

EDITORIAL

Taking the High Road

In my August editorial, I updated the membership on the activities of the Society and FASEB. The focus of the editorial concerned the evolving needs of the biomedical community and the role that APS could play by sponsoring meetings that provide the best science. Currently, we are pleased by the response of membership to the concept of specialty meetings and the Program Committee has already received many suggestions for such gatherings. We hope that more members will become involved in programming by suggesting topics and organizers for these specialty meetings. As president, I can assure you that the Council acts in the best interest of the membership and therefore relies on your input.

The situation regarding FASEB is still unresolved but progress is being made. Although the APS was instrumental in the founding of FASEB in 1913 its voice has been diminished by the expansion of FASEB to six corporate and one affiliate society. At the time of the expansion, the six corporate societies represented the bulk of the biomedical community. Times have changed, however, necessitating an effort by the APS to alter FASEB so that it can truly represent the interests of all of the biomedical community.

The resolution passed by the Council in June, and shared with the member-

Déjà Vu All Over Again

Aubrey E. Taylor, PhD Department of Physiology University of South Alabama, Mobile, AL

This is the first APS fall meeting designed as a specialty meeting, its theme being imaging techniques and smooth muscle function. The meeting at Mayo was the idea of Joe Szurszewski, who developed the program content with Carl Gisolfi, the APS Program Committee, and Michael Matthay and Jamie Sylvester of the American Thoracic Society.

The respiratory community provided 204 papers and seven symposia, which were complemented by outstanding presentations on both smooth muscle and imaging, thus making this a most successful meeting and a model for future fall meetings.



Aubrey E. Taylor

Being elected president of the American Physiological Society is the apex of my career as a physiologist, and I truly thought that I was prepared to lead physiology into the 1990s, having had some years of seasoning on the APS Council. But as I listened to the membership's concerns expressed at our meetings and in personal correspondence, I soon realized a great deal of work had to be done, mainly because of recurring problems that continue to arise year after year, creating, as the great Yogi Berra stated, "déjà vu all over again."

Past President's address presented at the APS Fall Meeting, Oct. 18, 1989, Rochester, MN

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EDITORIAL

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ship in my August editorial, was designed to accomplish this change. The suggestions for change provided FASEB with an opportunity to strengthen itself by attracting kindred societies while at the same time maintaining its excellent reputation. The Council has continually sought to take the "high road," endorsing the concept of "... a federation of biomedical societies ... for promotion of biomedical science. ..."

Since August, the three presidents of the APS (myself, Aubrey E. Taylor, and Shu Chien) have participated in two FASEB Board meetings in an attempt to resolve the underlying problems associated with the current FASEB and the move to establish a new federation. Although the task is far from complete, I am pleased to inform you that there has been considerable progress on the part of the Board to address the concerns expressed by APS, ASBMB, and the other societies.

A major task for the Board was developing a mechanism to essentially eliminate the assessment as a means of attracting new societies and to allow member societies the flexibility to meet separately from FASEB. The Board and FASEB Finance Committee has endorsed, in principle, a plan to reduce

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Headquarters phone: (301) 530-7164. TELE-FAX: (301) 571-1814. the assessment from the current level of \$62.00 per member to approximately \$25.00 per member by 1994. To further reduce the dues, the Board agreed that FASEB should formulate a spending plan based on a dues structure, thereby forcing the organization to operate within a defined budget.

The above recommendations should help to ensure the continued vitality of FASEB and to increase the flexibility of the member societies. The revision in the budget structure will require some significant changes in the operations of FASEB. All services and activities would need to be cost effective; the FASEB Journal could be phased out over this period if it continues to be a financial burden and support for the excellent public affairs activities of FASEB would be derived from several different sources instead of just the assessment.

The elimination of the assessment and the establishment of a reasonable dues structure for FASEB societies will also provide the APS with the flexibility to consider meeting independently of the traditional FASEB meeting. Each of us appreciates the importance of the FASEB meeting to promote interactions with other investigators working in related areas. Likewise, the FASEB meeting greatly benefits from the interdisciplinary and integrative nature of the physiological sciences. Unfortunately, the FASEB meeting does not bring together all investigators performing research in areas related to physiology.

Although this problem will be rectified in part through the initiation of the Society's new specialty meeting format, it would be desirable to achieve this objective by providing a large meeting format as well. To that end, the Council is entertaining the possibility of meeting with the Biophysical Society, the American Society for Cell Biology, the American Society for Biochemistry and Molecular Biology, and the Endocrine Society. The plan is to continue meeting with other FASEB societies but to occasionally meet with others after 1995. In fact, the proposed restructuring of FASEB might lead

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DÉJÀ VU ALL OVER AGAIN

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Fortunately, the Society has an excellent staff that works diligently to ensure that APS is successful. After all, when elected to Council we know very little about the desires and goals of previous Councils or, for example, how to hold an annual business meeting. Thank goodness for Lorraine Tucker!

Dr. Marty Frank is a superb administrator who never forgets his physiology upbringing and who has a remarkable ability to coordinate the Society's efforts, thus effectively guiding us in our roles as elected officers. Brenda Rauner, along with her remarkable staff, has served as the Society's publications manager during a time of rapid change in the APS journals and handbooks. Two journals were recently started and the publication of our books and handbook series was moved to Oxford University Press, thus eliminating the Society's monetary obligations for these important publications. APS publications are, and remain, the Society's chief source of income and continue to be a source of pride and accomplishment for all members.

Our public affairs are ably managed by Bill Samuels, who will take you in hand and lead you through the catacombs of the Congress, walk you into a room filled with senators or representatives, and prompt you in defending physiology's concerns about important issues before congressional committees. In fact, he can even take you to the highest office in the land. We have come a long way in our battle with the antivivisectionists, but we need to develop an even more aggressive stance in these matters. Bill and the recently formed GRIP Committee (Governmental Relations Initiatives Program) has provided us with the proper attitude and knowledge for presenting APS viewpoints to both legislative bodies and regulatory agencies and will continue to do so in the years ahead.

Jim Liakos, the APS business manager, is a major reason why the Society's investments have done so very well over the past years, even during the drastic fall in the stock market that occurred two years ago. You should know that APS also is a big business with more than a \$12 million budget. Because of Jim's wise investments we can sleep rather easily knowing that our Society is in excellent financial health.

A recent innovation in our Society has been the creation of 12 sections of five special interest groups that represent the physiology specialties of our members. Linda Buckler, who is the membership services coordinator, works with the section leadership to ensure that all members can participate in the governance of our Society as well as provide innovative input into meeting formats. The sectionalization procedures still continue to evolve, but in a short time the sections have brought about a positive attitude towards Society affairs within our membership. Linda also works with the program committee as it develops our new fall meeting specialty formats, which are designed with the flavor and the goals of a Gordon conference. Membership application procedures for both associate and student members have been streamlined and are now evaluated by Marty Frank. Another recent development has been the plan to reorganize the Federation of American Societies for Experimental Biology (FASEB) so that it would be a true federation of biological sciences, rather than a governing body of the present federated societies. APS President Vernon Bishop's editorial in *The Physiologist* (August 1989), entitled "At the Crossroads," defines clearly the problems that have developed over the years between FASEB and its affiliated societies.

Soon after my election as president I received correspondence from several members urging me to begin a process that would result in APS withdrawing from FASEB. This issue was considered in depth by the APS Long-Range Planning Committee (Ernst Knobil, chairman), which after identifying the problems existing between FASEB's governance role and APS proposed major changes in our Society's relationships with FASEB. Recently, the APS officers met with the officers of the other federated societies and formulated plans for a new Federation, one designed to work for the federated societies and not dictate policy to the affiliated members.

The past problems with FASEB seemed to far outweigh its accomplishments, and APS' relationship with FASEB has been a source of debate and despair for both the Council and the membership for many years, i.e., the most "déjà vu all over again" problem of all time. Among the hopes surrounding this change in FASEB structure is that other societies will join FASEB now since the "dreaded" yearly membership assessment will be so small that it will pose no financial hardship on other societies that would desire to become members. The new FASEB is designed to provide services, for a fee, and emphasize activities in public affairs and meetings. It is hoped that in the near future we should be able to attract all the biological sciences into the reorganized federation and create a FASEB that more realistically represents modern biology, not just its present six affiliated societies.

Our meetings can now be planned with any society interested in meeting with APS, but the FASEB meeting, as we know it, most likely will go the way of the old Atlantic City meetings, and for the first time, we can control our meetings in a fashion that serves the desires and needs of our membership.

So, a president and Council can be successful in eliminating many of the "déjà vu all over again" problems that seem to elude solutions over the years, but it depends on many factors and able guidance: Marty Frank's daily motivational skills, the publications manager, the publications committee and chairman (Paul Johnson in my case), the business manager and the finance committee and chairman (Fran Haddy), and the membership and meetings committees and their managers along with the chairman of the program committee (Carl Gisolfi). In addition, many other committees operate in a constructive fashion with the Council. But it is you, the members, who provide the most important input that guides the Council's work and curbs the tendency for "déjà vu all over again" to occur.

As I reviewed these changes that occurred during my six years on Council, several questions came to my mind. Why did these problems develop? Had they be i addressed before? Or do these changes that I highlight as accomplishments simply reflect "déjà vu all over again"?

To help me answer these questions, I asked the past presidents to relate to me the major problems each faced during his tenure, how he solved or attempted to solve the problem, and what he now perceives as the greatest problem facing physiology as a science and discipline. Nineteen past presidents responded and I have summarized their responses to you in order that you can evaluate how much "déjà vu all over again" has been associated with problems facing our Society.

Hallowell Davis (1958-59) listed as the major problems occurring during his presidency the need for a home base, a full time secretariat, and the loss of emerging subgroups from the Society. All of these problems resulted from the rapidly expanding science of physiology. The Society, in response to these needs, started the fall meetings, moved into Beaumont House, and expanded the number of committees and periodicals. The problems during Davis' presidency were clearly related to an expanding discipline. He said that the most perplexing problem now facing physiology is a lack of a unifying principle that identifies the discipline of physiology.

"For us," Davis stated, "thirty years ago it was selfregulation of the organism as a whole. Homeostasis and cybernetics were key concepts and they should not be obscured by developmental biology, molecular biology, or microbiology." He closed his comments with, "I hope you can find and use an effective slogan to emphasize the identity and the unity of physiology."

Horace Davenport served as our president in 1961-62 during what he termed "the Pitts-Comroe revolution," which had abolished the Board of Publications Trustees to place the publications and its finances under the control of the Council. "One of my jobs," he stated, "was to see to it that publications continued and to hold APS together." Two new committees, the publications and finance committees, were established, the *Journal of Neurophysiology* was purchased, and all APS publications and finances were to be directed by the two new committees and the Council. Davenport's advice about the recent developments in the biological sciences was, "departments and institutions are merely shells inhabited by successive generations of occupants. Names remain the same, but content changes and there is no point in regretting the change."

Herman Rahn (1963-64) stated the major problem of his administration centered on publications ownership, which was altered by the Pitts-Comroe-Davenport and Rahn presidencies into the present form. His words concerning the new biology were, "I have no fears as long as the public is interested in supporting its own major medical problems."

John Pappenheimer, our president in 1964-65, did not elaborate on the problems that arose during his presidency, but he did provide his perspective on the major problem facing physiology today. "Thirty percent of the Fellows of the Royal Society now call themselves physiologists," Pappenheimer said. "In contrast, less than one percent of the members of the US National Academy of Sciences call themselves physiologists even though a much larger percentage are in fact physiologists."

Bob Forster (1966-67) related that the major problem surrounding his presidency was one of finding an effective way for APS Council to interact with the US National Committee of the International Union of the Physiological Sciences. This problem ultimately was settled by having the APS president-elect, president, and immediate past president serve on this committee. Forster also suggested an interesting way to accommodate the new interests of the "Young Turks" in modern physiology. He proposes to "have them become more involved in our governance process and develop new election procedures to ensure their full participation."

Cliff Barger (1970-71) stated that the one problem facing APS then and now is how to increase the number of minorities and women in our Society. He vitalized this movement by obtaining funds for the now familiar Porter Physiology Development Program, which remains a vital component of our minority activities and recruitment efforts.

John Brobeck (1971-72) related that the most urgent problem he had to face during his presidency was replacing Ray Daggs, "which turned out to be the most significant development in a 25-year period." Orr Reynolds was selected as the executive secretary of APS and held the office in a responsible manner for 13 years. Brobeck identified our most pressing problem as the retention of similar disciplines within our Society. Biophysics was the society he cited as an example, saying he believed that Council was "too passive and did not respond to their (biophysicists) needs in the past," causing them to leave APS. Brobeck urged that we "should propose a reunion with biophysics and provide new innovations in teaching, curriculum coordination, and other medical school curriculum development for our membership."

Robert Berne (1972-73) found several problems facing our Society during his tenure relating to the fall meeting location, the election process for officers, and the development of a way that noncardiopulmonary scientists could be represented in the governance structure. In response to the problem of losing members to newer biological societies, Berne suggested "there is no question of the importance of molecular and cellular biology to physiology, but we must maintain a broad perspective so that we can integrate their important contributions and utilize their techniques in approaching organ system and whole body physiology. I am optimistic enough to believe this would definitely come about to the advantage of the American Physiological Society."

