



The Physiologist

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Why Funding Cuts at the National Institutes of Health Are So Painful

Howard H. Garrison, Office of Public Affairs, FASEB¹
Kimberly I. McGuire, Office of Public Affairs, FASEB
Robert E. Palazzo, Centre for Interdisciplinary Studies,
Rensselaer Polytechnic University, Troy, NY

Only four years after completion of a historic “doubling” of the National Institutes of Health (NIH) budget, biomedical researchers in the US are experiencing unprecedented competition for research funding and for many there is deteriorating morale about the prospects for survival in research careers. Three factors, in combination, account for this dramatic change: Flat funding for NIH has left funded researchers and their institutions vulnerable to the rising costs of biomedical research; reduced funding for competing grants puts research projects in jeopardy; and the increased capacity for research has resulted in a higher demand for funds. Boom and bust cycles are wasteful and inefficient. Steady, long-term growth will provide the optimal conditions for progress in science.

Throughout US history, scientific progress has promoted health and prosperity in a rapidly changing world. Since the agricultural advances and industrial breakthroughs of the 19th century, scientific and technological progress has been the engine of American economic growth. The manufacturing jobs of the 20th century and the high tech jobs of today were the direct product of advances in science and technology. Now, more than ever

before, investment in science and technology are necessary for economic success.

In the biomedical sciences, NIH has been the principal vehicle for America's investment in basic research. For much of its history, NIH has received steady budgetary increases; from 1971 through 1998, the average rate of growth was nine percent (2). Concerned that scientific opportunities were outpacing NIH funding, the US Congress took the historic step of doubling the NIH budget from 1998 through 2003. The resulting long-term, large-scale building of research capacity across the US led to a dramatic acceleration of discovery and a remarkable period of advancement. Insights at the molecular and cellular levels brought about new treatments for age-old diseases such as cancer and heart disease and facilitated responses to emerging crises such as HIV/AIDS and SARS (5). As the result of a range of scientific advances, Americans are enjoying longer and healthier lives. Life expectancy continues to rise: it is now 78 years for the total US population, and every five years for the past 30 years it has increased by one year. Moreover, the disability rate of older Americans has dropped by almost 30 percent in the past 20 years (3). The US biotechnology industry, with its massive potential for changing agriculture, health care, and environmental remediation, was also a product of this build-

¹FASEB Office of Public Affairs, 9650 Rockville Pike, Bethesda, MD 20814
Tel.: 301-634-7650; Fax: 301-634-7651

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Published bimonthly and distributed by
The American Physiological Society

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

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Subscriptions: Distributed to members as part of their membership. Nonmembers in the USA (print only): individuals \$60.00; institutions \$95.00. Nonmembers in Canada: individuals \$65.00; institutions \$100.00. Nonmembers elsewhere: individuals \$70.00; institutions \$105.00. Single copies and back issues when available, \$20.00 each; single copies and back issues of Abstracts issues when available, \$30.00. Subscribers to *The Physiologist* also receive abstracts of the Conferences of the American Physiological Society. The online version is available free to all worldwide.

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Headquarters phone: 301-634-7118
Fax: 301-634-7241
Email: info@the-aps.org
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Printed in the USA

up of resources and the subsequent expansion of knowledge.

As the doubling reached completion, the future looked bright for biomedical research in the US. Advocates for the doubling had assumed a return to status quo ante (i.e., a more modest but steady growth) after the doubling was achieved. The biomedical research community and its supporters were surprised, however, when the long-term pattern of growth came to an abrupt and unprecedented halt after 2003. The post-doubling NIH budget received only meager increases in 2004, 2005, and 2007, and a funding cut in 2006. Flat funding over the four-year timeframe eroded much of the build-up of the doubling period (3), and there is now widespread concern in the US biomedical research community about lost potential and real harm to ongoing research projects (9, 1).

Why? How did conditions deteriorate so rapidly after such an historic period of US investment? What is the explanation for the crisis that followed so soon after the era of expansion?

Three factors, acting in combination, have had profound, negative consequences for US biomedical research. First, the cost of research in the medical sciences has continued to increase steadily while the budget has stagnated, resulting in a loss of real purchasing

power. In addition, the impact of flat NIH budgets is concentrated, as shown below, in the competing grants pool, resulting in large and significant losses to key parts of the NIH portfolio. Finally, both of these setbacks have occurred just as the capacity for performing more research has come online as a consequence of substantial state and private university investment in infrastructure and personnel.

Erosion of Purchasing Power

The rising cost of biomedical research has eroded the purchasing power of NIH grants. By its very nature, science requires state-of-the-art equipment and facilities, and, thus, there is an internal dynamic forcing costs upwards. These science-based inflationary pressures are in addition to the other sources of rising costs. During the four years immediately following the doubling of the NIH budget, the US Department of Commerce Biomedical Research and Development Price Index (BRDPI), the accepted measure of rising costs in US biomedical research, was 3.7, 3.9, 4.5 and 3.7 percent (5). By 2007, the compound effect of inflation on a grant funded in 2003 was a net negative 16.8 percent.

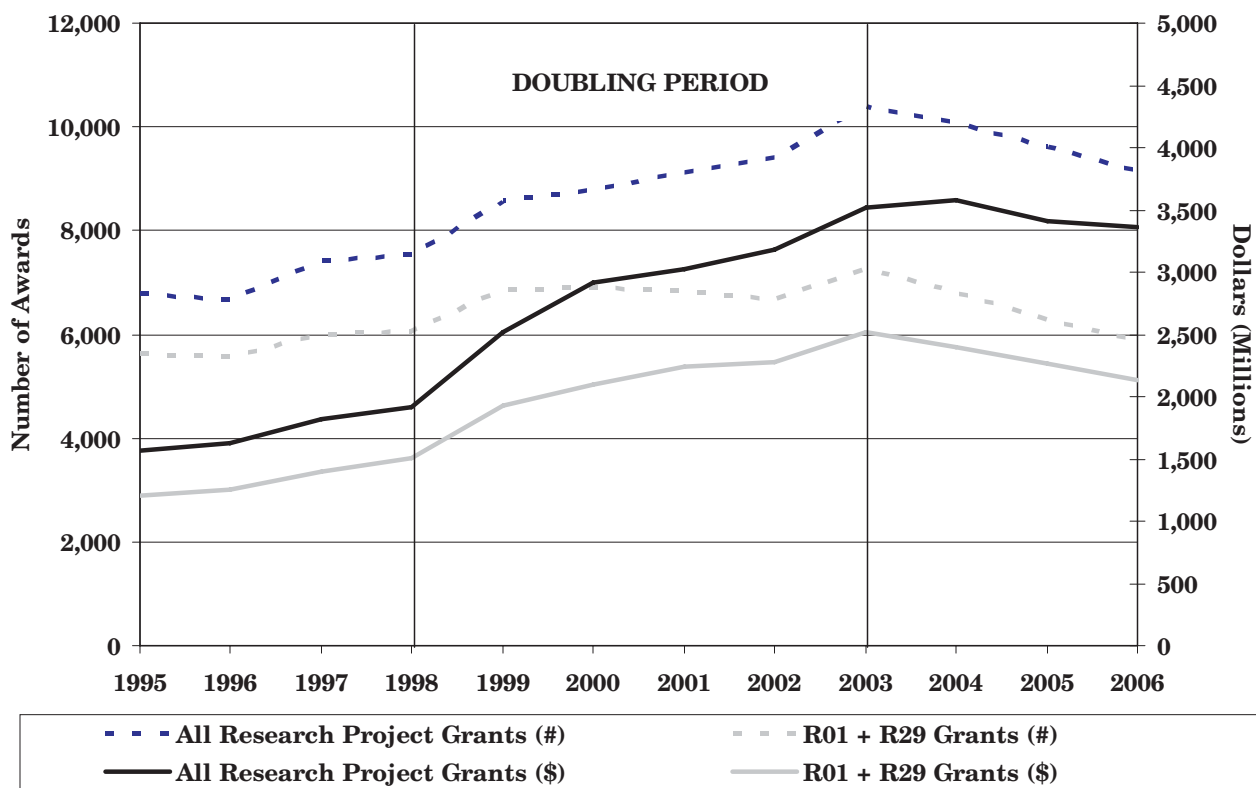
NIH funded research projects lost an additional 2.9 percent in 2007 when NIH announced that non-competing research

awards would be paid at 97.1% of the FY 2007 committed level (6). Since this policy was part of a broader effort to ensure funding for new investigators, the US research community did not protest the action. Nevertheless, the effects of this cut, added to the 16.8 percent loss to inflation, brought the total loss of purchasing power of a grant funded in 2003 to a stunning net negative 19.7 percent.

Funding for Competing Grants

NIH makes multi-year funding commitments to allow scientists time to properly plan, execute, and report the results of their work. Therefore, the amount of money available for new spending in any particular year represents only a fraction of the total budget. For example, in 2006 NIH budgeted \$14.7 billion for research grants (8). Of this, only \$3.4 billion was allocated for "competing grants" to investigators seeking to start new projects or to extend projects whose initial period of funding had expired. The majority of the NIH grant budget goes to honoring the commitments to continuing grants awarded in previous years, so that decreases in overall NIH funding have a disproportionate impact on the NIH competing grant pool. It is important to note that between 1989 and 1998, funds for competing grants comprised 13.9

Figure 1. Competing NIH Research Grant Awards



percent of the total NIH budget. However, in 2006, only 11.8 percent of the NIH budget was available for competing grants.

A close look at the recent history of funding for competing grant applications illustrates what has happened to this important component of the NIH budget and how it has disproportionately borne the burden of the adverse funding situation. While overall NIH budgets have been basically flat since 2003, the amount of money available for competing grants has been declining steadily. (Figure 1: Competing NIH Research Grant Awards). In 2003, NIH spent \$2.4 billion on competing R01 grants, its principal mechanism for supporting the investigator-initiated research projects that have been the primary source of progress in the biomedical sciences. By 2006, after three years of steady declines, NIH spent \$2.1 billion on competing grants, a loss of 11.1 percent before factoring in the effects of inflation. With the increased cost of research grants, this funding shortfall translates into a sizeable decline in the number of awards for new or renewed grants (Figure 1: Competing NIH Research Grant Awards). In 2003, NIH awarded 7,255 R01 grants for new projects and compet-

ing renewals. In 2006, this number declined by 19 percent to 5,878 awards. To limit this hemorrhaging of funds for new grants, NIH reduced the budgets of ongoing projects by 2.9 percent, and to promote the survival of endangered categories of researchers it has issued guidelines that establish priorities for funding new investigators, investigators seeking their first grant renewal, and investigators with insufficient other support (7). While this is an important effort to protect the most vulnerable researchers and in particular those who represent the future of US biomedical research, this policy is insufficient to redress the problem of diminished resources.

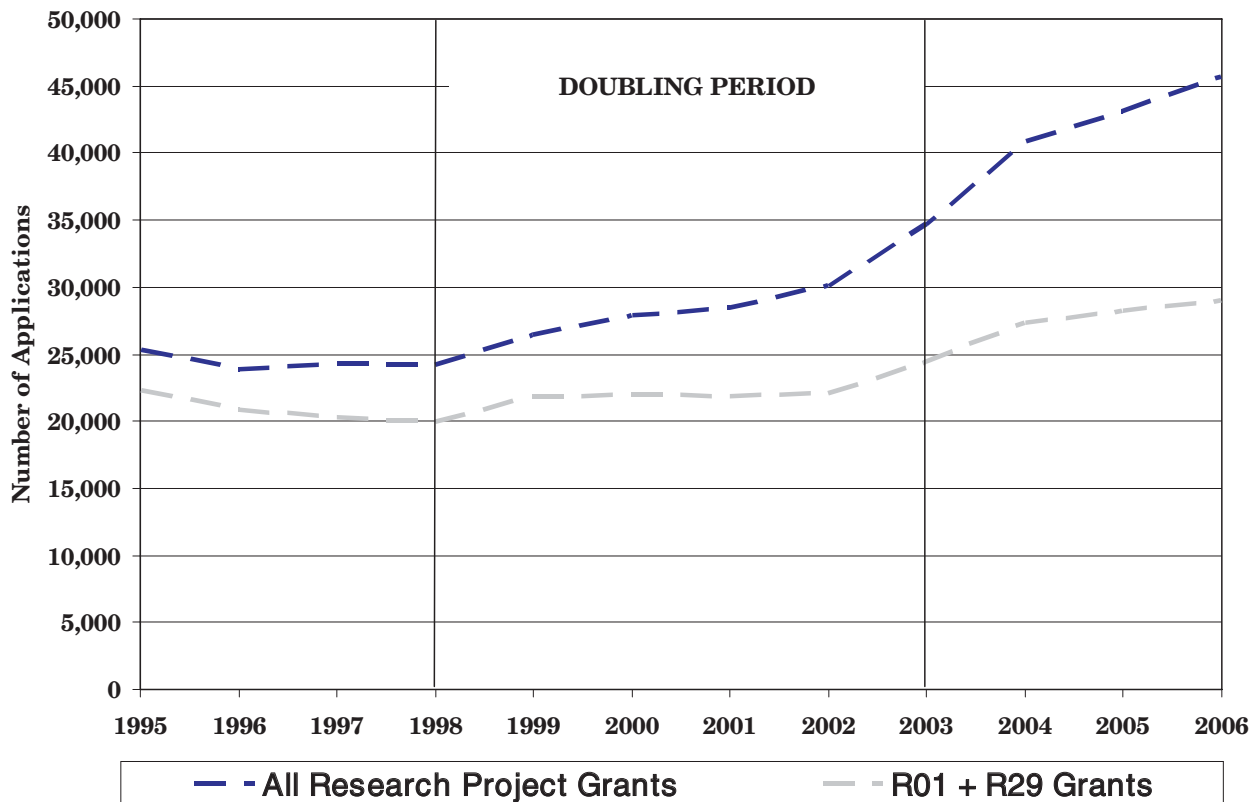
Increased Demand

Compounding the effects of inflationary erosion and decreased funding for competing awards, there is now a greater demand for grant funds in the US. The increased capacity for research created by the doubling of the NIH budget is just coming on-line (4). Applications for NIH grants are at an all time high, as new researchers seek funding and experienced researchers extend the scope and scale of their research (Figure 2: Number of NIH Research Grant Applications). The number of

applications for NIH grants rose very gradually during the first four years of the doubling, showing sizeable increases only in 2003, the fifth and final year of the doubling period. Only in the post-doubling years, 2004 through 2006, did the number of grant applications rise dramatically. This is because it took several years for the new researchers to be recruited into the expanding biomedical research enterprise and for the new proposals to be developed. Applications for all Research Project Grants rose from 34,710 in 2003 to 45,688 in 2006 (an increase of 31.6 percent), while R01 grant applications rose from 24,406 to 28,931 (18.5 percent) over the same period.

Without question, the US demand for research funds will continue to grow in the future as a direct result of the decision to expand the biomedical research enterprise. Medical schools, universities, teaching hospitals and other research organizations have embarked upon major, long-term programs of expansion of biomedical research, building new laboratories and renovating existing facilities. If funding opportunities continue to decline, many of these institutions may find themselves with excess capacity and the opportunity to realize fully the fruits of the doubling of the NIH budget will be lost.

Figure 2. Number of NIH Research Grant Applications



Conclusion

Technologically advanced societies rely on research, and their continued prosperity and well-being depend upon scientific progress. Yesterday's science cannot guarantee success with tomorrow's challenges; cycles of boom and bust are inefficient mechanisms for promoting a robust research enterprise. Stable, steady growth is needed to protect investment in biomedical research from inflation, ensure funding for new grants, and to protect the investment Congress and the American people have made by increasing capacity for biomedical research.

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We thank R. Moore and C. Bleakly of NIH for their help compiling the statistical data and D. Korn for his comments on an earlier version of this manuscript. ❖

Membership

Total Membership 10,395

Distribution by Employment

(7,759 respondents)

Institution	Total	Percent
Physiology Departments	1,691	21.8
Administration	27	0.3
Clinical	925	11.9
College or University	2,509	32.3
Commercial Companies	249	3.2
Community College or 2-Year Institution	9	0.1
Dental Schools	35	0.5
Government (Inc. V.A)	298	3.8
High School	4	0.1
Hospitals and Clinics	312	4.0
Institutes and Foundations	218	2.8
Medical Schools	511	6.7
Not-for-Profit Association	17	0.2
Other Preclinical Depts.	377	4.9
Other, please specify:	50	0.6
Private Practice	33	0.4
Public Health and Graduate Schools	97	1.3
Retired	26	0.3
Veterinary Schools	125	1.6

APS Membership Statistics

Distribution by Racial Background and Heritage

(optional personal data)

	Total respondents
Alaskan Native	2
American Indian	9
Asian or Pacific Islander	811
Black	71
Hispanic	201
Multiracial	23
Other	41
White	4,723

Distribution by Earned Degree

(8,310 respondents—includes 913 individuals with multiple doctorate degrees)

PhD	5,648
MD	2,403
DVM or VMD	139
DSc or ScD	91
DrMed or DMSc	13
EdD	12
JD	4

Distribution by Gender

(optional personal data)

Male	7,459
Female	2,310

Distribution by Age

(optional personal data)

70+	1,358
60-69	1,471
50-59	2,452
40-49	2,272
30-39	1,836
20-29	885

Principle Type of Work

(6,907 respondents)

	%
Administration	3.73
Clinical	5.47
Research	79.76
Teaching	11.03

Distribution by Primary Section

Affiliation

(9,610 respondents)

	%
Cardiovascular	23.5
Cell & Molecular Physiology	12.7
Central Nervous System	9.5
Comparative Physiology	3.9
Endocrinology & Metabolism	8.7
Environ. & Exercise Physiology	8.9

New Regular Members

*Transferred from Student Membership (9)

- James A. Bassuk**
Seattle Childrens Hosp. Res. Inst., WA
- Aditi Bhargava**
Univ. of California, San Francisco
- Justin Blau**
New York Univ.
- Arlin B. Blood***
Loma Linda Univ., CA
- Naomi Elisabeth Brooks**
Stellenbosch Univ., South Africa
- Chester Malcolm Brown**
Univ. of Illinois, Urbana-Champaign
- Ellen Lyda Burnham**
Univ. of Colorado, Denver
- Chad Clayton Carroll***
Ball State Univ., Muncie, IN
- Ching-Ping Chang**
Southern Taiwan Univ., Taiwan
- Jun-Tzu Sherry Chao**
Univ. of Missouri, Columbia
- Narattaphol Charoenphandhu**
Mahidol Univ. Fac. Sciences, Thailand
- Saurabh Chatterjee**
NIH, NIEHS, Res. Triangle Park, NC
- Marcelo Coertjens**
Univ. of Fed Do Piaui/CA, Brazil
- Karigowda Dammanahalli**
Univ. of Oklahoma Hlth. Sci. Ctr.
- Eduard Dedkov**
New York Coll. Osteopath Med., NY
- Kathryn Anne DeFea**
Univ. of California, Riverside
- Ramana Dodla**
Univ. of Texas, San Antonio
- Amitabh Dube**
S.M.S. Medical Coll., Jaipur, India
- Todd A. Duhamel***
Univ. of Manitoba, Winnipeg, MB
- Allison Audrey Eddy**
Univ. of Washington, Seattle
- Anita Marie Engh**
Univ. of Chicago, IL
- William Vogt Everson**
Univ. of Kentucky, Lexington
- Alberto Fernandez De Arriba**
Palau Pharma, S.A., Spain
- Hussein D. Foda**
SUNY-Stony Brook, NY
- Marco A.P. Fontes**
Univ. of Fed. De Minas Gerais, Brazil
- Lyle E. Fox**
Univ. of Iowa
- Nestor H. Garcia***
J. Robert Cade Fndn., Argentina
- Jeffrey Stephen Gilbert***
Univ. of Mississippi, Jackson
- Werner M. Graf**
Howard Univ., Washington, DC
- Ronald G. Gregg**
Univ. of Louisville, KY
- Warren Anthony Gregson**
Liverpool John Moores Univ., UK
- Lianzhi Gu**
Univ. of Illinois, Chicago
- Ravi Kumar Gutti**
NIH, Bethesda, MD
- Victor Z. Han**
Oregon Hlth. Sci. Univ., Beaverton
- Alyssa Herweyer Hasty**
Vanderbilt Univ., Nashville, TN
- Aaron Curtis Hinken***
Univ. of Illinois, Chicago
- Vallie Michelle Holloway**
Mayo Clinic of Jacksonville, FL
- Carlos E. Irarrazabal**
NIH, Bethesda, MD
- John G.R. Jefferys**
Univ. of Birmingham, UK
- Heather Marie Jones**
Pennsylvania State Univ., Erie
- Sonnet Sky Jonker***
Univ. of Iowa
- Wissam Habib Joumaa**
Lebanese Univ., Beirut, Lebanon
- Serhan Karvar**
Univ. of Southern CA, Los Angeles
- Thomas S. Kilduff**
SRI International, Menlo Park, CA
- Nathaniel D. Kirkpatrick**
Univ. of Arizona, Tuscon
- Lee Koetzner**
Palatin Technologies, Cranbury, NJ
- Rajesh Kumar**
Texas A&M, Temple
- Richard D. Lane**
Univ. of Toledo, OH
- Joseph E. LeDoux**
New York Univ.
- Dong Youb Lee**
Univ. of California, Davis
- Yen-shou Lin***
Massachusetts Gen. Hosp., Boston
- Eric E. Lloyd**
Baylor College of Med., Houston, TX
- Silviu Locovei**
Univ. of Miami, Miller Sch. Med., FL
- Jian Ma**
Med. Univ. of South Carolina, Charleston
- Mariano Marcano**
Univ. of Puerto Rico, San Juan
- Antonios Matsakas**
Univ. of Reading, UK
- Gary G. Matthews**
SUNY, Stony Brook, NY
- Theodore Mazzone**
Univ. of Illinois, Chicago
- Babak Mehrara**
Mem. Sloan-Kettering Cancer Ctr., NY
- Silvana S. Meyrelles***
Fed. Univ. Espirito Santo, Brazil
- Hiroto Miura**
Med. College of Wisconsin, Milwaukee
- Yoshinori Moriyama**
Okayama Univ., Japan
- Marvin H. O'Neal**
SUNY, Stony Brook, NY
- Naro Ohashi**
Tulane Univ., New Orleans, LA
- Jingsong Ou**
Med. College of Wisconsin, Milwaukee
- Scott L. Parker**
Univ. of Sydney, Australia
- David Pearce**
Univ. of California, San Francisco
- Robert D. Podolsky**
College of Charleston, SC
- Steven Poelzing**
Univ. of Utah, Salt Lake City
- Jan Polak**
Charles Univ., Prague, Czech Republic
- Gary O. Rankin**
Marshall Univ., Huntington, WV
- Gustavo J. Rinaldi**
Natl. Univ., Argentina
- David S. Rumschitzki**
City College of New York
- Athar H. Siddiqui**
Heart & Kidney Inst., Houston, TX
- Attila Sik**
Univ. of Laval, Quebec, Canada
- Ian Francis Smith**
Univ. of California, Irvine
- Matthew Adam Smith**
Carnegie Mellon Univ., Pittsburgh, PA
- Luis Sobrevia**
Pontificia Univ. Catolica, Chile
- Eva Maria Sorenson**
Washington Univ. Med. Ctr., Wash. DC
- Shigeyasu Tanaka**
Shizouka Univ., Japan
- Eric B. Taylor**
Joslin Diabetes Ctr., MA
- David M. Thomson***
Brigham Young Univ., Provo, UT
- Mohamed Trebak**
Albany Medical College, NY
- Paul Van Donkelaar**
Univ. of Oregon, Eugene
- Glenn A. Walter**
Univ. of Florida, Gainesville
- Petra Wetzel**
Med. Hochschule, Hannover, Germany
- R. James White**
Univ. of Rochester Med. Ctr., NY
- Danielle Margaret Wigmore***
Fitchburg State College, MA
- Martin Wikelski**
Princeton Univ., NJ
- Maurice Antonio Williams***
Univ. of Texas Southwestern Med. Ctr.

