Published by The American Physiological Society
Integrating the Life Sciences from Molecule to Organism

The Physiologist

INSIDE

D. Neil Granger

77th President of the APS

D. Neil Granger

I thank the members of APS for the honor and privilege of serving as your 77th President. Like many others, I am indebted to the Society for providing a professional home that has helped to nurture and shape my career as a physiologist. My membership in the APS began shortly after earning my PhD degree and soon thereafter I had an opportunity to become a more active participant in the Society by serving on one of its many committees (Membership). As my involvement in the APS increased over the years, I gained more insight into its diverse programs and developed an appreciation for the unwavering resolve of the APS to transform itself from a good to a great scientific organization. This was particularly evident when I served on the APS Council about a decade ago. Upon returning to the Council meetings over the past year, I was greeted by some familiar faces and struck by the realization that many of the issues (e.g., publications, meetings, the animal rights movement) that were hotly debated by Council a decade ago remain a source of discussion today. This is not entirely unexpected in view of the fact that these very issues represent the engines that drive the organization towards a mission stated by our progenitors as "to promote the advance of Physiology and to facilitate the personal intercourse between Physiologists." The challenges of and threats to this mission have not changed significantly since the APS was in its infancy; the challenges/threats are merely manifested differently and are largely reflective of evolving societal values, government policies and technological developments. Hence, while the problems remain largely the same today, they certainly appear more complex and require solutions that are in keeping with the times.

The effectiveness of our organization in dealing with the evolving challenges and threats within the biomedical community has earned the APS a reputation for leadership and vision. We have been fortunate to have great leaders who helped shape the vision for our future as physiologists and for our Society. The 76 past presidents of the Society have distinguished themselves as selfless leaders who had the professional will to serve as catalysts for change within an organization that is largely responsible for defining the role of physiologists in modern science. Much of the credit for this organization's success also goes to the 72 full-time staff that work each day to execute the vision and implement the programs

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Published bimonthly and distributed by The American Physiological Society

9650 Rockville Pike
Bethesda, Maryland 20814-3991
ISSN 0031-9376

Subscriptions: Distributed to members as part of their membership. Nonmembers in the USA: individuals $60.00; institutions $90.00. Nonmembers in Canada and Mexico: individuals $65.00; institutions $95.00. Nonmembers elsewhere: individuals $70.00; institutions $100.00. Single copies and back issues when available, $20.00 each; single copies and back issues of Abstracts issues when available, $30.00. Subscribers to *The Physiologist* also receive abstracts of the Conferences of the American Physiological Society.

Deadline for submission of material for publication: Jan. 10, February issue; March 10, April issue; May 10, June issue; July 10, August issue; Sept. 10, October issue; Nov. 10, December issue.

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Headquarters phone: 301-634-7118
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Printed in the USA

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and policies of Council and the Executive Committee. Martin Frank has instituted highly effective management practices within the organization and he remains a valued source of innovation and vision for Council. Marty clearly has a knack for identifying talent, as evidenced by his outstanding team of department managers, including Linda Allen (Meetings & Membership), Marsha Matyas (Education) Robert Price (Business), Alice Ra'anan (Public Affairs), Margaret Reich (Publications), and Sue Sabur (Marketing). The exceptional talent of this administrative team and their dedication to meeting the organization's goals and aspirations support the new management principle that "people are *not* your most important asset. The right people are." (3)

One of my first responsibilities as President is to address some of the major challenges presently facing the Society and to summarize how I plan to shape the agenda in the coming year to deal with these challenges. My

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Introducing.....D. Neil Granger

Neil Granger is Boyd Professor and Head of the Department of Molecular and Cellular Physiology at the Louisiana State University (LSU) Health Sciences Center (LSUHSC) in Shreveport, LA. Born in Erath, LA, he attended the University of Southwestern Louisiana, earning the BS in microbiology in 1973. Granger received his doctorate in physiology and biophysics with Aubrey Taylor at the University of Mississippi Medical Center in 1977. His first faculty position was in the Department of Physiology at the University of South Alabama, where he was appointed Assistant Professor in 1977, Associate Professor in 1980, and Professor in 1983. In 1986, he assumed his present position as department head at LSUHSC, where he has also served at the Associate Dean for Research from 1993-2001.

Granger's early research efforts were focused on regulation of fluid and solute exchange in the intestinal microcirculation. His later work centered on the contribution of reactive oxygen species to the microvascular dysfunction that results from reperfusion of ischemic tissues. He demonstrated a link between xanthine oxidase-derived reactive oxygen species, the adhesion of inflammatory cells to vascular endothelium, and subsequent injury to the vessel wall and parenchymal cells in postischemic tissues. This led to his work on defining the factors that regulate leukocyte-endothelial cells in the intact microcirculation in different models of acute and chronic inflammation. Granger's current studies focus on mechanisms that underlie the exaggerated inflammatory and pro-thrombogenic responses in the microvasculature of postischemic tissues, and how risk factors for cardiovascular disease influence these responses. His research has been continuously funded by the National Heart Lung and Blood Institute since 1980, and he has been principal investigator of a Program Project Grant from the National Institute of Diabetes and Digestive and Kidney Diseases since 1991.

Granger has authored or co-authored over 400 research papers, many of which have appeared in the *American Journal of Physiology*. He currently serves on the editorial boards of the *Heart & Circulation*, *GI & Liver*, and *Cell* sections of the *American Journal of Physiology*, as well as *Circulation Research*, *Microcirculation*, *Shock*, *Pathophysiology*, *Free Radical Biology & Medicine*, and *Lymphatic Research and Biology*. In addition, he previously served on the editorial boards of *NIPS*, *Gastroenterology*, *Digestive Diseases & Sciences*, *Journal of Critical Care*, and *Microvascular Research*. Granger also served as Associate Editor of the *American Journal of Physiology: GI & Liver* (1985-1991) and as Editor-in-Chief of *Microcirculation* (1999-2003). He was a member of the Clinical Sciences-2 (1983-1986), Cardiovascular & Renal (1987-1991), and General Medicine-A2 (1992-1996) Study Sections and presently serves on the Gastrointestinal Mucosal Pathobiology Study Section. He also served on several peer review panels and policy committees for the American Heart Association, the Research Committee of the American Gastroenterological Association, and the Physiology Test Committee of the National Board of Medical Examiners (1988-1991). Granger served on the Council of the Microcirculatory Society (1982-1985) and as its President in 1991-1992. He was recently elected to serve (2003-2005) on the Council of the Association of Chairs of Departments of Physiology.

Granger became an active member of the APS in 1978. In addition to his editorial service for the *American Journal of Physiology* and *NIPS*, Granger has served on several APS committees, including the Membership Committee (1984-1985), the Animal Care and Experimentation Committee (1985-1988), and the Cardiovascular Section Steering (1983-1986), and Nominating (1991-1996) Committees. He was elected to serve on the APS Council from 1993-1996, and as Secretary/Treasurer of the Cardiovascular Section from 2002-2003. Granger represented the APS on the FASEB Research Conferences Committee (1987-1990) and served as Chair of that committee in 1989-1990. He also served as Chair of the APS Awards Committee from 1995-1997.

Granger has received several awards and honors for his research. These include the APS Bowditch Award, the Distinguished Research Award from the GI Section of the APS, the Landis Award from the Microcirculatory Society, the Laerdal Award from the Society for Critical Care Medicine, the McKenna Memorial Award from the Canadian Association of Gastroenterology, the Dolph Adams Award from the Society for Leukocyte Biology, and the Career of Distinction Award from the Oxygen Society. He was recently designated as a Highly Cited Investigator by the Institute for Scientific Information. ❖

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predecessors have provided insightful commentary and unique perspectives about many of the issues that have dominated the agenda of the APS Council in recent history. I am not able to weigh-in on all of these issues, so I have chosen to focus on those matters that warrant some consideration in the coming year.

Strategic Planning

Historically, the APS has made an effort to promote and encourage the participation of its members in developing a vision for the future of the organization. Members have availed themselves of this opportunity through their Sections and/or through service on Society committees. For many years, planning for the APS was a loosely structured process that was slow to affect major change within the organization. In 1992, the APS held its first strategic planning meeting, the results of which have had a profound effect on the organization's ability to set both short- and long-term goals, to implement new programs (or modify existing ones), and most importantly, to monitor progress towards achieving those goals. A similar strategic planning effort was undertaken in 2000 and it resulted in an equally impressive outline of goals, objectives and action items that guide the current efforts of the APS (1). Recognizing the immense impact that strategic planning has had on our organization, and the ability of changing opportunities and challenges to render such plans dated or obsolete, recent presidents have emphasized the need to continue strategic planning on an ongoing basis (5, 6, 9). Accordingly, **John Williams** has called for the next planning meeting to be held in 2005.

An instrument that has proven invaluable in providing input from as many APS members as possible in the strategic planning process is the member needs survey. The survey was originally designed in 1996 to define the needs of members and to determine whether the Society's various programs are meeting those needs. The member input provided by the first survey was invaluable in the 2000 strategic planning effort, providing quantitative and qualitative data related to member satisfaction and perceived deficiencies in core APS program areas such as scientific meetings, publications, public affairs and education. Stratification of the data according to a variety of demographic factors, including respondent age, gender, professional degree, work environment, APS Section affiliation, etc., allows for an assessment of need for different groups within the Society. The APS staff is working to update the member needs survey in anticipation of the 2005 Strategic Planning meeting. Input on the survey has been solicited from a review group consisting of three members of Council and three members of the Section Advisory Committee. The web-based survey is scheduled for completion in the spring of 2004 and will be distributed to the entire membership shortly thereafter so that the data can be processed and evaluated in time for the Strategic Planning meeting. Given the importance of the information gleaned from this survey, I strongly encourage our members to take this opportunity to make a contribution to the long-range planning process by completing the survey. This will enable the Society to be responsive to your needs and to fulfill your expectations of the organization.

Publications

The APS journals program, with its present portfolio of 14 journals, has enjoyed a long history of excellence and innovation. A number of indicators of journal quality (impact factor), production efficiency (time to print) and interest by authors (manuscript submissions) and readers (hits on website) confirm the continuing success of the publications program. While much concern has been raised about the impact factor for the *American Journal of Physiology* (*AJP*) journals, the latest values for this arguably flawed measure of journal popularity places the *AJP* section journals in the top 10% of all biological journals. Manuscript submissions in the previous year have increased by eight per cent across all APS journals and the time to print publication (from manuscript acceptance to appearance in print) is down to about three and a half months. The transition to electronic publishing has gone very smoothly and the impact of having our journals online is exemplified by the fact that the publications component of the APS website received over 35 million hits last year.

NIPS, which has been a valuable source for short review articles for physiologists and their trainees for nearly 20 years, is changing its name and getting a face-lift. Walter Boron, the new Editor-in-Chief of *NIPS* and his editorial board have proposed (with the approval of APS and IUPS Councils) a change in title of *NIPS* to *Physiology*. The new title more aptly conveys the fact that the journal relates to the discipline of physiology and this change alone may draw more readers to the journal. In addition, *Physiology*, the main body of which will still contain short review-type articles, will also include several new features such as culled abstracts from other important papers, short articles on emerging topics and technologies, reviews of websites and occasional historical perspectives. The new look and content of the journal should broaden the appeal of this valuable component of our publications portfolio. The success of the transformed journal and impact of these changes on the appeal and popularity of *Physiology* are worth following since it may foretell a need to change the way we "package" our other APS journals in order to maintain their competitiveness in the field of science.

An important product of the immense success of our publications program is revenue. Indeed, journals have been the major source of revenue for the APS since 1914 when the Society assumed ownership and management of the *American Journal of Physiology* from its founder, William Townsend Porter. Within a year of its acquisition, the journal generated a surplus of $2,565.76 for the APS (2), which represents in today's dollars (adjusted for inflation) a sum of about $45,000. In 1995, the APS Council mandated that the journals program show a profit margin of 10%. This past year, the income from APS journals totaled approximately $13 million, with operating net revenue of about $1.2 million. These additional funds generated by APS publications are

used to support a variety of other programs and activities of the Society. The heavy reliance of the APS on publications revenue distinguishes it from other organizations that rely nearly equally on revenue generated from its annual meetings and its publications program. For example, the ASCB generates about 35% of its total revenue each year from publications and meetings, while in the Society for Neuroscience, journal revenue accounts for 25% and its meetings for 45% of total revenue (7). A similar distribution of revenue is reported for FASEB. For the APS, meetings represent less than five per cent while publications account for about 85% of the total revenue. This comparative analysis of revenue streams indicates that the health and vigor of the APS is more dependent on the financial success of our publications program than some other scientific organizations and that any threat to this program represents a serious threat to the Society as a whole.

The national and international movement to adopt the concept of open (free) access for online professional publishing may well represent a fundamental threat to the fiscal stability of the Society. This movement is said to have resulted from the rapidly escalating costs of subscriptions to many leading journals produced by for-profit publishers and a desire to provide the general public with free access to scientific reports that were funded by the tax paying public. This issue is gaining much attention in the scientific community and in the lay press. The movement appears to be gaining some traction as evidenced by the introduction of legislation in Congress that would eliminate copyright protection from research funded by the federal government, and the successful efforts of the Public Library of Science (PLoS) to gain the support of a number of scientific organizations and institutions. Some publishers (e.g., Oxford University Press) have announced that they will be experimenting with the open access (author-pays) model as an option for authors in the near future. The APS and FASEB have actively opposed this legislation and the two organizations have staked a position in opposition to the PLoS initiative. The APS journals meet the objectives of the open access model (i.e., available free online to all interested parties) within one year after the articles are available to subscribers. This commitment to innovative and independent publishing practices and to the wide dissemination of information contained in our journals is evidenced by our leadership role in drafting the "DC Principles," which has been signed by more than 45 other not-for-profit publishers representing over 110 journals. In collaboration with Stanford University's HighWire Press, the DC Principles signatories have worked to transform their print journals to online journals that allow the scientific community and the public easy access to nearly 700,000 free full-text articles and the abstracts of over 14 million articles in more than 4,500 Medline journals.

In addition to copyright ownership, an important economic issue related to the concept of open access publishing is the proposed transfer of costs for publications from subscribers to authors. The advocates for open access publishing contend that this new business model would enable researchers living and working in developing countries to have access to the information generated by scientists in wealthy nations. (In reality, the APS and many other not-for-profit publishers have traditionally sent print versions of their journals without charge to institutional libraries in developing countries. As these institutions gain internet connectivity, free online subscriptions are being provided.) However, little attention has been devoted to the issue of how scientists in these developing nations as well as investigators in Europe, Latin American, and Asia will obtain the funds necessary to publish their own work. In the United Kingdom, for example, federally funded grants cannot be used to pay for publications costs. PLoS projects the cost of publishing an open access article to fall in the range of $1,000 to $2,000, but the actual cost projected for publishing such an article in APS journals is somewhat higher. For example, the estimated cost to authors for the average length (10 pages) article published online only (no print version) would range between $1,700 for *Advances in Physiology Education*, $2,500 for *American Journal of Physiology* and $3,700 for *Physiological Genomics*, with 15–25% higher costs projected for the online plus print version of the same articles. These estimates do not include the 10% profit margin currently expected of APS publications.

The present business model used by the APS shares the costs of publication between the authors (page charges, submission fee) and the subscribers. The open access model assigns the cost of publishing entirely to authors and/or through a fee paid by the authors' institution. Other approaches to covering publication costs have also been proposed, including a "micro-payment system for a pay-per view or electronic reprint order/download (two to three dollars)" (4). The APS recently initiated an experiment to determine the level of interest of authors who wish to pay a fee ($1,500) to provide free online access to their article (in *Physiological Genomics*) at the time of publication. The response, thus far, has been modest (<15%) but the initial results demonstrate a willingness of some authors to pay for immediate free access to their published work. Whether authors would continue to choose this option if they had to pay the actual cost of publishing their article (e.g., $3,700 for *Physiological Genomics*) is not clear, but it appears unlikely. While it remains uncertain whether (and to what extent) the APS will have to modify its business plan to cover the costs of publishing its journals in the coming years, this looming potential threat to the major revenue stream for the APS suggests that we should work towards reducing our heavy dependence on profits from publications to support the many programs and activities of the Society.

Scientific meetings

The structure and quality of the annual APS meeting that is part of Experimental Biology (EB) has been a source of much discussion, anxiety and concern for Council and the membership in general. EB remains one of my very favorite scientific meetings and I have missed this meeting only

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once over the past 25 years. The diverse programming that is afforded by a yearly meeting with other member- and guest-societies of FASEB provides a unique opportunity, at a single venue, to fuel my own diverse research interests, which include the microcirculation, oxidative stress, inflammation, and ischemia-reperfusion injury. While the small specialty meetings are ideal for immersion in single topic issues, the larger multidisciplinary meetings have a greater potential to produce an environment that allows for integration of information gained at the molecular, cellular, organ and whole animal levels. Recent efforts to restructure the APS component of the EB meeting have focused on creating a feel for both types of meetings in a single venue. Indeed, the programming of EB has changed rather remarkably over recent years, with the addition of the "meeting within a meeting" format (Physiology InFocus), Section named lectureships, and more symposia, including those dealing with translational research. These efforts to improve and extend APS programming at the EB meeting have made it an even more attractive meeting. Nonetheless, there is a lingering view that the EB meeting does not generate the same level of interest by APS members as in years past and that the scientific quality of the meeting does not measure-up to that of other large scientific meetings that are primarily focused on a single organ system, e.g., American Heart Association (AHA) Scientific Sessions, Digestive Diseases Week (DDW), American Society of Nephrology (ASN).

