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Integrating the Life Sciences from Molecule to Organism

The Physiologist

INSIDE

Experimental Biology 2011

Changes in APS Sectional Programming for EB2011

Expanded programming and meeting-within-a-meeting structure

Pamela Carmines, Chair, Section Advisory Committee
Ron M. Lynch, Chair, Joint Program Committee

The scientific program for the annual Experimental Biology meeting is developed largely by the 12 individual APS Sections who request proposals for symposia and featured topics from membership, then select the most competitive for programming. Through this process, APS sectional programming at EB provides platform sessions and poster sessions that reflect the current state-of-the-art for the field. Subsequently, the Joint Program Committee (JPC, which includes representatives from each Section) organizes time and room scheduling within the meeting matrix. With multiple scientific meetings held each year, individual investigators often must decide which specific meeting(s) to attend. Obviously, investigators prefer to attend a meeting that offers a strong scientific program covering the breadth and depth of their particular field of interest. In light of this reasoning, the APS Section Advisory Committee (SAC; comprised of all APS Section Chairs) recently developed a plan designed to enhance the efficiency of the meeting and expand APS programming, with each Section being allotted one additional platform session (featured topic session or symposium) beginning with EB2011. This plan has two key components:

First, given the limited number of meeting rooms available at EB, the only feasible means of offering additional programming is to extend the duration of the meeting. This is being achieved by a two-hour extension of APS programming on Wednesdays, with sessions ending at 5:00 pm. Thus, Wednesday becomes a full meeting day, rather than a partial day of programming. By providing compelling programming through Wednesday afternoon, this last day of EB is envisioned to become more widely recognized as an integral component of the meeting—and one that is worth attending!

In conjunction with extending the meeting on Wednesday, the SAC also developed a plan to focus sectional identity by clustering programming for each APS Section within contiguous days. For example, programming developed by the Water & Electrolyte Homeostasis Section will occur only on Saturday, Sunday, and Monday, while programming developed by the Gastrointestinal & Liver Section is scheduled to occur completely on Tuesday & Wednesday. In contrast, the extensive program offerings developed by the Cardiovascular Section and the Respiratory Section (the largest APS Sections) span Sunday through Wednesday. In addition, each Section's programming is coordinated with other APS Sections and Interest Groups sharing closely related interests. For example, Epithelial

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From the President's Desk

Dear Friends:

Over the past year, the Society has taken part in some exciting discussions with our sister societies and organizations. However, before I tell you about this, allow me to thank you all for a great response to the recent member survey. We achieved a more than 25% response rate, which is almost twice that expected for a survey of such length. We are analyzing the responses as we speak, and, as promised, they will contribute substantially to the strategic planning retreat in January 2011.

Science has never been more global and collaborative than it is today, and with the electronic revolution, barriers to such collaboration will become even lower in the future. The APS has been increasingly proactive in reaching out to sister societies in the spirit of collaboration—to the extent that we recently developed formal guidelines to help us make decisions on how and under what conditions we should engage in such collaborations—we cannot be all things to all people.

Perhaps our closest "sibling" is The Physiological Society (TPS) across the pond. Past President Gary Sieck and I were graciously hosted by TPS at their recent annual meeting in Manchester, where we engaged in a short but very productive discussion on several fronts (how to work with the IUPS; how to make Physiology available to TPS members; how to continue scientific involvement in each other's annual meetings; how to work together to continue the Physiology in Medicine series now that the Annals of Internal Medicine has decided to end this venture with us and making the decision to initiate an annual, one day, leadership retreat to discuss issues like these and others in some depth on a continuing basis). Parallel discussions were proposed between chairs of some key committees of each society, such as education, program and publications, as the opportunities arise. These retreats would alternate yearly between the UK and the USA, and the first will be on UK soil in mid 2011. In 2012, on USA turf, TPS will join us at EB as we celebrate our 125th birthday.

While this is exciting, we recognize the need to be inclusive of physiological societies around the world. And it is especially important to realize that this is about collaboration, not colonization or dominance. Accordingly, we are similarly discussing possible collaborations with our Latin American colleagues, spearheaded by the Brazilian Physiological Society, who recently hosted an APS leadership visit to their annual meeting. There is good chance of a Pan-American Physiology scientific meeting being jointly organized, maybe for 2014 so as not to conflict with the IUPS meeting in 2013. Every Physiological Society from Canada to Argentina would be invited to be involved. Further contacts and discussions are ongoing with physiological societies in Africa and Europe.

Finally, we are actively engaged in discussion with the IUPS leadership. APS sees great, yet not fully realized, potential in the mission of the IUPS, and, in step with TPS, is having an ongoing series of discussions with IUPS to determine how IUPS can facilitate collaboration across the world's physiological organizations. Stay tuned! ❖

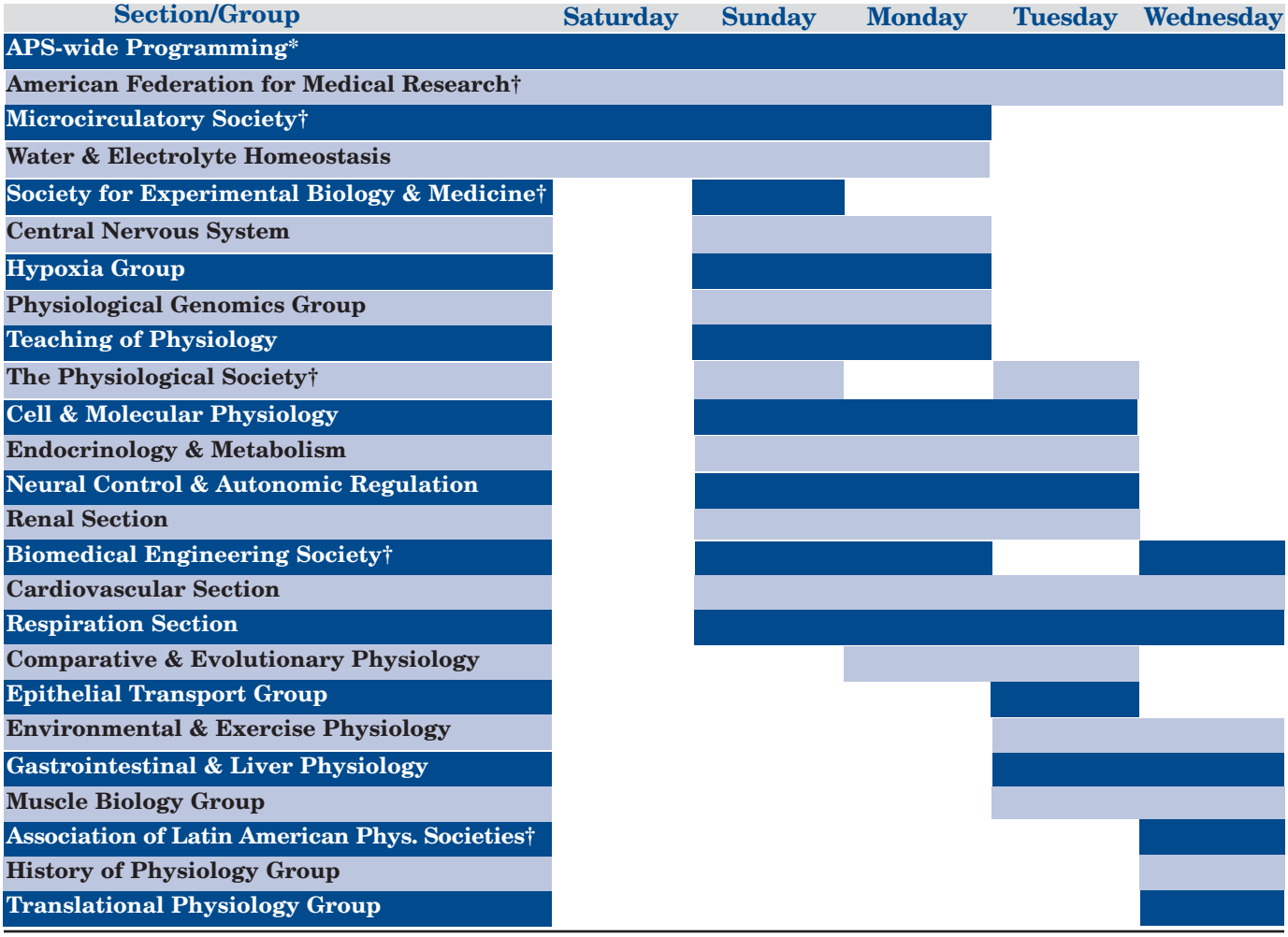
Peter D. Wagner, M.D.
President

Transport Group programming is coordinated with the Renal Section and GI & Liver Section programs. In this manner, the APS programming at EB will take on a "meeting-within-a-meeting" structure that provides focused attention on related topics presented on specific meeting days. The accompanying figure summarizes the arrangement of APS Section and Interest Group programming, as well as that of our guest societies, to be utilized at EB2011. This predictable arrangement of APS programming can be used by EB attendees in making their travel plans.

The JPC has already begun implementing these new aspects of APS programming for EB. The platform sessions for EB2011 have been positioned within the program grid in a manner consistent with the meeting-within-a-meeting structure shown in the figure. The availability of a pre-arranged structure for Section programming has allowed the JPC to focus more attention on assigning appropriately-sized rooms and minimizing scientific overlap during simultaneous sessions. One outcome of this process is that EB attendees should find the meeting to be more efficient, as many Sections will be able to hold most or all of their platform sessions in the same room. In many instances, related sessions programmed by different groups will be located in nearby rooms, thereby limiting the need to rush from one end of the convention center to another in order to hear one or two presentations!

Incorporating a full day of APS programming on the last day of EB means that many attendees will need to stay in the host city though Wednesday night, especially when the meeting is held at a west coast venue. This situation points to the need to also organize the ancillary sessions around the sectional clusters. Sectional dinners, the APS business meeting, and a variety of APS committee meetings and social events will see alterations in their scheduling pattern over time. Undoubtedly, these changes to the APS program structure during EB will require refinement in future years. Accordingly, a survey will be distributed to EB2011 attendees within a few weeks after the meeting, with the intent of identifying aspects of the program structure requiring further attention. The SAC and JPC will work diligently to respond appropriately to this feedback. While the structure of the meeting is undergoing some transition, our members should be confident that APS will continue to offer compelling EB programming that presents state-of-the-art research in the field of physiology. We look forward to seeing you at EB2011 in Washington, DC! ❖

Figure 1. Experimental Biology 2011 Program Grid.



*Workshops, Cannon Lecture, Bowditch Lecture, Randall Lecture, Cross-Sectional Symposia, Physiology InFocus
†Guest Society

Puerto Rico Physiological Society Report

The Puerto Rico Physiological Society (PRPS) has 48 registered members, of which 37 have Regular status and 11 have Associate status. Most of the Associate Members are high school students. The Executive Committee meets every two months for discussion of issues and planning.

The PRPS is currently working on possible partnerships with the private industry. One of the most important collaborations developed involves Pfizer pharmaceuticals. The PRPS and Pfizer will conduct outreach activities in four high schools of the island during the academic year 2010-11. Local outreach activities will be conducted by our members (faculty and graduate students) and will involve science discussions and basic experiences in physiology for advanced science students. We expect to impact around 200 students with this initiative. High school teachers will be also integrated in this activity. As a result, we expect to develop a continuing education program in physiological sciences for participating teachers. Pfizer has agreed to contribute $5,000 to the PRPS to sponsor this activity that should start next august. This initiative is important because it contributes to science education and creates awareness in the field among potential scientists. It also helps to attract high quality students to participate in the activities of the Chapter and APS.

The PRPS is also working in its annual meeting. The meeting had to be re-scheduled for next February 2011 to raise the necessary funds for the planned activities.

Nelson Escobales
Chapter President

New Regular Members

***transferred from Student Membership**

Noopur Amin
Univ. of California, Berkeley
Kurt Amsler
NYCOM, Old Westbury, NY
Naresh Chandra Bal
Ohio State Univ.
Tue G. Banke
San Diego, CA
Marc D. Basson
Michigan State Univ.
Paul David Berk
Columbia Univ. Med. Ctr., NY
Roopa Biswas
Uniformed Services Univ., MD
Judith Blaine
Univ. of Colorado Denver
David G. Breckenridge
Gilcad Sciences Inc, Palo Alto, CA
Frank Brosius
Univ. of Michigan
Mary Beth Brown*
IUPUI, Indianapolis, IN
J. Scott Bryson
Univ. of Kentucky
Deepti Bulchandani
Univ. of Kansas
Lara Anne Carlson
Univ. of New England, Biddeford, ME
Alberto Casas
ROCHE, Lima, Peru
Wei-Chun Chin
Univ. of California, Merced
Sonya D. Coaxum
Medical Univ. South Carolina
Laura Lee Colgin
Ntnu-Kavli Inst. Systems Neurosci's, Norway
Theresa Marie Curtis
SUNY Cortland, NY
Michael Paul Czubryt
Univ. of Manitoba, Canada
Vincent J. De Beer
Erasmus MC Hosp., Netherlands
Brian Delisle
Univ. of Kentucky, Lexington
Latifa A. Dill Naher
Prime Med. Coll. & Hosp., Bangladesh
Max James Donean
Simon Fraser Univ., Canada
Andrew Donini
York Univ., Toronto, Canada
Karen L. Edelblum
Univ. of Chicago, IL
Ramon Reig Garcia
Inst D'Invest Biomed, Spain
Michael B. Hovater
Univ. of Alabama, Birmingham
Hitoshi Inokawa
Kyoto Prefectural Univ. of Med., Japan
Miriam Ivenshitz
Weizmann Inst. Sci., Rehovot, Israel
Leslie M. Kay
Univ. of Chicago, IL
Reza Khanbabie
Univ. of Ottawa, Canada
C.J. Klok
Arizona State Univ.
Robin B. Knobel
Duke Univ., NC
Fred William Kolkhorst
San Diego State Univ., CA
Francesco Lacquaniti
Univ. of Rome Tor Vegata, Italy
Chuanyong Liu
Shandong Univ. Sch. Med., China
Hong Liu
Univ. of Illinois, Chicago
Esther Lubzens
Israel Oceanog/Limnological Res, Israel
Ming Chieh Ma
Fu Jen Catholic Univ., Taiwan
Qingcheng Mao
Univ. of Washington, Seattle
Takayuki Matsumoto
Medical Coll. of Georgia, Augusta
Rafi Mazor
Univ. of California, San Diego
Srboljub M. Mijailovich
Caritas St. Elizabeth's Med. Ctr., MA
Karni S. Moshal
North Carolina Central Univ.
Masahiro Murakami
Yale Univ., CT
Stephanie Jane Murphy
Oregon Hlth. & Sci. Univ.
Isabel Navarro
Univ. of Barcelona, Spain
Peter Hugo Nelson
Benedictine Univ., Lisle, IL
Robert O. Nneli
Abia St Univ. of Uturu, Nigeria
Leonardo Nogueira
Univ. of California, San Diego
David M. Ornitz
Washington Univ., MO
Carlos A Paladini
Univ. of Texas, San Antonio
Jeanie Park
Emory Univ., GA
Marnie Phillips
Massachusetts Inst. of Tech.
Jonathan Q. Purnell
Oregon Hlth. & Sci. Univ., Portland
Hassaan Anwer Rathore*
Univ. of Sains Malaysia, Penang
Sundaram Ramasamy
Harvard Med. Sch., MA
Maria V Sanchez-Vives
Univ. of Barcelona, Spain
Richard Schulz
Univ. of Alberta, Canada
Yoichi Seki
Max Planck Inst., Germany
Yoshitatsu Sei
NIDDK, NIH, Bethesda, MD
E. Mitchell Seymour*
Univ. of Michigan
Yatrik M Shah
Univ. of Michigan
Subeena Sood
Medstar Health Res. Inst., Wash, DC
David C. Spray
Albert Einstein Coll. Med., NY
Sandra M. Wells
Univ. of Nebraska
Christian M. Westby
NASA, Houston, TX
Andrew P. Wojtovich
Univ. of Rochester Med. Ctr., NY

New Affiliate Members

Simone Brito
College of Southern Nevada
Andrew W. G. Helle
Jackson Senior High School
Danielle Hobbs
Medcentric, Inc.
Laddie V. Tackett
Anthem Blue Cross Blue Shield, KY
Sara Walters Van Orden
Quinebaug Valley Comm. Coll., WA

Recently Deceased Members

Dinkar K. Kasbekar
Raleigh, NC
Karl J. Ullrich
Frankfurt, Germany

New Undergraduate Student Members

Prashasti Agrawal
Dartmouth College, NH
Ayed Allawzi
Purdue Univ., IN
Ashley Jean Bauer
Univ. of Minnesota, Duluth
William T. Buis
San Francisco State Univ., CA
Robert Casale
Kapi' Olani Comm. Coll., HI
David Coppedge
Univ. of Oregon
Jacquelynn N. Cuellar
Univ. of Texas, Brownsville
Cheryl J Dykstra-Aiello
Eastern Washington Univ., WA
Jonathan Gumucio
Univ. of Michigan
Robert Heler
Univ. of Richmond, VA
Diana Herrera
Univ. of Houston, TX
Jacob Hull
Kansas State Univ.
Michael Johnston
Univ. of North Carolina
Anh-Thu Le
Cornell Univ., NY
Kelly M. Lufkin
Hope College, MI
Mariaha Lyons
Univ. of North Dakota
Danielle Mabrey
Univ. of Wisconsin
Mary C. McAllister
Univ. of Notre Dame, IN
Christina Mitchell
Mount Royal Univ., Calgary, Canada
William P. Mosenthal
St. Lawrence Univ., NY
Alexandrea Nichols
Univ. of Utah
Courtney Nichols
Univ. of Alaska, Fairbanks
Matthew V. Puccetti
Univ. of Dayton, OH
Sara Redd
Bucknell Univ., PA
Sarah Reed
Univ. of Washington
Dan Smelter
Univ. of Minnesota
Anna Srouji
Univ. of California, Riverside
Rheana A. Techapinyawat
Univ. of Arizona Coll. of Med.
Breanne N. Wright
Univ. of Maryland, Baltimore County
Sen Xu
Tulane Univ., LA
Caitlin M. Zillner
Univ. of Wisconsin

New Graduate Student Members

Olushola Emmanuel Adeleye
Univ. of Agriculture, Nigeria
Davron Aliev
Univ. of California, Irvine
Jody M. Beers
Univ. of Maine
Thomas Scott Bowen
Univ. of Leeds, UK
Ryan Michael Broxterman
Kansas State Univ.
Maricarmen Colon
Ponce Sch. of Med., Puerto Rico
Daniel J. Dellostritto
Northeastern Ohio Univ. Coll.
Matthew Garver
Ohio State Univ.
Jasmine Lacey Hardy
Univ. of North Carolina, Charlotte
Paul Clifford Henning
Florida State Univ.
Walter Holbein
Univ. of Texas HSC, San Antonio
Tiago S. Hori
Memorial Univ., Newfoundland
Marla Edwinna Issac
Northshore Univ. Healthsystems, IL
Robert Acton Jacobs
Univ. of Zurich, Switzerland
Eddie Jo
Florida State Univ.
Shirit Kamil-Rosenberg
Columbia Univ., NY
Madhusudhanan M. Keralapurath
Univ. of Georgia
Andy Vilay Khamout
Florida State Univ.
Dennis Kolosov
York Univ., Toronto, Ontario, Canada
Rebecca Danti Larson
Univ. of Georgia
Steven K. Malin
Univ. of Massachusetts
Jane Ama Mantey
Meharry Medical College, TN
Christopher R. Martens
Univ. of Delaware
Ramaldo S. Martin
Georgia Inst. of Technology
Davi A.G. Mazala
Univ. of Maryland
Merlijn JPMT Meens
Maastricht Univ., Netherlands
Daniel J Migliaccio
Stony Brook Univ., NY
Peter N . Mittwede
Univ. of Mississippi Med. Ctr.
E. Matthew Morris
Univ. of Missouri
Michael D. Nelson
Univ. of Alberta, Edmonton
Josh O'Brien
Adelphi Univ., NY
Om Prakash Paliwal
RNT Medical College, Rajasthan, India
Naim Panjwant
Univ. of Toronto, Canada
Neil Phillips
Univ. of Florida
Norberto N. Quiles
Columbia Univ., NY
Matt Racine
Univ. of Colorado, Boulder
Sushant M. Ranadive
Univ. of Illinois, Urbana
Astin Ross
Univ. of Michigan
Matthew Schubert
California State Univ., Chico
Salheddin M. Sharif
West Virginia Univ.
Fenghua Sun
Chinese Univ. of Hong Kong, Shatin
Lakeisha C. Tillery
Meharry Medical College, TN
Kristie Wells
Univ. of Central Missouri
Bernard Wone
Univ. of Nevada, Reno
Stephanie L Wyler
Boise State Univ., ID

APS Membership Statistics

2010 Total Membership **11,163**

Distribution by Employment (7,049 respondents)

Institution	Total	Percent
Phys. Departments	1,466	20.8
Administration	22	0.3
Clinical	794	11.3
College or University	2,417	34.3
Commercial Cos.	254	3.6
Comm. College or 2-yr. Inst.	11	0.2
Dental Schools	29	0.4
Government (Inc. VA)	248	3.5
High School	5	0.1
Hospitals and Clinics	274	3.9
Insts. and Fndns.	189	2.7
Medical Schools	736	10.4
Not-for-Profit Assoc.	13	0.2
Other Preclin. Depts.	310	4.4
Other, please specify:	48	0.7
Private Practice	26	0.4
Public Hlth. and Grad. Sch.	80	1.1
Retired	22	0.3
Veterinary Schools	105	1.5

Distribution by Racial Background and Heritage (*optional Personal Data: 5,570 responders*)

American Indian or Alaskan Native	11
Asian or Pacific Islander	851
African American	86
Anglo American (non Hispanic)	4,622

Distribution by Ethnicity(*optional Personal Data: 5,516 responders*)

Hispanic	211
Non-Hispanic	5,305

Distribution by Gender (*optional personal data*)

Male	7,850
Female	2,792

Distribution by Age (*optional personal data*)

70+	1,329
60-69	1,549
50-59	2,163
40-49	1,998
30-39	1,440
20-29	639

Principle Type of Work (*6,438 respondents*)

	%
Administration	3.6
Clinical	5.4
Research	79.8
Teaching	11.1

Distribution by Primary Section Affiliation (10,742 respondents)

	%
Cardiovascular	22.4
Cell & Molecular	12.3
Central Nervous System	9.2
Comparative	3.9
Endocrinology & Metabolism	8.1
Environ. & Exercise	8.8
Gastrointestinal & Liver	5.4
Neural Control & Autonomic Reg.	5.0
Renal	7.3
Respiration	8.2
Teaching of Physiology	3.3
Water & Electrolyte Homeostasis	2.4

Distribution by Group Affiliation

Epithelial Transport	1,026
History of Physiology	569
Hypoxia	814
Members in Industry	364
Muscle Biology	1,123
Physiological Genomics	428
Translational Research	431

APS Membership in The Americas

USA	8,425
Canada	534
Brazil	109
Mexico	42
Argentina	30
Chile	17
Peru	9
Venezuela	5
Colombia	3
Dominica	2
Jamaica	2
Netherland Antilles	2
Saint Kitts and Nevis	2
Barbados	1
Cayman Islands	1
Grenada	1
Puerto Rico	1
Uruguay	1
Cayman Islands	1
Trinidad and Tobago	1

US States with More than 100 Members

CA	824
TX	542
NY	538
PA	415
MA	382
OH	369
IL	358
MD	348
NC	270
FL	259
GA	259
MI	242
MO	220
WI	219
MN	192
CO	184
TN	179
AL	176
IN	171
VA	169
LA	150
NJ	140
AZ	137
WA	137
CT	136
IA	128
KY	117
OR	111

APS Membership Outside The Americas (countries with >five members)

Japan	340
United Kingdom	207
Australia	155
Germany	133
France	96
Denmark	77
China	72
Switzerland	69
Italy	65
Sweden	62
Taiwan	60
Netherlands	58
Korea, Republic of	54
Spain	51
Israel	44
Belgium	41
India	40
Norway	30
New Zealand	29
Greece	27
Turkey	27
Nigeria	21
Ireland	15
Malaysia	14
South Africa	14
Thailand	14
Portugal	13
Czech Republic	11
Poland	10
Hungary	9
Singapore	9
Iran(Islamic Republic Of)	8
Austria	7
Croatia (Hrvatska)	7
Finland	7
Slovenia	7
Russian Federation	6
Saudi Arabia	6
Bangladesh	5
United Arab Emirates	5

Other countries represented: Balarus, Bulgaria, Egypt, Estonia, Iceland, Indonesia, Kuwait, Lebanon, Luxembourg, Macedonia, Mongolia, Montserrat, Mozambique, Napal, Oman, Pakistan, Philippines, Qatar, Romania, Samoa, Slovakia, Sri Lanka, Sudan, Tunisia, Ukraine, Viet Nam, and Yemen.

Canadian Provinces with Five or More members

Ontario	248
Quebec	83
Alberta	86
British Columbia	53
Manitoba	28
Nova Scotia	12
Newfoundland	10
Saskatchewan	6

APS Council Holds Summer Meeting in Bethesda

The APS Council held its annual summer meeting in Bethesda, MD, July 14-16, 2010, at the Bethesda Marriott Hotel. Each summer, the Council invites the APS Committee Chairs to the summer meeting to present their annual committee reports to Council. The committee reports begin on page 158 and will be posted to each committee's web page.

In addition to presenting their reports, the chairs discuss the highlights of their committees' activities and programs during the past year, and update Council on the committee's goals and plans for the coming year. The chairs also submit requests for new committee programs to Council for their approval. If the program requires new financial support, a New Programs Fund request is included with the request.

At the end of June, APS President Peter Wagner and Past President Gary Sieck attended the annual meeting of The Physiological Society (TPS). While at the meeting, they met with the TPS leadership and discussed the possibility of having an annual APS/TPS leadership retreat. This would be a one-day meeting, alternating each year between the TPS annual meeting and the APS annual meeting. Council approved having this annual leadership retreat and the first retreat will be at the TPS annual meeting in July 2011. The next retreat will be held in conjunction with EB12 allowing the TPS leadership to help APS celebrate its 125th anniversary. Other topics discussed at the meeting included IUPS issues; symposium exchange between APS and TPS at their annual meetings; reciprocal guest society status at each society's annual meeting; a proposal to have TPS purchase online subscriptions to "Physiology" for their members; "Physiology in Medicine"; and collaboration in international ventures.

At the spring Council meeting, Council approved a recommendation from the Publications Committee to add the position of Ethics Officer. This position will be filled by the outgoing Committee chair for a two-year term. The current Publications Committee Chair—Kim Barrett—will complete her term as chair on December 31 and will become the first Ethics Officer. The Council approved a recommendation from the Executive Cabinet to appoint Hershel Raff, Medical College of Wisconsin, as the new Publications Committee Chair. Raff will serve a four-year term from January 1, 2011 through December 31, 2014. Council also extended Ron Lynch's term as chair of the Joint Program Committee (JPC) for an additional three years. He will complete his tenure as the JPC chair on December 31, 2013.

Council received a request from The Physiological Society to have guest status at EB11 and EB12. TPS is sponsoring two symposium sessions at the EB11 meeting: *Emerging cardiorespiratory roles for gasotransmitters*, organized by Phillip K. Moore and Chris Peers; and *Molecular mechanisms underlying neurovascular protection in stroke*, organized by Giovanni Mann. The Council approved the request to give guest society status to TPS for EB11 and EB12.

