

FASEB News

"Quality Life Through Research"

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FASEB President Testifies Before Congressional Committees, Explains Need for Increases to NIH and NSF FY 2002 Budgets

FASEB President Mary J. C. Hendrix went to bat last month on behalf of increased funding for the National Institutes of Health (NIH) and the National Science Foundation (NSF), testifying before two Congressional committees. In testimony March 20 before the House of Representatives' Labor, Health and Human Services and Education Appropriations subcommittee, Dr. Hendrix urged lawmakers to continue their bipartisan effort to double the budget of the NIH by the year 2003 so that the agency can expand investigator-initiated research, train more clinical and basic scientists, develop and apply new technologies, and proportionally expand the necessary research infrastructure and research management.

The principal justification for this new NIH funding is the need to boost the "intellectual capital" in biomedical research, she said. "As a nation, if we are to exploit the promise of the fully-sequenced human genome, conduct the patient-oriented and translational



Standing here, after giving testimony to the VA/HUD subcommittee are (from left to right): Eli M. Pearce, president-elect of the American Chemical Society; FASEB's Mary Hendrix; George H. Trilling, president of the American Physical Society; and, Hyman Bass, president of the American Mathematical Society.

research that will provide new cures and therapies, and continue to supply the basic knowledge and human talent that has created our biotechnology industry, we must renew our investment in people.

Only with by increasing our national intellectual capital will we be able to exploit the medical and economic promise that beckons."

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Hendrix Speaks On Maintaining Balance Between Advancing Science and Assuring Animal Welfare

San Diego, Calif. – FASEB is committed to ensuring that animals used in scientific research receive quality care, FASEB President Mary Hendrix told a conference sponsored by Public Responsibility in Medicine and Research (PRIM&R). Speaking on March 27 to an audience composed of Institutional Animal Care and Use Committee (IACUC) members, attending veterinarians, animal care staff, institutional administrators, researchers, and others involved in shaping animal research policies, Dr. Hendrix reviewed FASEB positions and activities.

In her remarks, Dr. Hendrix emphasized FASEB's commitment to quality animal care and its strong support for performance-based standards. Performance-based regulatory standards are outcome-oriented, based on scientific evidence, and are evaluated by the results they achieve. Such standards assure animal welfare better than engineering standards requiring a rigid adherence to a specified set of processes or procedures, she said.

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FASEB News

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Guest Opinion

Serving the Needs of Postdoctoral Scientists

By Patsy M. Brannon

In September 2000, the Committee on Science, Engineering, and Public Policy (COSEPUP), a joint unit of the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine, released the report,



Patsy M. Brannon

Enhancing the Postdoctoral Experience for Scientists and Engineers: A Guide for Postdoctoral Scholars, Advisors, Institutions, Funding Organizations, and Disciplinary Societies. This book offers COSEPUP's assessment of the postdoctoral experience and provides principles, action points, and recommendations for enhancing that experience.

The guiding principles for the postdoctoral experience outlined in COSEPUP's report are:

- The postdoctoral experience should be viewed as an apprenticeship with the purpose of gaining scientific, technical, and other skills that advance the postdoc's professional career
- Postdocs should receive appropriate compensation, benefits, and recognition for their contributions to research
- To ensure that postdoctoral appointments are beneficial to all concerned, everyone involved should agree on a clear and mutual understanding of the nature and purpose of the appointment.

I applaud the comprehensive nature of the report and its thoughtful analyses of training, compensation/benefits, status, and career development of the postdoctoral fellow. Similarly, the Federation of American Societies for Experimental Biology (FASEB), whose 21 member societies represent the biomedical and life sciences, supports several of COSEPUP's proposals, and is doing several things in relation to the recommendations in the report. The FASEB Career Placement Service has a long and successful history of serving the needs of postdoctoral scientists and is widely used. This Career Placement Service – which offers an online applicant database, online classifieds, and a placement service – will continue.

In *FASEB Federal Funding for Biomedical and Related Life Sciences Research FY 2002*, the Federation's annual report to Congress, we recommended a substantial increase in the base salaries and benefits for postdocs supported by the National Institutes of Health's (NIH) National Research Service Award, comparable to those received by permanent employees. FASEB is working with both the NIH and the National Science Foundation, which sponsors a similar awards program; looking for ways to implement this recommendation. Additionally, FASEB officials are talking to key lawmakers in the House of Representatives and the Senate about the need for such changes.

At the March 2 National Academy of Science convocation on this issue, Air Force Retired Lt. Gen. Spence Armstrong, the senior advisor to the administrator of the National Aeronautics and Space Administration, echoed the popular view that current low level of compensation has created a crisis in biomedical research. Increasing the compensation and benefits for postdoctoral fellows is essential for recruiting more talented Americans committed to biomedical and life sciences research and for maintaining the biomedical and life sciences research capacity for the United States.

FASEB is discussing how we can promote an earlier awareness of all career options and assist with career placement more effectively. Our various member societies are offering programs at the annual Experimental Biology (EB) meetings that will focus on grantsmanship and alternative career paths. In 1997, FASEB held a Graduate Education Consensus Conference. The resulting report, available on the web at www.faseb.org/opa/educrpt.pdf, offers information on employment trends for Biomedical Ph.D.s, the wisdom of regulation admission to biomedical Ph.D. programs, matching the length and type of training with spectrum of opportunity and assessing the quality of biomedical graduate programs.

See *Postdocs* on Next Page

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Nonetheless, we face challenges as we move forward. Increasing the compensation for postdoctoral fellows is one among many competing priorities. Several panel members at the NAS Convocation spoke of the challenge that this poses, particularly in light of the federal budget constraints. Nonetheless, we need to continue to articulate the need for increased compensation for postdocs as a top priority.

Most importantly we need to define the postdoctoral position, and that definition must include a training component that would move the postdoctoral fellow to an independent researcher in either the academic or industrial setting. There needs to be a distinction between the trainees (we are still debating whether or not this is an appropriate title) and the general workforce (i.e. a postdoc working essentially as a technician). The training component of the postdoc experience needs to include seminars, effective presentation skills, and teaching. Often these are skills that are of equal importance to a postdoc's research when they go out and interview for jobs. Furthermore, scientists with more than five years of experience should have a different designation and status. Perhaps we could create an alternate career track called "staff scientist." Another example mentioned at the NAS convocation is the non-tenure track "researcher," in place in the University of California system.

