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# The Physiologist

Volume 43, Number 3

June 2000

## “Teaching Physiology: Filling a Bucket or Lighting a Fire?”

Aviad Haramati

Georgetown University School of Medicine



Thank you very much for the kind words and for this honor. I am really sorry my wife Claire could not be here today, because much of what you have said and honored could not have occurred without her dedication and support. I am most grateful to my esteemed colleagues at Georgetown University: Drs. Susan Mulrone, Michael Lumpkin, and Adam Myers for nominating me; to my current and former students who

wrote letters of support (I am truly humbled by your comments); to the Teaching Section of APS for having the insight to have such an award; and to the Committee for selecting me. The fact that the Committee is composed of past honorees makes this tribute all the more meaningful. Lastly, my thanks to W.B. Saunders Company for having the commitment and wisdom to sponsor such an award.

It is most appropriate that the award is named after Arthur Guyton, the eminent physiologist and educator, who is a role model for all of us. I first met Dr. Guyton when I was a newly arrived graduate student at the University of Cincinnati, and Guyton came to our institution as a Distinguished Visiting Professor. My first experience with Guyton was rather traumatic. Guyton loved to

*Aviad Haramati received the eighth annual Arthur C. Guyton Physiology Teacher of the Year Award. The following is a speech delivered by Haramati as he was presented the award at Experimental Biology 2000 in San Diego, CA, in April 2000.*

describe the homeostatic regulation of body function as a series of increasingly complex integrated circuits that culminated in a rather daunting overall picture. I remember seeing this particular slide and breaking into a cold sweat—wondering what possessed me to think I could ever know enough to have a career in physiology, much less teach it effectively. However, over time, I came to appreciate and admire

Guyton's tremendous contributions, and I am honored to be associated with him in this manner.

I was told that part of the requirement for receiving this award is that I would be asked to present a short essay of 20-30 min on a topic of relevance to physiology education. My colleagues tell me 20 is better than 30, and my parents taught me that anything worth saying can be said in 10 min or less—a lesson that I admit I did not learn very well. What I would like to do is to share my perspectives, gathered from over 20 years of teaching physiology in a medical school setting, and, I hope, stimulate a discussion of the issues for most of the remaining time. What I will not do is preach to this choir.

You may have noticed the title of my presentation, *Teaching Physiology: Filling a Bucket or Lighting a Fire?* I will explain in due course, but for those who are impatient my take-home message is very simple: teaching physiology **responsibly** entails much more than just transmitting scientific facts.

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# Teacher of the Year Award

(continued from page 117)

Let me begin by making two observations. The first is that most of us who teach in medical schools were hired not because of our ability to teach effectively but because of our expertise in research. In fact, few if any of us had formal training in education. Rather, we were recruited to our institutions because of our work in a particular area of medical science. We learned very quickly how to formulate questions, develop hypotheses, analyze results, and present data that either supported or refuted a particular position. Yet, in our role as teachers, we were expected to step in and cogently present material on aspects of physiology in the lecture hall or conduct small group discussions effectively. Or were we?

Consider the traditional view of the academic mission in basic science, in general, and physiology, in particular, outlined in Fig. 1. We engage in education—and teach the scientific principles of our discipline. We conduct scholarly research—and advance medical knowledge with new discoveries. And we perform service—to the University, to the profession, and to society. Despite the protestations of most medical school administrators that **education** is their number one priority, the fact is that faculty rewards—promotion, tenure and compensation are determined almost exclusively by the faculty's research productivity. And yet, what about the educational mission?

Arthur Vander commented on this issue several years ago in his Claude Bernard Distinguished Lectureship. Some of you may have been lucky enough to hear it; if not, I strongly urge you to read the text that was reprinted in *Advances in Physiology Education* (3). Vander provided many profound statements reflecting on the past in physiology and his ideas for shaping the future. I would like to quote a few of them. He stated that “it is mind-boggling that many faculty, who expend huge efforts training their students to do research, somehow have concluded that teaching, a no-less-difficult activity, requires no special training.” Because of institutional practices around the nation, “it's no wonder so many young faculty conclude that teaching is the price we pay in order to do research.” His point (directed to a junior faculty member) was that “you must approach your teaching with the same seriousness and effort that you devote to your research.” The truly humbling reason he

**I believe those [student-faculty] interactions are critical in that they enable the faculty to serve as role models and provide an opportunity for students to gain valuable insights and learn about more than didactic course material.**

gives is because, “you will be interacting with several hundred students a year; nothing you will ever do in the research lab is as likely to impact on so many lives.”

One benefit he gave of this effort is that the faculty member will “experience the excitement of finding that you never really understood your own field until you had to teach it to others.” Haven't we all been there? I know I have, when faced with having to teach acid-base physiology for the first time. So what was Vander's message? That, despite our lack of training in education and the skewed reward system, we should take our teaching activities seriously. But to what end? What are our true educational objectives?

Which brings me to my second observation. Students, especially medical students, are quite adept at budgeting their time efficiently. If they feel that a particular teaching session is a waste of time for them, they would rather spend the time studying in the library or at home. They can certainly read faster than we can speak. If all we do is read information to them, they vote with their feet—appropriately, I might add.

At times I have wondered what would happen if we provided incoming first-year medical students with a list of all the curricular objectives for the first two years, all the textbooks and handout materials, and asked them to come back in two years time and take the USMLE Step 1 examination. Would their scores be significantly different? I really do not know, but I have my doubts. So then, why go through all the trouble and expense, the hundreds, maybe thousands, of hours of student-faculty contact? Clearly, it is for more than simply information transfer. I believe those interactions are critical in that they enable the faculty to serve as role models and provide an opportunity for students to gain valuable insights and learn about more than didactic course material.

Horace Davenport is quoted as saying, “there is a great difference between teaching and learning, there is too much teaching and not enough learning.” We must

## Academic Mission of Basic Science

### • Education

Teach the scientific principles underlying medical practice

### • Research

Advance medical knowledge through discovery

### • Service

University, profession, society

Figure 1.

## Teacher of the Year Award

focus on the learning, and use whatever format we engage in (lecture, small-group discussion, problem-based learning session, etc.) to facilitate learning. When it comes to the lecture hall, how much learning takes place there? Many of you know better than I how much is actually retained by students after a lecture, maybe 10% or less. On the other hand, the lecture hall is a wonderful place for us to model various behaviors. Students can see excitement and passion. Students can discern what we consider important, concepts on which we place value, and the emphasis we give to certain ideas and not others.

I view my role as a motivator. My task is to engage the students in the subject matter so they will be excited and interested, and—if we are really successful—impatient to go home, study, contemplate and really **learn**.

Some of these issues were addressed in an interesting article by Penny Hansen and Ken Roberts on “Physiology’s hidden curriculum” (2). They made the point that “a simplistic definition of a curriculum in physiology would be its information content.” They asserted that there are unwritten aspects of a course in physiology that are beneficial to both students and faculty in terms of introducing elements of critical appraisal, placing physiology in a clinical context, and underscoring the importance of faculty as role models. I would go even further.

However, first, let’s go back to the title. When we teach physiology, are we simply there to fill a bucket? Not that filling a bucket is bad. As a renal physiologist, I am very familiar with buckets, especially full ones. Yet can we do better than buckets of facts? Yes, we can! Rather than filling buckets, we should be lighting fires with respect to the students’ professional development. We should fan the flames of enthusiasm, idealism, ethical behavior, and, yes, professionalism. These are elements we can and must model.

Which brings me to my final point. In the lecture that I referred to earlier, Vander

discussed various curricular reforms and admitted that while he did not know what was best, he challenged us with the following: “what I do know is that the traditional way of delivering the curriculum is badly in need of alteration and the very least physiologists can do is take a leadership role in doing it.” I was moved by Vander’s words. Up to that time, I had been involved in curricular matters at my own institution, but, after his talk, I began attending meetings on medical education and participating in discussions on promoting active learning, disciplinary vs. interdisciplinary courses, and other issues.

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**I firmly believe that we have the moral responsibility to actively participate in the professional development of our students and that we should consider this as an essential aspect of our role as physiology faculty and medical science educators.**

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During this time, I became aware of a major new initiative by the Association of American Medical Colleges (AAMC) called the *Medical School Objectives Project* (MSOP). The goal of this project is to develop a consensus within the medical education community on the attributes that medical students should possess at the time of graduation and to set forth learning objectives for the medi-

cal school curriculum derived from those attributes (1). The intent is to provide a frame of reference for guiding medical schools as they develop their own objectives and approaches.

Shown in Fig. 2 is a list of the new educational goals for graduating physicians, which I will summarize briefly. Physicians must be altruistic—meaning compassionate and empathetic in caring for patients and ethical and truthful in all of their professional dealings. Physicians must be knowledgeable regarding the scientific basis of medicine and be able to apply that understanding to the practice of medicine. Physicians must be highly skilled to provide health care to patients. This includes demonstrating the ability to obtain accurate medical history, perform physical examinations and certain diagnostic procedures, and be able to communicate appropriately with patients and their families. Physicians must be committed to working collaboratively with other physicians and health professionals in providing needed services to individual patients, populations, or communities.

However, we should not view these goals as limited to the students’ experiences in the “clinical” years. Although the goals center on interactions with patients and the delivery of health care, many of the behaviors are not limited to the clinical setting. Rather, it seems to me that we have a responsibility in our role as basic science educators, and physiologists in particular, to be aware of these objectives and incorporate them into all our interactions with students,

**NEW EDUCATIONAL GOALS**

**Graduating physicians must be:**

- *Altruistic*
- *Knowledgeable*
- *Skillful*
- *Dutiful*

Figure 2. Goals as given by AAMC (1).

## Teacher of the Year Award

including in the teaching of physiology. Figure 3 lists just a few examples of how we can accomplish this. In addition to our clear role in helping to provide students with a comprehensive knowledge of biomedical science, we can also advance their critical thinking and problem-solving skills with well-designed educational experiences. There are also important attitudinal issues that we can demonstrate, such as the recognition of limits and uncertainties in our current understanding, as well as the commitment to continually improving one's knowledge and skills. However, perhaps most relevant and timely is that we can directly model from our research activities one of the attributes that the AAMC felt was of high priority and listed first, namely, altruism. Compassion and empathy are essential when working with animals in the research laboratory. Research integrity mandates trustworthiness and truthfulness and an understanding of ethical precepts of the profession. I firmly believe that we have the moral responsibility



**Aviad Haramati accepting the Arthur C. Guyton Teacher of the Year Award from Dee Silverthorn, Chair of the Teaching of Physiology Section.**

to actively participate in the professional development of our students and that we should consider this as an essential aspect of our role as physiology faculty and medical science educators.

I have talked quite a bit about our responsibility to serve as appropriate role models to our students. It is time for me to publicly acknowledge the wonderful

role models that I have benefited from during my professional development. First, I am grateful to Robert Banks, professor of physiology at the University of Cincinnati, who taught me renal physiology and lit my fire by sharing his excitement in research and his skills as a master teacher. To Frank Knox, past chair of physiology and dean of Mayo Medical School, who guided my transition from postdoctoral fellow to independent investigator, expanded my research horizons, and who is a shining example of "a gentleman and a scholar." To Lawrence Lilienfield, my previous chair who recruited me to Georgetown University and, in addition to providing sage advice, gave me the freedom and support to thrive and grow. Most of all, I will always be grateful to my thesis professor, Leonard Kleinman, of blessed memory. Kleinman was a dedicated neonatologist, a brilliant physiologist (member of APS), and an inspiring educator. He was an exemplary model of compassion, commitment, and uncompromising integrity. Of all the nice words people have written about me, one comment a student wrote really struck a cord for me, "Dr. Haramati teaches his students not merely to understand renal physiology and basic science research...but also how to be a good person." If the latter part of that statement is indeed true, I think Lenny Kleinman would be proud. Thank you all very much for this honor and for your patience in listening to me.

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2. **Hansen, P., and K.B. Roberts.** Physiology's hidden curriculum. *News Physiol. Sci.* 7:41-44, 1992.
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### NEW EDUCATIONAL GOALS

#### *Role of the Basic Scientist*

- **Knowledge**
  - *Fund of knowledge in biomedical science*
- **Skills**
  - *Problem-solving and critical thinking*
- **Attitudes**
  - *Recognition of ambiguities and uncertainties of our current understanding (limits of knowledge)*
  - *Commitment to improve one's knowledge/ability*
- **Altruism**
  - *Compassion and empathy*
  - *Trustworthiness and truthfulness*
  - *Understanding and respect for the roles of other health care professionals*
  - *Understanding of the ethical precepts of the profession*

Figure 3.

## Introducing . . . Mordecai P. Blaustein

On January 1, 2000, Mordecai P. Blaustein succeeded Edward H. Blaine as Chair of the APS Finance Committee. Blaustein, who previously served on the Finance Committee for three years, is an ex officio member of the APS Council. He previously served as an elected APS Councillor. He also was a member of the APS Committee on Committees, including a term as Chair, and the APS Liaison With Industry Committee. In conjunction with his APS activities, Blaustein served on the FASEB Life Sciences Research Office Advisory Committee and the FASEB Antihypertensive Drug Study Advisory Panel. He was a member of the *American Journal of Physiology-Cell Physiology* Editorial Board for nine years. Two years ago, when Blaustein served as President of the Association of Chairs of Departments of Physiology (ACDP), he worked with APS President Gabriel Navar and APS Teaching of Physiology Section Chair Robert Carroll to bring the joint APS - ACDP Physiology Core Curriculum project to fruition; the final version of that document will be distributed this month.

Blaustein is Chairman of the Department of Physiology at the University of Maryland School of Medicine. He received his undergraduate education at Cornell University, and his medical edu-



cation at the Washington University School of Medicine in St. Louis. Following an internship in Boston and military service as a Naval Medical Research Officer in Bethesda under David Goldman, he completed his postdoctoral training with Alan Hodgkin at Cambridge University. In 1968 he joined the Department of Physiology and Biophysics at the Washington University School of Medicine. He moved to his present position in 1979.

Blaustein's research has focused on calcium transport and calcium signaling in neurons and vascular smooth muscle, with particular emphasis on the role of sodium-calcium exchange. He has also pioneered studies on the physiology of isolated presynaptic nerve terminals (synaptosomes). His research awards include the Pasarow Foundation Award

for Cardiovascular Research and an Alexander von Humboldt Senior Scientist Award. His more than 200 publications include an article on the possible role of a ouabain-like compound in salt-dependent hypertension that was published in *AJP-Cell Physiology* in 1977; this is one of the 10 most-cited articles to appear in *AJP* during its first century of publication.

The APS Finance Committee is charged with overseeing the annual budget and the overall financial status of the Society. As a result of the success of its publications, several recent bequests, and the performance of the stock market, the Society's financial reserves have grown substantially in recent years. The Society is currently in excellent financial health and has therefore been able to undertake a number of new initiatives for the benefit of its members. Nevertheless, the next several years promise to be very challenging, not only because of turbulence in the financial markets, but also because the profitability of the Society's journals may be undermined by several factors, including the high costs of necessary new ventures in electronic publishing. Blaustein looks forward to the opportunity to serve the members of APS and to help oversee the continuing fiscal well-being of the APS in the face of these challenges. ❖

## APS Sustaining Associate Members

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



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## Introducing . . . Thomas V. Peterson

On January 1, 2000, Thomas V. Peterson succeeded John Stokes as Chair of the APS Awards Committee. He has been a member of the Committee for the last three years.

