OCTOBER 2002

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ASBMB Today

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AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY

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Experimental Biology 2003

April 11-15
San Diego, CA

Additional Speakers will be chosen from the abstracts submitted to the ASBMB Nucleic Acid Structure, Function and Processing topic categories. Abstract deadline: 11/13/02

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ASBMB NUCLEIC ACID STRUCTURE, FUNCTION AND PROCESSING MEETING planned for EB 2003 in San Diego!

ASBMB Annual Meeting in Conjunction with Experimental Biology 2003 April 11 – 15, 2003 • San Diego, California

Organized by Michael Dahmus, *UC, Davis*, and Myron F. Goodman, *Univ. of Southern California*

Plenary Lecture

MARVELOUS MACROMOLECULAR MACHINES OF GENE EXPRESSION
Thomas A. Steitz, *HHMI, Yale, Univ.*

Macromolecular Complexes

STRUCTURAL BIOLOGY OF EUKARYOTIC GENE EXPRESSION
*Stephen K. Burley, *Structural GenomiX, Inc., San Diego, CA*

TAILS OF THE REPLICATION FORK. UNRAVELING DNA REPLICATION IN THREE DIMENSIONS
*Tom Ellenberger, *Harvard Medical School*

THE DETAILED WORKINGS OF A CHROMOSOMAL REPLICATION MACHINE
Mike O'Donnell, *HHMI, The Rockefeller University*

STRUCTURAL STUDIES OF PROKARYOTIC TRANSCRIPTION
Seth Darst, *The Rockefeller University*

Regulation of Gene Expression

COUPLING TRANSCRIPTION TO CHROMATIN AND RNA PROCESSING
*Stephen Buratowski, *Harvard Med. Sch.*

MECHANISMS OF TRANSCIPTION BY RNA POLYMERASE II AND III
*Nouria Hernandez, *HHMI, Cold Spring Harbor Lab.*

MECHANISMS OF ATP DEPENDENT CHROMATIN REMODELING ENZYMES
Geeta Narlikar, *Massachusetts Gen. Hosp.*

Invited speaker #4 – TBD

Replication, Recombination, Repair

SOS TRANSLESION SYNTHESIS REQUIRES E. COLI DNA POLYMERASE V AND TWO NON-FILAMENTOUS RECA MODES OF ACTION
*Myron F. Goodman, *Univ. of Southern California*

ASSEMBLY OF THE DNA NUCLEOTIDE EXCISION REPAIR MACHINERY IN HUMAN CELLS
*Richard D. Wood, *University of Pittsburgh Cancer Institute*

DOUBLE-STRAND BREAK REPAIR BY HOMOLOGOUS RECOMBINATION
Patrick M. Sung, *Univ. of Texas Hlth. Sci. Ctr. at San Antonio*

DYNAMIC INTERACTIONS BETWEEN DNA DAMAGE REPAIR PROTEINS
Roland Kanaar, *Erasmus Univ., Rotterdam, Netherlands*

Emerging Areas of RNA Processing

ALTERNATIVE SPLICING AND THE REGULATION OF NEURONAL GENE EXPRESSION
*Douglas L. Black, *HHMI, UCLA*

Invited speaker #2 - TBD
Invited speaker #3 - TBD
Invited speaker #4 - TBD

**denotes chairperson*

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ASBMB Today

AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY

OCTOBER 2002,
Volume 1, Issue 7

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Comments

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Senator Tom Harkin Visits ASBMB Member's Lab

By Peter Farnham, Public Affairs Officer

"It was an honor and a privilege to show him how doubling the NIH budget has helped patients, students, and physician scientists in his home state." This was Dr. Mary Hendrix's assessment of Senator Tom Harkin's (D-IA) recent visit to her University of Iowa laboratory.

Dr. Hendrix, a member of the ASBMB's Public Affairs Advisory Committee and a former FASEB President, is also Deputy Director of the Holden Comprehensive Cancer Center at the University of Iowa. The lab studies the composition and structure of tumors from prostate, breast, and ovarian cancer patients.

Dr. Hendrix hosted the Senator's visit as part of a fact-finding trip he was conducting during Congress's August recess to ascertain the impact of doubling of the NIH budget on research. A spokesman for the Senator told *ASBMB Today* that "the Senator wanted to interact with individuals who had benefited by the doubling of NIH, and to understand how new knowledge is translated into patient care."

A group of breast cancer survivors also accompanied the Senator during his visit. "If you have [breast cancer] in your family, and your mother had it and you're a young woman, that's got to be a fearful thing," Senator Harkin said. "I feel deeply that this is one of the illnesses we need to place on the shelf of history."

Dr. Hendrix also thanked the Senator for his efforts to bring about the doubling of the NIH budget, an effort begun with the Fiscal Year 1999 appropriation and almost completed this year. Senator Harkin's Appropriations Subcommittee on Labor, HHS, and Education, which funds the NIH, approved an FY2003 appropriation for NIH of $27.3 billion. The appropriation still must be acted upon by the full Senate, and in the House.

SENATOR TOM HARKIN studies tissue from a breast cancer tumor during his visit to Dr. Mary Hendrix's University of Iowa laboratory.

While the Senate Subcommittee figure is likely to be approved in the Senate, the situation is far more problematic in the House, where the budget allocation for the Labor/HHS bill is more than $4 billion short of what is needed to fund it at a level approaching the Senate version. House conservatives recently forced the leadership to introduce a bill that precisely mirrors the President's request; however, GOP moderates informed the House leadership that the bill as introduced was so short of funds that they would not support it. The House leadership then withdrew the bill the same day they introduced it.

The Harkin visit is a very good example of outreach by members of the scientific community. Arranging a congressional visit to one's laboratory is always a good idea, and ASBMB's public affairs staff can help you arrange such a visit. If you are interested in hosting such a visit, please contact the Society's Public Affairs Officer, Peter Farnham, at pfarnham@asbmb.faseb.org

'Balance' Is the New Refrain On Science Appropriations

By Peter Farnham, Public Affairs Officer

The chorus is becoming louder and louder in the waning days of the 107th Congress. It goes something like this—the life sciences as a whole have been funded extremely well the past five years, due to the doubling of the budget for the National Institutes of Health. Now that the NIH budget is almost doubled, it is time to start funding the other scientific disciplines again, all of which have been languishing at least since 1999. "Balance," so goes the chorus, must be restored to the federal government's approach to funding the scientific enterprise.

On the surface, this all sounds eminently reasonable—who could be opposed to "balance?" But as in all seemingly simple situations, the reality is much more complex, and full of pitfalls for everyone concerned.

First, the NIH budget is not doubled yet. Fiscal Year 2003, the last year of the five-year doubling plan, is not completed, and it is becoming more and more difficult to see how the doubling will be accomplished this year. The Senate Appropriations Committee has approved a bill completing the doubling, but it has not been approved by the full Senate.

Even more serious is the fact that the House version of the Labor/HHS bill is nowhere near being completed—in fact, an actionable bill has not even been introduced. Appropriations Committee chair Bill Young (R-FL) introduced the President's Labor/HHS bill on September 5 to meet a pledge by the leadership that the Labor/HHS bill would be dealt with in early September, but the House leadership pulled the bill off the legislative calendar that same day when it became clear that at least 30 Republican House moderates would not vote for it. In a House where the Republicans have only a six-seat majority, this kind of opposition from within one's own party is impossible to combat. Thus, even though the President's bill completes the five-year doubling of NIH, there are so many other popular programs underfunded in it that it has no political support beyond House conservatives.

Second, education programs are attracting a great deal of support in Congress this year, and there is considerable fear that increased funding for education will soak up even more of the very limited discretionary funds currently available. Even as stalwart a supporter of NIH as Senator Edward Kennedy (D-MA) has indicated that education funding may be at the top of his priorities this year. In this election year, the Democrats—eager to build their majority in the Senate and take back the House—are pushing this and other domestic issues in hopes of countering the Republicans' traditional election year strengths of defense, security, and combatting terrorism abroad and at home.

The balance issue regarding science funding plays out most overtly at the National Science Foundation. In late July, NSF received a very good increase of almost 12% in the Senate Appropriations Committee's VA/HUD bill. Furthermore, NSF's research programs received an overall increase of almost 15%, also excellent news. In addition, the Senate report on NSF decreed that every research program at NSF—save one—receive increases ranging from 12 to 20%. The one program that did not receive an increase of this magnitude was Biological Sciences.

To argue that NSF biological sciences could be cut because the life sciences were doing very well over all "reflects a misperception of NSF's role in funding biological research."

The Senate Appropriations Committee recommended that biology research receive an increase of 3.4%.

The report language was silent on this glaring disparity, although Senate staff have informed us that the "balance" issue was paramount. "Life sciences have been doing very well on a macro level," one Senate staff member informed us, "and the committee thought that there

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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 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.

BAMBED Today: An Update

Biochemistry and Molecular Biology Education (BAMBED) will soon complete its first year of publication by ASBMB, which Editors-in-Chief Judith G. Voet, Department of Chemistry, Swarthmore College, and Donald Voet, Department of Chemistry, University of Pennsylvania, credited for having "significantly improved the production of the journal and actively sponsoring new educational ventures."

Mission

BAMBED's mission is to assist in the teaching of biochemistry and molecular biology at the college, graduate and medical school level throughout the world. Its main audience is instructors at universities and colleges who teach biochemistry, molecular biology, and related fields such as microbiology and cell biology.

Content

BAMBED welcomes articles on teaching techniques and practice in all areas related to these fields, and on methods of assessment of the effectiveness of new educational approaches. The editors also encourage articles on research in biochemistry and molecular biology education, and in particlar articles providing details of simple, tried and tested, laboratory experiments. Those interested in secondary school outreach may submit papers aimed at increasing awareness of college and university faculty toward possibilities for contributing to the ongoing education of secondary school teachers. Each issue contains book reviews, a list of "Websites of Note" collected by the journal's Multimedia in Education Feature Editor, and a Meetings Calender.

Features

BAMBED has three feature sections in each issue, Problem-Based Learning (PBL) edited by Harold B. White III, Biotechnology Education edited by A. Stephen Dahms, and Multimedia in Biochemistry and Molecular Biology Education edited by Graham Parslow.

