ASBMB NEWS NEWS NEWS

Promoting Understanding of the Molecular Nature of Life Processes

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ASBMB To Publish Journal In Joint Venture with IUBMB

ASBMB will, in a joint venture with the International Union of Biochemistry and Molecular Biology (IUBMB), begin publication of *Biochemistry and Molecular Biology Education (BAMBED),* in both print and online versions, starting with the January/February 2002 issue.

"The ASBMB is enthusiastic about our new initiative in the area of publication of biochemical education," said ASBMB President Robert Wells in announcing the new venture. "The Council enthusiastically embraced the opportunity to work jointly with IUBMB on this project. We look forward to a wonderful educational journal under the leadership of Judith and Donald Voet."

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Said IUBMB President Brian Clark, "The new *BAMBED* venture with the ASBMB is a significant step forward in the IUBMB's plan of proactive cooperation and collaboration with regional and national organizations for the furtherance of research and education in the fields of biochemistry and molecular biology. At the start of my Presidency I called for a special worldwide effort in the area of education. I am immensely gratified that the ASBMB has responded concretely to embark on this joint venture with a friendly collegial spirit to pursue these worthwhile aims."

The Editors-in-Chief of *BAMBED,* Donald Voet, Ph.D., University of Pennsylvania, and Judith G. Voet, Ph.D., Swarthmore College, stated that the joint venture "will greatly increase our connection with the worldwide biochemistry and molecular biology community. This increased visibility should attract submissions from many biochemistry and molecular biology researchers whose interest in and contribution to education has until now not been shared with the rest of the community."

In 1997, ASBMB sponsored a satellite session on biochemistry and molecular biology education in conjunction with the ASBMB/IUBMB joint meeting in San Francisco. The attendance was overwhelming, with over 200 participants. This sparked the realization that there was a

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Comments
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We Get Letters . . .

More Members Report Problems In Obtaining Visas for Postdocs

(In our August/September issue we printed a letter from Professor Thomas Roche of Kansas State University concerning difficulties in obtaining visas for graduate and postdoctoral students from the Peoples Republic of China. That letter brought forth a wave of letters that cited similar problems and raised questions about the State Department's policy in regard to such visa applications. Due to space limitations we are unable to print all of these letters. Following are excerpts from some of these letters.)

I encountered this problem recently with a visa request for a postdoctoral fellow from India. The visa request was at first denied, and then a second request was granted. In the meantime, we lost four months of valuable research time.

T.J. Thomas, Ph.D.
New Jersey University of Medicine and Dentistry

* * * * * *

At NIH, we have an extensive visiting fellow program with many Chinese nationals. INS requires that all visiting fellows hold a J-1 exchange scholar visa, as they are not employees of NIH and therefore not eligible for any other visas.

I recently recruited a Chinese national and sent her all the paperwork required, including an IAP-66 form. However, her request for a J-1 visa was turned down twice by the U.S. embassy in Beijing which suggested that she apply for an H-1B visa. I find this quite curious, as we made it clear that she is not eligible for this visa, and would be more apt to remain in the U.S. on an H-1B visa than a J-1.

I believe that the main reason for turning down visas is not that embassy officials are afraid the students won't return, but that there is a hidden agenda to block as many visas as possible.

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Tell Us What You Think

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

The Postdoc Visa Issue:

How It Looks to One ASBMB Member

(In addition to printing letters from members concerning issues of importance, we occasionally print guest editorials in which members have an opportunity to express their thoughts in greater detail. These opinion pieces do not necessarily reflect the Society's position.)

By Jian Feng, Ph.D.
Department of Physiology and Biophysics
State University of New York at Buffalo

I would like to provide some information on the visa problems for students and postdocs from China that was raised by Dr. Thomas Roche in the August/September issue of *ASBMB News*.

Anyone who advertises for postdoctoral positions knows that the vast majority of respondents are from China and India. For postdoctoral fellows or exchange scholars from China, the issuance of a J-1 visa was almost guaranteed in the past. In recent years however, it has become increasingly difficult to obtain this type of visa.

I sense that there is a trend in the government to persuade investigators to petition for H-1B visas for their postdocs, instead of requesting J-1 visas. The following reasons can be inferred from this trend.

Intent to Immigrate

U.S. immigration laws assume that everyone seeking a non-immigrant visa potentially has the intention to immigrate. It is the burden of the applicant to prove that he or she does not intend to immigrate (simply put, guilty until proved otherwise). It is the duty of consulate officials to judge whether the applicant has proven this beyond their doubts.

From my experience and those of my colleagues, it is quite apparent that citizens of the Peoples Republic of China (PRC) who have obtained a Ph.D. outside China (Japan in my case, Germany in my colleague's case) will find it very difficult to prove their innocence of this suspicion. U.S. embassies or consulates in these countries seldom accept their J-1 visa applications, and ask them to go back to China to apply there. Once they are in China, the consulates will reject their applications on the basis that they cannot prove that they have strong ties to, or reasons to go back to, China. The fact that they have spent four to five years outside China to get a Ph.D. very often makes consular officials assume that they are very unlikely to go back to China once allowed into the U.S.

The odds of getting a J-1 visa for a Chinese postdoc who has never been to any foreign countries are in fact better. U.S. consulate officials would sometimes give them the benefit of doubt that they may return. However, the success rate is getting worse, as many investigators can tell.

Should the postdocs be unwilling to go back to their home countries, the issuance of a J-1 visa simply defeats the purpose. The J-1 visa is normally good for only three years, and requires that visa holders return to their home countries for at least two years before they can be issued any type of U.S. visa again.

In recent years however, it has become increasingly difficult to obtain a J-1 visa.

The two-year requirement is supposedly for the benefit of their home countries. If the home country is willing to issue a letter saying that the service of a J-1 scholar is not needed by that country, the requirement can be waived by the U.S. Immigration and Naturalization Service (INS). The scholar is then free to apply for other types of visas.

For those who do not have the right connections in China to get this "no objection" letter, immigration to Canada is a choice with an almost 100% success rate. After living in Canada for three years as permanent residents, they can elect to become Canadian citizens and will be free to come into the U.S.

H-1B Visas

If the consular officials believe that postdocs are not going back, they should be treated as non-immigrant workers, for which an H-1B visa is designated. The problem that we must face then is the increased cost in postdoc salaries and benefits, in addition to the fees for H-1B visa applications.

I tried very hard to get a J-1 visa for one of my postdocs, who got his Ph.D. in Japan. Despite the evidence he provided to the U.S. consulate in Shenyang, China, he was rejected four times there. Each time, he was not allowed to apply for a visa in Osaka, Japan, and had to fly to Shenyang. It should also be noted that a letter explaining that the postdoc is urgently needed for projects funded by the U.S. government very often has little impact on the decision of the consulate officials.

Continued on page 5.

We Get Letters . . . from page 2

Unfortunately, this hidden agenda is wreaking havoc with the scientific enterprise in this country. It appears that the State Department is shooting itself (or more appropriately, U.S. universities and other government agencies) in the foot. I would hope that ASBMB and FASEB weigh in on this issue.

David R. Sibley, Ph.D.
National Institute of Neurological Disorders & Stroke

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We admitted two Chinese graduate students in the Department of Pharmacology for Fall 2001. One got his student visa, but the other was denied after a couple of tries.

I am hiring a postdoc from the same country but she is skeptical about getting her H-1 visa. She does not want to go to the embassy because of all the negative feedback she has received from friends who were denied visas to come to the U.S. Such visa denial hinders the progress of my research which is supported by the NIH.

Ben C. Valdez, Ph.D.
Baylor College of Medicine

* * * * * *

In the last two months, I have had two scholars denied such visas, one for the second time. Written pleas to the U.S. embassy in Beijing have not been considered, or apparently even read, and the scholars were perfunctorily dismissed with a suggestion to apply for H-1B visas.

Considering that I have waited for these scholars to join my NIH-funded program since March, you can appreciate the cost of this to my research in terms of wasted time, effort, and NIH dollars.

I would much rather hire postdocs or postgraduate researchers trained at U.S. institutions, but in spite of widespread advertising I have not succeeded.

As even the intercession by our Congressional representative has fallen on deaf ears, I request that ASBMB intercede with the State Department by conveying the negative impact of this shortsighted and potentially destructive policy, not just on NIH-sponsored research programs but also on the progress of U.S. science and industry.

Maria Almira Correia, Ph.D.
University of California, San Francisco

* * * * * *

I had the same problem Professor Roche wrote about when I applied for a J-1 visa in Beijing. I still recall standing before an embassy officer and being hurt by his arrogant manner and his treating me like a liar. I managed to answer all his tough questions, but was rejected for no obvious reason.

I got my visa on the second try with another officer, who asked a few simple questions and let me pass. I can never understand why I could obtain my visa on the second attempt instead of the first.

Xinhai Yang, Ph.D.
Tufts University School of Medicine

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We also have experienced visa difficulties with Chinese students. Five out of ten had no problems, but one had to go through three interviews to obtain her visa, and two are still denied entry after three attempts.

I know of three other programs here that have experienced this same difficulty. The office of U.S. Senator Grassley has attempted to help, arguing that these students are needed to fill positions important for the advancement of U.S. science and agriculture, but this has not had a discernible effect.

Janice Buss, Ph.D. Assoc. Professor
Iowa State University

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Two prospective PRC students, accepted into the Ph.D. program in the Dept. of Biochemistry here, were denied visas in the manner described by Dr. Roche, despite their protestations that they did not plan to remain in this country. This capricious policy of the State Dept. has to be stopped.