The Public Affairs Committee proposed to Council and received approval to change the name of the Committee to the Science Policy Committee. John Chatham, Chair of the Committee, said that the goal of the name change is to provide greater clarity concerning the mission of the Committee. He said that over time, the definition of "public affairs" has broadened significantly, and the term "public affairs" can mean public relations rather than public policy. For more information on the Science Policy Committee, please go to http://ww.the-aps.org/committees.

The Animal Care and Experimentation (ACE) Committee submitted a request for approval of a new position statement entitled "Animal research is essential to the search for cures." Bill Yates, chair of the ACE Committee, said that one of the tasks the Committee undertook was to review all of the APS position statements, some of which had not been reviewed in several years. The Committee recommended replacing the position statement

APS Council: Back Row: Pam Carmines, Frank Powell, Thomas Pressley, Curt Sigmund, J.R. Haywood, Gordon Mitchell, Ida Llewellyn-Smith, Alan Sved, Jeff Sands, and Ron Lynch. Front Row (sitting): Kim Barrett, Usha Raj, Joey Granger, Peter Wagner, Gary Sieck, Linda Samuelson, and David Brooks.

APS Committee Chairs: Back Row: Janie Reckelhoff, Kathryn Sandberg, P. Darwin Bell, Patricia Molina, Thomas Schmidt. Front Row (sitting): Peter Lauf, Bill Yates, Erica Wehrwein, John Chatham, and John Buckwalter.

"Animal Research: the Humane Response to Human Suffering" (approved in 1987) with the statement, "Animal Research is Essential to the Search for Cures." The Council approved this recommendation.

The Education Committee reported on the final plans for APS participation in the US Science and Engineering Festival. Tom Pressley, Chair of the committee, said that there would be two exercises presented at the festival by APS. The first exercise is the Comparative Physiology exercise in which participants will feel how features such as fat and feathers can insulate animals from the cold, helping them to maintain their body temperature. The second exercise is the Cardiovascular exercise in which participants will use simple hoses and pumps to propel red-colored "blood" through tubing that represents vessels of different diameter and pressure heads to simulate the work associated with cardiac function.

The Career Opportunities in Physiology Committee has developed a proposal for an annual video contest for undergraduate and graduate students. The *APS Presents…Phantastic Physiology Voyage 2009: "Function Follows Form"* award will encourage undergraduate and graduate students to creatively connect with physiology and engages them with the broader public through a short video contest. The committee proposes two awards of $750 for first prize and $250 for Viewers Choice Prize. These videos would creatively demonstrate and/or explore a specific physiological function in five minutes or less. The video can be staged as a short play, commercial, news broadcast, talk show, music video, or documentary. The awards will be presented at the annual Experimental Biology meeting.

APS Employee Reception: Back Row: Ed Dwyer, Scarletta Whitsett, Joseph Girouard, David Udoff, Peter Wagner, Stephen Strumpf, and Martin Frank. Front Row: Virginia Million, Beverly Rude, Kathleen Pleet, Teki Bynum, Penny Ripka, and Stephani Rozier.

One of the highlights of the summer Council meeting is the employee appreciation reception. This year, APS President Peter Wagner hosted the reception on Wednesday, July 14 on the portico of the Lee Building on the FASEB campus. The reception provides an opportunity for members of Council and the committee chairs to meet with the APS staff. During the reception, Wagner thanked the staff and said, "The APS staff is the glue that holds the Society together. Each year the president tries to find a new way to thank the staff for all their hard work. But as every other president has said, the Society would not be the successful organization that it is without this staff." Wagner also said that he has enjoyed getting to know and working with all the staff."

The highlight of the reception every year is the recognition of those staff members who have worked for APS for five years or more (anniversary is based on five-year intervals). Each employee celebrating an anniversary receives a certificate of appreciation and a gift certificate. This year APS President Peter Wagner presented a 25-year certificate to Martin Frank (Executive Office); 15-year certificates to Teki Bynum (Peer Review), and Virginia Million (Journal Supervisor); 10-year certificates to Kathleen Pleet (Copy Editor), Penelope Ripka (Publications), Stephani Rozier (Circulations), and Beverly Rude (Journal Supervisor); and 5-year certificates to Edward Dwyer (Peer Review), Joseph Girouard (Journal Supervisor), Stephen Strumpf (Art Editor), David Udoff (Copy Editor), and Scarletta Whitsett (Education). ❖

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Association of Chairs of Departments of Physiology 2009 Survey Results

Chris Cheeseman and R. Clinton Webb
University of Alberta and Medical College of Georgia

The Association of Chairs of Departments of Physiology annual survey was emailed to 186 physiology departments throughout the US, Canada, Mexico, and Puerto Rico. A total of 53 surveys were returned, for a response rate of 28%. This rate is higher than last year's (25%) but still lower than that of the previous years' surveys (39%). Of the 53 surveys returned, there were 12 private and 41 public medical schools.

The data provide the reader with general trends of faculty, overall departmental budgets, and space available for research. As a reminder, beginning in 2004, ACDP decided not to include faculty salary information in this report. Because of the limited response rate and variability in departments responding on a year-by-year basis and the completeness of the AAMC salary data, which is more generally used, the ACDP Council decided to no longer collect or report this data. Data are still provided, though, on tenure, gender, and ethnicity of faculty (Table 1). Also included in Table 1 is information on the average number of contact hours for faculty and on the type of medical physiology course being taught.

Student/trainee information is provided by ethnicity for predoctoral and postdoctoral categories, as well as predoctoral trainee completions, stipends provided, and type of support (Table 2).

Institutional information is provided in Table 3. Departmental budget information (Table 4) shows type of support, faculty salaries derived from grants along with negotiated indirect costs to the departments. New for this year is the mean number of faculty in those departments. Table 5 ranks responding Institutions according to their total dollars, research grant dollars, and departmental space. Space averages are presented as research, administration, teaching and other.

For an update of AAMC salary data, please see the accompanying article. ❖

Table 1. Faculty Information

Faculty Summary (*n*=924)

	Male	Female	Total
Asian/Pacific Islander	100	39	139
Black (not Hispanic)	6	4	10
Hispanic	44	12	56
White (not Hispanic)	524	157	681
Foreign National	26	12	38
Total	**700**	**224**	**924**

For your faculty, what is the average number of hours of student contact (per year) for:

	Student Type	Average (hours)	Number (inst.)
Lab Hours	Graduate	309	26
	Medical	127	31
	Other	66	12
Lectures	Graduate	235	51
	Medical	967	53
	Other	86	32
Small Group	Graduate	48	31
	Medical	118	48
	Other	77	18

Medical Physiology Course Type

	Yes	No	Total Responded
Integrated Disciplines	32	17	49
Traditional	31	21	52
Within Traditional	31	20	51

Tenure Status in each department by degree

	Tenured	Not Tenured	Not Eligible	Total
MD	9	0	6	15
PhD	552	3	292	847
2 Doctorates	26	1	20	47
Other	5	0	0	5
Total	592	4	318	914

Teaching Interactions

MD/DO	51
DDS	21
DVM	4
Allied Health	33
Pharmacy	14
Other Biomedical	37
Life Science	29
Bioengineering	26
Other	18

Table 2. Student/Trainee Information

Student/Trainee Summary

US citizen/resident aliens

Predoctoral male	306	Postdoctoral male	128
Predoctoral female	320	Postdoctoral female	113

Foreign

Predoctoral male	154	Postdoctoral male	262
Predoctoral female	168	Postdoctoral female	189

Average Annual Stipend (US $)

	Average	Number
Postdoctoral	$38,170.86	50
Pre-doctoral	$23,487.57	50

Ethnicity of each pre- and postdoctoral student/trainee

	Pre-doctoral		Postdoctoral	
	Male	Female	Male	Female
Native American	9	2	0	0
Asian/Pacific Islander	23	32	24	17
Black (not Hispanic)	17	22	7	9
Hispanic	15	34	7	4
White (not Hispanic)	242	230	90	83

Predoctoral Trainee Completions

Trainees completing doctoral work during year ending 6/30/2009.

	Total
Female	127
Male	128
Total	**255**

US Citizen/Resident alien postdoctoral trainee completions:

	Male	Female
Native American	1	1
Asian/Pacific Islander	6	11
Black (not Hispanic)	5	4
Hispanic	4	6
White (not Hispanic)	77	67
Total	**93**	**89**

Foreign National predoctoral trainee completions:

	Male	Female
African	0	2
Asian/Pacific Islander	15	24
Central/South American	2	0
European/Canadian, etc.	15	11
Middle Eastern	2	1
Total	**34**	**38**

Table 2. Student/Trainee Information (continued)

Number of Foreign Pre- & Postdoctoral Students/Trainees

	Predoctoral		Postdoctoral	
	Male	Female	Male	Female
African	3	3	3	1
Asian/Pacific Islander	74	95	169	110
Central/South American	12	12	19	16
European/Canadian, etc.	35	32	46	45
Middle Eastern	28	19	20	10
Other	2	7	5	7
Total	**154**	**168**	**262**	**189**

Number of Foreign Pre- & Postdoctoral trainees whose primary source of support is:

	Pre-doctoral	Postdoctoral
Institutional	96	26
Research Grants	177	356
Private Foundations	10	23
Home (foreign) Gov.	14	7
Other	9	5
Total	**306**	**417**

Table 3. Institution Summary

Type of Institution

Private	12
Public	41
Total	**53**

Space Controlled by Department

	Average
Research Space	21,066
Administrative Space	3,058
Teaching Space	2,721
Other Space:	3,383
Total Space	30,228

Table 4. Institutional Financial Information

Budget by Institution

	All Institutions	No. Faculty (Mean)	Private Medical	No. Faculty (Mean)	Public Medical	No. Faculty (Mean)	Non-medical	No. Faculty (Mean)
Institutional (Hard money, e.g, operating costs, state allocations)	$ 2,148,154	52 (17.5)	$1,977,944	9(15.4)	$1,935,515	32 (17.7)	$2,531,004	11 (18.7)
Outside Research Grants and Contracts (direct costs only)	5,073,680	51 (17.7)	7,761,952	8(16.5)	4,325,682	32 (17.7)	3,133,406	11 (18.7)
Training Grants (direct costs only)	252,316	24 (17.7)	324,512	4(16.3)	317,296	15 (17.5)	115,138	5 (19.4)
Endowments	1,017,554	31 (19.5)	2,297,658	4(15.5)	404,275	22 (19.2)	350,729	5 (24.6)
Indirect Cost Recovery (amount returned to your department)	1,111,563	39 (17.8)	2,958,332	3(19.0)	219,887	28 (17.5)	156,470	8 (18.3)
Other Budget Support (identify)	672,413	43 (17.2)	1,511,114	7(15.3)	258,195	29 (16.9)	247,900	7 (20.4)
Average Departmental Budget	7,790,769		12,204,311		7,114,259		6,147,720	

Financial Information

Current fringe benefit rate most frequently used for Primary faculty	27.80	(*n*=54)
Federally negotiated indirect cost rate for FY 09-10 off campus	26.53	(*n*=43)
Federally negotiated indirect cost rate for FY 09-10 on campus	50.26	(*n*=53)
Percentage of allocated salary dollars directly returned to your department	78.38	(*n*=37)
Percentage of indirect costs returned to your department	18.33	(*n*=40)
Percentage of total faculty salaries derived from research grants (does not include fringe benefits costs)	37.27	(*n*=52)

Table 5. Complete Ranking According to Total Dollars

Rank Total Dollars	Total Dollars	Rank Research Grant Dollars	Research Grant Dollars	Rank Research Dollars/ Faculty	Research Dollars/ Faculty	Rank Total Research Space	Total Research Space	Rank Research Dollars/ sq ft	Research Dollars/ sq ft	No. of faculty
1	$28,229,924	1	$20,037,012	1	$1,252,313	7	27,891	1	$718	16
2	26,466,048	2	18,904,050	2	859,275	10	26,320	2	718	22
3	16,088,798	4	11,143,480	4	586,499	2	38,468	15	290	19
4	15,430,305	5	10,704,767	10	356,826	3	36,732	13	291	30
5	14,567,947	6	9,406,612	5	553,330	5	34,168	19	275	17
6	13,264,809	3	11,215,295	3	659,723	4	36,000	8	312	17
7	12,288,012	8	6,985,344	18	258,716	18	22,496	9	311	27
8	11,875,726	12	5,336,666	34	177,889	32	14,700	7	363	30
9	11,083,392	7	7,500,000	6	500,000	11	26,187	18	286	15
10	9,629,299	10	6,371,370	9	374,786	19	20,821	11	306	17
11	9,046,362	9	6,605,632	12	314,554	6	31,535	29	209	21
12	8,975,012	14	5,124,639	25	197,102	14	24,166	28	212	26
13	8,588,536	16	4,738,464	21	249,393	17	22,820	30	208	19
14	8,529,311	17	4,650,000	32	178,846	16	22,934	31	203	26
15	8,124,589	13	5,207,000	11	347,133	47	10,486	3	497	15
16	7,857,698	15	5,081,773	8	390,906	28	16,401	10	310	13
17	7,815,568	22	3,915,757	38	163,157	8	27,824	41	141	24
18	7,789,996	25	3,656,173	44	121,872	37	12,729	17	287	30
19	7,531,135	24	3,868,561	28	193,428	27	16,662	25	232	20
20	7,490,780	11	5,891,673	14	267,803	12	25,813	26	228	22
21	7,357,303	34	2,904,380	45	121,016	41	11,903	23	244	24
22	6,663,871	32	3,019,324	39	158,912	22	19,040	39	159	19
23	6,610,906	27	3,606,845	37	171,755	24	18,378	33	196	21
24	6,553,155	37	2,550,904	30	182,207	15	23,035	46	111	14
25	6,379,015	18	4,221,330	15	263,833	48	10,358	6	408	16
26	6,372,818	23	3,873,364	29	184,446	25	17,675	27	219	21
27	6,294,559	28	3,578,120	22	223,633	23	18,799	34	190	16
28	6,092,697	21	3,992,456	31	181,475	34	13,746	14	290	22
29	6,058,086	31	3,149,480	26	196,843	21	19,848	38	159	16
30	5,929,501	36	2,740,209	42	130,486	9	26,933	47	102	21
31	5,911,702	33	2,921,905	27	194,794	20	20,000	40	146	15
32	5,679,948	19	4,210,521	13	300,752	49	9,384	4	449	14
33	5,664,946	42	2,097,215	40	139,814	13	25,288	49	83	15
34	5,639,760	20	4,175,649	16	260,978	26	17,535	24	238	16
35	5,216,850	29	3,296,818	19	253,601	36	13,391	22	246	13
36	4,878,260	30	3,280,227	20	252,325	43	11,384	16	288	13
37	4,868,994	26	3,641,456	17	260,104	33	13,790	20	264	14
38	4,826,698	38	2,500,000	41	131,579	35	13,609	35	184	19
39	4,467,725	52	222,660	53	14,844	29	16,014	52	14	15
40	4,371,355	40	2,489,050	35	177,789	38	12,500	32	199	14
41	4,211,645	35	2,790,655	36	174,416	46	11,111	21	251	16
42	4,185,402	44	1,809,797	49	82,264	51	6,165	12	294	22
43	4,038,890	45	1,773,059	43	126,647	31	14,774	43	120	14
44	3,963,447	41	2,467,885	7	411,314	52	5,528	5	446	6
45	3,567,438	43	2,085,476	24	208,548	42	11,793	36	177	10
46	3,449,851	39	2,500,000	33	178,571	30	15,672	37	160	14
47	3,413,169	47	1,287,828	48	91,988	44	11,329	45	114	14
48	3,275,894	48	1,252,479	46	104,373	39	12,484	48	100	12
49	2,334,899	46	1,671,944	23	208,993	40	12,470	42	134	8
50	2,141,826	50	916,895	50	76,408	1	202,237	53	5	12
51	1,758,874	49	960,318	47	96,032	50	8,289	44	116	10
52	1,507,157	51	350,000	51	43,750	45	11,203	50	31	8
53	901,099	53	90,221	52	18,044	53	4,613	51	20	5

AAMC Medical School Faculty Compensation Survey

Each year the American Association of Medical Colleges (AAMC) surveys all the US medical schools as to faculty compensation. Because of this, the ACDP (see associated article) decided to no longer collect the same data from its members.

As a supplement to the ACDP survey, the AAMC has agreed to allow the APS to publish selected results from their survey.

Table 1 shows the regional distribution of medical schools responding to the AAMC survey in terms of public medical and private medical. Also shown is the number of physiology departments in those regions that responded.

Summary statistics on faculty compensation in physiology departments for PhD faculty are given in Table 2.

Table 3 shows the changes in salary that have occurred over the past three years. The summary statistics for separate regions of the country are given in Table 4.

Table 5 shows the salary comparison between PhD faculty in all basic science departments vs. those in physiology departments. ❖

Table 1. Distribution of Medical Schools Responding to AAMC Medical School Faculty Compensation Survey.

		Northeast	Midwest	South	West	TOTAL
All	**Private Medical**	24	11	14	3	52
	Public Medical	12	20	34	13	79
Physiology	**All Medical Schools**	15	19	29	11	74

Table 2. Summary Statistics on Physiology Department PhD Faculty Compensation.

		25th	Median	75th	Mean	Number of Faculty
Chair	All Schools	212,000	244,000	285,000	248,800	74
	Medical Public	209,000	243,000	273,000	237,300	48
	Medical Private	212,000	253,000	315,000	270,100	26
Professor	All Schools	124,000	148,000	179,000	155,700	589
	Medical Public	126,000	147,000	175,000	156,000	419
	Medical Private	121,000	156,000	182,000	155,100	170
Associate Professor	All Schools	94,000	104,000	118,000	107,700	341
	Medical Public	94,000	105,000	118,000	106,300	222
	Medical Private	93,000	103,000	120,000	110,300	119
Assistant Professor	All Schools	68,000	82,000	95,000	82,100	373
	Medical Public	67,000	82,000	95,000	81,800	243
	Medical Private	68,000	83,000	95,000	82,600	130
Instructor	All Schools	44,000	51,000	60,000	53,000	85
	Medical Public	45,000	50,000	60,000	53,100	54
	Medical Private	42,000	52,000	60,000	52,700	31

Table 3. Change in Total Compensation for Physiology Department PhD Faculty.

2008-2009		2007-2008		2006-2007		% Change 2007-2008 to 2008-2009	
Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
122,100	111,000	119,300	110,000	112,800	104,000	2.3	0.9

Mean and median values were combined for Assistant, Associate, and Professor.

Table 4. Summary Statistics on Physiology Department PhD Faculty Compensation by Region.

		Northeast	Midwest	South	West
Chair	25th	220,000	234,000	175,000	226,000
	Median	247,000	253,000	219,000	269,000
	75th	299,000	318,000	270,000	301,000
	Mean	275,900	263,400	223,300	254,200
	Total Faculty	15	19	29	11
Professor	25th	130,000	127,000	115,000	140,000
	Median	159,000	152,000	139,000	161,000
	75th	184,000	182,000	166,000	190,000
	Mean	157,700	157,400	144,400	174,700
	Total Faculty	125	166	204	94
Associate Professor	25th	99,000	91,000	90,000	98,000
	Median	109,000	98,000	105,000	110,000
	75th	131,000	112,000	116,000	122,000
	Mean	117,800	101,200	104,900	110,600
	Total Faculty	87	93	130	31
Assistant Professor	25th	74,000	65,000	64,000	81,000
	Median	90,000	78,000	79,000	93,000
	75th	101,000	89,000	90,000	104,000
	Mean	88,700	78,700	77,700	92,700
	Total Faculty	77	111	141	44
Instructor	25th	52,000	39,000	45,000	45,000
	Median	56,000	45,000	50,000	50,000
	75th	61,000	56,000	53,000	73,000
	Mean	58,200	49,800	51,100	57,900
	Total Faculty	17	17	42	9

Table 5. Salary comparison between all basic science departments and physiology departments

		All Basic Science Depts.	Physiology
Chair	25th	200,000	212,000
	Median	241,000	244,000
	75th	288,000	285,000
	Mean	246,400	248,800
	Total Faculty	533	74
Professor	25th	127,000	124,000
	Median	153,000	148,000
	75th	187,000	179,000
	Mean	163,000	155,700
	Total Faculty	4,197	589
Associate Professor	25th	93,000	94,000
	Median	106,000	104,000
	75th	122,000	118,000
	Mean	110,000	107,700
	Total Faculty	2,944	341
Assistant Professor	25th	70,000	68,000
	Median	84,000	82,000
	75th	96,000	95,000
	Mean	84,600	82,100
	Total Faculty	3,849	373
Instructor	25th	48,000	44,000
	Median	55,000	51,000
	75th	65,000	60,000
	Mean	59,300	53,000
	Total Faculty	600	85

Sharing Strategies in K-12 Science Education: Outreach Events for Local Teachers/Students at Scientific Meetings

Bethesda, MD - The American Physiological Society (APS) hosted a fourth seminar in its series on Sharing Strategies in K-12 Science Education on the campus of the Federation of American Societies for Experimental Biology (FASEB) on June 8, 2010. The roundtable discussions were among eight national scientific organizations. Each presented their outreach events for precollege teachers and/or students at scientific meetings sponsored by their respective organizations, including:

- FASEB's Experimental Biology, which is the annual conference for the APS, the American Society for Biochemistry and Molecular Biology (ASBMB), and the FASEB Minority Access to Research Careers (MARC) Program;
- American Society for Cell Biology's Cell Biology;
- American Society of Plant Biologists' Plant Biology;
- Society for Developmental Biology Regional Meetings;
- Howard Hughes Medical Institute's (HHMI) Holiday Lecture Series;
- National Center for Research Resources (NCRR) at the National Institutes of Health (NIH) Science Education Partnership Award (SEPA) Project Director's Annual Meeting.

Common Objectives: The presentations revealed that the goals and objectives for these outreach programs are similar. The following is a summary of the major threads of discussion.

- The outreach event or program's objective is to provide a pivotal experience for getting students excited and engaged in science by exposure to scientists. The most common strategy for this experience is through interactive hands-on participation in workshops and discussions with career panelists.
- The event establishes connections between the organization's member scientists and teachers in the local area of the convention city area.
- The workshops provide an awareness of information and instructional resources for teachers.
- The event also provides a learning experience for scientists themselves in communicating with precollege students and teachers either as speakers, volunteers, or as mentors for the participants.

Challenges and strategies in developing these outreach programs were also discussed, including preparing for the workshop events, identifying resources, and evaluating the programs. For instance, logistics in scheduling the workshops must be taken into consideration. State testing, spring breaks, limited school field trip days, and/or transportation are common challenges. Scheduling within the conference program also needs to coincide with the availability of scientists to interact with students and teachers.

Promoting the workshop and recruiting participants in the local area before the conference are other challenges. Approaches to casting wide publicity include mass postal media campaigns in the vicinity of the conference venue by address/mailing services, and email announcements to state, local, and district science administrators and science teacher organizations. Additionally, direct announcements to past teacher participants and scientist members of the sponsoring organizations are effective in publicizing the program. Society newsletters, direct invitations, past experience, and word of mouth are common methods in recruiting scientist volunteers.

Though the outreach programs are primarily funded and sponsored by their respective organizations, identifying additional resources and donations to support the workshop event was another aspect discussed. Material resources from local member scientists are one avenue for hands-on experiments with participants. Solicited donations of supplies, equipment demonstrations, and door prizes from vendors are other mechanisms of enhancing support for the outreach programs. A Program Officer from HHMI attended the brown bag lunch seminar and offered DVD copies of their Holiday Lecture Series to the outreach events presented in support of precollege science education.

Finally, program evaluation was discussed and varied with different measurable objectives. The number of participants is one measure, but more importantly, participant feedback evaluations help further refine the annual workshop programs. Some organizations implement a mentoring model and peer network, thus, providing the potential for more qualitative feedback on the outreach program experience.

In summary, the brown bag lunch roundtable seminar fostered a network of expertise and experience in producing effective outreach events for teachers and students at scientific meetings. The collaborative sharing identified common themes, challenges, and strategies for this model of supporting science education in communities across the nation.

The seminar series is supported by an NIH NCRR SEPA grant (http://www.ncrrsepa.org) as part of the APS' Six Star Science Frontiers in Physiology program (http://www.frontiersinphys.org). Programmatic information for the seminar series and presentations are available at: http://www.frontiersinphys.org/pages/page04g.shtml. ❖

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Juggling Research and Teaching at a Small Liberal Arts College

Steven Swoap
Williams College

As you enter the job market, you are bound to run across advertisements for positions in small colleges with which you are probably unfamiliar. These small colleges are not much like the state universities where you are likely training.

While the primary mission of a small college is undergraduate education, you will be pleased to know that part of that mission includes involving the undergraduates in a vibrant research program. Even though you might not have heard of the small colleges looking for new faculty, the current tight job market may encourage you to apply to these schools. Perhaps you will wonder, "Can I pull off a good research career at a small liberal arts school?" The answer is a resounding "yes," with a number of caveats to take into consideration and potholes to avoid.

Here is my top ten list of questions to ask yourself and/or your future employer.

#10. What are my teaching responsibilities?

Probably the biggest misconception that most folks have about the life of a small college professor is the extremely high amount of teaching required. In fact, colleges have a tremendous range in their teaching requirements. Some schools require four courses per semester. You will find it difficult to grab any time for research at those colleges and will most certainly leave bench science behind. Other colleges, like my school, Williams College, require much less. I teach one course and two labs per semester. You may find that even research I institutions require more teaching. As you ask around at individual small liberal arts colleges, I think you will find that the average is about three to four courses per year.

By the way, I have a pet peeve … when folks use the phrase "teaching load" and in particular the word "load." This phrase makes it sound like teaching is an onerous burden. If you think teaching is just a distraction, then perhaps the small college scene is not for you. For me, I love the teaching aspect of my career. Teaching courses makes me dig deeply into the literature --- some of my best ideas for experiments have sprung directly from preparations for a course.

Steven Swoap

#9. Do I need previous teaching experience?

The short answer is "not necessarily," at least for colleges with which I am familiar. A little Teaching Assistant experience will do just fine. When we hire a new faculty member, previous teaching experience is not even in our discussions. Rather, we look for someone that has an exciting and robust research program and has the type of personality that won't wilt in front of a lecture hall.

In addition to your job talk, don't be surprised if you are asked to give a "teaching demo" or a "typical class" on your interview. It probably won't be more than 30 minutes, and likely will be at the blackboard … a classic "chalk talk."

#8. Can I make it without graduate students?

The primary difference between a college and a university is that colleges don't offer graduate degrees. Not to state the obvious here, but that means no graduate students. You may think it is impossible to run a lab without grad students. However, there are two sides to that coin.

On one hand, undergrads that train in your small college lab have significant time constraints. You can't expect 60 hours a week from an undergrad. I need to constantly remind myself that while my physiology experiments are a huge priority in my life, many undergrads worry just as much about their singing group, their cute lab partner in microbiology, or the Thursday night party. There is no getting around the fact that the pace of productivity of a small college professor is impacted by the student population.

On the other side of that coin, however, doing research at a small school ensures an endless supply of students. Consequently, you will have a steady stream of bright, talented, and highly motivated students. You will be in the lab, elbow to elbow, training the students on a yearly basis. If you look forward to having a physiology "desk job" with technicians, post-docs, and grad students running your experiments while you jockey for grants and write manuscripts, then being a biology professor in a small college may not be for you.

Finally, working with the undergrads means that your music tastes will always be fresh and hip. Now, if they could just do something about my receding hairline.

#7. Speaking of jockeying for grants, what is the funding like for research at small colleges?

