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Integrating the Life Sciences from Molecule to Organism

The Physiologist

INSIDE

The Walter C. Randall Lecture: Embryos, Cloning People and Stem Cell Research

Bob Williamson,
University of Melbourne and 2005 Randall Lecturer

I was privileged to give the Walter C. Randall Lecture to the American Physiological Society at the IUPS/APS meeting in San Diego in April of this year, and the first part of that lecture was published in the last issue of *The Physiologist*.

In that issue, I argued that medical research is an inherently ethical pursuit. We can all be proud that we work in medical research. We try to solve problems so that healthy people remain healthy, and ill people become better. Sometimes we have to accept that a disease is too damaging to a person, and a situation is beyond help, but we always try, through research, to improve the state of humankind.

Most of the time, our choices in research are simple. If we cannot solve a problem, it is because we do not have the resources, or the technology, or the skills. Occasionally, however, trying to solve a problem raises ethical issues. Simple ethical issues are solved equally easily—if something is thought to be unethical, and there are no benefits to be gained, just don't do it!

Problems arise, however, when there are conflicts between different acceptable ethical principles. Usually the conflict is between wanting to commence or continue research that might help to treat or prevent a disease, but by so doing perhaps cause harm to another individual, or work in a way that appears to lack justice or to disrespect a person's autonomy. The conflict is magnified if the research takes place in a field that is moving very quickly. Embryo and stem cell research poses just such problems to our medical research community.

Until Dolly was cloned, there was a delightful simplicity to defining the beginning of a new life. Mammalian reproduction, it was thought, began when a sperm hit an egg. This is the clear moment in social time that links sex, love and a baby. It is a very significant moment biologically, as it represents the start of a new entity that can implant in a womb and develop to give a fetus and eventually a baby. It meets the third criterion of identity, a new genetic person different from its parents owing to DNA meiosis followed by recombination, scrambling the parents' genomes into a new and unique genome.

Most people believe that fertilization is at least *one* key moment, and many brought up in the Christian traditions (particularly Roman Catholics) would propose it is *the* key moment. In scientific terms, it combines three important features: social, genetic and biological individuality. Even those like myself who argue that we should accept a more gradual time scale for acquisition of the respect due to a living human being over the nine months of pregnancy respected the simplicity of fertilization as a key event.

Dolly changed all that. Dolly demonstrated that *any* cell in the human body, not just an embryo created by fertilization, could, in principle, give rise to a baby if treated in a certain manner. It separated biological individuality from social and genetic individuality.

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A human cell in a Petri dish (a diploid somatic cell, in scientific terms) is due little if any respect, and is certainly not an embryo (though it has the potential to become an embryo). We kill our cells all the time, when we wash our hands or have a nosebleed or brush our teeth. Yet if that cell were to be treated and implanted so as to give a child by reproductive cloning, the child would be due respect as a person. When, in the absence of fertilization, the absence of a sperm or an egg, is that respect acquired?

Stem cell research matters. While adult tissue contains stem cells, only very early stem cells, such as those obtained from embryos (ES cells), have maximum capacity to divide infinitely and give rise to all types of tissue. One way to obtain ES cells is from so-called surplus embryos, no longer needed after successful IVF pregnancies. However, this does not allow ES-equivalent cells to be made from those with multifactorial diseases such as diabetes or SLE, nor stem cells that are immunologically identical to a patient.

An alternative way to obtain ES cells is to place a somatic cell nucleus into a human egg from which the genes have been removed. This somatic cell, created by nuclear transfer (SCNT), can be given an electric shock which allows it to develop with some embryo characteristics, and stem cells can be harvested from it. However, it is not an embryo, because there is no sperm, no genetic identity, no social context. It is only if it is placed in the medically prepared womb of a woman at an appropriate time that it has even a very small chance of developing into an embryo, a fetus and a baby.

At present, most attempts at "Dolly cloning" (whether for reproduction in animals, or to obtain ES cells in humans) use an enucleated egg. However, it is already clear that it soon will be possible to derive mammalian clones without either eggs or sperm, by direct treatment of somatic cells. This blurs the boundary between embryo and somatic cell still further. Implantation is a better time to define the start of the existence of the "embryo deserving respect," because it combines the intention to embark towards reproduction with the possibility that a baby will result without further laboratory intervention.

We have lost the innocence of being able to offer a moment in time (fertilization) that marks the beginning of a new life. The stem cell made by nuclear transfer is just another somatic cell in culture, with the original diploid genome of the person from whom it was obtained. We need these stem cells to find new treatments for cystic fibrosis, ataxia, heart disease and cancer.

The potential for stem cell research is great. At this time, we do not know which type of human stem cell will be most useful, ES or cord blood or adult. It is probable that some types of cells will be best for some purposes, others for different purposes. We need to achieve a consensus on the best way forward, starting with respect for all views and for the interests of everyone, including patients with the disorders under study.

Everyone agrees that cloning people is unethical, because of the medical hazards and the loss of autonomy for the person cloned. There must be strict, internationally agreed rules to stop artificial cell constructs being put into the womb. However, it is also unethical to ignore opportunities to carry out research that could benefit many sick people. A cell from you or me in a lab dish is just that, and does not pose an ethical dilemma as long as it stays there! ❖

Iowa Physiological Society Meeting Held at Herbert Hoover Presidential Library and Museum

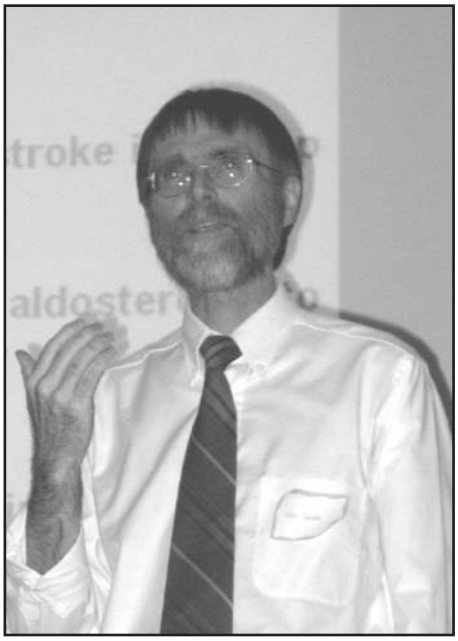
This year's annual meeting of the Iowa Physiological Society (IPS) was held on Sunday and Monday, May 8-9, 2005. We are especially thankful to the Herbert Hover Presidential Library and Museum in West Branch, IA that provided us with an outstanding venue for the meeting. More than 60 physiologists from Iowa and the neighboring states attended the meeting. A total number of 28 abstract submissions were received. These numbers were slightly higher than those for attendance and abstract submissions in the previous year and indicate that the Iowa Physiological Society gains interest and popularity among researchers and teachers in the field of physiology in Iowa and the neighboring states. The large number of abstract submissions allowed for a very exciting and stimulating scientific program that included three keynote lectures, three featured presentations, eight oral presentations, and 20 posters.

The scientific program started on Sunday afternoon with oral presentations given by the Student Trainee Award Finalists. Following the first poster session, a guided tour through the Herbert Hoover Presidential Library and Museum was offered. After an exciting tour through history and the achievements of President Hoover, the Finalists for the Postdoctoral Trainee Award gave their oral presentations. A second poster session ended the scientific program of the first meeting day.

Major goals of the annual IPS meeting are to bring together scientists and teachers in the field of physiology, to enhance scientific exchange, and to provide an opportunity to build new friendships and collaborations. The social evening on Sunday evening truly reflected this spirit. The park area of the Hoover Library allowed for a barbecue cookout and volleyball activities. Many participants enjoyed discussing research activities and teaching strategies in this informal setting.

Monday's presentations were focused on "Cerebrovascular Function and Stroke." Following the Welcome Address by the Director of the Herbert Hoover Presidential Library, Timothy Walch, the APS Keynote Lecture was presented by **Richard Roman** from the Medical College of Wisconsin, Milwaukee, WI. The topic of his lecture was "Role of Eicosanoids in the Pathogenesis of Ischemic and Hemorrhagic Stroke." Roman's lecture was certainly one of the major highlights of the meeting as indicated by the extended discussion and stimulating comments that followed the lecture.

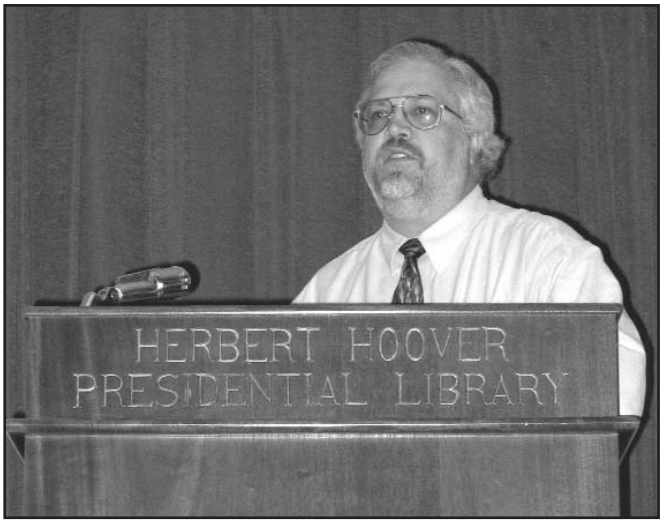
For the first time, the Louis E. Alley Memorial Lecture was held in conjunction with the annual IPS meeting. This lecture is made possible by a generous donation by Alley's family through the Department of Exercise Science at The University of Iowa. Alley was the Chair of the Department of Exercise Science at The University of Iowa from 1960-1978. Alley was particularly noted for innovations in graduate education, one of the major missions of the Iowa Physiological Society. **John S. Smeda** from the Memorial University of Newfoundland, St. John's Canada delivered this year's Louis E. Alley Memorial Lecture. The title of his presentation was "Alterations in Cerebrovascular Function Associated with Hemorrhagic Stroke."



John Smeda delivering the Louis E. Alley Memorial Lecture.

The third Keynote Lecture was sponsored by the Department of Exercise Science at The University of Iowa. The speaker was **Nicanor I. Moldovan** from the Dorothy M. Davis Heart and Lung Research Institute, The Ohio State University, Columbus, OH. His presentation was entitled "Monocytes/Macrophages as Architects of Neovascularization."

Richard Roman (right) discussing posters with students.



Frank Faraci presenting his Featured Presentation.

In addition, Featured Presentations around the theme of "Cerebrovascular Function and Stroke" were presented by **William T. Talman** (Department of Neurology and VAMC, The University of Iowa, Carver College of Medicine), **Frank M. Faraci** (Department of Internal Medicine, The University of Iowa, Carver College of Medicine), and **Gina C. Schatteman** (Department of Exercise Science, The University of Iowa).

Other highlights on Monday were the third poster session and the announcement of the Trainee Award Winners. One award each was given for the best student (undergraduate or graduate students) and the best postdoctoral presentation. The Trainee Award Committee selected the winners based on the quality of the abstracts, the oral presentations on Sunday, and the ability to answer questions from the audience. The winner for the Student Award was **Elizabeth S. Aunan** (Department of Exercise Science, The University of Iowa, mentor: **Kevin C. Kregel**). Her presentation was entitled "Reduced Tolerance to Heat Stress with Age: Are Cytokines and Endotoxin Involved?" The winner of the postdoctoral competition was **Rasna Sabharwal** (Department of Internal Medicine, The University of Iowa, mentor: **Mark W. Chapleau**). Her abstract was entitiled "Subunits of Acid-sensing Ion Channels (ASICs) Differentially Mediate Baroreceptor and Chemoreceptor Reflexes."

Nicanor Moldovan delivering his Keynote Lecture.

At the business meeting on Sunday evening, the new President of the IPS, **Scott H. Carlson** (Department of Biology, Luther College, Decorah, IA) officially took over the presidency of the Society. **Ulla Kopp** (Department of Internal Medicine, The University of Iowa, Carver College of Medicine) resigns from the position as treasurer and secretary this year. I would like to take this opportunity to thank her for the time and effort as our treasurer and secretary. She certainly was the driving motor of the Society for many years and the increasing success of the Society would not have been possible without her leadership.

Taken together, the meeting can be considered a great success. A high number of abstract submissions by trainees, outstanding keynote lectures, and informal scientific exchange among physiologists in the region shaped the spirit of this year's annual meeting. I am sure that many new friendships and collaborations were initiated and that all participants are looking forward to meet again at the 2006 annual meeting of The Iowa Physiological Society. ❖

Harald M. Stauss
Iowa Physiological Society

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.

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. Nomina-tions 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.

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Introducing William J. Martin

On April 5, 2005, **William J. Martin** succeeded **J. Michael Wyss** as Chair of the Steering Committee for the Central Nervous System Section. Prior to becoming Chair, Martin was a member of the Liaison with Industry Committee and served on the CNS section Steering Committee since 2003. Martin is currently a member of the Animal Care and Experimentation Committee for which he leads a working group on pain and distress. In addition to his participation in APS committees, Martin has mentored NIDDK Minority Travel Fellows at the annual Experimental Biology meeting and serves as a peer reviewer for numerous scientific publications, including the *Journal of Neurophysiology*.

Martin is currently a Senior Director in the department of Pharmacology at Theravance Inc., a small molecule drug discovery and development company based in South San Francisco, CA. After completing his undergraduate studies at Swarthmore College, Martin earned his PhD in Experimental Psychology from Brown University, in 1995, in the laboratory of. J. Michael Walker. He carried out his postdoctoral research at the Keck Center for Integrative Neuroscience at the University of California at San Francisco in the departments of Anatomy and Physiology with **Allan I. Basbaum**. At UCSF, Martin investigated nociresponsive neurons in mouse spinal cord dorsal horn and their contribution to pain transmission and modulation. With his colleagues at Brown, and later UCSF, Martin conducted seminal experiments on the electrophysiological actions of cannabinoids within nociceptive pathways in the brain and spinal cord.

In 1999, Martin joined the department of Pharmacology at the Merck Research Laboratories of Merck and Co., Inc. where he continued to pursue his interest in understanding and identifying novel treatments for persistent pain syndromes, such as neuropathic pain. Martin has also been recognized for his research on the genitourinary system. Within this context, he and his colleagues were first to advance the notion that melanocortin 4 receptors modulate erectile activity in rodents.

In addition to APS, Martin remains actively involved in the Society for Neuroscience and the International Association for the Study of Pain.

William J. Martin

As Chair, Martin plans to work with CNS Section Steering Committee members and Section affiliates to help the CNS section realize its full potential within the APS. During his tenure, he plans to focus on several key areas. First, ensure that CNS section affiliates are represented proportionally on APS committees. **Bill Yates**, the Committee on Committees Representative (and Secretary-Treasurer), encourages section affiliates to consider a self-nomination for appointment to a committee. Second, inspire section affiliates to participate in society conferences and meetings by promoting programming that is of significant interest. **Ann M. Schreihofer** chairs the Section Program Committee, which consists of **Timothy S. McClintock** and **Steven W. Mifflin**, and represents the Section on the Joint Programming Committee. In addition to Featured Topics, the Section currently organizes the Joseph Erlanger Distinguished Lectureship presented at the annual Experimental Biology meeting. This Distinguished Lecture, named after the American physiologist Joseph Erlanger (1874-1965), recognizes significant advances in the understanding of the central nervous system. Ideas for future Featured Topics, Workshops and Special Symposia are always welcome. Third, continue to recognize the importance that younger members play in the future of the CNS section and of the APS in general. The APS is uniquely positioned amongst scientific societies to support young investigators whose research interests include the CNS. Each year, the Awards Subcommittee, comprised of Ida J. **Llewellyn-Smith** and **Adian K. Curran**, selects CNS Section members to receive the New Investigator Award, Van Harreveld Memorial Award and Research Recognition Award. These awards recognize investigators at various early stages of their career. **Francis J. Golder** serves as Trainee Advisory Committee Representative and is open to learning how the CNS section can better serve the needs of young investigators. To this end, the Neural Control and Autonomic Regulation, Cardiovascular and CNS sections co-sponsor the Donald J. Reis Memorial Trainee Symposium, an abstract-driven Featured Topic that highlights outstanding submissions by trainees affiliated with any of these sections. Fourth, continue to engage investigators who conduct their research in an industrial setting. The study and treatment of CNS disorders represents one of the most important next waves of scientific discovery; a significant portion of this research is carried out by scientists working in industry. The CNS section and APS will benefit from these scientists' full participation. **Michael F.A. Finley** is our representative to the Liaison with Industry Committee. Fifth, recognize that the strength of the CNS Section derives, in part, from the publication of journals that are important to section affiliates including the *Journal of Neurophysiology* for which **Dora E. Angelaki** serves as an Associate Editor and Publications representative to the CNS section. Strong communication between relevant journals and the CNS section stands to benefit both. Martin plans to continue working closely with former chair, **Wyss**, and hopes that you will join him in promoting committee representation, meeting participation and young investigator support and development of all CNS section affiliates of the APS. Additional information about the CNS Section, including contact information Steering Committee members, is available in the Section Newsletter which is posted on the APS website. ❖

Introducing Pamela K. Carmines

Pamela K. Carmines was elected Chair of the Renal Physiology Section and assumed duties in April 2005. An APS member since 1982, she was Treasurer of the Renal Section from 1991 to 1994. She served on the APS Membership Committee from 1997 to 1999, and was the Renal Section representative to the Committee on Committees from 2000 to 2002. A charter member of the Nebraska Physiological Society, she served terms as Councilor (1998-1999) and President (2001-2002) of that organization.

Since 2001 Carmines has been Associate Editor of the *AJP: Renal Physiology*. She has also served on the editorial boards of the *AJP: Regulatory, Integrative & Comparitive Physiology* and *Hypertension*. She served three-year terms as a regular member of the Veterans Administration Merit Review Board for Nephrology and the American Heart Association Cardiorenal Review Committee. In addition, she has been an ad hoc reviewer for several NIH Study Sections and has served on Special Study Sections. From 1998 to 2001, she sat on the Executive Committee of the American Heart Association Council on Kidney in Cardiovascular Disease and edited that group's newsletter. She currently serves on the Research Committee of the American Heart Association Heartland Affiliate, and sits on the Board of Directors of the National Kidney Foundation of Nebraska.

A native of Virginia, Carmines earned a BS degree from Longwood College with majors in Chemistry and Biology. She received her graduate training in the Department of Physiology at the Indiana University School of Medicine, working under the tutelage of **George Tanner**. After earning the PhD degree in 1982, she pursued postdoctoral training with **Gabriel Navar** at the University of Alabama at Birmingham.

Pamela K. Carmines

Carmines was promoted to Research Instructor and to Research Assistant Professor at UAB, before accepting a position as Assistant Professor of Physiology at the Tulane University School of Medicine in 1988. She was appointed Associate Professor of Physiology & Biophysics (now Cellular & Integrative Physiology) at the University of Nebraska Medical Center in 1993, and was promoted to Professor in 1997.

Carmines' research interests focus primarily on regulation of renal hemodynamics, ranging from the integrative level (encompassing endothelial and epithelial influences on renal arteriolar tone) to studies of the intracellular signaling events evoked by angiotensin II in pre- and postglomerular microvascular smooth muscle cells. Her laboratory has also explored the deleterious impact of type 1 diabetes on renal function, including both the vascular and epithelial consequences of hyperglycemia and oxidative stress. She has received several accolades in recognition of her research and service. She was named an Established Investigator of the American Heart Association in 1990, and received the Young Scholars Award of the American Society of Hypertension in 1996. Most recently (2001), she received an Alumni Achievement Award from Longwood College.

During her tenure as Chair, Carmines hopes to build on the tradition of the Renal Section as one of the strongest and most prominent sections of the APS, despite its relatively modest size (~1,000 members; for comparison, Cardiovascular and Cell & Molecular sections each have ~3,000 members). One means to this end is to update the Section Operating Procedures ("bylaws') to comply with current APS governance and policies and to reflect the actual procedures as they have evolved over recent years. The committee structure of the Section will also be clarified, making information about the composition, charge and operating procedures of each committee readily available to the membership on the website (http://www.the-aps.org/sections/renal). The intent of this process is inform Section members about the nature of the standing committees and ad hoc committees responsible for accomplishing the primary activities of the Section (programming, awards, etc.) Carmines also hopes to develop strategies for promoting the advancement of trainees from their temporary status as potential award recipients to the situation in which they emerge as a "youth movement" that plays a direct role in the myriad activites of the Section. The overall goal is to ensure that the Renal Section operates as a "well-oiled machine," thus facilitating participation of members in Section and Society activities. With the help of an enthusiastic and dedicated Steering Committee, and with welcomed input and feedback from the Secton membership, there should be no significant impediment to accomplishing this goal. ❖

Total Membership **10,683**

Distribution by Employment
(7,665 respondents)

	No.	*%*
Physiology Departments	1,936	25.3
Administration	30	0.4
Clinical	1,131	14.8
College or University	2,184	28.5
Commercial Companies	204	2.7
Community College or 2-Year Institution	3	0.0
Dental Schools	32	0.4
Government (Inc. V.A)	25	0.3
Government (Inc. V.A.)	298	3.9
High School	5	0.1
Hospitals and Clinics	314	4.1
Institutes and Foundations	202	2.6
Medical Schools	511	6.7
Not-for-Profit Association	9	0.1
Other Preclinical Depts.	442	5.8
Other, please specify:	53	0.7
Private Practice	31	0.4
Public Health and Graduate Schools	97	1.3
Retired	14	0.2
Univ College	1	0.0
Veterinary Schools	143	1.9

Distribution by Racial Background and Heritage (optional personal data)

	Total respondents
Alaskan Native	1
American Indian	10
Asian or Pacific Islander	823
Black	78
Hispanic	194
Multiracial	21
Other	33
White	5,033

Distribution by Earned Degree
(8,176 respondents—includes 806 individuals with multiple doctorate degrees)

PhD	6,348
MD	2,383
DVM or VMD	98
DSc or ScD	93
DrMed or DMSc	30
EdD	10
JD	3

Distribution by Gender
(optional personal data)

Male	7,145
Female	2,192

Distribution by Age
(optional personal data)

70+	1,379
60-69	1,414
50-59	2,013
40-49	2,102
30-39	1,820
20-29	891

Principle Type of Work
(7,169 respondents)

	%
Administration	3.9
Clinical	5.7
Research	79.2
Teaching	11.2

Distribution by Primary Section Affiliation
(7,526 respondents)

	%
Cardiovascular	24.2
Cell & Molecular Physiology	12.4
Central Nervous System	8.4
Comparative Physiology	4.3
Endocrinology & Metabolism	8.9
Environ. & Exercise Physiology	8.6
Gastro. & Liver Physiology	5.6
Neural Control & Autonomic Reg.	4.4
Renal	7.5
Respiration	10.2
Teaching of Physiology	3.0
Water & Electrolyte Homeostasis	2.5

Distribution by Group Affiliation
(4,821 respondents)

	%
Epithelial Transport	23.3
History of Physiology	13.4
Hypoxia	17.6
Members in Industry	7.5
Muscle Biology	25.8
Physiological Genomics	7.5
Translational Research	4.9

Distribution by Primary Specialty
(4,967 respondents)

	%
Anatomy	0.7
Biochemistry	1.6
Biomedical engineering	0.8
Biophysics	0.6
Cardiovascular	32.8
Cellular and tissue	5.1
Comparative physiology	3.3
Electrolytes and water balance	3.7
Endocrines	7.2
Environment	2.7
Exercise	2.5
Gastrointestinal	3.2
General physiology	0.1
Immunology	0.6
Lipids and steroids	1.0
Muscle	11.0
Neural control and autonomic reg.	0.8
Neurosciences	7.0
Renal	2.3
Reproduction	1.6
Respiration	8.3
Teaching	0.5
Transport	0.5
Other	0.7