Dan Tosteson (1973-74) did not elaborate on the explicit problems that faced his presidency, but he developed a thoughtful response to what is "dying" about physiology. His "view of the term physiology means the attempt to describe the living process in terms of chemistry and physics. Viewed in this way there is no doubt that the discipline is 'alive and well.' We need to invigorate our discipline and improve the popularity of the word physiology in the minds of our colleagues."

Arthur Guyton (1974-75) described the major problem occurring during his tenure as one of convincing our membership that sectionalizing our journals would be good for the discipline of physiology. He believed this change in publications would decrease the exodus from APS of splinter groups forming new societies. Guyton did not address the new biology and how it can be incorporated into physiology. But one needs only to evaluate Guyton's impact on biophysics, bioengineering, the use of computers in physiology, and how his pioneering efforts in physiological modeling changed our approach to physiology to realize he probably would say the new biology, like biophysics and bioengineering, will become an important component of physiology departments in the near future and thereby strengthen physiology as a discipline.

Fran Ganong's (1977-78) major goals during his presidency was to liberalize our membership requirements and to reach out to other disciplines to attract new types of scientists into our Society. He also instituted the Financial Development



Aubrey E. Taylor receives commemorative presidential plaque from Vernon S. Bishop.

Committee and actively solicited corporate and individual funds to help meet the Society's financial needs for developing new programs. Ganong did not indicate how to maintain some of our most outstanding scientists as active members of APS, but his original goal to attract scientists from cell biology, clinical departments, and other disciplines is still a major goal of the APS Council. Ganong urged APS to change its position on membership in general, since "unfortunately some people still talk about our discipline as one that others can join."

Ernst Knobil (1979-80) saw as a major problem APS' failure to recognize the "relevance of the meeting structure of the APS to the working interests of our members and the competition of other speciality societies for their best work." He recommended that the Society have one physiology meeting a year, the fall meeting, with the spring meeting having no specific APS functions; its structure could be similar to a Gordon conference with several interacting themes. In addressing the basic problem of the new biology, Knobil believes physiology needs a new image and recommended changing the name to "regulatory biology."

Earl Wood (1980-81) believes several issues confronted his administration that continue to be problems for APS. The first is the size of APS and FASEB and how to deal with the excessive growth. The membership, Wood believes, is too restrictive and excludes the young leading-edge scientists. Legislation that restricts the use of animals in research also is a very serious matter and FASEB should begin to serve as a spokesbody for all biology to cope with this problem. He suggested that FASEB might even change its name from "biology" to "life sciences." He also discussed the problems of National Institutes of Health funding and how to prevent the erosion of federal grants for physiological research. Wood ended his letter with a quote from Saint-Exupéry's Wisdom of the Sand: "As for the future, your task is not to foresee the future, but to embellish it." He encouraged all future leadership to pursue this philosophy.

The major problem that confronted Fran Haddy (1981-82) as president was the Edward Taub-Silver Spring monkeys affair, which still is going on today. Because of this problem the public affairs committee was reorganized, a state network was developed, and Bill Samuels was recruited to manage public affairs. Haddy states that "subsequent events have underscored the importance of this effort." Also during his administration funds were set aside for the Tum Suden Awards for pre- and postdoctoral trainees. Haddy looks on physiology as not "being in any crisis, but in a rapidly evolving cycle using the new techniques and approaches available to us in modern biology."

Walter Randall (1982-83) believes several problems that impact on all basic sciences are especially acute problems for the future growth of physiology. One is the use of animals in research and another is related to teaching and research being wed as partners in departments of physiology rather than existing as mutually exclusive events. A need for more stability in NIH funding for research and education, the need to broaden career opportunities for physiologists, and a reorganization of APS along sectional lines were recognized by Randall as chronic problems that he believes will continue to affect the Society into the 21st century. He believes the use of animals in research is the most overwhelming of all of these problems. Randall served our Society extremely well by presenting APS viewpoints on the animal issues at several congressional committee hearings. He also cautioned us "against change for change's sake in regard to the new science" and advocated a more cautious and carefully formulated plan for incorporating the new biology into modern physiology.

Al Fishman (1983-84) identified the centennial celebration and the promotion of international physiology as the major problems he faced during his presidency. Fishman believed the centennial should be a celebration of physiology, which it certainly turned out to be, as all members can attest, but only because he orchestrated the process and pressed the Council for the needed funds. Fishman also initiated discussions with several foreign members of the IUPS, resulting in an increased participation of the APS in the international physiological community.

John West's (1984-85) greatest problem was finding a replacement for Orr Reynolds, who retired, which culminated in the recruitment of our current executive director, Martin Frank. West said a major issue he encountered was organizing a joint meeting with the British Physiological Society, but he solved that problem with the help of Michael Jackson (who was at that time chairman of the APS program committee) with results that proved to be most gratifying to the APS membership. The use of animals in physiological research also was identified by West as a problem area, which he felt was not addressed effectively during his presidency. He does believe the new biology affects departments of physiology more than the discipline and that APS, through Shu Chien's symposia on new cell biology, has adequately introduced molecular biology techniques to a broad-based physiology community. "There is no need to fear that 'the new biology' will destroy the science of physiology and our Society, as you stated in your letter," West said.

Howard Morgan (1985-86) believes the major problem he faced was the perception of physiology by many as an oldfashioned science and a real, almost desperate, need to incorporate the new biology into physiology. He said if a solution is finally reached in the latter area it would be by "training new students and postdoctoral fellows in a more mechanistic view of physiology." Morgan is an overly modest president relative to the problems he solved during his presidency, for he finally settled an age-old problem by requiring publications to become a part of APS and answerable to the Council rather than continuing to operate as a separate unit within our Society. This was a big accomplishment! In addition, he also initiated during his presidency the framework for organizing the new sectional governance procedures and created a new and well-received journal, News in Physiological Sciences.

Franklyn Knox (1986-87) believes the major problems he had to deal with were how to structure our governance, nominate our officers, and establish election procedures in a manner that would ensure proper representation of all present and future Society members. This was accomplished by restructuring the governance of APS into sections and by establishing a standing committee to nominate Council members and officers. Knox also said that although we need to incorporate the techniques of the new biology into modern physiology, we must not forget that "physiology remains a major underpinning for the practice of medicine and applications of physiological principles and techniques will continue to evolve in this sphere."

I did not ask Harvey Sparks for a letter, but Harvey likely would have said that APS should take more positive approaches to promoting physiology throughout the world. He established procedures to distribute our publications and books to less fortunate physiologists throughout the world. In addition, Harvey would likely say that the new cell physiology and molecular biology belong in physiology and that we should strive to accomplish this as soon as possible in order for physiology to remain as the most unique and viable field in the biological sciences.

As for my letter to myself, well that is a hard one. The past six years have seen a great deal of change in my daily schedule. My desk has been piled high with papers, the FAX machine has produced reams of paper, the telephone has been worse than a 4:00 AM alarm clock, and I have attended more and more meetings and flown to Washington at least once every two weeks. But you have seen the effect of my motion for sectionalization of the APS and have read in The *Physiologist* my testimony, put together with help from both Marty Frank and Bill Samuels, before a congressional committee; you know that FASEB's executive director Bob Krauss visited with me in Mobile to discuss the importance of FASEB, that I attended the Association of Latin American Physiological Societies meeting with Harvey Sparks, and that I missed the important Russian-American Physiological Exchange Program, which was handled so well by the two Franks, Marty and Knox.

I continued to badger the publications committee about improving communications, and a useful mini-newsletter from committee chairman John Cook to Council has resulted. I watched Paul Johnson orchestrate two new journals and the moving of our book program to Oxford University Press. I also watched with even more awe and wonder as the editors of our highly successful journals were changed. I saw the membership application process simplified and the requirements for associate membership relaxed to incorporate members in all biology, not just classical physiology. I helped to move needed funds from our publications' account to better fund our meeting programs. I saw the fall meeting change to a specialty meeting; in fact, this is the last fall meeting at which the past president's address will be presented. I helped to reorganize FASEB and I am looking forward to our new meeting format and will even propose a national biology meeting week to take place every 5 or 10 years in the United States in which as many biological organizations as possible will meet for one week.

Well, we know that physiology is not dying, or how else could so much be accomplished during my short span on the Council. True, some of the problems have dogged us for years, and you can see the tendency for "déjà vu all over again" in previous administrations to occur because of more pressing problems and the timing of specific events. But we who used to be the Young Turks of physiology finally faced up to several of these déjà vu issues and forced several things to happen in APS governance and functions. I am proud to have been your president at this exciting time. Thank you for the honor and thank all our staff and Marty Frank and you for working so hard to ensure the success of our Society.

There are many things we must now do, since the proper momentum is in place:

I) We must quickly finish the reorganization of FASEB and ask biophysics, cell biology, neuroscience, the Endocrine Society, the Microcirculatory Society, the Comparative Physiology Society, and all other interested societies to join FASEB. Once this is done the goal will have been achieved to have a federation that truly represents all biological

sciences, not just a six-member federation.

2) Once the federation has been reorganized our program committee along with a meeting committee must become active and begin to plan our future meetings agenda. Let's be innovative and try new things with new people and new societies! Also, I really believe we should try to have a large biology meeting every 5 to 10 years in the United States with simultaneous biology meetings occurring throughout the United States in all major cities. This also would be a prime time to solidify our public affairs when all societies can provide their input on the important issues, such as NIH funding, at a single point in time. The public relation benefits of a large meeting of this nature for biological sciences is obvious.

3) We might also consider changing our name. Physiology and Biophysics sounds good—if biophysics would go for it. Perhaps Regulatory Biology is not a bad moniker, as suggested by one of our past presidents. After all, biochemistry changed its name; perhaps we should consider changing our name! Perhaps holding a contest among our membership to suggest possible names for our Society will produce a name more in keeping with the changing times.

4) We must incorporate the new biological approaches into our physiological research and teaching programs. This will occur by a naturally evolving process, but in this day and time a constructive push is needed in order to ensure that physiology can reap the benefits brought about through the efforts of the new biological sciences and that physiology as a science is competitive in the grant funding arena.

5) Let's not be lulled into any false security about the future of physiological science and put our money and resources into the future of physiology by developing programs at the college level to build a pool of future physiologists. We are really lagging in this area, yet we have many undergraduate physiology teachers who are members of our Society who could easily be organized as a body to initiate a training program at the grassroots level. We must use all of our resources and energies to ensure a steady stream of students to become future physiologists. This was done during Ladd Prosser's presidency, using NIH funding mechanisms. Something similar must be done immediately!

6) We must find ways to ensure that federal funding agencies increase support for biomedical research and training. Although the agencies have increased funding in these categories over the past years, they have failed to provide sufficient funds to keep pace with the large number of excellent research and training grants that have been submitted. We are at a critical time and the structure of biological research in this country is in serious danger of collapse unless a major infusion of research and training dollars occurs. You must convey this need immediately to your elected representatives in the House and Senate, to the executive branch, and to the deans and administrators at your institutions. We do not have much time! It is predicted that less than 12 to 15 percent of competing and renewal RO1s will be funded this year.

7) The antivivisectionists will not go into their offices and forget about stopping the use of animals in research, so we

must come out of our laboratories to do effective offensive battle with this never-ending debasement of laboratory science. Write your letters and contact your senators and representatives when problems have been identified by you or by APS and use Bill Samuels and Marty Frank in all of these matters as knowledgeable consultants. Be even more diligent at your local level and remember the antivivisection movement is the most scientifically weak and scientifically uninformed movement in the world. You simply have to defend what you do to anyone who will listen, especially those who are in powerful positions.

8) You should contact APS about your needs and goals and, perhaps, some of our problems will not continue to be "déjà vu all over again," but will be problems solved in a worthwhile and productive fashion to strengthen our Society and physiology as both a science and a discipline. Your input is the best "anti-déjà vu" mechanism available. So use it!

9) In all honesty, there are still some "déjà vu all over again" problems that simply reflect the fact that some things move slower than others. This has occurred in the area of our educational programs and a plan for teaching physiology in regard to the new biology. Our education committee is at work on this issue and, perhaps, before my final Council meeting important decisions that affect the APS and its members can be formulated in this important area of physiology: our teaching role in the twenty-first century. **4**



nology Life Sciences Division, Houston, Texas)

Senate Closes Lab Doors to Activists; Locking Doors Up To House Members

The Senate has closed the laboratory doors to animal activists with the approval by unanimous consent of a bill that would make break-ins, vandalism, and theft of materials and laboratory animals a federal crime.

But to lock the legislation into law requires a favorable vote by the House, whose members are being deluged by letters and telephone calls from animal activists urging rejection of any such law or the enactment of a bill sponsored by Rep. Charlie Rose (D-NC), a bill promoted by animal activists.

The Senate bill, entitled "Animal Research Facilities Protection Act of 1989" (S. 727), was introduced by Sen. Howell Heflin (D-AL) after a raid by the Animal Liberation Front at the University of Arizona where research materials were destroyed, animals stolen, and buildings burned. The bill received bipartisan support and was brought to the Senate floor without committee hearings.