You are going to love this. Both NIH and NSF have programs for people just like you. NIH has the R15 program, with the acronym AREA (Academic Research Enhancement Award). NSF has the RUI (Research in Undergraduate Institutions). Both programs are evalu-

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ated using the same standards set for R01s or non-RUI proposals.

With the caveat that I have no clue about what happens behind the doors at NSF and NIH when they evaluate AREAs and RUIs, I think there is a little more flexibility in the quantity of publications and preliminary data. One major thrust of these programs is the training of undergraduate researchers—you should make sure that is sizable component in your grant application.

NSF also hands out CAREER awards, which are for junior faculty that actively integrate their teaching responsibilities with their research program. Here is a secret … shhh… we at small colleges integrate teaching and research daily. We should have a huge advantage over faculty at large universities for competitions like the CAREER award.

#6. Will the college provide financial support for you and/or your students to attend national meetings, such as EB?

Since you will likely have less interaction with other physiologists at a small college compared with a large research I university, it is even more important to attend meetings, present data, and interact with colleagues. It is also a great opportunity for undergraduates to present their research.

In my experience, most small colleges provide assistance to attend at least one national meeting a year regardless of whether you are presenting. In addition, there are often internal grant opportunities to obtain funding for yourself or students to attend meetings in which you are presenting. If your college does not provide this type of support, you should ask if it could be added to your start-up so you can attend some meetings until you have your own grant support for travel.

At the risk of creating additional competition for my own undergraduate students, you should also be aware that there is a lot of money out there to support undergraduate research for the summer. For example, the American Physiological Society has their Undergraduate Summer Research Fellowship program. Not only does the student get a stipend for the summer (and a small bit of cash for your lab), this program also pays the way for undergrads to attend EB or another APS conference. EB has a competition each year—the David Bruce awards - for the top undergraduate abstracts/presentations. Definitely a nice feather for your student should he/she win.

#5. Can you handle a silly mascot for your college?

From The Cobbers, to the Jumbos, or the Moundbuilders, or my own Purple Cows … you will do just fine!

#4. Does the college have facilities for your model organism?

If you work with cell culture or any non-vertebrate organism, you can take your research program most places. If you work with vertebrates, though, you need to make sure that the college has suitable animal facilities. Small colleges range from zero vertebrate facilities to extensive ones, like we have here at Williams College.

If I were to give out any advice, I would suggest you not compromise your research program to squeeze into a college that cannot support your critters. Oh, and just a heads up, you will soon be on your small college's animal care committee.

#3. Will the "start-up package" offered be enough"?

Right off the bat, you should know that the start-up funds will be much less than provided at a research I institution, even five to 10 times less. So is that amount enough? The reason you can build an exceptional research program at a liberal arts college is the use of shared equipment. I don't mean sharing pipettors or even PCR machines, but sharing the big stuff. A start-up package might be meager compared with a research I university, but if the college has adequate equipment and good collegiality, you can do your top-notch science. The college that just made you a job offer desperately wants you to succeed in your position. I don't think they will try to low-ball you.

Another item for your radar screen—it is possible that you will be asked to share bench space with another professor in the department, so don't be shocked if that happens. You should assess closely whether the lab space is sufficient for your work.

#2. Is it publish or perish in the life of a small college professor?

I think it is fair to say that if you don't publish a peer-reviewed manuscript with original research during your assistant professor years, you will have a difficult time getting tenure, or your next university job for that matter. However, it can be difficult to determine "how many is enough" and this is certainly college-dependent. If you teach four courses a semester, and they also expect 10 manuscripts in five years, you are being set up to fail.

While assessing benchmarks like this may be an awkward item to ask in an interview, it is important to get some sense of the expectation. Further, you can check the publication records of faculty that have recently received tenure in that department to see if there is a pattern. In my eyes, quality is important and I don't count beans.

#1. Will you be lonely?

Most likely, you will be the one and only physiologist at your college. You may not be able to walk down the hall to discuss with your colleagues Na+ flow through a renal epithelial cell. Of course, we are all over-connected to our phones and the web (how many times have you checked your e-mail today?), and contacting a colleague across the country can be easy. But reality sets in quickly. You become the top dog, and only dog for that matter, for physiology queries. I would not be truthful if I said I did not miss the back and forth among experts in my field. But in its place, I have gained something just as valuable … wonderful interactions with my colleagues that are experts in plant biochemistry, microbiology, evolution, ecology. I had no idea how much these interactions with folks not trained as physiologists would shape my research career. In addition, your colleagues will not all be nerdy scientists. You will be on committees with religion professors, play hoops with art historians, and attend dance recitals sitting next to business professors. Choosing a small college has been a blessing for me.

So, there you have it. My top ten (OK, only nine) questions to consider when you think about a career in a small college.

To comment on this article, go to http://www.the-aps.org/careers/careers1/mentor/liberalartscollege.htm. ❖

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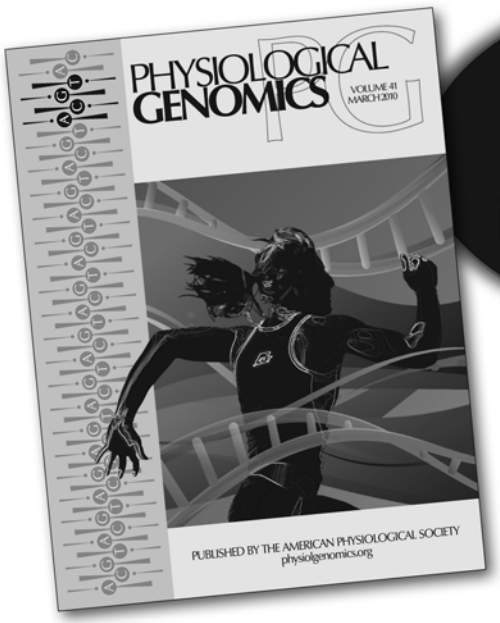

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9-3-10

APS Comments on Proposed Financial Conflict of Interest Rules

On May 21, 2010, the National Institutes of Health (NIH) requested comments on a set of proposed rules pertaining to financial conflicts of interest (FCOI) among extramural researchers. The new rules were developed in response to intense scrutiny from Members of Congress in the wake of a series of highly publicized incidents involving extramural researchers who failed to report financial interests properly. The proposed rules would expand the requirements for disclosure and reporting of financial interests, mandate online posting of FCOI, and require periodic training on what must be done to comply with the rules. The APS offered the following comments:

"The APS recognizes the need to conduct taxpayer funded research in accordance with the highest ethical standards in order to maintain the public trust and ensure research integrity. Relationships between academic researchers and their colleagues in industry are both beneficial and necessary for facilitating the flow of scientific information and advancing basic research discoveries to applied technologies, including treatment and prevention strategies for disease. The importance of bridging the basic and applied sciences was recently highlighted with passage of the Cures Acceleration Network (CAN) as part of the Patient Protection and Affordable Care Act. The CAN will focus resources on translational research in both academia and industry with the goal of speeding drug discovery and development. We strongly urge the NIH to express its support for such collaborative arrangements lest research institutions see the new FCOI regulations as a reason to discourage important collaborations between academic researchers and for-profit entities.

"In light of these principles, the APS offers the following recommendations in response to the proposed rules:

Adoption of a risk-based strategy for assessing the potential for a given financial relationship to pose a conflict of interest would maximize efficiency and ease regulatory burden as a result of the proposed regulations.

Central to the goal of managing COI and ensuring scientific integrity is efficiently identifying which relationships represent a potential conflict and which do not. One approach to evaluating relationships would be to promote the use of a risk-based strategy in assessing the potential for a given relationship to pose a conflict of interest. Institutions should be encouraged to take into account whether financial relationships pose a low or high risk of conflict of interest. Once a determination has been made with respect to potential risk, institutions could then utilize simplified procedures such as expedited review for low risk entities that are unlikely to pose an actual conflict of interest. This would have the effect of maximizing the efficiency of the system while significantly reducing regulatory burden.

NIH should consider the practical ramifications of the proposed regulations as they apply to sub-recipients of award funds when sub-recipients are based in foreign countries.

The proposed regulations address institutional responsibilities for sub-recipients of award funds and would require that awardee institutions ensure that sub-recipients comply with FCOI rules. This requirement could be problematic when researchers are collaborating with sub-recipients operating under a different set of laws and regulations in a foreign country. We, therefore, urge the NIH to consider the practical effect that the regulations would have in those instances where sub-recipients of grant funds operate in foreign countries.

NIH should provide guidelines for the content of required training on FCOI, or standard training programs and templates.

The proposed regulations would require regular training for investigators on conflict of interest policies. We recommend that the NIH clearly articulate its expectations for the content of the required training, or provide standard training programs or templates to institutions.

NIH should consider restricting the period of time following the completion of an award during which the DHHS can request documentation related to FCOI disclosure.

We are concerned about the proposed authority of DHHS to inquire 'at any time (i.e., before, during, or after award) into any Investigator disclosure of financial interests and the Institution's review of, or response to, such disclosure, whether or not the disclosure resulted in the Institution's determination of a FCOI.' We recommend that NIH consider restricting the inquiry period after the completion of an award to a defined number of years in accordance with agency record retention requirements.

Non-profit, member-based professional scientific and engineering societies should be excluded from the regulations.

As a member of the Federation of American Societies for Experimental Biology (FASEB), we endorse the recommendations made in its response to the NPRM, including the suggested modification of the term 'Significant Financial Interest' as follows:

(2) The term significant financial interest does not include the following types of financial interests: ***reasonable and customary reimbursements for expenses incurred****; salary, royalties, or other remuneration paid by the Institution to the Investigator if the Investigator is currently employed or otherwise appointed by the Institution; any ownership interest in the Institution held by an Investigator, if the Institution is a commercial or for-profit organization; income from seminars, lectures, or teaching engagements sponsored by a federal, state, or local government agency, or an institution of higher education as defined at 20 U.S.C. 1001(a),* ***or a***

non-profit, member-based professional scientific or engineering society*; or income from service on advisory committees or review panels for a federal, state, or local government agency, or an institution of higher education as defined at 20 U.S.C. 1001(a),* ***or a non-profit, member-based professional scientific or engineering society****.'*

Professional societies play a vital role in the scientific community by providing a forum for scientists to interact and advance their discipline through scientific meetings, journals and education programs that foster the next generation of researchers. Many scientists generously volunteer their time and expertise to these organizations as board members, journal editors, peer reviewers and in other roles. Researchers receive modest compensation for some of these activities, but more often they receive only reimbursement for travel expenses related to their activities. To include these types of financial relationships as possible sources of conflict of interest casts a negative light on these valuable interactions. We recommend that non-profit, member-based professional scientific and engineering societies be excluded from the regulations."

NIH Submits Plan to Replace Class B Dogs

In April NIH submitted a plan to the Senate Appropriations Committee to phase out the use by extramural researchers of dogs and cats purchased from Class B dealers over the next four years. "Class B" is a USDA designation for individuals who buy, sell, or transport animals they did not breed and raise themselves. About a dozen Class B dealers sell dogs and cats for research, and some of these individuals have generated controversy because of repeated failures to provide adequate care for animals and, in some cases, selling lost or stolen pets to research labs.

NIH estimates that extramural grantees currently purchase about 1,000 dogs each year from Class B dealers, primarily for pre-clinical cardiovascular studies. The number of cats purchased from Class B dealers is not known. Some Members of Congress have been so incensed by the egregious animal cruelty committed by certain Class B dealers that on several occasions in the past few years, Congress was on the verge of legislating an outright ban on Class B dealer sales of dogs and cats for research. However, that effort was fueled in part by claims from animal rights groups that there was no need for Class B dealers in the first place. The APS played a critical role in rallying objections to such a ban, calling instead for more resources to enforce the provisions of the Animal Welfare Act intended to ensure that animals are obtained legally and treated humanely. The APS argued that Class B dealers who violate the law should be punished, but those who obey the law represented an important source of animals because Class A dealers, who breed dogs for research, could not provide enough animals with the traits needed for certain kinds of cardiovascular studies. In 2007, Congress called upon NIH to commission an independent inquiry to resolve questions surrounding both the scientific and humane issues surrounding Class B dealer dogs and cats, and in 2008, the Institute for Laboratory Animal Research (ILAR) of the National Academy of Sciences undertook this study.

In May 2009, the findings of the ILAR study were announced. The panel of experts concluded that the non-purpose bred dogs and cats supplied by Class B dealers continue to play an important role in specific areas of medical research. However, the experts also concluded that the USDA cannot guarantee an acceptable level of care for these animals under existing law. The panel provided a list of other potential sources of dogs and cats with comparable random source characteristics, and recommended that NIH grantees replace the dogs and cats they currently buy from Class B dealers with animals from these other suppliers.

In August 2009, the APS Animal Care and Experimentation (ACE) Committee convened a working group to review the ILAR panel's findings and recommendations. Taking into account the specific traits needed in physiological research, the working group forwarded to the NIH suggestions for implementing the ILAR recommendations. The ACE Committee also recommended a new APS position statement on Random Source Dogs and Cats in Medical Research, which Council adopted in October, 2009. (See http://www.the-aps.org/pa/random-source.htm). The position statement noted that while the numbers of dogs and cats needed in biomedical research has decreased in recent years, "these animals remain critical for health research to alleviate serious and life-threatening conditions that afflict humans and animals." Moreover, although the majority of dogs and cats are bred for research, there is also some need for non-purpose bred or random source dogs and cats because they exhibit traits that are difficult to replicate in purpose-bred animals, such as advanced age, pre-existing health conditions, or previous exposure to viruses, allergens, or parasites. The APS position statement called upon the NIH to make immediate efforts to develop new suppliers so that translational research that depends upon these animals can continue without disruption. It was in light of these requirements that APS evaluated NIH's implementation plan.

NIH intends to issue contracts to USDA licensed Class A dealers to raise mature, large, socialized dogs needed for translational research in cardiovascular disease and certain other areas. The contracts will enable the breeders to develop the capacity to raise dogs suitable for translational cardiovascular research. Once the contracts terminate, the breeders should be able to continue supplying the animals in response to demand from the research community. It is anticipated that there will be a sharp increase in cost, which will also have to be addressed for this plan to succeed without disrupting research.

The APS has communicated its support to Congress because the NIH plan has the potential to resolve a long-running controversy in a way that permits important areas of translational research to proceed. By providing short-term support to Class A breeders, NIH can ensure the continued availability of scientifically appropriate animals that have been given the care they deserve. APS members who currently purchase Class B dogs for cardiovascular research should be prepared to make a transition to purpose-bred dogs within the next few years. These animals are likely to cost significantly more than those from Class B dealers. However, since it is in the interest of all parties to resolve this controversy, it is reasonable to expect that Congress and the NIH will provide the necessary supplemental funds. ❖

Bill Yates, Chair

Animal Care and Experimentation

The Animal Care and Experimentation (ACE) Committee has been using a wide range of approaches to draw attention to issues of concern. The Committee has sponsored programs at EB, revised the Society's position statements on animal research issues, and sought to participate in national policy discussions about animal welfare oversight.

The most development in animal welfare policy this year with the greatest potential for impact on APS members was the release of the pre-publication version of the Guide for the Care and Use of Laboratory Animals. This manual, which is published by the Institute for Laboratory Animal Research (ILAR) of the National Academy of Sciences, is a widely-used reference document concerning laboratory animal care. Institutions that conduct research funded by the US government are expected to follow the Guide, as are those whose animal facilities are accredited by the Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC), International. The current edition of the Guide was published in 1996 and will remain in force until the new edition is finalized. At that time, NIH's Office of Laboratory Animal Welfare (OLAW) and AAALAC will announce their timetables implementing the requirements of the new Guide.

During the revision process, the ACE Committee submitted comments to the ILAR committee charged with updating the Guide, and some of these comments were incorporated in the new edition. One of those recommendations was that institutional animal care and use committees (IACUCs) should make the determination whether a surgical procedure is major or minor based upon the actual impact on the animal. In recent years, the ACE Committee has been urging the USDA and OLAW to reconsider what constitutes a major surgery and to exclude from that classification minimally-invasive procedures such as laparoscopies that do not produce significant pain, distress, or physiological impairments. Members of the ACE committee have raised this topic at national conferences on IACUC issues. In addition, ACE Chair Bill Yates and former ACE Committee member Linda Toth co-authored an editorial ("Is it Time to Redefine 'Major Operative Procedures?'") that appeared in the January issue of the Journal of the American Association of Laboratory Animal Sciences (JAALAS). The ACE Committee also provided comments to OLAW when it released a new FAQ in February 2010 that classified laparoscopic procedures as major surgeries. OLAW subsequently revised this FAQ to permit IACUCs to decide whether laparoscopic procedures are major or minor surgery depending upon their outcome, which is consistent with the language in the new Guide.

Permitting certain minimally invasive procedures to be deemed minor surgeries will serve both animal welfare and science. This will allow animals that have not experienced significant pain, distress or impairment to be included in another research project, which will decrease the total number of animals needed. However, the ACE Committee has discovered that addressing regulatory issues often involves many layers of complexity. In this case, OLAW's FAQ and the new Guide are not the only regulatory authorities. The Animal Welfare Act, which applies to most mammals except purpose-bred rats and mice, also prohibits multiple major surgeries. Therefore, the ACE Committee will also try to encourage the USDA to revisit its approach.

The ACE Committee has been concerned about various tactics being used to obstruct research and intimidate researchers. To inform the membership about these trends, the ACE Committee sponsored a symposium at Experimental Biology 2010 entitled Trends in Animal Rights Activism and Extremism. The purpose of the symposium was to help researchers understand what the threats are and what they (and their institutions) can do to protect themselves and their work. A summary of this symposium is available at http://the-aps.org/pa/policy/animals/AnimalRightsExtremism.htm.

At EB 2010 the ACE Committee also sponsored a forum where researchers whose IACUCs are grappling with difficult issues could discuss them with colleagues. Although attendance was sparse, the forum was enthusiastically received. The committee plans to hold a similar event next year and will do more to inform the membership about it.

During the past year, APS has provided expert opinion to Congress and the NIH concerning the ongoing need for non-purpose bred dogs and cats in physiological research. A detailed report of these activities is provided elsewhere in these pages in the report of the Office of Science Policy ("NIH Submits Plan to Replace Class B Dogs.")

This summer the ACE Committee asked Council to approve a new position statement on the importance of animal research and an update to the APS Guiding Principles for the Care and Use of Animals in Research. The new position statement describes the important role that animals play in medical discovery:

Animal Research is Essential to the Search for Cures

Humane research involving animals provides unique insights into biological structure and function. These insights offer major benefits to both human and animal health. The American Physiological Society is strongly committed to ensuring that research animals are treated humanely and that their use is regulated appropriately.

Biomedical research today involves a wide array of approaches that make use of computers, molecules, cells, tissues, organs, and whole animals. Each approach addresses different elements of a research question. Together, they offer a full complement of ways to learn about living systems. Animal studies are particularly crucial for understanding how the body functions in health and disease. Basic and translational research involving animals is a necessary component in the search for causes, preventions, treatments, and cures for disease.

The ACE Committee also requested a significant update of the "APS Guiding Principles for the Care and Use of Animals in Research." This statement of the Society's commitment to humane animal care was first adopted by the APS Council in 1953. It has been reviewed and revised periodically since then as US animal welfare laws and policies have changed. The revisions approved by Council in July 2010 represent the first major changes to this document since 1991. They

are intended to clarify certain elements of the Guiding Principles and make them easier to apply in practical situations. In addition, because the Guiding Principles are based upon US animal welfare requirements, the update adds provisions to address the fact that other countries have different animal welfare requirements. This change was needed because of the increasing number of physiologists from around the world who are joining the APS and submitting articles for publication in APS journals. The update includes a change in the title, noting that these principles apply to vertebrate animals, and that they apply to training as well as research. The updated version of the APS Guiding Principles took effect September 1:

APS Guiding Principles for the Care and Use of Vertebrate Animals in Research and Training

As noted in the US Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training, "Procedures involving animals should be designed and performed with due consideration of their relevance to human or animal health, the advancement of knowledge, or the good of society." The use of animals is also justified to provide scientific, veterinary, and medical training that is not possible through other mechanisms.

Investigators should consider the appropriateness of the experimental procedures, the species of animals used, and number of animals required. Prospective approval of procedures on animal subjects should be obtained from an institutional animal care and use committee (IACUC) or similar oversight body as required under the relevant regulatory authorities. This review should also consider whether the use of animals in a given protocol could be replaced by other experimental approaches such as in vitro studies or computer modeling.

Only animals that are lawfully acquired shall be used in research and teaching. The procurement, transport, maintenance, and use of animals must in all cases comply with federal, state and local laws and regulations. In the United States, animal research may be subject to the Animal Welfare Act, the Public Health Service Policy on Humane Care and Use of Laboratory Animals, or other guidelines established by funding agencies. The PHS Policy requires institutions to use the Guide for the Care and Use of Laboratory Animals to develop and implement an institutional animal care and use program.

Analgesics and other techniques should be used to minimize discomfort and pain except when the intervention would compromise experimental goals. Appropriate anesthetics must be used to eliminate sensibility to pain during all surgical procedures. Drugs that produce muscle paralysis are not anesthetics. They must never be used alone for surgical restraint, only when animals are under anesthesia.

If the study requires the death of an animal, humane endpoints should be identified, and an approved method of euthanasia stipulated in the American Veterinary Medical Association's Guidelines of Euthanasia should be used. Death is acceptable as the endpoint of a study only where euthanasia would compromise scientific outcomes and an IACUC or similar oversight body has approved the exception.

Animals used in research and education must be housed, fed, and maintained in a manner appropriate for their species and their condition. They should also be given appropriate veterinary care.

Personnel who care for or perform procedures on animals must receive training for these tasks. When students or trainees use animals in educational activities or for the advancement of science, such work shall be conducted under the direct supervision of an experienced teacher, investigator, or veterinarian.

For more information about the new Guiding Principles visit the APS website at http://www.the-aps.org/pa/resources/bionews/NewPositionStatements.htm.

- Council accepted the Animal Care and Experimentation Committee report.
- Council unanimously approved a new position statement "Animal research is essential to the search for cures."
- Council unanimously approved technical corrections to the APS Guiding Principles for the Care and Use of Animals in Research and Training.

Kathryn Sandberg, Chair

Awards Committee

The Awards Committee received seven applications for the spring and fall Research Career Enhancement Awards (RCEA), down from 18 applications received last year. The Committee only received two applications for the Teaching Career Enhancement Awards (TCEA), one for the spring deadline and one for the fall deadline. This is similar to the number of applicants received for this award over the past several years. Unfortunately, this award continues to attract very few applicants.

This past fall seven applications were received for the Arthur C. Guyton Award, two for the Lazaro J. Mandel Award, and four for the Shih-Chun Wang Award. While these numbers seem low, they are similar to the numbers in years past. The quality of the applications received for these awards were outstanding.

The APS Postdoctoral Fellowship in Physiological Genomics receives the highest number of applications of all the Society awards. Thirteen applications were received in January 2010, which was down from the 24 applications received in January 2009; however, it was similar in number to the 12 applications received in January 2008 for this same award.

In addition to reviewing applications and selecting awardees, the Committee tracks the gender distribution of the applicants and recipients. The following results were found for the past year.

- For the fall 2009 RCEA Award, all the applicants were male (seven applications).
- For the fall 2009 TCEA Award, all the applicants were male (one application).
- For the 2009 Arthur Guyton Award, 28% of the applicants were female (two applications) and 72% male (five applications); the awardee was female.

• For the 2009 Mandel Award, all the applicants were male (two applications).
• For the 2009 Wang Award, all the applicants were male (four applications).
• For the 2010 APS Postdoctoral Fellowship Award, 38% of the applicants were female (five applications) and 62% male (seven applications); the two awardees were male.
• For the spring 2010 RCEA Award, 43% of the applicants were female (three applications) and 57% male (four applications); the awardees were 60% female (three awardees) and 40% male (two awardees).
• For the spring 2010 TCEA, there was only one application received, female; the applicant received the award.

The Committee will continue to track this information and discuss ways to increase the number of women applying for awards, including working with the Women in Physiology Committee.

The APS Awards Committee met at the Experimental Biology Annual Meeting in Anaheim, CA. At that meeting, the Committee discussed ideas on how to increase the number of applications. Some members believed the reduced amount of money for the Mandel and Wang Young Investigator Awards ($4,000/per award) and the fierce competition for the postdoctoral awards (two of 24 were funded in 2009) dissuaded investigators from applying. Other members thought that busy lives and email overload resulted in missed opportunities. The Committee also discussed and instituted the following at the meeting:
• requesting a four-page NIH-type biosketch instead of a full cv;
• the deadline date for applications for the fall RCEA and TCEA awards have been moved back by two weeks (Friday October 1, 2010) to determine if this will increase the number of applicants;
• examples of winning applications have been posted on the APS Awards website to give applicants guidance on what constitutes an outstanding application;
• the Committee discussed the nature of the postdoctoral fellowship in physiological genomics and decided that the focus of this fellowship could be flexible so that as physiology evolves over time, physiological fields deemed important by the Society could be encouraged through this mechanism.

2009-2010 Award Recipients

RCEA and TCEA Awards

The Fall Research Career Enhancement (RCEA) recipients are Timothy John Fairchild, Murdoch Univ., Australia; Thomas Lloyd Pannabecker, Univ. of Arizona; Gary L. Pierce, Medical College of Georgia; and Kevin A. Zwetsloot, Appalachian State Univ.

The Fall Teaching Career Enhancement (RCEA) recipient is Stefan Pulver, Univ. of Cambridge, UK.

The Spring Research Career Enhancement (RCEA) recipients are Linda Boland, Univ. of Richmond; Mihail Mitov, Univ. of Kentucky; Caroline Alice Rickards, Univ. of Texas at San Antonio; Chantal A. Rivera, LSU Health Sciences Center; and Jason D. Vescovi, York Univ., Canada.

The Spring Teaching Career Enhancement (RCEA) recipient is Penelope Hansen, Memorial Univ. of New Foundland, Canada.

Young Investigator Awards

The APS has three Young Investigator Awards, the Arthur C. Guyton Award for Excellence in Integrative Physiology, the Shih-Chun Wang Young Investigator Award, and the Lazaro J. Mandel Young Investigator Award.

The Arthur C. Guyton Award was awarded to Kelly J. Suter, Univ. of Texas at San Antonio. The Lazaro J. Mandel was awarded to Alexander Staruschenko, Medical College of Wisconsin. The Shih-Chun Wang was awarded to Eric Lazartigues, LSU Health Sciences Center.

Postdoctoral Fellowship Award in Physiological Genomics

The recipients of the Postdoctoral Fellowship Award in Physiological Genomics are Naresh Bal, Ohio State Univ., and Rudolf Schilder, Pennsylvania State Univ. College of Medicine.

• Council accepted the Awards Committee report.

Thomas Schmidt, Chair

Career Opportunities in Physiology

2009 Session Web Resources

Multimedia presentations for the EB 2009 Careers Symposium, "Rising and Surviving: Elucidating Tenure and Promotion in Multiple Career Paths," have been posted on the APS website and catalogued in the APS Archive of Teaching Resources. The resources include talks by Richard Klabunde, Ohio Univ. College of Osteopathic Medicine ("Overview of promotion in academia and industry"), Marian R. Walters, Penn State Capital College ("Tenure and Promotion in Universities"), Lois J. Geist, Univ. of Iowa ("Tenure and Promotion at Medical Schools"), and Magdalena Alonso-Galicia, Merck Research ("Promotion in management and research tracks in industry").