Attendance records for 1992 to 2000 indicate in most (six of nine) years, 17-19% (representing 1,200 to 1,670 individuals) of the APS membership participated in EB meetings. These numbers are quite similar to the statistics for the EB meeting held in 1983, where 1,534 members (25% of APS membership) attended. In the 2002 and 2003 EB meetings, APS member attendance exceeded 2,000 (2,485 & 2,133) and reflected 23% and 19% of Society membership, respectively. The data indicate that membership participation in the annual Society meeting has remained relatively constant at roughly 20% over the past two decades, with the substantial (80%) increase in Society membership over this same period resulting in a meaningful increase (>2,000 participants) in the actual number of APS members participating in EB.

It remains unclear, however, why only one-fifth of the APS membership chooses to attend our annual meeting each year and whether it is realistic to expect a much larger fraction of the membership to attend in the future. The attendance of APS members at EB compares favorably with other FASEB organizations. For example, the American Society for Pharmacology and Experimental Therapeutics (ASPET) estimates that about 17% of its members have attended its annual meeting over the past few years, while attendance by the American Association of Immunologists (AAI) membership ranges between 16 and 24%, regardless of whether the AAI holds it annual meeting with or separate from EB. The APS should continue with its recent efforts to experiment with novel programming strategies that focus on timely topics with broad appeal to the membership. We should also consider actively recruiting additional guest societies that are willing to meet with us at EB on a periodic basis. This would expose other researchers to our annual meeting and let them know what our meeting has to offer. We should also work harder to improve the prestige of the EB meeting, particularly for our trainees and junior faculty. This is best achieved by enhancing the quality of the science presented at the meeting, not only in symposia and named lectureships, but also in the free (poster and oral) communications. High quality science appears at all levels of programming in the most prestigious meetings. While the existing portfolio of Society- and Section-based awards for outstanding abstracts and presentations certainly helps to promote the submission of quality work by our trainees, more should be done to recognize research excellence in the free communications presented at our annual meeting. The prestigious AHA, ASN and DDW meetings use a peer review process to evaluate and stratify the submitted abstracts based on scientific merit. Such competition for a slot in the program and for recognition in the form of an oral communication fosters the practice of submitting one's best work to these meetings. While the long-held tradition of allowing all submitted APS abstracts to appear on the EB program should be continued, we should consider instituting an evaluation process that enables the Sections to identify and recognize more of the top submitted abstracts and then to highlight these submissions more effectively in the program, either by designating these as oral presentations or as "posters of distinction." If improving the prestige of the EB meeting is an important goal for the Society, then we should be prepared to adopt such a major change in our philosophy about free communications in order to achieve that goal.

The Joint Program Committee has put together an outstanding program for EB'04 and most of the planning for 2005 is already complete. In 2005, the XXXVth International Union of Physiological Sciences (IUPS) will be held (March 31 to April 5) in parallel with EB (April 2-6) in San Diego, CA. The IUPS was last held in the US in 1968. In addition to the normal elements of an EB meeting (e.g., Distinguished Lectures, symposia, featured topics and workshops) there will be several satellite meetings held in proximity to San Diego. The IUPS Congress will increase the participation of foreign scientists on the EB program and will provide an opportunity for the APS to showcase the EB meeting to physiologists who do not ordinarily attend our meetings. I look forward to a record attendance/participation of the APS membership in what should prove to be an outstanding IUPS Congress and EB meeting.

In 1991, the APS began an effort to provide its membership with a series of conferences that focus on specialty topics related to the discipline of physiology. Council originally approved the sponsorship of two APS Conferences per year and it has recently indicated an interest in increasing the number to four per year. Several outstanding specialty meetings have been developed through this program, with one new conference scheduled for 2004

that will focus on translational research related to mechanisms underlying the pathogenesis of inflammatory bowel disease. Despite the rather generous support provided by the APS to organizers of these conferences, which includes $25,000 and a highly qualified and experienced conference planning staff, the number of meeting proposals received by the JPC has been low (one to three per year). The FASEB Summer Research Conferences typically receive between 30 and 38 proposals each year and they offer a less competitive financial package for the Conference organizers ($9,000). With the large number of other conferences (Gordon Research, Keystone) that are also available to the biomedical research community, perhaps the supply now matches or exceeds the demand for new meetings of this type. Alternatively, interest in the APS Conferences to date may reflect the aggressiveness of our pursuit of competitive conference proposals. The FASEB Summer Conferences has a standing committee that is devoted entirely to the identification of new conference topics as well as the recruitment and evaluation of conference proposals. The APS may benefit from adopting a similar strategy to increase the visibility of our Conferences program and to generate additional proposals for an APS Conference. In addition to providing a large number of premier specialty meetings that bear on the discipline of physiology, a robust APS Conferences program has the potential to create another important revenue stream for the Society. The FASEB Summer Research Conferences, for example, generated in excess of $250,000 of net revenue in 2003 and project this revenue to exceed $400,000 in 2004.

Public Affairs

Advocacy for biomedical research and education is a vital role of the APS. The Society's public affairs activities are continuous and varied. The APS continues to take a leadership role in FASEB on animal issues, with one of our most recent efforts directed towards endorsing a legal strategy to counter a movement by animal activists to promote the concept of "personhood" via the judicial system. Inasmuch as animal activists have made little headway in affecting change via the legislative process, the likely battleground of the future between the biomedical community and animal activists is the courts. The APS remains committed to the use of its resources to oppose the effort by animal activists to deprive society of the many advances in health care that result from research on animals.

With the end of the doubling of the NIH budget and the new era of reduced federal spending on biomedical research, advocacy for increased NIH funding will remain a high priority for the APS in the coming year. There appears to be a growing sentiment in Congress that evidence for a substantial return on the recent large investment in NIH is needed before double-digit increases are again realized. Furthermore, Congress is directing much of the small increase in the total NIH budget towards new public health priorities, such as bioterrorism defense and emerging diseases (e.g., SARS, West Nile Virus). The Society, working with FASEB, will need to convince legislators that much has been accomplished as a result of the budget-doubling effort and that progress made from this investment will be lost without additional funding. However, in order to influence Congress on this issue, the membership must take an active role by writing to their elected officials in the House and Senate to request support for increased NIH funding. The Legislative Action Center of the APS website (http://www.the-aps.org/pa/action/) provides useful information about the status of the Federal budget process and tips about how to communicate with Congress on this issue.

Education

The emphasis placed on education by the APS is unique within the community of scientific societies. The Education Department of the APS is actively involved in a variety of activities that facilitate the teaching endeavors of our members, expose students at all educational levels to career opportunities in biomedical research, promotes the participation of minority members and women in the Society, and increases public awareness of the ethical use of animals in research, as well as advancements in health care that are a result of physiological research. The APS has received preliminary notification that it will be recognized for its efforts in the education arena by a Presidential Award for Excellence in Mentoring. The innovative nature of the education programs developed and administered by the APS has resulted in competitive applications for Federal grants that help to support some of these efforts. In order to ensure continued and expanded funding of this outstanding education program, we should explore other opportunities for support from Federal agencies and private foundations.

In recent years, education-related activities have provided an interface for interaction between the APS and the Association of Chairs of Departments of Physiology (ACDP). This fruitful collaboration has resulted in the production of a set of learning objectives for medical physiology courses, and the development of a professional skills document for graduate students and postdoctoral fellows, which is now available on our website (http://www.the-aps.org/education/MedPhysObj/medcor.htm). Efforts are also underway to work with the ACDP to promote and facilitate the development of more undergraduate programs in physiology. Future potential avenues for collaboration between the two organizations should be explored and might focus on efforts to increase the visibility of physiology as a career choice for undergraduates with the ultimate goal of increasing the pool of applicants in physiology graduate programs. There may be some urgency to this issue since it was recently reported that the number of doctoral degrees awarded in physiology between 1993 and 2002 fell by 24%, while PhD degrees granted in other biomedical disciplines fell to a lesser extent (e.g., Pharmacology by three per cent and Microbiology by 12%) or increased (e.g., 78% for Neurosciences and six per cent for Molecular biology) (8). A well-conceived and executed effort to grow the next generation of physiologists is vital to the health and vitality of both the APS and the ACDP.

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Closing

It's an exciting time to be a physiologist and to be part of an organization that has so effectively represented the discipline of physiology. The APS has developed into one of the premier scientific organizations because of the willingness of its leadership and membership to affect change in the goals and programs of the Society as the needs and/or opportunities arise. A growing membership, an outstanding staff, financial stability, and a number of highly successful programs justify optimism for the future of this vibrant organization. While there are existing threats to the health and vigor of the Society, we are well-positioned to respond to, and create opportunities from, these challenges. The upcoming strategic planning effort will afford the membership the opportunity to weigh-in on issues that relate to the effectiveness of the Society in representing and nurturing the discipline of physiology. Your input is important, so please participate in this process. My goal during the coming year and in the strategic planning process is to focus some of the debate on *1*) the threat to the financial stability of the Society posed by open access publishing and the need to lessen the Society's dependence on revenue from the publications program; *2*) affecting change in the Society's annual meeting to recognize excellence in the free communications, and to enhance the overall prestige of the meeting; *3*) increasing the participation of the membership in our advocacy efforts that relate to the funding for research in the physiological sciences, and *4*) developing a strategy to reverse the progressive decline in the enrollment of PhD students in our physiology graduate programs. I look forward to hearing from the membership about how we might best achieve these objectives.

Acknowledgements: I would like to acknowledge Aubrey Taylor, Joey Granger, Matthew Grisham, Tak Yee Aw, Ronald Korthuis, Robert Specian, and Marty Frank for reading drafts of this article and providing their perspectives on the issues addressed herein. I am also grateful to Margaret Reich and Linda Allen for their help in assembling the data presented in the article.

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Election Results

The American Physiological Society announces the results of the election of officers for 2004.

Douglas C. Eaton, Emory University School of Medicine, is the new President-Elect.

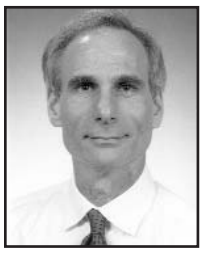
The three newly elected Councillors taking office on April 21, 2004 are **Carole Liedtke**, Case Western Reserve University School of Medicine, **Thomas Lohmeier**, University of Mississippi Medical Center, and **Irving Zucker**, University of Nebraska College of Medicine. The Councillors will serve for three years. ❖

President-Elect

Douglas C. Eaton

Councillors

Carole M. Liedtke



Thomas E. Lohmeier

Irving H. Zucker

Introducing Kevin Kregel

On January 1, 2004, **Kevin Kregel** succeeded **John Stallone** as Chair of the Animal Care and Experimentation (ACE) Committee. Prior to becoming Chair, Kregel was an ACE Committee member for three years and recently completed a three-year term as a Councillor for the Exercise and Environmental Physiology section. He is also currently serving as chair of an ad hoc APS committee charged with the development of a set of guidelines for research involving animals and exercise. He has served as a member of the Editorial Board of the *Journal of Applied Physiology* since 1996 and is currently an Associate Editor of *Exercise and Sport Sciences Reviews*.

Kevin Kregel

Kregel is a Professor in the Department of Exercise Science at the University of Iowa (UI) in Iowa City, IA, and holds a secondary appointment in the Free Radical and Radiation Biology Program in the Department of Radiation Oncology at the UI. He received his doctoral degree in Physiology & Biophysics from the UI in the laboratory of Carl Gisolfi. He then completed a NIH-sponsored postdoctoral research fellowship at the University of Arizona under the direction of Douglas Seals, working closely at that time with the laboratory of Charles Tipton. From 1990 to 1993, Kregel served as a faculty member at the University of Arizona, as well as a visiting scientist at Humboldt University in Heidelberg, Germany in 1992. In 1993, he joined the faculty at the UI and was appointed full professor in 2001.

Kregel's research focuses on the pathophysiological responses to stress, with a primary emphasis on alterations that accompany aging. The guiding hypothesis of his research program is that aged organisms have a reduced ability to cope with environmental stimuli (e.g., hyperthermia, hypoxia) due to an exaggerated production of reactive oxygen species, a blunted stress protein response, and concomitant oxidative damage. Kregel's laboratory uses an integrated physiological approach that includes whole-animal, cellular, molecular, and in vivo gene transfer techniques to pursue basic mechanisms involved in the stress response. Specific studies are addressing mechanistic questions involving the formation of reactive metabolites of oxygen and associated oxidative damage, transcriptional activation of different genes involved in the stress response (e.g., cytokines, stress proteins, antioxidant enzymes), and the impact of biological aging on these responses. Kregel's research has been funded his entire career by NIH, AHA and other sources.

The ACE Committee is charged with overseeing all issues related to the procurement, use and care of animals for research and teaching. The Committee advises the APS Council on actions to take or programs needed in these areas. Other ACE Committee duties include keeping the "*Guiding Principles of the Care and Use of Animals*" up-to-date, as well as staying apprised of legislation and the activities of various public and private groups concerning animal care and experimentation. The ACE Committee also acts as an arbiter for the Publications Committee when questions arise involving experimental procedures and care of animals in submitted manuscripts. As chair of the ACE Committee, Kregel will also be an ex officio member of the Public Affairs Committee of the APS.

There are several projects the ACE Committee will focus on over the next few years. The Committee is currently charged with the oversight of new developments involving animal models in medical and veterinary education and alternatives for animal usage. This project is being conducted in conjunction with the APS Education Committee. There will also be efforts to strengthen APS collaborations with state societies for biomedical research to enhance the Society's effectiveness in congressional advocacy and public outreach. The ACE Committee will continue to monitor issues involving to the management of pain and distress in animal research and related government efforts in this area. A related topic of importance to the APS membership that will be closely followed by the ACE Committee is the current international efforts to "harmonize" laboratory animal welfare requirements, which involves the potential development of science-based guidelines for laboratory animal care and experimentation. These are issues have broad implications for the conduct of science internationally and will certainly have an impact on APS members. ❖

Moving?

If you have moved or changed your phone, fax or Email address, please notify the APS Membership Office at 301-634-7171 or Fax to 301-634-7241. Your membership information can also be changed by visiting the Members Only portion of the APS Website at http://www.the-aps.org.

New Regular Members

***transferred from student membership**

Nawal Abdel-Hay Ahmed
Cairo Univ. Fac. of Science, Egypt
Solange Akselrod
Tel Aviv Univ., Israel
Jens P. Andersen
Univ. of Aarhus, Denmark
Gianfranco Bazzoni
Mario Negri Inst. of Pharm. Res., Italy
Peggy RuthAnne Biga
Marine Biological Lab., MA
Norma A. Bobadilla
National Univ. of Mexico, Mexico
Ivo Florian Brandes
Medical College of Wisconsin
Joseph E. Brayden
Univ. of Vermont
Marcelo Daniel Carattino
Univ. of Pittsburgh, PA
Michael J. Carper*
East Carolina Univ., NC
Felice D'Angillo
Ctr. Biol. Eval. & Res., MD
Frank A. Dinenno*
Colorado State Univ.
Hui Dong
Univ. of California, San Diego
David G. Edwards*
Univ.of New Hampshire
Ali A. Ehsani
Washington Univ.
Mara Ferrandi
Prassis Inst. of Res., Italy
Jeffrey James Fox
Gene Network Sciences, NY
Samara L. Freeman
Univ. of California, Davis
Timothy M. Griffin*
Duke Univ., NC
Mark A. Grobner
California State Univ., Stanislaus
Indra Rani Gupta
Montreal Children's Hosp., Canada
Ali Hafezi-Moghadam*
MA Eye and Ear Infirmary
Susan J. Hagen
Beth Israel Deaconess Med Ctr., MA
Pavel Hamet
CHUM Res. Centre, Canada
Bryan Glen Helwig*
Kansas State Univ.
Greta Lea Hoetzer*
Univ. of Colorado
Giuseppe Inesi
Univ. of Maryland
Eric Allen Johnson
Univ. of Oregon
Andreas Katsiaras
Univ. of Maryland
Sang Hoon Kim
Kyung Hee Univ., South Korea
Heidi Ann Kluess
Medical College of Wisconsin
Michael Lichtwarck-Aschoff
Uppsala Univ., Sweden
Richard P. Lifton
Yale Univ., CT
David Lominadze
Univ. of Louisville, KY
Lawrence J. Mandarino
Univ. of Texas, San Antonio
Cathyryne K.Manner*
US Dept. of Defense Med. Res., DC
Rosalinde Masereeuw
Univ. Med. Ctr. Nijmegen, Netherlands
Constance T. Moore
Howard Univ., DC
Eleni Mylona*
Emory Univ., GA
Gustavo Alberto Nader*
Children's Natl. Med. Ctr., DC
Keith W. Nehrke
Univ. of Rochester, NY
Guiseppe Novelli
Tor Vergata Univ., Rome, Italy
George K. Ojakian
SUNY Downstate Med. Ctr., NY
Kazunobu Okazaki
Inst. Exercise Environ. Med., Dallas, TX
Deborah D. O'Leary
Brock Univ., Canada
Jennifer P. Pons*
Georgetown Univ., DC
Christophe Pouzat
Univ. of Rene Descartes, France
John C. Quindry*
Univ. of Florida
Julie A. Rapps*
Carroll College, WI
Justin S. Rhodes
Oregon Health & Sci. Univ., VA Med Ctr
Barbara M. Sanborn
Colorado State Univ.
Maria Dolors Sans Gili
Univ. of Michigan
Sanjay Sesodia
Barry Univ., FL
John M. Shannon
Cincinnati Children's Hospital, OH
Hye-Won Shin
Univ. of California, Irvine
Keith Snyder
Southern Adventist Univ., TN
Inna Sokolova
Univ. of North Carolina, Charlotte
Zhilin Song*
Univ. of Colorado
Scott Alan Spier*
Univ. of Texas, Tyler
Sang-Hoon Suh
Univ. of California, Berkeley
John David Sweatt
Baylor College of Med., TX
Katalin Szaszi
Toronto General Hospital
Thomas M. Talavage
Purdue Univ., IL
Leslie P. Tao*
Univ. of California, Los Angles
Nikolaos Tsoukias
Florida International Univ.
Aria Tzika
Massachusetts General Hosp.
Jian Wang
Johns Hopkins Univ., MD
Fredric S. Young
Chroma Graphics Inc., CA
Mei Zhang
Virginia Commonwealth Univ.
Peng Zhao
Yale Univ. Sch. of Med., CT
Jianguo Zhuang
Lovelace Resp. Res. Inst., NM