In addition to the Senate bill, the House has three other bills in the hopper concerned with intrusions at research facilities by animal activists. They are:

• H.R. 3270, a bill by Rep. Charles Stenholm (D-TX) that would make break-ins of research institutions and farm facilities and the theft of animals from either entity a federal crime. This bill, insofar as its provisions for research facilities are concerned, parallels the Senate bill.

• H.R. 3349, a bill by Rep. Henry Waxman (D-CA) that would amend the Public Health Service Act to provide protection for research facilities receiving Public Health Service funds.

• H.R. 3223, Rep. Rose's bill, which would make break-ins of research institutions and the theft of animals a federal crime. However, should the intruder find the facility to be in violation of any provision of the Animal Welfare Act, the intruder then is not liable for the crime and can sue the US Department of Agriculture for failing to enforce the Act and the institution for not being in compliance. The objective of the bill is to give animal activists standing in the courts, a recognition denied the activists by all levels of the federal court system including the US Supreme Court. This is one of two bills sponsored by Rose to legislate standing for the activists.

When Heflin's bill reached the Senate floor for vote, the Alabama senator said, "Lawful protest and legitimate criticism (of animal research) are not the issue here, freedom of speech is a cherished right. Nevertheless, ideological terrorists and vigilantes who take the law into their own hands must not be tolerated.

"Everyone can agree that we owe an enormous debt to research animals. Laboratory animals should be utilized only when necessary and must be well cared for and respected for humane as well as scientific reasons. But no one can condone lawless and senselessly destructive acts for whatever reasons they are motivated.

"The federal investigative capability and legal system must be brought to bear against research sabotage that threatens the future health of the nation. No single state is able to provide the legal protection required to combat interstate and possibly even international saboteurs."

Heflin's bill provides penalties of not more than \$5,000 and not more than one year imprisonment, or both, for each violation for which an individual is convicted. If a violation causes harm to a person or property that is willful and malicious, then each violation carries a fine of not more than \$10,000 and a maximum prison sentence of 10 years, or both. If as a result of such violation the life of any individual is placed in jeopardy, the person shall be fined not more than \$25,000 and imprisoned for not more than 20 years, or both, for each violation.

William M. Samuels

Now Is the Time to Write Your Congressman

A statute to make break-ins, vandalism, and theft at the nation's research institutions a federal crime has been a major priority of the American Physiological Society since 1983 when then-president Walter Randall recommended such legislation to a Senate panel discussing animal welfare issues. In 1985, a bill was introduced in the House by Rep. George W. Brown, Jr. (D-CA), but failed to get out of committee.

There now is momentum within the Congress to enact such a statute, but the outcome for such an action will depend on you and your colleagues as the House members are being deluged with mail from the animal activists urging rejection of such a statute.

It is important for those of you who want protection for your laboratories to write and ask them to support the Senate-approved "Animal Research Facilities Protection Act of 1989" (S. 727) and to cosponsor H.R. 3270, "The Farm and Animal Research Facilities Protection Act of 1989," a bill sponsored by Rep. Charles W. Stenholm (D-TX) and, by and large, a companion to the Senate bill.

Your letters should note that H.R. 3270 is not to be confused with H.R. 3223, a bill introduced by Rep. Charlie Rose (D-NC) with a similar title. That bill actually supports break-ins of research facilities by animal activists.

Letters to your congressmen can be mailed to (Name), US House of Representatives, Washington, DC 20515.

NIH-ADAMHA Withdraw Proposed Conflict of Interest Policies

The National Institutes of Health and the Alcohol, Drug Abuse, and Mental Health Administration have withdrawn their proposed conflict of interest guidelines for scientists who receive federal research funds.

The guidelines, opposed by the scientific community as being overly restrictive, were proposed in September as a result of congressional pressures about ties between proprietary firms and federally funded researchers.

In its letter of comment, APS urged the immediate withdrawal of the proposed guidelines for several reasons, including the provision wherein a scientist would be guilty of a conflict of interest violation should the researcher, members of the project management team, or family members have financial holdings in a firm that might benefit from the research. (Copies of the APS letter are available from the Society's national office.)

APS Source Bank Lists Animal Welfare Training, Audiovisual Materials

A source bank for information concerning animal welfare matters has been established for APS members by the Society's Governmental Relations Initiative Programs Committee. The source bank is to serve as a central repository for members who need information for locating sources for available materials or information relating to laboratory animals' care and use.

The first items placed in the source bank are a listing of audiovisual and training materials that are available, including those in the collections of the US Department of Agriculture's National Agricultural Library. Members needing listings of available sources for training materials and audiovisuals should contact the APS national office.

Jury Convicts Activist, Acquits Two Others Held In NIH Demonstration

A federal court jury in Baltimore convicted a 40-year-old New York man on a felony charge resulting from damages to the front door of the National Institutes of Health administration building last April during a demonstration protesting the use of laboratory animals.

Edward M. Ashton of Beacon, NY, could be sentenced in March up to 10 years in prison and fined \$250,000. A video tape of the demonstration showed Ashton pounding on the door before it was forced open.

Two other activists, Alex Pacheco, founder and chairman of People for the Ethical Treatment of Animals, and Carol Lyn Burnett, PETA's director of communications, were found not guilty of charges resulting from the demonstration. Pacheco was charged with interfering with an arrest (Burnett's) and Burnett was charged with assaulting a police officer and resisting arrest.

Sections

SPECIAL FUNCTIONS

APS/FASEB Spring Meeting April 1–5, 1990

Cardiovascular Dinner Tuesday, 6:30 PM Constitution A/B

Cell and General Physiology Sunday, 8:00 PM Constitution E

Environmental and Exercise Physiology Business Meeting Wednesday, 5:30 PM Independence H/I

Epithelial Transport

Group Meeting Tuesday, 8:00 PM Independence D/E

Gastrointestinal Physiology

Reception and Award Lecture Tuesday, 5:30 PM Independence F/G

History Luncheon

Wednesday, 12:00 Noon McPherson Square

Regulation Dinner

Tuesday, 6:30 PM Independence H/I

Teaching of Physiology

Business Meeting Tuesday, 8:00 AM Room 32, Convention Center

(Grand Hyatt Hotel, unless otherwise indicated)

Moving?

If you change your address or telephone number, please notify the APS office (301-530-7171) as soon as possible.

American Physiological Society 142nd Business Meeting

Time: 5:45 PM, Wednesday, October 17, 1989 Place: Mayo Civic Center Theater, Rochester, MN

I. Call to Order

President Vernon S. Bishop called the meeting to order and welcomed the members to the 142nd Business Meeting of the American Physiological Society. The agenda, the New Members Election Ballot, a proposed amendment to the Society Bylaws (Article V, Section 5), a Code of Ethics of the American Physiological Society, and information on bills before Congress on the Research Facilities Protection Acts were distributed to the membership along with a list of future Society meetings.

Dr. Bishop announced the appointment of Douglas Grigs, University of Missouri, Columbia, as parliamentarian and Ronald Korthius and Joseph Benoit, Louisiana State University, Shreveport, as tellers.

This was the Society's first specialty fall meeting, and Dr. Bishop expressed delight with its success. Cosponsored by the American Thoracic Society, the meeting centered around the theme of imaging techniques and smooth muscle function. The science was superb and the sessions were well attended.

II. Report on Membership

President-Elect Shu Chien presented a report on the status of the Society membership.

A. Summary of Membership Status

Since the spring meeting, the Society membership increased to 6,707. There was some growth with increases in all categories: 4,721 regular members, 25 honorary, 765 emeritus, 231 corresponding, 824 associate, 7 associate corresponding, and 224 student members.



Vernon S. Bishop

B. Deaths Reported Since the Fall Meeting

The names of 24 deceased members were read. The membership observed a moment of silence in tribute to them (see p. 22).

III. Election of Members

A. Appointment of Tellers

The membership was instructed to strike those names from the ballot for whom they did not wish to vote, and tellers Korthius and Benoit were asked to collect and count the ballots.

B. Election of New Members

Dr. Chien expressed pleasure in announcing that the 148 candidates for regular and 25 for corresponding membership were elected to membership in the Society (see p. 19). In addition, 52 associate, 7 associate corresponding, and 38 student members have been approved for membership by the executive director. A total increase of 270 new members since the spring meeting was reported.

IV. Amendment to the Bylaws

The proposed Bylaw amendment (Article V, Standing Committees; Section 5, Program Committee) to increase the number of Program Committee members from four to six was published in the June 1989 issue of *The Physiologist*. The increase in committee membership will provide broader representation in the future development of innovative programs for specialty and intersociety meetings.

A motion was seconded and passed unanimously that the Program Committee be increased to six members.

V. State of the Society

Reporting on the state of the APS, Dr. Bishop said that the Society's financial status is excellent and referred to the summary balance sheet that was published in the August 1989 issue of *The Physiologist*. The Finance Committee, chaired by Norman Alpert, is developing a five-year projection that will help the Society in developing its long-range plans, particularly those related to programming.

The Publications Committee is chaired by John Cook. This committee oversees all the publications of the Society. The journals have continued to grow and the number of pages continue to increase. The "Science Citation Index" ranked Physiological Reviews and the American Journal of Physiology as 1st and 8th, respectively (The Physiologist, Oct. 1989, p. 249). In addition, the Society has initiated two new journals: AJP: Lung Cellular and Molecular Physiology (Donald Massaro, editor) already has 600 subscribers and AJP: Advances in Physiology Education (Harold Modell, editor) has 200 subscribers.

The Publications Committee has appointed three new editors: Keith Hruska (University of Washington) to AJP: Renal, Fluid and Electrolyte Physiology, Gordon Shepherd (Yale University) to Journal of Neurophysiology, and William Dantzler (University of Arizona) to AJP: Regulatory, Integrative and Comparative Physiology.

The Committee on Committees, chaired by Beverly Bishop, is diligently working to identify members for the various committees. Dr. Bishop has sent out a call for nominees and looks forward to hearing from the members. Although there are a limited number of vacancies, the membership was urged to inform her of the committees on which they wished to work.

The major goal of the APS is to improve programming so that our Society has the very best science. Beginning in 1992, the APS will sponsor up to two specialty meetings a year. The Society will provide the administrative and financial support and the membership has to provide the science.

President Vernon Bishop emphasized that all of us want to make these specialty meetings the best science in a given area. He stressed that the success of the meetings is dependent on the input from the membership. If members have an idea for programming or know someone who would like to organize a meeting, President Bishop urged them to contact their section programming committee representatives.

In 1990, the specialty fall meeting will be held in Orlando, FL, Oct. 6-10. The Comparative Physiology Section, along with five other societies, has organized the meeting. The theme is "In Search of Physiological Principles: The Use of Animal Diversity and Novel Technology."

In 1991, the specialty meeting will be held in San Antonio, TX, Sept. 29-Oct. 3, organized by the Endocrine and Metabolism and Cardiovascular Sections.

The Cell and General Physiology Section is planning the 1992 specialty meeting at Woods Hole, MA, Sept. 13-17, in conjunction with the Society of General Physiologists.

An editorial entitled "At the Crossroads," by President Bishop was published in the August 1989 issue of *The Physiologist*. In the editorial, he stated the recent resolution adopted by Council relative to the role of FASEB in the biomedical community. At the recent FASEB retreat of the member societies, Dr. Bishop reported that the resolution was on the agenda. This resulted in plans that would restructure FASEB and reduce the assessment, thereby allowing increased flexibility of societies to meet in different formats. Another meeting of the FASEB board will be held in December to consider the future of the Federation, and the membership will be kept informed as the plans progress.

Turning to the Animal Welfare Act, of which there are three parts, Dr. Bishop announced that parts 1 and 2 go into effect Oct. 31. Part 1 is concerned with definitions and part 2 deals with the administrative responsibilities of the research institution, the role of the institutional animal care and use committee, and the roles of USDA and APHIS. In parts 1 and 2, the scientific community won some issues in the area of administrative responsibilities for the institutions. It did not win the issue of taking pictures of laboratory violations by APHIS inspectors, which may be obtained by animal activists under the Freedom of Information Act. Also, the issue of the purchase of random source animals from Class B dealers was not won.

Part 3, involving exercise for dogs and the psychological well-being of primates, is in limbo, and it may be approximately two years before the final rules are published. It is also possible that the proposed rules may be withdrawn and a new proposal offered because USDA received more than 20,000 letters, the majority of which were from the scientific community about the proposed requirements for exercising dogs and providing psychological well-being for primates. Dr. Bishop said it is important to note that the 20,000 letters commenting on *part 3* were almost three times the number of letters received for *parts 1* and 2, of which there were 7,800 with an equal number from the scientific community and the animal activists.

Referring to the Research Facilities Protection Act handout, which lists the bills pending in Congress, Dr. Bishop strongly urged the members to contact their representatives in Congress concerning these bills. Letters do make a difference!

In closing, Dr. Bishop referred to the Society's Code of Ethics distributed with the agenda (see p. 17), which was approved by Council and will be incorporated in the Society's Operational Procedures.

There being no new business, the meeting was adjourned at 6:20 PM, Oct. 18, 1989.