Peterson is a professor in the Department of Medical Physiology at the Texas A&M University System Health Science Center College of Medicine. He graduated from Bethany College in Lindsborg, Kansas and the University of Oklahoma Health Science Center where he received his PhD in physiology. He then did a postdoctoral research fellowship at the University of Nebraska Medical Center, working with Joseph Gilmore and Irving Zucker. He began his faculty position at Texas A&M University in 1979.

Peterson's primary research area has been neural and humoral control of renal function. He has been mainly interested in the role of the renal nerves and atrial natriuretic factor (ANF) in mediating changes in renal sodium and water excretion during hypervolemic conditions. In the last few years, he has shifted his interests from research to adminis-



tration, particularly curriculum evaluation and the development and implementation of a new medical curriculum at his institution.

The APS Awards Committee is charged with overseeing all of the award programs of the Society to ensure uniformity and conformity with the goals of APS. Its main review function is to evaluate applications and select awardees of the Research Career Enhancement and Teaching Career Enhancement Awards, the APS Postdoctoral Fellowships in Physiological Genomics, and the

awardees of the Arthur C. Guyton Award in Integrative Physiology, the Shih-Chen Wang Young Investigator Award, and the Lazaro J. Mandel Young Investigator Award. The Committee also has responsibility for coordinating the selection processes for the Cannon and Bowditch Awards and the APS nominees for the FASEB Excellence in Science Award and for reviewing and recommending possible changes in the review procedures for the selection of sectional awards.

One of the Committee's recent challenges, although a positive one, is the increased number of different types of Society awards and the marked increase in the number of applications for review. This, of course, speaks well for the continued vitality of the APS awards program. It is hoped that the future will continue to see an increase in the number of awards and applications. This, of course, will require a close look at the structure and number of members serving on the Awards Committee such that its job can be accomplished in the most efficient fashion. ❖

## Gift Planning Opportunities

The American Physiological Society is pleased to invite the membership to consider including the APS in their gift giving plans. Over the last several years, the Society has received donations of land and securities, all of which have been used to launch the Society's various young investigator award programs.

Many options exist if you are interested in including the APS and its Endowment Fund in your financial or estate planning. Some options include:

✿ **Immediate Gifts:** Cash, gifts of appreciated securities, gifts of closely held stock, gifts of tangible personal property, retirement assets, charitable lead trusts and gifts of real estate.

✿ **Life Income Gifts:** Gift annuities, deferred payment gift annuities, charitable remainder trusts, charitable remainder unitrusts, and charitable annuity trusts.

✿ **Gifts of Insurance:** Ownership of life insurance policies can be donated, or the APS can become the beneficiary of policies owned by others.

✿ **Designated Gifts:** Gifts given to honor or memorialize an individual or an organization and can include scholarships, programs, etc., which are specified for support and named for individuals.

✿ **Gifts by Will:** Bequests of a percentage of estate, stated dollar amount or specific property or assets.

For more information on gift giving to the APS, please contact Martin Frank, Executive Director (Tel. 301-530-7118, Email: [mfrank@aps.faseb.org](mailto:mfrank@aps.faseb.org)), or Robert Price, Director of Finance (Tel. 301-530-7160, Email: [rprice@aps.faseb.org](mailto:rprice@aps.faseb.org)).



## 2000 Research Career Enhancement Awards

The Research Career Enhancement Awards are designed to enhance the research careers of APS members in good standing, strengthening their research programs and making them more competitive scientists. The awards are given competitively twice a year.

In 2000 the spring round of applications resulted in three applications being accepted, those of **Vera A. Golovina**, University of Maryland; **Leslie C. McKinney**, Uniformed Services University of the Health Sciences in Bethesda, MD; and **John David Symons**, University of California, Davis.

Golovina will use the award to attend a Cold Spring Harbor Laboratory course on the molecular cloning of neural genes. Golovina will utilize the techniques learned during the course to enhance her research program, which focuses on analyzing

the expression of store operated channels (SOC, responsible for “capacitative calcium entry”) in primary cultured human pulmonary artery myocytes.

McKinney will also use the award to attend a course, but at the Marine Biological Laboratory, to learn to use a digital imaging system to do quantitative microscopy for the measurement of calcium signals from single cells.

Symons will use his award to visit the laboratory of Kathryn Lamping at the University of Iowa to learn the dual micropipette cannulation technique for evaluating endothelial and vascular smooth muscle function in coronary microvessels.

APS members in good standing are invited to apply for Research Career Enhancement Awards. The deadlines for applications are February 15 and August 15. ❖

## APS Welcomes New Director of Finance

On November 15, 1999, Robert T. Price, CPA, joined the Society staff as Director of Finance after the retirement of longtime Business Manager, James Liakos. Bob comes to the Society from the American Diabetes Association, Alexandria, Virginia, where he served as Director of Financial Operations. Before that, he was Controller of the American Type Culture Collection in Manassas, Virginia.

Bob joined the staff at the beginning of the Society’s Strategic Planning Conference in Kiawah Island, South Carolina, and he appreciated the opportunity it presented. “Participating in the conference was not only a chance to meet many members of the Society’s council, committees, and staff in a few short days, but it also provided tremendous insight into the history of the organization and its vision for the future.”

Bob gives credit to Executive Director Martin Frank and the Business Office staff for a smooth transition. “Shortly after I started, we were faced with several challenges. However, because of Marty’s leadership and the knowledgeable and experienced Business Office staff, the Society obtained an un-



qualified audit opinion on its 1999 financial statements and government grant audits, and we were able to complete the Society’s 2000 budget. My thanks go to Jean Shao, Dell Pillers-Cline, and the rest of the Business Office staff, for their dedicated effort during the transition period.”

Regarding future changes to financial operations, Bob has been working with the Society’s staff in assessing its business processes. “We implemented several new procedures in response to the Society’s prior year audit, and we hope to add several more in the current year. Most pressing is the ability to use existing financial systems to disseminate timely and pertinent financial informa-

tion to management staff, the Council, and committees. As a first step, we developed a process for financial reporting to management staff that, when fully implemented, will provide the information necessary for each department to evaluate their financial condition on a monthly basis. With such information, we should be able to more closely monitor the Society’s budget and react quickly to changing conditions. Also in the near future, we hope to increase the Society’s financial forecasting capabilities, so that we can more readily respond to opportunities.”

Bob is also looking forward to the Business Office’s participation in changes brought on by new technology. “We are reviewing options that will enable use to process financial transactions with our members and customers via the APS web site. The capability for an organization such as ours to process business transactions electronically is quickly becoming a necessity.”

“It is an exciting time to be at APS. Because of the Society’s solid fiscal condition, it is well positioned to respond to the opportunities and challenges that lie ahead.” ❖



# APS Tops 10,000 Members!

## New Regular Members

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Washington University
- David Lopes Cardozo**  
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Service Physiologie, Rennes, France
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Medical College of Ohio
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Grenoble, France
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- Igor R. Efimov**  
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Naval Medical Research Institute, Maryland

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Centro De Bioingegneria, Italy

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**Xuejun Song**

Parker College of Chiropractic, Texas

**Tjeu Souren**

Jaeger BV, The Netherlands

**Bruno B. Stieger**

University Hospital, Switzerland

**Jodie Maree Stocks**

Australian Catholic University

**Michael James Stonerook**

Safety Pharmacology, Ohio

**Andres Oscar Stoppani**

University of Buenos Aires

**Anna Struneka**

Charles University

**Amer Suleman**

Heart Center of North Texas

**Kenneth Dean Sumida**

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**Abraham Joseph Susswein**

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Saitama Medical School, Japan

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Massachusetts General Hospital

**Lidia Szczupak**

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Laboratoire D'Explo Rations Fonctionnelles, France

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Tulane University
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- Alison Lynn Bodnar**  
Florida Atlantic University
- Khaldon Bodoor**  
University of Calgary, Canada
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- Bryony Susan Chamberlain**  
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- David Brian Cleary**  
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Vanguard University
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Duquesne University

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**Todd Michael McClafferty**

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University of Arizona

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University of North Texas

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California State University,  
Los Angeles

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University of Iowa

**Linda M. Shecterle**

Jacqmar, Inc., Minneapolis

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**Holly Michelle Smith**

Tennessee State University

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New Jersey

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Florida Atlantic University

**Marsha Spektor**

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University of California, Davis

**Anurag Varshney**  
National Center of Biological Science,  
India

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University of California, Riverside

**Alex Carlos Zambon**  
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**Robert B. Zuelch**  
Florida Atlantic University

## New Affiliate Members

**Ellen V. Cryan**  
R.W. Johnson Pharmaceutical  
Res. Inst.

**Ivan Roland Karkada**  
International Med. & Tech.  
University, Tanzania

**Theresa M. Martin**  
College of San Mateo

**Talay Yar**  
Shifa College of Medicine, Pakistan

## Deceased Members

**Ronald J. Knudson**  
Tucson, AZ  
**Ernst Knobil**  
Houston, TX

**Janice M. Pfeffer**  
Boston, MA  
**Stan Greenberg**  
New Orleans, LA

## Latin American Initiative

With the aim of strengthening the ties between The American Physiological Society, the sister Physiological Societies of Latin America, and the physiologists working in the Americas, APS is launching a **Latin American Initiative**.

This project is being handled by the International Physiology Committee of APS and consists of support for 4 courses/symposia per year to be carried out in Latin American countries with participation of APS members. The budget for each course/symposia is \$5,000. The **deadline for applications is August 1** for the following calendar year.

**Applications** can be submitted via email or mail to:

Chair of the International Physiology Committee, The American Physiological Society,  
9650 Rockville Pike, Bethesda, MD 20814-3991, email: [awards@aps.faseb.org](mailto:awards@aps.faseb.org)

Please include the following pertinent information:

- Title of the Course/Symposium
- Names and affiliations of the participants
- Titles of the presentations
- Rationale for the Course/Symposium
- Number of students of other participants attending
- Description of how the economic support will be used
- Identification of the other sources of economic support that will be available

Questions regarding the program should be addressed to Hector Rasgado-Flores (Tel: 847-578-3425; email: [floresh@mis.finchcms.edu](mailto:floresh@mis.finchcms.edu)) or Martin Frank (Tel: 301-530-7118; email: [mfrank@aps.faseb.org](mailto:mfrank@aps.faseb.org)).

# Publications

## Individual Impact Factors for the *AJP* Journals

As we announced in the December 1999 issue of *The Physiologist*, the Institute for Scientific Information (ISI) agreed in August 1999 to start reporting Impact Factors (IF) for the individual section journals of the *American Journal of Physiology* (*AJP*). When the 1999 IFs are published in the fall of 2000, the *AJP-Consolidated* will no longer have an IF, but the section journals of the *AJP* will. This will give authors who refer to IFs when deciding where to submit their papers the information they need.

In preparing the data collection and programming changes ISI had to make to calculate IFs for the individual *AJP* journals, they were able to hand-calculate IFs for 1998 and 1999. Table 1 shows the 1998 IFs calculated for the section journals along with the 1998 data published by ISI in fall 1999 for the APS journals: *AJP-Consolidated*, *Physiological Reviews*

(*PRV*), *Journal of Applied Physiology* (*JAP*), *Journal of Neurophysiology* (*JN*), and *News in Physiological Sciences* (*NIPS*). Table 2 compares the hand-calculated 1998 and 1999 data for the *AJP* section journals.

The published 1998 IF for the *AJP* was 3.077, so it is no surprise that the section journals' IFs all fall around 3.0. ISI believes that the hand-calculated IFs for the section journals for 1998 and 1999 may be underestimated by around 8%, due to mismatched citations caused by inconsistency in citing articles from the journals.

As was stated in the December 1999 *The Physiologist* article, it is important that articles from the journals are referenced correctly. An article in *AJP-Cell*, for instance, is correctly cited as *Am J Physiol Cell Physiol* 277: C361-372, 1999. APS Publications staff has done a number of things to help

**Table 1. 1998 APS Journal Impact Factors**

Journal	Impact Factor	Rank, Physiology	Rank, Related Field	Related Field
<i>AJP-Cell</i>	3.34	9/74	31/140	Cell Biology
<i>AJP-Endo</i>	3.068	11/74	17/84	Endocrinology & Metabolism
<i>AJP-GI</i>	2.865	12/74	8/45	Gastroenterology & Hepatology
<i>AJP-Heart</i>	2.535	17/74	10/63	Cardiac & Cardiovascular Systems
<i>AJP-Lung</i>	2.725	13/74	6/30 11/40	Respiratory System Peripheral Vascular Disease
<i>AJP-Regu</i>	2.179	21/74		
<i>AJP-Renal</i>	3.779	7/74	3/42	Urology & Nephrology
<i>AJP-Consolidated*</i>	3.077	9/67		
<i>PRV*</i>	23.656	1/67		
<i>JAP*</i>	2.122	19/67		
<i>JN*</i>	3.411	7/67		
<i>NIPS*</i>	2.170	18/67		

The 1998 data published by ISI in 1999 listed 67 physiology journals and included the following APS journals: *AJP-Consolidated*, *PRV*, *JAP*, *JN*, and *NIPS*. Adding the hand-calculation of the section journals makes the total number of physiology journals 74, so the section journals are ranked among 74 journals, and the other APS journals\* that had impact factors published in 1999 are ranked among 67 journals.

## Publications

ensure that the correct citation is used. An ID line with the proper citation for each article now appears in the upper right-hand corner of the first page of each article to aid authors. A press release was mailed to the editorial offices of over 100 association and commercial publishers, and a press release written for librarians was mailed to libraries and abstracting and indexing services. For those of you who use Reference Manager, EndNote, or ProCite to prepare your manuscripts, patches to download and update your software have been placed on the APS Web site at <http://www.faseb.org/aps/Publications/Styles.htm>.

Staff worked with the National Library of Medicine and HighWire Press (our online vendor) to ensure that links in Medline, PubMed, and throughout the HighWire site would still work. Margaret Reich, Director of Publications, invites you to let her know of any non-working citation links to ar-

**Table 2. Comparison of 1998 and 1999 Hand-Calculated Impact Factors for AJP Section Journals**

Journal	1998	1999
<i>Cell</i>	3.34	3.485
<i>Endo</i>	3.068	2.980
<i>Gastro</i>	2.865	3.228
<i>Heart</i>	2.535	2.747
<i>Lung</i>	2.725	3.147
<i>Regu</i>	2.179	2.453
<i>Renal</i>	3.779	3.590

ticles published since 1999 that you find in your research. She can be reached at [mreich@aps.faseb.org](mailto:mreich@aps.faseb.org).

In January, the *Consolidated* volume number was added to the covers of the individual *AJP* journals. In July 2000, a revised cover design will make even clearer how the journal titles and volume numbers should be used, by putting the complete journal title all together at the top of the cover and including the *Consolidated* volume number on the cover.

On March 29, 2000, Helen Atkins and Isabel Czech, representatives of ISI, attended the APS Publication Committee/Editors' Meeting to present the new IFs and answer questions about their calculations. At that meeting, they discussed and agreed to consider the publication of some other indicators of use and importance, such as the impact of a journal over time. As was reported in the June 1998 issue of *The Physiologist* (<http://www.faseb.org/aps/cstats.htm>), our journals' 10-year cumulative ratings are very competitive and rank higher than 10-year ratings of those journals with higher annual IFs than the *AJP* journals. (The 1998 IF for any journal is calculated by dividing the number of citations to articles published in 1996-1997 that appear in 1998 articles by the number of papers published in 1996-1997.)