2010 Career Symposium

In 2010, the Career Opportunities in Physiology, Trainee Advisory, and Women in Physiology Committees coordinated the topics of their sessions to provide a complimentary set of career advancement sessions for physiologists. The session featured speakers with experience in different types of government agencies.

2011 Career Symposium

The Committee will focus its EB symposium on careers in non-traditional academic positions. The session is entitled, "New Opportunities in Non-traditional Academic Positions." Employment opportunities at US Medical Schools are currently evolving. New models of employment are being created that allow both the institutions and the faculty more flexibility and a variety of opportunities. The current surveys indicate that a variety of academic institutions are moving away from traditional tenure-track appointments. As many factors influence the financing of

US medical schools, recent data indicate that they are adopting similar strategies moving forward. The goal of this symposium is to provide trainees with an overview of these trends to inform their decisions regarding future employment opportunities in academia. Speakers will provide presentations about current non-traditional research- and teaching-oriented career opportunities and discuss future trends in medical institutions.

Career Presentations at APS Conferences

In 2009, the Committee presented a two-hour workshop at the APS Conference "2009 APS Conference: Sex Steroids and Gender in Cardiovascular-Renal Physiology and Pathophysiology," using materials from the Professional Skills Course. The workshop, "Writing your first papers: The 'ins" and "outs' of authorship," focused on how authorship on manuscripts is determined and engaged participants in an authorship case study. Presenters also shared an overview of the career development resources offered by the APS, including the Professional Skills Courses.

Undergraduate Summer Research Fellowship Program

The 2009-10 UGSRFs completed their fellowship year by attending EB 2010 in Anaheim. Of the 24 fellows, 23 (96%) attended EB and 22 (92%) submitted an abstract. The 2009-10 UGSRFs, like those in the past, competed successfully in the David S. Bruce Excellence in Undergraduate Research Award program, winning three (30%) of the ten 2010 Bruce Awards.

2010-2011 Program

For the 11th year of the program, 73 applications were received, a 46% increase from 50 applications last year. The Committee recommended 24 students for fellowships; these students were subsequently approved by Council. Over the 11-year history of the program, the program has received 550 applications for the 180 awards granted, with an average funding rate of 33%.

Undergraduate Orientation Session at EB

The third orientation session at EB 2010 attracted 75+ undergraduate students. All undergraduate students who submitted a first-author physiology poster were invited and announcements were posted in emails to the Trainee and All-APS listservs. Members of the Careers, Trainee Advisory, and Education Committees gave the session presentations.

APS Website or Facebook - "Career Designer"

The Committee is planning a web application that would generate interest in learning more about physiology careers ("Could you be a physiologist?"). The K-12 student could click on career keywords that interest him/her and see the biography of an APS physiologist whose career deals with those interests.

Career Outreach PowerPoint Presentation Package

The Education Office has developed online experiments and a web format. Currently, they are working with a graphic artist to finalize the artwork for the online experiments. These activities should be completed before PhUn Week in November 2010 and will be promoted via the Career web, PhUn Week activities, and the APS Archive of Teaching Resources.

APS Local and Regional Science Fair Awards

In 2010, 27 requests for a Science Fair Award Packet have been received to date from APS members. Advertisements are posted in *The Physiologist* and the All-APS News email updates for members and sent to all past participants.

APS Careers Web Site

Links for this site of more than 1,500 pages are checked on an annual basis to assure that the resources can be easily accessed. This year, APS is redesigning its website and installing a content management system to handle the myriad content of the site. The career information on the website will be better integrated into the overall APS website once the new site is available.

Physiology Video Contest for Undergraduate and Graduate Students

The Committee has developed a proposal for an annual video contest for undergraduate and graduate students. The APS Presents…Phantastic Physiology Voyage 2009: "Function Follows Form" award will encourage undergraduate and graduate students to creatively connect with physiology and engages them with the broader public through a short video contest. The Committee proposes two awards of $750 for first prize and $250 for Viewers Choice Prize. These videos would creatively demonstrate and/or explore a specific physiological function in five minutes or less. The video can be staged as a short play, commercial, news broadcast, talk show, music video, or documentary.

The awards will be presented at the annual Experimental Biology meeting. The first award, which will consist of a $750 prize, will be presented to the first place video that will be chosen by the Career Opportunities in Physiology Committee and the second award, consisting of a $250 viewer's choice prize will be given to the fan favorite.

Physician-scientists

The Committee continues to discuss possible activities or outreach to physician-scientists. The Committee has discussed ways to encourage MD students to be involved in physiology research. Many medical students do research between their M1 and M2 year and present this research at a research days at the medical school; however, very few of these MD students present this research at a major scientific conference. To address this, the Committee is developing an Excellence in Medical Student Research Travel Award to encourage MD students to present their research in APS sessions at the Experimental Biology Meeting.

- Council accepted the Careers in Physiology Committee report.
- Council unanimously approved an allocation of $1,000 for the two proposed awards for the APS video contest.
- Council unanimously approved in concept an Excellence in Research Travel Award for health care professional students.

Chapter Advisory Committee

Peter K. Lauf, Chair

Chapter Purpose and Goals

The purpose of chapters includes awakening interest in the discipline of physiology at the grass roots level. A goal has been established to entice younger generations into considering the discipline of physiology as a career, from the high school to the college level. Chapters will also encourage the recruitment and training of new PhDs, to learn and teach the discipline of physiology. The chapters also encourage and support sharing research and advancing collaboration among regional and state physiologists. Understanding the needs of the public and their perception of physiology is another goal of the chapters. Increased understanding in how the general population perceives the ethics of the relationship of everyday research and teaching activities is needed. Once those needs have been identified, chapters will help to disseminate the culture in and philosophy of the discipline of physiology across societal strata and boundaries. An emphasis will be placed on strengthening, through collaboration with State Government Agencies and Industry, direct and in-kind support of the discipline of Physiology.

Chapter Status

Over the last year, four state chapters (Arizona, Tennessee, Indiana and Puerto Rico) were added to the existing chapters (Ohio, Oklahoma, Gulf Coast, Nebraska, and Iowa) bringing the CAC membership to nine. APS provided $1,000 in start-up funds for each of the four new chapters. Seven chapters have current and approved bylaws (Ohio, Nebraska, Arizona, Tennessee, Indiana, Iowa and Puerto Rico), two chapters have bylaws in revision/review (Gulf Coast, Oklahoma). The nine chapters are: Oklahoma Society of Physiology, Ohio Physiological Society, Iowa Physiological Society, Nebraska Physiological Society, Gulf Coast Physiological Society, Arizona Physiological Society, Tennessee Physiological Society, Indiana Physiological Society, and the Puerto Rico Physiological Society.

Non-profit Status

Four chapters have obtained their 501(c)(3) nonprofit status or equivalent (Ohio, Nebraska, Iowa, and Puerto Rico). The other five chapters are in the process of obtaining a nonprofit status. The Ohio and Nebraska Chapters participated in 2009 PhUn Week activities.

Awards

APS provides $1,000 travel and honorarium support for an APS lecture at each annual Chapter Meeting, and $500 for graduate/undergraduate student travel awards. In 2009, the APS award funds helped to provide support for three postdoctoral fellow awards, six graduate student awards, and four undergraduate student awards. These funds were complimented by chapter awards, such as the Peter K. Lauf Travel Fellowship of the Ohio Chapter. The APS lecture support enabled six national lecturers to speak at the annual Arizona chapter meeting, the Ohio Chapter meeting, the Gulf Coast Chapter meeting, the Nebraska Chapter meeting, at the Iowa Chapter meeting, and at the Tennessee Chapter meeting.

Chapter Activities

Eight chapters held meetings with over 523 meeting attendees, an increase from last year's total of 393 meeting attendees. Most annual chapter meetings were held across the state or region's academic institutions for one to two days. In addition to symposia and poster sessions, other Chapter business is conducted during the annual meeting. This includes holding elections, selecting an APS sponsored lecturer for the next meeting, selecting the student and postdoctoral chapter awardees, reviewing the Chapter's finances, and planning the next annual meeting. The Chapters also focus on how to include high school, post docs and graduate students in functions, how to promote the state or region's faculty and student posters/presentations, interfacing with other APS activities (i.e., PhUn Week, Summer Teachers, etc.), and increasing chapter membership and ultimately APS membership.

Future Chapters

There is possible chapter development in NY, GA, TX (which faces geographical challenges), PA, KY, IL, the Virginias, the Carolinas, the Dakotas, Kansas, Colorado, New England States, Minnesota, and the Mountain States. Recent CAC contact has been made with interested parties in the Midwest (Minnesota, and/or Upper MI/Lower MI), FL, Northern CA, and Philadelphia, PA.

- Council accepted the Chapter Advisory Committee report.

Linda Samuelson, Chair

Committee on Committees

This year 145 members submitted applications for 57 available committee positions (this includes member positions, chairs, and trainee/student positions). The section affiliations and other characteristics of the applicant pool in comparison to the recent past are summarized in Table 1. Some of these members submitted applications to more than one committee with a total of 171 applications for the open positions (Table 2).

The Committee on Committees (CoC) and Council identified 57 individuals to serve on APS standing committees. The joint efforts of the CoC and Council led to increasing the number of members on both the Membership and Publications Committees.

APS Standing Committee

Tables 1A and 1B show the section affiliation and other characteristics of the candidates chosen to fill the committee positions.

Table 3A shows the Section affiliation of the APS Standing Committee members in 2009 and 2010 and the composition in 2011 based on the new committee appointments. Table 3B shows the composition of the committees in terms of representation by members that are under the age of 45, women, living outside of the US, employed in Industry, and student members. The data in Tables 3A and 3B represents the percentage of APS members comprising these categories.

Table 1a. Section Affiliations of Applicant Pool and New Appointees.

Section	2008	2009	2010	2011 New Appointees	All APS Members
Cardiovascular	24 (23%)	28 (24%)	29 (20%)	12 (21.0%)	29%
Cell & Metabolism	7 (6.5%)	12 (10%)	8 (6%)	4 (7.0%)	12%
Central Nervous System	6 (6%)	3 (2.5%)	12 (8%)	5 (8.7%)	9%
Comparative	3 (3%)	8 (6.5%)	5 (3.4%)	3 (5.2%)	4%
Endocrine/Metabolism	8 (7.5%)	5 (4%)	2 (1.3%)	1 (1.7%)	8%
Environmental/Exercise	18 (17.5%)	7 (6%)	5 (3.4%)	1 (1.7%)	9%
Gastrointestinal & Liver	2 (2%)	8 (6.5%)	8 (5.5%)	7 (12.2%)	5%
NCAR	7 (6.5%)	7 (6%)	15 (10.3%)	4 (7.0%)	5%
Renal	7 (6.5%)	11 (9%)	13 (8.9%)	4 (7.0%)	7%
Respiration	5 (5%)	14 (12%)	14 (9.6%)	1 (1.7%)	9%
Teaching	7 (6.5%)	7 (6%)	7 (4.8%)	4 (7.0%)	3%
Water/Electrolyte	9 (8.5%)	7 (6%)	27 (18.6%)	11 (19.2%)	3%
TOTAL	104	118	145	57	

Table 1b: Other Characteristics of the Applicant Pool.

	2009	2010	New Appointees	All APS Members (%)
Under age 45	22 (19%)	74 (51%)	27 (14.3%)	33%
Women	46 (39%)	56 (38%)	26 (13.7%)	14.5%
Reside outside of the US	8 (7%)	13 (18.8%)	3 (1.5%)	21%
In Industry	1 (1%)	1 (1%)	0	2%
Student*	8 (7%)	12 (8.2%)	4 (2.1%)	12%

*This number refers to student members. Some postdoctoral trainees are regular members of APS.

Table 2: Section Affiliation of Completed Applications for APS Standing Committees
Total Number of Applications Per Committee: 171**

APS Committee	APS Section Affiliation											
	CV	Cell	CNS	Comp.	Endo.	EEP	GI&L	NCAR	Renal	Resp.	Teach.	WEH
ACE	3	1	1	1	0	0	0	0	0	2	0	3
Awards	3	1	2	1	0	1	0	0	1	0	1	2
Careers	4	0	2	0	2	1	2	4	1	1	0	4
Communications	0	0	1	0	0	0	1	0	0	0	1	2
Conference	2	1	0	0	0	1	1	1	3	2	0	2
Daggs	0	0	0	0	0	0	0	0	0	0	0	0
Education	6	2	0	1	1	1	1	5	5	4	6	3
Finance	1	1	1	0	0	0	0	0	1	1	0	0
International	4	0	2	0	0	1	1	2	2	0	1	6
Membership	3	1	2	0	0	1	0	1	0	0	0	1
Perkins	1	0	0	0	0	0	0	0	0	0	0	1
Porter	2	0	1	2	0	0	1	4	0	0	0	3
Public Affairs	1	0	0	0	0	1	2	0	0	1	0	1
Publications	3	0	0	0	0	0	1	0	1	2	0	0
Senior Phys.	0	0	0	0	0	0	0	0	0	0	0	0
Women	1	1	0	0	0	1	2	2	0	0	1	5
Total	34	8	12	5	3	8	12	19	14	13	10	33

****Some candidates applied for more than one committee.**

Strategic Planning

In the fall the CoC will undertake a strategic planning analysis to address the following issues: perform a SWOT analysis; assess existing committee structure and appointment practices; and consider evaluation of committee performance and mechanisms to act on evaluations to revise the process.

Planning for 2011

The CoC hopes that many APS members will consider serving the Society as a member of one of its standing committees. Applications can be submitted via the APS website, and are due along with an Endorsement form by January 17, 2011. Those candidates who are unsuccessful at securing a committee appointment initially are encouraged to re-submit their credentials for consideration for the same or another committee in the next cycle and those placed as alternates will be re-considered without re-nomination.

- Council accepted the Committee on Committees report.

Table 3a: Section Affiliation of APS Standing Committee Members (*not including Chapter Advisory Committee, Committee on Committees, Joint Program Committee, Physiologists in Industry Committee, Section Advisory Committee, and Trainee Advisory Committee as these are all section appointed positions*)

Section	2009	2010	2011	All APS Members (%)
Cardiovascular	28 (19.5%)	29 (19%)	28 (18.1%)	29%
Cell & Metabolism	13 (9%)	11 (7%)	14 (9%)	12%
Central Nervous System	10 (7%)	11 (7%)	13 (8.4%)	9%
Comparative	4 (3%)	8 (5%)	7 (4.5%)	4%
Endocrine & Metabolism	9 (6.5%)	9 (6%)	7 (4.5%)	8%
Environmental & Exercise	12 (8.5%)	15 (10%)	9 (5.8%)	9%
Gastrointestinal & Liver	9 (6.5%)	9 (6%)	9 (5.8%)	5%
NCAR	9 (6.5%)	12 (8%)	12 (7.7)	5%
Renal	15 (10.5%)	16 (10%)	18 (11.6%)	7%
Respiration	4 (3%)	8 (5%)	10 (6.4%)	9%
Teaching	8 (3.5%)	9 (6%)	9 (5.8%)	3%
Water/Electrolyte Homeostasis	22 (15.5%)	18 (11%)	18 (11.6%)	3%
Total	143	155	154	10,276

Table 3b: Other Characteristics of APS Standing Committee Members (*Chapter Advisory Committee, Committee on Committees, Joint Program Committee, Physiologists in Industry Committee, Section Advisory Committee, and Trainee Advisory Committee as these are all section appointed positions*).

	2009	2010	2011	All APS Members (%)
Under age 45	51 (35.5%)	38 (25%)	69 (44.8%)	33%
Women	52 (36.5%)	64 (41%)	66 (42.8%)	14.5%
Reside outside of the US	12 (8.5%)	14 (9%)	8 (5.1%)	21%
Employed by Industry	4 (2.5%)	4 (3%)	0	2%
*Trainees	16 (11%)	2 (1%)	8 (5.1%)	12%

*This number refers to student members. Some postdoctoral trainees are regular members of APS.

James Hicks, Chair

Communications Committee

EB Media Results

APS developed eight press releases highlighting scientific presentations being presented at the Experimental Biology (EB) meeting in April. The releases are posted on the APS press page, www.The-APS.org/press. Media coverage of our releases included placements on CNN.com, *Science Magazine*, TimeMagazine.com, *US News & World Report* and WebMD.

Announcement of Cannon and Bowditch Award Winners

APS also issued a release announcing Jeffrey Fredberg as the Walter B. Cannon Award lecturer. The lecture is the Society's pre-eminent award lecture and is designed to recognize an outstanding scientist for his or her contributions to the field. Dr. Fredberg's lecture was entitled "A Hard Day in the Life of a Soft Cell." In addition, staff issued a release announcing that Ohio State University's Paul Janssen had received the Henry Pickering Bowditch award for his original and outstanding work on novel mechanisms and relaxation in the heart. His lecture was entitled "Myocardial Contraction-Relaxation Coupling." The releases are posted on the APS press page at www.The-APS.org/press.

APS/AAAS Mass Media Fellow

The 2010 APS/AAAS Mass Media Fellow will be Rachel Bernstein. Ms. Bernstein is a pre-doctoral candidate in the Department of Chemistry at the University of California, Berkeley. She will serve her internship at the *Los Angeles Times*.

Media Outreach for August 2010 Meetings

Staff has begun to prepare identifying the abstracts it will profile for the two APS meetings this August, Global Change and Global Science: Comparative Physiology in a Changing World (August 4-7), and Inflammation, Immunity and Cardiovascular Disease (August 25-28).

- Council accepted the Communications Committee report.

P. Darwin Bell, Chair

Conference Committee

APS presented two successful conferences in 2009. The first was "ET-11 APS International Conference on Endothelin," in Montreal and the second was "Sex Steroids and Gender in Cardiovascular Renal Physiology and Pathophysiology," in Broomfield, CO. In 2010, APS presented an intersociety meeting entitled, "Global Change and Global Science: Comparative Physiology in a Changing World" in Westminster, CO and a conference entitled "Inflammation, Immunity and Cardiovascular Disease," also in Westminster, CO.

For 2011, APS will be sponsoring the conference entitled "Aldosterone the ENaC/degeneration Family of Ion Channels: Molecular Mechanisms and Pathophysiology." The conference entitled "Autonomic Regulation of Cardiovascular Function in Health and Disease" was originally scheduled for 2011 but has been moved to 2012, due to a scheduling conflict with an international meeting on this same topic.

There continues to be a problem with the number of new proposals for APS Conferences. The reason for lack of new proposals is not entirely clear, but may be related to the overall economy and the state of scientific funding. Many conference organizers also find it difficult to raise funds to support meetings, especially meetings that focus on basic science, and are not clinically driven. It has also become progressively more difficult to obtain NIH funding to support APS conferences. It is also apparent is that there is strong competition from several well-known and established summer conference programs and this has been a major impediment in establishing the APS Conference Program as one of the premier conference programs.

- Council accepted the Conference Committee report.

Thomas A. Pressely, Chair

Education Committee

Web-Based Professional Skills Courses

2010 Live Short Courses

In January 2010, the American Physiological Society conducted live professional skills training courses for graduate and postdoctoral students. This was the third time both courses, "Writing and Reviewing for Scientific Journals" and "Making Scientific Presentations: Critical First Skills," were run concurrently. The writing and reviewing course focused on upper level graduate students and post-docs and the skills needed for writing and reviewing their first author manuscript for scientific journals in biomedicine. The presentation skills course was geared toward lower level graduate students and the skills needed to create and present their first author posters at meetings. The instructors for this course were Kim Barrett, UCSD, Catherine Fuller, Univ. of AL-Birmingham, Robert Hester, Univ. of Mississippi, Evangeline Motley, Meharry Medical College, Thomas Schmidt, Univ. of Iowa, Heddwen Brooks, Univ. of Arizona, Carole Liedtke, Case Western Reserve Univ., David Pollock, Medical College of Georgia, and Mesia Steed, Wake Forest Univ.

For 2011, only the Writing and Reviewing for Journals course will be offered, with a maximum enrollment of 25 students (5 instructors). It will be held from January 6-9, 2011 at Disney's Contemporary Resort in Lake Buena Vista. For the Writing and

Reviewing course, students are encouraged to submit samples of their own manuscripts for discussion and revision.

Online Course Development

APS held a beta-test of its first Professional Skills Online Training Course on "Writing and Reviewing for Scientific Journals" from September 1 - October 15, 2009. This is the first online professional development course conducted by APS. The course evaluation results will be used to both improve the "Writing and Reviewing" course and plan additional online courses. The Education Office plans to run this course again.

Physiology Graduate Program Directors

In response to the success of the Medical Physiology Course Directors website and group as well as recent input from the APS Pipeline Taskforce, the Education Office has begun soliciting contact information on physiology program directors. It is hoped that these data will facilitate the organization of a similar support group for graduate education.

Towards developing a forum for graduate directors, representatives of the Society attended the 2009 National Directors of Graduate Studies in Pharmacology, hosted by the LSU Health Sciences Center and Tulane University Health Sciences Center in New Orleans. The APS will partner with the American Society for Pharmacology and Experimental Therapeutics to organize a joint meeting of Physiology and Pharmacology program directors in 2011.

Experimental Biology Activities

EB Refresher Course

The 2010 Refresher Course focused on cardiovascular physiology. The presentations are being prepared for the web and Advances publication.

Posters Presented by the Education Office

Members of the APS Education Office submitted an abstract for presentation as a poster at EB 2010. The poster was presented at the Teaching of Physiology Section session, "Helping Students Put the Pieces Together: Fostering Integrative Learning of Physiology."

Support For Medical Science Educators

Meeting of the Medical Physiology Course Directors

At EB 2010, approximately 20 medical physiology course directors attended the meeting. Participants talked about both cardiovascular physiology content and how best to teach it.

APS Archive Of Teaching Resources

An updated version of the Archive of Teaching Resources was launched in January 2009 that includes highlights of current APS research and announcements, as well as an improved interface for browsing and searching. The submission process has been simplified and now includes the ability to "clone" a submission. This allows a contributor to add similar items without going through each submission step again. The new Archive also has the ability to create "collections". For example, the Archive can associate a podcast with the associated journal article, press release, and discussion questions to be used in the classroom. The Archive layout is being used as a model by other scientific societies (AAAS, ASM) as they update their libraries.

The Archive added 800 new items in the past year and now includes more than 3,100 peer reviewed teaching resources items with an additional 400 items under review. More than 6,400 users have registered but many more use the site (registration is not required). In 2009, users viewed the information on more than 231,000 teaching resources and accessed more than 108,000 resources. That is, 50% of the time, users who read the descriptive information on a teaching resource go on to download it or click the link to it on the web.

Grant Proposals

In 2010, APS Education Office again submitted two proposals to NSF to support continued expansion of the APS Archive of Teaching Resources, both in terms of partners and features. A proposal, submitted as a subcontract with the AAAS, would allow a number of customization tools to be implemented, allowing users to embed Archive resource lists in faculty web pages, mySpace/Facebook pages, web course sites, and other e-interfaces to communicate with colleagues and students. It would also allow the staff to build strand maps to allow the user to find Archive resources by specific course topic. In addition, APS will promote the Archive, BEN and NSDL through multiple exhibits, workshops, and presentations.

David Bruce Awards

In 2010, 77 applications for the David Bruce Award were received and 24 finalists were selected. From the finalists, the subcommittee selected 10 David Bruce Awardees.

EB 2009 Undergraduate Poster Session

In 2010, approximately 250 APS members came to see the 100 undergraduate posters and to talk with the students. This year, 15 physiology departments paid a $250 fee for table space to promote their graduate programs to the undergraduate students at the session.

Promoting the Teaching of Physiology in Undergraduate Biology

Promoting APS Podcast Use

The Education Committee is developing a series of teaching resources to enhance and promote the use of the APS Life Lines podcasts in undergraduate courses and K-12 classrooms. A Subcommittee is developing question and answer sheets for each podcast and a group of past Summer Research Teachers are reviewing them for grade appropriateness. Links will be provided to the podcast, Q&A sheets, related research articles/press releases, and related websites.

APS Summer Research Program for Teachers

In 2010, 28 teachers from 21 states (see map) are participating in a newly designed modification of the comprehensive Frontiers fellowship program. These teachers have already completed three lessons since May, and will continue to participate in the online course activities through May 2011. The teachers will convene for the first time at EB 2011 in Washington, DC. This one-year modification of the traditional APS summer research program serves two purposes: 1) It will provide evidence of the impact of the physiology laboratory experience for the teacher fellows; and 2) It will develop a new model to allow APS to reach out to more teachers via online professional development.

2010 EB Workshop for Teachers and Students

More than 125 Anaheim area high school teachers and their students attended the workshop along with APS members and 2009 Frontiers Research Teachers (RTs). As students arrived, they were engaged in interactive demonstrations by APS members, K-12 Outreach Fellows, and representatives from ADInstruments. The keynote talk, "Diabetes and the Heart: The Biggest Loser?" was given by APS member, Pamela Lucchesi, Nationwide Children's Hospital. Her

talk was followed by a Careers Panel. Fourteen APS members served as tour guides during lunch where they took teachers and students through the exhibits and posters and shared a box lunch while discussing physiology careers.

While students were conducting their experiments, their teachers participated in a workshop activity on modeling the digestive system with common household items. Feedback from both teachers and students was very positive and students were especially excited to meet physiologists one-on-one. The Committee is planning to continue the program in 2011 in Washington, DC.

International Science and Engineering Fair (ISEF) Awards

The 61st Annual International Science and Engineering Fair (ISEF) was held in San Jose, California May 9-14, 2010. More than 1,600 students from 60 countries, regions, and territories competed in the world's largest pre-college science competition. During the two evenings of awards ceremonies, more than $4 million in scholarships, cash prizes, and awards were distributed in categories ranging from behavioral science to engineering and medicine. Prizes included scholarships, cash awards, scientific field trips to foreign countries, and the grand prizes: one top award of $75,000 and two $50,000 scholarships from Intel. Grand Awards in each of the 17 categories ranging from $500 to $5000 were presented by the Intel Foundation. Special Awards were presented by more than 70 scientific, professional, and educational organizations and included scholarships, summer internships, book and equipment grants, international travel, and scientific field trips.

NABT Professional Development Conference

The National Association of Biology Teachers is a professional organization of biology educators, primarily from K-12. The APS sponsors a keynote research update speaker each year for the NABT Professional Development Conference. For the November 2009 meeting in Denver, Colorado, Shane Kanatous of Colorado State University gave the presentation, "Lessons Learned from Marine Mammals." Patricia Molina is the APS-sponsored speaker for the November 2010 meeting in Minneapolis, MN.

APS Position Statement on K-12 Outreach

Explicit statements of the importance of specific scientific disciplines, teaching approaches, and advocacy in K-12 education have been released by several universities and professional societies. For many years, the APS has pursued multiple initiatives in K-12 outreach. As the various programs of the Society have become more ambitious, they frequently require the input from multiple APS Committees, including Education, Career Opportunities, and Women in Physiology. Beyond the Strategic Plan, however, the Society has never developed an explicit statement of its recommendations to K-12 educators or its goals in pursuing these efforts. Council approved the Education Committee's intention to develop such a position statement, in cooperation with other relevant Society committees.

Physiology Understanding Week

2009 PhUn Week

The PhUn Week 2009 theme was exercise and health. Nearly 10,000 K-12 students in 42 locations engaged in physiology activities and learned about physiology careers.

