

FASEB NEWS

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FASEB President David G. Kaufman stands outside of the Capitol after his testimony to Congress on behalf of increased funding for the National Science Foundation (see Page 9 for details of his testimony). Joining him are, from left to right: Felix E. Browder, the president of the American Mathematical Society; Daryle H. Busch, president of the American Chemical Society; and, Robert C. Richardson, chairman of the Physics Policy Committee of the American Physical Society.

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Society for Gynecologic Investigation Joins FASEB as Associate Member

The Board of Directors for the Federation of American Societies for Experimental Biology (FASEB) voted May 9 to admit the Society for Gynecologic Investigation (SGI) as an associate member. The addition of SGI brings the number of FASEB societies to 21.



The SGI – considered the premier scientific organization in obstetrics and gynecology in the United States – was formed in 1953 to promote excellence in the reproductive sciences through research, education and advocacy. Since then it has grown to comprise nearly 1,000 members whose areas of expertise include genetics, molecular biology, endocrinology, physiology, biochemistry, pharmacology, immunology and epidemiology. Sixty-five percent of its members hold an M.D. degree, while the remainder hold a Ph.D. or equivalent.

David G. Kaufman, FASEB's president, said SGI and FASEB are a good match. "I think that the SGI is composed of investigators with a similar outlook as the investigators in the other societies in FASEB," he said. "It will add strengths to the existing expertise within FASEB. The insights and knowledge of members of the SGI will enable FASEB to better address certain biomedical research policy issues, such as those in the realm of women's health.

"In turn, association with FASEB should give the SGI the benefits of the expertise within other societies," Dr. Kaufman added. "Together FASEB with SGI as an associate member should have a stronger, more recognized voice in policy issues and research funding advocacy."

Mary J. C. Hendrix, FASEB's president-elect, agrees. "SGI's inclusion will further strengthen our mission to support investigator-driven biomedical research activities," she said. "We are

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Guest Opinion

The Practice of Science At the Edge of Knowledge

By Frederick Grinnell

In recent decades, postmodernists and sociologists of science have argued that science is just one of many human activities with social and political aims -- comparable to, say, religion or art. They have questioned the objectivity of science, and



whether it has any unique ability to find the truth. Not surprisingly, such claims have evoked a negative response from proponents of the traditional view of science; the debate between the two sides has been called the science wars. In the debate, scientists have made few attempts to meet the postmodern critique on its own grounds, through serious reflection on the everyday practice of science. Yet that is the only

way to understand the nature of science and the features that distinguish science from other activities.

The behavior of baseball umpires helps define the issues. There are three types of umpires. The first type says: "I call balls and strikes as they are." The second says: "I call them as I see them." And the third says: "What I call them is what they become."

What distinguishes the types of umpires is not the situations in which they find themselves, but the attitudes that they bring to their work. As a result of those attitudes, they practice umpiring differently. The first type claims truth; the second, perspective; and the third, power.

Philosophers might identify the umpires' different claims as realism, contextualism, and social constructivism. Realism corresponds to the traditional view of science that links reality directly to observation. Contextualism suggests that how one looks at things will determine, to some extent, what one sees. Social constructivism corresponds to the postmodern view, linking reality with power. To determine which view most accurately reflects what scientists do, let us consider the two central features of scientific practice: discovery and credibility.

Discovery begins within the context of prevailing scientific beliefs. At the same time, the goals of discovery assume that previous knowledge is incomplete or wrong. Discovery takes place at the edge of knowledge, an ambiguous place where no one has been before. At the edge, one must make risky choices and address hard questions: What should be done first? How does one recognize data, especially when one is searching for something never seen before? And when experimental results do not meet one's expectations, is it because one's original idea was wrong, or because the methods used to test the idea were wrong? Scientists have a saying: Don't give up a good idea just because the data don't fit.

That description of research contrasts sharply with the traditional idea that in science, one proceeds from hypothesis to discovery in a linear fashion, guided by method and logic. Of course, some science does conform to that traditional model. An example would be a clinical drug trial approved by the Food and Drug Administration, in which researchers agree in advance on what will count as data, how many patients will be necessary for the data to be meaningful, and what will constitute a positive or negative outcome.

At the edge of knowledge, however, method and logic are insufficient. Intuition and creative insight become just as important. Moreover, researchers frequently find themselves taking unplanned journeys to unexpected places, realizing only later just what it is that they have discovered. Because experi-

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University of Texas Biochemist Selected as FASEB's Vice President-Elect for Science Policy

The Board of Directors for the Federation of American Societies for Experimental Biology (FASEB) has selected Bettie Sue Siler Masters, Ph.D., as the Federation's next Vice-President Elect for Science Policy. Dr. Masters will



assume her duties on July 1 and will succeed Sue P. Duckles, Ph.D., as the Vice-President for Science Policy on July 1, 2001. Dr. Masters

represents the American Society for Biochemistry and Molecular Biology on the Federation's board. She is also a member of three other FASEB member societies: the American Society for Pharmacology and Experimental Therapeutics, The American Society for Cell Biology and The Protein Society.

FASEB's Science Policy Committee examines science policy issues and recommends courses of action for the Federation. Dr. Masters hopes to bring a different perspective to science policy issues. "While the issues of funding must require our utmost efforts, we must also think about what the coming decades will need in terms of concentrated biomedical research activity," she

said. "I mean this not only from the technological development viewpoint, but from the aspects of intellectual activity and problems to be solved."

Dr. Masters serves as the chairperson of the U.S. National Committee of the National Academy of Sciences to the International Union of Biochemistry and Molecular Biology, a panel whose activities have revolved around the promotion of science at the international level. This committee, she said, "has been preaching the utility of "Collaboratories" (also known as "Laboratories without Walls" or "Virtual Laboratories"), which can be observed and/or controlled from remote locations and, employing the highest levels of technology available, can make high-level science available to all scientists who have access to the Internet. An organization such as FASEB could have enormous impact in promoting such collaboration and cooperation."

Dr. Masters has held The Robert A. Welch Foundation Chair in Chemistry at the University of Texas Health Science Center at San Antonio since 1990. Her research interests have included a class of intracellular, membrane-bound cytochromes P450 involved in the metabolism of therapeutic drugs, cancer-causing agents and hormonal mediators within organs such as the liver, lung and kidney. Her work has helped to define

the structure and function of these enzymes. More recently, her studies have focused on the characterization of the nitric oxide synthases, which produce nitric oxide in various organs and mediate neural signaling, dilation of blood vessels and killing of foreign cells such as tumors and bacterial or fungal agents.

Dr. Masters received her B.S. in Chemistry from Roanoke College in 1959. She then spent nine years at Duke University, completing her Ph.D., her postdoctoral work and an advanced research fellowship as a junior faculty member. She began her independent professional research career as a tenure-track faculty member at the University of Texas Southwestern Medical School at Dallas. From 1968 to 1982, she rose through the ranks there, becoming a full professor in 1976. She spent eight years – 1982 to 1990 – at the Medical College of Wisconsin in Milwaukee as Chair of the Department of Biochemistry, before returning to Texas to assume her current position.