Shu Chien President-Elect



APS Council. Top Row (1-r): M. Frank, C. V. Gisolfi, P. D. Wagner, G. Giebisch, B. R. Duling, and R. B. Reeves. Front Row (1-r): S. G. Schultz, A. W. Cowley, Jr., V. S. Bishop, A. E. Taylor, S. Chien, and B. Bishop.

APS/ATS '89

The 40th Annual Fall Meeting, held Oct. 15–19, 1989, in Rochester, MN, marked the first joint meeting of the APS with the American Thoracic Society (ATS). The themes for the meeting were "Mechanisms of Smooth Muscle Function" and "The Role of Imaging Techniques in Physiological Investigation." The meeting program was organized by a joint committee consisting of members of the APS, ATS, and Mayo Clinic.

The program consisted of 24 symposia, one debate, and three instrumentation tutorials. The two sessions on Monday, Oct. 16, were presented in plenary format and teleconferenced to the Mayo Clinic facilities in Scottsdale, AZ, and Jacksonville, FL. Dr. Franklyn G. Knox presented a special lecture on the history of the Mayo Clinic.

Dr. Joey P. Granger was the 1989 Bowditch Lecturer and presented a talk entitled "Atrial Peptides in Volume and Pressure Regulation." Aubrey E. Taylor presented the Past President's Address during the Tuesday night banquet. After the lecture, Dr. Taylor was presented a walnut plaque with a Centennial Medallion commemorating his



The 1989 Bowditch Lecturer, Joey P. Granger (left), receives a check from Aubrey E. Taylor at the APS/ATS Fall Meeting, Rochester, MN.

service as the APS 61st President.

The volunteered papers submitted for the APS/ATS meeting were programmed in 47 poster sessions. Of the 485 abstracts received, 439 (91%) were received from members of the APS. Female scientists were first authors on 113 volunteered papers or 23% of the total. Scientists residing outside of the Americas contributed 45 abstracts. Industrial scientists accounted for nine volunteered papers. Scientists in US government laboratories contributed 21 abstracts. Of the abstracts acknowledging research support, 205 (42%) received support from federal agencies and 50 (10%) received support from various private foundations, associations, and/or companies.

Table 1 indicates that 90 volunteered papers were submitted for the theme topic categories. In addition, 156 abstracts were received for respiratory categories and 81 abstracts for heart and circulation categories. This compares with 165 and 230, respectively, in 1988. The 1988 meeting held in Montreal was a joint meeting of APS and ASPET.

Of the 344 abstracts designating departmental affiliation, 133 or 27.49% were from departments of physiology or physiology/biophysics (Table 2). In addition, 46 or 7% were from departments of medicine and 34 or 6.2% were from departments of biology.

TABLE 2. Author Affiliations of Programmed, Volunteered Papers

Department	No. of Papers	% Total
Physiology	111	22.0
Physiology/biophysics	22	4.5
Medicine	46	95
Biology	34	7.0
Pharmacology	30	6.2
Surgery	11	2.3
Anesthesiology	9	1.9
Pediatrics	8	1.6
Biochemistry	5	1.0
Toxicology/pharmacy	3	0.6
Pathology	2	0.4
Other	63	13.0
Sub-Total	344	70.9
No department listed	141	29.1
Total	485	100.0

1989 APS/ATS Meeting Registration

Status	Number
Member	408
Nonmember	322
Students	141
Guests	13
Exhibitors	71
Total	955

TABLE 1. Volunteered Papers By Physiological Category

	1989 Papers		1988 Papers	
Category	No.	Percent	No.	Percent
Theme: Smooth Muscle Function	74	15.3		
Theme: Imaging Techniques	16	3.3		
Aging	3	0.6	23	1.7
Cell & general	15	3.1	28	2.1
Comparative	5	1.0	8	0.6
Endocrine & reproduction	11	2.3	47	3.5
Environmental & exercise	26	5.4	51	3.8
Gastrointestinal & liver	17	3.5	24	1.8
Gravitational	0	0	22	1.6
Heart & circulation	81	16.7	230	17.3
History	2	0.4	0	0
Membranes & transport	13	2.7	12	0.9
Metabolism	7	1.4	26	1.9
Muscle	21	4.3	61	4.5
Neurobiology & neural biophysics	4	0.8	180	13.5
Regulatory & integrative	6	1.2	30	2.2
Renal & electrolyte	9	1.9	46	3.4
Respiratory	156	32.2	165	12.4
Teaching materials	3	0.6	3	0.2
Water & electrolyte	4	0.8	35	2.6
Other	12	2.5	336	25.3
Total	485	100.0	1.327	99.3

THE PHYSIOLOGIST



Ali A. Khraibi, PhD, demonstrates methodology for measurement of renal interstitial hydrostatic pressure during the Mayo Research Laboratories Tour at the APS/ATS Fall Meeting, Rochester, MN.

Contributions

The American Physiological Society gratefully acknowledges the following for their support of the APS/ATS meeting:

Berlex Laboratories, Inc. Ciba-Geigy Corporation Glaxo Research Laboratories Janssen Research Foundation Lilly Research Laboratories Mayo Foundation Siemens Medical Systems, Inc.



Poster Sessions, 1989 APS/ATS Fall Meeting, Rochester, MN.

EDITORIAL

(continued from p. 2)

to multiple FASEB-organized meetings in which different societies with common interests might gather. Again, suggestions as to which societies we should consider meeting with would be greatly appreciated.

A major question currently facing the Board is whether FASEB should continue to have affiliate societies or whether new societies should join as equal partners. Obviously, the latter option implies that new societies would have to pay the current dues, which would translate into tens of thousands of dollars. A membership fee of this amount would be unacceptable to a new society and certainly would be unacceptable to APS if it weren't for the fact that we are currently a member. A more likely possibility would be the establishment of a two-tiered structure with a managing board comprised of the current corporate societies and a membership board comprised of all societies. However, even if the dues are reasonable, new societies will not join unless FASEB can provide a valuable service to the biomedical community. We hope that the public affairs activities of FASEB can provide this valued service. Perhaps this issue will be resolved in the next several meetings.

The health and vitality of the biomedical community is indebted to the efforts of FASEB on behalf of the individual scientist. The APS does not want that voice diminished; we merely wish that all societies that have benefited from the FASEB voice consider joining and becoming an active member of this organization. We must take the "high road" to accomplish this goal without diminishing FASEB and what it stands for. Only in that way will we be able to ensure a promising future for our discipline.

> Vernon S. Bishop President

Publications Committee

As of this report in October, 1989 is shaping up as a banner year for publications with 9% more journal pages being published through September compared with the same time last year. *AJP: Lung Cellular and Molecular Physiology* and *Advances in Physiology Education* debuted in August and June, respectively, and four books were published this year, with a fifth slated for early 1990.

The number of individual subscribers to the AJP: Lung Cellular and Molecular Physiology reached almost 500 before the first issue was published in August, with another 2,800 subscribers receiving it as part of the consolidated American Journal of Physiology. It currently ranks third in number of subscribers among the individual journals.

The first issue in June of Advances in Physiology Education was smaller in size than anticipated, but with exposure, it too should begin to receive more manuscripts. The journal appears in Part 3 of the consolidated AJP in June and December. It has a subscription list of almost 200 and is sent to all APS members.

The Publications Department welcomed two new editors in July 1989: K. A. Hruska of Washington University as editor for AJP: Renal, Fluid and Electrolyte Physiology and G. M. Shepherd of Yale University as editor of the Journal of Neurophysiology. W. H. Dantzler, University of Arizona, has been selected as the new editor for the AJP: Regulatory, Integrative and Comparative Physiology starting January 1, 1990. The process of selecting a new editor, starting July 1990, for the AJP: Cell Physiology is nearly complete.

Council's decision not to raise journal subscription prices in 1990, except for the cost of the expedited mailing to foreign subscribers, has resulted in a three-tier price structure: domestic, Canada and Mexico, and elsewhere. It will be interesting to see if the expedited mail service will result in an increased number of foreign subscriptions. Expedited delivery is a positive benefit for



John S. Cook

scientists in foreign countries, as is the availability of credit card payment. Both new services are being widely advertised.

News in Physiological Sciences was widely promoted at the IUPS Congress in Helsinki in July. Each registrant received a complimentary copy of the April issue and the opportunity to subscribe at a substantial discount. The April issue was designed for the Congress with special articles and with the Congress stamp on the cover. The response to the promotion was good, with 63 new subscriptions received to date. The adhering national societies of IUPS were not able to take up the offer of a bulk subscription rate of \$25 because of administrative problems associated with subscription fulfillment in their understaffed offices. They would be able, however, to promote the journal to their memberships at the \$25 rate if subscriptions could be handled at the central office in Bethesda.

With the completion of three volumes of the Gastrointestinal System Handbook, only one book is left inhouse, the last volume in the series. With its expected publication in early 1990, the in-house book program of the Society is over. As a result, the current deficits will be reduced as the stock of APS-produced books are sold off by Oxford University Press.

Oxford University Press is still waiting for final manuscripts for both the Renal Physiology Handbook, edited by Erich E. Windhager, and the Clinical Physiology Series book *Hypoxia, Metabolic Acidosis and the Circulation,* edited by Allen I. Arieff, before starting the manufacturing process. "Oxygen Biology: From Organ to Organelle" and "Hypertension in Blacks" are in the pipeline for the Clinical Physiology Series.

The Handbook and Technical Book Committees formed by the Publications Committee to initiate new books have decided on suitable areas for future books and have already invited several editors to organize books.

The Technical Book Committee has developed a description of the series:

This series of books is aimed at researchers, graduate students, laboratory workers, and others in need of detailed and practical descriptions of modern experimental techniques in cellular, molecular, and general physiology. No mere collection of "cookbook" protocols, each of these self-contained books will be edited by an expert in the field and overseen by the series editors. Each will cover the theory and history behind a given technique, add critical commentary, and describe major applications with specific examples. The limitations and extensions of the technique, and future directions, will also be discussed.

Three topics have been chosen and editors invited. The topics and editors are *Fractal Physiology*, edited by J. B. Bassingthwaighte; *Applications of Caged Compounds in Cell Physiology*, edited by J. Kaplan; and *Membrane Proteins: Structural and Analytical Methods*, edited by S. H. White.

D. G. Stuart has replaced R. B. Gunn as Chairman of the Handbook Advisory Committee. W. F. Ganong and J. F. Hoffman have been appointed as new members.

Ten new terminals were bought for the Publications Department in June. Editing on disk was expanded as more authors responded to our requests for disk manuscripts. A local area network is being developed to track manuscripts through the production process. The computerized system is proving very helpful for reports on costs, work assignments, reviewing, and production time. Laurie Chambers, former Book Production Manager, was appointed Journal Production Manager in August to replace J. P. Bloomer, who retired. We are grateful to Mrs. Chambers for phasing out the book program with a minimum of problems. Mrs. Bloomer deserves our thanks for 22 years of dedicated service to the Society and in particular for cutting journal production time significantly and encouraging the development of computer editing and control of journal production. On July 1, J. S. Cook took over as chairman of the Publications Committee from P. C. Johnson, who retired from the Committee after serving four years. C. M. Tipton was appointed as the fifth member. Dr. Cook was appointed as chairman of the *NIPS* Joint Managing Board at the meeting of the Board in Helsinki. He was also given responsibility for the news section of *NIPS*.

> John S. Cook Chairman

Renal Section Awards

The Renal Section selected among an excellent group of candidates two postdoctoral fellows and two graduate students to receive awards for research excellence. Judging took place at the 1989 Spring FASEB Meeting. The recipients in the postdoctoral category were Dr. Hasan A. Al-Mahrouq, who was sponsored by Dr. S. A. Kempson, and D. M. Hediger, who was sponsored by Dr. E. Wright. Dr. Al-Mahrouq's study was titled "Synthesis of an azido derivative of NAD that inhibits phosphate transport in renal cortical brush border membrane vesicles" and Dr. Hediger's study was titled "The human renal Na⁺/glucose cotransporters."

The graduate student recipients were Susan E. Mulroney, working with Dr. A. Haramati, and Jon Strieter, sponsored by Dr. J. L. Stevenson. Ms. Mulroney's abstract was titled "Role of growth hormone in promoting renal phosphate retention during development" and Mr. Strieter's was titled "Volume-activated chloride permeability can medaite cell volume regulation in a mathematical model of toad bladder epithelium." The committee also selected Dr. N. A. McCarty for the Proctor and Gamble Award. Dr. McCarty's title was "Time-dependent action of calcium for volume regulatory decrease in proximal straight tubule: the calcium window." His work took place in Dr. R. O'Neil's laboratory. The selection committee included Drs. W. B. Guggino (chairman), P. Aronson, S. Gullans, and W. H. Dantzler. The Renal Section looks forward to another excellent group of candidates for the 1990 awards.



Left to right: Susan E. Mulroney, William B. Guggino, N. A. McCarty, and Jon Strieter.

APS Membership Applications

Membership applications may be obtained from APS Membership Services, 9650 Rockville Pike, Bethesda, MD 20814. Applications received between February 1 and July 1 are considered for nomination by Council at the Fall Meeting, and those received between July 1 and February 1 are considered for nomination at the Spring Meeting of the Society.



So They Say ...

