

# The Physiologist

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Integrating the Life Sciences from Molecule to Organism



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## Education Outreach: Taking the "Fire" Beyond the Lecture Hall and Lab 2003 Arthur C. Guyton Teacher of the Year Award

George Ordway,  
University of Texas, Southwestern

I am extremely pleased to have this opportunity to share some of my thoughts about the roles of APS members as educators. Let me begin by first saying how honored I am for being selected as the 2003 Arthur C. Guyton Physiology Educator of the Year. This was truly a bittersweet honor, given the untimely deaths of Dr. Guyton and his wife, Ruth, so close in time to the presentation of the award at EB 2003 in San Diego. I am privileged to have my name associated with Arthur Guyton and with all the previous recipients of this unique award. I thank my friend and colleague, Dr. Jere Mitchell, for nominating me for the award, the Teaching Section of the APS for selecting me as this year's recipient, and the W.B. Saunders/Elsevier Publishing Company for their long-standing support of the award.

On the occasion of his selection for this award in 2000, Dr. Aviad Haramati wrote an article (1) for *The Physiologist* entitled, "Teaching Physiology: Filling a Bucket or Lighting a Fire?" In his article, Aviad very cogently presented the case that, rather than simply serving as dispensers of facts and content knowledge, our primary task as educators should be as motivators and role models, facilitating learning on the part of our students. Extending Aviad's analogy, we've all seen examples where "bucket fillers" have actually extinguished "fires" that had been effectively lit by others. In continuing this theme and in the spirit of the upcoming Olympic Games, I've chosen to



George Ordway

present some thoughts about what I consider an important additional task as physiologists and educators, taking the "fire" beyond the lecture hall or laboratory in ways outside what we normally consider "education." Specifically, I'm referring to science education outreach opportunities that can have a dramatic impact on teachers and students at all educational levels. Examples of programs that provide these opportunities already exist within the APS and in numerous local settings, serving as models for establishing similar programs elsewhere.

Two APS-sponsored programs in which members can light fires beyond the classroom include *Frontiers in Physiology* and the related *Explorations in Biomedicine*.

These provide middle and high school teachers with opportunities to spend a summer working fulltime in the lab of an APS mentor, as well as to attend a special weeklong teaching workshop and the EB meeting in the year following their summer experience. These research experiences can have profound effects on a teacher and his or her students. They are educational, giving teachers a chance to

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learn about and conduct science as it's done in the "real world." They are revealing, often exposing teachers to a myriad of science- and healthcare-related careers about which they were unaware. And perhaps above all they are rejuvenating, reminding teachers about the excitement of science that attracted them in the first place, an excitement that gets reflected in their teaching and passed on to their students.

Other opportunities for APS members include *Local Outreach Teams*, which provide middle and high school teachers with workshops focusing on hands-on, inquiry-based classroom lessons and activities. In addition, members can participate in "Physiology for Life Science Teachers and Students," a full-day workshop at EB for local high school students and teachers. This unique opportunity to interact with scientists and tour the posters and exhibits at a national meeting like EB lets students and teachers see how research is carried out by ordinary people who happen to be excited about their profession. Other opportunities include serving as a mentor for the recipient of a NIDDK/NIGMS Minority Travel Fellowship Award at EB or an APS Conference, or as a local judge to select the winners of APS Special Awards at the International Science and Engineering Fair. While the time investment for these is minimal, the fire-lighting potential that they have is incredible.

STARS (Science Teacher Access to Resources at Southwestern), a science education outreach program at UT Southwestern Medical Center at Dallas, is an example of how APS members can take the "fire" beyond the classroom in a local setting. STARS began in 1991 as an effort to improve science education in North Texas. Since then, it has developed into a multi-faceted program of 15 separate activities, some of which closely resemble those offered through APS. There are eight-week summer research experiences for middle and high school teachers, and workshops or in-service training on selected top-

ics, including all those offered through the APS Local Outreach Teams Program.

Basic Science Symposia were the initial activity offered by STARS and continue as a hallmark of the program. Symposia are presented six times a year with talks by UT Southwestern faculty on a featured topic that provides teachers with continuing education and professional development credit. Topics for this year are *Muscle Development & Wasting, Gastroenterology, The Dallas Bedrest & Training Study, Proteomics, Sensory Physiology, and Asthma & Allergies*.

STARS extensively recycles lab equipment, computers, and scientific journals for use by teachers and students. Equipment that is "outdated" for use in a research lab is often in excellent condition for use in a middle or high school science lab. An example are the 100 compound microscopes used by first-year medical students that UT Southwestern recently replaced and made available to schools in the Dallas-Fort Worth area. As a result, the return on the use of these microscopes will be far greater than would have been the case had they simply been sold as surplus equipment. UT Southwestern's inventory warehouse is affectionately known among local public school teachers as "The Candy Store."

Although teachers are the primary target audience of STARS, several activities focus on students. There is a summer research program for high school and community college students, and two to three tours per week of UT Southwestern facilities and its affiliated hospitals for middle, high school, and college science classes and interest groups. Career opportunities in science and healthcare are a particular interest of those who visit. For classes or schools unable to come to UT Southwestern, Science Ambassadors are recruited to go to them. One of my personal accomplishments as a Science Ambassador came as a result of a career day visit to a school in a small town outside of Dallas and being told that the students liked my presentation even better than the ones

by the professional bass fisherman and the big rig driver. In addition, STARS provides judges for local and regional science fairs, as well as mentors for students working on science fair projects.

My purpose in detailing the activities of this particular outreach program is not to brag about STARS, although I'm happy to do so, but to point out the variety of ways we can help beyond our own lecture halls, classrooms, and laboratories. Nor do I wish to imply that an effective outreach effort needs to include all of these types of activities. Any one of them can be of great benefit to teachers and students. In addition, while a number of these activities require financial underwriting, many can be done with little or no funding. As an example, faculty, staff, and student participation in all STARS activities is strictly voluntary.

Outreach partnerships are effective at all education levels: medical, graduate, and allied health science schools; undergraduate institutions; community colleges; and secondary and elementary schools. A given program might focus on an individual school, a group of schools, or a school district. Importantly, establish partnerships with schools or districts that not only will benefit from your efforts, but also want your help and are willing to work with you. Although this may seem intuitive, schools or districts rarely will turn down additional resources even if they don't see an immediate need for them or don't view them as an investment in which they too must contribute.

In establishing any outreach program, capitalize on your institution's strengths. For most of us, that usually turns out to be science in general and biological science in particular. Outreach efforts that combine the strengths of institutions at multiple levels are especially effective; for example, a medical school working with an undergraduate institution or community college to benefit a local school district. In addition, keep in mind that working with some school districts and administrations may

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often be frustrating; however, the reward of seeing a positive impact on teachers and students within those districts usually more than outweighs any frustration.

Although capitalizing on your institution's strengths, be "customer oriented." Provide the help and resources that the recipient needs and wants rather than simply what you think is best for them. A workshop on the latest RNA interference techniques might capitalize on your strengths, but probably won't be of much help to a ninth-grade general science or biology teacher. Topics listed in the Texas Essential Knowledge and Skills (TEKS) as requisite for biology are given high priority when planning

STARS symposia and workshops. Likewise, teachers who participate in the summer research program must address the TEKS or other science education standards as part of the classroom or lab activity they are required to develop.

As physiologists and educators, we frequently seem overwhelmed with responsibilities. Among these is our charge to "light a fire" in students in our lecture halls, classrooms, and labs. Equally important, however, is what I consider an obligation we share as scientists, to take the fire beyond these places and serve as mentors and role models for teachers and students outside our institutions. We can help teachers become better at their profession while making them feel like col-

leagues in the scientific community. We can inspire students to become active learners and improve science literacy, and perhaps in the process, excite them to pursue a career in science or healthcare. Effective education outreach programs often begin on a small scale, but they do begin. As Dr. Fred Zechman, who was Chairman of the Department of Physiology and Biophysics at the University of Kentucky when I was a graduate student used to say, "Just get on with it."



#### Reference

1. Haramati, A. Teaching Physiology: Filling a Bucket or Lighting a Fire? *The Physiologist* 43(3): 117; 119-121, 2000.

## Program Announcement

# Porter Physiology Fellowships for Minorities

Closing Date for New Applications: January 15, 2004  
Announcement of Awards: May 20, 2004

Annual Stipend: \$18,000

Duration of Fellowship: 1 year with possibility of 2nd year of support

The Porter Physiology Fellowships for Minorities are open to underrepresented ethnic minority applicants (African Americans, Hispanics, Native Americans, Native Alaskans, or Pacific Islanders) who are citizens or permanent residents of the United States or its territories. Applicants must have been accepted into or currently be enrolled in a graduate program pursuing an advanced degree in the physiological sciences.

#### FOR AN APPLICATION CONTACT:

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Childrens' Hospital, Boston, MA
- Mohan Dasu  
Shriner's Hosp. for Children, TX
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Eastern Virginia Med. Sch.
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Bogomoletz Inst. of Phys., Ukraine
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Franciscan Univ., Steubenville, OH
- Silvia Lacchini  
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Univ. of Texas Health Sci. Ctr., San Antonio
- Ron S. Leder\*  
Univ. Autonoma Metropolitan, Mexico
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Chunxiang Zhang  
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Univ. of North Dakota Sch. of Med.

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Medical College of Georgia  
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Medical College of Georgia  
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Nathan G. Lambert  
US Navy

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Christopher D. Wendtland  
Monroe Comm. Coll., Rochester, NY

## APS News

### APS Bylaw Changes

To provide APS with the flexibility to nominate and elect officers by mail and/or electronic ballot, it is suggested that the following changes be made to Article IV. *Officers of the APS bylaws.*

#### ARTICLE IV. *Officers*

SECTION 4. a. *Nomination of Officers.* Nominations for President Elect and for members of Council will be made by ~~mail~~ ballot, on forms provided by the Executive Director, before January 1 of each Year. Each member may nominate no more than one candidate for each office. If a member wishes to nominate the same person for President Elect and for Councillor he/she must nominate that individual for each position.

c. *Election of Officers.* Election of the President Elect and members of Council shall be made by ~~mail~~ ballot, on forms provided by the Executive Director, prior to the Spring Business Meeting. Each voting member must indicate on the ballot his/her choice of

the candidate for office. The candidate(s) receiving the most votes shall be elected. In case of a tie vote, the decision shall be made by lot. Ballots will be counted according to the Election Plan. ~~Two ballots, one for President Elect and one for Council, will be mailed together.~~ The results of the election will be announced at the Spring Meeting of the Society and the newly elected officers shall take office at the close of the Spring Meeting of Council.

The Committee on Committees has recommended that the membership of the Finance Committee be increased from four to five members.

#### ARTICLE V. *Standing Committees*

SECTION 2. *Finance Committee.* A Finance Committee, composed of ~~four~~ five regular members of the Society appointed by Council, shall receive the total coordinated budget proposals annually from the Executive Director and shall determine the annual budgets, reserve funds and investments of

the Society, subject to approval by the Council. The term of each member of the Finance Committee shall be three years; a member may not serve more than two consecutive terms. The Council shall designate the Chairperson of the Committee who shall be an ex officio member of the Council, without vote. On advice of the Finance Committee and consent of Council, the Executive Director shall be empowered to appoint and compensate a Business Manager who shall assist in carrying out the functions of the Finance Committee under the supervision of the Executive Director. The Past President shall serve as a voting member of the Finance Committee. The President Elect, President, Executive Director, the Chairperson of the Publications Committee, and the Business Manager shall be ex officio members of the Finance Committee, without vote. ❖

## 2003 APS/NIDDK Minority Travel Fellows Attend Conferences in San Diego, Banff, and Augusta

The APS regularly awards Travel Fellowships for under-represented minority scientists and students to attend APS scientific meetings with funds provided by the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). These Fellowships provide funds for transportation, meals, and lodging for travel to a meeting location, as well as complimentary meeting registration. Forty-nine Fellows attended the APS annual EB meeting, in San Diego, CA from April 11-15, 2003. Two Fellows attended "Aldosterone and ENaC: From Genetics to Physiology" from September 10-14, 2003 in Banff, Alberta, Canada and eight Fellows attended "Physiological Genomics: Understanding Renal and Cardiovascular Function Through Physiological Genomics" from October 1-4, 2003 in Augusta, GA.

Fellows in the NIDDK Minority Travel program not only received financial support to attend these meetings, but were also provided professional guidance through pairings with APS members who served as mentors to the Fellows for the duration of the conference. Thanks to the time and expertise offered by mentor volunteers, Fellows were able to maximize their time and more fully experience the many aspects of each conference.

The travel awards are open to graduate students, post-doctoral students, and advanced undergraduate students from minority groups underrepresented in science (i.e., African Americans, Hispanics, Native Americans, and Pacific Islanders). Students must be US citizens or permanent residents. The specific intent of this award is to increase participation of pre- and postdoctoral minority students in the physiological sciences. For more information, contact Brooke Bruthers in the APS Education Office at 301-634-7132 or [bbruthers@the-aps.org](mailto:bbruthers@the-aps.org), or visit [http://www.the-aps.org/education/minority\\_prog/index.htm](http://www.the-aps.org/education/minority_prog/index.htm) on the APS website.



Experimental Biology 2003 APS/NIDDK Minority Travel Fellows Luncheon.

### Fellows at "Experimental Biology 2003" were:

Nancy M. Aguilar, Univ. of California, Irvine  
 Indira De Jesus Aluelo, Univ. of Puerto Rico Medical Sciences Campus  
 Anita F. Austin, Meharry Medical College  
 Elisa Babilonia, New York Medical College  
 Erwin Bautista, Univ. of California, Davis  
 Le Ann Blomberg, US Department of Agriculture  
 Wendy Brisbon, Meharry Medical College  
 Candice M. Brown, Duke Univ. Medical Center  
 Wilmarie J. Bruckman Blanco, Univ. of Puerto Rico, Medical Sciences Campus  
 Raul Camacho, Vanderbilt Univ.  
 Robert Carter III, Army Research Institute of Environmental Medicine  
 Vondolee M. Delgado-Nixon, Ohio State Univ.  
 Cassandra V. Delgado-Reyes, Univ. of Illinois, Urbana-Champaign  
 Martin Farias III, Univ. of North Texas Health Sci. Center  
 Frances Verdelle Fernando, Univ. of Arizona

Gerald D. Frank, Vanderbilt Univ. School of Medicine  
 Carla Gardner, Vanderbilt Univ. Medical Center  
 Jacob Garza, Texas A&M Univ.  
 Lorie Ann Gonzalez, Texas A&M Univ., Kingsville  
 Jorge L. Gonzalez-Perez, Univ. of Puerto Rico, School of Medicine  
 Inneke M. Jackson, Florida A&M Univ.  
 Brigid Joseph, Liver Research Center, Albert Einstein College of Medicine  
 Milton Hamblin, Meharry Medical College  
 Shawn D. Hingtgen, Univ. of Iowa  
 Vallie M. Holloway, Loyola Univ. Chicago  
 Empress Hughes, Barry Univ.  
 Ollie Kelly, Emory Univ. School of Medicine  
 Michael Knox, Univ. of Arkansas for Medical Sciences  
 Daniel C. Lee, Florida A&M Univ.  
 Nikki L. Jernigan, Univ. of New Mexico  
 Dexter L. Lee, Medical College of Georgia  
 Johnalyn Lyles, Univ. of Maryland, Baltimore  
 Philip Marjon, Univ. of New Mexico



Rudy M. Ortiz, Univ. of California, Santa Cruz  
 Lauren Pagarigan, Univ. of California, Santa Cruz  
 Michael Payne, Case Western Reserve Univ.  
 Rhonda Prisby, Texas A&M Univ.  
 Stephanie M. Richardson, Meharry Medical College  
 Jose D. Rojas, Yale Univ. School of Medicine  
 C. Nathaniel Roybal, Univ. of New Mexico School of  
 Medicine  
 Elizabeth Sanchez-Maloy, Univ. of New Mexico  
 Health Science Center  
 Vanessa I. Toney, Brown Univ.  
 Johana Vallejo, Univ. of Missouri, Columbia  
 Michelle D. Walker, Florida A&M Univ.  
 Ceceile Ann Wight, Florida A&M Univ.  
 Julia E.R. Wilkerson, Univ. of Wisconsin  
 Ianthalatres Williams, Univ. of Alabama at Birmingham  
 Jan Michael Williams, Medical College of Georgia  
 Tracy A. Womble, Florida A&M Univ.  
 Elethia Woolfolk, Meharry Medical College.