In the PBL section, *BAMBED* has been publishing both problem sets and tests, in addition to assessment of the teaching method.

Biotechnology is a vital industrial area for which biochemical educators are preparing many of their students, but the industry often complains that students arrive ill prepared. The Biotechnology Education feature aims to "educate the educators" on the

The Need for *BAMBED*

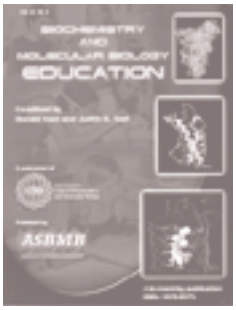
By Dr. Richard W. Hanson

There are major problems facing education in the areas of biochemistry and molecular biology at all levels in the curriculum and there are relatively few organized forums for the discussion of these problems. In my view there is a real need for a publication, such as *BAMBED*, that will systematically deal with the issues that face biochemistry education today. This is why I have been excited about joining the Editorial Board of *BAMBED* and am so pleased to have been asked by Judy and Don Voet to contribute several reviews on metabolic regulation that have recently been published in that journal.

In addition, I hope that *BAMBED* will take on a major problem in biochemistry that is not, in my opinion, being adequately addressed. This involves the future of teaching intermediary metabolism to undergraduate majors in biochemistry and in medical school courses throughout the United States. This subject continues to be critical for an understanding of the basis of many diseases, including atherosclerosis, obesity and diabetes.

I have noted from my years as Chair of the Biochemistry Department at Case Western Reserve University in Cleveland that the revolution in molecular genetics that has occurred over the past 25 years has greatly reduced the interest in intermediary metabolism among students of biochemistry. This has the expected result of fewer faculty members working on research in metabolism. In fact, many departments of biochemistry (including my own) are currently focusing on structural biology and/or proteomics as a major research theme. If this trend continues, I can safely predict that within a generation there will be no one left in biochemistry departments that understands metabolism well enough to teach the subject to medical students! I hope that *BAMBED* will take a leadership role in better defining this problem and in suggesting answers.

Of course there are more than problems to consider. Any journal that publishes on a regular basis must be interesting and *BAMBED* is a very "good read." Future additions will contain a continuing series of reviews aimed at faculty who teach biochemistry and need the latest ideas on a specific area of interest written in an accessible manner. The availability of Donald Nicholson's Metabolic MiniMaps has been a most delightful addition to the biochemical education literature. I have real confidence that *BAMBED*, under its new leadership, will become a timely and interesting journal for all of us who have the great good fortune to teach biochemistry to our students. It is certainly off to a very good start in that direction!



nature of biotechnology and its related industries, with the goal of providing guidance for the development of improved education of future workers in the biotechnology industries. In addition to providing the biochemical and molecular biological content so important to the field, educators are encouraged to introduce their students to other aspects of the industry.

Multimedia now pervades biochemistry and molecular biology education, yet many educators still struggle with how to use computers effectively and to assess the results of their use. The Multimedia in Education feature provides discussions of how leaders in the field have dealt with these problems. In addition, *BAMBED* has initiated a program of publishing metabolic minimaps by Donald Nicholson.

New Directions

A relatively new field, Bioinformatics, is growing rapidly, and *BAMBED* seeks to serve as a forum for discussion of how to bring it into the undergraduate curriculum as well as teach it at the graduate level. The journal encourages articles that deal with this important new field.

BAMBED has solicited short reviews from those active in the field on current topics of biochemical interest as well as overviews of classical topics and historical aspects by those who participated in their development, with the aim of providing educators with background material for the preparation of lectures. For example, *BAMBED* has published articles by Dr. Daniel Koshland on the hidden assumptions in the 3-point attachment model of how proteins discriminate chiral molecules; a memoir by Dr. Mildred Cohn on biochemistry in the first half of the twentieth century; a discussion by Dr. Perry Frey on surprises and revelations in biochemistry in the second half of the twentieth century; and have initiated a series of articles on important aspects of metabolism that began with a paper by Dr. Richard Hanson and colleagues on metabolic and genetic aspects of the gluconeogenic enzyme phosphenolpyruvate carboxykinase (PEPCK).

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ASBMB MOLECULAR BASIS OF CELL AND DEVELOPMENTAL BIOLOGY MEETING planned for EB 2003 in San Diego!

Experimental Biology 2003

April 11-15, 2003
San Diego, CA

ASBMB Annual Meeting in Conjunction with Experimental Biology 2003

Organized by Nahum Sonenberg, *McGill Univ.* and Natalie G. Ahn, *Univ. of Colorado*

Plenary Lecture

Joan V. Ruderman, *Harvard Med. Sch.*

Post-transcriptional Mechanisms

*Paul Macdonald, *Univ. of Texas, Austin*
Paul F. Lasko, *McGill Univ.*
Betsy Goodwin, *Univ. of Wisconsin*
Invited Speaker #4 - TBD

Cell Cycle

*Tin Tin Su, *Univ. of Colorado at Boulder*
Conly Rieder, *Wadsworth Center, NY State Dept. of Hlth.*
Yixian Zheng, *HHMI, Carnegie Inst. of Washington*
Peter K. Jackson, *Stanford Univ.*

Morphagens and Development

*Brad Olwin, *Univ. of Colorado at Boulder*
Michael Rudnicki, *Ottawa Health Research Institute*
David Ornitz, *Washington Univ., St. Louis*
Invited Speaker #4 – TBD

Organogenesis

*Susan Mango, *Huntsman Cancer Inst., Univ. of Utah*
Didier Y.R. Stainier, *UCSF*
James Posakony, *UCSD*
Invited Speaker #4 – TBD

**denotes chairperson*

Additional Speakers will be chosen from the abstracts submitted to the ASBMB Molecular Basis of Cell and Developmental Biology topic categories. Abstract deadline: 11/13/02

Travel Awards Available for Undergraduates, Graduates, Postdoctoral Fellows and Undergraduate Faculty

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NIH Institutes Get New Directors

NIH Director Elias Zerhouni last month announced the appointment of new directors for two NIH institutes.

National Institute of Mental Health

Thomas R. Insel, M.D., was named Director of the National Institute of Mental Health (NIMH). Dr. Insel, who is currently Professor, Department of Psychiatry and Director of the Center for Behavioral Neuroscience at Emory University School of Medicine, Atlanta, Georgia, is expected to begin his appointment in mid-November.

Dr. Insel will oversee the NIMH's $1.3 billion research budget that provides support to investigators at universities throughout the country in the areas of basic science; clinical research, including large-scale trials of new treatments; and studies of the organization and delivery of mental health services. The Institute also administers an in-house research program at the NIH.

Dr. Insel first joined NIMH in 1979 as a clinical associate in the Clinical Neuropharmacology Branch, and went on to hold several administrative and leadership posts. During his 15 years at NIMH before heading to Emory in 1994, he conducted research in Obsessive-Compulsive Disorder (OCD), initiating some of the first treatment trials for OCD using serotonin reuptake inhibitors. Five years later, Dr. Insel launched a research program in social neuroscience, focusing on the neurobiology of complex social behaviors in animals. Using molecular, cellular, and pharmacological approaches, Dr. Insel's laboratory has demonstrated the importance of the neuropeptides, oxytocin and vasopressin, in maternal behavior, pair bond formation, and aggression.

Dr. Insel graduated from Boston University where he received a B.A. from the College of Liberal Arts and an M.D. from the Medical School. He did his internship at Berkshire Medical Center, Pittsfield, Massachusetts, and his residency at the Langley Porter Neuropsychiatric Institute at the University of California San Francisco.

Alcohol Research Institute

Ting-Kai Li, M.D., was named as the new Director of the National Institute on Alcohol Abuse and Alcoholism (NIAAA). Dr. Li is currently Distinguished Professor, Department of Medicine, and of Biochemistry and Molecular Biology at Indiana University School of Medicine in Indianapolis, where he also serves as Director of the Indiana Alcohol Research Center. He is expected to assume his new duties within the next few weeks.

Dr. Li replaces Dr. Raynard Kington, who has served as Acting Director of NIAAA since January 2002 following the retirement of Director Enoch Gordis.

The author of more than 400 journal articles and book chapters, Dr. Li has produced ground-breaking research in several areas, including alcohol metabolism and animal models of alcoholism. He is a major participant in two NIAAA-supported research consortia — the Collaborative Study on the Genetics of Alcoholism (COGA) and the Integrative Neuroscience Initiative on Alcoholism (INIA).

Dr. Li received his medical degree from Harvard University in 1959. He joined the faculty of Indiana University School of Medicine in 1971 and served as the Associate Dean for Research from 1986-2000.

NSF Grants Address Challenges in Biology

A new funding opportunity at NSF, Frontiers in Integrative Biological Research (FIBR), is a competition for research grants of up to $5 million to address major challenges in biology. FIBR encourages investigators to identify major questions in biology and to develop integrative approaches to address them by integrating all available scientific concepts and research tools both from within and outside of the biological sciences.

The FIBR program seeks to support integrative research which addresses major questions in the biological sciences. FIBR encourages investigators to identify major under-studied or unanswered questions in biology and to develop innovative approaches to address them by integrating the scientific concepts and research tools of biology, math and the physical sciences, engineering, social sciences and the information sciences. Applicants are encouraged to focus on the biological significance of the question, to describe the integrative approaches, and to develop a research plan, which is not limited by conceptual, disciplinary, or organizational boundaries.

Particularly encouraged are the inclusion of young scientists trained in an interdisciplinary environment or in non-biological disciplines, and partnerships with minority serving and primarily undergraduate institutions and community colleges.

The program announcement can be found at http://www.nsf.gov/pubsys/ods/getpub.cfm?nsf02154.

Reports Required on Toxin and Pathogen Use at Research Labs

New federal rules require that almost 190,000 research facilities report on whether they possess or use any of over 70 pathogens and toxins that could be used for bioterrorist attacks against humans, agricultural plants or livestock. The new rules took effect September 10.

White House Science Adviser John Marburger stressed that the new rules focus on research that could be used to build weapons of mass destruction, and that most biological research would not be affected by the new rules.