" 'The practice of sending dirty laundry elsewhere should end.' New employers need to know the record and those who write letters of recommendation must take that responsibility seriously. Whistle-blowers, administrators, and journal editors say they are often afraid they will be sued if they are forthright. As a result, legislation that granted immunity to those who reveal research misconduct is one kind of lawmaking science would probably welcome."

> Remarks by Janet Newburgh, head of NIH office handling fraud and misconduct cases, as reported by The AAAS Observer.

APS/NIDDK Travel Fellowships for Minority Students

The APS/NIDDK-sponsored travel fellowship program provided an opportunity for nine highly qualified minority students and scientists to attend the 1989 fall meeting in Rochester, MN. Preceding the scientific session, the fellows were introduced to mentors at an orientation. Throughout the week, the mentors assisted the fellows in selecting appropriate scientific sessions. Franklyn G. Prendergast of Mayo Clinic and Foundation addressed the group on the topic, "Changing America: The New Face of Science and Engineering," at a luncheon sponsored by the American Cyanamid Company. This program, which has been enthusiastically received, will provide funds



Franklyn G. Prendergast

for 15 fellows to participate in the spring FASEB meeting in Washington, DC, April 1-5, 1990.

Recipients of the Fall 1989 Fellowship Awards



Front row (1-r): Sarah K. England, Medical College of Wisconsin; Cindy La Neave, University of Texas, El Paso; Cynthia Ann Jackson, University of California, Davis; and Lorie Manciet, University of Arizona. Back row (1-r): Xavier F. Flores, Medical College of Ohio; Manuel Perez, University of Texas, San Antonio; Julio A. Rimarachin, New York Medical College; Kwaku N. Owusu, Albert Einstein College of Medicine; and Alfredo Rego, Georgetown University.

News From Senior Physiologists

Letters to Horace Davenport

Laurence Wesson writes from Pheonixville. PA, that he officially retired in 1988 after completing a review article on some growth responses of the kidney. "Reviews are fun when one is not under time pressure," he said, "and I am thinking of writing more (reviews). Too many read as though assembled in great haste. . . . At the hands-on level I am returning to a high school and college interest in myrmecology (ants, that is). Wisdom? Unfortunately, unless wisdom can be perceived as such it does not exist. However, younger colleagues can lose little and possibly gain much by emulating those qualities they respect most or admire in older colleagues."

Paul Schloeb writes that as an academic surgeon he has not been in the same league as physiologists who are members of physiology departments. Nevertheless, he has cherished his membership in the American Physiological Society and has attended nearly all of the spring meetings. He continues to "put in 40 per week, more or less" at the University of Kansas Medical Center in Kansas City, KS.

Letter to Roy O. Greep

Emanuel Mendelson notes, "As the years go by it becomes more and more pleasant to hear from senior physiologists and others in the Federation."

Members are invited to submit nominations for honorary membership. Send nominations and documentation of the candidate's contributions to physiology to the APS Honorary Membership Committee, 9650 Rockville Pike, Bethesda, MD 20814, by December 1, 1989.

Fred S. Grodins (1915-1989)

Fred S. Grodins was born in Chicago and received his BS, MS, MD, and PhD (physiology) degrees from Northwestern University in 1937, 1940, 1942, and 1944, respectively. After service in the US Army Air Force from 1944 to 1946, he spent a year at the University of Illinois College of Medicine in Chicago before returning to Northwestern University Medical School as an associate professor of physiology. From 1951 to 1967, Dr. Grodins was Abbott Professor of Physiology at Northwestern University. He came to the University of Southern California in 1967 as professor of physiology and electrical engineering. Under Dr. Grodins' leadership, the School of Engineering at USC established in 1970 the Biomedical Engineering Program. Dr. Grodins served as professor and chairman of Biomedical Engineering from 1970 to 1986. During his tenure as chairman, Dr. Grodins established the Biomedical Engineering Department as one of the top biomedical engineering programs in the United States. From 1986 until his death he was emeritus professor of biomedical engineering, electrical en-



gineering, and physiology and biophysics at USC.

Dr. Grodins was an acknowledged pioneer in the field of biomedical engineering and made profound and lasting contributions in the area of regulation of breathing. His famous monograph on "Control Theory and Biological Systems" published in 1963 is considered a landmark publication on the application of engineering control theory to physiological systems. Dr. Grodins published over 100 scientific articles and book chapters in respiratory physiology, cardiovascular control, mathematical modeling, and computer simulation. Through his career-long active research program, funded by the National Institutes of Health, Dr. Grodins was responsible for training numerous graduate students and postdoctoral research fellows.

Dr. Grodins served on many governmental panels and advisory committees for the NIH, NSF, and NASA, and was on the editorial boards of the American Journal of Physiology, the Journal of Applied Physiology, Circulation Research, and Physiological Reviews. A past president and member of the board of directors of the Biomedical Engineering Society, Dr. Grodins was also a member of the American Physiological Society, Phi Beta Kappa, Sigma Xi, and the American Association for the Advancement of Science.

In Dr. Grodin's memory, a memorial fund is being established to support graduate study in biomedical engineering. Contributions may be made to the USC Fred S. Grodins Memorial Fund through the Office of the Dean, USC School of Engineering, OHE 200, Los Angeles, CA 90089 (213-743-4612).

APS Code of Ethics

A Code of Ethics for members of the American Physiological Society was adopted by the Council at the fall meeting in Rochester, MN.

CODE OF ETHICS

Membership in the American Physiological Society includes the acceptance of and the responsibility to uphold the following Code of Ethics.

The role of the physiologist is to advance the field through teaching, research, and service. In the process physiologists shall be honest in their reporting of research findings and ethical in their dealings with others. Moreover, physiologists shall be humane in the treatment of human and nonhuman subjects. Physiologists shall also have the professional responsibility to bring to the attention of appropriate authorities apparent violations of these principles.

Physiologists recognize the Society's responsibility to consider breaches of ethical behavior and to take any response deemed necessary in accordance with the Society's Bylaws, Article IX, Section 5 and as defined in the Operational Guide.

Gordon K. Moe (1915-1989)

Dr. Gordon K. Moe of Barneveld, NY, a renowned medical research scientist in the field of experimental cardiology and Director of Research Emeritus at the Masonic Medical Research Laboratory, passed away at St. Lukes Memorial Hospital, Oct. 24, 1989.

Dr. Moe and his colleagues at the Masonic Medical Research Laboratory pioneered the study of cardiac arrhythmias; these abnormal rhythms are responsible for the majority of deaths that occur soon after a heart attack.

Over the years, his research has contributed immeasurably to delineation of normal and abnormal mechanisms of heart function. Dr. Moe and his colleagues were responsible for defining the mechanism of a number of arrhythmias, including paroxysmal supraventricular tachycardia, atrial flutter, and fibrillation. Most recently, they discovered two mechanisms responsible for the generation of abnormal extra



beats in diseased hearts. These findings have greatly enhanced modern day understanding of the cellular mechanisms responsible for cardiac rhythm disturbances and have been instrumental in the development of applications for the artificial pacemaker.

During his career, Dr. Moe authored more than 200 articles on various cardiovascular subjects that have been published worldwide and translated into several languages.

Upon Dr. Moe's retirement in 1984 as Director of Research of the Masonic Medical Research Laboratory, an international symposium was organized in his honor in Amelia Island, FL. This symposium, which brought together the most eminent scientists and cardiologist from all over the world, was heralded as the most significant scientific event of the decade in the field of cardiology. It was a fitting tribute to a world-class scientist whose dedication and excellence in biomedical research had earned the admiration and respect of his colleagues all over the world.

Dr. Moe devoted his life to the service of humankind. His contributions to basic biomedical research have contributed importantly to the improved quality of health care that we all enjoy today.

Future Meetings		
1990		
FASEB Annual Meeting	April 1-5, Washington, DC	
APS Fall Meeting	October 6-10, Orlando, FL	
1991		
FASEB Annual Meeting	April 21-26, Atlanta, GA	
APS Fall Meeting	September 29-October 3, San Antonio, TX	
1992		
FASEB Annual Meeting	April 5–9, Anaheim, CA	
APS Fall Meeting	September 13-17, Cape Cod, MA	
1003		
FASEB Annual Meeting	March 28-April 1. New Orleans I.A.	
1994		
FASEB Annual Meeting	April 24–29, Anaheim, CA	
1005		

Membership Status

(September 1989)

Regular	4,721
Emeritus	675
Honorary	25
Corresponding	231
Associate	824
Associate Corresponding	7
Student	224
Total	6,707

Newly Elected Members

The following, nominated by Council, were elected to membership in the Society at the Fall Business Meeting, 1989, Rochester, MN.

Regular

Stephen Adler Westchester Med. Ctr., Valhalla

John H. M. Austin Columbia Presbyterian Med. Ctr., New York

Ann L. Baldwin Univ. of Arizona

Thomas J. Barstow Harbor-UCLA Med. Ctr.

Michel G. Baum Univ. of Texas, Southwestern

Rahim Behnia Northwestern Univ., Chicago

Bruce A. Benjamin Duke Univ., Durham

Alvin S. Blaustein VA Med. Ctr., Cincinnati

Barbara A. Block Univ. of Chicago

Bernard E. Bouscarel Arlington, Virginia

Bruce R. Boynton Univ. of Kentucky

Michael J. Breslow Johns Hopkins Hosp., Baltimore

Virginia L. Brooks Oregon Hlth. Sci. Univ.

Robert M. Bryan M. S. Hershey Med. Ctr.

James K. Bubien Univ. of Alabama at Birmingham Kenneth E. Burhop Baxter Healthcare Corp., Illinois

Daniel Burkhoff Johns Hopkins Hosp., Baltimore

Michael D. Caldwell Rhode Island Hosp.

John L. Carroll Johns Hopkins Children's Ctr., Baltimore

Frank J. Cerny SUNY at Buffalo

Mark W. Chapleau Univ. of Iowa

Michael C. Chobanian Univ. of Wisconsin

John T. Clark Meharry Med. Coll., Nashville

John W. Commissiong McGill, Univ., Quebec

Manuel G. Cosio Royal Victoria Hosp., Quebec

Mark A. Creager Brigham & Women's Hosp., Boston

Vincent J. Cristofalo Wistar Inst., Philadelphia

Proveen D. Dass Univ. of Arkansas for Med. Sci.

Yves Deshaies Laval Univ., Quebec

Thomas J. Doubt Naval Medical Res. Inst., Maryland

J. L. Durstine Univ. of South Carolina

Earl F. Ellis Richmond, Virginia

Andrew P. Evan Indiana Univ.

Douglas M. Fambrough Johns Hopkins Univ., Baltimore

Geza Fejes-Toth Henry Ford Hosp., Detroit

Leonard G. Feld Children's Hosp., Buffalo

James S. Ferraro Southern Illinois Univ.

Craig F. Ferris Univ. of Massachusetts

Thomas J. Ferro VA Med. Ctr., Albany

James E. Fish Philadelphia, Pennsylvania

Jerome L. Fleg Baltimore, Maryland Eugene C. Fletcher Houston, Texas

John S. Floras Toronto General Hosp.

David A. Ford Washington Univ.

David R. Franz Frederick, Maryland

Donald G. Gall Univ. of Calgary, Alberta

Kenneth W. Gasser Case Western Reserve Univ., Cleveland

Michael S. Goligorsky SUNY at Stony Brook

David Goltzman McGill Univ., Quebec

Arturo Gomez Univ. of Manitoba, Winnipeg

Joel A. Gordon Univ. of Iowa

Antonio R. Granata Univ. of Tennessee

Danielle Greenberg Bourne Lab, New York

Beverley Greenwood Med. Coll. of Wisconsin

Paul W. Gudewicz Albany Med. Coll.

Michael P. Habib VA Med. Ctr., Tucson

Peter H. Hackett Anchorage, Alaska

Mitchell L. Halperin St. Michael's Hosp., Ontario

John M. Hamlyn Univ. of Maryland

Daniel F. Hanley Johns Hopkins Hosp., Baltimore

James L. Heckman Temple Univ., Philadelphia

Alan T. Hirsch Brigham & Women's Hosp., Boston

John M. Holman Univ. of Utah

Rolf D. Hubmayr Mayo Fndn., Rochester

Alastair A. Hutchison Univ. of Florida

Machiko Ikegami Harbor-UCLA Med. Ctr.

David H. Ingbar Yale Univ., New Haven Robert K. Josephson Univ. of California, Irvine

Peter I. Karl North Shore Univ. Hosp., New York

Michael S. Katz Audie L. Murphy Mem. Veterans Hosp. San Antonio

George A. Kaysen VA Med. Ctr., California

Joseph Kedem Robert Wood Johnson Med. Sch., New Jersey

Ralph Keeler Univ. of British Columbia, Vancouver

Steven R. Kleeberger Johns Hopkins Univ., Baltimore

Richard P. Kraig Univ. of Chicago

Henry A. Lester Pasadena, California

Wilfred Lieberthal Newton, Massachusetts

Odile A. Mathieu-Costello Univ. of California, San Diego

Alan J. Mautone Schneider Children's Hosp., New York

Emeran A. Mayer Harbor-UCLA Med. Ctr.

Franklin D. McCool Mem. Hosp. of Rhode Island

Roger B. McDonald Univ. of California, Davis

Sheella Mierson Richmond, Virginia

William R. Millington Uniformed Services Univ., Maryland

Ira Mills Rhode Island Hosp.