APS Membership in The Americas

United States of America	8,314
Canada	503
Brazil	67
Mexico	38
Chile	20
Argentina	17
British West Indies	8
Peru	6
Venezuela	5
Jamaica	4
Colombia	1
Costa Rica	1
Honduras	1
Trinidad	1

US States with More than 100 Members

California	867
Texas	567
New York	539
Pennsylvania	427
Massachusetts	380
Ohio	379
Maryland	359
Illinois	352
North Carolina	262
Michigan	242
Florida	241
Missouri	217
Georgia	213
Wisconsin	198
Louisiana	174
Tennessee	174
Indiana	171
Virginia	170
Alabama	164
Colorado	164
New Jersey	163
Connecticut	160
Minnesota	153
Kentucky	144
Washington	124
Iowa	122
Arizona	118

APS Membership Outside The Americas
(countries with five or more members)

Japan	265
United Kingdom	191
Australia	143
Germany	121
France	94
Denmark	72
Switzerland	62
Nigeria	61

Italy	59
South Korea	56
Sweden	54
The Netherlands	53
Taiwan	50
Belgium	40
Israel	36
Spain	36
India	35
New Zealand	31
China	27
Turkey	26
Greece	25
Hong Kong	22
Norway	21
Thailand	12
Hungary	11
Ireland	11
Poland	10
Finland	9
Czech Republic	8
Portugal	8
Singapore	8
Austria	7
South Africa	7
Croatia	6
Lebanon	6
Russia	5
Slovenia	5
Ukraine	5

Other countries represented: Bangladesh, Belarus, Bosnia-Herzegovina, Bulgaria, Cyprus, Egypt, Iceland, Indonesia, Iran, Luxembourg, Malaysia, Pakistan, Philippines, Qatar, Macedonia, Romania, Saudi Arabia, Slovak Republic, Tanzania, United Arab Emirates, and Yugoslavia

Canadian Provinces with Five or More members

Ontario	223
Quebec	93
Alberta	72
British Columbia	51
Manitoba	22
Nova Scotia	11
Newfoundland	10
Saskatchewan	8

New Regular Members

***transferred from Student Membership**

Kolapo M. Ajuwon
Purdue Univ., LA
Amit Badhwar*
Lawson Health Res. Inst., ON, Canada
Ann-Marie Broome
Case Western Reserve Univ., OH
Amadou K.S. Camara
Med. College of Wisconsin
Jorge A. Carvajal
Pontificia Univ. Catolica De Chile, Chile
Kevin J. Cummings
Univ. of Calgary, AB, Canada
Bo Fernhall
Univ. of Illinois, Urbana
Marchel Gorselink
Numico Research, The Netherlands
Deming Gou
Oklahoma State Univ., OK
Daniel V. Hagan
Mercer Univ., GA
Brian T. Hawkins
Univ. of Arizona
Dirk M. Hentschel
Brigham & Women's Hosp., MA
Kazuo Hosoi
Univ. of Tokushima, Japan
Steven A. Kautz
Univ. of Florida
Glen Kenny
Univ. of Ottawa, ON, Canada
Zebulon V. Kenrick
Temple Univ., PA
Changkeun Kim
Korea Nat'l. Sport Univ., South Korea
Xiaohong Liu
Univ. of Pennsylvania
Bernardo Lopez-Cano
Medical College of Wisconsin
Nancy A. Lorr
Cornell Univ., NY
Christoph Lossin
Osaka Univ., Japan
Yi Long Ma
Univ. of Alaska, Fairbanks
Cina Maria Mack*
US EPA, NC
Daniel M. Merfeld
Harvard Medical School, MA
Sarah S. Milton
Florida Atlantic Univ., FL
Ramakrishna Mukkamala
Michigan State Univ.
Anne Monique Nuyt
Hopt Sainte-Justine Res. Ctr., Canada
Norma B. Ojeda
Univ. of Mississippi
Ibiyemi I. Olatunju-Bello
Univ. of Lagos, Nigeria
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David J. Perkel
Univ. of Washington
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Univ. of Toronto, Canada
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Univ. Elecro-Communications, Japan
Daniela M. Sartor
Univ. of Melbourne, Australia
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Univ. of Texas Medical Branch
Mark T. Sugalski
Southern Polytechnic State Univ., GA
David L. Tauck
Santa Clara Univ., CA
Wang Wang
National Inst. of Aging, NIH, MD
Simon L. Westbrook
Pfizer, United Kingdom
Richard J. Wood
Tufts Univ., MA
Jinzeng Yang
Univ. of Hawaii
Hiroyuki Yaoita
Fukushima Med. Univ., Japan
Lingling Zhang
Univ. of Arkansas
JianKun Zhu
Univ. of Texas, Dallas
Yunxiang Zhu
Univ. of North Carolina, Chapel Hill

New Affiliate Members

Jeffrey W. Varmette
J'VAR Corp., Glen Falls, NY
Karen Woolcock
Inter American Univ., Puerto Rico

New Student Members

Dickson Adesaoye
Ambrose Alli Univ., Nigeria
John E. Agho
Ambrose Alli Univ., Nigeria
Millicent O. Aisabor
Ambrose Alli Univ., Nigeria
Krishnamurthy Aishwarya
Jawaharlal Inst., India
Blair S. Ashley
The College of William & Mary, VA
Edlira Bashari
Univ. of Alabama, Birmingham
Joel Baumgart
Univ. of Virginia
Justin Boyer
Laurention Univ., Canada
Kathryn Brown
Univ. of Iowa
Melissa Burmeister
Louisiana State Univ., HSC
Lleri-Oluwa Busayo
Ahmaduu Bello Univ., Nigeria
Nai-Lin Cheng
Univ. of Alabama, Birmingham
Jason R. Cook
Grinnell College, IA
Pablo Costa
Florida Atlantic Univ.
Helle H. Damkier
Univ. of Arahus, Denmark
John Farmer
Univ. of Alabama, Birmingham
Kaushik Ghosal
Miami Univ., Ohio
Lauren L. Graham
Morehouse Sch. of Med., GA
Javier A.P. Gutierrez
Ponce Sch. of Med., PR
Roee Gutman
Tel Aviv Univ., Israel
Belinda Houghton
Univ. College, Cork, Ireland
Kevin Huang
Univ. of Alabama, Birmingham
Abdullahi Hussein
Ahmadu Bello Univ., Nigeria
Paul O. Inegbedion
Ambrose Alli Univ., Nigeria
Walid Kamoun
Univ. of North Carolina, Charlotte
Stephen C. Kolwicz
Temple Univ., PA
David Kosek
Univ. of Alabama, Birmingham
Megan Kozisek
Univ. of Nebraska Med. Ctr.
Hiu Yee Kwan
Chinese Univ. of Hong Kong
Temitope Lawal
Univ. of Lagos, Nigeria
Janne Lebeck
Univ. of Aarhus, Denmark
Jun Li
Univ. of Alabama, Birmingham
Rachel Lindstrom
Univ. of Colorado
Danielle Lodewyck
Northwestern Univ., IL
Abbey Maul
Univ. of Nebraska Medical Ctr.
Portia McCoy
Univ. of Alabama, Birmingham
Mary McCutchen
Univ. of Alabama, Birmingham
Will Mieding
Florida Atlantic Univ.
Aliyu Musa
Ahmadu Bello Univ., Nigeria
Manuel Navarro-Gonzales
John Curtin Sch. of Med. Res., Australia
Chih-Wen Ni
Georgia Inst. of Tech.
Rupiasih Nyoman
Univ. of Pune, India
Dragos Olteanu
Univ. of Alabama, Birmingham
Mackenzie M. Ott
Univ. of South Florida
Edward Parkin
Univ. of Arizona
Stefan Pasiakos
Univ. of Connecticut
Prashant Patole
Lugwig Maximillians Univ., Munich, Germany
Jeremiah J. Peiffer
Edith Cowan Univ., Australia
Anna Pishchulina
Univ. of Iowa
Carie Reynolds
Univ. of Florida
Mike Roberts
Baylor Univ., TX
Christopher Roybal
Univ. of New Mexico Sch. of Med.
Vaibhav Saini
Univ. of Alabama, Birmingham
Geoffrey O. Shafer
Case Western Res. Univ., OH
Faheem Shaikh
Univ. of Alabama, Birmingham
Amish Sham
Univ. of Alabama, Birmingham
Guillermo Silva
Henry Ford Hospital, MI
Brian Siroky
Univ. of Alabama, Birmingham
Amy J. Steig
Univ. of Colorado
Lee Stoner
Univ. of Georgia
Madelyn Stumpf
St. Louis Univ., MO
Lemuel W. Taylor
Baylor Univ., TX
Eleonora Tobaldini
Univ. of Milan, Italy
Uzoma Uzumefune
Ambrose Alli Univ., Nigeria
Kai Wang
Univ. of Alabama, Birmingham
Stephanie H. Wolfe
Univ. of South Florida
Alencia Woodard-Grice
Univ. of Alabama, Birmingham
Jing Yang
Univ. of Nebraska Med. Ctr.
Keturah Yusuf
Ahmadu Bello Univ., Nigeria
Xiaoli Zhang
Georgia State Univ.
Zhenghao Zhang
Univ. of Alabama, Birmingham

Recently Deceased Members

David A. Brodie
East Windsor, NJ
A.C. Bryan
Toronto, Canada
Horace W. Davenport
Ypsilanti, MI
Frederick D. DeMartinis
Phoenixville, PA
Noble O. Fowler
Cincinnati, OH
William F. Friedman
Los Angeles, CA
Ferdinand J.A. Kreuzer
Nijmegen, The Netherlands
Gillis La Roche
West Vancouver, Canada
Harry Lipner
Tallahassee, FL
Hortense S. Louckes-Davis
Pine Bluff, AR
A. Nichols Taylor
Winnetka, IL
C. Beecher Weld
Halifax, Canada
Jose A. Zanduaisky
Miami, FL

The Physiologist
Vol. 48, No. 6, 2005

Eighteen Teachers Attend APS Science Teaching Forum

At the end of July, the 18 Research Teachers from this year's Frontiers in Physiology and Explorations in Biomedicine Fellowship programs gathered at the Airlie Center in Warrenton, VA. During this intensive workshop week, the Research Teachers (RTs) explored inquiry- and equity-based teaching strategies, how to integrate technology into their classroom and the use of animals in teaching and research. The RTs participated in numerous hands-on laboratory and web-based activities, shared their summer research experiences, evaluated their current teaching techniques, and collaboratively developed strategies to implement teaching methods promoted by the National Science Education Standards. The RTs also started developing their own hands-on, inquiry-based science activities. The teachers left the Airlie Center exhausted but pleased with what they had learned and the vibrant collegial network that had formed over the week.

Coming from all over the United States, the 18 2005 Research Teachers gathered at the end of July at the Airlie Conference Center in Warrenton, VA for the 2005 Science Teaching Forum.

Mentor/Instructors are former Research Teachers who, having participated in the fellowship program, are great sources of information and encouragement for the group: Bruce Dudek, Louise Harwell, Tonya Smith, Cathy Box and Margaret Shain.

The 2005 RTs spent the most of the summer conducting research in APS-member laboratories, learning first-hand how the research process works. Over the last 15 years, the APS has partnered with many of the nation's leading biomedical academic, private, and government research facilities to provide research opportunities for over 300 teachers. The Frontiers in Physiology and Explorations in Biomedicine Professional Development Fellowship programs seek to build ongoing connections between science instructors and the biomedical research community. The summertime workshop and research experience are components of the competitive yearlong Fellowships.

In April the RTs will attend the Experimental Biology meeting in San Francisco, CA, to further their science experiences and learn about the latest life-science research findings. Many RTs will present their own research findings and/or activities at poster sessions.

The Frontiers Fellowship awardees teach at middle and high schools across the United States. Frontiers in Physiology is a program of the APS, and is sponsored by APS, the National Center for Research Resources (NCRR) Science Education Partnership Awards (SEPA), and the National Institute of

Katrenia Hosea-Flanigan, Ginna Barreda Myers and Silas Counts demonstrate a classroom model that explores the relationship between exercise and oxygen and carbon dioxide clearance.

Toni Lafferty, Tara Goetschkes and Jessica Tiatia explore and evaluate websites to incorporate into classroom labs and lessons.

Rudy Ortiz and Andrea Gwosdow joined the 2005 Research Teachers, Mentor/Instructors and APS Education Office staff for the week long workshop at the Airlie Center. As Physiologists-in-Residence, Gwosdow and Ortiz played key roles in explaining the physiology content in the labs and serving as resources in the teachers' lab/lesson development.

Diabetes and Digestive and Kidney Diseases (NIDDK) at the National Institutes of Health.

The Explorations in Biomedicine Fellowship is sponsored by APS and the National Institute of General Medical Sciences (NIGMS)/Minority Access to Research Careers (MARC) Program. Explorations RTs teach primarily Native American students at middle and high schools, and tribal colleges on Indian reservations.

Mentors and Curriculum Development: Deepening the Learning

Another vital component of the week-long Professional Development Workshop is the guidance provided by the Mentor/Instructor team composed of former RTs and Physiologists-in-Residence. During the workshop week, the Mentor/Instructors facilitated sessions using APS curriculum units and worked with the RTs one-on-one as they developed their own lab/lessons. The Mentor/Instructors work with the 2005 RTs throughout the Fellowship year via email and online activities.

Returning Mentor/Instructors were: **Cathy Box**, Tahoka Middle School in Tahoka, TX and **Margaret Shain**, Our Lady of Perpetual Help Jr. High School in New Albany, IN. Joining the Mentor team were **Bruce Dudek**, St. Labre Catholic Indian School in Ashland, MT; **Louise Harwell**, Eastside High School in Covington, GA; and **Tonya Smith**, Southeast Middle School in Hopkins, SC.

APS Members Serve as Physiologists-in-Residence

During the 2005 Science Teaching Forum, two dynamic physiologists served as Physiologists-in-Residence: **Andrea Gwosdow**, President of Gwosdow Associates in Arlington, MA, and **Rudy Ortiz**, Assistant Professor of Physiology/Endocrinology in the School of Natural Sciences, University of California, Merced.

As Physiologists-in-Residence, Gwosdow and Ortiz actively and effectively fielded the RTs' numerous questions related to science content, the use of animals in research, and classroom equity issues. Both were also called on to assist the teachers as they began developing science labs and activities to use in their classrooms.

Applications for the 2006 Professional Development Fellowships are available on the APS website at http://www.the-aps.org/education/frontiers/app.html. For additional information about the summer research programs, email the APS Education Office at education@the-aps.org, or call 301-634-7132.

Advisory Board Brainstorms for Skills Training Program

The Professional Skills Training Advisory Board Meeting was held on August 22-23, 2005, at the Aspen Wye River Conference Center in Queenstown, MD. A total of 21 Advisory Board members (of the 34 total members) were in attendance. The Board includes members of the Career Opportunities in Physiology, Education, Porter Physiology Development, Trainee Advisory, and Women in Physiology Committees; Council; and underrepresented graduate students, postdoctoral fellows, and established investigators.

The objectives of the meeting were to:
finalize topics for the two professional development short courses;
select dates and potential locations for the initial short course;
finalize criteria for selection of participants;
develop the content and publicity plan for the initial short course.

The first Live Short Course #1 will be on "Writing and Reviewing for Scientific Journals" (see related article).

The Advisory Board members present divided into five groups to draft the six sessions for the short course. These are "Authorship," "Writing a powerful abstract," "Writing the manuscript," "Journal selection and submission of the manuscript," "Getting through the review process," and "Serving as a reviewer for a journal." A list of potential speakers and breakout group leaders for each session was compiled along with suggested participant activities. Issues that minority trainees specifically face in each of these areas were discussed for inclusion in the sessions.

The second live short course will be either on "Communication Skills for Oral Presentations and Posters" or "Career Planning and Management," depending on whether the topic selected can be successfully transformed into an interactive course online. It will be offered in January or February 2007 and again in fall 2007.

Once these live short courses are finalized, they will be developed further to become interactive online courses that will be offered both as moderated versions and as self-taught versions. The Advisory Board previewed and approved the Project Wise web site (http://wise.berkeley.edu/) as a potential vehicle for the development of the interactive online courses.

The Professional Skills Training project is supported by a grant from the National Institute of General Medical Sciences at the NIH (Grant #GM073062-01). Over the next three years, the project will develop two live short courses and two interactive web courses for minority trainees based on portions of the APS/ACDP Professional Skills document (http://www.the-aps.org/education/skills.htm).

APS Launches New Professional Skills Training Program

APS is pleased to announce that it will be holding its first Professional Skills Workshop on "Writing and Reviewing for Scientific Journals" on January 12-15, 2006 in Orlando, FL. The course is supported by a grant to APS from the National Institute of General Medical Sciences at the NIH (Grant #GM073062-01).

This workshop will allow up to 40 graduate students and postdoctoral fellows who are US citizens or permanent residents to:
improve their skills at writing and submitting manuscripts;
learn how to better respond to reviewer criticisms;
learn how to be a good reviewer themselves;
find out how their skills in these areas will impact their career advancement;
discover how diversity issues may be influencing how they write and review manuscripts;
learn about resources that can further develop their writing and reviewing skills.

The workshop is especially designed to attract underrepresented minority students. It will bring together trainees from both APS and its partner, the American Society for Microbiology, with experienced mentors and scientists from the two societies.

Trainee participants will work in small groups of four trainees matched with a biomedical researcher in their field to better enable them to receive individualized training and to allow for networking opportunities within their field of study.

During the course, trainees will receive hands-on training at writing and reviewing their own writing and that of their colleagues. They are required to complete pre-workshop homework (readings, writing, sending in a draft manuscript), as well as additional evening homework during the course.

After this intensive 2.5-day course, trainee participants will leave with:
a clear concise abstract for a manuscript or meeting;
a detailed plan for improving your draft manuscript;
hands-on experience at critiquing manuscripts;
network of peers and mentors to share critiques and advice;
tools and resources for developing future manuscripts and abstracts

A second workshop on the same topic will be conducted again in Fall 2006. Dates and location are still to be determined but will be announced this winter. For more information or to sign up for email notification of a future short course, see the Professional Skills website at http://www.the-aps.org/education/professionalskills/.

New Streamlined Review for APS Archive of Teaching Resources

The APS Archive of Teaching Resource is streamlining its review process beginning in January 2006.

Materials submitted to the APS Archive will be reviewed twice yearly. A voluntary review panel will review all materials submitted within a specific field. Special calls for materials in specific fields will go out twice a year as well; however, any materials submitted by that date will be reviewed.

New deadline dates for submissions are February 15 and September 15. Review panels will be convened March 1 and October 1 and have two weeks to complete reviews of submitted materials. Reviews will be sent to authors on March 22 and October 22.

This new review process allows for more APS members to be involved in the review of materials submitted to the APS Archive. It also allows for a timelier turn-around period for the authors to receive feedback on their submissions.

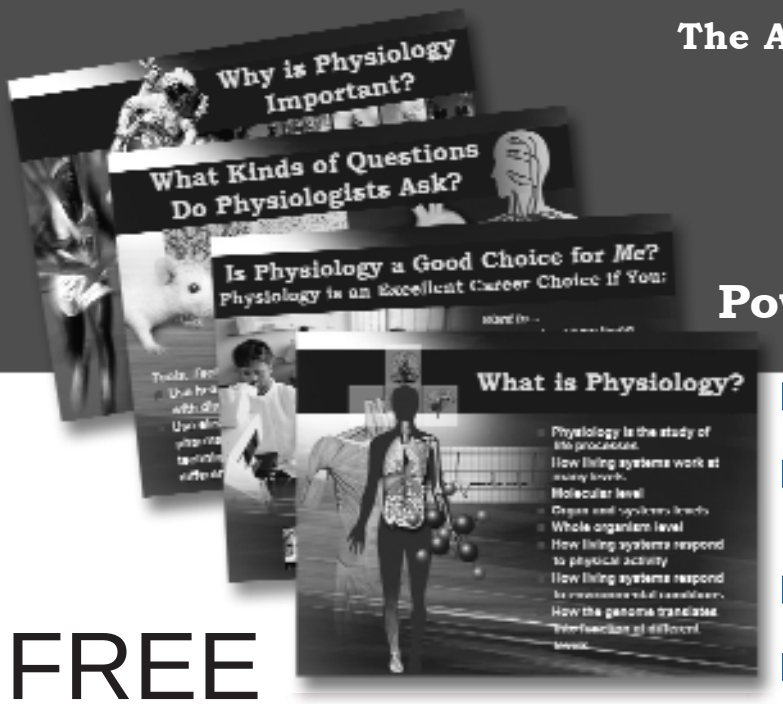
For the February 15 submission deadline, calls for submissions of undergrad-

Reach out to Undergraduates at Your Institution!

The American Physiological Society

Careers in Physiology

PowerPoint Presentation



FREE

- **Customize with your institution's logo!**
- **Templates included to add information about you and your research!**
- **Versions for lower and upper level undergraduates**
- **Download from *www.the-aps.org/education/undergrad/outreach.html***

Undergraduate Outreach PowerPoints

Purpose

These two PowerPoint presentations are specifically designed for use with lower level (first 2 years) and upper level (last 2 years) undergraduate students.

The goal of these presentations is to introduce physiology as a scientific discipline, briefly describe what it is and why it's important, and personalize physiology by describing some physiologists and what they do.

These presentations encourage undergraduate students to choose a career in physiology and graduate school. Students also are encouraged to explore physiology further through the APS website resources.

Format

The presentations are available as PowerPoints and can be modified to suit your audience. Templates are included that allow you to personalize your presentation to talk about yourself and your research.

The presentation includes three sections:

- **What Is Physiology?**
- **Meet a Physiologist**
- **Would You Like to be a Physiologist?**

Check them out now at
www.the-aps.org/education/undergrad/outreach.html

These presentations are sponsored by the
Career Opportunities in Physiology Committee of The American Physiological Society
Please contact the APS Education Office for additional information or to offer suggestions.
The American Physiological Society
9650 Rockville Pike, Bethesda, MD 20814-3991 (USA)
education@the-aps.org

uate and graduate materials in the following fields will be sent out via the section/group listservs: Cardiovascular, Comparative and Evolutionary, Environmental & Exercise, Genomics, Hypoxia, Muscle Biology, Renal, Respiration, Translational Research, and Water and Electrolyte Homeostasis.

For the September 15 submission deadline, calls for submissions of undergraduate and graduate materials in the following fields will be sent to the section/group listservs: Cell and Molecular, Central Nervous System, Endocrinology and Metabolism, Epithelial Transport, Gastrointestinal and Liver, History of Physiology, and Neural Control and Autonomic Regulation.

Calls for K-12 materials and materials dealing with pedagogy will be sent out separately.

APS is looking forward to streamlining the review process and involving a greater number of APS members in both submitting materials and reviewing materials for the APS Archive ❖

Get Your Daily Dose of Professional Development!
APS Professional Development Sessions

Experimental Biology 2006
April 1-5, 2006 • San Francisco, CA

Saturday, April 1 • 8:00 – 10:00 AM
Refresher Course: Gender Differences in Physiology
Organizer: Martha Blair, Education Committee
Exploring gender differences in the normal physiology and pathophysiology of the cardiovascular system, the musculoskeletal system, the central nervous system, and the immune system.

