Published by the American Physiological Society – *Integrating the Life Sciences from Molecule to Organism*

THE PHYSIOLOGIST

aps American Physiological Society

March 2016 • Vol. 59/No. 2

89th President of APS

Jane F. Reckelhoff

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I am very honored and humbled to have been chosen by the members of the American Physiological Society to represent them as the 89th President beginning in April 2016. I would like to thank the membership for their support. I would also like to thank the mentors I have had along the way who have shaped my career as a physiologist. I have been a member of APS for the past 25 years, and the Society has not only shaped my scientific career but given me opportunities to be of service to fellow physiologists by allowing me to serve on various APS committees. I consider the role of President as another opportunity to serve the Society and am excited to begin the task.

As I read the editorials by my predecessors, I believe the Society faces some old challenges and also some new ones. I just listened to Ben Busby from the National Center for Biotechnology Information at NIH give a talk on Genomic Variations in Individual Genomic Sequencing, and afterward he mentioned the current statistic that only 7% of those individuals who complete graduate school will remain in research and academics as a career. There are even publications aimed at graduate students to help them find alternative careers and "not waste time doing a postdoctoral fellowship in research"! As someone who loves performing research, writing papers and grants (although reading the "Triage" Summary Statements isn't fun!), I find this appalling, although not entirely surprising. One of my goals as APS President is to encourage continuation of existing programs and develop new programs that will support our members who want to develop or continue a career in research, whether that career is in medical centers, colleges and universities, industry, or government positions. APS is also comprised of many members who are pure academicians. More and more, these individuals are also being requested to write grants to support new educational initiatives and manuscripts that describe new teaching methods, and must develop networks of like-minded individuals who support their educational initiatives. So these members require assistance from new and existing APS programs as well.

Another challenge we face as a Society is our membership demographics. While our member numbers have been holding fairly steady over the past several years, in 2014 and 2015, we had more members drop

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A Matter of Opinion

Warning: Watch Out for Predatory Publishers

Because of the publication schedule for *The Physiologist*, I am writing this piece shortly after the New Year! Hopefully, each of you had an opportunity to relax, enjoy family and friends, and, most importantly, begin considering how to take advantage of the 6.6% increase in the NIH budget. While I too am looking forward to 2016, I was also pleasantly surprised to discover that even predatory Open Access (OA) publishers took time off over the Holidays. I received almost zero invitations from them over the Holidays. No one was offering to publish my latest research findings with guaranteed publication on Friday if I submitted my manuscript by Thursday

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THIS ISSUE:

the-aps.org

Published by the American Physiological Society – *Integrating the Life Sciences from Molecule to Organism*

THE PHYSIOLOGIST

Published bimonthly and distributed by The American Physiological Society

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

Subscriptions: Distributed to members as part of their membership. Nonmembers in the USA (print only): individuals $110.00; institutions $205.00. Nonmembers international: individuals $165.00; institutions $255.00. Single copies and back issues when available, subscriber $30.00 each; nonsubscriber $60.00 each. Subscribers to *The Physiologist* also receive abstracts of the Conferences of the American Physiological Society. The online version is available free to all worldwide.

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Headquarters phone: 301-634-7118
Fax: 301-634-7241
Email: webmaster@the-aps.org
http://www.the-aps.org
Printed in the USA

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Sex Matters

Studying Both Sexes: A New Frontier for Discovery

Janine Austin Clayton and Casey Sullivan

Janine Austin Clayton

Casey Sullivan

The Office of Research on Women's Health (ORWH) at the National Institutes of Health (NIH) recently celebrated a milestone anniversary: 25 years of progress in women's health research. As we celebrate the improved health that women enjoy due to the achievements of dedicated researchers and advocates, we also look forward with a new perspective. In 2015, ORWH is advocating the study of both sexes as a guiding principle for biomedicine, to aid in designing experiments, generating and testing hypotheses, and producing data that are essential for turning discovery into health for everyone.

While concerted and sustained effort has led to major advances in the inclusion of women in NIH-funded clinical research, preclinical studies with animals and cells frequently focus only on males and often neglect even to report the sex of animals studied (1). This preclinical research plays a vital role in setting the stage for treatments and interventions in humans. Therefore, NIH is now working to address gaps in our knowledge about fundamental biology by asking researchers to explain how relevant biological variables, such as sex, are factored into research designs and analyses for studies in vertebrate animals and humans (5). Applicants must provide strong justification from the scientific literature, preliminary data, or other relevant sources if proposing to study only one sex.

This new requirement is part of the overall NIH initiative to enhance reproducibility through rigor and transparency: asking applicants to describe the scientific premise of proposed research, the rigor of experimental designs, consideration of sex and other relevant biological variables, and authentication of key biological and/or chemical resources (10). Initially announced in June 2015 (6), these updates to instructions and review criteria apply to research grant (7) and individual career development award (8) applications due on or after January 25, 2016 [corresponding updates to training, fellowship, and institutional career development award applications (9) are in development].

What does this mean for researchers? You won't know until you look. Simply stating the sex of animals used in studies is a clear and feasible step; disaggregating data by sex can facilitate future meta-analyses and drive new investigations. Whether and how results from animal models–of either sex–generalize to other models or to human populations should be thoughtfully and carefully evaluated.

NIH is not alone in this endeavor: It will take a village to shift the scientific culture toward the more systematic study of male and female biology. Historically, the U.S. Congress has been very interested in women's health research and now turns an eye toward preclinical research. Experts are currently outlining best practices for considering sex as a biological variable within particular scientific and methodological contexts. And given the critical role of transparency in reporting, NIH has worked with journals to improve standards, including the requirement to report the sex of subjects, to enhance rigor and reproducibility. The APS is among the growing number of publishers that instruct scientists, when preparing manuscripts, to report basic biological information such as species, strain, and sex.

NIH-funded scientists make discoveries every day that tell us more about health and disease in men and women, and that in turn highlight how important it is to study both sexes. ORWH and other NIH partners have historically invested in programs that encourage consideration of sex as a biological variable. In 2002, ORWH developed the Specialized Centers of Research (SCORs) on Sex Differences to advance interdisciplinary studies on the effects of sex and gender

factors on women's health. In 2013, to catalyze fresh thinking, innovation, and discovery, ORWH partnered with the NIH Institutes and Centers to supplement existing NIH grants with a "sex and gender lens." To date, this program (3) has awarded more than $17 million to support a variety of approaches: Investigators are adding female mice to research on vascular mechanisms of age-related rises in blood pressure, exploring sex differences in embryonic malformation risk from maternal hyperglycemic insult, and generating a female reporter mouse to enable real-time in vivo monitoring of estrogen regulation in brown adipose tissue. The NIH Common Fund has joined in this effort by supporting additional supplements (4). For example, APS scientist Barbara Stranger received a supplement to her project measuring cell signaling and transcription factor proteins across multiple tissues in many individuals. This supplement will allow Stranger to study sex-biased gene expression, hormone signaling pathways, sex-chromosome encoded genes, and proteins implicated in complex diseases with sex-based characteristics.

This type of in-depth exploration of sex differences can be critical for understanding the causes, progression, and outcomes of diseases and conditions in both women and men. Importantly, however, the appropriate study of both sexes does not necessarily imply "sex differences research." Studying both sexes can tell us about how male and female biology is similar or different. And while the specific techniques and methods vary across disciplines and research questions, the general strategy of studying both sexes will create the most complete picture of the structures and processes that matter for the health of men and women. A recent article in *The FASEB Journal* expands on this idea, outlining the study of both sexes as a guiding principle for biomedicine, illustrating the variety of ways that scientists can account for the possible influence of sex in their research (2).

Comprehensive knowledge of both male and female biology–similarities and differences–is crucial for the development of sex- and gender-appropriate medical care, and is the cornerstone of precision medicine. With this guiding principle in place, we look forward to the next 25 years of progress. ●

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Janine Austin Clayton is Associate Director for Research on Women's Health and Director of the Office of Research on Women's Health (ORWH) at the National Institutes of Health (NIH). Since assuming this role in 2012, Clayton has strengthened NIH support for research on diseases, disorders, and conditions that affect women. She is the architect of a trans-NIH initiative to require scientists to consider sex as a biological variable across the research spectrum. As co-chair of the NIH Working Group on Women in Biomedical Careers with NIH Director Francis Collins, Clayton also leads NIH's efforts to advance women in science careers. Prior to joining ORWH, Clayton was the Deputy Clinical Director of the National Eye Institute (NEI) and has been an attending physician and clinical investigator in cornea and uveitis at the NEI since 1996. In the course of her research on ocular surface disease, she discovered a novel form of disease associated with premature ovarian insufficiency in young women, which set the stage for her commitment to rigorous, thoughtful exploration of the role of sex and gender in health and disease.

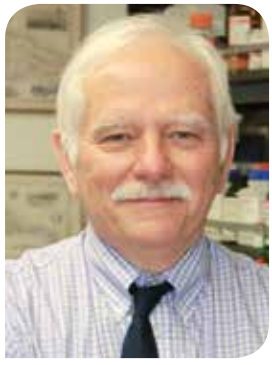
Casey Sullivan is a Presidential Management Fellow (STEM track) in the Office of Research on Women's Health at the National Institutes of Health.

Election Results

The American Physiological Society announces the results of the election of officers for 2016. Dennis Brown of Harvard Medical School, Massachusetts General Hospital is the new President-Elect. The three newly elected Councillors taking office on April 6, 2016 are Jennifer Pollock, The University of Alabama, Birmingham, School of Medicine; Willis K. Samson, Saint Louis University, School of Medicine; and Harold Schultz, University of Nebraska, Medical Center. The Councillors will each serve a 3-year term. ●


Dennis Brown


Jennifer Pollock


Willis K. Samson


Harold Schultz

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their membership than join the Society, and this trend included not only graduate student members but also regular members. One might expect students to change society affiliations as they moved from graduate student laboratories to postdoctoral laboratories since this is often related to the affiliations of their mentors at the time. However, it is not clear why regular members are not remaining in APS. One could propose that, since postdoctoral fellows are considered regular members, perhaps the ones who dropped affiliation with APS were those who began their own careers and no longer felt the Society represented their interests. In addition, with the tight paylines from NIH and other funding entities over the recent years, perhaps some of our regular members dropped their membership as they became less involved in research and didn't know about the APS programs designed to assist educators. I'm hopeful that this trend in funding may be turning around since Gary Gibbons, NHLBI Director, recently noted that their paylines for R01s for 2015 were 13 percentile (up from 10% in 2012) and expect that they will be 14 percentile in 2016. ESI grants in 2015 were funded at the 23 percentile (up from 20% in 2012) and expect to go up to 26.6 percentile in 2016. It also seems possible that our industry- and government-employed colleagues may not realize the benefits of becoming and remaining members of the APS.

I would encourage all junior investigators to take advantage of these APS opportunities and to develop mentorship relationships with senior APS members.

Another concern is that the average age of our membership is 53 years. Since I became an APS member 25 years ago and had a very nontraditional start to my career, you can imagine that I'm not a "spring chicken" myself. However, I am concerned that our Society be perceived as a value and important resource to members of all age groups, especially early and mid-career individuals, by providing more opportunities for them to participate in leadership through sections, interest groups, and committees. By including early and mid-career individuals in all APS programs, we would increase the likelihood of novel ideas and concepts being brought forth to improve our Society.

How I Became a Physiologist

Unlike most of the past presidents of APS, I had a very nontraditional education and career path. I am from a very small town in Indiana. My father was an engineer who could design and construct anything from either wood or metal. He was the director of a Research and Development group for a furniture company. My mother was a homemaker and a part-time receptionist/bookkeeper at a dentist's office. I am the oldest of four children; my brother is a chemical engineer, and I have one sister who is an occupational therapist, and the other is a nurse practitioner. Instead of starting college right out of high school like they did, I got married when I was 18 years old and had my first son before I was 19. My first husband was in the Navy, and, while he was away at sea, I started working as a "sitter" at a convalescent center across the street from our apartment. I had aspirations of being a nurse, and this was my first patient-oriented experience. After a year, I started nursing school and became a licensed practical nurse. This education included my first formal physiology courses, but I really learned physiology by "on the job" training. I worked in the Intensive Care Units at Norfolk General Hospital for 9 years, and there I took care of patients with cardiovascular, renal, neuro, and respiratory diseases and syndromes. Unlike today, in those days, LPNs were allowed to do everything in the ICUs that the RNs did except give IV medications. I read and interpreted laboratory reports, EKGs, and blood gases, and managed patients with mechanical ventilation (PEEP, CPAP, etc.). I also learned about blood volume, cardiac output, pulmonary artery wedge and central venous pressures, shock and treatment of hypotension [levophed (norepinephrine), dopamine] and acute hypertension (sodium nitroprusside), and chronic obstructive pulmonary disease, just to name a few. I loved it and became quite a good diagnostician. I wanted to be a physician and had physician friends who encouraged me. With this goal in mind, I started studying part-time at a community college–it was inexpensive (I also continued to work full time) and close to my home, which was important since by now I had two sons. After a couple of years, I transferred to the College of William and Mary, and my sons and I moved to Williamsburg where I pursued a degree in Chemistry. I also worked every Friday and Saturday night (11 PM to 7 AM) in the ICU in their small hospital. While at William and Mary, I realized that I was really interested in why things worked the way they did in the body and became

particularly enamored with biochemistry. I graduated in 1982, with a BS in Chemistry, and instead of going to medical school, I went to Medical College of Virginia in Richmond (now VCU) and became a graduate student in biochemistry. I was fortunate to be able to complete by graduate work in 3 years (I was old and didn't have time to waste!) with Judy Bond (APS member, past-president of ASBMB and FASEB). Bond taught me how to be a scientist, and I studied a proteinase in the proximal tubules of the kidney called meprin. We were really cellular and molecular physiologists, and we attended the FASEB meetings every year. In January 1986, I went to the Physiology Department at Texas Southwestern in Dallas for a postdoctoral fellowship with George DeMartino (APS member) and worked on the ATP-dependent protease that has since become known as the proteasome. Because of my continued interest in the kidney, I transferred to the Physiology Department at West Virginia University in Morgantown for a second postdoctoral fellowship with Chris Baylis (APS member). Dr. Baylis is world-renowned for her work, and she taught me to be a renal physiologist. She taught me about GFR, renal hemodynamics and autoregulation, and how to perform micropuncture studies. There I became interested in aging and sex differences in control of renal function. In 1991, I moved to the Physiology and Biophysics Department at the University of Mississippi Medical Center 2 years after John E. Hall (74th President of APS) succeeded Arthur C. Guyton (47th President of APS) as chair. I was the first woman to be hired as a faculty member in the 35-year history of the department, but they quickly got used to me! It was in Jackson that I became excited about hypertension research and where I learned integrative cardiovascular-renal physiology. This is where all of my ICU training came full circle and really paid off! With my molecular and cellular training in graduate school and first postdoc, I then had the tools to address research questions from the molecular and cellular level to the organ and whole animal level. I have had many mentors here in Jackson in addition to John Hall, including Joey Granger (84th President of APS), who taught me how to write grants, and Tom Lohmeier, who taught me neurocontrol of renal function and blood pressure. In addition, and very important to me, over the years I have been blessed to have worked with many talented, energetic, and committed postdoctoral fellows and students who have made, and continue to make, our research fun.

What happened to my sons? We grew up together, studied together at the kitchen table, traveled around the U.S. together, were poor together, and laughed a lot.

I wanted to provide you a fairly detailed description of my road to becoming a physiologist for several reasons. First is the unconventional way I came to my career as a physiologist. I remember when I was a graduate student with Judy Bond that she told me there are two kinds of scientists who are successful: those who are brilliant, and those who are persistent. I was and still am persistent! This is an important lesson for graduate students, postdoctoral fellows, and junior faculty especially who are facing times of difficult funding, difficult publication, and increased regulatory burden. In this regard, the APS Science Policy Committee (SPC) is proactive in lending our voice to those of FASEB and other organizations for funding with local and national legislators. In collaboration with the SPC, the Animal Care and Experimentation Committee (ACE) is also proactive in informing the membership regarding changes in laws regarding animal research, and lobbying for support of animal research. My story also proves that even turtles can get to the finish line eventually–with persistence! So don't give up!

As APS members, we should remember and advocate with our institutional administrators that "Medicine is the art and science of physiology.

Another important component in my story is the necessity for strong mentors along the way. These individuals not only mentored me in the performance of research and experimental design but also mentored me in how to write manuscripts and grants, how to present my work, and the importance of networking with colleagues. Judy Bond taught me early on how to be a "woman scientist" in a man's world. To these ends, they nominated me for seminars and awards, study sections, and committees; they introduced me to senior investigators; and they promoted my work among their colleagues. They served as sounding boards and provided advice in difficult situations.

The APS provides important mentoring programs for our members. The APS Education Department provides Professional Skills courses to graduate students and postdoctoral fellows in manuscript writing and presentation skills taught by established APS members. The Presentation Skills portion encourages our junior members to introduce themselves to established investigators at Experimental Biology to develop relationships with them for either scientific networking

or mentoring purposes. In addition, the Women In Physiology and the Careers Committees give seminars and symposia at Experimental Biology every year that provide mentoring in everything such as how to find a job, how to develop a resume or CV, how to set up a laboratory, etc. The Trainee Advisory Committee is also a huge resource for APS trainee members. I would encourage all junior investigators to take advantage of these APS opportunities and to develop mentorship relationships with senior APS members.

Challenges and Opportunities

The mission statement of APS is straightforward and guides most of the work of the Society: "The APS mission is to promote the discipline of physiology and thereby enhance human and animal health by disseminating research discoveries, facilitating research and scientific interaction, educating the public, and enable future generations of physiologists." We completed a Strategic Plan that was outlined in *The Physiologist* in 2011 (*The Physiologist* 54: 113, 2011), my first year on the Council. The Society outlined five objectives. I would like to address each goal individually and describe current efforts to accomplish it.

Specific Aim 1: To increase awareness of and advocate for the discipline of physiology

As I write this, I am reminded of the many Physiology Departments that have disbanded or been merged with other departments. There is the perception that the word "physiology" and the discipline is not "sexy," not state-of-the-art; it's old-fashioned, conjures up the "olden days." As such, physiology departments are perceived as not being as competitive in attracting trainees and well funded established scientists and research programs as departments with other names, such as Translational Research, Molecular Genomics, Nutrition and Kinesiology, Neuroscience, etc. (I made these names up, so don't think I'm singling out departments at specific institutions!) The change in focus is also in part motivated by the fact that, during the doubling of the NIH budget, many universities overbuilt research facilities and hired many scientists, exploiting the indirect costs. Now in the face of NIH budget cutbacks, many of these institutions have decided to cut back not only unfunded faculty but also programs. Thus physiology departments are often merged with other departments to consolidate teaching programs or because the educational mission of the department has been transferred to a central program.

What is interesting is that *1)* all of these new programs, regardless of their new titles, encompass areas of physiology. For example, if you take the names I just made up above, Translational Research is extrapolating basic physiology research in animals to clinical physiological studies and trials in humans. Molecular Genomics is the study of the physiology of how genes and their subsequent proteins are regulated to provide the function they perform. Nutrition and Kinesiology is the study of how nutrition and exercise impact the physiology and pathophysiology of men and women. Neuroscience is the study of the physiology and pathophysiology of the brain, cognitive function, and behavior. As a Society, we need to somehow convince these investigators and educators that we and they are all physiologists. *2)* The newest guidelines for medical education are competency-based. Not surprisingly, these competencies comprise the fundamentals of physiology in each functional system. However, some medical education administrators, in an attempt to appease the AAMC and the LCME, have removed the systematic study of physiology to provide a "vertically integrated curriculum." As APS members, we should remember and advocate with our institutional administrators that "Medicine is the art and science of physiology." In addition, we should advocate for our administrators to *be* physiologists or at least understand the value of physiology as a discipline. To this end, I will discuss below attempts to develop a Leadership Academy to increase the number of competent leaders in APS and our institutions as a whole. As current members of our Society, I encourage you to step up and be vocal about the importance of physiology in research and in medical education.

