



INSIDE

**ACDP Meeting
Highlights**
p. 14

**Williams Honored at
ACDP Meeting**
p. 15

**Highlights of the
2010 USA Science
and Engineering
Festival**
p. 19

**Dual Science
Couples and Being
a New Faculty
Member**
p. 22

**APS Leadership
Meets with NIH
Officials**
p. 24

**Experimental
Biology 2011
Program Schedule**
p. 28

The Physiologist

2010 Walter C. Randall Lecture in Biomedical Ethics

Scientific Integrity: Positive & Negative Academic/Industry Relationships

Debra A. Schwinn
Univ. of Washington, Seattle

Introduction to the Randall Lectureship

Walter C. Randall (1916-1993) was a physiologist who began his career as a biology major at Taylor Univ., where he graduated in 1938. After receiving his MS and PhD in physiology from Purdue Univ., and completing a postdoctoral fellowship at Case Western Reserve Univ., Randall spent an illustrious career as an academic scientist, culminating during the last 21 years as Chairman of the Department of Physiology at the Loyola Univ. Chicago Stritch School of Medicine. He was actively involved with the American Physiological Society his entire career.

After retiring, Randall returned to his roots at Taylor Univ., where he continued mentoring summer science students with their cardiovascular research projects. As a man with deep Christian beliefs and commitment, Randall emphasized the combination of integrity, scientific expertise, and rigor with all his students. Students and colleagues also remember Randall as a very humble man. It is in his memory that Taylor Univ. has partnered



Debra A. Schwinn

with the American Physiological Society to honor Randall with the Randall Lectureship in Biomedical Ethics.

Introduction to the 2010 Randall Lecturer

As a cardiovascular clinician and researcher, as well as Chair of a large clinical department at the Univ. of Washington, it was an honor to be selected to give the

2010 Randall Lecture in Biomedical Ethics. In terms of background, my area of scientific research focuses on stress responses in humans, particularly responses to the robust stress of surgery. It is in this context that after medical school, anesthesiology residency, and cardiothoracic anesthesiology clinical fellowship, I began basic science molecular pharmacology/physiology training focusing on α 1-adrenergic receptors in the laboratory of Robert J. Lefkowitz at Duke Univ. Over the last 25 years, my career has included cloning cDNAs, pharmacologically characterizing encoded pro-

(continued on page 3)

The Physiologist

Contents

2010 Walter C. Randall Lecture
in Biomedical Ethics

Scientific Integrity: Positive & Negative: Academic/Industry Relationships

Debra A. Schwinn

From the President's Desk

A Matter of Opinion

The More Things Change...

APS News

APS Council Holds Fall Council Meeting in Chantilly, VA

ACDP Meeting Highlights

Association of Chairs of Departments of Physiology Meeting Highlights
Williams Honored at Annual ACDP Meeting

Membership

New Undergraduate Student Members
New Graduate Student Members
New Affiliate Members

Education

APS Presents Awards at the Annual Biomedical Research Conference for Minority Students
Highlights of the 2010 USA Science and Engineering Festival
APS Archive of Teaching Resources Thanks its 2010 Reviewers
New Community is Coming to the APS Archive of Teaching Resources

Mentoring Forum

Dual Science Couples and Being a New Faculty Member

Angela J. Grippo 22

Science Policy

American Physiological Society

Condemns Threats Against Researchers 24

American Physiological Society

Statement Condemning Threats Against Researchers 24

APS Leadership Meets

with NIH Officials 24

NIH Board Approves Plan to Create New Center 25

European Union to Implement New Animal Welfare Rules in 2013 26

International Scientists Commit to Advocate for Animal Research 26

Reference Handbook on Clinical Signs in Rodents and Rabbits Available 27

Experimental Biology 2011

Program Schedule 28

Positions Available 33

People & Places

APS Members Weiss is New Dean at Univ. of Texas 33

Senior Physiologists' News 34

Book Review 35

The Wine Wizard 36

APS Membership Application 39

Published bimonthly and distributed by
The American Physiological Society

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

Peter D. Wagner

President

Gary C. Sieck

Past President

Joey P. Granger

President-Elect

Martin Frank

Editor and Executive Director

Councillors

Kenneth M. Baldwin,

David P. Brooks,

Ida Llewellyn-Smith,

Gordon S. Mitchell,

Frank L. Powell, Usha Raj,

Linda C. Samuelson,

Curt D. Sigmund, Alan F. Sved

Ex Officio

Pamela K. Carmines,

John C. Chatham,

J.R. Haywood, Ronald M. Lynch,

Thomas A. Pressley,

Hershel Raff,

Jeff M. Sands

Publications Committee: Chair: Hershel Raff; Members: Kim E. Barrett, William Chilian, Asrar Malik, David Pollock, Helen E. Raybould, Celia Sladek. *Director of Publications:* Rita Scheman. *Design and Copy Editor:* Joelle R. Grossnickle.

Subscriptions: Distributed to members as part of their membership. Nonmembers in the USA (print only): individuals \$85.00; institutions \$135.00. Nonmembers in Canada: individuals \$125.00; institutions \$170.00. Nonmembers elsewhere: individuals \$125.00; institutions \$170.00. Single copies and back issues when available, \$20.00 each; single copies and back issues of Abstracts issues when available, \$30.00. Subscribers to *The Physiologist* also receive abstracts of the Conferences of the American Physiological Society. The online version is available free to all worldwide.

The American Physiological Society assumes no responsibility for the statements and opinions advanced by contributors to *The Physiologist*.

Please notify the APS Membership Department as soon as possible if you change your address or telephone number.

Headquarters phone: 301-634-7118

Fax: 301-634-7241

Email: info@the-aps.org

<http://www.the-aps.org>

Printed in the USA

teins, and studying regulation for several new α 1-adrenergic receptor subtypes, as well as defining the physiologic and pharmacologic consequences of naturally occurring human genetic variants of these receptors. At a clinical level as a practicing anesthesiologist, I enjoyed partnering with a wonderful group of collaborating faculty to define the new field of perioperative genomics, an area of clinical genetics that examines the role of genetic variability in predicting adverse events following patient outcome after surgery. My interest in bioethical issues began early when I participated on an ethics committee that defined "Perioperative Do Not Resuscitate" guidelines for Duke Univ. Medical Center and published guidelines in this area for practicing clinicians in the operating room. This was followed later by fellowship training in bioethics and genetics during a sabbatical at the National Human Genome Research Institute in 2000, including a project on patient attitudes on biorepositories. More recently, I participated in the Institute of Medicine Committee on Organ Donation that recommended "Donation after Cardiac Death" criteria that have since been initiated nationwide. In terms of the Randall Lecture, I speak as chair of a large clinical department at a major research university, although I should point out that thoughts presented are my own, as well as others, in the fields cited. In academic medicine there is no more burning ethical question today than that of conflict of interest, or phrased in a different way, how academic faculty can most appropriately partner with industry to move science and medicine forward for the benefit of all mankind.

Background on Conflict of Interest

Because conflict of interest is such an important topic in academic medicine, several guidelines on conflict of interest have been issued recently, including one published by the *National Academies of Sciences* (25) and another set posted online by the American Association of Medical Colleges (AAMC) (1, 2). These documents provide specific guidelines on process, and/or how to approach issues related to conflict of interest. Because of this excellent material, this talk focuses on broader concepts underlying varying viewpoints that have led to such recommendations. First, traditional (finan-

cial) conflict of interest will be explored for both clinical and basic science research. Second, non-traditional conflicts of interest will be examined. These will be followed by examining the impact of world-view on ethical discernment and how this relates to decisions made (unwittingly or consciously) in the arena of conflict of interest.

Importance of Academic & Industrial Relationships

Many key discoveries in science and medicine have resulted from academic/industrial partnerships, including both medical and therapeutic advances. Several authors have recently commented that there is no inherent conflict of interest in principle for physicians or scientists working with industry or government since there is a commonality of interest that is "healthy, desirable, and beneficial." (8, 15) Industry/academic collaboration and partnerships are sought by both parties and *expected by Congress!* Indeed, Congress has encouraged technology transfer by facilitating patentability of life science research since the 1980s (7). Specifically, the Bayh-Dole Act of 1980 gives universities almost exclusive rights to intellectual property from government-sponsored research. This bill was passed because it was recognized that technology transfer is key to progress in medicine and the overall health of the population (21). In fact, it has been noted that life sciences faculty with industry relationships are more productive (in almost every measure) than colleagues without such support (39).

Problems with Academic & Industrial Relationships

Questions: If academic/industrial partnerships are so important and productive, then what is the problem? Simply stated, the question arises—for whom does the academic faculty member work? Specifically, could results of research be influenced by compensation (financial or otherwise)? Delving a bit deeper, if a researcher finds results that benefit a company, does this directly (or indirectly) lead to further compensation to the academic faculty member? There are multiple forms of compensation possible, including the following: further consulting relationships, equity ownership, advisory board membership, being a paid speaker for the company, research awards, education awards, and

publication "help." (39) In this context, what is appropriate and what is not?

Definitions: Rewards, financial or otherwise, raise the question of what is the definition of "conflict of interest?" Various dictionaries and websites define conflict of interest as the following:

- "situations where decisions are influenced by personal interest"
- "multiple interests—one of which could corrupt another"
- "someone in a position of trust has interests other than the common good"
- "using influence for personal gain."

Based on these definitions it is clear that balance is key. Academic/industry relationships provide support and funding for important research questions. Such funding has the potential to enhance creativity, facilitate development of more important (and perhaps higher risk) projects, facilitate expert consultation, provide more rapid advances and more publications, plus the possibility of commercialization. However, some possible unintended consequences might include restrictive covenants (secrecy agreements), culture clash (knowledge *versus* profit), suppression of negative findings, and possible influence of funding on university or research faculty decisions. In this regard, rather than simply being payment for time and services rendered, compensation to faculty members may unwittingly influence opinion and decisions related to research.

Size of the Concern: Given that checks and balances are important, what is the size of the potential problem? Several authors have examined this question and have documented that life science faculty have potential conflicting relationships (13, 39). Indeed, these authors document that 53% of life science researchers have had some relationship with industry in the past three years and 94% had some relationship over the course of their career. The most common relationship includes consulting, speaking (paid), research funding, and advisory boards. The more senior the faculty, the more funding and the higher percent incidence of such relationships. While some of these findings are natural consequences of industry asking advice of those who are the best thought leaders available, it is important to note that industry spends \$21 billion promoting products and currently provides approximately nine percent of all medical research funds to universities (13).

Training: Perhaps what may be more concerning is recent documentation that more than 50% of all internal medicine residency programs accept financial support from industry (26), even though 75% of program directors say accepting such aid is “not desirable.” Support comes in the form of

beginning to wane, down from 28% in 1995 to 20% today (7, 21). This observation may partly result from recent revelations in the news that some faculty from well-known academic institutions have received payments from industry up to five times their regular salary, with possible evidence of bias in

accepted free meals or travel from the company who makes the new drug (6, 10, 31). As a result, some ethicists and institutions suggest that NO gifts are acceptable, while others require such gifts to be of minimal value only.

Disclosure: Another problem with conflict of interest is the historic lack of disclosure. While this has tightened greatly in recent years, >90% of universities still rely on self-disclosure. A disturbing trend is that one-third of published manuscripts studied from 2004-2008 did not disclose industry/device company support, and until recently 50% of universities did not require disclosure of how much money or stock was received from companies (14, 21). Fortunately, many companies are now disclosing payments to physicians and researchers by publishing such payments on explicit websites (18). This allows institutions to “check” self-disclosure with listings from the companies themselves.

Congress: Another check and balance introduced by Congress was the Physician Payment Sunshine Act of 2009, part of the “Patient Protection and Affordability Act.” (29) A key item in this act is that trialists (not big pharma) own data from clinical trials for purposes of publication and reporting, while industry provides the funds and, therefore, owns the intellectual property from trials (5). This provides a balance between disclosure of positive and negative findings and intellectual property that ultimately can be used to drive a compound/device forward in the market.

Summary: It is clear that while there is a true need for academia and industry to collaborate in order to move research and medicine forward effectively, until recently checks and balances have been missing for many possible conflicts of interest. Recent attempts to correct this problem may have gone too far, and in some instances are beginning to have a stifling effect. Supporting this premise, recent rhetoric seems to suggest that researchers avoid all contact with industry in order to avoid [evil] influence. Such perspectives are neither helpful nor true, but do reinforce that a balance of transparency and accountability is needed at all times as academia and industry move forward together to change the future.

Non-Traditional Conflict of Interest

Context: In addition to traditional (monetary) conflict of interest, many

While these “gifts” seem small and, therefore, unlikely to influence, extensive research has been done on the “psychology of gift receipt” suggesting otherwise.

education materials such as pocket guides (83%), meals (90%), office supplies (68%), and drug samples (57%). While at first glance such support appears benign, and perhaps even helpful, it is interesting to note that these same authors document that programs that accept such financial support tend to be clustered in the southeastern US, are programs with lower overall board scores, and generally have less institutional financial support for education.

Leadership: At the other end of the spectrum, a recent *New England Journal of Medicine* article discusses senior academic leaders and their interactions with industry (24). While benefit is pointed out in terms of wisdom shared, specifically academia learning innovative approaches and industry learning of health trends, with both learning about cutting edge basic science research, concerns were also raised. Specifically, responsibilities may sometimes be irreconcilable between advancing the academic institution’s mission *versus* fiduciary responsibility to increase company profits. While an academic health care board member can be voted down by the company board, no such protection is available at the university level in the event a leader becomes swayed in one direction or another that may not be in the ultimate best interest of their university. Finally the article suggests that if academic leaders do participate on corporate boards, compensation should be limited to \$5,000/day with conflict of interest committees reviewing all such arrangements; but if board members generally earn more than this daily payment, the authors suggest that excess payments could be donated to charity.

Investigations and Negative Press: A concerning trend is that nationally industry/academic partnerships are

key publications related to recent drugs introduced into the market (7, 21). Indeed, US Senate Finance Committee investigations recently revealed high profile researchers who failed to disclose major industry ties (23, 34). In addition, publication fraud has also been discovered, that may or may not be related to direct conflict of interest over the years.

Gift Giving & Influence: Conflict of interest is not limited to physician researchers who study drugs coming onto the market—they have occurred with basic scientists as well. Global climate change research has had suspicion clouding the field over the last several years due to revelations from hacked emails suggesting journal reviewers may have excluded articles with contrary viewpoints from their own. Even at the 2010 FASEB meeting, as well as many other scientific meetings, Apple iPads are given away in raffles for visiting certain industry booths; lunch was also provided for “learning” workshops designed to help understand advantages of specific new products (as well as why it is essential that the researcher buy those products from the company providing lunch). While these “gifts” seem small and, therefore, unlikely to influence, extensive research has been done on the “psychology of gift receipt” suggesting otherwise. Indeed, while individuals may not always be conscious of these motives, there is a powerful impulse to reciprocate for even small gifts (6, 10, 31). These studies suggest that recipients are unable to remain objective and they reweigh information and choices in the light of a gift received. Research suggests an expectation of reciprocity may be the primary motive for gift giving, a finding that appears validated by the fact that physicians who request specific additions to drug formularies at their institutions are far more likely to have

non-traditional conflicts are apparent in academic medicine. One of the most important in this regard is academic pressure. Scientists in academia live in a world with extreme pressure to discover novel aspects of science and publish these findings in high quality (high impact) journals in order to obtain NIH or other national research funding, ultimately in order to repeat the cycle over again. Such pressure leads to the reality of “publish or perish.” In this context, could conflict of interest involve cutting corners? What happens when a scientist wants to promote his/her own hypothesis over those of others because of self-assured enthusiasm or for personal academic benefit? What about extreme behavior that might include falsification of data?

Native American Indian Studies: Unfortunately, there are recent examples of researchers potentially putting their own careers above those with whom they are working. Such conflicts may occur in clinical studies where researchers and their research subjects may have differing value systems. In April 2010, the New York Times published a report about a researcher at Arizona State Univ. who studied whether there was a genetic basis for the extremely high diabetes rate among the Native American tribe, the Havasupai, located in/near the Grand Canyon. The researcher was extremely dedicated in collecting samples, walking many hours to reach some of the tribe members to complete the study. While the study had full ethics review board approval at the university, and the tribe agreed to the study on diabetes, apparently the tribe did not believe they had given permission for the DNA collected to be used for several dozen other studies published that extended beyond the original focus on diabetes research. The Havasupai Indians view their blood as sacred and were particularly concerned about unauthorized studies on ancestral origins that contradicted their own tribal stories. The researcher, who has since moved to a university in another state, maintains that appropriate consents and research was performed. Arizona State Univ. reached a monetary settlement with the tribe. These events led some to propose an international tribunal akin to the Helsinki human rights agreement, which would lay out the ethical obligations to research participants. Others suggest that by staying

in touch with research subjects they can be asked about potential new studies. Either way, geneticists at the National Institutes of Health (NIH) suggest that much better communication is expected in genetics trials.

What happened in this situation? Did the researcher discover that by having obtained a rare, and unique, set of DNA from a highly inbred and isolated group of Native Americans, that significant additional important research questions could be addressed? Perhaps the ability to ask questions of ancestral origins of Native Americans was so uniquely available that it seemed natural to use the DNA and data in this way. Having access to this unique data set, did the researcher feel pressured to publish before someone else might have the same idea? Was it non-financial conflict of interest (including unfortunate lack of communication [or misunderstanding] with the tribe) or simply smart science? Certainly, the researcher gained academic productivity and promotion while the tribe felt cheated.

Aging Faculty in Medical Schools: Other examples of the extreme pressure to “publish or perish” in science can be seen by examining the natural history of research funding in medical schools in the US. Outstanding science, defined as making new discoveries continually throughout one’s career, is difficult. If one examines the demographics of medical school faculty, one can see how such pressure to publish might have its origin. In 1980, the peak age of medical school faculty was 37 years. In 2006, this peak had spread over two decades, maximal between ages 35-55 years; in parallel, NIH funding peaked between ages 40-55. Indeed the average age of investigators *funded for the first time by the NIH is 42.6 years* and 51.0 for all investigators with NIH funding. Success at obtaining national peer reviewed funding this late in one’s career speaks to the high standards and pressure many scientists feel they are under to produce excellent science, publish, and obtain competitive national funding such as provided by the NIH. Those who are successful at younger ages are under extreme pressure to continue such success. Since research funding may make the difference between having a job or not, this puts even the most successful scientists potentially at risk for conflicts of interest they might not otherwise consider.