The new rules—an outgrowth of bioterrorism legislation President Bush signed in mid-June—were developed extremely rapidly. The two federal agencies to which research facilities must report are the Centers for Disease Control and Prevention (CDC) in the case of human pathogens, and the Animal and Plant Health Inspection Service (APHIS), a USDA agency in the case of plant or livestock pathogens.

In general, any researcher at a facility using or possessing a human or animal toxin—referred to as a "select agent"—was to have reported this information to a designated official at the facility. The official was to have collated all information on pathogen use and possession at the facility, and submitted the information to the CDC by September 10.

Facilities possessing or using plant and livestock pathogens must also report this information—however, APHIS does not require facility reports until October 8.

In addition, facilities possessing or using any agent from a third category of pathogens called "overlap agents" must report to both CDC and APHIS. These are agents that could be used to harm either humans, plants, or livestock.

Facilities that do not possess or use any of these pathogens still must report this information to HHS and APHIS. Declaring nonpossession, according to CDC, "is a critical means of ensuring that DHHS is knowledgeable of the potential universe of possessors of regulated agents and is necessary in order to effectively carry out the statutory intent of responsibly governing the transfer, possession and use of biological agents and toxins."

For the complete list of pathogens and toxins affected by the new rule, check "What's New" on the ASBMB website at www.asbmb.org.

Energy Blocker May Be Potential Liver Cancer Treatment

A team of Johns Hopkins University researchers has identified and successfully tested in animals a potential new treatment for liver cancer, a disease for which there are few effective treatments.

Writing in the July 15 issue of *Cancer Research*, the scientists reported that only cancer cells were killed when the compound, 3-bromopyruvate, was given to rabbits with experimental liver tumors.

"It's very exciting because we expected the compound to be pretty toxic, but somehow normal cells in the rabbit protect themselves against it," said ASBMB member Peter Pedersen, Ph.D., Professor of Biological Chemistry, who has spent two decades studying energy production in cells and how it relates to cancer growth. "We even injected it into a vein so it was distributed throughout the rabbit, and we still didn't see any apparent toxicity. It's sort of amazing."

> ***"Any drug can be toxic, it's a matter of determining the limits."***
>
> **—Dr. Peter Pedersen**

A single injection of the compound cells directly into the artery that feeds the tumor killed a lot of the cancer cells, but left healthy liver alone. The researchers compared 3-bromopyruvate to a currently used treatment for human liver cancer, called chemoembolization, which delivers a dose of chemotherapy to the tumor and also blocks off the artery that feeds it.

"With 3-bromopyruvate in the rabbits, healthy liver seems to be spared, but sections of healthy liver were damaged by chemoembolization," says first author Jeff Geschwind, M.D., Associate Professor of Radiology and Director of Interventional Radiology. "The difference was quite dramatic."

Dr. Pedersen cautions that before 3-bromopyruvate could be tested in humans, scientists would need to learn how normal cells protect themselves, whether the compound causes long-term damage to normal tissues, and how increasing the dose affects the animals.

"We assume some level of the compound would be toxic," added Dr. Pedersen. "Any drug can be toxic, it's a matter of determining the limits."

Some 16,600 new cases of primary liver cancer are expected this year in the United States, but tumors that spread to the liver from elsewhere (so-called metastatic tumors) frequently hasten death from other, more prevalent types of cancer, such as skin, colon, breast and prostate cancers. If laboratory tests with other cancer cell types are promising, the compound might be useful for treating any tumor in the liver, not just ones originating there, the researchers say.

Two years ago, frustrated because most patients die within six months, Dr. Geschwind approached Dr. Pedersen with the idea of finding a new way to treat liver cancer. The plan: Identify potential new drugs and use intra-arterial delivery, a procedure with which Dr. Geschwind has considerable expertise, to get them directly into the tumor.

The timing was right, because Dr. Pedersen had learned enough about the role of energy production in liver cancer over the previous two decades to warrant looking for a possible new drug. Biological chemist Young Ko, Ph.D., an ASBMB member and Assistant Professor of Radiology, tested a dozen or so possible energy-blocking molecules in the lab to find ones that could kill liver cancer cells.

In 2001, the team reported that already-available 3-bromopyruvate was head and shoulders above the rest, in part because it blocks both ways cells make energy (in the form of a molecule called ATP). "3-Bromopyruvate looks like a chemical found in our own body," says Dr. Ko, who used 3-bromopyruvate in her graduate work years ago. "It shows a possible drug doesn't have to be fancy or expensive; this is just as simple and as good as can be."

Building on those laboratory studies, the researchers now have tested the compound's effects in an animal model of liver cancer. Team member and pathologist Michael Torbenson, M.D., saw damage only to the tumor when he examined the tumor, liver, and other possibly affected organs from the rabbits. The researchers don't understand how normal cells resist the compound's effects, but cancer cells' greater use of glucose to make energy may play a role.

In another experiment, the researchers discovered that small tumors in the lungs, buds from the original tumor in the liver, weren't affected by arterial delivery of 3-bromopyruvate, but were substantially reduced by intravenous injection.

"It might be logical to treat tumors in the liver by direct intra-arterial injection, and then use an intravenous injection to kill cancer cells that have spread," suggests Dr. Pedersen, "but knowing whether this is so is still a long way off." Another author is Dr. Carolyn Magee of the Russell H. Morgan Department of Radiology at the Johns Hopkins School of Medicine.

Researchers Identify Defect that Causes Rare Muscular Dystrophies

Subtle defects in the processing of a single protein that provides structural integrity to muscle cells can lead to several devastating forms of muscular dystrophy, according to studies by Howard Hughes Medical Institute (HHMI) researchers and their colleagues at the University of Iowa.

Dr. Kevin Campbell

The scientists, HHMI Investigator Dr. Kevin Campbell, an ASBMB member, and Dr. Daniel E. Michele of the University of Iowa, reported in two papers published in the July 25 issue of the journal *Nature* that defects in enzymes responsible for the processing of the structural protein dystroglycan are the underlying cause of several rare forms of muscular dystrophy that affect muscles and cause additional developmental brain abnormalities including mental retardation.

The new findings will immediately help doctors in providing accurate diagnosis and appropriate genetic counseling to patients and their families. In the longer term, knowing the underlying cause of the muscular dystrophies will help researchers tailor their interventions, according to Dr. Campbell. The disorder also disrupts an important component of learning and memory, so he is hopeful that his team's studies will improve understanding of possible links between muscle physiology and neurobiology.

The two articles described experiments that demonstrate that dystroglycan is defective in muscle-eye-brain disease and Fukuyama congenital muscular dystrophy. Separate genes had already been identified as defective in these syndromes, but researchers did not understand the underlying mechanism despite having information on the genes involved.

Dr. Campbell and his colleagues approached the problem by studying the large complex of proteins involved in several known muscular dystrophies. These proteins, called the dystrophin-glycoprotein complex, protect muscle cells from damage as they stretch and contract. They also help hold the cells in place by acting like a molecular Velcro that binds individual cells to the extracellular matrix, providing a bridge critical for the physical integrity of muscle.

In the most common form of muscular dystrophy, Duchenne muscular dystrophy, the dystrophin protein, which provides an anchorage inside the cell, is absent. In the dystrophies Dr. Campbell studied, the defect is in anchoring the cell to the extracellular matrix that surrounds it.

The researchers discovered that while the core dystroglycan protein is present on cell surfaces, it is missing distinctive sugar molecules that decorate the protein. The process of adding sugars to proteins, glycosylation, is an important finishing step in the processing of many proteins and provides a distinctive marking that allows binding partners to recognize the proteins.

"When the sugars are missing, it is like Velcro without the loops—it can't stick," said Dr. Campbell. "As a result, the cells don't adhere properly to the extracellular matrix and are easily damaged." He and his colleagues hypothesize that several genes defective in these rare forms of muscular dystrophy are involved in the biochemical pathway that leads to glycosylation of dystroglycan.

Added evidence for the importance of dystroglycan glycosylation came when Dr. Michele and his colleagues discovered that a commonly used mouse model of muscular dystrophy, the myd mouse, has a defect in the biochemical pathway that adds sugar molecules to the dystroglycan protein in muscle and brain.

> ***"When the sugars are missing, it is like Velcro without the loops—it can't stick."***
>
> **—Dr. Kevin Campbell**

In addition to muscular dystrophy, this mouse had neuronal migration defects very similar to that seen in the patients Dr. Michele studied. The loss of the binding of dystroglycan to matrix disrupts anchoring sites at the surface of the brain that are crucial for normal neuronal migration. In human patients, this type of neuronal migration defect results in abnormal smoothing of the brain surface.

"In both the mouse and patients, the only defect is in glycosylation; all the other (dystrophin-glycoprotein complex) components are there," said Dr. Campbell. "This shows the importance of the dystroglycan link to the extracellular matrix."

Seidmans Share Bristol-Myers Squibb Award For Achievement In Cardiovascular Research

Christine E. Seidman, M.D. and Jonathan G. Seidman, Ph.D. received the Twelfth Annual Bristol-Myers Squibb Award for Distinguished Achievement in Cardiovascular Research for their outstanding contributions to cardiovascular biology and medicine through their research of inherited human pathologies. The husband-and-wife team, who were the first to elucidate the cause of hypertrophic cardiomyopathy (HCM), share a $50,000 cash prize and each received a commemorative silver medallion at a dinner held in their honor on June 24 in New York.

Dr. Christine Seidman, an ASBMB member, is a Professor in the Departments of Medicine and Genetics at Harvard Medical School and a Howard Hughes Medical Institute (HHMI) investigator. She joined the faculty at Brigham and Women's Hospital in Boston in 1986 and is Attending Physician and Director of the Cardiovascular Genetics Service.

Dr. Jonathan Seidman is the Henrietta B. and Frederick H. Bugher Professor of Cardiovascular Genetics at Harvard Medical School and is also an HHMI Investigator. He has been a member of the Genetics Department at Harvard Medical School since 1981.

"Through molecular genetics, the Seidmans established the fundamental basis of understanding the causes and clinical implications of hypertrophic cardiomyopathy and other inheritable heart diseases," said Richard Gregg, M.D., Vice President, Clinical Discovery, Bristol-Myers Squibb Pharmaceutical Research Institute. "Not only have they made enormous contributions to science with their landmark studies, but they have also served as an inspiration to other scientists throughout the world."