Peter Rubenstein, Ph.D.
University of Iowa

* * * * * *

I am trying to recruit a student from China. After a two-minute interview, her visa was denied. The idea that this student would not return home was specious, since her husband was staying in China.

Carl Frieden
Washington University School of Medicine

The Postdoc Visa Issue: *. . . continued*

To perform my duty to the NIH, I petitioned for an H-1B visa for him. After two months and $2,610 ($1,500 for the school to file the H-1B petition on his behalf, $110 regular application fee for the INS, and $1,000 premium processing fee), the INS Vermont Service Center approved his H-1B petition. He was allowed to apply for his H-1B visa in Osaka, instead of in China. It took less than 10 minutes, and with not a single question asked of him, to get the H-1B visa in Osaka.

There is also an economic reason for the change from J-1 to H-1B. According to tax treaties between the U.S. and China, J-1 scholars do not need to pay U.S. income tax for three years. INS also allows their spouses (on J-2 visas) to work in the U.S. without paying income tax. J-1 scholars from other countries may or may not have the same treatment, depending on their nation's bilateral tax treaty with the U.S.

There is no tax exemption for people with H-1B visas. In addition, their spouses (on H-4 visas) are not allowed to work, and they cannot claim their spouses and children as dependents when filing tax returns. All aliens are treated as single persons for tax purposes, no matter whether they are married or not. Research institutions will have to pay significantly more to H-1B visa holders for them to get the same take-home salaries as J-1 scholars.

The point that I want to raise is that our labs are running on a nonprofit basis for the benefit of the taxpayers. The increase in costs for our research caused by the shift from J-1 to H-1B visas will either affect our work or increase the money we need to carry out that work.

The difficulties in getting F-1 student visas for Chinese nationals will also be a significant problem for many graduate programs. The current economic status of our academic research programs does not warrant a prediction that the labor market is going to change any time soon in our favor. The research community must find a strategy for sustained and balanced development in a market economy that recognizes neither national boundary or ethnic origins of its workers. If we do not voice our concerns, the policy makers will only be too happy that they have one less problem to worry about, and one less constituency to please.

Dr. Feng can be contacted by Email at jianfeng@buffalo.edu

ASBMB Travel Awards Available!

Travel Awards Deadline for Applications November 1

ANNUAL MEETING

held in conjunction with Experimental Biology
April 20 – 24, 2002
New Orleans, Louisiana

ASBMB Graduate Minority Travel Awards
The ASBMB has been awarded a grant through the Minority Access to Research Careers (MARC) program, administered by the National Institute of General Medical Sciences, NIH, to support a portion of the expenses of minority graduate students to attend the EB 2002 Meeting in New Orleans. Special scientific sessions will be held all day on Saturday, April 20, 2002 in which all recipients of this award must participate. Several awardees will be chosen to make oral presentations in these sessions, in addition to their presentations during the main meeting. Applicants must be members of a minority group currently under-represented in science. An applicant must submit an abstract to be presented at the meeting. Successful applicants will be reimbursed up to $1,000 for their expenses. Only U.S. residents qualify for the award.

ASBMB Graduate or Postdoctoral Travel Awards
Fellowships are available to assist graduate or postdoctoral fellows attending the EB 2002 Meeting in New Orleans. Applicants must submit an abstract to be presented at the meeting. The applicant's mentor must also agree to attend the meeting. Special scientific sessions will be held all day on Saturday, April 20, 2002 in which all recipients of this award must participate. Several awardees will be chosen to make oral presentations in these sessions, in addition to their presentations during the main meeting. Successful applicants will receive complimentary registration to EB 2002 and will be reimbursed up to $400 for their expenses.

ASBMB Undergraduate Travel Awards
Funds are available to assist undergraduate students participating in the ASBMB Undergraduate Poster Competition on Monday evening, April 22, 2002, during the EB 2002 Meeting in New Orleans. The undergraduate student must be the first author of the poster. Spring 2002 college graduates are eligible. Applicants may receive up to $300 to defray their expenses.

ASBMB Undergraduate Faculty Travel Awards
The ASBMB, through the Education and Professional Development Committee, will award 20 travel fellowships of $500 each. The fellowships, awarded competitively, are for faculty at undergraduate institutions who are primarily involved in undergraduate teaching at institutions which have limited travel resources.

Applications will be available in September 2001. Applications are due November 1, 2001.

To receive applications forms contact:
ASBMB, 9650 Rockville Pike, Bethesda, MD 20814-3996
Phone: 301.530.7145, Fax: 301.571.1824, Email: kgull@asbmb.faseb.org

Academy Calls for Fewer Restrictions On Funding for Stem Cell Research

By Peter Farnham
Public Affairs Officer

The National Research Council and the Institute of Medicine released a new report, "Stem Cells and the Future of Regenerative Medicine." The report, released in mid-September, calls for public funding of research on human stem cells derived from both adults and embryos. It notes that public funding provides the most efficient and responsible means to fulfill the promise of stem cells for achieving medical breakthroughs. The report clarifies what is known about the scientific potential of stem cells and how it can best be realized.

President Bush has announced that he would allow federal financial support of research that uses embryonic stem cells being cultured in laboratories around the world, but would prohibit funding for the development of new lines that involve the creation and destruction of additional embryos. However, the Academy report says that new stem cell lines will be needed given two unavoidable factors: Harmful genetic mutations are likely to accumulate in cell lines over time, and most of the existing lines have been cultured with animal cells or serum that could lead to potential human health risks.

Existing stem cell lines must be monitored closely for genetic mutations and other limitations, and new stem cell lines will be needed in the future, said the committee that wrote the report. Preventing the human body from rejecting transplanted stem cells also is critical, and research in this area should be pursued aggressively, including research on a technique known as somatic cell nuclear transfer.

An Academy news release quoted committee chair Bert Vogelstein, Professor of Oncology and Pathology at the Johns Hopkins University School of Medicine, Baltimore, and a Howard Hughes Medical Institute Investigator, as stating:

"Given the promise of stem cell research for treating and perhaps curing a variety of debilitating diseases, our committee felt strongly that research not be limited, but include work on both human adult and embryonic stem cells. We also believe that new embryonic stem cell lines will need to be developed in the long run to replace existing lines that become compromised by age, and to address concerns about culture with animal cells and serum that could result in health risks for humans."

To be useful for medical therapies, embryonic stem cells need to be transformed into different tissues for transplantation into patients, something which researchers are only beginning to learn how to do. Whenever tissue transplantation takes place, however, there is always a risk that the body's immune system will reject the new biological material, with life-threatening implications. To ensure that stem cell transplantation therapies can be broadly applied to treat many illnesses and individuals, new means to overcome tissue rejection must be found. A technique called somatic cell nuclear transfer, which can be used to create stem cells that are a genetic match to a patient, may be one way to do this, the report says. This practice, which is ethically controversial and sometimes called "therapeutic cloning," is done by removing the nucleus of an egg cell, inserting genetic material from the transplant recipient, and triggering cell division. Because there is no intent to implant the resulting embryo to produce a child, the nuclear transfer technique should not be confused with reproductive cloning.

The academy report notes that public sponsorship of basic research would help ensure that many more scientists could pursue a variety of research questions and that their results are made widely accessible via scientific journals — two factors that can significantly speed progress. In addition, public funding offers greater opportunities for regulatory oversight and scrutiny of research.

In light of the ethical dilemmas and scientific uncertainties raised by stem cell research, the committee called for the creation of a national advisory body made up of leading scientists, ethicists, and other stakeholders to be established at the National Institutes of Health (NIH). This group could ensure that proposals for federal funding to work on embryonic stem cells are justified on scientific grounds and meet current and future federally mandated ethical guidelines. The committee noted that in the past NIH has set up similar watchdog panels, such as the Recombinant DNA Advisory Committee, which oversees this once-controversial genetic engineering research.

The complete report can be read on-line at http://books.nap.edu/books/0903076307/html/index.html

EB 2002 Deadline for Abstracts November 7

CENTER FOR SCIENTIFIC REVIEW REVAMP OF STUDY SECTIONS:

One Participant's Viewpoint

Early last summer, Endocrine Society member Henry Kronenberg, Harvard Medical School, participated in a "Boundaries Panel" meeting at NIH dealing with the on-going effort to realign the NIH's study sections. Dr. Kronenberg prepared a report for the FASEB Science Policy Committee on which he serves, and has since graciously allowed us to share this report with you—many of whom are intensely interested in this subject. The following is his report.

I recently served on one of the NIH Boundaries Panels involved in setting up study sections....I offer the comments below to give the interested reader more of a sense of what NIH is doing here. I should say that I have no special knowledge but only the perspective of someone asked to participate on a specific panel.

I was asked to participate on a panel considering one of the 24 different Initial Review Group categories; my category was a catch-all that includes bone/connective tissue/arthritis/skin. I assume I was asked after input from relevant societies and the current NIH staff. The others on the panel (about 20 people) were senior scientists from the various relevant areas. The sessions were run by an individual from CSR and an outside person who is a former scientist and current administrator from Hopkins.

This panel was only the second to meet; the first was a Hematology panel. CSR clearly expects the specific procedures to evolve. As I understand it, they have also run panels a couple of years ago that led to the 4 new IRGs that cover neurobiology. The current model evolved from that experience; my understanding is that they do not plan to revisit the neurobiology IRGs for that reason. I think the plan is to have the rest of them meet over the next year or more. The mission of each meeting is to organize the study sections associated with each IRG.