We look forward to ISI broadening their data collection and reporting, and to watching our IFs grow. The Editors of the journals are actively recruiting interesting and important articles for publication in the *AJP* journals. Calls for papers on specific topics appear frequently within the pages of the journals and can be found on the APS home page and the individual journal home pages. The Publications Committee has also removed the restriction on the number of references for each article, so that authors are now allowed a more comprehensive reference list. ❖

### **Physiological Genomics News Flash!**

*Physiological Genomics* has been accepted for inclusion in the Science Citation Index®, Science Citation Index Expanded (also known as SciSearch®), ISI Alerting Services, Biotechnology Citation Index®, Biochemistry & Biophysics Citation Index®, and Current Contents®/Life Sciences. It is being reviewed in June by the Literature Selection Technical Review Committee for inclusion in Index Medicus and PubMed.

Our second print volume, containing articles published online this year, is available. Please contact Sue Pokroy, [spokroy@aps.faseb.org](mailto:spokroy@aps.faseb.org), 301-530-7015, if you would like a copy. As always, you can view all the articles published in *Physiological Genomics* at <http://physiolgenomics.physiology.org/>. Content will be free to all online until the end of 2001.

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Joint Congress of  
SPS/APS

## Conferences

3:00-5:30 PM

**Symposium XVIII:** *Molecular mechanisms in exo- and endocytosis*

(Organizers: L. Brodin, H. Bellen)

**Symposium XIX:** Matrix and receptors

(Organizers: P. Ekblom, P. Yurchenco)

**Symposium XX:** Future drug discovery

(Organizers: J. Tornell J.M Lundberg)

### POSTER SESSIONS

Friday, August 18 and Saturday, August 19, 1:00-2:30 PM

Posters will be selected from the submitted abstracts and grouped together thematically.

### SATELLITE SYMPOSIUM 1

**Functional Genomics: A New Approach to Understanding Cardiovascular and Renal Dysfunction**

August 19-20, 2000

Stockholm University

Organizers: Peter Thorén, Stockholm, D. Neil Granger, Shreveport

*An Acta Physiologica Scandinavia Symposium in connection with the SPS/APS meeting in Stockholm August 17-19, 2000*

*Registered participants of the main meeting may attend this Acta Physiologica Scandinavia symposium free of charge. The venue of this symposium will also be at the campus of Stockholm University, very close to the main meeting.*

Saturday, August 19, 2000

Session 1: *Technical aspects of models used in functional genomics*

**Session 2:** *Myocardial function*

**Session 3:** *Kidney Function*

Sunday, August 20, 2000

**Session 4:** *Regulation of blood pressure and vascular tone*

**Session 5:** *Hypoxic and Ischemic Tissue Injury*

**Session 6:** *Vascular function and pathology*

**Session 7:** *Inflammation*

For further information, please contact Professor Peter Thorén ([peter.thoren@fyfa.ki.se](mailto:peter.thoren@fyfa.ki.se))

### SATELLITE SYMPOSIUM 2:

**Physiological Mechanisms in Diabetes**

A Satellite Symposium of the Joint American and Scandinavian Physiological Societies' Meeting in August 2000

August 12-13, 2000

Reykjavik, Iceland

Organized by the Icelandic Physiological Society and the Icelandic Endocrine Club

Organizers: Rafn Benediktsson ([rafnbe@shr.is](mailto:rafnbe@shr.is)), Thor

Eysteinnsson ([thoreys@hi.is](mailto:thoreys@hi.is)), Logi Jonsson ([logi@hi.is](mailto:logi@hi.is))

### PROGRAM

Session topics and speakers:

**Vascular biology:** Karl Tryggvason (SVE), Einar Stefansson (IS), John E. Tooke (UK), Billy G. Hudson (USA).

**Genetics:** Karl Tryggvason (SVE), Ake Lernmark (USA), Kari Stefansson (IS).

**Pathophysiology:** Peter C. Butler (USA), J.R. Seckl (UK), Ole Schmitz (DK), Richard Bergman (USA).

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**Mail:** The American Physiological Society  
9650 Rockville Pike  
Bethesda, MD 20814-3991 (USA)

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### NIH Clarifies A-110 Data Disclosure Procedures

The NIH has posted a notice clarifying the agency's procedures for Freedom of Information Act (FOIA) requests for university research data. The "notice of amendment to [OMB Circular] A-110" represents one of NIH's final steps toward implementation of the 1998 Shelby data access provision.

According to the notice, a FOIA requests must state whether data are being sought under the provisions of A-110 and must describe the research data being

sought, including the NIH grant number. The request must also specify a federal regulation or executive order citing a published finding based on these data. This was one of the stipulations included in the regulation implementing the law providing for release of data from federally funded research projects under FOIA, namely, that the data must have been used in a federal regulation or executive order.

FOIA requests may only be made for

data produced under new or competing continuation awards to academic or non-profit institutions made after April 17, 2000, which is the date that the revision to A-110 became effective for NIH and other agencies.

Further information about FOIA requests under A-110 is available on the NIH web site at [http://grants.nih.gov/grants/policy/a110/a110\\_guidance\\_dec1999.htm](http://grants.nih.gov/grants/policy/a110/a110_guidance_dec1999.htm).

### Funding Bills Face Tough Times

Congress was expected to begin drafting FY2001 funding legislation in early May, although it was clear that the budget as approved did not provide enough money to cover priority programs.

The "allocations" of budget authority made available to the Labor-HHS-Education Appropriations Subcommittees in both the House and the Senate fell several billion dollars short of what would be needed just to fulfill the President's budget requests, which included a \$1 billion or 5.6% increase for NIH. The Congressional Budget Office estimated that Porter's subcommittee in the House was provided with almost \$10 billion less in budget authority than what the President

had requested for various programs, especially in the area of education. Specter's subcommittee in the Senate fared slightly better, but still fell \$5.5 billion in budget authority short of the President's requests. The situation in the Senate was further complicated by the fact that in order to win votes to pass the budget resolution, senators had agreed to eliminate a host of gimmicks that had previously been used to get around the budget caps. Meanwhile, both House Appropriations Subcommittee Chairman John Porter (R-IL) and Senate Appropriations Subcommittee Chairman Arlen Specter (R-PA) have said they want to provide NIH with a \$2.7 billion or 15%

increase in FY 2001, which represents a third step toward a five-year doubling of the agency's budget.

The VA-HUD-Independent Agencies Appropriations Subcommittee also appeared to have its share of budget woes. This subcommittee provides funding for VA medical research, the National Science Foundation, and NASA life sciences research. However, the House and Senate VA-HUD funding panels also came up short when the allocations were made. The budget authority given to the House panel was about \$8.3 billion below what would be needed to meet the President's request level, while the Senate panel falls about \$6.7 billion short.

### NIH Reduces IRB Workload, Allows Conference Calls

NIH has recently issued two policy decisions that will reduce the workload for Institutional Review Boards (IRBs) and make it possible for them to conduct meetings via telephone conference call if necessary.

Starting with the January 2001 Council round, NIH is implementing a revised policy for IRB review of human subjects protocols: IRB approval of those applications will not be required prior to NIH peer review. In general, this will affect applications submitted for the June/July 2000 receipt dates and will give institutions the option of delaying IRB review

until the institution has been notified that the application has earned a peer review priority score/percentile that appears to place the grant in a fundable range.

This policy change is being implemented in an effort to reduce IRB workload and was one of the recommendations of a congressionally mandated task force on reducing regulatory burden. Previous NIH policy had required applications for research involving human participants to have IRB approval at the time of submission or within 60 days after the application receipt date. Since fewer than half of all applications sub-

mitted to NIH are funded, this policy was modified to reduce burden to both applicants and IRBs.

The new policy in fact gives institutions flexibility over the timing of IRB review. Institutions have the discretion to still require advance review for certain kinds of research. Examples of this cited by NIH included research involving scientifically or ethically controversial areas or applications for certain mechanisms such as multicenter clinical trials.

Grants still cannot be made without IRB approval, so once the institution re-

ceives notice that an application is in the fundable range, it should proceed with IRB review. NIH is also developing guidance to assist applicants in determining where their applications stand with respect to a particular Institute or Center's fundable range.

For further information, see the notice that was posted May 1, 2000 on the NIH web site <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-00-031.html>

In another move to simplify proce-

dures, NIH's Division of Human Subjects Protection has decided to permit IRBs to convene meetings via telephone conference call when necessary. In a March 28, 2000 memorandum, Division Director J. Thomas Puglisi noted that while OPRR "strongly recommends" that IRBs meet in person, "OPRR recognizes that circumstances sometimes warrant conducting IRB meetings via telephone conference call."

Puglisi specified that telephone con-

ference calls be recognized as "convened" IRB meetings only when each participating member "(i) has received all pertinent material prior to the meeting, and (ii) can actively and equally participate in the discussion of all protocols." He further noted that the minutes of such meetings "must clearly document that these two conditions have been satisfied."

The Food and Drug Administration has allowed IRB meetings to be convened by telephone conference call since 1981.

### Bioethics and Research Compliance Resources on the Web

Two new collections of resources concerning bioethics and research compliance have been made available on the web. NIH's Office of Extramural Research has created a site entitled "NIH's Bioethics Resources on the Web" in collaboration with the NIH Bioethics Interest Group. The Association of American Medical Colleges (AAMC) established the second site, which addresses research compliance broadly, including bioethics.

The NIH site may be found at <http://www.nih.gov/sigs/bioethics>. It is intended to facilitate research, scholarly activities, and training in the area of bioethics. It provides information about bioethics initiatives at NIH institutes and centers, the Office for Protection from

Research Risks, and other government offices and programs, publications, reports, guidelines, and regulations related to bioethics. The site has a new bibliography of 4,650 items as well as information on educational and funding opportunities. Topics covered range from human subject and animal research, Institutional Review Boards (IRBs), genetics and medical ethics, and international research. There are also teaching resources, such as case studies and course curricula. The web site also links to related sites, such as university ethics programs, medical and biotech sites, the Federal Register, and ethics journals.

A summary of bioethics initiatives by the NIH Office of Extramural Research

(OER) is also available in an article on biomedical ethics in the March issue of OER's on-line newsletter, "The OER Connection." This article is available at <http://grants.nih.gov/grants/connection/index.htm>.

The AAMC web site consists of links to institutions with model policies, guidelines, and training materials on research compliance, with a special emphasis on human subjects protection. The site also includes information about research integrity, grants administration, and other issues. It site also provides links to federal resources. The AAMC site can be found at <http://www.aamc.org/research/dbr/compliance/startcom.htm>.

### NIH Creates New Animal Welfare Office

Effective March 2, 2000, NIH upgraded Division of Animal Welfare (DAW) into the Office of Laboratory Animal Welfare (OLAW). The Division of Animal Welfare was formerly a part of the Office of Protection from Research Risks (OPRR). However, the decision

was made that OLAW would remain at NIH while the portion of OPRR that deals with human subjects protection becomes a part of the Office of the Secretary of HHS. The OLAW web site has been moved to <http://grants.nih.gov/grants/olaw/olaw.htm>

Dr. Nelson Garnett, the director of the DAW, will retain his position as director of the new office. OLAW is responsible for ensuring compliance with the Public Health Service Policy on Humane Care and Use of Laboratory Animals for all PHS-funded research.



### APS Education Office Brings Science Teachers to 2000 NSTA Convention

With support from the NIH National Institute for General Medical Sciences, the American Physiological Society sponsored 10 travel fellowships to the National Science Teachers Association (NSTA) Annual Convention in Orlando, Florida, April 6-9, 2000, for science teachers in the APS *Explorations in Biomedicine* Summer Research Program. These past and present *Explorations* Summer Research Fellows and Local Outreach Team members also assisted APS Education Office staff in staffing an exhibit booth at the convention, which was attended by approximately 15,000 participants, including biology and life sciences teachers, science supervisors and administrators, curriculum developers, suppliers, and other industry professionals.

*Explorations* participants who received travel fellowships to NSTA were: Ashley Becker, Isle, MN; Bruce Dudek, Ashland, MT; Michael Dyre, Dumfries, VA; Dave Fitzpatrick, Charlo, MT; Don Hutson, Colstrip, MT; Anthony Kilyanek, Lame Deer, MT; Kathy Knudson, Polson, MT; Dan McGee, Heart Butte, MT; Mike Peterson, Frazer, MT; and Mary Alice Thomas, Polson, MT. Travel Fellows each worked for several hours in the APS booth during the course of the meeting, but were free to attend any sessions that pertained to their interests. After the convention, teachers wrote survey reports to summarize their experiences and describe the many new ideas and resources picked up at the meeting. They then shared these experiences with colleagues via the APS Summer Research Teachers listserv.

The APS exhibit hall booth received a large volume of traffic, especially on the first afternoon of the event, during which time the convention schedule was devoted exclusively to viewing the exhibits. Hundreds of free copies of a variety of physiology career resources, teaching resources, and other information about APS programs and publications were handed out to teachers, faculty, science curriculum developers, and other education professionals. In particular, attendees were interested in the free CD-ROM, *Resources for K-12 Science Education 1999*, a compilation of career information and lab activities developed by teachers in APS Summer Research programs for science teachers; the APS publication, *Women Life Scientists: Past, Present, and Future*, a book of 20 classroom modules incorporating inquiry-based and hands-on activities; APS t-shirts; and the APS professional development video, *Reflecting on Effective Teaching Practices*.

The NSTA's annual meeting provides an excellent forum for publicizing and promoting APS Education Office programs for teachers, and the APS looks forward to participating next

year in the 2001 NSTA Annual Convention in St. Louis, Missouri. APS members interested in learning more about NSTA can find their website at <http://www.nsta.org>. The APS *Explorations in Biomedicine* Summer Research Program is supported by a grant from the National Institute of General Medical Sciences (NIGMS)/Minority Access to Research Careers (MARC) Program. For more information, visit the APS website at <http://www.faseb.org/aps/educatn/explorations/explorbiomed.htm>.

Explorations in Biomedicine 2000 ad

1/2 page Archive of Teaching Resources Ad

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## Positions Available

**Post-doctoral Fellow.** An NIH-funded position is available in cellular neurophysiology at The John B. Pierce Laboratory/Yale University School of Medicine. Vincent Pieribone is seeking a new or recent PhD to study synaptic transmission in an single synapse. These studies involve intracellular neurophysiological recordings made during manipulations of the presynaptic neurotransmitter release machinery. Studies also involve ultrastructural analysis of identified synapses. The start date is spring/summer 2000. Interested individuals should send a curriculum vitae and the names of references to: The John B. Pierce Laboratory, 290 Congress Avenue, New Haven, CT 06519. Tel.: 203-562-9901, ext. 214; fax: 203-624-4950; email: [vincent.pieribone@cmp.yale.edu](mailto:vincent.pieribone@cmp.yale.edu); Internet: <http://www.jbpierce.org/NewFiles/Laboratories/CellNeurophys/Home.html>. Review of applications will begin immediately and will continue until the position is filled. [EOE/AA]

**Postdoctoral Position.** An NIH-funded postdoctoral position in neurophysiology is available immediately to study activity-dependent modulation of synaptic transmission in the CNS. The project involves dual and triple patch-clamp recordings from acute brain slices to examine the distributed properties of plasticity in small microcircuits. Expertise in electrophysiology is preferred, but other highly motivated individuals are encouraged to apply. Please contact Dr. Reiko Maki Fitzsimonds, Department of Cellular and Molecular Physiology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06520. Tel: 203-785-2987; fax: 203-785-4951; email: [reiko.fitzsimonds@yale.edu](mailto:reiko.fitzsimonds@yale.edu).