Bristol-Myers Squibb Award recipients Christine E. Seidman, M.D. and Jonathan G. Seidman, Ph.D.

The Seidmans were the first to elucidate the cause of HCM as genetic mutations in proteins of the sarcomere, the functional unit of striated cardiac muscle. In 1989, they localized a mutation to chromosome 14 and within three months had identified the β-cardiac myosin heavy chain (BMHC) as the locus of the mutation. Subsequently, they have identified four other gene mutations that cause HCM: cardiac troponin T on chromosome 1, cardiac myosin binding protein-C on chromosome 11, α-tropomyosin on chromosome 15 and β-cardiac myosin heavy chain, a second disease gene on chromosome 14, which is related to β-cardiac myosin heavy chain but which causes elderly onset HCM.

The two used their discoveries to develop genotype-phenotype correlations in families with HCM and developed mouse models of the disease. Their studies allowed scientists to understand the pathogenesis of the hypertrophy and cardiac failure, and to provide prognostic information to patients and families, including children at risk. The Seidmans demonstrated a significant correlation between genotype and survival; individuals with some gene mutations have a significantly reduced life expectancy while individuals with other mutations may have a near normal life expectancy. Some gene mutations produce less cardiac hypertrophy than β-cardiac heavy chain gene mutations while cardiac troponin T mutations are associated with very poor clinical outcomes. Sarcomere protein gene mutations account for some cases of elderly onset cardiac hypertrophy, a trait that had not been recognized as inheritable before results of the Seidman studies demonstrated the genetic cause.

The Seidmans' initial studies on hypertrophic cardiomyopathy in 1989 spurred interest and provided impetus for scientists at other institutions in the United States and throughout the world to pursue genetic defects as etiologies responsible for cardiomyopathies. More than 100 different disease-causing mutations have been identified, and scientists anticipate that the work of the Seidmans will play a pivotal role in developing new models for diagnosis and treatment for hypertrophic cardiomyopathy.

Their studies have also led to an understanding of the molecular genetic basis for dilated cardiomyopathy, a disorder characterized by enlarged chamber volumes of the heart with diminished contractile function. Dilated cardiomyopathy is the most common cause of heart failure requiring cardiac transplantation. They also identified mutations in sarcomere proteins β-myosin heavy chain, troponin T and titin, the nuclear envelope protein lamin A/C, and a transcription factor that cause inherited human heart failure, data that implies multiple

pathways can be triggered to cause contractile dysfunction and cardiac decompensation.

Their research has subsequently localized abnormal genes responsible for a rare form of congenital heart disease, atrial septal defects in the Holt-Gram syndrome, to chromosome 12q2. The mutated gene in this syndrome of heart disease, the first gene characterized that causes congenital heart disease, is a transcription factor, TBX5. More recently, the Seidmans have been mapping genetic loci for simple atrial septal defects. These studies culminated in their major discovery that mutations in another transcription factor, Nkx2.5, cause congenital heart disease and conduction defects seen on an electrocardiogram. These studies proved that congenital heart disease does have a genetic basis, but that the expression of the mutations varies among individuals. Both concepts are considered revolutionary contributions to understanding the pathogenesis of pediatric heart disease.

JBC Editor Receives Prestigious Humboldt Award

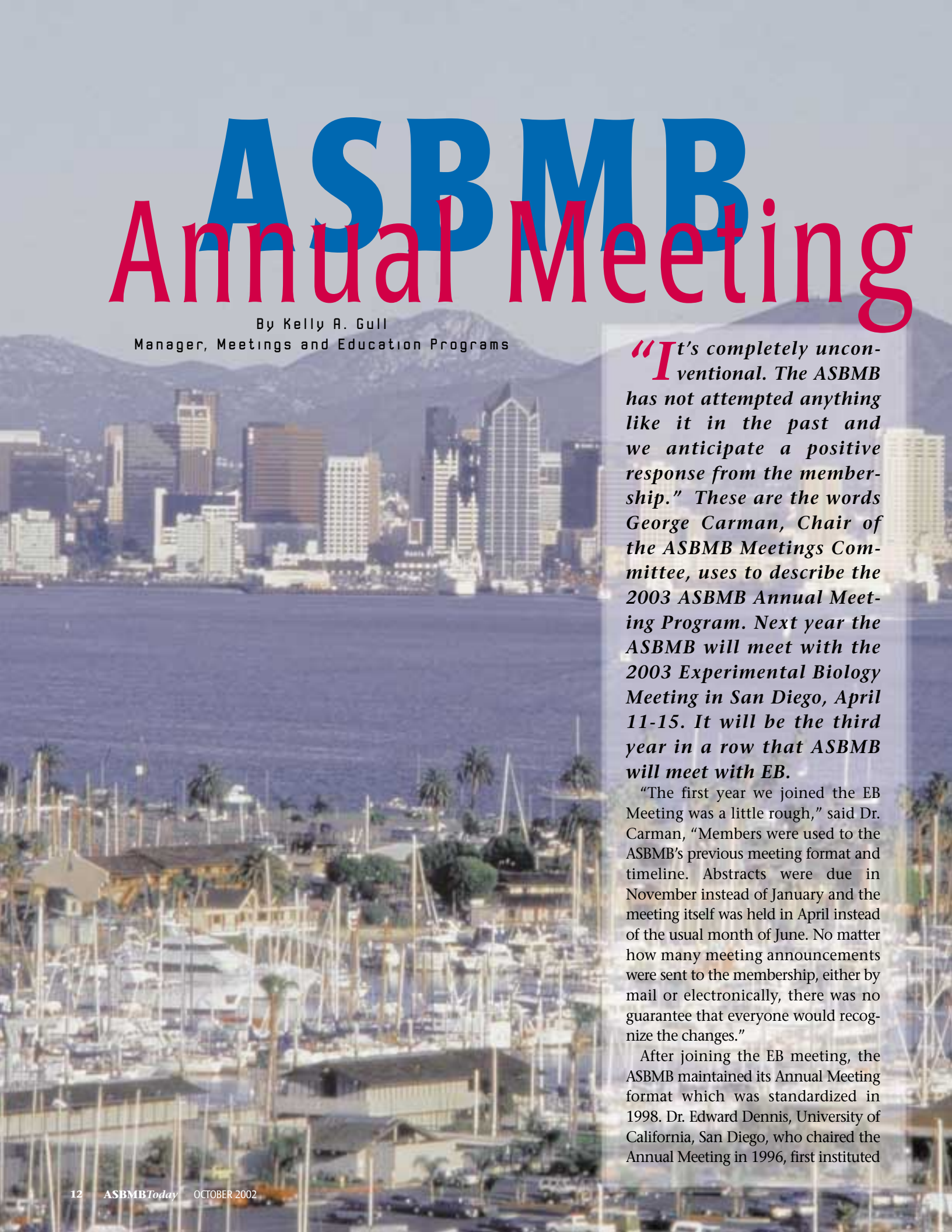
Charles E. Samuel, Professor and Chair of Molecular, Cellular, and Developmental Biology at the University of California, Santa Barbara (UCSB), has received the Humboldt Research Award to Senior Scientists for his lifetime achievements, especially his work on the infection-fighting interferon molecule. The award was presented to Dr. Samuel, an ASBMB member and Associate Editor of the *Journal of Biological Chemistry*, at a ceremony in Berlin in June.

Dr. Charles E. Samuel

The Humboldt Forschungspreise award is given annually in several disciplines to foreign scientists and scholars who have gained international eminence. The awards honor "lifetime achievement in research and teaching." Dr. Samuel's was in recognition of his work on the interferon system and virus-host interactions, carried out at UCSB over the past 25 years with numerous graduate students and postdoctoral fellows.

ASBMB Annual Meeting

By Kelly A. Gull
Manager, Meetings and Education Programs



"It's completely unconventional. The ASBMB has not attempted anything like it in the past and we anticipate a positive response from the membership." These are the words George Carman, Chair of the ASBMB Meetings Committee, uses to describe the 2003 ASBMB Annual Meeting Program. Next year the ASBMB will meet with the 2003 Experimental Biology Meeting in San Diego, April 11-15. It will be the third year in a row that ASBMB will meet with EB.

"The first year we joined the EB Meeting was a little rough," said Dr. Carman, "Members were used to the ASBMB's previous meeting format and timeline. Abstracts were due in November instead of January and the meeting itself was held in April instead of the usual month of June. No matter how many meeting announcements were sent to the membership, either by mail or electronically, there was no guarantee that everyone would recognize the changes."

After joining the EB meeting, the ASBMB maintained its Annual Meeting format which was standardized in 1998. Dr. Edward Dennis, University of California, San Diego, who chaired the Annual Meeting in 1996, first instituted

The Call for Abstracts has been mailed to all members.
Abstract Deadline—November 13, 2002.

Completely Restructured

the format. After going through the planning process, he thought it would be helpful to future program chairpersons if there were documentation of the design he used. Subsequently, he presented a meeting planning guide to the ASBMB Council. In 2000, he became the first chairperson of the newly created ASBMB Meetings Committee which deliberates policies concerning all ASBMB meetings. The program planning guide promoted an annual meeting with four general themes and four complimentary specialized satellite meetings to be held the weekend before the annual meeting.

"The idea was to have scientific sessions in every subject area every day."

— Dr. Vern Schramm

However, joining with EB, which boasts an attendance of nearly 13,000, presented different challenges. The EB meeting is a five-day meeting and is the annual meeting for six other societies in most years. Adding the ASBMB satellite meetings to this already large meeting meant a seven-day commitment from members who wanted to attend everything. Obviously, being away from labs and other commitments for this amount of time is difficult, as well as expensive. Another factor affecting attendees was the fact that EB meets in the Spring, a time when it is difficult for faculty to leave their campuses.

The Meetings Committee realized that the idea of satellite meetings had to be reconsidered. In fact, while they were at it, they decided to look at the entire meeting structure and see how ASBMB members could best be served at the EB 2003 meeting. The Committee reconsidered the four-theme approach. Were the themes too broad? Too narrow? Were members able to find their particular scientific interest at the meeting? Was there a subject of interest for all ASBMB members each day of the meeting? All the questions were thoroughly discussed and a new meeting layout began to take shape.