We must recognize forthrightly and articulate early that not all Ph.D.'s will become independent research investigators. The nature of our collaborative, multidisciplinary research today requires research teams with contributing scientists who are central to the team, but are not the team's principal investigator. Early entry-level career

paths, such a "staff scientist," need to be considered.

Such a career path might not include a training component and need not be designed to move a researcher to the path of an independent research scientist. We need people at all stages of the research career, not only in the postdoc career path, and we need to make both the postdoc path and the "staff scientist" position attractive career options.

On the eve of the NAS Convocation, FASEB's Science Policy subcommittee on Training and Career Opportunities met to discuss this issue and identified several ways in which FASEB might have a positive impact on this issue. We are in the process of finalizing a draft policy statement in response to the COSEPUP report. Once approved, that will be available on the Web at www.faseb.org/opar/Graduate.Education.html. Subcommittee members will be focusing, as well, on –

- Promoting science education
- Distinguishing research career track investigators, i.e. "staff scientists," from those being trained to become principal investigators
- Identifying ways to enhance and expand job opportunities
- Conducting further research on compensations for postdocs, and
- Finding ways to help scientists enter appropriate career tracks at an earlier stage in their careers.

Patsy M. Brannon, Ph.D., R.D., is the Rebecca Q. and James C. Morgan Dean of Human Ecology at Cornell University and a member of FASEB's Science Policy subcommittee on Training and Career Opportunities. This column is an expansion of comments made March 2 at the National Academy of Science convocation on Enhancing the Postdoctoral Experience for Scientists and Engineers. [EN]

- Dr. Hendrix's statement also pointed out the need –
- To reduce financial disincentives to research careers by funding a national program for educational loan repayment for physicians pursuing careers in research
 - To facilitate a substantial increase in the base salaries of NRSA-funded post-doctoral fellows and provide benefits comparable to those received by permanent employees
 - For the NIH, other federal agencies and the biomedical research community to address growing administrative costs associated with increased regulation.

Hendrix Joins Math, Physics and Chemistry Presidents in NSF Advocacy

On March 21, Dr. Hendrix appeared before the House Appropriations subcommittee on VA, HUD and Independent Agencies to talk about the need to increase funding for the National Science Foundation, the only federal agency whose sole mandate is to support basic research and science education across all disciplines. She was joined in her testimony by Eli M. Pearce, president-elect of the American Chemical Society; George H. Trilling, president of the American Physical Society; and, Hyman Bass, president of the American Mathematical Society.

Since its inception in 1950, the National Science Foundation (NSF) has served the nation exceedingly well by investing in the core disciplines of science and engineering, Dr. Hendrix told lawmakers. The agency's support for research across the breadth of science is why FASEB urges that the NSF budget for FY 2002 be increased by at least 16 percent, (to \$5.1 billion), to double the agency's budget by 2005.

The budget request for the NSF "is more than justified by the scientific achievements that NSF has supported in the past and the scientific promise that beckons," said Dr. Hendrix, who also serves as the Deputy Director and Associate Director, Basic Research at The University of Iowa's Holden Comprehensive Cancer Center. For instance, "new advances in the treatment of cancer will depend upon our knowledge of protein structure present on the surfaces of cancer cells. These advances will depend on structural biology – a new and very exciting area of science that relies upon accelerated beam technology. To realize the promise held out by structural biology, to apply this knowledge to better understanding and fighting cancer cells in the human body, we depend upon critical NSF support of mathematicians and physicists."

This, from her own area of cancer research, is one of four examples that Dr. Hendrix provided to the subcommittee to demonstrate how NSF-supported activities emphasize the multidisciplinary nature of science and the interdependence of the scientific disciplines.

President's Budget Bodes Well for NIH, Not so Good for NSF

President George W. Bush's budget proposal, due to be released this month, is expected to propose a \$2.8-billion increase for NIH. In a prepared statement released in February, Dr. Hendrix said: "This is a great start in our continued efforts to achieve the bipartisan goal of doubling the NIH budget by FY 2003, and we intend to work with the Administration and

Congress to fulfill the President's promise of doubling NIH over five years to bring the total NIH budget to \$27.3 billion in FY 2003."

On Sept. 22, 2000, then Presidential-candidate Bush called for a "medical moon shot" and a doubling of the NIH budget to \$27.3-billion by FY 2003. The NIH FY 2001 budget is \$20.3 billion. Bush's proposal for the agency represents an increase of 13.8 percent.

Dr. Hendrix said Bush's request "is a positive reflection of his commitment to research and is a strong starting point." In its annual federal funding report to Congress, FASEB endorsed an increase of \$3.4 billion (16.5 percent) for NIH to maintain the momentum for doubling the NIH budget by FY 2003. "We will work in a bipartisan fashion with our Congressional champions, such as Senators Arlen Specter (R-Pa.) and Tom Harkin (D-Iowa), to increase the agency's budget to the amount that we've recommended based on scientists' research needs," Dr. Hendrix said. Earlier this year, the two lawmakers introduced an amendment to the upcoming budget resolution that calls for the full \$3.4-billion increase for NIH.

The administration has given biomedical research advocates assurances that when the White House submits its budget later this month, it will make good on President Bush's campaign promise to carry on the effort begun three years ago to double the NIH budget by 2003. Following through with Bush's campaign promise would require the administration to seek an additional \$7 billion over the next two years in order to bring NIH to the doubling goal of \$27.3 billion by FY 2003.

The Bush request for NSF is as troubling as the NIH recommendation is promising. To an FY 2001 baseline of \$4.426 billion, the Bush recommendation is for a 1.2 percent, or \$56 million increase. **FN**

FASEB Publishes Article on Osteoporosis

Osteoporosis, or porous bone, is a disease characterized by decreased bone mass and a deterioration of bone tissue. This accumulated bone-thinning increases one's susceptibility to fractures of the hip, spine, and wrist. Currently, osteoporosis is a major public health threat for greater than 28 million Americans, 80 percent of whom are women.

Bone Builders: Preventing and Treating Osteoporosis, the latest essay in FASEB's Breakthroughs in Bioscience series,



traces the fascinating path of discovery that led to an understanding of how bone is remodeled, a process that involves the constant formation of new bone and the destruction of old bone. By determining the cellular factors important in regulating this complicated process, scientists were able to identify compounds that could then be manufactured

into effective drugs for preventing the formation and progression of the disease.

Today, scientists are continuing their basic research into bone biology to develop additional insights into osteoporosis. They are using a variety of new research tools borrowed from multiple scientific disciplines including immunology, genetics and molecular biology. These tools and the exciting experiments they are used in are summarized in the "Explosion of New Research" section of the article.