APS Mentors at "Experimental Biology 2003" were:  
 Jeffrey M. Gidday, Washington Univ. School of Medicine  
 Robert G. Carroll, East Carolina Univ. School of Medicine  
 Catherine F. Uyehara, Tripler Army Medical Center  
 Hannah V. Carey, Univ. of Wisconsin  
 Klaus F. Ley, Univ. of Virginia School of Medicine  
 Nancy L. Kanagy, Univ. of New Mexico School of Medicine  
 Robert T. Mallet, Univ. of North Texas Health  
 Science Center  
 Martin Farias III, Univ. of Washington Medical Center  
 Francisco H. Andrade, Case Western Reserve Univ.  
 Thomas C. Herzig, Uniformed Services Univ.  
 Rudy M. Ortiz, Tulane Univ. Health Sciences Center  
 Maria Florez-Duquet, California Polytechnic State  
 Univ., San Luis Obispo  
 Rayna J. Gonzales, Univ. of California, Irvine  
 Gregory L. Stahl, Harvard Medical School  
 Georges E. Haddad, Howard Univ.  
 Charles H. Lang, Penn State Univ. College of Medicine  
 Gerald M. Herrera, Univ. of Vermont  
 Barbara E. Goodman, Univ. of South Dakota  
 David R. Gross, Univ. of Illinois at Urbana  
 Suhayla Mukaddam Daher, Centre Hospital of the  
 Univ. of Montreal  
 Bernell Coleman, Howard Univ. College of Medicine  
 Susan M. Barman, Michigan State Univ.  
 Nancy J. Pelaez, California State Univ., Fullerton  
 Francisco H. Andrade, Case Western Reserve Univ.  
 Usha Raj, Harbor-UCLA Research and Education  
 Institute, Inc.  
 Mark G. Clemens, Univ. of North Carolina at Charlotte  
 Bonnie L. Blazer Yost, Indiana Univ.-Purdue  
 Univ., Indianapolis  
 Suzanne M. Schneider, Univ. of New Mexico  
 J. Michael Wyss, Univ. of Alabama at Birmingham  
 William M. Chilian, Louisiana State Univ.  
 Health Science Center  
 Mark M. Kneupfer, Saint Louis Univ.

Robert L. Hester, Univ. of Mississippi Medical Center  
 Jeffrey L. Osborn, Greater Hartford Academy of Math  
 and Science  
 Richard J. Paul, Univ. of Cincinnati College of Medicine  
 Karen A. Carlberg, Eastern Washington Univ.  
 Irving G. Joshua, Univ. of Louisville  
 Bryan Mackenzie, Harvard Medical School  
 Gina C. Schatteman, Univ. of Iowa  
 Kenneth D. Cohen, Western Michigan Univ.  
 Britton Chance, Univ. of Pennsylvania  
 C. Subah Packer, Indiana Univ. School of Medicine  
 William J. Martin, Merck and Co., Inc.  
 Cynthia Ann Jackson, Vanderbilt Univ. Medical Center  
 Chet Ray, Penn State Univ. College of Medicine  
 Armin Just, Univ. of North Carolina  
 J. Thomas Peterson, Pfizer Global R&D  
 Ingegerd M. Keith, Univ. of Wisconsin  
 J. David Symons, Univ. of Utah

Fellows at "Physiological Genomics: Understanding  
 Renal and Cardiovascular Function through Physiological  
 Genomics" were:  
 Anita Austin, Meharry Medical College  
 Turner R. Coggins, Jr., College of Southern Maryland

## Encouraging Undergraduate Students in Biomedical Research Careers

# Undergraduate Summer Research Fellowship

[www.the-aps.org/education/ugsrff/index.html](http://www.the-aps.org/education/ugsrff/index.html)



photo source: photodisc.com

**For APS Members and  
 Undergraduate Students:  
 Students will:**

- ▶ Experience 10 weeks of research during the summer in the lab of an established APS-member investigator;
- ▶ Attend an APS meeting;
- ▶ Present an abstract at an APS Meeting.

**Deadline for Applications  
 February 4, 2004**



The American Physiological Society, Education Office  
 9650 Rockville Pike, Bethesda, MD 20814-3991  
 301-634-7132, Fax: 301-634-7098  
 Email: [education@the-aps.org](mailto:education@the-aps.org)  
<http://www.the-aps.org/education.htm>

Ronald K. McMillon, Auburn Univ. College of Veterinary Medicine

Evangeline D. Motley, Meharry Medical College

Phillip Palmer, Meharry Medical College

Myla Patterson, Meharry Medical College

Stephanie Richardson, Meharry Medical College

Elethia Woolfolk, Meharry Medical College.

APS Mentors at "Physiological Genomics: Understanding Renal and Cardiovascular Function through Physiological Genomics" were:

Edward W. Inscho, Medical College of Georgia

Ralph A. Meyer, Jr., Carolinas Medical Center.

Fellows at "Aldosterone and ENaC: from Genetics to Physiology" were:

Ollie Kelly, Emory Univ.

Rudy Ortiz, Tulane Univ. Health Sciences Center ❖

## Women in Physiology and Pharmacology Committees Mentoring Symposium "Life After the PhD: Finding a Postdoctoral Fellowship"

Experimental Biology 2004

Tuesday, April 20, 2004

8:00 - 10:00 AM

Room 145A Convention Center

The workshop is targeted to young scientists of both genders interested in learning skills for their future careers. The workshop will present information for guiding young trainees on looking for and selecting a postdoctoral fellowship. One goal of the work-

shop is to define what a postdoctoral fellow is and to identify various types of postdoctoral positions that are available. The format of the workshop is to present four topics in 10- to 15-minute talks followed by a breakout session. Panelists will include, but not be limited to, APS and ASPET women who have positions in academia and industry/government in order to create an awareness of successful role models in various scientific/research

settings. The topics discussed will include "What is a Postdoc," "Resources for Finding a Postdoctoral Position," "Interview and Follow-up," and "What Types of Postdoctoral Positions are Available." The breakout session is planned to promote active participation of the audience and young scientists in best practices for each topic. The workshop offers a venue for networking between junior and more senior scientists. ❖

## Career Opportunities in Physiology Symposium "Planning A Successful Postdoctoral Experience: A Proactive Approach"

Experimental Biology 2004

Monday, April 19, 2004

5:45-7:45 PM

Room 145A Convention Center

A positive and successful postdoctoral experience is an essential component of the career development path taken by most physiologists. However, graduate students and postdoctoral fellows often fail to take a proactive role to obtain necessary skills and experiences required to prepare them for a successful career in industry, academics, government or other setting.

The purpose of this symposium is to advise graduate students and current postdoctoral fellows as to:

- 1) how to work with their mentor to design an individual development plan for their training period;
- 2) what skills should be developed during postdoctoral training and how to tailor their training to best prepare them to attain their individualized career goals;
- 3) how to obtain training in teaching, since such experience is generally difficult to obtain as a postdoctoral fellow, yet is expected by individuals and

committees hiring for academic positions and is viewed very favorably by other prospective employers as well; and

- 4) how to get involved in the newly organized National Postdoctoral Association.

The issues addressed are currently of great interest to graduate students, postdoctoral fellow and mentors, and it is anticipated that the expert speakers will provide valuable advice on each of the above topics. ❖

## APS Archive of Teaching Resources



The APS Archive of Teaching Resources (<http://www.apsarchive.org>) continues to grow with the recruitment of a variety of new learning objects from educators all over the country. To date, there are about 280 items catalogued in the Archive from various sources.

However, more material is still needed. Please consider submitting material that you have developed to use to make your teaching more effective. These can be

- lecture or course outlines or PowerPoint slides from a lecture that is particularly effective with your students
- problems or cases you've written for your classes

- diagram(s) that you've created to illustrate a specific pathway or process that seems to clarify it for your students

- simulations or videos you have developed

- web sites you have discovered that have valuable information for your teaching

- teaching tools/materials that you are developing that would benefit from feedback from your colleagues

- anything educational related to physiology, pathophysiology, or clinical physiology

By submitting learning objects that you have developed, you can help your colleagues in their efforts to find the best tools for introducing their stu-

dents to the exciting discipline of physiology.

Here are some new items in the Archive. Take a moment and check out those that are most relevant to your teaching. Don't forget that you can comment on any of these items through the comment section attached to each item, which can be found on its Fact Sheet.

- *Web Anatomy (Web site)*  
Murray Jensen
- *Peristalsis in Esophageal Function (analogy)*  
Barbara Goodman
- *Microcirculatory Flow (Web movies)*  
James Norton ❖



It's time to talk to middle and high school teachers about...

**Frontiers in Physiology**  
Professional Development Fellowship for Teachers  
Application Deadline is January 9, 2004

Teachers are seeking research hosts for Summer 2004.

Contact the Education Office with questions.

<http://www.the-aps.org/education/frontiers/app.htm>



American Physiological Society  
9650 Rockville Pike, Bethesda, MD 20854-3991  
T: 301-634-7132 F: 301-634-7098 E: [kkelly@the-aps.org](mailto:kkelly@the-aps.org)

## APS Presents Awards at ABRCMS Conference in San Diego, CA

The APS was an exhibitor and major conference sponsor at the Annual Biomedical Research Conference for Minority Students (ABRCMS) at the Town & Country Resort & Convention Center in San Diego, CA from October 15-18, 2003. Over 2,500 minority undergraduate students, graduate students, postdoctoral fellows, faculty and program directors attended this meeting. At the exhibit booth the APS Education Office highlighted the following awards, programs and resources for minority groups underrepresented in science:

*APS/NIDDK Minority Travel Fellowship*, which provides travel support for 50-70 students annually. This fellowship provides funds to attend Experimental Biology and the fall APS conferences. Awardees also are paired with a mentor, an APS member, in their area of research. The intent of this program is to increase participation of pre- and postdoctoral minority students in the physiological sciences.

*Undergraduate Summer Research*

*Fellowship*, which supports up to 12 fellowships each year. Fellowships support full-time undergraduate students to work in the laboratory of an APS member. The goal of this program is to excite and encourage students to pursue a career as a basic research scientist.

*Porter Physiology Fellowship Program*, supporting minority students pursuing full-time studies toward a PhD in the physiological sciences.

The new Career brochure and updated Career web site, the Archive of Teaching Resources, free membership for students, and Experimental Biology 2004 also were promoted.

The APS, represented by Education Office staff member, Brooke Bruthers, was also pleased to present four \$250 awards for the best poster and oral presentations during the conference. Twenty-five judges, including APS members, Cary Cooper, Latanya Hammonds-Odie, Barbara Horwitz and Marian Walters, selected the following winners:

Best Poster Presentation by a Sophomore: Poincyane Assis, Barry University, Miami Shores: Abstract Title: "Molecular Expression and Electrochemical Analysis of Phenylalanine-Tyrosine Transporter from *Anopheles gambiae* larvae";

Best Poster Presentation by a Junior: Kimberly Wiggins, Fayetteville State University: Abstract Title: "Analysis of the Putative Epididymal Anti-Microbial Protein Beta Defensin 28";

Best Poster Presentation by a Senior: Courtney Fields, Morgan State University: Abstract Title: "Polychlorinated-Biphenyls can Induce Isolated neural Crest Cells to Release a Factor that Regulates Macrophage Activity";

Best Oral Presentation: Marc Doombay, University of Iowa: Abstract Title: "Superoxide Dismutase Mimetic, Tempol, Improves Cardiac Performance by Inhibiting the Induction of MMP-9 Following MI in Mice."

The APS congratulates the students on a job well done and wishes them the best in their academic pursuits. The ABRCMS meeting is sponsored by the National Institute of General Medical Sciences Division of Minority Opportunities in Research and is coordinated by the American Society for Microbiology. For more information see <http://www.abrcms.org>.

For more information regarding the awards, programs and fellowships administered by the APS Education Office, please visit <http://www.the-aps.org/education/index.htm> or contact the office at [education@the-aps.org](mailto:education@the-aps.org) or 301-634-7132. ❖



APS staff member Brooke Bruthers presents awards to Poincyane Assis, Kimberly Wiggins, Courtney Fields, and Marc Doombay.

### Moving?

If you have moved or changed your phone, fax or Email address, please notify the APS Membership Office at 301-634-7171 or Fax to 301-634-7241. Your membership

information can also be changed by visiting the Members Only portion of the APS Website at <http://www.the-aps.org>.

## Better Keyword Searches, KWIC-ly

In this issue of *The Physiologist*, we are bringing you yet another article in the series highlighting some of the many useful features you will find when using the HighWire Library of the Sciences and Medicine. The Stanford's HighWire Press portal site, which hosts the online editions of all APS journals, allows you to search all of Medline plus the full text from 340 of the best science journals at once. The search tools it offers are built specifically to help you, the researcher, in your work. The portal can be found at <http://highwire.stanford.edu>. We hope you will love it once you try it!

We could pretend that keyword searches of full text are an adequate tool for finding the specific articles you need—since keyword searches are just about the only tool most search systems give you! But often a searcher is faced with thousands of search results in response to a keyword search, because systems like PubMed index over 12 million article abstracts, and the HighWire Portal indexes all those abstracts plus the full text of over a million articles as well. But there is help for those who have to look for the needle in the haystack!

The HighWire Portal at <http://highwire.stanford.edu> has recently added some tools to help you spot the needles in the haystack of a large result. The new tools take advantage of the recognition ability we all have—"I know it when I see it!"—by augmenting the "recall" of the keywords with the recognition of seeing just the right use of a term in the context of a sentence or phrase. These tools are helpful when a scientific term used in a keyword search is ambiguous or multifaceted, or when you are interested in only one aspect of many uses of that term; the tools are also useful when you are doing broad subject searches and cannot provide very specific keywords.

The new search tools are called "KWIC"—showing "keywords in context"—and "Instant Index"—which "clusters" items in your search results around major concepts. KWIC is

shown in the first figure; here you see a search for the keywords "cytochrome oxidase," which returned over 13,000 citations. An Instant Index for a search on the term "mercury" is shown in the second figure.

KWIC

You can easily see from the example how KWIC can help you recognize articles that use your search terms in a relevant way in a sentence. Each citation in a search result will typically

show you significant parts of the first two sentences in which your search terms are found in that citation. Not only can KWIC help you spot relevant results but it can suggest additional terms or phrases—search criteria that you can use to narrow your result.

Instant Index

The Instant Index is a more subtle and potentially more helpful new fea-

(continued on page 364)

Figure 1.

The screenshot shows the HighWire search interface. At the top, there's a navigation bar with links for Home, Search, My Email Alerts, For Institutions, For Publishers, About, Contact, and Help. Below this is a search box with 'Author:' and 'Keyword(s):' fields. The keyword 'cytochrome oxidase' is entered. A 'go' button is next to it. Below the search box, it says 'Search Results 1 to 10 of 13097 found'. There are several options for viewing results: 'all words', 'any words', 'phrase', 'Full Text', 'Journals', 'HighWire-hosted journals', 'HighWire + MEDLINE', and 'all articles'. There are also options for 'View abstracts' and 'Download to citation manager'. The search results are displayed in a list format. The first result is from JBC Online, titled 'Rotation of cytochrome oxidase in phospholipid vesicles. Investigations of interactions between cytochrome oxidases and between cytochrome oxidase and cytochrome bc1 complex'. The second result is from the Journal of Bacteriology, titled 'Terminal Oxidases of Bacillus subtilis Strain 168: One Quinol Oxidase, Cytochrome aa<sub>3</sub> or Cytochrome bd, Is Required for Aerobic Growth'. The third result is also from JBC Online, titled '... endospore-forming bacterium Bacillus subtilis has, under aerobic conditions, a branched respiratory system comprising one quinol oxidase branch and one cytochrome oxidase branch. ...'. The search results are displayed in a list format with various options for viewing and downloading the results.