Ghost Authorship: Another manifestation of extreme “pressure to publish” is ghost authorship and guest authorship. Ghost authorship can be defined as having someone help design a study, analyze results, and/or write the manuscripts without acknowledgement in the final publication. Guest authors may have had only superficial association with the study but may be added as authors anyway, perhaps to enhance credibility of the study and/or to satisfy a collaborative agreement. Neither ghost nor guest authors qualify for authorship as defined by most scientific journals today. Therefore, is this really a significant problem? Two key manuscripts addressing this topic were published in 2009 (19, 38). One examined 900 manuscripts, demonstrating that honorary authorship existed in 19% of these cases and guest authorship in 9%. Highly cited journals also had significant ghost authorship (*Ann Int Med* 4.9%; *J Amer Med Assoc* 7.9%; *Lancet*, *Nat Med*, *N Engl J Med* 10.9%), a finding that was more common in industry sponsored trials. Sometimes manuscript writers/editors are provided by industry with the rationale that it helps a busy researcher collate final data from a trial so that it is ready in a timely manner to be submitted to a scientific journal for publication. While this may be the altruistic intent, the editor (ghostwriter) is often an employee of the company and, therefore, may feel pressure toward ensuring positive results for their employer. Because of these issues, most journals now require independent analysis of crucial data (22). It is also important that academic institutions and journals have specific prohibitions against ghost writing in institutional conflict of interest policies.

Summary: Financial and Non-Financial Conflict of Interest

As described above, two main types of conflict of interest exist—financial and non-financial. Clearly, large financial conflict of interest should be avoided as much as possible because money does have the potential to influence decisions. However, any residual financial conflict of interest must then be managed appropriately (30), with an official not involved in the research setting forth a plan (e.g., having faculty without financial interest enroll patients, be involved in oversight of data entry, as well as statistical analysis, etc). Non-financial conflict of interest is also very powerful and should be managed by

academic institutions since the desire for positive results (so publication can occur) will never disappear.

Over the last decade, institutions have increasingly begun to establish systems where potential conflict of interest can be appropriately managed while allowing academic/industry collaborations to occur. Indeed management of conflict is becoming more nuanced, appropriate, and less constrictive than originally conceived. Appropriate management and disclosure of conflict of interest must become a core value for all institutions and researchers. Having said this, many high-impact journals have recently revealed new information suggesting that funding for many studies has not been reported/revealed as it should have been. This has led to fairly restrictive recommendations (6) as follows: 1) no financial gifts of any size; 2) no drug samples (vouchers are suggested instead); 3) drug formulary committees should have no contact with industry; 4) no gifts to support continuing medical education courses (direct or indirect); 5) travel reimbursements should be administered centrally through academic medical centers (there are some concerns about the practicality (9) or necessity (36) of this suggestion); 6) eliminate “no strings” contracts; 7) lectures should give clear science deliverables, not focused on selling drugs; and 8) academic medical centers need clear conflict of interest policies.

The Institute of Medicine (IOM) has also issued recommendations on conflict of interest (25). While the guidelines are similar to those described in the *J Amer Med Assoc* (6), the guidelines are somewhat less severe. Rather than specifics, the IOM recommendations focus on policies and procedures that need to be developed by institutions, national societies, groups, the NIH, and DHHS. Going one step further, several journal editors have now agreed that a uniform format should be used for disclosure of competing interests when submitting a manuscript to journals (12). This includes both financial and non-financial conflict of interest.

To many these guidelines seem overly restrictive. Nakayama (27) suggests there is a middle ground that acknowledges the rights of industry, physicians, residents, medical students, patients, and the public. Emphasis on professionalism is described as a way to keep a middle balance since professionalism

can be defined in part as “the responsibility to abide by an agreed upon code of ethics without having to resort to the blunt force of law.”(27) Professionalism has an increasingly central presence in medicine today; in spite of this, there is often misunderstanding about what professionalism entails. Indeed, what appears to be meant by authors who invoke professionalism in the context of a conflict of interest, is specific reference to utilization of appropriate ethical discernment which can be translated into a code of action. To advance this discussion further, it is important to pause briefly to bring historical perspective, specifically the impact of world view, on ethical discernment.

Impact of World View on Ethical Discernment

Context: Conflict of interest issues tend to be viewed as all or nothing. Some authors state that if there is zero money exchanged, (or influence, profit, personal benefit) then there is no conflict of interest, whereas if large amounts of money are involved there is potentially a large conflict of interest (6). But what about the gray area in between? This is a bit like pornography with its “I know it when I see it” statements. Yet, styles of what is acceptable have changed over time, so where is “truth”? Interestingly, for many in today’s world, truth often depends on one’s perspective and values. Others believe that truth is more absolute. As a result, it is critical that scientists review their assumptions as they begin to dissect the ultimate underlying issues in conflict of interest. Many of today’s scientists often unwittingly express a combination of modern (scientific) and postmodern (relative) approaches to the concept of “truth.”

Modernism: Modernism is a Western philosophy that spanned the late 19th and early 20th centuries, although its true roots began in the scientific revolution with Rene Descartes, a philosopher and mathematician from the Enlightenment era. Descartes is perhaps best known for the statement attributed to him: “I think, therefore, I am.”(3) Descartes espoused the view that rationality makes humans unique; he strived to measure things so that they could be known as having verifiable truth or significance. The concept that humans have the power to create and improve their environment led modernism to emphasize practical

experimentation, scientific knowledge, and technology. In modernism, truth is absolute and explainable. This explains why modernism tended to reject the existence of a compassionate, all-powerful God, because such a creator could not be proved empirically. In modernism, facts that can be proven based on scientific understanding are then used to explain concepts and principles in life around us. For example, the fact that oil floats on water can be used as the reason that oil beads on wet streets or floats in an oil spill in the ocean. Modernism defines such facts and their explanation of the world as objective truth. Because the scientific method is so embedded in experimental evidence, it is no surprise that many scientists tend to view life through a “modernism lens.”

Postmodernism: Postmodern thought can be distinguished from modernism in that it describes a continuum rather than absolute (black *versus* white) truth. In postmodernism, everything is relative (relativism); specifically there are many ways of seeing the truth. In some ways postmodern thought is less optimistic than modern thought because it allows that truth may not be found. Indeed, truth may be one perspective of many, and is, therefore, subjective. This is interesting for scientists to consider since postmodern thought questions objectivity of science all together. Postmodernism states that subjectivity of humans precludes them from discovering objective truth. Thus, science arrives at “truth” in response to social forces within/without the scientific community (scientific “bandwagons”). In fact, postmodern thought considers objectivity an illusion. One example of a poignant postmodern dilemma is the definition of when the sun rises. Is it the predawn light, the horizon brightening, the first rays of light across the sky, or does part of the sun need to be visible, or all of the sun? Postmodernism would suggest that it is impossible to be precise and reproducibly accurate about when exactly the sun rises.

Paradox for Scientists: Clearly this is a paradox for scientists today. Science is a modern discipline present in the midst of a postmodern world where truth is considered relative. This paradox of modern versus postmodern can be expressed in the following concepts: rationality *versus* subjectivity (which is inherently irrational), and/or pre-

dictability *versus* irrationality. Many scientists today unwittingly subscribe to both the scientific method and relativism (which is often considered the “politically correct” viewpoint).

Truth Goes Beyond Modern or Postmodern Concepts: Not only is there a paradox between modern and postmodern thought for scientists, most humans recognize that truth goes beyond both modern/postmodern thought. Many human traditions recognize transcendence, or that which goes beyond words or categorization. An example might be, how can beauty be defined or explained? George Keats in 1819 stated: “Beauty is truth, truth beauty, that is all ye know on earth, and all ye need to know” (20). Another way to ask the question is to query how can love be “quantified”? Both beauty and truth transcend rationality. Transcendence can be defined as knowledge beyond the grasp of the human mind, that which surpasses physical existence. One way to put it is to state that nature or beauty are echoes of a voice beyond humanity. Such concepts have been recognized across humanity for centuries. They are affirmed as the concept of “divine” in all major religions including (in alphabetical order) Baha’i, Buddhism, Christianity, Hinduism, Islam, Judaism, Sikhism. Even atheism affirms the concept of transcendence but often substitutes nature or human self-transcendence for the concept of divine. What are the implications for this concept of transcendence for how we discern ethical paths in conflict of interest?

Ethics in a World of Consumerism: One ethicist who has directly addressed postmodern ethics is Zygmunt Bauman. Bauman was a Jewish sociologist and emeritus professor at the Univ. of Leeds in the UK. In spite of being a Marxist, he was driven from Poland by a Communist anti-Semitic campaign. During his career he published 57 books and more than 100 articles. He viewed European modernity as a trade-off, where control over nature, hierarchy, rules and regulations were exchanged for security (a concept that ultimately did not work for Europe). He noted that in the second half of the 20th century, a shift took place where the Western world changed from being a society of producers to a society of consumers.(4) At that moment in time, modern security was exchanged for postmodern freedom to purchase, consume, and enjoy life. This

shift was recognized by leaders of other faith traditions in Europe as well; one example is the Christian thinker Francis Schaeffer who highlighted new

Christianity this is modeled after Jesus. Indeed, put another way, for Christians ethical principles focus on actions and principles that ultimately

Many of today’s scientists often unwittingly express a combination of modern (scientific) and postmodern (relative) approaches to the concept of “truth.”

enslavement to “personal peace and affluence,” (32) echoing Bauman’s observations. Bauman went on to state that institutions no longer provided a framework for values and meaning in life, individuals spliced together short-term projects called “careers,” and “progress,” and adaptability became key due to constant change. Bauman emphasized that in such a world, postmodern ethics must focus on a need for moral responsibility to others, not just following ethical rules (4).

Responses to Bauman’s Postmodern Ethics—Buddhist Perspective: Bauman’s postmodern ethical ideas generated responses from many groups. A Buddhist response to Bauman generally agreed with his viewpoints (35), but distinguished between rules and ethical principles. For the Buddhist, “rules” are defined as guides to moral conduct where as “principles” are more open ended – infinite in their demand upon human beings. These responses pointed out that in Buddhist tradition, one turns to underlying mental states and motivational disposition to assess morality of an action. Indeed, in this train of reasoning morality appeals to the deepest needs from one’s inescapable existential situation.

Responses to Bauman’s Postmodern Ethics—Christian Perspective: In contrast, postmodern Christian ethical viewpoints as expressed in a book by Dennis Hollinger (17), distinguish between consequences and principles. In this tradition, the question arises whether moral discernment should be guided by fruits/results of a decision, or normed by principles, rules, and laws. Hollinger points out that “character ethics” is important since ethics are less about “what we do” and more about “who we are;” Stanley Hauerwas, a Duke Univ. professor, is a strong proponent of this viewpoint (16). From this perspective, integrity, coherence, and contentment are derived from a “community of character.” Virtue is defined as what we as individuals are, and in

derive from character/conscience developed through an intimate relationship with Jesus Christ. C.S. Lewis, in *The Abolition of Man* (mid-century, in the period of Bauman’s influence), describes this knowledge of right and wrong as the Tao, shorthand for what he described as natural law or first principle (23). In this line of thought, ethical complexity is not the same as moral relativism!

Integration of Worldview Concepts and Conflict of Interest:

From the preceding discussion, it is apparent that worldview impacts ethical discernment in the area of conflict of interest. Since only two world views (modern and post-modern) have been briefly presented in this overview, the interested reader is referred to a succinct summary of other worldviews presented by the author J.W. Sire (34), a text used for this purpose by numerous universities over the years. While many scientists are unaware of their own worldview, most religious and non-religious traditions identify the concept of transcendence, or a reality beyond simple human existence (albeit expressed in somewhat different forms), where one has a moral framework from which to judge influences inherent in the discussion of conflict of interest. Such understanding provides a framework for how one approaches discerning appropriate synergy in academic-industrial partnerships.

Conclusion & Guiding Principles

One of the guiding principles in the conflict of interest controversy is that actions and decisions matter. Virtue, or “what we are” can be defined as acting coherently with what we value, having an organic unity of belief and behavior. Such virtuous behavior might be based upon ecological soundness, enhancing justice for the poor, respect for all, congruency, honesty, and/or faithfulness to religious values. In specific circumstances, discernment is key since it is important to elucidate motives and

context before final decisions are made.

In terms of practical suggestions for research studies, several important principles exist (11, 28, 37). Data accessibility for all authors and journal reviewers is key, as is a willingness to have independent analysis if needed; indeed, such independent review is required by journals in most cases. Avoiding gifts to prevent financial conflict of interest is important, as is transparency (disclosure) if financial compensation does exist. A motto "trust but verify" may be appropriate in this context. Institutional and journal oversight regulations are important as well. Honesty and transparency is always the best course so that one can pass the "front page newspaper" test. Finally, integrity is crucial in conflict of interest discussions. Integrity can be defined in several ways such as steadfast adherence to a strict moral or ethical code, perceived consistency of actions, or common honesty. In conclusion, transparent, thoughtful handling of conflict of interest is critical to successful academic/industry partnerships so crucial for success in advancing science and the public health. ❖

References

1. AAMC. Financial Conflicts of Interest in Academic Medicine, 2010.
2. AAMC. Forum on Conflict of Interest in Academe (FOCI Academe), 2010.
3. Baird FE and Kaufmann WA. *Philosophic classics*. Upper Saddle River, N.J.: Pearson/Prentice Hall, 2008.
4. Bauman Z. *Postmodern ethics*. Malden, Mass: Blackwell Publishing, 2009.
5. Beran R. "Conflict of interests—criticizing the critics." *Med Law* 28: 557-563, 2009.
6. Brennan T. "Health industry practices that create conflicts of interest: A policy proposal for academic medical centers." *JAMA* 295: 429-433, 2006.
7. "Bridges, not barriers." *Nature* 463: 999-1000.
8. Chatterji A. "Physician-industry cooperation in the medical device industry." *Health Aff* 27: 1532-1543, 2008.
9. Conti CR. "Conflict of Interest." *Clinical Cardiology* 32: 666-667, 2009.
10. Dana J. "A social science perspective on gifts to physicians from industry." *JAMA* 290: 252-255, 2003.
11. DeAngelis CD and Fontanarosa PB. "Ensuring Integrity in Industry-Sponsored Research." *JAMA: The Journal of the American Medical Association* 303: 1196-1198, 2010.
12. Drazen J. "Uniform format for disclosure of competing interests in ICMJE journals." *JAMA* 303: 75-76, 2010.
13. Dubovsky S. "Can academic departments maintain industry relationships while promoting physician professionalism?" *Acad Med* 85: 68-73, 2010.
14. Ellison J. "Acknowledgment of Company Support in Research Publications From Investigator-Sponsored Studies." *International Congress on Peer Review and Biomedical Publication*, Vancouver, BC, Canada, 2009.
15. Garber J. "AACE and ACRE: Commonality of Interests." *Endocr Pract* 15: 669-670, 2009.
16. Hauerwas S. *A better hope: resources for a church confronting capitalism, democracy, and postmodernity*. Grand Rapids, Mich.: Brazos Press, 2000.
17. Hollinger DP. *Choosing the good: Christian ethics in a complex world*. Grand Rapids, Mich.: Baker Academic, 2002.
18. Hughes V. "Sunshine on conflicts." *Nat Biotech* 28: 641-643, 2010.
19. Jones N. "Ghosts still present in the medical machine." *Nature* 461: 325, 2009.
20. Keats J. Ode on a Grecian Urn. In: *Lamia, Isabella, The Eve of St Agnes, and Other Poems*: Taylor and Hessey 1820.
21. Kling J. "Academia and the company coin." *Nat Biotech* 27: 411-414, 2009.
22. Lacasse J. "Ghostwriting at elite academic medical centers in the United States." *PLoS Med* 7: e1000230, 2010.
23. Lewis CS. *The Abolition of Man*. Rockefeller Center: Touchstone, 1996.
24. Lo B. "Serving two masters—conflicts of interest in academic medicine." *N Eng J Med* 362: 669-671, 2010.
25. Lo B, Field MJ, & Institute of Medicine Committee on Conflict of Interest in Medical Research, Education, and Practice. *Conflict of Interest in Medical Research, Education, and Practice*. Washington, D.C.: National Academies Press, 2009.
26. Loertscher L. "Pharmaceutical industry support and residency education: A survey of internal medicine program directors." *Arch Intern Med* 170: 356-362, 2010.
27. Nakayama D. "In defense of industry-physician relationships." *Am Surg* 76: 987-994, 2010.
28. Nissen S. "Setting the RECORD straight." *JAMA* 303: 1196-1198, 2010.
29. Patient Protection and Affordable Care Act (2 ed.). Washington DC, 2010.
30. Rockey SJ and Collins FS. "Managing Financial Conflict of Interest in Biomedical Research." *JAMA: The Journal of the American Medical Association* 303: 2400-2402, 2010.
31. Sandberg W. "The effect of educational gifts from pharmaceutical firms on medical students' recall of company names or products." *Acad Med* 72: 916-918, 1997.
32. Schaeffer FA. *How Shall We Then Live? The Rise and Decline of Western Thought and Culture*. Wheaton IL: Crossway Books, 1976.
33. Shaffer C. "Pfizer explores rare disease path." *Nat Biotechnol* 28: 881-882, 2010.
34. Sire JW. *The Universe Next Door: A Basic Worldview Catalog*. Downers Grove: InterVarsity Press, 2009.
35. Skiotis P. "Postmodern ethics: A Buddhist Response." In: *Western Buddhist Review*, 2004.
36. Steinman M. "Commercial influence and learner-perceived bias in continuing medical education." *Acad Med* 85: 74-79, 2010.
37. "Trust, but verify." *Nature* 461: 315-315, 2009.
38. Wislar J. "Prevalence of Honorary and Ghost Authorship in 6 General Medical Journals, 2008." *International Congress on Peer Review and Biomedical Publication*, Vancouver, BC, Canada, 2009.
39. Zinner D. "Participation of academic scientists in relationships with industry." *Health Aff* 28: 1814-1825, 2009. ❖

This month I thought I would give you a high level view of how the APS is financed. I think this can be useful not just for those who are interested in the Society's well-being, but also for those who are curious about how APS maintains its many programs. Recall that my prior message described the APS staff and how the APS is organized into functional departments. It is no surprise that the bulk of the budget is associated with those departments.

The APS is registered as a 501(c) 3 organization. That is IRS-ese for non-profit. We are not in business to make a profit or be traded on any stock market. But we have to take care of ourselves. We operate financially fundamentally like a family – we have “checking” and “savings” accounts. These, in concept, support our daily activities (annual budget) and constitute our savings accounts (reserves), respectively. I will describe each briefly now.

Annual budget

Our annual budget supports the daily activities, and in 2010 revenues approximated \$17.4 million. This total includes about \$16.1 million derived from several sources external to the APS itself and an additional \$1.3 million that comes from our reserves. You may well ask “why do we take from our reserves, and how much of our reserves is \$1.3 million?” The answer is that for about 15 years now, Council has authorized the annual use of four percent of our non-restricted long-term investments (“savings accounts”) to allow APS to do more for its members each year. In 2010, this reserve allocation amounted to about \$1.3 million. If you have not already figured it out, it means our non-restricted reserves are about \$30 million. More on that later.