Sunday, April 2 • 12:00 -2:00 PM
Schmidt-Nielsen Distinguished Mentor and Scientist Award Lecture on Mentoring
Come hear about how to get the most out of your mentors and the mentoring experience

Monday, April 3 • 8:00 – 10:00 AM
Mentoring Workshop: Mastering the Juggling Act: Laboratory, Life, and Leadership Roles
Organizers: Ann Schreihofer, Deborah Damon, and Laura Nisenbaum, Women in Physiology and Pharmacology Committees
Hear about and discuss how to juggle research-related duties, research with service and teaching duties, dual careers for a couple, and job and family.

Monday, April 3 • 5:45 – 7:45 PM
Careers Symposium: Navigating the Interview: How to Make It Work for You
Organizers: Nansie McHugh and William Galey, Career Opportunities in Physiology Committee
Learn how to preparing for an interview, the similarities and differences between industrial and academic hiring processes, and the skill sets desired by industrial and academic employers.

Tuesday, April 4 • 8:00 – 10:00 AM
Trainee Symposium: Transition from Postdoc to Jr. Faculty: Surviving the Initial Years
Organizers: Rudy Ortiz and Ryan Bavis, Trainee Advisory Committee
Discuss critical issues associated with the transition of postdocs to a faculty position such as negotiating a contract (including salary and start-up funding), setting up a lab and prioritizing time.

Senate Measure Would Jeopardize Research

On September 20, 2005 the Senate agreed to a provision that would bar USDA and FDA funding from research institutions that lawfully purchase animals from certain USDA-licensed animal dealers. The amendment, sponsored by Sen. Daniel Akaka (D-HI), was intended to stop research institutions from purchasing random source dogs and cats from so-called Class B dealers. The measure was added to the FY 2006 agriculture funding bill on a voice vote. Although it was intended to apply to non-purpose-bred dogs and cats, the amendment was so broadly worded that it would affect institutions that purchase any animal from a vendor with a Class B license.

The Akaka amendment consisted of a single sentence: "None of the funds made available by this Act may be used to provide funding to a research facility that purchases animals from a dealer that holds a Class B license under the Animal Welfare Act."

The APS has urged Congress to reject the Akaka amendment because it is represents a misguided effort to protect pets through a mechanism that would seriously disrupt medical research. It would have a particularly significant impact on land grant colleges and universities that receive USDA funds not only for research but also for education and extension activities. APS called upon the members of the House and Senate Agriculture Appropriations Subcommittees—who are expected to serve on the conference committee—to strip the Akaka language from the final version of the bill. "I emphatically disagree with Sen. Akaka's claim that USDA has failed to enforce existing pet protection laws," APS Executive Director **Martin Frank** said in a September 26 letter. The Society is "deeply concerned about both the intended and unintended consequences of this measure."

The USDA licenses and inspects two categories of animal dealers, Class A and Class B. These categories apply to those who sell any animal species regulated under the AWA. Class A dealers are breeders who raise animals on their own premises, while Class B dealers buy, sell, or transport any animals they did not breed and raise themselves. The USDA currently licenses some 1,247 Class B dealers. Some 50-100 of these Class B dealers provide animals for biomedical research, including several major suppliers. About a dozen Class B dealers were the intended targets of the legislation because they supply dogs and cats for medical research and education. Akaka had previously introduced a bill that would make it illegal for research facilities to purchase non-purpose-bred dogs and cats from Class B dealers. That legislation would have changed the AWA rather than blocking funding to those who abide by it. What both measures share is the goal of eliminating Class B dealers as a source for the non-purpose-bred dogs and cats needed for medical research and education.

This issue revolves around a relatively small number of animals: probably fewer than 36,000, about 40% of the total number of dogs and cats used in research. This number is an estimate because the USDA tracks the number of dogs and cats but does not break them down by source. In FY 2004 the USDA reported less than 90,000 dogs and cats in biomedical research. The proportion of purpose-bred vs. non-purpose-bred dogs and cats is based upon reporting by research facilities in a survey the National Association for Biomedical Research (NABR) conducted during the mid-1990s.

At one time, many of the random-source dogs and cats needed for medical research and education were supplied directly by pounds and shelters. However, animal activists have implemented laws and policies that make it effectively impossible for pounds and shelters to provide animals for research even though 3-5 million unwanted dogs and cats are put to death each year. USDA-licensed Class B dealers are only permitted to obtain dogs and cats from pounds and shelters, from individuals or breeders who have raised the animals on their own premises, or from other Class B dealers. For some research institutions, Class B dealers, who are permitted to play the role of middle-man, are the only legally-permissible source for non-purpose bred dogs and cats.

In his statement on the Senate floor, Akaka asserted that Class B dealers "routinely violate the Animal Welfare Act" by obtaining dogs and cats illegally and failing to provide appropriate husbandry and veterinary care. He specifically mentioned one "notorious" Class B who recently pleaded guilty to violating the AWA by falsifying animal acquisition records, but he treated this individual's behavior as if it were the norm. The USDA, which has been working to enforce existing pet protection laws, clearly was successful in prosecuting this case, but Akaka drew the conclusion that USDA cannot enforce existing laws. Rather than urging proper enforcement, Akaka's solution was to bar the purchase of dogs and cats from Class B dealers. No legislative hearings were held to provide evidence supporting Akaka's belief that Class B dealers ought to be eliminated.

In his floor remarks Akaka also claimed that dogs and cats with varied genetic backgrounds are "unsuitable as research subjects in any case, since they cannot be used as control cases or experimental animals." However, research protocols are designed to answer specific questions, and in some cases animals with varied genetic backgrounds represent the most appropriate research subjects. In addition, some research and training activities in the areas of heart disease, diabetes, digestive conditions, or shock-trauma requires dogs that are large in size. Such animals are readily available from Class B dealers but not from Class A breeders. Research into conditions related to aging obviously requires older animals, but the animals provided by breeders are typically quite young. Moreover, in the future there may be instances where non-purpose-bred dogs or cats represent the best animal model of a human disease.

The APS supports the enforcement of existing pet protection legislation and opposes efforts to interfere with research and educational activities involving non-purpose-bred dogs and cats.

PETA settles Covance Suit

On October 17, 2005, Covance announced that PETA and undercover operative Lisa Leitten reached a settlement in the lawsuit suit the company filed against them in June. Covance brought the suit after PETA accused the contract testing company of animal cruelty. PETA bolstered its claims with video footage of primates being handled by technicians that Leitten secretly recorded while working at a Covance facility in Vienna, Virginia. A Covance announcement of the settlement may be found at http://www.covance.com/animalwelfare/media-resources.php.

In the settlement agreement, Covance agreed to drop its suit in exchange for PETA's promise not to conduct undercover investigations of Covance or any of

its affiliates for five years. PETA also agreed to inform the company about any infiltrations currently in progress. Leitten agreed never to seek future employment with Covance or its affiliates and not to conduct undercover operations at a commercial animal testing facility for three years. PETA and Leitten further agreed they would not make public any materials obtained from the infiltration other than the previously published five and a half minute video. However, PETA and Leitten were permitted to retain a single copy of the materials she obtained for the sole purpose of providing them to investigators at the USDA, FDA, and the Fairfax County Virginia Commonwealth's Attorney. At the end of five years, PETA and Leitten will destroy their copies of the materials.

Covance filed the suit in June charging Leitten with lying about her true intentions to gain employment with the company and deliberately violating her a confidentiality agreement that was part of her terms of employment. The suit also accused PETA of engaging in a conspiracy with Leitten to harm the company's business and asserted that PETA interfered with Covance's employment contract with Leitten. According to a June 6 press release on the Covance website, the company asked for a court order to block similar improper acts in the future and sought "the return of all video, audio and other materials taken by PETA and Ms. Leitten in light of their legal obligations, except copies already provided to the regulatory authorities." The company wanted Leitten's original video footage "so that it can be examined for evidence of both (i) what Covance considers PETA's unsubstantiated claims of misconduct and (ii) potential distortion by PETA to further its aim to end all animal-related research for new treatments for serious diseases such as AIDS, cancer, and diabetes."

Based upon a comparison of what Covance sought in its lawsuit with the terms of the settlement agreement, the company appears to have achieved its goals.

APS Supports Multiple P. I. Policy

The APS has provided comments supportive of a proposal to permit more than one principal investigator on federal grants and contracts. On July 18, 2005, the federal Office of Science and Technology Policy (OSTP) issued a request for information on specific topics related to the implementation of a new policy to allow multiple principal investigators (PIs) on research grants and contracts (see *The Physiologist*, vol. 48, no. 1, p. 23). "As scientific advances increasingly require collaboration between investigators in diverse areas of research," the APS letter said. "The APS believes that it is important to recognize the unique contributions of multiple principal investigators (PIs) to research projects." The letter went on to say that by allowing multiple PIs on federal grants, the scientific community "will be taking a positive step towards fostering communication between disciplines." Excerpts from the sections of the letter addressing various topics are provided below. The full text of the letter is available at http://www.the-aps.org/pa/action/news/multipleinvestigators.htm.

On the definition of Principal Investigator: "APS believes that in order for the multiple PI policy to succeed, the role of the PI must be clearly defined. Each PI should have a defined responsibility for some aspect(s) of the project and contribute creatively in a way that is critical to the success of the research. Participation in a multiple PI grant project should be in line with each investigator's current, demonstrable research interest, and should represent a major effort and not a side-involvement. Designation as a PI should require a minimum percent effort from all parties (approximately 20%). A researcher who contributes only a service or technique, however specialized, but no novel concept, should not be considered a PI. APS believes that there should be a limit on the number of PIs allowed per project, perhaps not more than 3 for individual investigator initiated grants (R01's, RFA's, etc.), as more than that would make efficient coordination and management unwieldy."

On the application process: "Applications for multiple PI grants should include a rationale for the designation of more than one PI, a management plan and individual budgets for each PI. The rationale should include a description of the role of each PI. The management plan should include a process for resolving any disputes, and a plan for how decisions affecting the scientific direction of the project will be made. The individual budgets should reflect the anticipated allocation of the grant money, but there should also be a process put in place for reallocating funds as necessary, with the agreement of all PIs on the project. While the preparation of these documents may seem onerous, we believe that clear plans from the outset will ensure maximum transparency and facilitate open communication between all PIs and the grant-making agency."

On PIs at different institutions: "APS supports collaboration of PIs in different departments and institutions through participation in multiple PI grants. The preparation of individual budgets at the outset of the grant application process will facilitate such collaboration. By preparing separate budgets, each institution or department will be able to determine their share of the indirect costs of the grant and recognize the participation of their faculty. The recognition of multiple PIs at different departments or institutions will allow a fair distribution of credit for important collaborations."

On young investigators and peer review: "The APS has worked for years to help NIH foster programs that supported the careers of young and new investigators. Currently the NIH's Center for Scientific Review recognizes such investigators in peer review of their grant applications at Study Section in an effort to promote those careers. If the multiple PI policy were to preclude such investigators from seeking such special review, that policy could undermine efforts to enrich the scientific community with entering scientists. Young scientists who work with an internationally recognized senior scientist are at particular risk even if they have been designated a "PI" in that reviewers of their subsequent individual grant applications would likely consider their having failed to show their own independence of their senior colleagues.

"Regarding scientific review of multiple PI grants, the APS believes that each grant should be evaluated by only one study section. Given the diversity of scientific specialties that may be involved in multiple PI grants, this may require formation of special study sections staffed by pertinent experts."

The letter concluded by noting that the APS believes that allowing multiple PIs on federal grants will substantially benefit inter-disciplinary collaboration, although "implementation of this new research model will be a challenge."

"This is an important policy change that we believe will allow scientists in all disciplines to take advantage of the best new technologies and ideas," the letter stated.

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The Challenges of Dual-Use Research: Formation of the National Security Advisory Board for Biosecurity

In mid-October, *Science* (*3*) and *Nature* (*2*) published papers characterizing the genome of the 1918 Spanish influenza virus. Publication of these studies and the deposition of the genome sequence into publicly accessible databases raise questions regarding the possible misuse of legitimate science. Biological research on influenza can be considered "dual-use research," defined as work that has legitimate scientific purpose, but that could pose a threat to the public if misused. Research on botulism, anthrax, and smallpox has highlighted the need to manage the risks associated with certain kinds of biological research. While most biological research is not considered dual-use, the regulations employed have broad influence over the scientific community as a whole, affecting who can enter the country to study and work, who can participate in certain research projects, and how research results are communicated. Scientists are now facing new challenges as they deal with biosecurity regulations, even when their work does not involve high-risk pathogens such as those listed above.

Safeguarding the public against the use of chemical and biological weapons is a complex and difficult task. Government oversight is provided by the many federal agencies with jurisdiction over the various aspects of biological research, including the departments of Health and Human Services (HHS), Commerce, Defense, Treasury and Agriculture. Without an organizational structure in place, the process of regulating dual-use biological research can be confusing, and risks putting in place overly restrictive rules. In order to be effective, the government, universities and scientists must work together to develop regulations that achieve a balance between the free exchange of ideas and appropriate security.

For the past two decades, universities and scientists have functioned under a National Security Decision Directive issued during the Reagan administration (NSDD-189), which affirms the importance of openness in research, and establishes control of potentially dangerous information by defining research as either classified or fundamental. This bright line definition ensures that any non-classified, fundamental research can be freely shared in the scientific community. Following the events of September 11, 2001, worries about the misuse of research results by terrorists have increased. A National Academy of Sciences report issued in 2003 ("Biotechnology Research in an Age of Terrorism") recommended the formation of an advisory council to provide guidance to the federal government on issues of dual-use biological research. This has taken shape as the National Science Advisory Board for Biosecurity (NSABB, see http://www.biosecurityboard.gov).

The NSABB is charged with defining dual-use research, establishing criteria for recognizing such research, recommending strategies for effective federal oversight, developing a code of conduct for scientists and advising on the publication and dissemination of dual-use research. The NSABB had its first meeting in June, 2005 and is made up of 25 voting members appointed by the Secretary of HHS from the fields of molecular biology, public health, infectious disease, and national security, among others. Another 18 members are ex-officio and drawn from federal agencies. The first meeting focused on the Board's goals, and discussion centered on how to achieve the appropriate balance between an open environment for the conduct of research and the scientific community's obligation to protect the public from the misuse of their work.

The efficiency of the NSABB system was tested by the publication of the influenza papers referenced above. While editors at *Science* reviewed the manuscript submitted by Tumpey et. al. (*3*) for biosecurity concerns, and further consulted the director of the Centers for Disease Control, the director of the National Institute of Allergy and Infectious Diseases and the director of the Office Biotechnology Activities at NIH (home of NSABB), officials at the department of HHS insisted on last minute review of the paper by the full NSABB (*1*). This was accomplished in time for publication; however, it highlighted the need to establish uniform procedures for biosecurity review.

The establishment of the NSABB will begin to address some of the complex problems in the field of biosecurity. Further measures will be needed to address problems with immigration and visas for foreign scholars, control of knowledge export and development of appropriate countermeasures. ❖

1. Kennedy, D. *Science* **310**, 195. 2005.
2. Taubenberger, JK, *et al. Nature* **437**, 889-93. 2005.
3. Tumpey, TM, *et al. Science* **310**, 77-80. 2005.

APS Raises $90,000 for Physiology Students, Postdoctoral Students Affected by Hurricane Katrina

Moving swiftly after Hurricane Katrina disrupted operations at Tulane, LSU, Xavier and Loyola Universities in New Orleans, APS distributed about $80,000 of assistance to physiology graduate and postdoctoral students in the affected area.

Individual APS members generously donated about $15,000, while Council raised its initial commitment of $50,000 to $75,000. As of mid-October, APS received 56 applications for assistance and authorized 40 unrestricted awards of $2,000 each.

APS President **Douglas C. Eaton** said APS received "offers of assistance from over 40 universities from as far afield as Taiwan, Alaska and Puerto Rico." The offers were for graduate and postdoctoral openings for one to over 10 students each, laboratory space, research assistance and fellowships, often including housing and stipends.

Donations from APS members and the public can be made online at: http://www.the-aps.org/katrina.htm

The APS Executive Office received many thank-you notes and comments from recipients. Here are just a few:

"Thank you. My family has a long road ahead. We had to leave our house because of extensive roof damage. I had to retrieve our belongings yesterday. The APS award will really help. I thank the APS for its generosity. I will be there whenever you need me."

Martin Farias III
Senior Fellow, Dept. of Physiology,
Louisiana State University

"It's an honor to be associated with a Society that reaches out to our young people in such a caring and financially supportive manner. It is so reassuring when people reach out to help in this time of natural disaster."

Lisa Harrison-Bernard
LSU Health Science Center-New Orleans
Chair, APS Membership Committee

"I was extremely gratified to learn the graduate student and the postdocs associated with my lab had been aided by APS in their time of dire need. Your prompt generosity will help them restore their lives and their confidence in a dignified manner. I know this generosity is also being multiplied many times across APS. Thank you so much!"

Cuihua Zhang
LSU Dept. of Anesthesiology, Surgery, and Physiology

"I would like to personally thank APS for the Hurricane Katrina Award. Please know that it will greatly aid me with relocation expenses, as well as with the continuation of my research."

Melissa Burmeister
Graduate student
LSU HSC

"Ian Bartz is a postdoctoral fellow my lab. He lived about four blocks from the Mississippi River and has lost everything in the flood. I have already been very impressed by APS in response to this disaster. The web page and Katrina blog were very helpful for locating others. I have also been thankful to other APS members who have offered temporary lab space and equipment."

Gregory M. Dick
LSU Dept. of Physiology

"I would like to again thank the APS and its members for their help during this tragedy. It appears I have lost everything and with the help of APS I can make a fresh start."

Ian Bartz
Postdoctoral fellow
LSU, New Orleans, Dept. of Physiology

Country Physiology Mouse Takes a Little Media Bite of the Big Apple

Kirsten Sanford, APS/AAAS Mass Media Fellow

Thanks to APS and AAAS, New York City is my home for 10 weeks. Quite a change from the small town of Davis, CA where I've been for the past few years while working on my doctorate in neurophysiology at the University of California-Davis.

The New York move was prompted because I was the lucky recipient of an AAAS Mass Media Science and Engineering Fellowship placing me at WNBC-TV, the network's flaghip station. As the APS-sponsored fellow, I have the opportunity to gain experience writing about science for the public at this major media outlet in the world's largest media market.


Kirsten Sanford

Little did I realize before I arrived just how big "local" TV could be. The WNBC news department takes up much of two floors in the NBC building at 30 Rockefeller Center. On the 7th floor, I'm upstairs from Conan O'Brian and downstairs from Saturday Night Live.

TV news is a fast and furious world. What is here today is absolutely gone tomorrow: shorter in duration than the life-span of a mosquito! The process of making the news is rigidly structured, and each story that airs combines the work of many people in various roles. My role is that of the "adult intern." Since all the other interns are around 19 years old, I have a bit more freedom to practice my skills at writing and proposing stories.

I work with Dr. Max Gomez (the "on-air talent") and his producer, Cathy Becker. As the head of the Medical and Health news department, Max has the final say in the stories we pitch to the head-producers of "Live at 5." Cathy helps decide which stories we will produce, organizes all the interviews, writes scripts, and chooses the video for final pieces. Max has been the on-air medical and health reporter here for ages. Working in the field for nearly 30 years, Max is an incredible mentor.

Everyday is a different experience. Monday through Friday we put together an average of three stories a day: one longer "package" piece that runs about one minute 40 seconds and two short pieces ("voiceovers" or VOs) that run 20-25" each. So we prepare 15 stories each week, though the head-producers cut some due to time constraints or sudden "more important" news.

The VOs, which the anchors read "over" the videotape, are always that day's "breaking" news. There is definitely a balance between breaking news and

"evergreen" stories (those that are good forever), which I have yet to understand.

The longer packages often involve going on "shoots" to do interviews and get "B-roll" (the background video images that fill out a story). Max does most of the interviews, and the interns tag along to see how it's done. It is really educational to see how he formulates leading questions to extract the information he needs from subjects.

Learning how the system works was my initial challenge. Now I'm trying to learn the arts of pitching the right ideas and writing for TV. One thing I've learned in my vast four weeks' experience is that just about anything related to aging, cancer, smoking, drugs, or FDA or CDC proclamations seems to get on the air.

A major adjustment comes from the fact that for years I've been writing for academics. Now, I have to put all that knowledge away, because I now write for a television audience that is assumed to have no more than a sixth grade education!

As a scientist, I also find VO writing frustrating. While there is an art to the simplicity of writing that applies to all disciplines, I sometimes feel that crucial points are left out. The reasons for the exclusions are varied, but it's hard to come to terms with not just the time constraints (nothing gets more than 30"), but also the perceived intelligence of the TV audience. Another challenge is that the passive nature of television means it may be only the over-simplified main point that most people remember.

So what interesting stories have I worked on from a scientific viewpoint? One was a piece about a woman who created an organization to help people with myasthenia gravis, an autoimmune disorder of the acetylcholine receptor. Another reported on a study by an international fund that identified that the SARS virus comes from a species of horseshoe bat.

My term ends around Thanksgiving, but this country mouse is definitely glad to be working in the big city. Thanks again for the opportunity. ❖

2006 AAAS Mass Media Fellowship

Deadline: January 16

To apply for the 2006 Fellowship please go to these sites:

"Student Awards" section of the APS website for complete information brochure:
http://www.the-aps.org/awards/student.htm
or
http://www.aaas.org/programs/education/MassMedia/PDFs/2006MediaFellows.pdf

or for just the application:
http://www.aaas.org/programs/education/MassMedia/apply.shtml

For further information contact APS Communications Officer Mayer Resnick at mresnick@the-aps.org or 301-634-7209.

Attention Authors:

Important Information about the NIH Public Access Policy & Your Manuscript

Under the NIH Public Access Policy, NIH is asking its funded investigators to voluntarily submit to PubMed Central (PMC) the author's final manuscript of articles resulting from research supported in whole or in part with direct costs from NIH. According to the NIH, this policy applies only to manuscripts accepted for publication on or after May 2, 2005.

If you choose to submit your accepted manuscript to PMC, you will be asked to indicate when that manuscript should be made available to the public. As copyright holder of your article, the APS has the sole right to publish or disseminate it. However, the APS grants you permission to allow public release of your manuscript through PMC 12 months after publication in the print version of an APS journal.

This period of time is consistent with our existing policy to make all content publicly available through HighWire Press 12 months after print publication. NIH will be able to determine when 12 months have elapsed because APS sends NIH electronic feeds of the article metadata upon publication in a journal issue. Therefore, you can submit your accepted manuscript to PMC at the time of acceptance to an APS journal, and will not have to calculate or track time elapsed from publication.

NIH intends to use the PMC database of manuscripts for portfolio management; to create a permanent archive of articles based upon NIH-funded research; and to give the public access to research publications. In announcing this policy, NIH officials underscored that it is voluntary and there will be no sanctions of any kind against authors who do not submit their manuscripts. **If you have any questions with respect to the NIH Public Access Policy and the publication of your article in an APS journal, please contact Margaret Reich at mreich@the-aps.org.**

THE Physiology OF Cystic Fibrosis

GUEST EDITOR: Raymond A. Frizzell,
University of Pittsburgh

CONTRIBUTING AUTHORS INCLUDE: Richard C. Boucher, Neil A. Bradbury, R.J. Bridges, David C. Dawson, David C. Gadsby, William B. Guggino, Ron R. Kopito, Paul M. Quinton, and Michael J. Welsh

PUBLISHED BY THE AMERICAN PHYSIOLOGICAL SOCIETY

The Physiology of Cystic Fibrosis reports on one of the most intensively studied proteins in biomedical science: the cystic fibrosis transmembrane conductance regulator (CFTR). Since the gene was cloned, there has been an explosion of scientific interest in its use to explore the array of cellular processes on which CFTR touches.