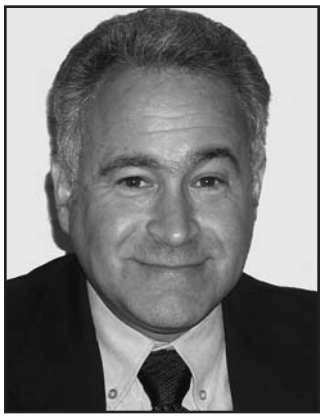
USA Science and Engineering Festival (USASEF)

On October 23-24, 2010, the APS will participate in the Inaugural USA Science & Engineering Festival Expo on the National Mall in Washington, DC. The organizers' intention is "to be the ultimate multi-cultural, multi-generational and multi-disciplinary celebration of science in the United States." Hosted by Lockheed Martin, the Festival and two-day Expo will the first national science festival in which science and engineering organizations from across the nation will have the opportunity to engage the public in fun, hands-on science activities to inspire the next generation of scientists and engineers.

The APS Exhibit Booth/program title is "Understanding Physiology for PhUn." Participants will engage in two physiology activities-one comparative physiology and one cardiovascular physiology, touching on both the biomedical aspects of physiology and the "one physiology" aspect of adaptations. Students will take an activity card with them. One side will describe how they can measure their temperature before, during, and after exercise to see how their body maintains its temperature. The other side of the activity card will describe how they can do a "straw race" at home, demonstrating changes in flow rate as diameter of the tube changes. Both sides of the postcard will direct them to an online site for a more detailed explanation by a physiologist (podcast) for both topics.

The booth will be staffed in two rotations per day of the Expo weekend, consisting of two past APS Minority K-12 Outreach Fellows, an Education Committee member, and a staff member of the APS Education Office. The Festival emphasizes the interaction of children with younger scientists, something that APS has promoted through PhUn Week and the K-12 Minority Outreach Fellows program. The Education Committee is enthusiastic about engaging the K-12 Minority Outreach Fellows as well as two Education Committee members in staffing the booth.

- Council accepted the Education Committee report.



Jeff Sands, Chair

Finance Committee

During the spring Council meeting, the Finance Committee reported that the Society's financial condition remains relatively strong through sound management and investment practices despite a difficult economy.

2009 Financial Results

Revenue, including $1.3 million from reserves, was $18.2 million and expenses over the same period were $16.7 million, resulting in a surplus for the year of $1.5 million. The Society was approximately $1.3 million over budget at year-end. Revenue for the year was $244, 000 under budget, but was offset by expenses that were $1.55 million under budget. Revenue categories that were under budget included journal-related income from Page Charges ($145,000 under budget) and Reprints ($146,000 under budget). Grant Income was $193,000 under budget and Meetings Income was $259,000 under budget. Several expense categories associated with producing the journals (i.e., Printing, Editor Expenses, and Mailing) were under budget by $592,000.

2010 Budget

Reductions in revenue of $140,500 and decreases in expenses of $188,000 resulted in a small increase in the 2009 budget surplus from $3,000 to $50,500. Budgeted revenue was decreased from $17.52 million to $17.38 million, and budgeted expenses were decreased from $17.51 million to $17.33 million.

Three Year Financial Forecast

The forecast projects a surplus of $7,000 in 2011, and deficits of $50,000 and $119,000 in 2012, and 2013, respectively. The projection shows both revenue and expenses growing at annual rates of 0.6% and 0.9%, respectively from 2010 to 2013. By comparison, the October 2009 projection showed revenue and expenses growing at rates of 1.2% and 2.3%, respectively with projected deficits of $155,000, $346,000, and $570,000, for the years 2011, 2012, and 2013, respectively.

Invested Funds Report

The Invested Funds report indicates that the value of the Long-term Funds increased almost 20% (from $32.3 million to $38.7 million) from December 2008 to December 2009. This increase was mainly due to gains in the stock market. Funds in the other two funds remained relatively constant in value. Other Funds increased from $720,216 to $720,447 and funds for Sections and Groups increased from $226,275 to $249,386 over the same period.

Current and Pending Grants

The current grant activity totals $2.7 million and the pending grants totals $924,000.

2011 Subscription Prices

At its spring meeting, Council approved the Publication Committee's recommendation for 2011 journal subscription price increases. Total publication costs are estimated, with consideration to the Publications program's charge to generate income (from subscriptions and other sources) that is 10% more than expenses. Based on the calculation, an increase of 5% in the program's Print plus Online version and Online Only version, and a 7% increase in the Print Only version of its journals will be needed to meet the 10% margin requirement. The recommendation for two different price increases is intended to encourage the purchase of online subscriptions. In addition, the price of the Society's Legacy product will be increased by $250, from $2,250 to $2,500.

Managed Accounts

It was reported that, at December 31, 2009, the combined return for the four equities accounts and the two fixed income accounts was +20.79% for the year, which was better than the Society's composite benchmark index of +17.55%.

- Council accepted the Finance Committee report.

Ida J. Llewellyn-Smith, Chair

International Physiology Committee

Approximately one quarter of all APS members are from countries other than the US. Since 2000, the number of international APS members has increased by over two-thirds. The International Physiology Committee sees itself as being integral to the international efforts of APS. The Committee seeks to assist APS by identifying and implementing ways in which APS can provide better service to the existing international membership base and by developing strategies to grow the international membership of APS and improve its international profile.

Overview of International Membership

In 2009, there were 2,421 international members and during the past year, the growth of the international membership has continued at a rapid rate. During the past year, 15.6% of APS's new members are from Canada, 9.6% are from Japan, 8.7% are from the UK, 7% are from Brazil, and membership from China increased by 33%.

Committee Activities

The International Physiology Committee coordinates and

APS Statement of Financial Position as of December 31, 2009

ASSETS		LIABILITIES AND NET ASSETS	
Cash and cash equivalents	$ 1,029,739	Accounts payable and accrued expenses	$ 1,945,766
Investments	44,622,417	Deferred subscriptions	6,030,076
Accounts receivable	1,349,071	Deferred dues	689,690
Pledges receivable,net	179,047	Total liabilities	8,665,532
Accrued interest receivable	186,215		
Advances to section editors	387,048	Net Assets:	
Prepaid expenses	164,797	Unrestricted	39,591,869
Inventories	40,068	Temporarily restricted	665,407
Furniture, fixtures, and equipment	976,906	Permanently restricted	12,500
		Total net assets	40,269,776
Total assets	43,935,308	**Total liabilities and net assets**	$ **48,935,308**

oversees two programs, the Latin American Initiative and the International Early Career Physiologist Travel Awards.

Latin American Initiative

The Committee received three applications for LAI funding in 2010. After reviewing the applications, the Committee approved funding for two applications and returned a third application for revision. Because there was still the possibility of awarding $10,000 in LAI support, the Committee, called for a second round of LAI applications. Two applications were received; one was the resubmission, which was funded, the other was not.

Improving the Numbers and Quality of LAI Applications

At the spring Committee meeting, concerns were expressed about the quality of some of the applications for LAI funding and the numbers of applications received. The guidelines for applications were revised in 2008 to give applicants a better idea of what information was required to maximize their chances of obtaining LAI funding. An on-line application

APS Statement of Activities for the year ended December 31, 2009

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Operating revenue:		-		
Subscriptions	$ 10,134,196	-	$ -	$ 10,134,196
Author charges	3,676,489	-	-	3,676,489
Membership dues	913,435	-	-	913,435
Grants and contracts	595,656		-	595,656
Conferences and meetings	529,479		-	529,479
Contributions	162,930	125,911	-	288,841
Advertising	272,960	-	-	272,960
Back issues	37,598	-	-	37,598
Other income	385,240	-	-	385,240
Release from restrictions	194,876	(194,876)	-	-
Total Operating Revenue	16,902,859	(68,965)	-	16,833,894
Operating expenses:				
Publications	11,592,920	-	-	11,592,920
Society general	2,871,450	-	-	2,871,450
Society programs	954,108	-	-	954,108
Education	1,237,971	-	-	1,237,971
Marketing	322,684	-	-	322,684
Total Operating Expenses	16,979,133	-	-	16,979,133
Operating change in net assets	(76,274)	(68,965)	-	(145,239)
Net realized loss on investments	(1,155,985)	-	-	(1,155,985)
Net unrealized gain on investments	6,812,257	-	-	(6,812,257)
Interest and dividends	1,068,909	466	-	1,069,375
Investment management fees	(347,051)	-	-	(347,051)
Total Investment Income	6,378,130	466	-	6,378,596
			-	-
Change in net assets	6,301,856	(68,499)	-	6,233,357
Net assets, beginning of year	33,290,013	733,906	12,500	34,036,419
Net assets, end of year	$ 39,591,869	$ 665,407	$ 12,500	$ 40,269,776

process was developed and implemented in 2008. This year's funding rounds indicated that some applicants were still not following the guidelines but it was unclear what actions the Committee could take in order to ensure that applicants read the guidelines and follow them. Because there were disappointingly few applications in 2010, the Committee discussed ways to increase the number of applications for LAI funding in coming years. A number of suggestions were made, including one-on-one personal contacts to solicit applications; using the Latin American listserv more proactively to inform APS members in Latin America about LAI funding; communicating the availability of LAI funding to US departments where Latin American trainees work, perhaps via a Facebook page called the "South American APS Community"; advertising the LAI through Physiological Societies in Latin American countries; and sending information about the LAI to the Latin American Hypertension Society. These new strategies will be tested in future funding rounds.

International Early Career Physiologist Travel Awards (IECP)

These awards aim to enable early career physiologists from outside the US to attend and participate in Experimental Biology (EB) meetings. This year, 19 applications for the IECP Travel Awards were received and ten applications were funded. The 2010 Award winners came from Brazil (2), Sweden (2), the UK (2), Australia (1), Malaysia (1), Nigeria (1) and Russia (1).

Improving the Numbers and Quality of IECP Travel Award Applications

In order to improve the quality of the IECP applications, a section called "Tips on Writing a Successful Abstract" was included in the Guidelines to Applicants. These tips seemed to have been successful in improving the scientific quality of the abstracts. However, the Committee agreed that the Guidelines still needed clarification. The applications for Awards in 2010 revealed that there was a problem with the criterion for defining scientific age. In this funding round, scientific age was defined as the number of years beyond "the highest earned degree." Using this definition, two APS members who had received a PhD only recently but were MDs and had been doing independent research for many years were eligible and applied for IECP Travel Awards. The 2011 Guidelines will specify that applicants must have obtained their first professional degree (i.e., PhD, MD or equivalent) within the past 10 years. The Committee discussed a number of other issues relating to the IECP Travel Awards including should individuals be allowed to receive the award more than once; should the review process be streamlined so that the Committee is not burdened with reading numerous abstracts; and should a mechanism be developed to ensure that IECP Travel Awardees do not win multiple EB travel awards in a given year.

Assessing Invitations to Participate In Joint Meetings with Other Physiological Societies

APS was asked to participate in a joint meeting of the Spanish Physiological Society and Portuguese Society of Endocrinology. Because APS did not have a formal process for dealing with invitations to take part in meeting organized by other societies, Council asked the International Committee to develop a set of guidelines for dealing with this issue. The Committee submitted a set of guidelines to Council at the summer meeting that was subsequently accepted and approved by Council.

Strategic Planning

During its meeting at EB, the International Committee identified that it needed to be more proactive in creating collaborations with international societies. The Committee also believed that it should be more integrated into the international activities of APS. The Committee saw itself as playing a greater role in identifying opportunities for joint international meetings with other societies. In particular, such events would increase the global profile of APS and increase its international membership. During the past year, the International Committee has worked on a survey aimed at international members. The survey has been designed to discover why international members join APS, what services they consider valuable and how they believe services to international members could be improved. The results of the survey will be sent to Council for use in developing the new APS Strategic Plan.

- Council accepted the International Physiology Committee report.
- Council unanimously approved the "Guidelines for Assessing Invitations from other Physiological Societies" in principle with the suggested changes.

Ronald Lynch, Chair

Joint Program Committee

The 2010 EB Meeting was held in Anaheim, CA April 24-28. Most scientific and poster sessions were well-attended and overall enthusiasm for the meeting remains high. Total attendance was 11,996 representing a 12% increase over the EB 2009 registration. The primary participating societies were APS, ASPET (pharmacology), ASN (nutrition), ASBMB (biochemistry), ASIP (pathology), and AAA (anatomy). APS hosted five guest societies including the Microcirculatory Society (MCS), the Biomedical Engineering Society (BMES), American Federation for Medical Research (AFMR), Society for Experimental Biology and Medicine (SEBM), and Association of Latin American Physiological Societies (ALACF).

The APS portion of the EB10 program featured two Techniques and Technology in Physiology Workshops on Saturday entitled, "Computational Modeling and Simulation as a Tool for Studying Physiological Processes" and "Nanotechnology and Nano/Microfluidics." APS also sponsored three "Cross-Sectional" Symposia entitled, Humoral Factors in Renal Injury and Hypertension Novel Redox Signaling in Ion Channel Regulation and Pathophysiology, Endoplasmic Reticulum Stress: At the Crossroads Between Fatty Liver, and Leptin Resistance, Obesity and Diabetes.

A total of 6,138 abstracts were submitted, an increase of 22% over the total abstracts submitted for EB 2009. Of the total abstracts submitted, 2,231 (36%) were programmed by APS. There were 718 late-breaking abstracts submitted, an increase of 37% from EB 2009. Of that total, 186 (26%) were submitted

to APS for programming versus 138 submitted in 2009.

APS programmed 310 sessions in total including 180 poster sessions, 59 symposia, 46 featured topics, 16 lectures, four workshops, one refresher course, one mini-symposium, one awards session and two special sessions.

The Physiology InFocus program, organized by APS President Gary Sieck, was entitled "Physiology and Biomedical Engineering: Partners in Translational Research." It included four symposia scheduled throughout the meeting. These were entitled "Airway Smooth Muscle: Where does it Come From, How Does It Work, What Does It Do?," "Preparing Students for Physiological Complexity-Emphasizing Quantitative Skills," "One Hundred Years of Starling: His Contributions to Physiology," and "Physiology at the Crossroads of Biomedical Engineering and Medicine."

The lectures included the 12 Section Distinguished Lectureships, the MCS Landis Award Lecture presented by Ulrich von Andrian; the Physiology in Perspective-The Walter B. Cannon Memorial Award Lecture, presented by Jeffrey Fredberg; The Henry Pickering Bowditch Award Lecture, presented by Paul Janssen; and The Walter C. Randall Lecture in Biomedical Ethics, presented by Debra Anne Schwinn.

Experimental Biology 2011

The JPC met at EB 2010 to begin organizing EB 2011 that will be held Saturday April 9 - Wednesday April 13 in Washington, DC. This EB meeting will be a six-society meeting. The JPC next met on June 16, 2010 in Bethesda to schedule the platform sessions. The 2011 meeting will be the first time that sections have "clustered" their programming on specific days within the meeting. The "clustering" of sessions by section provided a framework which facilitated session programming/slotting allowing more time for optimizing room selection for specific sections and sessions.

The EB11 Call for Abstracts and online abstract submission site was available by September 2010. The abstract deadline will be November 10, 2010. EB 2011 will again provide for a late breaking abstract deadline, anticipated sometime in February 2011.

The JPC received eight Cross-Sectional symposium proposals and approved the following four: "Role of microRNA in Cardiovascular System;" "Gas Channels;" "Therapeutic Potential of the ACE2/Ang-(1-7)/MasR Axis in Disease;" and "Understanding Blood Pressure Regulation Through Neural, Vascular, and Renal Specific Knockout/Knockdown Approaches." In addition, two Techniques and Technology workshops will be scheduled on the first day of EB 2011. They are "Translational Research: A Primer for the Basic Scientist," and "Small Animal Models." These workshops are designed to complement the Physiology InFocus series organized by APS President Peter Wagner. The Physiology InFocus program is entitled Molecular and Clinical Physiology in Human Disease and will feature a series of four symposia: "Left Heart Failure: Molecular, Physiological and Clinical Integration;" "Idiopathic and Inheritable Pulmonary Arterial Hypertension (PAH): From Genes to Clinical State;" "Physiology and Genetics of Obesity: Molecular Discovery and Translational Research;" and "Translational Biology of the Renal Podocyte."

The meeting will also feature sessions organized by the APS Publications Department, Careers in Physiology Committee, Public Affairs Committee, Women in Physiology Committee, Education Committee, Liaison with Industry Committee, and Trainee Advisory Committee.

Experimental Biology 2012

The next meeting of the JPC will be held in December. During this meeting, programming of poster sessions from abstracts will occur. In addition to the set programming, the JPC will identify several additional abstract driven "non-funded featured topics." There are three to four slots available on the morning of Wednesday, April 13 for these abstract driven featured topics; the oral sessions will follow the presentations on Wednesday afternoon. For these sessions, abstracts are usually drawn from several sections to consolidate an obvious critical mass, and therefore tend to be highly "interdisciplinary."

- Council accepted the Joint Program Committee report.

John B. Buckwalter, Chair

Membership Committee

The Committee proposed that APS introduce an option to pay membership for multiple years. As the availability of funds for our members fluctuates from year to year, the introduction of an option for membership renewal for more than a single year is desired. It is proposed that two and three year renewals be available at a discount. It is expected that this will help with the retention rate.

Introduce an option for lifetime APS membership. As with the multiple year memberships, this would give our members an additional option for paying dues to the APS.

After the 2009 Summer Council meeting, a Task Force was formed to work with the Membership Committee to examine issues related to membership growth, retention, and benefits. After much discussion throughout the year and during the Committee meeting at EB10 some common themes emerged.

If growth of the APS membership is desired it needs to be strategic and maintain the current strengths of the organization. There is a general feeling that the traditional membership pool of physiologists may be exhausted as a source of new members. Potential new targets include international members, engineers, and industry scientists. The biggest membership benefit for these members is most likely the annual meeting and, thus, this should be central in the marketing strategy to these groups.

APS member benefits for graduate students are outstanding, dues are relatively inexpensive, and there are many awards and travel fellowships that the students can apply for, and they enjoy discounted meeting registration. Additionally, the Trainee Advisory Committee has specifically targeted this group with symposia, designated listserv, as well inclusion with the governance of the individual sections.

APS member benefits for regular members are lacking. Discounted registration at the annual meeting is the most important tangible benefit for regular members. This is inadequate for a member that does not regularly attend Experimental Biology. Additional tangible benefits are needed for this group.

Differential submission fee to APS publications for APS members in good standing. Additional membership benefits

related to APS Journal publications is desired.

Increase the fee for non-members that attend Experimental Biology. This would enhance the benefit already enjoyed by APS members that attend EB. This would provide a greater incentive for non-members attending EB to join the APS.

Provide an additional registration discount for international members attending Experimental Biology for the first time. This would target potential international members for APS membership by allowing them to attend EB for the first time at a discounted rate. This encourages them to experience the greatest member benefit (the meeting) for them for the first time.

• Council accepted the Membership Committee report.

Chris Baylis, Chair

Perkins Memorial Award for International Physiologists Committee

Applications for the Award are accepted in the spring and fall, with application deadlines of April 15 and October 15. For the April 2009 deadline, the Committee received two applications, and funded one. For the October 2009 deadline, the Committee received 36 applications and funded one. We have absolutely no idea what caused this large rise in applications for the fall 2009 deadline.

During 2009, the Committee changed the reviewing process to eliminate using numerical scores, but instead ranking the applications based on financial need. The ranking is based on a numeric scale of 1 - *n*, depending on number of applicants, with 1 indicating the highest (greatest) need for financial support. The following five questions are used to determine if an application should be ranked for a possible award.

Does the candidate meet the general academic qualifications?

Does the host scientist meet the general qualifications?

Did the applicant demonstrate a financial need?

Does the duration of the scientific visit meet the minimum three (3) months?

Does the duration of the family's visit meet the minimum one month?

If the answer is yes to all the questions above, the application is ranked based on financial need and duration of separation from family, otherwise the application will not be considered further.

The ranking was extremely difficult with 39 applications so a triage system was instituted taking into consideration the following:

Any applicant whose family was already in the US or who has stated that they would bring their family, irrespective of funding was eliminated from consideration. Applicants with an annual salary of $40,000 or more were removed from consideration.

This left a list of 10 applications and the criteria used for ranking these applications were:

1. Salary/location; 2. Duration of separation from family (i.e., an applicant who would be in the US for just three months would score less than an applicant in the US for 12 months, etc.); 3. How developed the country of origin is (i.e., an applicant from Eastern Europe or Africa would score higher than an applicant from Japan or Australia.); 4. Completeness of application both from applicant and sponsor.

Because of the large number of applicants, and also the wide range of individuals who applied for the award, the initial intent of the award was re-reviewed. To further clarify the requirement for eligibility of the award, the following wording will be added to the award description:

This award is intended to support family visits to the US for postdoctoral fellows and junior faculty from overseas.

• Council accepted the Perkins Memorial Award for International Physiologists Committee Report.

Craig Frederick Plato, Chair

Physiologists in Industry Committee Report

Symposia 2010

The Physiologists in Industry Committee (PIIC) sponsored a symposium titled "Novel Opportunities in the Treatment of Heart Failure" at EB10. This symposium focused on the pathophysiological processes and signaling mechanisms that underlie the development of heart failure, and novel and emerging therapeutic approaches to treat this debilitating and extremely costly disease. The symposium topics included recent developments in biology and potential therapeutic applications of miRNAs for heart failure; the pathophysiology of heart failure with preserved ejection fraction (diastolic heart failure); the biology of histone deacetylases and the preclinical efficacy of HDAC inhibitors in pathological cardiac remodeling and diastolic heart failure; biology and potential therapeutic approaches of novel natriuretic peptides and selective vasopressin antagonists; and the rationale and latest clinical trial data for the use of rolofylline, a selective adenosine 1 receptor antagonist to treat acute decompensated heart failure.

This is the tenth symposium sponsored by the Committee. Attendants said that they appreciated the mix of academia and industry provided in the symposium. The topic was perceived as timely due to recent advances in understanding and awareness of altered miRNA expression profiles and so-called "epigenetic modulation" of pathophysiological mechanisms in heart failure.

The PIIC also co-sponsored the Translational Physiology symposium entitled "Integrins: New Insights and Therapeutic Targets." This symposium presented an overview of integrin biology, activation, signaling pathways and transduction and potential treatments utilizing integrins and displayed the "bench-to-bedside" scope of translational research interrogating this emerging therapeutic approach. The topics covered were the integrin activation, the pharmacological and toxico-

logic profile of the gastrointestinal-selective anti-inflammatory therapeutic vedolizumab in nonhuman primates, the signals regulating focal adhesion formation and cell mobility; and targeted siRNA delivery to leukocyte-implicated diseases. This was the fourth translational symposium organized by the Committee. Attendees gained an appreciation for the translational nature of studying and targeting this potentially very important biological target in a wide range of disorders including inflammatory diseases, neurodegenerative diseases, cancer, and cardiovascular diseases.

Novel Disease Model Award (NDM Award)

This award recognizes one graduate student ($500) and one postdoctoral fellow ($800) submitting the best abstract describing a disease model that is novel or promises application to the drug discovery process. The Committee received four student and four postdoc applications, and awards in both pre- and postdoctoral categories were given. The Committee would like to increase awareness and numbers of applicants for the award. The Committee will employ several mechanisms as a means of increasing awareness of the award, including PIIC members submitting the NDM Award description to their former graduate and postgraduate departments; interfacing with the Chair of the APS Trainee Advisory Committee to advertise the awards through the trainee ListServ; and the PIIC Chair will work with the ACDP to disseminate information about the award.

Symposia for EB 2011

The PIIC will continue its tradition of sponsoring high quality symposia relevant to industry and academic scientists. The Committee will be sponsoring a symposium on "Stem Cells in Physiology and Drug Discovery" for EB11. The Committee will also be sponsoring a Translational Physiology symposium on "The Cardiac Sarcomere as a Therapeutic Target."

Strategy Regarding Relationships Between APS and Industry

The Committee believed the best way to approach this issue was to consider "relationship" from the perspective of Value of the APS to Industry Physiologists, Value of Industry Physiologists to the APS, and identifying the gaps between traditional/academic physiologists and industry physiologists.

Value of APS Membership to Industry Physiologists. Membership provides access to leaders and leading research in the field of physiology; industry scientists are continually looking for innovations and breakthroughs that may impact their work and approaches; networking across physiology sub-disciplines for career development, job recruitment, etc.; and provide research that is varied, and can open up ideas for "thinking outside the box."

Value of Industry Scientist APS members to the APS as a whole. The industry members can enhance the translation of basic research discoveries into real-world therapeutic development processes/applications, and there is the potential to inform basic research endeavors based upon results/findings from a therapeutic-focused research.

Gaps between Academic and Industry Physiologists. There is inherent mistrust of academic scientists for industry research motivations due in part to the lack of openness in terms of research publications and sharing of information. Other issues where gaps exist include differences in appreciation for challenges in performing "translational research" that leads to real therapeutic breakthroughs, and a disconnect between training in an academic setting and on-the-job performance in industrial settings. The cultural focus is inherently different, too. The academic focus is long-term, narrowly focused and in-depth, while the industry focus has been, and is becoming even more short-term and wide-ranging. There are also communication and behavioral differences-information sharing within organizations, and team building and consensus vs. defending one's independent research line.

The Committee believes that the above analysis indicates there is significant value to, and from the perspective of the Society and industry physiologists, although significant gaps exist.

- Council accepted the Physiologists in Industry Committee Report.

Patricia Molina, Chair

Porter Physiology Development Committee

The goal of the Porter Physiology Development Program is to encourage diversity among students pursuing full-time studies toward the PhD (or DSc) in the physiological sciences and to encourage their participation in the American Physiological Society. The program provides one to two full-time graduate fellowships. The program is open to underrepresented ethnic minority applicants who are citizens or permanent residents of the United States or its territories.

2009-2010 Porter Physiology Fellowship Program

In 2009-2010, the program provided funding for five fellows. A new feature this year is the direct pay of the fellowship stipend to the institution rather than to the fellow. This will increase accountability, providing better information on IACUC compliance and fellow training for the use of humans/animals in research. Among the successes the Committee can now claim is that 100% of applicants for the Porter fellowship are APS members, and all applications are in line with a physiological approach. Recent Committee Activities.

One of the improvements to the program was encouraging Fellows to participate in EB, APS professional development activities, and K-12 outreach activities. Nearly all (80%) of the 2009-2010 Porter Fellows applied for a Minority Travel Fellowship (4/5). Half (2/4) of the students who applied received a fellowship, and 100% of the awardees presented a poster at EB 2010. One Fellow (20%) has completed at least one of the APS Professional Skills Training Courses.

2010-2011 Porter Fellowships: New and Renewal Applications

A total of 11 new and four renewal applications were submitted for the January 15 deadline and reviewed by the Committee. The stipend paid to the Porter Fellows for 2010-2011 will again be $23,500, consistent with the NIH scale. Funds were available

for five new awardees and three renewals. One awardee declined the award after receiving a Ruth L. Kirschstein F-31 Predoctoral Fellowship, therefore, a total of seven Porter Fellowships will be made in the coming year.

2009-2010 Travel Awards

The Porter Committee reviewed and recommended award recipients for Minority Travel Fellows (EB & workshops). Four travel fellows received funding to attend "ET-11: APS International Conference on Endothelin," September 2009 in Montreal, Canada. In January 2010, the Committee selected 35 travel fellows from 82 applicants to attend EB 2010.

Grant development

The APS Minority Travel Fellows program has been generously supported by an R13 grant from NIDDK since 1987. Since then, the program has submitted several successful continuation grant proposal. APS recently received the NOGA for funding for two years; $175,000 total. APS will submit a new competitive proposal in 2011.

2009 APS Awards

The APS exhibited at the 2009 meeting in Phoenix, AZ, promoting graduate study in physiology and the APS programs for minority students. APS provided $2,500 for cash awards for the most outstanding undergraduate presentations in physiology research.