Vern Schramm, Albert Einstein College of Medicine and Claudia Kent, University of Michigan, co-chairs of the 2003 Program Planning Committee, presented the radical idea. "The conception of the new format began with the question, 'Who is our constituency? What science are they doing and where could we find the information?" said Dr. Schramm. "The answer was right under our noses – *The Journal of Biological Chemistry*. Claudia Kent served as an Associate Editor of *JBC* from 1994 to 2000. During that time she headed the Committee which revised the Table of Contents of the *JBC* in 2001," Dr. Schramm continued.

ASBMB Program Committee Co-Chair Dr. Claudia Kent

"It was an extremely difficult task to undertake and a lot of time went in to changing the *JBC* Table of Contents," said Dr. Kent. "Science is constantly evolving and journals need to keep up with the changes. I am glad to see the hard work of the Committee put to use in other areas of the Society. We have 13 sections in the *JBC*. For the meeting we decided to consolidate a little and narrowed the themes down to ten scientific subjects, plus the science education theme," she explained. "Even that was hard to do," she admitted.

ASBMB Meetings Committee Chair George Carman

The subjects had to be pared down due to the other revolutionary idea that Drs. Schramm and Kent had in mind. They wanted to run all eleven themes concurrently every day at the meeting, morning and afternoon. "The idea was to have scientific sessions in every subject area every day. We felt that the old format could sometimes limit the themes to areas of

ASBMB Travel Awards are available for undergraduates, post-docs, graduate students and undergraduate faculty members. Check the ASBMB website at www.asbmb.org for more details.

research that may be too focused for ASBMB members who are working in the broad areas of scientific research represented in the Journal of Biological Chemistry. I know it sounds like we're trying to 'please everyone all the time' and in fact, we are," said Dr. Schramm.

The idea evolved even further and instead of calling them themes, the Committee decided to call each theme a meeting. The concept is that a member could potentially come to the EB meeting and participate for four of the five days in a meeting close to their interest, for example a "Glycobiology Meeting." "Everyone is interested in what others are doing in their particular area, but you usually like to focus on your field first," said Dr. Kent. "You also like to present your research to the public, which is why we've made changes in the structure of the symposia within each thematic meeting too. The ASBMB has always prided itself in the fact that they select speakers from the abstracts submitted to the meeting. We wanted to expand the opportunities for the attendees to participate. Instead of a schedule heavy with invited speaker talks, we decided to triple the number of presentations selected from the abstracts," she continued.

ASBMB Program Committee Co-Chair Dr. Vern Schramm

Over 300 speakers will be chosen from the abstracts submitted to each thematic meeting. This year, those selected from the abstracts will also be expected to present posters at the meeting so authors may receive even more visibility and the audience has another chance to have some discussion time with the author. In previous years, these authors have not been asked to present a poster.

"The ASBMB Council and I are excited about the possibilities," said Bettie Sue Masters, Robert A. Welch Professor at the University of Texas Health Science Center and President of the ASBMB. "I like to tell everyone to think 'out of the box' and Vern and Claudia, as well as the Meetings Committee, have lived up to my expectations. We are looking forward to a positive response from the membership. We want everyone to submit their abstracts for consideration and join us in San Diego in April. Mark your calendars now and have your colleagues and students do the same. The abstract deadline is November 13th and we all know how those dates can sneak up on you," she cautioned.

ASBMB's New Format:

Eleven Thematic Meetings within the National Meeting Every Day! More Opportunities to Present Your Research!

Over 300 scientists will be selected from the abstracts submitted to **ASBMB Topic Categories** to make oral presentations. Scientific sessions corresponding to the **Thematic Meetings** will be held each day in which speakers from the volunteered abstracts will present. Oral presenters will also present a poster at the meeting.

Thematic Meetings

Meeting I: Molecular Basis of Cell and Developmental Biology
Organized by Nahum Sonenberg, *McGill Univ.* and Natalie G. Ahn, *Univ. of Colorado*

Meeting II: Glycobiology
Organized by Gerald W. Hart, *Johns Hopkins Sch. of Med.*

Meeting III: Lipid Signaling, Metabolism and Transport
Organized by Dennis R. Voelker, *Natl. Jewish Med. Res. Ctr.*

Meeting IV: Biological Catalysis
Organized by Tadhg Begley, *Cornell University*

Meeting V: Metabolism – Pathways and Regulation
Organized by Luciano Rosetti, *Albert Einstein Col. of Med.*

Meeting VI: Signaling Pathways
Organized by Natalie G. Ahn, *Univ. of Colorado* and Nahum Sonenberg, *McGill Univ.*

Meeting VII: Genomics, Proteomics and Bioinformatics
Organized by Patricia Babbitt, *UCSF*

Meeting VIII: Protein Synthesis, Folding and Turnover
Organized by Cecile M. Pickart, *Johns Hopkins Bloomberg Sch. of Hygiene and Pub. Hlth.*

Meeting IX: Nucleic Acid Structure, Function and Processing
Organized by Michael Dahmus, *UC, Davis*

Meeting X: Membrane Assembly Interaction and Transport
Organized by Stephen H. White, *UC, Irvine*

Meeting XI: The Future of the Profession
Organized by A. Stephen Dahms, *California State Univ. System Biotechnology Program*

For the latest program information visit www.asbmb.org

JLR Institutes Papers in Press; Mandatory Online Submissions

Trudy M. Forte, Editor-in-Chief of the *Journal of Lipid Research* (*JLR*), marked her fourth year in that position with a report to the readership on progress made in the past year and changes anticipated in the future. Following is the substance of that report:

The Journal continues to prosper and the number of submissions is increasing. This increase is probably due, in part, to the inauguration of online submissions in January 2002. The online submission process has gone smoothly and has been highly successful. As of April 2002, 86% of submitted papers were received electronically. The high number of online submissions in such a short period of time suggests that authors find this a more convenient and rapid method for submitting manuscripts. To speed the process even more, *JLR* has adopted an electronic review process that has considerably decreased the turnaround time from submission to first decision for a manuscript. To further improve the efficiency of the submission and review process, the *JLR* will make online submission of manuscripts mandatory on January 1, 2003.

The Journal has recently instituted *JLR* Papers in Press (PIPs). Newly accepted papers will be published online in searchable PDF format on a twice-monthly basis (on the 1st and 16th of each month). The PIP reduces the time to publication, since it will appear 8-12 weeks before the print version. The date the PIP appears is the citable date of publication for the paper, for the purpose of establishing priority. Each PIP has a unique Digital Object Identifier (DOI) that needs to be used when citing the paper. For more information on *JLR* PIPs, the reader should visit the *JLR* web site (www.jlr.org).

One year ago *JLR* inaugurated its Thematic Review Series. This has been a highly successful endeavor, given the large number of "hits" on these articles as they appear online. These reviews are designed to focus on an area of current interest in the field of lipid research. Reviews on various topics within the area of interest appear in a series in consecutive months. The first series focused on the *ABC Transporters*, the second on *Regulation of Sterol/Lipid Metabolism and Transport*, and the third (current) series on *Lipases and How They Modulate Gut Uptake and Plasma Disposal of Lipids*. The fourth series, coordinated and edited by Linda Pike and Dennis Voelker, will commence in January 2003, and is entitled *Membranes and Polar Lipid Dynamics*. The *JLR* is very interested in your input into the Thematic Reviews, and I would be very happy if readers would let me know what area they feel is "ripe" for a review series. In addition to suggestions on review topics, we would like to have volunteers to coordinate and edit the series.

In addition to Thematic Reviews, *JLR* also publishes regular review articles. We encourage such reviews and look forward to suggestions for review topics from the readers of *JLR*.

As always, we look forward to your comments and suggestions.

Trudy M. Forte, Editor-in-Chief
Email: jlipidres@lbl.gov

Consortium for Archaeal Genomics and Proteomics Established at Penn State

The Consortium for Archaeal Genomics and Proteomics has been established at Pennsylvania State University under the leadership of ASBMB member James G. Ferry, Ph.D., Professor in the Department of Biochemistry and Molecular Biology, with support from the National Science Foundation which is anticipated to exceed $1.3 million over the next four years. The consortium will research the structure and function of the genes and proteins of organisms classified in the *Archaea*, the grouping that is thought to include the organisms living today with the most ancient evolutionary lineages.

Of the three domains in which living things are classified, the *Archaea* domain is likely the least familiar to most people—but Dr. Ferry and his research team aim to make it much more well known to scientists by revealing many of its secrets. Unlike organisms in the other two domains—the *Bacteria* and the *Eucarya*, which include plants, animals, fungi, algae, and other familiar organisms—the *Archaea* domain includes exotic forms of bacteria that live in extreme environments such as hot springs and salt lakes.

"Our efforts are expected to greatly expand the knowledge of novel biochemical and molecular biological characteristics of the *Archaea*, some of which are totally unique while others are a blend that appears to be 'borrowed' from both the *Bacteria* and *Eucarya*," Dr. Ferry says. The consortium's results are expected to contribute to a fundamental understanding of the *Bacteria* and *Eucarya* domains, as well.

The consortium is a collaborative research effort led by Penn State that includes researchers at the Whitehead Institute for Biomedical Research, Massachusetts Institute of Technology Institute for Genomic Research, the University of California at Los Angeles (UCLA), and the University of Maryland Center for Marine Biotechnology.

The model organism chosen for the project was first discovered by Ferry's laboratory living in oxygen-starved marine sediments from the Scripps canyon near La Jolla Shores in California. This species, named *Methanosarcina acetivorans*, ranks as the most metabolically diverse of all the *Archaea* because it has the largest genome yet sequenced from an *Archaea* organism—4.5 million base pairs.

"Our basic approach is to exploit this genomic sequence through the use of DNA microarrays to identify the genes that are regulated in response to environmental changes," Dr. Ferry explains. Researchers in the consortium also plan to supplement this approach with genetic and bioinformatic techniques used in genomics research and with enzyme techniques used in proteomics research. The consortium's research on proteins is an outgrowth of the NSF-funded Penn State Center for Microbial Structural Biology, which Dr. Ferry also directs. Daniel Jones, a senior scientist and the director of the Penn State Mass Spectroscopy Facility, will assist consortium researchers in their studies of cellular proteins with the analysis of two-dimensional gel-electrophoresis patterns.