William K. Milsom Univ. of British Columbia, Vancouver

Timothy S. Moerland Florida State Univ.

Thomas M. Murphy Univ. of Chicago

S. N. S. Murthy Hahnemann Univ., Philadelphia

Richard A. Nyhof Calvin Coll., Michigan

William C. O'Neill Emory Univ., Atlanta

Ann Ouyang Hosp. of The Univ. of Pennsylvania

Mark S. Paller Univ. of Minnesota Benet J. Pardini VA Med. Ctr., Iowa City

Richard A. Parisi Robert Wood Johnson Med. Sch., New Jersey

Richard E. Parker Vanderbilt Univ., Nashville

Barry T. Peterson Univ. of Texas Hlth. Ctr. at Tyler

Richard H. Pointer Howard Univ., Washington, DC

Nanduri R. Prabhakar Univ. Hosps. of Cleveland

Rajinder N. Puri Temple Univ., Philadelphia

Robert F. Rea Univ. of Iowa

M. M. Reddy Univ. of California, Riverside

Judith G. Regensteiner Univ. of Colorado

Jean-Marc E. Renaud Univ. of Calgary, Alberta

James C. Reynolds Univ. of Pennsylvania

Dean F. Rigel Cincinnati, Ohio

Charles E. Roselli Oregon Hlth. Sci. Univ.

Eric C. Rousseau Univ. of Sherbrooke, Quebec

William L. Rumsey Univ. of Pennsylvania

Hani N. Sabbah Henry Ford Heart & Vascular Inst., Detroit

Jeff M. Sands Emory Univ., Atlanta

Gabrielle K. Savard Queen's Univ., Ontario

Robert C. Schlant Emory Univ., Atlanta

Andreas J. Schwab McGill Univ. Med. Clinic

William M. Selig Hoffmann-La Roche, New Jersey

Stephanie A. Shore Harvard Sch. of Public Hlth., Boston

Trevor J. Shuttleworth Univ. of Rochester Med. Ctr.

Elliott Sigal Univ. of California, San Francisco

Jacquelyn M. Smith Chicago Coll. of Osteopathic Med. Jeffrey C. Smith Univ. of California, Los Angeles

Konrad H. Soergel Froedtert Hosp., Milwaukee

Mark S. Sothmann Univ. of Wisconsin

Madison S. Spach Duke Univ. Med. Ctr., Durham

Robert B. Spokane Westchester, Ohio

William D. Steers Univ. of Virginia

Robert L. Stephens Ohio State Univ.

Judy Y. Su Univ. of Washington

J. I. Sznajder Michael Reese Hosp., Chicago

Glen F. Tibbits Simon Fraser Univ., British Columbia

Mary L. Tod Univ. of Maryland

Ronald G. Tompkins Massachusetts General Hosp.

Joshua E. Tsitlik Johns Hopkins Univ., Baltimore

Jason G. Umans Univ. of Chicago Hosp.

Jorge E. Valenzuela Los Angeles, California

Thomas C. Vary Milton S. Hershey Med. Ctr.

Keith R. Walley St. Paul's Hosp., British Columbia

David O. Warner Rochester, Minnesota

John V. Weil Univ. of Colorado

Andrew H. Werber Albany Med. Coll.

Catharine I. Whiteside Univ. of Toronto

Eric P. Widmaier Boston Univ.

Judy R. Wilson Texas Coll. of Osteopathic Med.

Mark L. Witten Massachusetts General Hosp. E

Lorentz E. Wittmers Univ. of Minnesota, Duluth

Yoram Yagil Univ. of Rochester Stephen L. Young Duke Univ. Med. Ctr., Durham

Karl A. Zucker Univ. of Maryland Hosp.

Corresponding

Warwick P. Anderson Baker Med. Res. Inst., Australia

Gerhard Burckhardt Max-Planch Inst., FRG

Wing-Tai Cheng Dartmouth Med. Sch.

Pier G. Data Univ. of Chieti, Italy

Flora De Pablo Natl. Insts. of Hlth.

Joaquin Garcia-Estan Murcia Univ., Spain

Jan F. C. Glatz Univ. of Limburg, The Netherlands

Matsuhiko Hayashi Keio Univ., Japan

Leon C. Isaacson Univ. of Cape Town, South Africa

Kee S. Kim Hanyang Univ., Korea

Willem J. Lammers Univ. of Limburg, The Netherlands

Klaus F. Ley Freie Univ., Berlin, FRG

Francois J. Marchal Univ. of Nancy, France

Yoshinori Marunaka Emory Univ.

Kyoko Miyasaka Tokyo Metropolitan Inst., Japan

Denis R. Morel Univ. Hosp. of Geneva, Switzerland

Manuel Paiva Brussels, Belgium

Nicholas A. Saunders Royal Newcastle Hosp., Australia

Jochen D. Schipke Univ. of Dusseldorf, FRG

Luc H. E. H. Snoeckx Univ. of Limburg, The Netherlands

Shunsuke Suzuki Yokohama City Univ., Japan

Jun Tamaoki Tokyo Women's Med. Coll., Japan

Willy van Driessche Leuven, Belgium

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David Wang Natl. Defense Med. Ctr.

John A. Young Univ. of Sydney, Australia

Associate

Bill Theodore Ameredes Univ. of Florida

James William Anderson Univ. of Texas Med. Branch

Michael George Bemben Kirksville Coll. of Osteopathic Med., Missouri

Charles R. Bridges, Jr. Hosp. of The Univ. of Pennsylvania

Che-Ping Cheng Winston-Salem, North Carolina

Douglas C. Curran-Everett Univ. of Colorado

Elizabeth Dean Univ. of British Columbia, Vancouver

David S. Goldfarb Manhattan VA Hosp., New York

Anthony Carl Hackney Univ. of North Carolina

Randolph H. Hastings Burlingame, California

Robert L. Hesslink Gaithersburg, Maryland

Diane Ruth Karius Univ. of Kentucky

Salah Dean Kivlighn Univ. of Mississippi

Steven L. Lehman Univ. of California, Berkeley

Debra Anne Lewis Pennsylvania State Univ.

Hua Lin Ann Arbor, Michigan

Mahmoud Loghman-Adham Univ. of Utah

Roberto Maass-Moreno Indiana Univ.

Lorraine Hanna Manciet Univ. of Arizona

Paul R. Myers Univ. of Iowa Hosps.

Mallard D. Owen Ohio State Univ.

Linda Oyer Chae UMDNJ-Robert Wood Johnson Med. Sch.

Michele Lynn Perry Univ. of Alabama at Birmingham David Sanders Roane Northeast Louisiana Univ.

Lorraine Ann Rome Univ. of Cincinnati Med. Ctr.

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Anthony J. Senagore Ferguson Clinic, Michigan

Igor Stojanov Univ. of Tennessee

Kalyana Sundaram North Plainfield, New Jersey

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Malcolm Crispin Townsley Piscataway, New Jersey

Vicky Lurene Tucker Univ. of California, Davis

Kishena Chandiram Wadhwani Natl. Insts. of Hlth.

P. T. Wall Univ. of Texas, Southwestern

Michael James Wasicko Dartmouth Med. Sch.

Barry Douglas White Univ. of Georgia

Associate Corresponding

Nur Asikin Univ. of Indonesia

Maria R. Bonsignore Pisa, Italy

Camillo Di Giulio Univ. of Chieti, Italy

Catherine Mary Fuller Univ. of Alabama at Birmingham

Alon Harris Indiana Univ.

Wu-Xin Huang Univ. of Pennsylvania

Kiyoshi Ishida Tokyo, Japan

Shinichiro Koyama Tokyo, Japan

Pedro Ricardo Lowenstein MRC, United Kingdom

Masataka Onizuka Univ. of Tsukauba, Japan

Ulrich Pison Marien Hosp., Dusseldorf, FRG

APS NEWS

Hassan Y. Raffa King Fahad Hosp., Saudi Arabia

Nayel Moh'd Rawashdel Bowman Gray, Winston-Salem

Tatsuo Tanita Tohoku Univ., Japan

Michael Wendt Univ. of Munster, FRG

Jun Yu Univ. of Manitoba, Winnipeg

Student

David W. Armstrong Naval Med. Res. Inst., Maryland

Rajeev Bawa Rensselaer Polytechnical Inst., New York

Ronald A. Bouchard Univ. of Manitoba

Darrell Wayne Brann Med. Coll. of Georgia

Karen Ann Costa St. John's Univ., New York

Alain J.-L. Deschamps McGill Univ., Quebec

Michael David DuVall Univ. of Minnesota

Richard Andrew Fay Pennsylvania State Univ.

Xavier F. Flores Toledo, Ohio

Steven Lee Griffith Indianapolis, Indiana

Meredith Hay Univ. of Texas

Ping Nian He Davis, California

Rodney Lee Irwin Ohio State Univ.

David Thomas Kidwell Lexington, Kentucky Lauren Gerard Koch Med. Coll. of Ohio

Kevin Michael Krause Univ. of Kentucky

Meiqiu Lin Johns Hopkins Univ., Maryland

Karol R. Mackey Univ. of Vermont

Nael Arthur McCarty Univ. of Texas

Evangeline Delores Motley Howard Univ.

Katherine Irene Nodland Texas A&M Univ.

Mary Francis Otterson Med. Coll. of Wisconsin

Emily Puntillo New York Med. Coll.

Louis M. Renzetti Temple Univ., Philadelphia

S. Paul Rossby Univ. of Arkansas for Med. Sci.

Yoav Segal Washington Univ.

Stephanie Renken Skaggs Univ. of New Mexico

Edward Gradey Smith Eastern Virginia Med. Sch.

Sriram Subramaniam Univ. of Kentucky

Karyn Marie Todd Univ. of Michigan

Jie Wang New York Med. Coll.

Yang Wang Univ. of Toronto

Christopher Jon Wingard Wayne State Univ., Michigan

Jianing Yang Johns Hopkins Med. Inst., Baltimore

Deceased Members

Thomas Bronikowski, Milwaukee, WI (06-30-89)Leroy E. Duncan, Jr., Rockville, MD (11-17-88)Herbert Elftman, St. Louis, MO (02-28-89*) Cecil Entenman, Bernicia, CA (01-20-89)Donald S. Farner, Camano Island, WA (05 - 18 - 88)Colin Fell, New York, NY (03-30-89) James M. Felts, San Francisco, CA (04-04-89*)Frank Gollan, Miami, FL (06-12-89*) Susumu Hagiwara, Los Angeles, CA (04-19-89*)Lola S. Kelly, Berkeley, CA (06-15-89*) Joseph R. Larsen, Champaign, IL (02 - 17 - 89)Earl R. Loew, Newtonville, MA (11-25-89)Donald D. Macchia, Gary, IN (Jan. 1988) George Nichols, Manchester, MA (March 1989) Eleanor Larsen O'Neal, Johnson City, TN (02-01-89) Rulon W. Rawson, Salt Lake City, UT (04-28-89)Oscar W. Richards, Oakland, OR (01-31-89)Curt P. Richter, Baltimore, MD $(05-04-89^*)$ Kiichi Sagawa, Baltimore, MD (08-22-89)Wilbur A. Selle, Crona del Mar, CA (06-12-89*)Charles R. Smith, Columbus, OH $(05-04-89^*)$ Om P. Verma, Tuskegee, AL (Feb. 1988) *Date notified of member's death.

Computerized Editing

The American Journal of Physiology and Journal of Applied Physiology are now encouraging the submission of disks of accepted manuscripts for computerized editing. The following criteria must be met: 5¹/₄-inch, low-density disks preferably using WordPerfect (or other DOS-formatted software) done on an IBM-PC or compatible. Once accepted, please forward your disk containing the entire manuscript (title page, text, references, figure legends) with the following information: computer; software package and version; name of file; manuscript title, author(s), and reference number.

For further information, contact Krysia Moore at APS (301/530-7169).

APS member George H. Caughey, MD, Department of Medicine, University of California, San Francisco, was the recipient of the 1989 RJR Nabisco Research Scholars Award.

Michael H. Crawford, MD, formerly at the University of Texas, San Antonio, has been appointed chief, Division of Cardiology, University of New Mexico School of Medicine in Albuquerque.

Corresponding member, Berry Pinshow, PhD, at the Blaustein Institute for Desert Research, Ben Gurion University, Israel, is working in the Department of Zoology, University of Wisconsin, Madison, for the next year.

Glen R. Van Loon, MD, PhD, formerly at the University of Kentucky, has moved to the Billings Clinic, Billings, MT.

Donald L. Bredle, PhD, has accepted a position in the Applied Physiology Research Laboratory at Kent State University.

People and Places notices come almost exclusively from information provided by members and interested institutions. To ensure timely publication, announcements must be received at least *three months* (by the 5th of the month) before the desired publication date. Send all information to Martin Frank, Editor, *The Physiologist*, APS, 9650 Rockville Pike, Bethesda, MD 20814.

Correction

Wilfried F. H. M. Mommaerts' review of Molecular Biology in Physiology (The Physiologist, December 1989, p. 258) contained the following errors: physiological-chemical point of view should read physico-chemical point of view, second language should read secret language, and Dr. Mommaerts belongs to the Departments of Physiology and Molecular Biology not Department of Physiology and Molecular Biology.