Dr. Masters has been extensively recognized for her professional achievement. She received the FASEB Excellence in Science Award in 1992 and she was elected to membership in the Institute of Medicine in 1996. She has served on scientific advisory committees for organizations such as the National Institutes of Health, the American Cancer Society and the National Research Council. **FN**

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particularly excited about the new scientific and collaborative opportunities that the SGI brings to other FASEB societies, who share similar research goals."

The SGI's primary focus is research. In fact, one of the prerequisites for membership into the SGI is that the applicant must have been conducting research for at least two years. Forty percent of its members serve as principle investigators on grants supported by the National Institutes of Health (NIH).

The SGI provides summer research stipends for medical students, and it sponsors a grant program for new faculty members, providing them with two years of financial assistance to help them establish independent research laboratories. And the society was also instrumental in developing the Research Scientists Training Program and the Women's Reproductive Health Research Career Development Centers Program, both of which are supported by the NIH's National Institute of Child Health and Human Development.

The SGI publishes The Journal of the Society for Gynecologic Investigation (JSGI), a quarterly peer reviewed publication. The JSGI includes important scientific papers in all aspects of

reproductive biology, including the disciplines of perinatology, obstetrics, gynecology, reproductive endocrinology, infertility and gynecologic oncology.

James C. Rose, chairman of the SGI's Governmental Affairs Committee, said that the society's affiliation with FASEB would help the SGI to increase its impact in the advocacy for research funding. "The FASEB has a long successful history in this area, particularly relating to the National Institutes of Health," he said.

The SGI also wants to become more involved in biomedical policy issues on a national level. "In the past, the FASEB has been instrumental in helping Congress establish important policies relative to biomedical research, and the Society feels that its efforts in this area would be significantly enhanced by affiliation with FASEB," Dr. Rose said.

"We are delighted to welcome the Society for Gynecologic Investigation to the FASEB family," said Sidney H. Golub, the executive director for FASEB. "This group has taken the lead in important areas of science policy, such as promoting research experiences for physician scientists in training. The expertise of SGI members in women's health will aid the Federation in developing a broad program in public policy." **FN**

FASEB approves proposal for Physician-Scientists debt relief

On May 9, the FASEB Board of Directors approved a proposal for an extramural educational loan repayment program for physicians interested in pursuing a career in patient-oriented, disease-oriented or basic research. The plan was developed by a special committee of FASEB board members and will be shared with Congressional supporters of biomedical research and senior officials at the National Institutes of Health (NIH).

The plan grew out of recommendations presented in the report titled "The Physician-Scientist: Career Issues and Challenges at the Year 2000," which was featured in the February issue of *The FASEB Journal*. FASEB recommends that the following parameters be incorporated in the program:

- Candidates should be selected via a national competition without any special considerations for geographical location or institutional affiliation. However, the administrative agency overseeing the program should be mindful not to select a pool of candidates that concentrates these two demographics to certain states or a few institutions. There should be an open application process with no limit on the number of candidates from a specific institution. Candidates must exhibit the potential to become an independent physician-scientist. Candidates should be selected via a system that incorporates the key element of the National Institutes of Health (NIH) grant funding process: peer review. Before being officially accepted into the educational loan repayment program, candidates must demonstrate that they have been accepted into a research-training program.
- Funding for the program should be provided to support at least 100 new candidate slots per year. Participants would be eligible to receive up to \$105,000 for repayment of their educa-

tional loans. This sum would be paid out in equal installments over the duration of the three-year program, with a maximum of \$35,000 disbursed per year for debt repayment.

- Participants should not receive a salary from the extramural educational loan repayment program and should be required to submit annual progress reports on their training. However, participants should be entitled to receive a salary from federally supported research training programs.
 - Demographic data should be collected on current program participants. All participants who successfully complete the program should fill-out a program evaluation and data should be collected on their careers. In addition, participants who drop out of the program should be interviewed as to their reasons for leaving the program.
 - Participants who drop out of the program should be financially liable for the money they have received from the program for loan repayment. Furthermore, if their contract is breached before one year, participants should be liable for amounts already paid by the program plus a predetermined fine.
 - NIH should administer the educational loan repayment program. In addition, the Howard Hughes Medical Institute and other interested foundations should be encouraged to develop and administer similar programs of their own.
 - As stated in the *Public Health Service Act* for similar educational loan repayment programs, recipients should also receive an amount equal to 39% of the total amount of loan repayment to cover federal personal income tax obligations.
- Money for scheduled educational loan repayments should be sent to the person's lender(s) and not directly to the person. The administrative agency overseeing the program should be encouraged to manage the participant's debt portfolio for the duration of their appointment. **[FN]**

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mental conditions cannot be controlled completely, unexpected and important results sometimes occur, an aspect of research that Max Delbruck often called the principle of limited sloppiness.

Discovery begins as protoscience. For it to become science, the researcher must focus next on credibility -- convincing his or her peers that the new findings are correct. The researcher presents the work in highly stylized research publications. In those scientific short stories, which use the linear scientific method as plot, ambiguity and error disappear. The publication becomes the discovery. Because the linear model is the primary way in which scientists communicate, the public has come to believe that science works in a linear fashion, a misunderstanding of the nature of science and a source of disappointment when the results of research do not meet expectations. When high-school science teachers spend a summer working in my laboratory, they are amazed at how frequently experiments fail to work out as planned.

Professional scientists usually respond to new findings with a profound skepticism that goes beyond the specifics of the research. When first confronted with new work, gatekeepers judge it according to how well it fits with prevailing beliefs. Therefore, the more novel and unexpected a discovery, the more likely that other scientists will reject it -- precisely because it contradicts current understanding. When they were initially proposed, ribozymes, prions, and cold fusion all looked like long shots.

Faced with rejection, the researcher experiences a deep sense of insecurity. Error often accompanies the ambiguity of

discovery, and in science, being wrong is almost as bad as being ignored. On the other hand, as another saying puts it: Don't give up a good idea just because others don't understand it. To succeed in science, researchers have to confront rejection by becoming advocates for their new findings.

Indeed, at every step of the process, researchers continually reshape their work to anticipate and respond to the criticisms that they expect to receive from their peers. Only when others validate the observations -- often modifying them at the same time -- will the new work become widely accepted. Objectivity is embedded in the group, not the individual. Ribozymes and prions made it; cold fusion did not.

Returning to the analogy of the baseball umpire, it should now be clear that in the everyday practice of science, individual researchers call things as they see them. Calling things as they are is reserved for scientists acting collectively, and even those calls are tentative. That is, scientists are satisfied with credibility in the present, deferring truth to the future. In fact, unchangeable truth cannot be part of science. Last year's discoveries become this year's instruments of discovery. Moreover, the emergence of truth occurs not through power, as postmodernists assume, but as what the philosopher Annette Baier refers to as the commons of the mind, in her book of that name: "We reason together, challenge, revise, and complete each other's reasoning and each other's conceptions of reason."