As current members of our Society, I encourage you to step up and be vocal about the importance of physiology in research and in medical education.

To assist with our image problem and to provide ideas on how to better (for lack of a better word) advertise "physiology," the APS has recently employed a consulting firm to assist in a "repositioning/rebranding" exercise. The company is called "Minding Your Business" (MYB). At this writing, they have interviewed the APS department directors and some of the staff, and are now engaged in conducting interviews with the members, including leadership and general members. In addition, they will survey non-members who are active scientists and physiology educators to determine how best to attract these people. MYB will

also be holding focus groups in San Diego during the EB meeting to help assess how best to advance the discipline of physiology and the Society. We anticipate a report from MYB by mid-year to present at the Summer Council and Committee Chairs meeting. It is likely that we will begin the process of developing a new Strategic Plan either later this year or early next year at least in part based on the results of MYB's research.

I encourage APS members to apply or nominate other APS members for the prestigious Fellowship status.

Specific Aim 2: To actively work to attract, meet the needs of, engage, and retain membership subgroups

As mentioned above, MYB will hopefully be able to assist us in this endeavor. Our efforts to reach out to the international scientific community has brought us many loyal members and are encouraged by APS's participation in international meetings. I will discuss this more in *Aim 4.* The work of the APS Sections and the various Interest Groups are great examples of the subgroups that meet the scientific interaction needs of our members and may be important going forward in attracting scientists who do not recognize themselves as physiologists. In addition, the increasing number of Chapters across the U.S. is another grassroots way for us to reach out to nontraditional physiologists and get them to join our Society. The more our members interact with each other and other scientists, the better chance we have of attracting new members. It may not be clear to potential members what the benefits of being a member of the Society are. We must somehow convey all of the work of the Society and its strong infrastructure that is focused on supporting its members, with the major goal of adding to their career opportunities and satisfaction. We are anticipating that MYB may have novel ideas to accomplish this goal. The APS Membership and Meetings Department and the Membership Committee will likely be tasked to help in this endeavor.

One program the APS has developed to recognize the large number of our members who are exemplary scientists, educators, and servants of the Society was the implementation of the Fellows of the APS (FAPS) program in 2015. In the inaugural class, individuals were chosen who had received prestigious Society awards, been elected to the National Academies, or had served the Society as editors and/or members of Council. I encourage APS members to apply or nominate other APS members for the prestigious Fellowship status. The criteria and guidelines are on the APS website under "Awards."

The effort of the APS to establish and strongly support the APS Trainee Advisory Committee is a huge benefit for our trainees and junior members that few other societies have. APS has made it a top priority to promote our junior members by requiring their participation in all programming at the Experimental Biology meetings and our APS Conferences. Most APS committees are now required to have a trainee member. These opportunities not only provide much needed experience and exposure for our junior members but also increase their confidence to network with more senior members. This program is also an asset to the Society since these junior members are the pipeline for future leaders of the society. Hopefully, MYB will also consider how to keep our junior members from leaving the Society when beginning their independent careers.

Another initiative that was proposed more than 5 years ago and is still in the hatching stage is the development of a Leadership Academy. Definitive goals and the mechanisms to achieve these goals are being worked out by a Task Force commissioned by our current president, Patricia Molina, and the Task Force will bring their recommendations to Council for discussion and approval hopefully this year. Providing leadership training for our members will accomplish several things: provide our members an important benefit that they may not have the opportunity to obtain on their own, provide a pipeline for future leaders of APS, and provide leaders who are physiologists who will expand their roles at their own institutions, workplaces, and communities to support our goal of promoting awareness and advocate for the discipline of physiology.

Specific Aim 3: To develop strategies to strengthen the Society's publications in a changing world

Our vast portfolio of publications remains one of the stars of the APS and a huge incentive for membership in our Society. The Publications Committee and the APS Publications Department is indeed facing new challenges with the advent of the discussions of reproducibility and transparency in publications. While some may see these initiatives as punishing those of us who attempt to be pristine in our research design descriptions in our manuscripts because of the few duplicitous investigators in our community, we may look upon this as an opportunity to improve our reporting of data. The Publications Committee and the Editors are hard at work

to develop ground rules for our journals, and will be advancing new guidelines in the near future. Remember that the APS is one of the leaders in advancing excellence in publications. We were one of the first journal groups to require the mention of the sex of the materials used in manuscripts published in our journals. So I advise APS members to watch for notifications from the Publications Committee in the near future regarding reproducibility and transparency.

Specific Aim 4: To enhance opportunities for scientific interaction and exchange

Because one of our major mission goals is disseminating research discoveries and facilitating research and scientific interaction, the development of novel ways to accomplish this mission is imperative. Experimental Biology is currently our major gathering for the dissemination of scientific information and interaction among scientists. With the changing landscape of Experimental Biology and the reduction in the presence of the American Society of Nutrition after 2017, the participating societies and the programming of future Experimental Biology meetings may be changing. While this may be a challenge for the APS, it may also be a great opportunity to integrate other societies into Experimental Biology or make the meeting more APS focused. According to the APS Joint Program Committee and the Membership and Meetings Department, abstracts to Experimental Biology 2016 are reduced by 7% over the meeting in Boston last year, but are only 2% lower than number submitted in San Diego in 2014. Hopefully, with the increasing funding at NIH mentioned above, this trend will turn around.

So I advise APS members to watch for notifications from the Publications Committee in the near future regarding reproducibility and transparency.

As mentioned above, APS has made a strong commitment to reach out to our international colleagues and as a result has been successful in attracting many international members. One way this has been accomplished is through APS's participation in international meetings. A great example was the joint APS-Brazilian Physiological Society Pan-American Congress, *Physiology without Borders,* that was held in 2014 in Iguazu Falls, Brazil, The Congress was organized by APS member Benedito Machado and a committee comprised of representatives from the physiological societes in the Americas. In July, the APS will collaborate with The Physiological Society (TPS) of the UK to hold a joint meeting in Dublin, Ireland. Collaborations among TPS and APS members have resulted in speakers from both societies being involved in the scientific sessions. China and India may be untapped resources for new members if they can be convinced of the benefits of their membership in APS, and this could be promoted through meeting interactions. To this end, in September 2016, the APS and nine other international physiological societies will partner with the Chinese Association of Physiological Sciences to hold a joint conference in Beijing. Travel support to both the Dublin and Beijing meetings is available from APS. Information to apply is located on the APS website. Finally, the APS still maintains its collaboration with the International Union of Physiological Sciences (IUPS). Members of APS sit on the IUPS Board of the General Assembly, and we participate in their Congress programs. The 38th IUPS Congress (*http://iups2017.com/*), "Rhythms of Life," will be held in Rio de Janeiro, Brazil, in August 2017, and APS will contribute to the programming, and travel funds will be available.

Finally, I would like to see the APS Research Conference program expanded and become as successful and prestigious as the FASEB Summer Research Conferences or the Gordon Conferences. This past year, APS supported three conferences that were very successful scientifically. These conferences have the advantage of bringing together internationally recognized scientists in intimate surroundings that promote interaction and the potential for collaborations in the future. The conferences are very focused on a particular research area, and, while there may be some programming at Experimental Biology in these research areas, the scientific interactions are often not possible due to the busy schedule at Experimental Biology. Also, unlike Experimental Biology, the conferences are typically held in very cost-effective locations that allow principal investigators to send their trainees. These small conferences are an excellent opportunity for junior investigators and trainees to network with leaders in their respective fields. Some reasons why the Gordon and FASEB Summer Conferences are so successful include that the conferences are recurring, provide state-of-the-art research areas typically requiring presentation of unpublished results, and scientists from around the world plan years in advance to attend mainly at their own expense. It is important to note that neither the Gordon Conferences nor the FASEB Summer Conference program provide as much funding for their conferences as the APS. Attendees are willing to pay to attend

these other conferences in part because they are so innovative and important to their research goals. The APS Conference Committee has done an exemplary job in identifying research conferences to support, and as a recurrent APS conference organizer, I can attest that the staff in the Membership and Meetings Department do an excellent job in coordinating all of the logistics of the conference. However, I would like to see this program increase so that investigators plan years in advance to attend our APS Conferences as well. Members of APS should consider sending proposals for future conferences to the Conference Committee.

Specific Aim 5: To increase the visibility of physiology in life sciences and health sciences

This aim is also being addressed by our interaction with MYB. In addition, there are a large number of outreach programs supported by APS that attempt to accomplish these goals. One good example is the Phun Week program that provides hands-on information about physiology to young students and is often done in places where parents attend as well. In this way, the public becomes familiar with the APS and physiology. MYB is tasked to also tackle the problem of increasing visibility of physiology, and I look forward to hearing their suggestions.

Finally . . .

As I begin this year as APS President, I am honored, proud, and excited to serve such a prestigious Society of members who are committed to their work, regardless of place and their support of the Society. If you have suggestions for improvement of our Society and better accomplishment of our goals, please do not hesitate to contact me. ●

Jane F. Reckelhoff Biography

Jane F. Reckelhoff is a Billy S. Guyton Distinguished Professor, Director of the Women's Health Research Center, Director of Research Development for the Office of Research and Sponsored Programs, and Professor of Physiology and Biophysics at the University of Mississippi Medical Center. After being a Critical Care nurse at Norfolk General Hospital, Norfolk, Virginia, for 9 years, she moved to Williamsburg, where she received a Bachelor of Science degree in chemistry from the College of William and Mary in May 1982. She then went to the Medical College of Virginia/Virginia Commonwealth University in Richmond to study Biochemistry under Judith Bond. Reckelhoff's graduate work was on meprin, a zinc-metalloproteinase in the proximal tubule in the kidney. She completed a PhD in Biochemistry in December 1985.

In January of 1986, she joined the laboratory of George DeMartino in the Physiology Department at Texas Southwestern Medical School in Dallas, where she studied the ATP-dependent protease that later became known as the proteasome. In the Fall of 1987, she moved to the Physiology Department at West Virginia University in Morgantown, where she worked with Chris Baylis. During this postdoctoral fellowship under the tutelage of Baylis, Reckelhoff began her work to determine how sex differences impact renal function and disease, and the consequences of aging on renal function. She performed most of these studies using the technique of renal micropuncture.

In January 1991, Reckelhoff accepted a position as an assistant professor in the Department of Physiology and Biophysics at the University of Mississippi Medical Center (UMMC). In 2014, Jane Reckelhoff accepted the position of Director of Research in the Office of Research and Sponsored Programs, where she is charged with expanding and improving research infrastructure at UMMC.

In the years since joining the faculty in Jackson, Reckelhoff's research has focused on the role that sex steroids play in control of blood pressure and renal function, and the mechanisms responsible for postmenopausal hypertension. She has a special interest the differential roles played by testosterone in health and disease in males and females. To this end, Reckelhoff has been performing studies to determine the mechanisms by which blood pressure is elevated in women with polycystic ovary syndrome (PCOS), a condition that is characterized by elevated circulating testosterone levels. Androgen supplements in a female rat model of PCOS causes weight gain, insulin resistance, dyslipidemia, elevated plasma leptin, and increased blood pressure. In contrast, she is also interested in the consequences of the reduction in circulating testosterone levels in men who have chronic diseases, such as obesity, metabolic syndrome, and renal disease. She found that testosterone replacement in obese male rats caused them to

lose weight, reversed the metabolic syndrome characteristics, such as insulin resistance and dyslipidemia, and reduced plasma leptin and inflammation. However, despite these metabolic improvements, testosterone supplements in obese male rat increased their blood pressure, suggesting that, while the popular testosterone supplements in obese men may be beneficial for their symptoms of metabolic syndrome and inflammation, they should be monitored for elevations in their blood pressure.

Recklehoff's work has been continuously funded by multiple grants from the National Heart Lung and Blood Institute at NIH since 2000. Prior to that, she received grants from the American Heart Association, including an Established Investigator Grant, the American Federation of Aging Research (AFAR), the Juvenile Diabetes Foundation, the Children's Diabetes Research Foundation of America, and the Society for Women's Heath Research. She is currently the principal investigator (PI) of an R01 grant, and the PI on *Project 3* of a program project grant (P01), Cardiovascular Dynamics and their Control. She has more than 140 publications. Reckelhoff has trained more than 30 postdoctoral fellows, graduate students, summer undergraduate students, and high school students over the years. She has received several awards for her work, including the Young Scholar Award from the American Society of Hypertension and Monarch Pharmaceuticals (2000), and the Harry Goldblatt Award in Cardiovascular Research (2000), the Lewis K. Dahl Award for Hypertension Research (2011), the Harriet Dustan Award (2013), and the Distinguished Achievement Award, all from the Council for High Blood Pressure Research. In 2015, Jane Reckelhoff was honored with the Ernest Starling Award from the Water and Electrolyte Homeostasis Section of the APS. She also completed the Executive Leadership in Academic Program (ELAM) in 2014.

Reckelhoff has been very active in service. She served as the editor-in-chief of *Gender Medicine* from 2009 to 2012, and associate editor for *Clinical Therapeutics* (2014). She is currently associate editor of *American Journal of Physiology (AJP)–Regulatory, Integrative and Comparative Physiology*. She has served or currently serves on the editorial board of *Clinical Science, Hypertension, Biology of Sex Differences, AJP–Renal Physiology,* and *AJP–Heart and Circulatory Physiology*. Reckelhoff has also served as guest editor for various call for papers for *Gender Medicine, Steroids, Hypertension,* and *AJP–Heart and Circulatory Physiology*. She is currently guest co-editor for a call for papers from *AJP–Regulatory, Integrative and Comparative Physiology* on "Cardiovascular, Renal and Metabolic Diseases, Gender and Physiology."

With regard to APS, Jane Reckelhoff has been very active. She served as a member (1995-1998) and chair (2008-2011) of the Women in Physiology Committee, and member of the Porter Physiology Committee (2000-2002) and the Public Affairs Committee (2005-2008). She is a primary member of the Water and Electrolyte Homeostasis Section and has served as Secretary-Treasurer (2002-2005), Committee on Committees representative (2005-2007), Joint Program Committee representative (2008-2009), and Chair (2009-2011). Reckelhoff was elected to Council (2011-2014) and, while on Council, was co-chair of the Committee on Committees (2012-2013) and Task Force 4 of the Strategic Plan on Meetings and Conferences (2011-2012). Reckelhoff was also the co-organizer of the last four APS conferences related to sex and gender differences and women's health, the most recent one held in Annapolis, MD, in November 2015. She also served APS as co-chair of the program committee for the "Physiology without Borders" Pan-American Congress held in Iguazu Falls in 2014. In 2013, Jane Reckelhoff was the co-organizer for the FASEB Summer Conference on Renal Hemodynamics, and will be the organizer for the 2016 conference in June at Big Sky.

Reckelhoff has served as a member of the Leadership Committee and chair of the Membership subcommittee for the Council on Hypertension of the American Heart Association (AHA), and on numerous study sections and review panels for the AHA, NIH [General Medicine B, Neurobiology, ICP-1 (Fogarty International), Pathobiology of Kidney Disease, and special emphasis panels], and international panels.

Reckelhoff is the widow of Juan Carolos Romero from the Mayo Clinic. She has two sons, Eric who is executive chef at a restaurant in Allison Park, PA, and Jason who is a paralegal and title researcher for a law firm in Jackson; and two step-daughters, Patricia of Concord, CA, and Gabriella of Toronto, Canada. She has two grandchildren: Wilson, a freshman at Penn State University, and Annabelle in high school, and three step-grandchildren, Carlos Gabriel (10), Eli (8), and Ava (2). In her spare time, Reckelhoff enjoys travel, gardening, her fish pond, and serial killer movies and novels.

Continued from page 61:

Warning: Watch Out for Predatory Publishers

and paid them $500. What an amazing racket, and one that was not unexpected when the OA movement was launched in the early 90s. What a great way for the unscrupulous to fleece those needing to get their work published!

Over the course of nearly 20 years, OA publishing has exploded, with even the APS getting involved with the creation of *Physiological Reports* initially in partnership with The Physiological Society and now with a third partner, the Scandinavian Physiological Society. *Physiological Reports* was created in recognition of the fact that our journals do not publish all of the good physiological research. Those articles not accepted for publication in our subscription journals were finding their way into *PLoS One* and other OA journals. Having expended our reviewers' time and effort to review these manuscripts, the APS and TPS felt it was important to provide an OA option to our authors within our own family of journals. Our journals have been providing authors an opportunity to cascade their manuscripts into *Physiological Reports*, utilizing the reviews prepared for consideration within our subscription journals. As a result, the review process is expedited and their manuscripts are published rapidly. While most of the manuscripts published have cascaded from our subscription journals, *Physiological Reports* is receiving an increasing number of de novo submissions, something that should increase as the journal receives its first Impact Factor.

The explosion in OA is not an unexpected consequence of the OA movement and was one of our reasons for reacting negatively to the movement. While many societies and commercial publishers have launched OA journals, many more OA journals have been created by unscrupulous publishers seizing on the opportunity to generate revenue. To add to the confusion, many of the journals created by these unscrupulous publishers have names that are similar to reputable journals. According to Jeffrey Beall, librarian at the University of Colorado, Denver, and author of the blog *ScholarlyOA* (**http://scholarlyoa.com**), the number of potential, possible, or probably predatory publishers has increased from 18 in 2011 to 923 in 2016. The number of potential, possible, or probable predatory scholarly OA journals has increased from 126 in 2013 to 882 in 2016.

To entice unsuspecting authors to submit manuscripts, many of these journals include their journal Impact Factors on their websites and in their solicitation letters. Unfortunately, these Impact Factors are often purchased from unscrupulous entities masquerading as Thomson Reuters Institute of Scientific Information, the recognized provider of Impact Factors. The unscrupulous entities go by the names of Global Impact Factor, International Scientific Indexing, Einstein Institute for Scientific Information (Journal Impact Factor), or Global Institute for Scientific Information (JIF). These entities are being used in an attempt by the predatory publishers to buy legitimacy just as unsuspecting authors are submitting their manuscripts because of the quick (weak) review and rapid publication time . . . to increase the appearance of productivity on grant applications, for promotion review within their institutions, and on the job market. The amazing thing is that the predatory publishers never seem to purchase Impact Factors in the preferred range of 5.0. Almost all of the ones that I have seen advertise Impact Factors of 1.0 or less.

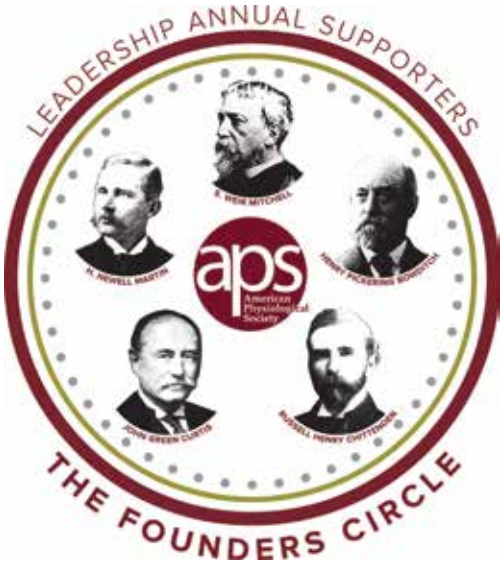
With the advent of OA publishing, it has become the Wild West as predatory publishers compete with reputable publishers for the attention of authors. As a publisher since 1898, APS provides strong journal brands, expertly peer reviewed, curated, and organized to meet the needs of our authors and readers. For authors everywhere, be wary of where you publish. Make sure that the publisher doesn't just take your money, post your article to a website, and run with your money. You need to make sure that the content will be there for perpetuity. ●

Martin Frank

APS News

The Founders Circle

Honoring the founders of the Society and their role in advancing physiology, The Founders Circle recognizes the Society's most generous donors to the Annual Fund. Individuals who make gifts of $250 or more to the APS Annual Fund in a given year (January 1-December 31) become members of The Founders Circle, according them special recognition for their generosity and leadership. If they wish, donors may designate gifts to one or more program areas, including education and diversity, career and research development, international programs, or science policy and public outreach.