This special supplement to *Physiological Reviews* focuses on essential physiological issues concerning the function of CFTR, concentrating on the nuts and bolts of CFTR and its contribution to epithelial cell function. The collection includes historical perspectives on the physiological basis of CF, analyses of the complex events occurring during disruption of chloride conductance in epithelial cells, reviews of CFTR function and the clinical manifestations brought on by mutations, and descriptions of how CFTR deletion or mutation leads to the infection and inflammation process governing the progression of CF airway disease. This growing understanding of the role of CFTR in the pathophysiology of CF serves as a clinical basis for more effective treatment of the disease.

Physiology in Perspective: The Walter B. Cannon Award Lecture (Supported by the Grass Foundation)

Jo Rae Wright
Duke Univ. Medical Center

"The Wisdom of Lung Surfactant: Balancing Host Defense and Surface Tension Reducing Functions"

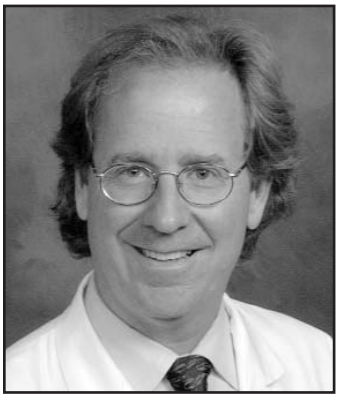
Saturday, April 1, 5:45 pm

Henry Pickering Bowditch Award Lecture

Ulrich Hans Von Andrian
Harvard Medical School

"Migrants on a Single-minded Mission: How T Cells Find Their Antigen"

Sunday, April 2, 5:45 pm

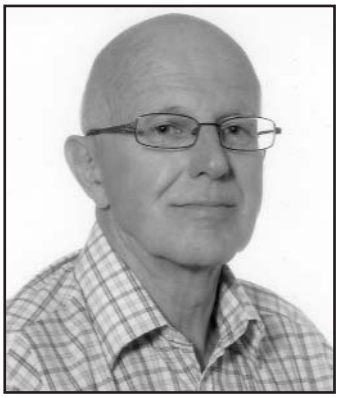


Ernest H. Starling Distinguished Lectureship of the Water and Electrolyte Homeostasis Section

Thomas Coffman
Duke Univ. Medical Center

"The Critical Role of the Kidney in Hypertension: Implications for Pathogenesis and Therapy"

Sunday, April 2, 8:00 am



Carl Ludwig Distinguished Lectureship of the Neural Control and Autonomic Regulation Section

Gunnar Wallin
Univ. of Göteborg

"Interindividual Differences in Sympathetic Activity: A Key to New Insight into Cardiovascular Regulation?"

Sunday, April 2, 10:30 am

Horace W. Davenport Distinguished Lectureship of the Gastrointestinal & Liver Section

Kim Barrett
Univ. California, San Diego

"Friends and Foes: The Physiology of Gut Epithelial Interactions With Luminal Bacteria"

Sunday, April 2, 2:00 pm

Claude Bernard Distinguished Lectureship of the Teaching of Physiology Section

Dee Silverthorn
Univ. of Texas

"Teaching and Learning in the Interactive Classroom"

Sunday, April 2, 2:00 pm

Carl W. Gottschalk Distinguished Lectureship of the Renal Section

Peter Igarashi
Univ. of Texas Southwestern Medical Center

"Transcriptional Mechanisms of Renal Cystogenesis"

Sunday, April 2, 3:15 pm

Hugh Davson Distinguished Lectureship of the Cell and Molecular Physiology Section

Michael J. Welsh
Univ. of Iowa

"Pursuing Cystic Fibrosis"

Monday, April 3, 9:00 am

Robert M. Berne Distinguished Lectureship of the Cardiovascular Section

Thomas Hintze
New York Medical College

"The Other Action of NO: Control of Cardiac Mitochondrial Oxygen Consumption and Substrate Use in Health in Disease"

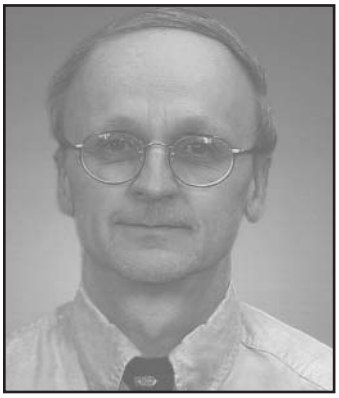
Monday, April 3, 10:30 am

Joseph Erlanger Distinguished Lectureship of the Central Nervous System Section

Paul Sawchenko
The Salk Institute

"Circuits and Mechanisms Providing for Adaptive Responses to Stress"

Monday, April 3, 2:00 pm



Edward F. Adolph Distinguished Lectureship of the Environmental and Exercise Physiology Section

Frank W. Booth
Univ. of Missouri

"Fundamental Question of Biology: How Does the Body Adapt to Physical Inactivity?"

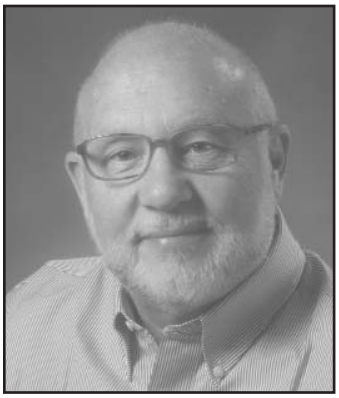
Monday, April 3, 3:15 pm

August Krogh Distinguished Lectureship of the Comparative & Evolutionary Physiology Section

Hiroko Nishimura
Univ. of Tennessee HSC

"Urine Concentration and Aquaporin Water Channels—Evolution and Development"

Tuesday, April 4, 9:00 am

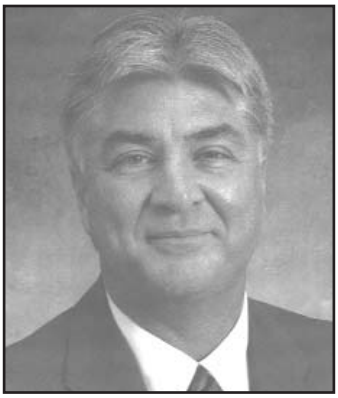


Solomon A. Berson Distinguished Lectureship of the Endocrinology and Metabolism Section

Richard N. Bergman
Univ. of Southern California School of Medicine

"Confessions of a Supermodel"

Tuesday, April 4, 10:30 am

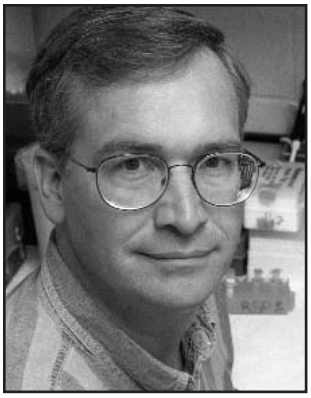


Julius H. Comroe, Jr. Distinguished Lectureship of the Respiration Section

Joe G.N. Garcia
Univ. of Chicago Medical Center

"Genomic Insights into Inflammatory Lung Injury"

Tuesday, April 4, 2:00 pm



Walter C. Randall Lecturer in Biomedical Ethics

Randall S. Prather
National Swine Resource and Res. Ctr., Univ. of Missouri-Columbia

"Transgenic Animals for Medicine and Agriculture: Do the Ends Justify the Means?"

Tuesday, April 20, 2:00 pm

April 1-5, San Francisco, CA

Saturday, April 1, 2006 8:00 AM–12:00 PM

Refresher Course:
Gender Differences in Physiology
APS Education Committee
Martha L. Blair

Saturday, April 1, 2006 1:00 PM–3:00 PM

Workshop:
Atomic Force Microscopy for Physiological Studies at the Nano Scale
The American Physiological Society
Gerald A. Meininger and Michael J. Davis

Symposium:
Ground-Floor Communications: Creating a Buzz About Science through Community and Constituency Outreach
APS Communications Committee
Hannah Carey

Saturday, April 1, 2006 3:00 PM–5:00 PM

Symposium:
Microcirculatory Society President's Symposium: Microcirculation: Unanswered Questions
Microcirculatory Society
Robert Hester

Saturday, April 1, 2006 3:30 PM–5:30 PM

Workshop:
Advanced Techniques in Imaging: From Cell to Animal
The American Physiological Society
Janos Peti-Peterdi and Darwin Bell

Saturday, April 1, 2006 5:30 PM–10:00 PM

Business Meeting:
MCS Business Meeting and Social
Microcirculatory Society
TBA

Sunday, April 2, 2006 8:00 AM–10:00 AM

Symposium:
A Comprehensive Stem Cell Research Update
Translational Physiology Track
American Federation for Medical Research
Meredith Hawkins

Symposium:
Cellular and Molecular Signals Regulating Plasticity of Skeletal Muscle Fiber Type and Size
Plasticity Track
Martin F. Schneider and Karyn Esser

Symposium:
New Insights into Ammonia Transport
I. David Weiner and Connie M. Westhoff

Symposium:
Protein-Protein Interactions in Epithelial Physiology
Neil A. Bradbury and Cathy Fuller

Symposium:
Regulation of Glomerular Function by Podocytes
David Bates and Bill Deen

Symposium:
The Physiology of Performance: From Mechanisms to Application
Translational Physiology Track
David K. Spierer and Adrienne S. Zion

Symposium:
The Role of Glucose in Modulating Cell Function in the Cardiovascular System
Obesity and Metabolic Syndrome Track
John C. Chatham and Jennifer Hall

Featured Topic:
Lipid Metabolism and Liver Inflammation
Lipid Signaling Track
Jian Zhang

Featured Topic:
Undergraduate Skills: What Should Students Be Able to Do?
Dee Silverthorn

Sunday, April 2, 2006 9:00 AM–10:00 AM

Special Session:
Water & Electrolyte Section Young Investigator Award
Water & Electrolyte Homeostasis Section
TBA

Sunday, April 2, 2006 10:30 AM–12:30 PM

Symposium:
Advances in Ion Channel Physiology
APS Liaision with Industry Committee
William J. Martin

Symposium:
Development and Maintenance of Epithelial Polarity
Cross Sectional
Ora Weisz and James Casanova

Symposium:
HIV Lipodystrophy: Lessons from a Novel Metabolic Syndrome
Obesity and Metabolic Syndrome Track
American Federation for Medical Research
Steven Grinspoon and Morris Schambelan

Symposium:
Investigating Cellular Signaling with Atomic Force Microscopy Methods
Physiology InFocus
Boris Mizaikoff and Douglas C. Eaton

Symposium:
Neuroendocrine Programming of the Respiratory Control System
Richard Kinkead and Vincent Joseph

Symposium:
Physiological Effects of Ovarian Hormone Deficiency
Michael J. Toth and Andre Tchernof

Featured Topic:
Air Pollutants or Intracellular Messengers? Inorganic Signaling Molecules in Vascular Regulation
Oxidative Stress/Hypoxia Track
Charles W. Leffler

Featured Topic:
Physiological Genomics of Skeletal Muscle Adaptation in Health and Disease
Gustavo Nader

Sunday, April 2, 2006 3:15 PM–5:15 PM

Symposium:
Human Integrative Physiology: The Missing Link in Systems Biology?
Translational Physiology Track
Michael J. Joyner

Symposium:
MCS Young Investigator Session Regulation of Cerebrovascular Function in Health and Disease
Microcirculatory Society
Fruzsina K. Johnson and William Durante

Symposium:
Neurovascular Interactions
Plasticity Track
Steven S. Segal

Symposium:
Pathological Calcification: Crystallization, Infection or Cell Transdifferentiation
American Federation for Medical Research
Virginia M. Miller and John C. Lieske

Symposium:
Spinal Interneurons: Underappreciated Players in Autonomic and Respiratory Regulation?
Plasticity Track
Ida J. Llewellyn-Smith and Lawrence P. Schramm

Symposium:
The Role of Modern Biology and Medicine in Drug Development in Academia and Industry
Society for Experimental Biology and Medicine
Charles A. Blake and Kenneth L. Barker

Featured Topic:
Functions of Gastrotransmitters in the Cardiovascular System
Ryan Dombkowski

Featured Topic:
NADPH Oxidase vs. Mitochondria: From Where do Vascular Reactive Oxygen Species Arise?
Oxidative Stress/Hypoxia Track
Michael Wolin

Monday, April 3, 2006 8:00 AM–10:00 AM

Symposium:
How Prepared are Your Students to Learn Physiology?
Howard Kutchai

Symposium:
Innovative Technologies for Proteomic Approaches to Systems Biology
Andrew S. Greene

Symposium:
Linking Mitochondrial Function in Skeletal Muscle to Disease
Oxidative Stress/Hypoxia Track
P. Darrell Neufer and David Hood

Symposium:
Mastering the Juggling Act: Laboratory Life, and Leadership Roles
APS Women in Physiology and ASPET Women in Pharmacology Committees
Ann Schreihofer, Deborah H. Damon, Laura Misenbaum

Symposium:
Mechanism Based Neurotherapeutics for Osteoarticular Pain
Translational Physiology Track
American Federation for Medical Research
Maren L. Mahowald

Featured Topic:
Cardiovascular Section Young Investigator Featured Topic: Molecular Regulation of eNOS Activity and Vascular Reactivity
Oxidative Stress/Hypoxia Track
Brett M. Mitchell

Featured Topic:
Control of Renal Function and Blood Pressure in Metabolic Syndrome and Diabetes
Obesity and Metabolic Syndrome Track
Michael W. Brands and Carolyn A. Ecelbarger

Featured Topic:
Junctional Regulation in Barrier Cells
Supported by: St. Luke's-Roosevelt Hospital Center
Jahar Bhattacharya

Monday, April 3, 2006 10:30 AM–12:30 PM

Tutorial:
Publishing 101: Dos and Don'ts of Publishing in APS Journals
APS Publications Committee
Kim E. Barrett

Symposium:
Could Cell Dehydration Promote Obesity and Chronic Disease? A Multidisciplinary Look at the Effects of Hypertonic Dehydration
Obesity and Metabolic Syndrome Track
Jodi Stookey

Symposium:
Integrating Cellular Functions: The Role of the Primary Cilium in Cell Proliferation and Kidney Disease
Physiology InFocus
Arlene Chapman and Winfield S. Sale

Symposium:
Molecular Characterization of Skeletal Muscle Plasticity in Nonmodel Organisms
Plasticity Track
Amanda Szucsik and Bryan Rourke

Symposium:
Novel Partners and Mechanisms in Oxygen Sensing
Oxidative Stress/Hypoxia Track
Nanduri R. Prabhakar and Chris Peers

Symposium:
Oscillations and Rhythms in the Neural Control of the Circulation
Plasticity Track
Susan M. Barman and Michael J. Kenney

Featured Topic:
Epithelial Ion Channels
Kenneth R. Hallows and Heather A. Drummond

Featured Topic:
Gastric Inflammation and Cancer Genesis
Translational Physiology Track
Eric Sibley and Linda Samuelson

Monday, April 3, 2006 3:15 PM–5:15 PM

Symposium:
Endothelial Permeability: Paracellular Pathway vs. Transcellular Pathway
Sarah Yuan and Jerry Breslin

Symposium:
Regulation of Cardiac Muscle Contraction
Kerry S. McDonald

Symposium:
Regulation of Leukocyte Recruitment on Inflamed Endothelium
Biomedical Engineering Society
Scott I. Simon

Symposium:
The Lipid in Lipid Rafts: Lipids as Signaling Molecules
Lipid Signaling Track
Physiology InFocus
He-Ping Ma

Symposium:
CO_2-H^+ Chemoreceptors: Where Are They, What Do They Do?
Hubert Forster and Matthew Hodges

Featured Topic:
Renal Section Young Investigator Award
Sylvie Breton

Featured Topic:
Autonomic Adjustments to Stress in Humans
Translational Physiology Track
Chester A. Ray

Featured Topic:
Role of Epithelial Cells in Initiation and Propagation of Intestinal Inflammation
Didier Merlin

Featured Topic:
Wiggers Award: Pivotal Role of Endothelium in Deranged Vascular Control
Obesity and Metabolic Syndrome Track
Paul Vanhoutte and Cuihua Zhang

Monday, April 3, 2006 5:45 PM–7:45 PM

Symposium:
Navigating the Interview: How to Make it Work for You
APS Careers in Physiology Committee
Nansie A. McHugh and William R. Galey

Tuesday, April 4, 2006 8:00 AM–10:00 AM

Symposium:
Bench to Bedside: Targeting Coagulation and Fibrinolysis in Acute Lung Injury
Translational Physiology Track
Lorraine B. Ware and Michael A. Matthay

Symposium:
Integrating Mechanical, Electrical, Metabolic, and Signaling Events in Computer Modeling of the Heart
Daniel A. Beard and James B. Bassingthwaighte

Symposium:
Melanocyte Stimulating Hormones and Their Receptors
Obesity and Metabolic Syndrome Track
Michael H. Humphreys

Symposium:
Transition from Postdoc to Jr. Faculty: Surviving the Initial Years
APS Trainee Advisory Committee
Rudy M. Ortiz and Ryan W. Bavis

Featured Topic:
Disease and Plasticity in the Neural Control of Breathing
Plasticity Track
Francis Golder and David D. Fuller

Featured Topic:
Fibroblasts and Myofibroblasts: Function and Tissue Repair
Paul A. Insel

Featured Topic:
Lipid Signaling, Lipid Rafts and Epithelial Transport
Lipid Signaling Track
Moshe Levi

Featured Topic:
Physiologic Adaptations to Intermittent Hypoxic Exposure
Oxidative Stress/Hypoxia Track
Stephen Muza

Tuesday, April 4, 2006 10:30 AM–12:30 PM

Symposium:
Acute Lung Injury and Regulation of Alveolar Fluid Clearance
Translational Physiology Track
Physiology InFocus
David M. Guidot and Michael A. Matthay

Symposium:
Aerobic Function in Aging Skeletal Muscle: From Molecular to Systemic Mechanisms
Harry B. Rossiter and Russell T. Hepple

Symposium:
Lipid Mediated Regulation of Membrane Transport
Lipid Signaling Track
Mouhamed S. Awayda and James D. Stockand

Symposium:
New Treatment Strategies to Combat Heart Failure
Translational Physiology Track
David J. Lefer and Rong Tian

Symposium:
Tubule Perfusion: 40 Years Old and Still Going Strong
Maurice Burg and Jeff M. Sands

Featured Topic:
Autonomic Motor Patterns and their Central Circuits
Robin McAllen

Featured Topic:
Developmental Changes in Respiratory Control in Neonatal Rodents
Plasticity Track
William K. Milsom

Featured Topic:
Gender Differences in Renal and Cardiovascular Disease
Kathryn Sandberg

Featured Topic:
Signaling Mechanisms Associated with Hypoxia
Oxidative Stress/Hypoxia Track
Paul Schumacker

Tuesday, April 4, 2006 3:15 PM–5:15 PM

Symposium:
Cell Signaling Underlying the Pathophysiology of Pneumonia
Jahar Bhattacharya and Jay Mizgerd

Symposium:
Pancreas Development and Insulin Secretion
Obesity and Metabolic Syndrome Track
William W. Hay, Jr.

Symposium:
The Obesity Epidemic: A Historical Perspective
Obesity and Metabolic Syndrome Track
George A. Bray

Featured Topic:
Activity-Dependent Plasticity in Central Homeostatic Systems
Plasticity Track
Javier Stern and Tamas Horvath

Featured Topic:
Donald J. Reis Memorial Trainee Symposium
David Busija and Milton Hamblin

Featured Topic:
Muscle Fatigue
Jean-Marc E. Renaud and Thomas M. Nosek

Featured Topic:
Neural Control of Cardiovascular Function during Exercise
TBA

Featured Topic:
Xenobiotic Transporters
Ryan M. Pelis

Tuesday, April 4, 2006 5:45 PM–7:45 PM

Poster Discussion:
Graduate Student Highlights in Respiration Physiology
Troy Stevens and Ralph F. Fregosi

Tuesday, April 4, 2006 5:45 PM–7:00 PM

Business Meeting: APS Business Meeting
The American Physiological Society

Wednesday, April 5, 2006 8:00 AM–10:00 AM

Symposium:
Hypothalamus-Brainstem: Modulation of the Cardiovascular Function
Association of Latin American Physiological Societies
Jose Antunes-Rodrigues and Valeria Rettori

Symposium:
Physiological Genomics and the Gastrointestinal Tract
Ronaldo P. Ferraris and Anne E. Kwitek

Symposium:
The Hot Brain
Scott Montain

Featured Topic:
Clinical Disorders and Vasopressin
Translational Physiology Track
John R. Claybaugh

Featured Topic:
Mechanotransduction and Lung Cells
Deborah A. Quinn and Susan Margulies

Featured Topic:
Myocardial Blood Flow Heterogeneity: A Response to Mechanical and Metabolic Drive
James B. Bassingthwaighte

Featured Topic:
Regulation of Vascular Tone in Diabetes and Metabolic Syndrome
Obesity and Metabolic Syndrome Track
Johnathan Tune

Wednesday, April 5, 2006 10:30 AM–12:30 PM

Symposium:
Hyperpolarization-Activated HCN Pacemaker Channels: Role in the Brain, Heart, and Disease
Steven A. Siegelbaum and Bernat Kocsis

Symposium:
Molecular Mechanisms of Intestinal Iron Transport
James F. Collins and Bryan Mackenzie

Symposium:
Fundamental Mechanisms of Mechanotransduction: Optical and Computational Approaches
Biomedical Engineering Society
Peter J. Butler and Roger D. Kamm

Symposium:
Obesity and Renal Disease
Obesity and Metabolic Syndrome Track
Lisa M. Harrison-Bernard

Featured Topic:
Control of Breathing: Exercise
Translational Physiology Track
Tony G. Babb

Featured Topic:
Mechanisms of Hypoxic Vasoconstriction
Oxidative Stress/Hypoxia Track
Michael J. Russell

Featured Topic:
Physiology of Fibroblast Growth Factors
James B. Hoying

Featured Topic:
Subcellular Organization of Second Messenger Signaling
Troy Stevens

Postdoctoral Positions

Postdoctoral Fellow: You are invited to apply for a Postdoctoral Fellow position in Dr. Mingyu Liang's laboratory in the Department of Physiology at Medical College of Wisconsin. You will be involved in studying hypertension and diabetes using state-of-the-art approaches including functional genomics and molecular therapeutics (for more information about our lab, see http://bbc.mcw.edu/labs/liang_lab.htm). You will have the opportunity to perform cutting edge research, interact with a highly dynamic group, and enjoy a friendly environment. Experience in molecular biology, particularly in making gene constructs, will be a plus, but any self-motivated PhD biomedical scientist capable of critical thinking will be considered. Please send or email a CV, a one-page summary of your research experience and career goals, and names and contact information for two references to Dr. Mingyu Liang, Department of Physiology, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, WI 53226; Email: mliang@mcw.edu.