"By exploring the metabolic diversity of our model organism we hope to discover novel enzymes and proteins with potential uses in biotechnology," Dr. Ferry says. The consortium's model organism and others like it, which produce methane, are ancient microbes whose direct ancestors are thought to have evolved at the time of the origin of life. "One expected outcome of the project is a more thorough understanding of the origin and early evolution of life, a goal that dovetails with those of the Penn State Center for Astrobiology, of which our lab is a member," Dr. Ferry commented. "In addition, anaerobic microbial food chains are essential links in the global carbon cycle, annually producing nearly a billion tons of methane, a potent greenhouse gas, so a better understanding of this process will have global environmental significance."

Balance ...

Continued from p. 3

were a lot of compelling opportunities in other areas that needed to be funded."

ASBMB President Bettie Sue Masters, in a letter sent to VA/HUD Subcommittee Chair Barbara MIkulski (D-MD) on September 4, noted the Society's concern about the Senate decision, saying that to argue that NSF biological sciences could be cut because the life sciences were doing very well over all "reflects a misperception of NSF's role in funding biological research."

Dr. Masters noted that NSF life sciences research does not focus on biomedical problems, and that holding NSF life sciences to a 3.4% increase penalizes non-biomedical life scientists—many of whom are ASBMB members working in non-biomedical areas of biology and chemistry—for NIH's success. She went on to note that ASBMB was not asking for double-digit increases for NSF biology programs at the expense of other disciplines, but rather, only that the NSF's biological sciences programs be treated the same as the other science directorates.

Unfortunately, it may be too late to bring about remedial action in the Senate; however, ASBMB has also written similar letters to the House, where action to counter the Senate's recommendation is more probable. The letters are available for reading on the ASBMB public affairs website under "policy statements".

It is unclear where the groundswell for cutting biology to fund other science disciplines at NSF has come from. However, after years of ASBMB and other life sciences organizations advocating for NSF as a whole, and not differentiating between scientific disciplines at NSF, it is now the sad case that at NSF—the most interdisciplinary of all federal science funding agencies—this kind of balkanization of science, where one discipline is pitted against another, has resurfaced.

Thus, under the harmonious chorus of "balance", growing discordance can be detected. And, unless the chorus begins to change a bit in coming months, it is likely that the cacophony underlying it will grow louder.

Renew Your Membership Online

ASBMB dues notices have been mailed to all members and you can now make payment online at the ASBMB website: www.asbmb.org. Click on "Renew Now" in the "What's New" box.

New for 2003 — Membership Cards

The renewal notice includes your new ASBMB membership card. And don't forget, your membership includes a free subscription to our monthly magazine, *ASBMB Today,* plus free subscriptions to *JBC Online* and *MCP Online*. You also receive special member rates for *Biochemistry and Molecular Biology Education, The Journal of Lipid Research* and *Trends in Biochemical Sciences,* as well as the print versions of *JBC* and *MCP.*

ASBMB members may also register for the Annual Meeting at discounted rates. In addition, you can order your 2003 edition of the *Annual Review of Biochemistry* through ASBMB.

If you have any questions, please email asbmb@asbmb.faseb.org.

Virginia Researchers Identify Protein 'Gatekeepers' Switching Action in Cell Nucleus

A switching mechanism that controls the entry of proteins into cell nuclei, where genetic material is stored, has been identified by researchers at the University of Virginia Health System.

"The paper marks an advance in our understanding of how cells sort molecules that are to be sent to different places inside the cell," said the principal investigator, ASBMB member Ian G. Macara, Professor of Pharmacology at the University of Virginia Markey Center for Cell Signaling.

"We call the molecules that are being moved around the cell 'cargo,' and each type of cargo has a zip code attached that determines the address within the cell to which it must be delivered. We study proteins called 'importins,' which are like trucks that carry the cargo into the center of the cell, the nucleus," he said. "We have discovered a new component of one of these trucks that helps load the cargo, and ensures correct delivery. It may also help the truck distinguish among different nuclear entry codes."

The nucleus of a cell is surrounded by a wall that separates the DNA from the rest of the cell. This wall contains thousands of tunnels, called pores, through which the trucks and their cargo travel. Millions of cargo molecules are carried in and out of each nucleus every minute. This heavy traffic of proteins through the wall occurs in every living organism except bacteria.

Understanding the details of how things get in and out of the nucleus is important, Dr. Macara said, because viruses such as HIV have stolen the cargo codes and use the trucks to move their components in and out of the nucleus. This allows them to take control of the cell and to replicate within it.

The Virginia study found that the new component, called Npap60 (nuclear pore-associated protein) attaches to its truck in three different ways, depending on whether the truck is in the cytoplasm picking up cargo, en route inside the tunnel, or in the nucleus making its delivery.

Dr. Mark E. Lindsay

"It's something no one would notice unless they take this component apart and look at how each small bit works," Dr. Macara said. "If you just asked how the intact Npap60 binds to its truck, it would always look the same, but by looking more closely you see this amazing switch mechanism. The way it works is very unusual, and is contrary to what scientists previously thought was the function of Npap60. Now, we want to know if it helps the truck select different types of cargo."

Dr. Ian G. Macara

How such selection might take place is the next step in the research by Dr. Macara and Dr. Mark E. Lindsay, a medical and doctoral degree student at the University of Virginia School of Medicine who initiated and led the study.

"Cargo entry into the nucleus is used for many different functions of living organisms," said Dr. Macara. "Proteins activate genes by entering the nucleus, and viruses must enter the nucleus in order to replicate. If we know how importins recognize nuclear entry codes, we may find out the mechanism for allowing or barring entry of viruses or proteins that switch on genes to cause disease."

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.

Marco Boorsma, Institute of Biotechnology, Switzerland

Luis G. Brieba, University of Texas Health Sciences Center

Tristan Fiedler, University of Miami

Rachel N. Fish, University of California, Berkeley

Diana S. Gomez-Garzon, University of Puerto Rico School of Medicine

Julie J. Hong, Purdue University

Promjit Jutabha, Virginia Tech College of Agriculture & Life Sciences

Dong Yul Kim, Purdue Unversity

Katrina A. Lehmann, University of Utah School of Medicine

Su Li, University of Utah School of Medicine

Hanwen Mao, Kent State University School of Biomedical Sciences

Kwan Y. Thai, Purdue University

Oya Yazgan, Texas Tech University Health Sciences Center

Brian C. Yowler, Penn State University College of Medicine

Daniel P. Zelinski, Purdue University

Qin Zhao, Purdue University

NIGMS Funds Complex Biomedical Systems Research Centers

The National Institute of General Medical Sciences has established Centers of Excellence in Complex Biomedical Systems Research. NIGMS anticipates spending a total of $25.5 million over the course of five years to support the centers.

Scientists have acquired a mass of data on the characteristics and functions of individual biological molecules. The focus now is on investigating how these molecules interact. Central to this effort is modeling and predicting the behavior of complex biological systems, which draws on the expertise and approaches of quantitative scientists, including mathematicians, physicists, computer scientists, and engineers, as well as those of biologists.

"We expect these centers to lead the way in training the next generation of researchers in computational biology."

—Dr. Judith H. Greenberg

"NIGMS is excited about the opportunity to nurture the growth of this important new area of biomedicine," said Dr. Judith H. Greenberg, Acting Director of NIGMS. "We anticipate that the new centers will develop creative approaches to address significant biomedical problems by combining the expertise of outstanding scientists working across disciplinary boundaries. We also expect these centers to lead the way in training the next generation of researchers in computational biology."

The new centers are designed to support the development of multi-investigator teams that can address biomedical complexity through research, training, workshops, symposia and other forms of outreach.

The University of Washington, Friday Harbor Laboratories, San Juan Island, Washington received $2.1 million to investigate how groups of genes control a variety of key biological processes, including the development of embryos and the functional and mechanical organization of cell structure and motion. Outreach activities will include creating and disseminating to the scientific community software to visualize and model data, hosting guest researchers and teaching yearly apprenticeship courses to recruit undergraduate biology students to careers in computational biology.

Case Western Reserve University in Cleveland was awarded $2.4 million to create the Center for Modeling Integrated Metabolic Systems (MIMS), an effort to mathematically model and simulate metabolism in skeletal muscle, brain and liver tissue in response to stresses associated with exercise, diet and oxygen supply. MIMS will extend its reach beyond Case Western Reserve by establishing a partnership with Cleveland State University, which has a substantial population of undergraduate students who are members of minority groups that are underrepresented in biomedical research careers.

In addition, NIGMS will support three planning grants to lay the groundwork for future centers of excellence at:

Boston University to conduct a pilot study of the interactions between two signaling pathways controlling cell growth and death in human cells. The effort will also organize a large group of faculty members representing computer science, experimental and clinical science, and statistics to begin planning a cross-disciplinary educational program for undergraduates.

University of California, Irvine, to foster collaborations between research faculty members in cell biology, developmental biology, physiology and medicine. The group plans to devise software engineering principles to simulate large biological systems.

University of New Mexico in Albuquerque, to develop plans to establish the Center for Spatiotemporal Modeling of Cell Signaling Networks. The project's goals are to use computational modeling to understand complex cell signaling circuits and to disseminate knowledge and tools to the broader research community. The center will recruit new faculty to conduct computational biology research and provide training programs for undergraduate, graduate and postdoctoral students to learn how to conduct interdisciplinary research to analyze complex biological systems.

Grandfather's Parkinson's

The title of an article in the August issue of *ASBMB Today,* "Grandfather's Parkinson's Could Be Fragile X Syndrome," should have been "Grandfather's Parkinson's Could Be Related to Fragile X Syndrome." The omission of the words "related to" in the headline could be seen to imply that Grandfather's Parkinson's is Fragile X Syndrome.

As stated in the first paragraph of the article, "Recent studies at the California School of Medicine at Davis reveal that grandfathers of mentally impaired children could easily be misdiagnosed as suffering from Parkinson's Disease (PD) or other movement disorders, when, in fact, the brain pathology causing their tremor and motor problems may be something entirely different. Their symptoms could be the result of mild changes in the fragile X gene responsible for their grandchild's retardation," grandfather's Parkinson's cannot be Fragile X syndrome.