2009 APS Exhibit

In 2009, the theme for the SACNAS annual conference was "Improving the Human Condition: Challenges for Interdisciplinary Science." The conference attracted over 2,800 conference attendees (36% professionals, 41% undergraduates, 18% graduates, 3% postdocs, special guests, and local community participants). The SACNAS exhibit hall hosted 282 exhibiting organizations and showcased 804 student research poster presentations over a two-day period. The APS was an exhibitor during the national conference in Dallas, TX from October 15-18, 2009.

USASEF

In October 2010, the first USA Science and Engineering Fair will take place in Washington, DC. The Education Committee is organizing events for students and several past K-12 Outreach Fellows have been invited to participate.

- Council accepted the Porter Physiology Development Committee Report.

John Chatham, Chair

Public Affairs Committee

Leadership interactions with FASEB

The APS is currently represented on the FASEB Board of Directors by J.R. Haywood. Michael Portman continues to serve as the APS representative to the FASEB Science Policy Committee (SPC) and as a member of its Clinical Research Subcommittee. In addition, Bill Talman became FASEB President on July 1.

Committee meetings

Fall 2009 meeting

The PA Committee held face-to-face meeting in October 2009. The morning session focused on Committee business. The afternoon was spent visiting Congressional offices on Capitol Hill.

The Committee discussed issues of concern at the NIH. Committee members reviewed new NIH Director Francis Collins' stated scientific priorities in terms of how physiology related to them. The Committee subsequently drafted a document outlining the many roles that physiology can play in advancing these scientific priorities. The white paper ("NIH Director's Priorities: Opportunities for Physiology") appeared in the June 2010 issue of The Physiologist.

There was an extensive discussion of the enhanced NIH peer review system. Committee members suggested drafting a letter to NIH inquiring about the uniformity of the review process between CSR and the various IC's. Other issues discussed include training for reviewers on special emphasis panels, and clustering of applications during review.

Committee members went to Capitol Hill and met with staff from 12 Congressional offices. The members talked about the need for sustainable growth in biomedical research funding. Since this was the third year Committee members visited Capitol Hill, they have gained a level of experience and ease with the process. It is hoped that they will share their experience and encourage other scientists to take the initiative to meet with their elected representatives.

January 2010 Conference Call

During this call, the Committee discussed the white paper addressing how physiology fits into the NIH Director's list of priorities. The goal is to distribute this information to APS members to increase awareness of the relevance of physiology to the NIH Director's goals. The Committee also discussed preparing a white paper on how physiology plays a crucial role in translational research. As a follow up to the NIH peer review issues discussed at the fall meeting, the Committee decided to incorporate many of the remaining concerns into a set of interview questions that CSR Director Toni Scarpa answered. His responses were reported in an article that appeared in the June 2010 issue of *The Physiologist*.

EB 2010

The Committee proposed to Council that the Committee name be changed to the Science Policy Committee because this term better describes its activities and interests. The Council approved this request. Other topics discussed included recent NIH announcements concerning the review of the Vertebrate Animal Section of grants, ideas for EB 2011 programming, and strategic planning.

Other Committee Activities

Comments, Letters and Testimony: submitted on behalf of the Society 2009-2010.

Appropriations testimony: submitted to House and Senate on the FY 2011 budgets for the National Institutes of Health (Labor-HHS-Education subcommittee), the National Science Foundation and NASA (Commerce, Science, Justice Subcommittee). Letters in support of funding for the Medical and Prosthetic Research Program at the VA were sent to the relevant committees in the House and Senate.

Early stage investigator policy: in response to concerns raised

by APS members, a letter was sent to the NIH Office of Extramural Research expressing concerns about implementation of a policy to make special allowances for early stage investigators in the grant review and funding process follow on to first letter.

Letter to Francis Collins focusing on training issues, meeting request

Peer Review: questions drafted and submitted for publication in *The Physiologist*.

Letter to President Obama regarding stimulus funding at NIH.

Coalition activities 2008-2009

The APS participates in the following advocacy organizations:

Research Means Hope has created advertisements urging public support for biomedical research and has launched an online petition drive urging Congress and the administration to make sustained, increased funding for NIH one of our country's highest priorities.

Ad Hoc Group for Medical Research. APS supports the Ad Hoc Group, which is recommending $35 billion for NIH in FY 2011.

Coalition for Science Funding. APS supports the CNSF recommendations for the National Science Foundation.

Friends of VA. APS supports the Friends of VA's recommendations for VA medical and prosthetic research.

- Council accepted the Public Affairs Committee Report.
- Council unanimously approved changing the name of the Public Affairs Committee to the Science Policy Committee.

Kim E. Barrett, Chair

Publications Committee

Editor appointments

Interviews were held for the Editor-in-Chief of *AJP-Heart*. William C. Stanley, currently an *AJP-Heart* Associate Editor, was selected as the new Editor-in-Chief and his term will begin January 1, 2011. Curt Sigmund, Editor, *AJP-Regu;* Tom Kleyman, Editor, *AJP-Renal*; and Ron Terjung, Chair, APS Book Committee were reappointed for their second three-year terms.

Impact Factor

The 2009 JCR journal Impact Factors held steady for all journals. *PRV*, at 37.726 (increased from 35.0 in 2008), is ranked highest among all physiology journals and sixth among all cited journals.

Journal statistics

Accepted manuscripts. Time from manuscript submission to first decision for 2009 averaged 28 days, the same as in 2008. The average rejection rate for all journals increased to 56% in 2009 from 53% in 2008.

Peer review system. Physiology has moved from a paper-based peer review process to an electronic system like the other AJP journals.

Submissions. There was a 10% overall decrease in submission of regular articles in 2009 as compared to 2008.

Articles and pages published. The number of regular research articles published decreased 6% from 2008 to 2009. This was due to the higher average rejection rate across the journals and decreased submissions in 2009. The number of manuscripts in AiPS decreased 6% compared to 2008; journal pages published decreased 4% compared to 2008; and the number of published pages was 5% under the 2009 page cap.

Supplemental data. A total of 553 data supplements were published in 2009 compared to 399 data supplements in 2008.

AuthorChoice. There were 40 requests for AuthorChoice in 2009 (compared to 48 in 2008), which represents less than 1% of all accepted articles during that period.

Color figures. In 2009, 4,666 color figures were published in APS journals of which 2,606 were published by APS member authors.

"Call for Papers" in APS journals. In 2009, there were 169 submitted and 110 papers published in response to calls for papers.

PubMed Central deposits. In 2009, 1,428 NIH-funded and 41 Wellcome Trust-funded research articles were deposited into PMC by the APS on behalf of authors, representing 42% and 1% respectively, of the total number of research articles published in 2009.

Neuroscience Peer Review Consortium

The *Journal of Neurophysiology* has participated in the Neuroscience Peer Review Consortium on a trial basis since the inception of NPRC in January 2009. The trial period concluded in December 2009. The Publications Committee has approved continuing with the trial through December 2011 when the program will be reassessed against specific criteria.

Finances

2011 subscription and Legacy content prices

Based on the cost plus 10% model used by the APS since setting 2002 prices, the Committee recommended that subscription prices be increased for 2011 by 5% for the Print plus Online journals and Online Only journals, and recommended a 7% increase in the Print Only version of its journals. The Committee also recommended that the price of the Society's Legacy product be increased by $250, from $2,250 to $2,500.

Cases of ethical misconduct

The total number of cases of ethical misconduct originating in 2009 was 120, a 32% increase compared to 2008.

Open Access

Key activities associated with Open Access (OA) in 2009 included OA advocate Harold Varmus being invited by the Obama administration to serve as co-chair of PCAST; The NIH Public Access Policy became permanent via the Omnibus Appropriations Act of 2009; the Fair Copyright in Research Works Act (to rescind the NIH Public Access Policy) was reintroduced in the House; the APS and other publishers signed a letter to Senators Lieberman and Conyers expressing concern over the reintroduction of the Federal Research Public Access Act (mandating public access across all federal funding agencies); and the APS responded to the OSTP call for public comments regarding extending public access policies across the federal government.

Books

"Comprehensive Physiology"

The contract for publication of "Comprehensive

Physiology" ("CPHY") was signed with Wiley-Blackwell in 2009. "CPHY" is the update of the "Handbook of Physiology" in online-only format and edited by Ron Terjung. The Book Committee is the Editorial Advisory Board. The original Handbook content is being digitized and will be included in "CPHY" as "Classic Content." To date, 264 articles have been commissioned, the approximate equivalent of 25% of the original Handbooks. Sample content of "CPHY" previewed at Wiley-Blackwell's booth at EB, and is publicly available until its launch in January, 2011.

New initiatives

Physiology in Medicine

Three articles were published in 2009 and in 2010. With change of editorship at the end of 2009, Annals of Internal Medicine has chosen not to continue the PIM series. At the 2009 APS Summer Council meeting, interest was expressed in furthering inter-society relationships and the suggestion was made to take PIM forward under APS auspices and possibly in collaboration with other societies (in particular, The Physiological Society). A subcommittee has been formed, which includes representation from The Physiological Society, to explore the feasibility of a new publication on the topic. The Subcommittee has identified the target audience as the 'inquisitive practicing clinician' across all specialties, with the secondary audience including PhD investigators in translational medicine; young investigators whose training is directed 'by example' and who no longer 'learn the basics' and people in industry, who may include, but not be limited to, any of the above categories." Current action points for the Subcommittee to involve market research and include the development of a readership questionnaire, drafting of a mock issue table of contents and discussion with Wiley-Blackwell regarding their offer to support our market research efforts, no strings attached.

DeepDyve

In May 2009, the APS signed a two-year agreement with DeepDyve allowing DeepDyve to create a searchable index of APS journals, display the first page of each article and enable customers on site to "rent" an article for a 24-hour period for $.99 and for longer periods at modestly higher fees. Customers can view the article but cannot print or copy/paste the content.

Marketing and sales strategic plan

In April 2010, the APS Publications and Marketing Departments retained publishing consultants who are expert in the area of sales and marketing to analyze the APS journals program to develop a sales and marketing strategic plan. The consultants were asked for recommendations for specific sales and marketing initiatives that will increase submissions and subscriptions, as well as provide an overall strategic framework from which APS can work from in the future. The report was due to APS by the end of June 2010.

China agreement

As of June 2010, the APS has entered into an agreement for selling the electronic version of our journals to institutions in China. Previously, the APS has had minimal sales representation in this growth market.

Committee Issues

Recommendations on procedures and guidelines to address ethical misconduct in publications

A set of formalized procedures describing APS ethical policy and new guidelines for handling cases of apparent ethical misconduct were recommended to the Publications Committee. Cases of apparent or actual ethical misconduct in APS publications that had to be managed in 2009 grew by 32%. The largest number of cases in 2009 involved figure manipulation (36%) and the majority of overall cases (72%) were identified prior to acceptance. The majority of cases involving figure manipulations were unintentional "presentation errors."

To help manage the increasing complexity and volume of these cases, the Publications Committee recommended the implementation of flowcharts and standardized letters, and the creation of a Publications Committee-appointed Ethics Officer. This would be done by reducing the Publications Committee Chair term to a one four-year term and then the chair would serve as the Ethics Officer for a one two-year term, overlapping with the first two years of the new Publications Chair. The Committee made additional recommendations including requesting that a statement of the author's contribution to the article to be submitted with the manuscript; that an explicit statement indicating that the Corresponding Author had seen the raw data be submitted with the manuscript; and that all authors be responsible for all of the submitted data (as is current APS policy). The Council approved all the Committee recommendations.

New ICMJE conflict of interest disclosure form

The editors of several major medical journals have announced that all journals published by members of the International Committee of Medical Journal Editors (ICMJE) will begin using an identical financial disclosure form. The ICMJE disclosure form is more detailed than the current APS form and could be incorporated into the APS manuscript submission system. The advantage of a standard form is that it would become familiar to authors, and it does not require disclosure of company ownership or disclosure in excess of any monetary amount of stock. The Publications Committee will wait to see if more changes are made to the form by the ICMJE and will review the issue again at the fall Committee meeting.

***Physiological Genomics* to be offered online only**

Physiological Genomics (PG) subscriptions totaled 332 in 2009; 236 were online subscriptions, and 50 were print plus online subscriptions. The Committee approved offering only online subscriptions beginning in 2011.

Limiting the number of new experiments requested during peer review

It was agreed that APS Editors would be asked not to make unreasonable demands regarding the number of experiments requested during peer review.

Undergraduate Publications

Publication in a student publication, such as the peer-reviewed Journal of Undergraduate Life Sciences, is considered prior publication under current APS policy. The Committee approved maintaining the current policy not to exempt undergraduate publications.

- Council accepted the Publications Committee Report.

Pamela K. Carmines, Chair

Section Advisory Committee

EB Restructuring

Developing outcomes assessment tools. SAC requested that all sections get accurate headcounts for the section symposia at EB2010 (and EB2011 and EB2012), in addition to the session topic and day and time of the session. The data obtained will be used to determine if the restructuring improves attendance at sessions programmed by each section, as well as the extent to that Wednesday programming is embraced by EB attendees. The SAC will be developing a survey to be distributed to EB11 and EB12 attendees to determine if members like or dislike the new EB structure (including clustering).

Publicizing the EB restructuring (expansion & clustering). SAC members will be working with their sections to inform members (via newsletters and listserv announcements) about the new EB structure. It is important to emphasize the cluster days for each section and the fact that the expanded EB program allows each section to offer additional sessions. SAC Chair Pam Carmines and JPC Chair Ron Lynch prepared an article published in this issue of *The Physiologist* explaining the programming changes to the membership.

Implementing the EB restructuring. SAC members have been charged to work with their sections' JPC representatives to encourage careful scheduling of sessions in a way that minimizes close scientific overlap with cluster partners.

APS 125th anniversary

In preparation for APS' 125th anniversary, each section chair has been charged with working with their section to create a Timeline of Physiology for their field. They have also been asked to have their section identify classic articles published in APS journals, for use in creating their timeline and for potential inclusion in a special publication to be generated in association with the 125th anniversary celebration.

Section Reports

Most sections report that their primary challenges are recruiting trainees and involving them in section activities, and obtaining financial support for section awards & activities. Each section presents multiple awards at EB, with most of these awards recognizing trainees and early career investigators.

Each section has updated their Standard Operating Procedures within the past three years. The sections are also working on producing Procedural Handbooks for each Officer and Steering Committee position.

The expansion of EB, which adds one symposium or featured topic session to each section's program portfolio, is viewed as a great opportunity for enhancing the scientific appeal of the meeting. There is anticipation that the expanded program may increase participation of more scientists in the field. Most sections are enthusiastic about the clustering of programming within EB, and some have already begun publicizing the "meeting with a meeting" format to their members.

The CNS' "outside-the-box" thinking led to their sponsorship of a David Bruce Award (using non-APS generated funds). Recognizing this as a means of maintaining the pipeline of talent entering the field, other sections are considering whether to follow the lead of the CNS section in this regard.

Approximately half of the sections have begun to utilize social media (primarily Facebook) as a means of connecting with trainees and early career investigators.

- Council accepted the Section Advisory Committee Report.

Margaret Anderson, Chair

Senior Physiologists Committee

Six senior physiologists (Drs. Vernon Bishop, Clark Blatteis, William Dantzler, Ronald Freeman, Frank Knox, and Harvey Sparks) comprised the Senior Physiology Committee in 2009. One of the primary duties of each Committee member is to "develop and maintain liaison with emeritus members and members about to retire." This liaison is accomplished by submitting, on behalf of the Society, a personal 70th, 80th, 90th, or 100th birthday greeting. Thus, each committee member makes about three dozen mailings in the course of the year. Each greeting includes an invitation for the senior recipient to inform APS about his current activities, interests and whereabouts, and requests "words of wisdom" for younger colleagues. The historical and philosophical commentaries evoked by this invitation provide the material subsequently published in "Senior Physiologist's News" in each issue of The Physiologist. By the end of 2009, the Senior Physiologist Committee members will have sent birthday wishes to 73 members reaching age 70, to 84 members reaching age 80, to 26 members reaching age 90, and to 1 member reaching age 100! Thirteen letters have been received and published in *The Physiologist*.

Responses from recipients of these birthday greetings are extremely positive and enthusiastic. Whether retired or still working in their labs, the majority of seniors obviously retain their passion for science. They express in innumerable ways how fulfilling they have found life and how important APS has been during their careers.

Another responsibility of the Senior Physiologists Committee is to review applications and recommend to Council the annual awardees of the $500 G. Edgar Folk, Jr., Senior Physiologists Award. This award is designed to support the scientific activities of a senior member. In 2009, three awards were made. The awardees were Felix Bronner,

to help pay for the various administrative charges associated with the editing of the book series Topics in Bone Biology; Peter Lauf, to help offset the travel costs of attending the Experimental Biology 2009 in New Orleans, LA; and Darlene Racker, to help defray costs of travel and the production of two posters that were presented at the 2009 American Heart Association Scientific Sessions in Orlando, FL.

- Council accepted the Senior Physiologists Committee Report.


Erica Wehrwein, Chair

Trainee Advisory Committee

Trainee Advisory Committee (TAC) Survey

The Committee is currently finalizing a manuscript describing the 2004 and 2007 survey results for submission to Advances in Physiology Education. The plan for the next survey is keep many questions from the 2007 survey, which proved informative. In addition, new questions will be added to assess the usage of current trainee related resources offered by the APS. The 2010 survey should help both the Committee and APS determine the efficacy of currently offered resources, and whether current resources are reaching their target audience. The survey will likely be implemented online in late 2010. TAC members will again be asked to send notifications through section listservs in hopes of reaching a wide audience. In addition, information about the survey with reference links will be added to the Committee's new Facebook page. Twitter will also be used to announce the survey.

EB Symposia

Experimental Biology 2009

Multimedia presentations for the EB 2009 Trainee Symposium, "Mentoring Strategies: Beyond the Bench," were edited and posted at the APS website and catalogued at the APS Archive of Teaching Resources for wide dissemination.

Experimental Biology 2010

The 2010 TAC Symposium was entitled, "Publish, Not Perish: How to Survive the Peer Review Process." It included presentations on how to select a journal, who the reviewers are, responding to reviewers, and how to be a constructive reviewer.

Experimental Biology 2011

In 2011, the TAC symposium will be entitled "The Individual Development Plan - Plotting a Career Trajectory." The session will include a 90-minute, activity-based presentation aimed at guiding the audience through the steps of self-assessment of skills, values, and interests. Audience members will learn how to explore their career options. In addition, they will learn about setting goals and working with their mentor to implement an Individual Development Plan. The session will conclude with approximately 30 minutes of informational interviewing, during which a number of more senior society members have been asked to join the trainees and facilitate group discussions of various career paths.

Trainee Facebook Site and Twitter

The APS Trainee Facebook page was launched in January. The approach was to first transfer members from the old Facebook "group" page to the Fan Page. The Facebook page was promoted heavily during the weeks leading up to EB 2010. Business cards with the links to Facebook and Twitter were provided to undergraduate students at EB10. The Committee is devising ways to include similar information in new member packets. The number of new fans on Facebook has spiked with each advertising event. The current administrators police the page for content. Topics currently not allowed include job postings and solicitation of positions. The site continues to be enhanced with pictures, content, and postings. Daily updates from EB 2010 were provided along with a listing of daily trainee events.

Congruent with the FB page a Twitter page was launched. FB postings are integrated with FB postings. Any TAC member is allowed to post to the Twitter account. Currently the Twitter feed is being used to advertise society wide trainee events. TAC discussion needs to address whether the main Twitter feed should be for a broader content base.

APS Trainee Community and Professional Service Award

The TAC received six complete applications for the award in 2010, its second year. The Committee was extremely pleased to note that the applicant pool was highly competitive. The Committee selected Catharine Clark, graduate student in the Department of Veterinary Biomedical Sciences and Dalton Cardiovascular Research Center, University of Missouri-Columbia, as the award recipient. Clark received the award at EB10.

Outreach to Undergraduates

The Committee is pleased that undergraduates are now accepted as student members in the Society. TAC members are now using social media tools (Facebook and Twitter) along with the website and newsletter to engage both undergraduate students and Physiology trainees. TAC members attended the EB 2010 Undergraduate Poster Session and engaged many of the undergraduate students in discussions of their research. The Committee also collaborated with the Career Opportunities in Physiology Committee on the 2010 EB Undergraduate Orientation Session, presenting some of the orientation talks and interacting with undergraduate students at the session tables. The TAC plans to continue these activities in 2010-2011. Finally, the TAC plans to expand the TAC survey to include undergraduates when it administers the Trainee Needs survey later this year.

- Council accepted the Trainee Advisory Committee Report.

Jane F. Reckelhoff, Chair

Women in Physiology Committee

Bodil Schmidt-Nielsen Distinguished Mentor and Scientist Award

Eight nominations were received for the seventh Bodil Schmidt-Nielsen Distinguished Mentor and Scientist award. M. Harold Laughlin, Univ. of Missouri, Columbia, was selected as the 2010 awardee. Laughlin gave a talk on mentoring entitled: "Mentoring as a Player Coach," and an article based on the lecture will be published in *The Physiologist*.

Caroline tum Suden/Frances Hellebrandt Professional Opportunity Awards

The Women in Physiology Committee received 141 applications for the 2010 Caroline tum Suden/Frances Hellebrandt Professional Opportunity Awards. The Committee was able to fund 36 tum Suden Awards. Two Steven M. Horvath Awards were given to the top two underrepresented minority tum Suden Awardees.

Career Mentoring Website

Over the past year, the Committee developed six articles for *The Physiologist* with related bulletin board discussion topics at the mentoring website. Additional articles/discussions are planned for the coming year. All articles are also catalogued in the APS Archive of Teaching Resources.

MentorNet Mentoring Program

The Committee launched the APS MentorNet collaboration in October 2007. The program was publicized this year via APS and trainee listservs, APS exhibits at meetings, and at APS-sponsored workshops at EB and the APS Professional Skills Training Courses. The Committee will continue to recruit students and mentors in the coming year and anticipates additional program growth as students become aware of the program.

EB Mentoring Workshop

For EB 2010, the workshop was entitled, "A Primer for the New PI: How to Herd Cats AND Keep Your Boss Happy."

The EB 2011 workshop will be entitled, "Work/Life Balance: Every Choice Matters." The participants will be Sue Duckles ("Can I have it all? Synchronizing the Mind and Heart"); Francisco (Paco) Andrade, University of Kentucky ("Time Management: Key to Effective Balance"); and Jennifer and David Pollock, Medical College of Georgia ("Advice We Give our Students"). A panel discussion will follow the presentations.

Women Serving on APS Committees and Sections

In reviewing the membership of the APS Section Advisory Committees (SACs) and other Society committees, it was found that the representation of women on the general Society committees was very good. There are three female Councillors (total of nine Councillors), SAC has a female chair, and three out of 12 section chairs are women.

FASEB Excellence in Science Award

For the 2011 award, 38 applications were received, down again from previous years. Dr. Gail Martin, Univ. of California, San Francisco, who studies development, will be the recipient for 2011. She is a member of the AAAS and the National Academy. Since its inception, there have been 22 winners, only one was a primary APS member. Primary ASBMB winners number 14 of the 22 (64%). The Committee will continue to work with APS members to enhance their nomination packets. In addition, the Committee is discussing strategies to increase the number of APS women who are National Academy of Science members, as that is a critical element for successful candidates for this prestigious award. ❖

- Council accepted the Women in Physiology Committee Report.

CALL FOR NOMINATIONS

For the Editorship of the

American Journal of Physiology-Lung Cellular and Molecular Physiology

Nominations are invited for the Editorship of *AJP-Lung* to succeed M. Matthay, who will complete his term as Editor on December 31, 2011. The Publications Committee plans to interview candidates in the Spring of 2011.

Applications should be received before **January 15, 2011.**

Nominations, accompanied by a curriculum vitae, should be sent to the Chair of the Publications Committee:

Hershel Raff, PhD
American Physiological Society
9650 Rockville Pike
Bethesda, MD 20814-3991

Anderson Appointed Director of NIH DPCPSI

APS Member James M. Anderson has been appointed by National Institutes of Health Director Francis S. Collins as the Director of the NIH Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI). DPCPSI's mission includes identifying emerging scientific opportunities, rising public health challenges, and scientific knowledge gaps that merit further research. The Division plans and implements trans-NIH initiatives supported by the Common Fund and coordinates research related to AIDS, behavioral and social sciences, women's health, and disease prevention. Anderson is currently Professor and Chair of the Department of Cell and Molecular Physiology in the School of Medicine at the University of North Carolina at Chapel Hill, a position he has held since 2002.

Paul R. Grimm is now a Postdoc in the Department of Physiology at the Univ. of Maryland, Baltimore. Prior to this move, Grimm was a Postdoc in the Department of Cellular and Integrative Physiology at the Univ. of Nebraska Medical Center, Omaha.

Craig Frederick Plato is now President and CEO of Plato Biopharma, Inc. in Westminster, CO. Prior to this move, Plato worked for Gilead Colorado, Inc. in Westminster, CO.

Ravichanderan Ramasamy is Associate Professor in the Department of Medicine at New York Univ. Langone Medical Center, New York, NY. Prior to this position Ramasamy was an Assistant Professor in the Department of Surgery, Division of Surgical Science at Columbia Univ., New York. ❖

Senior Physiologists' News

Letters to William H. Dantzler

James McCrady writes: "I am now serving as the professor emeritus within the College of Veterinary Medicine, Texas A&M University. My activities now consist of primarily of fundraising (chairs, professorships, research, etc.) and preparation of a manuscript covering the history of the veterinary college (1950-2000).

"Having only retired August 31, 2010, I would suggest that our younger colleagues continue to be active in academic pursuits as long as they can be productive and enjoy the activity. May they contribute much to society with little thought of a monetary return and enhancement of personal ego."

William M. Manger writes: "Thanks for your nice letter of August 3, 2010 and for remembering my birthday which was on Friday, August 13. I am glad to respond to your request for information about my activities and whereabouts.

"I continue to serve as Chairman of the National Hypertension Association which was founded in 1977. My major interests have been researching the mechanism of salt-sensitive hypertension and pheochromocytoma. We are also involved in implementing our VITAL (Values Initiative Teaching About Lifestyle) program in K through 2"d grade to teach healthy eating and appropriate physical activity. This program is focused on preventing and combating overweight and obesity in young children. This program has been implemented in some elementary schools in 11 states and Washington, D.C. (35,000 children), and it has proved highly popular and effective in introducing a healthy lifestyle for children. In October 2009, I received the Mayo Clinic Alumni Association Humanitar-ian Award for efforts to combat childhood obesity.

"In September 2011 I will receive an award for studies on pheochromocytoma/paraganglioma from the Pheo-Para Alliance.

"I continue to serve as a Professor of Clinical Medicine at New York University Medical Center where I see patients and have a research laboratory. I also periodically give lectures on hypertension and obesity.

"One of the books I have authored, 'Our Greatest Threats,' was written for the public and Dr. Joe Loscalzo, Chairman of Medicine at Harvard Medical School, has been quoted to say it 'should be required reading in our society.' A second edition of '100 Questions and Answers About Hypertension' is in press, and 'DASH to End Obesity' will soon be submitted for publication.

Letters to Margaret Anderson

Jay Cohn writes: "Thanks for your kind note commemorating my birthday. I am pleased to fill you in on my current activities.