(continued from page 363)

ture. Each search that retrieves more than 50 items will have a hyperlink that will take you to the Instant Index built from the top 500 items in your search result. You can see the Instant Index hyperlink in the middle of the first figure; it is the last link in the box under the Search Results heading; click on that link, and a new window like the one in the second figure will open up. The left side of the new window shows the index to your results; like the index in the back of the book, it contains concepts and subconcepts.

To the right of each concept is the number of citations that match. If you click on the concept name, the right side of the window will change to display the citations for that concept; in the example, we've clicked on "Cell; Proteins" and are looking at a list of 36 citations for that concept that contain the keyword "mercury" from our search. If you click on the "+" sign, it will show you the concepts indexed under another concept.

The technology that brings you the Instant Index is still being tuned, and we'd appreciate your feedback on

whether and where you find it most helpful and where you find otherwise. You may also find some interesting tests and uses for it. For example: try a search for your own papers and see whether the clusters of topics match what you think you've written about! Or, if you have to deliver a lecture (or a course) on a topic, you might do a search for that topic as a keyword search—perhaps asking for "review articles only"—and then see whether the resulting Instant Index suggests possible topics for your lecture outline.



Figure 2.

The screenshot shows a Microsoft Internet Explorer browser window titled "Instant Index - Microsoft Internet Explorer". The main content area is divided into two parts. On the left is the "Instant Index: mercury" sidebar, which lists "Top 500 results" categorized by field. The "Cell; Proteins" category is highlighted, showing 36 items. On the right is the "Articles in Cell; Proteins" list, showing items 1 to 10 of 36. The first article is from JBC Online, titled "Nucleosome fractionation by mercury affinity chromatography..." by Chen et al. (1991). The second article is from the Journal of Pharmacology and Experimental Therapeutics, titled "Role of Extracellular Thiols in Accumulation and Distribution of Inorganic Mercury..." by Lash et al. (1998). The third article is another from JBC Online, titled "The mercury-sensitive residue at cysteine 189 in the CHIP28 water channel" by Preston et al. (1993). Each article entry includes a thumbnail, the journal name, authors, title, citation information, and links for abstract, PDF, and citation map. The browser's status bar at the bottom shows "Internet".



PHYSIOLOGY IN PERSPECTIVE:  
THE WALTER B. CANNON  
AWARD LECTURE (SUPPORTED  
BY THE GRASS FOUNDATION)

**Christine Seidman**  
Harvard Medical School

*"Human Genetics:  
New Clues For Physiology  
and Pathology"*

SATURDAY, APRIL 17, 5:45 PM



HENRY PICKERING BOWDITCH  
AWARD LECTURE

**Robin L. Davison**  
Univ. of Iowa

*"Unraveling Cardiovascular  
Disease Through  
Physiological Genomics"*

SUNDAY, APRIL 18, 5:45 PM

## Distinguished Lectureships



CARL W. GOTTSCHALK  
DISTINGUISHED LECTURESHIP  
OF THE RENAL SECTION

**Thomas Jentsch**  
Hamburg Univ., Germany

*"Chloride Transport in the  
Kidney: Insights From  
Mouse Models and Human  
Disease"*

SUNDAY, APRIL 18, 8:00 AM



JULIUS H. COMROE, JR.  
DISTINGUISHED LECTURESHIP  
OF THE RESPIRATION SECTION

**Jerome Dempsey**  
Univ. of Wisconsin, Madison

*"Crossing the Apneic  
Threshold: Causes and  
Consequences"*

SUNDAY, APRIL 18, 10:30 AM



CARL LUDWIG  
DISTINGUISHED LECTURESHIP  
OF THE NEURAL CONTROL AND  
AUTONOMIC REGULATION  
SECTION

**Cliff Saper**  
Harvard Medical School

*"A Hypothalamic  
Integrator for Circadian  
Regulation"*

SUNDAY, APRIL 18, 2:00 PM



CLAUDE BERNARD  
DISTINGUISHED LECTURESHIP  
OF THE TEACHING OF  
PHYSIOLOGY SECTION

**Harold Modell**  
Physiology Education  
Research Consortium,  
Seattle, WA

*"Evolution of an Educator:  
Lessons Learned and  
Challenges Ahead"*

SUNDAY, APRIL 18, 3:15 PM



HUGH DAVSON  
DISTINGUISHED LECTURESHIP  
OF THE CELL AND MOLECULAR  
PHYSIOLOGY SECTION

**Peter Agre**  
Johns Hopkins Univ.

*"Aquaporin Water Channels  
at the Convergence of  
Physiology and Medicine"*

MONDAY, APRIL 19, 8:00 AM

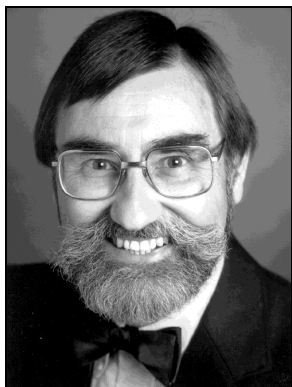


ROBERT M. BERNE  
DISTINGUISHED LECTURESHIP  
OF THE CARDIOVASCULAR  
SECTION

**Gary Owens**  
Univ. of Virginia

*"Molecular Regulation of  
Smooth Muscle  
Differentiation in  
Development and Disease"*

MONDAY, APRIL 19, 10:30 AM



AUGUST KROGH  
DISTINGUISHED LECTURESHIP  
OF THE COMPARATIVE  
PHYSIOLOGY SECTION

William Dantzler  
Univ. of Arizona

*"A Vertebrate Renal  
Odyssey—Organic Solute  
Excretion and Water  
Conservation in Reptiles,  
Birds and Mammals"*

MONDAY APRIL 19, 2:00 PM



SOLOMON A. BERSON  
DISTINGUISHED LECTURESHIP  
OF THE ENDOCRINOLOGY AND  
METABOLISM SECTION

Bert O'Malley  
Baylor College of Medicine

*"Signalling Through the  
Steroid Receptor  
Coactivators"*

MONDAY, APRIL 19, 2:00 PM



HORACE W. DAVENPORT  
DISTINGUISHED LECTURESHIP  
OF THE GASTROINTESTINAL  
SECTION

John Forte  
Univ. of California, Berkeley

*"The Gastric Hydrogen Ion  
Cycle"*

MONDAY, APRIL 19, 3:15 PM



EDWARD F. ADOLPH  
DISTINGUISHED LECTURESHIP OF  
THE ENVIRONMENTAL  
AND EXERCISE PHYSIOLOGY  
SECTION

Reggie Edgerton  
Univ. of California, Los Angeles

*"Learning and Memory in  
the Spinal Cord"*

TUESDAY, APRIL 20, 8:00 AM



JOSEPH ERLANGER  
DISTINGUISHED LECTURESHIP  
OF THE CENTRAL NERVOUS  
SYSTEM SECTION

Paul Greengard  
Rockefeller Univ., NY

*"Signal Integration in the  
Central Nervous System"*

TUESDAY, APRIL 20, 10:30 AM



ERNEST H. STARLING  
DISTINGUISHED LECTURESHIP  
OF THE WATER AND  
ELECTROLYTE HOMEOSTASIS  
SECTION

Christopher Wilcox  
Georgetown Univ.

*"Oxidative Stress and  
Functional NO Deficiency in  
the Kidney: A Critical Link  
to Hypertension?"*

TUESDAY, APRIL 20, 2:00 PM

## Sixth Annual Walter C. Randall Lecture in Biomedical Ethics



Kevin Fitzgerald, SJ, PhD  
*"Crossing Species Boundaries:  
Promethean, Pandoran or  
Just Plain Science?"*

Tuesday, April 20, 2:00 PM



## Saturday, April 17, Morning Session

**Cellular Homeostasis  
Education Committee**  
M. F. Romero and J. Freedman

**IACUC 101 for Scientists  
EB/APS Public Affairs Committee**  
J. Stallone

## Saturday, April 17, Afternoon Session

**The Promised Land or Fatal Attraction? A Practical  
Overview of the Present and Future of Genetically  
Engineered Mice**  
Workshop  
D. E. Kohan

**The Microcirculatory Society Presidential Symposium-  
Molecular Genetics Approaches to Microvascular  
Research**  
G. W. Schmid-Schonbein

**Making Science News: A Journalists Roundtable**  
Communications Committee  
A. Gwosdow

**Microarrays, Proteomics and Mass Spectrometry  
Workshop**  
S. Olds

## Sunday, April 18, Morning Session

**Physiology InFocus: Large Scale Systems Biology:High  
Throughput Genomics**  
(Cosponsored by *Physiological Genomics Journal*)  
A. Cowley and D. Nickerson

**A. Clifford Barger Memorial Symposium: Control of Blood  
Flow in the 21st Century-More Questions than Answers**  
Supported by the William Townsend Porter Foundation  
Cardiovascular Section  
W. Chilian and D. Gutterman

**Mechanical Cell Signaling Explored at the Nanoscale**  
The Biomedical Engineering Society  
V. Vogel and B. Helmke

**Use of Mouse Models to Understand the Pathophysiology  
of Diabetes: Implications for Preventing Complications**  
Translational Research Group  
D. Le Roith and B. Kahn

**Strategies for the Prevention of Alcohol-Mediated Tissue  
Injury**  
American Federation for Medical Research  
M. Hart and D. M. Guidot

**Insulin-Independent Exercise Signaling Pathways**  
Muscle Biology Group  
L. J. Goodyear

**Collaboration: The Cornerstone of Science,  
Learning and Change**  
Teaching Section  
W. M. Schlegel

**"Physiological Cross-Talk:" Non-Hemostatic Physiological  
Effects of Hemostatis-Related Components**  
The Society for Experimental Biology and Medicine  
B. S. Schwartz

## Sunday, April 18, Afternoon Session

**Mechanisms of Hyperglycemia in Diabetes II**  
American Federation for Medical Research  
J. Rabzuik

**Neural Control of Venous Capacitance Function in Health  
and Disease**  
Neural Control and Autonomic Regulation Section  
G. D. Fink and J. J. Galligan

**Do Baroreflexes Play a Role in Long-Term Control of  
Arterial Pressure?**  
Water and Electrolyte Homeostasis Section  
T. E. Lohmeier and V. L. Brooks

**Intracellular Trafficking of Membrane Proteins in Renal  
Epithelia**  
Cross Section  
P. A. Welling and M. Caplan

**A Bioinformatics How-To For the Wet-Lab Physiologist**  
Physiological Genomics Section  
H. Jacob

## Monday, April 19, Morning Session

**Physiology In Focus: Large Scale Systems Biology:  
Next Generation Technologies for Proteomics**  
P. Ping and A. Greene

**Integrated Control of Lung Fluid Balance**  
Respiration Section  
D. Mehta and A. B. Malik

**Polycystic Kidney Disease: From Bench to Bedside**  
Renal Section  
A.B. Chapman and J. Zhou

**Assembly of Tissues: Coordinating Cell Interactions  
in Large, Multicellular Systems**  
Biomedical Engineering Society  
T. C. Skalak and R. Tranquillo

**Mediators of Liver Inflammation**  
Gastronintestinal and Liver Section  
A. B. Lentsch

**Stem Cells and Progenitors Cells: Biology, Physiology,  
and Therapeutic Applications**  
Cardiovascular Section  
K. March

***Sympathetic-Adrenergic and Baroreflex Function  
With Aging***

Translational Research Group  
D. R. Seals and E. Hassler

***Peer-Review and Publication in the APS Journals***

Publications Committee  
D. Benos

***Nutrient Sensing and the Metabolic Syndrome of Aging***

American Federation for Medical Research  
N. Barzilai

***The Maternal-Fetal Dialogue***

Endocrinology and Metabolism Section  
M. Soares

***Redox Control of Skeletal Muscle Adaptation to Exercise  
and Inactivity***

Environment and Exercise Physiology Group  
S. Powers and M. Reid

***Non-Invasive Body Composition Analysis  
in Small Animals***

Comparative Physiology Section  
T. R. Nagy and J. R. Speakman

***The TRP Superfamily of Cation Channels: Emerging Roles  
in Epithelial Physiology***

Epithelial Transport Group  
P. R. Smith

***Biological Applications of Nanotechnology***

Cross Sectional Symposium  
J. Bhattacharya

## Monday, April 19, Afternoon Session

***Planning a Successful Postdoctoral Experience:  
A Proactive Approach***

Careers Committee  
D. A. Scheuer

***High Content Biology: Multiplexing in Cell Physiology***

Liaison With Industry Committee  
C. Montrose-Refizadeh

***Remodeling of Adult Tissues: Beneficial Adaptation,  
Disease and the Engineering of Reparative Medicine***

Biomedical Engineering Society  
A. McCulloch and R. Jain

***Functional Connections Among Ponto-Medullary  
Respiratory Neurons***

Respiration Section  
J. Duffin

***Ghrelin: Its Role in Energy Balance***

American Society for Nutritional Science and APS  
G. Truett

## Tuesday, April 20, Morning Session

***Physiology InFocus: Large Scale Systems Biology:  
New Approaches to Large Scale Systems Biology***

J. Williams and L. Samuelson

***Breathing and Walking Following Spinal Injury***  
Respiration Section

D. D. Fuller, and F. J. Golder

***The Role of Integrins in Vascular Cell Signaling  
and Regulation of Vascular Function***

Cell and Molecular Physiology Section  
M. J. Davis and G. A. Meininger

***Biophysical Studies of Membrane Trafficking***  
Central Nervous System Section

D. Zenisek

***Life After the PhD: Finding a Postdoctoral Fellowship***  
Women in Physiology Committee and ASPET

C. Liedtke, K. Berecek and J. Lakouski

***The Mechanisms and Impact of Fetal Physiological  
Programming***

Cross Sectional Symposium  
J. Schwartz

***Stem Cells of the Developing and Adult Lung***  
Respiration Section

Z. Borok and B. R. Stripp

***Store-Operated Calcium Channels and  
Control of Muscle Contraction***

Muscle Biology Group  
J. Ma

***Interaction of Physiological Mechanisms in  
Control of Muscle Glucose Uptake***

Endocrinology and Metabolism Section  
D. H. Wasserman and M. Charron

***Development of Arterial Oxygen Chemoreception  
in Mammals: Bench to Bedside***

Hypoxia Group  
J. L. Carroll

***Neuroendocrine Modulation and Adaptative Responses  
to Stress***

Association of Latin American Physiology Societies  
R. Guevara-Guzman and J. Antunes-Rodriguez

***Effects of Aging on Vascular Function-Human to Cell***  
Cardiovascular Section

J. Mueller-Delp and E. Wilson

## Tuesday, April 20, Afternoon Session

*New Genomic Technologies for Systems Biology*  
Physiological Genomics Group  
A. Kwitek

*Physical Activity: A Drive for Central Neural Plasticity*  
Environment and Exercise Physiology Group  
J. Kramer and T. Waldrop

*Cardiac Fibrosis-Good, Bad or Dead*  
Cardiovascular Section  
S. C. Tyagi and P. Lucchesi

*Arthur C. Guyton: The Man and His Science*  
J. P. Granger

*Commemorating Pavlov & the 1904 Nobel Prize*  
History Section  
C. Tipton

## Wednesday, April 21, Morning Session

*Physiology InFocus: Large Scale Systems Biology*  
*Applications of Systems Biology to Function and Disease*  
A. Kwitek and M. Donowitz

*Claudin Expression and Function in the Kidney*  
Renal Physiology Section  
R. C. Harris

*Mitochondrial Function in Aging and Disease*  
Cell and Molecular Physiology Group  
K. E. Conley and M. Harper

*Physiology of the Intrinsic Lymph Pump*  
Cardiovascular Section  
D. Zawieja and A. A. Gashev

*The Heme-Heme Oxygenase-Carbon Monoxide System*  
*and the Control of Cardiovascular and Renal Function*  
Cross Section  
A. Nasjletti and N. Abraham

*Cold Ischemic Injury of Organs for Transplantation:*  
*Devastation, Mechanisms and Prevention*  
American Federation for Medical Research  
A. Salahudeen

*Metalloproteinase and Diabetes*  
Renal Section  
S. C. Tyagi and I. G. Joshua

*The SAGA of Fever*  
History Section  
C. M. Blatteis

*The State of the Progenitor: A Comprehensive*  
*Stem Cell Research Update*  
American Federation for Medical Research  
M. Hawkins and E. Crook