We apologize for any misunderstanding caused by the omission of the words "related to" in the headline.

by John D. Thompson, Editor

Biotech Giant Buys Stake in Dendreon

Seattle-based Dendreon has struck a deal in which one of the biotech industry's leading companies, Genentech, will potentially pay more than $110 million to team up and develop cancer drugs aimed at a specific gene. Under the agreement, Genentech is buying an equity stake in Dendreon and paying an upfront fee and a series of milestone payments that will kick in as experimental drugs progress. The news continued the Seattle biotech company's quick reversal of fortune.

Dendreon Chief Business Officer Mitchell Gold stressed that the company isn't giving away the farm to Genentech. The company will keep rights to co-promote future products in the U.S. It will conduct some of the early clinical trials and will hang on to a double-digit chunk of future profits. Genentech will pay for the most expensive clinical trials and be responsible for manufacturing. It will share in the profits.

Gold said Genentech was one of many bidders for its gene, and it was chosen because of the cash it offered and its experience with cancer drugs using different scientific approaches. Page Sargisson, a spokeswoman for Genentech, said her company has the scientific ability and the money to try several simultaneous approaches to develop drugs homing in on Dendreon's gene. She said prostate cancer will be the first target.

Dendreon has discovered and patented a gene called Trp-p8, that it says is found in a range of cancers, including prostate, breast, lung and colon. Genentech has experience in genetic approaches to cancer: Its breast-cancer drug, Herceptin, zeroes in on a gene that is active in about one-fourth of breast-cancer patients.

Dendreon believes its gene is unusual because it is common in cancer cells and seldom found in healthy cells. The companies' next job is to create antibodies or conventional chemical compounds that will kill cancer cells. Gold said it could be two more years before that work is tested in humans.

Mark Monane, an analyst with Needham & Co., told the *Seattle Times* that the news was significant because it diversifies Dendreon, allowing it to move forward on several approaches to drugs, some of which are more proven in the eyes of investors than Dendreon's method of stimulating the immune system.

Bioinformatics Seen as Critical Component in Drug Discovery

Bioinformatics, a combination of information technology (IT) and biological sciences, is becoming recognized as a critical component of discovery by both pharmaceutical and pure IT companies.

"With the massive quantities of data now available to researchers, computers have become essential," according to Technical Insights Analyst Katherine Austin, a consultant with Frost & Sullivan. "However, having the data in the computer does not mean that it can be used in any meaningful way. The challenge for bioinformatics developers is to design platforms that can manage, retrieve, organize, compare, manipulate, and integrate data in a way that accelerates research, rather than acting as a bottleneck."

Bioinformatics and molecular modeling technologies have the potential, within three to five years, to hugely decrease the risk, cost, and expertise required for the early stages of drug development, target selection and validation.

New analysis by Technical Insights, a business unit of Frost & Sullivan, Bioinformatics, reveals that three fields will be most affected by advances in bioinformatics, all with the goal of structure-based drug design: genomics, proteomics, and combinatorial chemistry.

New Human Genome Database

Biomax Informatics AG, of Martinsreid, Germany, has launched a human genome database that is both automatically and manually annotated.

The new database has a price advantage, according to a company spokesman who said, "With Celera, you're talking at least $10,000 a year to license the database. Ours costs as little as $500 a year for academics and $1,500 a year for institutions."

The Biomax human genome database uses publicly available sequence data. The genes are identified automatically with the FGENESH++ gene modeling software developed by Softberry Inc. in Mount Kisco, New York.

Biotech Deals Key to Pharmaceutical Success

Pharmaceutical giants should get the new products they crave from biotech, said Jan Leschly, Chairman and CEO of New Jersey-based venture capital firm Care Capital LLC, in his keynote address at IBC's Drug Discovery Technology conference in August.

Even mega-mergers can't keep up with pharmaceutical companies' new chemical entity requirements, he said, adding, "To maintain a 12% growth rate, Pfizer/Pharmacia would have to add Amgen in 2003, then Schering-Plough in 2004. In 10 years it would have to be a $150 billion company."

The biotechnology industry, meanwhile, is a rich source of innovative products, producing a growing number of approvals—more than 120 in the last five years. Large pharmaceutical companies will never give up their own research and development because "everyone in the industry knows R&D is the lifeline," he said, but collaborations make more sense than ever before.

Competition will be tough though. Leschly pointed out that "more than 3,000 biotechs have to survive off deals with 600 mid-sized pharmaceuticals and 40 global companies. I believe consolidation will continue in pharma and biotech."

British Biotech Lifted by Antibiotic Research Deal

British Biotech Plc has recruited a privately owned U.S. firm, GeneSoft Inc., to help develop what could be the first new class of antibiotics in 30 years. Analysts said the project offered the best hope of recovery for the company, once the flagship of the UK biotech sector before it was hit by a string of product failures.

Biotech and pharmaceutical companies are striving to find new classes of antibiotics to treat infectious diseases after the emergence of drug-resistant bacteria has become one of the biggest problems in modern medicine.

British Biotech's strategy is to target an enzyme, polypeptide deformylase, which bacteria need to grow. "GeneSoft is not particularly well known, but it does appear to have medicinal chemistry expertise, which should be very useful for this project," said Mike Mitchell, an analyst at Evolution Beeson Gregory. While stressing the project was still at an early stage, he said one particular attraction was that antibiotic drugs generally take less time to develop than cancer drugs, which dominate the rest of British Biotech's portfolio.

DSM to Buy Roche's Vitamins, Fine Chemicals Unit for $2.22 Billion

Dutch chemicals group DSM has that it would buy Swiss pharmaceutical group Roche's vitamins and fine chemicals division for $2.22 billion. DSM Chairman Peter Elverding said the deal would be concluded at the start of 2003, but still requires the approval of anti-trust authorities. The DSM group is reportedly trying to change from a petrochemicals company to focusing on life science products—chemicals and biotechnological products—and performance materials.

$42 Million Slated for North Carolina Biomanufacturing

North Carolina's biomanufacturing industry will get a $42 million boost this year, and possibly another $108 million more over the next six years, from Golden LEAF Inc., the foundation that invests money from the tobacco settlement for the long-term economic advancement of North Carolina.

"The North Carolina Biotechnology Center is delighted that Golden LEAF has recognized the critical importance of biotechnology to the state's continued economic development," said Dr. Leslie M. Alexandre, the Center's President and CEO. "The foundation's commitment to $42 million in venture capital investments will help build on the state's existing strengths in biomanufacturing and biotechnology development."

The $42 million for biomanufacturing will be invested in venture capital funds that will provide funding for bioscience companies developing or manufacturing their products in North Carolina. If those investments are successful, Golden LEAF anticipates making additional investments of $108 million over the next six years, bringing its total investments in the bioscience sector to $150 million.

Quick! What are the best articles to read on a new topic?

Stanford's HighWire Press allows you to search all of Medline plus over 340 journals' full-text at once—including the *JBC*, of course! The new site is at http://highwire.stanford.edu.

The new portal from Stanford's HighWire Press has a tool called "Citation Map" to help you answer the question: "I only have time to scan a few articles on an unfamiliar topic; which are the best?" Perhaps you are meeting a new colleague for the first time; perhaps you have encountered a new topic in refereeing an article; or a new topic in your general reading, in a conference, or in a lecture; and you want to know what is going on in this area that is new to you. Or perhaps you have to give a lecture or write a review article and want help selecting a bibliography.

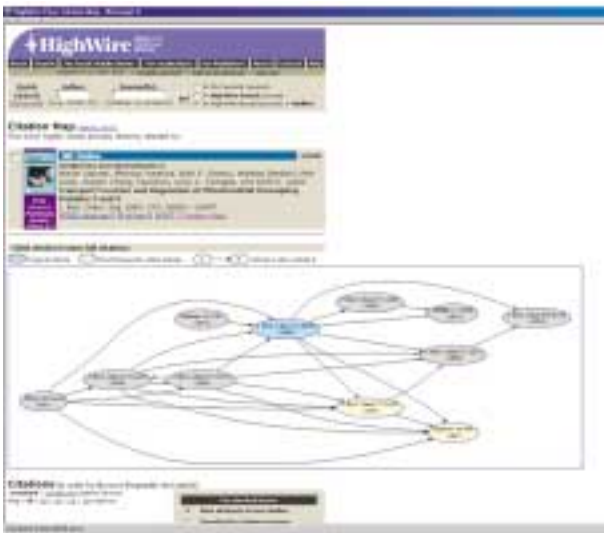
Previously, the available tools were a keyword search, but this might return too many articles that are distantly related to a topic; an author search, which might return too few articles narrowly focused on a single person's work; or a related articles search which gives you related articles, but no sense of how important they are in the field.

The new Citation Map tool provides a way to identify articles that are directly related by citation to a given article and are highly-cited themselves. It graphically displays the articles so that you can see which articles cite which other articles. It sorts the related articles by frequency of citation on the topic, and thus helps you prioritize your reading when you are unfamiliar with a field. It also shows you which authors and which journals appear most often. This information might, for example, lead you to evaluate other articles by a key author in the field.

You will find a hyperlink titled "Citation Map" on many items in a search result in the new portal. Click on the link to have the system compute a citation map starting from the particular article that you choose.

Take a look at the example Citation Map shown for 1999 *JBC* article by Jaburek et al. The top of the example repeats the full citation to the article. Then a map shows the most recent articles on the left (a *PNAS* article from 2001) and the oldest article on the right (*JBC* 1994); Jaburek et al. is in the middle. All articles shown are well-cited and the yellow circles show articles that are the most highly-cited within the group of related articles. The map shows not only the articles cited by Jaburek, but the articles that *cite* Jaburek, so you can look forward and backward in time, to see what "happened with" an article's work after it was published. Obviously, the more recent an article, the fewer articles will have cited it; articles whose full-text HTML is not online won't have citations and, because of the limits of online citation history, we don't record many citations prior to 1994. But within last 5-7 years, there is a wealth of material.

Image 1 – Citation map



By default, the map shows only the 10 most highly-cited articles related to the one you've chosen, but you can ask it to map up to 30 articles (the graphic map is hard to read above 20 articles). The list of citations is easy to read no matter how many articles you ask for.