New Student Members

Adam R. Anker
Univ. of Pittsburgh, PA
Casey J. Armstrong
Univ. of Colorado
Jill Ann Bell
Univ. of Southern California
Meghan L. Boucher
Univ. of Colorado
Jing Cao
Tufts Univ., MA
Guoli Chen
Indiana Univ.
Myung Dong Choi
Ball State Univ., IN
Linda Haiwon Chung
Univ. of Massachusetts
Graeme L. Close
Univ. of Liverpool, UK

Jarrod B. Collings
Louisiana State Univ.
Dongying Cui
Pennsylvania State Univ.
Nicolas Darcel
Univ. of California, Davis
Hai Kim Diep
Univ. of Calgary, Alberta
Joshua David Dowell
Indiana Univ.
Omar Atef El-Mounayri
Indiana Univ.
Darin James Falk
Univ. of Florida
Leonardo F. Ferreira
Kansas State Univ.
Maelanie Maka Galima
California State Univ., Long Beach
Margaret J. Gutilla
Ohio State Univ.
Maria M. Herrera
Henry Ford Health Systems, MI
Yessica Herrera-Guzman
Hosp. European Georges Pompidou, France
Jason M. Hoffman
Louisiana State Univ.
Basheer Khadaroo
Observatoire Oceanologique Banyuls, France
Anup L. Kundu
Tokyo Inst. of Tech., Japan
Angelia Denise Lockett
Indiana Univ., Purdue
Kevin D. Luykenaar
Univ. of Calgary, Alberta
Leonardo J. Magnoni
Univ. of Ottawa, Ontario
Daniel J. Malone
Temple Univ., PA
Allison L-C Marciszyn
Carnegie Mellon Univ., PA
Shawna M. McBride
Univ. of Wyoming
Andrea S. Oriolo
Univ. of Miami, FL
Mauricio R. Padilla
Centro Inv. Y Edu Para La Salu, Mexico
Beth A. Parker
Pennsylvania State Univ.
Michael A. Pascoe
Univ. of Colorado, Boulder
Son Minh Pham
Temple Univ., PA
Matthew R. Richardson
Indiana Univ.
Eric J. Rodenberg
Indiana Univ.
Zabeena P. Shaik
Univ. of Arkansas
Himani Sharma
India Inst. of Med. Sciences
Najeeb A. Shirwany
Univ. of Oklahoma
Grant H. Simmons
Univ. of Oregon
Michael W. St. Andre
Rensselaer Polytechnic Inst., Troy, NY
Oleksand E. Stakhovskyy
Kiev Medical Univ., Ukraine
Andrew B. Strawbridge
Indiana Univ.
Edna S. Suarez-Castillo
Univ. of Puerto Rico
Flaubert Tchantchou
Univ. of Massachusetts, Lowell
Analisa D. Thompson
Meharry Medical College, TN
Caitlin S. Thompson
Pennsylvania State Univ.
Hidejiro Urakami
Louisiana State Univ.
Darin Lee Van Gammeren
Univ. of Florida
Gary P. Van Guilder
Univ. of Colorado, Boulder
David Vigerust
Vanderbilt Univ., TN
Joseph M. Warpeha
Univ. of Minnesota
Christopher M. Westerkamp
East Carolina Univ., NC
Jan M. Williams
Medical College of Georgia
Oriana Hoi Yun Yu
Univ. of Calgary, Alberta
Symeon V. Zannikos
Univ. of Texas, Austin
Jian Zhang
Texas Tech. Univ.
Sarah L. Zimmerman
Univ. of Dayton, OH

New Affiliate Members

Deepak Chandramohan
St. Kitts, West Indies
Dwain D'Souza
Lousiana State Univ.
Meyer D. Lifschitz
Jerusalem, Israel
Ronald W. Palmer
US Army Med. Material Dev. Activity
Fort Detrick, MD
Ilie S. Racotta
CIBNOR, Mexico
John O. Ranker
Univ. of Cincinnati, OH
Ravi Madhi Reddy
St. Kitts, West Indies
Melina Silberberg
Univ. of New Mexico
Ron Squyres
Houston, TX
Yoo Young-Joo
Seoul, South Korea

Recently Deceased Members

Samuel B. Barker
Birmingham, AL
Carl J. Bentzel
Greenville, NC
Robert G. Boutilier
Cambridge, England
Richard D. Bukoski
Durham, NC
Marie T. Dimond
Washington, DC
Howard A. Eder
Bronx, NY
Charles W. Foreman
Sewanee, TN
M. Jack Frumin
Menlo Park, CA
Donald R. Griffin
Bedford, MA
Burton Horowitz
Reno, NV
T. Richard Houpt
Ithaca, NY
Ernst G. Huf
Newton, MA
Charles J. Imig
Iowa City, IA
George J. Jacobs
Montgomery, PA
Sherman Kupfer
New York, NY
Martin G. Larrabee
Glen Arm, MD
Louise H. Marshall
Los Angeles, CA
Malcolm B. McIlroy
Healdsburg, CA
Andrew P. Somlyo
Charlottesville, VA
Louis B. Speck
Glenwood Springs, CO
Paul D. Sturkie
East Brunswick, NJ
Alan Tucker
Fort Collins, CO
Nadine Wilson
Penticton, BC, Canada

Topic Search: Cutting Large Keyword Searches Down to Size

This issue of *The Physiologist* brings you yet another brief introduction to the helpful features you may find on the HighWire Library of the Sciences and Medicine's Portal site. You may use the portal features when looking up any of the papers on the APS journals' sites or any of the over 350 outstanding scientific journals that are hosted online by HighWire Press. The Portal is at http://highwire.stanford.edu.

Searching for an article that covers several topics in combination is one of the hardest things to do in most keyword-search systems. And when you search on a keyword and find that it describes astronomical features as well as biological ones (e.g., "mercury") you would like to be able to select only the portion of your result that has to do with your topic. It just got easier to do these things with the HighWire Portal's new concept search feature, called Topic Search.

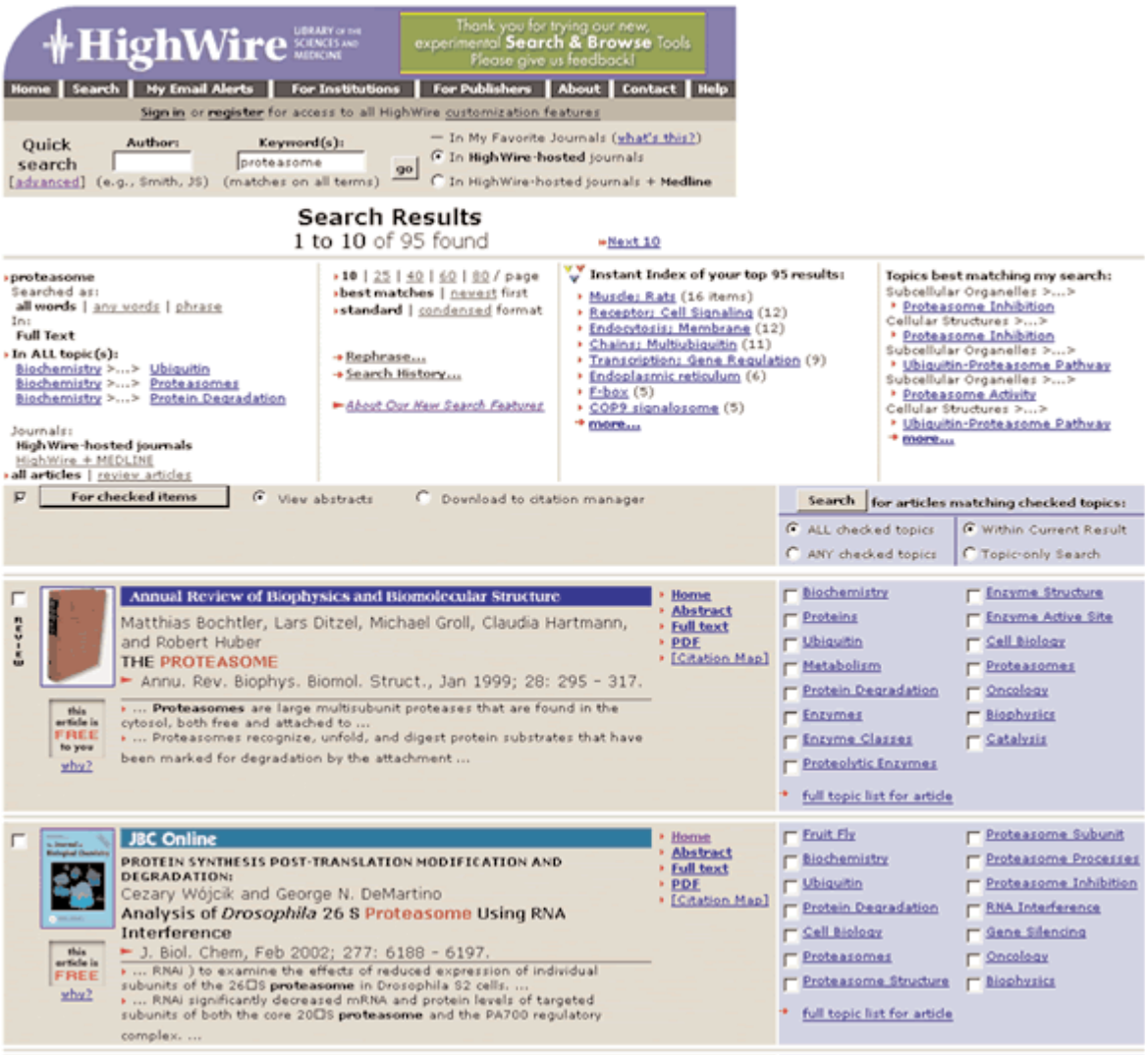
How Concept Search Works: Start with a Keyword as a "Seed"

Searching for topics can be hit or miss in some systems. After all, how do you know what concepts or topics to search for? In the HighWire Portal you start a topic search with a keyword search that will find *some* of the articles you would like to see: whenever you do a keyword search, your search results show you what topics the resulting articles are indexed under. You can then easily use the topics shown—individually or in combination—in a topic search with just a few clicks. You can subset your keyword search to retain only articles about certain concepts or you can start a new search based entirely on combinations of concepts in an article.

Example: Concept Search at Work

Suppose you are interested in ubiquitin-mediated degradation by the proteasome. You begin a concept search by planting a seed: you could do a keyword search for articles that have *all* the words "ubiquitin-mediated degradation by the proteasome"; zero result is not surprising. But a keyword search for *any* of those words finds almost 5 million items! The top items in the result—thanks to "relevance ranking"—are good ones to use as seeds in a concept search, though. But, perhaps best, a simple keyword search on the word "proteasome" retrieves "only" about 12,000 items.

Figure 1.



Let's start with this last result as the seed for searching by concept.

Notice the blue, rightmost column of the search result page shown here—you can narrow or widen your browser window depending on whether you want to see the topics. Here we see a selection of the topics that each article is filed under. We are going to check the boxes for the topics that match the concepts we are interested in: Ubiquitin, Protein Degradation, and Proteasomes.

Then click on the Search button toward the top of this rightmost column. First choose options for ALL topics (meaning that each article in the new result must contain all three checked topics) and Within Current Result (meaning that our keyword search result on "proteasome" will be reduced, refined, and limited to the three topics we have chosen.

The new result is "only" 233 articles, but each of these articles has something to say about all of these three topics.

Notice that the first article is a review article covering these topics. With the "one click" options described in an earlier article in this series, you can quickly limit the result to review articles only, or to the top-ranked HighWire-hosted articles (for which full text is likely to be online), or sort the results so that the newest articles are first. You can even further narrow your topic search by checkmarking more topics and clicking the Search button again.

The Limitations of Concept Searching

Concept search is a good way to "find what you are missing" when you have been relying on the more traditional author and keyword searches. It is good to pair it alongside other exploration tools like Citation Map and Instant Index (both described in previous articles in this series), and MatchMaker (described in an upcoming article).

You should not use concept search as your *only* tool when you need to conduct an exhaustive review of a topic. Although the "taxonomy" of concepts is extensive—there are almost 30,000 concepts that are indexed—and was developed and tested by working scientists and editors using a real-world scientific and medical vocabulary, the actual assignment of individual articles to specific topics is done by computer programs. (The programs analyze text in articles and extract concepts by looking for frequent phrases that match the phrases that editors have said are associated with the topics.) The computer assignment is generally very reliable but not perfect: a few topic assignments are made that shouldn't be, and a few are not made that should be. We are sure you will spot some of each!

We welcome suggestions for improvement from you whenever you see an error or omission. It's always a work in progress! Just click the Contact button to send us a pointer to an article we should analyze further. ❖

DC Principles

On March 16, 2004, the American Physiological Society, along with 47 other leading scientific, health and medical organizations representing over 600,000 scientists and physicians, held a press briefing to offer their response to advocates of "open access" to science. The participating organizations publish 380 journals per year and have collectively archived over 800,000 articles on their journal web sites with over half of the articles available at no cost to the reader.

The Washington DC Principles for Free Access to Science grew out of discussions the signatories have been having since 1996 about how best to enhance the experience of readers who use our online journal content. By last fall, however, these organizations began to wonder if the voice of small, not-for-profit publishers could be heard above the noise being generated by advocates of open access publishing, and concerns over the high subscription prices charged by commercial publishers. Against this backdrop it was decided that we could—and should—be heard.

As indicated during the press briefing, proponents of the DC Principles see their mission as one which maintains and enhances the independence, rigor, trust, and visibility that have established not-for-profit scholarly

The panelists for the press briefing on the DC Principles included Alice Villalobos, Karin Wittenborg, William Rosner (front row); and John Iglehart, Robert Wells, Martin Frank (back row).

DC Principles

WASHINGTON, DC. As scholarly, not-for-profit publishers, we reaffirm our commitment to innovative and independent publishing practices and to promoting the wide dissemination of information in our journals. Not-for-profit scientific, technical, and medical publishers are an integral part of the broader scholarly communities supporting scientists, researchers, and clinicians. We work in partnership with scholarly communities to ensure that these communities are sustained and extended, science is advanced, research meets the highest standards, and patient care is enhanced with accurate and timely information.

We continue to support broad access to the scientific and medical literature through the following publishing principles and practices:

1. As not-for-profit publishers, we see it as our mission to maintain and enhance the independence, rigor, trust, and visibility that have established scholarly journals as reliable filters of information emanating from clinical and laboratory research.

2. As not-for-profit publishers, we reinvest all of the revenue from our journals in the direct support of science worldwide, including scholarships, scientific meetings, grants, educational outreach, advocacy for research funding, the free dissemination of information for the public, and improvements in scientific publishing.

3. As not-for-profit publishers, we have introduced and will continue to support the following forms of free access:

Selected important articles of interest are free online from the time of publication;

The full text of our journals is freely available to everyone worldwide either immediately or within months of publication, depending on each publisher's business and publishing requirements;

The content of our journals is available free to scientists working in many low-income nations;

Articles are made available free online through reference linking between these journals;

Our content is available for indexing by major search engines so that readers worldwide can easily locate information.

4. We will continue to work to develop long-term preservation solutions for online journals to ensure the ongoing availability of the scientific literature.

5. We will continue to work with authors, peer-reviewers, and editors for the development of robust online and electronic tools to improve efficiency of their important intellectual endeavors.

6. We strongly support the principle that publication fees should not be borne solely by researchers and their funding institutions, because the ability to publish in scientific journals should be available equally to all scientists worldwide, no matter what their economic circumstances.

7. As not-for-profit publishers, we believe that a free society allows for the co-existence of many publishing models, and we will continue to work closely with our publishing colleagues to set high standards for the scholarly publishing enterprise.

For more information, see http://www.dcprinciples.org.

journals as reliable filters of information emanating from clinical and research laboratories.

Since the late 1990s, these not-for-profit publishers have sought to make the content of their journals as accessible as possible to their members, the scientific community and the public within the framework of their business models. In some cases, that meant that content was freely available almost immediately or after a short delay based on the society's business model. Even when the content is under access control, non-subscribers can gain access to individual articles for a small user fee. As not-for-profit publishers, we have to be fiscally responsible to our organizations, to our members and to our disciplines to ensure our ability to continue to publish the scientific and medical research of our authors and to maintain the integrity of our online journal collections.