This philosophy—using a portion of our reserves for the operating budget each year—deserves some discussion. It was not instigated as a method for covering insufficient revenues. It was a forward thinking, strategic move to enable the society to do more for its members in the face of a healthy reserve balance. Without it now, we would clearly have to cut back on some of our current programs. Thus, it enables us to do more than we could otherwise. Note that if our annual investment return were less than four percent, it means we would be reducing our reserves when we allocate four percent to the current budget. But if the

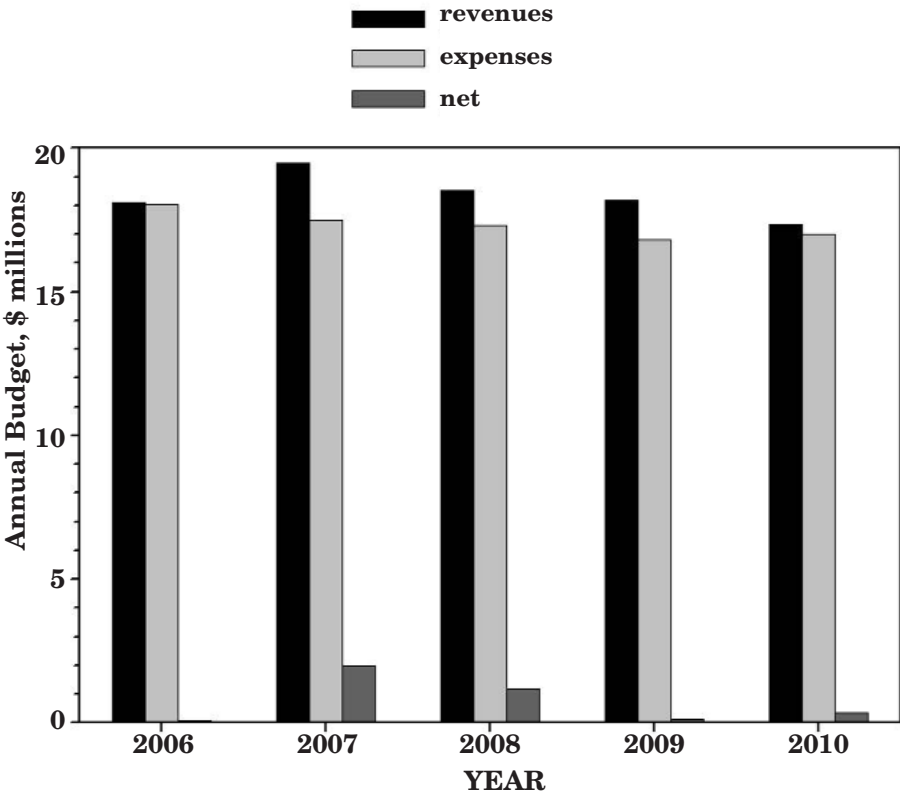


Figure 1: Annual APS budget for the past five years. The 2010 data are projected as of December 2010.

annual return is more than four percent, we can spend the four percent and still build our reserves at the same time. In 2010, the annual rate of return on our reserves has, at the time of writing, considerably exceeded four percent, so we are in good shape this year. However, in 2008 when things were dark, we chose to still spend four percent of our reserves (rather than cut our programs) and this, plus the weakening of the financial markets, led to a decrease in our reserves from which we are recovering well (see later when reserves are discussed in more detail).

The staff and Finance Committee together see to it that as each budget is developed in the fall for the ensuing year, it is projected as a balanced budget. Thus, revenues (including the allocation from reserves) and expenses are projected as essentially the same. That does not mean that at the end of the following year, we will have spent exactly what we earned - we may end up spending more or we may spend

less. Over each of the last five years, we have actually spent less: our year end budget has been positive, meaning that not all of the reserve allocation was, in the end, necessary. In 2010, based on current projections, there will be an excess of about \$350,000 or about two percent of the total 2010 budget. This means that instead of using about \$1.3 million from reserves as authorized by Council, we needed only about \$1 million. This outcome reflects a tradition of conservative budget projection when the budget is developed each year. Figure 1 shows our revenues and expenses over the past five years.

Our sources of revenue are interesting, and somewhat lopsided. Table 1 lists them in order of magnitude for

Table 1. Sources, Amounts, and Percentages of APS Revenue.

Revenue Source	Amount	% of total
Publications	14,035,000	80.9
Membership	981,000	5.6
Meetings	641,500	3.7
Education	384,500	2.2
Miscellaneous	45,500	0.3
Reserve Allocation	1,268,000	7.3
Totals	17,355,500	100

2010. We list them as “projected” because until the end of our fiscal year (December 31), they remain approximations. Writing this over the Holiday break, we are almost at year end, and so the numbers should be close.

You can see that the major source of revenue is our publications. We have a very strong publications program as you know, with 14 journals. Every year, Council instructs the Publications department to develop a budget that projects a 10% positive margin over its expenses, by setting subscription prices accordingly. That margin, plus the 4% allocation from reserves, is then used to support the other departments. Note also that membership dues account for less than 6% of the total.

Table 2 lists the 2010 expense projections of the seven units (actually, six departments, as Membership and Meetings are housed in one department) that can be thought of as providing programs. The revenues raised by each unit are also shown (numbers the same as in Table 1). There are three additional departments not listed (Information Technology, Business and Executive) that support the seven units and can be thought of as constituting the “F & A” base of the Society (or, in NIH parlance, indirect costs). Their expenses (\$666,000, \$967,500 and \$885,500 respectively) have already been distributed across and included in the seven units in the table. In other words, the total expenses of the Society in 2010 can be found from the sum of the expenses of the seven units in the table.

What Table 2 shows you is that all departments except Publications need net support above what revenues they raise themselves. This is the APS Council saying that the work of these departments is something to be invest-

ed in. If you add the numbers in the third column, you will see that the publications margin does not cover the costs of the other six units, which is where the \$1,268,000 allocation from reserves is applied. It is, therefore, the publications’ revenues and the reserve allocation, that, together with funds raised from other sources (Table 1), allow us to offer our scientific meetings, and our stellar programs in education and advocacy, marketing and communication.

Reserves

Our long term investments (“savings”) consist of both restricted endowments that must be used in specified ways for specific activities, as well as unrestricted reserves that could be used for any legitimate purpose Council directs. They are invested as a single pool, and together they total about \$40 million at the time of writing. A little over \$30 million or about 80% of this total is our unrestricted reserves that form the base from which the reserve allocation is taken to support the annual budget. The endowment portion funds many of our award programs, using in essence only the interest generated. Figure 2 shows the value of our total long term investment pool (unrestricted reserves plus endowed/restricted funds) and also the unrestricted portion over the last 5 years.

As you can see, it has been a rocky road. But note that even at its nadir, our invested funds had lost only 26% from their peak, a much better result than for example the S&P 500, which lost more than 38% in the same time. Indeed, we are almost back to our 2007 peak, which is a better result than the

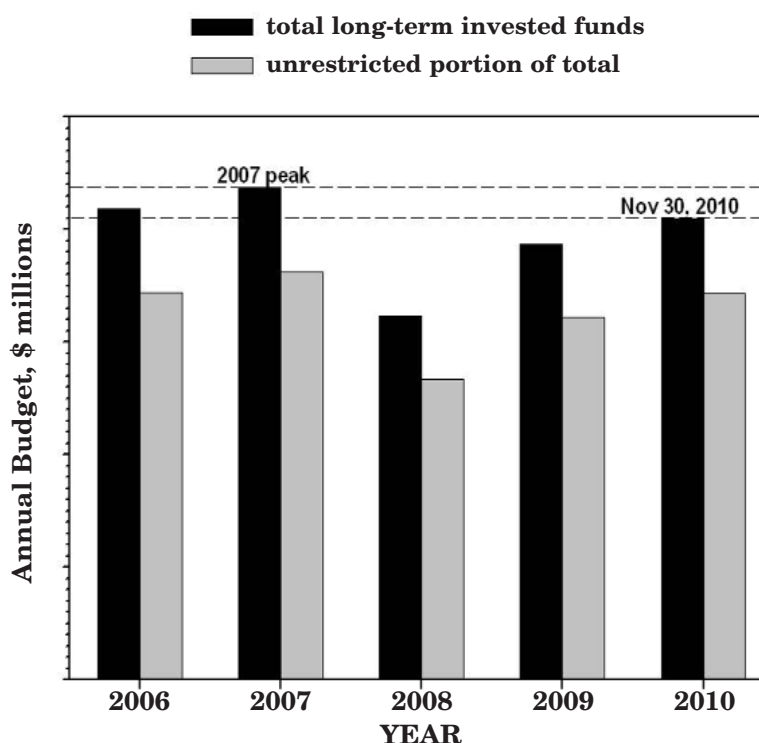


Figure 2: APS long term invested funds for the past five years. The 2010 data are as of November 30, 2010. The unrestricted portion is about 80% of the total, which includes endowments. We are back to about 95% of the 2007 peak values.

Table 2. 2010 APS Expense Projections.

APS Unit	Total expense	Revenues Raised	Revenues-Expenses
Publications	11,620,500	14,035,000	2,414,500
Membership	1,372,500	981,000	-391,500
Meetings	1,007,500	641,500	-366,000
Education	1,640,500	384,500	-1,256,000
Marketing	344,000	45,000	-299,000
Communications	393,000	0	-393,000
Science Policy	631,000	500	-630,500
Totals	17,009,000	16,087,500	-921,500
Reserve Allocation			1,268,000
Balance			346,500
(returned to reserves)			

stock markets. Remember that the Dow was at 14,000 back then and is about 11,500 now. You may ask why we fared better than the market. One reason was diversification—about 65% in stocks of various types and 35% in fixed income instruments. Probably more important was our explicitly conservative investment philosophy: willingness to give up the big but risky gains in order to be protected from heavy losses. And, we have first rate investment consultants to guide us.

The rule of thumb regarding reserves is that an organization should have 12

months of operating costs in accessible reserves. We are fortunate to have about double that amount, which is one reason why we feel confident in using 4% each year to support the programs from which our members benefit.

So, is APS currently financially strong? Absolutely. Is the future assured? Who knows. We have strong reserves, and a very well-established and respected journals program that continues to do well financially in spite of threats from the Open Access movement. APS lives within its means, is well-managed and professionally

advised financially, and has not posted a deficit budget in at least my memory (I have been on Council the past eight years) and actually much longer. That said, we are overly-dependent on one major source of revenue, and there are threats to that source as just mentioned. I can tell you this: the staff and leadership of the Society are ever vigilant about finances, and have been working on scenarios to cope with an Open Access world. I think we will be fine; I hope the same holds true for the NIH, NSF and the other funding agencies on which we all depend. ♦

A Matter of Opinion

The More Things Change ...

It seems like only yesterday that I wrote two editorials for *The Physiologist* that raised the possibility that NIH should consider reducing its salary contributions to faculty who serve as principal investigators on research grants (2, 3). In reality, the editorials were written over 20 years ago in response to the Gramm-Rudman-Hollings law that would result in the stagnation of the NIH budget, downward negotiation of grant budgets, and the plummeting of success rates.

As they say, the more things change, the more things stay the same!

Once again, the investigator community faces a similar situation. The excitement generated by the doubling of the NIH budget between 1997 and 2003 has been tempered by the grim realities of subsequent flat budgets and limited opportunities. The flat budgets have forced young people to extend their doctoral training and to take multiple postdoctoral positions. Academic institutions, facing the budget crunch, have been unable to add new faculty, diminishing opportunities for new investigators to develop their own independent academic research careers and discouraging many new scientists from pursuing academic research careers. As a result, the average age at which investigators receive their first independent NIH research grant is now 42 years, up from 34 years when I started as the APS Executive Director in 1985.

The editorials written over 20 years

ago generated little interest from outside of the APS community and the comments that were received were generally from individuals on soft-money academic positions. The editorials did not offer solutions but did raise some compelling questions. *"Should principal investigators, who are often full professors, receive 100% salary support from a grant? Should universities operate as motels, renting space to investigators with grant support and indirect costs? Are universities obliged to provide only token salary support to biomedical faculty while providing 9-10 months of salary in other academic departments?"*

As the research community faces a challenging period of flat federal budgets, this issue has again become a topic of discussion. Bruce Alberts, former President of the National Academies of Science and Editor-in-Chief of *Science*, editorialized about how academic institutions have overbuilt research capacity in response to incentives offered by the NIH (1). Specifically, he wrote that "NIH actually rewards institutions for paying faculty salaries with unguaranteed 'soft money' from research grants by providing increased overhead payments." In addition, he noted that overhead covers the depreciation costs associated with the new buildings constructed to house the faculty hired on these soft money research positions.

During the doubling of the NIH budget, we all marveled at the speculative building going on at most academic medical centers as new research

buildings were constructed with the expectation that the institution's faculty would be successful at securing research funding to help cover their own salaries, as well as assist in covering the depreciation costs of the new buildings. With the flattening of the NIH budget, the likelihood of success has been diminished, making it increasingly difficult to cover the depreciation portion of indirect costs and faculty salaries from research grants. The challenge for most institutions is how to provide the support needed for its faculty as they try and secure support from funding agencies. In a tight budget environment, many of the investigators searching for funding will find themselves moving to less research intensive institutions to maintain an academic affiliation or will leave academia entirely, a loss for science.

Twenty years ago, I suggested that the NIH no longer fund PI salaries, making them the responsibility of the academic institution. In so doing, additional funds would be made available to fund research grants to advance knowledge and develop treatments and cures for disease. Alberts' suggests that "at least half of the salary of each principal investigator be paid by his or her institution," recognizing that such a change would need to be phased in over at least a decade. He also suggested that NIH must make it clear "that expansion through laboratory building construction requires a substantial, non-reimbursable, long-term commit-

ment of resources, including 'hard-money' faculty support, by any institution that wants to increase its facilities and research staff."

Not surprisingly, the words of Bruce Alberts have generated considerable discussion. Indeed, when I accompanied the APS Presidents Wagner, Sieck and Granger and Science Policy Committee Chair, John Chatham in November to visit with NIH Directors, one of the first issues raised in our discussions with Sally Rockey, NIH Deputy Director for Extramural Research, related to Bruce Alberts editorial. We discussed our concerns about the fragility of the academic infrastructure as it tries to adapt to shrinking research budgets and declining clinical reimbursements, diminished institutional endowments, and reduced state tax revenues, noting that whatever changes are made, they will need to be made gradually. According to Rockey, the NIH is sufficiently concerned about the current situation that they are formulating plans for community meetings on the topic during 2011.

While Alberts' editorial calls for a commitment by institutions to increase their support for PI salaries, perhaps over the next decade, there is also the suggestion that an "overhead cost penalty could be introduced in proportion to an institution's fraction of soft money positions." Not surprisingly, this suggestion is not one that is likely to be

viewed favorably by administrative representatives of research institutions. They are concerned that the formula used to reimburse universities for the ancillary costs of conducting federally funded research on campus has remained unchanged for decades forcing institutions to use their own funds to fulfill the numerous mandates that have been added to their responsibilities as grant administrators. At a time of fixed budgets, increasing reimbursement for these overhead costs would result in less money for research grants, further diminishing success rates at NIH and making it even more difficult for young people to develop an independent research career.

It is clear that there is a need for dialogue between research scientists, academic administrators and federal funding agencies. There is a need to find a way to address the issue of diminishing federal and academic support for research. Can research administrators, bench scientists, and government officials devise a plan that recognizes the need to go slow in the process? If there is commitment to change, what are the possible scenarios? Town hall meetings, as suggested by Sally Rockey, might be one way to find a solution. However, Bruce Alberts has identified another possibility, one that would take time to implement and would require cooperation across many sectors of the academic community. Academic insti-

tutions would need to agree to increase their contribution to faculty salaries to 50% over a period of time, perhaps a decade or more, which would greatly increase funds available for research grants and increase success rates. At the same time, a portion of the available funds could be used to increase the government's contribution to indirect cost reimbursement, addressing the concerns raised by academic administrators. While increasing success rates is a noble outcome, Alberts' proposal fails to address a bigger problem, where will the remaining 50% of the PI's salary come from? That remains the big unknown, just as it did over 20 years ago. However, unless we discuss the issue, we will never be able to find a solution, a way to stabilize the vast biomedical research infrastructure created over the history of NIH. We need to find ways to accommodate change and that can only be accomplished with a willingness to compromise our positions. ❖

1. Alberts, B. Overbuilding Research Capacity. *Science* 329: 1257, 2010.
2. Frank, M. "A Question Worth Asking?" *The Physiologist* 32(5): 245-246, 1989.
3. Frank, M. "Effective March 1st." *The Physiologist* 29(2): 17-18, 1986.

Martin Frank

APS News

APS Council Holds Fall Council Meeting in Chantilly, VA

The APS Council held their fall meeting at the Westfields Marriott in Chantilly, VA November 4-5, 2010. Council received reports from the Publications, Finance, Membership, Education, and other Committees. APS staff members Marsha Matyas, Robert Price, Alice Ra'anani, and Rita Scheman joined the meeting to assist with the committee report presentations.

The Publications Committee reported that Peter Wagner, Univ. of California, San Diego, has been appointed as the next Editor of the

Journal of Applied Physiology. His term will begin in July 2011. In March of 2011, the Publications Committee will interview candidates for the editorship of *AJP Lung Cellular and Molecular Physiology* and for the *PRV* European Committee Chair for the term beginning January 1, 2012.

The Publications Department reported that the 2009 Journal Impact Factors for *PRV* was 37.7, which was ranked highest among all physiology journals (and one of the highest ranked among all biomedical journals, at 6th

place).

The Finance Committee presented Council with the projected final 2010 budget and the proposed 2011 budget, both of which were accepted and approved by Council.

The Conference Committee recommended that Council approve one conference proposal and one intersociety meeting proposal. The proposed conference is entitled "Physiology of Cardiovascular Disease: Gender Disparities," October 12-14, 2011, and is being organized by Jane Reckelhoff and

Christine Maric. The intersociety meeting is entitled "Integrated Biology of Exercise V," and is being organized by Darrel Neuffer for presentation in 2012. Council approved both proposals.

The Women in Physiology Committee recommended to Council that Douglas Eaton, Director, Center for Cell & Molecular Signaling, and Distinguished Professor and Chair, Department of Physiology, Emory Univ. Medical School, be selected as the 2011 Bodil Schmidt-Nielsen Distinguished Mentor Awardee. Council approved this recommendation and Eaton will receive his award at the EB11 meeting in Washington, D.C.

Based on a recommendation from the Daggs Award Committee, Council approved the selection of APS member Walter Boron, Case Western Reserve Univ., as the 2011 Daggs Awardee. He will receive his award at the 2011 APS Business Meeting on Tuesday, April 12 at EB11.

As many APS members are aware, APS Past President Dale Benos passed away suddenly in October. Because of his long-standing involvement with APS, the APS Council decided that the Society should find a way of honoring Benos. After much discussion, they

decided to rename the Early Career Professional Service Award to the Dale Benos Early Career Professional Service Award because Benos epitomized professional service not only to APS, but to his faculty and institution. This award is presented to an early career stage (graduate student, post-doctoral fellow, Assistant Professor or equivalent position) member of the Society who has made outstanding contributions to the physiology community and demonstrated dedication and commitment to furthering the broader goals of the physiology community. The awardee is selected by the Trainee Advisory Committee, and the award is presented the APS Business Meeting at the EB meeting.

Additional details of the Council's 2010 fall meeting will be presented to the membership at the 2011 APS Business Meeting. The Business Meeting will be held at EB11 on Tuesday, April 12, at 5:45 pm in the Washington DC Convention Center. All APS members are encouraged to attend.

Council Action Items

- Council approved the recommendations of the Finance Committee

accepting the 2010 estimated budget and approved the 2011 proposed budget.