The Breakthroughs series is a collection of illustrated articles that explain recent developments in basic biomedical research and how they are important to society. This article is the tenth in the series published by FASEB. Other articles are "Serendipity, Science, and a New Hantavirus," "The Polymerase Chain Reaction," "Blood Safety in the Age of AIDS," "Unraveling the Mystery of Protein Folding," "Cardiovascular Disease and the Endothelium," "Helicobacter pylori and Ulcers: a Paradigm Revised", "Cloning: Past, Present, and the Exciting Future" and "MRI: From Atomic Physics to Visualization, Understanding and Treatment of Brain Disorders" and "Making Anesthesia Safer: Unraveling the Malignant Hyperthermia Puzzle."

The full text of these reports can be obtained by submitting a written request to the FASEB Office of Public Affairs, 9650 Rockville Pike, Bethesda, Md. 20814. The fax number is 301-571-0686. The articles are also available on the Web at www.faseb.org/opar/break.

Dr. Hendrix explained to the PRIM&R audience FASEB's concern that the United States animal welfare oversight system has come to have too many authorities and too much paperwork. Because of this unnecessary regulatory burden, she said, the original intent of regulations – to provide humane care for laboratory animals – is being compromised. FASEB supports less detailed regulation that would place more control into the hands of local IACUC members, who are the most qualified to make oversight decisions at their institutions.

Dr. Hendrix offered several ways in which FASEB can help to promote local oversight. The Federation can help focus efforts in enhancing the function of IACUCs; collaborate in developing effective training for IACUC members; facilitate interactions among scientists, veterinarians, and animal care staff; educate the public about the importance of animals in research; work with government agencies to identify and reduce regulatory burden; and, work with other scientific societies to ensure animal welfare.

Regulatory burden is a particularly serious concern. Redundant oversight mechanisms hamper research efforts without providing added benefit to research animals. Resources should go to the care and treatment of animals rather than being diverted to documentation and reporting requirements. In this regard, effective local oversight provides better assurance of animal welfare than detailed, prescriptive regulations. In its recent comments to U. S. Department of Agriculture concerning the definition and reporting of pain and distress, FASEB recommended against the use of pain scales because local IACUCs and vets are in the best position to assess levels of pain and distress.

FASEB is strongly committed to educating the scientific community on issues related to animal research. This includes promotion of the highest standards of care for animals used in research and education. The keystone of this effort is the FASEB Statement of Principles on the Care and Use of Animals in Research and Education. (See accompanying box.)

“Good animal care and good science go hand-in-hand,” Dr. Hendrix emphasized in closing her remarks to PRIM&R.

FASEB takes every opportunity to educate both the public and scientists about the importance of the humane care of animals in research and the dangers posed by excessive regulation. In a recent letter to the editor of *Nature* magazine, Dr. Hendrix affirmed FASEB's commitment to its Statement of Principles. Dr. Hendrix's letter was in response to an earlier letter to the editor from Bert van Zutphen of the Netherlands (*Nature* 409, 452; 2001) suggesting that FASEB's opposition to Animal Welfare Act regulation of rats, mice, and birds stemmed from a difference in commitment to laboratory animal welfare between the FASEB and the European Science Foundation (ESF).

“In fact, our positions [on animal welfare] are quite similar, as demonstrated by the principles for the care and use of animals in research and education adopted by the FASEB Board of Directors in 1994,” Dr Hendrix wrote. “Our opposition to proposed changes in the United States' Animal Welfare Act (AWA) – extending it to cover rats, mice and birds – is certainly not based on a lack of concern for the welfare of these or any animals. In the United States, the care of most rats, mice and birds in medical research is subject to the Public Health Service

policy on humane care or voluntary accreditation by the Association for the Assessment and Accreditation of Laboratory Animal Care, International. What we object to is the additional level of bureaucracy that would divert resources from biomedical research without providing any new benefits for laboratory animals.”

For a summary of FASEB activities and comments in regards to the use of animals in research and education, go to www.faseb.org/opar/animal.research.education.html.

FASEB Statement of Principles for the Use of Animals in Research and Education

The Federation of American Societies for Experimental Biology (FASEB) affirms the essential contribution of animals in research and education aimed at improving the health of both humans and animals. The role of animals remains critical in understanding the fundamental processes of life, and in developing treatments for injury and disease. Members of the Constituent Societies of FASEB believe that the use of animals in research and education is a privilege. This imposes a major responsibility to provide for their proper care and humane treatment. Good animal care and good science go hand-in-hand.

Therefore, the members of the Constituent Societies of the Federation of American Societies for Experimental Biology support the following principles:

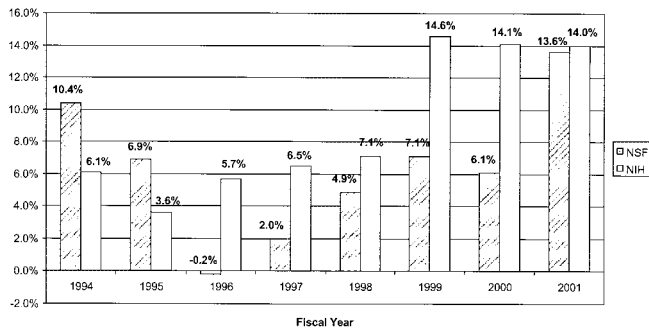
- All work with animals shall be designed and performed in consideration of its relevance to the improvement of human or animal health and the advancement of knowledge for the good of society.
- The acquisition, care and use of animals must be in accordance with applicable federal, state and local laws and regulations.
- Each institution is responsible for providing a review procedure to insure that the use of animals in research and education conforms to the highest ethical, humane and scientific standards.
- The minimum number of appropriate animals required to obtain valid results should be used. Good science demands judicious choices of appropriate methods, such as animals, computer simulations, or tissue and cell cultures.
- Animals shall be housed and maintained under conditions appropriate to their species. Veterinary medical care shall be available.
- Provision shall be made for the training and education of all personnel involved in the care and use of animals.
- Sound scientific practice and humane considerations require that animals receive sedation, analgesia or anesthesia when appropriate. Animals should not be permitted to suffer severe or chronic pain or distress unnecessarily; such animals should be euthanized.