Emily Wilson

Texas A&M HSC, College Station

Loren Eugene Wold*

Columbus Children's Res. Inst., OH

Gang Xi

Univ. of North Carolina, Chapel Hill

Jian Yang

Univ. of South Alabama, Mobile

Jun Zhou*

Pennington Biomed. Res. Ctr., LA

Hui Zou

Univ. of Massachusetts, Worcester

New Student Members

Abraham Al Ahmad

Univ. of Zurich, Switzerland

Ramon Ayon

Univ. of Nevada

Seung-Soo Baek

Kyunghee Univ., Korea

Konstantin Bakhurin

Univ. of Michigan

Selvakumar Balakrishnan

Jawaharlal Inst., India

Md. Shenuarin Bhuiyan

Tohoku Univ., Japan

Erika Boerman

Michigan State Univ.

Feray Bolukbaji

Istanbul Univ., Turkey

Sarah Borengasser

Univ. of Missouri, Columbia

Fernando Carneiro

Medical College of Georgia

Elissa Carney

Georgetown Univ., Washington, DC

Ameet Chimote

Wright State Univ., OH

Sanjib Chowdhury

Univ. of Nebraska

Matthew Coutsos

Wayne State Univ., MI

Trevor Day

Univ. of Calgary, Canada

Erin Delaney

Univ. of Delaware

Sussan Ekejiuba

Howard Univ., Washington, DC

Benjamin Eovaldi

Chicago College of Osteopath. Med., IL

Jose Escarlos

Central Mindanao Univ., Philippines

Xiangping Fang

York Univ., Canada

Leona Marie Flores

Univ. of California, San Diego

Scott Fuller

Louisiana State Univ.

Nikki Gillum

George Washington Univ., Wash., DC

Maya Goopalakrishnan

Jawaharlal Inst., India

Albert Gonzales

Colorado State Univ.

Eunan Hendron

Univ. of Texas HSC

Andres Hernandez

Auburn Univ., AL

Shiyuan Hong

Case Western Reserve Univ., OH

Michael Hultstrom

Haukeland Univ. Hosp., Norway

Amine Issa

Mayo Clinic, MN

Elisha Injeti

Loma Linda Univ., CA

Park Jae Young

Seoul Nat'l Univ., Korea

Nathan Jenkins

Univ. of Maryland, College Park

Sachin Kandlika

Michigan State Univ.

Niren Kapoor

Univ. of Alabama, Birmingham

Maggie Keck

Univ. of Arizona

Jong-hee Kim

Texas A&M Univ.

W Knight

Florida State Univ.

Dhanashri Kohok

Univ. of Texas HSC

Jeff Kroetsch

Univ. of Waterloo, Canada

Orlando Laitano

Univ. Fed Rio Grande, Brazil

Guillermo Lehmann

Inst. Fisiologia Exper., Argentina

I. Chung Lo

National Cheng Kung Univ., Taiwan

Fiona McCulloch

Univ. of Southern California

Jennifer McLarty

Univ. of South Carolina

Micheline Messina

Florida State Univ.

Amit Mittal

Univ. of Nebraska

Miguel Molina

Louisiana Health Science Center

Launrivette Mosquera

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W Nelson

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Berke Ozucure

Istanbul Univ., Turkey

Kimberly Pechman

Medical College of Wisconsin

Prerna Rastogi

St. Louis Univ., MO

Zelieann Rivera

Univ. of Arizona

Nestor Rodriguez-Alayo

National Univ. Pedro Ruiz Gallo

Luis Rueda

Univ. Natl. De Piura

Seha Saygili

Istanbul Univ., Turkey

Carrie Sharoff

Univ. of Massachusetts, Amherst

Joshua Steinhaus

Univ. of Western Australia

Mugdha Sukhthankar

Univ. of Tennessee

Yiying Wang

Univ. of Arkansas

Nichelle Whitlock

Univ. of Tennessee

Gary Yang

Univ. of British Columbia

Abdel-Aziz Zidane

Tanta Univ., Egypt

Recently Deceased Members

David V. Bates

Vancouver, BC, Canada

Bernard R. Landau

Cleveland, OH

Akira Omachi

Chicago, IL

Steven J. Wickler

Pomona, CA

John A. Young

Sydney, Australia

Time: 5:45 PM, Tuesday, May 1, 2007
Place: Washington, D.C.

I. Call to Order

The meeting was called to order at 5:45 PM by **President Dale J. Benos**, who welcomed the members to the 160th Business Meeting of the American Physiological Society. A booklet containing the agenda and a listing of all the APS award recipients was distributed.

II. Election of Officers

Executive Director Martin Frank announced the results of the election. The election was conducted via an online ballot. The new President-elect is **Irving Zucker**, University of Nebraska, (May 2, 2007–April 9, 2008). The three newly elected Councillors are **Barbara E. Goodman**, University of South Dakota School of Medicine; **Joey P. Granger**, University of Mississippi School of Medicine; and **David M. Pollock**, Medical College of Georgia (May 2, 2007–April 28, 2010). They are replacing Carole Liedtke, Thomas Lohmeier, and Irving Zucker who are completing three-year terms on Council. The newly elected Councillors will serve a three-year term. All newly elected officers will assume office at the close of the Annual Meeting.

III. Bylaw Change

In compliance with the Bylaws of the Society, the proposed amendments to the Bylaws to allow the Chair of Public Affairs Committee and the APS Representative to the FASEB Board to be ex officio members of Council without vote. The proposed amendments were published in *The Physiologist* [49(6): 321, 2006].

The motion was unanimously passed by the membership approving the amendment to the Bylaw as follows:

ARTICLE IV. Officers

SECTION 1. *Council*. The management of the Society shall be vested in a Council consisting of the President, the President Elect, the immediate Past President, and nine other regular members. The terms of the President and President Elect shall be one year. The terms of the nine additional Councillors shall be three years each and they shall not be eligible for immediate reelection except those who have served for two years or less in filling interim vacancies. A quorum for conducting official busi-

ness of the Society shall be two-thirds of the elected members of Council. The Chairpersons of the Publications Committee, the Finance Committee, the Joint Program Committee, the Education Committee, the **Public Affairs Committee**, the **APS Representative to the FASEB Board** and the Executive Director are ex officio members of the Council without vote; the Chairperson of the Section Advisory Committee is an ex officio member of the Council with vote. The Council may fill any interim vacancies in its membership. Council shall appoint members to all committees except the Section Advisory Committee. In the interim between meetings of Council, an Executive Cabinet consisting of the President, President Elect, Immediate Past President, and the Executive Director shall implement the policies of the Council.

IV. State of the Society

President Benos addressed the membership and spoke on the state of the Society.

Benos said that the Society is strong and is continuing to get stronger. The Society has five major departments, Education, Finance, Meetings/Membership, Public Affairs, and Publications. He said that each is lead by talented and dedicated leaders (Marsha Matyas, Education; Robert Price, Finance; Linda Allen, Meetings/Membership; Alice Ra'anan, Public Affairs; and Margaret Reich, Publications). Benos said that he has had the opportunity to work with these managers and they are wonderful.

He said that the Communications Department works well with these departments and helps to promote the activities of the Society and make it a wonderful organization.

Strategic Plan

Benos said that a Strategic Plan meeting was held in fall 2005 and a new plan was adopted the following year. The Strategic Plan includes five major directions.

DIRECTION 1: APS will be the leader in advancing the life sciences that investigate biological function

DIRECTION 2: APS will enhance the future of the field, ensuring that next generation physiologists are supported through all stages of their careers

DIRECTION 3: APS will drive understanding of and appreciation for

physiology and strengthen public and private support

DIRECTION 4: APS will be dynamic and relevant to an increasingly diverse and global membership

DIRECTION 5: APS will be a mission-directed, adaptable, and fiscally sound organization

Currently, there are four task forces working on various aspects of the Strategic Plan. These task forces have submitted interim reports to Council and to the Section Advisory Committee. These reports and recommendations were discussed by the sections' steering committees at EB and they will send their recommendations and comments to Council. Council will review and discuss the task force reports, and the input from the sections, at their summer Council meeting. Benos said that the Society is committed to training younger scientists to be leaders in APS, and science in general. He said that the world is becoming smaller through technology, and APS has to be responsive to the needs of all of the Society's members, including the international members. All of the Society's activities are very strong, but the Society has to be adaptable and be able to accommodate changes. He said that the leadership and staff of the Society will allow these necessary changes to be made.

Professional Skills Training Live Courses

Benos said that APS received a grant for two professional skills courses on writing and reviewing for journals and making scientific presentations. The Society has presented both of these courses, and Benos participated in one of these courses. He said it was very rewarding for the students and for him professionally. These courses have been such a success that Council has appropriated funds to continue the program for three more years beginning in January 2008. This is one of the ways in which APS is helping to train young scientists.

APS' PhUn Week

Benos said that this program started a couple of years ago. It was one of 14 innovative science education programs selected to be highlighted at the "Science + Society: Closing the Gap" conference held in Boston, in January 2007. APS PhUn Week launches nationally during the week of November 5, 2007.

APS Postdoctoral Initiative

Benos said that biomedical research is in a fiscal crisis with regards to funding F32s. He said that in 2002 approximately 38% of all applications reviewed were funded. That figure dropped in 2006 to 26%, but the number of applications is increasing. In response to this funding issue, the APS Council has approved a Post Doctoral Initiative. This will be a one year, one time program, and is open only to APS members. Applicants are eligible to apply if they receive a priority score of 200 or better from NIH. The first deadline is August 1, 2007, and the second (and last deadline) is January 2, 2008. He said that this is another initiative to help the younger members of the Society as directed in the Society's Strategic Plan.

Open Access Author Choice

Benos said that effective July 1, 2007, all authors of papers published in APS research journals can choose to make their manuscript immediately free upon payment of an open access fee. This was modeled on a program used initially for *Physiological Genomics*. The standard author fee is \$2,000 plus additional page charges. This will allow authors to satisfy new requirements of various funding agencies (e.g., Wellcome Trust). Benos said that many of these agencies have expressed a willingness to pay the open access fee for their authors. Benos said that by implementing this business model, it shows the Society's ability to adapt to changing times and environments.

Committee Chair Appointments

Benos announced that current Publications Committee Chair Kim Barrett, University of California, San Diego, has been reappointed to a second three-year term as Chair. Benos also announced that Ronald Lynch, University of Arizona HSC, has been appointed as Chair of the Joint Program Committee for a three-year term. Lynch will begin his term on January 1, 2008.

Future APS Meetings

APS Conference: *Sex and Gender in Cardiovascular-Renal Physiology and Pathophysiology*

August 9-12, 2007
Austin, TX

Experimental Biology 2008
April 5-9, 2008
San Diego, CA

APS Conference: Integrative Biology of Exercise

September 24-28, 2008

Location: Hilton Head, SC

What's Next for the Society

Benos said that APS has a responsibility to educate the public and elected Representatives about the importance of biomedical research. Benos said that he will be working with the APS Education and Public Affairs departments to develop resources for APS members to use in this endeavor. He said that all members should be advocates for science, promoting the importance of biomedical research.

V. Report on Membership

A. Summary of the Membership Status

President-Elect Hannah V. Carey reported on the status of the Society membership. As of February 9, 2006, the current membership of the Society is 9,719, of which 7,347 are regular members, 33 are honorary members, 1,134 are emeritus members, 12 are affiliate members, and 1,193 are student members. The Society also has 23 Sustaining members.

B. Deaths Reported Since the Last Meeting

Carey read the names of those members whose deaths had been reported since the last meeting. The membership stood and observed a moment of silence in tribute to their deceased colleagues.

VI. Awards and Presentations

A. Ray G. Dags Award

Ray G. Dags was the APS Executive Secretary-Treasurer from 1956 until his retirement in 1972. In tribute to his devotion to the Society, the Ray G. Dags Award was established, and is given annually to a physiologist for distinguished service to the Society and to the science of physiology. The 2007 Dags Awardee is Norman Staub, University of California, San Francisco.

Norman Staub has been a distinguished leader in physiological research and has provided outstanding service to the profession of physiology and to the American Physiological Society. He has been an active member of the APS since 1961, serving on many APS committees, including the Committee on Committees, the Membership

Committee, Joint Program Committee, and the Education Committee. He has made immense contributions to the functioning of the APS in a multitude of ways. One of his most significant achievements was the development of Poster-Discussion sessions at APS meetings.

In 1976, Staub was Chairman of the Respiration Group, as it was called before sections were established, and later served as programmer on the Respiration Section's steering committee. He served as an APS Councillor for seven years, and was elected to serve as APS President from 1991 to 1992.

During Staub's tenure as President, he made many important contributions to the advancement of APS. Especially noteworthy is his endeavor to get APS into the science education arena at the national, state, and local levels. He was the proponent that led to the establishment of the position of an education officer in APS. Staub's endorsement and advocacy for the APS High School science teachers program has had a lasting impact. He worked with the APS office to draft the first SEPA application in support of the APS High School Teachers' summer research program. He spearheaded the allocation of \$50,000 to start the program in 1991, and this provided the foundation for APS to receive Federal funds for this very important program.

Staub was active in developing international physiology and science education, and fostered the delivery of *News in Physiological Sciences* to physiolo-



APS President Dale Benos presents the Ray G. Dags Award to Norman Staub.

gists worldwide. He has also worked tirelessly to support the use of animals for physiological research.

Staub has made outstanding contributions to research in the areas of respiratory physiology, especially in pulmonary permeability in health and disease. He was able to perform chronic experiments in un-anesthetized sheep in deriving important fundamental information on pulmonary physiology, including fluid exchange and hemodynamic regulation. In 1969, he developed the sheep lung lymph fistula, thus opening the field of lung fluid dynamics. Staub found that the principal site of action of acute alveolar hypoxia was on the pulmonary arteries by demonstrating that the small muscular arteries are constricted in response to the composition of the alveolar gas of the units they supply.

In addition to his original publications in peer-reviewed journals, Staub has published several classical books in the field of his research. These include *Lung Fluid Exchange after Uneven Pulmonary Artery Obstruction in Sheep*, *Lung Water and Solute Exchange*, *Edema* (with Aubrey Taylor, who is also a prior APS president and a previous recipient of the Daggs Award), *Interstitial-Lymphatic and Solute*, and *The Pulmonary Intravascular Macrophages*. He has also written teaching materials for students in medicine and related fields, such as *Introductory synopsis for medical students studying physiology*.

In recognition of his outstanding accomplishments, Staub has received many awards and honors. Among these are the IS Ravdin Lectureship of the American College of Surgeons, the Louis and Arthur Lucien Award from McGill University for his contributions in the field of circulation research, the Amberson Lectureship of the American Thoracic Society, and the Landis Award Lectureship of the Microcirculatory Society. Staub received the Julius Comroe Award in 2002, and his lecture was published in the October 2002 issue of *AJP: Lung*. An advocate of clear and simple communications, Staub has also received two awards for scientific writing and is a dedicated student of the History of Physiology.

In accepting his award, Staub said: "I want to thank you all for this award. It came as a surprise. It was nice to hear all the nice things you had to say about me. Thank you."

B. Arthur C. Guyton Teacher of the Year Award

The Arthur C. Guyton Teacher of the Year Award was established in 1993 by the Teaching of Physiology Section and is supported by the W.B. Saunders Company, publisher of Guyton's *Textbook on Medical Physiology*, used to educate generations of medical and physiology students. The Arthur C. Guyton Physiology Educator of the Year Award is selected by the Teaching Section and is presented to an APS member who is a full-time faculty member at an accredited college or university. The Selection Committee selects a candidate for the Award who demonstrates evidence of: 1) excellence in classroom teaching over a number of years at undergraduate, graduate, or professional level; 2) commitment to the improvement of physiology teaching within the candidate's own institution; and 3) contributions to physiology education at the local community, national or international levels. This year's selection committee was chaired by Vikki McCleary. The APS and the Teaching of Physiology Section thanked Elsevier for providing the funding for this award.

Jeffrey Osborn trained at Michigan State under Michael Bailie and spent three years as a postdoc with Gerry DiBona at Iowa. In 1981, he took a position at the Medical College of Wisconsin, where he rose to the rank of Associate Professor. In 1992, he became the Director of the MCW Center for Science Education and expanded his interests

from renal hemodynamics into K-12 science outreach. As Director, he obtained over \$500,000 in grant funding from private foundations and from the state of Wisconsin for projects such as summer science programs, an "Academy of Science" charter school, and inquiry-based laboratory programs.

In 1999, Trinity College in Hartford, CT, recruited Osborn to spearhead the creation of the Greater Hartford Academy of Mathematics and Sciences, again with grant support from a variety of private foundations.

Osborn left Hartford in 2003 and took a position in the Department of Biology at University of Kentucky, where he now is the principle investigator on nearly \$4 million dollars in grants to support the University's Appalachian Math Science Partnership program. As part of that project, Osborn travels into Appalachia to conduct workshops for the K-12 science teachers. His ability to blend in with that reclusive population has contributed to the program's success. In October 2004, APS Councillor Dee Silverthorn had the opportunity to visit the University of Kentucky and meet some of Osborn's seminar students from Appalachia and said that the positive influence he is having on the teachers is noticeable.

The criteria for the Guyton award include excellence in outreach and other activities that promote physiology education at local, state, and national levels. Osborn's work in Wisconsin, Connecticut, and now in Kentucky has



APS President Dale Benos, and William Schmitt, Elsevier, present the Arthur C. Guyton Teacher of the Year Award to Jeffrey Osborn (Guyton Teacher of the Year), along with Vikki McCleary, chair of the Guyton selection committee).

had a profound influence on K-12 students in those states. There are not many of us who have had official citations from our state legislature and governor for our contributions!

In accepting his award, Osborn said: "Thank you for this award. I am deeply humbled by this award."

C. Orr E. Reynolds Award

The Orr Reynolds Award, established in 1985 in honor of the Society's second Executive Secretary/Treasurer, is presented for the best historical article submitted by a member of the Society. Members may receive the award only once, and those members who have advanced degrees in the history of science or medicine are not eligible.

The recipients receive \$500 and expenses to attend the spring meeting of the Society. The 2007 Reynolds Awardee is Charles Tipton, University of Arizona, for his article entitled "Historical Perspective: The Antiquity of Exercise, Exercise Physiology and the Exercise Prescription for Health."

In accepting his award, Tipton said: "It is a pleasure to be a recipient of an award of an individual that I knew. It is a distinct honor to be a recipient of this award. Thank you very much."

D. Giles F. Filley Memorial Awards

As a result of a bequest from the family of Giles F. Filley, a memorial fund was established in 1993 to recognize



APS President Dale Benos presents the Giles F. Filley Memorial Awards to Cheryl Fattman and Francis J. Golder.

excellence in respiratory physiology and medicine. Two annual awards of \$20,000 are made to investigators who hold an academic rank no higher than assistant professor and are pursuing research in respiratory physiology and medicine. Awards are made to APS members working in the United States, who have demonstrated outstanding promise based on their research program. This year the Society is pleased to recognize the promise of Cheryl Fattman, University of Pittsburgh, and Francis J. Golder, University of Pennsylvania.

E. Lazaro J. Mandel Young Investigator Award

As a result of a bequest from the wife of Lazaro J. Mandel, a memorial fund was established in 1999 to recognize excellence in epithelial or renal physiology. An annual award is made to an investigator who holds an academic rank no higher than assistant professor and is pursuing research in epithelial or renal physiology. An award is made to an APS member working in the United States who has demonstrated outstanding promise based on his or her research program. Each award is for \$7,500 and



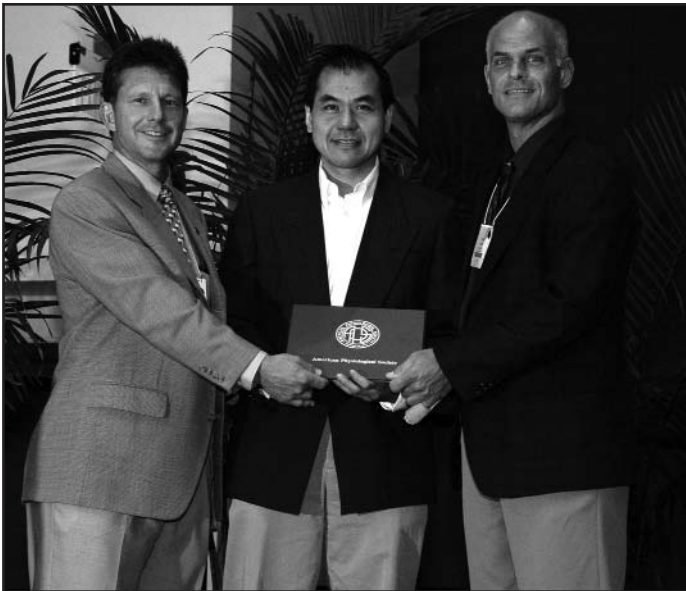
APS President Dale Benos presents the Orr E. Reynolds Award to Charles Tipton.



APS President Dale Benos presents the Lazaro J. Mandel Young Investigator Award to Heddwen Brooks.



APS President Dale Benos presents the Shih-Chun Wang Young Investigator Award to Ann M. Schreihof.



APS President Dale Benos and Liaison with Industry Committee Representative Craig Plato present the Liaison with Industry Committee Award to Wendell Lu.



APS President Dale Benos and Liaison with Industry Committee Representative Craig Plato present the Liaison with Industry Committee Award to Rasna Sabharwal.

is designated for the use of the awardee in his/her research program. Benos presented the 2007 Mandel Award to Heddwen Brooks, University of Arizona, College of Medicine.

F. Shih-Chun Wang Young Investigator Award

As a result of a bequest from the wife of Shih-Chun Wang, a memorial fund was established in 1998 to recognize

excellence in physiology. An annual award is made to an investigator who holds an academic rank no higher than assistant professor and is pursuing research in physiology. An award is made to an APS member working in the United States who has demonstrated outstanding promise based on his or her research program. Each award is for approximately \$7,000 and is designated for the use of the awardee in his/her research program. This year the Society is pleased to recognize the promise of Ann M. Schreihof, Medical College of Georgia.

G. Arthur C. Guyton Young Investigator Award

The Arthur C. Guyton Award Fund was established in 1993 to recognize the contributions of Arthur C. Guyton and his interests in feedback, modeling, and integrative physiology. The awards are made to independent investigators working in the United States, who hold an academic rank no higher than assistant professor, and are pursuing research that utilizes integrative approaches to the study of physiological function and explores the role of feedback regulation in physiological function. Each award is for approximately \$15,000 and is designated for the use of the awardee in his/her research program. This year the Society is pleased to present the award to Lena Ting, Emory University and Georgia Tech.

H. Liaison with Industry Committee Awards

The Liaison with Industry Awards are given for the best abstract describing a novel disease model. This is the fifth year this award has been given. Benos and Committee representative Craig Plato presented the 2007 Liaison with Industry Awards to Wendell J. Lu, University of Cincinnati, and Rasna Sabharwal, University of Iowa.

I. David S. Bruce Awards

The annual David S. Bruce Awards for Excellence in Undergraduate Research are granted to up to six currently enrolled undergraduate students who are first authors on a poster presented at the EB meeting. Each receives a cash award of \$500. This year the Society is pleased to recognize Monica Crary, Ursinus College, Jonelle George, Villa Julie College, Anthony Illing, University of Cincinnati, Casey McCroskey, Alderson-Broadbodus College, Andrew Miller, Skidmore College, and Kevin Ogden, Michigan State.