The following not-for-profit publishers endorse the above principles:
American Academy of Pediatrics
American Association for Cancer Research
American Association for Clinical Chemistry
American Cancer Society
American College of Chest Physicians
American College of Nutrition
American College of Physicians
American Dairy Science Association
American Diabetes Association
American Physiological Society
American Psychiatric Publishing
American Roentgen Ray Society
American Society of Animal Science
American Society for Biochemistry and Molecular Biology
American Society for Clinical Investigation
American Society for Clinical Nutrition
American Society for Investigative Pathology
American Society for Microbiology
American Society for Nutritional Sciences
American Society for Pharmacology and Experimental Therapeutics
American Society of Clinical Oncology
American Society of Hematology
American Society of Nephrology
American Society of Plant Biologists
Association for Molecular Pathology
Association for Research in Vision and Ophthalmology
Association of Biomolecular Resource Facilities
Biophysical Society
Cold Spring Harbor Laboratory Press
Company of Biologists, Limited
European Molecular Biology Organisation
Federation of American Societies for Experimental Biology
Genetics Society of America
Histochemical Society
Project HOPE
Protein Society
Radiological Society of North America
Royal College of Psychiatrists
Society for Experimental Biology and Medicine
Society for Leukocyte Biology
Society for the Study of Reproduction
Society of National Association Publications
Society of Nuclear Medicine
Society of Surgical Oncology
The Botanical Society of America
The Endocrine Society
The Physiological Society
The Rockefeller University Press

The organizations who have signed the DC Principles are not "for profit" organizations. . . .nor are they "for loss" organizations. Many of the organizations, including the APS, do make profits from their journals, or from their scientific meetings. However, as "not-for-profit" publishers, any profit that is made goes back into the organizations for the development of the next generation of scientists, through awards, fellowships, meetings and conferences, and outreach to the community.

The signatories of the DC Principles use business models that derive revenue from multiple sources in order to make their content as freely available as possible to their communities, to the public, as well as to scientists in underserved countries. It is difficult for the signatories to envision how a business model dependent on one revenue source can succeed in an era of shrinking Federal support for science and in which many US and foreign scientists are undertaking research on limited budgets.

Those individuals participating in the press briefing represent a collaborative effort to tell the story of the not-for-profit publisher. The panelists for the press briefing on the DC Principles included:

Robert D. Wells is President of the Federation of American Societies for Experimental Biology (FASEB). FASEB represents 22 professional societies, consisting of more than 65,000 biomedical research scientists. Wells is the former associate editor of the *Journal of Biological Chemistry* and is currently the Director of the Center for Genome Research at the Institute of Biosciences and Technology, Texas A&M University, Houston, TX.

John K. Iglehart has been the editor of *Health Affairs*, a journal he founded under the aegis of Project HOPE, since 1981. *Health Affairs* is a peer-reviewed, multidisciplinary journal, and is the largest circulation health policy periodical published in

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the United States. The bimonthly policy journal also counts subscribers in 25 foreign countries. Iglehart holds a degree in journalism from the University of Wisconsin-Milwaukee and has been a journalist-in-residence at Harvard University.

Alice Villalobos is an Assistant Professor in the Department of Environmental Medicine at the University of Rochester School of Medicine and Dentistry, Rochester, NY. Since she was a graduate student, she has been mentored by the American Physiological Society, thanks to funds derived in part from the Society's publication program and has applied to education and training fellowships and minority outreach programs. She has participated in the Explorations in Biomedicine and Research Careers program and sits on the Perkins Committee that oversees distribution of supplemental funds to international scientists working in the US.

Karin Wittenborg has been University Librarian at the University of Virginia since September 1993. Prior to joining the university she held professional positions at the University of California at Los Angeles (UCLA), Stanford University and the State University of New York. She currently serves on the Advisory Council for Stanford's Academic Computing and Libraries, Brown University's Committee on Information Resources, and on the Executive Committee of the Digital Library Federation.

William Rosner is Professor of Medicine and Associate Dean, College of Physician and Surgeons, Columbia University, and Director, Institute of Health Sciences, St. Luke's-Roosevelt Hospital, New York, NY. Rosner is also the past Chair of the Publications Committee for the Endocrine Society. His major area of clinical interest is androgenic disorders in women.

Martin Frank spokesperson for the Principles and Executive Director of the American Physiological Society (APS), one of the oldest biomedical sciences research societies in America. The nonprofit association has published the *American Journal of Physiology* since 1898 and presently publishes 13 other journals.

FY 2005 Budget Proposal Falls Short For Research

Facing an expensive war in Iraq, pressure from fiscal conservatives in Congress, and a soaring federal budget deficit, President George Bush unveiled his FY 2005 budget plan on February 2, 2004. Unfortunately, Mr. Bush's promise to hold the line on federal spending came at the expense of biomedical research and other domestic programs.

The article below provides highlights of the FY 2005 budget proposal for selected biomedical research agencies. The accompanying article describes final FY 2004 spending levels that were approved by the 108th Congress on January 23, 2004.

National Institutes of Health

With an election year looming at the end of 2004 and the deficit rising, the Administration was looking for ways to keep spending down. The President is proposing a $28.7 billion budget for NIH in FY 2005. This is a 2.6% increase or $900 million over the FY 2004 level. After enjoying double-digit budget increases from FY 1998 through FY 2003, NIH came in for a hard landing in FY 2004 with a budget increase of only 2.8%, and the FY 2005 proposal continues this trend by recommending another minimal increase.

Under President Bush's budget proposal, NIH would fund 258 additional research project grants (RPGs), but this growth in grant numbers means cuts in the size of grants. The proposed budget would allow NIH to fund a total of 10,393 new and competing awards. This is a 2.5% increase over FY 2004.

However, to help shore up grant numbers, the NIH is squeezing the size of the grants. The new batch of NIH grants will be only 1% bigger than this year's. Continuing grants will grow by 1.9%, which is well below the projected 3.5% inflation rate for biomedical research costs. The total number of grants including 27,351 ongoing projects would be 37,744 grants in FY 2005.

Last year, NIH Director Elias Zerhouni unveiled his Roadmap Initiative. Under the FY 2005 budget, this project is allocated $237 million, an increase of $109 million over FY 2004. Of this total, the Office of the Director would receive $60 million (up from $35 million in FY 2004). These are funds Zerhouni can distribute. The remaining $177 million is to come from NIH institutes and centers, each of which would contribute .63% of its budget to Roadmap projects.

The budget plan also recommends funding levels for three Roadmap initiatives. New Pathways to Discovery would get $137 million, Multidisciplinary Research Teams for the Future would be funded at $39 million and Re-engineering the Clinical Research Enterprise would receive $61 million.

In response to the possible threat of bioterror attacks, the FY 2005 budget includes $1.7 billion for bioterror countermeasures. This is an increase of $121 million or 7.5% over FY 2004. Within that amount $150 million is targeted for construction of an additional 20 Biolevel 3 laboratories at universities and research institutes across the country.

In an effort to boost funding for the NIH, APS joined with FASEB and the Ad Hoc Group for Medical Research Funding in calling on the President and Congress to keep the momentum of the doubling alive by providing NIH with $30.6 billion in FY 2005. This would provide a 10% increase over FY 2004 levels. In late February, Congress had its first chance to declare its budget priorities when the Senate Budget Committee met to mark up its FY 2005 budget resolution. (The budget resolution sets broad spending targets intended to guide the appropriations process.)

The Senate Budget Committee's original draft resolution contained $9 billion less than the President's budget for non-defense spending—including NIH. Calling upon the Senate to correct this deficiency, FASEB President Robert Wells asked the Senate Budget Committee to add more money for scientific research. "If we reduce our commitments to scientific research," he said in a press statement, "We compromise our future prosperity."

Senate biomedical research champion Arlen Specter (R-PA) took the lead in seeking an increase. When the budget resolution came to the floor,

Sen. Specter offered an amendment to increase funding for the NIH by an additional $1.3 billion to bring the resolution's overall allocation for the NIH to approximately $29.9 billion. This would be an increase of 7.2% over FY 2004 levels. In the early morning hours of March 12, Senator Specter's amendment passed by a margin of 72-24. The additional funds are scheduled to come from a one-sixth of one percent cut in travel and administrative expenses throughout the federal government. Because the budget resolution is only a blueprint for the appropriators to follow when assigning money to government programs, the Specter amendment—while a positive step forward—does not guarantee that NIH will ultimately get a 7.2% increase.

As of this writing, the House Budget Committee has not scheduled a mark-up of its budget resolution.

National Science Foundation

The National Science Foundation (NSF) also saw a smaller proposed budget increase in the President's budget plan. Under Bush's proposal, the NSF would receive $5.7 billion in FY 2005. This is a 3% increase or $167 million over FY 2004 levels. This falls well short of the $7.3 billion that would be needed to bring about a five year doubling of the NSF budget, a goal both the president and Congress endorsed in the NSF reauthorization bill that the president signed in December 2002.

The NSF's Research and Related Activities (R&RA) account overall would receive $4.5 billion, a 4.7% increase or $201 million more than FY 2004. However the Biological Sciences Directorate (BIO) would receive an increase of only 2.2%.

The small increases for the research directorates would squeeze NSF funding of competitively awarded research grants. This year NSF expects to fund only 6,145 research grants, a decline of 72 from this year's expected total. The BIO directorate would be able to fund 2.6% fewer grants than FY 2004.

VA Medical and Prosthetic Research

The President's FY 2005 budget proposal includes $770 million for VA Medical and Prosthetics Research. Of that total, however, only $385 million will go towards the direct costs of research. This is a decrease of 5.1% or

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FY 2004 Funding Finally Approved

On January 23, 2004, the Senate approved omnibus legislation to fund government agencies for the fiscal year that began October 1, 2003. The $820 billion spending bill provides funding for biomedical research programs at the NIH, NSF, VA, and NASA. The highlights of the budget are provided below.

National Institutes of Health

The NIH's FY 2004 budget effectively marks the end of the agency's five-year run of 14 to 15 percent annual increases. The legislation officially provides NIH with $28.0 billion in FY 2004, but it also calls for various fund transfers and an across-the-board cut that reduces the amount available for NIH programs to $27.8 billion. This amount represents a 2.8% increase or $763 million above the FY 2003 level. Although other federal programs did not fare even this well, the increase is well below the 10% advocated by the biomedical research community. Both FASEB and the Ad Hoc Group that NIH had recommended a $30.6 billion budget for the NIH in FY 2004 to move forward with research opportunities.

The omnibus bill included $128 million for activities related to NIH Director Elias Zerhouni's NIH Roadmap Initiative. Of this total, $35 million will come from the Office of the Director, while the Institutes will fund the remaining $93 million.

The legislation also instructed the Director to use $7.5 million in Roadmap funds to support innovative projects such as those funded in the Department of Defense's Defense Advanced Research Projects Agency (DARPA). On January 20, 2004, NIH announced the first such initiative. The Director's new "Pioneer Awards" will provide up to $500,000 a year for five years in direct costs to researchers "who have the potential to make extraordinary contributions to medical research." According to the NIH, applicants will have the intellectual freedom to pursue their ideas and follow them in expected or even unexpected directions. (See http://nihroadmap.nih.gov/highrisk/initiatives/pioneer/.)

Developing defenses against biological terrorism is a high priority. Biodefense research and development will account for $1.6 billion of the NIH budget, down slightly from the $1.7 billion allocated for this in FY 2003. Most of these funds will go to the National Institute of Allergy and Infectious Diseases (NIAID), which received a 16.3% increase, bringing its budget to $4.3 billion. Funds for investigator-initiated biodefense research grants will more than double in FY 2004.

National Science Foundation

The NSF budget for FY 2004 is $5.6 billion. This is an increase of $300 million or 5% over FY 2003 levels. Although this total is well above the President's request of $5.48 billion, it still falls short of the $6.39 billion recommended by the FASEB Consensus Conference to achieve a doubling of the NSF budget by FY 2007.

NSF's Research and Related Activities (R&RA) will be funded at $4.3 billion in FY 2004. This is $195 million or 4.8% more than the FY 2003 level. The various NSF research directorates received increases between 3% and 7%, with the Biological Science Directorate (BIO) coming in at the low end with a 3% increase. The NSF's Education and Human Resources programs will be funded at $939 million. This represents a 4% increase or $36 million above the FY 2003 level.

VA Medical and Prosthetic Research

The omnibus legislation provides the VA medical and prosthetics research with $406 million. This represents an $8 million increase over FY 2003 levels.

NASA Office of Biological and Physical Research

The Office and Biological and Physical Research within NASA will be funded at $990 million in FY 2004, an increase of 55 million or 5.9% over FY 2003 funding levels.

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$20.6 million less than FY 2004 levels.

The FASEB Consensus Conference and the Friends of VA Medical Care and Health Research (FOVA) are recommending an FY 2005 funding level of $460 million for the direct cost of research. This would represent a $52 million or 13% increase over the FY 2004 funding level.

NASA

On January 14, 2004, President Bush unveiled his new space exploration policy called "A Renewed Spirit of Discovery." This plan calls for completing the International Space Station by 2010, replacing the shuttle with a new crew vehicle and establishing an extended presence on the moon to serve as a launching point for future human space flight missions to far off places, such as Mars.

The FY 2005 budget reflects these near-term priorities. NASA's FY 2005 budget is $16.2 billion, a 5 % increase over FY 2004. However, most of the increase will go for the non-R&D priority of making safety improvements needed to return the shuttle to flight and construction on the international space station.

Under President Bush's FY 2005 budget, NASA's Office of Biological and Physical Research would get $1 billion, an increase of 6% over FY 2004.

Facing the Challenge of Animal "Personhood"

For many years animal activists have argued that animals deserve rights. This viewpoint was once considered extreme, but it has begun attracting attention from mainstream legal thinkers who are exploring the notion that animals deserve more protection than the legal system currently provides.

For the most part, the law considers animals to be property. This means that the owner must take legal and financial responsibility if an animal destroys property or causes harm to a person. On the other hand, if someone harms an animal, the owner is entitled to damages. However, these damages are generally limited to the economic value of the animal. Owners also have significant latitude concerning the fate of an animal, i.e., decisions about its living environment, medical treatment, etc.

The law provides some notable exceptions to the treatment of animals as property. For example, anti-cruelty laws allow the government to intervene if people mistreat their animals. Although in most states research is exempt from anti-cruelty laws, it is still subject to government oversight. However, since many activists distrust researchers and consider research to be inherently cruel, this arrangement is unsatisfactory to them.

There is growing interest in the field of animal rights law. Nearly three dozen law schools offer classes in animal rights law, and a number of local bar associations have established interest sections on animal rights law. These efforts are aimed at passing laws and using the courts to revisit the legal status of animals and provide greater protection for them.

Some of these efforts may seem benign enough. A number of localities have passed ordinances changing the term pet "owner" to "guardian." While this change alone does not affect the content of the laws, some see this change in terminology as a preliminary step toward getting the courts to consider animals as legal "persons." Advocates argue that it is only intended to encourage a greater sense of responsibility towards animals.

The long-term goal of the animal rights legal strategists is to get the law to recognize that animals have interests apart from human beings' interest in them. The traditional view is that human beings have legal privileges such as rights, certain mental characteristics such as the ability to make tools, use language, and be self-aware. However, as our understanding of animal cognition has progressed, these distinctions are falling by the wayside as animals demonstrate mental abilities and social behaviors once seen as characteristically human.

One line of animal rights argumentation goes that if an animal has mental characteristics similar to those of humans, then for the sake of fairness, society ought to provide it with the same kinds of rights that a human being of similar mental characteristics would be guaranteed. The argument is not that these animals should vote, but rather that they should have certain protections, such as the right to be governed by their own preferences or by what is in their own best interests. If this view were adopted, it could well mean that an increasing number of animal species could no longer be used as subjects of biomedical research.

One of the intermediate goals of animal rights law activists is to have the courts accept animals as "persons" and to allow court cases to be brought on their behalf. This is known as granting legal "standing," which provides access to the courts for the resolution of grievances. Such a move could open the door to an endless stream of court cases objecting to biomedical research and every other human endeavor that involves animals.

The biomedical research community must find a way to address these challenges. What should be the status of animals before the law? Is there a meaningful distinction between humans and animals, and if so, what is it? Is this a matter of "fairness" or should it be decided on some other grounds? The answer to these questions clearly will not be found in science alone. The APS has joined with a number of other scientific societies in seeking guidance from legal experts on how to answer these questions.

NIGMS to Sponsor Short-term Training Opportunities

In January, the NIGMS Council approved the concept for a new program of grants to develop short-term graduate level training program in integrative and organ systems pharmacology and physiology. A Request for Applications is expected to be published this spring with an application deadline some time in the summer.

NIGMS Council approved the concept after hearing evidence that both academia and industry are concerned about the low numbers of graduate students receiving training in how to choose and use whole animal models. It was noted further that this problem is complicated by the fact that many

academic institutions no longer have the faculty and facilities to provide appropriate training.

The goal of these R-25 Educational Project grants would be to foster the creation of short-term, intensive training. Awards are expected to be in the range of $100,000 to $200,000 per year, with funds available to help cover PI and faculty salaries, organizing expenses, course development, equipment, supplies, student room and board, and travel expenses.

NIGMS will set aside $500,000 for this program and will seek additional funding from other NIH components, participating institutions and industry. NIGMS would like to fund at least two or three awards in the first year of the program. The grants will run for three years.

Specific course design requirements will be outlined in the RFA, but the concept paper suggested that programs should provide a two to three week total immersion experience including lectures, labs, and seminars. The training should be designed to meet the needs of academia, industry, and government. Institutions in academia as well as industry are encouraged to apply for these training grants. For more information, contact Peter Preusch of NIGMS at 301-594-5938 or preuschp@nigms.nih.gov

AAHRPP Accreditation Taking Hold

The Association for the Accreditation of Human Research Protection Programs (AAHRPP), founded in 2001 as a means for organizations to demonstrate their commitment to protecting research participants, is making progress in its efforts to create a voluntary, peer-reviewed, and educational accreditation program.

Since May 2003, accreditation has been awarded to six organizations: Baylor Research Institute, Catholic Medical Center, Hunter Holmes McGuire VA Medical Center, New England Institutional Review Board, The University of Iowa, and Western Institutional Review Board. AAHRPP purposefully designed its program and accreditation standards to be applicable in the diverse settings where human research occurs.

Many institutions are engaged in some stage of the accreditation process: reviewing policies and procedures, conducting the self-assessment, preparing for a site visit, or responding to the AAHRPP site visit report.