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ACDP Meeting

Association of Chairs of Departments of Physiology Leadership Retreat Highlights

The Association of Chairs of Departments of Physiology (ACDP) held its annual Leadership Retreat at Dreams Sugar Bay Resort in St. Thomas, U.S. Virgin Islands, on December 3-6, 2015.

President Michael Sturek (Indiana Univ. Sch. of Med.) developed a program focused on issues being currently faced by department chairs and the discipline of physiology.

Research talks included the ninth annual Arthur C. Guyton Lectureship given by Leslie Leinwand (Univ. of Colorado) titled "Redefining Snake Oil: Translating Python Biology to Mammalian Hearts." The new chair research presentation was by Alan Daugherty (Univ. of Kentucky) on "Serendipitous and Convoluted Pathways into the Renin Angiotensin System."

The 2015 ACDP Distinguished Service Award was presented to John E. Hall (Univ. of Mississippi Med. Ctr.), who gave a much discussed talk on "The Ebb and Flow of Physiology and Physiology Departments: A Personal Perspective."

ACDP President Michael Sturek presents Leslie Leinwand (*left*) with the 2015 ACDP Arthur Guyton Lectureship Award

Four workshops were held based on topics selected by last year's attendees. The first was on "Undergraduate Physiology Curriculum," led by Erica Wehrwein (Michigan State Univ.) and T. Richard Nichols (Georgia Inst. of Technology). Wehrwein is the founder of a new Physiology Majors Interest Group within APS. ACDP members accepted the challenge issued to work on a new set of curriculum competencies for undergraduate physiology programs and to develop a revised set of the ACDP-APS List of Professional Skills for Physiology Trainees aimed at undergraduate students. These two projects will be ongoing over the year, with a progress report scheduled for the 2016 ACDP Leadership Retreat.

The second workshop was on "Chair Burnout: Identification, Coping, and Prevention" and included presentations by Irving Zucker (Univ. of Nebraska), Steven Houser (Temple Univ.), and L. Gabriel Navar (Tulane Univ.)

The third workshop switched the focus from chairs to faculty and was on "Conquering Burnout: Resilient Faculty" given by Kent Sanders (Univ. of Nevada). Both of these workshops generated much discussion and exchange of ideas among newer and more experienced chairs.

The final workshop focused on "Divisions and Virtual Physiology Departments" led by David Pollock (Univ. of Alabama-Birmingham) and Jonathan Geiger (Univ. of North Dakota). Neither university has a Department of Physiology anymore, and issues faced by physiologists scattered among different departments or divisions and how to best engender a sense of a virtual department in place of a physical one were discussed.

Martin Frank, APS Executive Director, updated the group on "Status and Initiatives of the APS."

Officer elections were held with the following results. Charles E. Wood (Univ. of Florida) was elected President-elect; Edward E. Morrison (Auburn Univ. Coll. of Vet. Med.) and Marlene A. Wilson (Univ. of South Carolina Sch. of Med.) were elected to 3-year terms as Councilors. Nicholas A. Delamere (Univ. of Arizona) was elected to a 3-year term as a representative to the Council of Faculty and Academic Societies (CFAS).

Nicholas A. Delamere (Univ. of Arizona) was thanked for his service as Past-President. Chris Cheeseman (Univ. of Alberta) and Joseph M. Metzger (Univ. of Minnesota) were thanked for their service as Councilors.

President-elect T. Richard Nichols (Georgia Inst. of Technology) announced the 2016 ACDP Leadership Retreat will be Dec. 8-11 at RIU Palace Cabo San Lucas in Los Cabos, Mexico. Note that the meeting will be 1 week later than normal because of hotel renovations. As details are available, they will be added to the 2016 meeting webpage at *acdponline.org/*.

The Leadership Retreat is open to chairs of departments of physiology or related areas, graduate directors in physiology or related areas, medical/osteopathic/veterinary physiology course directors, and undergraduate program directors. The meeting will build on this year's topics and will continue to focus on leadership issues and other areas of broad interest to those audiences. ●

Dreams Sugar Bay Resort

ACDP Council. *Back* (*left* to *right*): Edward Morrison, Janice Urban, Michael Sturek, Buck Hales, T. Richard Nichols, Nick Delamere. *Front* (*left* to *right*): Elsa Mangiarua, Marlene Wilson, Kebreten Manaye, Charles Wood, Chris Cheeseman. Not pictured: Joseph Metzger, Pieter de Tombe, R. Clinton Webb

Hall Honored at Annual ACDP Meeting

The highest award given by the Association of Chairs of Departments of Physiology (ACDP), the Distinguished Service Award, was awarded to John E. Hall, Arthur Guyton Professor and Chair of Physiology and Director of the Mississippi Center for Obesity Research at the University of Mississippi Medical Center (UMMC). Michael Sturek (Indiana Univ. Sch. of Med.), President of ACDP, presented the award during the organization's 2015 Leadership Retreat at Dreams Sugar Bay Resort in St. Thomas, U.S. Virgin Islands.

Hall was selected to receive the ACDP Distinguished Service Award for leadership in the discipline of physiology, his dedication to educating the next generation of medical students through his *Textbook of Medical Physiology,* and his service to national and international organizations.

Hall received his PhD in physiology at Michigan State University and did postdoctoral training at UMMC before joining the faculty as an Assistant Professor in the Department of Physiology in 1976. He rose through the ranks under the leadership of Arthur C. Guyton until he was named to succeed him as chair of the department in 1989 and given the title as the Arthur Guyton Professor of Physiology. In addition, from 1996 to 2008, he served as the Director of the Center of Excellence in Cardiovascular-Renal Research at UMMC, and from 2005 to 2013 he also served as Associate Vice Chancellor for Research. In 2013, he became the founding director of the Mississippi Center for Obesity Research, a position he holds in conjunction with being chair of the department.

His major research interests include obesity and metabolic disorders, cardiovascular and renal disease, mechanisms of hypertension, mathematical modeling, and systems analyses. Recent research in the lab has focused on obesity and target organ injury, central nervous system mechanisms of obesity-induced hypertension, and how the molecular signaling pathways that regulate appetite, energy expenditure, and sympathetic activity are altered in obesity. Hall's lab uses genetic, molecular, and integrative physiological approaches in its research studies. His research has been

ACDP President Michael Sturek presents John E. Hall (*right*) with the 2015 ACDP Distinguished Service Award

funded by NHLBI since 1975, and he has been Director of a Program Project grant since 1988.

Hall has authored or co-authored over 550 publications and has written or edited 21 books, including the *Textbook of Medical Physiology.* He is former Editor-in-Chief of *Hypertension* and *American Journal of Physiology–Regulatory, Integrative and Comparative Physiology*.

Hall served as President of the American Physiological Society and the Inter-American Society of Hypertension, Chair of the Committee of Scientific Councils, and Chair of the Hypertension Council, AHA.

He has mentored over 125 postdoctoral fellows, graduate students, medical students, and undergraduate students, and many of the trainees in his lab have become leaders in cardiovascular research, academia, and industry.

Because of his scientific endeavors, his dedicated service to the field of physiology, and his distinguished service to APS and other scientific organizations, the ACDP was proud to present its 2015 Distinguished Service Award to John E. Hall. ●

Experimental Biology

EB 2016 Distinguished Lectures

Physiology in Perspective – Walter B. Cannon Memorial Award Lecture

Amira Klip

Hospital for Sick Children, Toronto

Muscle-Immune Cell Crosstalk in the Genesis of Insulin Resistance

Saturday, April 2, 2016, 5:30 PM

Henry Pickering Bowditch Award

Sean D. Stocker

Penn State Coll. of Med.

Sodium-Sensing Central to Salt-Sensitive Hypertension

Sunday, April 3, 2016, 5:45 PM

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

David M. Pollock

Univ. of Alabama at Birmingham

Time to Re-Think Sodium Homeostasis?

Sunday, April 3, 2016, 4:15 PM

Carl Ludwig Distinguished Lecturer of the APS Neural Control and Autonomic Regulation Section

Benedito Honorio Machado

Sch. of Med. Ribeirao Preto-USP

Neurogenic Hypertension and the Secrets of Respiration

Monday, April 4, 2016, 8:00 AM

Claude Bernard Distinguished Lecturer of the APS Teaching of Physiology Section

Barbara E. Goodman

Univ. of South Dakota Sanford Sch. of Med.

An Evolution in Student-Centered Teaching

Sunday, April 3, 2016, 10:30 AM

Solomon A. Berson Distinguished Lecturer of the APS Endocrinology and Metabolism Section

Gerald I. Shulman

HHMI, Yale Univ. Sch. of Med.

Cellular Mechanisms of Insulin Resistance: Implications for Obesity, Type 2 Diabetes, and the Metabolic Syndrome

Monday, April 4, 2016, 10:30 AM

Hugh Davson Distinguished Lecturer of the APS Cell and Molecular Physiology Section

Paul A. Insel

Univ. of California, San Diego

GPCRomics: Discovering New *Ways Cells Communicate with One Another and the Outside World*

Sunday, April 3, 2016, 2:00 PM

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

Scott K. Powers

Univ. of Florida

Exercise: Teaching Myocytes New Tricks

Monday, April 4, 2016, 2:00 PM

Joseph Erlanger Distinguished Lecturer of the APS Central Nervous System Section

Quentin J. Pittman
Univ. of Calgary
Immune Stress and the Brain: Synaptic Substrates of Sickness
Monday, April 4, 2016, 3:15 PM

Robert M. Berne Distinguished Lecturer of the APS Cardiovascular Section

Stephanie W. Watts
Michigan State Univ.
Oh, the Places You'll Go! My Many Colored Serotonin (Apologies to Dr. Seuss)
Tuesday, April 5, 2016, 2:00 PM

Carl Gottschalk Distintuished Lectureship of the APS Renal Section

David H. Ellison
Oregon Hlth. Sci. Univ.
Aldosterone and Hypertension: What's the DCT Got to Do With It?
Monday, April 4, 2016, 3:15 PM

August Krogh Distinguished Lecturer of the APS Comparative and Evolutionary Physiology Section

Supported by Novo Nordisk Foundation

Jon F. Harrison
Arizona State Univ.
Physiological and Evolutionary Interactions Among Body Size, Metabolic Rate and Oxygen
Tuesday, April 5, 2016, 3:15 PM

Julius H. Comroe, Jr. Distinguished Lecturer of the APS Respiration Section

Gary C. Sieck
Mayo Clin. Col. of Med.
Mysteries and Maladies of Mitochondrial Dynamics
Tuesday, April 5, 2016, 10:30 AM

Horace W. Davenport Distinguished Lecturer of the Gastrointestinal and Liver Physiology Section

Bishr Omary
Univ. of Michigan
The Intermediate Filament Cytoskeleton: From Bench to Bedside
Tuesday, April 5, 2016, 3:15 PM

APS Nobel Prize Lecture

Roger Tsien
Howard Hughes Med. Inst., Univ. of California, San Diego
Molecules Against Cancer or for Very Long-Term Memory
Wednesday, April 6, 2016, 4:45 PM

Upcoming EB Symposia

Mark your calendars for professional development symposia at Experimental Biology 2016!

Saturday, April 2: 8:00 AM - 12:00 PM
Keep Your Eye on the Ion – A Refresher Course on Ionic Homeostasis and Systems Physiology (Medical Education Refresher Course)

Get an update on content from leading experts in the field: Regulation of Sodium Homeostasis and Hypertension (**John Osborn,** U Minnesota), Regulation of Potassium Homeostasis and Renal Disease (**Biff Palmer,** UT Southwestern Medical Center), Acid Base Disturbances and Regulation of Potassium (**L. Lee Hamm,** Tulane U School of Medicine), and Cardiac Ischemia: Ionic Currents and the ECG (**Richard Klabunde,** Marian U College of Osteopathic Medicine).

the-aps.org/refresher-ion

San Diego Convention Center, Rm. 24

Tuesday, April 5: 10:30 AM - 12:30 PM
Leadership and Management Skills: What You Might Not See in Your CV (Career Symposium)

A successful career in scientific research is filled with leadership and management opportunities. The challenge is in understanding what kind of leader you are, how you lead/manage, seeing the possibilities, and leading well. Learn how to explore, identify, and apply inherent and learned leadership/management skills.

the-aps.org/leadership

San Diego Convention Center, Rm. 25B

Monday, April 4: 3:15 - 5:15 PM
Negotiating for Success! (Mentoring Symposium)

Negotiation is both a skill and an art. Understanding your strengths and weakness will help you to best promote yourself and succeed in interviews and getting the position you are aiming for. Learn how to use the right tools and the right approach to succeed in any discipline.

the-aps.org/negotiating

San Diego Convention Center, Rm. 25C

Wednesday, April 6: 10:30 AM - 12:30 PM
Now Hiring PhD's: Post Doc Not Required (Trainee Symposium)

It is critical for trainees to become exposed to various career paths available in today's job market for PhD holders and to understand the skills necessary to attain those job opportunities. Learn about *1)* various career options that do not require a postdoc; *2)* how to get the experience and skills needed for those careers; and *3)* creative ways that graduate programs prepare trainees for diverse careers.

the-aps.org/hiring

San Diego Convention Center, Rm. 22

Experimental Biology 2016

April 2–6, 2016, San Diego, CA

PHYSIOLOGY PLATFORM SESSIONS

Saturday, April 2, 2016

Room			
Ballroom 20A			5:30 PM–6:30 PM Cannon Award Lecture **Klip**
Room 22			3:00 PM–5:00 PM *NCAR Section Award Session* Data NCARnation **Santisteban/Lazartigues**
Room 23	9:30 AM–11:30 AM *MCS Symp* Microcirculation: President's Symposium: Blood Cell-Microvessel Interactions **Rumbaut**	1:00 PM–3:00 PM *MCS Symp* Signal Integration and Microcirculatory Blood Flow Control: Making Parts Whole Using a Network Approach **Jackson**	3:30 PM–5:30 PM *MCS Symp* Advances in Microvascular Permeability/Glycocalyx **Breslin**
Room 24	8:00 AM–12:00 PM *Education Committee Refresher Course* Keep Your Eye on the Ion. Refresher Course on Ionic Homeostasis and Systems Physiology **Rodenbaugh/Scrogin**		2:15 PM–5:15 PM *WEH Section Award Session* WEH Trainee Award Finalists and Data Diuresis **Ho/Reckelhoff/O'Connor/ Polichnowski**
Room 25A		1:00 PM–5:15 PM *PGG Special Session* 3rd Annual APS Physiological Genomics Group Conference	
Room 25B		1:00 PM–3:00 PM *ACE Committee Symp* Having Trouble with Your IACUC? **Henegar**	
Room 25C			3:00 PM–5:00 PM *Communications Committee Symp* Setting the Record Straight for Science: How to Write to Local and National News Outlets **Goodman**
Room 26		1:00 PM–3:00 PM *APS Workshop* Advanced Microscopy Techniques for the Study of Physiology **Kolar/Yosten**	3:15 PM–5:15 PM *APS Workshop* Novel Methods to Perturb Genes for Physiological Examination **Andresen/Joe**

Saturday, April 2, 2016, *cont.*

Room			
Room 27			6:00 PM–8:00 PM *MCS Special Session* Microcirculatory Society Reception and Poster Discussion **Murfee/Gonzalez/Song/Lam**
Room 28AB	9:00 AM–5:00 PM *ETG Conf* Pre-EB Meeting of the Epithelial Transport Group Young Investigators Symposium **Levi**		

Sunday, April 3, 2016

Room	8:00-10:00 AM	10:30 AM-12:30 PM	3:15-5:15 PM
Ballroom 20A		*President's Symp Series – Physiological Mechanisms Responsive to Behavioral and Environmental Challenges* Physiological Processes Underlying Organ Injury in Alcohol Abuse **Murray/Souza**	*Integrative Physiol Symp* Early Life Stress and Sex-Specific Manifestations of Cardio-Respiratory Dysfunction: Insight from Microglial Cells **Baldy/Dasinger** 5:45 PM–6:45 PM Bowditch Award Lecture **Stocker**
Room 22	*NCAR Section FT* NCAR Young Investigator Awards **Ramchandra/Limberg**	*PIC Symp* Metabolic Syndrome and the Pathway of Drug Development: From Bench to Bedside **Zahner/Cornelius**	*Hypoxia Group FT* Chemical Control of Autonomic Function in Health and Disease **Forster**
Room 23	*E&M Section Symp* New Insights into Exercise and Insulin Sensitivity **Richter/McConell**	*CV Section FT* Wiggers Award FT **Meininger**	3:15 PM–4:15 PM MCS Landis Award Lecture **Segal** 4:30 PM–5:30 PM *MCS* Business Meeting and Reception
Room 24	*CV Section Symp* Physiological and Pathological Aspects of Hypertrophic Cardiomyopathy **Steinberg/Sadayappan**	10:30 AM–11:30 AM Teaching Section Bernard Lecture **Goodman**	2:00 PM–3:00 PM CAMP Section Davson Lecture **Insel** 3:15 PM–4:15 PM WEH New Investigator Award Lecture **George** 4:15 PM–5:15 PM WEH Section Starling Lecture **Pollock**

Sunday, April 3, 2016, *cont.*

Room	8:00-10:00 AM	10:30 AM-12:30 PM	3:15-5:15 PM
Room 25A	*WEH Section FT* Neural and Hormonal Modulation of Fluid Balance and Ion Homeostasis in Health and Disease **Banek/Lob**	*CAMP Section FT* Microbiota or Nutrition and Host Cell Signaling **Worrell/Butterworth**	*CAMP Section Symp* Orai/STIM1 Physiology and Pathophysiology **Muallem/Delpire**
Room 25B	*Teaching Section Symp* Standing on the Edge: Transformational Teaching and Learning Beyond the Classroom Walls **Crecelius/Taylor**	*PGG Symp* Omics Applications in Metabolic Physiology **Olfert/Adams**	*CEP Section FT* Comparative and Evolutionary Physiology Trainee Driven FT **Warren/Ivy**
Room 25C	*MBG FT* Muscle Dysfunction in Diabetes: Cause(s) or Effect(s)? **Brozinick**	*Resp Section Symp* Macrophages: A Double-Edged Sword in Inflammatory Tissue Injury **Mehta/D'Alessio**	*Resp Section FT* Intermittent Hypoxia: Respiratory and Cardiovascular Control and Beyond **Solomon/Fields**
Room 26	*CV Section Symp* Microbiome in Cardiopulmonary Diseases: From Association to Causation **Shenoy/Pluznick**	*NCAR Section Symp* Bridging the Gap between Pre-clinical and Clinical Evidence: Treating Cardiovascular Diseases with Autonomic Modulation Therapies **Ruble/Sunagawa**	*NCAR Section Symp* The Brain-Gut Axis: Microbiome in Neural and Metabolic Diseases **Zubcevic/Raizada**
Room 27	*Renal Section FT* Advances in Renal Physiology I **Grimm/Caceres**	*Renal Section FT* Renal Section Young Investigator Symp: Novel Signaling and Transport Mechanisms in the Collecting Duct **Prieto-Carrasquero/Peti-Peterdi**	*EEP Section Symp* Emerging Mechanisms of Thermoegulation and Metabolic Control **Clanton/Periasamy**
Room 28A	*PGG Award Session* Trainee Highlights in Physiological Genomics **Kriegel/Cai**	*ETG FT* Epithelial Physiology and Transport I **Bomberger/Bradbury**	*EEP Section FT* What do Both Mitochondrial Protein Turnover and Mitochondrial Function Tell Us About Exercise and Aging? **Miller**
Room 28B	*TIPG FT* Translational Physiology Showcase: Focus on the Effects of Alcohol Abuse, Behavior, Diet, Nutrition, and Extreme Environmental Conditions on Physiology **Young/Bikman**	*CNS Section Symp* The Spinal Control of Motor Output: From Neural Circuits to Mechanics **Frigon/Nichols**	*CV Section FT* Sex Disparities in Cardiovascular Function and Remodeling **Goulopoulou**