"Although I may have passed a landmark birthday, and my wife Syma and I now spend the winter months on Longboat Key, FL, I have not noticeably reduced my academic activities at the University of Minnesota. When I stepped down in 1996 as Head of the Cardiovascular Division of the Department of Medicine, I made a deal with the Chairman and Dean to stay on to develop an innovative cardiovascular disease prevention program. I had become disillusioned with our successful efforts to slow further disease progression in patients with advanced disease, which had long been my focus of research. We were prolonging life, but not necessarily restoring quality of life, and at tremendous health care costs. I was convinced that the same approaches which had slowed progression in advanced disease could keep people healthy if introduced before they became sick.

"I, therefore, opened in 2000 a screening center, the Rasmussen Center for Cardiovascular Disease Prevention. We have now screened over 2000 Twin Cities residents who were asymptomatic but concerned about their cardiovascular health. The screening consists of 10 non-invasive tests of vascular and cardiac functional and structural health. Our preliminary data indicate that our Disease Score, based on these 10 tests, is far more discriminating than traditional risk factors in identifying individuals likely to sustain subsequent cardiovascular morbid events. Appropriate treatment, targeted at those with high Disease Scores, is a strategy that could strikingly reduce the incidence of morbid events, reduce disease burden and decrease medical costs. We are in the process of documenting the effectiveness of our screening program. We have also simplified and auto-

mated most of the procedures in our Center so that the screening method can be exported to other centers. We are now involved, through a start-up company, at distributing these centers nationally to provide wider access to the methodology.

"I have always been passionate about improving health care. As medicine evolves, the gaps in knowledge and management strategies are continuously changing. In order to keep up with these changes and remain pertinent it is often necessary to re-invent oneself. I have accomplished that several times, always with the underlying belief that an understanding of physiological mechanisms is a necessary prerequisite to effective therapeutic intervention. Applying this principle to preventing symptomatic cardiovascular disease may be the most satisfying endeavor of my career."

G. Causey Whittow writes: "It was kind of you to acknowledge my 80th birthday; I am sorry that it has taken me so long to reply but I rarely go into my old Department to check my mailbox. I am afraid that I have little to contribute to your collation of news of senior physiologists; I no longer teach or conduct research in physiology, but I do enjoy reading physiology to refresh my aging memory!

"At the time that I retired, the Department of Physiology was amalgamated, along with several other departments, into a join Department of Anatomy, Biochemistry, Physiology and Reproductive Biology, so, sad to say, physiology lost its separate identity."

Philip A. Bromberg writes: "It was a lovely surprise to receive a handwritten letter from you on behalf of the APS in recognition of my having entered my 9th decade. I think I have been a member of the APS for half a century going back to annual meetings in Atlantic City, NJ. I am not a formally trained physiologist. My entry into Physiology was through my training in pulmonary medicine whose scientific base had become applied physiology as the specialty left the TB sanatoria and reintegrated into the mainstream medical centers. My major mentor, first at the Peter Bent Brigham Hospital in Boston and then at the University of Pittsburgh School of Medicine, was the late Eugene Robin. Gene was a master clinician and a creative, imaginative scientist. My initial work in his laboratory was the measurement of NH3 in expired air of intubated dogs in relation to blood ammonium levels and pH. This led us to experimentally manipulate blood pH, resulting in sharp pH-related increases and decreases in ammonium levels which we interpreted in terms of non-ionic diffusion of NH3 across cell membranes and attempts to estimate intracellular pH. At a more clinical level we took advantage of the infrared rapid CO2 analyzer to measure end-tidal pCO2 and compare it to arterial pCO2 as a means of detecting increased physiological dead space secondary to acute pulmonary embolism. Of course, the availability of the various blood gas electrodes made life easier. Robin and C. Sidney Burwell had rediscovered the Pickwickian syndrome, previously described by Charles Dickens a century earlier. But we were not clever enough either to recognize the importance of obstructive apnea in its pathogenesis or to imagine its treatment with continuous positive airway pressure. The 1950s and 1960s also saw the end of the great polio epidemics (Salk and Sabin vaccines) and the application of the Drinker respirator ("iron lung") to patients with severe hypercapnic respiratory failure followed rapidly by the development of positive pressure respirators and the birth of respiratory intensive care units. Acute lung injury and the hypoxemic adult respiratory distress syndrome requiring new applications of positive pressure ventilation and of "PEEP" was recognized in the later 1960s.

"The field of pulmonary physiology had seen explosive growth during and after WW II (Otis, Fenn, Rahn, Farhi, Riley, Cournand, Richards, Comroe, Roughton, etc.) and the next generation of outstanding physiologists (Mead, Macklem, Permutt, Hyatt, Forster, Dubois, Clements, West, Bates, Widdicombe, etc. in the Anglo-Saxon world alone) was in place. Pulmonary medicine teaching and training laid great emphasis on applied physiology for several decades to come. Indeed, although the cutting edge of respiratory research has adapted to rapid technical and conceptual advances in cell, molecular and membrane biology, in signal transduction, in cancer, in immunology, in pharmacology and in genetics and genetically engineered animal models, 'old-fashioned' applied physiology remains important for pulmonary clinicians. I should be remiss if I failed to mention the important discoveries concerning respiratory epithelial ion and water transport in cystic fibrosis made at the University of North Carolina by my colleagues, Richard Boucher, Michael Knowles, John Gatzy and many others.

"Inhalation toxicology has always been important in pulmonary medicine (e.g., occupational lung diseases, poison gases, etc), but the recognition of acute and chronic health effects attributable to ambient air pollution has added a new dimension. I have worked in this area for the past 30 years at the University of North Carolina School of Medicine where my colleagues and I developed a Center for Environmental Medicine in 1979. Our geographic area is also the home of the NIEHS and of the US EPA's Health Effects Research Laboratory whose Human Studies Division is co-located with our Center on the UNC medical campus. My publications over the last 30 years reflect this interest. The surface of the airways is the interface between the respiratory system and the air we breathe. Highly reactive gases like ozone and SO2, biological particles like allergens, endotoxin, and living microorganisms, and non-biological particles ranging in size from nanometers to micrometers are all deposited on this surface where they encounter a complex fluid layer covering the epithelium and associated cells. In addition to local effects of such agents systemic effects are also observed. The physiology and biochemistry of the airway surface and its communication with deeper tissues, the blood, the lymphatics and the nervous system seems to be an inexhaustible source of interesting problems.

"I continue to work full-time as a member of the faculty of the UNC Dept. of Medicine and of the Center for Environmental Medicine. I no longer have significant administrative responsibilities, but remain active in teaching and in clinical pulmonary medicine, as well as in various avenues of research. I regret the increasing corporatization of academic medicine and the degradation of physicians to the role of 'providers' working for bean counters and administrators, but I am fortunate to have colleagues from whom I continue to learn, who appreciate my efforts and are supportive. I am particularly fortunate to remain intellectually active and engaged and to have retained pretty good brain function. My physicians, aided by medications, have managed to

control my cardiovascular diseases. My spouse of >50 years (Françoise, née Vergnes) has watched over me and provided many joys, among which are three children. Finally, playing the violin since childhood has added an invaluable dimension to my life."

Letter to Clark M. Blatteis

Borje Johansson writes: "Thank you very much for your kind letter and for the congratulations from the Society on the occasion of my 80th birthday on July 29. It came as nice surprise! Here is a brief accounting of my professional life from the start to the present day.

"I went to medical school in Gothenburg (Goteborg in Swedish) and in 1959 I got my MD degree and my licence to practice. In parallel with the last few years of medical school, I was also a graduate student in Professor Bjorn Folkow's cardiovascular group in the Department of Physiology. I studied vasomotor reflexes elicited by stimulation of afferent sensory neurons from skin and muscle in anesthetised cats, and my PhD thesis on this topic was published in 1962. As new, permanent positions were then not available in the physiology lab, I was planning to go over to the hospital and become a 'real doctor.' However, through Dr. Folkow's contacts. I was invited to do a postdoctoral year in Dr. David F. Bohr's lab in the Department of Physiology of the University of Michigan in Ann Arbor.

"I arrived there in August 1964, together with my family. It was the beginning of a very happy and productive year for me. David Bohr was a pioneer in the field of vascular smooth muscle physiology and in his lab I learned the basic techniques for studying isolated blood vessels in vitro; one or two papers came out from our collaboration. Other scientists working on smooth muscle came as visitors to the Ann Arbor lab or appeared at physiology meetings elsewhere, so I was happy to become acquainted with several of them.

"Back in Gothenburg in 1965, I was given the opportunity to set up a new lab in the Physiology Department; of course, I equipped it for work on isolated blood vessels. Besides me, the staff included two very good graduate students, Bengt Ljung and Olof Jonsson, and two excellent lab assistants. We choose the rat portal vein as our favourite preparation. We felt that the spontaneous activity of this vein resembled the rhythmic vasomotion observed microscopically in small resistance vessels; this vasomotion may account for much of the "myogenic tone" which remains in vascular beds after denervation and/or adrenergic blockade.

"At this time I also got in contact with the pharmaceutical company AB Astra, which had its main activity near Stockholm, but also a lively research site in Molndal, near Gothenburg. This latter site was concentrating on drugs for cardiovascular disorders, and I agreed to do part-time consultant work for them. They gave us some generous help for the equipment of our smooth muscle lab. I will have more to say about Astra later).

"The publications from our group during the first few years dealt with aspects of the adrenergic innervation of the vascular smooth muscle, with the electrophysiology behind the spontaneous contractions and with effects obtained by changes in the ionic composition of the bath medium. The electrical activity of the smooth muscle preparation was studied in collaboration with Professor Johan Axelsson from Iceland who was on a one-year research visit in the Department of Zoophysiology in Gothenburg; he and his group introduced us to the 'sucrose gap technique' which we then continued to use for recording the electrical events in the portal vein.

"The old debate about the mechanism of vasodilatation in response to increased tissue metabolism came back among 'cardiovascular people' in those days. Which factor liberated by the working skeletal muscle causes the local vasodilatation required for increased supply of oxygen and fuels to the area? Is it the increased concentration of carbon dioxide, ATP, lactate or something else?? Dr. Stefan Mellander in our department suggested that the tone of the resistance vessels might be inhibited by the mere increase of osmolality in the extracellular tissue fluid, caused by the mixture of released metabolites. It didn´t have to be any single specific factor. Mellander had support for his thesis from animal experiments. These in vivo results stimulated our group to find out how our in vitro preparation of the spontaneously active vascular smooth muscle would respond to changes in osmolality. The results we got were in harmony with the in vivo findings: increasing the osmolality of the physiological salt solution in the organ bath gave a graded inhibition of the spontaneous contractions in the portal vein. It turned out that this experimental model could also provide information on the permeability of the smooth muscle cell membrane. It was really fun to see the time course of the changes in spontaneous contractions that occurred when osmolality was varied by adding non-ionic compounds of different molecular size to the medium. For instance, increase in osmolality by a small molecule like urea caused only a short-lasting inhibition of the contractions, reflecting a transient decrease in cell volume. This response faded off as the urea got into the cell and normal spontaneous rhythm was back after a few minutes. Return to urea-free medium led to a corresponding strong excitation of the smooth muscle due to swelling of the cells; normal activity returned as the intracellular urea leaked out. Changing osmolality with a somewhat larger molecule like glycerol caused similar responses but with a more sluggish time course compared to those with urea. Adding sucrose to the medium caused an inhibition of the spontaneous activity that lasted, indicating that this larger molecule entered the cells very slowly or not at all, thus keeping the cells shrunk. When we used this model to grade the relative cell membrane permeability for a set of nine compounds, they came out in our smooth muscle in exactly the same order as they did when Collander & Bärlund studied permeability in Chara ceratophylla (a green algae).

"A series of papers were the results of these experiments and Olof Jonsson's doctoral thesis, presented in 1970, was based on some of them. Bengt Ljung's interesting thesis on the adrenergic control mechanisms in vascular smooth muscle was also finished at this time. We were happy to see that our work was appreciated in the 'Smooth Muscle World': our grants grew, our correspondence with colleagues abroad grew, particularly with our friends in the US, and I got more and more invitations to lecture at conferences and symposia.

"A position of professor of physiology at the Medical Faculty of the University in Lund was open for application at this time and I was happy to be chosen from among the candidates. Interestingly, my friend and colleague in Gothenburg, Stefan Mellander, had gone to a similar position in the same Department in Lund two years earlier.

"So I moved with my family to Lund

in the summer of 1970. In contrast to Gothenburg, Lund has an old University with long traditions, but I found it quite easy to get acquainted with colleagues and staff in the Physiology Department and with the many colleagues in the rest of the Medical Faculty. Teaching physiology to students in the Medical School and to those in the School of Odontology would take perhaps 25% of my work time. The rest I could use to start organizing a smooth muscle laboratory in the Department of Physiology.

"I obtained good lab space, I was happy to find nice and clever lab assistants very soon, and in the first year I managed to pick up a couple of sharp medical students who were interested in doing some basic research under my mentorship in parallel with their clinical studies (this was the standard way for recruiting graduate students to the preclinical departments at the time). Three of them, Per Hellstrand, Bengt Uvelius and Anders Arner finished most of the work for their doctoral degree in my lab and so did Stefan Sigurdsson who came to us from Reykjavik, Iceland.

"The mechanics of the smooth muscle contraction was now a major theme of our research; we continued to use the portal vein, but later also preparations of urinary bladder smooth muscle. The Physiology Department had a well-equipped workshop with clever engineers who developed for us a recording apparatus which allowed time resolution in the ms range so that changes in force and shortening in a quick release experiment could be analyzed in detail. Studies of the force-velocity relation and of an initial transient in the isotonic shortening after the release suggested that a cross-bridge mechanism of contraction could apply to smooth muscle as proposed for skeletal muscle, although with a slower rate in the former. The spontaneous activity of the portal vein is fairly irregular due to variations in the bursts of spikes that elicit each contraction. By manipulation of the ionic composition in the organ bath medium, we managed to change the activity to a regular frequency of identical isometric contractions, each resembling a single twitch of a skeletal muscle preparation although with a slower time course. By letting these contractions go over to isotonic shortening with minimal load at all stages of the 'twitch,' I could study the time course of the 'active state' of the smooth muscle. The results showed a high plateau of 'active state' from the very beginning of the contraction to its isometric peak. A similar plateau is seen also in work on twitch contractions in skeletal muscle.

"Beside his contributions to our studies of the muscle mechanics, Hellstrand set up techniques for studying the metabolism of the smooth muscle in the portal vein and reported important data on oxygen consumption and lactate production in spontaneous activity and in K+ contractures. The effects of hypoxia and of removal of substrate (glucose) from the medium on the electrical and contractile activity were also topics of our studies.

"The vascular wall is known for its ability to adjust its structure in response to changes in mechanical load. I was curious to know how our portal vein would behave if exposed to increased load. Therefore, I opened the abdomen on a number of anesthetised rats and induced a portal hypertension by partial ligature of the vein at the hepatic hilus, sutured the belly and let the rats survive five to ten days. The portal veins that we took out after these short periods had a modest increase in lumen, but markedly thicker muscle wall than veins from sham operated control rats. The histology of these hypertrophic veins was further examined by Arner. The spontaneous mechanical activity of the veins exposed to portal hypertension was characterised by longer intervals between contractions and also longer duration of each period of activity. In a special experimental series, my colleague Professor Mellander and I studied the electrical responses to stretch in the rat portal vein. The sucrose gap apparatus was arranged so that we could stretch or shorten the preparation at graded constant rates. The number of electrical spikes per unit time was found to increase in proportion to the rate of lengthening. At the subsequent plateau of constant length, the spontaneous activity showed a fairly stable number of spikes per unit time. When we let the vein go back to its original length, there was inhibition of activity, the number of spikes per unit time decreasing in proportional to the rate of shortening. The stable spike activity at the constant short length was moderately less than that seen at the constant greater length. Thus, our study showed that spontaneously active vascular smooth is particularly sensitive to dynamic stretch and release.

"I have now given a brief summary of the activities of my group in the Physiology Department in Lund and I think it is fair to say that our publications were well accepted in the 'Smooth Muscle World.' I was invited to lecture, to write reviews and to contribute to handbooks. Many of my foreign contacts were in Europe, but the majority was in the US and Canada. So I very much appreciated my membership in APS.

"Besides my academic work in the Lund University I was still a member of a group of consultants to the Astra site in Molndal, mentioned above. In 1979, this part of the company intended to reorganize its research management. I was asked to accept a position there. I am not going to detail the most difficult decision in my life, but I did accept on the condition that I also could have a part-time position as adjunct professor in the Physiology Department in Lund, financed by Astra. With my family, I moved back to the Gothenburg area in the summer of 1980. During my first few years in the pharmaceutical company, I could do some experimental smooth muscle work in the Astra lab and on my regular visits to Lund. However, responsibility and work load increased when some very promising new drugs were discovered at Astra's Molndal site. Two of them were approved by FDA in the late 80s. I had an interesting and exiting time in Astra (now AstraZeneca) until I retired at the age of 65 (standard retirement age in Sweden), but I continued to do part-time consultancy for Astra for 10 more years.

"Even though I am no longer directly contributing to physiological research, I have maintained my membership in APS and I look for old friends in The Physiologist and I follow the news in Physiology as much as I can.

"I must also tell you that I am pleased to see Per Hellstrad in the same chair that I had in the Lund Physiology Department!

"Now that I am approaching my 80th birthday, I fortunately enjoy good health. I had a hard year in 1998 when I had a coronary bypass operation in the spring, and in November a total prostatectomy due to a local cancer, both apparently very successful. My wife and children are well and four

wonderful grandchildren have been added to the family. I spend as much time as I can with them. Other activities relate to our garden, our summerhouse, mushrooms and berries in the forests, and a game of bridge on Wednesdays.

"Your letter 'forced' me to look back on my life. I am wondering which is best 'one good life' or 'two good half lives.'

Letter to Frank Knox

Eugene Spaziani writes: "I retired in 2000 from the University of Iowa (UI) where I had a joint appointment in Biology and in Exercise Science. I might have continued to work, but decided to pack it in because (a) I would have had to move my lab twice due to major Department remodeling, (b) my NSF grant was expiring, and (c) I was 70 at the turn of the century; the symmetry appealed to me as time to stop.

"I immediately took on a couple of departmental tasks, including Directorship of our Howard Hughes Medical Institute grant in science education. At the same time, I decided to revisit after 50 years my first love, music. I joined the New Horizons concert band as a clarinetist. New Horizons is a national band enterprise for music participation by seniors, and one of the founders is our director, also the Head of Music Education at the UI. We give several community concerts per year. Especially enjoyable is performing with smaller groups of band personnel, including a clarinet quintet (for which I also arrange music), a polka band (the 'Polka Dots,' which plays at nursing and retirement homes) and a jazz group ('Spontaneous Combustion').

"The other major activity has been writing a book involving my specialty and the subject of most of my teaching, namely endocrinology. It's titled The Hormone Sourcebook, How Hormones Dominate Your Life From Before Birth through Old Age. Meant for the general public, males and females of any age, it was published in 2009. The idea is to help people understand endocrine control of the body in health and disease, explain controversies, frauds and fads about hormones that seem to appear almost daily in the news, and to help prepare one for that trip to the doctor. It can be accessed online by entering the book's title in Google. It's also now out in kindle form."

Letter to Philip Posner

H. Dwight Cavanagh writes: "Thank you for the '1940' note. I am not yet retired but have gone half-time (science, patients, teaching) which is working out well.

"I have had a most enjoyable and I hope significantly productive 40-year career in academia; and, in the latter years, I have confirmed that Sigmund Freud was right when he said that: 'the only passions that last are the passions of the mind.'" ❖

Reflections of a Senior Physiologist... Funding for Research

Richard J. Bing

Continued financial support for scientific research does much more than guarantee continuation of scientific projects. It keeps food on the table, kids in college and families content because it secures a stable financial future. Funding is only for scientific research, but when suddenly discontinued it can darken a life. Even with ample funding, pure science can get the short end when the applicant requests funds for political or monetary purposes only. Temptation to ask for grants for financial reasons only, regardless of their scientific value, is ever present. This temptation can become a curse. Respect for ideas, not for financial rewards is what matters.

Often the heartless tone of the message of denial of funding, as typed by one of 1,000 computers, comes as a shock. It appears heartless and rude! A person's research is her treasure, her life's glory. Her work is her child and as such she protects it. The scientist's self-confidence is shaken by such a denial letter. All of us carefully nourish this self-confidence. It is one of the scaffolds which holds us upright. Yet, we all have troubles judging our work. Like the mother porcupine said of her young baby, "How smooth is my baby's skin."

The denial notice can be rude, "The applicant should have familiarized herself with the effects of ----. She completely neglected the recent results published by ---- in the *Journal of* ----." It so happens that the reviewer also is working in the applicant's field. He is human and as such he becomes personally involved in the critique of this application. Honored by the quest to act as a referee, he feels that he must find something negative in the application. And here is the rub of the much taunted peer review, "How to get rid of the subcortical involvements of the reviewer in this application, who cannot help but to become involved in the applicant's work!"

At this point it may be a good idea to "send in the old folks," older and seasoned scientists and physicians to render their judgment. Because of their advanced age, the spirit of competition and greed might have disappeared, only to be succeeded by their hopefully impartial attitude. These men and women can be selected by council members or by retired members of review boards.

Things were different when private foundations were the main source of research funds. The applicant knew the reviewer personally, and there was easy contact. I dread to think of the difficulties encountered now when an applicant tries to penetrate the computer curtain of the reviewers. Peer review would greatly profit from lack of anonymity. And, the nasty tone of the reviewing letter would soon change.

What to do if the iron curtain has descended and the future looks grim? The unlucky applicant can chuck it all, leave science for good and try to make it in business. A scientist friend of mine in a similar situation bought a small strip of land in Texas and struck oil. Or she can try to join another more fortunate colleague, sharing his grant. This is not easy, because she has to be useful to the colleague in order to be included. Like marriage, this partnership can lead to arguments and dissolution of the partnership. Or she can deceive herself and reapply again only to get another doomsday letter. In either case the investigator faces a turbulent and disturbing future. We must indeed love creative science, to prefer it over the tranquility of the financial market.

Good luck! ❖

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Karl Ullrich, APS Honorary Member

1925-2010

Karl Julius Ullrich, an Honorary Member of the American Physiological Society, died on Monday, August 2, 2010 at the age of 84. Departing from us, he has left a rich legacy in Renal Physiology and in the Max Planck Institut für Biophysik which he served as Director from October 1967 to November 1993. In the 26 years of unfailing dedication, he elevated this Institute to a world class institution of intense activity and highest quality of research in renal and epithelial physiology.

Karl was born on Nov. 18, 1925 in Würzburg. He spent the first ten years of his life in lower Franconia, where his father was a schoolteacher and his mother a home-maker. For two years he attended a Catholic Boarding School in Würzburg and then transferred to a public school in Hammelburg at the foot of the Rhön-Mountains to which his parents had moved. At the age of 17 he had to leave school without a diploma being called up to military service in WWII. He served as sergeant in the former Yugoslavia, Northern Italy and central Germany and was fortunate to survive the war; his entire platoon perished under a collapsing bomb shelter during an air raid of Regensburg. In the last throws of the war he was captured by the American Army and was detained in a prison camp. In the three months of internment he took English classes, and he decided to study medicine. His dad who also had served in the German Army, was captured in the Russian theater, and was unduly executed, as Karl learned in 2007 in an unexpected letter from the Russian Embassy. Though the letter restored the integrity of his father, it came too late for his mother who had passed away 1971.

Life in post-war Germany was difficult. Supported by his mother who lived on a small pension, Karl, her only child, managed to attend the university in Erlangen to earn his High School Diploma. He transferred to the University of Würzburg where in 1951 he earned his MD degree with a thesis describing self-designed experiments on post-infectious orthostatic disorders. During his internship at the University of Würzburg, Karl came across Homer W. Smith's book *The Kidney in Health and Disease.* The book piqued his interest in renal function and led him to extend his studies to measurements of renal blood flow and filtration rate. After a brief period serving as substitute country family doctor, Karl decided to devote himself to basic research.

Karl J. Ullrich at about the time he became Director at the Max Planck Institute of Biophysics in Frankfurt /Main.

The Marburg years. In 1952 Karl joined the laboratory of Prof. Kurt Kramer in Marburg, a leading cardiovascular scientist who had worked in aviation physiology in the US. It was the time that H. Wirz, B. Hargitay and W. Kuhn had published the countercurrent hypothesis of urine concentration and the pressing questions to Karl were *1*) how do osmotic pressures within the renal medulla change during urinary concentration; and *2*) What solutes underlie the observed increase in osmotic pressure during antidiuresis? At Karl's disposal for this work were a torsion balance, a razor blade holder, a freezing point osmometer, a flame photometer, and some Conway dishes for measuring urea. Karl and Karl Heinz Jarausch worked day and night: "My whole recreation was to look out of the window of my laboratory to the St. Elisabeth church, a miracle of early Gothic architecture." What emerged from this kind of immersion was the confirmation of the countercurrent hypothesis. In their landmark paper of 1956, Ullrich and Jarausch demonstrated that the solute gradient in the renal medullary tissue varies with urine concentration and is mainly made up by NaCl and urea. Karl observed that the medulla contained high concentrations of the hitherto unknown chemical glycerophosphocholine and of inositol, substances that later were found to be osmolytes involved in the osmotic balance of medullary cells. In the summer of 1953 Karl married Marga Halbleib, whom he had known since school in Hammelburg. On Karl's advice she became a school teacher, and her small salary was important for the family to make ends meet, especially after their first son Martin was born in 1954.

The Göttingen years. In 1955 Karl and his family followed Kurt Kramer to Göttingen, where he continued his studies and obtained the German equivalent of the PhD degree. Applying microcatheterization and micropuncture techniques in renal medullary structures he found that collecting ducts absorb NaCl and urea and secrete hydrogen and ammonium ions. More important, however, was the methodological legacy of the Göttingen years. Karl had a practical mind, paired with an exuberant imagination and untiring enthusiasm. He wanted to understand how renal tubules work. He conceived a series of microanalytical techniques which he developed with his colleagues and the machine shop of the Physiological Institute. Next to the equipment for microcatheterization, Karl devised a micro-cuvette for photometric measurements in microliter volumes, a rotating glass-pipette beveller for smooth punctures of tubules and blood capillaries, a micro-pump for constant low-rate perfusion of tubular loops to analyze efflux or influx of tracer molecules and the "shrinking droplet" method for measuring local tubular volume absorption. These tools and methods provided the basis for his future research and were adopted by other laboratories in the world. Daughter Susanne was born in 1956, and son Christoph in 1959. In August 1959 Karl embarked with his family and his technician G. Pehling on an ocean-liner for an eight months sabbatical in the US. The collaboration with B. Schmidt-Nielsen and C. Gottschalk proved an exciting and fruitful experience. The recirculation of urea was detected as well as the effect of diet on the urea efflux from the collecting duct.

The Berlin years. Returning from the US, Karl was offered the chair of the new Institute of Physiology at the Free University of Berlin. He accepted, but under the condition of having a cochairman, which allowed O.H. Gauer to accept the second professorship. Berlin,

though a divided city, offered ideal working conditions. The move to Berlin was timely, as Karl had his arsenal of new techniques and positions to fill. Next to two senior coworkers, he attracted a strong group of young post-docs, many of them from abroad. In his own laboratory Karl measured the zero-net-flux concentration differences across the proximal tubule for Na^+, Cl^-, K^+ and Ca^{2+} and the quantitative determination of the osmotic water permeability of rat proximal and distal tubules.