**Postdoctoral Fellowship/Research Associate/Assistant Professor (Research).** The Obesity and Diabetes Research Center of the University of Maryland School of Medicine has positions available in the areas of mechanisms of obesity, diabetes, and aging. NIA- and industry-funded projects include the early physiological/molecular development of diabetes and aging; metabolic, enzymatic, and insulin signaling alterations in calorie restriction and aging; prevention of diabetes and its complications, retinopathy, nephropathy, and dyslipidemia; beta-cell culture, pancreatic islet, and transplant; and molecular aspects of aging, diabetes, and obesity. Doctorate in physiology, molecular or cell biology, or biochemistry with interest in integrating in vivo and in vitro studies is required. Start date of approximately July 2000. Send curriculum vitae; outline of research experience and interests; and names, addresses, and telephone numbers of three references to: B.C. Hansen, Director, Obesity and Diabetes Research Center, Department of Physiology, University of Maryland, School of Medicine, 10 South Pine Street, #6-00 MSTF, Baltimore, MD 21201. Fax: 410-706-7450; email: [bchansen@aol.com](mailto:bchansen@aol.com).

**Postdoctoral Fellow.** An NIH-funded position is available to study the regulation of body fluid homeostasis at The John B. Pierce Laboratory/Yale University School of Medicine. Dr. Gary W. Mack is seeking an individual to study the mechanisms of plasma volume expansion. Research involves both human and animal models and examines physiological mechanisms at the whole animal, whole organ, and cellular/molecular level. Experience with systemic physiology and molecular biology techniques is required. Send curriculum vitae and names of three references to: Gary W. Mack, PhD, The John B. Pierce Laboratory, 290 Congress Avenue, New Haven, CT 06519. Tel.: 203-562-9901, ext. 255; fax: 203-624-4950; email: [gary.mack@yale.edu](mailto:gary.mack@yale.edu); Internet: <http://www.jbpierce.org>. Review of applications will begin immediately and will continue until the position is filled. [EOE/AA]

**Postdoctoral Fellow.** An NIH-funded position is available in human thermal physiology at The John B. Pierce Laboratory/Yale University School of Medicine. Dr. Gary Mack is seeking an individual to study the regulation of active cutaneous vasodilation in humans. The studies involve recordings of skin sympathetic nerve activity, manipulations of the neurotransmitter release using intradermal microdialysis, and quantification of skin blood flow using laser Doppler velocimetry. Experience with microneurography is desirable. Send curriculum vitae and names of three references to: Gary W. Mack, PhD, The John B. Pierce Laboratory, 290 Congress Avenue, New Haven, CT 06519. Tel.: 203-562-9901, ext. 255; fax: 203-624-4950; email: [gary.mack@yale.edu](mailto:gary.mack@yale.edu); Internet: <http://www.jbpierce.org>. Review of applications will begin immediately and will continue until the position is filled. [EOE/AA]

**Faculty Position.** The Monell Chemical Senses Center has available a permanent faculty position in integrative/behavioral neuroscience. Investigators with interests in central nervous system processes as they apply to the chemical senses, appetitive behaviors, and nutritional physiology are encouraged to apply. A technical focus on neurochemistry and/or neuroanatomy is desirable. The Monell Center is a non-profit research institute devoted to the multidisciplinary study of taste and smell. See our web site, <http://www.monell.org>, for research interests of our faculty. Send a letter of interest, curriculum vitae, and names of three references to Personnel Officer, Monell Chemical Senses Center, 3500 Market Street, Philadelphia, PA 19104. Monell is an equal opportunity employer and encourages applications from women and minorities.

## Positions Available

**Postdoctoral Fellow.** A position is available in the Exercise and Nutrition Program at the Pennington Biomedical Research Center/Louisiana State University. Jeff Zachwieja is seeking an individual to study regulation of amino acid metabolism during exercise. Research involves both human and animal models and examines the impact of nutrition on amino acid metabolism during acute exercise. Qualifications: PhD in physiology, exercise physiology or related field. Experience with human clinical trials is needed. Experience with stable isotope methodology, gas-chromatography-mass spectrometry, and some experience with molecular biology techniques is preferred. Send curriculum vitae and names of three references to: Jeffrey J. Zachwieja, PhD, Exercise and Nutrition Program, Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, LA 70808. Tel.: 225-763-2530, fax: 225-763-2525; email: [zachwiji@pbrc.edu](mailto:zachwiji@pbrc.edu); Internet: <http://www.pbrc.edu>. Review of applications will begin immediately and continue until the position is filled. Official letter of application should be sent to: Evelyn P. Bennett, Assistant Director, HRM, Pennington Biomedical Research Center, 6400 Perkins Road, LA 70804-4124, REF: # 018931.

**Respiratory Biologist.** The Department of Physiology and the Respiratory Sciences Center at The University of Arizona, College of Medicine, invite applications for a tenure-track position at the rank of Assistant Professor or at the Associate Professor level for exceptionally well-qualified candidates. Preference will be given to candidates with expertise in molecular genetic and cellular approaches to understanding functional aspects of asthma, allergic inflammation, or airway regulation. The successful candidate will be expected to establish a vigorous, independent research program and contribute to teaching in graduate and medical systems physiology courses. Qualifications include the PhD, MD, or equivalent, and two or more years of postdoctoral training. Candidates with demonstrated experience in teaching and success in acquiring independent funding are especially encouraged to apply. Position is available beginning Fall of 2000. This is an on-going recruitment and will continue until the position is filled. Submit a letter of application, a summary of teaching and research goals, a curriculum vitae with the names of three references, and three reprints to: Job # 995172 Janis M. Burt, PhD, Head of the Search Committee, Department of Physiology, The University of Arizona, Tucson, AZ 85724-5051. More information can be found at [www.physiol.arizona.edu/](http://www.physiol.arizona.edu/) and <http://www.resp-sci.arizona.edu/>. The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer-Minorities/Women/Disabled/Veterans.

**Exercise Physiologist.** The University of Pittsburgh at Bradford invites applications for a tenure-track position as an assistant professor of exercise physiology to begin in Fall 2000. Responsibilities include supervision of undergraduate research and internships; undergraduate teaching of courses including but not limited to exercise physiology, kinesiology, animal physiology (for biology majors), and anatomy and physiology; and the development of an exercise science program. Requirements include a PhD in exercise physiology with a strong cardiorespiratory and biology background, with previous teaching experience and fitness testing preferred. Send curriculum vitae, teaching statement, transcripts, and three letters of recommendation by April 26 to: Bridgett M. Passauer, Chair, Exercise Physiology Search Committee, University of Pittsburgh at Bradford, Bradford, PA 16701. [AA/EOE]

**Assistant Professorship in Pediatrics.** The Department of Pediatrics of Emory University School of Medicine is seeking a cardiac cell physiologist for a non-tenure-track position in the area of developmental changes in electrical properties, excitation-contraction coupling, and regulation of calcium current and calcium concentration of mammalian cardiac cells. Candidates should have a PhD degree with two or more years of postdoctoral experience in the areas of single-cell patch-clamp studies; mathematical simulations; and analysis of cellular electrical activity, quantitative confocal laser scanning fluorescence microscopy, and immunofluorescence staining. We seek an outstanding individual who will establish and maintain a vigorous, externally funded research program and who is enthusiastic about collaborating with existing faculty in the Todd Franklin Cardiac Research Laboratory in various studies on postnatal developmental changes in heart cells. The successful applicant will have access to facilities for cell culture, animal surgery, cell isolation, and high-speed confocal microscope image acquisition and analysis. The appointee will also be expected to contribute to teaching of medical students and collaboration with other pediatric departmental faculty. Interested individuals should submit a complete curriculum vitae, a brief description of research interests and career goals, and the names and addresses (including e-mail) of three qualified references to: Ronald W. Joyner, MD, PhD, Search Committee Chairman, Department of Pediatrics, Emory University School of Medicine, 2040 Ridgewood Drive NE, Atlanta, GA 30322. Fax: 404-727-6024; email: [Rjoyner@cellbio.emory.edu](mailto:Rjoyner@cellbio.emory.edu). Review of applications will begin April 30, 2000 and will continue until position is filled. Women and minorities are encouraged to apply. [AA/EOE]

## Positions Available



**In vivo specialists.** The Merck Research Laboratories (MRL) division of Merck & Co., Inc., is seeking candidates to participate in drug discovery programs at our research facilities in the US, Canada, and the United Kingdom to explore the full range of therapeutic opportunities in central nervous system disorders, cancer, infectious diseases, and diseases affecting cardiovascular, pulmonary, endocrine, and immune function. Applicants may be drawn from disciplines that include, but are not limited to, pharmacology, physiology, neurosciences, psychology, and veterinary medicine, but must have significant expertise in in vivo techniques. Candidates preferably will have some postdoctoral experience, a superior record of accomplishment in biomedical research as demonstrated by a strong publication record, and excellent communication skills. Our salaries, benefits, and growth potential are excellent. Applicants interested in working at any of our sites should send their curriculum vitae (including names and addresses of three potential references), a statement describing their research interests, and their preference (if any) with respect to work location, to Neyda Conklin, Merck & Co., Inc., PO Box 2000, R80Y-135, Rahway, New Jersey 07065. Email: [neyda\\_conklin@merck.com](mailto:neyda_conklin@merck.com); Internet: <http://www.merck.com/mrl/>. If applying by e-mail, please attach your resume, preferably as an MS Word document. [EOE]

**Assistant or Associate Professor.** The Department of Physiology and Pharmacology in the University of New England College of Osteopathic Medicine invites applications for a 12-month, tenure-track appointment at the level of Assistant or Associate Professor. We are seeking applicants who hold a doctoral degree and who will seek to establish and maintain an extramurally funded research program, preferably in the areas of neuropharmacology, cardiovascular pharmacology, and/or diabetes. Preference will be given to applicants who can demonstrate excellence in teaching pharmacology and therapeutics to graduate and medical students. Salary and level of appointment will be commensurate with background and experience. Applicants should submit a curriculum vitae, a statement of teaching philosophy with copies of teaching evaluations and selected course materials, a statement of research interests and goals with reprints of selected recent publications in peer-reviewed journals, and the names of three references, by **July 15, 2000**, to: Department of Human Resources, c/o Sally Libby, University of New England, 11 Hill's Beach Road, Biddeford, ME 04005. The University of New England welcomes female and minority candidates. [AA/EOE]

**Assistant/Associate Professor – Research.** A position is available in the Exercise and Nutrition Program at the Pennington Biomedical Research Center/Louisiana State University. We are seeking an individual to provide leadership for our clinical exercise division. Doctoral education in kinesiology, exercise physiology, or a related field is required. Persons having a PhD in nursing with appropriate clinical exercise experience will also be considered. This is a non-tenure track position. Evidence of scholarly activity is desired. Applicants must possess excellent communication, writing, and administrative skills as well as have the ability to contribute as a “team player”. Primary responsibilities will include the following: 1) supervise and manage a clinical exercise staff, 2) participate in the design and implementation of multi-center clinical trials requiring an exercise/behavior modification core, 3) conduct exercise testing, and 4) provide group fitness instruction and individual exercise prescriptions when needed. Send curriculum vitae and names of three references to: Jeffrey J. Zachwieja, PhD, Exercise and Nutrition Program, Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, LA 70808-4124. Tel.: 225-763-2530, fax: 225-763-2525; email: [zachwjj@pbrc.edu](mailto:zachwjj@pbrc.edu); Internet: <http://www.pbrc.edu>. Review of applications will begin immediately and will continue until the position is filled. Official letter of application should be sent to: Evelyn P. Bennett, Assistant Director, HRM, Pennington Biomedical Research Center, 6400 Perkins Road, LA 70804-4124, REF: # 014917.

**Physiological Science Lectureship.** A position is available for a one-year, 100% employment, lectureship in physiological science to begin Fall 2000. Duties would include teaching six undergraduate courses in the UCLA Department of Physiological Science, including four sections of upper division laboratory for students in the major. Required qualifications include a doctorate in physiological science or a related discipline, demonstrated experience in undergraduate teaching at the university level, and skills in managing laboratory instruction in the life sciences. Please send a current curriculum vitae, including relevant publications, and a written statement of teaching interest and background by **June 30, 2000** to: Physiological Sciences Lecturer Search Committee, Box 951606, Los Angeles, CA 90095-1606. The University of California is an Equal Opportunity Employer committed to excellence through diversity.

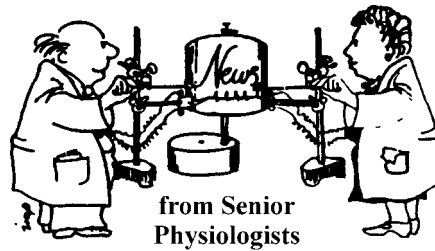
## News From Sr. Physiologists

### Letters to Michael Bárány

**Ingrith Deyrup-Olsen** writes: “My career in Physiology began in the College of Physicians and Surgeons of Columbia University, where I received the PhD degree in 1944. Here my interests developed in the area of water and electrolyte exchange and balance, and this basic interest has continued throughout my life. In 1947 I joined the Zoology Department of Barnard College and served there for 17 years, working also with Hans H. Ussing in Copenhagen, Robert E. Davies at the University of Pennsylvania, and, for two summers, at the Arctic Research Laboratory, in Barrow, Alaska. Throughout this time my studies involved the use of rodent tissues as models in the study of the then relatively new, and evolving exponentially, field of membrane channels and transports.

“In 1962 my marriage to Sigurd Olsen, a Danish limnologist, resulted in our transfer to the University of Washington, in Seattle. With this came a major shift in my interests, for in the new environment I discovered, as it were, the immense and varied field of invertebrate physiology. With two colleagues at the University of Washington, Arthur W. Martin and Daniel L. Luchtel, well-established experts in working with mollusks, I participated studies on terrestrial slugs, advanced mollusks that abound in the coastal lowlands of the Pacific Northwest. In particular, we investigated transport mechanisms and ultrastructure of the epithelia of the body surface and gastrointestinal tract. We found also that the terrestrial slug is an excellent model for studying the secretion of mucus, the remarkable and highly versatile material utilized by all animals to protect living cells at the interface with the environment.

“In addition to research, teaching has been a challenging and continuing interest. Beyond instructional responsibilities typical of academic situations, I took part in various national programs designed to improve the teaching of physiology and



biological science. These included educational activities of the American Physiological Society, the American Society of Zoologists, and the AAAS, among others. The effort to help young people acquire knowledge of physiological processes is not only a major responsibility of physiologists, I believe, but is also personally rewarding as a boundless opportunity for learning. Research tends to narrow and deepen one’s knowledge, while teaching requires a continuing effort to broaden and diversify its scope.

“I retired in 1990, and have been fortunate in retaining space and facilities in the Department of Zoology, so I have been able to continue some work with slugs. Much remains undone. Though I could view with regret the vast range of questions unanswered and ways unexplored, regret seems pointless. Rather, I take continuing delight in such knowledge as I have gained, and the thought of all that is ahead still to be discovered. And an endless source of pleasure, too, is the memory of the many colleagues, teachers, and students who fostered my interest, guided and advised, and added in so many ways to my life in physiology.”