The everyday practice of science is neither realism nor social constructivism, but rather balances on a contextual ledge in between.

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As an aside, science obviously involves uncertainty, as it remains open to new possibilities. That uncertainty typically produces optimism in scientists about the future, while those watching from the sidelines often are concerned about unanticipated consequences of discoveries. History teaches us that we should not minimize such unanticipated consequences, which can have a significant impact on society. An example would be the negative effects of technology on the environment. The increasing power of science requires an increasing commitment to social responsibility.

Postmodernists are right that the everyday practice of science is a social and political activity. But that does not mean that science is indistinguishable from other social and political activities. Just as different attitudes result in different practices for baseball umpires, the scientific attitude is only one way to practice exploration of the world, and not everything that one finds during exploration can be accommodated by science.

Besides mapping new territory, exploration offers us opportunities to learn how the world feels, and what it appears to mean. But those latter experiences typically depend too much on the individual's unique background and beliefs for others to verify them. Establishing credibility in science means trying to extract from experience just those aspects of the world that are common to other people, in other places and at other times. In an ideal world, credible science would be done by anonymous researchers.

In contrast, the individual is central in religion and art. In the religious attitude, knowledge of the world becomes absolute as the content of an individual's experience disappears in pure encounter -- ineffable spiritual union. Rather than looking for truth in the future, religion is oriented toward the past, where the sources of unchanging truth typically are located: revelation, prophecy, enlightenment. As a result, the aim is rediscovery rather than discovery. In corresponding fashion, credibility functions as a means of reaffirming the past and as a criterion for membership.

In the artistic attitude, on the other hand, knowledge of the world becomes personal through an individual's momentary vision. As in science, the artist tries to go where nobody has gone before, but what the artist discovers is an inner truth. That truth may have revelatory impact on others, and the quality of the artistic expression will always be open to critical evaluation, but those features are separate from the truth of the vision. Moreover, as the reflection of a particular historical moment, each artistic work has the potential to stand on its own, independent of past or future works.

In short, we can practice the world as science, religion, or art, depending upon the attitude that we bring to the project. If postmodernists think that the boundaries between science and those other practices have been blurred, it is because they focus on power, or the view of the third type of baseball umpire: "What I call them is what they become."

Eventually, however, technology will come to baseball. Instant replays will allow anyone who is interested to see -- in slow motion and from multiple angles -- the position of the baseball as it crosses the plate, and to judge the accuracy of the call. Then all umpires will be calling them as they see them, and those who call them wrong too often will be looking for new work.

Some postmodernists also critique scientific facts as mere social constructs, instead of reality. From the point of view of everyday practice, scientific facts are neither. Instead, they have become credible through verification by others, and powerful through development into technology. Unfortunately, the origin of scientific facts in everyday practice is usually obscured by modern science education. We teach our students only the linear model of discovery, in which ambiguity disappears, along with intuition and creative insight, and in which research becomes equivalent to critical thinking, logic, and problem solving. We leave students with the expectation that the hypothesis must come first, never last.

Critical thinking, logic, and problem solving are certainly important for managing life in a complex world, but what we give our students is an alienated view of science, with sterility and anonymity replacing adventure and excitement. Sir Peter Medawar used to criticize the traditional scientific paper because it omitted the "flights of imagination" that led researchers to their discoveries. The same can be said of science education. An understanding of the everyday practice of science is just as important for science literacy as the mastery of scientific facts. We need to teach both. **FN**

Frederick Grinnell, a member of FASEB's Science Policy Committee, is the director of the program in ethics in science and medicine and a professor of cell biology at the University of Texas Southwestern Medical Center at Dallas. This essay was originally published March 24 in The Chronicle of Higher Education.

Proposed regulatory changes on Pain and Distress in Lab Animals ahead

Scientists working with laboratory animals may soon be faced with changes in the federal regulations that govern the care of these animals. The Federation of American Societies for Experimental Biology (FASEB), along with the staff of FASEB Member Societies, have learned that changes are being proposed in the rules for reporting of pain and distress under the Animal Welfare Act (AWA).

The AWA was signed into law in 1966. While its original intent was to regulate the care and use of animals in the laboratory, it has become the only Federal law in the United States that regulates the treatment of animals in research, exhibition, transport and by dealers. Other laws, policies and guidelines may include the coverage of additional species or specifications for animal care and use, but all refer to the Animal Welfare Act as the minimum acceptable standard.

The U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service, Animal Care (AC) enforces the AWA. AC develops regulations that interpret the AWA with each amendment. Proposed rules are published in the *Federal Register* and open for public comment. Comments can be presented at public hearings, sent via mail, fax or email. After comments are analyzed, AC develops final rules, which

are also published in the *Federal Register*. The final rules include a description of the public comments and the Department's response to them followed by how the new rules will appear as regulations. See www.nal.usda.gov/awic/legislat/usdaleg1.htm for more information about the AWA. Visit the web site of the USDA's Animal Welfare Information Center <http://www.nal.usda.gov/awic/> for additional resources.

It is expected that during the near future the USDA will propose changes to the AWA in regards to defining and reporting pain and distress in laboratory animals. This proposal could be released as early as this summer. The process of developing the proposal has already caused some concern because of a lack of opportunities for input from the scientific community. There are concerns about not only the immediate impact this proposal may have on the conduct of scientific research and education, but also what the effect would be if the USDA takes on AWA oversight of rats, mice and birds.

Institutional Animal Care and Use Committees are required to address questions related to recognizing and reducing pain and distress each time an animal research protocol is reviewed. The laboratory animal welfare community has already given considerable

attention to these issues through a series of conferences. In May, the Scientists Center for Animal Welfare and the American College of Laboratory Animal Medicine held conferences, and the Institute for Laboratory Animal Research was scheduled to hold one in June. While some scientists have participated in these discussions, relatively few scientific societies have thus far been involved.

FASEB and its member societies are carefully monitoring these developments in order to respond to proposed changes in the AWA that could have significant impact on the conduct of animal research. The scientific community needs to be prepared to provide USDA with comments on whether proposed changes are likely to result in meaningful improvements in the welfare of laboratory animals.

Given that small rodents comprise an estimated 90 percent of research animals, the impact of proposed changes could be magnified enormously if the USDA were then to begin regulating rats, mice and birds. The question of whether USDA will do so is currently before the courts as a result of a lawsuit asserting that the AWA obliges the Secretary of Agriculture to oversee rats, mice and birds. (The USDA has taken the position that the law gives the Secretary a choice whether or not to regulate those species.) **FN**

Two new reports underscore the Economic Benefits of Biomedical Research And the role of the National Institutes of Health in this enterprise

From the Lasker Charitable Trust:

The findings described in *Exceptional Returns: The Economic Value of America's Investment in Medical Research* – a report released May 9 by Funding First, a public policy initiative of the Mary Woodard Lasker Charitable Trust – provide a new way to understand and value the enormous contribution of medical research to the American standard of living. Using accepted techniques of modern economics, nine leading economists were able to estimate a dollar value for increases in Americans' life expectancy. As a result it is now possible to compare the economic value of extended life to traditional components measured by economists when reporting on this country's Gross Domestic Product (GDP).