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## Section-Sponsored Featured Topics

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In Memory of Christopher A. Dawson,**

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Jahar Bhattacharya

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Pam Bounelis and Richard B. Marchase

**Non-traditional Arachidonic Acid Signaling in Arteries**

Robert Bryan

**Mechanisms of Vascular Dysfunction in Insulin Resistance**

Dave Busija

**Wigger's Award Featured Topic: Load Regulation  
of Cardiac Properties**

George Cooper, IV

**Oxygen Sensing by Neural Tissues**

Jay B. Dean

**Dysautonomics: Clinical Disorders of the  
Autonomic Nervous System**

D. Goldstein

**Novel Concepts in the Local Regulation of Vascular Tone**

Travis Hein and Cristine Heaps

**AstraZeneca Young Investigator Session:  
Renal Hemodynamics**

John Imig

**Stress, Mood and Autonomic Function**

Alan Kim Johnson and Angela J. Grippo

**Control of Muscle Blood Flow During Exercise**

Michael Joyner and Larry Sinoway

**Insect Models of Epithelial Tissue Transport**

Karl Karnaky

**Spectrum of Ion Channels in Alveolar Epithelial Cells:**

**Implications in Alveolar Fluid Balance and Cell Volume  
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Kwang-Jin Kim and Paul J. Kemp

**Membrane Traffic in Epithelial Cells**

Kevin L. Kirk

**Adaptation to Exercise Stresses: Mechanisms of Protection**

Timothy Koh

**Cell-Cell Contacts in Regulating Lung Function**

Michael Koval

**Molecular Physiology of Oxygen Homeostasis:**

**Oxygen-Dependent Hydroxylation**

Sukhamay Lahiri

**Intestinal, Renal and New Model Systems for the Study of  
Oligopeptide Transporters**

F. Leibach

**Vacuolar Type H<sup>+</sup> - ATPases: Structure and  
Cellular Function in Mammalian Cells**

Raul Martinez-Zaguilan

**The Respiratory-Sympathetic Dance:  
Who Leads and Who Follows**

Steve Mifflin

**Cardiovascular and Respiratory Constraints on Exercise**

Suzanne Munns

**Epithelial Na and K Channels**

Scott M. O'Grady and James D. Stockand

**Berne Lecture Featured Topic: Molecular Control of Smooth  
Muscle Differentiation in Vascular Development  
and Disease**

Gary Owens

**Rho and Rho Associate Kinase Pathways**

Richard J. Paul

**Inflammatory Mediators and Cardio-Renal Pathophysiology**

David Pollock and Jennifer Pollock

**Regulation of Intestinal Ion and Vitamin Transporters  
During Development**

Mrinalini C. Rao

**Muscle Fatigue**

Jean-Marc Renaud

**Vascular Communication and Coordinated Blood Distribution**

Richard Rivers

**Hypertensive Mechanisms: Insights from Genetic Models**

Richard Roman

**Writing Higher Level Cognitive Questions in Physiology**

Rod Seeley

**Comparative Regulation of Renal and Intestinal**

**Phosphorus Processing and Transport: From Molecules  
to Environment**

Shozo H. Sgiura and Ron Ferraris

**Beneficial and Deleterious Effects of Estrogen  
on the Cardiovascular System**

John Stallone

**Ghrelin: Its Role in Energy Balance**

Gary Truett

**Abbott Award Featured Topic**

TBA

**Microcirculatory Society Young Investigator Session**

David G. Welsh

**Starling Lecture Featured Topic: Nitric Oxide: Oxygen  
Radicals and Lipid Mediators in the Control of Arterial  
Pressure**

Christopher Wilcox

**Excitation-Contraction Coupling in Health and Disease**

Jay Williams

## APS Urges Revisions to VA Peer Review Plan

Merit review of grant applications at the Department of Veterans Affairs' Office of Research and Development (ORD) has been a topic of concern since the spring. On April 1, 2003, DVA Chief of Research and Development Nelda Wray informed 18 investigators that support for their research would not be forthcoming, as they had earlier been told to expect. These decisions were based in part upon a re-review of investigators' "productivity" using new guidelines established by Wray.

The April 1 announcement provoked a firestorm of protest within the VA investigator community. The "de-funding" of the grants took place on the very day that funding was supposed to have commenced. Wray, who was then only a few months into her tenure, said that the rescissions were needed so that ORD could move new directions. The funding decision on one grant was subsequently reversed, and bridge funding was provided to the remaining 17 investigators, but

widespread concerns remained. Wray began a series of consultations with VA investigators and the broader research community to discuss her vision of how to make the VA's \$400 million research program more responsive to veterans' health needs.

Along with broad questions about the direction of the ORD research program, there has also been an on-going discussion about merit review of grant applications centering on how the qualifications of grant applicants should be assessed. Many researchers objected to the secondary review of productivity by ORD staff that produced numerical scorecards based upon specific criteria. Wray responded by asking for comments on the criteria as well as on the question of who should evaluate applicant qualifications. The APS provided comments that in opposition to both the numerical scoring and the role of ORD in the review process.

In a comment letter, APS President John Williams urged ORD "not to implement this numerical scoring system, but rather to provide appropriate guidance" to peer reviewers. Peer reviewers are "the appropriate ones to make this assessment rather than the

ORD central staff," Williams wrote. He also pointed out that the proposed criteria "have not been validated as predictors of performance" and noted further that the "proposed performance criteria are not reflective of productivity across disciplines and in different types of research projects."

In the sample productivity criteria for a full professor supplied by ORD, full marks for "excellent" productivity would be awarded to an individual who had two or more active grants from non-VA funding sources, was the principal investigator on at least one grant, and was primary author on all (or most) of five or more articles a year that were published in "high quality, peer reviewed journals" as defined by ORD.

"These yardsticks are not universal indicators of 'excellent' productivity," Williams noted in the APS letter. "In fact, numerous scenarios can readily be imagined if these standards were implemented that would unjustly 'reward' or 'punish' investigators because of the nature of their research," Williams wrote.

The letter goes on to list the following issues that were not reflected in  
*(continued on page 374)*

## APS to Sponsor 2004 Mass Media Fellowship

For the sixth consecutive year, APS will sponsor an American Association for the Advancement of Science (AAAS) Mass Media Science and Engineering Fellow for summer 2004. Applications are due to the AAAS by January 15, 2004.

The APS-sponsored fellow will be one of approximately two dozen AAAS Mass Media fellows who will spend 10 weeks during the summer working in the newsrooms of newspapers, magazines, Internet news outlets, and radio and television stations. Fellows will receive a short training course in science journalism prior to the fellowship, and will spend the summer developing their ability to communicate complex scientific issues to non-scientists and improving public understanding of science. The AAAS arranges placements at participating media outlets as part of the selection

process. The fellowship includes travel to Washington for orientation and evaluation sessions at the beginning and end of the summer, as well as travel to the job site and a weekly stipend based upon local cost of living.

Individuals must be currently enrolled as a graduate or postgraduate student of physiology or a related discipline to apply for the APS fellowship. The application form is available in the "Student Awards" section of the APS website at <http://www.the-aps.org/awards/student.htm#AAAS>. Additional fellowships are available for students in other scientific and engineering disciplines. Information about the program is posted on the AAAS Education and Human Resources Directorate website at <http://ehrweb.aaas.org/massmedia.htm>. A brochure with additional information about the program is also post-

ed on both web sites.

In addition to the application form, applicants must submit a current résumé, a three- to five-page sample of writing directed to the general public, transcripts of graduate and undergraduate work, and three letters of recommendation. Two of the recommendation letters should be from faculty members, and the third should be a personal reference. The selection process is designed to seek out qualified candidates especially from under-represented communities, including African-Americans, Hispanics, Native Americans, and scientists with disabilities.

For more information or to receive a copy of the application by mail, contact Stacy Brooks in the APS Communications Office. (Tel. 301-634-7253; Email: [sbrooks@the-aps.org](mailto:sbrooks@the-aps.org)). ❖

(continued from page 373)

the proposed productivity criteria:

- Complexity of the work. There are significant differences in expected productivity across disciplines, with clinical research and epidemiological studies representing two notable areas that require an extended period to reach fruition. Similarly, productivity for a discipline such as physiology will differ from that in other areas of science.

- Publication impact: Journal impact factors may not be the most appropriate measure of the actual impact of the research. Subspecialty journals may have relatively low impact factors but research published in them may have immediate and significant impact on those practicing in the field.

- Multiple responsibilities of PI's. The output of a research group depends upon the scope of its funding. Many productive VA investigators also have important non-research responsibilities such as clinical service, teaching and training, and administrative duties. It would be counterproductive to the VA's mission if the ORD productivity assessment criteria were to create incentives for personnel to divorce themselves from these activities in order to improve their chances of obtaining VA research funding. Numbers of papers alone is not a valid measure of productivity because it fails to take into account how much of the PI's effort is dedicated to research and number of personnel in the lab.

- Funding: To take account only of outside funding will distort the focus of the VA research program by tending to reward those whose research is aligned with the research objectives of other funding sources.

"Output is so dependent upon the specific situation of investigators that productivity cannot be accurately compared through numerical scoring," Williams noted, summarizing APS concerns.

In response to the comments received, Wray announced in late October that productivity would be assessed qualitatively rather than scored numerically, and that merit review panels rather than the ORD office would make those assessments.

## Zerhouni Proposes NIH "Roadmap"

NIH Director Elias Zerhouni has proposed that the NIH direct \$2 billion over the next five years to priorities identified in a strategic planning process he has dubbed the NIH Roadmap. Zerhouni began the consultations that led to the Roadmap shortly after he was confirmed as NIH director in May 2002.

"There has been a scientific revolution in the last few years," Zerhouni said in a September 30 statement announcing the plan. "The opportunities for discovery have never been greater, but the complexity of biology remains a daunting challenge.

"With this new strategy for medical research, NIH is uniquely positioned to spark the changes that must be made to transform scientific knowledge into tangible benefits for people," Zerhouni said.

The Roadmap represents Zerhouni's effort to provide direction for the NIH in the post-doubling era. It is also needed to explain to Congress and the public today's challenges in biology and why it is still important for the NIH to receive meaningful increases. The major themes of the Roadmap are:

- New Pathways to Discovery
- Research Teams of the Future
- Reengineering the Clinical Research Enterprise

Further information is available on the NIH website at <http://nihroadmap.nih.gov>.

Zerhouni plans to allocate \$124 million for programs related to the Roadmap in the fiscal year that began October 1, 2003. The President's FY 2004 budget request for the NIH included \$35 million for Roadmap activities. The balance of the funds in FY 2004 as well as the vast majority of funding in future years will come from the institutes, centers, and divisions of the NIH.

## AAHRPP Offering Accreditation Workshops in Washington

The Association for the Accreditation of Human Research Protection Programs (AAHRPP) is offering one- and three-day workshops to assist research facility staff in preparing a self-assessment. An institutional self-assessment is the first step in seeking accreditation of a human subjects research program.

AAHRPP was incorporated in April 2001. Its founding members are FASEB, the Association of American Medical Colleges, Association of American Universities, Consortium of Social Science Associations, National Association of State Universities and Land-Grant Colleges, National Health Council, and Public Responsibility in Medicine and Research. AAHRPP offers voluntary accreditation that employs peer-review and an educational approach.

Through AAHRPP accreditation, research institutions can demonstrate their commitment and ability to conduct ethically sound research. A variety of organizations, including universities, hospitals, independent review boards, and government agencies, may apply.

As of October 2003 full AAHRPP Accreditation had been extended to Hunter Holmes McGuire VA Medical Center (Richmond, VA), the New England Institutional Review Board (Wellesley, MA), University of Iowa (Iowa City) and Western Institutional Review Board (Olympia, WA). In addition, Baylor Research Institute (Dallas, TX) had received Qualified Accreditation.

The first step in the accreditation process is an extensive internal assessment that is submitted to AAHRPP as a program description. Guidance for developing this assessment is provided by AAHRPP's "Accreditation Standards and Evaluation Instrument for Site Visitors." The AAHRPP workshops are intended to help institutions navigate

the process and are designed to answer these frequently asked questions:

- What departments and staff should be involved in the self-assessment process?
- What resources are needed to conduct the self-assessment?
- How long does the self-assessment take to complete?
- What can we expect once the self-assessment is submitted to AAHRPP?
- What happens during a site visit?
- What are the common problems that organizations are encountering?

For registration, fee, and schedule information, visit <http://www.aahrpp.org/workshops.htm>, or contact Todd Bentsen, AAHRPP Assistant Director for Marketing & Communications, at 202-783-8133 or [tbentsen@aahrpp.org](mailto:tbentsen@aahrpp.org).

## Primates in Research: Opportunity and Challenge

“Primates in Research: Opportunity and Challenge” is a fact sheet that addresses questions people ask about research with nonhuman primates. It is available on the APS website at <http://www.the-aps.org/pa/action/news/primates.htm>.

“Today, as we enter an era where we can unravel the mysteries of the genome and understand diseases at the molecular level, the role of nonhuman primates is more critical than ever in the search for cures,” the fact sheet states. Nonhuman primates represent a crucial research model because of their “striking similarities” to human beings.

The fact sheet goes on to note that while “nonhuman primates are critical to biomedical research targeting the causes, progression, prevention, and treatment of a wide variety of human diseases,” it is also the case that “the benefits move in both directions” since breakthroughs in human medicine “are also used to treat diseases in other animals, including nonhuman primates.”

The fact sheet includes a link to further information provided by the National Primate Research Centers in their new brochure “Linking Research to Healthy Living” (<http://www.pri-mate.wisc.edu/pin/nprcbrochure.pdf>).



## Medical Aspects of Harsh Environments, Volume 1.

Kent B. Pandolf, PhD and Robert E. Burr, MD.  
*Textbooks of Military Medicine*. Washington, DC: Borden Institute, Office of the Surgeon General, US Army Medical Department, 2001, 609 pp., illus., index, \$67.00. ISBN: 0-16-05107-6.

## Medical Aspects of Harsh Environments, Volume 2.

Kent B. Pandolf, PhD and Robert E. Burr, MD.  
*Textbooks of Military Medicine*. Washington, DC: Borden Institute, Office of the Surgeon General, US Army Medical Department, 2002, 595 pp., illus., index, \$67.00. ISBN: 0-16-051184-4.

These two volumes are new additions to the *Textbooks of Military Medicine* series, and provide a broad knowledge of physiology, pathophysiology, and treatment for exposure to these harsh environments. Although these volumes are written with the military physician in mind, many physiologists may find these textbooks quite useful. For the seasoned investigator, these books serve as a wonderful reference, while the new investigator may find these texts useful as a resource and introduction for new areas of potential research endeavors.

Volume 1 is an expansive work describing the medical conditions caused by heat and cold exposure. This

publication is broad in scope, ranging from a historical perspective to current information on the physiologic changes associated with heat or cold exposure, signs and symptoms at the time of patient presentation, psychological issues, as well as prevention and treatment of heat- and cold-related environmental illnesses and injuries. The first half of volume 1, section I, addresses hot environments. In particular, there are specific chapters discussing human adaptation to hot environments; physical exercise in hot climates; pathophysiology of heat-stroke; prevention of heat illness; and clinical diagnosis, management, and surveillance of exertional heat illness. Section II of volume 1 discusses injuries caused by cold-related environments. To this end, there are chapters pertaining to physiological and psychological responses to cold stress and hypothermia, prevention of cold injuries, and clinical aspects of cold injury. In addition, there are chapters about nonfreezing cold injury, treatment of accidental hypothermia, and cold-water immersion injury. This is not a complete list of the chapters presented, but is intended to illustrate the diversity of information offered.

Like volume 1, volume 2 is divided into two sections; section III discusses topics associated with mountain settings, while section IV explores medical issues related to special environments. Volume 2 describes the human adaptation to these harsh environments, as well as the physical, cognitive, and psychological effects of exposure. Although one would expect a discussion on acute mountain sickness, high-altitude cerebral edema, and

high-altitude pulmonary edema, and section III delivers, there are also chapters on human adaptation, physical performance, and neurological status at high terrestrial altitudes. Section IV discusses the physiology and treatment pertaining to special environments, including shipboard medicine, hyperbaric medicine of diving, supersonic aviation, spaceflight, and chemical-biological protective suits.

