, funded by the National Institute of Neurological Disorders and Stroke, used a fluorescent dye to light up the blood vessels, then put a form of calcium into astrocytes. They used one laser to activate the calcium, and another to monitor how astrocytes processed the chemical, and found that astrocytes caused blood vessels to dilate. 

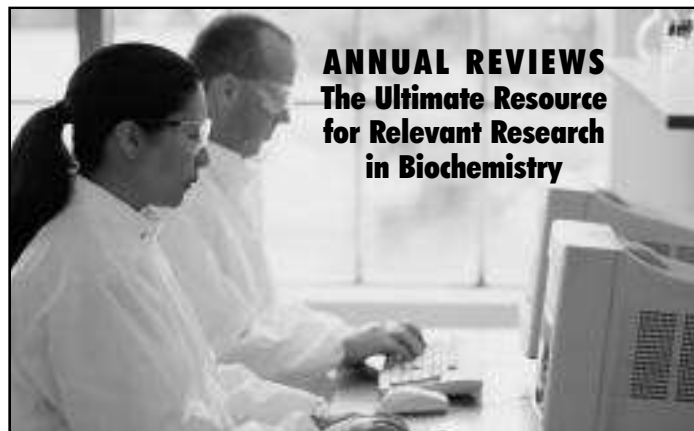
## ASBMB Member Honored by National Academy

**S**abeeha Merchant is one of 15 scientists selected by The National Academy of Sciences (NAS) to receive awards honoring their outstanding scientific achievements. The awards will be presented on April 23 at a ceremony in Washington, D.C., during the Academy's 143rd annual meeting. Merchant, Professor of Biochemistry in the Department of Chemistry and Biochemistry and Molecular Biology at the University of California, Los Angeles, will receive the Gilbert Morgan Smith Medal. The medal and a prize of \$20,000 is awarded every three years for excellence in published research on marine or freshwater algae. Merchant was chosen "for her pioneering discoveries in the assembly of metalloenzymes and the regulated biogenesis of major complexes of the photosynthetic apparatus in green algae." The medal was established by a bequest of Helen P. Smith in memory of her husband and has been presented since 1979. The National Academy of Sciences is a private, nonprofit honorific society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare. Since 1863, the National Academy of Sciences has served to "investigate, examine, experiment, and report upon any subject of science or art" whenever called upon to do so by any department of the government. 

## Alan Saltiel Named to Institute of Medicine

ASBMB member Alan Saltiel was among the 64 new members recently named to the Institute of Medicine of the National Academies in January. The 64 new members, raise IOM's total active membership to 1,461. Dr. Saltiel is Director of the Life Sciences Institute and John Jacob Abel Professor of Internal Medicine and Physiology at the University of Michigan, Ann Arbor.

With their election, members make a commitment to involve themselves in the work of the Institute, which conducts studies and other activities addressing a wide range of issues in medical science, health services, public health, and health policy. Current studies include a project to recommend appropriate nutritional standards for foods sold in schools, an evaluation of the nation's system for ensuring the safety of prescription drugs after they have reached the market, and an assessment of and recommendations for improving emergency health care in the U.S.



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# Clara Cynthia Benson

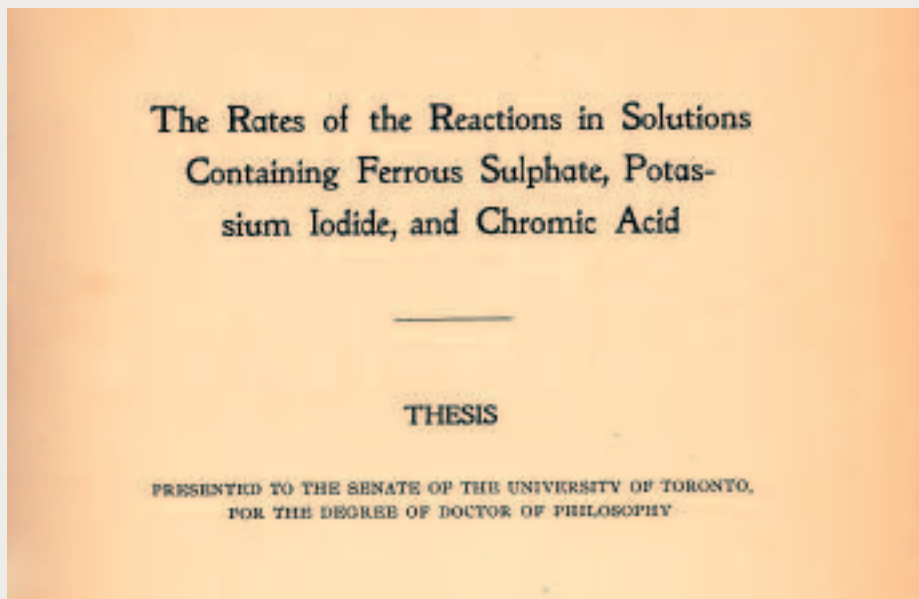
**D**r. Clara Benson was one of only four Canadians and the only woman in the group of 81 “charter” scientists who formed the American Society of Biological Chemists (ASBC, now ASBMB) in December of 1906. At 31, she was also among the youngest. Trained in physical chemistry at the University of Toronto (U of T), she had switched to physiological chemistry as a result of her initial academic appointment to teach in household science. This

in Canada and at the University as a pioneer in the genesis of higher education opportunities for women at that institution.

Clara Cynthia Benson, born June 5, 1875 in Port Hope, Ontario, Canada, was the eldest of four children of Thomas Moore Benson and Laura Abigail Fuller. Thomas Benson was a successful barrister and eventually a judge in Port Hope. She was educated at Port Hope High School and matriculated in University College of U of T

introduced the Ph.D. degree in 1897, and Clara Benson was one of the earliest students to be accepted into the doctoral program. Coincidentally, it was the intervention of Prof. A. B. Macallum that allowed the stalled proposal of President James Loudon, who had introduced such a degree program into the University senate 15 years earlier, to be reactivated in 1896, and thus make it possible for her to enroll a few years later. Macallum himself directed the first Ph.D. candidate at U of T (F. H. Scott, his thesis completed in 1899 on the cytochemistry of nerve cells) and would eventually also direct Maud Menten, famed for her subsequent contributions to enzyme kinetics, as a medical student and J. B. Collip, who played a key role in the isolation of insulin with Macleod, Banting and Best.

Clara Benson’s doctoral studies were done under the direction of Prof. William Lash Miller, who directed more doctoral students (6) in the early days (up until 1916) than any other member of the U of T faculty. Many of his students went onto distinguished careers in science and eventually the Chemistry Building at U of T was named for him. Her dissertation work was published (May, 1903) in the *Journal of Physical Chemistry* and was entitled “The Rates of the Reactions in Solutions Containing Ferrous Sulphate, Potassium Iodide and Chromic Acid” (See Figure 1). She was awarded her doctorate in



First page of thesis. Courtesy U of T.

brought her under the tutelage of Archibald Byron Macallum, which would prove to be an important step in her academic development. She would eventually go on to an impressive career in teaching, research and administration in food science at her alma mater, and is well-remembered

in 1895. She majored in mathematics, chemistry and physics, a most unusual course of study for a woman in those days, and was the first woman to receive a Bachelor of Arts degree in Chemistry at U of T in 1899. She then enrolled as a doctoral student. The University had only



# (1875-1964)

the same year and was the first woman to receive a Ph.D. in chemistry from U of T (See box). She shared the honor of being the first woman to receive the Ph.D. degree from U of T with Emma Baker (philosophy).