The Department of Energy recently announced that its laboratories that conduct significant amounts of human research will seek accreditation in 2004.

In September, the Centers for Disease Control and Prevention awarded AAHRPP a three-year grant to assess the role of accreditation in enhancing the protection of participants in public health research. Pilot measures will be developed and implemented in several locations, and then refined and made available to public health research partners to document and evaluate the impact of accreditation.

The Secretary's Advisory Commission on Human Research Protection issued a preliminary report on accreditation in December: "The [Accreditation] Subcommittee supports the concept of accreditation of Human Research Protection Programs (HRPP's) for the protection of human subjects in research. Accreditation promises to be a useful mechanism for all organizations involved in human research that, like education and certification, leads to self-improvement of systems and outcomes." The subcommittee interviewed institutional officials from two AAHRPP-accredited organizations in its deliberations.

All of these activities indicate that accreditation is beginning to fulfill its promise as an effective mechanism for insuring that research organizations comply with federal regulations governing research, but more importantly, that they maintain comprehensive human research protection programs.

AAHRPP was founded three years ago by FASEB and six other national organizations in an environment of grave concern: because of the shutdowns of major research programs by the federal government, research programs overall were being intensely scrutinized by lawmakers and by the media. Congressional bills to regulate research more rigorously were introduced in both the House and the Senate.

AAHRPP came together as a means for self-regulation by the research community. If research organizations were willing to subject themselves to a rigorous process of peer review and education, then further regulation could be avoided. Although high-profile research incidents have not occurred in several years, there is still interest among legislators in further regulating in this area, as demonstrated by Rep. Diana DeGette's introduction of a bill in the House last November.

We welcome your questions about any aspect of the AAHRPP accreditation program.

Information: Marjorie Speers, mspeers@aahrpp.org, 202-783-1112; Todd Bentsen, tbentsen@aahrpp.org, 202-783-8133. ❖

Marjorie A. Speers,
Executive Director,
AAHRPP

Public Affairs Events at EB 2004

IACUC 101 for Scientists: Dealing with Problem Areas
Saturday, April 17, 2004
11:00 AM-3:00 PM
Convention Center Room 146B

Making Science News
Saturday, April 17, 2004
2:00 PM-5:00 PM
Convention Center Room 140A

Will You Still Fund Me Tomorrow? The Deficit, Bioterror, and the NIH Roadmap
Monday, April 19, 2004
3:00 PM-4:30 PM
Convention Center Room 207B
Featured Speaker:
NIH Director Elias Zerhouni

Sustaining Integrative & Organ Systems Sciences: Problems, Opportunities, Solutions
Tuesday, April 20, 2004
12:30 PM-2:00 PM
Convention Center, Room 143C

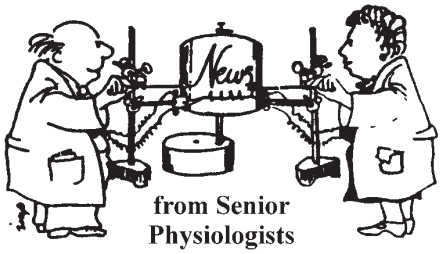
Letter to Gabor Kaley

Jay Tepperman writes: "The last time I was asked to write this kind of letter I was a stripling of 80. Now, 10 years later, I am an authentic Senior Geezer, astonished by the realization that, in spite of poor vision and loss of hearing, my health is generally good. Thank you for the opportunity to send my greetings to the five or six people who still remember me.

"My wife, Helen, and I closed our lab at SUNY Upstate Medical University in Syracuse 19 years ago. For most of that time we had a lovely time watching the busy lives of our three children and five grandchildren, traveling widely in Europe, the Mediterranean area, the Middle East, enjoying our great and good friends in Upstate NY, and spending our summers in our waterfront house at Skaneateles Lake. Helen did a lot of volunteer work in a local Museum of Science and Technology, Literacy Volunteers, Peace Action etc. I, in contrast, was a cultural, scientific and political spectator sportsman.

"Our greatest pleasure, apart from the fact that we are still partners after nearly 61 years of marriage, has been our vicarious participation in the complex lives of our children and grandchildren who turned out to be an entertaining group to watch. Our daughter, Jean, is the Executive Director of a nonprofit children's advocacy group and the editor of their publication. Our middle child, Kathy, is Professor of Biology at the University of Cincinnati. Our son, Jim, is doing very exciting work in the field of plant gene expression. I will spare you a detailed account of the achievement's of our grandchildren for we have been known to be insufferably grandparently on that subject.

"About two years ago we decided we would like to live nearer our children so we sold our two houses in the Syracuse area and moved into a very attractive retirement residence in Oakland, CA which is only a mile from our son's house and 15 minutes from one of our daughter's in Berkeley. We have been at Lake Park for a year and a half and we are glad we came. Our other daughter who lives in Ohio visits frequently. We have a great apart-



from Senior Physiologists

ment with a spectacular view, buffet at noon and sit down dinner at night, the Berkeley Rep Theater, Medical Grand Rounds at UCSF Medical School once a week and a temperature that fluctuates between 50 and 75 degrees F. Although we are often depressed by much of the domestic and international news, we are grateful for our good fortune.

"Some years ago Helen had your job of writing to the elderly. She joins me in sending you our greetings. I attended my first Physiological Society Meeting in 1941 and I was elected to membership in 1944. The lectures I hear at UCSF are a continuing reminder of the amazing advances that have occurred since then."

Letters to Michael Barany

Jose Antunes-Rodrigues writes: "Sorry for the delay in responding to your request. Thank you for your kind wishes on behalf of the American Physiological Society and for your greetings on my 70th birthday. I feel both pleased and rewarded to reach this age in good health and become a Senior Physiologist.

"I consider myself a very lucky person. During my entire life I received God's blessings: by having parents that gave me important guidance; at the University I decided to do science because the environment and the example of my mentor, professor Miguel Rolando Covian, student of Bernardo Houssay (Nobel Prize in Physiology and Medicine laureate in 1947). Finally, I was really lucky in 1964 to choose to do my postdoctoral fellowship with Prof. S. M. McCann, a Pioneer of Neuroendocrinology.

"During my second year as a medical student, I became interested in research of the central nervous control of water and salt metabolism in 1955, in the Laboratory of Prof. Covian, who had already shown that the hemidecorticate rat presented several endocrine changes. One of most remarkable effect was the change in the adrenal weight. With Dr. Covian, we investigated the role of the central nervous system in the control of salt intake. In his laboratory, systematic studies were undertaken to determine the effects of bilateral localized lesions of the rat hypothalamus on the free choice ingestion of tap water and 2% NaCl solution (Covian, MR and Antunes Rodrigues J. Specific alterations in sodium chloride intake after hypothalamic lesions in the rat. *Am J Physiol.* 205 (5):922-926, 1963).

"On the basis of Dr. McCann's work on control of body fluids, I joined him in Philadelphia in 1964 for 18 months. In 1967, I returned to Dallas to stay for another year with him, when he had just returned from Europe where Bengt Andersson showed him goats with a cannulae in the third ventricule. Following hypertonic saline injection into the cannula these animals would drink in a reproducible manner in contrast to the poor reproducibility of saline injected into hypothalamic region as observed earlier. Dr. McCann suggested to me to try the cannulation of the 3rd ventricle of the rat, which was successful. We developed several lines of evidence indicating that the medial preoptic area, anterior lateral hypothalamus, subfornical organ, area anterior and ventral of the third ventricle (AV3V), habenula, stria medullaris, supraoptic nucleus, medial septal area and paraventricular nucleus are organized in a neural circuit involved in the regulation of water and sodium metabolism.

"We extended these studies to examine the role of the hypothalamic atrial natriuretic peptide (ANP) and its interaction with neurohypophysial hormones, particularly oxytocin, in the control of body fluid homeostasis. It was generally believed that volume expansion acts directly on the heart by the stretch of atrial myocytes to increase the release of ANP leading to a reduction in the effective circulating blood volume. However, there is now compelling evidence that hypothalamic ANP/OT are also released during volume expansion through afferent inputs from baroreceptors to the brain. The role played by the brain ANP and its interaction with heurohy-

pophysial hormones, particularly oxytocin, in the control of body fluid homeostasis was recently reviewed by our group (*Physiol. Rev*., 84, 169-208, 2004).

"What I'm doing now? After reaching the age of 70 and compulsory retirement from the School of Medicine of Ribeirao Preto, University of Sao Paulo, I was invited by the Department of Physiology to continue participating in the teaching activities (undergraduate and graduate students) and developing our research projects in my former laboratory.

"Words to pass on to our younger colleagues: in life we must take care of our professional vocation, to choose the profession that really will provide pleasure. To exert an activity that makes one happy. All young researchers must be aware of his responsibilities for the scientific and technological development of the country, to produce and administer new knowledge, and to help place the new knowledge at the disposal of our society, in order to improve the living conditions of our fellow man.

"In teaching and research, it is very important to have a spirit of contribution, mainly with youngest, and loyalty to humanism. Our scientific career has no value if it is carried out without humanity. They are no meanings to accumulate new knowledge if we do not have tolerance, charity and justice. We must always look for happiness; to be loyal with us and with the environment in which we live. Under these conditions the fruit of our research, and the love of the people with whom we deal daily, will make them to contribute to the construction of a better world. We cannot change all the structure of an Institution, of a University, or the Country, but we can indeed change the environment in which we live. We must always remember that science does not have country, but scientists do and they must work for advancement of their country."

Lloyd L. Anderson writes: "Michael Bárány, asked me to reply as an elderly citizen (my 70th birthday, November 18, 2003) of the American Physiological Society. I do this with some trepidation since I am fully employed as a Charles F. Curtiss Distinguished Professor in Agriculture, and Professor of Animal Science, College of Agriculture and Professor of Biomedical Sciences, College of Veterinary Medicine, Iowa State University, Ames, IA. My faculty appointment at Iowa State began July 1, 1958. Immediately after receiving the PhD degree in reproductive physiology, I was awarded a competitive Postdoctoral Fellowship from the USDHEW, PHS, National Institutes of Health that allowed me to continue studies on uterine regulation of corpus luteum function. This was soon followed by a Lalor Foundation Fellowship to continue studies at the Station de Recherches de Physiologie Animale, Centre National de Recherches Zootechniques, Institut National de la Recherché Agronomique, Jouy-en-Josas, France with Charles Thibault and FranÇios du Mesnil du Buisson. Using the newly developed procedure of hypophysectomy in the pig as a model, we carried out studies on the interaction of gonadotropic hormones and the uterus in the maintenance of luteal tissue in the ovary. It was a wonderful experience for me working with extraordinarily talented scientists focused on understanding the physiology of the central nervous system in regulating ovarian-uterine function in an important farm animal species. Upon return to Iowa State University, I exploited this new neurosurgical technique in the pig to further our understanding CNS/ovarian/uterine function and developed a supraorbital neurosurgical approach for hypophysectomy and hypophyseal stalk transduction in young growing calves and during different stages of pregnancy in beef cattle. These studies focused not only on physiology of CNS and reproductive function, but also on growth and development. In addition, we developed a neurosurgical technique of hypothalamic deafferentiation in pigs and cattle to study specific nuclei in hypothalamic regulation of gonadotropic-ovarian-uterine function in pigs and cattle, as well as determining regulation of growth hormone secretion in growth and development and the seasonal regulation of prolactin secretion.

"During these years with a 65% research and 35% teaching appointment, I have been blessed with a wonderful group of 63 graduate students and postdoctoral trainees who have won numerous University Research Excellence awards, Animal Science Department awards, and national and international awards. These students from across the USA and countries that include Argentina, Belgium, Brazil, Canada, PR China, Costa Rica, Ecuador, Georgia, Ghana, India, Inner Mongolia, Iran, Japan, México, Nigeria, South Korea, Taiwan, Spain, Switzerland and Yugoslavia have gone on to outstanding careers in academia and industry here and in their home countries. This I am extremely proud, for the success of your students is of greatest satisfaction to a mentor. I was very pleased to receive the Margaret Ellen White Graduate Faculty Award, Iowa State University, Fall Convocation, 2003 from the Graduate Student Senate.

"Although my major focus is on research in animal physiology, I have maintained a strong program in undergraduate and graduate teaching. During the last 34 years I have taught two sections each semester of an elective course for undergraduate students titled Laboratory Methods in Animal Reproduction. This has been most satisfying keeping in contact with the development of undergraduate students to achieve their goals.

"Recently my research has focused on understanding cellular secretion and membrane fusion of secretory vesicles in endocrine cells. In collaboration with my former student, Bhanu P. Jena, Wayne State University School of Medicine, Detroit, MI, using atomic force microscopy and immunogold labeling we have shown how live growth hormone-secreting cells from the pig's pituitary gland, upon stimulation with a growth hormone-secretagogue, rapidly release growth hormone after transient fusion of the secretory vesicles to the plasma membrane. Understanding cellular secretion and membrane fusion is critical, since important cellular events such as ER-Golgi transport in protein maturation, plasma membrane recycling, cell division, sexual reproduction and the release of enzymes, hormones and neurotransmitters, all require fusion of opposing bilayers. Using transmis-

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sion electron microscopy and immunogold antibody labeling, we found upon stimulation of growth hormone cells, the secretory vesicles containing the hormone rapidly ascend to the plasma membrane for transient fusion with the porosome to release the hormone, with the empty or partially empty vesicles then returning to the cytoplasm for recycling. Thus, the role of secretion and membrane fusion in health and disease is profound.

"On a personal note, my wife JaNelle is Director of Information Systems, Mary Greeley Medical Center, Ames, IA. Our sons, Marc and his wife Julie of Minneapolis have two daughters, Janessa (10 years old) and Jenna (5 years old) and Benjamin (6 months old) and James and his wife Tricia near Chicago have two sons, Nicholas (3 years old) and David (8 months old). They bring us great joy. Finally, I was privileged to deliver the Graduate College Commencement address Fall Semester 1999 at Iowa State University. It was indeed an honor to address this graduating class of future leaders with these summary remarks: 'I am optimistic about the future, about people helping people that will make this world a better place. I believe we will have innovative technologies to meet food and fiber needs for an increasing world population. There are clouds on the horizon, however, that may dampen these aspirations for human progress. First is the issue of sovereignty of nations, and how ethnic, racial and social conflicts within and between sovereign nations are resolved by international organizations. Second, is how we treat all children from birth through teenage years to reach their full potential. Third, is the environment—whether in 2040 you will hear the chirping of frogs on a still summer night, whether cheetahs, rhinoceros, the great elephants, Siberian and Indian tigers move freely or merely are museum pieces. We are our brother's keeper. Maintain a critical but optimistic outlook. You are indeed, the future leaders to bring to reality that golden era of progress. For all in this select group of high achievers, my congratulations and best wishes for a bright future on the road ahead.'"

Letter to Edgar Folk

David Richard Lincicome writes: "It certainly was a surprise to get your letter which was forwarded by the post office in Garrett Park, MD to my new address here in Roxbury, CT. My wife (Dr. Margaret A. Stirewalt) died last April, and since then my son (Dr. David Van Cleave Lincicome) has been urging me to move to Roxbury to be near him. In December, I made that decision after months of indecision. You ask what I have been doing. Well, to tell you that will be quite a story for I am a believer in keeping busy that organic computer we carry around.

"First off, I retired (emphasis on 're') from my university chair in 1970 after: mentoring some 25 men and women to their doctoral or masters degrees; editing the first 37 volumes of the journal *Experimental Parasitology* from 1949-1976; founding the journal *Virology* (now in its 305+th volume); founding the review Journal *International Review of Tropical Medicine* and the *Advances in Veterinary Science*; and developing a research program on the molecular exchanges between a dependent cell and its organic environment. Diplomate status in the American Board of Microbiology came along during this period.

"Secondly, after re'tirement (re' meaning having a new set of wheels) from active graduate teaching and research, life changed from the field of tropical medicine to that of animal science. Certification as a Professional Animal Scientist (PAS) then as a Diplomate in the American College of Animal Physiology (DACAP) followed shortly thereafter. 1978 saw the beginning of service to the US Department of Agriculture at its Experiment Station in Beltsville, MD, as a Guest Scientist which is enjoyed even today. Along the way genetic conservation became of intense interest and many years were spent conserving and publishing about Jacob and Tunis sheep, Pygmy goats and more recently, Soft Coated Wheaten Terriers. In 2002 the American Livestock Breeds Conservancy awarded me its 25th Anniversary Award for this work in genetic conservation.

"Just a few days before my 90th birthday, I submitted a manuscript on genetic conservation and its importance for dogs for publication, the most recent effort to keep that organic computer working!"

Letter to Donald Marsh

Clara M. Ambrus writes: "In response to your kind letter, here is a brief report of myself. I have retired from the Rosvell Park Cancer Institute but I continue as professor of Pediatrics and Ob/Gyn (perinatology) and pharmacology at the State University of New York at Buffalo Medical School. My headquarters are now at the Buffalo General Hospital. My research laboratory is also there and I combine to work and publish. Last year I published (or submitted for publication) four papers.

"My husband's (Julian L. Ambrus) office is around the corner from me and one of my sons (Julian L. Ambrus, Jr.) who runs our rheumatology clinic and immunology research laboratory is in the next building. Once in a while we get together for lunch.

"My oldest daughter Madeline A. Lillie, is a pediatrics allergy-immunologist and her husband is a urologist. Both work in a close-by hospital and are both on the staff of our University. My only other child in town is a hospital administrator. Four more children are out of town. One of them is a physician on the Harvard faculty. We have eight grandchildren.