Postdoctoral Fellowship: You are encouraged to apply for a postdoctoral fellowship in a dynamic, friendly laboratory group involving exercise science and mechanical engineering faculty. Primary responsibility will be to supervise DOD-funded projects investigating integrative physiological mechanisms for the bone response to energy restriction. Secondary responsibilities will be to coordinate with existing/developing projects investigating *1*) efficacy of various exercise and pharmacological treatments in mitigating microgravity-induced bone loss; *2*) mechanisms for altered bone phenotype with Type 2 diabetes; *3*) role of bone matrix proteins in bone response to disuse and to exercise. Our laboratory's current methodologies include bone histomorphometry, pQCT in vivo and ex vivo, mechanical testing of bone, and in vivo determination of muscle strength. Candidate will have opportunities to gain independent research funding. Required: completed PhD in exercise science, physiology, cell biology, nutrition, or biomedical engineering, with research experience in bone biology. Strong work ethic, high motivation, and team player attitude essential. Preferred: experience in rodent research models, expertise in gene expression and/or cell biology techniques. Ability to contribute to diversity of gender, ethnic background, and/or training disciplines in our department is valued. Funding is available for up to three years; salary is commensurate with NIH stipend levels. Contact: Dr. Susan Bloomfield, Dept. of Health & Kinesiology, Texas A&M University, College Station, TX 77843-4243; Email: sbloom@tamu.edu.

Postdoctoral Positions: Exciting opportunities are available in a program dedicated to characterizing the fundamental mechanisms that link salt to hypertension at the molecular, cellular, tissue and whole organism levels. Trainees will work with the group that first identified this novel pathway involving critical ion transporters that directly control vascular tone and blood pressure. These studies apply state-of-the-art digital imaging (widefield, confocal and TIRF), patch clamp electrophysiology, molecular biology and whole animal (mouse) hemodynamic methods. The research includes experiments on mice with genetically altered Na and Ca transporters (knockouts, overexpressors and other mutations), and on the cells and tissues from these mice. Prior research experience in vascular physiology/pharmacology and either digital imaging, electrophysiology or hemodynamic studies of small arteries is required; fluency in both spoken and written English is essential. Strong preference will be given to US citizens and permanent residents. Applicants must hold a doctoral degree (MD, DVM, or PhD in physiology or pharmacology). Applicants should send a CV and bibliography, a brief statement of personal training objectives, and three letters of recommendation to: Mordecai P. Blaustein, MD, Department of Physiology, UMB, 655 W. Baltimore St., Baltimore, MD 21201, or via Email: mblauste@umaryland.edu.

Postdoctoral Position: Membrane Transport, Albert Einstein College of Medicine, Department of Molecular Pharmacology: Postdoctoral positions are available to study a new family of facilitative carriers that transport folates and antifolate drugs. The spectrum of studies will encompass tissue distribution, trafficking, role in cellular and epithelial transport, structure/function, and regulation at the molecular level. There is special emphasis on the role of these transporters in the intestinal absorption of physiological folates along with the transport of folates in a variety of other tissues with high folate requirements for biosynthetic processes. Since folates are essential nutrients these studies have considerable physiological relevance. Trainees are involved not only in basic transport studies but also in the application of these phenomena to understanding mechanisms of folate physiology and determinants of activity and resistance to antineoplastics. The laboratory is fully equipped for molecular biological and membrane transport studies. Putative transporters are studied in both Xenopus oocytes and mammalian expression systems. Candidates are sought with experience in membrane transport phenomena using electrophysiological, membrane vesicle and other techniques. Some background in molecular biology would be helpful but these skills can be acquired in this laboratory to complement a more biophysical background. The Albert Einstein College of Medicine is located in a residential area of the North East Bronx in close proximity to City Island and Westchester County with easy access to Manhattan. Contact Dr. I. David Goldman, Department of Molecular Pharmacology, Albert Einstein Cancer Center, Albert Einstein College of Medicine, Jack & Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY, 10461; Email: igoldman@aecom.yu.edu. [EOE]

Faculty Positions

Biology Faculty, Rank open: The Biology Department of Westmont College seeks to fill a tenure-track position to begin August 2006. PhD is required, and postdoctoral research and teaching experience preferred. Teaching responsibilities include Human or Vertebrate Physiology and an advanced course in molecular biology or animal behavior/ecology. Establishing a vigorous research program involving undergraduates is expected. Westmont is a 1,200-student, national select liberal arts college emphasizing excellence in undergraduate teaching, student development, scholarship, and commitment to the Christian faith. Faculty contribute

broadly to the character and mission of the College. Applications from underrepresented groups and women are encouraged. Please send curriculum vitae, a brief description of research plans, three letters of reference and the faculty appointment application found at http://www.westmont.edu/_academics/pages/provost/faculty_positions.html to Dr. Frank Percival, Dept of Biology, Westmont College, Santa Barbara, CA 93108; Email: perciva@westmont.edu. Review of applications will commence November 1, 2005.

Assistant Professor, Exercise Physiology: The Department of Kinesiology at Penn State University (http://www.hhdev.psu.edu/kines/) is seeking an entry-level faculty member with expertise in the area of children's exercise physiology, beginning Fall Semester 2006. This tenure-track position provides exciting opportunities to join a multi-disciplinary group of faculty working to reduce the prevalence of obesity in children and adolescents. Candidates emphasizing a translational approach linking physical activity with metabolism, energy balance, body composition, endocrinology and related areas will receive special consideration. Candidates must have an earned doctorate in an appropriate area, an established record of scholarship, and a commitment to excellence in teaching and service. The successful candidate will be expected to secure extramural research funding and assume teaching responsibilities at the undergraduate and graduate levels. Postdoctoral experience and an established research program are preferred. The Department of Kinesiology is an academic unit in the College of Health and Human Development (http://www.hhdev.psu.edu) offering BS, MS, and PhD degrees. The Department and College maintain significant research expertise and resources in several areas pertinent to the study of obesity including nutrient metabolism, energy balance (intake and expenditure), body composition, biomechanics and control of movement, genetics, stress physiology, ingestive behavior, cognition, and psychosocial functioning. Collaborations with multi-disciplinary Penn State organizations such as the Children, Youth and Families Consortium, the newly created Center for Childhood Obesity Research, the Diabetes Research Center, and the General Clinical Research Center, are encouraged. The Pennsylvania State University is the land grant institution of Pennsylvania. University Park is the largest of Penn State's 24 campuses, with an enrollment of approximately 41,000 students and offering more than 150 programs of graduate study. University Park is located in Central Pennsylvania, adjacent to the municipality of State College, which enjoys high rankings for cultural opportunities, local schools, and quality of life. Women and minorities are encouraged to apply. Applications should include a cover letter describing interests and qualifications for the position, curriculum vitae, three recent publications, and the name, address, and telephone number of three individuals willing to provide references. Direct all correspondence to: Jim Pawelczyk, PhD, Chair, Search Committee, Department of Kinesiology, Noll Laboratory, The Pennsylvania State University, University Park, PA 16802; phone: 814-863-1163; Email: jap18@psu.edu. Completed applications will be reviewed beginning November 28, 2005, and will continue until the position is filled. [AA/EOE]

Assistant Professor: Cellular Physiology Faculty Position: Applications are invited for a Tenure track Assistant Professor position in the Department of Physiology at Emory University. We seek an outstanding junior investigator to join a strong and established group devoted to basic cellular physiology. Research areas of interest include molecular and cellular physiology of membrane transport, ion channels, and cellular signaling or others which will complement the research of the existing faculty. We are particularly interested in candidates who can bridge these levels of analysis. Besides strength in cellular physiology, there are opportunities for collaboration with a large group of neuroscientists within the Department. The successful candidate will be expected to establish an independent research program and participate in the scholarly activities of the Emory academic community. Women and minority candidates are encouraged to apply. Applicants are asked to send curriculum vitae, a statement of research and teaching interests, and a list of three to five references to Dr. Douglas C. Eaton, Department of Physiology, Emory University, 615 Michael Street, Suite 648, Atlanta, GA 30322. The review of applications will begin immediately and will continue until the position is filled. [AA/EOE]

Assistant/Associate Professor: Faculty Vacancy, Cardiovascular Physiologist: The Department of Physiology at Ross University School of Medicine seeks a Cardiovascular Physiologist with a PhD or an MD/PhD degree, and experience teaching physiology to medical students in North American or United Kingdom medical schools. Rank is at the Assistant or Associate Professor level, commensurate with experience. Preference will be given to individuals with a strong track record of teaching excellence. The successful candidate will be part of a group of physiologists dedicated to teaching medical students, and interested in developing/implementing creative teaching techniques to improve medical student understanding and appreciation of physiology. Faculty are encouraged to explore, design and deliver innovative medical physiology curricula. Excellent opportunities exist for medical education research, computer-based delivery & assessment of curricula, integration of clinical & basic science, and the design of multi-format courses. The Physiology Department is in a unique position to rapidly evaluate changes to its physiology curriculum, and to dramatically influence international education in medical physiology. Ross University School of Medicine, founded in 1978, has placed more graduates in first year residency positions in 2002 than any other school in the world, including US medical schools. The mission of the school is to enable highly dedicated students to become effective, successful physicians in the United States. Our campus is located on the beautiful and culturally diverse Caribbean isle of Dominica, and boasts state-of-the-art facilities, high-tech classrooms, and hands-on laboratories. We offer a highly competitive, potentially tax-free annual salary, relocation assistance, deferred pension program, medical benefits, 25 days of paid annual leave, and opportunities for professional development. To learn more about this position and to apply, please visit our website at http://www.rossmed.edu, select Careers at Ross and submit your CV, or complete our on-line application process. [EOE]

Assistant Professor of Biology: Centre College seeks applicants for a tenure-track position beginning fall, 2006. Successful applicant will hold a PhD in the life sciences and expertise in physiology. Teaching duties include an upper division course in general and comparative physiology, development of a course in area of specialty, and introductory biology. Participation in the college's freshman studies and non-majors natural sciences programs is also anticipated. Collaborative research with undergraduates is expected and supported. Send statements of teaching philosophy, research interests, vita, transcripts, and three letters of recommendation to: Dean John Ward, Vice President for Academic Affairs, Centre College, 600 West Walnut St., Danville, KY 40422. Review of applicants will begin November 1 and continue until position is filled. Women and minorities are encouraged to apply. [AA/EOE]

Assistant/Associate Professor: The University of Kansas School of Medicine invites applications for two tenure-track faculty positions. The appointments will be at the rank of Assistant or Associate Professor. One appointment will be in the Department of Molecular & Integrative Physiology (http://www.kumc.edu/physiology/) and the other appointment will be in the Division of Cancer & Developmental Biology within the Department of Pathology & Laboratory Medicine (http://www2.kumc.edu/dcdb/). We seek scientists investigating signaling mechanisms controlling cell growth, differentiation, and/or cell death in cancer and/or developmental systems. Individuals utilizing animal models and/or stem cells in their research and performing research related to women's health are encouraged to apply. Minimum requirements include a PhD degree in the biological sciences and/or a MD degree, and relevant postdoctoral research experience. It is anticipated that both recruits will be affiliated with the Kansas Masonic Cancer Research Institute (http://kmcri.kumc.edu/index.aspx) and the Institute of Maternal-Fetal Biology (http://www.imfb.org). Send a curriculum vitae, a brief statement of current research activities and future research plans, and have the names and addresses, including email addresses, of three references sent to: Susan Harp, Administrative Officer, Kansas Masonic Cancer Research Institute, University of Kansas Medical Center, MS 1027, 3901 Rainbow Blvd., Kansas City, KS 66160; Tel.: 913-588-4786; Fax: 913-588-4701; Email: sharp@kumc.edu. [AA/EOE]

Associate or Assistant Professor in Exercise and Nutrition Science: The University at Buffalo, State University of New York, invites applications for a tenure-track faculty position at the Associate or Assistant Professor level in the Department of Exercise and Nutrition Sciences, School of Public Health and Health Professions. The start date is negotiable. Screening of applicants will begin October 1, 2005 and continue until the position is filled. Candidates should have an earned doctorate in a discipline relevant to exercise science. All applicants will be considered but preference will be given to candidates with research expertise in one of the following areas: metabolism, immunology, cardiovascular, pulmonary, or neuromuscular physiology. Postdoctoral research experience is required. A record of outstanding achievement in research with publications in high quality journals is desired, commensurate with rank. Successful candidates will be expected to develop an independent research program, seek external funding, and contribute to teaching and service. Candidates should submit *1*) a letter of application, *2*) a curriculum vitae, *3*) a brief statement of future research plans, and *4*) the names and contact information for three references to: Ms. Maureen Lannen, Assistant to the Chair Department of Exercise and Nutrition Sciences, Kimball Tower, Room 405, University at Buffalo, Buffalo, NY 14214-8028; Email: lannen@buffalo.edu. The Department of Exercise and Nutrition Sciences is one of the academic units in the School of Public Health and Health Professions. There are well-established research programs and excellent facilities available within the School and Department. The Department employs 18 full-time faculty and offers a BS in Exercise Science, a BS/MS in Exercise Nutrition, a BS/MS in Athletic Training, a Dietetic Internship with Advanced (Graduate) certificate program, MS degrees in Exercise Science and Nutrition and a PhD degree in Exercise Science. Approximately 12 graduate students on a thesis/dissertation track, and 120 undergraduate juniors, are accepted annually. The University at Buffalo is a Research I institution. With 24,000 students, it is New York's largest and most comprehensive university. The Western New York area provides a highly livable environment rich in music, theater, and professional sports in addition to the advantages of its location on the international border with Canada. The University at Buffalo is an Equal Opportunity/Affirmative Action Employer. The Department of Exercise and Nutrition Sciences is interested in identifying prospective minority and women candidates and professionals with disabilities. Qualified individuals with a disability may request needed reasonable accommodation to participate in the application process. No person in whatever relationship with The State University of New York shall be subject to discrimination on the basis of age, creed, color, disability, national origin, race, religion, ethnicity, sex, sexual orientation, marital or veteran status.

Faculty Position, Animal Physiologist: The Department of Biology at Pacific University in Forest Grove, Oregon invites applications for a full-time, tenure-track faculty position to begin in fall, 2006 with primary responsibility in the area of animal physiology. A full description of the position and directions for applying can be found at: http://www.pacificu.edu/as/biology/AnimalPhysiologist.cfm. [AA/EOE]

Assistant Professor, Animal Physiologist: The University of Richmond Department of Biology at this highly selective, private, primarily undergraduate university invites applications for a tenure-track assistant professor to join a growing department in a newly remodeled and expanded facility. We seek an animal physiologist who is working on integrated physiological problems at the cellular/molecular level or through the extensive utilization of cellular/molecular techniques. Teaching excellence that includes participation in an introductory integrative biology course, an upper level elective in area of specialization, and a general education science course is expected. The successful candidate will be expected to have a sustained record of research productivity and maintain a research program that attracts extramural funding and actively engages undergraduates. Applicants

should submit by mail a curriculum vitae, up to three recent publications, and separate statements of *1*) teaching philosophy and experience and *2*) research interests and plans, to: Dr. Roni J. Kingsley, Department of Biology, University of Richmond, Richmond, VA 23173. Applicants should also arrange for three letters of recommendation, including at least one that addresses teaching potential, to be sent directly to the same address. Review of applications will begin October 14, 2005 with an anticipated starting date of August 2006. The University of Richmond values diversity in its faculty, staff, and student body. In keeping with this commitment, our academic community strongly encourages applications from diverse candidates and candidates who support diversity. For more information on the department, resources, and teaching assignment, see (http://biology.richmond.edu/). Department of Biology: The Gottwald Center for the Sciences is a newly renovated and expanded facility that houses the Departments of Biology, Chemistry and Physics. Along with the new facility the Biology Department is making significant programmatic enhancements and expects to expand from 15 to 20 faculty in the next five years. Biology graduates approximately 50 seniors each year, many of whom go on to attend the top graduate and medical schools. The department offers courses and research opportunities in the areas of cell and molecular biology, developmental biology, ecology, evolution, genetics, immunology, invertebrate biology, microbiology, neurobiology, and organismal biology. There is also a concentration in Neuroscience, a major in Environmental Studies, and a major in Biochemistry and Molecular Biology. Three Laboratory Directors are responsible for laboratory preparation and teaching of labs in selected non-majors biology courses, as well as our four-semester introductory biology sequence. A microscopy facility (SEM, TEM, and confocal microscope), animal facility, greenhouse and herbarium, DNA sequencer, and equipment related to computer imaging technology, PCR, digital gel documentation, etc., are available for student and faculty use. On-campus field sites, including Westhampton Lake and Westhampton Woods, are available for class or personal research projects. In addition, the University is near a diversity of habitats, including the James River, the Blue Ridge Mountains, and the Atlantic Ocean. University and Community: The University of Richmond is a private, well-endowed, highly selective national liberal arts institution nestled on 350 acres of beautiful rolling woodlands in Richmond, VA. The Schools of Arts and Sciences, Business, Continuing Studies, Law, and Leadership Studies enroll a total of nearly 3,300 full-time students. Committed to faculty development, the University offers substantial support in research, travel grants and fellowships for both scholarly and pedagogical projects. The metropolitan Richmond area is known for its outstanding museums, theater, music, beautiful historic neighborhoods and public parks. Several private and public institutions of higher education are located in the Richmond area including Virginia Commonwealth University and the Medical College of Virginia. We are two hours from Washington DC and one hour from the University of Virginia in Charlottesville.

Assistant/Associate Professor: The Department of Molecular & Cellular Physiology invites applications for a tenure track position at the level of Assistant/Associate Professor. Successful applicants will be expected to develop an independent, nationally funded research program. Research areas are open, but preference will be given to individuals with an interest and record of achievement in cardiovascular science, inflammation and/or oxidative stress. Information about the departmental research focus is available at http://www.shreveportphysiology.com. A generous startup package and appropriate space will be offered. Applicants should have a Doctoral degree and relevant postdoctoral experience. Applications will be reviewed as they are received until the position is filled. Send curriculum vitae and names of three references to: D. Neil Granger, PhD, Boyd Professor & Head, Department of Molecular & Cellular Physiology, LSU Health Sciences Center, 1501 Kings Highway, Shreveport, LA 71130-3932; Fax: 318-675-6005, Email: dgrang@lsushc.edu. [AA/EOE]

Assistant Professor: The Department of Cellular and Integrative Physiology at the University of Nebraska Medical Center is seeking applications to fill a tenure-track Assistant Professor position to begin on or about July 1, 2006. The successful candidate will be expected to develop a solid, extramurally funded research program and contribute to teaching medical and graduate students. He/she will be expected to employ modern developmental, cellular, molecular, electrophysiological and/or integrative approaches to address questions related to physiology or pathophysiology. Although outstanding candidates in all areas of physiology will be considered, special consideration will be given to investigators who will complement existing strengths of the department in Neural Control of the Cardiovascular System, Microvascular Regulation and Renal Function. Candidates should have a PhD, MD or appropriate doctoral degree and relevant postdoctoral experience. Highly competitive salary and startup packages, including new laboratory space, are available. Please send CV, description of research interests and three letters of reference to: Kaushik P. Patel, PhD, Chair, Search Committee, Department of Cellular and Integrative Physiology, University of Nebraska Medical Center, 985850 Nebraska Medical Center, Omaha, NE 68198-5850. Electronic applications (in PDF format) are preferred and should be submitted to: cnorton@unmc.edu. The review of applications will continue until the position is filled. [AA/EOE]

Associate Professor/Professor: The Saint Louis University, School of Medicine, Department of Obstetrics, Gynecology and Women's Health seeks an Associate Professor/Professor for Exercise Physiology Obstetrics and Gynecology, Research Track. Primary Responsibilities: Serve as Director of Women's Pavilion Exercise Physiology and Clinical, Applications Institute; Develop a comprehensive women's exercise physiology, wellness and clinical applications program; Design and conduct research; supervise staff of exercise lab, (VO_2 testing, stress, testing, body composition assessment); Develop wellness programs with other departments. Candidates should possess a Doctorate in Exercise Physiology or equivalent and have an established scholarly record in the area of women's health and exercise physiology. Evidence of successful research funding and extensive publications in peer-reviewed journals is required. Salary and faculty appointment will be commensurate with past

experience and academic credentials. Significant start up support will be available. Send letter of application and CV in confidence to: Raul Artal, MD, Professor and Chairman, Saint Louis University, Department of Obstetrics, Gynecology and Women's Health, 6420 Clayton Road, Ste. 290, St. Louis, MO 63117; email: artalr@slucare1.sluh.edu. [EOE/M/F/VAH]

Assistant/Associate Professor, Metabolic Physiology: The Department of Kinesiology and the newly formed Center for Metabolic Biology at Arizona State University invites applications for a Tenure-Track position at the Assistant or Associate Professor level in the Department of Kinesiology beginning in the fall of 2006. The Center for Metabolic Biology is a multidisciplinary group of basic scientists comprised of members of the School of Life Sciences, Department of Kinesiology, and Department of Chemistry and Biochemistry. The mission of the Center is to unravel the basic mechanisms underlying the insulin resistance syndrome. A faculty member is sought who studies metabolic physiology using human and/or animal models. Research areas could include the role of inflammatory response, lipids, or mitochondrial dysfunction in insulin resistance, and/or the role of muscle contraction in improving insulin action. The candidate will be expected to carry out an active, externally-funded research program, teach undergraduate and graduate courses, and train graduate students and/or post- doctoral research fellows, and participate in professional and university service. Required Qualifications: Required qualifications include the following: *1*) earned doctorate in appropriate discipline, *2*) evidence of a publication record consistent with rank in appropriate journals, *3*) experience, appropriate to rank, teaching undergraduate or graduate courses in an appropriate discipline, *4*) evidence, appropriate to rank, of funded research or the potential to develop a funded research program, and *5*) evidence of a desire to work within a multidisciplinary environment. Desired Qualifications: *1*) at least two years of postdoctoral research experience; *2*) demonstrated evidence of college/university teaching experience; and *3*) evidence of a research focus compatible with research of current ASU faculty in metabolic physiology. Application Procedures: To apply, please submit the following: *1*) letter of application highlighting your academic expertise and professional accomplishments; *2*) a statement of research focus and accomplishments; *3*) a statement of teaching experience and philosophy; *4*) a current *curriculum vitae, 5*) three representative publications, and *6*) three letters of recommendation to: Metabolic Physiology Search Committee, Department of Kinesiology, Arizona State University, Box 870701 PEBW 218, Tempe AZ 85287-0701. Application Deadline: **November 15, 2005**; if not filled, the first of each month thereafter until search is closed. Arizona State University is one of the premier metropolitan public research universities in the nation. Enrolling more than 57,000 undergraduate, graduate, and professional students on four campuses in metropolitan Phoenix, ASU maintains a tradition of academic excellence in core disciplines, and has become an important global center for innovative interdisciplinary teaching and research. ASU offers outstanding resources for study and research, including libraries and museums with important collections, studios and performing arts spaces for creative endeavor, and unsurpassed state-of-the-art scientific and technological laboratories and research facilities. ASU is research-driven but focused on learning; teaching is carried out in a context that encourages the creation of new knowledge. The faculty includes recipients of prestigious academic and professional awards, including membership in the national academies and a recent Nobel Prize. ASU currently ranks sixth among public universities in its enrollment of freshmen merit scholars. The university champions diversity, and is international in scope, welcoming students from all 50 states and nations across the globe. ASU is an active partner with the private sector in initiatives to enhance the social well-being, economic competitiveness, cultural depth, and quality of life of metropolitan Phoenix and the state. Arizona State University is an equal opportunity/affirmative action employer. A background check is required for employment. ASU actively seeks diversity among applicants and promotes a diverse workforce.