These economists found:

- Increases in life expectancy in the 1970's and 1980's were worth **\$57 trillion** to Americans – a figure six times larger than the entire output of tangible goods and services in 1998.
- Improvements in health account for almost one-half of the actual gain in American living standards in the past 50 years.
- Research that reduced cancer deaths by just one fifth would be worth \$10 trillion to Americans – double the national debt.

The Lasker report is available in Adobe PDF format at www.laskerfoundation.org/fundingfirst/papers/Funding20First.pdf.

From the Congressional Joint Economic Committee:

"If we expect medical and biomedical advances to continue, funding for [biomedical] research must outpace inflation," according to a Congressional report released May 17. "Pressing health problems such as heart disease, Alzheimer's disease and AIDS cannot be conquered without such research."

According to *The Benefits of Biomedical Research and the Role of the NIH*, issued by the Joint Economic Committee (JEC), the federal government spends only one percent of its budget on NIH research funding. The share of the national health care spending that goes toward public and non-profit research has decreased over the last 20 years, from 2.2 percent in 1980 to 1.6 percent today. This is a worrisome trend, the report states, because advances in medical care come from research, not from spending money to apply already known techniques.

The report examines how NIH funding for medical research provides economic benefits, reduces suffering from illness and helps Americans live longer, healthier lives. It supports the case for doubling the budget of the NIH.

The JEC is composed of ten Members of the Senate and ten Members of the House of Representatives. Senator Connie Mack, Republican of Florida, is the current chairman.

The full text of the JEC report is available in Adobe PDF format at www.senate.gov/~jec/nih.pdf. **FN**

Issue Update: Stem Cells

Despite the potential therapeutic applications of embryonic stem cells, the debate continues on the merits of allowing the use of federal funds for stem-cell research. Many groups – including several FASEB societies – have been working to safeguard and expand opportunities for stem-cell research. For instance, the Board of Trustees of the Society for Developmental Biology (SDB) has appointed a committee to respond in a timely manner to requests for information and scientific opinion and public issues relevant to developmental biology. SDB, along with the American Society for Pharmacology and Experimental Therapeutics and the American Society for Cell Biology (ASCB) have held information sessions for Congress on the issue.

FASEB was among 107 scientific and patient advocacy groups to sign an April 25 letter to Senator Specter asserting “stem cell research must be supported by the federal government with the appropriate public scrutiny by the National Institutes of Health.”

On the government front, the National Institutes of Health (NIH) – backed by a legal opinion from the Department of Health and Human Services that allows the agency to support experiments with embryonic stem cells as long as the derivation is accomplished with private funding – is preparing guidelines it hopes to have finalized by this summer that would allow its grantees to conduct research with embryonic stem cells, even though federal law prohibits spending federal money for research that relies on the destruction of human embryos. FASEB endorsed these guidelines in a Jan. 28 letter to the NIH.

Many other groups – including the Alliance for Aging Research, the American Association for the Advancement of Science and the National Bioethics Advisory Commission – have made major contributions to the stem cell research advocacy effort. Following is a commentary by ASCB members Paul Berg and Lawrence S. B. Goldstein on the importance of continuing the fight on behalf of federal funding for this line of research. This essay was reprinted with permission by the ASCB from the ASCB Newsletter [Volume 23, Number 4, April 2000].

Stem Cell Research: The Fight is Not Over

A Ban on Stem Cell Research Would Result

In “Unprecedented Restriction on Scientific Freedom”

Last year, the scientific and patient advocacy communities, led by the American Society for Cell Biology, successfully joined efforts to prevent Congress from banning embryonic stem cell research in the face of considerable public pressure. But those who are determined to outlaw stem cell research are fiercely determined, well organized and are growing sharper in their message. If successful, their efforts will result in an unprecedented restriction on scientific freedom and an injustice to those who suffer from disease or have the potential to — all of us.

The discovery in November of 1998 by James Thomson and John Gearhart of embryonic stem (ES) cells was a major scientific breakthrough, the full value of which has barely begun to be appreciated. ES cells have the potential to form any type of human cell, but not a human being. A large body of successful work with mouse ES cells suggests that we can learn how to induce these cells to differentiate into many different cell types. Such a discovery would, in turn, enable scientists to create new, healthy tissue to replace damaged or dead tissue, such as bone marrow for the treatment of cancer, pancreatic cells for alleviating diabetes and neuronal cells for treating Parkinson’s disease, Alzheimer’s and various forms of brain and spinal cord disorders.

Despite the amazing scientific and medical potential of ES cells, those who oppose this research do so because they object to using cells that are obtained from human embryos. In 1995, Congress passed a ban on federal funding of research on embryos. The ban, however, is silent on stem cell research, and the Department of Health & Human Services (HHS) ruled last year that the law allows federally funded researchers to work with stem cell lines as long as the cells were derived by and obtained from privately funded sources. The American Society for Cell Biology, the Federation of American Societies for

Experimental Biology, the American Association for the Advancement of Science, the National Bioethics Advisory Commission and other scientific and patient organizations support the action of the HHS. Furthermore, most of these groups are advocating that federally funded scientists be enabled to derive stem cells themselves. Senators Arlen Specter (R-PA), Chairman of the Senate Labor Health & Human Services Appropriations and Education Subcommittee, and ranking Democrat Tom Harkin (D-IA) have recently introduced S. 2015, “The Stem Cell Research Act of 2000,” which would allow federally-funded scientists to do this.

Oponents of embryonic stem cell research argue that scientists can restrict their study to work on adult stem cells. This would be unwise. While there is some promising progress from work suggesting that adult stem cells are capable of limited differentiation, those indications have yet to be replicated. The rarity and indeterminate developmental history of adult stem cells render their value for the treatment of most diseases problematic. Rather, we believe that studies using all forms of stem cells — embryonic, fetal and adult — should be pursued to determine their relative utility for therapeutic purposes.

Earlier this year, the National Institutes of Health (NIH) released draft guidelines for research involving human pluripotent stem cells to implement HHS’s directive. The guidelines are appropriately restrictive and responsive to the sensibilities of those who are concerned that work proceed under careful ethical oversight, requiring that stem cell lines be derived only from frozen embryos that result from attempts at in vitro fertilization, and are in excess of clinical need and, therefore, will be discarded in any case. They also require the informed consent of the donor. Importantly, the guidelines furthermore ensure federal oversight of stem cell research and guarantee “daylight” through public input into the conduct and direction of this research in the United States. Currently, stem cell

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research may be conducted in the private sector free of federal oversight or participation, limiting the opportunity for public input and with the certainty of intellectual property barriers.