During the time of her graduate studies, it was proposed that a degree program be created in household science, which ostensibly was to prepare young women for careers as housewives. It was not an idea that was universally greeted with enthusiasm and Clara Benson, among other women graduates of University College, opposed it. However, upon completion of her degree, with only limited job opportunities available in chemistry (despite her Ph.D. degree), she accepted a position as demonstrator in food science in the Lillian Massey School of Domestic Science. Thus, she left Chemistry and joined the Department of Physiology (Physiological Chemistry), as required for the post, and became a protégé of Macallum. A. B. Macallum was an important figure in science and medicine, having founded, at the U of T, the first department of Biochemistry in Canada in 1906 and is often referred to as the “Father of the Medical School at Toronto.” He also had an active role in the founding of the JBC and ASBC. He was a member of the original editorial group (26 in all) of the JBC (and the only Canadian), and thus among the group approached by J. J. Abel regarding the formation of the ASBC, and was one of four charter

members of the Society from Canada. He was elected several times to the Council or Nominating Committee and in 1912-13, he served two terms as the 6th President.

The shift to Macallum’s Department was an opportune change for Clara Benson and she subsequently enjoyed a productive working relationship with him for many years. This continued even after he left Toronto in 1916, as part of the war effort, to head the Advisory Committee for Scientific and Industrial Research, which became the National Research Council of Canada, and then to chair the new Department of Biochemistry at McGill University in 1920. When food science was transferred to the medical building, Clara Benson became a lecturer in physiological chemistry (1905-06), thus becoming the first woman to achieve a rank above demonstrator at U of T. In 1906, the faculty of household science was established and she became associate professor along with Annie Laird. They were the first two women professors at U of T. She achieved the rank of full professor in 1926 and retired (as professor emeritus) in 1945.



*Clara in academic procession with Annie Laird, the first two associate professors at U of T (~1907). Photo courtesy U of T.*

It was, of course, her transfer to Macallum’s department that honed her interest in biochemistry and, undoubtedly at his urging, led to her also becoming a charter member of the Society. However, her training in physical chemistry also served her in good stead. Her interests in ion chemistry were similar to some of Macallum’s and they published an article together in the JBC in 1906 entitled “On the Concentration of Dilute Renal Excretions” (6, 87-104 (1906)). It was the only article Macallum published in the JBC, as he apparently preferred to send most of his work to the transactions of the Royal Societies

# A voice from the past

## U of T re-enacts 100-year-old thesis defense

by Nicolle Wahl

June 9, 2003 — The words of Clara Benson, one of the first women awarded a Ph.D. at U of T, captivated an audience during a re-enactment of her thesis defense at chemistry's spring reunion May 30.

The re-enactment was part of a day of special lectures and displays to mark the 100th anniversary of the landmark event by looking back over the history of women in science.

Christine Braban, a graduate student in chemistry, admitted to an attack of nerves before she strode into the auditorium posing as Benson, whose thesis was entitled, "The Rates of the Reactions in Solutions Containing Ferrous Sulphate, Potassium Iodide and Chronic Acid."

Wearing a high-collared antique lace shirt, a long black skirt, formal academic robes and with her hair pulled into a severe bun, "Benson" faced a sombre pair: 1903 chair of chemistry, Professor William Lang (played by chemistry professor James Donaldson) and her thesis supervisor Professor William Lash Miller (acted by department chair Stuart Whittington). Both wore



*Picture of U of T student Christine Braban as Clara Benson*

black academic robes with red and white hoods and severe expressions.

Braban played her part at a lectern on a chemistry bench, surrounded by replicas of laboratory glassware from Benson's time, occasionally gesturing to a blackboard littered with an alphabet soup of chemical equations.

"Most of the text of the re-enactment was actually taken from her thesis. I was trying to use her words," said Braban, adding that she understood most of Benson's thesis from her preparation for the re-enactment. But writing out the equations was a bit of a challenge, she explained. "Some of the nota-

tion was archaic. It was interesting that in only a hundred years, the notation has changed so much."

Braban worked on the re-enactment with a group of women including chemistry students Nana-Owusua Alecia Kwamena and Srimoyee Ray Chaudhuri, alumna Betty Leventhal, and senior development officer Sue McClelland as well as Bonnie Shepherd, administrative assistant

for alumni affairs at the Faculty of Physical Education and Health.

During their research, Braban and her colleagues got a glimpse of Benson's character. "She was a personality and she had her own opinions. Clara Benson wasn't just this woman who did a bit of chemistry a hundred years ago," said Braban. "Obviously she was a pretty strong woman, just to be there doing what she was doing. That's what we were trying to get through on the day and in the displays — to show her as she might have been."

*Reprinted with permission from the University of Toronto.*

of both Canada and Great Britain (he was a member of both). These interests were also useful in subsequent food research and Clara Benson played a key role in the Canadian war (WW I) effort by successfully demonstrating that analytical techniques developed for food tests could be applied to munitions preparations. It is also clear that she was a highly respected and revered teacher during her long association with the food science department. Her retirement in 1945 was accompanied by the unveiling of a Karsh portrait, which was hung in the Household Sciences Building, a particular honor, and by the creation of a fellowship in her name by the alumae of the Household Science School in 1950. Many years later, the Canadian Society of Chemistry, of which she was a fellow, created the Clara Benson Award to honor a woman chemist in Canada each year.

Clara Benson is also well known at the University of Toronto for the active role she played in developing women's athletics at that institution. She was co-chair of the committee that oversaw these activities and was named President of the Women's Athletic Association in 1921, a post she held until her retirement. Through her sustained efforts, greatly improved facilities were finally made available. The Women's Athletic facility at U of T today, opened in 1959, is named in her honor. She was also active in the YWCA and was an avid stamp collector. One of her most extensive activities was overseas travel (at a time when there was no significant air travel). She went to Europe, Africa, South America and Asia on several

occasions, logging visits to dozens of countries in the process, and was a frequent visitor to the USA, attending many scientific meetings there.

Following her retirement, she returned to New Hope where she lived out the rest of life, passing away in March of 1964 at the age of 89. She was in fact one of the last surviving members of the ASBC "charter group" and in 1956, along with three others, she attended the 50th anniversary dinner held in Atlantic City, as an honored guest of the Society. Typically, she refused any reimbursement for her expenses noting in a letter to the Secretary that she had "planned to come anyway."

Although in terms of productivity, her research accomplishments were modest, she clearly exerted a far more significant impact on science by the role model she provided for young women at Toronto (and surely beyond) in the first half of the 20th century. It is difficult today to appreciate how much ahead of her time she really was in simply attending the university and then in majoring in the physical sciences at a time when this was essentially the province of men. By way of illustration, she was denied access, as a lady, to the Annual Dinner of the Canadian Institute of Chemistry, a year after she was elected a fellow in 1919 (a slight that was presumably corrected in future years). She was also listed in the 1920s in American Men in Science, undoubtedly one of the few women to be so recognized at the time, judging by the title. In remarks attributed to her later in her career, she implies that her career choices probably made marriage a more difficult



*Clara at retirement, 1945. Image courtesy U of T.*

option (referring to the reluctance of men to marry educated women in her younger days). As with her contemporary lab mate and friend, Maud Menten, she remained single her entire life. If there was to be only one woman among the founders of the Society, it seems unlikely that one could have chosen a better individual than Clara Cynthia Benson for that honor. ☺

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The author gratefully acknowledges the assistance of Harold Averill and his colleagues of the University of Toronto Archives & Records Management and Edward Shorter of the U of T Faculty of Medicine for their assistance. Many thanks also to long term friend and colleague, Stanley Fenton of the U of T Dept of Nephrology, and his son Bruce, for their invaluable help in 'navigating' the U of T and sorting through archival material.