NIH Research Funding Trends: FY 1995 to FY 2000

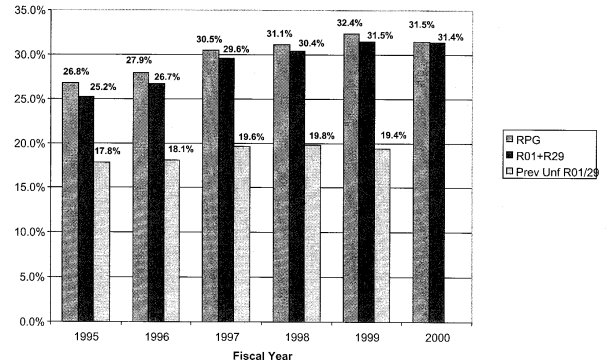
Using data from the National Institutes of Health web site, <http://grants.nih.gov/grants/award/award.htm>, FASEB's Office of Public Affairs created these graphs to illustrate trends in research funding activity for fiscal years 1995 through 2000. These charts show data for all research project grants (RPGs) as well as trends for traditional research grants (R01 and R29

awards). Separate presentations are made for grant applications, number of awards, and total dollars awarded. For the fiscal years 1995-1999, data are shown for new investigators (Prev Unf R01/R29), those individuals who had not previously received either R01 or R29 awards.

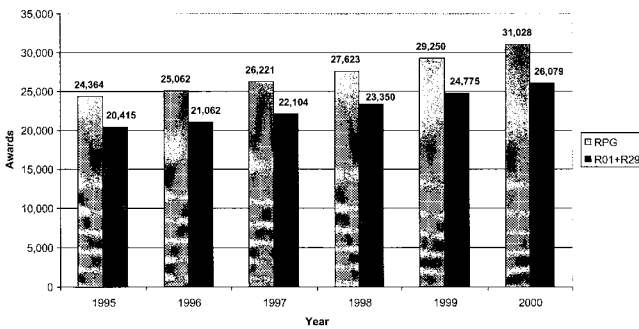
Funding Increases for NIH and NSF: FY1994-FY2001



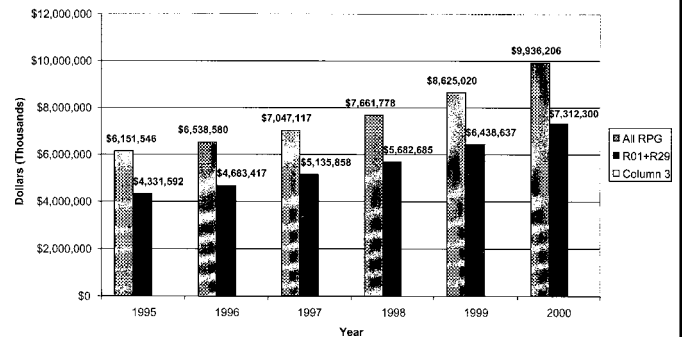
Success Rates For NIH Grants: FY1995-FY2000



Competing and Continuing NIH Awards: FY1995-FY2000



Funds for Competing and Continuing NIH Grants: FY1995-FY2000



These charts and others are available on the web at www.faseb.org/opar/ppp/fed_fund/nih_fund_s2.pdf.

Communicating Science: From the Laboratory Bench to the Breakfast Table

By Mary J. C. Hendrix

My lab at the University of Iowa is working on elucidating the molecular mechanisms underlying disease processes. This research utilizes several experimental biological models, including the use of human tumor cells and human arthritis synovial fibroblasts. Our immediate objectives include identifying genes that contribute to cancer metastasis and rheumatoid arthritis, diseases that exhibit similar biological activities. I hope it is obvious that I am excited about our research activities, and very absorbed in them.

So believe me when I say that I know from personal experience that often we can become so wrapped up in our work and our discoveries that many of us forget our obligation to explain them to the broader society that will eventually benefit. We forget to provide the details of our work in a language that non-scientists can understand. We forget to clarify the relevance of research to our daily lives – our health, wealth and well being as a nation – and how we translate our work for commercial use.

One of the ironies of our modern age is that while our society depends on science more than ever before, what we do in our laboratories remains an enigma to most people. As any nonscientist who has tried to wade through a scientific journal knows, the language of science is virtually incomprehensible to the average person. While these journals are not written for a general audience – nor should they be – they are perhaps the clearest example of the widening schism between scientists and the rest of society.

But if we are to maintain public appreciation and support for our scientific enterprise, we need to pay more attention to translating the benefits and grandeur of science into the language of broader society. Both educators and journalists have a role to play in communicating the achievements of science, and other members of our panel will address that. But scientists must recognize that we have a responsibility to increase the availability and salience of science to the public.

I dare say that this is not something we can choose to do. It is something that we must do, especially in light of recent high profile and controversial news stories – cloning, stem-cell research, and fetal-tissue research. Our work is in the public eye more now than perhaps ever before. And yet, arguably, our work has never been more misunderstood. Thus, we have an important role to play in redressing the balance.

We must work to build the bridges between scientists and journalists. There has been an exciting explosion of new scientific knowledge during our lifetimes. No one person can fathom it all. Many scientists, themselves, say they are hard

pressed to keep up with cutting-edge research, even in their own specialties. Imagine the challenge that the average newspaper reader must face.

To bring accurate, relevant information from the front lines of science to the pages of newspapers and into peoples' homes to the breakfast table, journalists and scientists must be willing and able to communicate with each other. This does not always come easily. In the words of Jim Hartz, the former co-host of the Today Show, and Dr. Rick Chappell, the Director of Science and



Mary Hendrix, practicing what she preaches. Here, as Senator Charles E. Grassley, a Republican from Iowa, looks on, Dr. Hendrix explains the work of a lab technician at the University of Iowa's Cancer Center.

Research Communications at Vanderbilt University – who in May 1998 testified before the Committee on Science in the U.S. House of Representatives that: “Scientists complained that reporters didn’t understand many of the basics of their methods, including peer review, the incremental nature of science, and a proper interpretation of statistics, probabilities and risk. Conversely, journalists complained that scientists get wrapped up too much in the jargon about such matters and fail to explain their work simply and cogently.”

The result of this impasse is that important stories may go unheard for lack of communication. Most Americans get information on scientific advances from their local newspapers, television stations and the Internet. Many newspapers do a decent job of covering science; some even have science sections. Nevertheless, many local news outlets often do not have the wherewithal to devote precious resources to science stories that are often difficult to write and may not attract a wide audience. According to Deborah Blum, a Pulitzer-Prize winning science journalist, readers do respond to science articles when they are done well. But she also notes that writing these stories requires mutual trust between the scientist who is the object of the story and the journalist who writes it.