Image 2 – Citation list

Next to the citation list, you also see the list of authors, and you might find find it useful to explore the work of an author who is unfamiliar to you; clicking on an author's name will bring up a list of all of his or her articles in the portal, which includes a million HighWire-hosted full-text articles, and about 12 million Medline abstracts.

More details on how it works can be found at this URL: http://highwire.stanford.edu/help/pop/citemap.dtl

Previous issues of *ASBMB Today* including topics about the HighWire Portal are available online at http://highwire.stanford.edu/inthepress/asbmb/index.dtl.

Next month we'll look at new techniques to further refine your search when your search retrieves far too many results to examine.

Career Opportunities

MOLECULAR BIOLOGIST:

Plan and conduct lab experiments in a high throughput commercial lab to conduct detection of genetically modified organisms. Perform genomic DNA isolation and purification, DNA sequence analysis, microarray (DNA biochip) exp., Taqman (real time PCR) assay and statistical analysis of data for quality control. Advance degree required plus two or more years experience in a molecular genetics laboratory. Resume to Genescan USA, 101 Woodland Hwy, Belle Chasse, LA 70037

FACULTY POSITION
University of Florida College of Medicine

The University of Florida Shands Cancer Center and the Department of Biochemistry and Molecular Biology invite applications for a tenure-track position at the level of Professor. Candidates should have a PhD or comparable degree, a strong record of research accomplishment in the area of histone acetylation/deacetylation and a demonstrated ability to obtain extramural funding. Anticipated start date is January 1, 2003. Salary is negotiable and will be based on qualifications and experience. Applicants should submit a curriculum vitae and names of three references by November 1, 2002 to: Michael S. Kilberg, PhD., Universiy of Florida, College of Medicine, Dept of Biochemistry & Molecular Biology, Box 100245, Gainesville, FL 32610-0245. The University of Florida is an EEO/AA institution.

EXECUTIVE DIRECTOR
Federation of American Societies for Experimental Biology

Quick Leonard Kieffer is currently recruiting for a new Executive Director for the Federation of American Societies for Experimental Biology (FASEB).

Located in Bethesda, MD, FASEB is a coalition of 21 independent Member Societies representing the interests of biomedical and life scientists. The purposes of the Federation are to bring together investigators in biological and medical sciences represented by the Member Societies; to disseminate information on the results of biological research through publications and scientific meetings; and to serve in other capacities in which the Member Societies can function more efficiently as a group than as individual units.

The Executive Director reports directly to the President/Board and is the chief administrative officer of the corporation, responsible for implementing financial, publication, advisory, public relations, educational, and other programs and policies approved by the Board. He/she provides leadership and direction to approximately 110 professional, technical and clerical support staff and manages an annual operating budget of $14.9 million.

Qualified applicants should have executive/administrative experience with a record of achievement and leadership in academic, association or other nonprofit organizations. The ideal candidate will be a distinguished clinician/researcher with proven administrative and leadership capabilities, excellent interpersonal skills, knowledge and understanding of the legislative process, knowledge of current trends/issues facing the biological and life sciences, and a strong sense of diplomacy. An advanced degree (M.D., Ph.D.) is highly desirable.

For additional information, please contact:

Robert Kuramoto, M.D., or Zack Reynolds of Quick Leonard Kieffer by phone: 312-876-9800 or email: rkuramoto@qlksearch.com, zreynolds@qlksearch.com.

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NEW SALLIE ROSEN KAPLAN FELLOWSHIP for Women in Basic, Clinical, Population and Prevention Science National Cancer Institute

The Sallie Rosen Kaplan Fellowship is a new opportunity for women postdoctoral scientists in cancer research, made possible by a generous bequest to the Foundation for NIH (FNIH). Candidates for the Kaplan Fellowship must possess a doctoral degree, have less than 5 years postdoctoral research experience, and have U.S. citizenship or U.S. permanent residency (green card). Fellowship training at the NCI can serve as a first postdoctoral assignment, or offer more experienced postdoctoral scientists an opportunity to further their training. Program duration is normally 2 to 5 years.

NCI's Maryland campuses boast the best funded and equipped research facilities in the United States. Postdoctoral fellows have the opportunity to interact with internationally renowned scientists from a wide range of disciplines. Starting fellowship stipend is $35,000 to $45,000 commensurate with level of experience. Kaplan Fellows will receive first-year stipend augmentation of approximately $10,000. Health insurance is provided and optional family insurance coverage is available.

Applications and supporting letters must be received by February 1, 2003. Selected candidates will be notified May 1, 2003. Applicants are strongly encouraged to apply online. For important application criteria information and instructions to apply online or by mail for this special opportunity, please go to our training and employment website http://generalemployment.nci.nih.gov or contact: Mr. Lee McPhatter, phone: 301-496-4796, fax: (301) 451-6238, email: lm148g@nih.gov

NCI is an Equal Employment Opportunity and Affirmative Action Employer

Calendar of Scientific Meetings

OCTOBER 2002

Federation of Analytical Chemistry and Spectroscopy Societies

October 13–17 • Providence, Rhode Island
Contact: FACSS National Office; Website: http://www.facss.org

The 18th International Conference on Arginine and Pyrimidines

October 13-17 • Giza, Cairo, Egypt
Biennial conference on all aspects of biochemistry and genetics of uptake and metabolism of arginine and pyrimidines.
Contact: Ahmed T. Abdelal, Georgia State University
Email: aabdelal@gsu.edu; Website: http://www.cas.gsu.edu/icap

The Applications of Proteomics

October 16–18 • Lille-Villenueve d'Ascq, France
Contact: French Society for Electrophoresis and Proteomic Analysis; Tel.: 33-3-20-43-40-97;
Email: hubert.hondermarck@univ-lille1.fr
Website: http://www.sfe-ices.org/

18th Asilomar Conference on Mass Spectrometry

October 18–22 • Asilomar, Pacific Grove, CA
Contact: American Society for Mass Spectrometry
Ph: 505-989-4517; Email: office@asms.org
Website: http://www.asms.org

Fourth HUGO Pacific Meeting and Fifth Asia-Pacific Conference on Human Genetics

October 27–30 • Pattaya, Chonburl, Thailand
Contact: Tel.: 66-2-8892557-8; http://www.mu-st.net/hugothai/

NOVEMBER 2002

AAPS Annual Meeting and Exposition

November 10-14 • Toronto, Ontario, Canada
Contact: AAPS Meetings; Fx: 703-243-9532 Email: Meetings@aaps.org

First Human Proteome Organizational (HUPO) Congress

November 21–24 • Versailles, France
Contact: http://www.hupo.org

3rd Conference of the International Coenzyme Q10 Association

November 22-24 • Metropole Hilton, London, UK.
Contact: Gian Paolo Littarru; Ph: +39 071 220 4674/4319
Email: littarru@unian.it; Website: www.CoenzymeQ10.org

13th International Conference on Genome Informatics

December 16–18 • Tokyo, Japan
Email: giw@ims.u-tokyo.ac.jp; Website: http://giw.ims.u-tokyo.ac.jp/giw2002/

DECEMBER 2002

Biochemical Aspects of Health and Disease Biochemical Society Christmas Meeting

December 16-18 • Imperial College, London
Abstract deadline: October 7
Early registration deadline: November 4
Contact: Meetings Office, Biochemical Society,
59 Portland Place, London W1B 1QW
Ph: +44 (0)20 7580 3481
Fx: +44 (0)20 7637 7626
Website: http://www.biochemistry.org/meetings/

JANUARY 2003

18th Enzyme Mechanisms Conference

January 4-8 • Galveston Island, Texas
Contact: Andrea Scott; Ph: 979-845-9165; Fx: 979-845-9452
Email: ascott@mail.chem.tamu.edu
Website: http://www.chem.tamu.edu/enzyme

FEBRUARY 2003

Miami Nature Biotechnology Winter Symposium

February 1-5 • Radisson Deauville Resort, Miami Beach
Contact: Sandy Black, Executive Director
Ph/Fx: 423-253-3876; Email: sblack@miami.edu
Website: http://www.med.miami.edu/mnbws

MARCH 2003

Keystone Symposium, Proteomics: Technologies and Applications

March 25–30 • Keystone Resort, Keystone, Colorado
Contact: Paul Lugauer; Tel.: 970-262-1230 ext. 111
Email: info@keystone.symposia.org
Website: http://www.keystonesymposia.org

APRIL 2003

American Society for Biochemistry and Molecular Biology Annual Meeting in Conjunction with EB2003

April 11-15 • San Diego, California
Contact: EB2003 Office; Ph: 301-634-7010
Fx: 301-634-7014; Email: eb@faseb.org
Website: http://www.faseb.org/meetings/eb2003

MAY 2003

10th Undergraduate Microbiology Education Conference

May 16-18 • University of Maryland, College Park, Maryland
Contact: Carlos Pelham; Ph: 202-942-9317
Email: EducationResources@asmusa.org
Website: http://www.asmusa.org/edusrc/edu4c.htm

JUNE 2003

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

June 5-8 • Iowa State University, Ames, Iowa
Abstracts due April 4, 2003; Registration deadline May 5, 2003
Students may apply for travel grants (applications due April 4, 2003)
Contact: Gulshan Singh
Ph: 515-294-7978; Fx: 515-294-2244
E-mail:pbmb@iastate.edu
Website: http://molebio.iastate.edu/-gfst/phomepg.html

JULY 2003

FEBS 2003 Meeting on Signal Transduction

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

Education in the Molecular Life Sciences: The Central Role of Biochemistry and Molecular Biology

July 18-20 • University of Toronto, Canada
Contact: Kelly Gull; Ph: 301-634-7126; Email: kgull@asbmb.faseb.org
Website: http://www.richmond.edu/~jbell2/iubmb-satellite.html

19th International Congress of Biochemistry and Molecular Biology

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

AUGUST 2003

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

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

16th International Mass Spectrometry Society Conference

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

Department Heads Take Note:

ASBMB Offers Free Membership to New Ph.D.s

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

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

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

Kathie Cullins
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Bethesda, MD 20814
Email: asbmb@asbmb.faseb.org

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