*Ralph A. Bradshaw  
University of California Irvine*

# Four New Members Named to NIAID Advisory Council

**T**he National Institute of Allergy and Infectious Diseases (NIAID) today announced the appointment of four new members to the National Advisory Allergy and Infectious Diseases Council, its principal advisory body.

The council provides recommendations on the conduct and support of research, including training young scientists and disseminating health information derived from NIAID research. It embodies a diverse perspective on science, health and the human impact of disease. The council is composed of physicians, scientists and representatives of the public who contribute their time and expertise for a four-year term.

Vanderbilt University; Martin Rosenberg,\* Promega Corporation, Madison, Wisconsin; and Dr. Megan Sykes, Harvard Medical School.

Dr. Baird, a Professor in the Department of Chemistry and Chemical Biology at Cornell, also serves as director of the Nanobiotechnology Center and is principal investigator for Cornell's training grant in molecular biophysics. Her lab uses biochemical and biophysical approaches to investigate basic mechanisms of cell surface receptors in mediating transmembrane signals in immune responses. A primary focus of the laboratory's research is the high-affinity receptor for immunoglobulin E. She works closely with other interdisciplinary scientists and engineers to develop

new technologies and quantitative approaches to cell biology problems.

Dr. Edwards, Professor of Pediatrics at Vanderbilt University, was the principal investigator of the NIAID-funded, placebo-controlled influenza efficacy trial comparing live, attenuated, and inactivated influenza vaccines in more than 3,000 volunteers. She is now studying the impact of vaccination programs on disease burden and leads the NIAID-supported Vaccine and Treatment Evaluation Unit at Vanderbilt.

Dr. Rosenberg is Chief Scientific Officer of Promega Corporation and serves on the boards of directors for Promega Corporation; Cubist Pharmaceuticals; the Medical College of Wisconsin Research Foundation; Nereus Pharmaceuticals; Anacor Pharmaceuticals; and Scarab Genomics. He is editor of both *Current Opinions in Biotechnol-*

*ogy and the Journal of Bacteriology*, as well as an adjunct professor in the Department of Bacteriology at the University of Wisconsin and in the Department of Biochemistry at the Robert Wood Johnson Medical School.

Dr. Sykes is the Harold and Ellen Danser Professor in the Department of Surgery and a professor of medicine at Harvard Medical School. She is an immunologist and associate director of the Transplantation Biology Research Center at Massachusetts General Hospital. Her research is in the areas of hematopoietic cell transplantation; achievement of graft-versus-leukemia effects without graft-versus-host disease; organ allograft tolerance induction; and xenotransplantation. She is president of the International Xenotransplantation Association and a councilor of the International Transplantation Society. 

## Summers Stepping Down as Harvard President

In his five-year tenure at Harvard University, President Lawrence H. Summers frequently found himself in the spotlight because of rifts with faculty at the Ivy League institution.

The *Boston Globe* reported that shortly after he took office, a handful of prominent professors, including Cornel West, left the university after a dispute with him. Last year, he was widely criticized for suggesting that innate ability may partly explain why few women reach top science posts.

On Tuesday, February 21, facing the second no-confidence vote by faculty members in a year, Summers announced he would leave June 30, bringing to a close the briefest tenure of any Harvard president since 1862, when Cornelius Felton died after two years in office.

Last March, the arts and sciences faculty passed a 218-185 no confidence vote in Summers—the first known instance of such an action in the 370-year history of the university.

# Study Links Diet Quality with Alcohol Drinking Patterns

**U**nhealthy alcohol drinking patterns may go hand-in-hand with unhealthy eating habits, according to a new study by researchers at the National Institute on Alcohol Abuse and Alcoholism (NIAAA), part of the National Institutes of Health (NIH), and the U.S. Department of Agriculture (USDA). Examining diet quality of individuals who drink any kind of alcoholic beverage, researchers found that people who drink the largest quantities of alcohol—even infrequently—have the poorest quality diets. Conversely, people who drink the least amount of alcohol—regardless of drinking frequency—have the best quality diets. A report of the findings appears in the February 15, 2006 issue of the *American Journal of Epidemiology*.

“This is a very useful finding that refines our understanding of the relationship between patterns of alcohol consumption and other aspects of health behavior,” said NIAAA Director Ting-Kai Li, M.D. Previous studies have shown that moderate alcohol consumption is associated with a reduced risk for cardiovascular disease and death, notes first author Rosalind A. Breslow, Ph.D., an epidemiologist in NIAAA’s Division of Epidemiology and Prevention Research. However, diet could be partly responsible for these findings, since a healthy diet has been associated with the same outcome.

“Clarifying the relationship between alcohol consumption and diet quality is an important step in determining

the extent to which diet influences studies of alcohol and cardiovascular outcomes,” explains Dr. Breslow. To that end, the purpose of our study was to determine the association between drinking patterns and diet quality in the U.S. population. It’s important to note that determining the cause or causes of any such association was not part of our current study.”

Dr. Breslow and her colleagues analyzed data collected from more than 3,000 participants in the National Health and Nutrition Examination Survey (NHANES), an ongoing survey of representative cross-sectional samples of

*“This finding refines our understanding of the relationship between patterns of alcohol consumption and other aspects of health behavior.”*  
—NIAAA Director Ting-Kai Li, M.D.

the U.S. population conducted by the U.S. Department of Health and Human Services’ Centers for Disease Control and Prevention. Data included alcohol consumption information as well as Healthy Eating Index (HEI) scores, a widely used measure of total diet quality. Created by the USDA, the HEI measures how closely an individual’s diet conforms to USDA recommendations regarding vegetables, fruit, grains, meat, and milk as well as total fat, cholesterol, and sodium consumption.

Total alcohol—the sum of individuals’ wine, beer, and liquor consumption—was characterized by three variables: the amount consumed on drinking days (quantity); how often

consumption occurs (frequency); and average daily volume (quantity multiplied by frequency). As alcohol quantity increased, HEI scores declined. As alcohol frequency increased, HEI scores improved. Diet quality was poorest among the highest quantity, least frequent drinkers and best among the lowest quantity, more frequent drinkers.

The researchers also found that HEI scores were not significantly different between those who drank the highest average daily volume compared with those who drank the lowest average daily volume. They therefore suggest that alcohol drinking patterns—as

measured by quantity and frequency—rather than average daily consumption, should be considered in future studies of the relationship between alcohol consumption and health outcomes.

“In our study, healthier diets were associated with healthier drinking patterns,” says Dr. Breslow. “In that regard, I think it’s important that women have not more than 1 drink per day and that men have not more than 2 drinks per day—the alcohol consumption recommendations set forth in the sixth edition of Dietary Guidelines for Americans, the federal government’s science-based advice to promote health and reduce risk of chronic diseases through nutrition and physical activity.”

# Aussie Scientists Searching for 'Superdrug'

Australian scientists believe they may have found the key to creating a drug which could potentially treat many viral infections, including bird flu, but a marketable drug based on their research is likely to be 10 years away.