Assistant Professor: Earlham College, Vertebrate Physiologist, Tenure-Track. We seek a vertebrate physiologist to bridge our departmental strengths between whole organism and cellular/molecular biology. Courses include human anatomy and physiology, an upper level specialty course, and team-taught introductory courses. We would like a person eager to participate in student-faculty collaborative research in a liberal arts environment marked by close working relationships among students and faculty. The Earlham College Biology Department is a national leader in producing students who continue to graduate degrees. PhDs should send curriculum vitae, three letters of reference, and statements describing research interests and teaching philosophy to Dr. Leslie Bishop, Dept. of Biology, Earlham College, Richmond, IN 47374. Teaching or postdoctoral experience is desirable. Review of applications will begin October 21, 2005, and will continue until the position is filled. The College continues to build a community that reflects the gender and racial diversity of society. We particularly encourage applications from women, racial minorities, and Quakers. Please visit our web site at http://www.earlham.edu/~biol/. [AA/EOE]

Assistant Professor, Biology: The Department of Biology at Westminster College seeks a tenure-track Assistant Professor to begin in August 2006. Teaching responsibilities will include physiology, introductory biology, and upper level courses in the candidate's area of expertise. Opportunity exists for participation in interdisciplinary programs, including a neuroscience major. The successful candidate will have broad training, versatility, dedication to quality teaching and advising in a liberal arts environment, and a strong commitment to research with undergraduates. A PhD in the appropriate field is required at the time of hiring. Westminster College is a coeducational, liberal arts institution with historic ties to the Presbyterian Church (USA). The College enrolls about 1,500 full-time students and employs about 105 full-time faculty. It is located in a beautiful rural setting in close proximity to both Pittsburgh and Cleveland. Review of applications will begin October 21, 2005, and will continue until the position is filled. Applications, including a statement of teaching philosophy and research goals, and three letters of recommendation, should be submitted to: Joseph M.

Balczon, Chair, Department of Biology, Westminster College, New Wilmington, PA, 16172-0001. [EOE]

Assistant or Associate Professor–Biomechanics: The Division of Kinesiology at the University of Michigan invites applications for a tenure-track faculty position at the Assistant or Associate Professor level. Individuals with training and experience in any area of biomechanics relevant to human movement and health are encouraged to apply. Priority will be given to applicants studying innovative research questions and using novel techniques in either humans or animal models. Applicants must have completed a doctorate and postdoctoral training is expected. Demonstrated ability to attract external funding at the Associate Professor level or high potential to attract external funding at the Assistant Professor level is required. Teaching experience is highly desirable. Responsibilities of the position include developing a strong research program and teaching undergraduate courses in human movement biomechanics and graduate courses in the area of research specialty. The individual will be expected to acquire federal funding for research and to contribute to interdisciplinary research activities in the Division of Kinesiology. The Division of Kinesiology at the University of Michigan is one of 19 degree-granting academic units on the Ann Arbor campus. Detailed information on the Division of Kinesiology, including its faculty, laboratories and instructional programs, is available at the following website: http://www.kines.umich.edu/. Review of applications will begin 15 November 2005 and will continue until the position is filled. Minorities and women are especially encouraged to apply. To apply, send electronic copies (pdf files) of your letter of application, curriculum vitae, two-page research statement, and names and contact information (mailing address, phone number, and email address) for three references to: Marsha Lewis, Division of Kinesiology, The University of Michigan, mhlewis@umich.edu. For more information, please contact Melissa Gross (mgross@umich.edu) or Dan Ferris (ferrisdp@umich.edu). [AA/EOE]

Assistant/Associate Professor: The Department of Biology at James Madison University invites applications for a nine month (summer, fall) tenure track position at the rank of assistant or associate professor to begin in May 2006. Teaching responsibilities will be primarily in graduate level Clinical Physiology-Pathophysiology for Physician Assistant students and undergraduate courses in physiology and biology for Biology majors. A continuing commitment to scholarly activity suitable for the involvement of undergraduate and Masters degree graduate students is expected. Research specialization within animal/human physiology is open. The successful candidate will have a PhD, commitment to excellence in both teaching and scholarship, and familiarity with contemporary pedagogy. Teaching experience in clinical human physiology and pathophysiology and postdoctoral research are preferred. Submit cover letter, curriculum vitae, statement of teaching philosophy, and a research plan as part of an electronic application created at joblink.jmu.edu. In addition, three letters of recommendation must be sent directly to santeesa@jmu.edu as email attachments. Applications received by October 17, 2005 will receive full consideration. For further information contact Dr. Steven Keffer, Chair, Physiology Search Committee at keffersl@jmu.edu. About the Department: The Biology Department at James Madison University currently serves over 700 undergraduate majors and 12 graduate students. It offers a wide variety of courses for biology majors, general education, and pre-health profession majors. A recently launched four-semester core curriculum was developed with a NSF-CCLI grant. The MS graduate program has both a research and a teaching track. The 32 full-time faculty members are engaged in teaching and research in a broad range of sub disciplines and mentor over 150 undergraduate student researchers during the academic year and in summer. Most faculty are supported in their research by external or internal funds and research and teaching postdoctoral fellows are a recent addition in the department. Both individual and shared research spaces are located near faculty offices and most classes and labs are taught in the same building. About the University: James Madison University is a comprehensive co-educational institution of higher learning in the Shenandoah Valley of Virginia. Founded in 1908 as a state school for women, JMU has grown to a current student body of 15,809 on a campus of 614 acres. JMU offers 66 undergraduate degree programs, as well as 29 masters, 2 educational specialist, and four doctoral programs. About the Area: JMU is located in Harrisonburg, a city of 33,000 located in the heart of the Shenandoah Valley of Virginia. It is a two-hour drive from Richmond and Washington, DC and one hour from Charlottesville. The area affords many opportunities for outdoor recreation, with the George Washington National Forest and Shenandoah National Park located nearby and the Blue Ridge and Allegheny Mountains to the east and west of the city, respectively. [AA/EOE]

Assistant or Associate Professor: A tenure-track faculty position (Assistant or Associate Professor) is available in the Department of Anesthesiology at the Penn State University College of Medicine to strengthen and complement existing Neuroscience/Pain research. The candidate must have an outstanding record of research accomplishments, as documented by publications in leading peer-reviewed journals and grant support. Specific area of emphasis includes, but is not limited, to pain research employing electrophysiological, biochemical, and molecular approaches. The successful applicant will be provided with a generous package including competitive salary, start-up funds and ample laboratory space. The candidate will be expected to establish an externally funded research program and actively collaborate with other basic and clinical investigators in the department. To learn more about the Department of Anesthesiology please visit http://infonet.hmc.psu.edu/anesthesia/. Please send a cover letter, curriculum vitae, a two- to four-page research plan, and arrange for submission of three letters of recommendation. Application materials can be sent electronically to kbowman@psu.edu or by mail to: Karen Bowman, Department of Anesthesiology, Penn State Milton S. Hershey Medical Center, Penn State College of Medicine, 500 University Drive, H187, PO Box 850, Hershey, PA 17033.

Assistant Professor: Tenure-Track position at the Assistant Professor level.

Must have a PhD in biology, physiology, or zoology with an emphasis in physiology. Must be qualified to teach upper-level human physiology, human anatomy-physiology to nursing students, and advanced courses in specialty of interest. Postdoctoral experience preferred but not required. Must participate in graduate program and establish a modest research program. Salary commensurate with experience. Review of applicants will begin immediately, with a deadline of October 10, 2005 or until position is filled. Starting date: August, 2006. Applicants should send application materials to address below. Click here to access more information: http://www.sfasu.edu/biologypositions.html. Send letter of application, curriculum vita, transcripts, three letters of recommendation and a statement of teaching and research philosophies and career objectives to: Dr. Kevin Langford, Department of Biology, Box 13003, Stephen F. Austin State University, Nacogdoches, TX 75962-3003; Tel.: 936-468-3601; Email: klangford@sfasu.edu. Applications subject to disclosure under Texas Open Records Act. [AA/EOE]

Chair, Department of Physiology: Department of Physiology and Biophysics, Case Western Reserve University School of Medicine. Nominations or applications are invited from established, dynamic scientists with a creative vision for the position of Chair of the Department of Physiology at the Case Western Reserve University School of Medicine. The Department has a fine tradition, excellent faculty, facilities, space and a vigorous graduate program. The new leadership at the School of Medicine seeks a chairperson who will lead this strong department to greater national prominence and will provide resources to build on existing strengths or to develop a new area. New development and expansion of many programs at the School of Medicine provide exciting opportunities for interdisciplinary collaboration. The successful candidate will have an outstanding record of scholarly achievements with proven leadership, mentoring and administrative abilities. In addition to a CV and a list of publications, applicants should submit a letter describing their research, teaching, service, administrative experience, previous mentoring and their legacy or vision in building interdisciplinary programs and resources. Nominations and/or applications should be emailed to chairphysiol@case.edu. For additional information, visit http://physiology.case.edu. For questions or additional information you may call Lynn Landmesser at 216-368-3996. [AA/EOE]

Tenure Track/Faculty Positions: The Robert C. Byrd Health Sciences Center, School of Medicine, Center for Respiratory Biology and Lung Disease at West Virginia University Health Sciences Center invites applications from outstanding scientists for tenure-track positions, available January 1, 2006. The Center is committed to developing an interdisciplinary group of collaborators among basic, translational and clinical scientists for research in respiratory health and disease. The recruitment is open at all ranks, but individuals with established research programs for appointment at the Associate or Full Professor level are encouraged. We currently seek investigators with basic science research programs that explore cellular, molecular and genetic mechanisms of asthma, COPD, inflammation and lung injury resulting from environmental exposure during prenatal and early postnatal life through adulthood. Toxic agents of particular interest include cigarette smoke, nanoparticulates, and diesel exhaust. Appointees for Assistant Professor will be expected to develop a NIH-funded, independent research program within three years; appointees for Associate or Full Professor will be expected to have current NIH funding. The academic appointment will be in an appropriate basic science or clinical department and will include responsibilities supporting the educational mission in graduate and professional training programs. West Virginia University is a comprehensive, Carnegie designated Doctoral/Research-Extensive, public institution. Morgantown is rated as one of the best small towns in the US, with affordable housing, excellent schools, a picturesque countryside, and many outdoor activities. Qualifications: A PhD, MD, or equivalent, two or more years of postdoctoral training, and evidence of significant research accomplishments. Applications should include: curriculum vitae, cover letter, and the names and addresses (including Email) of three references. Applications by Email with attachments are preferred to: sammons@hsc.wvu.edu. Mailed applications and letters should be addressed to: Richard D. Dey, PhD, Director, Center for Respiratory Biology and Lung Disease, PO Box 9130, West Virginia University, Morgantown, WV 26506-9130. Review of applications will begin October 1, 2005, and continue until positions are filled. [AA/EOE]

Faculty Position: Tenure Track Position in Exercise Physiology. Applications are invited for a new tenure-track faculty position in the Division of Exercise Physiology at the West Virginia University School of Medicine, with rank dependent upon qualifications. The successful candidate will be expected to maintain an extramurally funded research program in the areas of muscle biology, cardiovascular sciences, or diabetes and obesity. Salary will be highly competitive and dependent upon the person's qualifications and rank. Review of applications will begin November 1, 2005, and continue until the position is filled. For more information about the position, check the division web site (http://www.hsc.wvu.edu/som/ep/). To apply, send letter of application, brief description of research, curriculum vitae, and names, addresses (including Email), and telephone numbers of three references to: Michael D. Delp, PhD, Search Committee Chair, Division of Exercise Physiology, West Virginia University School of Medicine, PO Box 9227, Morgantown, WV 26506-9227. Submission of materials in the form of electronic documents should be sent to mdelp@hsc.wvu.edu and lstankos@hsc.wvu.edu. [AA/EOE]

Department Chairman at the Professor level: The Department of Health Sciences at Boston University Sargent College of Health and Rehabilitation Sciences is searching for a Department Chairman at the Professor level. The department has undergraduate and Master of Science programs in human anatomy and physiology, health science, nutrition, and exercise science as well as a PhD program in human anatomy and physiology. The faculty has diverse backgrounds including muscle biology, neuroscience, nutrition, and exercise science. The area of expertise of the successful candidate is broadly defined within the above disciplines but ideally will expand upon existing departmental strengths. Applicants should have an earned doctorate, a

strong scholarly record and funding from extramural sources, as well as a commitment to further development of undergraduate programs in human physiology, nutrition and health science. Review of applications will commence upon receipt, and will continue until the position is filled. Applicants should submit a letter of application, curriculum vitae and three letters of reference to: Susan Kandarian, PhD, Chair, Health Sciences Search Committee, Boston University, 635 Commonwealth Ave., 4th Floor, Boston, MA 02215. [AA/EOE]

Director Exercise Physiology: Coler-Goldwater Specialty Hospital and Nursing Facility seeks a Director of Exercise Physiology interested in working in a leading rehabilitation center to play a vital role in the successful rehabilitation of our cardiac and general rehabilitation patients. Hands-on responsibilities include patient evaluations, exercise stress testing, risk factor management and exercise training. Working closely with our Cardiology, Immunology and Neurology Departments to perform complex cardiopulmonary stress testing, pulmonary stress testing, spirometry and bronchospasm evaluations, also opens the door to research and education endeavors which our institution finds important to remain in the forefront of rehabilitation services. The successful candidate must have a Master's Degree in Exercise Physiology or closely related field, strong analytical skills and a minimum of one year of clinical experience in a hospital or cardiac rehabilitation setting. BLS or ACLS certification is preferred. Located on beautiful Roosevelt Island in New York City, the facility is easily accessible from the five boroughs by subway, bus or car and provides free parking. We offer competitive salaries and an excellent benefits package including an on-site health club. For immediate consideration, please send your resume to: Human Resources Department, Coler-Goldwater Specialty Hospital and Nursing Facility, One Main Street, Roosevelt Island, NY 10044; Fax: 212-318-4464; Email: Orlando.Acosta@nychhc.org. [EOE M/F]

Research Positions

Laboratory Position: A laboratory position in muscle metabolism is currently available in the laboratory of Dr. Ronald G. Haller at the Institute for Exercise and Environmental Medicine in Dallas, TX; http://www.ieemphd.org. The Institute for Exercise and Environ-mental Medicine is affiliated with the University of Texas Southwestern Medical Center at Dallas. This position is currently funded from departmental sources. The applicant must have a MS in field of enzymology (PhD Preferred). The ideal candidate will have strong biochemistry laboratory skills. Salary is commensurate with experience. This staff member will be an employee of Presbyterian Hospital of Dallas and thus will receive comprehensive fringe benefits including medical, dental, and life insurance. Please submit a resume, and the names of three references to Sherry Burnside at 214-345-4618. [AA/EOE]

Molecular Biologist, GS-401-9/10/11: The USDA/ARS Western Human Nutrition Research Center at the University of California, Davis (http://www.whnrc.usda.gov) seeks a full-time support scientist with a strong background in molecular biology and tissue culture techniques. Additional experience with animal models is highly desirable. The incumbent will serve as part of a multi-disciplinary team investigating dietary, behavioral, and molecular regulators of metabolism, adipose tissue function, and obesity. The successful candidate will utilize molecular biological and cell culture techniques to analyze gene function and expression patterns, and will participate in physiological research using *in vivo* systems. Minimum requirements include at least a BS in biology, nutrition, or a related field, and demonstrated research experience. Salary range is $43,563 to $68,521 per annum, plus benefits (US citizenship required). Refer to http://www.ars.usda.gov for the full text announcement (ARS-D5W-0426) and complete application instructions. [AA/EOE]

Animal Physiologist: The Biology Department at Fairfield University announces a tenure-track assistant professor position in animal physiology with start date of September 1, 2006. Job requirements include: teaching undergraduates, maintaining an active research program that involves undergraduates, advising and mentoring students, and participating in departmental and university committees. Commitment to teaching excellence, responsiveness to student needs, and effective communication skills are expected. Teaching responsibilities include participation in a team-taught introductory biology sequence and an upper division course in mammalian physiology, both with accompanying laboratories. Candidates are also encouraged to develop an additional course in their area of expertise (e.g., neurophysiology, reproductive physiology, endocrinology, comparative physiology), with emphasis at the organismal level. Candidates must possess a PhD in physiology or a closely related discipline. Those with demonstrated excellence in undergraduate teaching, experience working with undergraduates in research, and postdoctoral research experience will be given special consideration. Salary and benefits at Fairfield University are highly competitive. Qualified candidates should send a cover letter that addresses the above requirements. The application must include a CV, graduate transcripts, a statement of teaching goals, a statement of research interests and goals (including the role of undergraduates and the potential for grant initiatives), selected reprints, and three letters of reference sent under separate cover. All application materials should be addressed to: Dr. Glenn Sauer, Chair, Biology Department, Fairfield University, Fairfield, CT 06824. Review of completed applications begins on October 15 and will continue until the position is filled. Fairfield University is a comprehensive Jesuit, Catholic university with an active and pluralistic faculty located in southern Connecticut, 50 miles from New York City and minutes from New Haven. Fairfield University is an Affirmative Action/Equal Opportunity Employer. Women, minorities, and candidates with disabilities are encouraged to apply. Visit our website at http://www.fairfield.edu. ❖

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Horace Willard Davenport (1912-2005)

APS President 1961-1962: Rhodes Scholar, researcher, teacher, author, historian

It's impossible to say for which of his accomplishments **Horace W. Davenport**, APS President 1961-1962, will be most remembered. His progression through the years and his breadth of interests were quite amazing.

But Davenport's impact on APS was quick and long-lived, as the Society faced a true crisis during his presidency. The collapse of the publishing board of trustees required a revamping of APS finances and its publishing approach, and the restructuring of the board of trustees into a publications committee. During his tenure APS also purchased the *Journal of Neurophysiology*, a prize that required delicate negotiations to win over.

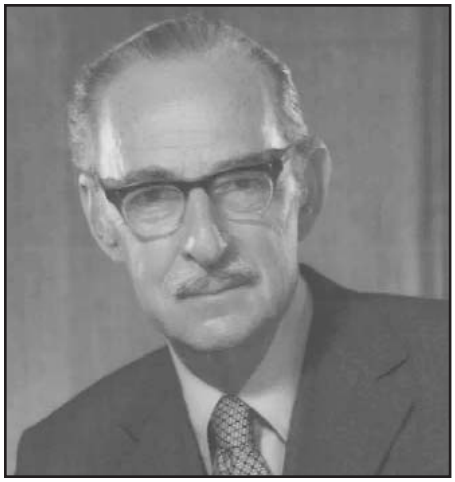
While active on many committees and Council before his presidency, afterward Davenport served on the editorial boards of the *American Journal of Physiology* and the *Journal of Applied Physiology* as well as the Centennial Celebration, Honorary Membership and Senior Physiologists Committees.

In addition to his contributions to APS, Davenport was elected to the National Academy of Sciences in 1974 and had a long history of service to the NSF, the NIH, the National Foundation for Infantile Paralysis, and the Office of Naval Research. He received numerous accolades, including the Alumni Distinguished Service Award from the California Institute of Technology in 1966, the Friedenwald Medal from the American Gastroenterological Association in 1988, and the APS Ray Daggs Award for Services to Physiology also in 1988.

His first doctoral student at the University of Michigan, **Leonard (Rusty) Johnson**, said of Davenport: "He probably was the most educated person I ever met. He seemed to know most of Shakespeare by heart, along with many classical music pieces, and he'd give extemporaneous speeches on all kinds of subjects."

But most of all, said Johnson, "Davenport was a great teacher, who literally made students learn. He also was a great department chair. His faculty worshipped him because he was there to support them and stayed out of their way when they didn't need help."

Under Davenport, Johnson earned his doctorate in 1967, publishing three papers, none of which bore his mentor's name. Johnson recalled: "He said: 'That's your work, not mine.' That's just the way he was."



Horace W. Davenport

Two lectures are named after Davenport: at the annual EB meeting, the Gastrointestinal and Liver Section's is the "Horace W. Davenport Distinguished Lectureship," and the Univ. of Michigan Medical School presents an annual "Horace W. Davenport Lecture in the Medical Humanities."

These two lectures, covering GI research and the implications of biomedicine, reflect Davenport's range of professional interests, which were impressed on him at Caltech, where he received his Bachelor's degree in 1935 and his doctorate in biochemistry in 1939. In between, as a Rhodes Scholar he "read" animal physiology and biochemistry at Balliol College, Oxford, England, receiving two more baccalaureates.

After earning his doctorate at Caltech, Davenport held fellowships at the Univ. of Rochester and Yale, and was an instructor in physiology at the Univ. of Pennsylvania and Harvard Medical School.

In 1945 Davenport became chairman of the Department of Physiology at the Univ. of Utah, where he developed his teaching skills and in 1947 published his classic text, *The ABC of Acid-Base Chemistry.*

In 1956 Davenport became professor and chairman of the Department of Physiology, Univ. of Michigan until 1978 when he became the William Beaumont Emeritus Professor of Physiology. He retired in 1983. Another book, *Physiology of the Digestive Tract*, was published in 1961.

Davenport's research published in the 1960s explained how the gastric mucosal barrier prevents the stomach from injuring itself while digesting food. History of Medicine professor Howard Markell, a colleague for 25 years, said little was known about stomach acids before Davenport's 1964 publication. "It was so revolutionary, it was clinically and scientifically applicable immediately," he said.

At Michigan, he was recognized as a charismatic and unforgettable teacher, according to Robert Kelch, executive vice-president for medical affairs. He "always kept me and my classmates spellbound," in part because "he understood the theater of being a teacher," Kelch added.

John Williams, the current chair and professor at Michigan's Department of Molecular and Integrated Physiology, said Davenport's work at Michigan transformed the department into the well-known institution it is today. Williams noted that Davenport had a dry sense of humor and was famous for his toy brass cannon which he fired to "punctuate his remarks about gastric acid secretion." Johnson said it occasionally was also used to refocus dozing students.

After his retirement in 1983, Davenport became a physiology and medical historian, publishing seven books.

Born in Philadelphia, Davenport graduated high school in Glendale, CA, and worked for two years at Pacific Bell Telephone Co. as a cable splicer and installer before entering Caltech in Pasadena.

Davenport was predeceased by his two wives, Virginia (Dickerson) and Ingeborg (Epstein) and a son, Thomas. He is survived by a son, Robertson Davenport, director of the Univ. of Michigan's blood bank and transfusion service, his daughter-in-law Nancy Wirth, who is also at the Medical School, and grandsons Nicholas and Alexander.

Contributions to the Univ. of Michigan scholarship fund in Davenport's memory can sent to the Univ. of Michigan Dept. of Molecular and Integrative Physiology, 1301 East Catherine Street, 7744 Medical Science Building II, Ann Arbor, MI 48109-0622. Checks should be made payable to the Univ. of Michigan. Please specify the Horace Davenport Scholarship Fund on your check. ❖

Campbell Receives Carver College of Medicine Distinguished Mentoring Award, Lecture

The University of Iowa (UI) Roy J. and Lucille A. Carver College of Medicine hosted the fourth annual Distinguished Mentor Award ceremony and Distinguished Mentor's Lecture on October 10.

Kevin Campbell, the Roy J. Carver Chair of Physiology and Biophysics and head of the department, and a Howard Hughes Medical Institute (HHMI) Investigator, received the 2005 Distinguished Mentoring Award, which honors a UI Carver College of Medicine faculty member who has demonstrated outstanding commitment to research mentoring and whose trainees have gone on to have notable careers of their own.