Her advice? First, all journalism school graduates should take an entry-level science-writing course. Secondly, news outlets – newspapers, magazines, and TV and radio stations – need to have training workshops, for writers and editors. Finally, and this is where we come in, every person employed in the scientific field should take a science communication course and should be taught that communicating with the public is part of their job description. “Scientists know very little about the culture of journalism, what makes a story, how to talk to reporters,” she says.

Ms. Blum’s comments show that the gap between scientists and journalists threatens to get wider. Closing it will require that scientists and journalists gain a greater appreciation for how each other operates.

FASEB attempts to close the gap in a couple of ways. Take, for instance, our Breakthroughs in Bioscience project. Break-

throughs are a series of illustrated essays that explain recent breakthroughs in biomedical research and how they are important to society. In recent years, we have covered topics such as Magnetic Resonance Imaging, Cloning and Protein Folding. Our most recent essay, on Osteoporosis, has just been published as is available from FASEB's Office of Public Affairs.

These essays are one way that FASEB tries to demystify basic research. Each article explains how basic research has led to developments in a current field of study, the integral part that laboratory animals played in the discoveries, and the impact of public funding on the outcome of research. We distribute these, free of charge, to lawmakers, government officials, teachers, students and the press – in the hopes of bridging this much talked about chasm between scientists and the non-scientist.

This fall, FASEB plans to launch a public education campaign on the importance of animals in the conduct of biomedical research. This effort will include the publication of an article featuring vignettes from several FASEB societies, and Op-Eds debunking the arguments of the animal rights activists and explaining arcane yet important issues such as defining the responsibilities of Institutional Animal Care and Use Committees (IACUC) with respect toward assuring the welfare and appropriate use of animals in research. Another Op-Ed will clarify the current flap over the addition of mice, rats and birds to the Animal Welfare Act. I am sure that few lay people understand the challenges we face, and I think many scientists don't understand what's at stake as well.

We are also developing Op-Eds on subjects such as cloning and post-doctoral compensation and benefits. We are aiming high, hoping to place these articles in publications such as the *New York Times* and the *Washington Post*.

If you are just embarking on this exciting journey, here are few tips for basic survival:

- Get your message straight. Focus on two or three main points you want to get across, phrase them in simple, non-technical language, and stick to these points. There is no time or space for complicated explanations.
- Describe the implications of your work, rather than the clever science. People want to know how they are going to be affected by your work. Is it going to mean a more effective antibiotic for ear infections? Will it drastically reduce the incidence of Down's syndrome in children born to women of advanced maternal age? And, for some politicians, will it create a new export industry?
- Learn about the world of the journalist. They live by ferocious deadlines, and are always in a hurry. So try to respond quickly to their queries. They work in a highly competitive industry, and few understand even basic scientific facts, but they do try to get things right. The onus is on you to explain your work in clear and simple terms.
- Prepare a simple document with the important details. This should highlight the basic details of the story, spell everyone's names correctly, and have your contact information. And consult your collaborators and colleagues to make sure everyone agrees on the wording to avoid territorial arguments before they start. Admit what you don't know, and offer to get back to them with missing information.
- Understand the importance of pictures. Good pictures can make all the difference. A compelling photo can gain a story prominent newspaper coverage; and, as far as TV is con-

cerned, if there are no interesting pictures, there is no story.

- Finally, if a science article appears in your local newspaper or on a television broadcast, send in a comment either complimenting them on their coverage, clarifying an issue or vehemently disagreeing. Let them know that you are willing to engage in a dialogue.

As important as bridging the gap between scientists and the media is, there is no substitute for scientists speaking directly to the public about their work. In part because science must compete for discretionary funding with disparate interests, engaging the public's interest in science through direct interaction is crucial. Also, scientists have an ethical obligation to the public to account for their stewardship of the public funds used to support their work.

Public speaking is one of the best ways for scientists to reach the public and share their enthusiasm for their work and educate the public. Efforts can include speaking at local civic clubs and other organizations, working with teachers in local schools, and inviting interested groups, such as students and lawmakers, into their laboratories. Without these efforts, support for science may erode.

But the reality is that often, scientists who decide to spend time talking to the media or the public pay a high price professionally. Such activities take precious time away from their work, and may thus jeopardize their ability to compete for grants or tenure or complete research projects. Even for those who prove adept at public communications, the price among a scientist's peers is often great. It is important that we have institutional backing for these efforts. University officials, at the highest level, must recognize the importance of communicating science to the public, and encourage faculty to speak to the public about science and scientific issues.

However, in addition to these public service and ethical motivations for aiding science journalists, there are also very practical reasons. For one thing, publicity helps communicate scientific information among researchers. Experience has shown that after a piece of research is publicized, a scientist usually receives a significant number of requests for further information from fellow researchers, many of whom may have missed the published scientific paper or meeting presentation. Particularly important in this era of interdisciplinary research, such contacts often come from colleagues outside the scientist's discipline. These may result in useful collaborations or new insights into the scientist's work.

Finally, of course, coverage of science and technology attracts more public and private support for research and attracts interested, talented students to careers in science and engineering. There is a great deal that scientists can learn in making the media work to their advantage. Unless they learn to use the media to explain their work to the public, they cannot expect that the public will support them. Lack of public support translates rapidly into loss of public funding, and the sidelining of what should be one of the driving forces of American life.

It is a privilege to do research. Let us be responsible stewards and advocates for our trade and for our progeny!

Mary J. C. Hendrix is the president of FASEB. This essay was taken from a speech presented March 31 at panel titled "A Call to Activism: Communicating About Science" at Experimental Biology 2001.

What We've Been Doing

FASEB President Hosts Congressional Delegation at U of Iowa Cancer Center

FASEB President Mary J. C. Hendrix met on March 16 with Speaker of the House J. Dennis Hastert (R-Ill.) and Representatives Jim Leach (R-Iowa) and Greg Ganske (R-Iowa) when they visited The Holden Comprehensive Cancer Center at The University of Iowa. "I am so pleased to have these lawmakers visit this state-of-the-art facility," said Dr. Hendrix, who serves as the Deputy Director and Associate Director, Basic Research at the Center.

The Cancer Center was established in 1980 to promote interactive, high-quality cancer research; to provide high-quality health care related to the prevention, detection, and treatment of cancer; and to educate cancer professionals and the citizens of Iowa about cancer. It serves to enhance cancer-related research, education, and cancer care, and provides a focal point for cancer research. "The center represents a commitment by the people of Iowa and the National Cancer Institute to support research against cancer and other related diseases."