We had a fairly structured experience. In advance we received more than 400 abstracts that had been reviewed by study sections in this particular area roughly a year ago. We were asked to read them in advance, but were given little other information in advance (a defect, I think). Then we had a brief introductory meeting at which Ellie Ehrenfeld, other CSR people, our chair, and a member of the original Boundaries Panel spoke. The next day we were given a subset of the abstracts to categorize into topic areas. A matrix was provided with "organs" for columns (bone, arthritis, skin, dental, etc) and approaches for rows (basic biology, biomaterials, epidemiology, etc). I found this fairly contrived, but the matrix turned out to be pretty serviceable. Then we got together in small groups to go over the assignments with others who had read the same abstracts. Then the whole group got together to discuss disagreements among the assignments.

The reason this was so important was that the next step was to set up study sections to cover the various topics. A major constraint was that a study section have neither too few nor too many abstracts/meeting. The group as a whole thrashed out various ways of doing it, generally reached a consensus, but had to have votes on a few conflicting visions of organization.

Finally, another set of small groups (this time self-selected by skill set) got together to write descriptions of the specific topics covered by each study section and possible overlaps with other study sections both inside and outside this particular IRG. These were further honed over the next few days via e-mail.

As I understand it, the next step is to publish the results on the CSR website, thereby soliciting comments. After all the IRG groups meet, some sort of process will be used to reconcile conflicting visions about overlap topics across IRG groupings. CSR is clearly sensitive to the idea that they must get input from all stakeholders. They clearly controlled the nature of the process but were not at all heavy handed, I thought, in driving the specifics of the process. There was a fairly vigorous debate, because the panel contained many outspoken articulate people, none of whom viewed themselves as representing NIH per se.

Overall, I was impressed by the quality of the group and by the thoughtfulness of the overall process. I am sure that the time spent categorizing abstracts at the meeting involved a very inefficient use of the panel's time. But the proper categorization of abstracts was essential to the methodology used. Most specifically, several topic areas that are completely coherent and could have had their own study sections were not given their own study sections because the topics were represented by too few abstracts. The CSR people said it was impossible to have a study section that reviewed fewer than 50 proposals/meeting. No one seriously objected to this practical constraint.

The resulting study section alignment, perhaps not surprisingly, strongly resembled the current status quo, but there were some differences and dramatic changes were seriously considered and rejected for various reasons.

Continued on page 19.

Roger Kornberg to Open ASBMB Program at EB2002 in New Orleans

Eukaryotic Gene Transcription Machinery will be the topic for Dr. Roger Kornberg of Stanford University, who will present the Opening Keynote Lecture at ASBMB's Annual Meeting, held meet in conjunction with the Experimental Biology 2002 Meeting, April 20-24 in New Orleans.

Dr. Kornberg, of Stanford University, shares the ASBMB-Merck Award, for outstanding contributions to research in biochemistry and molecular biology, with Dr. Robert Roeder of Rockefeller University, who will deliver an Award lecture at the Annual Meeting. He has also been asked to present the keynote lecture at ASBMB's Satellite Meeting, Transcriptional Regulatory Mechanisms.

The Award recognizes complementary discoveries, over the past 25 years, through which Drs. Kornberg and Roeder elucidated the nucleosome as the fundamental unit of chromatin; identified RNA polymerases I, II, and III, general and gene-specific transcription factors, the mediator of transcriptional regulation; and revealed the structure of RNA polymerase II with attendant insights into the transcription initiation and elongation mechanisms.

Drs. Roeder and Kornberg are just two of the seven outstanding scientists selected by the ASBMB Awards Committee to receive awards in 2002.

Award Lectures Feature Outstanding Scientists

Others chosen by the Awards Committee include Dr. Joseph Heitman, HHMI, Duke University Medical Center, who was chosen to receive the ASBMB-Amgen Award. This award is presented to a new investigator (no more than 15 years past receiving his doctorate) for significant achievements in the application of biochemistry and molecular biology to the understanding of disease.

"Our work focuses on the yeast *Saccharomyces cerevisiae* (Baker's or Brewer's yeast) as a model to understand how cells sense and respond to their environment," said Dr. Heitman in discussing the research cited in his award. "Our specific focus is using yeast as a model to elucidate how immunosuppressive drugs block signaling events in T-lymphocytes that mediate rejection of transplanted organs, and to understand how pathogenic fungi sense and infect their hosts.

"Our studies reveal that, like the original Model-T, yeasts and human cells are often constructed from universal components that are readily interchangeable, despite the fact that these organisms diverged from a common ancestor a billion years ago."

Another ASBMB Award presented to younger investigators who have no more than 10 years post-doctoral experience is the Schering-Plough Scientific Achievement Award. This year's Schering-Plough Award recipient is Dr. John D. York, HHMI, Duke University Medical Center.

Much of Dr. York's research deals with identification of the cellular targets and processes influenced by orphan IP messengers. He has utilized a multidisciplinary approach to characterize the function of over 10 gene products that control production of IP messengers that play critical roles in the regulation of membrane trafficking, cytoskeleton organization, gene expression, and mRNA export.

These studies have led to the surprising finding that compartmentalization of specific IP pathways to the nucleus provides an additional layer of complexity to IP-mediated pathways. In addition, by determining the crystal structure of one of the IP metabolizing enzymes, Dr. York has uncovered a novel family of lithium targets with relevance to manic depressive disease.

Dr. Gordon Hammes was selected to receive the William C. Rose Award, which recognizes outstanding contributions to biochemical and molecular biological research and a demonstrated commitment to the training of younger scientists, as epitomized by the late Dr. Rose. (See page 16 for article on Dr. Hammes' Award.)

Every two years, the Society solicits nominations for the Herbert A. Sober Lectureship and the Avanti Award. The 2002 recipient of the Herbert A. Sober Lectureship is Dr. Jack D. Griffith, University of North Carolina, Chapel Hill. This lectureship recognizes outstanding science with a particular emphasis on the development of methods and techniques to aid in research.

"When I began developing techniques for directly visualizing DNA and DNA-protein complexes by electron microscopy," recalled Dr. Griffith, "EM of macromolecules was in general held in great skepticism by many biochemists. Over the years by making these methods highly quantitative and by collaborating with many of the best biochemists and molecular biologists. I feel that we have slowly changed thinking so that EM of DNA and macromolecules is now accepted as a legitimate player in structural biology."

The Avanti Award alternates between ASBMB and the Biophysical Society and recognizes exceptional research

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Satellite Meeting Deadline for Abstracts November 7

ASBMB Satellite Meetings
April 19-20, 2002
Sheraton New Orleans, Louisiana

Satellite I - Transcriptional Regulatory Mechanisms

Organized by Ronald C. Conaway, *Stowers Inst. for Med. Res., Kansas City, MO*, Joan W. Conaway, *Stowers Inst. for Med. Res., Kansas City, MO*, and Ali Shilatifard, *Saint Louis University*

Keynote Lecturers

Robert G. Roeder Richard Losick

Symposia

Activation
*Barbara J. Graves, Peggy Farnham, Robert Schleif, Dale Dorsett

Chromatin
*Sharon Y.R. Dent, Karolin Luger, Ed Seto

Repression Mechanisms
*Ronald C. Conaway, Elke Krueger, Don Ayer

Fundamental Mechanisms
*Ali Shilatifard, Jean-Marc Egly, Robert Landick

Satellite II - Scientific and Technical Challenges in the Human Proteome

Organized by Al Burlingame, *UCSF* and John T. Stults, *Genentech, Inc.*

Keynote Lecturers

Ruedi Aebersold Leigh Anderson

Symposia

Cellular and Subcellular Fractionation in Scientific and Technical Challenges of the Human Proteome
*John J. M. Bergeron

Proteomic Approaches to Protein Modifications
*Al Burlingame

Protein Separation and Quantitation in Proteomics
*John T. Stults, Ruth A. VanBogelen, John R.Yates, III

Proteomics on Scale: Translating Capacity into Knowledge
*Steven A. Carr, Marc Vidal, Scott Patterson

Satellite III – Combinatorial Signaling

Organized by Ralph A. Bradshaw, *UC, Irvine* and Sarah J. Parsons, *Univ. of Virginia Hlth. Sci. Ctr.*

Keynote Lecturers

Ralph A. Bradshaw Natalie G. Ahn

Symposia

Receptor Crosstalk
*Sarah J. Parsons, Corinne M. Silva, Louis Lattrell

Receptor Oligomerization
*Steve Hubbard, Melissa Starovasnik, Moosa Mohammadi

Growth Factor/Integrin Signaling
*John T. Parsons, Alan Wells, Michael Schaller

Non-Genomic Steroid Signaling
*Margaret A. Shupnik, Kathryn Horwitz, Stavros Manolaga

Abstract Deadline—November 7, 2001

Abstracts submitted to ASBMB Satellite Meeting topic categories will be displayed Friday and Saturday, the 19th and 20th in the Sheraton New Orleans from 8:00 AM - 5:00 PM. Posters presented in the Satellite Meetings will not be presented within the Experimental Biology 2002 Meeting, April 20 - 24, 2002.

For information contact: ASBMB Meeting Office, 9650 Rockville Pike, Bethesda, MD 20814
Tel: 301-530-7145; Fax: 301-571-1824; www.asbmb.org

(*denotes Chairperson)

contributions in the area of lipids. This year's recipient, selected by ASBMB, is Dr. Christian R. H. Raetz, Duke University Medical Center.