Monday, April 4, 2016

Room	8:00-10:00 AM	10:30 AM-12:30 PM	3:15-5:15 PM
Ballroom 20A	*TAC FT* Sex Differences in Health and Disease **Ilatovskaya/Banek**	*APS President's Symp Series. Physiological Mechanisms Responsive to Behavioral and Environmental Challenges* Dietary Influences on Physiological Control Mechanisms – How Much, When and What **Anthony**	*Integrative Physiol Symp* Role of Epithelium in Innate Defence: More than a Barrier **Garnett**
Room 22	*CV Section Symp* Novel Insights in Vascular Disease in Metabolic Syndrome **Weber/Stepp**	*WEH Section Symp* Hydration Physiology: From Cells to Systems and Clinical Health Outcomes **Armstrong**	*E&M Section Symp* The Control of Skeletal Muscle Atrophy in Responses to Disuse: Clinical/Pre-Clinical Contentions and Fallacies of Evidence **Atherton/Lang**
Room 23	*E&M Section FT* Metabolic Consequences of Exercise **Steiner/Yosten**	*EEP Section Symp* Exercise and Cancer: From Cardiovascular Outcomes to the Tumor Microenvironment **Behnke/Jones**	3:15 PM–4:15 PM CNS Section Erlanger Lecture **Pittman** 4:15 PM–5:15 PM *CNS Section* Erlanger Lecture MiniSymp **Pittman/Stocker**
Room 24	8:00 AM–9:00 AM NCAR Ludwig Lecture **Machado**	10:30 AM–11:30 AM E&M Section Berson Lecture **Shulman**	2:00 PM–3:00 PM EEP Section Adolph Lecture **Powers** 3:15 PM–4:15 PM Renal Section Gottschalk Lecture **Ellison**
Room 25A	*GL Section FT* Innate Immune Functions of Epithelial Cells **Frey**	*CAMP Section FT* Cell Signaling: Proteins, Pathways, and Mechanisms **Rao/Rodrigues**	*PGG FT* Environmental Regulators on Microbiome-Mediated Immunity and Inflammation: Genetic and Epigenetic Implications **Claycombe/Meydani**
Room 25B	*Teach Section FT* Achieving Mastery Using Non-Standard Assessment Methods **Golden**	*Resp Section FT* Environmental Exposures, Oxidative Stress, and Lung Disease **Waters**	*Teach Section Symp* Scientific Foundation for Clinical Practice: More Than a Pile of Facts **Alarcón Fortepiani/Sanchez-Diaz**
Room 25C	*WEH Section FT* Hypertension: Developing Concepts **O'Connor/Ho**	*CEP Section FT* Avian Osmoregulation: Unique Solutions, Unanswered Questions **Sweazea/Goldstein**	*WIP Committee Symp* Negotiating for Success! **Mathis/Sweazea**
Room 26	*EEP Section Symp* Modulatory Influence of Exercise on Physiological Function with Aging **Seals/Booth**	*GIL Section Symp* Neuro-Immune Crosstalk in the Gut **Gulbransen/Lomax**	*Hypoxia Group Symp* Transcriptional and Epigenetic Regulation of Cardio-Respiratory Homeostasis under Hypoxia **Semenza/Ramirez**

Monday, April 4, 2016, *cont.*

Room	8:00-10:00 AM	10:30 AM-12:30 PM	3:15-5:15 PM
Room 27	*CV Section FT* Cooperation Between Adaptive and Innate Immunity in Cardiovascular Disease **DeLeon-Pennell/de Castro Bras**	*Renal Section Symp* Novel Mechanisms of Gene Regulation in the Kidney **Gumz/Hoover**	*NCAR Section FT* Vagal-Respiratory Coupling and its Implications in Health and Disease **Dutschmann**
Room 28A	*CV Section FT* Cerebrovascular Dysfunction and Reactive Nitrogen Species **Katakam/Pollock**	*ETG FT* Epithelial Physiology and Transport II **Hamilton/Helms**	*CV Section FT* Cardiopulmonary Effects of Environmental Stressors **Wold**
Room 28B	*Publications Committee Symp* Publishing 101: How to Get Your Work Published and Avoid Ethical Minefields **Sigmund/Scheman**	*CV Section Symp* Thyroid Hormone Modulation of Cardiac Function and Remodeling: Bench to Bedside **Portman/Gerdes**	*Resp Section FT* Inflammation and Its Influence on Lung Function and Respiratory Control **Wilson/Wilson**

Tuesday, April 5, 2016

Room	8:00-10:00 AM	10:30 AM-12:30 PM	3:15-5:15 PM
Ballroom 20A	*PG Journal* Beyond GWAS: Attaching Physiology to the Genome **Munroe/Wiltshire**	*President's Symp Series Symp* *Physiological Mechanisms Responsive to Behavioral and Environmental Challenges* Physiological Adaptation to Behavioral, Environmental, and Chronological Stress **Simon/Whitaker**	*Integrative Physiol Symp* Mechanobiology of Fibrosis across Organ Systems **Tschumperlin** 5:45 PM–7:45 PM APS Business Meeting
Room 22	8:00 AM–10:00 AM *GIL Section Special Session* John Forte GIL Section Distinguished Abstract Plenary Session **Uno/Zavros**	*CV Section Symp* Shear Stress-Induced Mechanotransduction in Endothelial Cells: Implications for Vascular Health and Adaptations to Physical Activity **Hellsten/Egginton**	*CV Section FT* Metabolic Regulation of Cardiac Function in Diabetes: Epigenetics and Posttranslational Mechanisms **Wende/Chatham**
Room 23	*CV Section Symp* Redox Mediated Endothelial Responses: Showcasing NOX2 Enzymes in Pathophysiology **Chatterjee/Sampath**	*CV Section Symp* New Insights into the Role of Autophagy in Cardiac Disease **Mellor/Hill**	3:15 PM–4:15 PM CEP Section Krogh Lecture *Supported by Novo Nordisk Foundation* **Harrison**
Room 24	*Resp Section Symp* Opioid-Induced Respiratory Depression: Sites/Mechanisms of Action and Potential Solutions **Forster/Miller**	10:30 AM–11:30 AM Respiration Section Comroe Lecture **Sieck**	2:00 PM–3:00 PM CV Section BerneLecture **Watts** 3:15 PM–4:15 PM GIL Section Davenport Lecture **Omary**

Tuesday, April 5, 2016, *cont.*

Room	8:00-10:00 AM	10:30 AM-12:30 PM	3:15-5:15 PM
Room 25A	*WEH Section FT* Origins of Adult Cardiovascular and Metabolic Disease **Loria/Gillis**	*CAMP Section FT* Ion Channels and Transporters in Health and Disease **Kravtsov/Thai**	*CAMP Section Symp* Ion, Water, and Gas Movements through the Brain in Health and Disease: Putting it All Together **O'Donnell/Iliff**
Room 25B	*MBG FT* Skeletal Muscle Peroxisomal-Mitochondrial Interactions in Health and Disease **Cortright/Noland**	*Careers Committee Symp* Leadership and Management Skills: What You Might Not See in Your CV **Schnackenberg/Richards-Williams**	*E&M Section FT* Hormones and Reproduction **Samson**
Room 25C	*History Group Symp* A Broad History of Temperature Regulation **Leon/Kirkton**	*CEP Section Symp* Context Dependence of Cardiorespiratory Physiology: Temperature Effects, Circadian Cycles, and System Interdependence **Santin/Hartzler**	*MBG Symp* Gene Regulation in Skeletal Muscle **Nader**
Room 26	*CV Section FT* 2016 Gabor Kaley Lecture FT **Nourshargh**	*EEP Section Symp* Mechanisms of Neuromuscular Junction Destabilization and Fragmentation in Aging Skeletal Muscle **Jackson/Hepple**	*WEH Section FT* Cross-Talk Between Salt and Other Factors in Hypertension **Li**
Room 27	*Renal Section FT* Advances in Renal Physiology II **O'Connor/Evans**	*Renal Section Symp* Still Unraveling the Mysteries of the Kidney with Isolated Tubules after All These Years **Sands/Brooks**	*CNS Section FT* Novel Mechanisms at the Level of the Solitary Tract Nucleus (NTS) **McDougall**
Room 28A	*CNS Section Symp* Building Neural Circuits: Wiring and Experience **Van Hooser/Cang**	*NCAR Section FT* The Mind Matters: Psychology as an Overlooked Variable in Autonomic Physiology **Wehrwein/Carter**	*EEP Section Symp* Mechanisms Regulating Skeletal Muscle Mass **Bodine**
Room 28B	*NCAR Section FT* Neural Control of Inflammation-Mediated Hypertension **Lazartigues**	*GIL Section FT* Chronic Liver Diseases Modulated by Transcriptional and Translational Mechanisms **Wang/Machida**	*Resp Section Symp* Neurostimulation to Restore Breathing with Neuromuscular Disorders **Mitchell/Streeter**
Marina Ballroom DE			1:00 PM–2:00 PM *History of Physiology Group Lecture* **Severinghaus**
Room 33ABC			3:00 PM–5:00 PM 2014 Tang Prize in Biopharmaceutical Science **Honjo**

Wednesday, April 6, 2016

Room	8:00-10:00 AM	10:30 AM-12:30 PM	2:30-4:30 PM
Ballroom 20A			4:45 PM–5:45 PM APS Nobel Prize Lecture **Tsien**
Room 22	*CV Section FT* New Approaches for Induction of Arteriogenesis **Rocic**	*TAC Symp* Now Hiring PhD's: Post Doc Not Required **Hernandez-Carretero/Dougherty**	
Room 23	*Pan-American Societies Symp* Cardiac Mitochondria: More than an ATP Powerplant **Antunes/Villa-Abrille**	*AFMR Symp* Emerging New Mechanism in Alcoholic Liver Disease **Liangpunsakul**	
Room 24	*Integrative Physiol Symp* Reprogrammed Cells as Models for Disease **Chilian/Zhang**		
Room 25A	*GIL Section Symp* Mechanisms Underlying Host-Microbial Interactions in Pathophysiology of Diseases, Using Gut Organoids and Animal Models **Dudeja/Sun**	*CAMP Section Symp* Recent Advances in the Structure and Function of Epithelial Tight Junctions **Rao/Vetrano**	*AFMR Symp* Natural Products: Biological Effects and Therapeutic Potential in Human Disease **Prabhakar/Wu**
Room 25B	*Resp Section Symp* Microtubules in Lung Disease and Recovery **Birukova/Stevens**	*Resp Section FT* Redundancy and Plasticity in Respiratory Control **Bavis/Nichols**	
Room 25C	*CNS Section FT* Breathing Disturbances in Neurological Disorders **Moreira**	*CEP Section Symp* Comparative Physiology of Skeletal Muscle – Novel Studies in Plasticity and Structure **Rourke/Horner**	*NDOGS Special Session* ORPHEUS – Developing Best Practices for Graduate Education in Europe **Barnett**
Room 26	*TPIG Symp* Novel Molecular Targets and Therapeutic Approaches in Myocardial Infarction and Heart Failure **Koch/Sharp**	*CV Section FT* Endothelial Dysfunction in Diabetes **Dokken/Meininger**	
Room 27	*Renal Section Symp* Renal Potassium Sensing Mechanisms: A New Paradigm for Potassium Secretion **Ellison/Subramanya**	*ETG Symp* Compartmentalization of Signal Transduction in Epithelial Cell Biology **Fenton/Rieg**	
Room 28A	*EEP Section FT* Hot, Cold, and Old: Aging and the Physiology of Thermal Stress **Schlader/Gagnon**	*EEP Section FT* Recovery from Exercise and Translating Post-Exercise Hypotension **Baynard**	
Room 28B	*E&M Section Symp* Role of Oxytocin in the Control of Energy Homeostasis **Blevins/Samson**	*NCAR Section FT* Actions and Interactions of Baroreflexes, Chemoreflexes and Metaboreflexes in Autonomic Regulation and Heart Disease **Amann/Fadel**	

Mentoring Forum

Switching Gears After Graduate School: From Applied Human Physiology to Basic Science

Styliani Goulopoulou

University of North Texas Health Center, Fort Worth, Texas

It is not the goal of this column to encourage you to switch fields of study after graduate school. But if you decide to do so, please know that it is possible and fun.

I have been asked several times by graduate students why, when, and how I made this decision. Students in the fields of applied human physiology are interested to know whether it is possible and how they can do it. But before I share with you my thoughts, let me introduce myself. I did my graduate training in exercise science in an integrative human physiology lab and my postdoctoral training in vascular physiology in a basic science lab. I am now a researcher and a teacher in an academic institution. But let me tell you more about my graduate training in human physiology. Following a master's degree in Exercise Science, I did my PhD in Exercise Physiology and Science Education. I trained in cardiovascular human physiology for almost 7 years. I was in a good school with great mentors and a lot of opportunities. During this time, I had the chance to work with many different populations, and I became an expert in many techniques that are often found in a cardiovascular human physiology lab. To make a long story short, I had a very happy childhood. By the end, I had found my passion: cardiovascular physiology.

After my first involvement in a research project, I decided to continue with a research career and started making plans to one day become a faculty member in an academic institution. I knew that postdoctoral training would be a prerequisite for this path. It was then that I made a move toward a different direction: an unexpected decision for some and an opportunity for exploration for me. There are many reasons why a graduate student would think of changing fields of study after their PhD. I initially thought of having a section in this essay about good and bad reasons to make a switch after graduate school. I decided against it. I would like to avoid labeling your reasons as "good" or "bad." After all, our career decisions reflect who we are, where we want to be, and our personal needs and aspirations. This is a complex interaction of various factors and a very personal matter. Your reason to want to make a change will be a good one only if you can justify it to yourself and if the decision makes you happy. Here is my own reason: curiosity. The research projects I was doing during graduate school were mostly descriptive. The non-invasive techniques I was using led to significant inferences and correlations but did not provide an answer to the question of "why a physiological phenomenon occurs." I always want to know why. Nosy by nature.

In the following few paragraphs, I will outline for you some of the lessons I learned when I decided to switch gears after graduate school. My suggestions and advice are based on my personal experience and may not directly apply to all.

How to Prepare for a Postdoc in a Basic Science Laboratory

Finish Strong

Being prolific during your graduate training will set the tone for your next career steps. It is important to demonstrate early on a good work ethic, high productivity, and involvement in the scientific community. These attributes will help you start building a good reputation and will make you competitive during your search for a postdoctoral position. A strong publication record, evidence of grantsmanship, enthusiasm, and dedication for learning often offset the lack of prior experience when you interview for a postdoc. At the beginning of your postdoc, you will have to spend a lot of time learning basic laboratory skills and new techniques. As a result, publications may be delayed. Excellent productivity during graduate training can buy you some time and give you a benefit "due to prior good behavior" when you apply for fellowships and awards. Do not leave "unfinished business" behind. If

you want your dissertation to be published, write and submit your papers before you leave graduate school. After you start your postdoc, you will be consumed with a learning curve, new responsibilities, new goals, and a new life. Finish strong–both words are equally important herein.

Develop Long-Term and Short-Term Career Plans

As you are contemplating the possibility of switching fields of study, use a pen and a notepad (or a screen and a keyboard). Make notes. Ask yourself many questions. Who do I want to be when I grow up? What type of people do I like to work with? What part of the scientific process makes me happiest? Most colleagues would agree that we continuously ask ourselves questions like these. But the value of these questions and their answers are the greatest at points of our careers when we are looking for a change. Nobody will or should answer them for you. Having this conversation with yourself will help you develop your career plans. As a result, when you interview for a postdoctoral position, you will be able to clearly communicate to your future mentor why you want to work with her/him and why you have chosen to switch gears after graduate school.

Seek Advice

Seek advice and discuss your thoughts with others. Choose among those who are good listeners and avoid those who think that they have an answer for everything. Your PhD advisor, your lab mates, and other faculty at your school could be a great resource. Learn from their experience and wisdom and carefully listen to yourself when you explain your reasons for this change. I started contemplating changing fields of study as soon as I decided to do a postdoc and pursue a research career. I was very lucky to have excellent PhD advisors and mentors. They did not judge my decision to leave the field of study they trained me in. With curiosity, they asked *Why?* and carefully listened to my *Because.* They shared their experience and helped me develop a strategy to find a good environment for my postgraduate training. At a conference, I met with two world-renowned cardiovascular physiologists, with experience in both human and animal physiology. Our conversations about the advantages and disadvantages of switching gears after graduate school started at the conference site and continued for several months. I ended up doing my postdoc with one of them and am enjoying the mentorship of both to this day. Conferences are indeed great places for scientific exchange.

Make a List of Your Strengths and Weaknesses

I hope you have not dropped your pen and notepad (or screen and keyboard) just yet. Keep writing (keep typing). It is time to identify your major strengths and weaknesses as a scientist. I do not know you in person, but if you are a PhD student in physiology, you will find some of your strengths in the following list: intelligence, scientific curiosity, knowledge of the scientific process and ethics, expertise in at least one subject related to physiology, good understanding of the integrative nature of physiology. You can expand this list to include your specific skills and attributes. Do not forget to add in this list your dedication to take over big challenges and overcome them. So here you go! Now you have an answer to common interview questions: "What are your strengths?" and "Why should I hire you?" What about your weaknesses? Here is what I can come up with: lack of prior experience in a basic science laboratory; lack or limited knowledge of subject areas such as molecular biology, biochemistry, immunology, and pharmacology; limited exposure to the scientific literature covering the new area of study. Having this list will help you throughout your search for a postdoctoral position. Also, you can use this list as a self-evaluation tool during your postdoctoral training. If your career goals remain the same, as time passes, your list of strengths will become longer than that of your weaknesses.

Choose the Right Mentor for Your Postgraduate Training

You made the decision: you decided to continue with a postdoctoral training in a basic science laboratory! Now, you need to find the right mentor and environment for your training. It is time that all your hard work of self-talking, seeking advice, and building a strong productivity record pays off. There are a lot of comprehensive articles and blogs about how to choose a postdoc. I do believe, however, that special considerations should be given when one decides to make a change in their field of study. In one of our conversations, my PhD advisor once mentioned that it is the postdoctoral training and not the graduate training that determines our career path. Although both stages of training shape a scientist, I would agree that it is the postdoctoral training that determines the

first steps of an independent research career. Choose wisely. Make a short-list with researchers who do the work you want to do. Read papers from their lab, meet their trainees in conferences, e-mail them, and ask them questions. Some prefer postdocs with specific technical skills and prior experiences. Some will view you as a risk and some as an asset. Look for those who aspire to mentor young scientists. A senior researcher with a large lab may feel more comfortable to accept a new postdoc with no prior experience. On the other hand, I know young investigators who appreciate enthusiasm and dedication much more than prior experience. In this case, you will have one-on-one training, because the junior faculty will be in the lab with you most of the time. During your interview, request to meet with lab members. Conduct a search to find out where previous lab members are now (i.e., faculty positions). Explain clearly your goals and aspirations. Ask your potential mentor whether they will be comfortable helping you make a change and whether they can adequately prepare you for the next step. In my case, my long-term goal was to obtain an independent faculty position in an institution that supports research. To achieve this goal, I knew that I had to get independent funding, a strong publication record, and a new network of support. Importantly, I needed extensive training in vascular physiology and biology. I wanted to do this in 3 years. It was an ambitious plan, but my postdoc mentor signed up for it with the same enthusiasm I proposed it. After your interview with a potential mentor, you should be able to answer these questions: "Will this mentor/environment help me get where I want to be?" and "Will I be happy working here?"

Work More, Work Longer, Work Harder

Congratulations! You got a postdoc position in a basic science lab in a great institution with a mentor you really like. Now what?

Celebrate and be happy but do not forget that you are here to learn and succeed. There is no magic recipe for success. If you want to be successful in this new career path, you have to master fundamental skills and techniques. You must become an expert in at least one of them. Having no prior experience in a basic science laboratory will be frustrating and a big challenge at times. "Repetition is the mother of all learning." If you want to catch up with everyone around you and become good in what you are doing, work more, work longer, and work harder. Be restless; observe and assist others, ask questions, make notes, immerse yourself in this new environment. At the beginning of my postdoc, I chose to shadow a postdoctoral fellow with whom I shared common interests and appreciated her work ethic. We started working on projects together, and I learned from her as much as I could. I kept an open line of communication with my mentor, updating him often about my failures and successes. One thing I learned during my postdoc was to deal with failures, and I had many of them, especially at the beginning of my training. Overcoming obstacles and dealing with disappointments gave me confidence and made me determined to complete what I had started.