The Melbourne researchers have found that switching off a naturally occurring protein, known as SOCS1, in mice makes them resistant to viral infections. They hope to develop a drug to temporarily do the same thing in humans, potentially creating a single treatment for viruses as diverse as the flu and hepatitis. SOCS1 is found in most cells of the body and plays an important role in switching off a person's immune response.

Paul Hertzog,\* of the Monash Institute of Medical Research, said the protein told the body when to block interferon which is produced in large amounts to fight infection.

"If you remove that block and keep it going for a couple of days longer, then you might get 50% more people over a viral infection than you would otherwise," Professor Hertzog explained.

"The good thing about the interferon system and boosting the immune system that way is, potentially it could protect against all viruses. Its potential is very broad. It's not like a vaccine where the treatment is specific to a virus and will

only work against, for example the flu, and won't protect you against other things."

The researchers' work on SOCS1 in mice, led by Monash's Jennifer Fenner, was recently published in the science journal, *Nature Immunology*. They found SOCS1-deficient mice showed viral resistance after infection with Semliki Forest Virus, which affects all organs in the body.

"If we want to block SOCS1 in humans, we can't turn it off genetically like we can in the mice, so what we have to do is find a different way of turning it off which would be via a drug," Professor Hertzog said.

*\* ASBMB member.*

## Symposium to Honor Memory of Professor Irving Klotz, Northwestern University

The Irving M. Klotz Memorial Symposium will take place on Wednesday, April 26, and Thursday, April 27 at the Allen Center on the Evanston campus of Northwestern University. You are invited to share in this opportunity to honor the memory of Professor Klotz, who devoted 64 years to the service of the university.

The symposium will start with a tour of the Nanotechnology and Pancoe buildings at 4:00 p.m. on Wednesday. There will be a social hour at the Allen Center at 5:30 p.m. before dinner, which will be served at 6:30. A program will follow at 8:00 p.m.

The scientific symposium will take place Thursday at the Allen Center. Coffee and pastries will be available from 8:00 a.m. until 9:00 a.m. when the scientific papers will start. Lunch will be served from 12:45 until 1:45 p.m., and the afternoon session will be from 2:00 till 5:00 p.m.. Speakers include: Professor Harold Scheraga, Cornell University; Professor Howard Schachman, University of California, Berkeley; Professor Laszlo Lorand, Northwestern University Medical School; Dr. Dieter Gruen, Argonne National Laboratory; Dr. Joseph Walder, Integrated DNA Technologies; Professor Arthur Veis, Northwestern University Medical School; Professor Amy

Rosenzweig, Irving M. Klotz Professor, Northwestern University; and Professor Marc Kirchner, Harvard University.

Blocks of hotel rooms are reserved at the Best Western and Orrington Hotels in Evanston.

Best Western University Plaza, 847-491-6400, Date In: April 25, Date Out: April 28, Rate: \$105+ tax nightly. Hotel Orrington, 847-866-8700. Drop date: March 31.

Hotel Orrington, 847-866-8700. Date In: April 25, Date Out: April 28, Rate: \$129+ tax nightly, Drop Date: March 31.

Registration for the symposium is on the web at <http://www.chem.northwestern.edu/~klotz/register.php>.

Your registration must be received before April 15. Complete information will be available on the symposium web page. Parking on campus is not available during the day on Thursday. Parking is open after 4:00 p.m. on Wednesday. The Best Western Hotel provides free transportation; there is a taxi stand at the Orrington. For more information about visitor parking on the Evanston campus, see Northwestern's Visitor Parking web page and the related links including campus parking maps.

For further information contact Robert M. Rosenberg, Visiting Scholar, Northwestern University, [rnr921@northwestern.edu](mailto:rnr921@northwestern.edu)

# 2007 Program Planning Committee

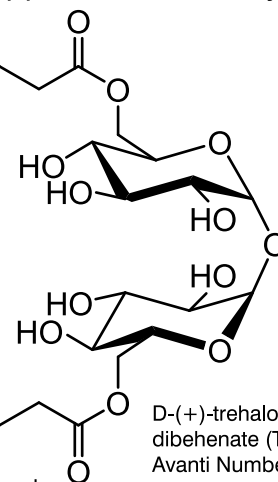


ASBMB 2007 Program Planning Committee met January 21 at the Coronado Island (California) Marriott Resort to plan the ASBMB 2007 annual meeting which will be held in Washington, DC, April 28 - May 2. Not all members were able to attend. Present at the meeting were: Row 1 (left -right): Susan Taylor (invited guest), Tobias Meyer, Juliette Bell, Judy Bond, Dennis Voelker (invited guest) and Kristen Lynch. Row 2 (left - right): Hongtao Yu, Joseph Noel, Michael Rosen (co-chair), Vito Quaranta, Benjamin Cravatt (co-chair), Jared Rutter and Sara Courtneidge (invited guest). Row 3- (left - right): Jack Taunton, Ellis Bell and Jack Dixon (invited guest). Susan Taylor and Jack Dixon are past presidents of ASBMB, and Dennis Voelker is currently Chair of our Meetings Committee. Not all members were able to attend.

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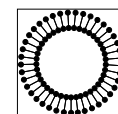
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## OBITUARY

# Lawrence Grossman, Ph.D. (1924-2006)

**D**r. Lawrence (Larry) Grossman, an internationally respected biochemist and a longtime authority on DNA repair, died peacefully on January 13, 2006 at the age of 82 following complications of a fractured hip and Alzheimer's disease. Larry received his graduate training in biochemistry at the University of Southern California and was awarded the Ph.D degree in 1954. Following brief postdoctoral stints in Nathan Kaplan's laboratory in the McCollum-Pratt Institute on the Johns Hopkins Homewood campus and then the NIH, Larry was recruited by Kaplan to the faculty of the Department of Biochemistry at Brandeis University. In 1975 he was appointed the E. V. McCollum Professor and Chair of the Department of Biochemistry in the School of Hygiene and Public Health at Johns Hopkins University, a position that he held until his formal retirement shortly before his death.

Larry will be remembered as a pioneer in the DNA repair community. He was an active participant in a small but historically important meeting sponsored by the National Academy of Sciences in 1965, the first formal DNA repair meeting in the United States (that one included Max Delbruck.) From that time on Larry was a key participant in numerous national and international meetings on biological responses to DNA damage, where his expertise in excision repair of DNA damage was always keenly sought. He was the first to demonstrate the enzyme-catalyzed excision repair of cyclobutane pyrimidine dimers in vitro, using extracts of the UV resistant bacterium *M. luteus*, and through an elegant series of experiments, he went on to demonstrate that this organism employs an unusual mechanism of

nucleotide excision repair, one shared only with *E. coli* cells infected with bacteriophage T4. Later, Larry elucidated many fundamental aspects of the more general mechanism of nucleotide excision repair, using *E. coli* as a model system. Larry maintained an active interest in DNA repair mechanisms for the remainder of his career, most recently exploring variations in DNA repair capacity in human populations using a high throughput plasmid-based assay. I learned much about DNA repair from



*Dr. Lawrence Grossman*

Larry Grossman and will always be enormously grateful to him for the advice, encouragement and general help he provided me in the early years of my own career.