- Council unanimously approved a motion to transfer 12 regular members to emeritus membership status.
- Council unanimously approved the selection of Walter Boron as the 2011 Daggs Awardee.
- Council unanimously approved the selection of Douglas Eaton as the 2011 Bodil Schmidt-Nielsen Awardee.
- Council unanimously approved the conference proposal entitled "Physiology of Cardiovascular Disease: Gender Disparities" for presentation in 2011.
- Council unanimously approved the intersociety conference proposal entitled "Integrated Biology of Exercise V" for presentation in 2012.
- Council unanimously approved providing support for a teaching workshop at the 2012 AAPS meeting in Alexandria, Egypt.
- Council unanimously approved efforts to hold a Pan-American Congress of Physiological Sciences in 2014. ❖



Front Row (seated): Pam Carmines, Gary Sieck, Peter Wagner, Joey Granger, Kim Barrett. **Back Row:** Jeff Sands, Ron Lynch, John Chatham, Usha Raj, Gordon Mitchell, Curt Sigmund, Alan Sved, Linda Samuelson, Thomas Pressley, Frank Powell, Ida Llewellyn-Smith, Ken Baldwin.

Association of Chairs of Departments of Physiology Meeting Highlights

The Association of Chairs of Departments of Physiology (ACDP) held its annual meeting at Hyatt Regency Coconut Point, Bonita Springs, FL on December 2-5, 2010.

President R. Clinton Webb (Medical College of Georgia) developed a program based on current cutting-edge research presentations and issues dealing with recruiting and retaining quality faculty, even in the age of departmental mergers.

The fourth Arthur Guyton Lectureship was given by Ferid Murad, 1998 Nobel Laureate (Brown Foundation Institute of Molecular Medicine for the Prevention of Human Diseases, Univ. of Texas Health Science Center, Houston) on "Discovery of Nitric Oxide and Cyclic GMP in Cell Signaling and Their Role in Drug Development." The new chair research presentation was by Nader Abraham (Univ. of Toledo) on "Antioxidants and Stem Cell Therapy: Sources, Cell Types and Clinical Applications." Other research presentations were given by Frank Werblin (Univ. of California, Berkley) on "The retina simplified" and R. Kevin Grigsby (AAMC) on "Kaolin-specific pica."

Presentations focusing on recruiting and retaining faculty were given by R. Kevin Grigsby (AAMC) entitled "A Strategy for Departmental Innovation: Driving Toward Sustainable Growth." In addition, JR Haywood (Michigan State Univ.), Barbara Sanborn (Colorado State Univ.), and Thomas Westfall (Saint Louis Univ.) jointly



ACDP President R. Clinton Webb, Past President Meredith Bond, and CAS Representative L. Gabriel Navar present Ferid Murad with the 4th Guyton Lectureship Award.

talked about the issues chairs face when dealing with a departmental merger from the perspectives of facing a merger, having just finished a merger, and having completed a merger several years ago, respectively.

Bishr Omary (Univ. of Michigan) led a discussion on "A proposal to increase the use of R56 awards by NIH." L. Gabriel Navar led working sessions for participants to review and revise sections of the ACDP/APS Medical Physiology Learning Objectives. A new revision is planned for 2011. Martin Frank, APS Executive Director, gave an update on APS activities and future plans.

Officer elections were held with the following results. Marshall (Chip) Montrose (Univ. of Cincinnati College of Medicine) was elected President-elect, Susan DeMesquita (American Univ. of the Caribbean School of Medicine) was elected Secretary-Treasurer, T. Richard Nichols (Georgia Institute of Technology) and Michael Sturek (Indiana Univ. School of Medicine) were elected to three-year terms as Councilors, and Bishr Omary (Univ. of Michigan Medical School) was elected to a one-year term as Councilor to finish out Chip Montrose's term. Meredith Bond (Univ. of Maryland School of Medicine) was elected as Council of Academic Societies (AAMC) Representative.

Bond was thanked for her service as Past President. Chris Cheeseman (Univ. of Alberta) was thanked for his service as Secretary-Treasurer, as was Steven R. Houser (Temple Univ. School of Medicine) for his service as Councilor.

President-elect Gary Sieck (Mayo Clinic College of Medicine) announced the 2011 ACDP annual fall meeting will be held at the Playacar Palace Resort in Cancun, Mexico on December 1-4, 2011. For more information on the 2011 meeting, see <http://www.acdponline.org/Meetings/2011fallmeeting.htm>. ♦



ACDP logo displayed in waterfall during opening reception.

Williams Honored at Annual ACDP Meeting

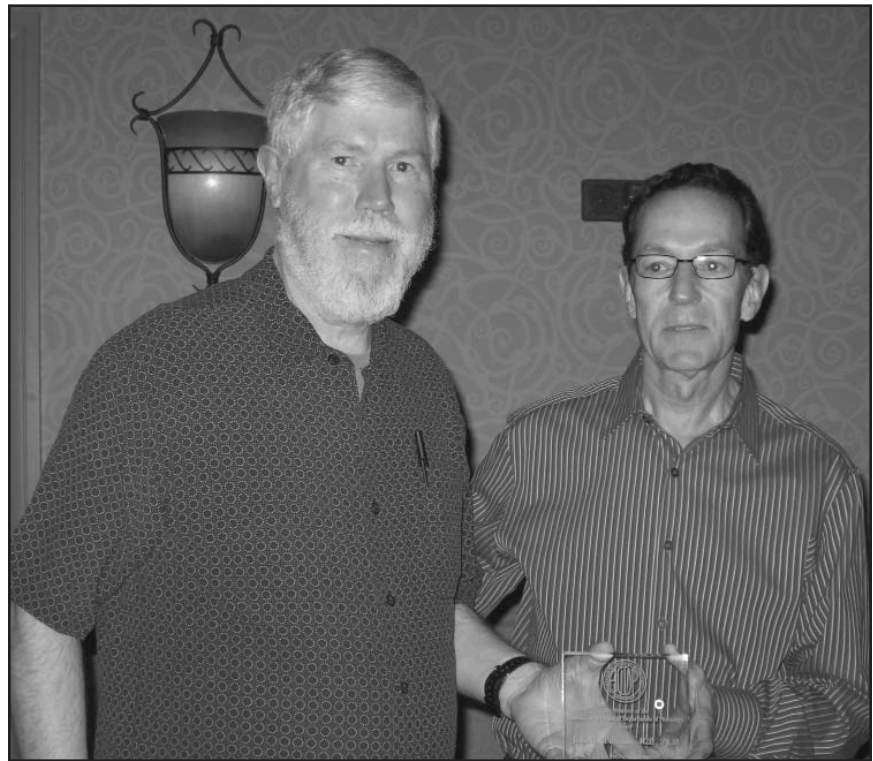
R. Clinton Webb (Medical College of Georgia), President of the Association of Chairs of Departments of Physiology (ACDP), presented the ACDP's highest award, the Distinguished Service Award, to John A. Williams, MD, PhD, former Chair, Department of Molecular and Integrative Physiology, Univ. of Michigan Medical School, during the organization's 2010 fall meeting in Bonita Springs, FL.

Williams was selected to receive the ACDP Distinguished Service Award for his long and illustrious service to ACDP, to science, and to physiology.

Williams received his medical and doctoral degree in Physiology & Biophysics from the Univ. of Washington in 1968. He then completed a one-year postdoctoral fellowship at the Univ. of Utah and served as a Staff Associate in the Clinical Endocrinology Branch of the National Institute of Arthritis and Metabolic Diseases from 1969-71. He continued his postdoctoral training as a Helen Hay Whitney Foundation Fellow in the Department of Pharmacology at the Univ. of Cambridge, United Kingdom and in 1973 joined the faculty at the Univ. of California, San Francisco. At UCSF he rose to the position of Professor and Vice-Chair of Physiology and Co-Director of the Laboratory of Cell Biology at Mount Zion Hospital.

He moved to the Univ. of Michigan (U-M) in 1987 as Professor and Chair of the Department of Physiology, and he received a secondary appointment as Professor of Internal Medicine in 1988. Williams served as department chair for 21 years before stepping down from this leadership position in 2008 to focus on his research and teaching activities. During his tenure, the department grew and thrived as shown by its recent high ranking in the NRC Assessment of Research Doctorate Programs.

Williams has been active in a number of scientific societies and served as President of the American Physiological Society and the American Pancreatic Association. He has



ACDP President R. Clinton Webb presents John A. Williams with the 2010 Distinguished Service Award.

received numerous awards, including the Gastrointestinal Section Prize of the American Physiological Society, the Ismar Boas Medal of the German Gastroenterological Association, and election as a fellow of the American Association for the Advancement of Science. He also was honored by the American Pancreatic Association with a Lifetime Achievement Award, received the U-M Distinguished Faculty Achievement Award in 2004, and a Distinguished Alumni award from Central Washington Univ. in 2009. In 2009 he was named the first the Horace W. Davenport Collegiate Professor of Physiology at the U-M.

His distinguished career has included training more than 70 students and fellows, many of whom have gone on to obtain key positions at prestigious academic and research institutions. His work has led to over 270 peer-reviewed papers in high-quality journals and more than 75 reviews and book chapters. He served as Editor of the *American Journal of Physiology: Gastrointestinal and Liver Physiology*,

Associate Editor for the *Journal of Clinical Investigation*, and Section Editor for the *Annual Review of Physiology*. Most recently, Williams was the founding editor of *The Pancreapedia*, an electronic knowledge base for the exocrine pancreas. He has served on two permanent NIH study sections and chaired one. He has been continuously funded by multiple grants since 1973 and one of his active grants has been awarded MERIT status by the National Institutes of Health. He also continues to serve as director of a Predoctoral Training Grant and as Associate Director of the Michigan Digestive Disease Center.

Because of his scientific endeavors; his dedicated service to the field of gastrointestinal and pancreatic physiology and physiology as a whole; and his distinguished service to APS, ACDP, and other scientific organizations, the ACDP was proud to present its 2010 Distinguished Service Award to John A. Williams. ❖

New Undergraduate Student Members

Forrest Andrew Brooks
Univ. of Colorado, Boulder
Allison Rae Bruhl
Colorado State Univ.
Colin Campbell
Univ. of California, Irvine

Mehria Sayad-Shah
Univ. of California, San Diego
Michelle Nicole Sullivan
Colorado State Univ.
Chi Yung Yuen
The Chinese Univ. of Hong Kong

Michael Jon Ziegele
Eldridge Lab, WI

New Graduate Student Members

Rushita Adhikari Bagchi
Univ. of Manitoba, Canada
Franke Aefiner
Ohio State Univ.
Tiffany Akins
Univ. of Wisconsin, Madison
Vance L. Albaugh
Penn State Univ. College of Med.
Asma Al Menhali
Univ. of Michigan
Kameswari Ananthakrishnan
Univ. of Arizona
Stan Andrisse
St. Louis Univ., MO
Joshua James Avila
Texas A&M Univ.
Priya Balasubramanian
Michigan State Univ.
Lital Bar Ilan
Hebrew Univ., Isreal
Greg Barton
Univ. of Wisconsin, Madison
Jacqueline Beaudry
York Univ., Canada
Virginie Bolduc
Montreal Heart Inst., Canada
Robert Eli Brainard
Univ. of Louisville, KY
Nelson Augusto Jardim Brügger
Univ. Fed Do Rio Grande Do Sul, Brazil
David Campbell
Univ. of Arizona College of Med.
Zana Ara Carver
Columbia Basin College, WA
Cheng-Hung Chen
Idaho State Univ.
Michelle E. Clement
Ohio State Univ.
Katie Colbert Coate
Vanderbilt Univ., Sch of Med., TN
Evangeline Wang Cornwell
Boston Univ., MA
Michael P. Craig
Univ. of Cincinnati Coll. of Med.
Mark Wayne Cunningham
Univ. of Florida
James Thomas Davis
California State Univ., Fullerton
Patrick Davis
Brigham Young Univ., UT
Shobhit Dhawan
Tytgat Inst., Netherlands

Alicia Diener
Univ. of Nebraska Med. Ctr.
Ajit S. Divakaruni
Univ. of Cambridge
Gaelle Doucet
UMR622, France
Anna D'Souza
York Univ., Canada
Jennifer J. Dupont
Univ. of Delaware
Michelle Eagle
Tulane Univ., LA
Erika Eliason
Univ. of British Columbia, Canada
Jennifer Emily Enns
Univ. of Manitoba, Canada
Kimberly Fairbrother
Appalachian State Univ., NC
Jonathan Fallica
Johns Hopkins Univ., MD
David Pual Ferguson
Texas A&M Univ.
Elfego Galvan
Univ. of Buffalo, NY
Zarine Garcia
Colorado State Univ.
Jamie Genthe
Med. College of Wisconsin
Alexandro Gianforcaro
York Univ., Canada
Adam G. Goodwill
West Virginia Univ.
Adam David Gracz
Univ. of North Carolina, Chapel Hill
Jennifer C. Guercio
Montclair State Univ., NJ
Justin Guilkey
Ball State Univ., IN
Nathaniel Hart
Univ. of Arizona
Lori I. Hatcher
Univ. of Nebraska Med. Ctr.
Heather E. Held
State Univ. of NY, Buffalo
Kimbell Louise Hetzler
Univ. of South Carolina
Derek Samuel Hill
Nottingham Univ., UK
Shannadora Hollis
Univ. of Maryland, Baltimore
Lily Huang
Tulane Univ., Sch. of Med., LA

Brent Humber
McMaster Univ., Canada
Rebecca Lynn Hutcheson
Univ. of South Alabama
Moon Hyon Hwang
Univ. of Florida
Poonam Jalswal
Univ. of Florida
Catherine Jarrett
Arizona State Univ.
Kyle Bruce Johnson
Michigan State Univ.
Memory Kashumba
Lincoln Memorial Univ., TN
Robert Arnold Larson
Michigan Technological Univ.
Sang-Rok Lee
The Florida State Univ.
Jiahua Li
Univ. of Southern California
Tinamarie Lieu
Johns Hopkins Med. Inst., MD
Andreia Lopes Da Silva
Sch. of Med. of Ribeirao Preto, USP
Rebecca E.K. Macpherson
Brock Univ., Canada
Isabelle Masseau
Univ. of Missouri
Ashley Ann McKinney
Western Michigan Univ.
John Nicholas Melvan
Louisiana State Univ., HSC
Megan Migchels
Univ. of Western Ontario
Naz Moaddab
Georgetown Univ., DC
Hoda Moazzen
Univ. of Western Ontario, Canada
Amit Modgil
North Dakota State Univ.
Colby Daniels Moore
Baylor Univ., TX
David Justin Moore
Penn State Univ.
Elizabeth Ann Moran
Univ. of Kansas Med. Ctr.
Jason M. Moreau
Univ. of Western Ontario
Fiona O'Connor
Univ. College Cork, Ireland
Melina Andrea Pagotto
IFISE, Argentina

Rupal Pandey
Univ. of South Carolina

Ashley J. Peckett
York Univ., Canada

Jeremiah Phelps
Michigan State Univ.

Chris Norman Poole
Univ. of Oklahoma

Rene Raphemot
Vanderbilt Univ., Sch. of Med., TN

Steve Ratchford
Univ. of Oregon

Robert Regenhart
Univ. of Florida

Jessica L. Retana
Colorado State Univ.

Tom Roeschel
Charite Univ. Hospital, Berlin, Germany

Evan Epstein Schick
Univ. of Toledo, OH

Vanessa V. Selwyn
New Mexico State Univ.

Young Ah Seo
Penn State Univ.

Gregory Shamitko
Tulane Univ. Sch. of Med., LA

Charu Shukla
Kent State Univ., OH

Alíue David Silva
Univ. of Sao Paulo, Brazil

Peter Istvan Sipos
Univ. of Manchester, UK

Christopher E. Slay
Univ. of California, Irvine

Ruben C. Sloan
East Carolina Univ., NC

Alexandra Soto-Pina
Univ. of Texas HSC, San Antonio

Jeremy Ezra Springer
Dalhousie Univ., Canada

Mitchel R. Stacy
Univ. of Toledo, OH

Robert Alan Standley
Ball State Univ., IN

Anna Elizabeth Stanhewicz
Penn State Univ.

Madhan Subramanian
Michigan State Univ.

Siddharth Sukumaran
SUNY, Buffalo, NY

Ryo Takagi
Kobe Univ., Japan

Elton Taylor
Lincoln Memorial Univ., TN

Leslie Charles Thompson
East Carolina Univ., NC

Miranda Udem
Ball State Univ., IN

Chia-Ling Wu
Boston Univ., MA

Maddalena Alessandra Wu
Univ. of Milan, Italy

Tao Xing
Macquarie Univ., Australia

Sheng Yi
Kansas State Univ.

Samet Serdar Yildirim
Ankara Univ., Sch. of Med., Turkey

Emily Young
Univ. of Mississippi Med. Ctr.

New Affiliate Members

Louis William Kutcher
Univ. of Cincinnati, OH

Michael Anthony Suniga
N30 Pharmaceuticals, Boulder, CO

APS Supports Local and Regional Science Fairs

Would you like to be a science fair judge
at your local school and present an APS award?



Each year the APS sponsors awards at local and regional science fairs on a first come, first serve basis. The APS awardee receives an APS t-shirt, pin, and a Certificate of Achievement for the best physiology-related project. The student's teacher receives a copy of the APS book, *Women Life Scientists: Past, Present, and Future* and an APS teacher resource packet. Any APS member who participates as a judge in a local or regional science fair at an elementary, middle, or high school is eligible to apply and receive APS support for one award per year.

To request an award package, visit the APS Science Fair website or contact Scarlett Whitsett (swhitsett@the-aps.org) at the APS Education Office.

www.the-aps.org/education/sciencefair

APS Presents Awards at the Annual Biomedical Research Conference for Minority Students

The APS presented awards to minority undergraduate researchers and was a major conference sponsor at the Annual Biomedical Research Conference for Minority Students (ABRCMS) at the Charlotte Convention Center in Charlotte, NC from November 10-13, 2010. ABRCMS is a national conference designed to facilitate increased minority involvement in biomedical and behavioral science careers. This four-day conference encompassed scientific presentations, professional development workshops, poster and oral presentations, and numerous networking opportunities with faculty and administrators from graduate schools, government agencies, scientific societies and foundations.

ABRCMS, the largest professional event of its kind in the nation, is designed to encourage underrepresented minority students to pursue advanced training in the biomedical and behavioral sciences, including mathematics; it also provides faculty with resources for facilitating these students' success.

The four-day conference recorded its highest participation numbers ever in 2010. More than 3,200 people attended, including approximately 2,000 students, 600 faculty and program directors, and 500 recruiters for graduate and summer research programs. Of the attendees, more than 1,400 students participated in poster and oral presentations in 10 sub-disciplines of the biomedical and behavioral sciences. All undergraduate student presentations were judged in a rigorous competition, and the students with the highest scores in each scientific discipline and for each educational level received monetary awards.