Be Honest

"I know that I know nothing." If Socrates was brave enough to make this statement, we can all admit our shortcomings and need for improvement. When I interviewed with my postdoctoral mentor and his trainees, I disclosed that I did not know how to pipette and had never handled rodents before–because it would take them only a few minutes with me in the laboratory to realize that this was true. This not only broke the ice but also helped them to understand what they should teach me first and foremost. There is no value in impressing others by making untrue statements. You are here to learn. Admit it and start learning.

Be Involved and Contribute

Revisit the list with your strengths and weaknesses often. Use your strengths to achieve your goals. Use your experience to help your new lab mates and your new lab be successful. You already have been through the process of obtaining a doctoral degree. The requirements for completion of graduate studies vary among schools and disciplines, but certain aspects are similar. Share your experience with graduate students in your new lab and assist with their mentoring. As an applied physiologist, you have a holistic approach to research questions and physiology-related problems. In most cases, basic science laboratories have a more reductionist view that reduces their ability to relate their work to human physiology. Contribute. Ask questions during lab meetings and journal clubs and teach others your integrative way of thinking.

Create a New Network but Don't Forget the Past

Most of us make our first science friends during graduate school, and it is then when we interact with our first science mentors. You have decided to change fields of study, but it is important that you stay in touch with those who know you the most. During the last 6 years, my network of science friends has doubled and then tripled. This large group of friends and mentors has become a large family–my science family. When I was recently searching for a faculty position, I had support and mentorship from this family. I would not have been successful in this process without their advice, experience, and wisdom. Whether we like it or not, we are never alone. The question we have to answer is with whom we want to be and share. You do not need to build a new network. You already have one. Make it bigger and stronger. Bring people together.

Final Thoughts

Science gives us unlimited opportunities for discovery and learning. Find your passion in physiology and follow it. Techniques and laboratory skills are important tools to help us answer questions but should not dictate which questions we want to answer. Gaps and holes in scientific knowledge should be the ones determining where to go next. The paths that you can take after graduate school are many. If postdoctoral training in a different area of study helps you to answer different or bigger questions that interest you, make a switch after graduate school and learn something new. If you have found your passion in your current area of study, stay in it and learn more. Good luck! ●

To comment on this article or ask a question of the author, see *www.the-aps.org/forum-switching-gears*.

Styliani (Stella) Goulopoulou received her PhD in 2010 in Exercise Science and Science Education at Syracuse University. She then completed a 3-year postdoctoral training in vascular physiology in the laboratory of R. C. Webb at the Medical College of Georgia, where she stayed an additional year as a Research Assistant Scientist. Currently, she is an Assistant Professor in the Institute for Cardiovascular and Metabolic Diseases in the University of North Texas Health Science Center. Stella's research is focused on maternal vascular adaptations to pregnancy. She uses animal models, and integrative and translational approaches to investigate the interactions between placenta-derived factors, innate immune system, and vascular adaptations in pregnancy-induced hypertension. Her work is funded by the American Heart Association. Stella serves on the APS International Physiology Committee and was recently selected for the Cardiovascular Section Advocacy Committee.

Education

APS Participates in the 2015 Central Regional HAPS Conference

Barbara E. Goodman and Lynn Diener
University of South Dakota and Mount Mary University


Barbara E. Goodman


Lynn Diener

Anatomy and physiology educators from the Central U.S. gathered on Saturday, November 14 for the Central Regional Human Anatomy and Physiology (HAPS) conference at Alverno College, Milwaukee, WI.

Barb Goodman, University of South Dakota, APS Physiology Education Community of Practice (PECOP; *www.lifescitrc.org/PECOP*) Community Coordinator, and Lynn Diener, Mt. Mary University, PECOP Fellow, presented a plenary update seminar on "Student-Centered Learning in Physiology Courses" at the regional HAPS Conference.

The 80 participants wrote down and then discussed a student-centered learning activity that they had seen used in the classroom, learned how a colleague uses the Life Science Teaching Resource Community (*www.LifeSciTRC.org*) to give ideas for classes, and initiated an idea to try some new method of student-centered learning in classrooms. ●


Participants in the HAPS workshop

Barb Goodman is a professor at the University of South Dakota Sanford School of Medicine in Vermillion, SD. She is the past chair of the APS Teaching Section, the organizer of the 2014 and 2016 APS Institutes on Teaching and Learning, and one of the three co-PIs on the APS NSF grant establishing PECOP. She teaches Advanced Human Physiology and Physiology for Occupational Therapy Doctoral Students, and has shifted all of her classes to student-centered, team-based learning.

Lynn Diener is an Associate Professor at Mount Mary University in Milwaukee, WI. She has taught a variety of courses but regularly teaches Human Physiology, Human Anatomy, and Ecology. She received her PhD in Molecular and Environmental Toxicology from the University of Wisconsin-Madison. She enjoys incorporating student-centered learning into her classes and takes every opportunity she can to learn more about doing so effectively.

APS Undergraduate Orientation and Poster Sessions

APS Undergraduate Orientation Session

All undergraduate students are invited to attend.

Saturday, April 2
3:30-5:30 PM
San Diego Marriott Hotel and Marina, Torrey Pines

Come and network with other undergraduate researchers; hear great suggestions on how to get the most out of EB; get hints to make presenting your poster easier; meet the APS President and Executive Director; and meet members from the Careers, Education, and Trainee Advisory Committees.

For more information, go to *www.the-aps.org/ugorient*.

Undergraduate students practice introducing themselves and sharing their research at the EB meeting

APS Undergraduate Poster Session

Undergraduate students: Sign up to present your poster!
APS Members: Come see the future of physiology!

Sunday, April 3
4:00-5:30 PM
San Diego Convention Center, Sails Pavilion

Undergraduate students presenting their research findings to APS members

Over 150 undergraduate students will be presenting their research on a wide range of topics. Don't miss this opportunity to support undergraduate students and encourage them to pursue a career in biomedical research. It's also a great time to look for your next graduate student!

Meet the David Bruce Outstanding Abstract Awardees and be among the first to discover which of those students wins the David Bruce Excellence in Undergraduate Research Award.

Watch the video submissions from the 2016 APS Presents . . . Phantastic Physiology Voyage: "Function Follows Form" video contest and learn which among those were selected as the award winners (see *www.the-aps.org/video*).

For more information, go to *www.the-aps.org/ugposter* or contact Allison Hood, Project Assistant, Diversity & Higher Education Programs (*ahood@the-aps.org*, 301 634-7233).

Graduate Program Recruitment Opportunity

Graduate programs: Don't miss the opportunity to recruit Undergraduate Students for your next graduate student cohort.

Where you will find:
- Over 125 undergraduate students presenting posters
- All first authors on research abstracts for EB
- Most considering a research career
- Many considering graduate school

Graduate departments and programs talk with undergraduate students about advance degree opportunities at their institutions

The APS Education Committee invites graduate physiology departments to recruit graduate students at this event.

Recruiters will receive:
- Dedicated 30 minutes at beginning of session to interact with students before session begins (3:30-4:00 PM) (food served)
- Table space for distributing graduate school information (6-ft. table)
- Inclusion on signage at poster session
- Listing in special session program with contact information
- Access to list of undergraduate students from the session who are interested in graduate school

Cost: $250/table

To sign up, go to *www.the-aps.org/ugposter* or contact Allison Hood, Project Assistant, Diversity & Higher Education Programs (*ahood@the-aps.org*, 301 634-7233). ●

2016 Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientists Awardee

Ormond MacDougald

The Women in Physiology Committee is pleased to announce that Ormond MacDougald, University of Michigan, is the 2016 Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Awardee. For more information, please visit *http://www.the-aps.org/schmidtnielsen*. ●

Science Policy

Congress Passes FY 2016 Funding Bills

On December 18, 2015, Congress passed a $1.067 trillion omnibus appropriations bill (H.R. 2029) that will fund federal agencies and programs in fiscal year (FY) 2016. The total amount reflects an additional $50 billion that was made available through the Bipartisan Budget Act of 2015. The bill provides the National Institute of Health (NIH) with its first significant budget increase in several years. Other agencies, including the National Science Foundation, will receive modest budget increases. Highlights of the funding bill are below.

NIH

The omnibus provides the NIH with a $2 billion increase (+6.3%), bringing the total budget of the agency to $32.1 billion. Because some programs are designated to receive part of the increase, the budgets of most institutes and centers (ICs) will increase by ~4%. Programs receiving designated increases include: $200 million for the Precision Medicine Initiative (PMI); $350 million for Alzheimer's disease research; $85 million for the BRAIN Initiative; and $100 million for combatting antimicrobial resistance. These increases are in addition to the current levels of funding, with the exception of the PMI, which is a new program in FY 2016.

A number of provisions were included in report language accompanying the Omnibus:

- NIH will be expected to increase support for Ruth L. Kirschstein National Research Service Awards in proportion to at least the level of increase for most ICs (4%). NIH will also be expected to provide a stipend increase consistent with 2016 pay raises for federal employees (1.3%).

- The Institutional Development Award program (IDeA) will receive $321 million, a significant increase over the FY 2015 funding level of $273 million. The report states that the increase is in recognition of the program's success and calls on NIH to maintain at least this percentage in subsequent budget requests.

- The report calls on the NIH Director to "continue the traditional focus on basic biomedical research" and reiterates the importance of basic research in laying the groundwork for future translation. The report also requests an update in the FY 2017 budget request on NIH's efforts to ensure a focus on basic science is preserved.

- NIH will be expected "to consider the burden of disease when setting priorities and developing strategic plans" so that resources are directed to areas with significant opportunity to improve the current and future health of the American population.

- The report language expressed continued concern about the inability to reproduce some findings in biomedical research and directs the NIH to "continue to stress the importance of experimental rigor and transparency of reporting of research findings to enhance the ability of others to replicate them."

- Funding for the Science Education Partnership Awards (SEPA) will be continued at no less than the FY 2015 level.

National Science Foundation

The National Science Foundation (NSF) received a modest increase of $119 million (+1.6%), bringing the total budget to $7.46 billion. Total funding for research and related activities will be set at $6.03 billion, with $147 million going to support the multi-agency BRAIN initiative. Language in the House version of the bill that would have imposed deep cuts in funding for the geosciences and social and behavioral sciences was eliminated in the final version of the legislation. Nevertheless, funding for the social and behavioral sciences directorate will be held to the FY 2015 level. The bill also contains language that will require abstracts to "articulate how the project serves the national interest."

Veterans Affairs

Medical and Prosthetic Research at the Veterans Affairs (VA) received a $41.8 million increase (7.07%), bringing the program's total budget to $630.7 million.

NASA

NASA's budget increased by $1.28 billion (7.08%), for a total FY 2016 budget of $19.29 billion. Funding for science increased 6.56% to $5.589 billion.

Travel Restrictions for Federal Employees

Congress also took a step toward addressing problematic travel restrictions for federal employees in the Omnibus bill. In 2012, the White House Office of Management and Budget (OMB) issued Memorandum M-12-12 with new travel policies for all federal employees. This action was intended to address perceived misuse of taxpayer dollars for federal travel expenses. Agency implementation of these policies resulted in significant administrative burden for federal employees, including federally employed scientists.

Because Congress had directed federal agencies to adhere to the policies set forth in that specific memorandum, OMB has been unable to modify it to alleviate the administrative burden. To address this problem, the Omnibus included language permitting agencies to adhere to any future revisions of OMB travel policies. ●

NIH to End All Chimpanzee Research

"All NIH-owned chimpanzees that reside outside of the Federal Sanctuary System . . . are now eligible for retirement," NIH Director Francis Collins said in a statement released November 18, 2015. The announcement was made soon after *Nature* disclosed in an online article that Collins had informed NIH staff of this decision 2 days earlier.

"It is time to acknowledge that there is no further justification for the 50 chimpanzees to continue to be kept available," Collins said in an e-mail to NIH senior staff.

The decision was the culmination of a process set in motion in December 2010, when Collins asked the Institute of Medicine (IOM) to assess the continued scientific need for chimpanzees in NIH-funded biomedical and behavioral research. In December 2011, an IOM study panel announced that it had concluded that chimpanzees were no longer necessary for most current human biomedical research. The panel also set forth new ethical criteria for NIH to apply to future chimpanzee research. Collins accepted the report in principle and temporarily halted the approval process for new research involving chimpanzees. He also asked NIH's Council of Councils to commission a working group to review current research in light of the IOM's new criteria and recommend how NIH should implement the report's findings.

One of the IOM criteria was that research with NIH-owned chimpanzees must be necessary to advance public health. This narrow focus on NIH's mission precluded allowing researchers with other funding to conduct studies that might advance the health of chimpanzees, i.e., through the development of vaccines to protect wild chimpanzees against infectious disease such as Ebola.

The NIH working group on the IOM report issued draft recommendations in January 2013. A period of public comment followed, and in June 2013, Collins announced that NIH would retain a colony of 50 chimpanzees for future biomedical research. In addition, all NIH-owned chimpanzees were to be provided with an "ethologically appropriate environment," as defined by the working group.

Some chimpanzees were immediately sent to Chimp Haven, the federally chartered sanctuary for animals no longer needed for research. Another 300 were to be temporarily retired in place until the animals to be sent to the research colony were identified. Additional animals would be sent to Chimp Haven on a space-available basis. NIH also established a Chimpanzee Research Use Panel to review research proposals for compliance with the new standards. It then secured legislation to lift a $30 million spending cap on the total funding it was able to provide for the care of retired chimpanzees at Chimp Haven.

Image used with permission (http://www.clipart.com/en/close-up?o=5066722)

Even as NIH was moving to implement the IOM report, there was a concurrent development with even greater potential to disrupt research with chimpanzees. In March 2010, a coalition of animal rights and animal protection organizations petitioned the U.S. Fish and Wildlife Service (F&WS) to classify captive chimpanzees as an endangered species. Under the Endangered Species Act (ESA), any kind of biomedical research with an endangered species that is not specifically intended to promote the survival of that species requires going through a complicated permitting process. This requirement applies even to simple procedures such as temporary restraint or blood draw. In 1990, wild chimpanzees were placed on the endangered species list. However, captive chimpanzees were designated as threatened because they were seen as a promising species for HIV/AIDS research. The threatened designation is less restrictive and does not include the requirement to seek a F&WS permit before conducting research with them.

In response to the petition, F&WS conducted a "status review" of captive chimpanzees in late 2011. In June 2013–shortly after NIH announced its plans to implement the IOM recommendations on chimpanzee research–F&WS issued a proposal to reclassify captive chimpanzees as endangered. Despite the recommendation of the APS and other research organizations not to make the change, the endangered designation was applied to captive chimpanzees in June 2015. This step set up a Catch-22: NIH would not allow chimpanzee-focused research with its animals, and F&WS would not allow human-focused research without a special permit.

In his November 18, 2015 announcement, Collins said that, since June 2013, NIH had "phased out all previously active biomedical research protocols using chimpanzees that did not meet the IOM principles and criteria, and no new biomedical research projects have been approved." (In his earlier e-mail to NIH administrators, Collins indicated that one application had been submitted but later was withdrawn.)

Collins also said that the F&WS had not received any requests for research permits under the ESA since June, when captive chimpanzees were designated as endangered. Consequently, he had "reassessed the need to maintain chimpanzees for biomedical research and decided that, effective immediately, NIH will no longer maintain a colony of 50 chimpanzees for future research." He indicated that "[r]elocation of the chimpanzees to the Federal Sanctuary System will be conducted as space is available and on a timescale that will allow for optimal transition of each individual chimpanzee with careful consideration of their welfare, including their health and social grouping."

The decision was "specific to chimpanzees," according to the announcement: "Research with other non-human primates will continue to be valued, supported, and conducted by the NIH." ●

Image used with permission (http://www.clipart.com/en/close-up?o=5066710)

WHO Says Ketamine Should Not Be Placed Under International Control

On December 8, 2015, an expert panel recommended that the World Health Organization (WHO) not place international drug controls on ketamine. The panel concluded that "ketamine abuse does not pose a global public health threat, while controlling it could limit access to the only anesthetic and pain killer available in large areas of the developing world." Ketamine is also an important veterinary anesthetic. WHO will forward this recommendation to its Commission on Narcotic Drugs for a final decision in March 2016.

The recommendation was prompted by a Chinese request to restrict ketamine's availability due to its potential use as a recreational drug. China first proposed that ketamine be classified as a Schedule I drug, the most restrictive classification. In March 2015, China modified its request, asking only that ketamine be regulated under Schedule IV. "Placing substances under international control can often limit access to them for medical purposes," explained Kees De Joncheere, WHO Director for Essential Medicines and Health Products. "Morphine is a case in point: Even though it is inexpensive and one of the best substances available for pain management, in most countries availability and use are limited due to excessive regulation," he said.

On October 14, 2015, the APS submitted a position statement urging that WHO reject a change in the international regulation of ketamine. The APS statement was submitted in response to a U.S. Food and Drug Administration request for public comment on the abuse potential and medical usefulness of ketamine. The FDA used the comments it received to develop a recommendation on ketamine and nine other drug substances for WHO's Expert Committee on Drug Dependence.

The APS emphasized that ketamine is a vital anesthetic used in veterinary and human medicine, as well as in animal research. APS also noted that the U.S. already regulates ketamine under the Controlled Substances Act. To read the APS statement in its entirety, go to *http://the-aps.org/Ketamine*. ●

NIH to End Research Targeted by PETA

On December 11, 2015, BuzzFeed broke the news that a well regarded researcher's work on the physical and psychological effects of maternal deprivation in infant monkeys would be terminated. Constantine Stratakis, scientific director of the National Institutes of Child Health and Human Development (NICHD), said the decision was made for financial reasons. However, coming as it did after a year-long campaign by PETA, many on both sides of the issue saw the move as bowing to external pressure.

In a *Science* article published December 14, 2015, Stratakis was quoted as saying that the research of Stephen Suomi has produced "a treasure trove of material." Suomi "has made critical observations on the impact of certain behavior on genetics," Stratakis said. A PETA representative is quoted in the same article as welcoming the decision. "They did the right thing by shutting down this work," PETA Director of Laboratory Investigations Justin Goodman said.

According to an NICHD statement, Suomi's research will be phased out over 3 years as part of a broader plan to end the institute's operations at the NIH Animal Center in Poolesville, MD. Suomi has been studying the long-term effects of early maternal separation on the mental health and development of infant monkeys with a colony of about 300 animals. According to the statement, over the course of the next 3 years, about 100 animals per year will be transferred to other facilities. Suomi's lab "may continue to analyze behavioral data and to conduct experiments on collected samples, but no animals will be involved," it said.

Many in the research community viewed the decision with concern. "What is clear is that the science is valuable and that the work is conducted with care for the animals," Speaking of Research said in a December 15, 2015 blog post. "Science is the essential foundation of medical progress and discovery that benefits society, humans, animals, and the environment," the post said. It noted that both the American Psychological Association and the American Society of Primatologists had voiced their support for the scientific merit of Suomi's work and its contributions to human and animal health.

"The U.S. has a strong system for direction, review, and oversight of animal research," said Speaking of Research. It went on to caution that "[p]olitical campaigns by groups fundamentally opposed to all use of animals in research threaten the very fabric of science on which medical progress depends."

The American Society of Primatologists (ASP) registered its concern that the decision will have "widespread–and unknown–effects." ASP noted that Suomi is involved in collaborations with other researchers to answer a variety of scientific questions while reducing the number of animals needed. The ASP's Board of Directors estimated that terminating Suomi's studies may affect more than a dozen large-scale projects being conducted by more than 60 researchers in the U.S., Italy, France, the UK, Germany, and Canada.

"We believe that the decision by the NIH that curtails long-term, life-long data collection on [these] rhesus macaques will negatively impact both human and non-human primate health," the ASP board said.