J. Caroline tum Suden/Frances Hellebrandt Professional Opportunity Awards

Thirty-six awards were made possible by the bequests of Caroline tum Suden and Frances Hellebrandt, who were long-time members of the Society. Awards are open to graduate students or postdoctoral fellows who present papers



APS President Dale Benos presents the Arthur C. Guyton Young Investigator Award to Lena Ting.

at the spring meeting. Recipients receive a \$500 check for travel to the Experimental Biology meeting, paid registration, and have access to the FASEB Placement Service. Siribhinya Benyajati, Chair of the Women in Physiology Committee, presented the awards.

K. Minority Travel Fellowships

The Minority Travel Fellowship Award program was established in 1987 for minority physiologists, and is open to advanced undergraduate, predoctoral, and postdoctoral students, who have obtained their undergraduate education in Minority Biomedical Research Programs (MBRP) and MARC eligible institutions, as well as students in the APS Porter Physiology Development Program. Minority faculty members at the above institutions may also apply. Funds are provided for travel and per diem to attend the annual spring meeting. This program is supported by the NIDDK and the NIGMS. The intent of this award is to increase participation of pre- and postdoctoral minority students in physiological sciences. Frank announced that 33 Minority Travel Fellowship awards were presented to minority students to help them attend the Experimental Biology 2007 meeting.

L. Porter Travel Fellows Award

The Porter Physiological Development Awards are designed to support the



APS President Dale Benos presents the Bodil Schmidt-Nielsen Distinguished Mentor Award to Barbara A. Horwitz.



Kim Barrett, Chair of the APS Publications Committee, and Margaret Reich, APS Publications Director, present Ron Terjung a certificate in recognition for his service on the Publications Committee.

training of talented students entering careers in physiology by providing predoctoral fellowships for underrepresented students. Frank said that the APS has a long standing interest in promoting the training of minority students as evidenced by these awards. Each award includes an \$18,000 stipend. This year's recipients are: Andrew J. Clark, University of California, Irvine; Lymari Lopez-Diaz, University of Michigan; Jeffrey B. Mason, University of California, Davis; Kristy M. Nicks, University of Arkansas for Medical Sciences; Adrienne L. Orr, Stanford University; LaShon C. Sturgis, Medical College of Georgia; Brandi A. Thompson, University of Michigan; and Ricardo A. Valenzuela, Stanford University.

M. Undergraduate Summer Research Fellowships

In 2000, the APS Council approved funds to develop and support summer research fellowships for undergraduate students. The program was initiated in recognition of the importance of undergraduate research experience leading to a career in physiology research. These fellowships support full-time undergraduate students to work in the laboratory of an established physiologist. This year's recipients are: Tanner L. Bartholow, Juniata College; Hannah Chang, Stony Brook University; Kylie Davis*, University of North Dakota; Alice V. Easton, Princeton University; Timothy J. Ewert, Spring Arbor University; Kristan M. Green,

University of North Dakota; Lindsey M. Jackson, University of New England; Nicole M. Marvin, St. Olaf College; Kevin K. Ogden, Michigan State University; Jason J. Pan, Washington University, St. Louis; Basharat Sanni, University of North Carolina at Charlotte; Rupak Shivakodi, DePauw University; Michael Weintraub, Columbia University; and Michelle R. Wolf, College of William & Mary.

N. Bodil Schmidt-Nielsen Distinguished Mentor Award

The Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award honors a member of the Society who is judged to have made outstanding contributions to physiological research and demonstrated dedication and commitment to excellence in training of young physiologists. The award was established to recognize Dr. Bodil M. Schmidt-Nielsen, the first woman President of the Society and a distinguished physiologist who has made significant contributions in her field. The recipient of the 2007 Bodil Schmidt-Nielsen Award is Barbara A. Horwitz, University of California, Davis. She was formally recognized as the recipient of this Award at a ceremony held earlier in the meeting.

O. Recognition of Outgoing Section Chairs

David Gutterman, Chair of the Cardiovascular Section, Simon Lewis, Chair of the Cell & Molecular Physiology Section, and Ronald Terjung,



APS President Dale Benos presents Robert Carroll, outgoing Chair of the Education Committee, with a certificate of appreciation.

Chair of the Environmental & Exercise Physiology Section complete their terms at the close of the EB07 meeting. Benos thanked them for their service to their sections and to APS.

P. Recognition of Outgoing Committee Chairs

Benos recognized the outgoing committee chairs and thanked them for



APS President Dale Benos presents William Galey, outgoing Chair of the Career Opportunities in Physiology Committee, with a certificate of appreciation.

their service to the APS. The outgoing chairs are Robert Carroll, Chair of the Education Committee, William Galey, Chair of the Career Opportunities in Physiology Committee; Kevin Kregel, Chair of the Animal Care & Experimentation Committee; and Donald Marsh, Chair of the Senior Physiologists Committee.



APS President Dale Benos presents Kevin Kregel, outgoing Chair of the Animal Care & Experimentation Committee, with a certificate of appreciation.

Q. Recognition of Outgoing Councillors

Councillors Carole Liedtke, Thomas Lohmeier, and Irving Zucker will complete their terms at the close of this meeting. Benos thanked them for their service to the Society.

Douglas Eaton was recognized for his service as APS President. When presenting Eaton with the Past-President



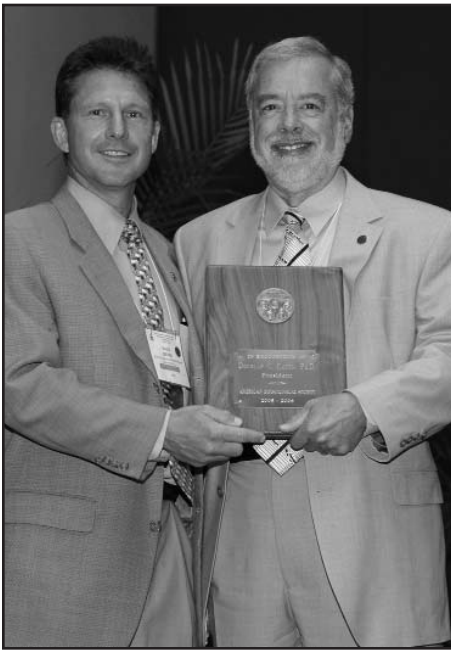
APS President Dale Benos presents Carole Liedtke, outgoing APS Councillor, with a certificate of appreciation.



APS President Dale Benos presents Thomas Lohmeier, outgoing APS Councillor, with a certificate of appreciation.



APS President Dale Benos presents Irving Zucker, outgoing APS Councillor, with a certificate of appreciation.



APS President Dale Benos presents a plaque of appreciation to Doug Eaton, outgoing APS Past-President.

plaque Benos said “I want to thank him for his tireless efforts to advance the Society in numerous areas. Doug has been outstanding to work with; he has shown and displayed a lot of leadership for the Society, especially through the time of creating and enacting a new Strategic Plan. For everything you have



Section Advisory Committee: Back Row: David Goldstein, Chris Cheeseman, James Rose, Larissa Shimoda, Pamela Carmines, Simon Lewis, John Cuppoletti, Frank Belloni, and Ken Baldwin. Front Row : Ronald Terjung, Michael Sawka, Chet Ray, William Martin, David Brooks, and David Gutterman.

done for the Society, thank you very much.”

Upon accepting his plaque, Eaton said “I want to thank all the members of the Society that have made the last three years so memorable for me. I would like to thank the APS staff who were so wonderful in helping me accomplishing my

goals and accommodating my whims. I truly want to thank my long time friend Marty Frank for his support during this time. Thank you very much.”

R. New Business

No new business.



APS Council: Back Row Gary Sieck, Michael Wyss, Michael Portman, Carole Liedtke, Susan Barman, Joey Granger, James Hicks, Curt Sigmund, Barbara Goodman, Irving Joshua, David Pollock, and Thomas Pressley. Front Row Dee Silverthorn, Irving Zucker, Hannah Carey, Dale Benos, Douglas Eaton, Kim Barrett, and Kenneth Baldwin.



APS Presidents: Back Row L-R: Walter Boron, James Schafer, Gerald DiBona, Brian Duling, John Williams, John Hall, D. Neil Granger, (need name), Douglas Eaton, and L. Gabriel Navar. Front Row: William Danztler, Irving Zucker, Hannah Carey, Dale Benos, Barbara Horwitz, and Shu Chien.

VII. Passing of the Gavel

Benos then passed the gavel to **Hannah V. Carey**, University of Wisconsin, incoming President of the American Physiological Society saying "It gives me great pleasure to welcome Hannah Carey as the next president of APS." Benos said "I know that the

Society will be in excellent hands with Hannah as our president."

Carey addressed the membership saying "Thank you everyone. I want to tell you about Dale. He has been a superb president of our Society and excellent role model for me. So on behalf of the Society I want to extend

my gratitude for your leadership of the Society, as well as the many ways you have served us over the years."

There being no new business, the meeting was adjourned at 6:50 PM, May 1, 2007. ❖

*Hannah V. Carey
President-Elect*



APS President Dale Benos presents a certificate to Francis Ashcroft, Cannon Lecturer.



APS Past-President Doug Eaton presents a certificate to James Stockand, Bowditch Lecturer.



APS President-Elect Hannah Carey, and APS President Dale Benos play a game of politics at Experimental Biology '07.



APS President Dale Benos presents plaques to Sandra Titus and David Prentice, APS Walter C. Randall Lecturers in Biomedical Ethics.

Bowditch Award Lecture

The Bowditch Lectureship is awarded to a regular member, under 42 years of age, for original and outstanding accomplishments in the field of physiology. Selected by the APS President, the recipient presents a lecture at the Experimental Biology meeting, which is considered for publication in the Society journal of their choosing. The recipient receives an honorarium of \$2,500, reimbursement of expenses incurred while participating in the Experimental Biology meeting, and a plaque. The membership is invited to submit nominations for the Bowditch

Lecturer. A nomination shall be accompanied by a candidate's curriculum vitae and one letter detailing the individual's status, contributions, and potential.

More information on the award and nomination procedures are available at <http://www.the-aps.org>. Nominations should be sent to: The APS Bowditch Lecture Award, c/o Linda Jean Dresser, 9650 Rockville Pike, Bethesda, MD 20814-3991; or submitted online at http://www.the-aps.org/cgi-bin/Election/Lecture_form.htm.



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JOURNAL TITLE	LEGACY CONTENT DATES
<i>Journal of Applied Physiology</i>	July 1948 - Sept 1996
<i>Journal of Neurophysiology</i>	Jan 1938 - Dec 1996
<i>American Journal of Physiology (AJP)</i>	Jan 1898 - Dec 1976
<i>AJP-Cell Physiology</i>	Jan 1977 - Sept 1997
<i>AJP-Endocrinology & Metabolism</i>	Jan 1977 - Sept 1997
<i>AJP-Gastrointestinal & Liver Physiology</i>	Jan 1980 - Sept 1997
<i>AJP-Heart & Circulatory Physiology</i>	Jan 1977 - Sept 1997
<i>AJP-Lung Cellular & Molecular Physiology</i>	Aug 1989 - Sept 1997
<i>AJP-Regulatory, Integrative & Comparative Physiology</i>	Jan 1977 - Sept 1997
<i>AJP-Renal Physiology</i>	Jan 1977 - Sept 1997
<i>Advances in Physiology Education</i>	June 1989 - Nov 1997
<i>Physiological Reviews</i>	Jan 1921 - Dec 1997
<i>News in Physiological Sciences</i>	Jan 1986 - Jan 1998
<i>Physiological Genomics</i>	Not applicable because first published in 1999

Contact us for more info:
The American Physiological Society
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Journals of The American Physiological Society and participants in the Washington DC Principles for Free Access to Science (www.dcpinciples.org)

PLEASE NOTE: All online content published after the end dates for the journals above is free to all 12 months after publication.



Undergraduate Students Receive David S. Bruce Awards for Excellence in Undergraduate Research

Six undergraduate students who were first authors on abstracts submitted to Experimental Biology 2007 in Washington, DC received David S. Bruce Awards for Excellence in Undergraduate Research.

The APS Education Committee, chaired by Thomas A. Pressley, Texas Tech Univ. Health Science Center, initially selected 17 finalists from a pool of 63 applicants. Finalists were chosen based on the quality and novelty of their abstracts and letters written by the candidates describing their career goals, their role in the research, and the significance of the research. The 17 finalists were:

Lindsay Ambrecht, College of William and Mary
Janelle Billig, College of William and Mary
Monica Crary, Ursinus College
Raphael Freitas, Federal Univ. of Sao Paulo
Jonelle George, Villa Julie College
Vladimir Glinskii, Harvard Univ.
Anthony Illing, Univ. of Cincinnati
Casey McCroskey, Alderson-Broaddus College
Andrew Miller, Skidmore College
Kevin Ogden, Michigan State Univ.
Charles Norton, Univ. of New Mexico
Michaela O'Rourke, Univ. of New England

Jason Pan, Washington Univ.
Jennifer Pardieck, Medical College of Georgia
Rupak Shivakoti, DePauw Univ.
Paul Wach, Medical College of Georgia
Victoria Youngblood, Univ. of New Mexico

These students then made oral presentations of their posters to a subcommittee chaired by Thomas A. Pressley. Six awardees were selected based on their knowledge of their research project. Each awardee received \$500 and a certificate of recognition. Awards were presented by Pressley and President Dale Benos during a special APS Undergraduate Poster Session at EB 2007. The awardees were:

Monica Crary, Ursinus College
Jonelle George, Villa Julie College
Anthony Illing, Univ. of Cincinnati
Casey McCroskey, Alderson-Broaddus College
Andrew Miller, Skidmore College
Kevin Ogden, Michigan State Univ.

APS congratulates all these students on the quality of their research and presentations.

The APS award is named in honor of APS member David S. Bruce (1939–2000), who served as Chair of the APS Teaching Section and was a professor of physiology at



The finalists for the 2007 David S. Bruce Awards for Excellence in Undergraduate Research.



The awardees for the 2007 David S. Bruce Awards for Excellence in Undergraduate Research.

Wheaton College from 1978-2000. Bruce was a dedicated physiology educator who had a particular interest in engaging undergraduate students in scientific research. Bruce not only encouraged and supported his students in participating in research, but he also regularly brought undergraduate students to the Experimental Biology meeting, often to present their research findings. For more information, visit the APS website at <http://www.the-aps.org/awards/student/bruce.htm>. ❖

Graduate Students and Postdoctoral Fellows Receive tium Suden/Hellebrandt Professional Opportunity Awards

Graduate students and postdoctoral fellows who were first authors on an abstract submitted to Experimental Biology 2007 in Washington, DC were eligible to apply for the Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Award. The APS Women in Physiology Committee, chaired by Siribhinya Benyajati at the University of Oklahoma Health Sciences Center, selected 35 awardees from a pool of 167 applicants. Applicants were chosen based on the quality and novelty of their abstracts, and letters written by the candidates describing their career goals, research, and why they were particularly deserving of the award. Each awardee received \$500, a certificate of recognition, and complimentary registration for the EB 2007 meeting. Awards were presented during the APS Business Meeting. Awardees were:

Julye Adams, Univ. of Kentucky
Erika Boesen, Medical College of Georgia
Ian Bratz, Indiana School of Medicine
Melissa Burmeister, Cornell Univ. College of Vet. Med.
Samuel Carmichael, Univ. of Kentucky
Erica Dale, Univ. of Wisconsin-Madison
Darren DeLorey, Medical College of Wisconsin
Ahmed Elmarakby, Medical College of Georgia
Kim Gannon, Univ. of Mississippi Medical Center
Carmen Halabi, Univ. of Iowa Carver College of Med.
Gregory Henderson, Univ. of California, Berkeley

Benjamin Hodnett, Univ. of Mississippi Medical Center
Michael Hoffman, Univ. of Wisconsin-Madison
Lacy Holowatz, Pennsylvania State Univ.
Radu Iliescu, Univ. of Mississippi Medical Center
David Infanger, Cornell Univ.
JaNae Joyner, Wake Forest Univ.
Julie Kang, Univ. of Southern California
Wing-Kee Lee, Univ. of Witten/Herdecke
Guillermo Lehmann, CONICET-UNR
Melissa Li, Michigan State Univ.
Jing Li, New York Medical College
Adam Mitchell, Georgetown Univ.
Jessica Osmond, Medical College of Georgia
Barkha Patel, York Univ.
Jennifer Pluznick, Yale Univ. School of Medicine
Caroline Rickards, US Army Inst. for Surgical Research
Rasna Sabharwal, Univ. of Iowa
Adeel Safdar, McMaster Univ.
Minga Sellers, Texas A&M Univ.
Alexis Simpkins, Medical College of Georgia
Ildiko Toma, Univ. of Southern California
Chris van der Poel, The Univ. of Melbourne
Trinity Vera, Univ. of Mississippi Medical Center
Xiaohong Xia, Univ. of Nebraska Medical Center



Siribhinya Benyajati, Chair, APS Women in Physiology Committee (center), with Caroline tum Suden/Frances A. Hellebrandt Professional Opportunity Awardees.

Horwitz Receives Schmidt-Nielsen Distinguished Mentor and Scientist Award

The APS Women in Physiology Committee hosted a reception at Experimental Biology 2007 to honor Barbara A. Horwitz, Professor of Physiology and Vice Provost for Academic Personnel at the University of California, Davis, as the fourth recipient of the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award.

More than 65 trainees, EB awardees, and colleagues gathered to celebrate the award and hear Horwitz's award lecture entitled, "Mentoring Lessons Learned." The talk will be published in a future issue of *The Physiologist* and posted on the APS Mentoring web site (<http://www.the-aps.org/career>). Martha E. O'Donnell (Univ. of California, Davis), Horwitz's first graduate student, was present to introduce her. The award was presented to Horwitz by Siribhinya Benyajati, Chair of the Women in Physiology Committee, and Dale Benos, President of the APS.

Horwitz received her PhD at Emory University. She did her postdoctoral training at the University of California, Los Angeles and Davis before being appointed Assistant Research Physiologist in the Department of Physiological Sciences at Davis and subsequently, Assistant Professor in the Department of Animal Physiology. She rose through the academic ranks and in 1978 was named Professor of Physiology and in 2003, Distinguished Professor. She served as Chair of the Department of Animal Physiology from 1991-1993; and after the Department was reorganized/renamed as the Section of Neurobiology, Physiology and Behavior in 1993, she continued to serve as Chair of the Section until 1998. In 2001, she was named the Vice Provost for Academic Personnel, and in July 2007 she became Interim Provost and Executive Vice Chancellor at Davis.

Horwitz successfully mentored eight postdoctoral fellows, 11 predoctoral students, and countless undergraduates. A significant number of Horwitz's undergraduate mentees have obtained PhD or other post baccalaureate/professional degrees. Her graduate student mentees have gone on to a wide variety of positions, mostly in academia, and are leading successful scientific careers with national funding. The majority of Horwitz's mentees are also well respected college and university teachers, receiving teaching awards themselves. All of the people writing the supporting recommendation letters (many of whom started out

as undergraduate students in Horwitz's classes) attested to Horwitz's dedication, commitment, her life-long hands-on mentoring, and her outstanding teaching ability. Horwitz is credited for her ability to instill students with fascination of science, passion for physiology, and strong scientific ethic. It was pointed out that she not only continues to mentor her own students long after graduation but also acts as a mentor to undergraduate and graduate students at University of California, Davis, studying physiology or nutrition, as well as students in the Initiative for Maximizing Student Diversity Program. She is a mentor of junior scientists, whether they are students just starting out, assistant professors establishing their laboratories, or full professors in need of some advice and guidance from a colleague. She has obtained two grants



APS President Dale Benos presents Barbara Horwitz with the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award.

of national funding to develop instructional materials for undergraduate physiology courses and is a principal investigator on a NIH-funded mentoring program (in its ninth year) aimed at increasing the number of under-represented minorities in biomedical research.

APS congratulates Dr. Horwitz on this well-deserved honor.

APS members are encouraged to nominate members for the 2008 Bodil Schmidt-Nielsen Award. For more information, see the APS website (<http://www.the-aps.org/awards/society/schmidt-nielsen.htm>). Application deadline is September 15, 2007. ❖

Undergraduate Summer Research Fellows Attend EB

The 2006 Undergraduate Summer Research Fellows (UGSRFs) attended the Experimental Biology meeting to report on their research findings from last summer.

Fourteen Undergraduate Research Fellows attended the meeting; 12 of the undergraduate fellows were authors on abstracts submitted to the meeting. Of those, 11 were first authors on their abstracts.

As an orientation session, the UGSRFs and some of their mentors met with Nansie McHugh, Chair of the

Career Opportunities in Physiology Committee, and Cathy Uyehara, Committee member. They were joined by the finalists for the David S. Bruce Excellence in Undergraduate Research Awards and their research mentors. McHugh led a discussion with the students about what occurs during a large scientific meeting and how to get the most out of being there, both of in terms of science and career talks, as well as social activities. They also talked about poster presentations and hints for making that a positive experience.

On Monday, the Undergraduate fellows participated in the APS Undergraduate Poster Session and presented their posters to APS members, in addition to their regularly scheduled scientific session.

Overall, the Undergraduate Summer Research Fellows saw the Experimental Biology meeting as being a very positive learning experience and appreciated the opportunity to come and present their research. ❖

Undergraduate Research Highlighted at Special EB Session

EB 2007 provided the setting for the fourth annual APS Undergraduate Poster Session. This special session highlights the contributions of undergraduate students to physiology research. Students present their poster at both their regularly scheduled poster session and the special Undergraduate Poster Session. This year it was held on Monday afternoon and culminated with the presentation of the David S. Bruce Awards.

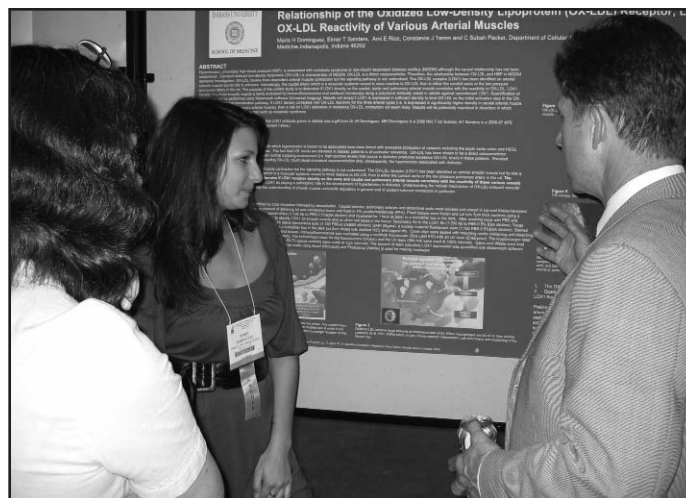
Of the 133 undergraduate first authors invited to present at the APS Undergraduate Poster Session, 95 accepted the invitation and took advantage of the opportunity to display their poster and present it to interested scientists and guests. The session not only provided undergraduate students with an opportunity to highlight their research but also to meet faculty from many graduate schools and medical schools to discuss their future plans. Approximately 200 APS members and guests were in attendance at the session, with many comments heard as to the high quality of research being presented by the students. The students and their research were highlighted again this year in a special printed program distributed during the session.