**Nicholas Sperelakis** writes: “It has been a great time to be a cell physiologist. Tremendous advances have been made during the past 50 years. Development of new techniques has enabled giant steps forward in analysis of the various functions of cells. One example is the use of 1) the whole cell voltage clamp of isolated single cells to study the various ionic currents and their properties, and 2) the patch clamp of cell-attached patches and isolated membrane patches (inside-out and outside-out) to record the

currents through single ion channels. The latter is a powerful technique that allows measurement of conformational changes in single protein molecules and small complexes. Nobel prizes in physiology and medicine were awarded for these techniques, for discovery of G proteins, for discovery of the mechanism of action of nitric oxide, for discovery of the cyclic nucleotides and other second messengers, and for discovery of the factors relating to cell function. I have enjoyed doing my part in helping to push back the frontiers of science.

“But there is another message that I would like to send to younger physiological scientists. That is that our world is in great jeopardy because of destruction of the environment and wildlife due to relentless pollution of the air, water, and land. There is rampant over-development (‘urban sprawl’), with resultant loss of farmland and forests. The destruction of the environment and farmland is closely tied to over-population of humans. There is urgent need for stabilization of population globally. There is a sad abuse of human rights and woman’s rights throughout the world, including genocide and mutilations. Likewise, there is abuse of animals and animal rights. Science and technology have made tremendous advances in the last century, but alas human nature has not. Weapons of mass destruction have been developed, but human nature and emotions have not changed since the days of Homer and earlier.

“But you probably know all this already. What can we do now? For one, I strongly encourage all physiologists to join those numerous organizations that are devoted to saving the environment; stopping pollution; saving wildlife, forests, and farmland; stabilizing the world’s population; and promoting human rights and animal welfare.

“In closing, I want to give only a few relevant quotations. Abraham Lincoln: “I am in favour of animal rights as well as human rights.” Socrates: “We cannot move the world unless we first move

## News From Sr. Physiologists

ourselves.” Henry D. Thoreau: “In wildness is the preservation of the world.” Margaret Mead: “Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it is the only thing that ever has.”

**Arthur Coulter** writes: “To me, physiology has always been the “master science,” the sun of the solar system of medical sciences. My contribution has been to promote the application of engineering methods and theories to physiological problems. With Ralph Stacy and Richard Peters, I helped found a graduate program in biomedical engineering at the University of North Carolina. The program has flourished, producing about 130 MS and 64 PhDs since 1968, and is now a department in the medical school. Among its graduates are 2 department chairs and a dean of engineering.

“Since retiring in 1970, I have been concerned about the social responsibilities of scientists, and have been active in Physicians for Social Responsibility, serving six years on its national Board of Directors and now as co-president of the NC Triangle Chapter. My primary focus has been on prevention of nuclear war and the abolition of all nuclear weapons. I’d love to make contact with older physiologists having similar concerns.”

### Letter to Arthur E. Baue

**René J. Girerd** writes: “I have been, so far, in very good health.

“In 1963, I started a residency program in pathology, forcing me to put my involvement in physiology on the back burner. However, I found satisfaction in my laboratory responsibilities. Our staff numbered 55, and I was quite busy at Dover General Hospital, as well as investigating Coroners’ cases in Morris County.

“I have traveled a lot, first as a pilot during the war, then by choice to pay respect to our blue dot by exploring it with new eyes. Marcel Proust said it: “The real voyage of discovery consists not in see-

ing new landscapes, but in having new eyes’.

“I am now getting my new eyes ready to visit 300,000,000 Monarch butterflies hibernating at Michoacán, near Gadalajara, Mexico. How they find their way for their return trip is a mystery. Recently the possibility of mapping and memorizing ultra-low-frequency sound sources (which remain constant around the world) has been proposed for bird migrations.”

### Letters to Eugene Renkin

**W. Watson Alberts** writes: “Although my work has been in the field of neuroscience, my wife and I have been interested in the Search for Extraterrestrial Intelligence (SETI) for many years. Since my retirement, we have become involved with the SETI program at the University of California at Berkeley. I have volunteered with UC Berkeley’s long-running SETI project called SERENDIP, which analyzes radio signals picked up from the Arecibo radio telescope.

“Recently we were able to endow the Watson and Marilyn Alberts Chair in the Search for Extraterrestrial Intelligence in the Astronomy Department at UC Berkeley. The search for other civilizations has all sorts of profound scientific, philosophical, and religious implications, but such a discovery may be far in the future. An academic chair is a way to guarantee that research in this area will continue.”

**Hugh Van Liew** writes: “In 1997, I retired from the Physiology Department at the University at Buffalo after 34 years. I took a three-year position here at the Navy Experimental Diving Unit, Panama City, FL. The three years will be finished this June, and there is much work to be done before that time.”

**Henry Tedeschi** writes: “Presently, I am retired although I’m still at the University (as Research Professor). I have a Cell Physiology textbook on the Web: “Cell

Physiology. Molecular Dynamics.” The Web site is <http://www.cellphysiology.com> and it is available by subscription (\$20/year for personal subscription and \$100/year for class or library subscription). I update it almost daily. I am not carrying out experiments at the moment but I have some plans for the future.”

**W. B. Youmans** writes: “I appreciate your greetings and the invitation to write after having reached my ninetieth birthday.

“Like all senior physiologists my career has been unique. The dates of my education and positions appear in the usual publications available in medical and public libraries. However, I note that I failed to include in the information I sent to these publications the fact that my first year in college (1927-28) was spent in the divinity school of Vanderbilt University. Then, as a device to be able to stay in college, I moved to the school now known as Western Kentucky University. There, I received the BS degree with a major in biology and a minor in chemistry in 1932 and a Master’s degree in 1933.

“Western Kentucky University had several outstanding professors who were PhDs from the University of Wisconsin in soils, plant physiology, and biochemistry. They aroused my interest in becoming a graduate student at Wisconsin. I became an instructor at WKU and then, in 1935, I was accepted by Walter J. Meek as a graduate student in Medical Physiology at the University of Wisconsin. My main words of wisdom are that anyone planning to become a physiologist should try to find a major professor like Dr. Meek.

“In 1938 I accepted a position as instructor at the University of Oregon Medical School. I went on part-time basis there during 1942-44 and completed requirements for the MD degree. I had taken all of the basic medical science courses at Wisconsin.

“In 1952 I went back to the University of Wisconsin as professor and chairman  
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of the Department of Physiology. I retired from the chairmanship there in 1971 and was given Emeritus standing in 1976.

“Cynthia and I moved to Port Angeles, Washington and lived there until December of 1998 when we moved to our present address (3212 South Old Ridge Road, Columbia MO 65203), where we occupy a floor of the home of our son Charles Gilbert Youmans, a professor of English at the University of Missouri.

“My interest in medical physiology after retirement has continued, and I keep up reasonably well with the main new discoveries. My interest in the history of physiology has become even greater than it was during my active career. My most recent paper appeared in the 1997 Fall issue of the PHAROS, ‘Luciani’s Support of Cesalpinus: As Discoverer of Circulation of the Blood.’

“Currently, I am preparing a paper on the fact that, as shown by one of my students and me (*Proc. Soc. Exp. Biol. Med.* 95:100-101, 1957), Cheyne-Stokes breathing is not always dependent upon reflexes from either peripheral chemoreceptors or from sinoaortic baroreceptors. To my knowledge we were the first to demonstrate this fact, and I would be pleased to hear from anyone who has performed experiments related to it. A review of “Cheyne-Stokes Rhythms” written by Lorenz and Ito in *Acta Neurochirurgica* in 1978 has 121 references, but does not include ours.

“In 1990 I sent to the archives of the University of Wisconsin tapes about my period on the faculty there, and also I sent a video of the history of the Department of Physiology. I was interviewed in 1998 for two hours on my period at the University of Oregon Medical School. This has been transmitted and is in the archives at the Oregon Health Sciences University.

“My experimental research over a period of 40 years (1935-1975) dealt mainly with various functions of the autonomic nervous system and visceral reflexes. With the collaboration of several

of my graduate students two reflexes were discovered and have been described. These studies are described in several PhD theses, which are available at the University of Wisconsin, Madison.

“I was the first to show that angiotension has cardioaccelerator action; and some of my graduate students have participated in studies of the mechanism of this action.

“Alonzo Lands credited me with discovering phenylephrine receptors (now named  $\alpha_1$  receptors). Actually, this was done by Walter J. Meek and his graduate students (including me). Knowledge of the mosaic of action of phenylephrine, worked out at Wisconsin and continued at Oregon, led to recognition that it was safe to use phenylephrine as a pressor agent in patients under cyclopropane anesthesia, and led me to demonstrate (with M. Goodman and J. Gould) the use of it to revert paroxysmal supraventricular tachycardia.

“Phenylephrine is now generally used as the agent of choice to selectively activate  $\alpha_1$  receptors.

“It may be of use to someone who is interested in the history of physiology to know that I have acquired a number of old textbooks of human physiology including those of Luciani, Michael Foster, Magendie, Howell, Macleod, Wright and others.”

### Letter to N. Herbert Spector

**Robert S. Pogrund** writes: “I wish that I could say that I’m still active in biomedical research and publishing the results of significant research while the university allows me a lab in spite of formal retirement, like many of my contemporary colleagues. But, unfortunately I can’t. A serious myocardial infarction back in the mid 1970s or about 25 years ago forced my early retirement. Genes, stress, and environment apparently converged to cause this circumstance and subsequent hospitalization allowed plenty of time to reminisce about our kymographic recordings of animal physi-

ological activity. However, my mentors at the University of Illinois, Urbana, during the 1940s entered those reminiscences – Tec Steggerda, William C. Rose, Carl Hartman, Herb Carter, Carl Vestling – all seemed to influence my thinking for the future.

“The scientific method prevailed. The heart attack presented an opportunity to study myself, a subject of one and obviously without statistical significance and, therefore, nonpublishable. The first step was to refuse recommended bypass open-heart surgery by a surgeon with little experience in a hospital needing a track record for successful surgery at a time when the technique was still under development. I’ve always supported animal research, having been a vivisectionist from way back when, but I suddenly converted to anti-vivisection when the subject was myself, in spite having a similar anatomy to a guinea pig – both of us having no tail. So I recorded the episodes of pain on what days or nights, environmental temperature and humidity, presence or absence of stress, influence of humor, and so forth without going into excessive detail. The upshot of it all was that improved nutrition, removal from stress, and regular exercise permitted a substantial recovery enough to play vigorous racquetball until quitting recently when two of my opponents died in cardiac arrest. That phase ended, but hopefully collateral circulation was developing; praise be angiogenesis.

“As a result of this experience, I noted that urban air pollution was a serious impediment to normal cardiovascular physiology while carbon monoxide levels, primarily from operating automobile exhausts, became a concern for myself and fellow humanity. I prepared some articles on the matter for the local newspaper and the enthusiastic reception by readers and local political leaders encouraged the newspaper editor to invite my writing a weekly article on a regular basis – scientific writing for understanding by the layman. The Maricopa County Board of Supervisors appointed me to the



## News From Sr. Physiologists

County Air Pollution Advisory Committee. The writing continued for several years, but the move from lab bench to legislative bodies was a relatively short trip. My fellow committee members contested the scientific method.

"It is apparently difficult for non-natural scientists to understand the knowledge base of definitive formulations, equations, and established laboratory procedures. Opinions and less quantifiable theories influence the decision-making process within the legislative body. Wisdom dictates a better science education to create science-savvy citizens who then might become less vulnerable to dowsing rods or psychics or other beliefs in the supernatural. I hope that younger physiologists can integrate themselves from the lab bench to, at least on a part-time basis, enter the current New Age culture and speak their minds. To do so, the sciences need to develop without borders, so that the total picture is constantly in view, and that goes, too, for the molecular biologists and their concerns with apoptosis or nitric oxide (an air pollutant) within cellular physiology."

### Letters to Kenneth Zierler

**N. Herb Spector** writes: "At age 80, I am looking forward to new careers in research, writing, editing, inventing (biomedical and other gadgets), and sports competition (as a member of the USA Veterans' Fencing Team); continuing to organize an institution (with collaborators in 40 countries) for research in neuroimmunomodulation (and eventually, neuroimmunogenesis); spending as much time as possible with my children and grandchildren; and integrating what is valid in the ancient wisdom of Native American Shamans, Tibetan Buddhism (Dalai Lama et al.), and ayurvedic medicine with what is valid in modern biomedical sciences.

"In the words of my esteemed friend, Neal Miller, 'my salary was retired' 5 years ago, but, as you can see from the above, I am busier than ever.

"On the professional side, I continue to design new experiments and from time to time have persuaded my colleagues in various countries to join me in carrying them out, each time with considerable success. Lately these have been in the field of conditioning various immune responses [e.g., natural killer cell (NK) activity] to exploit and enhance what Walter B. Cannon called 'the natural wisdom of the body'. NK activity is one of the body's built-in defense mechanisms against cancer and virally infected cells. These experiments have demonstrated, among other results, that in young and very old mice, of both sexes, in the absence of an antigen, we can increase NK activity manifold, revive the aging thymus, and occasionally even reversing cancer (multiple myeloma) in some mice. These preliminary results are crying to be extended in mice and humans, but funding is extremely difficult to obtain; many (so far unfulfilled) promises of millions of dollars have been made in the past 10 years. I have been awarded many high honors, in the US and several other countries, but none of them carries any stipends for research.

"I continue to think like a pessimist but live like an optimist.

"I continue to serve as an editor on five journals (in neuroscience, immunology, and neuroimmunomodulation). I am on the 'advisory board' of several other journals, but none of them has ever asked me for advice.

"I continue to preach to young (and old) physicians and scientists in many countries, to keep abreast of the (often revolutionary) latest research in genetics, molecular biology, nutrition, biochemical and physiological individuality, chronobiology, and neuroimmunomodulation, while not failing to be keenly aware of science history. Just because investigators of 50 or 150 years ago didn't have all of our modern equipment and their papers don't show up in computer searches doesn't mean that they were stupid; we can learn a great deal from them.

"I try to carry the message of classic physiology (i.e., integrative biology) to young scientists and physicians. In this age of over-specialization and resulting tunnel vision, it is too often forgotten that no cell (or even molecule) in the living organism functions alone, nor is it uninfluenced by all the other cells and 'systems' in the body.

"In writing, I am poised, technologically, between the 19<sup>th</sup> and 20<sup>th</sup> centuries: I still write with a pen. My grandchildren have been after me for many years to get a computer (with word processor) and as soon as I have some spare time, I will do so and try to catch up to modern times.

"On the non-professional front, my greatest pleasures come from my children and grandchildren. Also, I still enjoy portrait and 3-dimensional photography, occasionally chess, writing of poetry, reading history (science and politics), and fencing. In my salad days, I won many championships in foil, épée, and sabre in the US and France. Now, despite the pain of bum knees, bum hip joints, a bum back, and generalized arthritis, I still greatly enjoy fencing and still do quite well in national and international sabre competitions.

"In a few of my (rare) spare moments, I look for venture capital to exploit some of my 200 or so inventions.