Larry will be remembered for his gentle demeanor, his sparkling wit and humor, and above all, the keen interest that he took in the professional development of young investigators, especially those in less well developed regions of the world. In particular, he devoted much time and energy to establishing a significant molecular biology presence in Pakistan, working with a former Pakistani postdoctoral fellow, Sheik Riazuddin. To this end he orchestrated several meetings with senior officials in the Pakistani government, including the late President Zia-ul-Haq. Most fittingly, the Department of Biochemistry and Molecular Biology established the Lawrence Grossman Lectureship in his name in 2004.

Larry was a staunch and active defender of democracy and the democratic process. In the early years of

World War II he quit high school and enlisted in the Navy as an aviation cadet. A skilled pilot, Larry flew numerous combat missions in the Pacific theater and twice received the Distinguished Flying Cross. He was also an avid and experienced sailor. Larry Grossman is survived by his wife Barbara (Bobby), his sons Jon and Carl, his daughter Ilene and six grandchildren.

*Errol C. Friedberg  
Professor and Chair  
Department of Pathology,  
University of Texas Southwestern  
Medical Center at Dallas*

## ASBMB Welcomes New Ph.D.s

ASBMB extends its congratulations to these individuals who recently received their Ph.D. degrees. In recognition of their 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.

**Frances M. Antommattei**  
University of Massachusetts  
Amherst

**Janice M. Ascano**  
University of Cincinnati

**Janis T. Lee**  
University of Oklahoma Health  
Science Center

**Autumn Massiello**  
Virginia Commonwealth University

**Marek Vrbacky**  
Charles University, Prague

*\* Candidates with an asterisk were previous Associate members who met the requirements for a free one-year membership.*



# Career Opportunities

## NORTHERN KENTUCKY UNIVERSITY Postdoctoral Position

A postdoctoral position is available to characterize members of the P5 subfamily of P-type transport ATPases in mice. Research involves the expression, localization, and determination of the ion specificity and cellular/physiological function of the transporters. Applicants should have a Ph.D. with a strong background in molecular biology/biochemistry. Opportunities to teach undergraduate lab or lecture courses are also available but not required. Salary is commensurate with experience but competitive. Please submit curriculum vitae, summary of research experience, and three references to: Patrick J. Schultheis, Ph.D., Department of Biological Sciences, Northern Kentucky University, Nunn Drive, Highland Heights, KY 41099. E-mail: schultheisp@nku.edu. For best consideration, please submit materials by April 1, 2006.

*NKU is an Affirmative Action/Equal Opportunity employer and actively seeks applications from minorities and women.*

## KALAMAZOO COLLEGE Biochemistry Visiting Assistant Professor

Kalamazoo College seeks a visiting assistant professor in Biochemistry or Bioorganic Chemistry for a full-year sabbatical replacement for the 2006-07 academic year. Graduate degree (Ph.D. or similar) in biochemistry, bioorganic chemistry or closely related field required.

Candidates are expected to have high aptitude for and interest in undergraduate teaching. Kalamazoo College is a highly selective, nationally known, undergraduate liberal arts college. Review of applications will begin March 6, 2006, and continue until the position is filled. Send curriculum vitae, undergraduate and graduate transcripts (unofficial acceptable), a detailed statement of teaching philosophy and goals, and three letters of recommendation to Dr. Jeffrey Bartz, Chair, Department of Chemistry, Kalamazoo College, 1200 Academy Street, Kalamazoo, MI 49006-3295. For more information about the college, visit [www.kzoo.edu](http://www.kzoo.edu). Candidates who will con-

tribute to the cultural diversity of the College are encouraged to apply and to identify themselves if they wish. EOE.

## U.S. ARMY RESEARCH LABORATORY Postdoctoral Fellowship

Postdoctoral positions are available in the Bio-Inspired Devices and Sensors Team in the Sensors and Electron Devices Directorate of the U.S. Army Research Laboratory, located in Adelphi, MD.

These positions will involve the development of novel bioassays as well as micro- and molecular- biology-based devices for a broad range of defense applications. Ideal candidates will have a strong background and demonstrated ability to work at the forefront of interdisciplinary fields in biotechnology and the physical sciences. Experience with immunoassay development (e.g., lateral flow), biological and synthetic molecular recognition (e.g., biomimetics), protein and DNA-based nanostructures, and biological self-assembly (e.g., phage display), as well as general micro- and molecular-biological methods development is preferred.

Additional skills of interest include: spectrochemical (fluorescence, Raman, etc.) and electrochemical methods of analysis, optical microscopy, and bio-integrated materials synthesis. Interested candidates should submit a CV along with at least 2

letters of reference to [arlest@arl.army.mil](mailto:arlest@arl.army.mil). *US citizenship is required for this position.*

## THE MONELL CHEMICAL SENSES CENTER Postdoctoral Fellowship Position

A postdoctoral fellowship position is available immediately in human sensory perception. Position will focus on human chemosensory psychophysics in a funded project led by Dr. Paul Breslin of the Monell Chemical Senses Center. Successful applicant will have strong skills in psychophysical methodology, data management and analysis, and be able to manage and execute an independent research program within this project, as well as strong communication and writing skills.

The Monell Chemical Senses Center was founded in 1968 as the world's first non-profit scientific institute devoted exclusively to basic research on the chemical senses: taste, smell and chemical-somatosensation.

Interested candidates should send a cover letter describing interests and future goals, c.v. and three supporting letters of reference to Jane Saar, Psychophysics, Monell Chemical Senses Center, 3500 Market Street, Philadelphia, PA 19104-3308, tel. 215-573-5775, [jsaar@monell.org](mailto:jsaar@monell.org). *The Monell Chemical Senses Center is an equal opportunity employer. Women and minorities are encouraged to apply.*

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by John D. Thompson, Editor

## Big Pharma Optimistic That '06 Will Outshine '05

After a sea of troubles that plagued them last year, executives at some of the world's largest pharmaceutical companies are buoyant about their prospects in 2006.

After a lengthy drought of new products, drug companies are looking at early-stage pipelines flush with promising new medicines while prescription growth is accelerating slightly, after enjoying but a 3% increase last year. At the same time, some firms are getting slightly higher prices under the new Medicare drug benefit program.

For example, Merck which took a beating last year is forecasting a 10% rise in profit yearly through 2010, led by Gardasil, a vaccine for cervical cancer that analysts say could become a multibillion-dollar seller. One month into the new year, shares of Merck

were up 30% from their low in October when concern about Vioxx-related lawsuits peaked. At the same time, shares of Pfizer were 25% up from early December, when they had hit an eight-year low. Still, some analysts have warned that such gains are more perception than reality. They note that sales and earnings fell in 2005 at companies such as Merck, Pfizer, and Bristol-Myers Squibb, and have predicted that they will fall again this year.

The pessimists warn that promises about early-stage pipelines have turned out to be false before and argue that the current optimism comes mainly from the short-term success of cost-cutting efforts, a benefit that may last only a few months. And even the most optimistic analysts do not expect the

drought of new treatments to end before the end of this decade.

However, after a year of layoffs, missed earnings forecasts, and federal warnings about potentially dangerous drugs, the change in attitude is marked. Ely Lilly CEO Sidney Taurel has pointed to recent FDA approvals, including cancer drugs from Pfizer and Bayer; a rheumatoid arthritis treatment from Bristol-Myers; and Exubera, an inhaled insulin from Pfizer whose approval last week received attention as a significant new approach to controlling diabetes. Taurel was quoted as saying, "There have been a number of product approvals which are showing the world that the industry has not lost its capacity to innovate. There is a resurgence of productivity in research and development."