This is the second year that graduate departments were invited to sponsor the session and display promotional materials for their departments to those undergraduates considering graduate school. The following schools participated:

- Department of Physiology at the Louisiana State Univ. Health Sciences Center in New Orleans
- Department of Physiology at the Medical College of Georgia
- Department of Physiology at the Medical College of Wisconsin
- Intercollege Graduate Degree Program in Physiology at Pennsylvania State Univ.
- Department of Physiology at the Univ. of Alabama, Birmingham
- Department of Physiology at the Univ. of Alberta
- Physiological Sciences, Graduate Interdisciplinary Program at the Univ. of Arizona
- Biomedical Sciences Graduate Program and Department of Bioengineering at the Univ. of California, San Diego
- Department of Molecular and Cell Physiology at the Univ. of Cincinnati College of Medicine
- Department of Physiology & Biophysics at the Univ. of Colorado at Denver Health Sciences Center
- Department of Physiology at the Chandler College of

- Medicine, Univ. of Kentucky
 - Department of Physiology & Biophysics at the Univ. of Mississippi Medical Center
 - Department of Cellular and Integrative Physiology at the Univ. of Nebraska Medical Center
 - Department of Pharmacology, Physiology & Therapeutics at the Univ. of North Dakota School of Medicine & Health Sciences
 - Programs in Biomedical & Biological Sciences at the Univ. of Southern California
 - The Graduate Program in Cell & Regulatory Biology at the Univ. of Texas Health Science Center at Houston
- The departments also received a list of undergraduate presenters who indicated they were interested in being contacted about attending graduate school.

APS looks forward to hosting APS Undergraduate Poster Sessions at future Experimental Biology meetings and encourages undergraduate students doing research in physiology to submit abstracts for EB, apply for the David Bruce award, and attend the poster session in 2008. Departments who are interested in sponsoring the 2008 Undergraduate Poster Session and displaying materials for their departments are encouraged to contact Melinda Lowy of the APS Education Office (mlowy@the-aps.org; 301-634-7787). ❖



An undergraduate student gives her poster presentation.

2007 APS/NIDDK Minority Travel Fellows Attend Experimental Biology in Washington, DC

The APS regularly awards Travel Fellowships for underrepresented 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 registration, transportation, meals, and lodging for travel to a meeting location, as well as complimentary meeting registration. Thirty-three Fellows attended the APS annual meeting, "Experimental Biology" (EB) in Washington, DC from April 28-May 2, 2007.

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.

During EB, Fellows attended an orientation and reception on Saturday afternoon and a luncheon on Wednesday. This year, the luncheon speaker was Catherine F.T. Uyehara, Tripler Army

Medical Center, Hawaii. Uyehara shared through her own personal experiences, that although there are challenges for those underrepresented in the sciences, there are still many opportunities for trainees and established physiologists from different backgrounds interested in mentoring them. An optional networking breakfast was also scheduled on Monday morning.

The travel awards are open to graduate students, postdoctoral students, and advanced undergraduate students from minority groups underrepresented in science (i.e., African Americans, Hispanics, Native Americans, and Pacific Islanders). Students must be U.S. 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, or visit http://www.the-aps.org/education/minority_prog/index.htm on the APS website.

Fellows at "Experimental Biology 2007" were: **Adebowale Adebisi**, Univ. of Tennessee Health Science Center, **Julio Ayala**, Vanderbilt Univ., **Carmelo Blanquicett**, Emory Univ.,

Sonya Coaxum, Medical Univ. of South Carolina, **Nildris Cruz**, UPR-Medical Science Campus, **Carlos del Rio**, The Ohio State Univ., **Dolores Doane**, Univ. of Illinois at Urbana-Champaign, **Maria Dominguez**, Indiana Univ. School of Medicine, **Leticia Gonzalez**, Univ. of North Texas Health Science Center, **Laura Gonzalez Bosc**, Univ. of New Mexico, **James Harris**, Auburn Univ., **Mark Hernandez**, Univ. of Missouri-Columbia, **Andres Hernandez**, Auburn Univ., **Crystal Hill-Pryor**, Medical College of Georgia, **Michael Hoffman**, UW-Madison, **Anna Leal**, UT Southwestern, **Lymari Lopez-Diaz**, Univ. of Michigan, **Wendell Lu**, Univ. of Cincinnati, **Keisa Mathis**, LSU Health Sciences Center, **Karl Pendergrass**, Wake Forest Univ., **Farah Ramirez-Marrero**, Mayo Clinic, **Clintoria Richards-Williams**, Univ. of Alabama at Birmingham, **Edelmarie Rivera-De Jesús**, Ponce School of Medicine, **Ana Rodriguez**, Univ. of Puerto Rico – Medical Sciences Campus, **Walter Rodriguez**, Univ. of Louisville, **Melissa Romero-Aleshire**, Univ. of Arizona, **Olga Santiago**, Ponce School of Medicine, **Keshari Thakali**, Michigan State Univ., **Ann Tobin**, Medical College of Wisconsin, **Carmen**



2007 APS/NIDDK Minority Travel Fellows.

Troncoso Brindeiro, Univ. of Nebraska Medical Center, **Wanda Vila-Carriles**, Univ. of Alabama at Birmingham, **Vabren Watts**, Meharry Medical College, **Julia Wilkerson**, Univ. of Wisconsin.

APS Mentors at "Experimental Biology 2007" were: **Thomas C. Resta**, Univ. of New Mexico, Albuquerque, **Catherine F.T. Uyehara**, Tripler Army Medical Center, **R. Brooks Robey**, White River Junction/VA Medical Center, **Francisco H. Andrade**, Univ. of Kentucky, **Nansie A. McHugh**, Huntingdon Life Sciences, **Julio E. Ayala**, Vanderbilt Univ., **Wanda H. Vila-Carriles**, Univ. of Alabama at

Birmingham, **Judy Muller Delp, Ph.D**, West Virginia Univ. School of Medicine, **Bruce M. Damon**, Vanderbilt Univ. Institute of Imaging Science, **Richard J. Paul**, Cincinnati College of Medicine, **Gregory L. Florant**, Colorado State Univ., **Douglas C. Eaton**, Emory Univ. School of Medicine, **Kendall F. Morris**, Univ. of South Florida College of Medicine, **Dexter L. Lee**, Howard Univ., **Martin Farias III**, Texas A&M Health Science Center, **Helen E. Raybould**, Univ. of California, Davis School of Veterinary Medicine, **Roy L. Sutliff**, Emory Univ., **Liming Jin**, Johns Hopkins Univ., **Patricia Molina**, Louisiana State Univ.

Health Science Center, **Barbara E. Goodman**, Sanford School of Medicine of the Univ. of South Dakota, **Mark G. Clemens**, Univ. of North Carolina, Charlotte, **Oscar A. Candia**, Mount Sinai School of Medicine, **C. Subah Packer**, Indiana Univ. School of Medicine, **Pascale H. Lane**, Univ. of Nebraska College of Medicine, **Parimal Chowdhury**, Univ. of Arkansas for Medical Sciences, **Laura Gonzalez Bosc**, Univ. of New Mexico, **William M. Chilian**, Louisiana State Univ. Health Sciences Center, **Jennifer S. Pollock**, Medical College of Georgia, **Donald G. Welsh**, Univ. of Calgary, **Susan M. Barman**, Michigan State Univ. ❖

2008 Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award Applications due September 15, 2007

The Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award honors a member of the American Physiological Society who is judged to have made outstanding contributions to physiological research and demonstrated dedication and commitment to excellence in training of young physiologists whether by mentoring, guiding and nurturing their professional and personal development, developing novel education methods/materials, promoting scientific outreach efforts, attracting individuals to the field of physiology, or by otherwise fostering an environment exceptionally conducive to education in physiology.

The award was established to recognize Dr. Bodil M. Schmidt-Nielsen, the first woman President of the Society and a distinguished physiologist who has made significant contributions in her field. The award of \$1,000 and a commemorative plaque will be presented at the annual Experimental Biology meeting where the awardee will meet with APS members and young scientists and give a talk on mentoring. The awardee will also be asked to write up the talk for publication on the web

and/or in *The Physiologist* and will receive reimbursement of expenses incurred in association with the delivery of the talk at the Experimental Biology meeting. The first award was made at EB 2004.

Nominations can be submitted to the Women in Physiology Committee by any member of the American Physiological Society. The nomination should include the following:

A letter stating the basis for nomination with a synopsis of the nominee's scientific contributions and mentoring skills and evidence related to the criteria, such as:

- assisting students with research funding or job placement,
- success of graduates,
- publications and presentations of graduate students,
- providing psychological support, encouragement, and essential strategies for life in the scholarly community,
- continued interest in the individual's professional advancement,
- participation in graduate education activities,
- successful role model,

teaching awards,

descriptions of innovative teaching methods, etc.

A list of current and former trainees (undergraduate, graduate, postdoctoral fellows, clinical fellows, and junior faculty), training dates, and their current positions and any award they received.

Support letters - successful nominations usually contain 8-10 letters. No more than 3 letters can be from colleagues, with the remainder from current or former trainees. Trainee letters should be from a variety of institutions. No more than 10 letters can be submitted.

Nominee's current curriculum vitae, including current and past grant support information.

The nomination packet should be submitted by the nominator.

Nominations are due by **September 15**. All nominations must be submitted online at <http://www.the-aps.org/awardapps>.

For question and recommendations of competitive nomination packet contents, contact Melinda Lowy, APS Education Office at mlowy@the-aps.org or 301-634-7787. ❖

Washington, DC Area Science Teachers and Students Explore Physiology at EB 2007

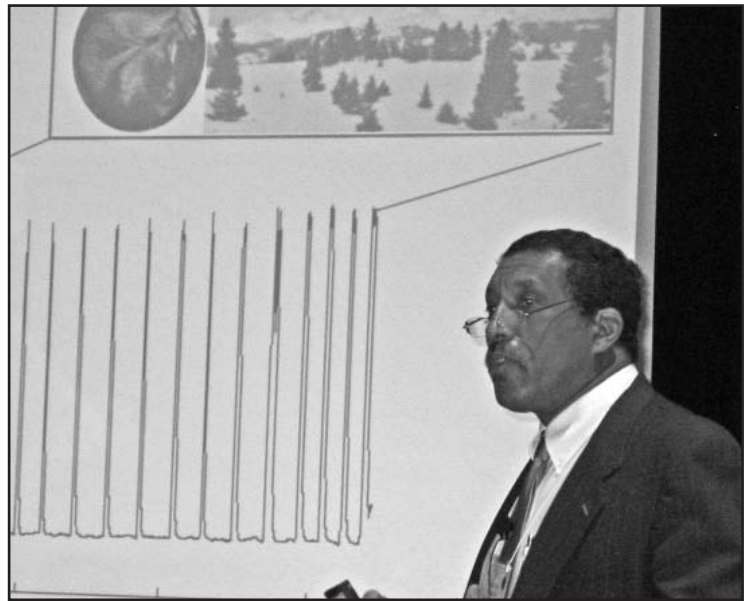
More than 100 Washington, DC area high school teachers and students participated in the Physiology for Life Science Teachers and Students Workshop at EB 2007. The workshop included a keynote presentation, a careers panel discussion, a tour of posters and exhibits, and hands-on physiology workshops for students and teachers.

Education Committee member Joseph Benoit, University of North Dakota, coordinated the day's events, and Thomas Pressley, Texas Tech University, Chair of the Education Committee, served as the master of ceremonies. During the whole day affair, participants learned about current research findings, explored hands-on, inquiry-based lab activities, learned about education and careers in biomedicine, met with APS researchers, and toured the EB posters and exhibits.

The keynote presentation, "Why Fat is Good: The Physiological Consequences of Obesity in Mammalian Hibernators," was given by APS member and Porter

Committee chair, Gregory Florant of Colorado State University, Fort Collins. Florant's talk was followed by a Careers Panel that included APS members Patricia Molina of Louisiana State University Health Sciences Center, Mesia Steed of the University of Louisville and 2006 APS Minority Outreach K-12

Fellow, and Florant. The panel was moderated by science teacher Margaret Shain (Indiana). Responding to the audience's engaging questions, the career panel discussed the excitement of research careers in physiology and the training required to become a physiologist. Thirty two APS members served as tour guides during lunch where they took teachers and students through the exhibits and posters and shared a box lunch while discussing physiology careers.



Greg Florant explains the physiological basis of hibernation.



Tom Pressley describes respiration and heart rates to students.

The afternoon student session was led by Robin Looft-Wilson of the College of William & Mary with assistance from Barb Goodman of the University of South Dakota, Jeff Osborn of the University of California, Irvine, Jennifer Uno of the University of North Carolina-Chapel Hill, and the two 2007 APS Minority Outreach K-12 Fellows, Jessica Clark of Washington University in St. Louis, and Clintoria Richards-Williams of the University of Alabama at Birmingham. Students used the "Elvis Experiments" from the APS "Physiology of Fitness" unit to learn about factors affecting flow of liquids through tubing (radius, length, viscosity).

While students were conducting their experiments, their teachers and the 2006



Teachers model heart chambers with balloons upon various cardiovascular conditions, while Joey Benoit, coordinator oversees the session in the background.



Panelists shared their experiences in becoming a physiologist. From left to right: Margaret Shain (facilitator), Mesia Steed, Patricia Molina, and Greg Florant.



Clintoria Richards-Williams (right), one of the two 2007 APS K-12 Outreach Fellows, leads students in designing an experiment to test the effects of radius size on flow rates.



Students set up an experiment to test the effect of length on flow rates.

Research Teachers in the Frontiers in Physiology Fellowship participated in workshop activities on the anatomy and physiology of the heart, and an inquiry approach to identifying and classifying slide images of tissue samples, with presentations led by science teachers Cynthia Pfirrmann (New Jersey) and Stephen Biscotte (South Carolina). Benoit and Pressley served as physiologist resources. As in the past, feedback from both teachers and students was very positive and students were especial-

ly excited to meet physiologists one-on-one. The committee is planning to continue the program in 2008 in San Diego.

The Frontiers in Physiology program is designed to create ongoing working relationships between research scientists and middle/high school teachers via research and inservice experiences and electronic communications. Additionally, the program promotes the adoption of national standards for K-12 content and pedagogical techniques among middle and high school science teachers

through ongoing inservice activities developed collaboratively by teachers and physiology researchers. Frontiers in Physiology is a program of APS, and is sponsored by APS, the National Center for Research Resources Science Education Partnership Awards, and the National Institute of Diabetes and Digestive and Kidney Disease at the National Institutes of Health. For more information about the APS education programs, please visit: <http://www.the-aps.org/education>. ❖

2007-2008 Porter Physiology Fellows Announced

The APS and Porter Physiology Development Committee congratulate the 2007-2008 APS Porter Physiology Fellows:

Bonnie L. Akerman, Dartmouth College

Antino R. Allen, Indiana University

Zelieann Rivera, University of Arizona

Lizette Warner, Mayo Clinic

Brandi Thompson, University of Michigan and a 2006-2007 Porter Fellow, was named the 2007-2008

Eleanor Ison-Franklin Fellow in honor of Dr. Franklin, the past Co-Chair of the Porter Committee, indicating that she had the highest ranked application among the renewal applicants.

The Porter Physiology Fellowships for minorities are one-year fellowships that provide a stipend of \$20,772, with the opportunity for a second year of funding. The fellowships are open to underrepresented ethnic minority applicants (African Americans, Hispanics, Native Americans, Native Alaskans, or Pacific Islanders) who are citizens or perma-

nent 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 more information, see the APS website at http://www.the-aps.org/education/minority_prog/stu_fellows/porter_phy/ov_pp.htm or contact Brooke Bruthers in the APS Education Office at education@the-aps.org or 301-634-7132. The deadline for 2008-2009 applications will be **January 15, 2008**. ❖

The American Physiological Society Medical Physiology Curriculum Objectives

<http://www.the-aps.org/education/MedPhysObj/medcor.htm>

Download in HTML or PDF format

NOW AVAILABLE IN PRINT FORM; UP TO 15 COPIES FREE PER DEPARTMENT.

The **Medical Physiology Curriculum Objectives** is a joint project of The American Physiological Society and the Association of Chairs of Departments of Physiology.

APS Education Office
9650 Rockville Pike, Bethesda, MD 20814-3991
Phone: 301-634-7132; Fax: 301-634-7098; Email:
education@the-aps.org; <http://www.the-aps.org/education.htm>

APS Supports 24 Undergraduate Researchers

The American Physiological Society's Undergraduate Summer Research Fellowships (UGSRF) program is sponsored by the APS Career Opportunities in Physiology Committee and funded by the APS Council. This year, APS doubled the number of fellowships, funding 24 undergraduates for summer 2007. The program was established in 2000, making this the seventh year of the program.

These fellowships are to support full-

time undergraduate students to work in the laboratory of an established investigator. The intent of this program is to excite and encourage students to pursue a career as a basic or clinical research scientist. Faculty sponsors/advisors must be active members of the APS in good standing but do not have to be US residents. Past awardees include students from Canada and South America.

These Fellowships provide a \$3,000

summer stipend to the student (10 weeks of support), a \$300 grant to the faculty sponsor/advisor, and up to \$1,000 to the student so that he/she may attend and present their data at the APS annual meeting (Experimental Biology) or an APS fall Conference.

This year 69 applicants vied for the 24 fellowships.

2007 Undergraduate Summer Research Fellowship Awardees

Student/Student Institution

Blair S. Ashley
The College of William and Mary
Austin W. Blum
Cornell Univ.
J. Austin Carr
Univ. of California, San Diego
Kerin Carta
Syracuse Univ.
Lindsay A. Davis
Albion College
Sarah B. Devlin
Kansas State Univ.
Matthew P. Dukes
Univ. of Mississippi
Theodore G. Eckman
Juniata College
Sara M. Freiberg
Univ. of Wisconsin, Madison
Brianna L. Goldenstein
Univ. of North Dakota
Sarah J. Jefferson
Pennsylvania State Univ.
Maleka Khambaty
East Tennessee State Univ.
Tamara Livshiz
Univ. of Michigan
Kaitlin M. Moredock
Univ. of Dayton
Jessica R. Priestley
Michigan State Univ.
Linnea Pudwill
Colorado State Univ.
Kristen N. Reynolds
Johnson C. Smith Univ.
Ean R. Saberski
Rensselaer Polytechnic Institute
Richa Sharma
Indiana Univ.
Kaniza Y. Tai
Univ. of Massachusetts
A. Caitlynn Taylor
Asbury College
Kristin M. Thomas
Univ. of Michigan
Matthew Welsh
Univ. of Central Florida
Daniel B. Yaeger
Willamette Univ.

Research Host/Host Institution

Robin Looft-Wilson
The College of William and Mary
Klaus W. Beyenbach
Cornell Univ.
Frank L. Powell
Univ. of California, San Diego
Scott Collier
Syracuse Univ.
J.R. Haywood & Carrie A. Northcott
Michigan State Univ.
Bruce D. Schultz,
Kansas State Univ.
Joey P. Granger
Univ. of Mississippi
Gregory L. Stahl, F.A.H.A
Harvard Medical School
Stephen Johnson, M.D.
Univ. of Wisconsin, Madison
Van Doze
Univ. of North Dakota
Donna Korzick
Pennsylvania State Univ.
Tom W. Ecay
East Tennessee State Univ.
Jessica Schwartz
Univ. of Michigan
Carissa Krane
Univ. of Dayton
Stephanie Watts
Michigan State Univ.
Frank A. Dinunno
Colorado State Univ.
Inna Sokolova
Univ. of North Carolina at Charlotte
Albert Sinusas, M.D.
Yale Univ. School of Medicine
C. Subah Packer
Indiana Univ.
David I. Soybel, M.D.
Brigham and Women's Hospital
Sean D. Stocker
Univ. of Kentucky
Jeffrey Horowitz
Univ. of Michigan
Annabell C. Segarra
Univ. of Puerto Rico
Stasinos Stavrianeas
Willamette Univ.

APS Presents Awards to Outstanding High School Students at the 58th Annual International Science and Engineering Fair

The 58th Annual Intel International Science and Engineering Fair (ISEF), presented by Agilent Technologies, was held in Albuquerque, NM May 13-19, 2007. Nearly 1,500 students from 47 countries, regions, and territories competed in the world's largest pre-college science competition awards. During the two evenings of awards ceremonies, over \$4 million in scholarships, cash prizes, and awards were distributed in categories ranging from behavioral science to engineering and medicine. Prizes included scholarships, cash awards, scientific field trips to foreign countries and the grand prizes: three \$50,000 scholarships from Intel. Grand Awards in each of 23 categories ranging from \$500 to \$5,000 were presented by funds provided by numerous companies, universities, and organizations including the Intel Foundation, Agilent Technologies, Alcatel-Lucent, Shell Oil, University of New Mexico, New Mexico State University, New Mexico Tech, and Science News. Special Awards are presented by over 70 scientific, professional and educational organizations and include scholarships, summer internships, book and equipment grants and scientific field trips.

For the 12th year, the APS presented four Special Awards in the form of cash prizes, certificates and student subscriptions for the best projects in the physiological sciences. This year's APS judging

team included L. Britt Wilson from the University of South Carolina School of Medicine who acted as lead judge, and fellow judges Nancy Kanagy, Laura Gonzalez Bosc, Brad Broughton, Karen Sweazea, from the University of New Mexico, and Matthew Campen from the Lovelace Respiratory Research Institute.

The convention center was packed with posters displaying projects ranging from physiologic-based research done at home or at large medical schools, to complex robotics complete with computer driven controls. Students spent two days being interviewed by judges representing a variety of disciplines, and participated in a panel discussion featuring several Nobel Laureates. As judges, we previewed almost 200 projects to select 21 that best fit the category of "physiology." We interviewed each of these finalists to evaluate their involvement in the project and to determine their understanding of the science and experimental design behind the project. After two days of interviews, we chose the following projects to receive APS awards for excellence in physiological research.

Receiving \$1,000 and first place was Isha H. Jain, 16, of Freedom High School, Bethlehem, PA for her project, "Gene Expression During Fin Growth in Zebrafish: The Role of the Gap Junction Protein Connexin43 in Vertebrate Bone Development." Isha studies both wild-type and shortfin Zebrafish (mutant

defective in connexin 43) to test the hypothesis that connexin43 regulates osteoblast differentiation. However, Isha showed that proliferating mesenchymal cells expressed the connexin43 protein, suggesting a pivotal role for this protein in the induction of mesenchymal proliferation. Alterations in connexin43 expression and/or regulation may underlie a variety of developmental malformations.

Second place and a \$500 award went to Michael C. Green, 16, of the South Carolina Association of Independent Home Schools, Cayce, SC for his project, "Digest this! How Food Affects the pH of the Gastrointestinal System." Michael displayed the enthusiasm and desire of a young bench scientist as he researched and examined how different foods alter pH of the gastrointestinal tract. He simulated the various parts of the gastrointestinal tract, including the mouth, esophagus, stomach, small intestine, and large intestine. His data supported his hypothesis that proteins and fats caused much greater alterations in pH, than do foods high in carbohydrates.

Dayan Li, 17, of Eleanor Roosevelt High School, Greenbelt, MD was awarded one of the two third place awards (\$500) for his project, "Thrombospondin-1 Switches Nitric Oxide Function from Inhibitory to Stimulatory for Gene Expression of Human Tumor Endothelial Cell Markers." As one of the top three students at the Intel ISEF



The winners of the APS Special Awards at the 2007 Intel ISEF with Lead Judge, Britt Wilson. Pictured from left to right: Michael Green, Dayan Li, Britt Wilson (Lead Judge), Tahseen Ismail, and Isha Jain.