While much of the science is directly related to military experience, there are significant portions of both volumes that come openly from basic research laboratories. It is the mix of basic and applied physiology that is presented that makes these volumes so useful. Graduate programs in physiology, and medical programs offering an applied physiology curriculum, may find this series beneficial, using the volumes as the textbooks for their courses, or at least as a reference book. In addition, the extensive use of illustrations and tables enables the reader to more fully understand the discussion, and adds immensely to the overall value of the product. The summary section of each chapter is informative and concise, while the references are extensive. Finally, the list of acronyms and comprehensive index at the end of each volume are very helpful, and references material in the both volumes. In conclusion, if you conduct research or teach in the field of applied physiology, you will find this series very practical and functional. ❖

Thomas C. Herzig  
Uniformed Services University of the  
Health Sciences

## Books Received

*Human Physiology: From Cells to Systems, 5th Edition*. Instructor's Edition.  
Lauralee Sherwood.  
Belmont, CA: Brooks/Cole-Thomson Learning, 2004, 802 pp., illus., index, \$116.95. ISBN: 0-534-39503-1.

*Insulin-Like Growth Factors*.  
Derek LeRoith, Walter Zumkeller, and Robert C. Baxter.  
Medical Intelligence Unit.  
New York: Kluwer Academic/Plenum Publishers, 2003, 498 pp., illus., index, \$165.00. ISBN: 0-306-47846-3.



## Networking Communicating with Bodies and Machines in the Nineteenth Century: Studies in Literature and Science

Laura Otis.

Ann Arbor, MI: Univ. of Michigan Press, 2002, 268 pp., illus, index, \$49.50.

ISBN: 0-472-11213-9.

An observation in 1959 and later elaborated by C.P. Snow, scientist, politician, and novelist, has been so universally and uncritically accepted that it has become almost an axiom of modern mythology, i.e. that "science" and "the humanities" are so far apart, that they are two separate worlds, out of touch with each other.

If such is true in the 20th and 21st centuries (which I find somewhat dubious), it certainly was farthest from the truth in the 19th century, as so well and thoroughly documented by Otis in her scholarly work, *Networking (Communicating with Bodies and Machines in the Nineteenth Century)*. In my personal acquaintance, in our epoch, there is a very prominent neuroscientist who played in the Boston Symphony Orchestra in his "spare time"; a Nobel-prize winning physiologist who is now a full time graphic artist; a former diva of the Metropolitan Opera who is fully acquainted with large areas of biomedical research and practice; a Nobel-prize winning physicist and mathematician who played the bongo drums professionally; the world's leading researcher and pioneer in kidney physiology, who won a Pulitzer prize for one of his novels; and many more.

I wish that Otis would bring her formidable scholarly talents to examine the 20th century as thoroughly as she did the 19th century. To quote the quite accurate description on the book jacket:

"The interdisciplinary sweep of the book is impressive, as it focuses simultaneously on the literary works of George Eliot, Bram Stoker, Henry Jones, and Mark Twain (among others), and on the scientific and technological achievements by Luigi Galvani, Hermann von Helmholtz, Charles Babbage, Samuel Morse, and Werner von Siemens."

Quite surprising and refreshing is her more than passing acquaintance with the famous controversy between the great neuroscientists (who shared a Nobel Prize in 1906) Camillo Golgi and Santiago Ramón y Cajal... and others! In each case, she documents the scientists' familiarity with the literature of the day, and conversely, the deep appreciation of the current (19th century) scientific works by the literati.

The other vast area of human endeavor, politics; insufficiently examined by the politician, Snow; in its interrelationships with science and literature, has been examined by Laura Otis in a previous work but is noted to some extent in this book as well.

She carefully documents, in great detail, the two-way street between literature and science (physiology, physics, chemistry, and much more). Among many other examples, Helmholtz wrote *Science and Culture*; Mark Twain was fascinated with the technologies of communication; telephone, telegraph, telegraphy, even the scientific and pseudo-scientific areas of "mental communication." He spent much effort in debunking and parodying several pseudo-sciences. In 1898,

Twain even pre-invented television with his "telectroscope"! Surprisingly, Otis does not mention the prescient science-fiction of Jules Verne and H.G. Wells.

Hardly a handful of famous scientists and writers are missed in this fascinating scholarly analysis, with endless details and quotations. Any casual reader can open any page of this opus and find a treasure of detailed (and well-written) examinations of the works of eminent figures, in each case, illustrating the surprising and intimate familiarity of each with other disciplines, today thought to be quite separate. The writer, George Eliot (1809-1890) exhibited her vast knowledge of both science and industry.

The word "bionics" was not invented in the 19th century, but Otis, without giving it a name, gives many examples of that type of investigation, even in the mid-19th century. Morse and other early physicists saw their wires as "nerves" while Helmholtz referred to nerves as "wires."

A glance at the index of this remarkable book will reveal many more names of famous scientists and well-known writers than could be listed in this brief review. The text amply demonstrates their more than passing familiarity with other than their own fields. Unhesitatingly and enthusiastically, I recommend this book to any scientist, writer, artist, historian, or lay person, as a reference source, but also as a "fun read," in part, or in whole. ❖

Novera Herb Spector  
American Institute for  
Neuroimmunomodulation  
Carlsbad, CA

## Postdoctoral Positions

Postdoctoral Associate: Cardiovascular Disease Research Program, J.L. Chambers, Biomedical/Biotechnology Research Institute, North Carolina Central University Durham, NC. This Postdoctoral Associate position will serve to assist the Principal Investigator in conducting extramurally-funded biomedical research focusing on various aspects of Cardiovascular Physiology and Disease. This position will serve to investigate mechanisms that contribute to cardiovascular homeostasis as well as to the adaptive responses to cardiovascular disease and injury. Several areas of current interest in the laboratory focus on novel positive and negative regulators of arterial remodeling following disease and/or injury, alterations in cardiovascular physiology and pathophysiology related to microgravity, cyclic nucleotide biology and its influence on cardiovascular physiology and the response to disease and/or injury, cellular changes involved in neointima and plaque formation and atherogenesis, and the interactions between various matrix-associated factors and growth factors/cytokines and their influence on vascular remodeling. Applicants should have successfully earned an advanced degree (MD, DVM, PhD) within the past several years, have a strong background in cardiovascular science and medicine and/or related disciplines, and demonstrate keen interest in pursuing research in cardiovascular physiology and disease. For more information please see: <http://www.nccu.edu/Academics/BBRI/tulis.htm>. Please send an updated curriculum vita, a copy of doctoral transcript, a brief statement of research interests and goals, and contact information for three references to: David A. Tulis, PhD, Cardiovascular Disease Research Program, J.L. Chambers Biomedical/Biotechnology Research Institute, North Carolina Central University, 700 George Street, Durham, NC 27707; Fax: 919-530-7998; Email [dtulis@wpo.nccu.edu](mailto:dtulis@wpo.nccu.edu). NCCU complies with the Immigration

Reform and Control Act of 1986. [EEO/AA]

Postdoctoral Position: A postdoctoral position is available immediately for an NIH-funded project to investigate the effects of hypoxia on fetal cardiovascular physiology and its programming effect on the cardiovascular system in the offspring. The research project will involve measuring vascular function using myographic techniques as well as assessing gene/protein expression of signal transduction pathways of hearts and blood vessels using molecular techniques. Applicants must have a PhD and relevant research experience in cardiovascular physiology and molecular biology. Salary will be competitive with NIH guidelines. For consideration, please send a current curriculum vitae, a brief statement of research and career interests along with names and addresses of three references to Dr. Loren Thompson, Assoc. Professor, Dept. of Obstetrics, Gynecology and Reproductive Sciences, University of Maryland School of Medicine, Bressler Research Building, Rm 11-029, 655 W. Baltimore St., Baltimore, MD, 21201 or send to [lthompson1@umm.edu](mailto:lthompson1@umm.edu).

## Faculty Positions

Faculty Positions: Applications are sought for two junior-level, tenure-track faculty positions in Electrical & Computer Engineering at the Engineering University of Delaware, starting September 2004. Candidates with research interests and experiences in the following areas are particularly sought: biomedical sciences or engineering, bioelectronics, bioinformatics, nanostructures and electronic devices. Applicants should have a PhD in electrical engineering, computer engineering, biomedical sciences (e.g., physiology, neuroscience), or biomedical engineering. Successful candidates are also expected to have demonstrated excellence in innovative research and have the potential for high quality teaching and mentoring.

Faculty members are expected to carry out a vigorous research program, teach and supervise students at the graduate and undergraduate levels. Applicants should send a resume, a statement of research and teaching interests and achievements, and a list of at least three references to: Faculty Search Committee, Department of Electrical and Computer Engineering, University of Delaware, Newark, DE 19716. Application material may also be electronically submitted at [fsearch@ece.udel.edu](mailto:fsearch@ece.udel.edu). Review of applications will begin immediately and will continue until the position is filled. The curriculum vitae and letters of reference shall be shared with departmental faculty. [EEO]

Faculty Position, Physiology: The Department of Integrative Physiology at the University of North Texas Health Science Center (UNTHSC) is seeking outstanding applicants for a full time, tenure track faculty appointment at the Assistant, Associate or Full Professor level. Applicants must hold the PhD or equivalent doctoral degree, have completed a minimum of two years postdoctoral experience (for applicants at the Assistant Professor level), and have established an independent, currently funded research program addressing fundamental aspects of cardiovascular physiology. Applicants with research programs in vascular physiology, cardiac mechanics or electrophysiology will be given the highest priority. Application of the research to the molecular biology of heart failure, diabetes, obesity, ischemic heart disease or other cardiac disorders is preferred. The successful applicant will also be expected to participate in the institution's graduate and medical education programs. Laboratory space and startup funding will be available. Initial rank will be commensurate with the successful applicant's experience. Please submit a letter of application, curriculum vitae, statement of career objectives, and at least three letters of reference to Robert T. Mallet, PhD, Search Committee Chair, Department of Integrative Physiology, UNTHSC,

3500 Camp Bowie Boulevard, Fort Worth, TX 76107. Deadline for application is January 23, 2004. You may visit our web site at <http://www.hsc.unt.edu/departments/intphysio>.

**Assistant Professor:** The Department of Physiology and Health Science, Ball State University, Muncie, IN, is seeking applicants for a tenure-track position as an Assistant Professor in human anatomy and physiology beginning August 20, 2004. Responsibilities include: introductory courses in human anatomy and physiology plus one or more upper level/graduate courses; heaviest emphasis will be anatomy. The successful candidate will be expected to conduct an active research program that should include undergraduate and master level students. Minimum qualifications: earned doctorate; evidence of successful teaching experience at the college or university level. Preferred qualifications: earned doctorate in anatomy, physiology, or related field; relevant postdoctoral training; one or more years of successful college/university teaching. Send letter of application including description of teaching and research interests, curriculum vitae, evidence of successful teaching experience, copies of undergraduate and graduate transcripts showing highest degree earned, and the names of three references with contact information to: Dr. Diana Godish, Chairperson, Search Committee, Department of Physiology and Health Science, Ball State University, Muncie, IN 47306. Review of applications will begin December 15, 2003, and will continue until the position is filled. (<http://www.bsu.edu>) The Department of Physiology and Health Science seeks to attract an active, culturally and academically diverse faculty of the highest caliber. [EEO/AA]

**Assistant Professor-Biology:** West Virginia Wesleyan College invites applications for a tenure-track assistant professorship for fall 2004. PhD required. Ecological physiologist, animal physiologist, or comparative phys-

iologist. Human anatomy and physiology for nursing and athletic training majors constitutes half of the teaching responsibilities for this position, with the remainder divided among introductory physiology for majors and upper level courses in the candidate's area of expertise. The successful candidate will have broad training, versatility, dedication to quality teaching and advising, and a strong commitment to carrying out research with undergraduates. West Virginia Wesleyan (<http://www.wvwc.edu>) is a liberal arts college of 1,500 students located in the foothills of the Appalachians, midway between Pittsburgh and Charleston, WV, in Buckhannon, WV, named one of the "100 Best Small Towns in America." The College was founded in 1890 and is closely related to the United Methodist Church. To apply: send letter of application, resume, unofficial graduate and undergraduate transcripts, brief statements of teaching philosophy and research interests, representative student evaluations and syllabi, and three letters of reference to Jeff Abernathy, Dean of the College, West Virginia Wesleyan College, 59 College Avenue, Buckhannon, WV 26201. Minority and female candidates are especially encouraged to apply. Review of applications will begin October 1 and continue until the position is filled. [AA/EOE]

**Assistant or Associate Professor** in Biomedical Engineering: The University of Rochester invites applications for two new tenure-track positions at the level of Assistant or Associate Professor in the Department of Biomedical Engineering (BME). Applicants must have a PhD or MD degree and should have significant research accomplishments. Candidates with research interests in the areas of musculoskeletal tissue engineering, biomechanics, biomedical imaging, or cardiovascular tissue engineering are particularly encouraged to apply, but applications are welcome from outstanding candidates in other areas of BME. Successful candidates are expected to develop and maintain

independent, extramurally funded research programs and to participate in departmental teaching programs. The University of Rochester, supported by a Development Award from the Whitaker Foundation, is committed to a major enhancement of our programs, including the establishment of endowed chairs in Biomedical Engineering (advertised separately). Review of candidates will continue until the positions are filled. Applicants should send a CV, recent reprints, a statement of research and teaching interests and plans, and the names of at least three references to: Dr. Richard E. Waugh, Chair, Faculty Search Committee, Biomedical Engineering, University of Rochester (<http://www.bme.rochester.edu>), Medical Center Box 639, 601 Elmwood Ave, Rochester, NY 14642. [EEO/AA]

**Assistant Professor:** The Department of Molecular & Integrative Physiology and the School of Molecular & Cellular Biology at the University of Illinois at Urbana-Champaign (UIUC) invite applications for a faculty position in Systems Physiology. The successful candidate will address fundamental mechanisms involved in the functioning of cells and systems using molecular, physiological or computational approaches. Priorities will be given to candidates working in the cardiovascular, respiratory or renal system, but outstanding candidates in other systems will also be considered. The position is full-time and tenure track in the Department (in the Colleges of Liberal Arts and Sciences and Medicine), starting August 2004. Rank is open but the focus will be at the Assistant Professor level. Applicants must have a doctoral degree, postdoctoral experience, and evidence of outstanding research potential. Appointee will be provided with excellent laboratory facilities and substantial start-up funds, and is expected to develop a vigorous, independently funded research program, and to contribute to undergraduate/graduate teaching. Salary is commensurate with experience. The UIUC has added substantial faculty strength in the bio-

logical sciences in recent years and additional hires in related areas are anticipated for the next several years. Urbana-Champaign offers the residential advantages of a medium-sized university city, excellent cultural opportunities and easy access to Chicago and St. Louis. Information concerning the School of Molecular & Cellular Biology at the UIUC can be found at <http://www.life.uiuc.edu/mcb/> and for the Department of Molecular and Integrative Physiology at <http://www.life.uiuc.edu/physiology/index2.html>. Applications should be submitted to: Systems Physiology Search, School of Molecular & Cellular Biology, University of Illinois at Urbana-Champaign, 393 Morrill Hall, 505 S. Goodwin Ave., Urbana, IL 61801. Applications must include a CV that includes a complete list of publications and a concise summary of past research accomplishments and future plans. Please arrange to have four letters of recommendation sent to the same address. Electronic submissions with PDF files are encouraged and should be sent to [mcbsearch@life.uiuc.edu](mailto:mcbsearch@life.uiuc.edu). Be sure to specify that the application is for the Systems Physiology position. To ensure full consideration, applications should be received by December 15, 2003. Interviews may be conducted before the closing date but no hires will be made until after the application deadline. [EEO/AA]

Assistant Professor, Biology: Duquesne University is seeking an assistant professor, tenure track, who uses molecular, cellular, or organismal approaches to explore biological questions. The successful applicant is expected to establish a vigorous research program involving MS, PhD, and undergraduate students, and to teach in the biology curriculum. We are an interactive faculty, committed to combining externally funded research with excellence in teaching. We investigate problems in a diverse range of systems and we seek individuals who complement and extend these interests. Competitive salary and start-up package are available.