The APS, represented by Brooke Bruthers, APS Minority Programs Coordinator, and 2010-2011 APS K-12 Minority Outreach Fellows, Jessica Ibarra, Univ. of Texas Health Sciences Center, San Antonio, was pleased to present \$2,500 in awards to eight undergraduate students for the best oral and poster presentations in the physiological sciences. Students also received a complimentary one-year print subscription to the APS journal, *Physiology*, and an APS denim shirt. Awardees were added to the APS Minority Physiologists Listserv. Nineteen judges, including APS members, Eric Bennett, Univ. of South Florida; Vondolee Delgado-Nixon, Ohio State Univ.; Latanya Hammonds-Odie (co-chair), Georgia Gwinnett College; Rebecca Hasson, Univ. of California, San Francisco; Jessica M. Ibarra, Univ. of Texas HSC, San Antonio; Elsa Mangiarua, Marshall Univ. School of Medicine; Trudy Moore-Harrison, Univ. of North Carolina, Charlotte; Mohammad Newaz, Chicago State Univ.; Thomas Pressley, Texas Tech Univ. HSC; Thomas Schmidt, Univ. of Iowa; Monte Willis, Univ. of North Carolina; and Zivar Yousefipour, Texas Southern Univ., selected the winners:

Oral Presentations

Zakiya Qualls, Howard Univ.; and Quentin Wilson, Tuskegee Univ.

Poster Presentations

Olubusayo Awe, Morehouse College; Ashley Bauer, Univ. of Minnesota Med. School, Duluth; U'Kevia Bell, Prairie View A&M Univ.; Katiria Flores, Univ. of Puerto Rico, Mayagüez; Elaine

Garcia, Univ. of California, Davis; Porsha Howell, New Mexico State Univ.; Wana Mathieu, Univ. of Arizona; and Breanne Wright, Univ. of Maryland, Baltimore County.

The APS congratulates the students on a job well done and wishes them the best in their academic pursuits.

Finally, the APS Education Office sponsored an exhibit booth, highlighting the following awards, programs and resources for minority groups underrepresented in science:

- APS/NIDDK Minority Travel Fellowship which provides funds to attend Experimental Biology and the fall APS conferences;
- Undergraduate Summer Research Fellowships which support full-time undergraduate students to work in the laboratory of an APS member;
- Porter Physiology Fellowship Program which supports minority students pursuing full-time studies toward a PhD in the physiological sciences;
- Professional Skills Training Courses which promote the development of key skills among graduate and postdoctoral students by creating effective live and online courses that are appropriate for students in any life science discipline; and
- APS Minority Listserv which provides information on APS events, awards, grants, fellowships, science news, positions available and more.

For more information on these programs, go to http://www.the-aps.org/education/minority_prog/. The APS career brochure, career web site, Archive of Teaching Resources, Facebook fan page, membership for students, MentorNet, and Experimental Biology 2011 also were highlighted at the exhibit.

Formerly known as the MARC/MBRS Symposium, this conference is sponsored by the National Institute of General Medical Sciences (NIGMS), Division of Minority Opportunities in Research Program (MORE) and managed by the American Society for Microbiology (ASM). For more information see <http://www.abrcms.org>. For more information regarding the awards, programs and fellowships administered by the APS Education Office, please visit <http://www.the-aps.org/education/index.htm> or contact the office at education@the-aps.org or 301-634-7132. ❖



Jessica Ibarra (top right) with ABRCMS presentation awardees.

Highlights of the 2010 USA Science & Engineering Festival

More than 500,000 people attended the 2010 USA Science & Engineering Festival on the US National Mall and surrounding facilities in Washington, DC during the weekend of October 23-24, 2010. The APS Exhibit Booth was in the Mellon Auditorium located on

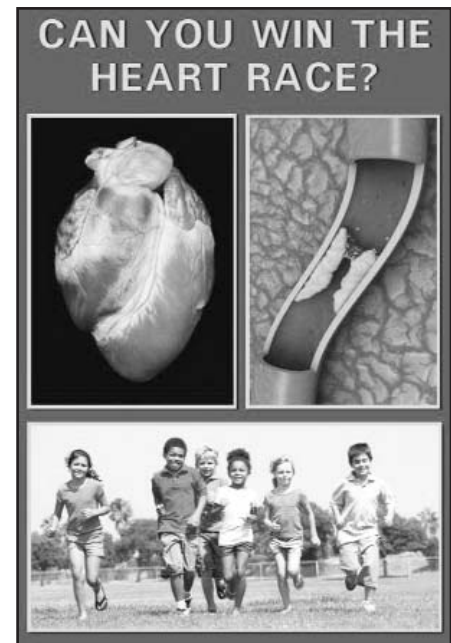
Freedom Plaza on Constitution Avenue. Six APS members were divided into morning and afternoon shifts, and engaged visitors with hands-on activities at the booth: they were: *APS Education Committee Members*: Thomas Pressley, Texas Tech Univ.



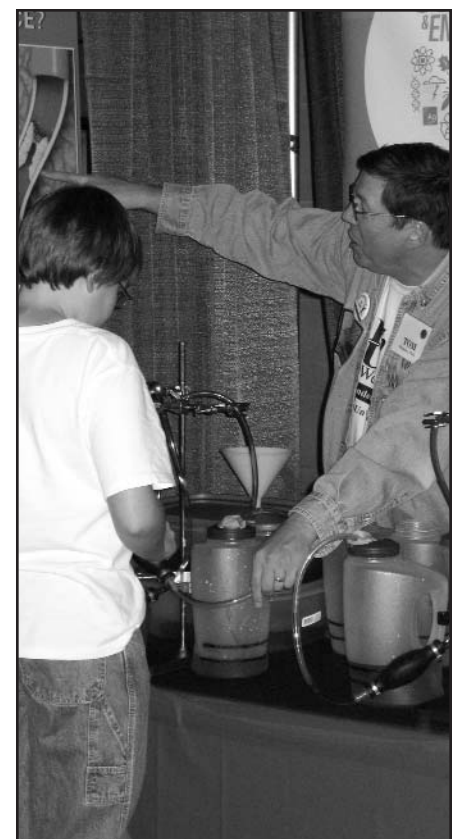
The APS Exhibit Booth team, left to right: Mel Limson, TanYa Gwathmey, Thomas Pressley, Clintoria Richards Williams, Rudy Ortiz, Jodie Krontiris-Litowitz, Miranda Byse, and Marsha Matyas. Not pictured: Mesia Moore Steed.



Clintoria Richards Williams guides a group of young girls into thinking about solving a problem with the circulatory system.



The sign that provided context for the Healthy Heart Pumping Race.



Thomas Pressley, Chair of the APS Education Committee, demonstrates blood flow by using the model and illustration.



A young kid enjoying the experience of pumping fluids through tubing with or without a constriction, modeling a diseased or normal circulatory system.



Rudy Ortiz engages a set of twins to feel how fat (vegetable shortening) and feathers (bubble wrap) can provide warmth from ice cold buckets of water.

HSC; Johanna Krontiris-Litowitz, Youngstown State Univ.; *APS Early Career Professional Service Awardee*: Rudy Ortiz, Univ. of California, Merced; *APS K-12 Outreach Fellows*: TanYa Gwathmey, Wake Forest Univ.; Mesia Moore Steed, Wake Forest Univ.; and Clintoria Richards Williams, Emory Univ.

A demographic and ethnic diversity of visitors to the APS Exhibit Booth

included young and old adult individuals, parent-child or family groups, and groups of young children and adolescents. There was a steady and constant flow of guests engaging in both APS booth activities on the "Healthy Heart Race" and a demonstration on insulation using fat, feathers, and skin in cold water.

The "Healthy Heart Pumping Race" engaged participants to understand a

model of blood flow and the effects of unhealthy diets and lack of exercise. The model was constructed with a unidirectional marine gas pump and tubing that circulated fluid (water with red food coloring) from a reservoir into a graduated jug. When the tube was clamped to demonstrate clogged arteries, the pump was more difficult to squeeze and the time to fill the jug was longer.



Marsha Lakes Matyas, APS Director of Education, engages attendees with the newly developed Physiology Clever Catch Ball, available at the APS Online Store.



Jodie Krontiris-Litowitz explains insulation to two young children while they observe the polar bear and bird photographs.

A model of insulation attracted participants to feel the differences of protection from ice cold water with fat, feathers, and skin. Fat was simulated with vegetable shortening, while feathers were represented by bubble wrap, and skin served as the control in a bucket of ice water. Each model system was fashioned like a double-gloved system with sealed plastic zippie bags. Participants were captivated with the demonstration and led to discussions on adaptations in different animals (polar bears, birds, and humans).

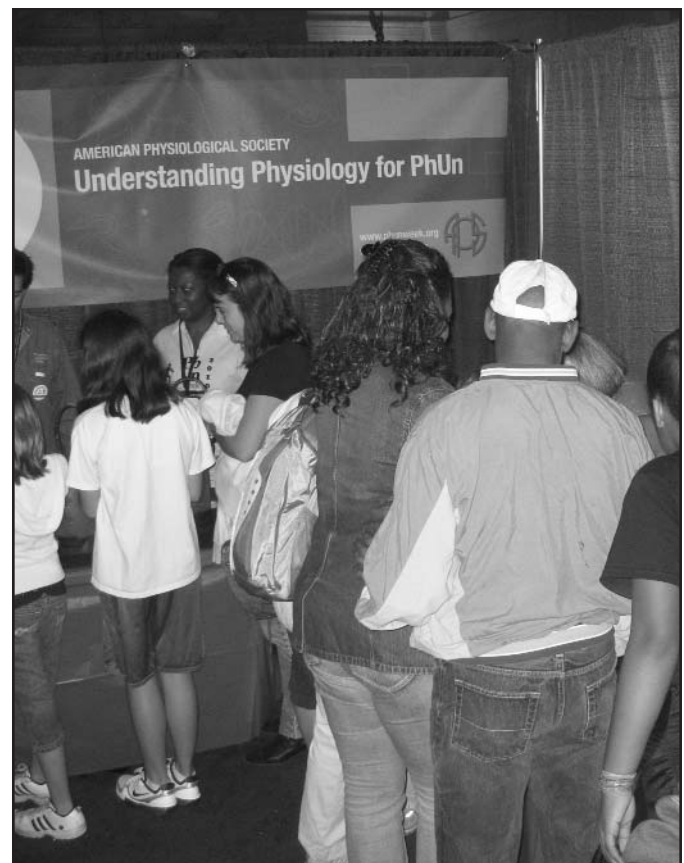
The new APS Physiology Clever Catch Ball debuted during the Festival weekend. Initially based on the Anatomy Clever Catch Ball, physiology content questions and answers were developed by the APS Education Committee. Sales are available through the APS Online Store. The inflated beach ball with questions is tossed among a group of people or an individual. The question upon which the left thumb lands when the ball is caught is the question to be answered by the individual. The teaching tool is an engaging and fun way to introduce concepts and discussions on physiological systems. ❖



Mesia Moore Steed shares the Phizzy the Physiologist Bear postcard for a related online experiment with a group of young boys.



A sign with photos of polar bears and birds with a stimulating question on thermal insulation.



An estimated 2,500 guests passed through the APS Exhibit Booth over the course of two days.

APS Archive of Teaching Resources Thanks its 2010 Reviewers

The APS Archive of Teaching Resources would like to thank the following members for serving as reviewers of undergraduate/graduate/professionals items for the 2010 Fall Review Cycle: Robert Augustyniak, Maureen Basha, Mitsi Blount, and Kristen Mitchell. Thanks to their efforts, the following twelve items were accepted into the Archive:

Acidosis: Metabolic & Respiratory Hypertension (Case Study)

John Dietz

Acidosis: Respiratory (Case Study)

John Dietz

Case Study - "While you were sleeping..."

Jeanette Hafey

Fluid Retention following the MAZE surgical procedure (Case Study)

John Dietz and Charles Preuss

Hyponatremia (Case Study)

John Dietz

Low-grade Inflammation and Exercise (PowerPoint)

Wren McLaughlin and

Lorrie Brilla

Muscle Spindle Physiology Lecture and Referee Analogy (PowerPoint)

Lorrie Brilla

Nuclear Structure and Chromosome Evolution (PowerPoint)

Lindsay Shopland

Polyuria & Polydipsia (Case Study)

John Dietz

Physiology of the Kidneys, Body Fluids and Acid-Base Balance (Case Study)

John Dietz

Weakness and Hypotension (Case Study)

John Dietz

Additionally, the Archive would like to thank the following members for reviewing K-12 classroom activities developed by participants in the APS Frontiers in Physiology program: Rob Carroll, Erik Henriksen, Robert Hester, Thomas Pressley, Thomas Schmidt, Dexter Speck, and Chris Woodman. Thanks to their efforts, forty-six items were reviewed for the Archive.

To view and comment on these newly accepted items, visit the APS Archive of Teaching Resources at <http://www.apsarchive.org>. ❖

New Community is Coming to the APS Archive of Teaching Resources

The APS Archive of Teaching Resources (<http://www.apsarchive.org>) was recently awarded a three-year grant from the National Science Foundation to create an Archive Community of Practice (Marsha Lakes Matyas, Director of Education Programs, Co-PI).

The Archive Community of Practice will provide a forum where educators not only contribute and share teaching materials, but also provide feedback, ratings, and recommendations of sets of Archive materials that they have used.

Be on the lookout for upcoming changes to the Archive and the addi-

tion of resources from our new partners: American Association of Anatomists (AAA), Massachusetts Society for Medical Research (MSMR), and Northwest Association for Biomedical Research (NWABR). ❖

Mentoring Forum

Dual Science Couples and Being a New Faculty Member

Angela J. Grippo
Northern Illinois Univ.

I am employed at a large university whose mission includes a strong value on research, as well as teaching of graduate and undergraduate students. I am part of a dual-career couple. My husband and I met during graduate school, and we have been together for 11 years (married for 6½ years). We do not yet have children. Currently, my husband and I work in the same department; he began his position three years before I was hired into my current position. As a dual-career couple, we have encountered challenges and have learned several important lessons. Below are some lessons I have learned throughout the process of looking for jobs in academia and working at a research- and teach-



Angela J. Grippo

ing-focused institution.

Lesson 1: Decisions are best made together. This lesson might sound obvious, as all relationships involve compromises and sacrifices. However, being a dual-career couple comes with inherent challenges, especially when one person is considering a particular opportunity to advance his or her career. I have found that the best way to approach these opportunities is to discuss all of the pros and cons together and consider how the decision will affect not only both of your careers, but also your relationship in general.

Lesson 2: The academic world is a small world. A difficult challenge

for dual-career couples looking for jobs is determining when to discuss with potential employers the fact that they have a spouse in academia. I don't think there is an easy solution to this challenge, and each situation may need to be assessed on an individual basis. However, a consistent theme I learned through applying for jobs is that there are very few degrees of separation among academics. Oftentimes, someone who I thought was a stranger actually knew someone who knew one of us, or someone who had trained one of us, and so forth. The good news is that one can use this information to his/her advantage while searching for jobs. As an example, when my husband or I applied for a job in a particular city, we (or sometimes one of our mentors) contacted individuals who were located nearby or otherwise had an association with the institution, explained our situation, included our CVs, and asked if they knew of any potential opportunities that might be relevant to our situation. Although this approach might not feel appropriate for everyone, we found this to be a more effective way to learn about potential job opportunities than waiting for "the right time" to announce that one of us had a spouse during the job negotiation process.

Lesson 3: Having one's own identity is an asset. Given that my husband and I work in the same department, there are several opportunities for us to interact on a daily basis. When I accepted my current position, we decided together that we would function independently at work – and we would make a concerted effort to each keep our own identities. For example, we do not regularly sit next to each other at meetings, eat lunch together, or socialize in each other's offices. Additionally, although we have published one article together prior to working at the same institution, we decided that it would be most appropriate if we did not collaborate on projects together while each of us is working toward achieving tenure. Given that a conflict of interest can involve not only an actual conflict but also a perceived conflict, we find that keeping clear individual identities conveys a level of appropriate professionalism to our students, colleagues, and administrators.

Lesson 4: A teamwork-focused lab is a happy lab. My husband and I are a team at home, and my laboratory is a team at work. I have learned in my first few years as an Assistant Professor that the members of my laboratory are productive and focused because we work together as a team. I strive for a laboratory culture that includes clear goals for conducting research, transparency about the responsibilities of the lab members, and a team-oriented approach where more advanced lab members can serve as unofficial mentors to junior lab members. Individual lab members may have specific priorities in terms of the research projects that are being carried out (e.g., a graduate student working on a Master's project, a postdoc working on an independently designed series of studies); however, these projects often include additional researchers participating at various levels. I see several benefits to this approach, the first and foremost being that the members of my lab know they have a social support network in place for when someone has a question or needs assistance. Another benefit is that the members of my lab know that they do not have to "compete" for time, resources, or my attention and instead can focus their efforts on getting things done. Of course, inherent in this approach is ensuring that all members of a project know what is required to earn credit (e.g., authorship on an article or abstract) and keeping track of individual effort so that appropriate credit can be given to all members who have earned it.

Lesson 5: Individual lab members need individual mentoring styles. While I attempt to keep consistency in my lab in certain contexts

(such as a teamwork-oriented culture and a systematic approach to giving authorship), I also strive to consider the individual needs of my lab members. For instance, currently in my laboratory there is one postdoctoral fellow, two graduate students (one advanced student and one who is new this year), and several undergraduate volunteers with various goals of applying to graduate school or entering the job market. I ask many of my students to complete a SWOT Analysis (Strengths, Weaknesses, Opportunities, and Threats) within the first month of entering my lab, which encourages the individual to self-reflect on his/her abilities and goals. (Incidentally, I first learned about the concept of a SWOT Analysis from the APS, which uses them regularly for long-term strategic planning and periodic evaluation of committees). I have adapted APS's SWOT Analysis to determine an individualized mentoring plan for each member of my laboratory. In addition, I ask each person to evaluate him/herself at the end of each academic term in the context of research productivity and career progress (reflecting back on the initial SWOT Analysis and the previous term). I have found that this strategy is working thus far to help me tailor my mentoring style to each individual's strengths, weaknesses, motivations, and goals.

I think the most important lesson I have learned by being part of a dual-career couple is that although it has its challenges, it is also fun! Flexibility and an open mind are qualities that I have tried to capitalize on throughout my career. Finally, I feel that keeping everything in perspective—including work, life, and relationships—is a good strategy when it comes to making tough decisions. ❖

Angela Grippo's research is focused on interactions among stress, emotion, and the cardiovascular system. She uses animal models and integrative research methods to investigate mechanisms underlying the bidirectional link between mood disorders and cardiovascular disease. She teaches courses in biological psychology, as well as psychopharmacology.

Grippo received a BS in psychology from Drake University,

and a MA and PhD in psychology (behavioral neuroscience) from the Univ. of Iowa. She then completed two postdoctoral fellowships, at Loyola Univ. Medical Center and at the Univ. of Illinois at Chicago. Currently, she is an Assistant Professor of Psychology at Northern Illinois Univ., where she supervises both graduate and undergraduate students and has funding from the National Institute of Mental Health. ❖

American Physiological Society Condemns Threats Against Researchers

In November 2010, UCLA primate researcher J. David Jentsch received a threatening letter from animal rights extremists. The letter, signed by the “Justice Department,” contained razor blades supposedly dipped in “AIDS blood.” In 1999, someone using the same name sent 88 letters containing razor blades—also supposedly dipped in HIV-infected blood—to other non-human primate researchers. Shortly after Jentsch received the threatening letter, the North American Animal Liberation Front Press Office posted a communiqué

from the so-called Justice Department, naming a trainee in his lab as a target and providing her home address.