APS members who served as Special Awards judges at the Intel ISEF. Pictured from left to right: Matthew Campen, Britt Wilson, Laura Gonzalez Bosc, Karen Sweazea, Nancy Kanagy, and Brad Broughton.

overall, Dayan also won the Intel Foundation Young Scientist Award, the grand prize with a \$50,000 college scholarship. Dayan used RT-PCR to examine the expression of several tumor marker genes in umbilical vein endothelial cells. His data showed that nitric oxide (NO) inhibited the expression of the marker genes, but in the presence of thrombospondin-1, NO augmented expression of these genes. This work provides important input regarding drug therapy involving compounds that release thrombospondin-1.

Third place was also awarded to Tahseen Ismail, 18, of Hillsborough High School, Tampa, FL. Tahseen's work, "The Effect of Progesterone on Ischemic Brain Injury in Sprague-Dawley Rats with Permanent Middle Cerebral Artery Occlusion," showed a marked reduction cerebral infarct volume in rats treated with progesterone. In addition, she showed progesterone-treated rats exhibited fewer functional

deficits following middle cerebral artery occlusion. This work may provide important insight regarding treatment options for stroke victims.

These projects are just a small sampling of the many outstanding projects we had the opportunity to observe. The finalists at the fair were bright, enthusiastic, and diverse. The students were quite impressive, as was the range and depth of their projects. It is a wonderful event and I was proud to represent APS at this celebration of the scientists of tomorrow.

Additional APS finalists included:

1. Dalene Cook, Seneca High School, Seneca, MO: "How Sweet It Is: The Influence of Taste Perception and Sensitivity on Food Choice Based on Taste Status"
2. Michael Kapps, Thornhill Secondary School, Thornhill, Ontario, Canada: "Cellular and Molecular Mechanisms of Ethanol-Induced Developmental Toxicity"

3. Marc Egerman, Ossining High School, Ossining, NY: "The Identification of a Myostatin Signaling Pathway: An in vitro Study of Myotube and Myoblast Response"

4. Mary Wen, Archbishop Molloy High School, Briarwood, NY: Proliferation and Alignment of Osteoblasts on Oriented Magnetic Nanocomposites

5. Kahla White, Latta High School, Ada, OK: The Effect of 17 Beta-Estradiol and Ethinylestradiol on the Gender Distortion and Fertility of *Drosophila melanogaster*"

6. Melanie Kabinoff, Park Vista High School, Lake Worth, FL: "Beta-Amyloid Precursor Protein - 1: Linking Protein Replacement Therapy as Treatment for Alzheimer's Disease and Melanoma - A Three-Year Study" ❖

*L. Britt Wilson
University of South Carolina
APS Education Committee*

Missed Experimental Biology 2007?

Attended EB2007 but missed

APS trainee/education sessions?

You can still attend them!

Listen to the talks and view the

PowerPoint presentations for:

Refresher Course on GI

Physiology

www.the-aps.org/education/refresher/GIPhysiology.htm

Trainee Symposium

Multiple Career Paths for a

Physiologist: Understand

Your Options and How to

Get There

www.the-aps.org/trainees/

Symposia/2007symposium.htm

Career Symposium

Guide for Successful

Collaboration:

From the Handshake to the

Collaborative Research

Agreement

www.the-aps.org/careers/

careers1/EBSymposia/EB2007

symposium.htm

APS/ASPET Mentoring

Symposium

Being Heard: The

Microinequities That Tilt the

Playing Field

www.the-

aps.org/careers/careers1/mentor/

workshop/07wrkshp.htm

Teaching Your First Course

Johanna (Jodie) K. Krontiris-Litowitz
Youngstown State University

Where do I start?

This is usually the thought that comes to mind when faced with that first course. The best place to start is with your colleagues. Sit down with them and ask a few questions. Find out if the course has been taught before or if it is a new course. If it has been taught before, talk to the other course instructors and ask them how the course was designed and managed in the past. Find out if you are supposed to teach “as it has always been taught” or if there are some issues with previous courses necessitating a change in format. Either way, make your job easier and tap the experience and expertise of your colleagues. If it is a team taught course, meet with the other members of the teaching team ASAP and discuss content, format, course management etc.

If you are teaching a new course for the first time—lucky you. Course design, content, and format are in your capable hands. It can be scary at first, but it will be a lot of fun. Be sure that you understand the department's expectations for the course, the preparedness of your student population, and the impact that your course will have on subsequent courses that your students will take. If there are prerequisites for your course, review the text to see what students will know when they enter your class. If there are no prerequisites for your course, you may want to give a test of basic knowledge during the first week so that you understand the background and preparation of your students. With this information you can pitch your course at a level that will ensure success.

Krontiris-Litowitz is a Professor in Biological Sciences at Youngstown State University where she teaches Neurobiology, Neuroanatomy and Anatomy & Physiology.

She mentors undergraduate and graduate students in her research laboratory as they investigate sex-based differences in the extracellular matrix of the hypertrophied rat heart.

She is a member of the Women in Physiology Committee.

How do you prepare a course?

Everyone has prepared at least one course by opening a textbook chapter, outlining the important points and then turning the outline in a lecture. What many discover at test time is that the students have a superficial knowledge of the material. They know the facts of the topic but primarily in the context of the text or course. They are slow to relate their knowledge to situations outside of the lecture context and may be unable to use it to predict outcomes or assess a problem.

Consequently, one of the first caveats for preparing a course is to clearly identify the course objectives. What do you want your students to know? Should they know content or facts? How should they be able to manipulate the information that they have learned? Will you expect them to be able to solve clinical problems, calculate results, predict outcomes? Will they need to acquire skills in the course? Think about questions like these and then format them into a list as your course objectives. Once the list is complete, match your objectives to one or more class sessions or topics. For example, if you want your students to acquire content knowledge, identify the class session in which you present the information or the homework reading assignment (textbook chapters, websites, etc.) that addresses the topic. If you want students to learn to apply their knowledge to clinical problems, data analysis etc., identify class sessions where you give them examples in class or provide them with opportunities to practice working them out with their classmates or on their own. If these ideas won't work for you, there are many other ways to build your learning objectives into the course, such as incorporating them into student projects, homework assignments, study questions, web-based discussion, etc. For more ideas, search the “APS Archive of Teaching Resources” (www.apsarchive.org).



Dr. Jodie Krontiris-Litowitz (r) and her students: Sarah Siao, Ben Fulton, and Latisha Foster.

[org/main/ugradsearch.asp](http://www.apsarchive.org/main/ugradsearch.asp)) and “Resources for Effective Pedagogy” (www.apsarchive.org/main/ugradpedagogy.asp) at the APS website.

Plan your course outline and your classroom presentations around these objectives. Some faculty build from small ideas to big concepts and some do the reverse starting with big concepts and working their way down to the small ideas. Do whatever works best for you but be sure to sketch out a logical progression of ideas before writing the presentation.

Collect as many resources for your course as time allows. Gather images from your textbook (many publishers supply image libraries and lecture slides), the internet and even create your own images using a drawing program. Search the web for graphs, animations, case studies, and examples that you can use. Again the APS website, www.apsarchive.org/main/ugradsearch.asp, is a great resource for many of these. Talk to colleagues about how they taught the course and what they did or used that really worked for them. You may not use all of the resources that you collect but they will give you another perspective of the topic and a toolkit for answering those unexpected questions.

Preparing the Syllabus

After you have finalized your course objectives, you are ready to prepare a syllabus. A syllabus is a contract between the student and the instructor and when a student registers for a course, they agree to comply with the

terms of this contract. Within the syllabus the instructor lays out the expectations for the course with respect to learning goals, student behavior, and course grading policy. Typically, learning goals explain what the student should be able to do at the end of the course (e.g., identify three mechanisms of..., explain the process..., predict the change in..., determine the validity of the statement...). The syllabus section on student behavior deals with a range of instructor expectations, some as mundane as attendance or cell phones in class and others as crucial as class participation or plagiarism. While these may be unpleasant topics, some preemptive thought and action will make your job easier. Decide before class begins whether or not students can talk in class, eat in class, answer cell phones, leave early or walk in late. Refine your vision of class participation and define your idea of plagiarism. Once you have decided on these parameters, clarify them in your syllabus and talk to your students about them on the first day of class. If students understand that these issues influence the classroom environment and that your goal is to provide the best classroom environment possible, the majority of your students will support your efforts. Finally, the syllabus defines what the instructor will use as a grading scale and the assignments, quizzes, and exams that will be associated with the final course score.

It is important to invest significant time and effort into your syllabus because you must live with it throughout the course. Often, first-time instructors or instructors teaching a course for the first time prepare the “perfect” syllabus only to discover midway through the course that either the students or the instructor cannot live with perfection. As a result, an instructor may consider altering the syllabus. However—a word of caution—if you must deviate from your syllabus, be judicious about it. Traditionally if an instructor deviates from the syllabus, it must benefit the student. For example, if you must reschedule an exam, it is appropriate to change the date (usually a later date) so that it provides the student with at least as much study time as the originally scheduled day. Also, if you must drop top-

ics from the schedule and eliminate associated assignments, make sure that the lost points do not penalize student grades.

What should I teach in my course? What should I cover in class?

These are actually two separate questions. You may expect students to know the material in 1,000 pages of the text, but it is unreasonable to expect that you will discuss all of this during class time. Decide what students need to know at the end of the course and then divide it up between what you can present in class and what you expect students to learn on their own. Don't allow your students become “dependent” learners (Weimer, Maryellen. 2002. *Learner-Centered Teaching, Five Key Changes to Practice*. Jossey-Bass, San Francisco, CA) where they look upon their instructor as the source of all knowledge. Prod them into learning for themselves with challenging and relevant questions (Why don't birds have teeth?) that make them delve into their learning resources (texts, internet, etc.) for answers. Also, encourage them to be selective about their learning. Help them recognize that learning everything in the 1,000 pages of their textbook is unrealistic for the course and that they might be more successful if they were selective about their learning. Guide them to ask questions and make decisions about their studying. Help them ask themselves questions like, “Does this concept have broad applications outside of this chapter? If so maybe I should focus on it rather than detailed content knowledge.” Encourage them to learn information that will help derive other information by asking questions like, “If I learn how the Na/K pump works, will I need to memorize the events associated with hyperkalemia or hypernatremia?”

How do students learn?

Many of us attended courses that were taught in a traditional lecture format.

By and large that worked. After all, we are successful scientists today. There is some question about the value of this technique. Studies show that classroom lectures are not the most effective way to teach or the most effective way for students to learn. Because of our own experience in

the classroom however, most of us feel comfortable with this form of teaching, and might naturally want to use it for the first time in our own courses. If this works for you, use it but take some part of your first course and experiment with alternative teaching strategies like problems-based learning, think-pair-share exercises, etc. For examples of quick and easy ways to teach without lecture, look at the “APS Archive of Teaching Resources” at the APS website www.apsarchive.org/main/ugrad-search.asp.

Large class sizes can be intimidating and often instructors feel that lecture is the only option in this situation. However, there are several effective alternative strategies that you could consider. One example is class discussion. While it is difficult to run a single discussion section in a large class, it is quite reasonable to generate productive discussion if you break up the class into groups of 3-5 neighboring students. These students can work as a team for five minutes answering a question that you pose. At the end of this time you can poll the groups for their responses to assess student understanding and misconceptions.

It is important to recognize that all students do not learn the same way; hence it might be wise to try multiple presentation formats in your class session. Some students learn better with pictures, some with written words, some with stories/lectures and some by talking about the topic. Vary your course presentation so that it incorporates all of these formats. You might try introducing a topic with a combination of verbal and written format by lecturing with slides and then follow this up with a discussion of a flow chart, diagram, or linkage map. As a summary you might ask students to explain the answer to a question to the person sitting next to them. In this way you can address multiple learning styles and enhance the successful learning in your classroom.

How do I know that my students are learning? Testing and Assessment

Many instructors regard testing and assessment as an unpleasant but necessary task that makes some fraction of the class dissatisfied. However, if used

appropriately, testing and assessment can provide valuable feedback for students, enabling them to identify their study targets and ultimately improve their learning and grades. Often an instructor relies on test scores only to tell them if students are learning course material. The problem with this method is that exams occur at the end of the curricular unit and by the time the instructor finds out that students have not learned the material, it is too late to remediate. An alternative to this is to quiz student knowledge frequently throughout the course. These assessments don't need to be labor intensive; simple questions with oral or written

answers will do. For example, after a difficult topic in class an instructor can put a question up on the screen with three to four answers, one of which is correct and the others which address common confusions or misconceptions associated with the topic. Ask the question and have students raise their hand or write their answers on a card. Their replies should give you a sense of their understanding. If you want to know about their deep understanding of the topic, you could pose a question and ask them to write a short paragraph in response. Share these results with the class and ask students to explain why they chose right or wrong answers. This discussion

will allow you to dispel the misconceptions that students might have. Also, use this time as an opportunity to guide students to study targets that promote depth understanding rather than superficial learning or memorization. Finally, evaluate student understanding early and often. It will promote learning and prevent those frustrated, confused students that appear in your office just before the exam. ❖

Additional commentary and discussion on this topic can be found on the APS web site at <http://www.the-aps.org/mentoringforum>.

Science Policy

Research Advocacy at EB 2007

Communicating with Congress

Communicating with Congress was the theme of the EB 2007 symposium sponsored by the APS Communications Committee. Committee Chair Frank Belloni chaired the session, which he explained was intended to prepare scientists to get involved in Congressional advocacy.

FASEB Director of Legislative Relations Jon Retzlaff began by describing the many challenges that research advocates currently face in Congress. Retzlaff noted that budget limitations

and competing priorities have reduced the pool of money available for allocation to research. The change in party control of Congress has also affected the budget situation because Democrats have a number of priority programs that have been chronically under-funded in recent years. The attitude among many on Capitol Hill that the NIH got its due with the five-year doubling of its budget represents a further challenge, as does the lack of knowledge among lawmakers and the public at large about the National Institutes of Health and its role in funding science.

Retzlaff emphasized the need for scientists to engage and explain the benefits of the work they do to Congress and highlighted effective advocacy strategies. One such strategy is the use of a consistent message. For example, this year, the biomedical research community has agreed to ask for a 6.7% increase for the NIH in each of the next three years because these increases would restore the agency's purchasing power to the level it reached at the end of the doubling.

Sarah England shared her perspective on what Congressional staffers need to hear from research advocates. England is an associate professor of physiology at the University of Iowa and a former fellow on Senator Hillary Clinton's staff. She stressed that staff rely on constituents to communicate clearly about the issues. Since most Congressional staff are not extensively trained in the

sciences, it is important to make the messages clear, simple and personal, without too much scientific detail. She also recommended formulating a specific request or "ask," rather than discussing problems in an open-ended manner. In addition, you should be prepared to explain who might oppose your position and respond to the arguments they might make. Finally, England recommended bringing business cards and writing on them your areas of expertise and issues of concern.

Bill Talman addressed the importance of researchers using their voices on behalf of the scientific community. Talman is a Professor of Neurology at the University of Iowa and the past Chair of the APS Public Affairs Committee. He described effective ways to reach out to Members of Congress, including personal visits, letters, and phone calls. He suggested that researchers convey where their expertise lies and that they express their willingness to help the office on matters related to science. In addition, researchers should also explain how they as constituents will be affected by decisions made in Congress. Repeatedly reaching out to Members of Congress and their staff makes it possible to develop a relationship with the office that will be beneficial in the long run, but such relationships can also be critically important when urgent issues arise. Talman also emphasized the

The APS Office of Public Affairs has changed its name to the Office of Science Policy. Visit us on the web at <http://www.the-aps.org/pa/> to learn more about the policy issues that the office works on.

importance of keeping messages on point, offering to help where appropriate and being willing to compromise.

Stacie Propst stressed the importance of scientists as messengers in research advocacy. Propst is senior director of science policy and outreach at Research!America. She noted that while Americans have respect for scientists, they know very few personally – highlighting the need for scientists to become more actively involved within their communities. Propst suggested that researchers partner with the patient groups, which will increase the level of awareness in the public and Congress about the importance of NIH-funded research and its benefits for health. Propst also described Research!America's campaign, "Your Congress, Your Health", which asks Members of Congress to answer a series of questions about research. Research!America plans to post their answers on its website so constituents will know their elected officials' positions on research and health care issues.

APS members go to Capitol Hill

About a dozen APS members took advantage of the fact that the Experimental Biology '07 meeting was in Washington and scheduled meetings with their Senators and Representatives. The APS Office of Science Policy (formerly the Office of Public Affairs) provided "how to" information and talking points to assist them in scheduling meetings with their Members of Congress.

Even if you were not able to arrange Congressional visits during EB '07, Members of Congress frequently travel to their districts to meet with constituents. For more information on how to arrange a visit with your Senator or Representative, visit the APS Science Policy web pages at <http://www.the-aps.org/pa> ❖

Congress Considers Research Funding for FY 2008

In late spring, Congress began considering appropriations legislation that will fund federal agencies and programs, including research, in fiscal year (FY) 2008. With the Democrats in charge of both houses of Congress for the first

time in 12 years, the process was off to a rocky start with debates about earmarks and veto threats from the President. Appropriators in the House of Representatives and the Senate are working to develop their respective versions of the budget, but the process is expected to stretch into the fall.

The budget of the National Institutes of Health (NIH), which has received only minimal, sub-inflationary increases in recent years, is slated to receive an additional \$750 million over FY 2007 spending in the House budget plan and an additional \$1 billion in the Senate plan. Both the House and Senate would require the NIH to transfer another \$200 million to the Global AIDS/HIV fund, giving the agency's budget a net increase of 1.9% under the House plan and 2.8% under the Senate plan. While both plans would reverse the cut proposed by the administration, the increases would be far below the 6.7% increase recommended by the APS and FASEB that would get the NIH back on track.

The National Science Foundation's budget fares better, with a proposed 10% increase over FY 2007 under the House budget plan. The additional \$593 million would bring the agency's budget to \$6.51 billion in FY 2008. The Senate's budget plan would provide NSF with an increase of \$637 million, to reach a total of \$6.55 billion, nearly 11% over FY 2007. This measure awaits full consideration of the House of Representatives, and the Senate appropriations committee.

A bright spot in the budget picture is the medical and prosthetic research program at the VA. House appropriators have increased the allocation for medical and prosthetic research by 16%, to \$480 million, a number that matches the FASEB request. Senate appropriators have gone even further, increasing the budget by 21% to \$500 million. These increases would come on top of a \$33 million boost that VA medical and prosthetic research received in the supplemental appropriations bill passed earlier this year that funded the Iraq war. ❖

NIH Director Elias Zerhouni and Former Congressman John Porter Address NIH Needs

At a session jointly sponsored by all participating EB societies, former Congressman John Porter and NIH Director Elias Zerhouni spoke about the importance of funding for biomedical research. While in Congress, Porter chaired the House appropriations subcommittee on Labor, Health and Human Services, Education and related agencies, where he led the push to double the NIH budget. As a

longtime champion of the NIH, Porter was able to share with the audience how critically important it is for Congress to hear directly from the research community. Porter was followed by Elias Zerhouni, who spoke about the current budget situation as well as the plans that NIH is making to move medicine forward in the coming years. ❖



NIH Director Elias Zerhouni, APS Executive Director Martin Frank, APS President-Elect Hannah Carey, APS President Dale Benos, and Former Congressman John Porter.

Media Finds A Lot to Like at Experimental Biology 2007

The Communications Department issued 18 press releases in connection with Experimental Biology 2007, generating a bushel of publicity for physiology, the Society and the researchers.

Newswise, which tracks coverage in online and print publications showed 145 articles based on the scientific studies. A study on the role of alcohol in breast cancer and another on yoga were particularly successful with print and online publications.

Highlights from our media efforts for EB '07 include the following:

- more than 260 TV and radio stations ran our stories;
- radio interview with CBS network radio news;
- live, on-air, morning drive interview with an NPR affiliate lasting six minutes;
- news report aired by BBC Radio in the UK during morning drive time;
- print coverage in the *Wall Street Journal*;
- wire service (UPI, Reuters) pick up of 80% of our studies;
- Internet coverage by Forbes.com, MSNBC.com, *Scientific American*, *Atlanta Journal Constitution* and *Austin-American Statesman*.

VMS (TV) Coverage

A total of 263 TV hits:

Top ten TV markets are: New York, Los Angeles, Chicago, Philadelphia, Boston, San Francisco, Dallas-Ft. Worth, Washington,, DC, Atlanta, and Houston.

Alcohol & Breast Cancer

- Top 10 markets: 13 hits
- Top 20: 23
- Top 50: 57
- Total: 120 national and 4 international

Diesel Exhaust Particles

- Top 10 markets: 5 hits
- Top 20: 9
- Top 50: 18
- Total: 58

Prenatal Nicotine

- Top 10 markets: 1 hit
- Top 20: 2
- Top 50: 11
- Total: 45

Yoga & Breast Cancer

- Top 10 markets: 16 hits
- Top 20: 27
- Top 50: 28
- Total: 32

Brain & Hormones

- Top 10 markets: 2
- Total: 4

In addition, a total of 104 broadcast outlets picked up our study on pramlin-tide and obesity. This study appeared in *AJP-Endocrinology and Metabolism* and garnered coverage on ABC, NBC and Fox News.

For a complete list of recent press releases go to: <http://www.the-aps.org/press/journal/index.htm>.