APS Members Elected to the French l'Académie des Sciences

Ernst Knobil, PhD, University of Texas Health Science Center, Houston, and Vernon Mountcastle, MD, Johns Hopkins University School of Medicine, were elected to the French l'Académie des Sciences as foreign associates on September 20, 1989. Knobil, whose contributions have been on the physiology of the primate adenohypophysis, was president of APS in 1979 and is chairman of the Long-Range Planning Committee. Mountcastle, who has received many honors for his research on how the brain functions, has been a member since 1949.



Vernon Mountcastle



Ernst Knobil

The National Medal of Science Awards

President Bush presented the National Medal of Science and the National Medal of Technology on Oct. 18 to 27 scientists and engineers for outstanding work in their fields. Of the 19 National Medal of Science awardees, **Roger W. Sperry**, PhD, California Institute of Technology, received the award for his work on neurospecificity, which showed how brain networks for behavior are affected through a system of chemical coding of individual cells, paving the way for fundamental contributions to understanding human nature. Sperry has been an APS member since 1945.

Faculty Research Award

Fitz-Roy E. Curry, PhD, professor and acting chair of the department of human physiology at the University of California, Davis, was awarded the 14th annual Faculty Research Award for his work on capillaries. He received \$15,000 for support of a research fellow and a \$250 stipend. The annual award is in recognition of outstanding contributions to biomedical sciences and medicine through laboratory or clinical research. Curry has been described as being in the forefront of research in microcirculation and microvascular exchange. His laboratory is one of a few in the world doing enhanced image processing with microcirculation.

Hungarian Physiological Society Honors George B. Frank

On the evening of August 27, 1989, at the opening session of the Hungarian Physiological Society in Debrecen, **George B. Frank**, PhD, professor of pharmacology at the University of Alberta, was presented with the Samuel Ratz Medallion and Diploma for his contributions to science and in recognition of his contribution to the development of physiology in Hungary. Frank,

who was elected as an Honorary Member of the Hungarian Physiological Society in 1987, was visiting Hungary as a guest of the society. The following morning, Frank presented a lecture related to his research to the first session of the muscle physiology section of the society. Frank has been an APS member since 1958.



George B. Frank

POSITIONS AVAILABLE

Sabbatical replacement, human anatomy and physiology. The Department of Biology at Southern Oregon State College is seeking a sabbatical replacement to teach human anatomy and physiology for the 1990-91 academic year. The human anatomy and physiology course, with an enrollment of about 150 students each term, has one lecture section (two 90-minute periods each week) and seven laboratory sections each term (twice a week for 90 minutes each meeting). The individual hired will give the lectures, teach three laboratory sections, and supervise prephysical therapy students in the dissection of human cadavers. Experience in cadaver dissection is an absolute necessity for this position. There will be no advising responsibilities or committee assignments.

Southern Oregon State College, with an enrollment of approximately 4,800, is located in Ashland, a town of 16,000 nestled at the base of the Siskiyou Mountains in the Rogue Valley. Effective dates for the position, which requires a Master's or Doctorate degree, will be from September 16, 1990 to June 15, 1991. To apply, send vitae and names and phone numbers or letters from references to Richard E. Welton, Department of Biology, 1250 Siskiyou Boulevard, Ashland, OR 97520-5071.

Naval Research Laboratory. NRL, the Navy's corporate research laboratory, is seeking highly motivated scientists to fill postdoctoral positions for expanding programs in the Center for Bio/Molecular Science and Engineering. The new center was established to conduct multidiscipinary research in biotechnology, and to apply this technology to solve problems of interest to the Navy. Current research areas include studies on the general biophysical chemistry of membranes; use of immunological and receptor-based technologies for biosensor design and engineering; development of blood substitutes; study of archaebacterial lipids and novel glycolipids as models of ultra-stable membranes; examination of the physical properties of thin films and surfaces; development of novel microwave devices, ultramicroelectrodes, and electron emitters based on metallized tubule composites; molecular self-assembly of submicron-sized particles; and interdisciplinary projects in nanometer-scale patterning of solid substrates. For more information, please contact: Dr. Joel Schnur, Code 6090, Naval Research Laboratory, Washington, DC 20375-5000. Phone: (202) 767-3344.

Positions Available

There is a \$25 charge per issue for each position listed. A check or money order payable to the American Physiological Society must accompany the copy. Purchase orders will not be accepted unless accompanied by payment. Ads not prepaid will not be printed. Copy must be typed double-spaced and limited to 150 words. All copy is subject to the editorial policy of The Physiologist. EOAAE indicates Equal Opportunity/Affirmative Action Employer and appears only where given on original copy. Copy deadline: copy must reach the APS office before the 15th of the month, 2 months preceding the month of issue (e.g., before February 15 for the April issue). Mail copy to APS, 9650 Rockville Pike, Bethesda, MD 20814.

OPINION

To the Editor

I have just read your editorial, "A Question Worth Asking?," in the October issue of The Physiologist. I agree with your idea of eliminating the salary of principal investigators from research grants with the exception of summer salaries for the investigators who are not on 12-month appointments. I believe this proposal would change the face of the research-graduate education enterprises in the United States for the better. Even though there would be a period of "upheaval" in the "National Universities"-those with a substantial number of faculty on soft money-the long range benefits to the country would be enormous. The improvements might even be of such a magnitude as to induce young people into making their careers in one of the basic health sciences and help us maintain whatever competitive edge we have in the scientific domain.

> Robert L. Isaacson Department of Psychology SUNY at Binghamton

Advances in Comparative Environmental Physiology. I. NaCl Transport in Epithelia

R. Greger (editor)

New York: Springer-Verlag, 1989, 321 pp., illus., index, \$89.50

One of the most fundamental requirements of animal cells is the ability to regulate cell volume and solute transport. The mechanisms for NaCl transport in epithelia are numerous and frequently appear disparate, yet features can be found in the mammalian kidney that are also present in the gills of invertebrates. Thus it is appropriate, as noted by the editor, to "search for elements common to several epithelia." Such a purpose is in keeping with the aim of this new series "to provide comprehensive, integrated reviews giving sound, critical, and provocative summaries of our present knowledge in environmental and comparative physiology." The text is divided into eight chapters, each written by one or more authorities.

Chapter 1 examines NaCl transport in gills and related structures. Drs. A. Péqueux, R. Gilles, and W. S. Marshall discuss the morphological changes that occur with adaptation to fresh water and review the mechanism of NaCl transport, including the role of membrane-bound ATPases and the significance of carbonic anhydrase. A highly interesting section examines the role of metabolism in NaCl transport.

In Chapter 2, Dr. G. A. Gerencser reviews Na⁺ and Cl⁻ transport across the invertebrate intestine. This chapter examines studies using anion-sensitive and voltage-sensitive microelectrodes in the *Aplysia* species. Additional work on anion-stimulated ATPase activity and Cl⁻ transport in membrane vesicles is also reviewed.

Chapter 3, by Drs. J. A. Groot and R. Bakker, provides an overview of NaCl in the vertebrate intestine. The chapter deals with osmotic water flow and transport in leaky epithelia. Particular reference is made to the paracellular pathway, its selectivity, and its influence by transpithelial potentials. Experimental approaches to the study of ion transport are covered, including short-circuit current, microelectrodes, and apical and basolateral membrane vesicles. The plasticity of transport functions in the intestinal epithelium is considered and there is an informative discussion of equivalent circuit analysis under short-circuited and open-circuit conditions. The authors also review the issue of active Cl⁻¹ transport and its coupling to Na⁺¹ transport.

In Chapter 4, Dr. F. Lang examines NaCl transport in the kidney and provides an overview of the mechanisms of NaCl transport in the vertebrate nephron. The discussion proceeds anatomically from the proximal tubule to the collecting duct and contains an extensive section on the hormonal modulation of renal tubular NaCl transport.

Dr. E. H. Larsen reviews NaCl transport in amphibian skin in Chapter 5. Results of studies examining Na⁺, K⁺, and Cl⁻ transport are reviewed. The chapter contains a clear discussion of permeability measurements, Cl⁻-Cl⁻ exchange diffusion, and active transport.

Dr. M. J. Welch describes NaCl transport in the tracheal epithelium in Chapter 6. He provides a careful description of both the cell type involved in Cl⁻ secretion and the mechanism of Cl⁻ secretion, including the factors that are responsible for Cl⁻ entry at the basolateral membrane and for Cl⁻ exit at the apical membrane. The mechanism of Na⁺ absorption is also discussed and the author devotes considerable attention to the factors that regulate Cl⁻ secretion. This chapter reviews both the similarities and the differences between Cl⁻ transport in the trachea and other Cl⁻ secretory epithelia.

Chapter 7, by Drs. E. Schlatter and R. Greger, examines the mechanism of NaCl transport in salt glands, with particular attention to the shark rectal gland and the nasal salt gland of birds. The authors emphasize the strengths and limitations of each model system. The section on salt glands in reptiles provides a particularly

informative comparison between the salt gland of birds and the reptilian counterpart.

Dr. L. G. Palmer reviews the regulation of NaCl transport in tight epithelia in Chapter 8. This is an appropriate final chapter because it emphasizes the similarities rather than the differences in NaCl transport in tight epithelia. The chapter is unique in its organization: the author considers the factors that regulate transport based on the temporal importance of their effect.

This monograph provides a nice overview of NaCl transport in a diverse group of epithelia. The volume fulfills the intent of the editors, emphasizing the elements that are common to a variety of transport processes and demonstrating the insight one can obtain from different systems. The references are generally authoritative and current. I would strongly recommend this volume to investigators who are seriously interested in epithelial transport. Dr. Greger and his colleagues are to be commended for providing in one volume such a wealth of information.

> Charles S. Wingo Department of Medicine and Physiology University of Florida

Animal Warfare: The Story of the Animal Liberation Front David Henshaw London: Fontana, 1989, 202 pp., illus., index, £3.99

British television journalist David Henshaw has put together a paperback book that outlines in general terms the history of the Animal Liberation Front in Great Britain, thus giving the outside world for the first time a glimpse into one faction of this shadowy group of international terrorists who have taken credit for vandalizing animal facilities and destroying millions of dollars in property.

Considering the secrecy in which ALF operates, both in Great Britain and the United States, the book provides only a rough-hewn view of the underground organization. Henshaw's insights into the activities of ALF and the people it attracts are interesting portraits. And some of the quotations cited are chilling, not the least of which are quotations from John Beggs ("If a scientist died, I wouldn't lose a great deal of sleep") and Tim Daly ("It's a war—and in a war you have to take up arms, and people will get killed").

The ALF roots in Great Britain go back much further than the ALF faction in the United States, which made itself first known in December 1982 with break-ins at Howard University, the University of Florida, and the Bethesda, MD, National Naval Medical Center. In Great Britain, ALF was born in 1976, an offshoot of a group established in 1962 as the Hunt Saboteurs Association, later known as the Band of Mercy until it was rechristened ALF.

Although the book itself is somewhat disappointing in that it does not (probably because the author could not) go much beyond the superficial layers of ALF, it is a book that may be important to its American readers because it gives a history of how ALF has grown and moved into more violent activities as a way to achieve its goal of having society adopt a new set of beliefs that would grant rights to all animals.

The pattern of ALF's development in the United States seems to parallel ALF's development in Great Britain. We already have had the arson of buildings and the threat of assassinations. Can letter bombs be far behind?

NIH NEWS

Study Shows World Gains from US Training Aid to Foreign Scientists

A unique program to train young foreign scientists in the United States has had farreaching effects on health sciences research throughout the world, a new study shows.

For more than 30 years, with a relatively small federal investment, more than 2,500 foreign scientists have come to the United States as International Research Fellows (IRF) to study with leading scientists at top US research institutions.

Now, health sciences research is reaping dividends from the program, according to a study prepared for the Fogarty International Center for Advanced Study in the Health Sciences, the international division of the National Institutes of Health (NIH), which administers the program.

The study shows that, of the foreign scientists surveyed (those who obtained advanced research training in the IRF program between 1958 and 1982), a substantial majority have achieved successful research careers in academia in their home countries. Many also play a substantial role in determining their nations' science policies. For example, a former IRF from Uruguay later became Director of the Primary Health Care Program of that country's Ministry of Public Health. Another is chief scientific chairman of Israel's Medical Research Administration.

These scientists have become accomplished researchers (more than 90% have published articles in worldwide journals and presented papers at international conferences) and, in doing so, have created additional international collaborative opportunities for US and foreign scientists.

The study, entitled "Scientific and Professional Accomplishments of Former International Research Fellows," was conducted by CHI Research/Computer Horizons, Haddon Heights, NJ, and Abt Associates, Inc., of Cambridge, MA, under contract to the Office of Planning and Evaluation of the Fogarty International Center. The study was designed to measure the effectiveness of the IRF program and to determine its future needs.

Congress established the IRF program in 1958 to promote international cooperation in biomedical research by providing postdoctoral grants to promising foreign scientists to study at US institutions in the early years of their research careers.