**Victor J. Wilson** writes: "Having spent my whole professional life at Rockefeller University, except for the equivalent of a postdoctoral fellowship at Walter Reed when I was in the Army, I retired and became Emeritus last summer. The transition has been an easy one, because I stopped experimental work about two and a half years ago. I took the decision reluctantly, but decided that almost 50 years in the laboratory, if you count graduate school, seemed enough, particularly in a labor-intensive field like mammalian neurophysiology. I have remained active, however, continuing as editor of the neuroscience journal, *Experimental* (continued on page 150)

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*Brain Research*, belonging to some advisory boards, going to meetings, and trying to keep up with relevant areas of the ever-expanding literature. I also hope to arrange some working visits to other laboratories. Many years ago a colleague

told me that we were all very fortunate, being paid to pursue a hobby. I guess that neuroscience remains my hobby. The University is very good to its Emeriti, and I have all the facilities and help that I need.

“My wife and I are fortunate that our

two daughters both live in the area, which enables us to watch our grandchildren grow up at close range. We continue to enjoy travel and the many things that New York has to offer, and now that my schedule is even more flexible that it used to be, will probably do more of both.” ❖

## Call for Nominations

### Bowditch Lecture Award

The annual Bowditch Lecture honoring the first elected President of the American Physiological Society, Henry Pickering Bowditch, has been given at the annual meeting since 1956. The first Bowditch Lecture, “Role of the Red Blood Corpuscles in the Regulation of Renal Blood Flow and Glomerular Filtration Rate,” was presented by John R. Pappenheimer.

The lecturer is selected by the President with the consent of Council from among the regular members who have achieved outstanding work and are un-

der 40 years of age at the time of presentation. The award is for original and outstanding accomplishments in the field of physiology. Originality of approach, clarity of data presentation, and the general significance of the results are important criteria. The award conveys an honorarium of \$2,500 plus travel and per diem expenses to attend the spring meeting, and the recipient is invited to submit a manuscript for publication in one of the Society’s journals.

Nominations should be accompanied by letters from two nominators describ-

ing the importance of the candidate’s work, a brief sketch of the nominee’s professional history, papers or manuscripts that substantiate the excellence of the candidate, and a curriculum vitae. The nominators should clearly state the contributions of candidates to any jointly authored manuscripts and papers, documenting the independence of the nominee’s work.

Nominations should be submitted by October 1 to: The APS Bowditch Lecture Award, 9650 Rockville Pike, Bethesda, MD 20814-3991.

### Physiology in Perspective Walter B. Cannon Memorial Lecture Award

The Cannon Memorial Lecture honors Walter B. Cannon, President of the Society from 1913-1916 and one of the century’s most distinguished physiologists. The plenary lecture is presented annually by a distinguished physiologic scientist, domestic or foreign, at the spring meeting on a subject that addresses some aspect of the concept of homeostasis as enunciated in Cannon’s

classic work, *The Wisdom of the Body*. The lecture, sponsored by the Grass Foundation, is selected by the APS President with the consent of Council.

The recipient receives an honorarium of \$4,000 plus travel and per diem expenses and is invited to submit a manuscript for consideration of publication in one of the Society’s journals.

Nominations for the Cannon Lecture

award should be adequately documented to demonstrate the candidate’s contributions to physiology. A curriculum vitae should accompany the letter of support describing the nominee’s achievements. Submit nominations by October 1 to: The APS Cannon Lecture Award, 9650 Rockville Pike, Bethesda, MD 20814-3991.

## People and Places

### Dawson Named Chair at Oregon Health Sciences University

APS member David C. Dawson has been named Chair of the Department of Physiology and Pharmacology at the Oregon Health Sciences University in Portland, Oregon. He was formerly a member of the Department of Physiology at the University of Michigan.

Dawson's strength is in bringing a rigorous training in cellular and molecular physiology as applied to more integrated systems. He sees a powerful link among physiology, pharmacology, chemistry, and genetics, all of which will directly impact the development of new drugs. Consequently, he is looking forward to involving both members of his department and those



of clinical departments in a variety of collaborations. He is also planning on offering additional opportunities for graduate students, including training in bioengineering.

Dawson's background reflects his interdisciplinary philosophy. His undergraduate degree was in electrical engineering and his doctorate in comparative physiology. His research has taken him from biophysics to genetics to marine biology. Currently he is investigating the structure, function, and regulation of ion channels and examining the molecular defect that causes cystic fibrosis.

### Wright Named First Mellinkoff Chair

Long-time APS member Ernest Wright, Chair of the Department of Physiology at UCLA, has been named as the first Sherman M. Mellinkoff Distinguished Professor in Medicine. Mellinkoff was the second dean of the UCLA School of Medicine and guided the transformation of the school into a national leader during his 24-year tenure from 1962-1986.

Wright was named as the first Mellinkoff Chair because of he "has championed novel ap-



proaches to education and is deeply involved with medical school teaching." The \$2.8 million endowed professorship will advance Wright's research in the structure, function, and genetics of transport proteins, which act as gatekeepers for the body by carrying essential molecules in and out of cells. Wright also plans to test new techniques for exploring hereditary defects in nutrient absorption.

### Narahashi Receives Otto Kraye Award

Toshio Narahashi, an APS member at Northwestern University, has received the 2000 Otto Kraye Award from the American Society for Pharmacology and Experimental Therapeutics (ASPET). The Otto Kraye Award in Pharmacology, supported by Zeneca Pharmaceuticals, is presented annually to a distinguished investigator whose research has contributed significantly to defining the mechanisms of action of drugs or other chemicals.

Narahashi currently holds the John Evans Professorship in Pharmacology, the most distinguished professorship at Northwestern. In announcing the award, ASPET noted that Narahashi has made seminal contributions to the understanding of ion channel function in many areas from the action of animal and plant toxins to insecticides, including DDT, local anesthetics,

and alcohol. These contributions, including the elucidation of the action of tetrodotoxin from the puffer fish, the action of pyrethroids as insecticides, and the actions of other toxins including sea anemone toxin, have served to define and characterize the sodium channel and its chemical sensitivity and are widely recognized as fundamental contributions to the definition of ion channel structure and function.

The award ceremony will take place during the Joint Annual Meeting of ASPET, the American Society for Biochemistry and Molecular Biology, the Pharmacological Society of Canada, and the French Pharmacological Society in Boston, MA, June 4-8, 2000.

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### El-Sabban Receives Khwarizmi International Award

Farouk Fathy El-Sabban, APS member from the University of Malaya Medical Centre, recently received the Khwarizmi International Award for excellence in biomedical research. The award was presented to El-Sabban by Sayed Mohammad Khatami, President of the Islamic Republic of Iran, at a presentation ceremony in Tehran, February 6, 2000. El-Sabban was judged third place international for his project entitled "Effect of High Temperature and Nutritional Factors on Thrombosis in Brain Microvessels."

El-Sabban's work focuses on the pathophysiology, nutri-

tional, and environmental influences on the cardiovascular system, particularly on thrombosis in the cerebral microcirculation. The Khwarizmi International Awards were created in the memory of the 9<sup>th</sup> Century AD mathematician and astronomer Abu Jafar Mohammad Ibn Mousa Khwarizmi. The awards are given to those research projects that are judged by international referees to have contributed significantly to knowledge. There is an award for each major area of science, and recipients can be citizens of any country. A Certificate of Excellence in Research and a Plaque are given to each awardee.

Having accepted a position as Senior Research Fellow, Boyer Center of Molecular Medicine, University College London, UK, **Aamir Ahmed** is no longer with the Boyer Center of Molecular Medicine, Yale University School of Medicine, New Haven, CT.

**William G. Aschenbach** has recently accepted a position with the Metabolism Section, Joslin Diabetes Center, Boston, MA. Prior to his new commitment, Aschenbach was with the Health and Human Performance Department, Auburn University, Auburn, AL.

Recently, **Kenneth M. Baker** affiliated with the Division of Molecular Cardiology, Texas A&M University College of Medicine, Temple, TX. Prior to his new affiliation, Baker was with the Weis Center for Research, Geisinger Clinic, Danville, PA.

**Robert Wayne Barbee** has joined the Department of Emergency Medicine Research, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA. Formerly, Barbee was with the Department of Emergency Medicine Research, Carolinas Medical Center, Charlotte, NC.

**Nora Valeria Bergasa** has joined the Department of Medicine, Columbia University College of Physicians and Surgeons, New York. Prior to her new appointment, Bergasa was with the Department of Medicine, Beth Israel Medical

Center, Albert Einstein College of Medicine, New York.

Moving from the Department of Physiology, Arizona Health Science Center, Tucson, AZ, **Sherri M. Borman** has affiliated with the Regional Reproductive Sciences, Oregon Regional Primate Center, Beaverton, OR.

**Richard D. Boyle** has joined the Center for Bioinformatics, Ames Research Center-NASA, Moffett Field, CA. Prior to his new position, Boyle was associated with the Neuro-Sensory Research Laboratory, Oregon Health Sciences University, Portland, OR.

Moving to Toronto, Ontario, Canada, **Anthony K. C. Chan** has joined the Division of Hematology and Oncology, The Hospital for Sick Children, Toronto, Ontario, Canada. Chan was formerly with the Department of Pediatrics, McMaster University, Hamilton, Ontario, Canada.

Accepting a position with the Department of Pediatrics, SUNY at Stony Brook School of Medicine, Health Sciences Center, Stony Brook, NY, **Avinash Chander** has left the Department of Pediatrics, Thomas Jefferson University Medical College, Philadelphia, PA.

Associating with the Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, OH, **Margaret Patricia Chandler** has left the

Department of Physiology and Biophysics, University of Oklahoma Health Science Center, Oklahoma City, OK.

**John Charles Chatham** has accepted a position with the Department of Medicine, University of Alabama at Birmingham, Center for NMR Research and Development, Birmingham, AL. Chatham was previously with the Department of Radiology-MR Research, Johns Hopkins University School of Medicine, Baltimore, MD.

Having affiliated with the Department of Neurology, University of Cincinnati, Cincinnati, OH, **Joseph F. Clark** has left the Department of Biochemistry, University of Oxford, Oxford, United Kingdom.

Moving from the Department of Molecular Physiology and Biophysics, Vanderbilt University School of Medicine, Nashville, TN, **Robert H. Coker III**, has joined the Department of Exercise Science, University of Mississippi, University, MS.

**Michael Keith Connor** has affiliated with the Department of Cancer Biology, Sunnybrook and Women's College Health Sciences Centre, North York, Ontario, Canada. Prior to his new association, Connor was with the Department of Biology, York University, North York, Ontario, Canada.

**Paul Macke Consigny** has joined the Department of Vascular Therapies,

## People and Places

Guidant Corporation, Santa Clara, CA. Formerly, Consigny was with the Department of Radiology, Thomas Jefferson University Hospital, Philadelphia, PA.

**Patrick Michael Dougherty** is currently with the Division of Anesthesiology and Critical Care Medicine, University of Texas M.D. Anderson Cancer Institute, Houston, TX. Prior to his new affiliation, Dougherty was with the Department of Neurosurgery, Johns Hopkins Medical School, Baltimore, MD.

Accepting a position with the Novartis Institute of Biomedical Research, Department of Metabolic Disease, Summit, NJ, **Beth Elaine Dunning** was formerly with Sandoz Research Institute, Sandoz Pharmaceutical Corporation, East Hanover, NJ.

**Anthony G. Durmowicz** has relocated to the Department of Pediatric Pulmonology, University of Utah School of Medicine, Salt Lake City, UT. Durmowicz previously was with the Department of Pediatrics, University of Colorado Health Science Center, Denver.

**Dariush Elahi** has accepted a position with the Geriatric Research Laboratory, Massachusetts General Hospital, Geriatric Research Laboratory, Boston, MA. Elahi was previously affiliated with the Department of Medicine, Division of Gerontology, University of Maryland, Baltimore, MD.

Having joined the Department of Biological Sciences, California Polytechnic State University, San Luis Obispo, CA, **Maria Florez-Duquet** has moved from the Neuroscience Program, Department of Psychology, University of Delaware, Newark, DE.

Formerly associated with the Department of Physiology and Biophysics, University of Tennessee, Memphis, TN, **Carol A. Everson** has joined the Department of Neurology, Medical College of Wisconsin, Milwaukee, WI.

Affiliating with the Department of Neurology, Harvard Institute of Medicine, Beth Israel Deaconess Medical Center, Boston, MA, **Russell J. Ferland** has moved from the Department of Neuroscience, University of Rochester Medical Center, Rochester, NY.

**Bradley Edward Greger** has joined the Department of Biology, California Institute of Technology, Pasadena, CA. Greger was formerly with the Department of Anatomy and Neurobiology, Washington University Medical School, St. Louis, MO.

**Marguerite Hatch** has been appointed to the Department of Nephrology and Pediatrics, Northwestern University, Chicago, IL. Previously, Hatch was affiliated with the Department of Nephrology, University of California, Irvine, CA.

**Abdallah M. Hayar** has affiliated with the Department of Anatomy and Neurobiology, University of Maryland, Baltimore, MD. Prior to his new assignment, Hayar was with the Department of Pharmacology, University of Virginia, Charlottesville, VA.

Previously, **Brian D. Hoit** was associated with the Department of Medicine, University of Cincinnati Medical Center, Cincinnati, OH. Recently Hoit joined the Division of Cardiology, University of Hospitals of Cleveland, Cleveland, OH.

Affiliating with the Department of Genomics, SEQUENOM, Inc., San Diego, CA, **Carolyn R. Hoyal-Wrightson** has left the Department of Molecular and Experimental Medicine, Scripps Research Institute, La Jolla, CA.

**Rachel A. Hunt** has recently affiliated with the Department of Neuroscience, Wyeth-Ayerst Research, Monmouth Junction, NJ. Prior to that new affiliation, Hunt was with the Geisinger Clinic, Weis Center for Research, Danville, PA.

**Per Ole Iversen** recently joined the Department of Hematology, Ullevaal University Hospital, Oslo, Norway. Prior to his new assignment, Iversen was with the Department of Physiology, Institute of Basic Medical Sciences, University of Oslo, Oslo, Norway.

**Damir Janigro** is now the Director of the Cerebrovascular Research, Cleveland Clinic Foundation, Cleveland, OH. Prior to his new assignment, Janigro was with the Department of Neurosurgery, University of Washington, Seattle, WA.

Joining the Dunn Human Nutrition Unit, Medical Research Council, Cambridge, United Kingdom, **Mika B. Jekabsons** recently moved from the Department of Neurobiology, Physiology, and Behavior, University of California, Davis, CA.

Previously affiliated with the Department of Physiology, University of Michigan, Ann Arbor, MI, **Douglas G. Johns** recently joined the Department of Medicine, Boston University, Boston, MA.

**Jane A. Kent-Braun** has affiliated with the Department of Exercise Science, University of Massachusetts, Amherst, MA. Previously, Kent-Braun was with the Department of Radiology and Magnetic Resonance Unit, University of California, San Francisco, CA.

**Kurt J. Langenbach** has joined the Department of Neurology and Neurological Sciences, Stanford, CA. Previously, Langenbach was with the Department of Physiology and Cell Biology, Albany Medical College, Albany, NY.

Affiliating with the Department of Cardiovascular Therapeutics, Parke-Davis Pharmaceuticals, Ann Arbor, MI, **Robert J. Leadley, Jr.**, has moved from the Department of Cardiovascular Biology, Rhone Poulenc Rorer, Collegeville, PA.

Formerly with the Department of Pharmacology, Bayer Corporation, Berkeley,

## People and Places

CA, **Al Yue Lin** recently was appointed the Director of Preclinical Development and Pharmacology, Fibrogen, Inc., South San Francisco, CA.

**David Marcinek** is presently associated with the Department of Radiology, University of Washington Medical Center, Seattle, WA. Marcinek had been affiliated with Hopkins Marine Station, Stanford University, Pacific Grove, CA.