The Frankfurt years. In 1967 Karl was elected a member of the Max-Planck Society and called to head the physiological section of the Max-Planck Institute of Biophysics in Frankfurt at the river Main. The move to Frankfurt improved opportunities for research. It allowed him to assemble an astute biochemical research group and to create a state of the art facility for electron microscopy. Close contacts with the other two sections of the Institute headed by the physico-chemist R. Schlögl and the biologist H. Passow provided theoretical background for membrane transport and insights into the structure and function of non-epithelial cell membranes. In addition, Schlögl would often rescue Karl's overspent research budget at year's end. Thus was the general cooperative atmosphere at the Max Planck Institute. Its scientific output was enormous as a result. Karl's laboratory continued the micropuncture experiments on proximal tubules of the rat kidney in vivo. The driving forces for absorbing Na^+, Cl^-, HCO_3^- and urea were determined and the specificity and Na^+ dependence of transporters of sugars, amino acids, phosphate, sulfate, lactate and other solutes elucidated. Karl's findings were corroborated by electrophysiological experiments in the laboratory of E. Frömter and further corroborated and extended by experiments on membrane vesicles performed in the biochemical laboratory led by R. Kinne, H. Murer and later G. Burckhardt. Thus a comprehensive picture was obtained of the transport properties of the apical and basolateral cell membrane of mammalian proximal tubules. In addition, other tubular segments of the nephron were analyzed such as the thick ascending limb of the loop of Henle by the late R. Greger, as well as sweat glands, the excretory pancreas and the intestine by I. Schulz and others. Karl, however, continued to focus his work on renal proximal tubules. He developed a method for "zero-net flux stop-flow capillary perfusion" which enabled the identification of different organic anion and cation transporters in the contraluminal cell membrane. He used hundreds of synthetic compounds - among them analogs, agonists, antagonists, and drugs - to elucidate the structural requirements for solute transport in vivo, thereby elucidating the effects of charge, hydrophobicity, and hydrogen-bonding on transport crucial for the design of pharmacological agents.

Karl's laboratory in Frankfurt attracted a steady stream of visitors and scientific collaborators. All those who over the years became friends with Karl and Marga fondly recall the generosity and hospitality which Marga offered at their home. Visitors also recall the stately old central villa of the Institute – the former home of a Jewish banker whose widow had bequeathed it for the purpose of research in 1924 – with its inner courtyard, its magnificent wooden staircase and stuccoed ceiling in the lecture hall. Here, no one ever fell asleep, be it for the high quality of the presented science, the lively and penetrating discussions, or the old, uncomfortable hinged wooden benches, which Karl would not allow to be replaced.

Karl's contribution to our understanding of kidney functions goes far beyond what has been published under his name. The research frontiers that Karl had pioneered have allowed his students and collaborators to pursue new knowledge and endeavours. More than a dozen of them have obtained leading academic positions in Germany and other countries. For them and in turn for their students, Karl is like a centre of their scientific universe.

Karl received many honours and distinctions. He was invited to countless international meetings and delivered many plenary lectures and keynote talks. The most prestigious lecture was perhaps the Walter B Cannon Lecture delivered at the Centennial Meeting of the American Physiological Society (1987). Very early in his career Karl was elected member of the Academy Leopoldina, which today is the German National Academy of Sciences. He was elected honorary member in nearly a dozen national and international learned societies. The list of medals, awards, prizes and honorary doctorates he received is long and impressive. Yet in spite of all the recognition, Karl remained modest and kind and a man who would never renege on his word. Whenever collaborators or students came to him with a problem of scientific, technical or personal nature, Karl would listen and engage himself for the better. When, for example, visitors complained that they could not sleep in the guest room of the Villa because of pigeons cooing, he himself climbed up underneath the roof to evict the sleep offenders. Karl also lent his fervor for the public good. He made sure that Biology was taught well in High School; he helped raise funds for cultural events and supported the Fine Arts. During the time of the Cold War he sustained colleagues in Eastern-Block countries by maintaining close contact, by extending frequent invitations, by providing a work place and housing at the institute and by helping them out with chemicals, instruments or scientific literature.

Not long after Karl's retirement in 1993 Marga's health began to diminish. As she became increasingly disabled, Karl alone took over the household and all the care of his wife until she passed away in 2002. His devotion had taken a toll on his own health, but he returned to his former habits of reading the scientific literature and monitoring the progress of his large academic family. On July 31, 2010, the eighth anniversary of Marga's passing, Karl visited her graveside in the company of his son Christoph, a well known pianist. On the walk back to his home Karl's heart all of sudden decided to deny further service. He died two days later, never having reached consciousness again.

Karl is survived by his children and 7 grandchildren, Christian, Andreas, Thomas, August, Sophie, Paula and Lili. Whether we are his own children or his academic children, we share the loss of a father. ❖

Klaus W. Beyenbach
Ithaca, NY

Eberhard Fromter
Frankfurt, Germany

Postdoctoral Position

Two NIH-funded postdoctoral fellowship positions: Available in the Nehrke Lab at the University of Rochester Medical Center. The laboratory focuses on integrative physiology and acid/base transport in the genetic model C. elegans. The successful candidates must have a doctoral degree (PhD, MD, etc.) in a biomedical related field and experience with model organisms is preferred, but not required. The first project focuses on synergistic proton and calcium signaling during rhythmic defecation behavior in worms. This behavior is driven by oscillatory calcium signaling and calcium wave propagation in the intestine and thus a working knowledge of dynamic fluorescent imaging techniques, genetically-encoded biosensors and/or optogenetics would be beneficial. This position is currently open to begin immediately. A second position is available starting in January, 2011 to study organelle pH regulation and neurodegeneration following cell stress. The approach will incorporate both worm and mammalian models (cell culture, primary cells from transgenic mice). A background in neurobiology/neurodegeneration is preferred. Rochester, NY is a small city (~200,000) on the shores of Lake Ontario. The locale is perfect for families, the schools are generally excellent, and an abundance of opportunities exist for the outdoorsperson. Our theatre and orchestras are among the best on the East coast, buoyed by proximity to the world-reknown Eastman School of Music. The University of Rochester Medical Center is a premier research and teaching institute. The laboratory itself is currently peopled by several graduate students, undergraduates, a postdoc and a technician, and is thus relatively small (~8 people). I myself still work in the lab and have routine contact with other lab members on a daily basis. Salary is commensurate with experience and qualification. The University of Rochester is an equal opportunity/affirmative action employer. Interested individuals should send their current CV by email, and the names and contact information (including email) of three references to keith_nehrke@urmc.rochester.edu.

Postdoctoral scholar: Sought for work in the UCLA Exercise and Metabolic Disease Research (EMDR) Laboratory, led by Christian K. Roberts, and supported by an NHLBI-funded study on the effects of acculturation on cardiovascular disease and metabolic health in Mexican Americans. This will include evaluating cardiovascular measurements for a culturally tailored lifestyle change intervention involving Mexican Americans at risk for cardiovascular disease. In addition, the trainee will have the opportunity to be involved in other studies on metabolic disease prevention through resistance training (RT), including a recently funded randomized controlled trial to investigate the effects of RT on cardiovascular function in smokers. Applicants must hold a PhD or equivalent degree. Preference will be given to candidates who also show strengths in the following areas: non-invasive cardiovascular assessment, molecular biology techniques, conducting human randomized-controlled trials and preparing IRB applications, statistical knowledge and supervising students. A successful candidate should also be an ambitious scientist with great enthusiasm for research, a solid publication record and outstanding work ethics. UCLA is an equal opportunity/affirmative action employer. Interested individuals should send a letter of application, a full curriculum vitae, and the names and contact information (including email addresses) of three references to: Cristina Hidalgo (chidalgo@sonnet.ucla.edu).

Faculty Positions

Faculty positions in Health: Michigan Technological University invites applicants for new tenure-track positions at any rank in the broad areas of health sciences and engineering. This campus-wide Strategic Faculty Hiring Initiative (SFHI) is projected to bring up to ten new faculty members to campus over a two-year period to strengthen the key focus areas of biochemistry, bioengineering, bioethics, biomaterials, biomechanics, human factors, medical informatics, cell biology, physiology, and statistical genetics. Faculty hired through this initiative are expected to establish a vigorous, nationally competitive research program and to be committed to excellence in both undergraduate and graduate education. The application review process will begin on October 1, 2010. Details on the SFHI and application instructions are available at www.mtu.edu/sfhi. More general information on Michigan Technological University is available at www.mtu.edu. Michigan Tech is an internationally renowned doctoral research university located in Michigan's scenic Upper Peninsula, on the south shore of Lake Superior. Houghton provides a unique setting where natural beauty and exceptional year-round outdoor activities, culture, education, and a diversity of residents from around the world come together to share a superb living and learning experience. As part of its strategic focus, Michigan Tech is experiencing remarkable growth in research. In the last five years, research expenditures have doubled, up to $60M in 2008. The University has also recently initiated efforts to advance health-related research capabilities with the establishment of animal facilities and the formation of the Departments of Biomedical Engineering and Exercise Science, Health and Physical Education. Michigan Tech is an ADVANCE institution, one of a limited number of universities in receipt of NSF funds in support of our commitment to increase diversity and the participation and advancement of women in STEM. Michigan Technological University is an equal opportunity, affirmative action employer/educational institution. Applications from women and minorities are encouraged.

Research Positions

NIH Intramural Research Program is Recruiting, "Earl Stadtman Investigators": The National Institutes of Health, the nation's premier agency for biomedical and behavioral research, announces a new call for top-tier tenure-track candidates to become "NIH Earl Stadtman Investigators." We have multiple positions to offer in any area consistent with the NIH mission including physiology and systems biology. *Who we are:* We constitute the world's largest facility for the biomedical and behavioral

sciences. Our researchers include numerous members of the National Academy of Sciences and the Institute of Medicine, Searle Scholars, winners of the Lasker Award, Nobel Prize, the National Medal of Science and the Presidential Early Career Awards, and recipients of many other high honors. Among us are the editors of top journals, the writers of some of the most highly cited papers in the biomedical sciences, and generators of licenses and patents yielding nearly $100 million in annual royalties. We are on the cutting edge of new discoveries and their application to the clinic. We perform work in labs, in clinics, out in the field, and on nearly every continent; and every day we advance the state of science to improve the quality of life. *What we seek:* To maintain our position at the cutting edge, we seek the continued infusion of a diverse and creative staff. The Earl Stadtman Investigator recruitment is an opportunity to explore the limits of your productivity and your independence from preconceived research objectives. Please share with us your ideas for a novel research program and career aspirations and how they contribute to the NIH mission. *Qualifications/eligibility:* Candidates must have an MD, PhD, DDS/DMD, DVM, DO, RN/PhD, or equivalent doctoral degree and have an outstanding record of research accomplishments as evidenced by publications in major peer-reviewed journals. Preference will be given to applicants who are in the early stages of their research careers; only non-tenured applicants will be considered. Candidates in any area of biomedical, translational and behavioral research are invited to apply. Appointees may be US citizens, resident aliens or non-resident aliens with, or eligible to obtain, a valid employment-authorization visa. *Salary:* Successful candidates are offered competitive salaries commensurate with experience and qualifications, and they are assigned ample research space, supported positions and an operating budget. Our scientists focus entirely on their research with ample opportunities to mentor and train outstanding fellows at all levels. *How to apply:* Complete applications must be received by October 1, 2010. Interested applicants must submit a curriculum vitae, a three-page research plan, a one-page description of their vision for their future research and its potential impact, and contact information for three professional references through our online application system at http://tenuretrack.nih.gov/apply. Letters of recommendation will be requested automatically when you submit your application. No paper applications will be accepted. *What to expect:* Search committees of subject-matter experts will review and evaluate applicants based on the following criteria: publication record, potential scientific impact of current and proposed research, scientific vision, demonstrated independence, and awards. The committees will identify the most highly qualified candidates to invite to the NIH for a lecture open to the NIH scientific staff in December 2010 and for interviews with the search committees. Top candidates then will be nominated as finalists for Earl Stadtman tenure-track positions. More information about the NIH Intramural Research Program is at http://intramural.nih.gov/search and http://sourcebook.od.nih.gov/sci-prgms/sci-prgms-toc.htm. Specific questions regarding this recruitment effort may be directed to Dr. Roland Owens, Assistant Director, NIH Office of Intramural Research at owensrol@mail.nih.gov. *DHHS and NIH are Equal Opportunity Employers.* ❖

The Physiologist
Vol. 53, No. 5, 2010

Neuro Dynamix II: Concepts of Neurophysiology

W. Otto Friesen and
Jonathan A. Friesen
New York, USA: Oxford Press, 2010,
240pp, illus, index, $49.95
ISBN: 978-0-19-537183-3

In many cases, students new to neurophysiology can find the material to be overwhelming. Neurodynamix II: Concepts of Neurophysiology aims to increase understanding of neurophysiology with basic text lessons and hands-on simulations available at http://www.neurodynamix.net. The simulator addresses five models: membrane patch, neuronal compartments, individual neurons, synaptic interactions between neuron pairs and small neuronal circuits. There is a sequential progression from basic to more complex systems. Neurodynamix II was developed as a supplement to undergraduate and graduate courses and to be used for self-study.

The book begins in a similar manner to a number of neurophysiology texts that includes an array of equations and definitions. However, the authors do simplify this information as much as possible and draw upon many useful analogies to explain potentially confusing electrical concepts; although the book would benefit from simple illustrations to relay these analogies. A convenient index of definitions and units would also save the reader time. While the basics of electricity (chapter 1) can be difficult to wade through, it lays the foundation for the rest of the book. The authors are careful to only cover concepts that are essential to understanding neurophysiology.

Each of the seven chapters begins with a text background of the material followed by lessons to be performed on the accompanying software. This is a useful system for the student, allowing for introduction to the material followed by application. A limitation is that often times a subject is not described in detail but refers the reader to the software for further explanation. This can be especially frustrating when the software does not explain the concept in any greater depth. However, when paired with a college course, the software could be a valuable assignment that would be clarified at a later time.

The software itself clearly has practical use, especially to a student that will perform neurophysiological experiments in the lab. Mathematical equations underlying each model covered in the software are described in a straightforward manner at the end of the book. Real-time patch clamp and nerve simulations are possible with the software. The settings can be adjusted for the particular example experiment allowing the student to see the results when parameters are altered. The student should be informed that often times the windows for each simulation are hidden and must be "found" on the computer screen. Without all the windows showing it is impossible to perform the simulations. In addition, very few directions are provided for use of the software. As long as students are guided with the software, it could potentially be an effective teaching tool. The organization of the software lessons could be improved, including software lessons matching the subheading for each lesson in the text. Again, if the student is informed which lessons to download, these would become minor issues. Nonetheless, this could discourage the student, especially in the situation of self-study.

An exciting portion of the software is being able to go through several simulations of the Hodgkin and Huxley experiments on giant squid axons through the online software. The student can gain an appreciation of these classic experiments and at the same time begin to understand axon propagation and the role of ion channels. Clearly, the ability to apply information that was previously covered in the text is an advantage to this book. A limitation comes when multiple "lessons" are covered or assigned, but adequate answers are not offered. In the classroom setting, this could be acceptable if class time was available to go over the answers and to explain why a particular lesson was assigned. In early chapters, questions are posed and the student is instructed to work through to find numerical answers. Unfortunately, in some cases information such as the units used in the calculations are not supplied until the next page. This can leave the reader frustrated and confused wondering why the correct answer cannot be obtained; only to find that it was a unit conversion issue. For the self-learner, these scenarios would leave many questions. However, this book could benefit a self-learner if they had a colleague or answer key they could turn to for definite answers to the questions posed in the book.

Overall, Neurodynamix II: Concepts of Neurophysiology offers a succinct tutorial on the basics of neurophysiology in a logical sequence. It goes beyond most other textbooks of neurophysiology by offering free, online software to apply concepts covered in the text. If adopting this book for a new course considerable time will need to be devoted to working with the software prior to bringing it to the classroom. While this book and software could add a new dimension to a neurophysiology course, its use for self-study would be more suitable if the student has an advisor or colleague to turn to for questions that remain unanswered. After completing the book and the accompanying software, a student will have a more thorough grasp of neurophysiology. ❖

Lara Roberts DeRuisseau
Le Moyne College

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The Wine Wizard

Peter Wagner

Peter Wagner

Hi all– San Diego is broiling–y'all must be secretly very pleased that we are having to suffer out here just like y'all back there. It's gonna make me cool down those crisp whites and delicious pinks and sit under the umbrella by the pool.

Whites/pinks: 2009 Trader Joe's Viognier, San Luis Obispo, California $6. This is real viognier, recognizable by a clean peach and citrus nose. The palate is also clean, viscous and rich, and has lots of stonefruit and lime and good acidity. Unlike some viognier, the finish is long and rich – not at all hard. If it had a hint more apricot, (which you will have trouble tasting here) it would be spectacular. But for $6 when it's broiling?

2009 Rose of Pinot Noir, "Lucy" Santa Lucia Highlands, California $15. This has a lush deep pink color – none of that pallor or brown hint of bad roses. The nose has complexity with cherry and blueberry fruit, a floral hint, and some sage and honey in the background. The palate is totally dry (I hate sweet pink wines), with crisp acidity, and nice cherry and citrus fruit. Medium length, light, balanced and great on a hot day when opened quite cold out of the frig.

2008 Egret Chardonnay, Carneros, California, $12. I don't often write up chardonnay. This one makes the list because it has almost no oak on the nose or palate and has excellent tropical/citrus/lemon rind fruit. While viscous and buttery, it has very good acidity to balance the "fat". It is rich and smooth and easy to drink.

2009 Chamisal Vineyards Chardonnay, Central Coast, California $12. Two Chardonnays in one column?? This wine was raised only in stainless steel—no oak at all. The nose is clean, with citrus and pear. The palate is clean, with excellent acidity and lots of nice fruit—pear, apple and citrus. There is richness and viscosity, a well-integrated wine.

Reds: 2007 Columbia Crest Cabernet, Washington state, "Grand Estates". $7-50. In spite of the presumptuous name, this is their ordinary daily slurp. It has a very forward, rich dark berry nose with some green pepper and a large dose of American oak (comes across as dill). The palate is soft and rich, with dark cherry fruit, slight green pepper, and again a large dose of dill and vanilla. Tannins are in check, acid is in balance and the finish is quite long. The only problem is that for some, the American oak will be over the top. If that does not bother you, this is great value. By chance, I tried this wine on two different occasions, and my notes are not identical. In part I am sure that my palate is not constant, but in part it may be bottle variation. What varied to me between bottles was the fruit intensity. What did not vary was the heavy oak.

2005 Mas Donis Barrica, Capcanes, Spain $7. This Rhone blend (85% Grenache, 15% Syrah) has a full, deep, red and black fruit nose, with a touch of earth and even barnyard that quickly dissipated (it is 5 years old, after all). The palate has excellent, bright, red and dark cherry fruit, excellent acid, medium soft tannins, and the oak is clearly in the background. It is supple, rich, easy to drink and does not taste 5 years old. It will be hard to find. On the label I saw it was imported by European Cellars @ 704-358-1565

2008 Casa Gran del Siurana red wine GR-174, Priorat, Spain $15. No, I have no idea what GR-174 means. This wine is equal parts Grenache, Carignane and Cabernet. It has a smoky nose with plums and cherries. The fruit is forward, ripe, clean and almost sweet, and tastes of cherry and raspberry. There is heat (from the 15% alcohol) but the wine is balanced and easy to approach with medium tannins and good acid.

2007 John Alan "Bon Terre Rouge", Paso Robles, California $12. This wine has 14.8% alcohol, 70% Cabernet and 10% each of Cabernet Franc, Petite Sirah and Malbec. It has an excellent blackberry fruit nose with a strong dose of dill (Am oak as you know). The palate also has loads of blackberry fruit, and medium full tannins, but is not overly extracted. Oak is strong, but the fruit clearly leads the way. Acid is just right, and the length is very good.

Enjoy these drops, especially the white/pink group, but serve them all quite cold! Even the reds could use a few minutes to cool down, to say 60-70 degrees F in the frig, when it is triple digits outside. ❖

CALL FOR NOMINATIONS

for the Chair of the European Editorial Committee of

Physiological Reviews

Nominations are invited for the European Chair of *Physiological Reviews* to succeed O. H. Petersen, who will complete his term as Chair of the European Editorial Committee on December 31, 2011. The Publications Committee plans to interview candidates in the Spring of 2011.

Applications should be received before **January 15, 2011.**

Nominations, accompanied by a curriculum vitae, should be sent to the Chair of the Publications Committee:

Hershel Raff, PhD
American Physiological Society
9650 Rockville Pike
Bethesda, MD 20814-3991

November 4-6

8th Annual World Congress on Insulin Resistance, Diabetes, and Cardiovascular Disease, Los Angeles, CA. *Information:* Tel.: 818-342-1889; Fax: 818-342-1538; Email: info@insulinresistance.us; Internet: http://www.insulinresistance.us.

November 5-6

24th International Laser Medicine Congress and Courses, Florence, Italy. *Information:* Internet: http://www.laserflorence.eu/.

November 9-11

Global Obesity Summit 2010, Jackson, Mississippi. *Information:* Stephanie Lucas, Meeting Secretariat, Department of Physiology & Biophysics, University of Mississippi Medical Center, 2500 North State Street, Jackson, Mississippi 39216-4505. Tel.: 601-984-1801; Fax: 601-984-1817; Email: slucas@umc.edu; Internet: http://gos.umc.edu.

November 11-13

AMWA's 70th Annual Conference, Milwaukee, WI. *Information:* Internet: http://www.amwa.org/default/conference/2010/2010regbrochure.pdf.

November 18-20

The 3rd International Conference on Fixed Combination in the Treatment of Hypertension, Dyslipidemia and Diabetes Mellitus, Brisbane, Australia. *Information:* Internet: http://www.fixedcombination.com.

December 2-5

14th Asia-Oceania Congress of Endocrinology, Kuala Lumpur, Malaysia. *Information:* Congress Secretariat, Console Communications Sdn Bhd, Suite 11.8, Level 11, Wisma UOA 11, 21, Jalan Pinang, 50450 Kuala Lumpur. Tel: +603 2162 0566; Fax: +603 2161 6560; Email: aoce2010@console.com.my.

December 11-15

50th Anniversary American Society for Cell Biology Annual Meeting, Philadelphia, PA. *Information:* Internet: http://www.ascb.org/meetings.

December 13-15

SEB Education and Public Affairs Symposium on Food Safety and Security, Lancaster, United Kingdom. *Information:* Talja Dempster. Email: dempster@sebiology.org; Internet: http://www.sebiology.org/meetings/Lancaster2010/Lancaster.html.

December 15-17

Cross Themed Meeting, Durham University, United Kingdom. *Information:* Tel.: +44(0) 20 7269 5715; Email: sbarnsley@physoc.org; Internet: http://www.physoc.org/ct2010.

2011

January 27-28

The Leukocyte in Cardiovascular Disease, Geneva, Switzerland. *Information:* Lucy Purser, Events and Marketing Coordinator, Abcam plc, 330 Cambridge Science Park, Milton Road, Cambridge, CB4 0FL, United Kingdom. Tel.: +44 (0) 1223 696000; Fax: +44 (0) 1223 771600; Email: events@abcam.com; Internet: http://www.abcam.com/geneva.

February 12-17

SPIE Medical Imaging, Lake Buena Vista, Florida. *Information:* Internet: http://spie.org/medical-imaging.xml?WT.mc_id=RCALLACE.

February 24-27

The International Conference on Prehypertension and Cardio Metabolic Syndrome, Vienna, Austria. *Information:* Ravit Levy. Tel.: +41 (0) 22 533 0948; Email: secretariat@prehypertension.org; Internet: http://www.prehypertension.org.

March 10-11

Immunochemotherapy: Correcting Immune Escape in Cancer, Philadelphia, PA. *Information:* Lucy Purser, Events and Marketing Coordinator, Abcam plc, 330 Cambridge Science Park, Milton Road, Cambridge, CB4 0FL, United Kingdom. Tel.: +44 (0) 1223 696000; Fax: +44 (0) 1223 771600; Email: events@abcam.com; Internet: http://www.abcam.com/philadelphia.

April 7-8

Injury and Repair Mechanisms in Chronic Airway Disease, London, United Kingdom. *Information:* Lucy Purser, Events and Marketing Coordinator, Abcam plc, 330 Cambridge Science Park, Milton Road, Cambridge, CB4 0FL, United Kingdom. Tel.: +44 (0) 1223 696000; Fax: +44 (0) 1223 771600; Email: events@abcam.com; Internet: http://www.abcam.com/londonimmunology.

APS-PST
Professional Skills Training
2011 Schedule

January 6 – 9

Live Short Course:

Writing and Reviewing for Scientific Journals

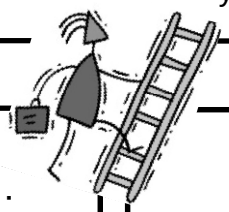
Learn how to write and improve your 1st author draft manuscript from the abstract to the discussion. You will have the opportunity to work directly with top faculty and peers during this three day course held at Disney's Contemporary Resort in Lake Buena Vista, Florida. Applications are due December 1st. Apply at www.the-aps.org/education/profSkills

February 1 - March 11

Online Short Course:

Making Scientific Presentations

Anxious about designing and presenting a poster at your next scientific meeting? This course will teach you how to introduce yourself, produce a great abstract, design an effective and engaging poster, and manage presentation situations. This online course provides independent exercises as well as group exercises that allow you to gain valuable feedback.



May 12 -15

Online Weekend Course:

Interviewing for an Academic Position

Post-docs: Are you ready to apply for your first faculty position? This weekend course will provide resources you need to start a job search, prepare a cover letter and research statement, have a successful interview, and present an engaging job talk.

June 27 – August 5

Online Short Course:

Writing and Reviewing for Scientific Journals

This online version of the Live Short Course allows you to improve your manuscript without leaving the comfort of your home (or lab). You will have the opportunity to work with top faculty and peers via discussion boards and online postings.

MEMBERSHIP APPLICATION FORM
The American Physiological Society

1. Check membership category you are applying for: ❑ Regular ❑ Affiliate ❑ Graduate Student ❑ Undergraduate Student

2. Name of Applicant: _____ / _____ / _____
Last Name or Family Name *First Name* *Middle Name*

3. Date of Birth _____ / _____ / _____ Optional: Male ❑ Female ❑
Month *Day* *Year*

4. Institution Name _____ Department _____
(Please do not abbreviate Institution Name)

5. Institution Street Address _____

6. City/State/Zip/Country _____

7. Home Address ***(Students Only)*** _____

8. Work Phone _____ Home Phone _____

9. Fax _____ E-mail _____

10. **Educational Status:** ▶ **IMPORTANT for STUDENTS: ** If you are enrolled as a graduate student for an advanced degree, or as an undergraduate student, please include the month and year you expect to receive your degree.**

Dates**	Degree	Institution	Major Field	Advisor

11. **WHAT IS YOUR SECTION AFFILIATION?** Please identify your primary sectional affiliation with a "1" and check (✓) up to two additional sections with which you would like to affiliate. **There can be only one "Primary" affiliation.**

___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

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

13. **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.) *Undergraduate Students do not require sponsors but must supply proof of enrollment such as transcripts or letter from your advisor.*

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) _____

14. OCCUPATIONAL HISTORY [Check if student ❑]

Current Position:

Dates	Title	Institution	Department	Supervisor

Prior Positions:

Dates	Title	Institution	Department	Supervisor

15. 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.

16. DOCTORAL DISSERTATION TITLE (if applicable):

_____

_____

17. POSTDOCTORAL RESEARCH TOPIC (if applicable):

_____

_____

18. 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 301-634-7264) (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: 301-634-7264 • E-mail: members@the-aps.org • Web: www.the-aps.org