The Distinguished Mentor's lecture, which highlights the award by bringing to the UI world-class scientists who embody the ideals of the award and its recipient, was given by Nobel laureate **Eric Kandel**, professor of physiology and cell biophysics, biochemistry and molecular biophysics at Columbia University in New York, and an HHMI investigator. Kandel's lecture was titled, "Molecular Memory for the Persistence of Memory Storage."

Kandel, who also is the Fred Kavli Professor and director of the Kavli Institute for Brain Sciences at the Columbia University College of Physicians and Surgeons, shared the 2000 Nobel Prize in Physiology or Medicine for discoveries revealing the biochemical changes that accompany memory formation. His research focuses on understanding the basic molecular mechanisms underlying learning and memory. Kandel is a member of the National Academy of Sciences and the American Academy of Arts and Sciences. He has received the National Medal of Science and the Albert Lasker Basic Medical Research Award.

An internationally recognized expert on muscular dystrophy, Campbell has discovered the genetic and molecular causes of many forms of the disease. His research has improved diagnosis of muscular dystrophies and provides a basis for developing new therapeutic strategies to treat muscle disease.

During a research career that spans almost 25 years at the UI, Campbell also has provided outstanding research training and mentorship for many undergraduates, graduate students, and postdoctoral and clinical fellows. Many of his former trainees are now leaders in the fields of physiology, neurology, molecular genetics and cellular biology. Currently, his laboratory includes three associates, 10 postdoctoral fellows, one graduate student, eight research assistants and five undergraduates.

An HHMI investigator since 1989, Campbell also is director of the Wellstone Center for Muscular Dystrophy, the UI Foundation Distinguished Professor of Physiology and Biophysics, and professor of internal medicine and neurology. He has received numerous awards for his research and is a member of the Institute of Medicine and the National Academy of Sciences. ❖

Steve F. Abcouwer, Associate Professor, has affiliated with the Department of Surgery, Penn State University Hershey Medical Center, Hershey, PA. Abcouwer was formerly Instructor in Surgery, Department of Biochemistry and Molecular Biology, University of New Mexico, Albuquerque, NM.

Hamid I. Akbarali, as Professor, has affiliated with the Department of Pharmacology and Toxicology, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA. Prior to his new position, Akbarali was formerly an Associate Professor, Department of Physiology, University of Oklahoma Health Science Center, Oklahoma City, OK.

Bill T. Ameredes, Associate Professor, recently joined the Division of Pulmonary, Allergy, Immunology, Critical Care and Sleep, University of Texas Medical Branch, Galveston, TX. Formerly, Ameredes had been a Research Assistant Professor, Division of Pulmonary Allergy and Critical Care Medicine, University of Pittsburgh, Pittsburgh, PA.

Harry L. Anderson has affiliated with Wright State University School of Medicine, Kettering, OH, as a Professor of Surgery. Anderson was previously an Associate Professor of Surgery, University of Massachusetts Memorial Medical Center, Boylston, MA.

Maria M. Anton, a Postdoctoral Student, has moved to the Department of Anesthesia Research, Medical College of Wisconsin, VA Medical Center, Milwaukee, WI. Anton was previously associated with the Department of Kinesiology, University of Texas, Austin, TX.

Mouhamed S. Awayda is currently an Associate Professor, Department of Physiology, SUNY, Buffalo, NY. Awayda was previously with the Department of Physiology, Tulane University School of Medicine, New Orleans, LA.

Bruce Wayne Bailey has affiliated with the College of Nursing and Health Science, University of Massachusetts, Boston, MA. Bailey was formerly associated with the University of Kansas, Department of Health Sport and Exercise Science, University of Kansas, Lawrence, KS.

Brad Jon Behnke recently associated with West Virginia University, Division of Exercise Physiology, Morgantown, WV, as a Postdoctoral Research Associate. Behnke was formerly with the Department of Health and Kinesiology, Texas A&M University, College Station, TX.

Jill Ann Bell, a Research Associate, has joined the Department of Physiology, East Carolina University, Greenville, NC. Previously, Bell was associated with the Department of Kinesiology, University of Southern California, Los Angeles, CA.

Gregory L Brower, an Associate Professor, recently joined the Department of Cell, Developmental Biology, and Anatomy, University of South Carolina School of Medicine, Columbia, SC. Brower previously was a Research Fellow, Department of Anatomy, Physiology, and Pharmacology, Auburn University, Auburn, AL.

Leticia Castillo has accepted the position of Associate Professor, Department of Pediatrics and Critical Care Medicine, Texas Children's Hospital, Houston, TX. Castillo was formerly an Associate Director, Critical Care, Department of Anesthesia, Children's Hospital, Boston, MA.

Adria E. Colletti, as a Senior Scientist, recently joined Pharmacokinetics and Drug Metabolism, AMGEN, Cambridge,

MA. Prior to her new assignment, Colletti was a Senior Research Biochemist, Department of Drug Metabolism, Merck Research Laboratories, Rahway, NJ.

James F. Collins, an Assistant Professor, is currently with the Department of Exercise and Nutrition Sciences, University at Buffalo, Buffalo, NY. Prior to his new position, Collins was a Research Associate Professor, Department of Pediatrics, University of Arizona Health Science Center, Tucson, AZ.

Joseph Antonio Covi, a Postdoctoral Research Associate, has affiliated with the Department of Biology, Colorado State University, Fort Collins, CO. Covi had previously been associated with the Department of Biological Sciences, Louisiana State University, Baton Rouge, LA.

YanFeng Ding, as a Postdoctoral Research Associate, has joined the Department of Cellular and Integrative Physiology, University of Nebraska Medical Center, Omaha, NE. Formerly, Ding was a Postdoctoral Student with the Department of Anatomy, Physiology, and Pharmacology, Auburn University, College of Veterinary Medicine, Auburn, AL.

Karlhans Endlich has been appointed Professor and Director, Department of Anatomy, University of Greifswald, Greifswald, Germany. Endlich was previously associated with the Department of Anatomy and Cell Biology, University of Heidelberg, Germany, as an Assistant Professor.

Ana Yesenia Estevez accepted the position of Assistant Professor, Department of Biology, St. Lawrence University, Canton, NY. Estevez was formerly a Research Assistant Professor, Department of Anesthesiology, Vanderbilt University Medical School, Nashville, TN.

Mazyar Fallah, an Assistant Professor, has affiliated with the Centre for Vision Research, School of Kinesiology and Health, Toronto, Ontario, Canada. Fallah was formerly a Postdoctoral Fellow, with, the Systems Neurobiology Laboratories, The Salk Institute, La Jolla, CA.

Xin Fang recently affiliated with the Department of Biological Science, Warwick University, Coventry, England. Fang previously was associated with the Department of Physiology, University of Bristol Medical School, Bristol, England.

Martin Farias has affiliated, as a Senior Fellow, with the Department of Physiology, Louisiana State University Health Science Center, New Orleans, LA. Farias was formerly with the Department of Physiology and Biophysics, University of Washington Medical Center, Seattle, WA.

Bruce A. Freeman accepted the position of Vice Chair, Director, Center for Free Radical Biology, Department of Pharmacology, University of Pittsburgh School of Medicine, Pittsburgh, PA. Prior to his new affiliation, Freeman had been Vice Chair and Director, Center Free Radical Biology, Department of Anesthesiology, Biochemistry and Molecular Genetics, University Alabama, Birmingham, AL.

Yoshiyuki Fukuba, a Professor, has joined the Prefectural University of Hiroshima, Department of Exercise Science & Physiology, Hiroshima, Japan. Prior to his new position, Fukuba was associated with the Department of Exercise Science & Physiology, School of Health Science, Hiroshima Women's University, Hiroshima, Japan.

Masataka Fukue has accepted the position of Director, Department of Surgery, Koga Hospital, Koga, Ibaraki, Japan. Fukue had been Assistant Director, Shonai Amarume Hospital, Shonai, Amarume, Higashitagawa, Yamagata, Japan.

Jeffrey Stephen Gilbert has affiliated with the University of Texas Health Science Center, Department of Obstetrics-Gynecology, San Antonio, TX. Gilbert was previously associated with the University of Wyoming, Department of Zoology and Physiology, Laramie, WY.

Arrie Lynelle Golden is currently an Associate Professor of Basic Sciences, Bastyr University, Kenmore, WA. Prior to her new assignment, Golden held the position of Assistant Professor, Department of Biological and Physical Science, Kennesaw State University, Kennesaw, GA.

Chad Randall Hancock, a Postdoctoral Fellow, joined the Department of Applied Physiology, Washington University, St. Louis, MO. Hancock was formerly a member of the Department of Pharmacology and Physiology, University of Missouri, Columbia, MO.

Markus Hecker, a Professor, has joined the University of Heidelberg, Institute of Physiology and Pathophysiology, Heidelberg, Germany. Formerly, Hecker was associated with the Department of Cardiovascular Physiology, University of Goettingen, Goettingen, Germany.

Matthias Albrecht Hediger, an Associate Professor, recently affiliated with the Institut for Biochemistry and Molecular Biology, University of Berne, Bern, Switzerland. Formerly, Hediger was with Brigham & Women's Hospital, Department of Medicine, Harvard Institute of Medicine, Boston, MA.

Aaron Curtis Hinken affiliated with the Department of Physiology and Biophysics, University of Illinois, Chicago, IL. Hinken was previously associated with the Department of Pharmacology and Physiology, University of Missouri, Columbia, MO.

Youngmok Charles Jang joined the Department of Cellular and Structural Biology, University of Texas Health Science Center, San Antonio, TX. Jang was previously affiliated with the Department of Applied Physiology and Kinesiology, University of Florida, Gainesville, FL.

Mika B. Jekabsons has affiliated with the University of Mississippi, Department of Biology, University, MS, as an Assistant Professor. Prior to his new position, Jekabsons was associated with the Buck Institute for Age Research, Novato, CA, as a Postdoctoral Fellow.

Amy Lynn Johnson has accepted the position of Lecturer, Department of Physical Education and Exercise Science, University of North Dakota, Grand Forks, ND. Formerly, Johnson was Assistant Professor, Department of Biology, Culver-Stockton College, Canton, MO.

Fumihiko Kajiya is currently Professor and Chairman, Department of Medical Engineering, Kawasaki Medical School, Okayama, Japan. Previously, Kajiya was Professor, Department of Cardiovascular Physiology, Okayama University Graduate School of Medicine and Dentistry, Okayama, Japan.

Abba J. Kastin, a Professor, has affiliated with the Pennington Biomedical Research Center, Baton Rouge, LA. Before his new affiliation, Kastin was Professor, VA Medical Center, Tulane University School of Medicine, New Orleans, LA.

Michael A. Kurz is now the Executive Director, Medical Affairs, Cordis Corporation, Miami Lakes. FL. Kurz was formerly Director of Cardiovascular Medical Affairs, Centocor Inc., Horsham, PA.

Gisela Lannig, a Postdoctoral Fellow, affiliated with the Alfred Wegener Institute, the Department of Physiology of Marine Animals, Bremerhaven, Germany. Prior to her move, Lannig was a Research Scholar, Department of Biology, University of North Carolina, Charlotte, NC.

William R. Law is currently Professor and Chair, Department of Biological Sciences, University of the Sciences in Philadelphia, PA. Law was previously Associate Professor, Department of Physiology and Biophysics, University of Illinois, Chicago College of Medicine, Chicago, IL.

Joseph Loscalzo has accepted a position as Professor and Chairman, Department of Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA. Loscalzo was Professor, Department of Medicine and Biochemistry, Boston University School of Medicine, Whitaker Cardiovascular Institute, Boston, MA.

Jennifer L. Lucitti, is currently a Postdoctoral Fellow, Department of Molecular Physiology and Biophysics, Baylor College of Medicine, Houston, TX. Lucitti was formerly a Research Associate, Department of Pediatric Cardiology, Children's Hospital of Pittsburgh, University of Pittsburgh, Pittsburgh, PA.

Gordon Gregor MacGregor has accepted the position of Research Assistant Professor, Department of Cell Biology and Physiology, Pittsburgh University School of Medicine, Pittsburgh, PA. MacGregor was formerly an Associate Research Scientist, Department of Cell and Molecular Physiology, Yale University School of Medicine, New Haven, CT.

Nansie Anne McHugh accepted the position of Associate Principal Scientist, Huntingdon Life Sciences, East Millstone, NJ. Formerly, McHugh, as an Associate Principal Scientist, was affiliated with the Department of Cardiovascular and Central Nervous System, Schering-Plough Research Institute, Kenilworth, NJ.

Leslie C. McKinney, a Pharmacologist, recently affiliated with the Division of Urologic and Reproductive Drugs, Center for Drug Evaluation and Research, Food and Drug Administration, Silver Spring, MD. Formerly, McKinney was an Assistant Professor, Department of Anesthesiology, Uniformed Services University Health Science, Bethesda, MD.

Karen Alice Munger is presently an Associate Professor, Department of Research and Development, University of South Dakota, Sioux Falls, SD. Munger was previously an Adjunct Research Associate, Department of Nephrology and Hypertension, VA Medical Center, University of California, San Diego, CA.

S. Jamal Mustafa is affiliated with the Department of Research and Graduate Studies, West Virginia University, Morgantown, WV. Mustafa was previously associated with the Department of Pharmacology, Physiology, and Heart Center, East Carolina University School of Medicine, Greenville, NC.

Loren G. Myhre is currently a Senior Researcher with Nike Inc., Nike Sports Research Lab, Beaverton, OR. Myre was previously a Research Physiologist, System Research, Armstrong Laboratory, Brooks Air Force Base, TX.

Jeffrey Scott Otis, a Postdoctoral Fellow, has affiliated with Emory VA Medical Center, Decatur, GA. Otis was formerly associated with Emory University, Department of Pharmacology, Emory University, Atlanta, GA.

James Lee Park, an Associate Staff Investigator, joined the Division of Nephrology, University of Michigan Medical School, Ann Arbor, MI. Park was previously affiliated with the Department of Hypertension and Vascular Research, Henry Ford Hospital, Detroit, MI.

Stine Falsig Pedersen, a Research Assistant, has affiliated with the Institute of Molecular Biology and Physiology, University of Copenhagen, Copenhagen, Denmark. Formerly, Pedersen was with the Department of Human Physiology, University of California, Davis, CA.

Ricardo Fernandez Perez, an Associate Professor, has affiliated with the Department of Physiology, Universidade Federal do Parana, Curitiba, Brazil. Prior to his new position, Perez was an Assistant Professor, Department of Surgery, Yale University School of Medicine, New Haven, CT.

Daniel Pomp, a Professor, has associated with the Michael Hooker Research Center, University of North Carolina, Chapel Hill, NC. Pomp was previously affiliated with the Department of Animal Science, University of Nebraska, Lincoln, NE.

Rhonda D. Prisby has moved to the Department of Exercise Physiology, Robert C. Byrd Health Sciences Center, West Virginia University, Morgantown, WV. Prisby was formerly a Research Assistant, Department of Health and Kinesiology, Texas A&M University, College Station, TX.

Michael Reutter is presently an Instructor, Biology Department, Normandale Community College, Bloomington, MN. Reutter was formerly an Instructor, Department of Science, Century College, White Bear Lake, MN.

Mark R. Rheault recently joined The Whitney Lab, University of Florida, St. Augustine, FL. Rheault was previously associated with the Department of Biology, McMaster University, Hamilton, Ontario, Canada.

Steven Edward Riechman, an Assistant Professor, recently joined the Department of Health & Kinesiology, Texas A&M University, College Station, TX. Riechman was previously affiliated with the School of Exercise, Leisure, and Sport, Kent State University, Kent, OH.

R. Brooks Robey, an Associate Chief of Staff for Research, is currently Associate Professor, of Medicine and Physiology, Dartmouth, White River Junction VA Medical Center, White River Junction, VT. Robey was formerly an Assistant

Professor, Department of Medicine and Nephrology, University of Illinois at Chicago College of Medicine, Chicago, IL.

David William Rodenbaugh has accepted the position of Assistant Professor, Biosciences Department, Minnesota State University, Moorhead, MN. Rodenbaugh was previously associated with the Department of Physiology, University of Michigan, Ann Arbor, MI, as a Postdoctoral Fellow.

J. Enrique Silva, is currently Professor, and Chief, Endocrinology, Baystate Medical Center, Division of Endocrinology, Springfield, MA. Silva was formerly Professor and Chief, Division of Endocrinology, S.M.B.D. Jewish General Hospital, McGill University, Montreal, Canada.

Aleksandra Sindic is currently a Postdoctoral Fellow, Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, OH. Sindic had been a Science Assistant, Medical Klin and Poliklin Experimental Nephrology, University of Klin Muenster, Munster, Germany.

Karen M. Spach has affiliated with the Teuscher Lab, University of Vermont, Burlington, VT. Formerly, Spach was with the Department of Biochemistry, University of Wisconsin, Madison, WI.

Sang-Hoon Suh, an Assistant Professor, has moved to Yonsei University, Department of Physical Education, Seoul, South Korea. Prior to his recent affiliation, Suh was associated with Queens College, The City University of New York, Department of Family Nutrition and Exercise Science, Flushing, NY.

David G. Taylor has accepted the position of Postdoctoral Associate, University of Central Florida, Orlando, FL. Formerly, Taylor was affiliated with the Department of Pharmacology and Therapeutics, University of Florida, Gainesville, FL.

Stephen John Trumble, an Assistant Professor, will be joining the Department of Biology, College of Arts and Sciences, University of Michigan, Flint, MI, as the Vertebrate Physiological Ecologist. Trumble was previously a Postdoctoral Fellow with the National Research Council, National Academy of Sciences, Seattle, WA.

Andrew K. Tryba, an Assistant Professor, has joined the Department of Physiology, Medical College of Wisconsin, Milwaukee, WI. Tryba formerly was affiliated with the Department of Physiology, Texas Tech University Health Science Center, Lubbock, TX.

Ping Ming Wang, a Research Scientist, has associated with the Department of Internal Medicine, University of Cincinnati, Cincinnati, OH. Wang had been a Research Engineer, Institute of Bioengineering and Bioscience, Georgia Institute of Technology, Atlanta, GA.

Yingxiao Wang has accepted a position of Assistant Professor, Department of Bioengineering, University of Illinois, Urbana-Champaign, Urbana, IL. Wang was previously affiliated with the Department of Bioengineering, University of California, San Diego, La Jolla, CA.

Daniel Edward Warren, a Postdoctoral Researcher, has joined the Department of Anesthesia, University of California, San Francisco, CA. Warren was previously affiliated with the Department of Molecular Pharmacology and Physiology, Brown University, Providence, RI.

Sean Michael Wilson, Assistant Professor, has affiliated with the Department of Pharmacology, University of Mississippi School of Pharmacy, University, MS. Wilson was formerly a Research Assistant Professor, Department of Pharmacology, University of Nevada School of Medicine, Reno, NV.

Brett J. Wong, as a postdoctoral scholar, has affiliated with the Department of Exercise Science, University of Iowa, Iowa City, IA. Wong was previously associated with the Department of Human Physiology, University of Oregon, Eugene, OR.

Baojian Xue is currently an Assistant Research Scientist, Department of Psychology, University of Iowa, Iowa City, IA. Xue was formerly a Postdoctoral Fellow, Dalton Cardiovascular Center, University of Missouri, Columbia, MO.

Yifan Yang has affiliated with the Department of Medical Sciences, University of California, Irvine, CA. Yang was formerly with the Department of Human Performance Laboratory, Ball State University, Muncie, IN.

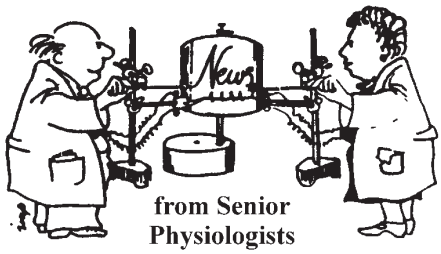
Linda Chia-Hui Yu, an Assistant Professor, has affiliated with the National Taiwan University, Graduate Institute of Physiology, Taipei, Taiwan. Yu had previously been a Postdoctoral Fellow, Department of Biological Sciences, University of Calgary, Calgary, Canada.

Patricio Zapata recently moved to the Universidad del Desarrollo, Santiago Chile. Zapata now holds the position of Professor, Faculty of Medicine. Zapata was previously Professor and Head, Laboratory of Neurobiology, Catholic University of Chile, Santiago, Chile.

Lin Zhang has joined the Formulaology Department, Liaoning College of Chinese Medicine, Shenyang, China. Zhang was previously affiliated with the Beijing University of Chinese Medicine, Formulalaology Department, Beijing, China.

Correction: Gerald A. Meininger accepted the position of Director, Dalton Cardiovascular Research Center, University of Missouri, Columbia, MO. Meininger was formerly Regents' Professor and Associate Head and Director Vascular Biology, Department of Medical Physiology, Texas A&M University Systems, College Station, TX.

Letters to Alan Hoffmann



Basil I. Hirschowitz writes: "Thank you for asking me to write the reminiscence and also for being patient with my delay in responding.

"I currently spend three days a week at the University, largely in clinical research, involving long-term treatment of patients with acid hypersecretion. However, as I enter my ninth decade, I have finally closed my GI clinical practice, bidding farewell to my loyal patients, some of whom I have been treating for more than 40 years.

"My currently funded research project, in its 16th year, deals with long-term medical treatment of Zollinger-Ellison syndrome and related hypersecretion disorders. The project has generated, and continuous to generate, enough data and questions to keep us usefully employed in analyzing and reporting results well into retirement. My group and I are actively examining clinical outcomes, as well as risk factors, for clinical manifestations of acid hypersecretion, (both recently published), and the potentially negative effects of potent acid suppression; we are also trying to explain the wide differences in sensitivity to proton pump inhibitors by genotyping P450, and HK TPase.

"The current research flows naturally from my longstanding studies, over a period of 55 years, of the physiology and pathophysiology of gastric acid, electrolytes and pepsin secretion in healthy and sick humans, and in many animal models including fistula dogs, rats, chickens, frogs, and guinea pigs as well as isolated peptic cells. This work has always served as the intellectual foundation for my clinical practice.

"My first exposure to physiology was at age 17 in my senior year at Witwatersrand University in Johannesburg under the tutelage of the brothers Joe and Teddy Gillman. Their enthusiasm for research and discovery was infectious, and has motivated me ever since. My major research then concerned vagus escape, and I was instructed in preparation of an open chest cat model for these studies by Jack Caunter who had been a technician in Sir Charles Sherrington's lab in Britain.

"After graduating with a B.Sc. in physiology in 1943, I resumed medical school training and served as an instructor in physiology for a year. Following a medical residency in Johannesburg, I spent four years in London, first at the Hammersmith Postgraduate hospital under Sir John McMichael and then with Francis Avery Jones at the Central Middlesex hospital, before moving to the Univ. of Michigan in Ann Arbor in 1953 and then to Temple University in Philadelphia. In 1959 I started the Gastroenterology Division at the Univ. of Alabama at Birmingham (UAB) and have been here happily ever since.

"Mine has been a hybrid career, and I always considered myself to be a physiologist working in medicine, shifting between basic and applied science, and equally at home presenting at FASEB as at DDW (Digestive Disease Week), or publishing in *AJP* as in *Gastroenterology* and other clinical journals.