More than 2,500 scientists from 51 countries in Europe, Canada, Asia, Latin America, the Middle East, and Africa have received advanced research training for one to two years under the program at a total cost of \$50 million. The five universities most frequently selected for their research training and collaboration were Harvard University, the University of California at San Francisco, the University of California at Los Angeles, Stanford University, and Johns Hopkins University.

At the time of their IRF experience, most respondents were between 30 and 34 years old and held MD degrees, although the more recent recipients have tended to hold both PhD and MD degrees. Western Europe or Canada was home to 55% of respondents; Asia and the Pacific, 20%; Latin America, 16%; the Middle East, 6%; and Africa, 3%.

The most common fields studied during IRF terms were in the biomedical sciences (biochemistry, molecular biology, and physiology) and clinical medicine (neurology, neurosurgery, and endocrinology).

The respondents credited the IRF program for having directly contributed to important research and clinical achievements in their careers, including having stimulated their research to new or different directions, and having advanced their research through collaboration or close cooperation with US research teams.

What fellows took home with them differed according to where they are from. Fellows from developed countries tended to strengthen relationships between their countries' scientific institutions and the United States, to have contributed to research programs of their US hosts, and to have planned future collaborations with US scientists.

Fellows from developing countries were more likely to have learned US experimental techniques or research methodologies and to have made significant contributions to biomedical research and health care in their home countries.

Five major types of scientific achievements were reported by one-third or more of the fellows: introducing new equipment, techniques, or diagnostic procedures to their home countries; establishing new scientific or public health entities; providing solutions to worldwide basic research problems; contributing to local or regional clinical research; and developing new research techniques. An IRF from Brazil, for example, helped establish a new university's science policy in his home country; other former IRFs started nuclear medicine departments in Austria and Finland.

The study also found that most fellows (91%) returned to their countries of nomination for otheir first jobs after IRF-supported postdoctorate study, and three of four remained there. The majority (70%) assumed academic careers, and almost half achieved the rank of professor. At the first job after the postdoctoral experience, former IRFs devoted 70% of their time to research, primarily in basic research.

As an Argentine participant put it, "It allowed a quantum jump in my understanding of scientific problems." The selection of about 100 fellows a year is now accomplished through nominating committees in home countries, with scientific reviews being conducted by an NIH study section. The recommendation for final approval comes from the Fogarty Center's Advisory Board.

For more information about the study, contact: Dr. Coralie Farlee, Assistant Director for Planning and Evaluation, Fogarty International Center, Bldg. 38A, Rm. 609, National Institutes of Health, Bethesda, MD 20892. Phone: (301) 496-1491.

NAS Primer

The National Academy of Sciences (NAS) is distributing a 22-page booklet, titled On Being A Scientist, which discusses professional standards in science for young researchers. The booklet explains the nature of science and responsibilities of researchers, such as sharing data and assigning credit to scientists in journal articles. The NAS decided to prepare the booklet because of the growing attention to the importance of scientific integrity in research. Although the NAS is distributing some free copies to graduate schools in science, others may obtain copies from the NAS Press, 2101 Constitution Ave. NW. Washington. DC 20418 (\$5 for a single copy, \$4 each for two to nine copies, or \$2.50 each for 10 or more copies).



Scientific Meetings and Congresses

Tuberous Sclerosis and Allied Disorders, New York Academy of Sciences, Hyatt Regency, Bethesda, MD, April 23-25, 1990. *Information:* Conference Dept., New York Academy of Sciences, 2 East 63rd St., New York, NY 10021. Phone: (212) 838-0230; FAX: (212) 888-2894.

Scientific Conference on the Structure and Function of Ion Channels in the Heart and Vascular System, Knickerbocker Hotel, Chicago, May 8-11, 1990. *Information:* American Heart Association, Scientific Conf. on the Structure and Function of Ion Channels in the Heart and Vascular System, 7320 Greenville Ave., Dallas, TX 75231.

The Tenth Frontiers of Pharmacology Symposium, "Clinical Pharmacology in Space," NASA Johnson Space Center, Houston, TX, May 10-11, 1990. *Information:* American College of Clinical Pharmacology, 751 Strafford Ave., Ste. 1, Wayne, PA 19087.

Pulmonary Emphysema: The Rationale for Therapeutic Intervention, New York Academy of Sciences, Grosvenor Resort, Orlando, FL, May 16-18, 1990. *Information:* Conference Dept., New York Academy of Sciences, 2 East 63rd St., New York, NY 10021. Phone: (212) 838-0230; FAX: (212) 888-2894.

6th Biomedical Simulations Resource Workshop, "Advanced Methods of Pharmacokinetic and Pharmacodynamic Systems Analysis," Los Angeles, CA, May 18–19, 1990. *Information:* Biomedical Simulations Resource, Univ. of Southern California, Olin Hall of Engineering 500, Los Angeles, CA 90089-1451. Phone: (213) 743-3648.

Molecular Mechanisms of Cellular Growth Symposium, Danville, PA, June 17-21, 1990. *Information:* Howard E. Morgan, MD, Senior Vice President, Research, Geisinger Clinic, Danville, PA 17822-2601.

Molecular and Cellular Mechanisms of Alcohol and Anesthetics, New York Academy of Sciences, Univ. of Calgary, Alberta, Canada, June 25-28, 1990. *Information:* Conference Dept., New York Academy of Sciences, 2 East 63rd St., New York, NY 10021. Phone (212) 838-0230; FAX: (212) 888-2894.

Atmospheric Oxygen Variation Through Geologic Time, Earth System Science Center Workshop, Pennsylvania State Univ., July 16-20, 1990. *Information:* Earth System Science Center, 512 Deikei Bldg., Pennsylvania State Univ., University Park, PA 16802. Phone: (814) 865-1073; FAX: (814) 865-3191. Special Topics in Medical Magnetic Resonance Workshop, Whistler, British Columbia, Canada, July 23-27, 1990. *Information:* Dr. P. Nicholls, Dept. of Biological Sciences, Brock Univ., St. Catharines, Ontario L2S 3A1, Canada. Phone: (416) 688-5550, ext. 3828; FAX: (416) 688-2789.

Muscle Contraction, Seattle, WA, July 23-27, 1990. *Information:* G. H. Pollack, Bioengineering, Univ. of Washington, Seattle, WA 98195. Phone: (206) 535-1880.

The Twelfth International Congress for Electron Microscopy, Seattle, WA, Aug. 12-18, 1990. *Information:* XII ICEM Secretariat, Univ. of Washington, 5001 -25th Ave., NE, GH-22, Seattle, WA 98195. FAX: (206) 545-9359.

International Congress, Molecular Changes by Microwaves, Vienna, Austria, Oct. 26-28, 1990. *Information:* Professor G. Lubec, Univ. of Vienna, Dept. of Paediatrics, Währinger Gürtel 18, A 1090 Vienna, Austria. International Society for Pathophysiology Constituent Congress, Moscow, USSR, May 28-June 1, 1991. *Information:* Dr. Vladimir S. Shinkarenko, Secretary General, Inst. of General Pathology and Pathological Physiology, USSR Academy of Medical Sciences, Baltiyskaya str. 8, Moscow - 315 USSR. Phone: 151.94.40 or 151.95.40.

Regional Meeting of the International Physiological Sciences, Prague, Czechoslovakia, June 29-July 5, 1991. *Informaton:* Secretariat of the Organizing Committee, Regional Meeting of IUPS, Prague 1991, P.O. Box 88, Vítezného února 31, 120 26 Prague, Czechoslovakia.

APS ACCEPTS VISA AND MASTERCARD FOR PAYMENT OF DUES AND SUBSCRIPTIONS

BOOKS RECEIVED

The Regulation of Acid-Base Balance. Donald W. Seldin and Gerhard Giebisch (editors). New York: Raven, 1988, 615 pp., illus., index, \$85.00.

Neuromethods. Vol. 13. Psychopharmacology. A. A. Boulton, G. B. Baker, and Andrew J. Greenshaw (editors). Clifton, NJ: Humana, 1989, 800 pp., illus., index, \$99.50.

Outflow of Cerebrospinal Fluid. Flemming Gjerris, Svend Erik Borgesen, and Per Soelberg Sorensen (editors). Copenhagen: Munksgaard, 1989, 416 pp., illus., index. (Proc. of Alfred Benzon Symp. 27, Copenhagen, 1988).

The Comparative Physiology of Regulatory Peptides. Suzanne Holmgren (editor). New York: Chapman and Hall, 1989, 380 pp., illus., index, \$85.00.

Preventive Cardiology. Eugeni I. Chazov and Raphael G. Oganov (editors). Transl. by Elliott B. Urdang. CT: International Universities Press, 1989, 296 pp., illus., index, \$40.00.

The 1989 Neuro-Computing Bibliography (6th ed.). Casimir C. Klimasauskas (editor). Cambridge, MA: MIT Press, 1989, 624 pp., index, \$55.00.

Fetal and Neonatal Measurements III. Gerhard Gennser, Karel Marsal, Nils Svenningsen, and Kjell Lindstrom (editors). Sweden: Malmo, 1989, 547 pp., illus., index. (Proc. of the Third International Conf. on Fetal and Neonatal Physiological Measurements, Sweden, 1988).

Progress in Applied Microcirculation. K. Messmer and F. Hammersen (editors). Vasomotion and Flow Modulation in the Microcirculation (series, vol. 15). M. Intaglietta (editor). Basel: Karger, 1989, 102 pp., illus., index, \$52.00.

The Return of Blood to the Heart: Venous Pumps in Health and Disease. A. M. N. Gardner and R. H. Fox (editors). London: John Libby, 1989, 184 pp., illus., index, \$49.00.

Molecular Mechanisms of Alcohol: Neurobiology and Metabolism. G. Sun, P. Rudeen, W. Wood, Y. Wei, and A. Sun (editors). Clifton, NJ: Humana, 1989, 408 pp., illus., index, \$74.50.

Method of Animal Experimentation (vol. 7). William I. Gay and James E. Heavner (editors). San Diego, CA: Academic, 1989, 237 pp., illus., index, \$75.00.

Recollections of My Life. Santiago Ramon y Cajal. Translated by E. Horne Craigie with Juan Cano. Cambridge, MA: MIT Press, 1989, 638 pp., illus., index, \$16.95.

APS Sustaining Associate Members

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Establishment of Dollar Limits for Program Project and Specialized Centers of Research

National Heart, Lung, and Blood Institute

Effective with the receipt of applications due after January 1, 1990, the following limitations will apply.

1) New program project and SCOR applications. New applications that are assigned to the National Heart, Lung, and Blood Institute (NHLBI) may request up to \$1.0 million direct costs in the first year with a maximum increase of no more than 4% in each additional year requested in that application.

Requests for special equipment that cause the applications to exceed these limits, however, will be permitted and considered on an individual basis. Applicants should make every attempt to include all equipment in the ceiling amount and to discuss the equipment request with NHLBI staff early in the planning phase of their application. All requests for equipment that cause the application to exceed the limits will require in-depth justification and will be carefully considered throughout the review process. Final decisions will depend on the nature of the justification and the Institute's fiscal situation.

2) Competing renewal program project and SCOR applications. Competing renewal applications may request up to \$1.0 million direct costs, or a 10% increase over the recommended amount shown on the award statement for the last noncompeting year, whichever is greater, with a maximum increase of no more than 4% in each succeeding year. The same policy regarding equipment that is stated above applies to competing renewals. Applications that exceed these limits will be returned to the applicant. These guidelines also apply to all other NHLBI Center mechanisms.

Questions about these new policies may be directed to: Ronald G. Geller, PhD, Director, Division of Extramural Affairs, National Heart, Lung, and Blood Institute, National Institutes of Health, Westwood Building, Room 7A/17, Bethesda, MD 20892. Phone: (301) 496-7416.

Professional Women and Minorities: A New Data Report

A substantial shortage of natural scientists and engineers may lie ahead unless more women and minorities can be attracted to these fields. A new data report, *Professional Women and Minorities*, delineates the progress of these underutilized groups, and the trends in their participation both at the preparatory and working levels.

Doctoral awards to American minorities continue to be so scarce that the prospect of increasing minority representation on the faculties of America's colleges and universities remains dim. For example, American universities awarded engineering doctorates to only 15 black American men, 37 Hispanic men, and 174 American women of all races in 1988, while 2,089 foreign citizens earned PhD awards in engineering that year. At present production rates, American engineering faculties will continue indefinitely to include many more foreign born faculty than native born minority men or women of any race.

The statistics needed to assess both the attainment of women and minorities in entering the professional labor force and to forecast the probable number and characteristics of persons available for employment in various fields in coming years are provided in more than 300 tables in the eighth edition of Professional Women and Minorities: A Manpower Data Resource Service. This 272-page volume, compiled by Betty M. Vetter, provides a comprehensive statistical picture of yesterday's, today's, and tomorrow's professional workforce in the United States in the natural and social sciences, engineering, arts, humanities, education, and all the professions. Both historical and current data on enrollments and degrees are provided by subfield, and all tables are broken up by citizenship, sex, and/or minority status.

Copies of *Professional Women and Minorities* are available for \$75 to Commission members and \$85 to nonmembers from the Commission on Professionals in Science and Technology, 1500 Massachusetts Ave., NW, Ste. 831, Washington, DC 20005.