Additional information about the Department can be found at <http://www.science.duq.edu/biology>. To apply, send a cover letter, CV, statements of research and teaching goals, and three letters of reference to Dr. Mary Alleman, Biology Faculty Search Chair, Department of Biological Sciences, Duquesne University, Pittsburgh, PA 15282. Review of applications will begin December 15. Founded by the Holy Ghost Fathers, Duquesne University is Catholic in mission and ecumenical in spirit. The University values Equality of Opportunity both as an Educational Institution and as an Employer.

Assistant Professor, Neuromotor Control: The Faculty of Kinesiology at the University of Calgary invites applications for a full-time, tenure-track academic position at the Assistant Professor level with a research interest in neuromotor control. The Faculty of Kinesiology is a dynamic, innovative Faculty dedicated to achieving excellence and diversity in research, education, and partnerships. This position offers an excellent opportunity to develop an independent research program, within a multidisciplinary research environment, through collaboration with members of the internationally renowned Human Performance Laboratory, Sport Medicine Centre, and the Faculty of Medicine. The successful candidate will be expected to contribute to teaching in the undergraduate and graduate programs of the Faculty of Kinesiology. The Faculty of Kinesiology's nationally accredited undergraduate program attracts talented students who possess one of the highest admission averages at the University of Calgary. In addition, the Faculty is in the process of significantly expanding its research laboratories, and the University of Calgary's Faculties of Kinesiology and Medicine have a dynamic partnership and outstanding research facilities and personnel in biomechanics, bone and joint health, sport medicine, and health, wellness, and human performance (<http://www.kin.ucalgary.ca>).

Applicants should have a PhD, evidence of commitment to and superior ability in teaching, and an active program of research with strong potential for external funding. Calgary is a vibrant, multicultural city (population ~1,000,000) near the Rocky Mountains, Banff National Park, and Lake Louise. Please submit curriculum vitae, three letters of reference, and a cover letter including a statement of research interests by January 15, 2004 to: T. Gabriele, PhD, Acting Dean and Associate Dean (Academic), Faculty of Kinesiology, 2500 University Drive NW, Calgary, AB, Canada T2N 1N4. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. The University of Calgary respects, appreciates, and encourages diversity.

Assistant Professor: Tenure Track Assistant Professor of Histology and Cell Biology, Tenure Track Assistant Professor of Physiology, Assistant Lecturer in Histology/Anatomy and Cell Biology. The Department of Biological Sciences at Idaho State University (<http://www.isu.edu/departments/bios>) invites applications for three full-time positions. Teaching responsibilities for the tenure track position in histology and cell biology may include medical histology, cell biology and/or radiobiology. Teaching responsibilities for the tenure track position in physiology include a two-semester undergraduate, upper division course in human anatomy and physiology as well as a graduate level physiology course in his or her expertise. Both positions require the development of independent, extramurally funded research programs that complement departmental strengths, and effective mentoring of undergraduate and graduate students. The doctoral level, assistant lecturer in histology/anatomy could teach courses in human gross anatomy, histology and/or radiobiology, and cell biology. Salaries are commensurate with training and experience. Review of all positions will begin January 15, 2004 and continue until filled. To apply,

send cover letter, curriculum vitae, statement of teaching philosophy and research goals (research statement is optional for assistant lecturer position), and contact information for three references, to Chair, Anatomy & Physiology Search Committee, Department of Biological Sciences, ISU, Pocatello, ID, USA, 83209-8007. [EEO]

**Assistant Professor-Physiologist:** The Department of Biology at San Francisco State University invites applications for a tenure-track physiologist position at the Assistant Professor level. We are interested in hiring an individual who studies cardiovascular, respiratory or renal function and we will consider individuals whose research is at the level of organ systems or cellular and molecular processes. We especially encourage individuals to apply whose research has immediate biomedical/human relevance or a comparative emphasis. Candidates must have an established record of research and a firm commitment to excellence in research and teaching. A PhD in physiology, cell biology or a related discipline is required and postdoctoral experience is preferable. Teaching responsibilities may include lower and upper division courses in physiology or human biology, as well as graduate level specialty courses. The Department of Biology at SFSU offers a dynamic and comprehensive program in biology, with a core physiology group spanning molecular to system-level and ecological physiology. Adding a physiologist specializing in cardiovascular, respiratory or renal function will significantly enhance and complement the strengths of our current physiology group. For more information about the Department see our website (<http://www.sfsu.edu/~biology>). San Francisco State University, a member of the California State University system, serves a diverse student body of 27,000. SFSU faculty is expected to be effective teachers and demonstrate professional achievement and growth through continued research, publications, and/or creative activities. Send a cover letter, state-

ment of teaching interests and philosophy, a description of research program, resume, and three letters of recommendation to: Physiology Search Committee, Department of Biology, San Francisco State University, 1600 Holloway Avenue, San Francisco, CA 94132. Please direct inquiries to Dr. Chris Moffatt at [moffatt@sfsu.edu](mailto:moffatt@sfsu.edu). Review of applications will begin December 1, 2003. Women, ethnic minorities and persons with disabilities are encouraged to apply. [AA/EEO]

**Assistant Professor Of Zoology:** The Zoology Department of Ohio Wesleyan University, a selective undergraduate liberal arts college, invites applications for a tenure track position to begin August 2004. Responsibilities include teaching introductory biology, advanced courses in mammalian and comparative physiology, and another advanced course in area of expertise over a two-year cycle. Ohio Wesleyan seeks faculty who are committed to excellence in teaching and to involvement of undergraduates in research. PhD required. Additional position and institutional information is available at <http://jobs.owu.edu>, or from the chair ([dcradaba@owu.edu](mailto:dcradaba@owu.edu)). Send letter of application, current CV, statement of teaching and research interests, all undergraduate and graduate transcripts, three letters of recommendation, and up to five reprints to Dr. Dennis C. Radabaugh, Department of Zoology, Ohio Wesleyan University, Delaware, OH 43015. Review of applications will begin on December 1, 2003. [EEO/AA]

## Research Positions

**Graduate Research Fellowship Position:** The Skeletal Muscle Physiology Laboratory, Department of Kinesiology, at The University of Toledo is seeking qualified candidates pursuing a MS or a PhD degree for a Graduate Research Fellowship position. The primary research focus of the lab is on the influence of exercise on the immunobiology of skeletal muscle.

Specifically, the lab is interested in determining the mechanisms for the interplay between skeletal muscle and inflammatory cells after both injurious and non-injurious exercise. We are currently using human, rodent, and cell culture models and contemporary laboratory techniques to answer basic and applied questions. Candidates must meet or exceed the admission criteria for entry into either MS or PhD program in Applied Physiology (see website for specific criteria). Prior laboratory experience in exercise physiology, biochemistry, immunology, and/or cell and molecular biology is desired. Benefits include a full tuition waiver and a competitive salary (stipend). The position is available for the Spring 2004 semester and will remain open until the position is filled. For more information, please visit <http://www.utoledo.edu/~kinesiology> or contact Dr. Frank Pizza at 419-530-4178 or Email: [FPizza@pop3.utoledo.edu](mailto:FPizza@pop3.utoledo.edu).

**Graduate Research Opportunity:** Graduate research opportunity in Exercise Physiology and Biomechanics at the University of Southern California, Los Angeles, CA. Opportunities for studying Exercise Physiology or Biomechanics are available at the University of Southern California. In Exercise Physiology, our research focuses on metabolism (carbohydrates, lipids, proteins) and its regulation during exercise, with aging and in pathophysiological conditions (Type I Diabetes, Type II Diabetes, Obesity). In Biomechanics, our research focuses on the mechanisms humans use to generate and control momentum during multi-joint movements (athletic, ergonomic, and clinical populations). We currently have several positions open for highly motivated graduate students. Courses for doctoral students are offered within and outside the department in areas such as biomedical engineering, computer science, integrative and evolutionary biology, physiology, gerontology, and statistics. Doctoral students will enter one of two interdisciplinary degree programs available at USC; Biomedical Engineering (Biomechan-

ics) or Integrative and Evolutionary Biology (Biomechanics and Exercise Physiology). Students are encouraged to apply for Graduate Fellowships, and Teaching and Research Assistantships. Recipients receive stipends, health benefits, and tuition remission as part their assistantships or fellowships. If you are interested in learning more about the programs, please contact Dr. Jill McNitt-Gray; [menitt@usc.edu](mailto:menitt@usc.edu), Biomechanics; or Dr. Lorraine Turcotte [Turcotte@usc.edu](mailto:Turcotte@usc.edu), Exercise Physiology.

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Assistant Research Scientist: The Department of Internal Medicine, Division of Pulmonary, Critical Care and Occupational Medicine at the University of Iowa Carver College of Medicine is seeking an Assistant Research Scientist to perform basic research in understanding the function and biochemistry of the receptor for adenovirus (CAR). The work will include an understanding of the theories and methods required to address important problems in the function and cell biology of this protein in epithelial and nonepithelial cells. The work will involve a combination of electrophysiology, biochemical and recombinant DNA techniques. Requires person in this classification has the academic knowledge of a discipline that is generally associated with a Doctoral degree (PhD) or an equivalent professional degree, i.e., MD, DDS or DVM. In addition, the person will have demonstrated the ability to plan and execute a research study through some progressively responsible independent research work. Requires postdoctoral completion. Desires postdoctoral experience in gene transfer, adenovirus vectors generation; research experience in biochemical analysis of structure function and in the biochemistry of membrane proteins and recombinant DNA techniques. Desires the ability of the person to obtain funding for their demonstrated work. Please send resume and cover letter indicating # 44751 to: Carol Wehby, Human Resources, Internal Medicine, The University of Iowa, E400 GH, 200 Hawkins Drive, Iowa City, IA, 52242-1081. [EEO/AA]

Assistant Research Scientist: The Department of Internal Medicine, Division of Pulmonary Diseases, Critical Care and Occupational Medicine, University of Iowa Carver College of Medicine is seeking an Assistant Research Scientist to perform basic or applied research on problems related to phagocyte function, signal transduction, and host-microbe interactions, which present critical or unusually difficult obstacles to understanding and which involve the development of new theories or methodologies with complete responsibility for all aspects of the research project. Requires a person in this classification has the academic knowledge of a discipline generally associated with a Doctoral degree, or an equivalent professional degree, i.e., MD, DDS, or DVM. In addition, such a person will normally have accumulated several years of progressively responsible independent research work. This work will be evidenced by publications, inventions and the like, which have had considerable impact and value to the person's field or discipline. Requires completion of an accredited postdoctoral position. Desires considerable research experience and publication record in the areas of hematopoietic stem cells, biochemical signaling pathways and reactive oxygen species. Desires experience with techniques of protein and lipid analytical biochemistry, enzymatic assays, immunoprecipitation, immunofluorescence, Western blot, analysis of signal transduction proteins, FACS, subcellular fractionation. Desires knowledge of molecular biology techniques, including cloning of DNA fragments and PCR products into plasmid vectors, bacterial transformation, transfection of mammalian cells, use of viral vectors for gene delivery, and RNA interference. The candidate is expected to play an active role in training and supervising students, postdoctoral fellows and research assistants, and preparing research papers. Please send resume and cover letter indicating # 44752 to: Carol Wehby, Human Resources, Internal Medicine, The University of Iowa, E400 GH, 200 Hawkins Drive,

Iowa City, IA, 52242-1081. [EEO/AA]

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Assistant Research Scientist: University of Iowa Carver College of Medicine, Department of Internal Medicine, Division of Infectious Diseases is seeking an Assistant Research Scientist to perform basic or applied research in an area of considerable scope and complexity in which existing theory or methods may be limited or lacking with responsibility for identifying and selecting the problems to be studied, the approach to them and the results obtained. Requires person in this classification has the academic knowledge of a discipline that is generally associated with a Doctoral degree (PhD) in a relevant field, or an equivalent professional degree, i.e., MD, DDS or DVM with documented basic virology research experience. In addition, the person will have demonstrated the ability to plan and execute a research study through some progressively responsible independent research work. Highly desires reasonable experience with either recombinant protein expression or molecular virologic diagnostic testing. Please send resume and cover letter indicating # 44748 to: Carol Wehby, Human Resources, Internal Medicine, The University of Iowa, E400 GH, 200 Hawkins Drive, Iowa City, IA, 52242-1081. [EEO/AA]

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Research Scientist: The best pediatric hospital in the nation, The Children's Hospital of Philadelphia, offers the following research opportunity: A research position is currently available at The Children's Hospital of Philadelphia to study T cell function in transplant patients undergoing various immunosuppressive regimens. The Children's Hospital of Philadelphia and the University of Pennsylvania campus support a tremendous immunology and biology research community. Salary is very competitive and includes an excellent benefits package. Applicants should have a PhD, MD, or equivalent, and practical knowledge and at least three years experience in cellular immunology

and flow cytometry. Apply online at <http://careers.chop.edu> or Fax: 215-590-4644; Email: [schaaf@email.chop.edu](mailto:schaaf@email.chop.edu). [EOE]

## Other Positions

**Endowed Chair:** The University of Rochester invites applications for two endowed faculty positions in the Department of Biomedical Engineering in the School of Engineering and Applied Sciences in the College. Applicants must be established investigators with outstanding accomplishments in Biomedical Engineering (BME) with qualifications for appointment as Associate or Full Professor. Preference will be given to applicants whose research interests lie in the areas of medical imaging, biomechanics, medical optics or vision engineering, but outstanding applicants with interests in any area of BME are encouraged to apply. The successful candidate is expected to provide leadership as an independent, extramurally funded investigator and to participate in departmental teaching programs. The University of Rochester, supported by a recent Development Award from the Whitaker Foundation, is engaged in a major enhancement of our programs, including at least two other appointments in Biomedical Engineering advertised separately. Review of candidates will continue until the positions are filled. Applicants should send a CV, recent reprints, a statement of research and teaching interests and plans, and the names of at least four references to:

Dr. Richard E. Waugh, Chair, Faculty Search Committee, Biomedical Engineering, University of Rochester (<http://www.bme.rochester.edu>), Medical Center Box 639, 601 Elmwood Ave, Rochester, NY 14642. [EEO/AA]

**Database Administrator:** The Children's Hospital of Philadelphia, Stem Cell Transplant Section, Division of Oncology, seeks candidates who will manage data for both national and local studies for stem cell transplant patients. The Stem Cell Transplant Section is comprised of physicians, nurse practitioners, an unrelated search coordinator, and study coordinators. The team also consists of the Stem Cell Laboratory, Apheresis, and Radiation Oncology. Approximately 70 hematopoietic stem cell transplants are performed yearly. The Data Coordinator will be responsible for obtaining accurate data and transmitting into relational data bases, as well as forms for submission to international data collection groups. Both computer skills and a medical background are desirable. Responsibilities include: set-up and management of Stem Soft database for submission of data to the International Bone Marrow Transplant Registry and for institutional protocols; database analysis and report generation in preparation for numerous quality assurance studies and institutional reports; completion of data forms to the National Marrow Donor Program for unrelated donor transplants; attendance at inpatient and outpatient rounds to keep abreast of patient developments, both inpa-

tient and outpatient, so as to ensure accurate data collection; participation in quarterly Quality Improvement meetings with other members of the Stem Cell Transplant program; obtaining information from the Stem Cell Laboratory regarding product delivered. Education and experience: strongly preferred is a background in data management or computer databases, with some medical knowledge. Direct inquiries, nominations, and applications with cover letter in confidence to: Nancy Bunin, MD, Director, Stem Cell Transplant Program, Division of Oncology, The Children's Hospital of Philadelphia, 3400 Civic Center Blvd., Philadelphia, PA 19104; Email: [buninn@email.chop.edu](mailto:buninn@email.chop.edu). Electronic submission of credentials encouraged. [EEO/AA]

**Graduate Assistantships:** Graduate Research and Teaching Assistantships are available in the Department of Kinesiology at the University of Illinois at Urbana/Champaign for students who wish to pursue MS or PhD degrees in Exercise Physiology. Assistantships are available in the laboratories of Drs. Ellen Evans (body composition, bone, weight loss), Kim Huey (skeletal muscle, heat shock proteins), and Jeff Woods (aging, immune function, cancer, viral infection). Research laboratories are state-of-the-art and support body composition analysis and molecular biology, immunology, physiology and biochemical techniques. Please contact Jeff Woods, PhD at [woods1@uiuc.edu](mailto:woods1@uiuc.edu) and access our webpage at: <http://www.kines.uiuc.edu/>. ❖

## Advertise your job vacancy to over 11,000 members and subscribers!

Ads are accepted for either positions available or positions wanted under all categories. The charge is only \$75. All ads are also posted on the APS Career Opportunity Web page upon receipt for a three month period.