## FDA Pipeline Choked with Backlog of Generic Drugs

With low-cost generic drugs being hailed as one of the few ways to rein in skyrocketing healthcare costs, the Food and Drug Administration is swamped with a backlog of more than 800 applications—a record high—to bring new generic products to the market.

As a result, it is considered likely that fewer generic drugs will be made available to consumers in the years ahead than the industry is already able to provide. Despite this, the FDA has told Congress that the office that reviews new generics needs no additional money and the agency has no plans to hire more reviewers.

"We are very aware that many, many people are waiting for more generics to

be approved and that there is frustration about the backlog," Gary Buehler, head of the agency's Office of Generic Drugs, told the *Washington Post*. Buehler predicted a record number of applications this year—and an even larger backlog—because "we don't believe we'll be getting any staff increases in 2006."

The Bush administration has strongly advocated generics as a way to hold down healthcare costs, and Mark B. McClellan, Director of the Centers for Medicare and Medicaid Services, said in an interview last month that an ever-growing number of generics is essential to controlling the cost to the government and seniors of the new Medicare prescription drug program.

"This huge backlog of generic applications is just unacceptable," said Rep. Henry A. Waxman (D-Calif.), one of the sponsors of the law that two decades ago made generics more easily available. "This is the time for the FDA to be ramping up its generic reviews, not to be falling so badly behind."

Last year, reported the *Washington Post*, the generics office approved more than 450 applications, 23 fewer than the year before. The office took an average of 20.5 months to review each application, compared with 19.9 months in 1999, although by statute the agency is obliged to do the job within six months.

## Boston Hospitals Seeking 'Angels' to Fund Research

With venture capital firms increasingly shying away from funding early-stage companies, several of Boston's major research hospitals are taking matters into their own hands by creating—or working to foster—angel investor funds.

Beth Israel Deaconess Medical Center has spent the past year recruiting 15 to 20 investors for a "venture philanthropy" fund with a goal of raising \$5 million to \$10 million. Children's Hospital is forming an "angel advisory group," and Partners Healthcare Systems Inc. is organizing a fund of angel investors at its Center for Innovative Ventures.

These efforts are not only new for teaching hospitals, it's new for universities, according to Abigail Barrow, director of the University of Massachusetts' Technology Transfer Center in Boston. "Once people see what they're doing and how successful it is, I'm sure it will be copied all over the place," she said.

Mark Chalek, chief of business ventures at Beth Israel's Technology Ventures office, said medical research centers "need some sort of mechanism" to develop promising research.

"A lot of us think we're out here in the dark right now," said Chalek, who launched the Technology Ventures

office in 1998. "It's not like my scientists have gotten stupider. We have lots and lots of technology. There are 1,000 inventions at Beth Israel, and only about 120 of those are licensed." Roughly 90 percent of Beth Israel's portfolio is laying fallow, Chalek said.

"We're not saying all of those are going to be blockbuster products. We're not saying we want to turn ourselves into drug companies or venture capital firms," he said. "But what we'd like to do is give our technology a greater opportunity to be developed. It's not only a problem for us, it's a social problem—who knows which one will be an undiscovered diamond?"

## Amgen to Build Major Plant in Ireland

Amgen Inc. has announced that it will build a manufacturing plant in Ireland to supply its growing European customer base. Amgen and the Irish government said the plant, to be built near the southwest city of Cork and open in 2009, would employ 1,100 and cost more than \$1 billion.

"Investments of this scale speak volumes about Ireland's ability to compete and win the most advanced and innovative business from the biggest biotechnology company in the world," said Micheal Martin, Ireland's Minister for Employment, Trade and Enterprise. He hailed Amgen as a company with world-class research and development and "a proven ability to manufacture and sell blockbuster products."

Amgen, based in Thousand Oaks, California, received an undisclosed amount of grants from the Irish gov-

ernment as part of the deal. However, company officials stressed that they picked Ireland primarily for other reasons, notably Ireland's concentration of drug companies and its corporate tax rate of 12.5%—about a third the rate of many European rivals

"We considered several attractive sites in other countries for these projects and finally chose Ireland due to its thriving biotechnology community, infrastructure to support biologics manufacturing and pro-business environment," said Dr. Fabrizio Bonanni, Amgen's Senior VP of Manufacturing.

Amgen, which employs more than 14,000 people worldwide, has also announced plans to will expand its research and development hubs in Cambridge, England, and in the San Francisco, Seattle and Cambridge, Mass., as well as developing a new R&D center in Uxbridge, England.

## BD to Study Stem Cells

Becton Dickinson and Company (BD) has started to explore the commercial potential of stem cells as a treatment for diabetes. The firm, which already sells systems for testing and sorting cells to research and diagnostic laboratories, may be in a strong position to supply therapeutic stem cells, if that technology lives up to scientific hopes.

Reuters quoted BD executive Edward Ludwig as saying, at the World Economic Forum meeting in Davos, "We have begun looking at the use of cells as therapeutic devices. This is still very long term—it is not something that is going to happen tomorrow. We're still working in the area I would call bench-level feasibility."

Ludwig said it was too soon to say how any future stem cell treatment would be commercialized or whether BD would work with other companies.

# For Your Lab/For Your Lab/For Your Lab

The information in For Your Lab has been provided by manufacturers and suppliers of laboratory equipment. For further information about any of these products listed contacts are listed at the bottom of each panel. When contacting any of these companies, please mention that you saw their product in *ASBMB Today*. Please note that a listing in *ASBMB Today* does not imply an endorsement by the American Society for Biochemistry and Molecular Biology or by any of its members or staff.

Manufacturers and suppliers, to include your products in For Your Lab contact Molly at [adnet@faseb.org](mailto:adnet@faseb.org) or 301-634-7157 (direct) or 1-800-433-2732 ext. 7157.

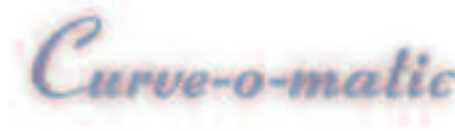
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- 6) Antibodies for neural sciences and obesity research
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## Eli Lilly's Labs Go Global

Across the nation, so-called teaching hospitals have teamed up with Eli Lilly to find out, in experiments on volunteer patients, whether its newest drugs are safe and effective. However, at the same time Lilly is increasingly moving its research and development, including clinical trials, to China, India, and the former Soviet bloc. The reason is simple: It's much, much cheaper to do this work in these nations, and Lilly considers the work itself to be as good as in the U.S. or Western Europe.

Lilly isn't the only member of Big Pharma relocating R&D operations to the developing world. Industry titan Pfizer is testing drugs in Russia, while AstraZeneca has been conducting clinical trials in China. But Lilly seems to be ahead of many of its peers. "If all of Lilly's plans jell, they would be very forward-looking," says Stephen DeCherney, President of Global Clinical Research for Quintiles Transnational, which conducts drug trials on behalf of pharmaceutical and biotech outfits.

Chairman and CEO Sidney Taurel says Lilly is currently doing 20% of its chemistry work in China, where he says costs are one-quarter that in the U.S. or Western Europe. Lilly helped start a lab in Shanghai in 2003, a year after industry pioneer Novo Nordisk opened a small research facility in Beijing. The startup, Chem-Explorer, works exclusively for Lilly and has a staff of 230 chemists, of which 20% to 25% have PhDs.