Jentsch is a neuroscientist who studies mechanisms underlying cognition, impulse control, and decision making in vervet monkeys. He has been a target of animal rights extremist intimidation and harassment for several years. In 2009, when his car was fire-bombed in the driveway of his home, Jentsch chose to fight back by establishing an organization called Pro-Test for Science (<http://www.pro-test-for-science.org/>) that has held public demonstrations in support of animal research in 2009 and 2010.

Jentsch wrote a defiant open letter in which he described the mailing as an “amateurish attempt at instilling fear”

and “the latest in a series of psychological attacks by animal rights activists who have focused their attention on UCLA researchers.” His open letter is posted on the Speaking of Research website at <http://speakingofresearch.com/2010/11/19/open-letter-to-the-justice-department/>.

A number of organizations including the APS issued statements condemning the use of violence and threats against those involved in lawful and humane research involving animals. Others groups that issued statements include the American Veterinary Medical Association, Society for Neuroscience, American Association for Laboratory Animal Science, and the American Society of Primatologists. Philosopher Peter Singer, whose book *Animal Liberation* is considered to mark the founding of the modern animal rights movement, also decried the extremists’ action. Singer tweeted, “Ugh...How will this help animals? All it does is give the animal movement the worst possible image.”

The APS statement condemning threats against researchers may be found at <http://www.the-aps.org/pa/policy/animals/SupportofAnimalResearchers.htm>.

American Physiological Society Statement Condemning Threats Against Researchers

Since July 2006, a number of California researchers who conduct medical research utilizing animals have been the target of violent and threatening incidents directed towards them and their families. These incidents have included actual or attempted arson; home intrusion; criminal vandalism; and harassment such as aggressive home demonstrations by individuals wearing clothing that conceals their identities. The American Physiological Society condemns all acts of violence or intimidation against individuals engaged in legitimate scientific inquiries intended to advance knowledge and improve health.

The most recent such events took place in late November when a group of unidentified extremists sent a package containing razor blades and a threatening letter to UCLA neuroscientist David Jentsch. A claim was made that a similar package was sent to a graduate student in Jentsch’s lab, although the package has not actually been received.

Dr. Jentsch’s research is being conducted both lawfully and humanely with the objective of relieving human suffering. Jentsch is a professor of psychology and of psychiatry and bi-behavioral sciences. He utilizes vervet monkeys in research into genetic and neurochemical mechanisms that influence cognition, impulse control, and decision-making. The research, which

receives competitive funding from the National Institutes of Health, has provided important insights into biochemical processes related to how the brain stores and processes information. These insights are important in terms of understanding methamphetamine addiction and tobacco dependence among teens, along with cognitive disabilities that affect behavior, speech, and reasoning in patients with schizophrenia.

Dr. Jentsch is one of many scientists who have been harassed or threatened because they work with animals. Research involving animals plays an essential role in efforts to discover causes, preventions, treatments, and cures for disease. Knowledge obtained through research with animals has saved many lives and improved the quality of life for millions of people and animals. Scientists recognize that they have ethical duties both to relieve suffering through research as well as to provide humane care for research animals. Moreover, the use of animals in research is subject to strict regulatory oversight.

The American Physiological Society condemns extremist actions against researchers in the strongest possible terms: it is thuggery, pure and simple. Harassment, threats, and violence contribute nothing to the betterment of animal welfare, nor do they promote dialogue or thoughtful consideration of these serious issues.

APS Leadership Meets with NIH Officials

On Wednesday, November 3, 2010 APS President Peter Wagner, Past President Gary Sieck, President-elect Joey Granger, Science Policy Committee Chair John Chatham, and Executive Director Martin Frank met with officials at the National Institutes of Health to discuss APS priorities.

The APS leadership met with Dr. Sally Rockey, Director of the Office of Extramural Research, Dr. Story Landis, Director of the National Institute of Neurological Disorders and Stroke (NINDS), Dr. James Kiley, Director of the Division of Lung Diseases at the National Heart, Lung and Blood Institute (NHLBI), and Dr. Greg Germino, Deputy Director of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).

Discussion in several of the meetings focused on the importance of training the next generation of researchers. At the NHLBI, APS leadership conveyed specific concerns about the lack of sup-



APS President Peter Wagner, Past President Gary Sieck, President-elect Joey Granger, and Science Policy Committee Chair John Chatham in front of Building 1 at the National Institutes of Health.

port for individual pre-doctoral fellowships. There was also discussion about efforts to diversify the scientific workforce through programs designed to support underrepresented minorities during training. NIH officials expressed concern about the lack of progress in this area, citing the low numbers of minorities applying for R01 grants despite many years of efforts to increase diversity. The APS Minority Programs were highlighted, and the leadership encouraged the NIH to look more broadly at how to measure the success of diversity programs.

Declining success rates for R01 grant applications were a topic of discussion in many of the meetings. At the NINDS, Dr. Landis reported that they are working to support investigators and maintain the number of R01 grants by phasing out certain large projects to free up resources, and providing bridge funds when necessary. The APS leadership raised concerns at the NHLBI about the decision to use different paylines for A0

and A1 grant applications and the challenge that presents for investigators. An additional pressure for investigators at major research institutions is the requirement to support a large percentage of their salaries on research grants. Dr. Rockey referenced the recent Science editorial by Dr. Bruce Alberts (1) and noted the need to examine the current academic business model which encourages investigators to support the bulk of their own salaries with grant dollars.

Officials at both the NIDDK and NHLBI asked the APS for help in identifying Society members who are willing to participate in the peer review process. In the past the

APS has solicited volunteers for peer review service and submitted contact information to the NIH, and will continue to do so as necessary.

1. Alberts, B. Overbuilding Research Capacity. *Science* 329, 1257 (2010).

NIH Board Approves Plan to Create New Center

On December 7, 2010 the NIH Scientific Management Review Board met and voted to recommend the creation of a new Center to focus on translational research. The proposed Center will be called the National Center for Advancing Translational Sciences (NCATS) and will incorporate existing clinical research programs such as the Clinical and Translational Science Awards (CTSA), Therapeutics for Rare and Neglected Diseases (TRND), the Molecular Libraries Initiative and the newly created Cures Acceleration Network (CAN).

The NIH Reform Act of 2006 capped the number of NIH Institutes and Centers at the current 27, and, thus, the proposal for a new Center necessitates the elimination of one of the existing ICs. The current plan calls for the elimination of the National Center for Research Resources (NCRR), with the existing NCRR programs being dispersed either to the new NCATS or other ICs. The Board has requested a report on the impact of the reorganiza-



APS President Peter Wagner, Past President Gary Sieck, President-elect Joey Granger, and Science Policy Committee Chair John Chatham with Dr. Sally Rockey, NIH Deputy Director for Extramural Research.

tion to be completed before the next meeting in February.

The reorganization is slated to be completed on October 1, 2011, which is the start of fiscal year 2012. To read more about the plans and to provide your comments, see the NIH Feedback website: <http://feedback.nih.gov/>.

European Union to Implement New Animal Welfare Rules in 2013

On September 22, 2010, the European Union (EU) adopted a new set of requirements for the protection of animals in scientific procedures including those for research, education, and training. Directive 2010/63/EU was adopted by the European Parliament and the Council of the European Union after extensive negotiations and a lengthy approval process. It will go into effect on January 1, 2013.

Directive 2010/63 will have the greatest impact on scientists working in EU member nations, but it may also affect US scientists in EU-based pharmaceutical companies if they make global changes in procedure for reasons of comparability and consistency. In addition, the new Directive may affect scientists who collaborate with EU researchers or who want to publish their research in certain EU-based journals.

Directive 2010/63 replaces the 24-year-old Directive 86/609. Many improvements to laboratory animal welfare occurred since Directive 86/609 went into effect, and while some EU members had revised their national animal welfare laws during the interim, others had not. A new Directive was deemed necessary to eliminate these disparities.

The new Directive contains 60 substantive articles and eight annexes along with a preamble consisting of 56 paragraphs. Some sections of the preamble embody different points of view on the necessity for and desirability of research with animals. However, as noted by the UK advocacy group Understanding Animal Research, "The main legally-binding parts of the text are the 'articles' and 'annexes'" while the preamble is "intended to explain and justify the rest of the Directive." The significance of this distinction may become more apparent as the

Directive is incorporated into the laws, regulations, and/or administrative provisions of each member state. The process of incorporating the Directive into the laws of member states is called "transposition" and is supposed to be completed by November 10, 2012 so that the provisions of new Directive will enter into force in all member nations as of January 1, 2013.

Most animal welfare standards in the new Directive are similar to those prevailing in the US. However, methods for assuring compliance differ, and a few provisions exceed US requirements. For example, the Directive covers cephalopods, whereas in the US, research with invertebrates is not subject to government oversight. The use of wild-caught animals and stray or feral domestic animals is prohibited unless there is a scientific rationale why purpose-bred animals of the same species cannot be substituted. Translational or applied research with nonhuman primates is restricted to that intended prevent, diagnose, treat, or cure a health condition in humans. This restriction does not apply to basic research. Research with great apes such as chimpanzees is prohibited, except for research aimed at the preservation of the species. An exemption may be sought if there is an outbreak of a life-threatening disease for which no other research model would suffice. In addition, the Directive mandates the publication of a nontechnical summary of all animal research projects minus any trade secrets or information that could identify researchers or institutions. Evaluation of a research project to determine whether it is justified may integrate the opinion of independent parties.

A group of European scientists who met in Basel, Switzerland in November 2010 called upon their colleagues to rise to the challenges contained in the new Directive. (See related article on the Basel declaration calling for more trust, transparency and communication on animal research.)

For a link to the Directive, see <http://www.the-aps.org/pa/eudirective.htm>. For background, see http://www.understandinganimalresearch.org.uk/policy_issues/european_regulation.

International Scientists Commit to Advocate for Animal Research

November 29, 2010 top European scientists issued a declaration affirming their support for humane animal research and promising to engage policy makers and the public in a dialogue about its importance to medical discovery. The declaration was the product of a two-day scientific conference in Basel, Switzerland on challenges to animal research.

The document, called the Basel Declaration, sets high standards for animal welfare, emphasizes the value of continued research to both human and animal health, and stresses the importance of basic research as the foundation for applied research.

The declaration comes at a time of mounting challenges to animal research across Europe. Two recent court cases, one in Germany and one in Switzerland, have barred researchers from using primates in basic research, citing lack of imminent practical benefit from the work. More broadly, the European Union recently approved a new regulatory framework that will add new restrictions and place new requirements on the conduct of research (see previous article). The debates leading up to the new EU Directive revealed many misunderstandings about animal research. This has prompted some researchers to try to engage both policy makers and the public more directly. In addition to these challenges, researchers across Europe have faced an escalation of harassment by extremists. Most notably, in Switzerland last summer, animal rights extremists set fire to the vacation home of then-Novartis CEO, Daniel Vasella.

At its launch, over 50 life scientists from Germany and Switzerland had signed the Basel Declaration, making a commitment to increase public understanding of animal research. Now they are encouraging scientists around the world to sign on as well. The declaration list eight introductory points offering examples of research areas and health issues that still require scientific exploration (the very first of which is "many physiological processes") and reiterating the value of research to improving animal health and importance of basic research—which in par-

ticular has seen legal restrictions in Europe recently. It then lists ten "Fundamental Principles," the first seven of which are focused on upholding high animal welfare standards. The last three focus on improving dialogue with the public and lawmakers. Finally, it ends with eight action points to which signatories commit; these focus on improving how animal research is understood by the public, lawmakers, the media, and educators and condemning extremism.

You can download a PDF of the declaration or, if you choose, sign it here: <http://www.basel-declaration.org/>

Reference Handbook on Clinical Signs in Rodents and Rabbits Available

Charles River Laboratories, Inc. has published a reference handbook with practical information about normal and abnormal clinical conditions in laboratory rodents and rabbits. *The Handbook of Clinical Signs in Rodents and Rabbits* is intended to help research personnel, veterinarians, and laboratory animal care staff assess these animals. The book explains how to make and describe observations using clinically applicable terminology and measures. It contains descriptions

and images of both normal and abnormal clinical findings.

To obtain a complimentary copy, provide contact information and a mailing address to the Charles River Customer Support Center at askcharlesriver@crl.com or 1.877.274.8371. Multiple copies will be provided to institutions upon request. Spanish, French and Chinese versions of the handbook are expected to be available in 2011. ♦



Faith Wolfe, Executive Director of States United for Biomedical Research (SUBR), presents APS Director of Government Relations and Science Policy, Alice Ra'anán, with the 2010 SUBR Distinguished Service Award.



APS Director Martin Frank (left) and President Peter Wagner (right) stand with Alice Ra'anán (second from right) and SUBR Director Faith Wolfe (second from left) after the award ceremony.

FREE Necessary Color for Member Authors



Contact us today
The American Physiological Society
Tel: 301 634 7171
Fax: 301 634 7264
E-mail: members@the-aps.org
Web: www.the-aps.org

Regular or Student Members of the American Physiological Society (APS) who are first or last authors of articles in any of the APS research journals get **FREE scientifically necessary COLOR**.

These APS journals are listed below. If you are not yet an APS Member and are planning to submit a manuscript that requires color to any of these journals as a first or last author, then you need to apply for membership today in APS. We provide several convenient ways to apply for Membership. Just go to our web site and select your choice at: www.the-aps.org/membership/application.htm

The APS Research Journals

- American Journal of Physiology (AJP consolidated)
- AJP-Cell Physiology
- AJP-Endocrinology and Metabolism
- AJP-Gastrointestinal and Liver Physiology
- AJP-Heart and Circulatory Physiology
- AJP-Lung Cellular and Molecular Physiology
- AJP-Regulatory, Integrative and Comparative Physiology
- AJP-Renal Physiology
- Advances in Physiology Education
- Journal of Applied Physiology
- Journal of Neurophysiology
- Physiological Genomics

Saturday, April 9, 2011

Ballroom B	5:45-6:45 PM Physiology in Perspective: The Walter B. Cannon Memorial Lecture Bolli
Room 146A	1:00-3:00 PM <i>Workshop: Translational Research: A Primer for the Basic Scientist</i> Miller/Bairey Merz 3:15-5:15 PM <i>Workshop: Rodent Instrumentation</i> Knuepfer
Room 146B	2:00-5:15 PM <i>AFMR Workshop: Keys for Translation: Science and Strategy</i> Zucker
Room 146C	8:00 AM-12:00 NOON Refresher Course in Cell Physiology: Intracellular Signaling Pressley/Williams
Room 145A	9:00-11:30 AM Microcirculatory Society President's Symposium Zawieja 2:00-4:30 PM MCS Trainee Free Oral Communications Chakraborty
Room 147A	1:00-3:00 PM <i>Sci Policy Symp: How to Become and Advocate: A Workshop for Scientists</i> Talman/Haywood
Room 147B	12:45-2:45 PM <i>WEH Special Session: Vasopressin and the Neurohypophysis: An Old but Continuing Story. The Leonard Share Memorial Symposium</i> Stallone/Brooks 3:15-5:30 PM WEH Trainee Award Finalists Symposium TBD
Room 154A	3:00-5:00 PM <i>Communications Symp: Communicating Science as a New Career Path: Physiology Beyond the Lab</i> Hicks

Bowditch Award Lecture

The Bowditch Lectureship is awarded to a regular member, 42 years of age or younger (at the time of the 2011 lecture), for original and outstanding accomplishments in the field of physiology. Selected by the APS President, the recipient presents a lecture at the Experimental Biology meeting, which is considered for publication in the Society journal of their choosing. The recipient receives an honorarium of \$2,500, reimbursement of expenses incurred while participating in the Experimental Biology meeting, and a plaque. The membership is invited to submit nominations for the Bowditch Lecturer. A nomination shall be accompanied by a candidate's curriculum vitae and one letter detailing the individual's status, contributions, and potential.

More information on the award and nomination procedures are available at <http://www.the-aps.org>. Nominations should be submitted online at <http://www.the-aps.org/awardapps>.

Physiology in Perspective Walter B. Cannon Memorial Lecture

The Cannon Memorial Lecture, sponsored by the Grass Foundation, honors Walter B. Cannon, President of the Society from 1913-1916, and is presented annually at the spring meeting to an outstanding physiological scientist, domestic or foreign, as selected by the President-Elect with the consent of Council. The recipient presents a lecture on "Physiology in Perspective," addressing Cannon's concepts of "The Wisdom of the Body." The lecture is considered for publication in the Society journal of their choosing. The recipient receives an honorarium of \$4,000, a plaque, and reimbursement of expenses incurred in association with delivery of the lecture. The membership is invited to submit nominations for this lecture. A nomination shall be accompanied by a candidate's curriculum vitae and one letter detailing the individual's status and contributions.

More information on the award and nomination procedures are available at <http://www.the-aps.org>. Nominations should be submitted online at <http://www.the-aps.org/awardapps>.