Formerly, **Manuel Martinez-Maldonado** was the Vice Provost for Research Administration, Oregon Health Science University, Portland, OR. Recently, Martinez-Maldonado was designated the President and Dean of Ponce School of Medicine, Ponce, PR.

**David W. McFadden** has joined the Department of Surgery, West Virginia University, Morgantown, WV. Prior to his new appointment, McFadden was with the Department of Surgery, University of California, Los Angeles, CA.

**Michael Mueller** recently joined the Department of Neurology and Brain Physiology, Central Physiology and Pathophysiology, Georg-August University Goettingen, Goettingen, Germany. Previously, Mueller was with the Department of Cell Biology, Duke University Medical Center, Durham, NC.

Having affiliated with the Osaka University of Health and Sport Sciences, Osaka, Japan, **Koji Okamura** has left the Saga Research Institute, Otsuka Pharmaceutical Co. Ltd., Saga, Japan.

Joining the Department of Biology, Morgan State University, Baltimore, MD, **Dina Nicole Paltoo** has moved from the Department of Physiology and Biophysics, Howard University College of Medicine, Washington, DC.

Moving from the Center for Activity and Aging, St. Joseph Health Center, University of Western Ontario, London, Ontario, Canada, **Charles L. Rice** is currently the Vice Chancellor for Health Affairs, University of Illinois at Chicago, Chicago, IL.

**Robert F. Rogers** has joined the Department of Pathology, Anatomy, and Cell Biology, Thomas Jefferson University, Jefferson Medical College, Philadelphia, PA. Prior to his new affiliation, Rogers was a Visiting Scientist, Central Research and Development, E.I. du Pont de Nemours and Co, Neural Computation Group, Wilmington, DE.

Affiliating with the Department of Engineering, University of Pittsburgh, Pittsburgh, PA, **Sanjeev G. Shroff** was previously associated with the Department of Medicine, University of Chicago, Chicago, IL.

Previously affiliated with the Department of Neuroscience and Director of Central Research, DuPont Experimental Station, Wilmington, DE, **James S. Schwaber** has recently joined the Department of Pathology, Anatomy, and Cell Biology, Thomas Jefferson University, Philadelphia, PA.

**Zhilin Song** was associated with the Department of Physiology, Chicago

Medical School, North Chicago, IL. Recently, Song joined the Department of Neuroscience, University of California, Riverside, CA.

Formerly, **Hiroyuki Suga** was the Chairman of the Department of Physiology II, Okayama University Medical School, Okayama, Japan. Presently, Suga is the Director General, Department of Research Institute, National Cardiovascular Center, Osaka, Japan.

**Christopher Michael Tan** has affiliated with the Department of Pharmacology, Vanderbilt University Medical Center, Vanderbilt University, Nashville, TN. Prior to his new affiliation, Tan was with the Robarts Research Institute, London, Ontario, Canada.

Formerly with the Department of Protein Metabolism Group, Rowett Research Institute, Aberdeen, Scotland, **Timothy J. Wester** has joined the Institute of Food Nutrition and Human Health, Palmerston North, New Zealand.

**Thad Elliot Wilson** was formerly with the Life Science Department, Utah Valley State College, Salt Lake City, UT. Wilson is currently with the Institute for Exercise and Environmental Medicine, Presbyterian Hospital of Dallas, University of Texas Southwestern Medical Center, Dallas, TX.

Previously affiliated with the Department of Physiology and Pharmacology, SUNY-Health Sciences, Brooklyn, NY, **Hengtao Zhang** recently joined the Department of Physiology and Biophysics, University of Alabama, Birmingham, AL.

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### **Endothelium, Nitric Oxide and Atherosclerosis: From Basic Mechanisms to Clinical Implications**

Julio P. Panza and Richard O. Cannon III  
Armonk, NY: Futura, 1999, 322 pp.,  
illus., index, \$75.00  
ISBN: 0-87993-436-0

This book is a comprehensive review of the multifaceted roles of nitric oxide and other endothelial-derived factors in vascular biology. The book consists of four parts. The first seven chapters provide basic and fundamental information regarding the biology of nitric oxide, starting from its discovery, covering all the basic functions, and ending with the regulation of its production by the endothelium. The second part consists of four chapters that address basic mechanisms of endothelium dysfunction. The next five chapters constitute the third part. These chapters introduce clinical findings related to endothelial dysfunction and nitric oxide production and utilization in cardiovascular disorders. The last part entitled "therapeutic strategies to improve endothelium dysfunction" consists of six chapters. These chapters focus on clinical findings regarding the function and regulation of nitric oxide production in cardiovascular diseases.

Overall this is an excellent book that can be a valuable tool and reference to clinician scientists as well as basic scientists. The first two parts covering the basic and fundamental functions of nitric oxide under physiological and pathological conditions are outstanding. The clinical parts contain several chapters with strong clinical relevance but are in part repetitive, since the introductory chapters cover all the basic aspects. Nonetheless the emphasis on the biological significance and clinical relevance is outstanding. There are also three additional outstanding features in this book. The first is the reproduction of original data that lead to the discovery of endot-

helium-derived relaxing factor (EDRF)/nitric oxide and to the discovery of some of its important biological functions. The second is the utility by many authors of cartoon figures and diagrams that guide the reader through some of the complex molecular and cellular events mediated by nitric oxide and other endothelium-derived factors. The third and final outstanding feature is that the majority of the authors provide appropriate and extensive references (the average chapter cites about 50 reference and the number varies from 11 to 163 references).

The introductory chapter by Bob Furchgott is a treasure. It reveals events, presents some of the original data, and conveys insights that lead to the discovery of EDRF and then nitric oxide. The chapter is a walk through the history of this discovery that was recognized by the Noble Prize in Medicine and Physiology in 1998. He also included as an introduction the opening remarks of his 1982 NIH application that described the discovery of EDRF. Equally insightful and comprehensive is the chapter by Salvador Moncada and Anne Higgs. For the readers that have not read the original work that lead to the characterization of nitric oxide as the major form of EDRF this is an opportunity to do so, since some of the original data by Moncada and co-workers is reproduced in this chapter. William Downey and Thomas Michel review the molecular regulation of the endothelium nitric oxide synthase, and Paul Huang and colleagues review findings of the endothelial and neuronal knock-out mice. Here I must note an error in the page order as a color figure from Paul Huang's chapter is misplaced in the end of the next chapter of Richard Cohen, who reviewed the basic mechanisms of nitric oxide signaling to smooth muscle cells. Timothy McMahon and Jonathan Stamler discuss the role of nitric oxide and hemoglobin-bound nitric oxide in the respiratory cycle, and the first chapter ends with Virginia Miller's chapter on the hormonal regulation of nitric oxide and other endothelial-derived factors.

The second part opens with a comprehensive review of the basic science of endothelium dysfunction by Paul Vanhoutte, who made full use of cartoon diagrams to explain in a clear and concise manner the complexity of interactions between different endothelium-derived factors. Although the next three chapters reproduce some of the basic concepts and aspects of previous chapters, they contain a number of specialized and valuable data regarding the endothelial production of nitric oxide and other endothelial-derived factors. Frank Ruschitzka, Georg Noll, and Thomas Luscher extensively discuss some of the interactions between these factors in vascular disorders. James Liao is focused on the role of inflammation and the interaction of inflammatory cells and products with endothelium and nitric oxide. Maziar Zafari, David Harrison, and Kathy Griendling review and update findings regarding the role of vascular NADH/NADPH oxidase on the regulation of nitric oxide bioactivity.

The clinical chapters open with an overview by Julio Panza, who comprehensively reviews the role of nitric oxide in hypertension. The bioavailability of nitric oxide in hypercholesterimia is reviewed by Robert Vogel and in human coronary circulation by Arshed Quayyumi. Helmut Drexel and Burkhard Horning discuss the impaired endothelium-dependent vasodilation in heart failure, and this part concludes with a chapter by Anthony Heagerty who reviews similar events in microcirculation.

The last part of this book is also focused on clinical aspects of endothelial function in human cardiovascular disease. Scott Kinlay, Andrew Selwyn, and Peter Ganz provide the review of the clinical problems associated with endothelial dysfunction. Mark Granger reviews aspects of oxidative stress and endothelial dysfunction in atherosclerosis. Shanthi Adimoolam and John Cooke critically review the anti-atherogenic role of nitric oxide. Richard Cannon III reviews the relationship between hormonal

## Book Reviews

therapy and nitric oxide in postmenopausal women, an area of recent public interest. John Mancini and Eric Hamber review the clinical trails using angiotensin-converting enzyme inhibitors in coronary patients, and the last chapter by Jonathan Abrams reviews the use of ni-

trates in cardiovascular disease. Despite feeling that the clinical chapters appear somewhat repetitive (especially the introductory remarks), each chapter, however, was sufficiently specialized and offered new information and perspectives on different human diseases. I highly rec-

ommend this book as a valuable source of information on the critical and pivotal function of endothelium-derived factors in human pathophysiology.

*Harry Ischiropoulos*  
*University of Pennsylvania*

### Lung Development

Claude Gaultier, Jacques R. Bourbon, and Martin Post (Editors).  
New York: Oxford Univ. Press, 1999, 451 pp., illus., index,  
\$89.50  
ISBN: 0-19-511278-4

This is the 9th offering of the Clinical Physiology Series published by the American Physiological Society. Its 32 authors (from North America and the European Union plus 1 Australian) describe lung development in 16 chapters. The preface states that each "contributor took the standpoint that the developing lung should be understood starting at the bedside and moving toward gene dysfunction." I think that less than half of the material in this book will be useful at the patient's bedside, but the effort to address a clinical as well as a basic science audience is laudable and many chapters succeed in this regard.

Developmental biology is making rapid strides as molecular and genetic tools are brought to bear upon intriguing questions. The pace of discovery is uneven across the broad field of lung development; the mechanics of producing a book constrain any author's product. The timeliness of hardbound scientific books will continue to be plagued by production requirements, although there is some promise in electronic short-circuiting of the bound volume. *Lung Development* is being reviewed almost a year after its publication in early 1999.

Most of the chapters have one or several citations from 1998 and one even quotes a paper in press for 1999. Others suffer, with the most recent reports quoted being at least 3 years old at publication.

For my tastes, the best results in this volume come from avoidance of recitation of individual reports and an emphasis on interpretation of results by the authors. Liberal use of tables and graphics showing known and supposed relationships are effective ways to avoid details of interest only to the specialist investigator but that obscure the physiological and clinical message. Several chapters succeed: those in the last quarter of this volume are particularly readable and successfully accomplish the stated goal of a synopsis from bedside to gene.

One of the more successful chapters is that of Pitkänen and O'Brodovich titled "Development of lung epithelial ion transport: Implications for neonatal lung disease." Herein is juxtaposed detailed discussions of the several mechanisms for regulating lung ion and water flux at a protein and cellular level, with relevant clinical material clearly identified and separated usefully by numerous section headings. Because several decades of physiological investigations preceded attempts at a molecular explanation of lung salt and water balance, we might expect a mature discussion with secure physiological grounding for a rich clinical context. This chapter delivers.

Other areas of lung development are only beginning to be explored and have much less physiological information that

would allow the molecular biology results to be put into a clinically relevant context. Texts reviewing cell and molecular biological progress on an annual basis may better be able to present state-of-the-art in highly focused areas but *Lung Development* does a good job of analyzing and synthesizing material on growth factors, epithelial-mesenchymal interactions, and the directives determined by matrix elements.

An odd omission from this volume is any dedicated discussion on surfactant. This is despite the homage given to the Avery and Mead observations on the cause of neonatal respiratory distress. Clearly the editors needed to make selections for a volume of only 450 pages, but the lack of update on innate immunity and the role of surfactant lectins was a bit of a surprise.

Who should buy a copy of *Lung Development*? This is an important work and should be available in all comprehensive medical libraries and in many of those devoted to pediatric clinical practice. Most individuals interested in the topic from a clinical perspective should be satisfied with a reading without ownership. Even for the expert, this volume provides competent reporting and its useful index (averaging about 3 entries per text page) gives a practical means of selecting material for review.

*Stephen L. Young*  
*Duke University*



### The Expressiveness of the Body and the Divergence of Greek and Chinese Medicine

Shigehisa Kuriyama  
Cambridge, MA, MIT Press, 1999, 340 pp., illus., index, \$29.50  
ISBN 0-942299-88-4

What do we care about the perception and misperceptions of the physiology of the past—between clashes of cultures?

Despite the universal reality of the structure and function of the human body, Shigehisa Kuriyama, from the International Research Center for Japanese Studies, presents diverse medical traditions in their historical development and in their perception. Choosing Chinese and Greek origins for contrasting these diverse medical traditions, Kuriyama begins this book by identifying the primary preoccupation of the Greeks with muscle and of the Chinese with the tracts and points of acupuncture, leading each group to regard the other as absurd and thus unable to cooperate in the development of philosophical or physiological progress.

The first two chapters comprise “Styles of Touching.” Chapter 1, “Grasping the Language of Life” considers the haptic style of touching in both cultures. It focuses on the anatomical area of the radial pulse at the wrists. Although both groups grasped the same zone, their observations and their conclusions were entirely different. Rather than the pulsation that Western medicine has considered extensively, Eastern medicine selected three immediately adjacent zones on each wrist to diagnose small intestine, heart, gall bladder, liver, bladder, kidneys, large intestine, lungs, stomach, spleen, and pericardium, depending on whether a floating or sunken sensation was con-

veyed to the examining fingers. The concept of the pulsation of that area seems to have escaped Chinese notice. Nonetheless, contemporary observers seem to credit both examiners with great diagnostic skill. Chapter 2, “The Expressiveness of Words” explores radial wrist palpation “from the conviction that people express themselves not just in words, in a language accessible to the ears, but also in a language accessible only to the touch.” Music was used as a method for describing the pulsations in Western cultures.

The third and fourth chapters comprise “Styles of Seeing.” Kuriyama rhetorically asks: “How could one not see?” Comparing the musculature portrayed in Vesalius’ anatomy and the total absence of muscles in the acupuncture man, “we see almost irresistibly a puzzle about blindness, about how observant Chinese doctors overlooked, strangely, one of the most prominent features of the human body” (p. 111). The history of Greek muscular body involved, early on, the history of how Greek men defined themselves vis-à-vis various others—animals, barbarians, and women (p. 149). Doctors in China missed much of the anatomic detail observed in Greek dissections and incorporated invisible features that dissection could never justify, which “makes acupuncture man seem a mystery” (p. 153).

The fifth and sixth chapters comprise “Styles of Being.” Kuriyama considers blood and life in the fifth chapter and goes directly into bleeding and leeching. Both cultures used them, although somewhat differently. In the sixth chapter, the relationship between environmental conditions and human feelings or illness is shown to have been well recognized and rather similarly by both the East and the West, although for the Chinese, “wind represented less a distant, exciting cause of disease, inciting imbalances within the body, than disease itself, an alien invader.

It swept straight into the body’s interior and harmed by intrusion . . . . Wind was feared as wind” (p. 250). Earlier in the text the cold northern wind was regarded as purifying and the warm wind of the south was regarded as leading to sloth and cowardice. One might wonder about these concepts’ possible later relationship with racism, with the northern peoples regarded as energetic producers and the southern peoples as lazy (p. 141, 248-249).