"Training in medicine influenced my view of physiology as an integrative process. Though I often worked with isolated cells and tissues, I always came back to the whole organism. I never felt that one could tell what time it was by examining the parts of a clock that had been disassembled to find out what made it tick. Moreover, I was not always assured that taking a clock apart allowed one to deduce what had made it tick. As I now struggle to follow the torrents of molecular and other science and as I marvel at the exponential growth of knowledge, I wonder whether my integrative view was, in fact, a useful one-today it would seem old-fashioned, like being a translator of a lost language.

"Like Ahab, I have been pursuing a white whale for the last 40 years. I am still trying to solve two related puzzles concerning hypoglycemic stimulation of the gastric vagus in conscious gastric fistula dogs. Insulin hypoglycemia, or cerebral cytoglucopenia by 2-deoxyglucose, evoke a profound central counter-regulation. The first question is, what fuel does the brain then use to do this in the face of lack of glucose? Second, in the same studies, we also found that insulin, (but not 2-DG) in a dose related fashion, independently of glucose, profoundly inhibits even maximally stimulated acid secretion and that inhibition is not affected by giving glucose, but is very rapidly reversed by injecting IV KCl or RbCl .

"There is always some hesitation talking about one's life contributions. Strangely, while I consider myself a physiologist, what I am most widely known for is not physiology, but the invention of the fiberoptic gastroscope in 1956 that made possible fully flexible endoscopy. That invention impacted the practice of gastroenterology in the last 50 years arguably as much as any other single advance. It has since afforded me several awards and honors for which I am grateful.

"During the course of my career, I had the good fortune to interact with Horace Davenport in Ann Arbor, Simon Komarov in Philadelphia, Charlie Code and especially Warren Rehm. While working in Ann Arbor, I visited Warren several times in Louisville to seek his help with puzzling gastric secretion data. I remember the tidal wave of enthusiasm lasting long into the night with endless extensions of discussion on yellow lined pads in the converted basement that served as his lab. A few years later at UAB, I was on the Physiology Chairman Search Committee, and invited Warren as an outside advisor to the committee. He came, he saw, and was conquered; he moved to Birmingham to fill the UAB Chair and continued his intense career in gastric secretion until he retired many productive years later.

"As for advice to current trainees? We, who are leaving, envy you the opportunities that the rush of science is about to offer you. Defend it and make good use of it.

"With best wishes to the physiology fraternity."

John Mixner writes: "Thank you for the letter which was sent to members of APS who were born in 1915.

"I retired from Rutgers, the State University of New Jersey, in 1977 as Emeritus Professor of Animal Physiology after serving on the faculty there for 30 years. I immediately moved to Hendersonville, NC where my wife and I developed an outstanding rhodo-

dendron and azalea garden over the next 15 years. We were awarded the Bronze Medal of the Southeastern Chapter of the American Rhododendron Society in 1990 in recognition of our contributions to the Society.

"Travel photography has been one of my hobbies both before and after retirement. My wife and I have visited over 50 countries around the world, including International Dairy Congresses in London, Paris, Trento, New Delhi, Sydney and Washington, DC, where I have presented papers.

"Since 1993 I have lived in Carolina Village, a retirement community in Hendersonville, NC.

"My first 15 years at Rutgers were in the research area of: artificial breeding of dairy cattle; metabolism of bull semen; freezing bull semen for use in artificial breeding; measuring the thyroid gland thyroxin secretion rate in dairy cattle; measuring liver and kidney function in dairy cattle. I enjoyed working with graduate students, both MS and PhD candidates.

"My second 15 years at Rutgers were as Chairman of the Dairy Science Department (one year) and 14 years as Chairman of the Department of Animal Sciences where my work was mostly administrative."

Letters to Julio Cruz

Lawrence Espey writes: "Thank you for the birthday greetings. Other than the usual 'News' and 'Meeting Announcements' from the APS, I think your note is the first time I have heard from someone within the APS since I became a member in 1967. I am impressed by your willingness to take on this task of communicating with 'the more mature' members of the Society.

"In response to the information you requested, I continue to work full-time at teaching (giving all the lectures and labs in four courses per year) and research (currently operating on $350,000 from the NSF and $224,000 in intramural funds from Trinity University). I have two full-time research assistants, and one postdoctoral fellow (Haruhiro Kondo). In addition to my teaching and research, I spend considerable time serving as Chair of the University Committee for Commencements and Convocations, and am solely responsible for directing the winter and spring Commencements at this institution. Also, I am currently Acting Chair of our Animal Research Committee, along with serving as a member of several other committees. My hobbies include travel, jogging, and working truly like "a peon" on some property we own in the Texas Hill Country about 60 miles from San Antonio.

"I might add that I could have retired five years ago, and made a higher annual salary from our excellent pension plan (TIAA/CREF) than from my regular salary. However, I feel that I am close to bringing my 44 years of research on the physiology of ovulation to a comprehensive ending, and plan to work until I have achieved this goal.

"Hopefully, one day, my wife and I might manage to make it to Peru and other parts of South America. A decade ago, we spent a marvelous eight days in Guatemala, and last spring we enjoyed an eight-day cruise along the western coasts of Costa Rica and Nicaragua, but we have not managed to make it further south."

Jorge Fischbarg writes: "Thank you for your kind invitation in behalf of our Society. I am pleased to mark the occasion with some thoughts.

"I was born in Argentina, and went to a special high school (Colegio Nacional de Buenos Aires), where I found science. That interest slept while I was in Medical School (and played Tournament chess). However, it resurfaced after graduation. I was admitted to the Department of Biophysics at the University of Buenos Aires in 1961. My group was headed by Jose Zadunaisky, and included Mario Parisi, Virgilio Lew, Oscar Candia, Ricardo Montoreano, Dante Chiarandini, and Marta Piras. Candia, Montoreano and I followed Jose to Louisville, KY, in 1964. I then went to the Committee on Mathematical Biology, University of Chicago. After two years taking courses, I decided I was an experimentalist first, switched to physiology, finished a PhD under Constantine Spyropoulos, and in 1970 took up a position at Columbia University, where I remain.

"Where did all that training go? I think it helped. In 1971, I discovered a tiny electrical potential difference across corneal endothelium that solidified the idea of fluid transport across that layer. That finding also became popular among kidney proximal tubule researchers, who had had a controversy about the electrical activity of their preparation. I next modified the Bourguet technique, after which we could detect fluid movements with 1 nanoliter resolution. With this procedure we discovered the presence of fluid transport in conjunctival epithelium (simultaneously with Vincent Lee), and with my colleague Friedrich Diecke in lens epithelium.

"A high point came when in 1976 I went for a sabbatical to the legendary Physiological Laboratory in Cambridge. I interacted there with Guillermo Whittembury, Adrian Hill, and Thomas Zeuthen; I still do. I met Sir Alan Hodgkin; I was curious about the scientific thinking that guided his Nobel-winning research. What struck me was that he frequently resorted to mathematical descriptions of results, which he handled with great ease. Among those I knew, I had only detected such a gift in Hans Ussing and Adrian Hill.

"Being fascinated by water passage through membrane proteins, I teamed up with Samuel Silverstein and Ora Rosen. We published a technique to detect volume changes in Xenopus laevis oocytes expressing water-permeable membrane proteins; that procedure was immediately adopted by the laboratories of Alan Verkman and Peter Agre, among others. With Julio Hernandez we came to the conclusion that both channels and transporters have a similar structure involving a complex inner channel, an idea that extends the original unifying conception by Peter Lauger. Our most definitive contribution to this is about to appear. With Juan Carlos Vera we have recently communicated a homology structure of the glucose transporter Glut1.

"Fluid transport in epithelia is a major interest of mine, and a major unsolved mystery. A discussion of whether it is transcellular or paracellular has seesawed for years. Lately we are finding evidence that in corneal endothelium the fluid movement is driven by paracellular electro-osmosis, not by transcellular local osmosis across aquaporins. These findings have been met with both great interest and reserve, given that textbooks tend to say otherwise, and that research on aquaporins is immensely popular. Parenthetically, the idea of electro-osmosis is not even mine; it was shown to me

by Ussing. But whatever the precise mechanism, there are difficult ways to find out. I hope that tempers will cool down and that we will be able to do just that. In the meantime, the omens are good; my old mathematical bent has resulted in recent contributions that are consistent with paracellular flow from modeling endothelial transport (with F. Diecke) and tight junction electrochemistry (with Andrey Rubashlin, Pavel Iserovich and J. Hernandez). We are presently working in all these areas.

"For younger physiologists, I reproduce what I heard from an Infectious Diseases specialist who became Dean of a Medical School: 'All the advances I have seen in medical practice derive from breakthroughs in basic science laboratories.' Finally, I mistrust techniques that appear to give answers to all problems. I have found (while using them) that no single technique can do that, including patch clamp, molecular biology, or knockout/mutant animals. To me, the art of matching a problem with the techniques required to solve it is the key to advances in physiology. And if no technique exists, we need to create it. Fashionable research has no role in a demanding quest for solutions."

Donald T. Frazier writes: "Thanks so much for my birthday greetings from you and the APS. As you requested, I will summarize some of the activities in which I am currently engaged.

"I retired from the University Of Kentucky College Of Medicine in the year 2000 but accepted a post-retirement appointment which is still in effect. I was the former chair of the Department of Physiology with a joint appointment in Biomedical Engineering. My research program involved control of respiration of which I am still engaged. In fact, we will have an abstract at this year's Neuroscience meeting in Washington DC. A few years ago we moved our laboratory to the Lovelace Respiratory Research Institute in Albuquerque, New Mexico under the supervision of my associate, Dr. Fadi Xu. He is now completely in charge of the program with me acting as a consultant. I still enjoy helping with all aspects of the program, ie., writing the grants, manuscripts and data analysis. We are planning to submit a continuation of our study on the role of the cerebellum in respiratory regulation this coming spring. Fadi and I have published many papers on the cerebellum and hopefully have established its importance in breathing.

"In addition, in 1980 we began our involvement in our Outreach Program for Science and Health Career Opportunities. This interest involved into a free standing Center of which I am still the Director. We have our own building complete with an exhibit area and interactive classroom. I still believe we have the best physiology teaching lab on campus but, come to think of it, we may have the only one. We speak to 5,000 to 7,000 students during the school year either on or off campus. We have a mobile classroom that allows us to take our show on the road to rural areas. In the summer, we hold science camps and motivational programs at various levels and for different lengths of time. Also, we place around 30 undergraduate and high school students in research labs throughout the medical center. Many of our programs have concentrated on under-represented students either culturally or geographically.

"We still have one active NIH grant. About six years ago, NIGMS chose us to develop an internet based grant writing course to help faculty from minority institutions be more successful with their proposal submissions. We initiated such a course and have trained over 200 faculties to date. We were recently renewed and are in the process of revising the existing 14 modules and writing two more. Our format is the NIH RO1 with the modules representing the various components of the 398 application. Faculties are brought to our campus for an orientation but go through the course at their home institution. Under development is a peer review process in which the participants can electronically receive feedback as they write the various components of their proposal.

"We are constantly up-grading the modules to make sure we are current with all the changes in forms and policies.

"I have remained active on campus and the community. I currently serve on four boards (president of two) and one commission. Needless to say I love retirement as it allows one to pick and choose what you do."

W. Curtis Worthington writes: "I became a State of South Carolina retiree officially in 1991 at which time I was Associate Dean for Academic Affairs and the Director of the Waring Historical Library. I am happy to say that I have been allowed to remain the latter ever since. My arrangement with the University is to spend three days a week in the library with a staff consisting of a Curator, an Associate Curator and more recently an Archivist. I work on Tuesdays, Wednesdays and Thursdays. I have devoted the rest of my time for the most part to activities on or in the water. I was brought up on one of the Sea Islands of South Carolina and I have a natural inclination toward the estuaries, creeks, and inlets of the local area.

"I have had an interest in history since school days and my interest in the history of medicine was a natural development. I have continued to write on a variety of historical subjects and I recommend it as an excellent way to hang on to at least some of one's neurons. I'm currently pursuing a biographical work on Thomas Trotter, a British naval surgeon of the late 18th and early 19th centuries. He was a major contributor to reform of the British Navy and wrote poetry, a combination that I found intriguing.

"My words of wisdom such as they are: *1*) You are not married to the bench. Retirement is not a divorce; *2*) Plan in advance for your post retirement life. Know what it is that you are going to be doing after your last day in the lab; *3*) Hang on to whatever intellectual activity attracts you and pursue it. The possibilities are endless!

"In regards to the disposition of my papers, I'm fortunate in that a formal archive is in the early stages of development here at the Medical University of South Carolina and the Archivist works under my formal purview. I, therefore, have available advice on what to retain and what not to retain conveniently at hand.

"Thank you very much for affording me this opportunity to express my rather strong feelings about retirement and what a rewarding period in life it can be." ❖

22nd Annual Computed Body Tomography—Cutting Edge 2006

Thursday February 16, 2006-Sunday February 19, 2006
Disney Yacht and Beach Club Resort
Orlando, FL

Presented by:
Johns Hopkins Medicine
The Russell H. Morgan Department of Radiology and Radiological Science

Course Description:
This seminar for the radiologist will provide a comprehensive review of recent advances in computed body tomography focusing on 16 and 64 slice MCDT. A series of focused lectures has been designed to concentrate on specific topics in depth. Participants will have the opportunity to expand their knowledge of the latest concepts in multidetector-row CT, CT angiography, the value of high resolution CT in the chest, the uses of CT in the GI tract, cardiac CT, and coronary artery imaging and PET/CT in oncology. There will be time for questions and discussion. Optional hands-on workstation training will be available. The daily schedule has been designed to include ample time to enjoy the luxurious facilities of the Disney Yacht and Beach Club Resort and the Disney attractions.

Participants will expand their knowledge in:
the latest concepts in the chest and cardiac CT, including coronary artery imaging;
the newest applications of multidetector/multislice CT;
the clinical applications of CT angiography (CTA);
the role of CT in GI pathology, including virtual colonoscopy;
the latest concepts in liver and renal imaging;
the use of workstations for CT angiography and 3D imaging.

Registration:
Registration at the Disney Yacht and Beach Club Resort will be:
Wednesday, February 15, 6:00-7:30 PM.
Thursday, February 16, 7:00-7:55 AM.

Location:
Disney Yacht and Beach Club Resort 407-934-3372; 1700 Epcot Resorts Boulevard Fax: 407-934-3305, Lake Buena Vista, Orlando, FL 32830.

Registration deadline:
February 9, 2006

Fees: Physicians: $700;
Residents/Fellows/Allied Health Professionals: $650.

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

Contact: Office of Continuing Medical Education Johns Hopkins University School of Medicine Turner 20, 720 Rutland Avenue; Baltimore, MD 21205-2195; 410-955-2959; Fax: 410-955-0807 Email: cmenet@ihmLedr; http://www.hopkinscme.ne. ❖

12th Annual Update on the Treatment of Alzheimer's and Related Disorders

Defining the Standard of Care
Theme: Behavioral and Other Neuropsychiatric Symptoms: Pathways to Optimal Diagnosis and Treatment

March 25, 2006
Johns Hopkins University School of Medicine; Thomas B. Turner Building, Johns Hopkins University School of Medicine, Baltimore, MD

Target Audience: Physicians, psychologists, nurses, social workers, pharmacists, activity therapists, administrators and other professionals who care for dementia patients in any setting will benefit from this course.

Course Description: This annual course is designed to provide an update of state-of-the-art, practical approaches to the care of patients with dementia and Alzheimer's disease for all groups of health care professionals. This year's course will focus on the behavioral and neuropsychiatric symptoms of dementia. These symptoms complicate almost every case of dementia and have significant adverse effects on patients and caregivers. They are some of the most treatable symptoms of the disease. Their treatment involves careful differentiation followed by the interplay of a series of nonmedication and medication interventions. Serious questions about the safety of certain medications (atypical and perhaps other antipsychotics) for these symptoms have been raised.

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

The Johns Hopkins University School of Medicine designates this educational activity for a maximum of 7.5 hours in category I credit toward the AMA Physician's Recognition Award. Each physician should claim only those hours of credit that he/she actually spent in the activity.

Fees: Physicians: $120; Residents, Fellows, Nurses and Allied Health Professionals: $75.

Contact: Office of Continuing Medical Education Johns Hopkins University School of Medicine Turner 20, 720 Rutland Avenue; Baltimore, MD 21205-2195; 410-955-2959; Fax: 410-955-0807 Email: cmenet@ihmLedr; http://www.hopkinscme.ne. ❖

2006

February 11-16

Medical Imaging, San Diego, CA. *Information:* http://spie.org/conferences/calls/06/mi/.

February 18-22

50th Annual Meeting of the Biophysical Society. Salt Palace Convention Center, Salt Lake City, UT. *Information:* http://www.biophysics.org.

March 3-6

Second International Meeting on Physiology and Pharmacology of Temperature Regulation, Phoenix, AZ. *Information:* Andrej A. Romanovsky, MD, PhD, Director, Systemic Inflammation Laboratory Trauma Research, St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, AZ 85013 USA. Tel: 602-406-5059; Fax: 602-406-4113; Email: aromano@chw.edu; http://www.feverlab.net/meeting/index.htm.

March 6-8

International Symposium on Clinical Neurology and Neurophysiology, Tel Aviv, Israel. *Information:* ISAS International Seminars, PO Box 574, Jerusalem 91004, Israel. Tel: ++972-2-6520574; Fax: ++972-2-6520558. http://www.neurophysiologysymposium.com.

March 29-April 1

3rd International Conference on Functional Genomics of Aging, Palazzo Reale, Palermo, Sicily. *Information:* Conference Secretariat Lyn Aitken, Grennacres, The Green, Goosey, Faringdon, Oxon SN7 8PA UK. Tel: +44 0 1367 718500; Fax: +44 01367 718300; email: fga2006@elsevier.com.

April 22-26

8th International NPY Meeting, Clearwater, FL. *Information:* http://www.doce-conferences.ufl.edu/npy.

June 24-29

31st FEBS Congress: Molecules in Heath and Disease (hosted by Turkish Biochemical Society), Istanbul, Turkey. *Information:* ODS Congress Management Sari Asma Sok. No: 8, 34464 Yenikoy, Sariyer, Istanbul, Turkey. Tel: +90 212 299 99 80; Fax: +90 212 299 99 77; Email : febs@febs2006.org; http://www.febs2006.org/.

June 28-July 1

5th International Congress of Pathophysiology, Beijing, China. *Information:* Prof. Liling Wu, Secretary General of ISP2006, Department of Pathophysiology, Peking University Health Science Center, 38 Xueyuan Road, Beijing 100083, China. Fax: +86 10 82802403; E-mail: wull@isp2006.org.cn or pathophy@bjmu.edu.cn; http://www.isp2006.org.cn.

July 3-7

The Third International Symposium on Aero Aqua Bio-Mechanisms (ISABMEC 2006), Okinawa, Japan. *Information:* Internet: http://abmech.org/isabmec2006/.

September 2-6

European Respiratory Society 2006 Annual Congress, Munich, Germany. *Information:* http://www.ersnet.org.

September 3-8

2006 Gordon Research Conference on Molecular Mechanisms in Lymphatic Function and Disease, Les Diablerets, Switzerland. *Information:* http://www.grc.org/.

October 26-29

Joint World Congress on Stroke: International Stroke Society, Mediterranean Stroke Society and Southern African Stroke Foundation, Cape Town, South Africa. *Information:* Global Congress Organizers and Association Management Services, 17 Ru du Cendrier, P.O. Box 1726, CH-1211 Geneva 1, Switzerland. Tel: +44 22 908 0488; Fax: +44 22 732 2850; Email: stroke2006@kenes.com; http://www.kenes.com/stroke2006.

MEMBERSHIP APPLICATION FORM
The American Physiological Society

1. Check membership category you are applying for: ❑ Regular ❑ Affiliate ❑ Student
2. Do you currently hold membership in the APS? ❑ Yes ❑ No
3. If you answered yes to above, what is your category of Membership? _____ Year elected? _____
4. Name of Applicant: _____ / _____ / _____
   Last Name or Family Name *First Name* *Middle Name*
5. Date of Birth _____ / _____ / _____ Optional: Male ❑ Female ❑
   Month *Day* *Year*
6. Institution Name _____ Department _____
   (Please do not abbreviate Institution Name)
7. Institution Street Address _____
8. City/State/Zip/Country _____
9. Home Address ***(Students only)*** _____
10. Work Phone _____ Home Phone _____
11. Fax _____ E-mail _____

12. **EDUCATIONAL STATUS: ▶ <u>IMPORTANT</u> for <u>STUDENTS</u>: **If you are enrolled as a student for an advanced degree (Ph.D., M.D., D.V.M.) please include the <u>month and year</u> <u>you expect</u> <u>to receive your degree</u>.**

Dates**	Degree	Institution	Major Field	Advisor

13. **WHAT IS YOUR SECTION AFFILIATION?** Please identify and rank up to three sections to which you desire affiliation. (e.g., 1 = primary affiliation, 2 = secondary affiliation, 3 = tertiary affiliation). **<u>There can be only one "Primary" affiliation.</u>**

___Cardiovascular	___Endocrinology & Metabolism	___Renal Physiology
___Cell & Molecular Physiology	___Environmental & Exercise Physiology	___Respiration Physiology
___Central Nervous System	___Gastrointestinal & Liver Physiology	___Teaching of Physiology
___Comparative & Evolutionary Physiology	___Neural Control & Autonomic Regulation	___Water & Electrolyte Homeostasis

14. **DO YOU WORK IN INDUSTRY?** ❑ YES ❑ NO

15. **SPONSORS** (Sponsors must be Regular APS Members. If you are unable to find sponsors, check the box below, and we will locate them for you.)

CHECK THIS BOX IF APPLICABLE: ❑ Please locate sponsors on my behalf.

#1 Sponsor Name _____	#2 Sponsor Name _____
Mailing Address _____	Mailing Address _____
_____	_____
_____	_____
Phone _____	Phone _____
Fax _____	Fax _____
E-mail _____	E-mail _____
Sponsor Signature* _____	Sponsor Signature* _____

**signature indicates that sponsor attests applicant is qualified for membership.*

▶ Please turn over for more questions...and mailing instructions.

Membership Application (Continued...) **Applicant Last Name** (please print)_____

16. OCCUPATIONAL HISTORY [Check if student ❒]

Current Position:

Dates	Title	Institution	Department	Supervisor

Prior Positions:

Dates	Title	Institution	Department	Supervisor

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 contransport in isolated mammalian villus enterocytes. Am J Physiol Gastrointest Liver Physiol 280: G26-G33, 1991.

18. DOCTORAL DISSERTATION TITLE (if applicable):

19. POSTDOCTORAL RESEARCH TOPIC (if applicable):

20. WHICH FACTOR INFLUENCED YOU TO FILL OUT OUR MEMBERSHIP APPLICATION?

❑ Mailer ❑ Meeting (Which meeting?_____) ❑ Colleague ❑ Other_____

Mail your application to: Membership Services Department, The American Physiological Society
9650 Rockville Pike, Bethesda, Maryland 20814-3991 (U.S.A.)
(or fax to 301-634-7241) (or submit online at: www.the-aps.org/membership/application.htm)

Send no money now—you will receive a dues statement upon approval of membership.
Approval Deadlines: Membership applications are considered for approval on a monthly basis.
Questions? Call: 301-634-7171, Fax: 301-634-7241, E-mail: members@the-aps.org, Web: www.the-aps.org

R/ 2005