Dr. Hendrix said that she was appreciative of the support that President George W. Bush and members of Congress have shown for biomedical research. The Congressional visit comes two weeks after President Bush released a summary of his 2002 budget request, which included a \$2.8-billion increase for the National Institutes of Health (NIH). Dr. Hendrix noted that Speaker Hastert, Rep. Ganske, who sits on the House Commerce subcommittee on Health and Environment, and Rep. Leach have worked in Congress to achieve FASEB's national goal of doubling biomedical research. "It was a great honor to show them what that investment has meant right here in Iowa," she said.



Mary Hendrix (far right) explains a piece of equipment in a lab at the U. of Iowa's Cancer Center to Representative Jim Leach (far left) and Speaker of the House J. Dennis Hastert (center).

Hendrix Meets With New Chairman of the House L/HHS Appropriations Subcommittee

On March 13, Mary Hendrix met for the third time this year with Representative Ralph Regula, the Ohio Republican recently appointed to head the House of Representatives' Labor, Health and Human Services and Education

Appropriations Subcommittee. Rep. Regula acknowledged the NIH doubling effort, but made no commitments. He spoke to Dr. Hendrix about the difficulties he will face in crafting a spending bill, asking what we would advocate cutting so that NIH can receive a large increase. He also expressed concern about human cloning and mentioned that he had discussed stem cell research with his fellow Subcommittee members. He seemed reassured by FASEB's voluntary moratorium on human cloning and offered his view that stem cell research did not currently appear to be a serious issue for the subcommittee.

That day, Dr. Hendrix also met with Representative Vern Ehlers, a Republican from Michigan; Senate Budget Committee Staff Director Bill Hoagland; Senate L/HHS Subcommittee Staff Director Bettilou; and, staff for Senator John McCain, a Republican from Arizona, and the White House Office of Science and Technology Policy.



Standing outside the door of FASEB's new Capitol Hill office are, from left to right: Robert H. Michel, Paul G. Rogers, Mary Hendrix and former Congressman John Edward Porter.

FASEB Opens Legislative Affairs Office on Capitol Hill

Retired U.S. Congressman John Edward Porter, Paul G. Rogers, the chairman of Research!America's Board of Directors, and retired U. S. Congressman Robert H. Michel were among the dignitaries present at a reception March 7 celebrating the opening of FASEB's Capitol Hill office. Mary Hendrix was there, as were staff from FASEB Societies, and representatives from other research advocacy groups. The office, located at, 236 Massachusetts Avenue, NE Suite 410, Washington, DC, will be available for the Public Affairs staff of FASEB societies and their volunteer leaders as they make the rounds on Capital Hill. Pat White, FASEB's Director of Legislative Affairs, can be reached at: (phone) 202-543-1155; (fax) 202-546-2370; and, (email) fpwhite@opa.faseb.org.

Hendrix Makes More Rounds on Capitol Hill

On March 7, Mary Hendrix attended Campaign for Medical Research meetings with Senate Budget Committee Chairman Pete V. Domenici (R-NM) and Senator Kent Conrad (D-ND), the top Budget Committee Democrat. Both senators expressed support for doubling the NIH budget and showed great familiarity with NIH operations and research. Senator Domenici said he was concerned about "balance" in the federal research

portfolio, but offered that the NIH doubling was “going to happen.”

Hendrix Confers With Representatives Regula, Nussle and Sununu

On Feb. 28, Mary Hendrix met with Representatives Ralph Regula, Jim Nussle (R-IA) and John Sununu (R-NH), and attended a breakfast with Senator Arlen Specter (R-PA) the next day. Her meeting with L/HHS Appropriations Subcommittee Chair Regula was focused on the NIH doubling and the rationale for increased investment in NIH. Representative Nussle is the new chair of the House Budget Committee. He said that while his committee had not yet begun its work, President Bush’s \$2.8 billion request for NIH would be in the House budget resolution. Senator Specter reaffirmed his commitment to NIH, and asked the science community’s help in assuring passage of S.Res.19, a non-binding amendment to the budget resolution that will specify a \$3.4 billion increase for NIH in FY2002. Senator Tom Harkin (D-IA) is a co-author of this measure.

FASEB Praises Bioethics Panel Report On Federal Human Subjects Protections

The draft report issued by the National Bioethics Advisory Commission (NBAC) recommending major changes in government oversight of research involving human subjects provides a comprehensive and integrative set of recommendations to enhance the organization and execution of research oversight, while improving efficiency and reducing redundancy in the existing system, according to Mary Hendrix in a Feb. 15 letter to NBAC Executive Director Eric M. Meslin. The report, *Ethical and Policy Issues in Research Involving Human Participants*, was released last December following more than a year of Congressional scrutiny into the risks that people face when participating in research. It catalogs the deficiencies of the current system to protect human subjects and offers some innovative ideas about reforms.

There are, however, certain aspects of the report that FASEB is concerned about. One recommendation would establish an independent office to carry out all federal regulation of human-subject research. A new office would be charged with developing a government-wide set of rules. “We do support the idea of a centralized office to oversee all research involving human participants, regardless of funding source,” Dr. Hendrix said. But rather than creating an entirely new entity, FASEB proposes that the mission of the recently established Office for Human Research Protections (OHRP) in the Department of Health and Human Services (DHHS) be expanded to include these additional responsibilities. This structure would produce multiple benefits including the protection of human participants involved in non-Federally funded research, the elimination of overlapping and sometimes conflicting policies from different government agencies and the reduction of regulatory burden. This solution would also avoid any duplication in the oversight of HHS-funded research and the coordination of Federally sponsored research and prevent administrative confusion between the two offices.

Nevertheless, the letter concludes, NBAC’s “comprehensive and detailed” report will prove indispensable for leading the Nation as it strives to address the ethical and policy issues

associated with research involving human participants.

FASEB Finds ORI’s Proposal to Protect Whistleblowers Overly Broad, Too Prescriptive, and Unfair

In cases of research misconduct, the accused as well as the accusers must be accorded full protection under the law, according to Mary Hendrix. In a Jan. 29 letter to the federal Office of Research Integrity (ORI), she wrote: “We believe that allegations of misconduct should be addressed impartially, with due process for all parties and deplore those situations in which there is retaliation against individuals bringing charges of misconduct.” However, while FASEB strongly supports legitimate efforts to punish scientific misconduct and protect the integrity of the scientific record, Federation officials are dismayed by ORI’s proposed standards for the protection of research misconduct whistleblowers.