"My husband and I continue to run the family farm in Boston, NY (a 35-minute drive from the hospital). We have developed a technique to breed falcons in captivity. With permission of the conservation department, we periodically release young falcons to the wild. I feel that age is creeping up on me from periodic honors I receive. I recently was made foreign member of the National Academy of Science of Hungary, and last month I received the annual health care award from D'Youwille College. The Vatican made me a Lady Commander of the Holy Sepulchre of Jerusalem.

"The central theme of my work is physiology and pathophysiology of the blood coagulation and fibrinolysis system. I enjoy periodic contact with former PhD students of mine who are scattered all over the world. I continue to work; I try to be productive and useful and I certainly keep entertained." ❖

The Physiologist
Vol. 47, No. 2, 2004

Primer of Biostatistics, 5th Edition

Stanton A. Glantz
New York: McGraw-Hill, 2002,
489 pp., illus., index, $34.95
ISBN: 0-07-137946-0

For nearly 70 years, statisticians have struggled to help scientists understand statistical concepts and use statistical methods. A book that promotes literacy in statistics would be a useful resource for researchers. This 5th edition of *Primer of Biostatistics* is not that book.

This *Primer* does have constructive elements, but they are overshadowed by problems with the conceptual origin of the book, by information that is confusing, misleading, or just plain wrong, and by a tone that sounds sarcastic and all-knowing.

In the preface, the author discusses the conceptual origin of the book and its impact on the content of the early chapters. This paragraph, taken from page xvi of the preface, illustrates my concerns with the book:

> "[The book] is based on the premise that much of what is published in the biomedical literature uses dubious statistical practices, … . Most of the errors (at least as they relate to statistical inference) center on misuse of the *t* test, probably because the people doing the research were unfamiliar with anything else. … Since so much is published that should probably be analyzed with analysis of variance, and since analysis of variance is really the paradigm of all parametric statistical tests, I present it first, then discuss the *t* test as a special case."

If the conceptual origin of a book is to be a pet peeve—the failure to use analysis of variance when it is appropriate—the peeve must make sense from the perspectives of context and logic. In this case, it does not. Moreover, I am confused by the statement that analysis of variance is really the paradigm of all parametric statistical tests. Does the author mean that analysis of variance is the procedure on which all other parametric tests are based? It is not: analysis of variance is just one kind of general linear model. But what will an inexperienced reader think?

The author's use of analysis of variance as the conceptual origin of his book creates immediate problems. In Chapter 3, he uses analysis of variance to compare cardiac output among four groups and then misuses analysis of variance to compare glucose levels between two groups (page 47). I raised my eyebrows, too: a two-sample *t* test would have been the appropriate procedure. In Chapter 4 is a section entitled "The *t* Test is an Analysis of Variance" (page 84). It is not: a *t* test and an analysis of variance do produce

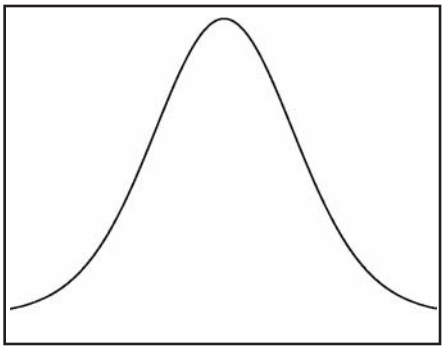

Figure 1.

equivalent results, but the structure of the procedures is quite different.

For reasons I fail to understand, many books of statistics depict *t* distributions that are inaccurate and inconsistent. So does this one. The shape of the *t* distributions in Figures 4-5, 6-4, 6-5, and 6-7 is nothing like it should be (Figure 1):

What will happen when an inexperienced reader sees the inaccurate and inconsistent *t* distributions?

The Primer stumbles also on simple concepts. For example, the author reinforces misunderstanding of the adjective *null* when he states that the null hypothesis is one of no effect (page 31). This is a common misconception. The null hypothesis is the hypothesis being tested; it need not be one of no difference.

At the beginning of this review, I mentioned that the *Primer* does have constructive elements. What are they? The discussion that standard deviations rather than standard errors estimate variability; the discussion that statistical significance and scientific importance differ; the discussion that confidence intervals are important. These elements, however, are swamped by problems that are bigger.

In the concluding chapter (page 436), the author asks how the reader can help improve the use of statistics by researchers. He answers by writing:

> "Do not let people get away with sloppy statistical thinking any more than you would permit them to get away with sloppy clinical or scientific thinking. Write letters to the editor. Ask questions in class, rounds, and meetings."

Whatever happened to the notion of collaboration between scientist and statistician as a way to improve literacy in statistics?

Because of this omission, because of problems with the conceptual origin of the book, and because of information that is confusing or misleading, I am unable to recommend *Primer of Biostatistics* as a resource. ❖

Douglas Curran-Everett
National Jewish Medical and Research Center
University of Colorado Health Sciences Center

Functional Genomics: Methods and Protocols

Michael J. Brownstein and Arkady B. Khodursky (Editors).
Totowa, NJ: Humana Press, 2003, 258 pp., $89.50
ISBN: 1-588-29291-6

Microarray technology is a major experimental platform that has become a mainstay in the realm of functional genomic explorations of a wide range of biological systems. As with any scientific experiment, there are essentially four parts that constitute a microarray experiment: *1*) designing the experiment; *2*) conducting the experiment, *3*) analyzing the data obtained, and *4*) interpreting the data obtained. Due to the massive quantity of data that this technique produces, careful considerations to experimental design issues go a long way in discerning the outcome of a microarray experiment. Skills at conducting microarray experiments are as important as data normalization, analysis, and interpretation. Due to these multiple levels of complexities associated with the performance of microarray experiments, a good one-stop reading material would benefit entry-level as well as senior investigators into the field of microarrays. *Functional Genomics: Methods and Protocols* edited by Brownstein and Khodursky meets this need very well. This book belongs to the series of Methods in Molecular Biology and is basically comprised of two sections: *1*) methods in microarray data generation and *2*) methods in microarray data analysis. There is nothing comparable to knowledge gained from experience at the bench, which is what is compiled in the first section dealing with methods in data generation. Investigators who choose to use this book as a guide to perform microarray experiments will like the attention to detail regarding issues as simple as the choice of tubes to hold reaction mixtures. Time-tested detailed protocols with useful little "tricks" such as, for example, "tap the tube gently to ensure that pellets are dislodged" are written to ensure that readers get the most out of using the recommended protocols in their labs. In our opinion, this is the most valuable section of this book. The chapters on isolation of polysomal RNA for microarray analysis and parallel analysis of gene copy number and expression using cDNA microarrays contain protocols for extended applications of the array technology beyond merely knowing what genes are differentially expressed between two given biological samples. Another particularly interesting chapter is the genome-wide mapping of protein-DNA interactions by chromatin immunoprecipitation and DNA microarray hybridization. This chapter is explained with protocols applied to understand protein-DNA interactions in yeast.

The second section of this book concentrates on experimental design and analysis issues. The organization of experimental design after the section on experimental methods at the bench is somewhat peculiar considering that, in practice, serious considerations to experimental design should be given prior to actually performing the experiments. In any case, topics covered in these chapters are written by well known groups of investigators in the field and include: *1*) how to design an informative microarray experiment, *2*) descriptions of statistical methods for data normalization, and *3*) subsequent analyses for extracting meaningful data from the several sources of experimental noise that emanate out of gene expression experiments. Real examples expose the strengths and weaknesses of each method for a given situation, aimed at helping readers choose appropriate protocols and utilize them for their own data sets. In addition, web links are provided to the programs and tools discussed in several chapters. This book is an excellent reference not only for core bioinformatics/genomics courses in undergraduate and graduate programs but also for researchers involved in setting up core laboratories for microarrays. It is valuable because it includes two additional aspects: guidance for the manufacture and use of spotted microarrays on glass, plastic, and nylon membranes, and a chapter dedicated for management of microarray databases that is crucial for successful data mining long after the actual hybridization experiments are done.

All said and done, this is a useful book to own as a guide for adopting protocols for gene expression analysis. ❖

Bina Joe and Steven L. Britton
Medical College of Ohio

Books Received

An Atlas of Reproductive Physiology in Men.
E.S.E. Hafez with B. Hafez and S.D. Hafez.
The Encyclopedia of Visual Medicine Series.
Boca Raton, FL: CRC Press, 2004, 250 pp., illus, index, $149.95.
ISBN: 1-84214-235-6.

Elastomeric Proteins: Structures, Biomechanical Properties, and Biological Roles
Peter R. Shewry, Arthur S. Tatham, and Allen J. Bailey (Editors).
New York: Cambridge Univ. Press, 2003, 391 pp., illus., index, $95.00.
ISBN: 0-521-81594-0.

Evidence–Based Practice Manual: Research and Outcome Measures in Health and Human Services.
Albert R. Roberts and Kenneth R. Yeager (Editors).
New York: Oxford University Press, 2004, 1050 pp., illus., index, $89.50.
ISBN: 0-19-516500-4.

Microcosms of the Brain.
Douglas Tweed.
New York: Oxford University Press, 2003, 199 pp., illus., index, $37.50.
ISBN: 0-19—852893-0.

Mind Time: The Temporal Factor in Consciousness.
Benjamin Libet.
Cambridge, MA: Harvard University Press, 248 pp., illus., index, $29.95.
ISBN: 0-674-01320-4.

The Physiologist
Vol. 47, No. 2, 2004

Shu Chien Receives Honorary Membership from The Chinese Association for Physiological Sciences

The Chinese Association for Physiological Sciences (CAPS) elected Dr. Shu Chien, a Past President of APS and Chair of the 2005 IUPS Congress, as an Honorary Member. A ceremony was held in Beijing on October 17, 2003 at which CAPS President Tai Yao presented the certificate of Honorary Membership to Chien, who gave a speech on "Past, Present and Future of Physiological Sciences." Chien is University Professor of Bioengineering and Medicine, Chair of Department of Biomedical Engineering, and Director of the Whitaker Institute of Biomedical Engineering at UCSD.

The Chinese Association for Physiological Sciences President Tai Yao presents a certificate of Honorary Membership to APS Past-President and Chair of the 2005 IUPS Congress Shu Chien.

The goals of CAPS are to promote and disseminate physiological sciences, facilitate and enhance the training of Chinese physiological scientists, advance physiological science and technology to improve the economy and society, and strengthen international exchange and cooperation. The Association was formed in 1926 in Beijing by 17 physiologists under the leadership of the late Robert K.S. Lim, and it published the first issue of *Chinese Journal of Physiology* in 1927. By 1937, CPS had held 10 Annual Meetings and elected seven world leaders in physiological sciences as Honorary Members, including J.J. Abel, A.J. Carson and F.G. Hopkins from USA and E. Abderhalden, J. Barcroft and E. Sharpey-Schafer from UK. Ivan Pavlov of USSR was the last Honorary Member installed by CAPS in 1937. Thus, Chien is the first Honorary Member elected by CAPS in 2/3 of a century and the only living Honorary Member. Several outstanding American physiologists, including Walter B. Cannon, were regular members of CAPS because they were working at the Peking Union Medical College in the 1930s.

The nationwide scientific activities of CAPS were disrupted from 1937 to 1948 due to WWII and again from 1957 to 1977 due to the "Cultural Revolution." In 1977 CAPS re-initiated its activities, including annual meetings and journal publication, and have made significant progresses during the intervening 26 years. The membership of the Association has increased to 3,000. CAPS is now an official adhering body of the International Union of Physiological Sciences (IUPS) and the Federation of Asian and Oceanian Physiological Societies (FAOPS).

CAPS, in collaboration with the Peking University Health Science Center will hold the *First International Conference of Chinese Physiological Scientists* (ICCPS) in Beijing from July 14-17, 2004, with a focus on *Physiological Sciences in the Postgenomic Era*. CAPS President Tai Yao and Professor Shu Chien will be Conference Co-Presidents. IUPS President **Allen Cowley** and Vice Presidents Akimichi Kaneko and Irene Schulz will be Conference Advisors and give plenary lectures. The website of the meeting can be found on http://www.caps-china.org/ICCPS.html. ❖

The Chinese Association for Physiological Sciences President Tai Yao and new Honorary Member Shu Chien join the members and guests participating in the Honorary Membership ceremony.

Anna N. Ahn has relocated to the Department of Biology, Harvey Mudd College, Claremont, CA. Ahn was previously with the Department of Organismic and Evolutionary Biology, Harvard University, Bedford, MA.

Barbara J. Ballermann is currently Director of Nephrology, University of Alberta, Clinical Science, Edmonton, Alberta, Canada. Ballerman had been associated with the Department of Medicine, Albert Einstein College of Medicine, Bronx, NY.

Nora Valeria Bergasa has moved to the Department of Medicine, Division of Hepatology, SUNY, Brooklyn, NY. Previously, Bergasa was associated with the Department of Medicine, Columbia University College of Physicians and Surgeons, New York, NY.

Steven R. Bergmann has associated with the Division of Cardiology, Beth Israel Medical Center, New York, NY. Bergmann had been affiliated with the Division of Cardiology, Columbia University College of Physicians & Surgeons, New York, NY.

Sue C. Bodine recently joined the Exercise Biology Program as Professor, University of California, Davis, CA. Bodine was previously affiliated with the Department of Physiology and Pharmacology as Director, Elixir Pharmaceuticals, Cambridge, MA.

Jennifer L. Bornkamp is presently affiliated with PsychoGenics Inc., Institute for Cancer Prevention, Valhalla, NY. Bornkamp was formerly associated with the Department of General Toxicology, Schering Plough Research, Lafayette, NJ.

Marco de Paula Brotto has joined the Department of Physiology & Biophysics, Robert Wood Johnson School of Medicine, Piscataway, NJ. Brotto had been associated with the Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, OH.

Steven D. Brown has accepted a Chief Medical Officer position, University of Texas Health Center, Tyler, TX. Prior to his new appointment, Brown had been Assistant Professor, Bakersfield Memorial Hospital Administrator of Medical Affairs, Bakersfield, CA.

Kenneth E. Burhop is currently the Vice President Project Management, Research and Development, Medication Delivery, Baxter Healthcare Corporation, Deerfield, IL. Burhop was formerly Research Scientist and Manager, Baxter Hill Care Corporation, Boulder, CO.

Zoe Cohen is currently a student with the Canadian Blood Services, St. Michael's Hospital, Toronto, Ontario, Canada. Cohen had been with the Department of Cardiovascular and Thoracic Surgery, University of Arizona, Tucson, AZ.

Travis Winton Hein has been appointed Assistant Professor, Department of Surgery, Scott & White Memorial Hospital, Temple, TX. Previously, Hein was affiliated with the Department of Medical Physiology, Texas A&M University Health Science Center, College Station, TX.

Kichang Lee is currently a Research Fellow with HRCA Research and Training, Harvard Medical School, Laboratory for Cardiovascular Research, Boston, MA. Prior to his new affiliation, Kichang was with the Department of Epidemiology & Public Health, The John B. Pierce Laboratory, Yale University School of Medicine, New Haven, CT.

Edgar Villanueva Lerma has accepted the position of Nephrologist, Associates in Nephrology, S.C., Berwyn, IL. Lerma was formerly Clinical Assistant Professor of Medicine, University of North Dakota School of Medicine, Grand Forks, ND.

Xi Lin recently joined the Department of Otolaryngology and Cell Biology, Emory University School of Medicine, Atlanta, GA, as Associate Professor. Prior to his new position, Lin had been affiliated with the Howe Ear Institute, Los Angeles, CA.

Que Liu recently associated with Amylin Pharmaceutical Inc., Department of Pharmacology, San Diego, CA, as a Senior Staff Scientist. Liu previously was affiliated with Cytokinetics Inc., Department of Pharmacology, South San Francisco, CA.

Lawrence Edward Mays accepted a position with the Department of Computer Science, University of North Carolina at Charlotte, NC. Mays had been affiliated with the Department of Physiological Optics, University of Alabama, Birmingham, AL.

Mohammed A. Nayeem is currently a Biologist with NIEHS/NIH, Research Triangle Park, NC. Prior to his new assignment, Nayeem held the position of Assistant Professor, Research, Department of Pharmacology and Toxicology, East Carolina University, Brody School of Medicine, Greenville, NC.

Janos Peti-Peterdi accepted a position as Associate Professor, University of Southern California, Los Angeles, CA. Peti-Peterdi was previously affiliated with the Department of Medicine, Division of Nephrology, University of Alabama, Birmingham, AL.

Steven H. Platts recently joined the Universities Space Research Association as Research Scientist, Johnson Space Center, Houston, TX. Prior to his new affiliation, Platts was with the Department of Molecular Physiology and Biological Physiology, University of Virginia, Charlottesville, VA.

Robert Roach, Scientist, has moved to the University of Colorado Health Sciences Center, Aurora, CO. Roach was previously affiliated with New Mexico Resonance, Albuquerque, NM.

Brian Tracy has accepted a position of Assistant Professor, Department of Health and Exercise Science, Colorado State University, Fort Collins, CO. Formerly, Tracy was affiliated with Department of Kinesiology and Applied Physiology, University of Colorado, Boulder, CO.

Edward Westen joined the Department of Biology, Wartburg College, Waverly, IA. Westen previously was associated with the Department of Medicine, Division of Physiology, University of California, San Diego, CA.

Thad Wilson affiliated with the Division of Cardiology, Penn State College of Medicine, Hershey, PA. Wilson was formerly with the Department of Biomedical Sciences, Southwest Missouri State University, Springfield, MO.