Sunday, April 10, 2011

	8:00-10:00 AM	10:30 AM-12:30 PM	3:15-5:15 PM
Ballroom B	<i>Cross Sectional Symp:</i> Therapeutic Potential of the ACE2/Ang-(1-7)/MasR Axis in Disease Lazartigues/Sandberg	<i>AFMR Symp:</i> Angiotensin- Insulin Cross talk - A True Translational Story from Bedside to Bench Prabhakar/Folli	2:00-3:00 PM <i>CAMPS Section</i> Davson Lecture Brown 3:15-5:15 PM <i>Physiol InFocus: Molecular and Clinical Physiology in Human Disease.</i> Left Heart Failure: Molecular, Physiological and Clinical Integration McNally 5:45-6:45 PM Henry Pickering Bowditch Award Shimoda
Room 146A	<i>SEBM Symp:</i> Energy Metabolism and the Pathogenesis, Treatment and Prevention of Obesity and Diabetes Adamo/Kendall	10:30-11:30 AM <i>Teaching Section:</i> Bernard Lecture Rangachari	3:15-4:15 PM <i>WEH Section</i> Starling Lecture Sigmund
Room 146B	<i>CV Symp:</i> Salt, Angiotensin II, Superoxide, and Endothelial Function Lombard/Greene	<i>Renal Symp:</i> Cyclic Nucleotide Signaling in Water Homeostasis Blount	3:15-4:30 PM MCS Landis Award Lecture Davis 4:30-5:15 PM MCS Business Meeting <i>CAMPS Symp:</i> Epithelial Ion Channel Trafficking Butterworth/Staruschenko
Room 146C	<i>CV Symp:</i> Latest on the Potential of Stem Cell Therapy in Cardiovascular Diseases Raizada/Paton	<i>BMES Symp:</i> Stem Cell Mechanobiology Chien	
Room 145A	<i>Industry Symp:</i> Stem Cells in Physiology and Drug Discovery Alonso-Galicia/Watson	<i>Respiration FT:</i> Respiratory Control Disorders Fuller/Katz	<i>Endo/Metab Symp:</i> How Much do We Actually Know About the Function of Intracellular Signals in the Regulation of In Vivo Protein Metabolism and Muscle Plasticity? Atherton/Rennie
Room 145B	<i>Physiol Genomics FT:</i> Molecular Mechanism and Genetics of Hypertension Joe	<i>NCAR Symp:</i> Real Progress in Translational Cardiovascular Research to Treat Disease Paton/Machado	<i>NCAR FT:</i> Neural and Humoral Mechanisms in Human Hypertension Auchus/Vongpatanasin
Room 147A	<i>Publications Symp:</i> Publishing 101: Dos and Don'ts of Publishing in APS Journals Raff/Scherman	<i>WEH FT:</i> Hypertension: Mechanisms and Consequences Brands	Renal Section Young Investigator Award Featured Topic Fenton
Room 147B	<i>Hypoxia Symp:</i> Redox/Hypoxic Modulation of Neuronal and Synaptic Function Kline/Wilson	<i>CV Symp:</i> Matrix Metalloproteinases Induce Vasomotor Dysfunction in Inflammatory States Korthuis/Schmid-Schönbein	<i>Respiration Symp:</i> Peripheral: Central Chemoreceptor Interactions Dempsey/Guyenet
Room 154A	<i>Teaching FT:</i> Educational Use of Modeling and Simulation to Foster Learning of Physiology Pelaez	<i>Physiol Genomics Symp:</i> Intracrine Renin-angiotensin System: A New Paradigm in Cardiovascular and Renal Control Zhou	<i>CV Symp:</i> Circadian Clocks: Emerging Roles in the Cardiovascular System Chatham/Young
Room 154B	<i>J.Physiol. Symp:</i> Molecular Mechanisms Underlying Neurovascular Protection in Stroke Mann	<i>CV FT:</i> Inflammation, Oxidative Stress and Vascular Function Xiang/Naik	<i>CNS Symp:</i> New Frontiers in Thermoregulation Romanovsky
Room 155	<i>WEH FT 4/4:</i> Cardiovascular and Renal Homeostasis During Pregnancy and Pregnancy Complications Sasser/Masilamani	<i>CNS FT:</i> Forward Genetic Analysis of Nervous System Development and Function Gallo/LaMantia	<i>Teaching Symp:</i> Taking the Mystery out of Science Education Research Wenderoth

Monday, April 11, 2011

	8:00-10:00 AM	10:30 AM-12:30 PM	3:15-5:15 PM
Ballroom B	<i>Cross Sectional Symp: Gas Channels</i> Gros/ Boron	<i>Respiration Symp:</i> Sphingolipids in Lung Disease Uhlig/Spiegel	2:00-3:00 PM CV Section Berne Lecture Vatner 3:15-5:15 PM <i>Physiol InFocus: Molecular and Clinical Physiology in Human Disease.</i> Physiology and Genetics of Obesity: Molecular Discovery and Translational Research Lund
Room 146A	8:00-9:00 AM NCAR Ludwig Lecture Mark 9:00-10:00 AM <i>NCAR Minisym: Central Neural Regulation of Blood Pressure and Metabolism</i> Mark/Chapleau	10:30-11:30 AM Endo/Metab Section Berson Lecture Mantzoros	2:00-3:00 PM CNS Section Erlanger Lecture Swanson 3:15-5:15 PM Renal Section Gottschalk Lecture Garvin
Room 146B	<i>Respiration FT: Mesenchymal and Endothelial Progenitor Stem Cells: Novel Treatment Strategies for Lung Injury</i> Matthay/Bhattacharya	<i>Renal Symp: Molecular Imaging in Renal Physiology</i> Ortiz/Blaine	<i>Careers Symp: New Opportunities in Non-traditional Academic Positions</i> Cunningham/Imig
Room 146C	<i>CAMPS Symp: Ubiquitin and Ubiquitin-like Modifications that Regulate Ion Channels in Epithelial Cells</i> Kuman/Helms	<i>CNS Symp: Toward a Blueprint of CNS Circuits Controlling Body Weight: Dissecting the Neuronal Regulation of Food Intake and Energy Metabolism</i> Tschöp/Friedman	<i>AFMR Symp: Neurodegenerative Diseases: Pathogenesis and Treatment from Bench to Bedside</i> Reiss/Jeitner
Room 145A	<i>Physiol Genomics: Trainee Highlights in Physiological Genomics</i> Moreno/Zhuo/Andrade	<i>MCS Symp: Microcirculatory Society Young Investigator Symposium: Free Radical Biology in Microvascular Regulation and Angiogenesis</i> Tran/Goodwill	<i>CAMPS Symp: P2Y Receptors: Autocrine/Paracrine Regulators of Cell Physiology</i> Insel/Dubyak
Room 145B	<i>WEH FT: Hemodynamic and Inflammatory Alterations in Hypertension and Renal Disease</i> Mattson	NCAR Trainee Featured Topic Chapleau/Arnold	<i>NCAR Symp: Mechanisms of Peripheral and Autonomic Neuropathies</i> Obrosova/Yorek
Room 147A	<i>Renal FT: Gender Differences: Renal Physiology and Pathophysiology</i> Manigrasso/Maric	<i>WEH FT: Novel Renal and Extra-renal Mechanisms of Sodium and Water Homeostasis</i> Bie	<i>Respiration Symp: Pathobiology of Oxygen Exposure During Development: Bedside to Bench and Back to Bedside</i> Gauda/Halbower
Room 147B	<i>Teach Symp: Entering Medical Student Competencies and the MCAT Revision</i> Silverthorn/Galey, Jr.	<i>CAMPS FT: Redox Regulation of Mitochondrial Function in Health and Disease</i> Marcinek/Percival	<i>WEH Symp: Developmental Programming of Renal and Cardiovascular Disease in Adults</i> Alexander/Salazar
Room 154A	<i>Endo/Metab FT: Brain-Gut Interactions</i> Samson	<i>Hypoxia FT: Hypoxia-induced Gene Expression</i> Prabahakar/Powell	<i>CEPS Symp: What Fuel are You Burning? Comparative Physiology of Metabolic Substrate Utilization</i> Braun/Willis
Room 154B	<i>CV FT: Form and Function of Cellular Microdomains in the Vasculature</i> Isakson	<i>CV FT: Wigger's Award Featured Topic: Role of Stem/Progenitor Cells in Cardiovascular Pathophysiology and Therapy</i> Bolli	1:00-2:30 PM <i>EEP Special Session: The Physiological Legacy of Elsworth R. Buskirk</i> Pawelczyk/Korzick 3:15-5:15 PM <i>CV FT: Coupling Blood Flow to Metabolic Demand: New Insights and Perspectives</i> Segal
Room 155	<i>CNS FT: Multi-scale Modeling and Systems Biology of Synapses</i> Schwaber	<i>CEPT FT: Elucidating Nature's Solutions to Human Disease</i> Ortiz	<i>BMES Symp: Stem Cell Tissue Engineering</i> Gerecht

Tuesday, April 12, 2011

8:00-10:00 AM

10:30 AM-12:30 PM

3:15-5:15 PM

Ballroom B

Physiology InFocus: Molecular and Clinical Physiology in Human Disease. Translational Biology of the Renal Podocyte
Wiggins

5:45-7:00 PM
APS Business Meeting

Room 146A	8:00-9:00 AM: CEPS Section Krogh Lecture Kooyman 9:00-10:00 AM <i>CEPS Special Session: Grand Challenges in Organismal Biology: Comparative, Ecological and Evolutionary Physiology</i> Carey	10:30-11:30 AM Respiration Section Comroe Lecture Bhattacharya	2:00-3:00 PM Walter C. Randall Lecture on Biomedical Ethics Koocher 3:15-5:15 PM GI/Liver Section Davenport Lecture Madara
Room 146B	<i>Respiration FT: Multiscale Neuronal Control of Respiratory Function: Bridging Gene Networks to Neural Networks</i> Morris	<i>Endo/Metab Symp: Oxidants, immunity, beta cells and diabetes</i> Corbett/Matthews	<i>CV Symp: Linking Integrin Adhesion and Mechanotransduction to Myocardial Function</i> Muthuchamy/Meininger
Room 146C	<i>Phys Soc Symp: Emerging Cardiorespiratory Roles for Gasotransmitters</i> Moore/Peers	<i>Renal Symp: Renal Medullary Structure-Function Relationships</i> Pannabecker/Layton	2:00-3:00 PM EEP Section Adolph Lecture Joyner 3:15-5:15 PM <i>EEP Symp: Sympathetic and Endothelial Control of Muscle Blood Flow in Aging and Hypertension</i> Joyner/Saltin
Room 145A	<i>EEP FT: Performance Physiology in the Heat: New Concepts and Controversies</i> Cheuvront	<i>EEP FT: Role of Sex Hormones in Regulation of Physiological and Metabolic Function of Muscle</i> Spangenburg	<i>Respiration Symp: Molecular Diversity in the Regulation of Lung Tight Junctions</i> Koval/Kim
Room 145B	<i>NCAR FT: Renal Nerves: Their Role in Cardiovascular Disease</i> Zucker	<i>NCAR FT: Control of Sympathetic Nerve Activity: Coupling to Respiration</i> Wehrwein/Toney	<i>Endo/Metab Symp: Sex Difference Contributions to the Developmental Origins of Health and Disease</i> Nijland/Gilbert
Room 147A	<i>ETG FT: Regulation of Transporters and Modulatory Proteins, Lipids, and Hormones</i> McDonough	<i>ETG FT: Regulation of Water and Ion Channels and Modulatory Proteins, Lipids, and Hormones</i> Knepper	<i>ETG Symp: Myosins ESCRT Trafficking Across Epithelia</i> Levi/Blaine
Room 147B	<i>CAMPS FT: Ion Channels</i> Liedtke/Earley	<i>CAMPS FT: Ammonia Transport Processes</i> Worrell/Verlander	<i>CAMPS Symp: Electrolytes, Carbohydrates and Fats: Epithelial Cells Making and Delivering Milk</i> Schultz/Neville
Room 154A	<i>Endo/Metab FT: Brain-Adipocyte Interactions</i> Yosten	<i>GIL FT: New Insights on Roles of Extracellular Mediators in Intestinal Epithelial Restitution</i> Tan	<i>MBG Symp: Lipid Rafts and Skeletal Muscle Metabolism in Diabetes</i> Broznick/Elmendorf
Room 154B	<i>CV FT: Adaptation of the Microcirculation to Inflammatory Insult</i> Breslin	<i>CV FT: Fibroblast-cardiomyocyte Signaling</i> Dixon	<i>CEPS Symp: Cardiac pH Regulation</i> Warren/Shiels
Room 155	<i>Renal FT: Regulation of Distal Ion Transport: ENaC, ROMK</i> Butterworth/Edinger	<i>CEPS FT: Comparative Physiology of Brown Adipose Tissue</i> Klingenspor	<i>AFMR Symp: Vitamin D: Relevance in Infection, Inflammation, and Asthma</i> Freishtat

Wednesday, April 13, 2011

	8:00-10:00 AM	10:30 AM-12:30 PM	3:00-5:00 PM
Room 146A	<i>CV Symp: Mechanisms of Mitochondria-mediated Cardiovascular Dysfunction and the Application of Organelle-specific Therapies in the Metabolic Syndrome</i> Busija/Nguyen	<i>EEP Symp: Cardiovascular Consequences of Type 2 Diabetes on Exercise Capacity</i> Regensteiner/ Stewart	<i>Physiol InFocus: Molecular and Clinical Physiology in Human Disease. Idiopathic and Inheritable Pulmonary Arterial Hypertension (PAH): From Genes to Clinical State</i> Yuan
Room 146B	<i>Cross Sectional Symp: Understanding Blood Pressure Regulation Through Neural, Vascular, and Renal Specific Knockout/Knockdown Approaches</i> Pollock/Pollock	<i>Cross Sectional Symp: Role of microRNA in Cardiovascular System</i> Chien/Shyy	
Room 146C	<i>Women in Physiol Symp: Work/Life Balance: Every Choice Matters</i> Duckles/Lindsey	<i>Respiration Symp: Neural-glia Interactions in Central Respiratory Control and Spinal Plasticity</i> Nichols/Funk	
Room 145A	<i>EEP FT: Vascular Adaptation to Exercise in Atherosclerosis</i> Simmons/Padilla	<i>CV Symp: What Makes the Mitochondria a Killer?</i> Murphy/Steed	<i>Translational Physiol Symp: The Cardiac Sarcomere as a Therapeutic Target</i> Liles/Pitts
Room 145B	<i>Respiration FT: Pulmonary Vascular Permeability: Emerging Paradigms</i> Parthasarathi	<i>BMES Symp: Mechanobiology of Vascular Endothelium</i> Konstantopoulos	<i>CV FT: Angiogenesis, Arteriogenesis, and Muscle Function: Contributions of Animal Models to Understanding Peripheral Artery Disease</i> Unthank
Room 147A	<i>MBG FT: Mitochondrial Involvement in Sarcopenia: Do We Have More Questions than Answers?</i> Hepple	<i>MBG FT: Genetic and Molecular Influences on Skeletal Muscle Size and Strength</i> Hubal	<i>AFMR Symp: Mechanisms of Prostate Cancer Progression to the Castration-resistant State</i> Sharifi/McPhaul
Room 147B	<i>ALACF Symp: Central and Peripheral Aspects of Intermittent and Sustained Hypoxia</i> Machado/Iturriaga	<i>Trainee Symp: The Individual Development Plan: Plotting a Career Trajectory</i> Bates/Simmons	<i>EEP Symp: Autophagy in Skeletal Muscle</i> Yan
Room 154A	<i>GIL FT: Xenobiotic Transporters in the Liver</i> Hagenbuch	<i>GIL Symp: Membrane Trafficking and Secretion in Digestive Epithelia</i> Groblewski/Williams	<i>GIL Symp: Fetal/Neonatal Origins of GI Disease</i> Jacobson/Claud
Room 154B	<i>CV FT: ECM-Cardiomyocyte Signaling in Heart Disease</i> Sheikh/Borg	<i>History Symp: Balloons, Aeronauts and Mountain Tops: Contributions of Nathan Zuntz to High Altitude Physiology</i> Dean	<i>CV FT: Recent Concepts in Redox Signaling in the Cardiovascular System</i> Chilian
Room 155		<i>Respiration FT: Lung Physiology: TRP Channels in Lung Function and Disease</i> Townsley/Kuebler	

**Assistant/Associate Professor:
Animal Biology/Animal Cell
Biology/Animal Physiology:**

The Department of Biology at the Univ. of Regina invites applications for up to two tenure-track positions at the Assistant Professor or Associate Professor level, effective July 1, 2011. We are seeking animal biologists, animal cell biologists and/or physiologists to contribute to the newly established Nursing Program at the Univ. of Regina. Candidates must have a PhD and a productive research record, and must use state-of-the-art methods in their research program. Postdoctoral experience is an asset. The successful candidates will have a strong commitment to quality undergraduate and graduate teaching, academic excellence and the development of a vigorous, externally-funded research program. Start-up research funds will be provided. The primary teaching duties include first-year Nursing Program courses in human anatomy and physiology. Applicants are requested to submit a cover letter, CV, summary of research interests, summary of teaching interests and philosophy, three samples of research publications, and to arrange for three letters of reference. All documents except for the letters of reference should be submitted online via the Human Resources website (<https://urcareers.uregina.ca/appli->

[cants/jsp/shared/Welcome_css.jsp](https://urcareers.uregina.ca/appli-cants/jsp/shared/Welcome_css.jsp)).

Letters of reference should be sent to: Dr. Harold Weger, Head, Department of Biology, Univ. of Regina, Regina, SK, S4S 0A2 Canada (Fax: 306-337-2410; Tel.: 306-585-4479; Email harold.weger@uregina.ca). The closing date for applications is Feb. 28, 2011; review of applications will begin in January 2011. Further information about the Department, and further details about the positions, are available at: <http://www.uregina.ca/biology>. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. The Univ. of Regina is committed to achieving a representative workforce. Qualified diversity group members are encouraged to self identify on their application.

**Assistant Professor, Biological
Sciences, Full-Time, Tenure Track,**

2011 Fall Semester: Benedictine Univ. is a liberal arts institution located in the research corridor of metropolitan Chicago with nationally recognized programs in the sciences. The Univ. is in the midst of tremendous growth in the area of life sciences and, consistent with the Univ.'s vision statement, the institution is making a significant commitment of resources to support these programs. Position

Description: Academic Program Director for the Master's of Clinical Exercise Physiology program. Responsible for student recruitment, hiring, and teaching in the program. Establish and participate in externally-funded faculty/student research at the graduate level. Startup funds available. Qualifications: PhD required with research interest in the physiology of exercise. Teaching and experience in field is required; postdoc experience preferred. Candidates must have legal authority to work in the USA permanently. Application Deadline: Priority given to applications received by February 1, 2011. Position open until filled. Application Process: Interested applicants should submit a cover letter, curriculum vitae, undergraduate and graduate transcripts, statements of teaching philosophy and research interests, and three letters of recommendation (at least one addressing teaching effectiveness and one addressing leadership potential) through Academic Jobs Online at <https://academicjobsonline.org/ajo/Benedictine%20University/Exercise%20Physiology>. Any questions should be directed to: Rose Fisk, Coordinator, College of Science, Benedictine Univ., 5700 College Road, Lisle, IL 60532. Email: rfisk@ben.edu. Fax: 630-829-6547. [EOE] ❖

People & Places

APS Member Weiss is New Dean at Univ. of Texas

APS Member David S. Weiss, a neuroscientist whose research has advanced understanding of brain disorders such as epilepsy and the action of therapeutic drugs such as anxiety medications, is the new dean of the

Graduate School of Biomedical Sciences at the University of Texas Health Science Center San Antonio, as of December 1 2010. Weiss, chairman of the Health Science Center's physiology department, becomes the fourth

dean of the Graduate School since its founding in 1972. He will also hold the Dielmann Chair in Basic Biomedical Investigation. ❖

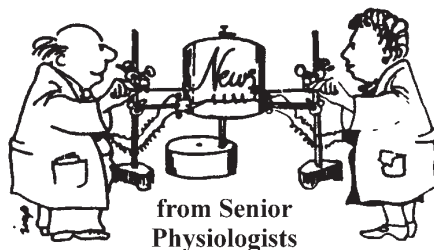
Letter to Margaret Anderson

Caspar Rüegg wrote: "Thank you so much for your kind letter conveying the greetings of the American Physiological Society in the year of my 80th birthday.

"I just returned with my wife Elvi from hiking in the Engadine Valley in Switzerland to our home in Hirschberg, a village near Heidelberg, Germany. Now, looking back to some 12 years following my (obligatory) retirement from the Chair of Physiology II at Heidelberg, I feel truly grateful for the generous support to work on muscle and to mentor many young physiologists.