“The proposed rules greatly exceed the agency’s statutory authority, are overly prescriptive, may conflict with existing laws creating an unfair imbalance between the accuser and the accused,” Dr. Hendrix wrote. “With little justification in terms of scope or magnitude of the problem, the rules also place new, unreasonable and costly financial burdens on research institutions.”

The proposed standards, published in the Nov. 28, 2000 *Federal Register*, would require institutions receiving PHS funds to “follow certain requirements for preventing or otherwise responding to occurrences of retaliation against whistleblowers.” Among FASEB’s concerns is that the ORI’s proposed policy –

- Establishes an elaborate structure and prescribes a detailed system of regulations that go far beyond the agency’s statutory authority. These include requirements for subcontractors and the establishment of specified time frames for adjudicating cases. Moreover, the time frames established in these rules are unreasonable in light of the sensitive charges and adversarial relationships involved.
- Creates a completely new and redundant system for dispute resolution. It creates a totally separate channel for grievances in addition to mechanisms existing under collective bargaining agreements and state laws. In some cases, it would be possible for individuals to pursue remedies simultaneously in all three venues, and it might be the case that the results would be three separate opinions.
- May conflict with state laws and institutional employment agreements, thereby resulting in a complex web of competing rules and regulations. Under the National Labor Relations Act, an employer cannot unilaterally make changes in the conditions of employment. In those institutions covered by collective bargaining agreements, employers cannot, by themselves, establish a system for resolving grievances unless it is already covered by the contract.

“The new rules go well beyond the development of standards and mandate the creation of a complex and burden some system,” Dr. Hendrix writes. “We also question whether the proposed remedies will have the desired effects and are concerned that the creation of a special status for whistleblowers will create new legal problems.” **FN**

ORI Suspends Policy on Instruction in The Responsible Conduct of Research

The Public Health Service's Office of Research Integrity (ORI) has suspended its controversial Policy on Instruction in the Responsible Conduct of Research amid Congressional inquiries into the legality of the rules. FASEB strongly criticized the policy when a draft was released in August 2000. In an Aug. 11, 2000 letter to ORI Acting Director Chris D. Pascal, FASEB President Mary Hendrix said that the policy, which would require all research staff supported by PHS grants to undergo training in the 'responsible conduct of research,' is too broad, has a flawed approach and could be prohibitively expensive. Despite similar concerns raised by others in the scientific community, ORI adopted and published the final PHS Policy on Instruction in the Responsible Conduct of Research on Dec. 1, 2000.

On Feb. 5, the House of Representatives Committee on Energy and Commerce sent a letter to Mr. Pascal questioning the legality of the policy. "While we strongly support federal efforts to encourage responsible and ethical scientific research practices, we are troubled by ORI's process in implementing such efforts," wrote Representative W.J. "Billy" Tauzin, the Louisiana Republican who heads the committee. "Based on the Committee staff's review, we are concerned that a policy aimed at improving the ethics of those outside government may have been issued by a government agency in apparent disregard of federal law." The ORI announced Feb. 20 that the policy would remain suspended while under review.

Society News

Former FASEB President to Head Lasker's Funding First

The trustees of the Mary Woodard Lasker Charitable Trust have appointed Samuel C. Silverstein as president of



Samuel C. Silverstein

Funding First, the medical and health research policy program of the Lasker Trust. Dr. Silverstein, a professor and chairman of the Department of Physiology and Cell Biophysics

at Columbia University College of Physicians and Scientists, served as president of FASEB from 1994 to 1995 and holds membership in four FASEB societies: American Physiological Society, the American Society for Biochemistry and Molecular Biology, the American Association of Immunologists and the American Society for Clinical Investigation. As president of Funding First, Dr. Silverstein will work with former U. S. Senator Mark O. Hatfield, who serves as the chairman of Funding First. James W. Fordyce, chairman of the Trust, said, "We are extremely fortunate to have the benefit of these two talented and dedicated individuals as advocates for our goal of increasing long term support for medical research."

APS Publication Features Account of Defense Against Animal Rights Activists

The February issue of *The Physiologist*, the newsletter of the American Physiological Society, features, as its cover story, an account by Adrian R. Morrison of the University of Pennsylvania, of his experiences defending researchers targeted by animal rights activists and later as a target himself of an Animal Liberation Front break-in. In "Personal Reflections on the 'Animal-Rights' Phenomenon," Dr. Morrison describes how animal activists distort information and use terror tactics to intimidate researchers. "Revealing the mistreatment of the scientific literature" is "time-consuming"

but "quite straightforward," Morrison explains. It is much more challenging to deal with the "debilitating" aftermath of a laboratory break-in. "A number of colleagues said they were right behind me," Morrison writes, "but my interest was in having people beside me, or better yet, in front of me." The article is available on line at www.the-aps.org/publications/journals/tphys/tphys.htm. Click on Vol. 44, No. 1 (February, 2001)

Distinguished UT-Houston Scientist, Academic Leader and FASEB Activist Dies

Thomas F. Burks II, Ph.D., executive vice president for research and academic



Thomas F. Burks, II

affairs at The University of Texas Health Science Center at Houston and a professor of pharmacology at the university's Medical School, suffered a fatal heart attack on March 2. He was 62 years old. A highly respected researcher, teacher and administrator, Dr. Burks was also an active participant in many scientific organizations. Included among these were his services as president of the American Society for Pharmacology and Experimental Therapeutics (ASPET) in 1990-1991 and membership on FASEB's Public Affairs Advisory Committee (predecessor to the Science Policy Committee). In that capacity, he made major contributions to FASEB policies on animals in research, indirect costs, public outreach and other issues.

ASPET's New Science Magazine Debuts at EB2001

The inaugural issue *Molecular Interventions*, the newest publication from the American Society for Pharmacology and Experimental Therapeutics (ASPET), made its debut at EB 2001. *Molecular Interventions* is designed to appeal to a broad range of biomedical scientists, and consists of short review articles and a number of departments that address science and pharmacology from multiple perspectives. The publication will appear

bimonthly, in print and online, and will be available for free through the end of 2001, after which time it will be published monthly and available by subscription.

ASIP Appoints New Executive Director

Mark E. Sobel has been hired as the next executive director of the American Society for Investigative Pathology



Mark E. Sobel

(ASIP). He succeeds Frances Pitlick, who served as ASIP's executive officer for 12 years. Dr. Sobel received his medical degree from the Mount Sinai School of Medicine and a Ph.D. in biomedical sciences from the City University of New York. After residency training at Boston Children's Medical Center, he came to NIH.