Even the decision to end the research did not satisfy PETA. Justin Goodman told *Science* the group would continue its pressure on NIH to end all research with nonhuman primates. "We're also trying to get NIH to start counting the number of mice and rats it uses." On December 21, 2015–just 10 days after the NICHD decision was disclosed–PETA announced that 28 Members of Congress had written to Collins, asking that the 300 monkeys from Suomi's studies be sent to sanctuaries rather than transferred to other labs. "Your decision last month to retire all federally owned chimpanzees to sanctuaries demonstrates NIH's commitment to providing refuge to primates previously used in experiments," the congressional letter said.

PETA launched its high-profile campaign against Suomi in September 2014, using video footage and photos of animals in his studies that were obtained through Freedom of Information Act requests. PETA's claims that the research traumatized the animals were aired in the media and conveyed in graphic ads in the Washington, DC Metro system.

In December 2014, Representatives Lucille Roybal-Allard (D-CA), Dina Titus (D-NV), Eliot Engel (D-NY), and Sam Farr (D-CA) wrote to NIH Director Francis Collins expressing concern about the "scientific and ethical justification" of Suomi's research and urging him to conduct a bioethics review.

Collins provided a response in January 2015. After outlining the "numerous policies and protocols" in place at NIH "to assure the ethical treatment" of animals, Collins detailed issues that were addressed in a review conducted by the NICHD's Animal Care and Use Committee under the direction of NIH's Office of Laboratory Animal Welfare. No problems were explicitly identified, but Collins told the Representatives that "several important refinements" would be made to the research protocol as a result of the review. These included deleting neonatal EEG analyses and spinal taps that "previously yielded important data, but are not currently needed to achieve the research goals." In addition, the number of blood draws was to be reduced, and the protocol was amended to "define distress behaviors more clearly."

Meanwhile, also in January 2015, the American Psychological Association (APA) wrote to Representatives Roybal-Allard, Titus, Engel, and Farr, detailing how Suomi's research has contributed to the understanding of human and animal behavior and to the improvement of treatments for mental illnesses including depression, addiction, and autism. In a January 22, 2015 letter, APA Acting Executive Director for Science Howard Kurtzman urged the Representatives to reevaluate the research in light of the demonstrated benefits of Suomi's research. "We believe that the facts do not support PETA's public statements about this research," Kurtzman wrote.

However, PETA interpreted the NIH-mandated protocol changes as a victory and kept the pressure on. On October 20, 2015, the group sent letters to hundreds of people living near Collins and Suomi. "I am writing to share some disturbing information about one of your neighbors that is especially upsetting if you object to animal abuse," Senior Laboratory Oversight Specialist Alka Chandna said in the letter. She described the studies in inflammatory terms as "cruel psychological experiments" and asserted that "neuroscientists have called them worthless." Chandna urged the neighbors to visit, call, or e-mail Collins or Suomi with a personal appeal to "save monkeys from terrible suffering." The letters included the scientists' home addresses, their telephone numbers, and e-mail.

In July 2015, language about nonhuman primate research was included in the House Appropriations Committee's report that accompanied NIH's FY 2016 funding legislation. The report called upon Collins to "conduct a review of its ethical policies and processes with respect to nonhuman primate research subjects, in consultation with outside experts." While report language lacks the force of law, it provides instructions to federal agencies. It is therefore likely that NIH will undertake an ethical review of nonhuman primate research in the coming year. ●

NIH Releases Agency-Wide Strategic Plan

In response to calls from Congress, the National Institutes of Health (NIH) has released its first agency-wide strategic plan. The research strategic plan for fiscal years 2016-2020, entitled "Turning Discovery Into Health," is intended to harmonize decision making across the institutes and centers (IC) but not replace the strategic plans developed for each individual IC.

There are four objectives outlined in the plan.

Advance opportunities in biomedical research through exploration of fundamental science, discovery of treatments and cures, and advancement of health promotion and disease prevention.

Foster innovation by setting NIH priorities by balancing the opportunities presented by the best science, public health needs, and unique ability of the NIH to address challenges in human health that would otherwise go unmet.

Enhance scientific stewardship by supporting the best scientific ideas and scientific minds while also earning and maintaining public trust.

Excel as a federal science agency by managing for results through developing methodologies to evaluate scientific investments, conducting workforce analyses, continuously reviewing the peer-review system, enhancing scientific rigor and reproducibility, and reducing administrative burden.

The plan also offers a list of "stretch goals" for the next 5 years, including enhancing survival of cancer patients through application of precision medicine; development of a universal flu vaccine; development of a wearable bio-sensor for monitoring blood alcohol levels; and development of an artificial pancreas for management of diabetes.

To read the entire strategic plan, go to *http://bit.ly/NIHplan*. ●

Publications

Current Calls for Papers

Physiological Genomics

- Gut Microbiota in Health and Disease
- Systems Biology and Polygenic Traits

Journal of Neurophysiology

- Spinal Control of Motor Outputs (*Submission deadline: December 31, 2016)*
- Building Neural Circuits: Wiring and Experience (*Submission deadline: December 31, 2016)*
- Biology of Neuroengineering Interfaces (*Submission deadline: December 31, 2016)*
- Auditory System Plasticity *(Submission deadline: July 1, 2016)*
- Comparative Approaches in Neurobiology *(Submission deadline: July 1,2016)*
- Glial Cells and Neuronal Signaling *(Submission deadline: July 1, 2016)*

Advances in Physiology Education

- Historical Perspectives and Living Histories

Journal of Applied Physiology

- Aging and Exercise *(Submission deadline: April 1, 2016)*

American Journal of Physiology–Cell Physiology

- Cellular Mechanisms of Proteostasis (*Submission deadline: June 30, 2016)*
- Gasotransmitters (*Submission deadline: June 30, 2016)*
- Omic Approaches to Epithelial Cell Biology (*Submission deadline: June 30, 2016)*
- Regulation of Cell Signaling Pathways (*Submission deadline: June 30, 2016)*
- Stem Cells: Physiology and Microenvironment (*Submission deadline: June 30, 2016)*

American Journal of Physiology–Endocrinology and Metabolism

- Islet Biology *(Submission deadline: March 31, 2016)*
- Novel Aspects of Adipocyte Biology *(Submission deadline: March 31, 2016)*
- CNS Control of Metabolism *(Submission deadline: March 31, 2016)*
- Endocrine and Metabolic Dysfunction during Aging and Senescence *(Submission deadline: March 31, 2016)*
- Metabolic Control by Inflammation and Immunity *(Submission deadline: March 31, 2016)*
- Mitochondrial Dynamics and Oxidative Stress in Disease *(Submission deadline: March 31, 2016)*
- Stress-Induced Metabolic Regulation *(Submission deadline: March 31, 2016)*

American Journal of Physiology–Gastrointestinal and Liver Physiology

- Microbiome and Host Interactions
- Nutrient Sensing, Nutrition, and Metabolism
- Systems Biology
- Translational Human Pathophysiology

American Journal of Physiology–Lung Cellular and Molecular Physiology

- Electronic Cigarettes: Not All Good News? *(Submission deadline: October 1, 2017)*
- Ion Channels and Transporters in Lung Function and Disease
- Age-Related Dysfunction in Lung Barrier Function in Health and Disease
- Real-Time Visualization of Lung Function: from Micro to Macro
- Biomarkers in Lung Diseases: from Pathogenesis to Prediction to New Therapies

- Sex Differences in the Respiratory System
- Translational Research in Acute Lung Injury and Pulmonary Fibrosis

American Journal of Physiology–Regulatory, Integrative and Comparative Physiology

- Sex and Gender Differences in Cardiovascular, Renal and Metabolic Diseases *(Submission deadline: June 30, 2016)*

American Journal of Physiology–Renal Physiology

- Endothelin in Renal Physiology and Disease *(Submission deadline: June 30, 2016)*
- Imaging Techniques in Renal (Patho)physiology Research *(Submission deadline: June 30, 2016)*
- Inflammation and Inflammatory Mediators in Kidney *(Submission deadline: June 30, 2016)*
- Purinergic Signaling Mechanisms in the Lower Urinary Tract *(Submission deadline: June 30, 2016)*
- Mechanism and Treatment of Renal Fibrosis and Treatment *(Submission deadline: June 30, 2016)*

For a complete list of current Calls for Papers, visit the APS website.

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***transferred from student membership**

Maricedes Acosta-Martinez
Stony Brook Univ. Med. Ctr., Stony Brook, NY

Peter Agger
Aarhus Univ. Hosp., Aarhus, Denmark

Jason Amatoury
NeuroScience Res. Australia, Randwick, Australia

Allen Andres
Cedars-Sinai Med. Ctr., Los Angeles, CA

Charles Antwi-Boasiako
Univ. of Ghana Med. Sch., Accra, Ghana

Bhavisha Bakrania
Univ. of Mississippi Med. Ctr., Ridgeland, MS

Sivasai Balivada
Univ. of Texas, El Paso, TX

Chrisitiane Becari
Mayo Clinic, Rochester, MN

Sheng Bi
Johns Hopkins Univ. Sch. of Med., Baltimore, MD

Gregory Blass
Med. Coll. of Wisconsin, Milwaukee, WI

Evgeny Bondarenko
Univ. of California-Los Angeles, Los Angeles, CA

Thomas A. Bowman
Tufts Univ., Revere, MA

M. Christian Brown
Mass. Eye & Ear Infirmary, Boston, MA

Raul Camacho
Janssen, Spring House, PA

Maria Alicia Carrillo-Sepulveda
NYIT Coll. of Osteopathic Med., Old Westbury, NY

Daian Chen
Univ. of Alabama at Birmingham, Birmingham, AL

Ye Chen-Izu
Univ. of California-Davis, Davis, CA

Julia T. Choi
Univ. of Massachusetts-Amherst, Amherst, MA

Katie Colbert Coate
Samford Univ., Pelham, AL

Wes Colgan
ADInstruments, Colorado Springs, CO

Hilary Ann Coller
UCLA, Los Angeles, CA

Robert Davis
Univ. of Illinois at Chicago, Chicago, IL

Luiz Renato De Franca
Federal Univ. of Minas Gerais, Belo Horizonte, Brazil

Gregory Clarke DeAngelis
Univ. Rochester, Rochester, NY

Joan Deffeyes
Univ. of Montreal, Brookhaven, GA

Ana Diaz Artiles
Cornell Univ., Ithaca, NY

Ryan Michael Downey
Emory Univ., Atlanta, GA

Mikel Egana
Trinity Coll. Dublin, Dublin, Ireland

Daniela A. M. Eichenberger
Univ. of São Paulo, Ribeirão Preto, Brazil

Jonathan E. Elliott*
Mayo Clinic, Rochester, MN

Taolin Fang
Univ. of Mississippi Med. Ctr., Jackson, MS

C. Andrew Frank
Univ. of Iowa, Iowa City, IA

Yao Fu
Oklahoma Med. Res. Foundation, Oklahoma City, OK

Cornelius Joel Funk
John Brown Univ., Siloam Springs, AR

Dana Gaddy
Texas A&M Univ., College Station, TX

Sina A. Gharib
Univ. of Washington, Seattle, WA

Ellen Elizabeth Gillis*
Georgia Regents Univ., Jackson, MS

Andrew John Gow
Rutgers Univ., Piscataway, NJ

Richard J. Gumina
Vanderbilt Univ., Nashville, TN

Liubov Gushchina
The Ohio State Univ., Columbus, OH

Taketsugu Hama
Univ. of Tennessee, Memphis, TN

Terry Hinds
Univ. of Toledo, Toledo, OH

Alex O. Holcombe
Univ. of Sydney, Sydney, Australia

Pingbo Huang
Hong Kong Univ. Sci. & Tech. Kowloon, Hong Kong

Qiu-Xing Jiang
Univ. of Florida, Gainesville, FL

Venus Joumaa
Univ. of Calgary, Calgary, Canada

James Jun
HHMI-Janelia Res. Campus, Ashburn, VA

Mira Jung
Univ. Mississippi Med. Ctr., Jackson, MS

John David Kanady
Univ. of Arizona, Tucson, AZ

Rebecca Kappus
Appalachian State Univ., Boone, NC

Matthew W. Kay
The George Washington Univ., Washington, DC

Paul Kemp
Cardiff Univ., Cardiff, United Kingdom

John Walter Krakauer
Johns Hopkins Univ., Baltimore, MD

Raj Kumar Krishnan
Montefiore Med. Ctr., New York, NY

Nicholas T. Kruse
Univ. of Iowa, Iowa City, IA

Phil David Langton
Univ of Bristol, Bristol, United Kingdom

Sebastian Larion
Med. Coll. of Georgia, Augusta, GA

Gwenael Layec
Univ. of Utah, Salt Lake City, UT

Mathieu Lemaire
Univ. of Toronto, New Haven, CT

Chun Li
LSUHSC, Shreveport, LA

Qiangrong Liang
NYIT Coll. of Osteopathic Med., Old Westbury, NY

Jing Liu
Northwestern Univ. Feinberg Sch. of Med., Chicago, IL

Cristian Cezar Login
"Iuliu Hatieganu" Univ. of Med. and Pharmacy Cluj-Napoca, Romania Cluj-Napoca, Romania

Beibei Luo
Second Military Med. Univ., Shanghai, China

Meena S. Madhur
Vanderbilt Univ., Nashville, TN

Sarah Malmquist
Stony Brook Univ., Stony Brook, NY

Jody Lee Martin
Loyola Univ., Chicago, IL

Evan Lee Matthews*
Montclair State Univ., Montclair, NJ

Jamie Mayo
Univ. of Melbourne, Parkville, Australia

Carrie McAllister
Univ. of Texas Med. Branch, Galveston, TX

Colin Shane McCoin
Kansas Univ. Med. Ctr., Kansas City, KS

Avtar Singh Meena
Univ. of Tennessee Hlth. Sci. Ctr., Memphis, TN

Olachi Joy Mezu-Ndubuisi
Univ. of Wisconsin, Madison, WI

Said Movahedi Naini
Brigham and Women's Hosp., Boston, MA

Yumi Murata
The National Inst. of Advanced Industrial Sci., Tsukuba, Japan

Jonathan Paul Mynard
Murdoch Childrens Res. Inst., Preston, Australia

Shyam Sundar Nandi
Univ. of Nebraska Med. Ctr., Omaha, NE

Robert Charles Noland
Pennington BioMed. Res. Ctr., Baton Rouge, LA

Anthony Norcia
Stanford Univ., Stanford, CA

Jessica P. Otis
Carneigie Institution, Baltimore, MD

Brie Paddock
Arcadia Univ., Glenside ,PA

Amanda Rosemary Pahng
LSU Hlth. Sci. Ctr., New Orleans, LA

David Ross Painter
The Univ. of Queensland, Brisbane, Australia

Qing Pan
Zhejiang Univ. of Tech., Hangzhou, China

Alexandra Paradis*
California Baptist Univ., Loma Linda, CA

Monica Perez
Univ. of Miami, Miami, FL

Linda Peterson
Washington Univ. Sch. of Med., Saint Louis, MO

Danielle Rachel Plomaritas*
The ASK Academy, Albuquerque, NM

Steven Poelzing
Virginia Tech, Roanoke, VA

Eija Pöllänen
Gerontology Res. Ctr., Jyväskylä, Finland

Sutthasinee Poonyachoti
Chulalongkorn Univ. Fac. Veterinary, Bangkok, Thailand

Simone Porcelli
National Res. Council, Segrate, Italy

Sumanth D. Prabhu
Univ. of Alabama at Birmingham, Birmingham, AL

Kara Geo Pratt
Univ. of Wyoming, Laramie, WY

Anand R. Nair
Univ. of Iowa, Iowa City, IA

John Edward Rash
Colorado State Univ., Fort Collins, CO

Benjamin Jennings Renquist
Univ. of Arizona, Tucson, AZ

Nazareth De Novaes Rocha
Univ. Federal Fluminense, Niteroi, Brazil

Sunil Saharan
New York Univ., Brooklyn, NY

F Javier Javier Salazar
Univ. of Murcia, Murcia, Spain

Geoffrey Ian Sandle
Univ. of Leeds, Leeds, United Kingdom

Christopher Schonhoff
Tufts Univ., North Grafton, MA

Ratanesh Kumar Seth
Univ. **of** South Carolina, Columbia, SC

Amit Sharma
Med. Coll. of Wisconsin, Milwaukee, WI

Purnima Sharma
All India Inst. of Med. Sci., Jodhpur, India

Amanda Renee Sherwood
Univ. of Louisville, Louisville, KY

Shujie Shi
Univ. of Pittsburgh, Pittsburgh, PA

Joon Shim
Boston Univ. Sch. of Med., Boston, MA

Arti Vijay Shinde
Albert Einstein Coll. of Med., New York, NY

Shanshan Song
Univ. of Arizona, Tucson, AZ

Rajasekaran Namakkal Soorappan
Univ. of Alabama at Birmingham, Birmingham, AL

Angela Stanton
Independent Researcher, Anaheim, CA

Creed Stary
Stanford Univ., Stanford, CA

Jane Stubbe
Univ. of Southern Denmark, Odense, Denmark

Shinichiro Sugiura*
Univ. of Toledo, Toledo, OH

Toshihiko Suzuki
Tokyo Bay Med. Ctr., Urayasu-City, Japan

Malu Gamez Tansey
Emory Univ., Atlanta, GA

Erkan Tuncay
Ankara Univ. Tip Fakultesi, Ankara, Turkey

Jennifer Rae Vranish
Univ. of Texas at Arlington, Arlington, TX

Shengyu Wang
First Affiliated Hosp. of Xi'An Med. Univ., Xi'an, China

Xander H. T. Wehrens
Baylor Coll. Med., Houston, TX

Annette Michele Weintraub
Mount St. Mary's Univ., Emmitsburg, MD

Laura Weise
Cross Univ. of New Mexico, Albuquerque, NM

Auriel A Willette
Iowa State Univ., Ames, IA

Calum Wilson
Univ. of Strathclyde, Glasgow, United Kingdom

Margaret T. T. Wong-Riley
Med. Coll. of Wisconsin, Milwaukee, WI

Licy L. Yanes
Univ. of Mississippi Med. Ctr., Jackson, MS

Song Tieng Yao
Florey Inst. of NeuroSci. and Mental Hlth. Univ. of Melbourne, Melbourne, Australia