If you would like to have your ad listed in *The Physiologist* or on the APS Career Opportunities Web page (<http://www.the-aps.org/careers/careers1/>

[posavail.htm](http://www.the-aps.org/careers/careers1/posavail.htm)), the following items are needed: a copy of the ad, the name of a contact person, and either a purchase order number, credit card number (with expiration date and name of cardholder) or billing address. Send the information to Linda Dresser (Email: [ldresser@the-aps.org](mailto:ldresser@the-aps.org); Tel: 301-634-7165; Fax: 301-634-7242).

## Agre Wins 2003 Nobel Prize in Chemistry

APS member Peter Agre, has won the 2003 Nobel Prize in Chemistry for isolating the membrane protein that acts as the water channel in cells. Agre shares the Nobel Prize in Chemistry with Roderick MacKinnon for his work on structural and mechanistic studies of ion channels.

In 1988, Peter Agre succeeded in isolating a membrane protein that, a year or so later, he realized must be the long-sought-after water channel. This decisive discovery opened the door to a whole series of biochemical, physiological and genetic studies of water channels in bacteria, plants and mammals.

Agre has been an active participant in the Society's meetings since his selection as the inaugural Carl W. Gottschalk Distinguished Lecturer of the APS Renal Section in 1994. In 2004, Agre will be the Hugh Davson Distinguished Lecturer of the APS Cell & Molecular Physiology Section. His lecture, entitled, "Aquaporin



Peter Agre

Water Channels at the Convergence of Physiology and Medicine" is scheduled for presentation on Monday, April 19, 2004, at the Experimental Biology meeting in Washington, DC.

Agre is professor in the department of biological chemistry at Johns Hopkins University School of

Medicine in Baltimore, MD. He has been an APS member since 1998 and has been active in several of the Society's disciplinary sections including Renal and Cell and Molecular Physiology.

After earning a bachelor's degree in chemistry from Augsburg College in 1970, Agre received his medical degree from Johns Hopkins University in 1974. He completed post-graduate medical training and a fellowship at the University of North Carolina at Chapel Hill before returning to John Hopkins in 1981. He has served as a faculty member in the departments of medicine and cell biology. In 1993, Agre was appointed to his current position as a professor in the department of biological chemistry.

The APS would like to congratulate Dr. Agre on his prestigious achievement. ❖

## APS Members Elected to Institute of Medicine

The Institute of Medicine of the National Academies announced the names of its 65 newly elected members, raising the Institute's total active membership to 1,382. In addition, the Institute honored five individuals by election to foreign associate membership, bringing the total members in that category to 71. Among the newly elected members are two APS members, Robert H. Bartlett, MD, professor of surgery, University of Michigan Medical Center, Ann Arbor and Jeffrey M. Drazen, MD, editor in chief, *New England Journal of Medicine*, Boston. ❖

## Robert Carter, III Receives National Alumnus Award at Minority Access' Fourth Annual Role Models Awards Banquet

APS Member Robert Carter, III, a graduate of North Texas Health Science Center (NTHSC) received a Minority Access Alumnus Role Model Award at the Fourth Annual Role Models Awards Banquet at the Hilton Washington Hotel in September.

Carter received both the PhD in biomedical sciences and the MPH in epidemiology from NTHSC. He is currently a principal investigator in the Thermal and Mountain Medicine Division at the US Army Research Institute of Environmental Medicine. He has had 12 papers published in peer reviewed journals during the first five years of his career as a graduate and post-graduate scientist, and a like number of abstracts presented at scientific meetings.

"Dr. Carter symbolizes Minority Access' ideal alumnus role model—a graduate who has made significant

contributions in biomedical research and can be held up as a role model to minority students," stated Andrea Mickle, president and chief executive officer of Minority Access, Inc.

The Fourth National Role Models conference united over 200 representatives from major research universities, community colleges and historically black colleges and universities to address the health disparity issue—illnesses that disproportionately affect minorities.

One of the highlights of the annual conference is the awards banquet, which focuses the national spotlight on institutions and the accomplishments of individuals who have excelled in producing and/or supporting minority researchers, particularly in the biomedical sciences and related fields. ❖



Corrie Brian Allen is currently the Director, Lone Wolf Research, Mount Vernon, WA. Allen was formerly Assistant Professor, Department of Pediatrics, National Jewish Medical and Research Center, Denver, CO.

Harry L. Anderson recently joined the University of Massachusetts Memorial Medical Center as Associate Professor of Surgery, Boylston, MA. Prior to his new appointment, Anderson was associated with the Department of Surgery, St. Luke's Hospital, Coopersburg, PA.

Aaron Barchowsky has associated with the Department of Environmental and Occupational Health, University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA. Barchowsky had been affiliated with the Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH

Jonathan Samuel Beck affiliated with Anthemis Consulting located in Macclesfield, Cheshire, United Kingdom. Previously, Beck had been associated with Unilever Research, Port Sunlight Laboratory, Bebington, England, UK.

Klaus Bielefeldt is presently associated with the Department of Medicine, University of Pittsburgh, Pittsburgh, PA. Bielefeldt had been affiliated with the Department of Medicine, University of Iowa, Iowa City, IA.

Edward Michael Blumenthal has affiliated with the Department of Biological Science, Marquette University, Milwaukee, WI. Blumenthal had been associated with the Department of Biology, University of Virginia, Charlottesville, VA.

Meredith Bond joined the Department of Physiology as Professor and Chair, University of Maryland School of Medicine, Baltimore, MD. Bond was formerly with the Department of Molecular Cardiology, Cleveland Clinic Research Institute, Cleveland, OH.

Pamela Janet Boyd has associated with the Laboratory of Medicine and Pathobiology, University of Toronto, Toronto, Ontario, Canada. Previously, Boyd was associated with the Department of Kinesiology and Health Science, York University, North York, Ontario, Canada.

Louis G. Chicoine accepted an assignment with the Center for Gene Therapy, Columbus Children's Research Institute, Columbus, OH. Chicoine was previously associated with the Department of Pediatrics, University of New Mexico Health Sciences Center, Albuquerque, NM.

Leslie Anne Cornick has accepted a position as Assistant Professor, Department of Zoology, Connecticut College, New London, CT. Cornick had been associated with the Institute of Marine Science, University of Alaska School of Fisheries and Ocean Science, Fairbanks, AK.

John H. Durham is currently a member of Nephrology Associates of Orangeburg, The Regional Medical Center, Orangeburg, SC. Durham previously served in the Department of Nephrology and Hypertension, Winthrop University Hospital, Mineola, NY.

Amy Halseth has joined the Department of Cardiovascular and Metabolic Diseases, Amylin Pharmaceutical Inc., San Diego, CA. Halseth was formerly with the Department of Cardiovascular and Metabolic Diseases, Pharmacia Corporation, St. Louis, MO.

Sandra K. Hunter accepted a position with the Exercise Science Program, Department of Physical Therapy, Marquette University, Milwaukee, WI. Hunter had been with the Department of Kinesiology and Applied Physiology, University of Colorado, Boulder, CO.

Walter H. Massion, Professor Emeritus has moved to Carmel, CA. Massion previously held the position of Professor of Anesthesiology, University of Oklahoma Health Science Center, Oklahoma City, OK.

Nichole Karine McDaniel joined the Department of Biology and Medical Lab Technology, Bronx Community College, CUNY, Bronx, NY. McDaniel was previously with the Department of Pharmacology and Physiology, University of Medicine & Dentistry of New Jersey, Newark, NJ.

James Douglas McLister recently affiliated with the Department of Biology, Indiana University, South Bend, IN. Prior to his new position, McLister had been associated with the Department of Biology, University of Utah, Salt Lake City, UT.

Fred L. Minnear associated with the Department of Physiology and Pharmacology, West Virginia University Health Science Center, Morgantown, WV. Minnear had been affiliated with the Center for Cardiovascular Sciences, Albany Medical College, Albany, NY.

Jeffrey L. Osborn has affiliated with the Department of Biology, University of Kentucky, Lexington, KY. Prior to his new association, Osborn was with the Department of Biology and Neuroscience, Greater Hartford Academy of Math and Science, Hartford, CT.

Richard A. Parisi is now Associate Professor, Department of Medicine, UMDNJ-RW Johnson Medical School, New Brunswick, NJ. Parisi had previously been Medical Director, Sleep Disorders Center of Virginia, Richmond, VA.

Pamela Reinagel moved to the Department of Neurobiology, University of California, San Diego, La Jolla, CA. Reinagel was formerly with the Department of Neurobiology, Harvard Medical School, Boston, MA.

David W. Russ is presently affiliated with the Department of Physical Therapy, University of Maryland, Baltimore, MD. Russ was previously associated with the Department of Exercise Science, University of Massachusetts, Amherst, MA.

Michael A. Steinmetz is currently a member of the Center for Scientific Review as Scientific Review Administrator, National Institutes of Health, Bethesda, MD. Prior to his new position, Steinmetz was affiliated with the Krieger Mind and Brain Institute, Johns Hopkins University, Baltimore, MD.

Christopher Michael Tan recently affiliated with the Department of Pharmacology, Merck Frosst Centre for Therapeutic Research, Kirkland, PQ, Canada. Tan was previously associated with the Department of Pharmacology, Vanderbilt University Medical Center, Nashville, TN.

Volker Vallon is currently with the Department of Medicine and Pharmacology, University of California, San Diego & VAMC, San Diego, CA. Formerly, Vallon was associated with

the Department of Pharmacology, University of Tubingen, Tubingen, Germany.

Christian Wegener has affiliated with the Department of Biology, Animal Physiology, Marburg University, Marburg, Germany. Wegener was formerly with the Department of Zoology, Stockholm University, Stockholm, Sweden.

David A. Wilson is presently the Scientific Review Administrator, National Heart, Lung, and Blood Institute, NIH, Division of Extramural Affairs, Bethesda, MD. Wilson was formerly with the Department of Anesthesiology, Johns Hopkins University, Baltimore, MD.

Richard P. Wyeth has affiliated with the Department of Biology, Virginia

College of Osteopathic Medicine, Blacksburg, VA. Wyeth was previously associated with the Department of Biology, Radford University, Radford, VA.

Qing-Hua Zeng recently joined the Department of Biology, Northeast Normal University School of Life Science, Chang Chun JiLin, Peoples Republic of China. Prior to her present affiliation, Zeng was associated with the Department of Pharmacology, St. Louis University School of Medicine, St. Louis, MO.

Adrienne Stevens Zion has accepted the position of Associate Medical Director, Cardinal Health, Wayne, NJ. Zion had been affiliated with the Biobehavioral Sciences, Columbia University Teachers College, New York, NY. ♦

## APS Sustaining Associate Members

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



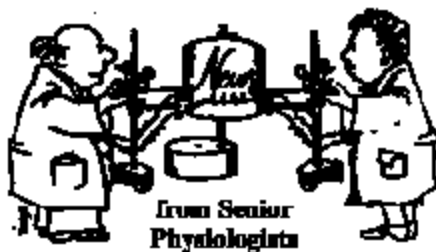
Abbott Laboratories	Harvard Apparatus	Procter & Gamble Co.
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The Grass Foundation	Pharmacia and Upjohn, Inc.	

## Letters to Douglas Stuart

Roger TannerThies writes: "My life changed when I retired five years ago at age 65. I moved to a nearby state, remarried, and my wife and I merged our last names into one. Fortunately, all my life I have been able to 'follow my bliss' (Joseph Campbell) and do what I really wanted to do. My advice to younger physiologists in order to have a fulfilling life is to follow your heart more than your head. Let me sketch my career as an example.

"I have been a teacher all my life. I taught nature study at Boy Scout camp in high school. I was a lab assistant in biology courses the year after I took them in college. In graduate school at The Rockefeller University I crossed the street to assist in Cornell Medical School physiology laboratories. My first position was in the Physiology Department at Washington University in St. Louis for a few years. I lectured and was responsible for cardiovascular dog labs and frog sciatic nerve labs. Then after a research fellowship in London for a year I took my family to Uganda for two years to teach East African medical students. I remained as a teacher of medical and other health professional students in Oklahoma for the next 31 years. Fifteen years ago I took a sabbatical year to teach in China. I taught the whole physiology course to 33 medical students in English. While in Oklahoma I also studied for an M.A. in Human Relations, took education courses and was certified to teach high school science, and did short physiology review courses all over North America.

"I have always been a teacher more than an investigator. I was privileged to be acquainted with many Nobel Prize winners, who were often great teachers as well as incisive scientists. In my research I made modest contributions to understanding neuromuscular transmission and spinal pathways for pain, but others would have probably discovered such things a few years later. My pride and joy is the many lives I have touched as a teacher, mentor, guide and friend. People have been more important to me than



science or medical advances. Teaching is a way of expressing our natural compassion and care for others. I treasure my teachers and mentors, and my teaching has expressed my love for my students. My mentors were like parents, and many of my students were like children.

"If you follow your bliss, then anything you give will be returned manyfold. I went overseas with an eagerness to share what I knew. But I received more than I gave; those were some of the happiest and most exciting years of my life. What a gift to be able to live in another culture and be a citizen of the world. How fortunate we are as physiologists that our 'work' can be so satisfying and meaningful.

"My satisfactions since I retired come from renovating the old farm house that I share with my wife, growing much of our own fruits, berries and vegetables, and doing co-mediation between couples over child custody issues. I also substitute teach in all subjects at the local rural high school and am finishing a physiology review book for the Step I examination. We travel and enjoy visiting children and grandchildren across the country. My retirement is not being any less busy but having more choices and flexibility. I seek to savor the moment, which we can all do anytime."

David A. Prince writes: "I am responding belatedly to your letter in which you request information about my current activities. I am still working full-time at Stanford. From 1970-1989 I chaired the Department of Neurology and then the Department of Neurology and Neurological Sciences here. During that time I was also involved in clinical activities as a neurologist and ran basic research and training programs, chiefly focused

on mechanisms of epileptogenesis. Since stepping down as chair in 1989, I have not been substantially involved in clinical work, but have continued to run both a training grant and a program project grant in epilepsy. My R01 grant is entering its 38th year and has been funded through 2006, and a second R01 grant on interneurons has been in place for the past three years. My time is spent mostly with fellows, reviewing papers, editing manuscripts, and working with undergraduate students who get their honors in Biology by doing a project in our laboratories. The latter turns out to be a most interesting and rewarding experience. My plans are to continue to be active in neuroscience research and training, at least as long as my synapses hold out.

"You asked for 'words of wisdom' to pass on to younger colleagues. One word of advice is to treat all of your colleagues and trainees well and with the utmost respect. You never know where these people will turn up—for example, the last two chairs of our department were individuals I knew as trainees in the clinical and basic neuroscience programs at Stanford. Academic career evolves through a number of stages, extending from duties as a lineman, quarterback and coach to those as a cheerleader, historian and philosopher. I am not quite sure where I fit in this ladder (I'm certainly not a lineman anymore), but I do hope to remain active in some capacity or another for some time to come."