Dr. Raetz has had an impressive career as a leader in the evolution of modern lipid biology, as a mentor of graduate students and postdoctoral fellows, as Vice President of Research in a major pharmaceutical company, and now as an academician and departmental chairman. The single most important factor in his prolific contribution to lipid biology has been his ability to effectively utilize chemistry, biochemistry, molecular genetics, and genomics to solve biological problems.

AT ANNUAL MEETING:

ASBMB To Honor John Porter For Strong Support of NIH

Former Congressman John Porter will be the first recipient of the Society's Howard K. Schachman Public Service Award. Mr. Porter spoke with President Bob Wells in early September, and told him how delighted and honored he was to be the first recipient, and that he will come to our annual meeting in April 2002 in New Orleans to accept the award and to give a presentation. "Very pleased," was how Public Affairs Advisory Committee Chairman Bill Brinkley, Baylor College of Medicine, characterized his reaction to the news.

Mr. Porter retired from Congress in January after a 20-year career representing his suburban Chicago district. He chaired the House appropriations subcommittee on Labor, HHS, Education, and Related Agencies for the last six years of his tenure. Throughout his career as a member of Congress, he evinced strong and unwavering support for the National Institutes of Health, and was the key supporter in the House of the plan to double the NIH budget over five years starting in 1997. This plan is now in its fourth year, and doubling the NIH budget in five years is a goal espoused by the Administration and virtually every member of the House and Senate.

The Schachman Award was created this year by the ASBMB Council to recognize outstanding contributions in the area of public service. The award recognizes an individual who demonstrates dedication to public service in support of biomedical science.

Plenary Lectures from other prominent scientists will also be held throughout the meeting.

Meetings-within-a-Meeting

Since 1996, the ASBMB has organized symposia at the Annual Meeting into thematic categories. Attendees may choose to attend symposia within the same theme or consider sampling lectures from each category. Separating the symposia into themes allows participants to experience attending a meeting-within-a-meeting and not be intimidated by a meeting as large as Experimental Biology. The theme of the EB 2002 meeting is Translating the Genome (see pages 12 and 13 for program details).

Ralph A. Bradshaw, University of California, Irvine; and Joan Conaway, Stowers Institute for Medical Research, co-chaired this year's Program Committee, which organized the Annual Meeting into three themes: Cellular Control, Gene Regulation and Proteomics. "We chose these themes because they encompass some of the most important topics on the scientific horizon," said Conaway.

"We also believe the ASBMB Meeting is unique in that it offers the opportunity for young scientists to present their research. Speakers are selected from abstracts submitted to ASBMB symposium topic categories," added Bradshaw. The deadline for abstracts is November 7.

Focus Group Sessions

As an outgrowth of the recent ASBMB strategic planning retreats, the Society's Meetings Task Force, chaired by Ed Dennis, University of California, San Diego, has initiated a new program to sponsor focus groups. These groups will provide an opportunity for self-selected groups of ASBMB members in a specific scientific area to meet and exchange information on a regular basis. This interaction will allow smaller groups with shared scientific interests to create an identity within the larger society, as well as enable members to have influence on ASBMB's scientific and educational programming.

For Program Updates and Travel Award Information, check the Annual Meeting section of the ASBMB website: www.asbmb.org.

EB 2002 Deadline for Abstracts November 7

After receiving proposals identifying possible focus groups, the ASBMB selected several and asked those who submitted the suggestions, to organize symposia at the Annual Meeting. There will be four Focus Group Sessions this year.

The initial Focus Group sessions will be centered on Glycobiology; Lipids and Membranes; Metabolic Regulation; and Enzyme Structure, Function and Mechanism. The organizers are, respectively, John Lowe, HHMI, University of Michigan; Dennis R. Voelker, National Jewish Medical and Research Center; Richard W. Hanson, Case Western University; and Vern Schramm, Albert Einstein College of Medicine. In addition to invited lecturers, up to four speakers will be chosen from abstracts submitted to Focus Group topic categories. Attendees are encouraged to submit abstracts for consideration by the November 7 deadline.

Education and Professional Development

"We're pleased that Human Resource topics have become an additional theme within the ASBMB Meeting," said Dr. Marion O'Leary, Chair of the ASBMB Education and Professional Development Committee. The Committee has organized six symposia this year as well as a Women Scientists' Mentoring Session/Reception, the Sixth Annual Undergraduate Research Achievement Award Poster Competition (sponsored by the *Biochemical Journal*) and the ASBMB Graduate/Postdoctoral Travel Award Symposium. The committee also awards travel fellowships to graduate students, postdoctoral fellows, undergraduate faculty and undergraduate students who participate in the poster competition.

Minority Affairs

The ASBMB Minority Affairs Committee has organized a session entitled, "Under-Representation of Minorities in Science: Can the Leaks in the Pipeline be Fixed?" Usually, the Committee also sponsors a minority reception. However, this year, the EB 2002 meeting will include an EB Minority Symposium, Poster Session and Reception. The chairs of each participating Society's Minority Affairs Committee organized the sessions and reception. The ASBMB has also been awarded a grant through the Minority Access to Research Careers (MARC) program, administered by the National Institute of General Medical Sciences, NIH, to support a portion of the expenses of minority graduate students to attend the EB 2002 Meeting in New Orleans.

"Scientists of color face unique hurdles, pressures, and expectations which may lead to increasing the leakiness of the pipeline," said Minority Affairs Committee Chair Dr. Philip Ortiz, Empire State College, Saratoga, New York, in discussing the Committee's goals. "Career mentoring is one answer for dealing with this. Since each phase of one's scientific education and career presents new challenges, the mentoring should not end when a student graduates, finishes a post-doc, takes a faculty position, or reaches some other milestone. Rather, for mentorship to be successful there must be a career-long partnership/commitment between mentor and protégé."

Special Sessions

Several special sessions will also be held during the program. Terry S. Woodin, Division of Undergraduate Education, of the National Science Foundation will chair a session describing NSF funding activities and new directions the foundation is taking. Also speaking in the session will be Maryanna Henkart, Division of Molecular and Cellular Biosciences, NSF and Jean Chin, Division of Cell Biology and Biophysics, of the National Institutes of Health. The American Cancer Society will also host a session to discuss their research funding opportunities.

Once again, the Association of Biomedical Resource Facilities (ABRF) has also organized its annual joint symposium with the ASBMB, "ASBMB/ABRF Symposium: What's Real In All These Microarray Data: Learning To Trust Your Intuition While Using Sound Statistical Methods." The session has been organized by ABRF Board Member Ronald Niece, Research Resources & Technologies, Tustin, California. Dr. Niece will introduce the session by discussing the "Role of Shared Resources in Modern Life Sciences Research."

NIGMS to Sponsor Symposium at ASBMB Annual Meeting

In celebration of its 40th Anniversary, the National Institute of General Medical Sciences is sponsoring the ASBMB closing symposium, Proteomics and Drug Discovery, on Wednesday, April 24, at 2:00 p.m.

Marvin Cassman, Director of NIGMS will introduce the session, in which Marc C. Mumby, University of Texas Southwestern Medical Center at Dallas; Wayne A. Hendrickson, Columbia University; and Edward Maggio, Structural Bioinformatics, Inc., San Diego, will make presentations.

ASBMB Annual Meeting

In Conjunction with Experimental Biology 2002

April 20-24, 2002 • New Orleans, Louisiana

Organized by the ASBMB Program Committee
Chairs: Ralph A. Bradshaw, UC, Irvine and
Joan W. Conaway, Stowers Inst. for Med. Res., Kansas City, MO

ASBMB OPENING LECTURE

The Eukaryotic Gene Transcription Machinery
Roger Kornberg, *Stanford Univ.*

AWARD LECTURES

ASBMB-Merck Award: Roger Kornberg and Robert Roeder
ASBMB-Amgen Award: Joseph Heitman,
ASBMB-Avanti Award in Lipids: Christian R.H. Raetz
ASBMB-Schering-Plough Research Institute Award: John D. York
Herbert A. Sober Lectureship: Jack D. Griffith
William C. Rose Award: Gordon Hammes.