Wenjing Zhang
West China Hosp. Sichuan Univ., Chengdu, China

New Graduate Student Members

Niousha Ahmari
Univ. of Florida, Gainesville, FL

Gauri Akolkar
Univ. of Manitoba, Winnipeg, Canada

Marcos Paulo Rocha Alves
Fluminense Federal Univ., Niteroi, Brazil

Zaki Al-Yafeai
LSU Hlth. Sci. Ctr. Shreveport, Shreveport, LA

Ashley Lynn Artese
Florida State Univ., Tallahassee, FL

Anthony Asmar
Old Dominion Univ., Yorktown, VA

Jill Badin
Indiana Univ. Sch. of Med., Indianapolis, IN

Rick Ballweg
Univ. of Cincinnati, Cincinnati, OH

Greg Barton
Univ. of Wisconsin-Madison, Madison, WI

Ronique Beckford
Univ. of Tennessee, Knoxville, TN

Catherine Bellissimo
Univ. of Waterloo, Waterloo, Canada

Daniel Blackwell
Loyola Univ. Chicago, Maywood, IL

Lillian Brady
Univ. of Alabama at Birmingham, Birmingham, AL

Kanokwan Bunsawat
Univ. of Illinois at Chicago, Chicago, IL

Bradley Byers
Univ. of Alberta, Edmonton, Canada

David Adam Carter
Univ. of Melbourne, Parkville, Australia

Andrew J. Castellano
Philadelphia Coll. of Osteopathic, Brooklyn, NY

Sophie Chabot
CRIUCPQ-Laval Univ., Quebec, Canada

Paige Chambers
Univ. of Waterloo, Fort Frances, Canada

Kadambari Chandra
Shekar Univ. of Minnesota at Twin Cities, Edina, MN

Hsin-Hung Chen
National Yang-Ming Univ., Kaohsiung, Taiwan

Hsin-Hung Chen
National Yang-Ming Univ., Kaohsiung, Taiwan

Dahima Cintron
Mayo Clinic, Rochester, MN

Sophie Élène Collins
Univ. of Alberta, Edmonton, Canada

Mariano Colon-Caraballo
Ponce Hlth. Sci. Univ., Ponce, PR

Christopher Shawn Conway
Univ. of Hawaii, Keaau, HI

Geoff Coombs
Univ. of Ottawa, Ottawa, Canada

Meli'Sa Crawford
Arizona State Univ., Bethesda, MD

Juan Gilberto De La Cruz Gonzalez
UANL, Monterrey, Mexico

Christina Draijer
Univ. of Groningen Groningen Netherlands

Kristen Engevik
Univ. of Cincinnati, Cincinnati, OH

Mehrbod Estaki
Univ. of British Columbia Okanagan, Kelowna, Canada

Cornelia E. Fanter
Saint Louis Univ., Saint Louis, MO

G**ary J Farkas** Penn State Univ. Coll. of Med. Hershey PA

Rachel Fenske
Univ. of Wisconsin-Madison, Madison, WI

David Ferland
Michigan State Univ., Okemos, MI

Andrew Jarod Flores
Univ. of Arizona, Tucson, AZ

Ghezal Froogh
New York Med. Coll., Valhalla, NY

Brandon Gheller
Cornell Univ., Ithaca, NY

Andrew Gibb
Univ. of Louisville, Louisville, KY

Whitney Sharee Gibbs
Med. Univ. of South Carolina, Charleston, SC

Aliya Gifford
Vanderbilt Univ., Nashville, TN

Sabrina Ribeiro Gonsalez
Tulane Univ., New Orleans, LA

Angela Greenman
Univ. of Wisconsin-Madison, Madison, WI

Coral Hahn-Townsend
Univ. of Georgia, Athens, GA

Catherine Hambleton
Univ. of Kansas, Lawrence, KS

Iris Hardege
Univ. Of Cambridge, Cambridge, United Kingdom

Alexandria Lynn Hopp
Univ. of Wisconsin-Madison, Madison, WI

Anthony Incognito
Univ. of Guelph, Richmond Hill, Canada

Mohammad Jafarnejad
Imperial Coll. London, London, United Kingdom

Samira Jamalian
Imperial Coll. London, London, United Kingdom

Mengyao Jia
Univ. of British Columbia, Vancouver, Canada

Kalen Alane Johnson
Texas A&M Univ., Coll. Station, TX

Ramakanth Reddy Kankanala
Mediciti Inst. of Med. Sci., Hyderabad, India

Mohamed Katary
Gru Univ., North Augusta, SC

Alexander Kiel
IU Sch. of Med., Indianapolis, IN

Tim Koopmans
Univ. of Groningen, Groningen, The Netherlands

Frenk Kwon
Univ. of Waterloo, Waterloo, Canada

Robert Arnold Larson
Michigan Technological Univ., Houghton, MI

Dylan Lee Georgia
Inst. of Technology, Atlanta, GA

Kaitlyn Carlene Leonard
Clemson Univ., Lexington, NC

Malene E. Lindholm
Karolinska Inst., Stockholm, Sweden

Tingting Liu
Univ. of California-Davis, Davis, CA

Ziping Liu
Rutgers Univ., New Brunswick, NJ

Marissa Lovett
Univ. of Arizona, Tucson, AZ

Brandon Lucke-Wold
West Virginia Univ., Morgantown, WV

Berkley Luk
Baylor Coll. of Med./Texas Children's Hosp., Houston, TX

Morten Toft Lund
Univ. of Copenhagen, Copenhagen, Denmark

Anyun Ma
Univ. of Nebraska Med.Ctr., Omaha, NE

Bimit Mahat
Univ. of Ottawa, Ottawa, Canada

Simon Malenfant
Quebec Heart and Lung Inst., Quebec City, Canada

Alexandria Marciante
Unt.-Hlth. Sci. Ctr., Keller, TX

João Dario Mattos
Fluminense Federal Univ., Niteroi, Brazil

Katherine McGeever
Univ. of Illinois, Urbana, IL

Ivan Merdzo
Tulane Univ. Sch. of Med., New Orleans, LA

Dylan Meyer
Texas Tech Univ. Hlth. Sci. Ctr., Lubbock, TX

Edwin Ray Miranda
UIC, Oak Park, IL

Linn Emilia Moore
Univ. of Alberta, Edmonton, Canada

Evan J. Myers
SUNY Buffalo, Buffalo, NY

Stephan Nieuwoudt
Cleveland Clinic Lerner Res. Inst., Cleveland, OH

Monica Ortiz-Mesina
Inst. Mexicano Del Seguro Social, Colima, Mexico

Chelsea Mia Pagan
Seattle Children's Res. Inst., Seattle, WA

Victoria Shayla Parker
Univ. of Iowa, Iowa City, IA

Yogi A Patel
Georgia Inst. of Tech., Atlanta, GA

Tim Podlogar
Univ. of Birmingham, Trzin, Slovenia

David J. Polhemus
LSU Hlth. Sci. Ctr., New Orleans, LA

Natasha Pracejus
Univ. of Melbourne, Parkville, Australia

Ali Pressley
Appalachian State Univ., Boone, NC

Jeffrey D. Pressly
UTHSC, Memphis, TN

Michael E. Price
Univ. of Nebraska Med. Ctr., Omaha, NE

Harry Pritchard
Univ. of Nevada Reno, Reno, NV

Candy Mavis Rivas
Univ. of Arizona, Tucson, AZ

Helena Naly Miguens Rocha
Fluminense Federal Univ., Niteroi, Brazil

Trey Rottgen
West Virginia Univ., Morgantown, WV

Meghan Lynne Ruebel
Arkansas Children's Nutrition Ctr./ UAMS, Little Rock, AR

Gregory Ruegsegger
Univ. of Missouri, Columbia, MO

Katherine Russell
Mayo Clinic, Rochester, MN

James Sackett
Univ. at Buffalo, Buffalo, NY

Yalin Sencer
Sahin Hacettepe Univ., Ankara, Turkey

Michal Schäfer
Univ. of Colorado Denver/AMC, Aurora, CO

Aaron Schneider
Univ. of Iowa, Iowa City, IA

Lakmini Senavirathna
Oklahoma State Univ., Stillwater, OK

Anmol Shahid
Univ. of Alberta, Edmonton, Canada

Yue Shang
St. Boniface Hosp. Res., Winnipeg, Canada

Cierra Sharp
Univ. of Louisville, Louisville, KY

John Roger Alden Shepherd
Mayo Clinic, Rochester, MN

Daniel Shill
James Madison Univ., Athens, GA

Mikaela Sifuentes
Univ. of Texas Hlth. Sci. Ctr. at San Antonio, San Antonio, TX

Ludmila Silveira
Univ. of São Paulo of Ribeirão Preto, Ribeirao Preto, Brazil

Clark Sims
Univ. of Arkansas for Med. Sci., Little Rock, AR

Osman Sinen
Akdeniz Univ. Faculty of Med., Antalya, Turkey

Yoginee Sritharen
Mayo Clinic, Rochester, MN

Caroline Staunton
Univ. of Liverpool, Liverpool, United Kingdom

Timothy Stodola
The Med. Coll. of Wisconsin, Milwaukee, WI

Xiaofei Sun
Washington State Univ., Pullman, WA

Emma Louise Teal
Univ. of Cincinnati, Cincinnati, OH

Janee Terwoord
Colorado State Univ., Fort Collins, CO

Craig S. Thomson
Univ. of Cincinnati, Cincinnati, OH

Kyriakos Tsitoglou
Inst. of Cardiovascular Sci., Birmingham, United Kingdom

John Paul Valenzuela
Georgia Regents Univ., Augusta, GA

Larissa Mello Vargas
Mackenzie Univ., São Paulo, Brazil

Olga Volodina
Iowa State Univ., Ames, IA

Brittany M. Wade
Med. Coll. of Wisconsin, Milwaukee, WI

Jie Wang
Univ. of Manitoba, Winnipeg, Canada

Kristal Jerri Webb
Univ. of South Alabama, Mobile, AL

Robert Weinberg
Brigham and Women's Hosp., Boston, MA

Sebastian Weiss
Univ. Hosp. Hamburg-Eppendorf, Eppendorf, Germany

Lukas Wichmann
Justus Liebig Univ. Giessen, Giessen, Germany

Diarra Kevin Williams
Univ. of Arkansas Med. Sci., Little Rock, AR

Ian M. Williams
Vanderbilt Univ., Nashville, TN

Nathan Winn
Univ. of Missouri, Columbia, MO

Tao Yang
Univ. of Florida, Gainesville, FL

Pascal Yazbeck
Univ. of Illinois-Chicago, Chicago, IL

Shuai Yuan
Louisiana State Univ. Hlth. Sci. Ctr.-Shreveport, Shreveport, LA

Lysien Zambrano
UNIFESP-EPM Sao Paulo, Sao Paulo, Brazil

Mei Mu Zi Zheng
Univ. of British Columbia, Vancouver, Canada

Undergraduate Student Members

Emily Adamic
Univ. of Memphis, Memphis, TN

Sophie Buller
Univ. of Nevada Sch. of Med., Reno, NV

Sally Jo Detloff
Benedictine Univ., West Chicago, IL

India Rachel Gill
Elon Univ., Elon, NC

Andrew Kuczmarski
Univ. of Delaware, Columbia, MD

Taylor Levin
UW Hosp. and Clinics, Madison, WI

Makensie Louw
Brigham Young Univ., Pleasant Grove, UT

Cassandra Moshfegh
George Washington Univ. Sch. of Med. and Hlth. Sci., Great Falls, VA

Paul Murdock
Univ. of Cincinnati, Johnstown, OH

Tanya Omar
Mayo Clinic, Eden Prairie, MN

Merrick S. Reynolds
Brigham Young Univ., Washington, UT

Andrej Roczkowsky
Univ. of Alberta, Edmonton, Canada

Erin Grace Ryan
Univ. of Miami, Glendale, AZ

Jimmy Söderberg
Manchester Metropolitan Univ., Liverpool, United Kingdom

Kiran Raj Somers
Mayo Clinic, Rochester, MN

Sara Spampinato
Univ. of South Florida, Tampa, FL

Graham Leonard Strauss
The Univ. of Scranton, Lehighton, PA

Colin D. Tomes
Messiah Coll., Mechanicsburg, PA

Joe Lawrence Webb
Iowa State Univ., Ames, IA

Stevenclaude Dorsainvil White
Emory Univ. Sch. of Med., Atlanta, GA

Affiliate Members

Kevin Christmas
Univ. of Texas at Austin, Austin, TX

Rienzi A. Diaz
Univ. De Valparaiso, Vina Del Mar, Chile

Ernest Leo Fallen
McMaster Univ., Toronto, Canada

Miriam Golbert
Coll. of the Canyons, Santa Clarita, CA

Chris McGlory
McMaster Univ., Hamilton, Canada

Hanne Bjerregaard Moeller
Aarhus Univ., Aarhus, Denmark

Eileen Roark
Manchester Community Coll., Manchester, CT

News From Distinguished Physiologists

Letter to Patricia E. Molina

Paul C. Johnson writes: "I was very pleased to receive your letter informing me that I have been named to the inaugural class of Fellows of the APS. This is an especially high honor for me since I value my membership in the Society very much. The Society was the main avenue of my entry into the scientific community. It provided me with many opportunities to grow as a scientist and to contribute to the advancement of physiological knowledge. It was also an opportunity to meet other scientists and enjoy their company as well as learn much from discussions with them about their strategies and approaches. I was also pleased to be able to give back to the Society by serving on Council and the Publications Committee, and in other ways.

"My entry into physiology was a fortunate accident from having to support myself financially at the University of Michigan in my junior and senior years after finishing the first 2 years at Gogebic community college in my home town in the Upper Peninsula of Michigan. My money was running out in my junior year after moving to Ann Arbor, but I learned that there was a student employment office, where a kindly woman suggested that I look into an opportunity as a research lab assistant to Professor John Bean in the Department of Physiology. She noted from my transcript that I had never taken a course in biology [I was a physics major and never interested in biology (or in teaching for that matter)], but she sensed that I was getting desperate and thought it was worth a try. Fortunately for me, John Bean had been a chemistry major and was brought into physiology by Detlev Bronk (later President of Rockefeller University), whose PhD dissertation combined physiology and physics. John hired me and treated me as he would a student to do experiments on oxygen toxicity in rats. Not only was I earning enough money to finish my B.S. in physics, but I also was learning to do research and in a field for which, I realized, was very important and for which I was much better suited. John encouraged me to apply to the graduate program in physiology, I was accepted, and he was my mentor during my PhD training. While my lack of biology was somewhat a handicap, that was offset by my physics background, which was very helpful later in my work in circulation with my postdoc mentor Ewald Selkurt and in my subsequent academic and research career over a period of about 55 years.

"The field of physiology seems to be back on track as a highly respected scientific discipline these days, and we can thank our leaders, including yourself, for making this happen. There was an initial burst of enthusiasm for molecular biology, which, as is often the case, attracted attention because it was new and held much promise. We learned how it can be used to advance our own studies and incorporate it as appropriate. Now I see physiology mentioned quite often and in positive terms.

"Thank you for the invitation to attend the President's reception at the upcoming APS meeting in San Diego. At my age (87), I am limited in my ability to travel but will keep it in mind and hope it might be possible. I still remember well my first APS meeting in 1954, which I enjoyed very much but was also shocked to find that physiologists I had put on a pedestal were grilled (sometimes very sharply) by their peers. I learned that this is the way that scientists weed out data and hypotheses that can't survive close scrutiny and move the field forward.

"Again, thank you for the honor and for the memento of the APS Fellowship award, which I display prominently in our living room." ●

Letter to Martin Frank

Herb Spector writes: "Six years ago, at the request of the American Physiological Society, I wrote my '91st Year Report' (*The Physiologist* 53: 25-26, 2010).

"Having successfully passed my 96th birthday, I am now in my 97th year.

"A few years ago, Marty Frank of the APS interviewed me. The 1-hour video deals with a few of my many careers and is available in the 'Living History' section of the APS website.

"In the last 6 years, I have stopped driving and have become increasingly deaf and blind, but am still writing books, articles, and research proposals . . . whenever I can find a typist or by using my two-finger seek and occasionally find the right keys method, as I am doing now.

"Today, just as 6 years ago, no promised millions of dollars have been forthcoming to support the essential human research, which will drastically change for the better, the practices of clinical medicine (see my 'Two Challenges' in the summary remarks to the 5th Stromboli Conference on Aging and Cancer; in *Curr Aging Sci* 6: 86-91, 2013).

"I continue to receive kudos and high honors from around the world, none of which are accompanied by cash.

"I still give fencing lessons, mostly verbal, and still gratis. My pupils are still winning local and world veterans' championships.

"After more than 500 gold medals in local, national, international, and veterans' fencing championships, I stopped competing several years ago. What used to be called (by an Olympic saber champion) "the" fastest lunge in the world" now is the world's slowest and results in sore knees and back for many hours afterward (more details, upon request, to any of you who are still curious)." ●

Obituary

In Memoriam: Aubrey E. Taylor (1933-2015)


Aubrey E. Taylor

It is with profound sadness that we note the passing of our mentor and dear friend, Aubrey E. Taylor, on December 23, 2015, at the age of 82. His death followed several years of declining health related to Alzheimer's disease. Aubrey is survived by his wife Jane Davis Taylor; daughters Audrey Jane Hildebrand (Price), Lenda Sue Taylor, and Mary Ann Taylor; grandchildren Taylor Hildebrand (Valley), Emily Bridgefort (James), Sarah Backes (Byron), John Smith, and Mary Jane Smith; and great-grandchild Walter Backes.

A proud native of Texas, Aubrey graduated from Paschal High School in Fort Worth, Texas. He subsequently served for 2 years in the U.S. Army. During this early period of Aubrey's life, he developed a passion for, excelled as a competitor in, and earned income from the rodeo. However, recognizing the significant risks to his own health and the limited financial stability that riding steers and bucking horses would afford him and his growing family, Aubrey chose another career path. He enrolled as an undergraduate student majoring in mathematics and psychology at Texas Christian University (TCU), earning a baccalaureate degree in 1960. It is notable that 38 years after earning the BS degree, Aubrey was recognized by TCU as a "distinguished alumnus" for his career achievements as a scholar. Furthermore, we note that his trainees continued to benefit from his early experiences, as Aubrey would frequently relay tips on rodeo riding strategy to accompany tips on math, science, and career development.

After completion of the bachelor's degree, Aubrey was recruited to join the graduate program in Physiology and Biophysics at the University of Mississippi Medical Center, where he earned a PhD degree under the tutelage of Arthur C. Guyton in 1964. That year, Aubrey assumed his first faculty position as an Assistant Professor in the Department of Physiology and Biophysics at the University of Mississippi. He took time out from this academic appointment to complete a 2-year postdoctoral fellowship in the Biophysical Laboratory at Harvard University to study membrane transport and nonequilibrium thermodynamics with Peter Curran. With this training, Aubrey began a life-long effort to apply his knowledge of mathematics, physiology, and biophysics to improve our understanding of the physical and chemical factors that influence microvascular function in health and disease.

On his return to the University of Mississippi in 1967, Aubrey was promoted to Associate Professor, then again to Professor in 1973. Four years thereafter, he was named Professor and Chair of the Department of Physiology at the University of South Alabama College of Medicine, a position that he held with distinction until his retirement in 2002. Due to the international attention drawn to Aubrey's own research contributions, his skillful leadership and devotion to his faculty, the Department flourished and quickly gained a worldwide reputation as a leading center for microcirculation research.

Aubrey had an active service role and held numerous leadership positions in different national and international scientific organizations, including the American Physiological Society (APS), the Microcirculatory Society (MCS), the American Heart Association (AHA), and the American Thoracic Society (ATS). He served for 4 years on the APS Council and was subsequently elected as the Society's 61st President. He also chaired the APS Membership Committee and served as the Respiratory Section representative to the Program Committee. He held similar positions in the MCS, serving on the MCS Council and was elected to serve as the Society's 30th President. Aubrey's service contributions to the AHA include membership on the Research Committee, Chair of the Lung and Development Study Group, and Chair of the Cardiopulmonary and Critical Care Council. Aubrey also served on the Council of the Association of Chairmen of Physiology Departments and was recognized by that organization with a Distinguished Service Award in 1995.

Aubrey's research and scholarly contributions over a 40+ year career as a physiologist were wide-ranging and

involved several organ systems. The thread connecting much of this work was his passion to define the factors governing transcapillary fluid and solute exchange in health and disease, with a particular focus on the lung. Since Aubrey was also an avid bird watcher, transcapillary *Starling* forces really held additional meaning for him. He was a renaissance scholar whose work was not limited to basic mechanistic questions but included many studies that were directed toward identifying novel therapeutic approaches for treatment of pulmonary edema. He did translational research long before the term was coined and the effort popularized. Aubrey published more than 700 original papers, reviews, books, and book chapters.

Recognition for Aubrey's achievements as a research scientist came in numerous forms. He enjoyed 30 years of continuous research from the National Institutes of Health, including a 10-year MERIT award. Aubrey served on the editorial board of several prestigious journals, including the *American Journal of Physiology, Circulation Research, Journal of Applied Physiology, Microcirculation,* and the *American Journal of Respiratory and Critical Care Medicine.* He was also an associate editor for the *Journal of Applied Physiology,* the *Journal of Critical Care,* and *Clinical Sciences.* A number of national and international organizations have recognized him with major lectures and awards for a lifetime of outstanding research. Some notable examples are the Research Achievement Award from the AHA, the Cannon Award from the APS, the Landis Award from the MCS, the Wiggers Award from the Cardiovascular Section of the APS, and the Classics in Physiology Award from the ATS. In 2015, Aubrey was elected as a Fellow of the American Physiological Society.