Despite the ethical protections provided in the proposed NIH guidelines, some “right to life” groups have flooded the NIH and members of Congress with several thousand letters expressing their opposition to stem cell research, far outnumbering the letters received from scientists and health advocates. In addition, last year, 70 members of the House co-signed a letter to HHS Secretary Donna E. Shalala opposing the department’s 1999 ruling allowing the NIH to fund stem cell research, and demanding reconsideration. This year, 20 Senate members followed suit in opposing the NIH guidelines. Representative Jay Dickey (R-AR), one of the original authors of the embryo research ban, has said that he is “more determined than ever” to defeat stem cell research.

“Stem cell research is not an abortion issue; it is a question of science with enormous potential for improving human health. We must protect this most promising and humane line of research from an assault from those who fear it.”

In spite of this intense pressure, the defense of stem cell research in Congress is formidable, bipartisan and includes many conservative pro-life members. Senators Specter and Harkin have held no fewer than four hearings on the importance of stem cell research. Others on record in support include Representatives Brian Bilbray (R-CA), Duke Cunningham (R-CA), Dianna DeGette (D-CO), Nita Lowey (D-NY), John Porter (R-IL), Henry Waxman (D-CA) and Senator Strom Thurmond (R-SC). Complicating matters is renewed opposition to fetal tissue research [see pages 12-14]. The stem cells that Gearhart obtained using private funds were from aborted fetuses, which will inevitably entangle the effort to ban fetal tissue research with the stem cell controversy.

Stem cell research is not an abortion issue; it is a question of science with enormous potential for improving human health. We must protect this most promising and humane line of research from an assault from those who fear it.

Paul Berg is Cahill Professor of Cancer Research and Director of the Beckman Center for Molecular and Genetic Medicine at Stanford University School of Medicine. Lawrence S. B. Goldstein is Professor at the University of California, San Diego and Investigator of the Howard Hughes Medical Institute. Berg is Chair and Goldstein is member of the Public Policy Committee of the American Society for Cell Biology. 

What We've Been Doing

FASEB President testifies on behalf of NASA

Investigator-initiated, peer-reviewed Life Sciences research at the National Aeronautics and Space Administration (NASA) should be given the highest priority in fiscal 2001, according to a statement by FASEB President David G. Kaufman to the House Science subcommittee on Space and Aeronautics. Dr. Kaufman appeared before the committee on March 22 on behalf of increased funding for NASA.

In recent years, NASA has revised its review process to resemble the National Institutes of Health model of peer review. NASA should continue to increase the proportion of its research dollars that are awarded through this process, Dr. Kaufman said. In addition, he said, "Grants should be funded at higher levels for longer periods of times, and [NASA] should increase the number of application deadlines per year. Both of these changes would likely encourage more scientists to pursue NASA-related research, and this would improve the applicant pool. With stronger proposals to choose from and increased continuity of ongoing efforts, program productivity would rise and the public's return on the nation's space research investment would increase."

Dr. Kaufman applauded NASA's efforts to increase its interactions with the academic research community and talked about the importance of maintaining a consistent schedule of research flights for scientists pursuing experiments dependent on space as a variable. His prepared statement can be found on the World Wide Web at www.faseb.org/opar/govttest/nasa.pdf.

FASEB President joins leaders of the Physical, Chemical and Mathematical Societies To testify before Congress on behalf of NSF

On April 12, Dr. Kaufman appeared before the House of Representatives Appropriations Subcommittee for VA/HUD and Independent Agencies with representatives of the American Physical Society, the American Chemical Society and the American Mathematical Society. The four society leaders presented their unanimous support for the President's request of a 17 percent increase in the National Science Foundation's (NSF) budget as well as for such an increase being part of a multi-year expansion of the agency's budget.

The FASEB portion of the testimony spoke to the interdependence of scientific disciplines in general, and the specific medical advances that past achievements in physics, chemistry, math and computer science have enabled. Progress in biological and medical research is dependent on the steady flow of knowledge from other scientific fields, said Dr. Kaufman.

"Discoveries in physics affect biology; breakthroughs in materials research have a profound impact on medicine; new mathematical approaches enable all the sciences and engineering; and advances in biology propel chemistry and physics," Dr. Kaufman told lawmakers on the committee. "Engineering and computer science provide critical tools upon which all of us depend in our research laboratories. We're all in this marvelous enterprise together."

The NSF is the only federal agency whose sole mandate is to support basic research and science education across all disciplines. Dr. Kaufman was joined by Daryle H. Busch, president of the American Chemical Society; Robert C. Richardson, chairman of the Physics Policy Committee of the American Physical Society; and, Felix E. Browder, the president of the American Mathematical Society. Their joint testimony can be found on the World Wide Web www.faseb.org/opar/govttest/nsffy2001.pdf.

Kaufman talks about Physician-Scientists with Representative Jesse Jackson Jr.

Continuing to spread FASEB's message regarding the recommendations of the Physician-Scientist report, Dr. Kaufman met with Representative Jesse Jackson, Jr., Democrat of Illinois, on April 12. The two had a lengthy discussion regarding the need to continue increasing support for the NIH, provide more data regarding health disparities in our country, and examine ways that Congress might be able to facilitate the development of programs to encourage physician-scientists to pursue research careers. Outcomes of the meeting included an offer to work with Mr. Jackson's staff in their development of a debt-relief program for clinical researchers focused on health disparities questions.

On March 28, 29 and 30, FASEB leaders also met with the following lawmakers and/or their staff to discuss the Federation's report on Physician-Scientists: Ken Bentsen, Democrat of Texas; Ernest Istook, Jr., Republican of Oklahoma; Patrick J. Kennedy, Democrat of Rhode Island; and Edward J. Markey, Democrat of Massachusetts.



Representative Jesse Jackson, Jr. stands here with FASEB President David G. Kaufman after their meeting on Capitol Hill.

Kaufman and former FASEB President make Capitol Hill visits with representatives from the Campaign for Medical Research

On April 24 and 25, Dr. Kaufman and William R. Brinkley, FASEB's immediate past president – joined by representatives from the Campaign for Medical Research – met with several Senators to talk about doubling the budget for the NIH by 2003. The Campaign, a coalition of research and patient advocacy groups, works closely with former Republican Minority Leader Robert H. Michel and Paul G. Rogers, the former Chairman of the

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House Subcommittee on Health and the Environment from 1971-79, to reach out to congressional leaders to encourage them to support the doubling effort.

Two members of the Republican leadership – Senators Larry E. Craig, a Republican from Idaho and Senator Paul D. Coverdell, a Republican of Georgia – expressed support for the doubling effort and talked about the importance for finding a “champion” to replace Senator Connie Mack, the Florida Republican who started the campaign to double the NIH’s budget. Both Senators said there needed to be stronger Congressional oversight of the NIH.

The FASEB contingent also met with Republican Senators Thad Cochran of Mississippi, Judd Gregg of New Hampshire and Jon L. Kyl of Arizona – all members of the Labor, Health and Human Services (L/HHS) subcommittee, which drafts the budget for the NIH. Mr. Cochran and Mr. Gregg said the doubling effort was among their top priorities. Mr. Kyl, however, said the NIH was fourth on his list of priorities, behind Defense, Social Security and tax cuts. Democratic Senators Daniel K. Inouye of Hawaii and Patty Murray of Washington – also members of the L/HHS subcommittee – promised to fight for a 15 percent increase for the NIH.