If you know of a study that is in Articles in Press and might be of interest to the general public, please drop a line to Communications Director Donna Krupa at dkrupa@the-aps.org or call her at (301) 634-7209. ❖

Highlights From the Web Search

Topic	Outlet	Date Ran
Alcohol/breast (Gu)	UPI	4.30.07
Alcohol/breast	<i>Wall Street Journal</i>	5.1.07
Alcohol/breast	BBC News	5.1.07
Alcohol/breast	Reuters	4.30.07
Alcohol/breast	Reuters UK	5.1.07
Alcohol/breast	<i>Scientific American</i>	4.30.07
Alcohol/breast	FoxNews.com	5.1.07
Alcohol/breast	NBC6 (NBC FL)	5.1.07
Alcohol/breast	WLS-TV (ABC Chicago)	5.1.07
Alcohol/breast	Fox 28 (Fox South Bend)	4.30.07
Alcohol/breast	WTVJ (NBC Miami)	5.1.07
Prenatal exposure to nicotine (Zhang)	Reuters	5.1.07
Prenatal exposure to nicotine	Reuters UK	5.1.07
Prenatal exposure to nicotine	<i>Scientific American</i>	5.1.07
Prenatal exposure to nicotine	Tobacco.org news	5.1.07
Prenatal exposure to nicotine	Yahoo.news	5.1.07
Prenatal exposure to nicotine	AOL News	5.1.07
Lap band surgery (Carroll)	UPI	5.2.07
Lap band surgery	<i>Scientific American</i>	5.2.07
Lap band surgery	Reuters UK	5.2.07
Lap band surgery	Reuters	5.2.07
Diesel exhaust (Nurkiewicz)	UPI	5.2.07
Diesel exhaust	WV Public Radio; Live at 7:40 AM	5.1.07
Diesel exhaust	Forbes.com	5.1.07
Diesel exhaust	WNDU-TV (NBC, South Bend)	5.4.07
Yoga (Schultz)	UPI	4.30.07
Yoga	ABC News	4.30.07
Yoga	MSNBC.com	4.30.07
South African plants (Mackraj)	NutraIngredients.com	5.2.07
South African plants	Natural Products Insider	5.2.07
Social isolation (Grippio)	UPI	4.30.07
Trout heart (Rodnick)	UPI	5.1.07
Bugs	FoxNews.com	5.8.07
Hibernation	Yahoo.News!-Science	5.8.07

Postdoctoral Positions

Postdoctoral Research Fellow (NIH Supported): Position available to study epithelial cell signaling. Our laboratory uses a multidisciplinary approach including patch clamp electrophysiology, cellular imaging and biochemical techniques to study the signaling pathways regulating ion channels involved in secretion from intestinal epithelia. Ongoing studies include the differential regulation of apical and basolateral membrane K channels, basolateral membrane Cl channel activity during changes in secretory rate and coordination of ion channel activation with mucus release. Candidate should have a PhD degree in physiology or a related discipline (or equivalent). Experience with patch clamping or imaging is preferred. Applications received by June 15, 2007 will receive full consideration. Send curriculum vitae, including a statement of your research interests, along with names and addresses of three references to: Dan R. Halm, Department of Neuroscience, Cell Biology and Physiology, Wright State University, 3640 Colonel Glenn Highway, Dayton OH 45435; Email: dan.halm@wright.edu; Fax: 937-775-3391. [AA/EOE]

Postdoctoral Research Position (Cardiovascular imaging): Postdoctoral research position available, effective immediately, in cardiovascular imaging program, Section of Cardiovascular Medicine, Yale University School of Medicine. Looking for candidate to participate in Bioengineering Research Partnership (BRP) focused on development and validation of 3D echocardiographic speckle tracking. Position in multidisciplinary laboratory focused on targeted molecular imaging of myocardial angiogenesis, post-infarction left ventricular remodeling, coronary physiology, and myocardial mechanics. Laboratory employs small and large animal models of ischemia/reperfusion to develop non-invasive imaging approaches for assessment of myocardial angiogenesis and remodeling. NIH funded projects involve cardiovascular imaging of large and small animals with multiple modalities, including; 3D echocardiography, single photon emission computed tomography (SPECT), microSPECT, microCT, angiography, and magnetic resonance imaging. Applicant should

hold PhD and/or MD degree, and have strong background in bioengineering, cardiovascular physiology with some experience in animal surgery, or imaging. Applications from women and members of minority groups are encouraged. If interested, please send a statement of research interests, curriculum vitae, and the names of three references to Albert J. Sinusas, MD, Professor of Medicine and Diagnostic Radiology, Director of Animal Research Laboratories, Section of Cardiovascular Medicine, Yale University School of Medicine, PO Box 208017, New Haven, CT 06520-8017; Email: albert.sinusas@yale.edu. [AA/EOE]

Postdoctoral Positions: West Virginia University, Department of Medicine, Section of Digestive Diseases: Two postdoctoral positions are immediately available to study the molecular characteristics of Ca²⁺-activated K channels in intestinal physiology and pathophysiology (chronic inflammation). Applicants with PhD/DVM/MD degree with motivation to succeed in scientific research and strong background in physiology, cell biology, proteomics and molecular biological techniques are encouraged to apply. Applicants are expected to have independent well-structured working style with the ability to work as a team. The positions will remain open until filled. Qualified applicants should submit their curriculum vitae along with the names and contact information of three professional references to: Debbie Williams, West Virginia University, Section of Digestive Diseases, Robert C. Byrd Health Sciences Center, PO Box 9161, Morgantown WV 26506; Email: DigestiveDiseasesSearch@hsc.wvu.edu. [AA/EOE]

Postdoctoral Fellow: Neurophysiology and Biomechanics of the Spine. Position available for an NIH funded Postdoctoral Fellow/Associate Research Scientist position to work in a spinal physiology laboratory, under supervision of Dr. Joel Pickar (Palmer Center for Chiropractic Research, Davenport, IA). Applications are being accepted for immediate employment. The position provides an opportunity for an investigator, interested in the general area of Complementary and Alternative Medicine (CAM) and the more specific area of "body-based therapies" as defined at NIH, to

receive neurophysiological training as a CAM basic scientist. The NIH-funded project is part of a Developmental Center grant whose purpose is focused on understanding the mechanical characteristics of spinal manipulation and their relationship to the therapeutic changes in sensory, motor and biomechanical systems. The laboratory in which the applicant will conduct research uses neurophysiological and biomechanical approaches to the study the vertebral column. Position Qualifications Required: PhD or comparable degree in neuroscience or biomechanics; ability and willingness to perform small animal surgery; experience in the somatosensory system including single unit electrophysiological recordings from the peripheral and/or central nervous system in animal models; familiarity with a computer programming language or data acquisition program; ability to analyze data, write, and to work and think independently. For further information, the PI Joel G. Pickar may be contacted at pickar_j@palmer.edu. To apply: use identifying requisition #P0607-50 and send a summary of research interests, CV and contact information from three references to: Tracy Reitan, PHR Human Resources, Palmer College of Chiropractic, 1000 Brady Street, Davenport, IA 52803; Fax: 563-884-5802; Email: hr_dept@palmer.edu. Applicants selected for interviews who may require access accommodations are encouraged to contact the Human Resources Office. [EEO/AA/HV]

Postdoctoral Associate Position in Neuroendocrinology in the Office of Clinical Partnerships at Arizona State University to study interactions between the endocrine, nervous, and immune systems. The focus of the lab is the development of a model which uses stress testing as a means to test underlying function of the system and link to disease risk, and to identify specific interventions to target underlying deficits. Models have been developed to test linkages between stress responses and risk for disease including effects on depression and neurological disorders, autoimmune disease, osteoporosis, diabetes, cardiovascular disease, and cancer. Current research includes: human studies on the effects of stress, exercise, aging, gender, metabolic state, psychological state and disease state on the neuroendocrine system; development of

biomarker patterns in performance to achieve peak performance for athletes, special military forces, and top level executives. State of the art facilities exist for health and fitness testing, comprehensive physiological measurements, and include a neuroendocrine core lab. Research has been funded by NIH, NSF, National Arthritis Foundation, NASA and the Arizona Center for Disease Control. Candidates must have earned a PhD or MD in a related field at the time of appointment. A background in neuroscience, endocrinology, and/or immunology is needed. Training and experience should include radioimmunoassays, ELISAs, and Luminex. Position is a part of ASU's clinical partnership program, providing abundant opportunities to interact across disciplines within the university and with the medical institutions in the valley, including: Mayo Clinic Arizona, Sun Health Research Institute, Barrow Neurological Institute, Banner Health, Maricopa Medical Center, VA Medical Center, Phoenix Branch of the NIDDK, and the new genomics institute, TGen. Please send a CV, statement of research interests, recent reprints, and names of the three references to: Dr. Kathleen S. Matt, Director of Clinical Partnerships, ASU PO Box 877105, Tempe, AZ 85287-7105; Tel.: 480-965-7906; Fax: 480-727-6589; Email: kmatt@asu.edu.

Postdoctoral Position: Physiology/Neuroscience and PhD Scholarship. School of Medicine, University of Western Sydney, New South Wales, Australia. This postdoctoral position is funded by the National Health and Medical Research Council of Australia and is a fixed term, full-time position for 12 months with prospects of renewal for up to three years. The Postdoctoral Research Officer (or suitably motivated PhD candidate) shall study the neural mechanisms that contribute to our sense of pain, in particular the pain arising from deep structures such as bone. The successful applicant is expected to have experience in electrophysiological recordings (extra cellular) and surgery in small animals, as these skills will be necessary for undertaking research. The applicant will also gain the opportunity to be involved in pioneering neuro-imaging studies (fMRI—functional Magnetic Resonance Imaging) and contribute to the delivery of a new medical course. Enquires: Dr. David Mahns, Senior

Lecturer in Physiology, School of Medicine University of Western Sydney, Building 3, Room 3.G06, Campbelltown Campus, Locked Bag 1797, Penrith South DC NSW 1797 Australia; Tel.: 4620 3259; Fax: 4628 5353; Email: d.mahns@uws.edu.au.

Postdoctoral Fellows, Research Associates, and/or Visiting Scientists: We are looking for Postdoctoral Fellows, Research Associates, and/or Visiting Scientists to study: lipid mediators of fever and hypothermia in systemic inflammation, physiological roles of transient receptor potential channels, and behavioral thermoregulation in rats and mice. Recent publications from the Laboratory include *PLoS Biol* 4: e284, 2006 and *PLoS ONE* 1: e1, 2006. Highly motivated individuals with an enthusiastic interest in our research program are invited to apply. Background in systems physiology, molecular biology, or immunohistochemistry/neuroanatomy is preferred, but the ability to think and work independently, dedication to work, and persistence in the face of failure are more important than the area of specialization. Mandatory requirements include an advanced degree, a track record of peer-reviewed publications, excellent computer skills, and good writing skills. To apply, send your CV, reprints of full-length papers, a brief description of research interests and career goals, and names, Email addresses, and telephone numbers of at least two references to: Andrej A. Romanovsky, MD, PhD, Director, Systemic Inflammation Laboratory, St. Joseph's Hospital, 350 W. Thomas Road, Phoenix, AZ 85013, USA; aromano@chw.edu.

Postdoctoral Research Positions: We have Postdoctoral research positions available at the University of California, Davis Medical Center in Sacramento, CA to investigate the signaling and molecular mechanisms of microvascular endothelial barrier dysfunction in inflammation, trauma, and diabetes. Current research approaches include intravital microscopy, 3D fluorescence imaging, FRET, in vivo animal models, isolated microvessel preparations, and various molecular cell biology techniques. Doctoral degree in related areas is required. Experience in vascular physiology, microscopic imaging, and small animal surgery is preferred.

Please send CV and a list of three references by Email to: Dr. Sarah Yuan, Director of Surgical Research at sarahyuan@ucdavis.edu.

Faculty Positions

Assistant/Associate Professor: One long term contract graduate faculty position at Barry University. PhD and teaching experience required in Gross Anatomy and/or Medical Physiology. Expected to teach graduate students in both lecture and labs. Experience in small liberal arts college preferred. Responsibilities include academic advising, committee work, some research and/or writing grants and publishing. Strong record of teaching excellence and scholarship desirable. Send letter stating interest, complete resume, transcripts, and three letters of reference to: Sr. John Karen Frei, Dean, School of Natural and Health Sciences, Barry University, 11300 NE Second Ave, Miami Shores, FL 33161.

Assistant/Associate Professor: The Department of Pharmacology, Physiology and Therapeutics at the University of North Dakota, School of Medicine and Health Sciences invites applications for one full-time tenure-track faculty position at the Assistant/Associate Professor level. Applicants for this faculty position must have a PhD or equivalent degree with at least three years of postdoctoral training. Applicants for the position at the Associate Professor level must have evidence of significant independent funding. Preference will be given to those applying mass spectrometric, proteomic and/or modern molecular strategies to areas of existing strength in the Department; namely cellular signaling, neuroscience and aging. A number of our faculty members are supported by a five-year \$10.3 M COBRE (NIH) grant that was recently renewed for a second five-year period to study "Pathophysiological Signaling in Neurodegenerative Diseases." The successful candidate will be expected to maintain an active extramurally-funded research program and participate in team-taught graduate and medical courses. Please send current curriculum vitae, contact information for at least three individuals willing to serve as references, and descriptions of previous and proposed research as well

as teaching experience to: Dr. Jonathan D. Geiger, Professor and Chair, Department of Pharmacology, Physiology and Therapeutics, Box 9037, University of North Dakota, School of Medicine and Health Sciences, Grand Forks, ND 58203; Tel.: 701-777-2183; Fax: 701-777-4490; Email: jgeiger@medicine.nodak.edu. Applications will be reviewed as received until the position is filled. The University of North Dakota, with about 13,000 students, is located in Grand Forks, ND, a family-orientated community of over 50,000 people with excellent schools, parks, and abundant year-round outdoor recreational activities. <http://www.med.und.nodak.edu/depts/pharm>. [AA/EOE]

Assistant/Associate/Full Professor

Positions: Albany Medical College invites applications for tenure-track faculty positions at all ranks in the Center for Cardiovascular Sciences. We seek highly motivated individuals with a record of research productivity to participate in an interactive group engaged in cellular, molecular, and genetic cardiovascular research and graduate education. We are particularly interested in applicants who have translational interests in cardiac/vascular pathophysiology in order to complement existing strengths in vascular cell signaling, smooth muscle reactivity, endothelial barrier function, and nitric oxide biology. A PhD or MD/PhD degree and three years of productive postdoctoral experience are minimal requirements for appointment at the Assistant Professor level. Applicants for Associate or Full Professor should have appropriate experience and a nationally recognized and funded research program. Investigators in the Center for Cardiovascular Sciences have opportunities for collaboration with scientists at neighboring institutions, including the Bioengineering Dept. at Rensselaer Polytechnic Institute, SUNY Albany College of Nanosciences and Center for Functional Genomics, the Ordway Research Institute and the New York State Wadsworth Laboratories. The area offers diverse cultural and recreational attractions with easy access to Boston, New York City, and the Adirondack, Catskill, and Berkshire Mountains. For further information about the Center and Albany Medical College, please visit <http://www.amc.edu>. Applicants should submit a current curriculum vitae,

description of research interests, and three letters of recommendation by August 1 to: Dr. Harold A. Singer, Chair, CCS Search Committee Director, Center for Cardiovascular Sciences, Albany Medical College (MC-8), 47 New Scotland Ave., Albany, NY 12208. [AA/EOE]

Assistant/Associate Professor: The College of Veterinary Medicine at North Carolina State University (NCSU) in Raleigh, North Carolina announces a new tenure track faculty position in Neurophysiology. This position may be filled at the Assistant or Associate Professor level, depending on experience and qualifications, with an initial appointment at 70% research, 20-30% teaching, and 0-10% service depending upon entering rank. A PhD in neurophysiology or a relevant neuroscience field is required. Candidates also having a DVM or teaching experience in a veterinary professional curriculum are encouraged to apply. This position supports ongoing initiatives at the NCSU College of Veterinary Medicine and other Colleges at NCSU on the various aspects of neuroscience. The successful candidate is expected to advance the field of neuroscience and neurophysiology through an active, extramurally funded program in this area. The College and University have a number of faculty members in related disciplines such as neurobiology and behavior, toxicology, pharmacology, clinical neurology, and biomedical engineering, providing multiple opportunities for collaboration. Moreover, the emerging Center for Comparative Medicine and Translational research (<http://www.ncsu.edu/cmtr>) and the W.M. Keck Center for Behavioral Biology (http://www.cals.ncsu.edu/beh_bio/) provide additional opportunities to extend interactions beyond the College of Veterinary Medicine. The successful applicant will be appointed to the Department of Molecular Biomedical Sciences, one of three academic departments in the college. The Department of Molecular Biomedical Sciences (<http://www.cvm.ncsu.edu/mbs/intro.htm>) consists of 36 faculty members who have a diversity of research and teaching interests. The responsibilities of the new faculty member will include: 1) developing, and/or maintaining, an extramurally funded research program in neuroscience in areas such as environmental effects on neural function, neurologic effects of

infectious or immune processes, and/or developmental neurology; there will be opportunities for interaction with related programs including toxicology, pharmacology, clinical neurology and biomedical engineering; 2) acting as lecturer in a 5-credit hour course in veterinary physiology taught to students in the professional veterinary curriculum; 3) participating in graduate education. Candidate will have access to graduate students through several existing programs in toxicology, comparative biomedical sciences, functional genomics, immunology, physiology, and biotechnology. In addition, the applicant will have broad collaborative opportunities with nearby institutes such as the Environmental Protection Agency (EPA), the National Institute of Environmental Health Sciences (NIEHS), as well as neighboring Universities (University of North Carolina and Duke). Raleigh is situated in central North Carolina, and both beach and mountain communities are within a few hours drive. The Triangle community of Raleigh, Durham and Chapel Hill has been cited as one of the most desirable places to live in the United States. The quality of life in Central North Carolina is excellent, with many stimulating cultural, sporting and outdoor activities. The local public school system is excellent. The application should be submitted using an electronic on-line procedure. Please use this web site: <http://jobs.ncsu.edu> and search by Identification Number B96-0708, to complete the Applicant Profile. Applications should include: 1) a curriculum vitae; 2) a statement of research interests and projected research programs; 3) a statement describing the applicant's teaching philosophy; and 4) the names and addresses of three references the committee may contact. Applications are currently being accepted and the position will be open until August 15, 2007 or until a suitable candidate is identified. Questions about the position can be directed to Dr. Lola Hudson, Search Committee Chair, College of Veterinary Medicine, North Carolina State University, 4700 Hillsborough St., Raleigh, NC 27606; Email: lola_hudson@ncsu.edu. [AA/EOE] For additional information, contact the Office of Equal Opportunity at 919-513-3148.

Assistant/Associate Professor: Touro University College of Medicine is a

Jewish sponsored institution committed to educating physicians for the twenty-first century, academic excellence and expanding knowledge through scholarship. Located in Northern New Jersey the College of Medicine provides an exceptional opportunity to be involved in the creation of a unique and innovative allopathic medical school. Applications are now being accepted for assistant/associate professors in physiology. The major responsibility for these positions is the education of medical students. For further information visit our web site at <http://www.touromed.touro.edu>. Interested applicants should provide a letter of interest and current CV to alex.stagnaro-green@touro.edu. [AA/EOE]

Faculty Positions: The Texas A&M Health Science Center, Irma Lerma Rangel College of Pharmacy invites applications for three faculty positions in the Department of Pharmaceutical Sciences in the following areas; Pharmacology, Immunology/Genetics, and Molecular Biology. A terminal degree in the respective discipline is required and all areas of research within these disciplines are welcome. However, preference will be given to candidates with experience in academic pharmacy and/or research projects in pharmaceutical or disease areas. Candidates are expected to have a strong commitment to pharmacy education, teach, establish an independent research program, and participate in the service missions of the College and Health Science Center. Salaries are competitive with attractive start-up packages. For more information, please see our website: <http://pharmacy.tamhsc.edu>. The College of Pharmacy is a state-supported institution located in historic Kingsville, a quaint city of 25,000 that is home to the legendary King Ranch. Corpus Christi and its beaches are 40 miles to the northeast, and Mexico is 120 miles to the south. The College is housed in a state-of-the-art, 64,000 square-foot building designed to facilitate pharmacy education and independent research. The College has a highly innovative, integrated, and team-taught PharmD curriculum with classroom, laboratory, and experiential components. The eight current faculty members have research experience in pharmacology, physiology, medicinal chemistry, pharmaceuticals, social and behavioral sciences, and microbial biochem-

istry. The department expects to have 14 faculty members in the next two years. Interested candidates are encouraged to submit a cover letter, curriculum vita, statements of teaching and research philosophy, three letters of recommendation, and contact information from three additional references. Please address applications to Anna Ratka, PhD, PharmD, Professor and Chair, Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas A&M Health Science Center, 1010 West Avenue B, MSC 131, Kingsville, TX 78363; Tel.: 361-593-4297; Fax: 361-593-4303; Email: aratka@pharmacy.tamhsc.edu. Application review will begin immediately and conclude when the positions are filled. [AA/EOE]

Director of Molecular Genetics: Masonic Medical Research Laboratory, Utica, NY 13501, Date Available: Immediately. The Masonic Medical Research Laboratory, a not-for-profit independent basic biomedical research institute located at the foothills of the Adirondack Mountains in upstate New York, invites applications for an individual to head its Department of Molecular Genetics. Position is at a rank equivalent to Associate or Full Professor. PhD and/or MD candidates with experience and interest in genetic and molecular aspects of the electrical function of the heart will be given strong preference. The Masonic Medical Research Laboratory has assembled one of the most complete teams of investigators worldwide to tackle the problem of cardiac arrhythmias responsible for sudden cardiac death in infants, children, and young adults. Spacious state-of-the-art laboratory facilities are available in our newly constructed Molecular Biology/Genetics Wing. A distinguished record of scientific achievement and a solid track record of extramural grant support are a must. Please send curriculum vitae and list of three references to Dr. Charles Antzelevitch: ca@mmrl.edu.

Chairperson: Michigan State University, Department of Large Animal Clinical Sciences. The Department of Large Animal Clinical Sciences (LCS) at Michigan State University invites applications and nominations for the position of Chairperson. The Chairperson is the principal representative of the

Department with authority and responsibility for administrative decisions and reports to the Dean of the College of Veterinary Medicine. The Department of LCS is seeking a dynamic individual with an outstanding record of achievement; an appreciation for the range of disciplines in large animal clinical sciences; and an understanding of our diverse functions of clinical medicine, research, teaching, and extension/outreach. The successful candidate must have a veterinary medical degree and be eligible for tenure at the full professor level. An earned doctorate or other graduate degree or board certification in related fields is highly desired. The selected individual should have a distinguished record of scholarship, as well as significant experience in communication, leadership and team building, development, a strong commitment to diversity, and dedication to the land grant mission. Review of applications will begin June 15, 2007 and will continue until a suitable candidate is identified. MSU is committed to achieving excellence through cultural diversity. The university actively encourages applications and/or nominations of women, persons of color, veterans and persons with disabilities. Additional information is available at http://cvm.msu.edu/lcs/LCS_Chair_Search/index.html. Send inquiries of applications (including statement of interest, curriculum vitae, and names and contact information of three references) to: Dr. Linda Mansfield, Search Committee Chair; 181 Food Safety Building; College of Veterinary Medicine; Michigan State University; East Lansing, MI 48824; Tel.: 517-432-3100 x119; Fax: 517-432-2310. MSU is strongly committed to achieving excellence through cultural diversity. The University actively encourages applications and nominations of women, persons of color, veterans and persons with disabilities. [AA/EOE]

Full Professor: Endothelial Pathobiology Program, University of Texas Medical Branch, Galveston. The Department of Pathology, University of Texas Medical Branch, Galveston, is seeking applications for a full professor to develop and lead the newly established Endothelial Pathobiology Program. The Endothelial Pathobiology Program will include at least eight full-time faculty members by September 2010. Members

of the Program will interact with University scientists whose research is focused on infectious, immunological, metabolic, nutritional, toxicological, gestational, or endocrine diseases in which the endothelium of the microvasculature plays a key role in pathogenesis. The successful applicant will have an extensive body of influential scientific publications, experience in mentoring successful research careers, an established international reputation in the field of endothelial cell biology or pathobiology, and an active research program which employs cutting-edge technologies and physiologically relevant models of microvasculature dysfunction. Experience in developing research priorities, defining and pursuing research opportunities, and building collaborative research initiatives is essential, as is familiarity with research-based postgraduate and student research programs. Applicants should send a letter of interest, statement of current and future research objectives, and curriculum vitae to: David H. Walker, Professor and Chair, Department of Pathology, Executive Director, Center for Biodefense and Emerging Infectious Disease, University of Texas Medical Branch, 301 University Blvd., Keiller Bldg., Galveston, TX 77555-609 USA; Email: dwalker@utmb.edu. The Search Committee will begin evaluating applications July 15, 2007 and will continue until a suitable candidate is identified. [AA/EOE]

Assistant/Associate Medical Professor in Pharmacology: City College, Department of Physiology & Pharmacology. Position Detail: Professorial. FLSA Status: Exempt Compensation: \$80,000-90,000. College Web Site: <http://www.cny.cuny.edu>. Notice Number: FY-13459. Closing Date: Open until filled with review of applications to begin 08/08/2007. Position Description and Duties: The CUNY Medical School seeks an Assistant/Associate Medical Professor in Pharmacology in the Department of Physiology and Pharmacology. Applicants should be qualified to teach basic principles of Pharmacology to medical students. Qualification Requirements: PhD and/or MD with two (2) years of postdoctoral work in any area of Pharmacology. Candidates must have demonstrated a strong record of scholarly research and publications in Pharmacology. Preference will be given to candidates

with funded research programs who employ cellular, molecular, biochemical or behavioral research approaches. The City College of New York has a strong institutional commitment to the principle of diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of individuals, including women and under-represented groups. Upon request, reasonable accommodations provided for individuals with disabilities. All candidates must provide documentation to prove employment eligibility in compliance with IRCA. To Apply: Please submit a current curriculum vitae, statement of research plan and names and contact information of three(3) references to: The Pharmacology Search Committee PVN # FY-13459, Department of Physiology & Pharmacology, The CUNY Medical School/Sophie Davis of Biomedical Education, The City College of New York, 160 Convent Avenue, HR 203, New York, NY 10031. [AA/EOE]

Assistant or Associate Professor: Physiology and Neurobiology. The Department of Physiology and Neurobiology at the University of Connecticut, Storrs, invites applications for a tenure track faculty position available in Fall 2008, at the Assistant or Associate Professor level. The successful candidate will be expected to maintain an independent and vigorous research program and participate in the Department's graduate and undergraduate teaching. We encourage applications from individuals studying fundamental physiological or neural processes at the molecular, cellular or systems level. Special consideration will be given to those emphasizing membrane biology. Applicants must possess a PhD and have completed at least two years of postdoctoral training. Candidates for Associate Professor are expected to have a currently funded and active research program. Review of candidates will begin on October 1, 2007, and the search will continue until the position is filled. Send curriculum vitae, a brief summary of current research with a statement of research directions, a statement of teaching interests, and the names of at least three references to: Chair, PNB Search Committee, University of Connecticut, Department of Physiology & Neurobiology, Box U-3156, 75 North Eagleville Road, Storrs, CT 06269-3156; <http://www.pnb.uconn.edu>.