THEME I: Cellular Control

Plenary Lecturers

Lipid Rafts in Membrane Trafficking
Kai Simons, *Max Planck Inst., Dresden*

Apoptosis Mechanisms: A Genomics Perspective
John Reed, *Burnham Inst.*

Title TBD
Brian U. Druker, *Oregon Hlth. Sci. Univ.*

Symposia

Role of Mitochondria in Apoptosis
*Douglas Green, Craig B. Thompson, Richard J. Youle

Control of Cholesterol Homeostasis (In memory of Konrad Bloch)
*Dennis Vance, Michael Brown, Joseph Goldstein

Endoplasmic Reticulum Stress Response
*Randal J. Kaufman, Dave Ron

Cell Cycle M-phase Control
*J. Wade Harper

Combinatorial Signaling Satellite Highlight Symposium
*Sarah J. Parsons, John T. Parsons, Stevan Hubbard, Margaret A. Shupnik

THEME II: Gene Regulation

Plenary Lectures

Multiprotein Complexes that Regulate Transcription by Modifying Chromatin
Jerry L. Workman, *HHMI, Penn State Univ.*

Protein Sorting at the ER Membrane
Arthur E. Johnson, *Texas A&M University Health Sci. Ctr.*

Symposia

Signaling to the Nucleus and Beyond
*Barbara J. Graves, Eric Olson, Carol Prives

Chromatin Remodeling Machines
*Sharon Y.R. Dent, Brad Cairns, Craig L. Peterson

Shuttling To and From the Nucleus
*Douglass J. Forbes, Michael F. Rexach, Mary S. Moore

Protein Trafficking at Membranes
*Robert E. Jensen, Rosemary Stuart, Colin Robinson, Steven M. Theg

THEME III: Proteomics

Plenary Lectures

Issues in the Inference of Protein Function Using Bioinformatics Approaches
Patricia C. Babbitt, *UCSF*

Symposia

Protein Machines
*Jyoti Choudhary

Chemically Reactive Probes for Proteomics and Drug Discovery
*James A. Wells, Matt Bogyo, Ruedi Aebersold

Protein Dynamics & Function
*Arthur G. Palmer, III, A. Joshua Wand, Ann E. McDermott

Evolution of Function in $(\beta/\alpha)_8$-Barrels
*John A. Gerlt, Frank Raushel, Reinhard Sterner

FOCUS GROUP SESSIONS

Regulation of Development and Immunity by Glycoconjugates
Organized by the ASBMB Glycobiology Focus Group
*John Lowe, Carlos B. Hirschberg

Lipid Traffic and Enzymology in Membrane Assembly
Organized by the ASBMB Lipids and Membranes Focus Group
*Dennis R. Voelker, Masahiro Nishijima

Animal Models for the Study of Metabolic Processes
Organized by the ASBMB Metabolic Regulation Focus Group
*Richard W. Hanson, Domenico Accili, Mulchand S. Patel

Enzyme Structure, Function and Mechanism
Organized by the ASBMB Enzyme Structure, Function and Mechanism Focus Group
*Vern Schramm, JoAnne Stubbe, Daniel Herschlag

EDUCATION AND PROFESSIONAL DEVELOPMENT SYMPOSIA AND ACTIVITIES

Teaching Biochemistry I — New Methods
*J. Ellis Bell, *Christopher E. Rohlman, Jan Serie, Fred Rudolph

Teaching Biochemistry II — New Content
*J. Ellis Bell, *Christopher E. Rohlman, Suzanne O'Handley, Jonathan Smith, John Boyle

Careers in the Biotechnology and Pharmaceutical Industries
*A. Stephen Dahms, David Jensen

Digital Libraries and Publishing in the Electronic Age
*Marion O'Leary, Yolanda George, Robert D. Simoni, Scott Cooper, Paul A. Craig

Workshop: How to get students actively involved in learning, even if you have 150 of them in the class.
*Harold B. White, III, Richard Felder, Rebecca Brent

Women in Science
*Esther Sabban, *Judith G. Voet, Donna J. Nelson Mildred Cohn, Virginia A. Zakian, J. Scott Long

Women Scientists' Mentoring Session/Reception
*Adele J. Wolfson, Diane Jones, Marilee Benore Parsons

Sixth Annual Undergraduate Research Achievement Award Poster Competition (Sponsored by the *Biochemical Journal*)
*Phillip A. Ortiz, Christopher Rohlman

ASBMB Graduate/Postdoctoral Travel Award Symposium - April 20, 2002

EB Teaching Poster Sessions

Travel Awards Available for Undergraduates, Graduates, Post-doctoral fellows, Undergraduate Faculty

MINORITY AFFAIRS SYMPOSIUM

Under Representation of Minorities in Science: Can the Leaks in the Pipeline be Fixed?
*Philip A. Ortiz. Empire State Col., and Thomas D. Landefeld, California State Univ. – Dominguez Hills

EB Minority Symposium, Poster Session and Reception

SPECIAL SESSIONS

ASBMB/ABRF Symposium: What's Real In All These Microarray Data: Learning To Trust Your Intuition While Using Sound Statistical Methods
*Ronald L. Niece, Brian Yandell, Stephen M. Schwartz, Alan Attie

ASBMB Public Affairs Session: Presentation of the Schachman Public Service Award to Hon. John Porter, former Member of Congress (1980-2000) and Chairman (1995-2000) of the House Appropriations Subcommittee on Labor, HHS, Education, and Related Agencies. Mr. Porter will also deliver a lecture.

New Directions and Funding Opportunities at NSF
*Terry S. Woodin, Maryanna P. Henkart, Jean Chin

CLOSING SYMPOSIUM - Wednesday, April 24 - 2:00 - 4:15 PM

Proteomics and Drug Discovery - *Sponsored by the NIGMS, NIH in Celebration of its 40th Anniversary*
*Richard A. Ikeda, Marvin Cassman, Marc C. Mumby, Wayne A. Hendrickson, Edward Maggio

Abstract Deadline – November 7, 2001

For information contact: ASBMB Meeting Office, 9650 Rockville Pike, Bethesda, MD 20814
Tel: 301-530-7145; Fax: 301-571-1824; *www.asbmb.org*

(*denotes Chairperson)

ASBMB President Robert Wells, at right, and IUBMB President Brian Clark announced joint venture in publication of **Biochemistry and Molecular Biology Education.**

biochemistry and molecular biology education community out there that could be better served by ASBMB. Since that time the Education and Professional Development Committee has sponsored a full slate of education sessions at each meeting during the main conference. These sessions have continued to be successful.

As a result of these sessions, ASBMB subsequently worked closely with IUBMB to transfer publishing responsibility from Elsevier to ASBMB.

"ASBMB offers its experience in publishing journals both in print form and online," noted the *BAMBED* editors. "In addition, ASBMB has a strong commitment to making information on the web as freely accessible as possible. *The Journal of Biological Chemistry*, for example, offers ALL of its content online to everyone starting on January 1 of the year following publication. It is also in the process of developing a new website for educational resources as well as a digital library of web-based resources for biochemistry and molecular biology education."

Aims and Scope of *BAMBED*

The aim of *Biochemistry and Molecular Biology Education* is to assist in the teaching of biochemistry and molecular biology at the college, graduate school and medical school level throughout the world. The intended audience is instructors at universities and colleges who teach biochemistry, molecular biology, and related fields such as microbiology, physiology, and cell biology.

Articles are welcomed on teaching techniques and practices in all areas related to these fields, and on methods of assessment of the effectiveness of new educational approaches. Articles are also encouraged on research in biochemistry and molecular biology education.

Short reviews will be published from time to time on key areas of biochemical knowledge from workers active in the field. Such reviews are intended to provide background material for the preparation of lectures. Articles providing details of simple, tried and tested, laboratory experiments are especially encouraged.

Each issue will contain reviews of books and other teaching aids such as websites, videotapes, transparency/slide sets and computer software. Many of the pages will contain full-color figures. There is also a companion website that will contain two levels of access. Full-text access is available to all materials for subscribers; access to the Table of Contents and Abstracts is available for all visitors. In addition, a fully accessible section of the website is being developed that will be updated frequently and will contain reviewed multimedia materials such as computer graphics-based tutorials on macromolecular structure, and Java- and Shockwave-based tutorials on most aspects of biochemistry and molecular biology. ASBMB and IUBMB expect this new site to become a general repository for multimedia materials valuable to biochemical educators.

Call for Papers

Manuscripts (three copies) containing new ideas concerning any aspect of the teaching of biochemistry or molecular biology, including laboratory class experiments, are welcomed and should be sent to Professor Donald Voet, Chemistry Department, University of Pennsylvania, 231 South 34th Street, Philadelphia, PA 19104-6323, USA. Tel: + 1 215 898 6457: Fax: + 1 215 898 5747; E-mail: voet@sas.upenn.edu. Authors may now submit manuscripts as E-mail attachments or on 3.5" disks. Email submissions and disks should be clearly marked with the following information (where appropriate): operating system, disk format (e.g. DS/DD), word-processor package used including version number, authors' names, short title of article. Two copies of the final version should be submitted along with the disk.

Contributions should be written concisely in English. All articles should include a brief, informative abstract or summary that will be printed at the beginning of the paper. Three or four keywords should also be included for searching purposes, as well as a running title of less than 60 characters.

EB 2002
Deadline for Abstracts
November 7

A Special Announcement

JBC Centennial 1905-2005

100 Years of Biochemistry and Molecular Biology

As announced earlier this year, the *Journal of Biological Chemistry* will reprint classic JBC papers in preparation for the Centennial Celebration in 2005. It is remarkable to look back on the century and recall the discoveries that mark the great advances in biochemistry and to realize the enormous role of the *JBC* in publishing this pioneering work.

During the past year, we, with great help from the JBC Associate Editors, have selected papers published in the JBC that we believe represent classic contributions to biochemistry and molecular biology. We also canvassed the JBC Editorial Board and many members of the ASBMB who, in addition to nominating their own papers, provided helpful suggestions.

The selection process has been difficult in large part because the number of papers published in the JBC since 1905 is staggering, over 150,000. In addition, it is particularly difficult to define "classic" and to establish the criteria to be used for selection. First, we selected irrefutable landmark advances in biochemistry and molecular biology such as Arthur Kornberg's DNA replication papers. Second, papers were selected from authors who are themselves "classic" even if their most important work may have been published primarily in other journals. Otto Meyerhof is one example because much of his early work was published in the German literature. We felt, however, that a paper from Meyerhof, although possibly not itself a classic, should be included as representative of a classic body of work and, as such, an integral part of the history of biochemistry. Similarly for Linus Pauling, since most of his classic work was published in the chemical literature. We also screened citation data from ISI and selected many papers from this source. The all-time citation champion on protein determinations by Oliver Lowry is certainly a "classic." Lastly, we consulted with many of the living authors to determine whether our judgment concurred with theirs. For most authors we shall publish a single representative paper but for some we may publish two or three papers together in one issue, if they represent an indivisible story or a body of work so large that a single paper simply does not suffice.