Dr. Sobel held positions of increasing responsibility at the NCI since 1976. As a principal investigator, his research focused on the molecular mechanisms of neoplasia. He has a strong record of original publications and mentorship in the laboratory setting. Dr. Sobel became increasingly interested in wide-ranging policy issues, including education and training in pathology, the need for support for biomedical research scientists, and the ethical conduct of biomedical research and clinical practice, said Tucker Collins, ASIP's president. Dr. Sobel has worked extensively with both the Association for Molecular Pathology (AMP), as well as ASIP. He is a Past-President of AMP and was a member of the organizing committee that formed AMP and wrote the AMP Bylaws, and has been a member of AMP's Council since the fall of 1995.

He has participated in ASIP governance for nearly a decade and is Past-President of ASIP. While he was President of ASIP, he devoted particular attention to the ASIP Publications and was instrumental in the development of *The Journal of Molecular Diagnostics*. "Notable among his many contributions to our Society was his leadership on the pathology position on the use of human tissue in research," said Dr. Tucker. "He presented testimony on behalf of the

ASIP to the National Bioethics Advisory Commission (NBAC) and has sat on several NIH advisory panels on related topics.”

AAI Seeks Editor for The Journal of Immunology

The American Association of Immunologists (AAI) seeks applicants for the position of Editor-in-Chief (EIC) for its official publication, *The Journal of Immunology (The JI)*. The term of service is from July 1, 2002 to June 30, 2007, with a required transition period starting January 1, 2002. This position is considered to be part-time for which a stipend and associated expenses are provided. The EIC is responsible to the AAI Publications Committee and, ultimately, to the AAI Council. Interested individuals should submit an application package that includes a curriculum vitae; a succinct letter of interest and qualifications; a statement on the conceptual direction of *The JI* in its pursuit of scientific excellence; and, innovations that may be considered. Applicants must be members in good standing with the AAI and are required to reside within the continental U.S. A more detailed description of the position

may be obtained by contacting the AAI Executive Office at www.aai.org. Applications will be received through June 31, 2001. Please address them to: Chair, AAI Publications Committee, c/o AAI, 9650 Rockville Pike, Bethesda, MD 20814.

AAA Cosponsors Embryology and Imaging Conference

The American Association of Anatomists (AAA) is among several cosponsors of a conference on Embryology, Imaging and Education, to be held May 11 and 12 at the National Museum of Health and Medicine in Washington, D.C. The interdisciplinary forum will assess the state of embryology, the impact of advanced imaging technology, the most effective ways to use imaging to teach embryology, and the potential of imaging techniques in education and clinical applications. The program is aimed at researchers, educators, and students in anatomy, cell biology, developmental sciences, embryology, nursing, OB/GYN, and medical illustration. To register, contact Lisa Holmes (HOLMES@afip.osd.mil) or go to www.afip.org. For details on AAA-supported Student Travel Awards,

contact: Liz Lockett (202-782-2682, lockett@afip.org).

Minority Student Workshop: A Success Story

(This is excerpted from an essay, by student By Brenda Salumbides, that was reprinted from the AAA Newsletter). At the last year's AAA-FASEB Minority Student Workshop in San Diego, I stepped up to inquire about scientists looking for summer students. After lunch, (former FASEB President) David Kaufman, of the University of North Carolina at Chapel Hill (UNC), gave me his business card and asked me to e-mail him. I contacted him the following week and, less than a month later, I was on my way to a summer internship at UNC.

Through a grant from the National Institute of Environmental Health Sciences (NIEHS), UNC covered all my expenses and provided a stipend under the Summer Pre-Graduate Research Experience (SPGRE) program. I spent the 10-week program in Dr. Kaufman's lab in the Department of Pathology and Laboratory Medicine, where I worked on mapping the chromosomal location of a human DNA clone using a procedure called fluorescence *in situ* hybridization (FISH).

Since I had only taken lower division classes prior to that summer, most of the material was new to me. Dr. Kaufman and his staff were very enthusiastic about answering my questions and sharing their knowledge. They also worked one-on-one helping me prepare for the poster session at the end of the program. This event was good practice for future presentations.

Aside from the research experience, I was also exposed to Southern hospitality. The SPGRE program included 50 students from all over the east coast, but mostly from the south. One of the most enjoyable experiences was becoming friends with the other students who were from so many backgrounds and different universities.

Since the summer, I have presented several times at school and at two national conferences. Participating in the NIH Bridges to the Future program and the internship have served as stepping stones to other opportunities in research. Last fall, I transferred from community college to San Diego State University and now work as a scientific intern at The Scripps Research Institute through SDSU's MARC (Minority Access to Research Careers) program.

And in April, I'll be back at the AAA-FASEB Minority Student Workshop in Orlando to encourage other students to take advantage of the wonderful opportunities that will be offered along with lunch!

Protein Society Hosts 4th European Symposium

On April 18 to 22, the Protein Society will host the 4th European Symposium of The Protein Society at the Institut Pasteur, Paris. The program will include leading figures in protein science from around the world. In addition, The Protein Society has announced the recipients of several of their awards to be presented at the 15th Annual Symposium of The Protein Society, July 28 to August 1, in Philadelphia, Penn. The recipient of the Stein and Moore Award supported by the Merck Foundation is Alan Fersht of Cambridge University; the recipient of The Young Investigator Award supported by DuPont Pharmaceutical is Kevan Shokat of the University of California-San Francisco and Berkeley; the recipient of the Neurath Award supported by the Neurath Foundation is Art Horwich of Yale University; and, the Amgen

Lecturer is Robert Sauer of MIT. The awardees will present a lecture at the annual symposium. In addition Luis Serrano of EMBL-Heidelberg and G. Winter of the MRC-Cambridge will speak at the Stein and Moore Symposium”.

EMS Hosts Functional Genomics Meeting

On Oct. 16 through 18, the Environmental Mutagen Society and the International Association of Environmental Mutagen Societies will host a meeting in Seattle, Wash., on Functional Genomics. The panel of speakers – led by keynote speaker Susan Taylor of the University of California, San Diego – will talk about recent discoveries in applied and basic genomic research. The meeting will focus on genetic changes at the molecular level, their identification, expression, and function as well as associated genomic technologies. Abstracts are due on June 1. For information on the complete program, abstract submission, registration and hotel arrangements, please go to the website www.genomicfunctions.org. **FN**