Finally, FASEB leaders met with the staff of Senators Mack, Diane Feinstein, Democrat of California and Harry Reid, Democrat of Nevada. Jim Ryan of Mr. Reid’s staff said the senator is willing to play a lead role in the doubling effort. Mark Smith of Mr. Mack’s office said the Senator is committed to finding a strong replacement for himself, and his wife – Pricilla Mack – plans to organize a senatorial spousal visit to the NIH in the near future.

On March 29, FASEB leaders and CFMR representatives met with Republican Senators Olympia J. Snowe of Maine, Gordon Smith of New Hampshire, and Pete V. Domenici of New Mexico.

Kaufman meets with NIH Deputy Director for Extramural Research

On April 26, Dr. Kaufman met with NIH Deputy Director for Extramural Research, Wendy Baldwin. Dr. Kaufman had just returned from the Experimental Biology 2000 meeting in San Diego, Calif., where he spoke with several FASEB society councils and heard the views of their members. He spoke with Dr. Baldwin about the proposed NIH budget for FY 2001 and the review of modular grants, two issues of significant concern for extramural scientists. The FASEB President also told Dr. Baldwin that the scientists were very pleased with the decision to allow “just-in-time” reviews by Institutional Review Boards as well as by the opportunity for these committees to handle routine business by conference calls. Both Drs. Kaufman and Baldwin agreed that it was useful for NIH and the extramural community to exchange information on a frequent basis, and she offered to provide regular statistical updates on NIH programs for publication in the FASEB Newsletter

FASEB President-Elect makes the rounds on Capitol Hill

On May 4, FASEB President-Elect Mary J. C. Hendrix joined the Campaign for Medical Research for visits with six lawmakers to talk about doubling the NIH’s budget by the year 2003. Those lawmakers were: Republican Representatives Randy Cunningham

of California; Dan Miller of Florida; Henry Bonilla of Texas; Jay Dickey of Arkansas; Anne Northup of Kentucky; and Ernest Istook, Jr. of Oklahoma.

New OPA Web Site

The FASEB Office of Public Affairs has redesigned its Web site into what we hope will become a valuable tool for FASEB Society members and others interested in issues affecting the life sciences research profession. The redesigned site will enable visitors to learn more about and participate in the process that shapes laws and regulations that affect biomedical scientists. Among the new features are:

- A News Room that features the most up-to-date information on FASEB activities, reports and policy statements, including copies of press releases and the *FASEB News* newsletter.
- A Publications Center where you can access online versions of all OPA publications, including articles in our Breakthroughs in Bioscience series, the most recent Federal Funding Consensus Report and FASEB policy statements.
- A Public Policy Priorities reading room where you can learn more about important legislative and regulatory issues facing the biomedical research enterprise and FASEB positions on these issues
- A Legislative Action Center, where, by entering your zip code, you can obtain the contact information for your Congressional Representative, including fax numbers, email addresses and Web pages.

Remember to bookmark www.faseb.org/opa and visit often to see what is happening and how you can have a direct impact on the issues that affect biomedical research. **FN**

22 FASEB Society Members Elected to the Academy

Twenty-two FASEB Society members were among the 75 scientists and foreign associates who were elected May 2 to the National Academy of Sciences in recognition of their distinguished and continuing achievements in original research. These include former FASEB President Robert J. Cousins; former FASEB Board members Michael J. Welsh and Charles A. Janeway, Jr. and former ASBMB President Jack E. Dixon.



AGRE, Peter C.; professor of medicine and biological chemistry, department of biological chemistry, and director, Markey Graduate Program in Cellular and Molecular Medicine, School of Medicine, Johns Hopkins University, Baltimore, Md. (APS, ASBMB, ASCB, ASCI).



JANEWAY, Charles A., Jr.; investigator, Howard Hughes Medical Institute, and professor of pathology, School of Medicine, Yale University, New Haven, Conn. (AAI)



COUSINS, Robert J.; director, Center for Nutritional Sciences, and Boston Family Professor of Human Nutrition, department of food science and human nutrition, University of Florida, Gainesville, Fla. (ASBMB, ASNS)



KOLODNER, Richard D.; professor of medicine and head, laboratory of cancer genetics, Ludwig Institute for Cancer Research, School of Medicine, University of California, San Diego, La Jolla, Calif. (ASBMB)



DIXON, Jack E.; Minor J. Coon Professor and chair, department of biological chemistry, University of Michigan Medical School, Ann Arbor, Mich. (ASBMB, Protein, ENDO)



MacKINNON, Roderick; investigator, Howard Hughes Medical Institute, and professor, laboratory of molecular neurobiology and biophysics, Rockefeller University, New York City, N.Y. (BPS)



FIELDS, Stanley; investigator, Howard Hughes Medical Institute, and professor, departments of genetics and medical genetics, University of Washington, Seattle, Wash. (ASBMB, ASCB)



MAHLEY, Robert W.; professor of pathology and medicine, University of California, San Francisco, director, Gladstone Institute of Cardiovascular Disease and president, the J. David Gladstone Institutes, San Francisco, Calif. (ASBMB, ASCI)



HAKOMORI, Sen-itiroh; head, division of biomembrane research, Pacific Northwest Research Institute, and professor of pathobiology and microbiology, School of Public Health and Community Medicine, University of Washington, Seattle, Wash. (ASBMB, AAI)



MASSAGUE, Joan; investigator, Howard Hughes Medical Institute, and professor, Graduate School of Medical Sciences, Memorial Sloan-Kettering Cancer Center, New York City (ASBMB)

See Academy on next page



MEYER, Barbara J.; investigator, Howard Hughes Medical Institute, and professor of genetics and development, department of molecular and cell biology, University of California, Berkeley, Calif. (ASCB)



WATERSTON, Robert H.; James S. McDonnell Professor and chair, department of genetics, School of Medicine, Washington University, St. Louis, Mo. (ASCB, ASHG)



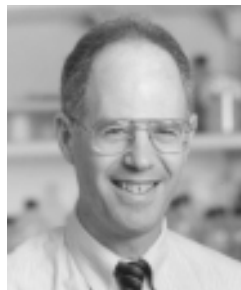
OLSON, Eric N.; professor of molecular biology and oncology and Nancy B. and Jake L. Hamon Distinguished Chair in Basic Cancer Research, University of Texas Southwestern Medical Center, Dallas, Texas (ASCB)



WELSH, Michael J.; investigator, Howard Hughes Medical Institute, and professor of internal medicine, physiology, and biophysics, department of internal medicine, College of Medicine, University of Iowa, Iowa City. (APS, ASBMB, ASCB, BPS, ASCI)



REES, Douglas C.; investigator, Howard Hughes Medical Institute, and professor of chemistry, California Institute of Technology, Pasadena, Calif. (ASBMB, Protein)



WICKNER, Reed B.; chief, laboratory of biochemistry and genetics, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, Md. (ASBMB, ASCI)



SHELLER, Richard H.; investigator, Howard Hughes Medical Institute, and professor of molecular and cellular physiology, Stanford University (ASCB)

Newly elected foreign associates, their affiliations at the time of election, and their country of citizenship are:

KAZIRO, Yoshito; professor, faculty of bioscience and biotechnology, Tokyo Institute of Technology, Yokohama (Japan) (ASBMB)

PARODI, Armando J.; professor of biochemistry, University of Buenos Aires (Argentina) (ASBMB, ASCB)

STILLMAN, Bruce W.; director, Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y. (Australia) (ASBMB, ASCB).