Many may not know that Aubrey played a significant role in the development of national health policy regarding second-hand tobacco smoke, ultimately helping to pave the way for smoke-free work places. Aubrey led the group that developed an AHA position paper on environmental tobacco smoke and cardiovascular disease, published in 1992, and was a vocal advocate for the AHA in this regard. Over the next several years, he held news conferences, spoke to AHA affiliate and division boards and the Alabama Governor's Health Conference on the impact of environmental smoke. In 1994, he testified to Congressional Subcommittees on environmental smoke and heart disease. These efforts were recognized in 2005, when Aubrey received the AHA Award of Meritorious Achievement.

Aubrey's reputation as a scientist attracted a number of trainees to his laboratory. He served as mentor for 15 predoctoral graduate students and 20 postdoctoral fellows, with the latter group coming from different universities in North America, Europe, Asia, and Australia. We both had the privilege of training with Aubrey and can attest to his effectiveness as a mentor. His expectations were high, but this came with an unwavering dedication to our success as scientists. Aubrey was always proud of his trainees and their accomplishments, generous with his support and praise, and never was willing to take credit for the efforts of his students. He had the capacity to challenge our thoughts, study design, and data interpretation in a way that was just so scientifically healthy and helpful. For any trainee coming to his office, the door was always open, science discussions lively, and the parting words from Aubrey often "great . . . publish it." To those he trained, Aubrey never seemed aware of how special he was, which made him all the more so.

In addition to his numerous and wide-ranging contributions to science, Aubrey will be remembered as a genuine, kind, and warm individual with a down-to-earth style. Aubrey's personality did not stray too far from that evident during his earlier life on the rodeo circuit, with the occasional utterance of salty language to complement his scientific terminology. He was not always inclined to conform to stereotypical scientific interactions, and we loved him all the more for it. Aubrey was truly a legendary figure who dedicated his life to research and teaching. He succeeded, through the force of his personality and convictions, in shaping the lives and careers of many physiologists, who will miss him for a long, long time. ●

D. Neil Granger
LSU Health Sciences Center-Shreveport, Shreveport, Louisiana

Mary I. Townsley
University of South Alabama College of Medicine, Mobile, Alabama

Positions Available

Assistant Professor: The Kinesiology and Health Science Department at California State University, Sacramento, seeks to hire an assistant professor to teach Biomechanics in Exercise Science. Doctorate in Biomechanics with postdoctorate experience in motor control or neuromuscular physiology preferred. ABD candidates will be considered; degree must be completed by August 2016. Peer-reviewed publications, external grants, and prior college/university teaching experience working with a diverse population is preferred. The successful applicant will mainly teach a variety of biomechanical courses in an undergraduate and graduate Exercise Science program, develop a scholarly record, and perform university/community service. Applications are only accepted through the Sacramento State jobs website. For full vacancy announcement, including application procedure, please see *http://www.csus.edu/about/employment/*. The review of applications will begin January 20, 2016, and continue until the position is filled. Address questions only to Dr. Roberto Quintana, Search Committee Chair, Department of Kinesiology & Health Science; phone: 916-278-4495; e-mail: *quintana@csus.edu*. AA/EEO. Clery Act Statistics available. Mandated reporter requirements. A background check (including a criminal records check) must be completed satisfactorily before any candidate can be offered a position with CSUS.

Assistant Professor: The Biology Department at Misericordia University, located in Dallas, PA, invites applications for a 1-year visiting faculty position at the instructor/assistant professor level beginning in August 2016. Load is 12 teaching credits per semester. The successful candidate must hold a MS (for instructor) or PhD (for assistant professor) in the biological sciences or closely related discipline. Teaching expectations include anatomy and physiology, and human structure and function courses for health science majors. Misericordia University, a 90-year-old institution founded by the Sisters of Mercy, offering baccalaureate, master's, and doctoral degrees, is located adjacent to the Pocono Mountains region of Northeastern Pennsylvania, approximately 2 h from New York City and Philadelphia. The University's approach of combining a quality liberal arts education with professional preparation and service to others has resulted in its wide regional acclaim. Misericordia University is committed to student, faculty, and staff diversity, and values the educational benefit this brings to campus. Candidates should indicate any experience and/or leadership that contribute to this goal. For confidential consideration, please enclose in your application package a letter of application, which includes your telephone number and e-mail address, curriculum vitae, official transcripts, statement of teaching philosophy, and three letters of reference, to Misericordia University, Attention: Human Resources Department, 301 Lake St., Dallas, PA 18612 or e-mail: *hr@misericordia.edu*. Inquiries only should be directed to: Dr. Angela Asirvatham, Associate Professor of Biology and Department Chair, e-mail: *aasirvat@misericordia.edu*. Applications are being accepted until the position is filled. For additional information about Misericordia University, visit our website at *http://www.misericordia.edu*.

Assistant/Associate Professor: The Division of Critical Care Medicine at Cincinnati Children's Hospital Medical Center is recruiting a research investigator. Areas of research focus within the Division of Critical Care Medicine include sepsis and infectious diseases, trauma, immunology, inflammation, and aging. Candidates with active research programs in basic and translational science in these areas are particularly encouraged to apply. The successful candidate must have earned a doctorate in an appropriate biomedical discipline and qualifications commensurate with the faculty appointment at the rank of associate professor. Records of scholarly activity and extramural funding in a research environment are required. Interested individuals should submit an application through the Cincinnati Children's Hospital Medical Center website at *http://www.cincinnatichildrens.org/careers/Apply/default/* (ID 81824). Interested individuals should also send curriculum vitae and two letters of recommendation to: Basilia Zingarelli, MD, PhD Professor and Director of Basic Science Research Division of Critical Care Medicine Cincinnati Children's Hospital Medical Center, 3333 Burnet Ave., Cincinnati, Ohio 45229; tel.: 513 636 8704; fax: 513 636 4892; e-mail: *basilia.zingarelli@cchmc.org*. Cincinnati Children's Hospital Medical Center is an affirmative action/equal opportunity institution. Women and minorities are encouraged to apply.

Assistant/Associate Professor: The Department of Biology & Wildlife and the Institute of Arctic Biology at the University of Alaska Fairbanks seek applicants for a tenure-track faculty position in vertebrate integrative

physiology at the assistant/associate professor level. Outstanding applicants conducting innovative research in mammalian or avian physiological adaptation from the molecular level to population processes–especially in Arctic or high-latitude ecosystems with potential management implications–are encouraged to apply. Applicants must possess a PhD in the biological sciences or a related field. Postdoctoral and teaching experience, a record of extramural funding, and evidence of the ability to mentor students and establish broad collaborations are preferred. Responsibilities include advising PhD, MS, and undergraduate students and teaching two courses per year. Desirable course offerings include wildlife nutrition; mammalogy; physiological ecology; comparative and/or functional vertebrate anatomy; and a graduate-level course in the candidate's area of expertise. The successful candidate will have the opportunity to interact and collaborate with over 50 biology faculty and postdocs as well as researchers in wildlife conservation and management agencies to address state needs. The Department of Biology and Wildlife has over 400 undergraduate and 100 MS and PhD students. Numerous field stations, research centers, and laboratory facilities are available, including the Bonanza Creek LTER, Arctic LTER, a High-Performance Computing cluster, DNA Core Lab, hibernation and animal housing facilities, R.G. White Large Animal Research Station, Center for Alaska Native Health Research, Toolik Field Station, the Alaska Cooperative Fish and Wildlife Research Unit, and the University of Alaska Museum. Additional details about our faculty, programs, and facilities are available on the Institute of Arctic Biology (*www.iab.uaf.edu*) or Department of Biology & Wildlife (*www.bw.uaf.edu*) websites. The University of Alaska Fairbanks (UAF) is the major research institution in the University of Alaska system and has been ranked in the top 20 small research universities in the U.S. by Academic Analytics. Fairbanks is a large and culturally diverse community in the heart of interior Alaska and features access to unparalleled outdoor and field opportunities. Applications must be completed online at *www.uakjobs.com/applicants/Central?quickFind=88677* and should include a cover letter and contact information for five references, a curriculum vitae, a statement of research accomplishments and goals, and a statement of teaching philosophy. The position is open until filled, and review will begin on February 1, 2016. Questions can be directed to Dr. Link Olson, *link.olson@alaska.edu*, 907-474-5998. The University of Alaska is an equal-opportunity/affirmative-action employer and educational institution. Minorities and women are encouraged to apply.

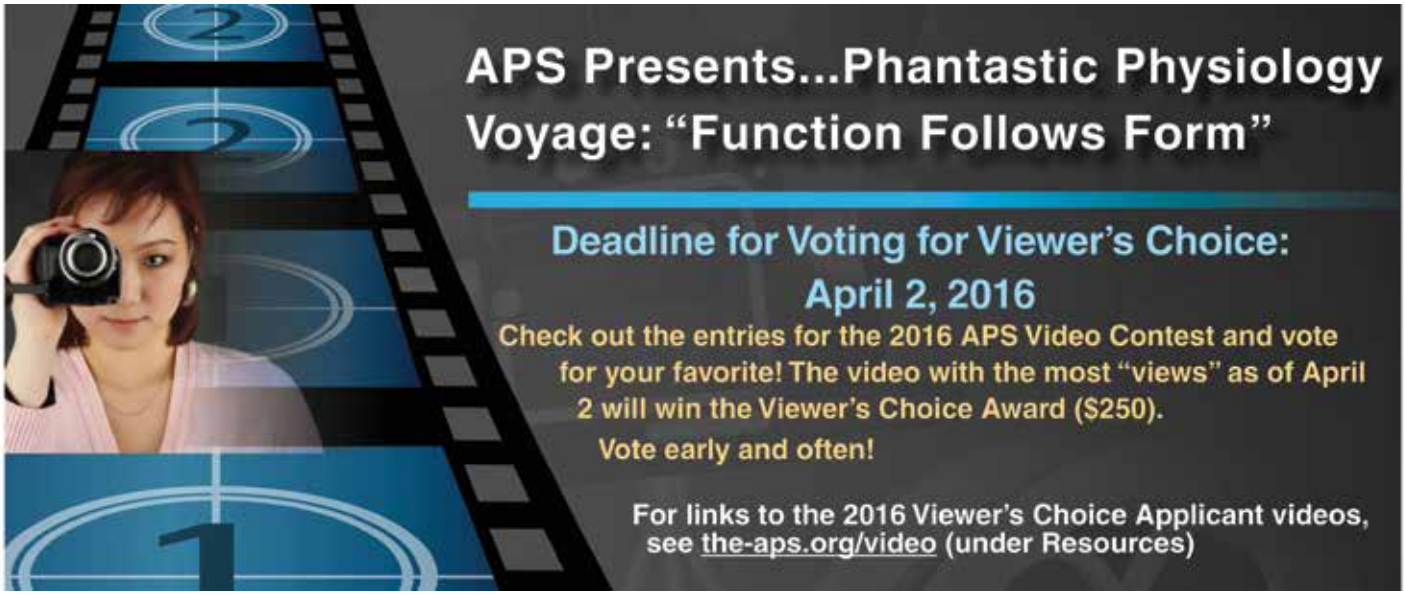
Associate Service Fellow: The National Institute for Occupational Safety and Health (NIOSH) is pleased to announce an opening for an Associate Service Fellow with an emphasis on pulmonary toxicology/pharmacology to join its Pathology and Physiology Research Branch (PPRB) in the Health Effects Laboratory Division (HELD; *www.cdc.gov/niosh/contact/im-held.html*), Morgantown, WV. *Responsibilities:* The successful candidate will develop hypothesis-driven pathophysiological investigations of lung toxicity caused by substances inhaled in the workplace. The ideal candidate will have experience developing disease models at the in vivo and in vitro levels. Expertise in assessment of pulmonary function, airway reactivity, isolated airway preparations, and cell culture is highly desirable. *Qualifications:* The successful candidate should have a PhD in toxicology/pharmacology or a closely related field and at least 2 years of postdoctoral training. Experience with laboratory animals and in vivo methodology is required. *Facilities:* The HELD is a fully equipped research facility at which all biomedical disciplines are represented and collaborations with biomedical engineers are a strength for the development of inhalation models. The campus is located in Morgantown, WV, one of the top small cities in the U.S., with fine schools and cultural features. It is adjacent to West Virginia University, and close collaborations with investigators and adjunct faculty appointments are established there. *Application:* Applicants should send a curriculum vitae, a statement describing past and current research interests, and contact information for three letters of reference to Jeffrey S. Fedan at *jsf2@cdc.gov*. NIOSH is an Affirmative Action/Equal Opportunity Employer.

Chair: The University of Saskatchewan invites applications from outstanding scholars for a research chair in Imaging Science funded by the Sylvia Fedoruk Canadian Centre for Nuclear Innovation. The successful candidate will have a PhD and advanced postdoctoral training in the area of imaging, especially as it relates to the development and use of animal models for diagnostic, therapeutic, or fundamental research purposes. Preference would be given to graduates of health

sciences (e.g., veterinary medicine, medicine, pharmacy) with advanced research training (PhD with postdoctoral training) in medical imaging. Board certification with experience in nuclear imaging are desirable. Experience with clinical trials or collaboration with industry demonstrated through generation of intellectual property will be an asset. The Chair will be expected to participate in collaborative interdisciplinary imaging research and training programs across campus as well as be part of a research team at the recently established Saskatchewan Centre for Cyclotron Sciences. An eligible candidate is emerging as a nationally or internationally recognized scholar demonstrating strong potential to attract competitively awarded research funding, and should have an exceptional track record of research and experience with interdisciplinary research partnerships. The selected candidate will be appointed to a tenure-track position in the Department of Small Animal Clinical Sciences, Western College of Veterinary Medicine, at an academic rank commensurate with experience and will be named the Fedoruk Chair in Imaging Sciences. The Chair will also contribute to both graduate education and training. The Chair is expected to actively recruit and supervise graduate students, build a dynamic research team, and build research collaborations across campus and with industry. Tri-council and other external peer-reviewed and industry funding is expected to be secured and sustained. The University of Saskatchewan is committed to enhancing its national and global research standing. The University of Saskatchewan campus is home to leading-edge clinical and research imaging infrastructure, including a recently completed 24 MeV cyclotron and radioisotope production facility operated by the Sylvia Fedoruk Canadian Centre for Nuclear Innovation (*www.fedorukcentre.ca*), the Canadian Light Source national synchrotron facility (*www.lightsource.ca*), the Saskatchewan Structural Sciences Centre, a state-of-the-art Health Sciences Facility including a PET-CT, the Vaccine and Infectious Disease Organization (VIDO-interVac; *www.vido.org*) with level three containment facilities, and National Research Council and Agriculture and Agri-Food Canada research centres. The person will be based at WCVM, which houses the Veterinary Medical Centre, a quality specialty referral hospital, with a Linear Accelerator with capabilities for SRT and IMRT, MRI, and nuclear scintigraphy. This infrastructure is complemented by a comprehensive array of human, veterinary, and agricultural research and teaching programs. The successful candidate will be appointed to a tenure-track position in the Department of Small Animal Clinical Sciences at an academic rank commensurate with experience and a 5-year term as Fedoruk Research Chair with a possibility of renewal. Salary bands for this post are as follows: assistant professor, $90,796-109,108; associate professor, $109,108-127,420; and professor, $127,420-148,784. This position comes with a comprehensive benefits package, which includes pension plan, life insurance (compulsory and voluntary), academic long-term disability, sick leave, travel insurance, death benefit, dental plan, extended health and vision care plan, employee assistance program, and flexible health and wellness spending program. The competition is currently open, and applications will be reviewed beginning January 15, 2016. Please send a curriculum vitae, letter of introduction, a summary of proposed research, contact information for three referees, and a statement of teaching interests, in confidence, to: Dr. Cindy Shmon, Head, Department of Small Animal Clinical Sciences, Western College of Veterinary Medicine, 52 Campus Dr., University of Saskatchewan, Saskatoon, S7N 5B4, Canada. The University of Saskatchewan is strongly committed to a diverse and inclusive workplace that empowers all employees to reach their full potential. All members of the university community share a responsibility for developing and maintaining an environment in which differences are valued and inclusiveness is practiced. The university welcomes applications from those who will contribute to the diversity of our community. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority.

Postdoctoral Scientist: A postdoctoral scientist position is available beginning no earlier than June 1, 2016 working under the mentorship of Dr. Aaron J. Trask at The Research Institute at Nationwide Children's Hospital, Columbus, OH. The Trask Lab conducts research examining the mechanisms of vascular remodeling, dysfunction, and biomechanics in metabolic diseases such as Type 2 diabetes, hypertension, and metabolic syndrome. The candidate should have an excellent academic track record, experience in molecular and cell biological techniques, including cell culture, and be willing to develop and learn new experimental methods. Experience with mouse models and small animal surgery, and a background in biomedical engineering is preferred but not required. The duties include, but

are not limited to, designing/performing complex experimental procedures that include molecular, cellular, biochemical, in vivo/ex vivo techniques, immunocyto/histochemistry, and assisting in the interpretation of results. The successful candidate will be creative, possess an exceptional work ethic, and be expected to efficiently and independently complete experiments and data analysis. The detail-oriented candidate will be proficient in preparing scientific publications and research grant proposals, and will work toward a goal of becoming independent in his/her research effort, and eventually obtaining extramural research funding. Candidates should submit no more than a two-page cover letter detailing their qualifications, interests, and career objectives, a curriculum vitae, and contact information for three references who have agreed to be contacted. Cover letter and references should be emailed to Patrick Kennedy at *patrick.kennedy@nationwidechildrens.org*. Salary will be commensurate with NIH guidelines. The review of applications will continue until the position is filled. *Responsibilities: 1)* With guidance from the mentor, designs experiments and develops protocols required to conduct productive research in the area of cardiovascular research. Techniques are focused in areas of molecular and cellular biology using in vitro, ex vivo, and in vivo assays. After the study has been designed, performs the research work in accordance with the protocol. *2)* Collects and analyzes data in accordance with appropriate statistical procedures, and prepares reports, inclusive of graphs, tables, and photographs, of the results of studies. Helps to plan future research endeavors. *3)* Prepares scientific and technical papers from the results of the research work. Publishes papers in appropriate refereed scientific journals. Presents findings at local and national research forums. *4)* Collaborates and interacts with other researchers doing similar studies at NCH and at other research institutions. *5)* Serves as a resource person for other investigators and as a mentor to less experienced research personnel. *6)* Performs miscellaneous related duties as required. *7)* Works toward research independence. Prepares to submit proposals to and obtain funding from external granting agencies. *8)* This is considered a training position, therefore the RI will allow a trainee 5 years to advance beyond the level of postdoc. *Other information:* Reports to: Principal Investigator. *Knowledge, skills, and abilities required: 1)* PhD, MD, PharmD, or equivalent degree. *2)* Four or more years of productive experience in a related scientific research field. *3)* Necessary technical skills in the appropriate area of research. *4)* Must be able to communicate effectively (written and oral) in English. ●



Meetings & Congresses

2016

March 6-8

Biomedical Basis of Elite Performance 2016, Nottingham, United Kingdom. *Information:* internet: *http://www.physoc.org/bbep2016/*

April 2-6

2016 Experimental Biology, San Diego, CA.

June 20-24

APS Institute on Teaching and Learning, Madison, Wisconsin. *#ITLPhysiology*

July 21-25

12th International Congress of Cell Biology, Prague, Czech Republic. *Information:* internet: *http://www.cscb.cz/*

July 29-31

APS/TPS Joint Meeting: Physiology 2016, Dublin, Ireland. *#Physiology2016*

August 24-27

APS Conference: Inflammation, Immunity and Cardiovascular Disease, Westminster, Colorado.

November 2-4

APS Intersociety Meeting: The Integrative Biology of Exercise VII, Phoenix, Arizonia.

2017

April 22-26

2017 Experimental Biology, San Francisco, CA.

May 27-June 1

International Neuromodulation Society 13th World Congress,Edinburgh, Scotland. *Information:* internet: *http://www.neuromodulation.com/ins-congress*.

August 1-5

IUPS 38th World Congress: Rhythms of Life, Rio de Janeiro, Brazil. *Information:* Internet: *http://iups2017.com/*.