Biology Faculty Position: The University of Redlands invites applications for a tenure track faculty position in Biology. The successful candidate will have appropriate training and expertise to teach animal physiology; responsibilities will include teaching both non-majors and majors and involving undergraduates in research. A PhD (by Sept. 2008), evidence of excellence in undergraduate teaching, and a commitment to undergraduate research are required. Please send letter of application, CV, description of research plans, statement of teaching philosophy with a list of potential course offerings, and arrange for three letters of recommendation to be sent to: Chair, Search Committee, Department of Biology, University of Redlands, PO Box 3080, Redlands, CA 92373-0999. Applications received by October 26, 2007 are assured full consideration. Located in an ethnically and culturally diverse region midway between Los Angeles and Palm Springs, the University of Redlands (<http://www.redlands.edu>) is a private, selective, liberal arts university enrolling approximately 2,300 undergraduates in the residential College of Arts and Sciences. We actively seek applications from members of under-represented populations. [AA/EOE]

Professor and Chair: Department of Physiology. Southern Illinois University School of Medicine, Southern Illinois University School of Medicine invites applications for the position of Professor and Chair of the Department of Physiology. The successful candidate will be responsible for the continued development of the department and will guide its research and education missions. Qualified candidates must have a PhD and/or MD (or equivalent) degree, outstanding academic experience, research productivity with publication in nationally or internationally referred journals and professional service activities. Candidates must also have proven ability to secure and sustain extramural funding as well as excellent interpersonal and leadership skills. The Department of Physiology is located on the campus of Southern Illinois University Carbondale, a large, public, comprehensive research-intensive university situated in a pleasant community surrounded by the Shawnee National Forest and located two hours southeast of St. Louis. This is a vibrant, growing

department with 12-month, state-funded faculty positions. Current research strengths include cancer biology, endocrinology, neurobiology and reproduction. Opportunities for collaboration exist with the Simmons Cooper Cancer Institute, the Center for Integrated Research in Cognitive and Neural Sciences, as well as other basic and clinical science departments within the university. The Department is responsible for various educational programs including an integrative medical curriculum and both graduate and undergraduate physiology degree programs. For more information about the department, please visit our website: <http://www.siumed.edu/physiology/>. Applicants should submit a cover letter highlighting their interests and qualifications, their curriculum vita, and the contact information for five or more persons qualified and willing to discuss the applicant's abilities to fill this position. Applications may be submitted electronically in PDF or RTF format to: Professor Ronald A. Browning (rbrowning@siumed.edu), Physiology Search Committee Chair, Department of Physiology, School of Medicine, Mail Code 6523, Southern Illinois University Carbondale, 1135 Lincoln Drive, Carbondale, IL 62901. Applications will be reviewed beginning September 1, 2007 and will continue until the position is filled. Effective date of employment is August 15, 2008, but is negotiable. Before any offer of employment is made the University will conduct a pre-employment background investigation, which includes a criminal background check. All applications are welcomed and encouraged and will receive consideration. [AA/EOE]

Assistant Professor of Biology-Animal Physiologist: Augustana College invites applications for a tenure-track Assistant Professor position in the Department of Biology beginning September 2008. Duties include teaching two courses each semester. These will include introductory biology, human physiology, and an advanced undergraduate course in general physiology. While teaching is a major component of the position, productive research involving undergraduates is expected and is a long-standing tradition in the department. The college is situated in an area experiencing rapid growth in biomedical, biotech, agricultural, and environ-

mental research, offering collaboration opportunities in various research areas. Applicants must possess a PhD. A commitment to the mission of a church-related liberal arts college is expected. Salary is competitive and dependent upon qualifications; excellent fringe benefits are included. Review of applications will begin immediately and close on October 5, 2007. Visit us at <http://www.augie.edu> or contact the department chair, steven.matzner@augie.edu, 605-274-4821 for information. Please send a letter of application, including teaching philosophy and goals for professional development, copies of undergrad and graduate transcripts, a curriculum vita, and three letters of reference to the Dean of the College, Augustana College, 2001 S Summit Avenue, Sioux Falls, SD 57197; Tel.: 605-274-4110; Fax: 605-274-5547. Applicants must comply with the Immigration Reform and Control Act, and are required to submit official transcripts upon employment. [EOE/AA].

Research Positions

Life Science Curator: The California Science Center is currently seeking a Life Science Curator to oversee the development of all life science exhibits and selected educational materials. This position also develops and maintains working relationships with the scientific community and assists with fundraising initiatives. Major Responsibilities: Exhibit Development: develop the educational goals required to design and develop new life science exhibits. Oversee exhibit design, fabrication and installation and the upgrade of existing life science exhibits. Exhibit Evaluation: supervise life science exhibit evaluation. Review evaluation outcomes and apply results to exhibit improvement. Educational Program Development: develop education programs and materials to support life science exhibits. Funding and Program Support: assist in the development of grant proposals and other sponsorship opportunities. The Scientific Community: assemble and maintain a network of content advisors from academia, industry and government. Minimum Qualification: possession of an earned doctorate in biology, chemistry, physics or a related scientific field. Three years of experience in any of the following: teaching at the college or

university level; exhibit and education program development at science museums; or equivalent educational experience in the public understanding of science, such as print or film media. One year of experience in an administrative or supervisory capacity, such as serving as administrator of a science program within a college, university or a museum of science and industry. Salary Range: \$6,484.00 to \$7,152.00 per month with excellent State benefits. Application Procedure: Send resume and cover letter (a must) to California Science Center, State Human Resources Dept, 700 State Dr., Los Angeles, CA 90037. For a complete job description, please visit our website at: <http://www.californiasciencecenter.org>. California State Government provides equal opportunity to all regardless of race, color, creed, national origin, ancestry, gender, marital status, disability, religious or political affiliation, age, or gender orientation. It is an objective of the State of California to achieve a drug-free, safe workplace. Any applicant for employment will be expected to behave in accordance with this objective because the use of illegal drugs is inconsistent with the law of the State, the rules governing civil service and the special trust placed in public servants.

Research Assistant/Postdoctoral Position: Positions available for a Research Assistant and/or a postdoctoral fellow to work in a muscle biophysics/physiology laboratory, under supervision of Dr. Dilson Rassier (Department of Kinesiology, McGill University, Montreal, Canada). Research investigates the basic mechanisms of muscle contraction and force regulation at the cellular and molecular levels. The laboratory uses an array of experimental preparations and microscopic techniques, including single muscle fibers, isolated myofibrils and isolated myosin/actin filaments. Applicants should have a strong background in one or more of the following areas: physics, biophysics, physiology, biochemistry, and/or molecular biology. Salary negotiable according to experience. If interested, please send curriculum vitae and the names of two references to Dr. Dilson E. Rassier, 475 Pine Avenue West, McGill University, Montreal (QC), Canada, H2W 1S4; Email: dilson.rassier@mcgill.ca; Tel.: 1-514-3984184, ext. 0558; Fax: 1-514-3984186.

Bradley Andresen is currently an Assistant Professor, Department of Internal Medicine, University of Missouri, Columbia. Andresen was formerly a research instructor for Georgetown University, Washington, DC.

Berton Braverman is currently the Director Neuromonitoring, US Neuromonitoring, Inc., Mount Prospect, IL. Braverman was with Rush University Medical Center, Chicago, IL.

Johan F. Brekke is currently a Senior Medical Scientist, Gilead, 323 East 93rd St #1E, New York, NY. Prior to his new position, Brekke was a Postdoctoral Fellow at Yale University School of Medicine, in New Haven, CT.

Malcolm Cox is currently the Chief Academic Affiliations Officer, Department of Veterans Affairs, Washington, DC. Cox was formerly the Carl W. Walter Distinguished Professor of Medicine, Harvard Medical School, Boston, MA.

Gerard David D'Angelo is currently Research Scientist III, Institute for Pharmaceutical Discovery, Institute for Bioanalytics LLC, Brandford, CT. D'Angelo was formerly an Assistant Research Scientist, Vascular Biology Center, Medical College of Georgia, Augusta, GA.

Mark Estacion is currently an Associate Research Scientist, Department of Research, VA CT Healthcare System, West Haven, CT. Prior to his new position, Estacion was a Senior Researcher at MetroHealth Medical Center, Cleveland, OH.

Satoshi Fujita is currently an Assistant Professor, Department of Frontier Sciences University, Tokyo, Chiba, Japan. Prior to his new position, Fujita was a Research Scientist, University Texas Medical Branch.

Gregory Henderson is now at the Mayo Clinic, Rochester, MN. Prior to his new position, Henderson was in the Department of Integrative Biology, Univ. of California, Berkeley.

Keith E. Jackson, an Assistant Professor of Pharmacology, has affiliated with the University of Louisiana at Monroe, College of Pharmacy, Department of Basic Pharmaceutical Sciences, Monroe, LA. Jackson was formerly a Postdoctoral Fellow, Department of Physiology, Tulane University, New Orleans, LA.

Sangho Kim is a Postdoctoral Researcher, Korea University, Seoul, Republic of Korea. Prior to his new position, Kim was affiliated with the Department of Applied Physiology & Kinesiology, University of Florida, Gainesville, FL.

Carolyn Komer is currently an Associate Professor, Division of Functional Biology, West Virginia School of Osteopathic Medicine, Lewisburg, WV. Prior to her new position, Komer was an Assistant Professor of Animal Science, Iowa State University, Ames, IA.

Bruce C. Kone is the Dean of Folke H. Peterson, Distinguished Professor, University of Florida, College of Medicine, Gainesville, FL. Kone was previously the Willerson Chair Professor and Director, Renal Disease and Hypertension, Department of Internal Medicine, University of Texas, Houston, TX.

Ronald J. Korthuis, Jr. is currently the Bolm Distinguished Professor & Chair, Medical Pharmacology & Physiology Department, University of Missouri, Columbia, MO. Prior to his new position, Korthuis was Professor and Vice Chairman of the Department of Molecular and Cellular Physiology, Louisiana State University Medical Center, Shreveport, LA.

Claudio E. Lagoa is a Veterinarian at the Virginia-Tech Marion duPont Scott Equine Medical Center, Leesburg, VA. Lagoa was formerly a Research Associate in the Department of Surgery, University of Pittsburgh, Pittsburgh, PA.

Junyi Ma is a Scientist affiliated with Cellular Dynamics International, Inc., Madison, WI. Ma was formerly a Postdoctoral Fellow with MD Anderson Cancer Center, Department of Anesthesiology, Houston, TX.

Yoko Momose-Sato is a Professor, Kanto Gakuin University, College of Human Environmental Studies, Department of Health and Nutrition, Yokohama, Japan. Prior to her previous position, Momose-Sato had been a Senior Assistant Professor, Department of Physiology, Tokyo Medical and Dental University, Tokyo, Japan.

Oleg E. Osadchii is a Lector, Department of Biomedical Sciences, University of Copenhagen, The Panum Institute, Copenhagen, Denmark. Formerly, Osadchii was a Research Associate, University of Liverpool, Cardiology Group, School of Clinical Sciences, Liverpool, United Kingdom.

Ravi K.M. Reddy is a Lecturer, Flinders University School of Medicine, Department of Physiology and Pharmacology, Adelaide, Australia. Prior to his present position, Reddy attended the Windsor University School of Medicine, St. Kitts, West Indies.

James Reynolds is the Vice President for Academic Affairs/Dean of Faculty, Wilmington College Ohio. Prior to his

new position, Reynolds was the Vice President for Academic Affairs, Midland Lutheran College, Fremont, NE.

Thomas H. Shaffer accepted the position of Associate Director Biomedical Research, The Nemours Foundation, Nemours Biomed Res-A.I. Dupont Hospital, Wilmington, DE. Shaffer was formerly Professor, Department of Physiology, Temple University School of Medicine, Philadelphia, PA.

Sinclair Allan Smith is presently an Associate Professor, Department of Health Sciences, College of Nursing and Health Professionals, Drexel University, Philadelphia, PA. Smith had been an Assistant Professor, Department of Occupational Therapy, Temple University, Philadelphia, PA.

Jun Sun is currently an Assistant Professor, Department of Medicine, University of Rochester, NY. Sun was a Research Assistant Professor, Department of Pathology, University of Chicago, Chicago, IL.

S. Randall Thomas is Research Director, Center National de la Recherche Scientifique, University of Evry, Val d'Essonne, Evry, France. Thomas was previously Research Director, CNRS, Faculty of Medicine, Paris, France.

John P. Thyfault has joined the Department of Nutritional Sciences, H. S. Truman VA Hospital, University of Missouri, Columbia, MO. Thyfault was formerly a Postdoctoral Fellow, Department of Physiology, East Carolina University, Greenville, NC.

Brett J. Wong is currently Assistant Professor, with Kansas State University, Department of Kinesiology, in Manhattan, KS. Prior to his new position, Wong was a Postdoctoral Fellow at the University of Iowa in the Department of Exercise Science, Iowa City, IA.

Yu-Dong Zhou has joined the Department of Neurology, Beth Israel Deaconess/Harvard Medical School. Zhou was formerly with the Department of Biomedical Engineering, Boston University, MA.

Noah Paul Zimmerman is a Postdoctoral Researcher, Medical College of Wisconsin, Department of Microbiology and Molecular Genetics, Milwaukee, WI. Prior to his new position, Zimmerman was with the Department of Marine Science, Gulf Coast Research Lab, University of Southern Mississippi, Ocean Springs, MS. ❖

The Wine Wizard

Peter Wagner

Meridian is a large operation headquartered in St. Helena, CA, which is in the northern end of the Napa Valley. However, their major vineyards are in the Paso Robles area. Their wines tend to be blends from many regions. Their goal is approachable, affordable, straightforward wines and generally they have achieved that objective year after year, which is why I have chosen to focus this column on their current wines. Here goes:

2005 Meridian Chardonnay (\$6). This has always been their flagship wine in my opinion, and this current vintage is no exception. It is the best of the six wines in this column, and tastes like a \$20 or more effort. The nose is tropical (as usual for Meridian), with some nice citric tones to balance the ripe fruit aromas. The palate follows in kind - forward tropical fruit with lemon, almost sweet/sour sense (i.e., almost pineapple) with excellent but not biting acid. Mouthfeel is viscous but by no means buttery. The oak is there (vanilla) but what is especially nice is that the oak is not dominant. A good, quite long finish. This wine is tasty and fairly rich and appealing, but it is not very complex.

2005 Meridian Sauvignon Blanc (\$6). This is NOT New Zealand style wine, so if you are hooked on NZ, forget it. This wine has nice melon and grapefruit aromas, and a palate that is similar. There is no oak. It is clean, dry, a bit generic, and has a short slightly bitter finish, at least until the wine warms up a bit towards room temperature. It is a fine party wine, but not of the quality of the above Chardonnay.

2005 Meridian Pinot Grigio (\$6). This wine has a decent nose with notes of lemon, melon and, especially, nectarine. The palate is a bit different with fair but not opulent quince (similar to pear) leading lemon and nectarine flavors. There is a short, slightly hard finish. The overall impression is mediocre, but

at this price, it's worth a try if you like the variety or just want to see what California

Pinot Grigio (aka Pinot Gris) is like.

2005 Meridian Pinot Noir (\$11). Note the price - that's what movies do to wine prices. The



Peter Wagner

nose is "OK" but not interesting. You can tell it is Pinot by the cherry and spicy oak aromas. The sour cherry palate is a bit thin, and needs more fruit intensity. Tartness shows, along with spicy oak and some tobacco flavors. Mouthfeel is light and the wine is a bit thin. If only it had more cherry fruit. It does open a bit in the glass, but is still not that great. Surprisingly, the rest of the very same bottle when tasted at room temperature the next day after being in the frig 24 hours was quite a bit better, with more fruit and viscosity.

2004 Meridian Cabernet Sauvignon (\$6). This is a strange wine. It is in a word very "berryish," but I cannot identify the grape or what berry. Nose is cherry, slightly nutty and herbal. The palate is quite forward and rich, but the flavor is "berry"-unidentifiable to me. The fruit is very ripe, a bit spicy, with vanilla and slight tobacco. It has fair acidity, yet comes across as lush and almost sweet. The tannins are soft, and the length is reasonable. This wine was also as approachable the second day, but it all comes down to whether you like "berry" wine, lush and fruity as it may be. At this price, why not see if you like it?

2004 Meridian Merlot (\$6). Not wholly dissimilar from the Cabernet above: again, "berryish"! There is cherry and vanilla on the nose with a bit of cashew nut. The palate is ripe and juicy berries"

with a touch of spice, light tannin and medium acid. It has medium light body, and lacks any depth or complexity. It, too, lasted into the second day without deteriorating. A simple wine with generic flavors, but again, we all have different tastes and you may love it.

In sum, the Chardonnay is right on target, but the five other wines, while easy to drink, have flaws or odd features that will keep me continuing to look for the perfect bargain.

Additional wines:

Foxglove 2005 Edna Valley Chardonnay (\$10). This is a light, refreshing, crisp wine, and is not heavy, over-oaked or buttery. Just the thing for warm summer evenings. By all means serve it a bit colder than usual. Nose and palate both are mainly citrus and green apple with some tropical fruit as well. Acidity is very good, making it crisp and refreshing. Oak is in the background - touch of vanilla. Clean, balanced with good length, it is not the most complex or rich wine but a very good value in its style.

2-UP 2005 South Australian Shiraz (\$9). This one will blow you away if you like your Oz Shiraz rich, tasty, balanced, soft and cheap. Bright plum and cherry nose with light vanilla oak. The palate is a rush of ripe, rich fruit (blueberry, cherry, plum), and the vanilla stays in the background as do the soft tannins. Acidity is excellent, giving the wine a brightness to balance the rich ripe fruit. Length is also very good. Dangerously easy to drink. Why the low price? It has limited structure and thus will probably last only a couple of years. But who cares?

Seghesio 2005 Sonoma Zinfandel (\$16). This is the "bottom" of the Seghesio Zin range, yet in some ways tastes better than all the others at half the price. It has been reliable year after year, but 2005 is the best for some time in my book. This is a very, very good wine. Pure Zin raspberry/cherry and briar nose with some vanilla and a hint of tobacco. It does take about 15 minutes to open properly once poured into the glass, but worth the wait. The palate is pure, intense, ripe lush fruit that seems sweet at first, but is not (finishes quite dry) but there is good structure with excellent acid and medium tannins. It is full bodied, clean, and is actually elegant (by which I mean has lots of good stuff without the sense that every

last element, such as tannins and bitter seed flavors, had to be squeezed out of the grapes to get decent fruit intensity). There is dill from the American oak, but the fruit leads the oak throughout. Very nice finish, there is nothing bad to say about this one. Except I don't see how it could get better, so if you buy some, drink soon. But, don't forget the 15 minutes to breathe in the glass after pouring.

Castle Rock 2005 central coast Pinot Noir (\$9). Castle Rock pinot has become eagerly awaited each year since it first showed up a few years back – because it was always great value. The 2005 version lives up to its past. Very nice varietal black cherry fruit, not too much oak or spice, just a light presence that adds complexity. The wine is supple and viscous with medium light tannin and soft-

er acids that makes the wine easy to drink. The finish is good, and overall I find this a much more attractive wine than the same-priced Mark West 2005 Pinot. Both are quite widely available, so why not try them side by side and decide for yourself? For \$9 you don't get a wine that will last too long, but well-stored I think this will go 4-5 years before breaking down. ❖

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Physiology in Perspective Walter B. Cannon Memorial Lecture

The Cannon Memorial Lecture, sponsored by the Grass Foundation, honors Walter B. Cannon, President of the Society from 1913-1916, and is presented annually at the spring meeting to an outstanding physiological scientist, domestic or foreign, as selected by the President-Elect with the consent of Council. The recipient presents a lecture on "Physiology in Perspective," addressing Cannon's concepts of "The Wisdom of the Body." The lecture is considered for publication in the Society journal of their choosing. The recipient receives an honorarium of \$4,000, a plaque, and reimbursement of expenses incurred in association

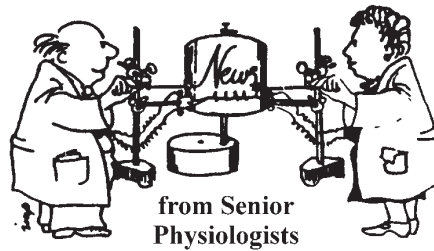
with delivery of the lecture. The membership is invited to submit nominations for this lecture. A nomination shall be accompanied by a candidate's curriculum vitae and one letter detailing the individual's status and contributions.

More information on the award and nomination procedures are available at <http://www.the-aps.org>. Nominations should be sent to: The APS Cannon Lecture Award, c/o Linda Jean Dresser, 9650 Rockville Pike, Bethesda, MD 20814-3991; or submitted online at http://www.the-aps.org/cgi-bin/Election/Lecture_form.htm.

Letter to Virenda Mahesh

Kenneth A. Hubel writes: "When I opened your note I was startled to realize that 10 years had passed since I responded to Dick Malvin's similar inquiry when I turned 70. In the final paragraph of that response I wrote: 'I will retire in January 1998, having had the pleasures of discovering a few new facts of some importance, and of having worked with good people for commendable goals in a stimulating setting where we shared an honorable ethic.' Memories of that career and those good people provide rich and continuing pleasure.

"For a couple of years I helped tutor second-year medical students at the University of Iowa in the arts of eliciting a clinical history and of performing a physical examination but since then I have used my clinical skills only at the Iowa City Free Medical Clinic. There we are not pressed by administrators to sacrifice needed time with patients on the altar of 'efficiency.' The medical students who see the patients are bright and I'm delighted to show them how to



detect an enlarged spleen or evaluate the cause of abdominal pain. And I correct them if they put the stethoscope on the shirt instead of the skin. An occasional review of electrolyte transport catches my eye if the author's name is familiar but the list of familiar names is getting shorter.

"I completed an autobiography for my family and had 30 copies printed in 2004. Copies of letters that I wrote to family and friends for 40 years restored many memories as did 20,000 Kodachrome slides (for which the text also serves as an index). The slides and a scanner also provide grist for the Photoshop mill whose myriad adjustments I have barely tapped. I play also

sax with a senior center 'swing band' and with a local professional band. My wife, Jan, and I have bicycled from southern Illinois to Yorktown, VA, on the North and South Islands of New Zealand, in Holland and Belgium, northern Italy and southern France. In August we tested our cardiac reserve by climbing over Beartooth Pass in Montana, and thereafter coasted for 100 minutes into Red Lodge. We still ski in Colorado a couple of weeks in January and we look forward to biking in the Finger Lakes region in New York on the way to my wife's 50th reunion at Syracuse. We are blessed to have two daughters and their families nearby, a great community and an old English sheep dog.