In spite of a conscientious and thorough effort, we are painfully aware that these selections are very highly subjective and will not please everyone. Undoubtedly, we have included papers that some will feel do not deserve "classic" status and it is equally certain that other papers that are clearly deserving of such recognition have been inadvertently overlooked. We did our best.

We plan to publish the classic papers weekly in roughly chronological order and expect that by 2005 will have re-published 200-300 papers. We also plan to collect the classics, or a subset of them, together in a "JBC Centennial Classics Compendium" that we hope will be useful for teaching purposes.

We hope readers of the and students of biochemistry enjoy re-living the classic moments in biochemistry as much as we have enjoyed the selection process.

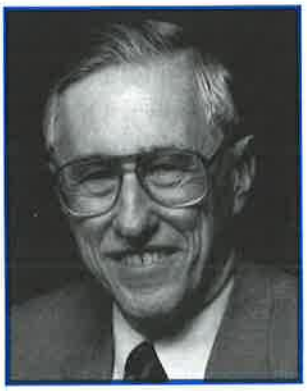
Robert L. Hill
Associate Editor

Robert D. Simoni
Deputy Editor

Duke Biochemist Named to Receive ASBMB's William Rose Award

The most satisfying aspect of academia is the training and mentoring of young people, both in the classroom and in my laboratories—Dr. Gordon Hammes

Dr. Gordon Hammes, Distinguished Service Professor of Biochemistry at Duke University and a Past President of ASBMB, has been selected to receive the ASBMB William Rose Award, which will be presented at the Society's Annual Meeting, April 20-24 in New Orleans, Louisiana.



Dr. Gordon Hammes

The Award recognizes outstanding contributions to biochemical and molecular biological research and a demonstrated commitment to the training of younger scientists, as epitomized by the late Dr. Rose. Recipients over the past five years include Charles Yanofsky, Robert Simoni, Richard W. Hanson, Rowena G. Matthews and Marc W. Kirschner. Nominators and nominees need not be members of the Society. The Award consists of a plaque, a stipend, and transportation to the 2002 Meeting to present a lecture.

In nominating Dr. Hammes, Stephen J. Benkovic, Evan Pugh Professor and Eberly Chair in Chemistry at Pennsylvania State University, wrote, "Gordon's splendid career encompasses all the accomplishments the Award honors: outstanding contributions to biochemical research and an intense, personal commitment to the training of younger scientists."

Acknowledging this educational commitment, Dr. Hammes commented, "The most satisfying aspect of academia is the training and mentoring of young people, both in the classroom and in my laboratories. I have been fortunate in having worked with many outstanding young scientists who have gone on to very successful careers. Their success will have a far greater impact on science and society than the specific accomplishments of my research program."

Lewis Cantley, Ph.D., Professor in the Harvard Medical School Department of Cell Biology and Chief of the Division of Signal Transduction at Beth Israel Deaconess Medical Center, who seconded the nomination of Dr. Hammes, recalled:

"What most struck me about Gordon when I decided to join his laboratory as a graduate student in 1971 was his clarity of thought. He could quickly formulate the simplest model consistent with existing data to explain very complex systems. This skill was no doubt honed from years of studying kinetics. He applied it to increasingly heterogeneous systems with great success and passed this approach on to the next generation of scientists."

Dr. Cantley added that Dr. Hammes "set an example for all of us, not only as a scientist but as a communicator. His clarity of thought is reflected both in his seminars and in his scientific writing. His reputation for returning initial drafts of manuscripts from students and postdocs within a day with extensive editing and suggestions for clarity was renowned. I remember being extremely embarrassed by the extensive changes he made in the first draft of my first paper in his lab and the pride I took when the last paper I submitted from my graduate work was returned with only minor editing."

Outstanding Research

Dr. Hammes' research in many different aspects of enzyme mechanisms and structure is considered outstanding. He was the first to apply relaxation methods to enzymatic reactions, and his elucidation of elementary steps in enzymatic processes through the study of very fast reactions provided new insight into how enzymes work.

Ribonuclease Studies

The studies of ribonuclease resulted in a detailed picture of how this enzyme breaks down RNA through the formation of a cyclic phosphate intermediate. A variety of model substrates were utilized to determine the entire reaction sequence using steady state, stopped flow, temperature jump, and stopped-flow temperature jump methods. The mechanism that emerged was the binding of substrates at rates close to diffusion controlled,

followed by a conformational change of the enzyme-substrate complex in the 0.1 - 1 msec time range. The actual catalytic event involves proton transfers between the enzyme and substrate, and the nature of the conformational change could be inferred from the kinetic studies and the crystal structure. It is due to movement around a "hinge" region of the enzyme; the enzyme folds around the substrate, squeezing out water and orienting imidazoles appropriately for catalysis.

Research on aspartate aminotransferase was also noteworthy. This enzyme involves the interchange of an amino group between amino acids (aspartate and glutamate) and utilizes pyridoxal phosphate as a coenzyme. The first studies with the temperature jump method clearly showed the interconversion of aldimine-ketimine intermediates. The ultimate resolution of the reaction mechanism was obtained with the substrate â-hydroxy aspartate. The rate constants for 8 steps in half of the enzymatic reaction could be evaluated.

The mechanism involves the formation of an initial complex between enzyme and substrate, a conformational change, formation of a Schiff base with pyridoxal, interconversion of the Schiff base to a quinoid intermediate, formation of the ketimine, and hydrolysis of the ketimine via a conformational change and enzyme-substrate complex. The pyridoxamine enzyme would then react with the second substrate to complete the reaction cycle. This may well be the most detailed elucidation of reaction intermediates for any enzymatic reaction.

Enzymatic Reactions

Consideration of the body of data produced from enzyme kinetics, as well as that for model reaction such as proton transfer, hydrogen bonding, hydrophobic interactions, and helix-coil transitions produced some important generalizations as to how enzymes work.

First, in many cases, the formation of the initial enzyme-substrate complex occurs at a rate close to diffusion controlled.

Second, the formation of the enzyme-substrate complex is often followed by a conformational change, presumably to create a hydrophobic environment and to orient the catalytic groups precisely. Based on the study of model reactions, these conformational changes were determined to be highly cooperative, and a model was proposed as to how this might enhance catalysis. The hydrophobic environment enhances electrostatic interactions and can modulate proton transfers by altering the pK's.

Third, enzymes function efficiently by creating multiple intermediates that are comparably populated. This permits a high activation energy step to be replaced by a series of low activation energy steps. Many years later, an argument for multiple intermediates was made based on evolutionary considerations.

This approach to enzyme mechanisms was extended to regulatory enzymes, especially aspartate transcarabamoylase. In addition to general studies which clarified the number and nature of catalytic and regulatory binding sites, kinetic studies provided insight into the regulatory mechanism. Although a major concerted conformational change occurs, consistent with the Monod-Wyman-Changeux mechanism, other conformational changes also clearly occur that involve sequential rather than concerted events. Indeed as more allosteric systems are studied, it is clear that generally multiple mechanisms are involved in the regulation. The work on aspartate transcarabamoylase demonstrated both the occurrence of multiple regulatory conformational changes, as well as how their mechanisms can be elucidated using fast reaction techniques.

More Complex Systems

The research of Dr. Hammes then turned to more complex systems.

The studies of chloroplast ATP synthase were especially important, and serve as a paradigm for the detailed study of the coupling of a complex membrane-bound enzyme whose reaction is coupled to ion transport. This enzyme synthesizes ATP through coupling with a pH gradient. A model system was developed which contains only the enzyme in a phospholipid vesicle along with bacteriorhodopsin, a system first utilized by Racker and coworkers. When light shines on the vesicles, a proton gradient is produced by bacteriorhodopsin.

With this system, it was possible to study the reaction mechanism without the complexities of the natural system. For example, it was possible to determine unambiguously that 3 protons were pumped for each ATP synthesized. Dr. Hammes' development and use of fluorescence resonance energy transfer to obtain a structural map of the enzyme was pioneering. This led to a three-dimensional map of the enzyme that contained distances between more than 10 different sites on the enzyme and membrane, probably the most detailed structural map obtained with this method.

Continued on page 19.

Stowers Institute Benefactor Foresees State-of-the-Art Research Facility

"It is the centerpiece of our dream of making the Kansas City area into a 'Biomed Valley' that will lead the world in biomedical research."

When the Stowers Institute for Medical Research inaugurated its state-of-the-art research facilities this past April in what many scientists might consider an unlikely location—Kansas City—its mission was put across in plain English by the benefactor.

"The more we understand about life, the more we can hope for life," said mutual funds magnate James E. Stowers Jr. to explain why he and his wife, Virginia, are devoting almost the entirety of their multi-billion-dollar fortune to the creation and operation of a basic research institute.

Joan Conaway, Ph.D., a Senior Scientist, came to the Stowers Institute from the Oklahoma Medical Research Foundation.

The Stowers Institute, occupying a 10-acre campus in the heart of Kansas City, has 600,000 square feet of laboratory, office, and support space built at a cost of more than $200 million and is backed by an endowment that currently exceeds $1.6 billion. Lead scientists occupy labs ranging from 1,000 to 2,400 square feet. There are extensive core facilities for bioinformatics, imaging, and flow cytometry, plus advanced mice-care facilities that feature one of the few robotic cage-wash systems in the country.