"They do now excellent research in Germany and elsewhere and I would like to tell all our young colleagues: 'Keep your "feu sacré," your enthusiasm for research.' But looking back I also remember my own wishes for my retirement expressed at the end of my last lecture ('Abschiedvorlesung') entitled 'machina carnis'—the muscle machine: could I do some oil painting again as I did in my youth and would I have more time to hike with Elvi in the Swiss mountains or perhaps even continue with research? The latter vision did not become true. Instead I became fascinated with matters outside my field of research: I got impressed with Eric Kandel's work on memory, and especially by his idea that spoken words will change synaptic strengths in ones brain (if remembered). Couldn't the same thing also happen when we talk to ourselves or even when we think in silent speech? Could, in other words, our thoughts change our brain? I gave lectures on this, published in German, e.g., in the Wiener Medizinische Wochenschrift. Some friends suggested I write a book on the subject. I did. It is going in to its fifth edition shortly.

"As many others I noted that neurobiology (or neurophysiology for that matter) was fundamental to any scientific understanding of psychosomatic medicine and cognitive therapies. Clearly, my own work was only 'desk research,' but at least I had a new hobby, something to keep my mind busy. Nonetheless, as one of the Honorary Editors of the *Journal of Muscle Research and Cell Motility*, I kept my long-term interest in the comparative approaches to muscle physiology. Apart from the meetings of the Swiss Academy of Medical Sciences, however, I went to meetings and conferences only occasionally and mainly to meet old



friends and colleagues. For instance, I fondly remember the retirement symposium of Richard (Dick) Murphy in Charlottesville where I met my old friend and former postdoc Rick Paul again after so many years, as well as one of my mentors, the late David Bohr with whom I published (1965, in *Science*, [1]) on the calcium dependence of (skinned) skeletal and smooth muscle.

1. Filo RS, Bohr DF, Ruegg JC. Glycerinated skeletal and smooth muscle: calcium and magnesium dependence. *Science*. 1965; 147: 1581–1583.

Carleton Baker writes: "I hope you can read this, as I can no longer type, which, I believe, is not surprising at 80 years old. I do thank you for your letter from the Senior Physiologists Committee and the APS. It's hard to believe that I have been a member since about my age of 28 years when Dr. William F. Hamilton invited me to join (around 1950s). I have had an excellent career as a physiologist under the initial guidance of Dr. Hamilton and Dr. John Remington, reaching full professor at the Medical College of Georgia. I was at the position as professor at the University of Louisville for about four years where I had the pleasure of becoming a close friend of the Dean, Dr. Don Smith, who asked me to go to Tampa, FL to open a new medical college at the Univ. of South Florida. That was an unbelievable period and one I greatly appreciate being a part of. It is rare to be involved in such an enterprise. It was an education in itself and you never knew what you would be doing on any given day.

"I retired in 1995 and started as a Clinical Professor of Physiology for about four years when I was able to continue my research. However, I had a bad stroke about three years later and lost most of my ability to analyze satisfactorily. I played a lot of golf after that

until about 2001 when my lumbar spine shattered and the nerves could not be replaced by the neurosurgeon. So now I am pretty crippled and can not do much of anything. So I read a lot of history and other items of interest.

"Well, that is about where I am now!!"

Pietro Bramante writes: "Thank you for the kind letter forwarded by the post office to our present address. Long ago I contributed a short parody to *The Physiologist*. The story of a paper or "Equivalent Values," *The Physiologist*, 11, 74, 1968. Because of poor vision, I asked my wife to handwrite this letter.

"Again, thanks a lot!"

Letter to William Dantzler

Jerome G. Porush writes: "Thanks for your kind greetings on my 80th birthday. After 50 years in medicine, I decided to retire in 2001. I did remain involved for a few years by participating in the publication of four additional papers and also remained a member of the morbidity and mortality committee of the 'Collaborative Study Group' until 2006. Although these activities took only a small percentage of my time, it allowed me to tail off less abruptly from a very busy career in research, patient care, and, above all, teaching. I had the pleasure of supervising approximately 85 nephrology fellows starting in 1963.

"I still stay somewhat current with the general medical literature, particularly in nephrology and hypertension.

"My first wife died of ovarian cancer in 2004 after almost 52 years of marriage. I was fortunate to meet my present wife, whom I married in 2006. She is an artist which allows me to play as much golf as I like (which is four to five days a week, weather permitting). We both like traveling, the theater and classical music. With NYC close by, we have more than we can handle. I also have been able to catch up on some of the non-medical literature I missed over the years.

"I do not really have anything new to say to younger colleagues, but would like to remind those who see patients to try to apply the science they know and the curiosity that brought them to research to the bedside.

"Again, thank you and the Society for your interest." ❖

Metabolic Regulation: A Human Perspective 3rd Edition

Keith N. Frayn

Massachusetts, USA: Wiley-Blackwell
Publishers, March 2010, 384 pp. illus,
index

\$71.99

ISBN: 978-1-4051-8359-8

The 3rd edition of *Metabolic Regulation—A Human Perspective* by Keith N. Frayn, Professor of Human Metabolism at Oxford, updates and enhances an exceptionally valuable textbook for students of physiology, biochemistry and medicine. This book is also likely to prove valuable for scientists in diverse fields who are struggling to figure out the metabolic phenotype of their genetically engineered mice!

Frayn approaches the subject of metabolism in problem oriented manner, i.e., how does the body cope with the variations in fuel availability after we eat a low or high carbohydrate meal, during food deprivation, and in response to the energy demands of exercise? With a keen awareness of the importance of cell- and tissue-specific regulation and an integrative perspective that incorporates the physiological perspective, this paperback provides a perfect complement to standard biochemistry and physiology textbooks.

Frayn sets the stage by first covering the key principles of metabolism from an enzymatic and cellular perspective, and briefly summarizing the regulation of the absorption and digestion of nutrients from food. He then makes important distinctions between short- and long-term mechanisms regulating metabolism, and considers the special mechanisms regulating fuel utilization in specific tissues (brain, muscle, liver, kidney). Importantly, this organizational approach differs substantially from the traditional presentation of each key biochemical pathway. Emphasis is on the integration of metabolism. The later chapters focus the discussion on the key roles of neural and endocrine systems that are often given short shrift in standard texts. Finally, Frayn applies the principles of tissue-specific metabolic regulation toward understanding how energy, glucose and lipid homeostasis are dysregulated in obesity and diabetes.

I have used previous editions of this

book to teach nutritional biochemistry to advanced undergraduate and first-year graduate students. I was delighted to find the addition of a more molecular perspective in the new edition. In addition, each chapter now starts with useful, on target “key learning points” to guide study. The improved figures, combined with the exceptionally clear writing, make this book a pleasure to read. Thus, I can highly recommend this new edition of *Metabolic Regulation* to students of all of the basic and applied biological sciences. In addition, this book will be exceptionally useful for more advanced graduate students in cell and molecular biology or genetics graduate programs who wish to apply their expertise to understanding the pathogenesis of metabolic abnormalities complex diseases such as diabetes, cardiovascular disease and obesity. This text will also be a valuable resource for first year medical students who often wonder “why they need to learn all of this biochemistry.”

Frayn’s elegant synthesis provides clear motivation for learning the pathways that may seem, upon first exposure, unconnected to clinical practice.

A website (<http://www.wiley.com/go/frayn>) includes pdf files of the figures in each chapter (quite useful for instructors, but Powerpoint slides would be even better). The website also includes questions/answers for each chapter that highlight key points, and, thus, provides a useful study guide for students.

In summary, *Metabolic Regulation—A Human Perspective 3rd edition* presents a well-organized, up to date, well-integrated and comprehensive picture of the regulation of metabolism in health and disease, and is highly recommended to anyone seeking to understand this rapidly evolving field. ❖

Susan K. Fried
Boston Univ. School of Medicine
skfried@bu.edu

Look ahead. Prepare today. Enjoy tomorrow.

Partner with the nation's largest credit union serving the biomedical industry and enjoy a wide range of benefits, including:

- FREE MORTGAGE, CREDIT AND RETIREMENT PLAN CHECK-UPS
- CHECKING WITH FREE WORLDWIDE ATM REBATES AND DEBIT REWARDS
- FULL RANGE OF CONSUMER AND BUSINESS LOANS
- INTERNATIONAL REMITTANCE SERVICES FOR LESS

NIH Federal Credit Union

All employees and members of FASEB and its constituent societies in Maryland, Washington, D.C., Virginia and West Virginia are eligible for membership. For more information, visit nihfcu.org or stop by FASEB's Human Resource Department.

nihfcu.org



The Wine Wizard Peter Wagner



Peter Wagner

Hi all: now you can laugh at us insane Diego. It's cold, windy and foggy with some rain. Forecast to stay that way several days. OK, it's no ice storm, but pretty hard on us. Be kind. This column mixes some wines recently tasted (the usual way I select) with a few sparklers that I know will work even though not recently tasted.

Sparklers worth having:

Low price: Freixenet is a big Cava (Spanish equivalent of champagne) producer and they make some very dependable and tasty white sparklers. I like Carta Nevada Brut and Cordon Negro Brut. Both are very widely available. The former is a touch sweet but full of tasty fruit and costs just \$6. Goes very well with cheese and crackers, smoked oysters and olives in front of the fire. The latter (wine, not the fire) is dryer and technically "superior" to the former and costs \$9 (Trader Joe, San Diego prices). Both have just 11.5% alcohol so they will not dissolve your brain tissue.

Medium price: Schramsberg and Roederer Estate are two very reliable California sparkler houses that also make excellent bubbly. Schramsberg blanc de blancs is mid-\$20's; their blanc de noirs low-\$30's. Roederer Estate's non-vintage brut is about \$20. These are all classical sparklers with finesse, dryness, and light, zesty, apply/yeasty flavors and are clearly high quality.

Higher end: Veuve Clicquot is a true French champagne and is always excellent, again with light, clean, dry elements yet tasty and long-lasting. But it costs \$35-\$40. Still, that is less than many high end French bottles, and excellence is guaranteed.

And do not forget Australian sparkling Shiraz if you can find it. Not much gets to the USA, sadly, but if you can find one, give it a try. The makers usually leave a touch of residual sugar in the wine, but usually there is very good depth of flavor. Great with any red meat, obviously. No specific names to suggest because they are so rare—just ask your wine shop, and you never know. They vary in price from \$10 to \$30. I probably would not pick the cheapest.

Whites

You may recall I have espoused two grape varieties with Latin backgrounds on more than one occasion: Albarino

from Spain and Torrontes from Argentina. Well-made versions are both delightful, different from the usual humdrum, and relatively cheap.

2009 Crios Torrontes, from Salta, Argentina, \$10. This has the classic nose of raisiny, almost Muscat-like sweetness, with apricot, citrus and lychee to boot. The palate is forward, with stone fruit and citrus, and is clean, fresh, with excellent acidity and a dry—yes, not sweet—lemony finish.

2007 Clos du Bois Chardonnay, Russian River, \$10. This wine should be widely available. It has quite some vanilla oak on the nose along with tropical/apple fruit. The palate however displays more apply fruit and less vanilla, with a crisp and clean taste and a lightness that makes it attractive. Thus, not a heavy, creamy, oak bomb of yesteryear.

2009 Jules Taylor Sauvignon Blanc, Marlborough, New Zealand \$12. Here we go again, yet another classic from NZ. Gooseberry/citrus/passionfruit on the nose and palate; clean, crisp yet rich, with good acidity and length.

Reds

2009 Zynthesis Zinfandel (old vine), Lodi \$11. Lodi—lovingly referred to by *los arrogantes* (thanks Kim and Rita) as the armpit of California—has been turning out some fine Zin for quite a while now. "Old vine" claims mean that the vines are, well, old. Folklore has it

that the older the vine, the better the wine due to greater flavor concentration in fewer grapes. The truly old vines have 100 years or more. This one has a very clean nice cherry/raspberry nose. The palate is light and bright, not sweet, and the wine is not heavy at all. In particular, tannins are fairly soft, and there is no residual sugar to make it sweet (thank goodness).

2008 Girard Zinfandel (old vine) Napa Valley \$17. Napa—lovingly referred to by residents of Lodi as the home of *los arrogantes*—has been turning out good wines for quite a while now. This wine has a forward red berry nose (cherry, cranberry, boysenberry even) and the palate is similar, with forwardfruit and some vanilla. As with the previous wine, there is very nice light mouthfeel yet it has richness at the same time. There are modest tannins and good acidity, with a long, dry finish.

2005 Graffigna Cabernet Sauvignon, San Juan Valley, Argentina \$15. This is a well made wine. The nose is complex with dark berry, slight green pepper, spice, and vanilla. The palate has forward, rich red and black cherry flavors, medium soft tannins, and has a long finish. Despite its age, it has a fresh feel with very good acidity. Overall, well balanced and interesting.

And finally—the Mollydooker range from down under (South Australia). These are very big, in your face wines and quite extreme in both taste, alcohol levels (15% is the wimp; 17% is the champ) and name. You will either really like them or hate them. They are not cheap, but several are around \$20. You could look for the following:

2009 Verdelho ("the violinist") \$20 – the only white in the bunch 15.5% alc

2009 Cabernet Sauvignon ("the maitre D") \$22 with 15% alc

2009 Shiraz ("the boxer") \$22 with 16% alc

2009 Shiraz/Cabernet/Merlot ("two left feet") \$22 with 16% alc

2009 Merlot ("the scooter") \$22 with 17% alc

2009 Shiraz ("blue eyed boy") \$44 with 16% alc

The only one I did not like was the straight Merlot—too obviously alcoholic with more dry herbs than fruit. The others all had great fruit, viscosity, lushness etc. Enjoy. ♦

March 10-11

Immunotherapy: 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>.

March 14-17

HGM 2011 (Human Genome Meeting 2011), Dubai, United Arab Emirates. *Information:* Internet: <http://www.hgm2011.org/>.

March 21-23

AAAI Spring Symposia 2011: Computational Physiology, Stanford, CA. *Information:* Internet: <http://sites.google.com/site/aaaicomputationalphysiology/home>.

March 31-April 3

2nd International Course on Pain Medicine (ICPM 2011), Porto, Portugal. *Information:* Email: icpm@icpm.net; Internet: <http://www.icpm.net/>.

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>.

April 29-May 1

Southern Biomedical Engineering Conference, Arlington, TX. *Information:* Internet: <http://www.uta.edu/bioengineering/sbec2011/>.

May 8-11

The IL-1 Family of Cytokines: From Basic Biology to Clinical Applications, Clearwater, FL. *Information:* Secretariat, Sherwood M. Reichard, 119 Davis Road, Suite 5A, Augusta, GA 30907. Tel.: 706-228-4655; Fax: 706-228-4685; Email: sherwoodreichard@earthlink.net; Internet: <http://www.clearwater2011.com/>.

May 12-15

Advances in Applied Physics and Materials Science Congress, Antalya, Turkey. *Information:* Scientific Secretariat, Dr. A. Yavuz Oral, Gebze Institute of Technology, Department of Materials Science and Engineering, Cayirova Campus 31300, Gebze Kocaeli Turkey. Tel.: +90 (262) 605-1309; Fax: +90 (262) 605-1337; Email: info@apmas2011.org; Internet: <http://www.apmas2011.org/index.html>.

May 13-18

2011 American Thoracic Society International Conference, Denver, CO. *Information:* ATS International Conference Department, 61 Broadway, New York, NY 10006. Tel.: 212-315-8658; Email: conference@thoracic.org; Internet: <http://www.thoracic.org/conference/>.

May 18-21

Nicotinic Acetylcholine Receptors 2011, Cambridge, United Kingdom. *Information:* Jemma Beard. Tel.: +44 (0) 1223 495120; Email: jbeard@hinxton.wellcome.ac.uk.

June 2-4

Organization for the Study of Sex Differences (OSSD) Fifth Annual Meeting, Oklahoma City, OK. *Information:* Internet: <http://www.ossdweb.org>.

June 8-10

8th Annual World Congress of IBMISPS on Brain, Spinal Cord Mapping and Image Guided Therapy, San Francisco, CA. *Information:* Internet: <http://www.world-brainmapping.org/>.

June 27-29

9th International Conference on Modeling in Medicine and Biology (BIOMED 2011), Riga, Latvia. *Information:* Irene Moreno, Conference Coordinator. Email: imoreno@wessex.ac.uk; Internet: <http://www.wessex.ac.uk/11-conferences/biomed-2011.html>.

June 27-30

3rd Cardiovascular Control Conference: Roles of Brain, Kidney, and Hormones in Normal Blood Pressure Regulation, Sonderborg, Denmark. *Information:* Internet: <http://www.sdu.dk/cc3>.

June 29-July 2

The International 21st Puijo Symposium, "Physical Exercise, Ageing and Disability - Current Evidence", Kuopio, Finland. *Information:* Puijo Symposium Secretariat, Kuopio Research Institute of Exercise Medicine. Email: puijo.symposium@uef.fi; Internet: <http://www.uku.fi/conf/puijo/>.

July 1-4

SEB Glasgow 2011, Glasgow, United Kingdom. *Information:* Talja Dempster, Conference and Communications Manager, Society for Experimental Biology, Charles Darwin house, 12 Roger Street, London, WC1N 2JU. Tel.: +44 (0) 207 6852605; Fax: +44 (0) 207 6852601; Email: t.dempster@sebiology.org; Internet: http://sebiology.org/meetings/glasgow_2011/glasgow.html.

August 1-5

12th International Congress on Amino Acids, Peptides and Proteins, Beijing, China. *Information:* Professor Gert Lubec, FRSC (UK), c/o Medical University of Vienna, Währinger Gürtel 18, A-1090 Vienna, Austria. Fax: +43.1.40400 6065; Email: gert.lubec@medunivwien.ac.at.

August 14-17

2011 National HIV Prevention Conference - The Urgency of Now: Reduce Incidence. Improve Access. Promote Equity., Atlanta, GA. *Information:* Tel.: 888-234-6291; Email: info@2011NHPC.org; Internet: <http://www.2011nhpc.org/>.

September 9-11

Oskar Kellner Symposium 2011: Metabolic Flexibility in Animal and Human Nutrition, Warnemünde, Germany. *Information:* Email: oks-info@fbn-dummerstorf.de; Internet: <http://oks.fbn-dummerstorf.de/>.

Meetings & Conferences

of the American Physiological Society

Experimental Biology 2011

April 9-13, 2011 • Washington, D.C.

2011 APS Conference:

**7th International Symposium on Aldosterone and
the ENaC/Degenerin Family of Ion Channels:
Molecular Mechanisms and Pathophysiology**

September 18-22, 2011 • Asilomar Conference Grounds, Pacific Grove, California

2011 APS Conference:

Physiology of Cardiovascular Disease: Gender Disparities

October 12-14, 2011 • University of Mississippi Medical Center, Jackson, Mississippi

Experimental Biology 2012

April 21-25, 2012 • San Diego, California

2012 APS Intersociety Meeting:

The Integrative Biology of Exercise VI

October 10-13, 2012 • Westin Westminster, Colorado



The American Physiological Society, Meetings Department
Phone: 301.634.7967, Fax: 301.634.7264, E-mail: meetings@the-aps.org



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 _____

Mailing Address _____

Phone _____

Fax _____

E-mail _____

Sponsor Signature* _____

#2 Sponsor Name _____

Mailing Address _____

Phone _____

Fax _____

E-mail _____

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 cotransport 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