Lilly does roughly 50% of its clinical research outside the U.S., most of it done in Western Europe with China and India accounting for only a sliver. However, Taurel has predicted that Lilly will be doing 20% to 30% of this testing in those two countries in the next few years. Money is an obvious reason for this, but equally important is the fact that these nations now have the research labs, hospitals, and professional staffs to conduct studies that would meet the standards of the FDA or similar agencies in the European Union.

## EU Promises Funding Deal

The leaders of the European Union vowed in late February that they would make it a priority to finally wrap up a deal on the region's research and development funding program—an agreement for which the region's scientists have been waiting months.

Two years ago, the European Commission made a proposal to double EU research funding and give more emphasis to basic research unfettered by political motives. Since then, however, negotiations between member countries have seen the planned increase undergo significant cuts.

When discussions over the total EU budget collapsed in 2005, any agree-

ment on the science funding program—known as Framework Programme 7 (FP7)—was also frozen. Late last year, however, an 11th-hour agreement on the overall EU budget paved the way for FP7 negotiations to move forward.

With the current program (FP6) due to expire at the end of 2006, the Austrian government has vowed to use its six-month turn at the rotating EU presidency to broker a deal. In a joint statement with the Finnish presidency, which will take over from Austria for the second half of 2006, it said: "The presidencies will make every effort, in close liaison with the European Parliament, to ensure [the] timely launch of" FP7.

## San Diego Group Seeking Biotech Input on FDA

A national survey to examine how effectively U.S. biotechnology companies and federal drug regulators work with each other to bring new medicines and medical devices to market was launched last month by San Diego's biotech industry association.

The survey will be distributed to hundreds of biotech and medical device companies through the Council of State Biotechnology Associations. The council represents 43 states, including California and Massachusetts, which boast the largest clusters of biotechs in the United States.

The survey comes at a time when the FDA and the drug industry are facing scrutiny. Politicians and consumer health advocates have questioned the FDA's handling of safety issues following the withdrawal of Merck's painkiller Vioxx and Biogen Idec's multiple sclerosis drug Tysabri, which were both linked to patient death.

Austrian Science Minister Elisabeth Gehrler outlined the Austrian presidency's research objectives on Tuesday at a European Parliament committee meeting. "FP7 is the main instrument for the promotion of research at EU level. A quick adoption of FP7 would be a sign that the European Union is capable of taking action and would enable researchers to improve their planning for the coming years," she said.

The bad news for scientists is that the 11th hour deal hammered out by EU leaders in December will mean much tighter purse-strings than they had hoped for the duration of FP7.

# Calendar of Scientific Meetings

## MARCH 2006

### Gordon Research Conference (GRC) on New Antibacterial Discovery & Development

March 5-10 • Ventura Beach Marriott, Ventura, California  
For Information: Email: [trevor.trust@astrazeneca.com](mailto:trevor.trust@astrazeneca.com)  
Website: [www.grc.org/programs/2006/antibact.htm](http://www.grc.org/programs/2006/antibact.htm)

### Funding U.S. Research: Challenges and Opportunities, arranged by the Coalition for Bridging the Sciences Sponsored by Pittcon [The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy]

March 11-17 • Orange County Convention Center, Orlando, FL  
For complete program go to [www.appcluster05.com/app/homepage.cfm?appname=376&moduleid=855&linkid=4341](http://www.appcluster05.com/app/homepage.cfm?appname=376&moduleid=855&linkid=4341)  
A special symposium, Funding U.S. Research: Challenges and Opportunities, will be held March 16 and will include speakers from the National Science Foundation and National Institute of Biomedical Imaging and Engineering, as well as academia, industry, and government.

### DNA Structure, Genomic Rearrangements, and Human Disease

March 12-14 • Institute of Biosciences and Technology, Houston, Texas  
Organizers: James R. Lupski, Baylor College of Medicine and Robert D. Wells, Institute of Biosciences and Technology  
Keynote Lecturer: Dr. Evan Eichler, University of Washington, Seattle  
This three-day symposium will focus on DNA structure and how atypical DNA conformations result in human genetic disease. More detailed information including program and registration information can be found on the ASBMB website, [www.asbmb.org/meetings](http://www.asbmb.org/meetings)

### RNAi2006: Advances in RNA Interference Research

March 22-23 • St. Anne's College, Oxford, UK  
Organizer: Muhammad Sohail, Biochemistry Department, University of Oxford, Email: [muhhammad.sohail@bioch.ox.ac.uk](mailto:muhhammad.sohail@bioch.ox.ac.uk)  
Tel: +44 1865 275225; Fax: +44 1865 275259  
Website: <http://libpubmedia.co.uk/Conferences/RNAi2006HomeMay2005.htm>

### American Chemical Society 231st National Meeting

March 26 – 30 • Atlanta  
Contact: Charmayne Marsh; Ph: 202-872-4445  
Email: [y\\_marsh@acs.org](mailto:y_marsh@acs.org); Website: [www.acs.org/meetings](http://www.acs.org/meetings)

### Compartmentalization of Cyclic AMP Signalling

March 29-30 • King's College, Cambridge, UK  
Contact: Meetings Office, Biochemical Society, 3rd Floor, Eagle House, 16 Proctor Street, London, WC1V 6NX  
Email: [meetings@biochemistry.org](mailto:meetings@biochemistry.org)  
Website: [www.biochemistry.org/meetings](http://www.biochemistry.org/meetings)

### Biochemical Society Annual Symposium The Cell Biology of Inositol Lipids and Phosphates

March 29-31 • University of Birmingham, UK  
Organizer: Michael Wakelam, University of Birmingham  
Early registration deadline: February 28, 2006  
For more information: [www.biochemistry.org/meetings](http://www.biochemistry.org/meetings)

## APRIL 2006

### American Society for Biochemistry and Molecular Biology Centennial Meeting in Conjunction with Experimental Biology 2006

April 1-5 • San Francisco  
For information contact: [www.asbmb.org/meetings](http://www.asbmb.org/meetings)  
Email: [meetings@asbmb.org](mailto:meetings@asbmb.org)  
Ph: 301-634-7145; Website: [www.asbmb.org/meetings](http://www.asbmb.org/meetings)

### Recomb 2006—The Tenth Annual International Conference on Research in Computational Molecular Biology

April 2-5 • Venice, Italy  
For information contact: Email: [info@vенеziacongressi.com](mailto:info@vенеziacongressi.com)  
Ph: +39 0415238995; Website: <http://recomb06.dei.unipd.it/>

### Bio 2006 Chicago—Annual International Convention of the Biotechnology Industry Organization

April 8-12 • McCormick Place, Chicago, Illinois  
Register on or before February 23 to take advantage of early discounted rate. For internet registration and wire payment instructions: [www.bio.org](http://www.bio.org)  
To register by mail: BIO c/o SunTrust Bank, P.O. Box 79532 Baltimore, MD 21279-0532  
Note: Faxed forms are no longer accepted.