The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its use for the general welfare. The Academy was established in 1863 by a congressional act of incorporation, signed by Abraham Lincoln, that calls on the Academy to act as an official adviser to the federal government, upon request, in any matter of science or technology.

Additional information about the institution is available on the Internet at <http://national-academies.org>. A full directory of NAS members can be found online at <http://national-academies.org/nas>.

SCHLESSINGER, Joseph; The Milton and Helen Kimmelman Professor of Pharmacology and director, Skirball Institute for Biomolecular Medicine, New York University Medical Center, New York City (ASBMB, ASCB)



SHOOTER, Eric M.; professor of neurobiology, School of Medicine, Stanford University (ASBMB)

Society News

APS Reaches 10,000 Members

Thanks to the tremendous efforts of L. Gabriel Navar, the former president of the American Physiological Society (APS), and to members of the Society, APS has reached its goal of 10,000 members in the year 2000. At the annual Society Business Meeting, held during Experimental Biology 2000 in San Diego, it was announced that the current membership of the Society was 9,961. Of that number, 7,019 are regular members, 40 are honorary members, 1,066 are emeritus members, 74 are affiliate members, and 1,762 are student members.

As a result of applications submitted at the Experimental Biology meeting, an additional 103 students were admitted to membership in APS, bringing the total membership to 10,064.

APS encourages members to continue their efforts to recruit their colleagues and students to join the Society. Visit the APS membership page for more information. www.faseb.org/aps

ASBMB Members Wins NSF's Waterman Award

Jennifer A. Doudna, a member of the American Society for Biochemistry and Molecular Biology (ASBMB), was presented May 3 with the National Science Foundation's (NSF) prestigious Alan T. Waterman Award for 2000. She is the 25th recipient of the award and the third woman to be so honored.

The award, named after NSF's first director, annually honors a young – 35 or younger when nominated – U.S. scientist who is at the forefront of science or engineering. The award consists of a medal and a \$500,000 grant over three years for scientific research or advanced study in any field of science or engineering.

Dr. Doudna is a professor of molecular biophysics and biochemistry at Yale University and a principal investigator with Howard Hughes



Medical Institute. Her field is structural biology, and the NSF cited her for helping to unravel the mechanism of how RNA acts as an enzyme to catalyze specific biochemical reactions and how polyanionic RNA folds to form a three-dimensional structure.

In October 1998 Dr. Doudna, along with a postdoctoral fellow and a research assistant, were one of two groups to report the X-ray crystal structure of a naturally occurring catalytic RNA – in their case, the self-cleaving ribosome found in the hepatitis delta virus. It is the largest of just three tertiary-structured RNAs whose crystal structures are known. Dr. Doudna's long-term research objectives are to understand the chemical basis for RNA catalysis and RNA-protein interactions and to establish principles for folding that will enable rational design of RNA molecules.

Dr. Doudna earned a BA in chemistry from Pomona College, Claremont, Calif., in 1985 and a Ph.D. in biochemistry from Harvard University in 1989.

Journal of Biological Chemistry Launches "Papers in Press"

The Journal of Biological Chemistry (JBC), a journal of ASBMB, now publishes all papers immediately after acceptance. The publication system, JBC Papers in Press (JBC PIPs), places PDF versions of submitted manuscripts on the JBC web site. This is fallout from the JBC electronic submission and review system. Since the "raw" manuscripts are used for review, and are then accepted for print and on-line publication, there is no reason that the information cannot be disseminated for general use. This makes the information available about eight weeks earlier than the normal publishing process.

Papers appearing as JBC PIPs will be copy-edited and published subsequently in both print and on-line versions. The papers will be fully searchable, citable, and will establish publication priority. The print and on-line versions will note the date of publication in JBC PIPs. Probably one of the most valuable features is that the papers will be available freely to anyone with access to the Internet. In short, the JBC PIPs will be available barrier-free to scientists worldwide immediately upon acceptance.

For complete information concerning JBC PIPs, go to www.jbc.org/pips.

Cell Biologists Hold 40th Annual Meeting

The 40th annual meeting for the American Society for Cell Biology will be held Dec. 9-13 at the Moscone Convention Center in San Francisco, Calif. The keynote Symposium, "The ASCB: 40 Years Leading the Revolution in Cell Biology," will be held Dec. 9, 6:00 p.m. The speakers include J. Michael Bishop, Michael S. Brown, Joseph L. Goldstein and Harold E. Varmus.

The following programs will be offered: The Mechanism of Protein Synthesis; Novel Dimensions of Cell Motility; Chromosome Dynamics; Determination of Left-Right Asymmetry; Pathogen Recognition and Host Defense; Cellular Organization at the Synapse; Biological Clocks; and, Chemical Approaches to Biological Problems.

In addition, there will be six minisymposia each afternoon, award lectures and workshops and sessions on careers, education, grantsmanship, public policy and issues of special interest to minorities and women. For more information, visit ASCB's web site, www.ascb.org/ascb, email ascbinfo@ascb.org or call 301-530-7153.

Biophysical Society Holds 45th Annual Meeting

The Biophysical Society's 45th Annual Meeting will be held Feb. 17-21, 2001 in Boston, mass. Brian W. Matthews, a professor of molecular biology at the University of Oregon, will give the National Lecture. Information on the scientific program and other meeting events may be found at www.biophysics.org/biophys. The abstract submission deadline is Sunday, Oct. 1.

Biophysical Society Presents Election Slate

The Biophysical Society will hold its election of officers and members of council this summer. The nominees for President-Elect are Wilma K. Olson, *State University of New Jersey*, and Eaton E. Lattman, *Johns Hopkins University*. Nominees for Council are Mordecai P. Blaustein, *University of Maryland School of Medicine*, Maurice Eftink, *University of Mississippi*, Hector

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Rasgado-Flores, *FUHS/Chicago Medical School*, Bertrand Garcia-Moreno, *Johns Hopkins University*, Susan Hamilton, *University of Colorado Medical Center*, James M. Hogle, *Harvard Medical School*, Michael L. Jennings, *University of Arkansas for Medical Sciences*, James C. Lee, *University of Texas Medical Branch*, David H. MacLennan, *University of Toronto*, Carol B. Post, *Purdue University*, Andrew D. Robertson, *University of Iowa* and Ligia Toro de Stefani, *University of California, Los Angeles*.

AAA in Pioneering Role: Student(s) on Board!