Paul Webb writes: "I have enjoyed an unconventional life as a physiologist and continue to do so as I turn 80 in December. It all began when I was doing two years of Army service just after WWII. In Alaska I met Loren Carlson who offered me a chance to do thermal physiology at the University of Washington. I wanted to quench my thirst for research for a year, then return to clinical life, but physiology prevailed over internal medicine. I progressed from university to the Air Force Aeromedical laboratory, then to consulting and my own independent laboratory immodestly called Webb

Associates in Yellow Springs, OH. The problems I tackled were applied but some of the work led to satisfying basic physiology. Tolerance for extreme heat, body cooling, cold exposure in diving, and energy balance were research topics that arose from aviation, space and undersea medicine. I enjoyed inventing things such as a suitcase-sized life support system for high altitude flying (we did not say 'space' in the Air Force before 1958), a new kind of pressure suit, which was an elastic leotard for extravehicular activity, a metabolic rate monitor, and a human calorimeter using an insulated water cooled suit. The idea for the calorimeter came from the situation of an astronaut outside his vehicle. In a vacuum there is no way to dissipate metabolic heat; specific suit layers blocked even radiation. He loses metabolic heat to his water cooled undergarment. The suit calorimeter mimics this. It allows treadmill walking and other sorts of exercise. Body heat loss combined with continuous measurement of respiratory gas exchange produced energy balances over minutes, hours and days. Complete thermal balance during exercise showed the dynamic relationships between heat production, heat loss and body temperatures. I adopted the heretical view that it is heat that is regulated, not temperature. By adding nutrient balance mea-

surement over weeks of time I could look at energy balances during under-eating, over-eating and balanced intake. The Webb Associates laboratory ran for 25 years, and then expired from financial malnutrition. I went into active retirement 20 years ago. I was invited to take the calorimeter to various laboratories in the US and Europe, looking at 24-hour resting energy expenditure, the energetics of uphill and downhill walking and more. In the past decade I have helped colleagues find support for ideas that interest both of us, for example the study of body heat storage during exercise with muscle temperature added to the usual array to see where the heat is stored. There has even been a revival of interest in my elastic space suit. I am involved in several projects currently, which pleases me. I am on the faculty at Wright State University School of Medicine and I continue to publish. I enjoy home life, marriage and a Corgi. I read, walk and play tennis. One of these days I may slow down, but only if I have to."

#### Letter to G. Edgar Folk

Rex L. Jamison writes: "Thank you for your letter asking what I am doing. It brings back memories to hear from someone at the University of Iowa, because I was born and raised in Iowa (Story City) and attended the

University of Iowa, which was a wonderful place to learn—perfect for someone from a small town. I had many great teachers who took time to talk with me personally.

"I have spent most of my career at Stanford, teaching, caring for patients and studying the fascinating mechanisms by which the mammalian renal medulla becomes hypertonic to enable the kidney to form a concentrated urine. In the last six years, I have changed directions and am now directing a prospective, randomized, double blind clinical trial to determine if giving large doses of folic acid and vitamins B6 and B12 to patients with advanced and end stage renal disease, to lower their high plasma homocysteine levels, will reduce their mortality and cardiovascular morbidity. The study is sponsored by the Cooperative Studies Program of the Department of Veteran Affairs. Thirty-six medical centers are participating. We have just completed the enrollment period. We exceeded our target enrollment of 2,006 patients, and have begun a four-year observation period. I have a wonderfully able team of clinical outcomes specialists, statisticians, investigators and nurse coordinators who have worked very well together. It has been a lot of work—but and enriching experience. I found out that clinical outcomes research is no less complex than bench research." ♦

## Announcements

### Ninth International Workshop on Developmental Nephrology

The Ninth International Workshop on Developmental Nephrology: Genomics and the Kidney—New Insights into Developmental Pathways and Disease will be held in the Barossa Valley, South Australia, August 25-27, 2004 as a satellite meeting of the Thirteenth Congress of the International Pediatric Nephrology Association (Adelaide; August 29-September 2, 2004). The Workshop is designed to serve as a forum for the

exchange of ideas regarding the theoretical and practical aspects of the biology and genetics of renal development. The program will include keynote speakers, platform presentations, and theme-oriented poster sessions focused on topics including the control of nephronogenesis, patterning in the lower urinary tract, establishment of 3-D architecture in the kidney, molecular regulation of epithelial differentiation and function, genetic

determinants of defects in renal architecture and tubular transport, and determinants of the renal response to injury. For additional information and registration materials, please contact Dr. Lisa M. Satlin [lisa.satlin@mssm.edu](mailto:lisa.satlin@mssm.edu).

Additional information and registration forms available on the IPNA web site at: <http://www.ipna2004.com>.

♦

## 49th Annual Topics in Clinical Medicine

May 3-7, 2004

Department of Medicine, Johns Hopkins University School of Medicine, Thomas B. Turner Building, Baltimore, MD

This five-day course is designed for physicians and other professionals primarily interested in internal medicine. The topics will deal with recent and significant advances in areas of general clinical interest. They will be related to the diagnosis and

management of disease and, wherever possible, will be illustrated by clinical demonstrations. The program will be a varied one. In addition to short, illustrated discussions of specific disease problems, there will be conferences and symposia devoted to important, broad areas of clinical medicine.

Fees:

Physicians: \$750

Residents, Fellows, Physician

Assistants, Nurse Practitioners: \$600

Please reference the following contact information if you have any questions: Conference Coordinator, Johns Hopkins University School of Medicine, Office of Continuing Medical Education, Turner 20, 720 Rutland Avenue, Baltimore, MD 21205. Tel.: 410-955-2959, Fax: 410-955-0807; Email: [cmenet@jhmi.edu](mailto:cmenet@jhmi.edu); Website: <http://www.hopkinscme.org/cme>. ❖

## Michigan Society for Medical Research Call for Award Nominations

The Michigan Society for Medical Research (MISMR) is a non-profit educational organization which promotes understanding of medical research including the appropriate use of animals. We direct our educational efforts to demonstrate the relationship between animal research and the scientific progress while emphasizing that humane considerations guide the use of animals in research.

The MISMR Awards Program was established in 1996 by the Board of Directors to honor and recognize individuals for outstanding research, education, and science advocacy.

The purpose of the awards is to recognize individuals whose activities and attitudes promote the understanding of biomedical research, science education, and public and animal health.

The Bennett J. Cohen Education Leadership Award is named in memory of the pioneer and visionary in the

field of laboratory animal science who founded and directed the Unit for Laboratory Animal Medicine at the University of Michigan for 23 years. Dr. Cohen was a founding member and the first president of the MISMR.

The Science Education Award is given to individuals who have been instrumental in developing, implementing or contributing to an advocacy program that promotes science and science education.

Nominees for the Bennett J. Cohen Education Leadership Award or the Science Education Award should demonstrate through their actions and specific contributions support of the MISMR goals and objectives.

All nominations are reviewed by the Awards Selection Committee, which consists of members of the MISMR Board of Directors and other advocates for medical research and science education.

The nomination should be in the

form of a narrative which elaborates upon the nominee's primary contribution to medical research/science and how the candidate's advocacy activities have encompassed the mission of MISMR. The narrative should be accompanied by biographical information and a cover with the individual's full name, organizational affiliation, your name, address and organizational affiliation.

Letter from other persons who know the candidate from a different perspective are welcome.

In the review of nominations, emphasis will be placed on: evidence of a sustained focus on research and education; effectiveness, duration and nature of the advocacy activities.

For more information, including submission information, please contact MISMR directly at PO Box 3237, Ann Arbor, MI 48106-3237. Tel.: 734-763-8029, Fax: 734-930-1568, Email: [mismr@umich.edu](mailto:mismr@umich.edu). ❖

## Tenth Anniversary Two Day Course on the Treatment of Alzheimer's Disease and Other Dementias

March 26-27, 2004

Johns Hopkins University School of Medicine, Thomas B. Turner Building, Baltimore, MD

This course is designed to provide an update of approaches to the care of patients with dementia and Alzheimer's disease for all groups of health care professionals. The tenth anniversary course is presented in a two-day format. The first day will present historical and clinical perspectives on the development of new drug treatments for Alzheimer's and related dementias. This day will cover several issues in drug development, and provide an objective discussion of current controversies and upcoming developments. The second day, which follows the more traditional format, will begin with the presentation of the Annual Award for Excellence in Dementia Care to Paul R. McHugh, MD. This is followed by two plenary

sessions in which clinicians will be provided with updates of new research and clinical care for patients with dementia. There is then an early afternoon debate on controversies in the assessment of clinical outcomes for dementia treatments. The course also offers breakout sessions (six presentations) to discuss practical aspects of the care of patients with dementia. Professionals who care for dementia patients in any setting will benefit from this course. The first day course is also targeted at historians and experts in drug development both in the pharmaceutical industry and also in public policy and regulatory fields.

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

the content, quality and scientific integrity of this CME activity.

The Johns Hopkins University School of Medicine designates this educational activity for a maximum of 14 category 1 toward the AMA Physician's Recognition Award. Each physician should claim only those credits that he/she actually spent in the activity. Other appropriated credit is pending.

Fees:

Two-day fee: \$150; One-day fee: \$90

Please reference the following contact information if you have any questions: Johns Hopkins University School of Medicine, Office of Continuing Medical Education, Turner 20, 720 Rutland Avenue, Baltimore, MD 21205. Tel.: 410-955-2959, Fax: 410-955-0807; Email: cmenet@jhmi.edu; Website: <http://www.hopkinscme.org/cme>. ❖

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

August 1-8, 2004

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

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

The course consists of lectures focusing on the principles, techniques and clinical applications of MDCT with focus on new applications, including CT angiography, virtual imaging to include virtual colonoscopy, cardiac CT, and the latest advances in thoracic CT scanning. The lectures will also address the latest innovations in imaging the liver, pancreas, kidneys and GI tract. There will be time for discussion and opportunities for hands-on training on CT

workstations.

Upon completion of this course, participants will: understand how to optimize the use of multislice CT scanning in clinical practice; understand the role of CT angiography and its clinical applications; learn about the developing role of cardiac CT in clinical practice; learn the newest techniques for optimization of imaging the liver, pancreas and kidney; learn the newest concepts in GI imaging, including virtual colonoscopy; understand the latest concepts of thoracic imaging, including pulmonary embolism and screening for lung cancer; understand the changing role of radiology in American health care today.

Registration Deadline: July 28, 2004

Payment must accompany your registration. Registrations received after July 28, 2004, will be subject to a \$50 late fee. Only on-site registrations will be accepted after this date.

Fees:

Physicians: \$695

Residents\*/Fellows\*/Allied Health Professionals:

*\*with verification of status*

\$595

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

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

## 2004 Lasker Foundation Call for Nominations

The Albert and Mary Lasker Foundation invites you to submit a nomination for the:

- The Albert Lasker Basic Medical Research Award;
- The Albert Lasker Clinical Medical Research Award;
- The Special Achievement Award in Medical Science;

Nomination forms can be downloaded from the Foundation's website and

are made available in Acrobat PDF format. With the free Acrobat reader, version 5.0 or higher, you may fill out a nomination form on the web, save it on your computer, and print it. However, nomination forms may not be submitted electronically, but must be sent to the Foundation via mail or express courier. Please carefully follow submission guidelines which are outlined in the nomination packets. All

nomination materials should be received by the Foundation no later than February 2, 2004.

Need help? For questions, or to request a paper copy of the nomination form, please contact David Keegan at [dkeegan@laskerfoundation.org](mailto:dkeegan@laskerfoundation.org), or at 212-286-0222. Nomination information is also available at <http://www.laskerfoundation.org/awards/nominate.html>. ❖

## Twentieth Anniversary Computed Body Tomography The Cutting Edge

February 12-15, 2004

Disney Yacht and Beach Club Resort  
Lake Buena Vista, Orlando, Florida  
Sponsored by Johns Hopkins University School of Medicine  
The Russell H. Morgan Department of Radiology and Radiological Science

This seminar, for the radiologist, will provide a comprehensive review of recent advances in computed body tomography. A series of focused lectures has been designed to concentrate on specific topics in depth. Participants will have the opportunity to expand their knowledge of the latest concepts in multidetector-row CT, CT angiography, the value of high resolution CT in the chest, the uses of CT in the GI tract, clinical application of musculoskeletal CT, cardiac CT, and PET/CT in oncology. There will be time for questions and discussion. Optional hands-on workstation training will also be available. The daily schedule has been designed to include ample

time to enjoy the luxurious facilities of the Disney Yacht and Beach Club Resort and the Disney facilities. Participants will expand their knowledge in: the latest concepts in the chest and cardiac CT; the newest applications of multidetector/multi-slice CT; the clinical applications of CT angiography (CTA); the role of CT in GI pathology, including virtual colonoscopy; the latest concepts in liver and renal imaging.

REGISTRATION: The Registration cut-off date is February 9, 2004.

Please note: Payment must accompany your registration. Registrations received after 5 p.m. EST on February 9 will be subject to a \$50 late fee. Only on-site registrations will be accepted after this date.

Registration at the Disney Yacht and Beach Club Resort will be: Wednesday, February 11, 6:00-7:30 pm, Thursday, February 12, 7:00-7:55 am.

The Johns Hopkins University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. The Johns Hopkins University School of Medicine designates this educational activity for a maximum of 24.25 category 1 credits toward the AMA Physician's Recognition Award. Each physician should claim only those credits that he/she actually spent in the activity.

Please reference the following contact information if you have any questions: Johns Hopkins University School of Medicine, Office of Continuing Medical Education, Turner 20, 720 Rutland Avenue, Baltimore, MD 21205. Tel.: 410-955-2959, Fax: 410-955-0807; Email: [cmenet@jhmi.edu](mailto:cmenet@jhmi.edu); Website: <http://www.hopkinscme.org/cme>. ❖

## Science and Engineering Institutes, Summer 2004

Become a globally-engaged researcher. Spend eight weeks conducting research and experiencing life in Japan, Korea, Taiwan, China, or

Australia. Sponsored by the US National Science Foundation for US Graduate Students. For more information, go to <http://www.nsf.gov/cgi-bin/getpub?nsf03608>. Application deadline is December 23, 2003.

2004

## February 14-18

48th Annual Meeting of the Biophysical Society, Baltimore, MD. **Information:** Internet: <http://www.biophysics.org>.

## March 5-6

The Third Gulf Coast Physiological Society Meeting, Mobile, AL. **Information:** Internet: <http://www.physiology.usouthal.edu/gulfcoast/>.

## March 7-12

Molecular Mechanisms in Lymphatic Function and Disease Gordon Research Conference, Ventura, CA. **Information:** Internet: <http://grc.org/programs/2004/lymphat.htm>.

## April 22-23

Cleveland Cell Biology Symposium: Regulation of Nuclear Function, Cleveland, OH. **Information:** <http://www.cwru.edu/med/cellbiology>.

## May 15-21

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

## May 25-27

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

## May 28-31

The XIV International Congress of Dietetics, Chicago, IL. **Information:** Email: [congress@internationaldietetics.org](mailto:congress@internationaldietetics.org); Internet: <http://www.internationaldietetics.org> or <http://www.choosechicago.com>.

## May 31-June 5

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

## June 4-7

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

## June 9-12

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

## June 20-23

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

## July 2-10

4th International Congress of the African Association of Physiological Sciences, Tangier, Morocco. **Information:** Email: [aapsmorocco04@yahoo.com](mailto:aapsmorocco04@yahoo.com)

## August 15-20

Macromolecular Organization and Cell Function, Oxford, UK. **Information:** Gordon Research Conferences, P.O. Box 984, West Kingston, RI 02892-0984 USA. Email: [hardinc@missouri.edu](mailto:hardinc@missouri.edu); Internet: <http://www.missouri.edu/~physch/GRC/CRG2004.htm>.

## August 25-27

The 9th International Workshop on Developmental Nephrology: Fenomics and the Kidney - New Insights into Developmental Pathways and Disease, Barossa Valley, South Australia. **Information:** IPNA 2004 Congress, Hartley Management Group Pty Ltd., PO Box 20 Kent Town South Australia 5071. Tel: +61 8 8363 4399; Fax: +61 8 8363 4577; Email: [ipna2004@hartleymgt.com.au](mailto:ipna2004@hartleymgt.com.au); Web: <http://www.ipna2004.com>.

## August 29-September 2

The Thirteenth Congress of the International Pediatric Nephrology Association, Adelaide, South Australia. **Information:** IPNA 2004 Congress, Hartley Management Group Pty Ltd., PO Box 20 Kent Town South Australia 5071. Tel: +61 8 8363 4399; Fax: +61 8 8363 4577; Email: [ipna2004@hartleymgt.com.au](mailto:ipna2004@hartleymgt.com.au); Web: <http://www.ipna2004.com>.

## August 31- September 4

12th International Congress of Endocrinology, Lisbon, Portugal. **Information:** Internet: <http://www.ice2004.com>.