### 47th ENC Experimental Nuclear Magnetic Resonance

April 23-28 • Asilomar Conference Ctr., Pacific Grove, CA  
Contact: ENC, 2019 Galisteo Street, Building I-1 Santa Fe, New Mexico 87505; Ph: 505-89-4573  
Fx: 505-989-1073; Email: [enc@enc-conference.org](mailto:enc@enc-conference.org)  
Web page: <http://www.enc-conference.org>

## MAY 2006

### Canadian Proteomics Initiative—The Sixth Annual International Conference

May 10-12 • University of Alberta, Edmonton, Canada  
The program developed for CPI 2006 offers something for everyone with an interest in proteomics, bioinformatics, and structural biology. CPI will offer three post-conference workshops on May 13-14: Bioinformatics for Proteomics, Practical Proteomics, and Introduction to Transcriptomics.  
Co-Chairs: Joel H. Weiner and David Wishart, University of Alberta Contact: Steven Leard, [steven@marketwhys.ca](mailto:steven@marketwhys.ca)  
phone: 780-414-1663; fax: 780-414-1664; Website: [cpicanada.org](http://cpicanada.org)

### **FEBS Special Meeting on Cellular Signaling -**

May 26-June 1 • Dubrovnik, Croatia  
Early registration: March 15, 2006; [www.dubrovnik-conference.org](http://www.dubrovnik-conference.org)

### **CSBMCB International Meeting on Membrane Proteins in Health and Disease**

May 31- June 4 • Niagara-on-the-Lake, Ontario, Canada  
This Canadian Society of Biochemistry, Molecular and Cellular Biology sponsored meeting, held in Canada's wine country close to Niagara Falls, will feature cutting-edge sessions on Structural Biology of Membrane Proteins, Regulating Membrane Permeability, Dynamics of Membrane Proteins, Transporters and Disease, Trafficking Defects in Membrane Proteins, and Assembly and Disassembly of Membrane Proteins. Meeting organizer: Dr. Reinhart Reithmeier  
Email: [r.reithmeier@utoronto.ca](mailto:r.reithmeier@utoronto.ca)  
Website: [www.csbmcb.ca/e\\_index.html](http://www.csbmcb.ca/e_index.html)

## **JUNE 2006**

### **20th IUBMB International Congress of Biochemistry and Molecular Biology and 11th FAOBMB Congress in conjunction with 79th Annual Meeting of the Japanese Biochemical Society and 29th Annual Meeting of the Molecular Biology Society of Japan**

June 16-23 • Kyoto, Japan  
Deadline for On-line Registration: May 18, 2006  
Website: [www.congre.co.jp/iubmb/registration.html](http://www.congre.co.jp/iubmb/registration.html)

### **4th Annual Meeting of the International Society for Stem Cell Research**

June 29-July 1 • Metro Toronto Convention Centre Toronto, Ontario, Canada  
For information on the ISSCR Annual Meeting, contact ISSCR Headquarters: Ph: 847-509-1944; E-mail: [isscr@isscr.org](mailto:isscr@isscr.org)  
Conference Administrator: Deb Pederson [dpederson@isscr.org](mailto:dpederson@isscr.org)  
Press Inquiries: Heather Gagnon [hgagnon@isscr.org](mailto:hgagnon@isscr.org)  
Conference Director: Liz Freyn [lfrey@isscr.org](mailto:lfrey@isscr.org)

## **JULY 2006**

### **Gordon Conference on Enzymes, Coenzymes & Metabolic Pathways**

July 16 -21 • University of New England, Biddeford, Maine  
For information contact: Email: [grc@grc.org](mailto:grc@grc.org)  
Ph: 401-783-4011 ext 100; [www.grc.uri.edu/06sched.htm#GRC](http://www.grc.uri.edu/06sched.htm#GRC)

### **17th International Symposium on Plant Lipids**

July 16-21 • Michigan State University Campus, East Lansing  
Organizer: Christoph Benning  
For registration information, preliminary program, instructions for submitting abstracts, and for information on financial aid available for young scientists to attend the meeting, go to: [www.ispl2006.msu.edu/](http://www.ispl2006.msu.edu/). Members of underrepresented groups are especially encouraged to apply for financial aid.

### **Bioscience 2006: Bioscience for the 21st Century and Biochemical Journal Centenary Symposium**

July 23-27 • Glasgow, UK  
For more information: [www.biochemistry.org/meetings](http://www.biochemistry.org/meetings)

## **AUGUST 2006**

### **ISPMB 2006 – 8th International Congress of Plant Molecular Biology**

August 20-2005 • Adelaide Convention Centre, South Australia  
Abstract And Early Registration Deadline: Friday, March 3.  
Online registration and abstract submission pages:  
[www.sallyjayconferences.com.au/ispmb2006/registration.htm](http://www.sallyjayconferences.com.au/ispmb2006/registration.htm)  
[www.sallyjayconferences.com.au/ispmb2006/abstract.htm](http://www.sallyjayconferences.com.au/ispmb2006/abstract.htm)  
Abstracts cannot be accepted without registration and payment. All abstracts must be submitted online, abstracts sent as attachments will not be accepted.  
Program details:  
[www.sallyjayconferences.com.au/ispmb2006/program.htm](http://www.sallyjayconferences.com.au/ispmb2006/program.htm)

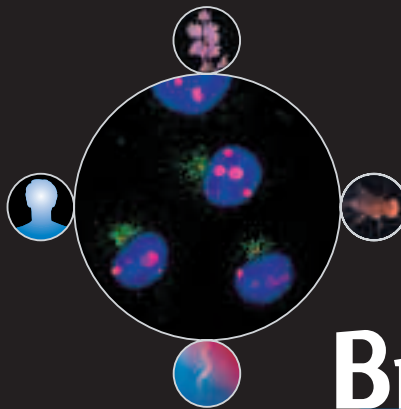
## **SEPTEMBER 2006**

### **5th European Congress of Biogerontology**

September 16-20 • Istanbul, Turkey  
Tel: +90 216 347 35 35 Pbx; Fax: +90 216 347 78 50  
Email: [okarabel@symcon.com.tr](mailto:okarabel@symcon.com.tr); Website: [www.symcon.com.tr](http://www.symcon.com.tr)  
Congress President Prof. Serif Akman, Etlik, Ankara, Turkey  
Tel: +90 312 304 3306; Fax: +90 312 304 3300  
E-mail: [sakman@gata.edu.tr](mailto:sakman@gata.edu.tr)

### **The 33rd Annual Conference of the Federation of Analytical Chemistry and Spectroscopy Societies (FACSS)**

September 24-28 • Disney's Contemporary Resort, Lake Buena Vista, FL  
Contact: FACSS, PO Box 24379, Santa Fe, NM 87502  
Phone: 505-820-1648; Fax: 505-989-1073  
Email: [facss@facss.org](mailto:facss@facss.org); Web Page: [www.facss.org](http://www.facss.org)



# BioScience 2006

bioscience for the 21st century

23–27 July 2006, Glasgow, UK



## BJ Centenary Symposium: Literature, Legacy, Life...

Monday 24 July 2006

*celebrating 100 years of biochemistry*

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Peter Parker and Guy Salvesen

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- Fred Goldberg
- Steve Huber
- Louise Johnson
- Stephen O'Rahilly
- Donny Strosberg
- Mike Waterfield
- Lewis Wolpert

### Focus topics:

- Nuclear receptors
- Transcription
- Control of immune responses
- Proteins - structure and function
- Ion channels
- Information processing and molecular signalling
- Coordination of cellular processes

### Award lectures:

- James Barber
- Simon Boulton
- Phillip Hawkins
- Seamus Martin
- Kim Nasmyth
- Martin Raff
- Sir Gregory Winter

**REGISTRATION NOW OPEN!**

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**Early Registration Deadline: Monday 22 May 2006**

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