The author’s march of ideas is somewhat circuitous and repetitious. Details become somewhat tedious. Nonetheless, it is worth the reader’s work to harvest the book’s important perspective. The Greek contrast has only tenuous roots. The Vesalian man, which Kuriyama chose to contrast with Hua Shou (the acupuncture man), as the Chinese counterpart, may still be representative of Western medicine (although not Grecian) as Hua Shou is representative for both Eastern medicine and Chinese medicine. Andreas Vesalius (1514-1564 AD) was Flemish born of German extraction, educated in Paris, and guided by the bigoted Galenist (Jacobus Sylvius). He worked in Italy, never in Greece. Although Galen was born in Pergamus, he worked on the Italian Peninsula. He commenced practice in Rome in 164 AD

There is a brief Epilogue followed by an extensive bibliography and other notes. Names and terms in Chinese and Japanese are followed by a well-designed index facilitating rapid access to specific information.

Yes! We all should care about the past as a springboard to begin jumping vigorously into the pool of future physiological research. The book is worthy.

*William H. Wehrmacher  
Loyola University at Chicago/  
Stritch School of Medicine*

## Books Received

*Essentials of Exercise Physiology*,  
2<sup>nd</sup> Edition.

William D. McArdle, Frank I. Katch, and Victor L. Katch.  
Baltimore, MD: Lippincott Williams & Wilkins, 2000, 679  
pp., illus., index, \$52.95.  
ISBN: 0-683-30507-7.

*Student Study Guide and Workshop for Essentials of Exercise  
Physiology*, 2<sup>nd</sup> Edition.

(Packaged with *Essentials of Exercise Physiology*)  
Victor L. Katch, Frank I. Katch, and William D. McArdle.  
Baltimore, MD: Lippincott Williams & Wilkins, 2000, 475  
pp., illus., index.  
ISBN: 683-30507-7.

*Hypoxia: Into the Next Millennium*.

Robert C. Roach, Peter D. Wagner, and Peter H. Hackett  
(Editors).

*Advances in Experimental Medicine and Biology*, Vol. 474.  
New York: Kluwer Academic/Plenum, 1999, 476 pp., illus.,  
index, \$125.00.  
ISBN: 0-306-46289-3.

*Ivan Pavlov: Exploring the Animal Machine*.

Daniel Todes.  
New York: Oxford University Press, 2000, 112 pp., illus.,  
index, \$22.00.  
ISBN: 0-19-510514-1.

*Nitric Oxide and the Cardiovascular System*.

Joseph Loscalzo and Joseph A. Vita  
(Editors).  
Contemporary Cardiology.  
Totowa, NJ: Humana, 2000, 601 pp., illus., index, \$149.50.  
ISBN: 0-89603-620-0.

*Nutrition in Spaceflight and Weightlessness Models*.

Helen W. Lane and Dale A. Schoeller (Editors).  
Boca Raton, FL: CRC, 2000, 301 pp., illus., index, \$89.95.  
ISBN: 0-8493-2278-2.

*Sports & Exercise Nutrition*.

William D. McArdle, Frank I. Katch, and Victor L. Katch.  
Baltimore, MD: Lippincott Williams & Wilkins, 2000,  
750 pp., illus., index, \$49.95.  
ISBN: 0-683-30449-6.

1/2 page ad

## MEMBERSHIP APPLICATION

## MEMBERSHIP APPLICATION

# Announcements

## Lake Cumberland Biological Transport Group Meeting

It is time to plan for the 2000 Lake Cumberland Biological Transport Meeting (affiliated with APS). The central theme of the meeting is biological transport, but presentations in other areas are welcome. This is an excellent forum for principal investigators, postdoctoral fellows, and graduate students alike to present their data and receive feedback.

The scientific sessions will be held in the mornings and evenings on **Sunday, June 11 to Tuesday, June 13**. Afternoons are free to enjoy swimming, fishing, golfing, riding, hiking, or any of the other activities available at the site of the meeting, Lake Cumberland State Resort Park, Jamestown, KY. ❖

For more information, contact:

Roger Worrell Instructor Emory Univ. Medical School 1648 Pierce Drive Atlanta, GA 30322 Tel: 404-727-9141 Fax: 404-727-0329 E-mail: rworrell@CCMS-renal. physio.emory.edu	Ann Sherry Postdoctoral Assistant Univ. of Cincinnati PO Box 670576 Cincinnati, OH 45267 513-558-3021 513-558-5738 ann.sherry@uc.edu
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or visit the Web site at:

<http://iupucbio1.iupui.edu/cumberland/>

## Volvo Awards for Low Back Pain Research

To encourage research in low back pain, in 2001 the Volvo Company will award three prizes of \$10,000 each. Awards will be made competitively based on scientific merit in one or more of the following areas: clinical studies, bioengineering studies, or studies in other basic science areas.

Papers submitted for the contest must contain **original** material not previously published or submitted for publication. A multiple authorship is acceptable. The manuscripts, in the English language, should be in the form of a complete report, including original illustrations (marked with names), which is not to exceed 15 typewritten pages. References

and tables can be added as double-spaced typed text not smaller than Times 12 point and in a form suitable for submission as an original paper to a scientific journal. Ethics committee approval is necessary for all animal studies, as well as controlled clinical studies.

**One original and five copies** of each paper in full, including illustrations, must reach the address below **not later than December 15, 2000**. Accordingly, articles sent by fax will **not** be accepted. Please include complete author address with telephone number, fax number, and email address. Winners will be notified in mid-March 2001.

One of the authors should be prepared, at his/her own expense, to attend the meeting of the International Society for the Study of the Lumbar Spine, June 19-23, 2001, in Edinburgh, Scotland, to present the paper and to receive the award.

The Board of Referees will be chaired by Alf Nachemson and will contain members from the fields of clinical medicine, bioengineering, and biochemistry.

All correspondence concerning the award should be directed to: Professor Alf Nachemson, Department of Orthopaedics, Sahlgrenska University Hospital, S-413 45 Göteborg, Sweden. ❖

## NSBRI Solicits Projects for Space-Related Biomedical Research

The National Space Biomedical Research Institute (NSBRI), a non-profit organization managed by a consortium of research institutions, is accepting proposals for space-related biomedical research projects to expand the scope of its eight current research areas. This opportunity is available to all members of the US scientific community, regardless of whether they are from consortium-member institutions. NSBRI research addresses and seeks solutions to the various health con-

cerns associated with long-duration human space exploration.

Funded projects will become part of NSBRI research teams in the following areas: bone loss; cardiovascular alterations; human performance factors, sleep, and chronobiology; immunology, infection, and hematology; muscle alterations and atrophy; neurovestibular adaptation; radiation effects; and technology development.

The deadline for submitting proposals is June 16, 2000. Detailed information and submission instructions are available in NSBRI Research Announcement 00-01 at <http://www.nsbri.org> or by calling 713-798-7412. On the NSBRI web site, click on the words "NSBRI Research Announcements" to access the announcement. ❖

40th ANNUAL MEETING  
FULL PAGE AD

## Announcements

### New Slide Units from AGA

The American Gastroenterological Association announced the release of two new slide units on nutrition available from the Gastroenterology Teaching Projects. They are *Clinical Nutrition I: Specialized Nutrition Support* and *Clinical Nutrition II: Short Bowel Syndrome*.

*Clinical Nutrition I: Specialized Nutrition Support* contains 117 color slides covering the fundamentals of parenteral and enteral nutrition support. William Heizer of the University of North Carolina at Chapel Hill is the primary author.

*Clinical Nutrition II: Short Bowel Syndrome* contains 93 color slides covering sites of bowel resection, pathophysiology, clinical manifestation, management, and long-term complications. The primary author is Carol E. Semrad, Columbia University College of Physicians and Surgeons.

Each slide unit is designed to stand alone as a teaching resource. An accompanying text includes legends and references as well as a reprint of each slide for quick referral. The slides and text are

packaged in a binder for bookshelf storage. Slides can be easily integrated into the lecturer's own materials.

To order, contact Milner-Fenwick [tel.: 800-432-8433 (US) or 410-252-1700 (outside US); fax: 410-252-6316; email: [agaslides@milner-fenwick.com](mailto:agaslides@milner-fenwick.com)]. To view descriptions, table of contents, and several sample slides from this and all other AGA slide units, visit Milner-Fenwick's web site (<http://www.milner-fenwick.com>). ❖

### Deadlines! Deadlines!

The APS sponsored awards are plentiful, but in order to be considered, don't forget to submit the application information before the deadline!

#### Next Deadline

#### Award

June 15	William T. Porter Fellowship Award
July 16	NIDDK Minority Travel Fellowships for APS Conference
August 15	Research Career Enhancement Awards
October 15	Teaching Career Enhancement Awards
November 1	Shih-Chun Wang Young Investigator Award
November 1	Arthur C. Guyton Awards in Integrative Physiology
November 1	Giles F. Filley Memorial Awards for Excellence in Respiratory Physiology and Medicine
November 1	Lazaro J. Mandel Young Investigator Award
November 8	Procter & Gamble Professional Opportunity Awards
November 8	Caroline tum Suden/Francis A. Hellebrandt Professional Opportunity Awards
November 15	John F. Perkins, Jr., Memorial Fellowships
November 16	Liaison With Industry Award for Novel Disease Models
November 23	NIDDK Travel Fellowships for Minority Physiologists for EB Meeting
December 1	Orr E. Reynolds History Award
January 15	William T. Porter Fellowship Awards
January 15	APS Postdoctoral Fellowship in Physiological Genomics
January 15	AAAS Mass Media Science and Engineering Fellowship
February 15	Research Career Enhancement Awards
April 15	Teaching Career Enhancement Awards
May 15	John F. Perkins, Jr., Memorial Fellowships

## Scientific Meetings and Congresses

### June 19-21

*High-Throughput Technologies (7th Annual Summit and Exposition)*, Philadelphia, PA. **Information:** Cambridge Healthtech Institute, 1037 Chestnut Street, Newton Upper Falls, MA 02464. Tel: 617-630-1300 or 888-999-6288; fax: 617-630-1325; email: [chi@healthtech.com](mailto:chi@healthtech.com); Internet: <http://www.healthtech.com>.

### July 12-14

*Serono Symposia USA: XIIIth Ovarian Workshop: Molecular and Cellular Basis of Paracrine, Autocrine and Juxtacrine Communication in the Ovary*, Madison, WI. **Information:** Cindy J. Bell, Executive Director, Serono Symposia USA, Inc., 100 Longwater Circle, Norwell, MA 02061. Tel: 800-283-8088 or 781-982-9000; fax: 781-982-9481.

### July 17-21

*Millennium Congress of International Society for Autonomic Neuroscience*, London, UK. **Information:** ISAN Congress Secretariat, Congress House, 65 West Drive, Cheam, Sutton, Surrey SM2 7NB, UK. Tel: +44-208-661-0877; fax: +44-208-661-9036; email: [info@conforg.com](mailto:info@conforg.com); Internet: <http://www.conforg.com>.

### July 30-August 4

*9th International Conference on Environmental Ergonomics (The integrative physiological, biomedical, & engineering approach)*, Ruhr-University Bochum, Germany. **Information:** Prof. Werner. Tel: +49-234-7005442; fax: +49-234-7094117; email: [icee2000@biomed.ruhr-uni-bochum.de](mailto:icee2000@biomed.ruhr-uni-bochum.de); Internet: <http://www.biomed.ruhr-uni-bochum.de/icee2000.html>

### August 5-9

*World Congress of Pediatric Gastroenterology, Hepatology and Nutrition*, Boston, MA. **Information:** World Congress of Pediatric Gastroenterology, Hepatology and Nutrition, 6900 Grove Road, Thorofare, NJ 08086. Tel: 856-848-1000, X252; 856-848-5274; email: [naspgn@slackinc.com](mailto:naspgn@slackinc.com); Internet: <http://www.naspgn.org>.

### August 30-September 3

*World Congress of Lung Health and 10th European Respiratory Society Congress*, Florence, Italy. **Information:** ERS Headquarters Lausanne, 1, boulevard de grancy, CH-1006 Luasanne, Switzerland. Tel: +41-21-613-0202; fax: +41-21-617-2865; email: [congres@ersnet.org](mailto:congres@ersnet.org) or [scientif@ersnet.org](mailto:scientif@ersnet.org).

### September 5-10

*XIth International Vascular Biology Meeting*, Geneva, Switzerland. **Information:** IVBM 2000, c/o MCI Group SA, Rue de Lyon 75, 1211 Geneva 13, Switzerland. Tel: +41-22-345-3600; fax: +41-22-240-2363; email: [anne-lise@mcitravel.com](mailto:anne-lise@mcitravel.com).

### September 7-10

*American Heart Association Scientific Conference on Interactions of Blood and the Pulmonary Circulation*, Sedalia, CO. **Information:** Project Coordinator Scientific Conference on the Interactions of Blood and the Pulmonary Circulation, Office of Professional Education, American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231-4596. Tel: 214-706-1543; fax: 214-706-5262; email: [sciconf@heart.org](mailto:sciconf@heart.org); Internet: <http://www.americanheart.org/Scientific/confer>.

### September 7-13

*2000 Pre-Olympic Congress, International Congress on Sports Science, Sports Medicine and Physical Education*, Brisbane, Australia. **Information:** Amanda Costin, 2000 Pre-Olympic Congress, C/-Queensland University of Technology, Human Movement Studies, Locked Bag 2, Red Hill, Queensland 4059, Australia. Tel: +61-7-3864-5824; fax: +61-7-3864-9690; email: [a.costin@qut.edu.au](mailto:a.costin@qut.edu.au).

### September 10-15

*First International Symposium on Microgravity Research and Applications in Physical Sciences and Biotechnology*, Sorrento, Italy. **Information:** Conference Secretariat, ESTEC Conference Bureau, PO Box 299, 2200 AG Noordwijk, The Netherlands. Tel: +31-071-565-5005; fax: +31-071-565-5658; email: [confburo@estec.esa.nl](mailto:confburo@estec.esa.nl); Internet: <http://www.estec.esa.int/CONFANNOUN>.

### September 10-15

*Principles and Practice of Tracer Methodology in Metabolism*, Galveston, Texas. **Information:** Robert R. Wolfe, PhD, Course Director, Department of Metabolism, University of Texas Medical Branch and Shriners Burns Hospital, 815 Market St., Galveston, TX 77550. Fax: 409-770-6825; email: [rwolfe@utmb.edu](mailto:rwolfe@utmb.edu).

### September 14-17

*XIV Congress of the Cardiovascular System Dynamics Society*, Baltimore, Maryland, USA. **Information:** David A. Kass, M.D. or J. Yasha Kresh, Ph.D., Johns Hopkins Medical Institutions, Baltimore, MD. email: [dkass@bme.jhu.edu](mailto:dkass@bme.jhu.edu) or [j.yasha.kresh@drexel.edu](mailto:j.yasha.kresh@drexel.edu); Internet: <http://www.hopkinscme.org/CSDS>

### September 14-25

*Supramolecular Structure and Function (Seventh International Summer School on Biophysics)*, Rovinj (Istria), Croatia. **Information:** Prof. dr. Greta Pifat-Mrzljak, Ruder Boskovic Institute, HR-10000 Zagreb, Croatia, POB 1016. Tel: +385-1-4561-127; fax: +385-1-4680-239; email: [pifat@rudjer.irb.hr](mailto:pifat@rudjer.irb.hr); Internet: <http://rudjer.irb.hr/~dpavlek/biophysics2000.html>.