Postdoctoral Positions

Postdoctoral Position Stem Cell Biology and the Lung: A postdoctoral position is available for a qualified individual interested in studying the biology and pathophysiology of hematopoietic stem cell function, and their associated conditioning regimens, in the lung. Emphasis will be placed on examining the immunotoxicological effects of the chemotherapy regimens used for myeloablation as well as the role stem cells play in this process. This research is being directed by Rodney J. Folz, MD, PhD, Associate Professor of Medicine and Assistant Research Professor of Cell and Molecular Biology, Duke University Medical Center. This position is funded by NIH. To be considered for this position, please send a CV, a cover letter listing your research interests and long-term objectives, and the names and contact information for three references by Email to rodney.folz@duke.edu (please cc a copy to ken.kuzenski@duke.edu), or by mail to Dr. Folz, Box 2620, Duke University Medical Center, Durham, NC 27710; Tel.: 919-684-3539.

Postdoctoral Positions: Two postdoctoral positions are available in the Division of Nephrology at University of Utah to conduct projects funded by two NIH grants. The research addresses molecular mechanisms of renal salt/water handling and blood pressure regulation as well as of chronic renal diseases. Experimental approaches involve gene knockout, cellular biology, whole organ physiology, etc. Highly motivated individuals with strong background in molecular biology and renal physiology are seriously considered. Please email CV and names of three references to: Dr. Tianxin Yang, MD, PhD, Division of Nephrology, University of Utah, 30 North 1900 East, Room 4R312, Salt Lake City, UT 84132-2412; Email: Tianxin.Yang@hsc.utah.edu.

Postdoctoral Positions: Two Postdoctoral Positions in stem cell research are available immediately at the Department of Pediatrics, University of South Florida (USF). Highly motivated individuals interested in using combined gene and stem cell therapy to treat heart failure and type 1 diabetes should apply. The positions are supported by NIH grants for two years. The research program is under the direction of Dr. Ian Phillips, Professor and USF Vice President for Research, and Dr. Clare Zhang, Assistant Professor. Our research focuses on development and application of a combined strategy of gene transfer and adult stem cells to regenerate cardiac muscle for heart failure and pancreatic islets for diabetes. Please send CV, research summary and names of three references to: Dr. Clare Zhang, Department of Pediatrics, University of South Florida, 140 7th Ave S, CRI 2007, St. Petersburg, FL 33701; Email: czhang@hsc.usf.edu.

Postdoctoral Position: Postdoctoral position is available to study intrinsic mechanisms of neural regulation of cerebral blood flow, neuroprotection and brain damage. Candidate should have a strong background in integrative and electrophysiology. Experience in intracellular recording in vivo is highly desirable. Applicants should send cover letter, curriculum vitae, names & addresses of three references to: Dr. Eugene Golanov, Neurosurgery Department, The University of Mississippi Medical Center, 2500 N. State St., Jackson, MS 39216; Email egolanov@neurosurgery.umsmed.edu. [EOE, M/F/D/V]

Postdoctoral Position: A postdoctoral position is available in the Department of Neurology at Yale University School of Medicine to conduct projects funded by an NIH grant and other sources. Salary is based on NIH postdoctoral scale with full benefits. The research addresses molecular mechanisms of ionic channel reorganization of neurons and axons after nerve injury and cell transplantation. Experimental approaches involve cell culture, patch clamp electrophysiology, nerve injury models, cell transplantation methods, etc. Highly motivated individuals with strong background in electrophysiology and neurobiology will be considered. Please email CV and names of three references to: Ms. Cindy Cadoret, Administrative Assistant, Neuroscience Research Center (127A), VA Connecticut Health Care System, 950 Campbell Ave., West Haven, CT 06516.

Postdoctoral Position in Calcium Signaling Research: A postdoctoral position is available immediately in the laboratory of Dr. W. Gil Wier to study Ca2+ signaling in small arteries, particularly during sympathetic neuromuscular transmission. This research seeks new information on the mechanisms of differential release of sympathetic co-transmitters (ATP and NE) in small arteries and effects of these transmitters on smooth muscle. Experimental approaches include confocal imaging of Ca2+ in intact arteries (including use of genetically encoded Ca2+ indicators), electrophysiological recording, and use of receptor deficient (e.g. P2X1) transgenic animals. Experience in the use of small arteries is highly desirable. Applicants should have the PhD or MD and, preferably, training in muscle physiology and Ca signaling. For information about the Department of Physiology at University of Maryland Baltimore, and the current research program, see Faculty pages at http://physiology.umaryland.edu/. Salary is commensurate with experience and according to the current NIH postdoctoral levels; full benefits are available. Applicants should have the PhD and/or MD and send their curriculum vitae and names of three references via email to: Dr. Withrow Gil Wier, Professor of Physiology, University of Maryland, Baltimore, 655 West Baltimore Street, Baltimore, MD 21201; Email: gwier001@umaryland.edu.

Faculty Positions

Assistant Professor of Kinesiology: The Department of Kinesiology at Kansas State University invites applications for an Assistant Professor

tenure-track position whose research focus compliments the Department's existing research areas (cardiorespiratory/cardiovascular/muscle exercise physiology, public health, behavioral bases of physical activity). Outstanding individuals with an emphasis in human research are strongly encouraged to apply. Successful candidates will be expected to contribute to the undergraduate and graduate Kinesiology program. Responsibilities: conduct research and seek extramural funding in the area of specialization. Engage in collaborative research within the Department and/or with other units of the university community. Maintain a national presence in the appropriate professional societies. Teach undergraduate and graduate courses. Provide service to university and professional organizations. Qualifications: Completed PhD or equivalent in exercise physiology, public health, or related field; a focused line of research with potential for federal grant support; evidence of effective teaching. Postdoctoral experience strongly preferred. Appointment: nine-month tenure-track appointment beginning August 2004. Send letters of application, curriculum vitae, and names, addresses, Email addresses, and telephone numbers of three references to: Dr. Craig Harms, Search Committee Chair, Department of Kinesiology, 1A Natatorium, Kansas State University, Manhattan, KS 66506. The Department of Kinesiology at Kansas State University (K-State) has been nationally recognized as one of the leading programs of its kind. The Department is housed in the College of Arts and Sciences and provides education for over 450 undergraduate majors and 35 graduate students. Faculty in the department have research interests in the physiologic and behavioral components of physical activity. Strong collaborative ties exist with Veterinary Medicine, Department of Human Nutrition, and The Community Health Institute. K-State is a comprehensive, research, land-grant institution with an enrollment of 23,000. Founded in 1863, K-State is located on a beautiful 664-acre campus in Manhattan, a fast growing, multicultural community of nearly 50,000 in the rolling Flint Hills of northeast Kansas. http://www.ksu.edu/kines/ [EEO/AA]

Two Tenure-Track Faculty Positions: The West Virginia University, Robert C. Byrd Health Sciences Center, Cardiovascular Sciences and Vascular Biology, is seeking two Assistant/Associate/Full Professors. As part of a major interdisciplinary initiative in cardiovascular research, West Virginia University invites applications from outstanding scientists for two tenure-track positions, an Assistant Professor and an Associate Professor or Professor, for appointment July 1, 2004, in the Center for Interdisciplinary Research in Cardiovascular Sciences (CIRCS). These recruitments are supported by a new institutional Strategic Research Plan designed to expand biomedical research and graduate training. Priority will be given to individuals using modern cellular or molecular approaches to study regulation of vascular tone, inflammatory disturbances in endothelial permeability, angiogenesis or vascular remodeling, cerebrovascular ischemia, or cardiac/vascular dysfunction in hypertension, diabetes, atherosclerosis or heart failure. A total of six new tenure track faculty will be hired into the CIRCS over the next three years, with the goal of building a dynamic interdisciplinary team that will strengthen and unite basic, translational and clinical research in cardiovascular health and disease. Appointees will be expected to develop an independent, NIH-funded research program, and participate in the teaching missions of the institution. A generous startup package, competitive salary commensurate with experience, and independent laboratory space will be provided. Successful candidates will receive a tenure-track appointment in the most suitable basic science or clinical department. West Virginia University is a comprehensive, Carnegie designated Doctoral Research-Extensive public institution, with approximately 24,000 undergraduate and 5,500 graduate students. Morgantown has 55,000 residents and is rated as one of the best small towns in the US, with affordable housing, excellent schools, a picturesque countryside, and many outdoor activities. Qualifications: A PhD or MD, two or more years of postdoctoral training, and evidence of significant research accomplishments. Interested individuals should submit a complete curriculum vitae, a brief description of research interests, and the names and addresses (including email) of three references to: Matthew A. Boegehold, PhD, Director, Center for Interdisciplinary Research in Cardiovascular Sciences, PO Box 9229, West Virginia University, Morgantown, WV 26505-9229. Review of applications will begin **February 20, 2004,** and continue until positions are filled. [EEO/AA]

Assistant/Associate Professor, Neurobiology: Wartburg College is seeking a candidate committed to teaching in a liberal arts environment and involving undergraduate students in collaborative research. The full-time, tenure-track position will be beginning fall term 2004 and requires a PhD in Neurobiology or a related discipline by September 2004. Teach Neurobiology, an introductory team-taught sequence, and a general education course; and supervise student research. Complete information at http://www.wartburg.edu/hr. Submit letter of application, curriculum vitae, statement of teaching philosophy and research interests, unofficial transcripts, and information for three references to Jane Juchems, Human Resources, Wartburg College, 100 Wartburg Blvd., Waverly, IA 50677. Wartburg College is a four-year, coeducational liberal arts college of the Lutheran Church (ELCA.). [AA/EEO]

Research Assistant Professor, Confocal Microfluorometry and Microscopy: The Department of Anatomy and Physiology within the College of Veterinary Medicine at Kansas State University invites applications for a full-time position at the level of a Research Assistant Professor. Preference will be given to candidates with research interests in epithelial physiology and expertise in microfluorometry, immunohistochemistry and confocal microscopy. The Core seeks individuals, who will be able to man-

age the multi-user microscopy facility and work closely with the Director of this facility, Dr. Philine Wangemann. Responsibilities include operation and maintenance of equipment, training and supervision of users, design and implementation of studies, data analyses, administrative duties and participation in ongoing research projects. The Core houses state-of-the-art equipment including a Carl Zeiss 510 META confocal microscope and a Leica CM3050S Cryostat (http://www.vet.k-state.edu/depts/ap/COBRE/confocal.htm). The position is funded for three years with the possibility to extend funding. Applicants should submit a description of research interests, curriculum vitae and contact information for three references to Dr. Philine Wangemann, Search Committee Chair. Electronic submission is preferred at wange@vet.k-state.edu. Materials may be mailed to: Department of Anatomy and Physiology, Kansas State University, 228 Coles Hall, Manhattan KS 66506-5802. Review of applications will begin **March 1, 2004** and continues until the position is filled. [AA/EEO]

Assistant/Associate Professor, Molecular and Cellular Physiology: The Department of Molecular and Cellular Physiology at the University of Cincinnati is recruiting multiple faculty at the level of Assistant or Associate Professor. We seek colleagues that can contribute to a broadly interpreted theme of membrane physiology, building upon departmental and institutional strengths in membrane transport, epithelial biology, cell and tissue development, contractility, and hormonal regulation. A strong modern infrastructure (including bioinformatics, mutant mouse models, and imaging) will support research approaches studying molecular events in biologic systems that span the scale from single cells to whole organisms. Faculty members are expected to sustain an externally funded research program, have a strong commitment to graduate and medical education, and contribute to our vigorous collaborative environment. Candidates should have a doctoral degree, and will be considered for a faculty rank and track commensurate with experience. Review of applications will commence upon receipt, and will continue until all positions are filled. Please send a curriculum vitae, statement of research interests, and the names of four potential references to: Marshall H. Montrose, PhD, Chair, Department of Molecular and Cellular Physiology, University of Cincinnati College of Medicine 231 Albert Sabin Way, 4251 Medical Sciences Building, Cincinnati, OH 45267-0576; Email: marilyn.paolo@uc.edu. [AA/EEO]

Assistant Professor: Applications are invited for a tenure track appointment at the rank of assistant professor. Candidates should hold the PhD or MD degree, have a record of excellence in research, and be committed to academic programs in medical and graduate education. Research areas marked for expansion include, but are not limited to, cardiovascular-renal, cellular/molecular, membrane/transport physiology and functional genomics. Emphasis will be placed on individuals whose research program will interdigitate with the activities of the Hypertension and Renal Center of Excellence. The successful applicant will be expected to develop an independent extramurally funded re-search program. Send a curriculum vitae, a brief statement of research interest, copies of representative publications, and the names of three references to: Dr. L. Gabriel Navar, Chairman, Tulane University Health Sciences Center, School of Medicine, Department of Physiology SL-39, 1430 Tulane Avenue, New Orleans, LA 70112. We will accept applications until a qualified applicant is found. [EEO/AA]

Assistant Professor: The Biomedical Sciences Department at Southwest Missouri State University anticipates an August 16, 2004, opening for tenure-track assistant professor in human physiology/neurobiology/exercise physiology. See http://www.smsu.edu/hiresm-su for full description of position. Please direct further inquiries to Benjamin F. Timson, bft266f@smsu.edu, 417-836-6152. [AA/EEO]

Assistant Professor of Biology: Penn State Erie, the Behrend College, invites applications for a tenure-track position in animal physiology. Applicants must have a strong commitment to undergraduate teaching and to research. A PhD is required; postdoctoral and teaching experience preferred. Expectations: teach upper-division animal physiology, non-majors human physiology, and upper-division courses (two, in alternate years) in physiology; establish an active research program involving undergraduates; seek external funding. Penn State Erie (http://www.pserie.psu.edu) is a four-year and graduate college of Penn State, growing in enrollments and student quality. The College is committed to excellence in teaching, research, and outreach, and emphasizes balance between teaching and research. The School of Science offers strong four-year majors in biology, chemistry, computer science, mathematics, and physics. Biology teaching and research laboratories are newly renovated. The faculty conduct research in ecology, molecular biology, developmental biology, and microbiology (http://www.bio.bd.psu.edu). Pennsylvania Sea Grant (http://www.pserie.psu.edu/seagrant) is headquartered at Penn State Erie. Send curriculum vitae, copies of graduate and undergraduate transcripts, teaching statement, research statement explaining the suitability of your research program to an undergraduate institution of 3,800 students, and names and email addresses of three references that the search committee may contact independently. Send to: Dr. Roger Knacke, Penn State Erie, School of Science, Dept. BIOL-G, 5091 Station Road, Erie, PA 16563-0203. Application deadline is **March 15, 2004**, or until the position is filled. {EEO/AA]

Assistant Professor (Research Track): The Department of Physiology at UT Southwestern Medical Center invites applications from outstanding scientists with a PhD or equivalent degree and at least three years of postdoctoral training in molecular biology, preferably in genetic approaches applied to muscle biolo-

gy, for an Assistant Professor position on the Research Track. Of particular interest are candidates who have the potential to develop independent research programs while collaborating with investigations using molecular genetic approaches in mice. Applicants should submit a curriculum vitae, a brief statement of research experience and a list of references to: James T. Stull, PhD, Department of Physiology, University of Texas Southwestern Medical Center, 5323 Harry Hines Boulevard, Dallas, TX 75390-9040. [EEO/AA]

Research Positions

Research Assistant Professor, Department of Anesthesiology: PhD or equivalent degree required with a minimum of one year of post-doctoral experience. Independent research skills are necessary in the molecular pathology of oxidative stress in the lungs or other organs including a demonstrated ability to perform real time PCR, in situ hybridization, and immunochemical localization studies in fixed tissue. Please send a written letter of inquiry and complete curriculum vitae to Dr. C.A. Piantadosi, Professor of Medicine and Director Center for Hyperbaric Medicine, Box 3823, Duke University Medical Center, Durham NC 27710.

Scientist, In Vivo Physiology/ Pharmacology: Located in Westminster, CO, Myogen is engaged in the discovery, development and commercialization of small molecule therapeutics for the treatment of cardiovascular disorders. This position requires a PhD or equivalent in cardiovascular physiology, pharmacology or closely related field; seven+ years' experience; a track record of scientific accomplishments; exemplary management and leadership skills; and experience with the design & use of small animal (mice and rats) models of cardiac disease, especially models of chronic myocardial infarction, pathological cardiac hypertrophy, and heart failure. Experience with hemodynamic monitoring and ex-vivo molecular analysis of the heart desired. We provide a competitive compensation and benefits package. View complete job description and apply online at http://www.myogen.com. Email resume (MS Word file) to: hr@myogen.com. [EEO]

Head of Section of Molecular Medicine at Wake Forest University School of Medicine: The Department of Internal Medicine seeks an established MD, PhD or MD/PhD investigator to head a growing and innovative Section on Molecular Medicine. This rising Section will be the central coordinating unit for translational and integrative research and research training throughout the Department. A major goal for this Section is to participate cooperatively in the development of an institutional Proteomics Program in conjunction with the Department of Biochemistry and the Structural Biology Center. Opportunities exist for multidisciplinary research in diabetes, inflammation, vascular diseases, and kidney diseases, to name a few. The potential leader for this Section should possess qualities of leadership that include the development of multidisciplinary research programs that extend beyond traditional departmental lines. Considerable resources will be devoted to the development of this Section and include additional faculty positions, research space, and start-up funds. This is an exceptional opportunity for a talented leader to have significant impact on the translational research activities for the Department and, thereby, the Health Science Center. Curriculum vitae and names and addresses of three references should be sent to: Thomas D. DuBose, Jr., MD, Chair, Department of Internal Medicine, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157. Electronic applications acceptable to: tdubose@wfubmc.edu. [AA/EEO]

APS Sustaining Associate Members

The Society gratefully acknowledges the contributions received from Sustaining Members in support of the Society's goals and objectives

Abbott Laboratories

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Axon Instruments, Inc.