The scientific focus, as expressed by William B. Neaves, Ph.D., President and CEO, is to study how genes and proteins control the way cells divide, differentiate, migrate and die.

Dr. Neaves, formerly executive vice president for academic affairs of the University of Texas Southwestern Medical Center at Dallas, and Robb Krumlauf, Ph.D., Scientific Director, who came from England's National Institute for Medical Research at Mill Hill, are rapidly recruiting lead scientists from around the United States and abroad whose research interests fit within that focus. They have the help of a scientific advisory board made up of five members of the National Academy of Sciences and chaired by Douglas A. Melton, Ph.D., a Howard Hughes Investigator at Harvard.

The first four scientific teams moved into their laboratories in November 2000. Since then, six additional lead scientists have been recruited, plus specialists in bioinformatics, transgenic technology and genomics to operate core facilities. By 2004 the Institute is likely to be completely filled, with as many as 50 fully staffed laboratories and a total of about 600 people, including administrative and maintenance personnel.

Jim and Virginia Stowers are both cancer survivors with backgrounds in medicine – he nearly completed medical school, and she was a nurse-anesthetist. Those experiences shaped their decision to put the fruit of their labors behind research. They concluded that the best possibilities for achieving eventual breakthroughs in medical treatment for such diseases as cancer, Parkinson's and dementia lay in research focused on understanding the genes and proteins that control the behavior of cells.

"Everything we are doing is focused on the goal of making this Institute the best of its kind within 25 years," Mr. Stowers said when the largest part of their gift to the Institute endowment, $1.114 billion in American Century stock, was announced on May 10, 2001. "It is the centerpiece of our dream of making the Kansas City area into a 'Biomed Valley' that will lead the world in biomedical research."

Each research team is led by a Senior Scientist with a distinguished record of research and publication or an Assistant Scientist who has done notable work at the postdoctoral level. In addition to Dr. Krumlauf, whose

research focuses on molecular pathways that regulate how the mammalian head, brain and nervous system are built, those who have joined the Institute include:

- Kent G. Golic, Ph.D., Senior Scientist, specialty in genetics of fruit flies, coming from the University of Utah.
- Ron and Joan Conaway, Ph.Ds., Senior Scientists, who work on the molecular mechanism and regulation of gene transcription, coming from the Oklahoma Medical Research Foundation.
- Arcady R. Mushegian, Ph.D., Director of Bio-informatics, coming from Akkadix Corp., La Jolla, Calif.
- Scott Hawley, Ph.D., Senior Scientist, expert in the genetics of meiosis, coming from the University of California-Davis.
- Brian L. Sauer, Ph.D., Director of Transgenic Technology, coming from the Oklahoma Medical Research Foundation.
- Ranjan Perera, Ph.D., Associate Director of Genomics, coming from Akkadix Corp. in La Jolla, Calif.
- Linheng Li, Ph.D., Assistant Scientist, who studies gene expression during early hematopoietic stem cell development in mice, coming from the University of Washington.
- Jim Coffman, Ph.D., Assistant Scientist, who studies regulatory proteins that control spatially differential transcription of genes in the early sea urchin embryo, coming from Cal Tech.
- Ting Xie, Ph.D., Assistant Scientist, who studies molecular mechanisms governing stem cell maintenance and division in the fruit-fly ovary, coming from the Carnegie Institution of Washington.
- Chunying Du, Ph.D., Assistant Scientist, previously a Howard Hughes-sponsored postdoctoral fellow at UT Southwestern.
- Paul A. Trainor, Ph.D., Assistant Scientist, formerly a postdoctoral research fellow with Dr. Krumlauf at Mill Hill, London.

One Participant's View . . . *from page 7*

Overall, I was impressed by the goals and the methods CSR is using. Of course, because I was asked to participate, I have a reason to be relaxed about outside participation in the process. It will be important that this process continue to get feedback and be transparent to the scientific community. There will certainly be winners and losers, so it needs to be and appear fair and participatory.

If anyone has questions about what I have written, please feel free to e-mail me at: kronenberg.henry@mgh.harvard.edu

William Rose Award . . . *from page 17*

When the crystal structure was determined some years later, this map proved to be remarkably accurate, demonstrating the value of fluorescence resonance energy transfer when properly utilized. Along the way, a new experimental method was developed–phase lifetime spectrophotometry–which permits the dynamics of ion pumping processes to be measured.

Dr. Hammes' study of pyruvate and α-ketoglutarate dehydrogenase and fatty acid synthase elucidated the elementary steps and established important structure-function relationships in the coupling of multiple enzymic processes in a single molecule. In the case of the dehydrogenases, a series of studies characterizing the kinetics, subunit stoichiometries, site-to-site distances, and rate of lipoic acid movement suggested a mechanism in which intermediates are passed between both the catalytic sites and multiple lipoic acids, rather than the textbook mechanism in which a single lipoic acid rotates between catalytic sites.

Furthermore, the time for rotation of the lipoic acid between sites was estimated for the first time as a few hundred nanoseconds. In the case of fatty acid synthase, a tour de force was carried out which characterized the kinetics and stereochemistry of most of the individual reactions in the synthesis of a fatty acid, some 37 steps. This included isolation and characterization of many of the enzyme-bound intermediates. The resultant mechanism fits remarkably well with the postulated structure and later studies by others.

In sum, the research of Dr. Hammes from simple model reactions to enzymes, regulatory enzymes, and then to complex multienyzme complexes and membrane-bound enzymes has resulted in an unusually large development of experimental methods, mechanistic concepts, and general principles.

Educational Opportunities

National Research Council Associateship Programs

The National Research Council's 2002 Postdoctoral and Senior Research Associateship Programs will be conducted on behalf of over 120 laboratories representing nearly all government agencies with such facilities. These programs provide opportunities for Ph.D., Sc.D., or M.D. scientists and engineers to perform research in areas of their choosing, but compatible with the interests of the sponsoring laboratory.

Some 300 fulltime positions will be awarded for research in chemistry, earth and atmospheric sciences, engineering, applied sciences and computer science, mathematics, and physics. Annual stipends range from $34,000 to $61,000, and applications will be accepted throughout 2002. Those received by January 15 will be reviewed in February, by April 15 in June, and by August 15 in October.

Further information and applications can be obtained from the National Research Council web site at www.national-academies.org/rap.

National Academics Internship

The Christine Mirzayan Internship Program of the National Academies is designed to engage graduate and postdoctoral science, engineering, medical, veterinary, business, and law students in science and technology policy and to familiarize them with the interactions between science, technology, and government.

As a result, students develop essential skills different from those attained in academia and make the transition from being a graduate student to a professional.

There are two 12-week sessions each year, starting in January and June 10 weeks.

To apply, candidates should submit the application and reference forms available online. The deadline for receipt of materials is November 1 for the January program and March 1 for the June program.

Details are on our website: national-academies.org/internship. Additional questions should be directed to: internship@nas.edu.

Michigan State Announces Graduate Fellowships, Assistantships

Michigan State University has graduate fellowships and assistantships in 12 departments or programs. In addition, the new Plant Science fellowships provide outstanding candidates with funding for the first two years of study.

Fellows may select a department upon enrollment, or if desired, may perform research rotations in any plant science-related laboratory on campus, regardless of department or program.

After the first year, rotating students will choose a major professor and graduate degree program; after the second year, funding will be provided by the major professor and department. Each Plant Science Fellow also will receive a $2000 professional enhancement grant for travel to scientific meetings or other relevant activities.

Participating departments and graduate programs include: Biochemistry and Molecular Biology (www.bch.msu.edu); Plant Biology (www.plantbiology.msu.edu); Plant Pathology (www.plantpathology.msu.edu); Cell and Molecular Biology (www.ns.msu.edu/cmb); Crop and Soil Sciences (www.css.msu.edu); Ecology, Evolutionary Biology and Behavior (www.msu.edu/~eebb); Entomology (www.ent.msu.edu); Forestry (www.for.msu.edu); Genetics (www.ns.msu.edu/genetics); Horticulture (www.hrt.msu.edu); the MSU-DOE Plant Research Laboratory (www.prl.msu.edu); W. K. Kellogg Biological Station (www.kbs.msu.edu) and Plant Breeding and Genetics (www.hrt.msu.edu/pbgp).

For more information about the Fellowships or Plant Science programs at Michigan State, contact Judy Ward, phone: 517-355-0301; email: wardj@msu.edu, or visit the MSU Plant Science Web Page at: www.msu.edu/user/gradschl/plantsci.htm.

NIA Research, Training Program Guide

The National Institute on Aging (NIA) has posted its 2001 NIA Guide to Research and Training Programs on the internet. This document contains information about the NIA, including its programs, major aging research advances and topics, and award mechanisms.

The guide is a useful resource for those not familiar with the NIA and its mission, or who wish to have a convenient source of information about NIA. The 2001 NIA Guide can be accessed at http://www.nih.gov/nia/news/2001guide.pdf.

Members in the News

ASBMB Members Honored With Lasker Award

Dr. Mario Cappechi

ASBMB member Dr. Mario Capechi, and American Peptide Society member Dr. Oliver Smithies, along with Dr. Martin Evans, share the 2001 Albert Lasker Award for Basic Medical Research, which is made in recognition of outstanding contributions to basic and clinical medical research.