With passage of revised bylaws and articles of incorporation, the American Association of Anatomists (AAA) becomes the first FASEB society to give students and postdocs a voice on its Board of Directors.

The updated AAA bylaws, approved at the society's April 17 annual business meeting, adds two new voting directors to the board and specifies that they must be student/post-doctoral

members. The first two members to assume this unique role are April Collins, a graduate student at Tulane University and Patrick Nahirney, a postdoctoral fellow at Cornell University/Weill Medical College. Ms. Collins and Mr. Nahirney will each serve a one-year term, but may be slated to serve a full two-year term when the next AAA election takes place this fall.

With this provision, AAA has taken a pioneering role in not just allowing, but actually mandating, student involvement at the board level. A quick e-mail survey of association CEOs nationwide turned up very few that permit students to serve on their boards in a voting capacity. Of 29 responses, only 1 society set aside separate student slots (other than groups specifically organized for students, such as the American Dental Student Association). In many associations, in fact—including most of the FASEB societies—students are not even eligible to vote in general elections.

Results of the latest AAA elections were also announced at the business meeting. Elected to the AAA board were:

- *Judy K. Brunso-Bechtold*, professor of neurobiology and anatomy, Wake Forest University School of Medicine – elected as vice president (will serve a two-year transitional term, based on the new bylaws).

- *John W. Lough*, professor of cell biology, neurobiology, and anatomy, Medical College of Wisconsin – elected to a three-year term as councilor.

- *Michiko Watanabe*, associate professor of pediatrics, Case Western Reserve University – elected to a three-year term as councilor.

- *Duane E. Haines*, professor and chairman of anatomy, University of Mississippi Medical Center – reelected to a second four-year term as secretary-treasurer.

Retiring Board members Ellen R. Dirksen, Kathryn J. Jones, and Drew M. Noden, were thanked for their service to the society.

Students Choose Career Advice Over California Sunshine

“There are three kinds of people in the world,” Litha Woods explained. “Those who make things happen, those

who watch things happen, and those who wonder what happened.”

Her audience at the AAA-FASEB Minority Student Workshop was obviously out to *make* things happen. Why else come to a windowless hotel ballroom on the first day of spring break in San Diego to hear a bunch of speeches and have lunch with anatomy professors?

Some 75 high school and undergraduate students from the San Diego area were joined by AAA members willing to share their experiences, insights, advice and blunders with future physicians and researchers-to-be, as well as with many students still exploring their options.

The largely Latino group heard from Ana Navarro, associate professor in the Department of Family and Preventive Medicine at the University of California, San Diego, who assured them that, “Once you choose your field, you still have many choices, many things you can do.” She acknowledged that she was one of those who didn’t have a goal or major ambition early on. Her family simply encouraged her to go to school and to study—the rest fell into place when she came upon a mentor who was interested in what she had to say.

James C. Story (Meharry Medical College School of Medicine), who chaired the program for AAA, led a spirited question and answer session, as students jumped in to respond to each other’s queries and offer advice based on their own experience. It was clear, as Dr. Story told the group, that “if you jumpstart yourself, someone will be there to assist you.”

This year’s Minority Student Workshop was co-sponsored by AAA and FASEB, with NIH funding via the MARC program. Irma Castro, administrator of the “Latinas/Latinos Achieving More Academically Program” of San Diego City Schools, was instrumental in recruiting local students.

AAA Initiates Outreach Grants

A new Outreach Grant Program approved by AAA offers funding support for non-AAA workshops and symposia, either as stand-alone activities or incorporated under the umbrella of other national or international societies.

The primary criteria for evaluating such proposals will be visibility and

impact, quality of participants and value to the Association. Interested AAA members should contact the national office at 301-571-8314. The first proposal deadline is Aug. 1.

Survival Skills for Research On Iowa Anatomy Agenda

A successful research career takes much more than simply having a good idea for research. You also must be able to communicate that idea, figure out who might fund it, put together the right team, carry out the work and effectively present the results.

Recognizing that it takes more than science to do science, the University of Iowa’s Department of Anatomy and Cell Biology has initiated a semester-long program on “Survival Skills for a Research Career.” Open to graduate students, postdocs, junior faculty and other research professionals, the program includes sessions on grant proposal preparation, science writing, finding research funds, reviewing manuscripts, presentation skills, speaking to the media, advocating for science, collaboration and teamwork, technology transfer, running clinical trials and preparing an effective curriculum vitae.

FASEB President-Elect Mary J. C. Hendrix, who chairs the department, hopes the new program will provide a template for other disciplines – both science and non-science – to adapt. Email course director Robin Davisson at robin-davisson@uiowa.edu for further information.

ASBMR Prepares for 22nd Annual Meeting

The American Society for Bone and Mineral Research (ASBMR) will hold its 22nd Annual Meeting at the Metro Toronto Convention Centre in Toronto, Canada, from Sept. 22-26. Plenary lectures will be presented on “Steroid Hormone Action 2000,” “Genetic Consideration in the Pathophysiology of Osteoporosis,” “Genome Science: Strategies to Discover Disease Mechanisms and Drug Targets,” “Molecular Biology of Glucocorticoid Signaling,” “Glucocorticoid Effects on Bone,” and “Some Roles of Matrix Metalloproteinases in Skeleton Modeling and Remodeling.”

The meeting includes four mini-symposia on topics ranging from

“Transgenic Technology,” to “Bone Mineralization: from Basic to Clinical Science.”

The ASBMR and the North American Menopause Society will hold a joint symposium on Hormone Replacement and Menopause Management during the ASBMR Annual Meeting on Sept. 22. ASBMR Committees will sponsor several sessions as well. The Membership Development Committee will sponsor the New Investigator Breakfast and the Special Session for Allied Health Professionals. The Education Committee will sponsor the Physician-Scientists, a Vanishing Breed Session and the Biotechniques Workshop: cDNA Microarray Gene Chip Analyses Technology. The Industry Relations Committee will sponsor a session on Scientific Aspects of Successful Drug Development.

ASBMR Job Placement Service Is Now Online

Now ASBMR members can access up-to-date candidate listings using the ASBMR Job Placement Service web site at www.asbmr.org. Once enrolled, members will be able to use a self-assigned login name and password to access the database. On-line enrollment is good for one year and entitles employers to unlimited on-line job postings.

Candidates/employees gain access to a selection of job openings in academia, industry, government and private practice. Employers post positions and view the resumes of participating candidates. For more information visit the ASBMR web site at www.asbmr.org, or contact Douglas Fesler, ASBMR Project Coordinator, at (202) 857-1161, or send an e-mail to asbmr@dc.sba.com.

ASBMR Is Moving

The ASBMR will be relocating its offices as of June 26. The new address will be: ASBMR Business Office, 2025 M Street, NW, Suite 800, Washington, DC 20036-3309 USA. The new telephone and fax numbers will be: Tel: (202) 367-1161 and Fax: (202) 367-2161. The e-mail and web site addresses will remain the same - E-mail: ASBMR@dc.sba.com Internet: www.asbmr.org. **FN**