"I serve on the board of the Council for International Visitors to Iowa Cities. American embassies around the world select potential national leaders for educational visits of three weeks to various American cities. In recent years they have been selected chiefly from Muslim countries. We have the pleasure of providing those visitors warm hospitality and candid opinions in a small Midwest



Chair, Department of Physiology

The Virginia Commonwealth University School of Medicine seeks applicants for the position of Chair of the Department of Physiology. Applicants must be senior investigators with a strong record of high-quality research and research funding, experience in administration and teaching and a history of the successful training and mentoring of young scientists. An advanced degree (PhD, MD or MD/PhD) is required. Investigators who have been involved in or who have promoted translational research are encouraged to apply. The Department has strong programs in molecular cardiology and vascular disease, sensory neurobiology and gastrointestinal physiology but applicants in any discipline are sought. The Institution considers this position pivotal in its strategic plan of building its research infrastructure, promoting interdisciplinary science and bridging basic and clinical investigation. Accordingly, it is willing to provide considerable resources into recruiting an outstanding scientist to lead this Department. Interested candidates should send their curriculum vitae and names of three references to: Gordon L. Archer, Chair; Associate Dean for Research, School of Medicine; Virginia Commonwealth University; Box 980565; Richmond, VA 23298. garcher@vcu.edu.

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city with a large university. We hope to alter their adverse opinions of the US so often formed by our television and cinema and the arrogant foreign policies of the current presidential administration. 'Tis better to light one candle than to curse the darkness.'

"We would delight in hearing from friends if they are passing through."

Letters to Julio Cruz

Toshio Narahashi writes: "I apologize for not writing you sooner, but I have been swamped with several grant proposals to be submitted in time. Thank you for sending me a card for my 80th birthday. It was very kind of you. I am still working full time!"

"I have been using electrophysiological approaches and am proud of being a member of APS for many years. However, since my research subjects have something to do with interactions of chemicals with neuroreceptors and ion channels, I usually attend the annual meetings of the Society for Neuroscience and the Society of Toxicology, plus a few symposia every year leaving little time to attend the APS meeting. I feel I left 'my heart in APS.'

"I would like to take advantage of this column to let my friends know what I have been doing recently. If I make any smallest contributions to science, they may be classified into two: one for the mechanism of action of insecticides on neuroreceptors and ion channels, which I started at the University of Tokyo almost 60 years ago; and the other for the mechanism of action of various therapeutic drugs and natural toxins (such as tetrodotoxin) on neuroreceptors and channels, which were commenced mostly after moving to the US some 45 years ago.

"One of the exciting findings was to count the number of sodium channels needed to be modified for the insecticide pyrethroid to cause hyperexcitation in animals. When one out of 100 channels is modified from the normal short opening (2-3 msec) to long opening (up to a few seconds), animal develops hyperexcitation, explaining why pyrethroid is so potent. I believe this is an important concept in neuropharmacology as it is applicable to the agents that 'inhibit' hyperexcitation (e.g., antiepileptic drugs).

"The therapeutic drugs we have been working on during the past 10-20 years include alcohol (therapeutic?) and Alzheimer's drugs. Their mechanisms of action are so complex that I cannot even summarize here. Interested readers may

check my publications in internet. Fortunately, Narahashi is a rare name even in Japan, and most of the ~350 papers listed in internet under Narahashi are my papers.

"Although many things still remain to be studied along these lines, I am now moving (at least trying) to a new (for me) area, i.e., 'microglia.' Microglia represent a very exciting field as they are directly related not only to physiology but also to pharmacology, toxicology, and pathophysiology (such as Alzheimer's and Parkinson's). It may sound crazy as someone in my age is going to undertake a new field, but I would like to think forward rather than backward. I will have to secure a grant or two to get this study started, though. Incidentally, money is not a special topic these days: 40 years ago it was not a topic because money was plenty; it is not a topic these days either because everybody is trying to get it.

"I will certainly keep in touch with you through this column or otherwise, and would like to report my progress, if any, on 'microglia' study."

Carlton F. Hazlewood writes: "It is a pleasure to correspond with you as my 71st birth date approaches. Your request that I write a bit about my career has prompted considerable reflection. When I was a graduate student at the University of Tennessee Medical Units at Memphis, my dissertation work addressed the problem of quantitatively defining progressive changes in the inorganic matter (ions and water) of skeletal muscles of strain 129 mice—a very new animal model, at that time, for muscular dystrophy. I slowly became fluent in cellular physiology and came to understand the history and implications of the Ionic basis of electrical activity in muscle and nerve physiology. In this process, I 'wore out' three major professors, as I chose, and was approved, to pursue this project independently. I had some wonderfully clever professors at UT Medical Units at Memphis, and I ended up in a division of clinical physiology—in those days a new and practical creation. Hence, I had ever-present in my mind to understand physiology as it relates to the 'bedside.' This work was interrupted, when I was accepted for postdoctoral studies in the department of medicine at The Johns Hopkins University School of Medicine, where I was to obtain insight into the mechanism of action of insulin. My mentor, Kenneth L. Zierler, MD, was (and is

today) extraordinary. There, with his help, I improved my skill in measuring cellular potentials and was allowed to 'sneak in' studies of the electrolyte composition of developing skeletal muscle in the rat. Wow! I found that, in the rats' early postnatal life, the concentration of muscle sodium exceeds that of potassium—a theoretical impossibility, if one clings to conventional wisdom yet the muscles did not know that. What an exciting moment! That moment 'hooked' me and the thrust of my academic career was determined. My faculty appointment with Baylor College of Medicine commenced in July of 1964. It began with funding from the Muscular Dystrophy Associations of America to continue the systematic studies of the inorganic (ions and water) matter changes in skeletal muscles of the postnatal rat. The data I accumulated continued to fill me with excitement and concern. It was becoming next to impossible to explain the findings in the conventional way.

"Within six months after my having said so in the first major publication of the findings, I was told my funding was terminated '...in order to make more money available for younger researchers.' A quick check of the published records, showed that two of the 'younger researchers' were 1) my mentor at Hopkins and 2) a Nobel Laureate—then retired. These were exciting times, because our findings could be explained by two theories that differed in the assumptions made about the physical properties of Ions and water within cells. Proponents of conventional wisdom had stated that water is water is water! The proponents of our view had demonstrated that the physical state of water in biological systems varies with the physiological and pathophysiological states of the tissues. The latter discovery has been corroborated in many studies, including some that served as a test of the seemingly preposterous idea that the human body could be imaged by capturing the physical properties of water in space and time. We now know this technology as magnetic resonance Imaging (MRI). (Needless to say, these fundamental enquiries into the physical state of water and ions in living cells involved much fruitful collaboration. Primary among these were my associations with Harold E. Rorschach, Gilbert N. Ling, James S. Clegg, William Negendank, Miklós Kellermayer, Raymond V. Damadian, Walter Drost-

Hansen, Buford Nichols, and many, many more. Then, there were also a number of students and postdocs from around the world.) In the early 1980s my work with inorganic matter came to the attention of The United Nations Educational, Scientific, and Cultural organization (UNESCO), and I was invited to join the Expert Committee on Molecular and Cell Biophysics for the Scientific Cooperation Bureau for the European and North American Region, on which I served from 1983 to 1988. From 1985 to 1988 I served as co-chairman (with Professor Vasilescu, Institute of Biophysics, Bucharest, Romania) of Project 3: The Role of Water and Ions in Molecular and Cell Biophysics. This was a lot of fun: we made numerous life-long friends, helped exchange ideas with scientists in the former Soviet Union and Eastern Europe, and, in some cases, helped keep science alive in some parts of the world in a difficult time during, and toward the end of, the Cold War. In sum, we found harmony in a multitude of cultures.

"You asked that I consider stating what I have learned and what I might wish to pass on to the younger generations of physiologists. The following is my attempt to do that. First, from time to time we believe we understand certain phenomena that occur in our universe. A large majority, in fact, may perceive this understanding as truth. Indeed, this perceived truth sometimes evolves into dogma. As Fleck pointed out: 'Once a structurally complete and closed system of opinions consisting of many details and relations has been formed, it offers enduring resistance to anything that contradicts it,' (Fleck, L. (1979) *Genesis and Development of a Fact*. Ed. by T. J. Trenn and R. K. Merton. Translated by F. Bradley and T. J. Trenn. The University of Chicago Press, Chicago). During the lifetime of such dogma, much useful and even crucial information from the past and present may be lost, forgotten, overlooked, or ignored. Information inconsistent with dogma is likely to be overlooked or dismissed because it is perceived to be a spurious observation inconsistent with (or irrelevant to) the popular paradigm of the time. When new ideas are 'born' and are associated with compelling new data, these ideas scream for a new synthesis of all data (old and new), yet the old ideas often remain. In most cultures throughout history, it is my observation that old ideas persist long after sound evidence dictates otherwise.

"Second, when new and exciting findings are reported, and, particularly, when these findings conflict with conventional wisdom, they are often referred to as controversial or are even 'overlooked' and/or suppressed. This seems to be a ubiquitous phenomenon across disciplines. In science, this is expected and should be anticipated. For example, because of an accumulated knowledge base (containing numerous implicit and explicit assumptions), we think we 'know' that certain results are not possible. Thus, to consider them possible is, at best, politically incorrect or, certainly, poor 'grantsmanship.' The third and final notion is one that I find difficult to accept, but I find abundant evidence for it and I frequently experience it. Walter Kaufmann states in the prologue to his English translation of Martin Buber's book, *I and Thou*—'Mundus Vult Decepi: The world wants to be deceived. The truth is too complex and frightening; the taste for truth is an acquired taste that few acquire' (Page 9, Charles Scribner's Sons, 1970).

"Finally, my conclusion to this ongoing career, is best summarized by Omar Khayyam XXVII

Myself when young did eagerly frequent

Doctor and Saint, and heard great argument

About it and about: but evermore Came out by the same door wherein I went.

With them the seed of wisdom did I sow,

And with my own hand wrought to make it grow;

And this was all the Harvest that I reap'd—

"I came like Water, and like Wind I go."

"With regard to your interest in knowing what I'm currently doing, the answer is simple. I am pursuing three major goals: 1) continuing studies on the role(s) of cellular water in health and disease; 2) evaluating the therapeutic value of magnetic fields in the human; and, 3) establishing our company (Petroclean, L.L.C.) which is dedicated to the elimination of petrochemical contamination in our soil and water and to increasing the productivity of our land.'

Letters to Vernon Bishop

John Spitzer writes: "Thank you for the good wishes for my 80th birthday. Taking stock on this occasion, I have to conclude that I have been blessed in

both my professional endeavors and my private life, especially if I recall arriving as an immigrant 56 years ago with 25 cents in my pocket. My 52-year membership in APS and other scientific society memberships provided me with satisfying intellectual homes. Being surrounded by students, fellows and colleagues with a variety of backgrounds and experiences had been very stimulating. Serving as a faculty member at Hahnemann Medical College for 17 years and as the Department Head of a great faculty for 27 years at the LSU Health Sciences Center in New Orleans had been a wonderful experience. Directing two Institutional Training Grants, a Program Project and a Center Grant (in addition to RO1s) had been a great challenge and a lot of fun. My private life has been made wonderfully happy by Judy, my wife of 56 years, our two children and their families. I say this in spite of some quite rude bumps along the road. Hurricane Katrina was responsible for the most recent one, by inundating our one-story home with six to eight feet of dirty, infested, 90+ degree water for about two weeks, thus, destroying the contents and our belongings. This event made me a very experienced evacuee/refugee/DP (displaced person), as it happened for the third time in my life that I became such a person. (The first time I lost everything was during the Shoah, courtesy of Nazi Germany, the second time, a few years later when leaving Communist Hungary.) After Katrina we relocated back to the Philadelphia area, where we had lived prior to moving to New Orleans in 1973. Thankfully, the presence of our children and their families considerably ameliorated the trauma of rebuilding our lives under these downsized conditions. So now we are enjoying the love of our family, the company of some friends, the cultural opportunities that Philadelphia offers and some traveling, while keeping an anxious eye from a distance on our former Department's struggles to recover from a very bad nightmare."

Werner P. Koella writes: "Thank you ever so much for your kind letter of April 3 and the informing formulary of the American Physiological Society. Both reached me five days before I turned 90 years old. I greatly enjoyed receiving news from my most 'important' professional society. But I am afraid that I cannot give much interesting news con-

cerning my 'doings.' Since my eyesight is not too good anymore, I cannot read anything that would inform me about the program in Physiology. But I enjoy the news I hear from my colleagues. But I hear well enough to listen (for two to three hours) to music and I still play the accordion. In addition, I watch television (news, scientific presentations and, occasionally, a movie). And, occasionally, I talk (physiological) business with one of the few colleagues I still have contact with. I started to reduce my 'physiolog-

ical science activities' at about the age of 76, when I was 'reduced' in my bodily and mental capabilities by a coronary mishap. But the bodily capacities came back to some extent, and I still could maintain to a certain extent my mode of daily walking. I still walk about a mile (or a little more) every day. Then I occasionally 'play' with one of my three grandsons or with my granddaughter. As to walking in my first 25 years of retirement, I walked a little bit more than 15,000 miles. That kept me in good

shape.

"So, I can say that I had altogether, a good, if not a very happy, retirement. I still quite often think of all the good things I could enjoy during my professional life, in particular the 17 years I worked in the USA (1951-1968).

"PS: In 1972 I founded the European Sleep Research Society and acted as its first president till 1989. In 1988, I published a monograph: *The Physiology of Sleep.*" ❖

Moving?

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September 3-5

Essential and Non-Essential Metal Metabolism in Aquatic Organisms, London, England. *Information:* Email: k.steel@sebiology.org; Internet: <http://www.sebiology.org/Meetings/pageview.asp?S=2&mid=93>.

September 5-6

Cardiac Electrophysiology: With a Special Celebration of the Centenary of the Discovery of the Sinoatrial and Atrioventricular Nodes, Manchester, United Kingdom. *Information:* Nick Boross-Toby, Head of Events, The Physiological Society. Tel.: +44 (0)207 269 5718; Fax: +44 (0)1207 269 5720 Email: meetings@physoc.org; Internet: <http://www.physoc.org/meetings/man2007.asp>.

September 5-9

Mouse Molecular Genetics, Cambridge, United Kingdom. *Information:* Pam Garland, Conference Organiser, The Wellcome Trust Genome Campus, The Wellcome Trust Conference Center, Hinxton, Cambridgeshire, CB10 1RQ. Tel.: +44 0 1223 495111; Fax: +44 0 1223 495023; Email: p.garland@wtconference.org.uk; Internet: <http://firstcontact.hinxton.wellcome.ac.uk>.

September 11-14

Joint meeting of The Physiological Society, The Slovakian Physiological Society and FEPS, Bratislava, Slovakia September 18-23 International Workshop - Molecular physiology of membrane transport and cellular signalling, Yaremche, Ukraine. *Information:* David G Bennett, The Physiological Society. Tel.: +44 (0)207 269 5712; Fax: +44 (0)1207 269 5720 Email: meetings@physoc.org; Internet: <http://www.physoc.org/international/yaremche2007/>.

September 16-19

10th International Conference on Endothelin, Bergamo, Italy. *Information:* Francesca Di Fronzo, Mario Negri Institute for Pharmacological Research, via Gavazzeni, 11-24125 Bergamo, Italy. Tel.: +39 035 319888; Fax: +39 035 319331; Email: difronzo@et-10.it; Internet: <http://www.et-10.it>.

September 18-22

VIIIth World Congress on Neurohypophysial Hormones, Regensburg, Germany. *Information:* Internet: <http://www.uni-regensburg.de/wcnh2007>.

September 19-22

7th Annual Meeting of the Safety Pharmacology Society, Edinburgh, Scotland. *Information:* Internet: <http://209.183.221.48/am2007/index.asp>.

September 23-27

9th Annual International Symposium on Mutation Detection, Xiamen, China. *Information:* HUGO, 144 Harley St, London W1G 7LD, UK. Tel: [44] (20) 7935 8085; Fax: [44] (20) 7935 8341; Email: hugo@hugo-international.org; Internet: <http://www.hugo-international.org>.

October 18-21

AACVPR 22nd Annual Meeting, Salt Lake City, UT. *Information:* AACVPR, 401 North Michigan Avenue, Suite 2200, Chicago, IL 60611. Tel.: 312-321-5146; Fax: 312-527-6635; Email: aacvpr@aacvpr.org; Internet: <http://www.aacvpr.org/>.

December 17-18

Renal Cortex: Physiological Basis of Glomerular and Tubular Diseases, Bristol, United Kingdom. *Information:* Nick Boross-Toby, Head of Events, The Physiological Society. Tel.: +44 (0)207 269 5718; Fax: +44 (0)1207 269 5720 Email: meetings@physoc.org; Internet: <http://www.physoc.org/meetings/bris2007.asp>.

2008

January 30–February 3

Developmental Vascular Biology Workshop III, Monterey, CA. *Information:* Bernadette Englert, Tel: (301) 760-7745; Email: <mailto:bernadette@navbo.org>; Internet: <http://www.navbo.org/dvb08Workshop.htm>.

2008 Alan T. Waterman Award Call for Nominations

The Alan T. Waterman Award is the highest honor awarded by the National Science Foundation. Since 1975, when Congress established the award to honor the agency's first director, the annual award has been bestowed upon individuals who have demonstrated exceptional individual achievement in scientific or engineering research of sufficient quality to place them at the forefront of their peers.

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Candidates should have demonstrated exceptional individual achievements in scientific or engineering research of sufficient quality to place them at the forefront of their peers. Criteria include originality, innovation, and significant

impact on the field.

Nominations will be accepted from July 1, 2007 through December 7, 2007.

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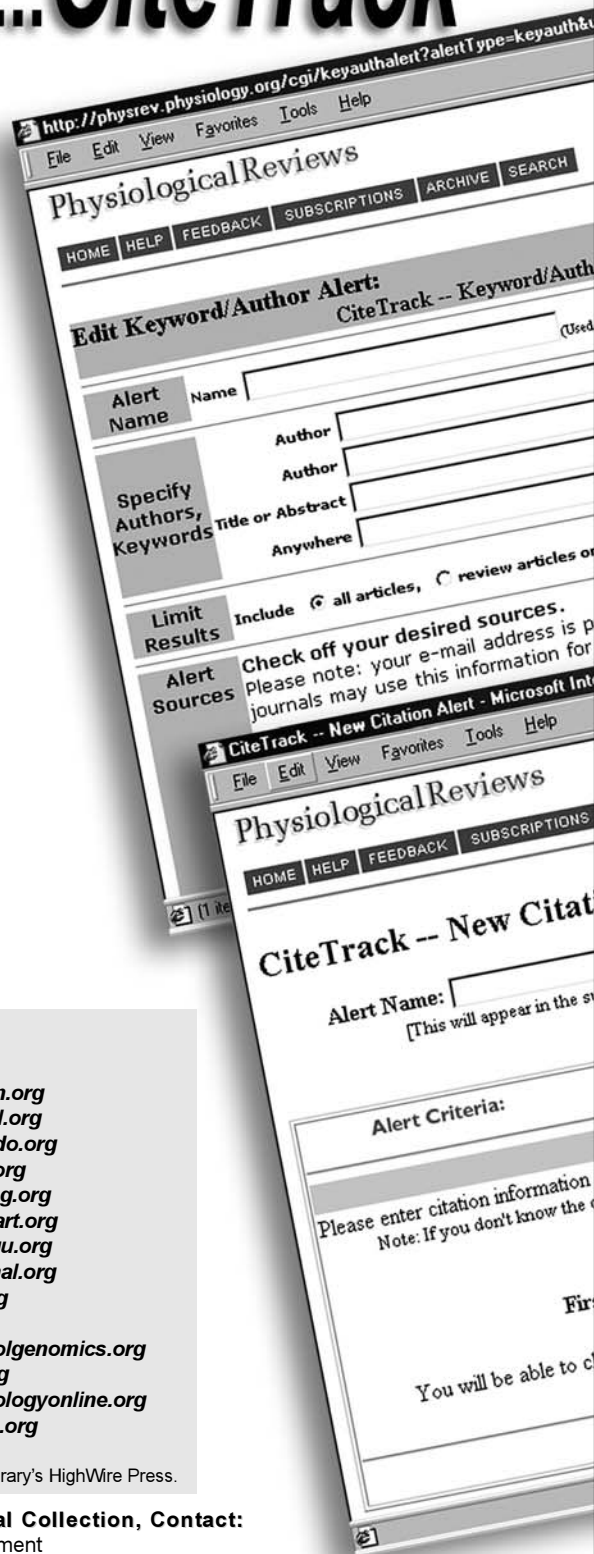
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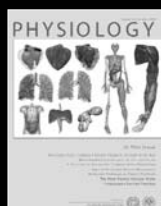
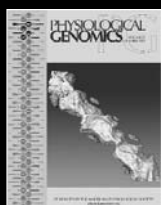
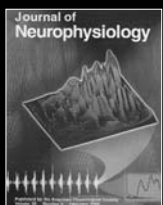
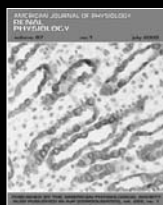
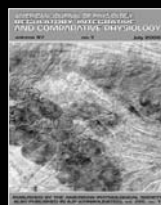
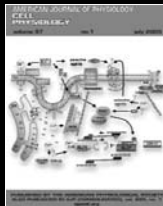
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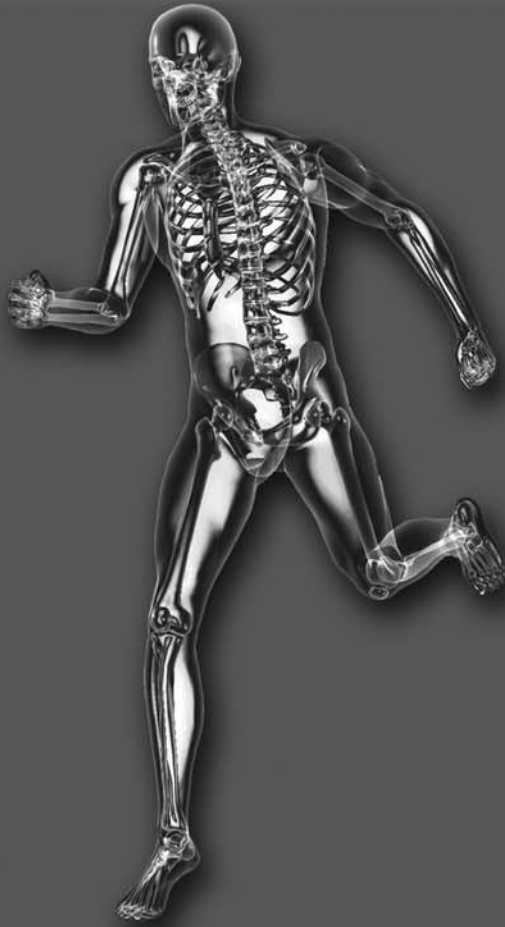
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17. LIST YOUR MOST SIGNIFICANT PUBLICATIONS, WITH EMPHASIS ON THE PAST 5 YEARS (Publications should consist of manuscripts in peer-reviewed journals. List them in the same style as sample below.)

Sample: MacLeod RJ and Hamilton JR. Volume Regulation initiated by Na⁺-nutrient cotransport in isolated mammalian villus enterocytes. Am J Physiol Gastrointest Liver Physiol 280: G26-G33, 1991.

18. DOCTORAL DISSERTATION TITLE (if applicable):

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