Drs. Capecchi, of the University of Utah; Evans of Cardiff University (Wales); and Smithies of the University of North Carolina; were honored for pioneering the use of mouse embryonic stem cells to create animal models of human disease.

Their research resulted in the development of a powerful technology for manipulating the mouse genome with exquisite precision, which allows the creation of animal models of human disease. With this technology, researchers have engineered mice with conditions such as arteriosclerosis, cancer, high blood pressure, and cystic fibrosis, allowing the study of many debilitating disorders.The same technology is uncovering the secrets of normal biological processes as well, revealing, for example, how the nervous system develops or how immune cells collaborate to quash microbial invaders.

Dickson Award Honors Gene Transcription Pioneer

Dr. Robert Roeder

Robert G. Roeder, Ph.D., a pioneer in the discovery and characterization of the fundamental molecular mechanisms of gene transcription, has received the University of Pittsburgh's 2001 Dickson Prize in Medicine, which recognizes individuals who have made significant, progressive contributions to the field of medicine. The Prize was presented September 12 in conjunction with Dr. Roeder's presentation, "Regulation of Transcription in Human Cells: Complexities and Challenges," during the university's showcase of research, Science 2001: A Research Odyssey. Dr. Roeder, a recipient of the 2002 ASBMB-Merck Award, is recognized for the discovery and analysis of proteins involved in transcription, the first step in decoding stored genetic information.

8 ASBMB Members Named Biophysical Society Fellows

Eight ASBMB members are among the 13 scientists selected as Biophysical Society Fellows for 2002. Fellows are members of the Society who have demonstrated excellence in science and the expansion of the field of biophysics. ASBMB members are:

Ken A. Dill, University of California, San Francisco, for studies in protein structure, in particular the use of lattice models to provide insight into the energetics and kinetics of protein folding.

Robert Gennis, University of Illinois, Urbana, for work in bacterial bioenergetics, pioneering the combination of state-of-the-art molecular genetics and physical chemical tools to dissect complex events in membranes that defy exploration by standard high-resolution structural methods.

Wayne Hendrickson, Columbia University, for contributions of numerous three-dimensional macromolecular structures to the scientific literature and innovations in x-ray crystallography.

H. Ronald Kaback, University of California, Los Angeles, for pioneering biochemical and biophysical approaches to the study of active transport and for seminal contributions in the field of bioenergetics.

John A. Schellman, University of Oregon, for the development of theoretical methods for studying biological macromolecules, ranging from theories of helix-coil transitions in polypeptides and the energetics of protein folding to the statistical mechanics of nucleic acids.

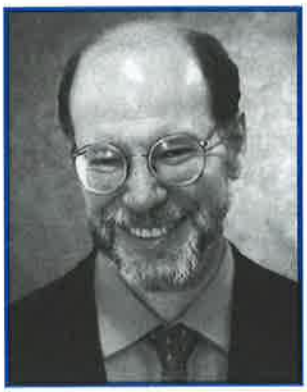
Ignacio Tinoco, Jr., University of California, Berkeley, for seminal work in the RNA structure and the thermodynamics and kinetics of RNA folding.

Stephen H. White, University of California, Irvine, School of Medicine, for contributions to understanding of biological membranes through work encompassing both structural and thermodynamic aspects of lipid bilayers.

Bruno H. Zimm, University of California, San Diego, for contributions in the areas of macromolecular structure, light scattering, gel electrophoresis, and other transport properties.

Continued on page 22.

MIT Scientist Receives Bristol-Myers Squibb Award



Dr. Robert Horvitz

H. Robert Horvitz, Ph.D., who discovered that specific genes control programmed cell death, or apoptosis, is the recipient of the Fourteenth Annual Bristol-Myers Squibb Award for Distinguished Achievement in Neuroscience Research. He received the $50,000 cash prize and a silver medallion at a New York City dinner in his honor.

Dr. Horvitz, is the David H. Kock Professor of Biology, MIT and the McGovern Institute for Brain Research, and an HHMI Investigator.

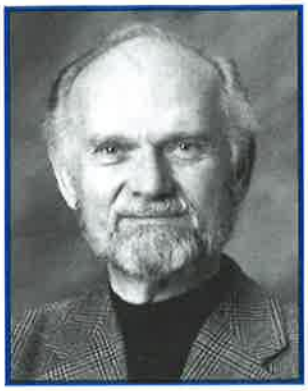
His research led to a more mechanistic understanding of basic developmental processes that sculpt the nervous system and to the finding that the genes and proteins responsible for apoptosis in *C. elegans* are broadly conserved among organisms, and involved in a variety of human diseases, including neurological disorders.

Kansas U. Professor Named AAPS Fellow

The American Association of Pharmaceutical Scientists (AAPS) has named C. Russell Middaugh, Ph.D., to its prestigious list of AAPS Fellows. This title honors those who have contributed scholarly research, such as original articles, patents, and presentations, in the pharmaceutical sciences.

Dr. Middaugh, the Aya and Takera Higuchi Distinguished Professor of Science at the University of Kansas, is well known for his work in the area of protein and polynucleotide formulation and characterization, notably in the areas of solubility and stabilization.

Louisville Scientist Wins Award for Outstanding Research



James L. Wittliff

James L. Wittliff, Ph.D., of the University of Louisville, has been selected to receive the American Association for Clinical Chemistry's (AACC) award for outstanding contributions to clinical chemistry in a selected area of research. Dr. Wittliff was recognized at the AACC Annual Meeting last summer for his original research in the area of the molecular endocrinology of human cancer.

Dr. Wittliff and his research team are internationally recognized for innovative studies of the molecular mechanisms by which estrogens promote signal transduction in normal tissue and breast cancer. He was one of the first investigators to identify a correlation between the presence of estrogen receptor proteins in a breast cancer biopsy and response to either additive or surgical ablative hormone therapy.

4 More Scientists Join *MCP* Editorial Board

Four more scientists have agreed to serve on the Editorial Board of ASBMB's new publication, *Molecular and Cellular Proteomics*.

The addition of Michael A. Baldwin, University of California-San Francisco; Kong-Joo Lee, Ewha Womans University, Seoul, Korea; David L. Smith, University of Nebraska; and Michael Snyder, Yale University; brings to 64 the number of distinguished scientists serving on the MCP Board.

Dr. Ralph A. Bradshaw, of the Department of Physiology and Biophysics at the University of California, Irvine, is the Editor of the new publication, and the Deputy Editor is Al Burlingame, Department of Pharmaceutical Chemistry at the University of California, San Francisco.

For Program Updates and Travel Award Information, check the Annual Meeting section of the ASBMB website: www.asbmb.org.

Calendar of Scientific Meetings

EB 2002 Deadline for Abstracts November 7

2001 National Conference on Tobacco or Health

November 27-29,2001 • New Orleans, Louisiana
Contact: Shelly Kowalczyk, Ph: 301-294-5437, Email: skowalczyk@feddata.com
Website.www.tobaccocontrolconference.org

American Society for Cell Biology 41st Annual Meeting

December 8-12, 2001 • Washington, DC
Ph: 301-347-9300; Fx: 301-347-9310; Email: ascbinfo@ascb.org
Website: www.ascb.org

Glycogenomics: Impact of Genomics and Informatics in Glycobiology Biochemical Society Joint Meeting with the Physiological Society

December 17-19, 2001 • University of York, UK
Contact: Meetings Office, Biochemical Society
Ph: +44 (0)20 7580 5530; Fx: +44 (0)20 7637 7626; Email: meetings@biochemistryorg
Website: www.biochemistryorg/meetings/

Oxygen Club of California 2002 World Congress, IXth Annual Meeting

Co-sponsored by the Society for Free Radical Research International (SFRRI) and with the Linus Pauling Institute (LPI).
March 6-9, 2002 • Parker's Doubletree Resort, Santa Barbara, California
Contact: Enrique Cadenas; Ph: 323-442-1418; Fx: 323-224-7473; Email: cadenas@hsc.usc.edu
Website: www.oxyclubcalifornia.org

ASBMB Satellite Meetings:
I - Transcriptional Regulatory Mechanisms
II - Combinatorial Signaling
III - Scientific and Technical Challenges in the Human Proteome

April 19-20, 2002 • New Orleans, Louisiana
Contact: Kelly Gull; Ph: 301-530-7145; Fx: 301-571-1824; Email: kgull@asbmb.faseb.org
Website.www.asbmb.org

American Society for Biochemistry and Molecular Biology Annual Meeting in Conjunction with EB2002

April 20-24, 2002 • New Orleans, Louisiana
Contact: EB2002 Meetings Office; Ph: 301-530-7010; Fx: 301-530-7014; Email:eb@faseb.org
Website.faseb.org/meetings/eb2002

ASBMB Graduation Survey

The ASBMB Education and Professional Development Committee has mailed the fourth annual graduation survey to Biochemistry and Molecular Biology Department Chairpersons. Respondents may either mail the survey to the Society or complete the form online in the Education section of the ASBMB website. The results of this survey will be published in *ASBMB News* and placed on the Society's website: www.asbmb.org.

The data will enable the Committee to more fully serve our members by providing up-to-date demographics and showing trends over time. It also will help the Committee to better identify which institutions offer degrees and at what level. Additionally, the data will be of help to research universities in identifying recruiting areas that they may not have previously identified.

The deadline for return of this survey information is November 23. Please visit the Education section of the ASBMB Website to see if a survey form for your institution has been returned. If not, you may complete the survey online at the "Graduation Survey" site.

Please email questions or concerns about the survey to:
surveys@asbmb.faseb.org

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