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International Society for the Study of the Lumbar Spine (ISSLS)

Courses, Fellowships, Awards and Prizes

International ISSLS Fellowship

The ISSLS was founded in 1974 to bring together those individuals throughout the world, who, by their contributions and activities both in the area of research and clinical study were interested in the lumbar spine in health and disease. Its further purpose was to serve as a forum for the exchange of information of both an investigative and clinical nature which relates to low back pain and disability.

This has been accomplished by holding annual meetings throughout the world. Unfortunately, there are many countries that are not represented. The members of the Society feel that a great deal of information could be exchanged if these countries actively participated.

The purpose of the International Fellowship Fund is to identify appropriate individuals in underrepresented/underdeveloped areas and financially sponsor them to attend and actively participate in the Society's meetings.

If anyone would like to attend next year's meeting in New York, NY, May 10-14, 2005, the applicant should send a letter of application briefly outlining their work, along with a curriculum vitae, a list of their publications, in English, and two letters of sponsorship from their superiors. They should also send an abstract of a paper or poster that they would present at the meeting. The applicant should have demonstrated interest in clinical spine or non clinical spine related research. Five copies of this material should be in the Society's office in Toronto by **December 1, 2004.** The committee will meet shortly after to decide which of the applicants will receive this award for the 2005 meeting.

Send applications to: ISSLS, Sunnybrook and Women's Health Science Centre, Room MG 323, 2075 Bayview Avenue, Toronto, Canada M4N 3M5. Tel.: 416-480-4833 Fax: 416-480-6055; Email: shirley.fitzgerald@sw.ca

ISSLS Instructional Course

Controversies in diagnosis and treatment of lumbar spinal conditions, March 27 & 28, 2005, Nairobi, Kenya

The 32nd annual meeting of the ISSLS will be held in New York, NY May 10-15, 2005. If you are interested in attending the meeting, as a non-member, you must have a paper or poster on the program or be invited by a member. Deadline for abstracts is **November 15, 2004.** Please reference http://www.ISSLS.org under annual meetings for information regarding submitting an abstract. For further information, please contact Shirley Fitzgerald at Sunnybrook and Womens Health Science Centre, Room MG 323, 2075 Bayview Avenue, Toronto, Canada, M4N 3M5. Tel.: 416-480-4833, Fax: 416-480-6055, Email: Shirley.Fitzgerald@sw.ca.

The 2004 Disabled Children Association Award for Scientific Research

The Disabled Children Association (DCA) is pleased to invite nominations for its 2004 Award for scientific research. Granting the award will be in accordance with the following conditions:

1. The Award aims at encouraging scientific research in disability and rehabilitation.
2. The Award for Scientific Research consists of:

A financial award of ~$26,500 for each of its branches.

A document, which bears the Association name, its emblem, the Award emblem and the winner's name.

The winner's name(s) will be displayed on the Board of Honour at the Association headquarters.

3. The award will be granted in three categories:

Rehabilitation
Special Education
Medicine and Medical Sciences.

Candidates may be nominated by scientific, educational, medical and social institutions. Individual's nominations are also accepted.

The DCA Award for Scientific Research is granted to researchers and scientific organizations which contribute effectively with distinguished scientific research in the field of disability and rehabilitation or develop new unprecedented techniques, technical aids or equipment, or medicine for the assistance of disabled children. Granting the award will be in accordance with the following conditions:

Research and studies presented should be sound and published during the last five years.

Medication should have proved its effectiveness in the treatment or prevention of disability in accordance with the WHO standards.

Technical aids, equipment, and other materials shall be directly related to disability or rehabilitation; and have been proven to be effective for its purpose and meet safety tests and scientific standards.

If the award is granted for the invention of a medicine, equipment, or treatment, the recipient preserves his/her rights to the invention.

6. Nominations should be sent to the Award secretariat with the following requirements:

Five copies of the scientific product in addition to the invention or a complete representation describing it in detail.

A typed CV detailing the nominee's academic background and experience, and listing all published work.

Three (3) recent color photographs.

A detailed contact address.

7. Submitted papers/materials will not be returned.
8. The Disabled Children Association must receive the above information no later than **November 30, 2004.**
9. Nominations should be sent to: The Award Secretariat, Disabled Children Association, PO Box 8557, Riyadh 11492, Saudi Arabia.

Other contact information: Email: prize@dca.org.sa; Tel: +9661-4543913 ext. 203; Tel: +9661-4543521.

Call for 2004 AAMC Awards Nominations

Each year at its annual meeting the Association of American Medical Colleges presents its major awards honoring individuals and programs making significant contributions to our community. Nominations for these awards are currently being solicited:

The **Abraham Flexner Award for Distinguished Service to Medical Education** is the highest honor that academic medicine presents for sustained contributions to American medical education. The award is a medal and a cash prize of $10,000. For information, contact 202-828-0472.

The **Alpha Omega Robert J. Glaser Distinguished Teacher Awards** regognize the significant contributions to medical education made by gifted teachers. Each winner receives $10,000; the awardee's institution receives $5,000; and the awardee's AΩA chapter receives $1,000. For information, contact 202-828-0680.

The **Award for Distinguished Research in the Biomedical Sciences** recognizes exceptional research discoveries, and consists of a plaque and a cash award of $5,000. For information, contact 202-828-0472.

The **David E. Rogers Award** is granted annually to an individual who has made major contributions to improving the health and health care of the American people. The Rogers Award is a prize of $10,000 and a crystal presentation piece, and is supported by The Robert Wood Johnson Foundation. For information, contact 202-828-0472.

MDCT at Sea: Advanced Topics in Multidetector-Row CT Scanning A Cruise to Alaska

August 1-8, 2004

Sponsored by Johns Hopkins University School of Medicine, The Russell H. Morgan Department of Radiology and Radiological Science

This course is dedicated to the current state-of-the-art of multidetector slice CT scanning with an emphasis on 16 row MDCT. The course is designed for the radiologist to integrate a series of detailed lectures by experts in the field with the opportunity to enjoy the beauty and harmony of one of nature's last preserves, the inner passage to Alaska.

The course consists of lectures focusing on the principles, techniques and clinical applications of MDCT with specific focus on new applications, including CT angiography, virtual imaging to include virtual colonoscopy, cardiac CT, and the latest advances in thoracic CT scanning. The lectures will also address the latest innovations in imaging the liver, pancreas, kidneys and GI tract. There will be ample time for discussion and opportunities for hands-on training on CT workstations. This course will provide a unique opportunity to combine an outstanding educational activity with an outstanding social program.

Fees:

Physicians: $695

Residents*/Fellows*/Allied Health Professionals:

$595

**with verification of status*

The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

The Johns Hopkins University School of Medicine designates this educational activity for a maximum of 26 category 1 credits toward the AMA Physician's Recognition Award. Each physician should claim only those credits that he/she actually spent in the activity. The American Medical Association has determined that non-US licensed physicians who participate in this CME activity are eligible for AMA PRA category 1 credit. The American Society of Radiologic Technologists recognizes Category 1 for Category B credit for the radiologic technologist.

For more information, contact: Elliot K. Fishman, MD, FACR, Johns Hopkins University School of Medicine, Office of Continuing Medical Education, Conference Coordinator, Turner 20, 720 Rutland Avenue, Baltimore, MD 21205-2195; Tel.: 410-955-2959; Fax: 410-955-0807; Email: cmenet@jhmi.edu; http://www.hopkinscme.org/cme. ❖

32nd Annual Current Topics in Geriatrics

October 14-16, 2004

Sponsored by Johns Hopkins University School of Medicine, to be held at the Sheraton Baltimore North Hotel, Baltimore, MD

This course is designed to provide practical information to clinicians in internal medicine, family practice, geriatrics, and other specialty areas and healthcare professionals who care for elderly patients. The demographic imperative of our aging population is well-known. Many primary care physicians see mostly elderly patients.

The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. This activity has been approved for AMA PRA credit. Other applicable credit will be offered.

Fees:

Physicians: $475

Residents*/Fellows*/Allied Health Professionals:

$375

**with verification of status*

(If registration is postmarked by September 1, 2004, deduct $25).

For more information, contact: Johns Hopkins University School of Medicine, Office of Continuing Medical Education, Conference Coordinator, Turner 20, 720 Rutland Avenue, Baltimore, MD 21205-2195; Tel.: 410-955-2959; Fax: 410-955-0807; Email: cmenet@jhmi.edu; http://www.hopkinscme.org/cme. ❖

Vanderbilt University Summer Conferences Call for Abstracts

All participants are highly encouraged but not required to submit an abstract. Students interested in partial fellowship support to attend any of the Vanderbilt University Summer Conferences are required to submit an abstract, resume and statement of research goals. For additional information about abstract submissions, visit http://medschool.mc.vanderbilt.edu/vusc; Tel.: 615-322-0672; Email: cme@vanderbilt.edu.

Mathemathetical Models in Signaling Systems; June 16-18, 2004; Deadline for abstract submission: April 15, 2004; Notification date: May 1, 2004.

Pharmacogenomics: From Concept to Clinical Practice; June 20-23, 2004; Notification date: May 1, 2004. ❖

Lake Cumberland Biological Transport Group Meeting

Make plans to attend the 2004 Lake Cumberland Biological Transport Group meeting (affiliated with APS). The theme is focused on biological transport systems and/or mechanisms. Presentations from all related areas are welcome. The meeting provides an outstanding forum for principal investigators, postdoctoral fellows, and graduate students alike to present data and obtain feedback. Scientific sessions are scheduled Sunday evening, June 13, through Wednesday morning, June 16, with afternoons free for informal interactions that allow all to enjoy the many amenities available in the picturesque setting provided by the Lake Cumberland State Resort Park at Jamestown, KY. Further details can be obtained at the meeting web site (http://iupucbio1.iupui.edu/cumberland/default.htm).

Contact:

Bruce D. Schultz, PhD, Meeting Chair, Assistant Professor, Department Anatomy & Physiology, Kansas State University, 1600 Denison Ave., Manhattan, KS 66506, Tel: 785-532-4839; Fax: 785-532-4557; Email: bschultz@vet.ksu.edu;

Sne ana Petrovic, MD, PhD, Meeting Vice-Chair, Research Instructor, Division of Nephrology and Hypertension, Univ. of Cincinnati College of Medicine, PO Box 670 585, Cincinnati, OH 45267-0585; Tel.: 513-861-3100 x4441; Fax: 513-475-6415; Email: snezana.petrovic@med.va.gov. ❖

Call for Nominations for the 19th Annual Gustav O. Lienhard Award Through the Institute of Medicine

The Institute of Medicine is accepting nominations for the 19th annual Gustav O. Lienhard Award. The award, a medal and $25,000, recognizes individuals for outstanding achievement in improving health care services in the US. Support for the award is provided by an endowment established by The Robert Wood Johnson Foundation.

The Gustav O. Lienhard Award focuses on creative or pioneering efforts that have appreciably improved personal health services rather than on contributions to the science base of health care. To encourage consideration of the widest possible range of candidates, no eligibility limits are placed on the education or profession of individuals who may be nominated. Award recipients are selected on the basis of two principal criteria:

achievement in the area of personal health services; and

achievement of national scope.

Additional selection criteria include: innovative, creative, and pioneering achievement;

unique contributions by the nominee to that achievement;

positive change over a sustained period—not simply for the potential for such change—through the nominee's achievement;

a qualitative and quantitative impact; and

success in overcoming barriers, based on resources available.

Finally, the recipient must attend the ceremony to receive the award.

Any individual or group may submit a nomination. Nomination materials should include:

A letter of no more than five pages providing a detailed description of how the nominee's overall accomplishments of specific achievements have made a sustained, national contribution to the improvement of personal health services; the letter should emphasize the nominee's unique contributions;

A one-sentence citation summarizing the nominee's overall accomplishment of specific achievements; and

A curriculum vitae with a selected bibliography of up to 15 entries.

Only written material will be considered. Nominations for the 2004 Lienhard Award are due **April 30, 2004,** and should be submitted to: The Lienhard Award Committee, C/O Susanne Stoiber, Institute of Medicine, 500 Fifth Street, NW, Wash-ington, DC 20001; Email: lienhard@nas.edu, Tel: (202) 334-2177.

A panel of experts in various aspects of health care, convened by the Institute of Medicine, will review all nominations and make award recommendations. The panel's recommendations will be acted on by the Institute's governing council and president.

For more information on the history of the award, go to http://www.iom.edu/lienhard. ❖

May 3-4
Symposium on Cardiovascular Molecular Imaging, National Institutes of Health, Bethesda, MD. *Information:* American Society of Nuclear Cardiology, 9111 Old Georgetown Road, Bethesda, MD 20814. Tel: 301-493-2360; Email: CMISymposium@asnc.org; Internet: http://www.asnc.org/meetings/imaging.cfm.

May 3-5
IBC's Targeting Metabolic Syndrome, Boston, MA. *Information:* Client Services Dept., IBC Life Sciences, One Research Drive, Suite 400A, Westborough, MA 01581-5195. Tel: 508-616-5550 x1004; Fax: 508-616-5533; E-mail: reg@ibcusa.com; Internet: http://www.LifeSciencesInfo.com/metabolic/?source=3065-49.

May 6-7
Advancing Diagnostic Approaches for TMJ Diseases and Disorders, The Third Scientific Meeting of The TMJ Association, Bethesda, MD. *Information:* Deanne Clare, The TMJ Association, P.O. Box 26770, Milwaukee, WI 53226-0770. Tel.: 414-259-3223; Fax: 414-259-8112; Email: info@tmj.org; Internet: http://www.tmj.org/2004sciencemtg.asp.

May 15-21
Twelfth Scientific Meeting and Exhibition of the International Society for Magnetic Resonance in Medicine, Kyoto, Japan. *Information:* International Society for Magnetic Resonance in Medicine, 2118 Milvia Street, Suite 201, Berkeley, CA. Tel.: +1 510 841 1899; Fax: +1 510 841 2340; Email: info@ismrm.org; Internet: http://www.ismrm.org.

May 17-18
Emerging Molecular Targets to Treat Disorders Affecting Cognitive Function, Princeton, NJ. *Information:* Ellen M. Wofford, SVP, Pharm Ed Associates, a division of Financial Research Associates, LLC. Tel.: 803-548-6021; Fax: 803-548-6024; Internet: http://www.frallc.com; Internet: http://www.pharmedassociates.com.

May 23-26
Frontiers in Addiction Biology: Genomics and Beyond, Vanderbilt University, Nashville, TN. *Information:* Tel.: 615-322-0672; Email: cme@vanderbilt.edu; Internet: http://medschool.mc.vanderbilt.edu/vusc.

May 25-27
Amino-Acid/Protein Metabolism in Health and Disease International Congress, Milano, Italy. *Information:* Organising Secretariat, San Raffaele Congress Centre, Via Olgettina 58-20132 Milano-Italy. Tel: +39-02 2643 3700; Fax: +39 026 2643 3754.

May 28-31
The XIV International Congress of Dietetics, Chicago, IL. *Information:* Email: congress@internationaldietetics.org; Internet: http://www.internationaldietetics.org or http://www.choosechicago.com.

May 31-June 5
31st Annual Meeting of the International Society for the Study of the Lumbar Spine, Porto, Portugal. *Information:* Secretary, Dr. Scott Boden, Sunnybrook and Women's Health Science Center, Room MG 323, 2075 Bayview Avenue, Toronto, Canada, M4N 3M5. Internet: http://www.issls.org.

June 4-7
33rd Annual Meeting of the American Aging Association, St. Petersburg, FL. *Information:* American Aging Association, The Sally Balin Medical Center, 110 Chesley Drive Media, PA 19063. Fax: 610-565-9747; Internet: https://www.americanaging.org/meetinginfo.htm.

June 6-9
Frontiers in Genome Engineering: Building a Better Mouse, Vanderbilt University, Nashville, TN. *Information:* Tel.: 615-322-0672; Email: cme@vanderbilt.edu; Internet: http://medschool.mc.vanderbilt.edu/vusc.

June 9-12
CSPS 7th Annual Symposium on Pharmaceutical Sciences, Vancouver, British Columbia, Canada. *Information:* Sandra Hutt, Administrator, Canadian Society for Pharmaceutical Sciences, Journal of Pharmacy & Pharmaceutical Sciences, 3118 Dentistry/Pharmacy Centre, University of Alberta Campus, Edmonton, Alberta, Canada T6G 2N8. Tel.: 780-492-0950; Fax: 780-492-0951; Internet: http://www.ualberta.ca/~csps/symposium2004/home.htm.

June 13-16
2004 Lake Cumberland Biological Transport Group Meeting, Lake Cumberland State Resort Park, Jamestown, Kentucky. *Information:* Bruce D. Schultz, Ph.D. Meeting Chair, Department of Anatomy & Physiology, Kansas State University, Manhattan, KS 66506-5802. Tel.: 785-532-4839; Fax: 785-532-4557; Email: bschultz@vet.ksu.edu; Internet: http://iupucbio1.iupui.edu/cumberland/default.htm.

June 16-18
Mathematical Models in Signaling Systems, Vanderbilt University, Nashville, TN. *Information:* Tel.: 615-322-0672; Email: cme@vanderbilt.edu; Internet: http://medschool.mc.vanderbilt.edu/vusc.

June 20-22
9th International Workshop on Multiple Endocrine Neoplasias (MEN2004), Bethesda, MD. *Information:* American Institutes for Research (AIR). Tel.: 301-592-2115; Email: men2004@air.org; Internet: http://www.men2004.org.

June 20-23
8th International Symposium on Resistance Arteries (ISRA), Angers, France. *Information:* 8th ISRA, laboratoire de Physiologie-UPRES EA 2170, faculté de médecine d'Angers, rue haute de reculée, 49045, Angers, France. Tel.: 0-33-(0)241 735 845; Fax: 0-33-(0)241 735 896; Email: isra8th@med.univ-angers.fr; Internet: http://www.isra2004.org.